APPENDIX A

HISTORICAL FLOOD EVENTS/DAMAGES SUMMARY

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Flood #	Storm #	Start Year	Start Month	Start Day	Season	Region	LGP#	Water Bodies	Type of Event	Rainfall (mm)	Damage Estimate by Community (if known)	Description
Corner Brook Area												
16	013	1954	12	20	Winter	Western	1200		Rainfall	65.8		Street flooded and 12 basements reported flooding.
29	020	1957	1	23	Winter	Western	1200		Rainfall	40.13		Low lying sections of the city began to fill with water as blocked sewers and high snow ban, damage to several roads.
31	022	1957	10	2	Fall	Western	1200	Bell's Brook	Rainfall	91.19		During a rainstorm several catch basins were not cleared causing streets to become eroded and washed out. At least 12 basements were flooded and the bridge over Bells Brook was damaged
32	023	1957	11	9	Fall	Western	1200		Rainfall	41.91		Several sections of the roads in town were washed out and severely damaged
43	031	1962	11	1	Fall	Western	1200		Rainfall	44.45		Many gravel roads were washed out, also much private property damage.
57	042	1968	11	26	Fall	Western	1200		Rainfall			A section of the railway was washed away.
64	047	1970	5	22	Spring	Western	1200	Majestic Brook	Rainfall	48.8	$17,500.00	MR: Heavy rainfall of 257.6 mm caused streams to flood their banks resulting in extensive damage to roads, culverts, and bridges. Several streets including Watson's Road was inundated by heavy runoff causing erosion, culverts were blocked with debris and one river overflowed its bank
66	048	1970	11	24	Fall	Western	1200		Rainfall	100.9		A major washout was reported in the Elizabeth Street area, as well as many others throughout the city, many basements were flooded resulting in damages.
71	053	1972	N/A	N/A	Spring	Western	1200		Rainfall and Snowmelt			A three year old drowned when swept away by a swollen stream behind her house.
72	054	1972	3	9	Winter	Western	1200		Rainfall	20.3	$20,000.00	Damage to streets and city property
74	055	1972	5	15	Spring	Western	1200		Rainfall			MR: Corner Brook NL, May 15, 1972. Spring runoff accompanied by rainfall caused flooding affecting communities on the Port au Prince Peninsula and area; damage to CNR; in Corner Brook, a 3-year old child drowned when swept away by a swollen brook behind her home. The causeway washed out at Mississippi Drive, water washed out sections of the roadway.
78	058	1972	12	7	Winter	Western	1200	Bell's Brook	Rainfall			Bell's Brook overflowed inundating the road and flooding property.
86	064	1973	6	23	Summer	Western	1200		Rainfall		$30,000.00	Rainfall caused considerable damages to some homes and property
93	066	1973	8	1	Summer	Western	1200	Bell's Brook	Rainfall			MR: A landslide occurred upstream bringing 30-40 cords of pulpwood and trees down the river with the flood, several boats were dragged out to sea. Highway 47 was underwater in at least two places and a bridge was washed out. At least 4 families were forced to leave their homes because of the flood waters. A number of basements were flooded as Bell's Brook overflowed. Corner Brook Stream and Bell's Brook overflowed resulting in some inundation.
96	069	1974	9	12	Summer	Western	1200		Rainfall			A home on Old Humber Road was Inundated
105	074	1975	9	21	Summer	Western	1200		Rainfall	46.7	$50,000.00	Storm sewers and ditches just couldn't cope with the heavy rain in a short period of time resulting in flooding streets and washouts. Many basements in low lying areas were inundated.
107	075	1975	12	22	Winter	Western	1200		Rainfall and Snowmelt	24.9		MR: Flooding in the streets was said to be extensive as sewer systems could not handle the water. Storm damage was reported to be quite extensive to the streets, road shoulders were also damaged. A section of the highway in the Exploits region near Grand Falls was underwater.
114	078	1976	1	27	Winter	Western	1200		Rainfall	22.4	$100,000.00	MR: Ice piled up at the mouth of Clark's Brook causing some problems. Several road washouts had occurred, one resident on Massey Drive was reported to have lost his driveway. The area was plugged with ice causing the water to back up inundating 4 homes and threatening 10 others. Several road washouts reported. Homes in Frenchman's Cove, Benoit's Cove and Lark Harbour damaged by flood waters. Steady Brook clogged with ice causing inundation of 4 homes and threatening another 10
118	080	1976	3	21	Spring	Western	1200		Rainfall			Heavy rain and snowmelt caused flooding on several streets and private property was damaged
121	083	1976	10	31	Fall	Western	1200		Rainfall	45.5		2 days of rainfall resulted in damage to roads and property.
128	087	1977	1	4	Winter	Western	1200		Rainfall and Snowmelt	9.1		A blocked catch basin caused heavy runoff on Humber Road
146	094	1977	12	25	Winter	Western	1200		Rainfall	31.8		Road damage occurred due to rain. Tons of mud and water flooded homes in the area.
168	102	1979	3	6	Winter	Western	1200		Rainfall and Snowmelt	64	$120,000.00	MR: 80ft section of retaining wall felled by high flows and ice. Some basement flooding and minor road damages was reported throughout the city. Blocked culverts and ditches caused some flooding in the roads
175	106	1979	11	4	Fall	Western	1200		Rainfall			MR: Section of highway under 0.5m of water. Flooding and rockslides reported at several locations.

176	107	1980	8	10	Summer	Western	1200		Rainfall			Minimal damage to city streets. One family forced to vacate basement apartment
178	109	1981	2	3	Winter	Western	1200		Rainfall			20-25 washouts reported
180	111	1981	2	12	Winter	Western	1200		Rainfall			Minor Flooding reported in Corner Brook
262	165	1996	2	17	Winter	Western	1200		Rainfall and Snowmelt	49		Two days of heavy rain and melting snow caused flooding in Corner Brook, Curling and Massey Drive. Washouts and mudslides occurred. In Cox's Cove, a few homes flooded. In Flat Bay many cabins were seriously damaged.
281	172	1999	1	24	Winter	Western	1200	Bonne Bay Pond	Rainfall	43.4		Heavy rainfall and snow. Portion of highway shoulder near Bonne Bay Pond had 30 meters washed away and dropped off by about 10 feet. No major accidents. TCH Deer Lake to Birchy Narrows minor shoulder damage.
324	185	2002	2	11	Winter	Western	1200		Rainfall	30		Heavy rain. ~30 mm of rain. Corner Brook, West Coast. City streets were flooded.
325	186	2002	2	28	Winter	Western	1200		unknown			The city received 90 distress calls about flooding. Tiny rapids formed gauges in streets. Water was pouring out of manhole covers.
338	195	2003	3	31	Spring	Western	1200		Rainfall and Snowmelt		$1,400,000.00	MR: Damage to infrastructure. The Trans Canada Highway is closed because of a flood damaged bridge. Rainfall and snowmelt. West Coast, Stephenville area. Sidewalk section washed away in Stephenville. In Cox's Cove basements were flooded as a result of floodwaters on the Frenchman's Pond watershed. Corner Brook suffered extensive damage
350	199	2003	10	22	Fall	Western	1200		Rainfall			Heavy rain. Corner Brook. Knocked out retaining wall on high wall interchange.
363	209	2004	8	9	Summer	Western	1200		Rainfall			Flooding in MacDonald Drive area.
406	219	2005	8	11	Summer	Western	1200		Rainfall	45		Street Damage and Private Properties damaged.
417	220	2005	9	27	Fall	Western	1200		Rainfall	61.4		Heavy rainfall. 151.4 mm of rain in Stephenville. Stephenville area, affecting 12 communities ~100 km apart. Greater than 1:100 year flood & 1:100 year 12 hour rainfall in Stephenville. EFO declared a State of Emergency in Stephenville & Reidville. 76 homes flooded & 181 people evacuated in Stephenville; 2 bridge washouts and several water main breaks in Stephenville. 90 people evacuated in Reidville.
509	258	2009	8	19	Summer	Western	1200		Rainfall			Heavy Rain caused severe flooding, which washed dirt and rocks in the street
519	266	2010	9	7	Summer	Western	1200		Rainfall			Winds and rain caused trees to fall down on properties in Corner Brook (Earl)

Petrie's Brook

502	252	2008	12	10	Fall	Western	1200	Petrie's Brook	Rainfall and Snowmelt			Heavy snow and rains caused a flash flood in Corner Brook area. Petrie's Brook overflowed. A culvert was engulfed and the bank collapsed, sending water, rocks and trees rushing past nearby homes.

APPENDIX B

WATERCOURSE CROSSING SUMMARIES

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CORNER BROOK STREAM WATERCOURSE CROSSINGS

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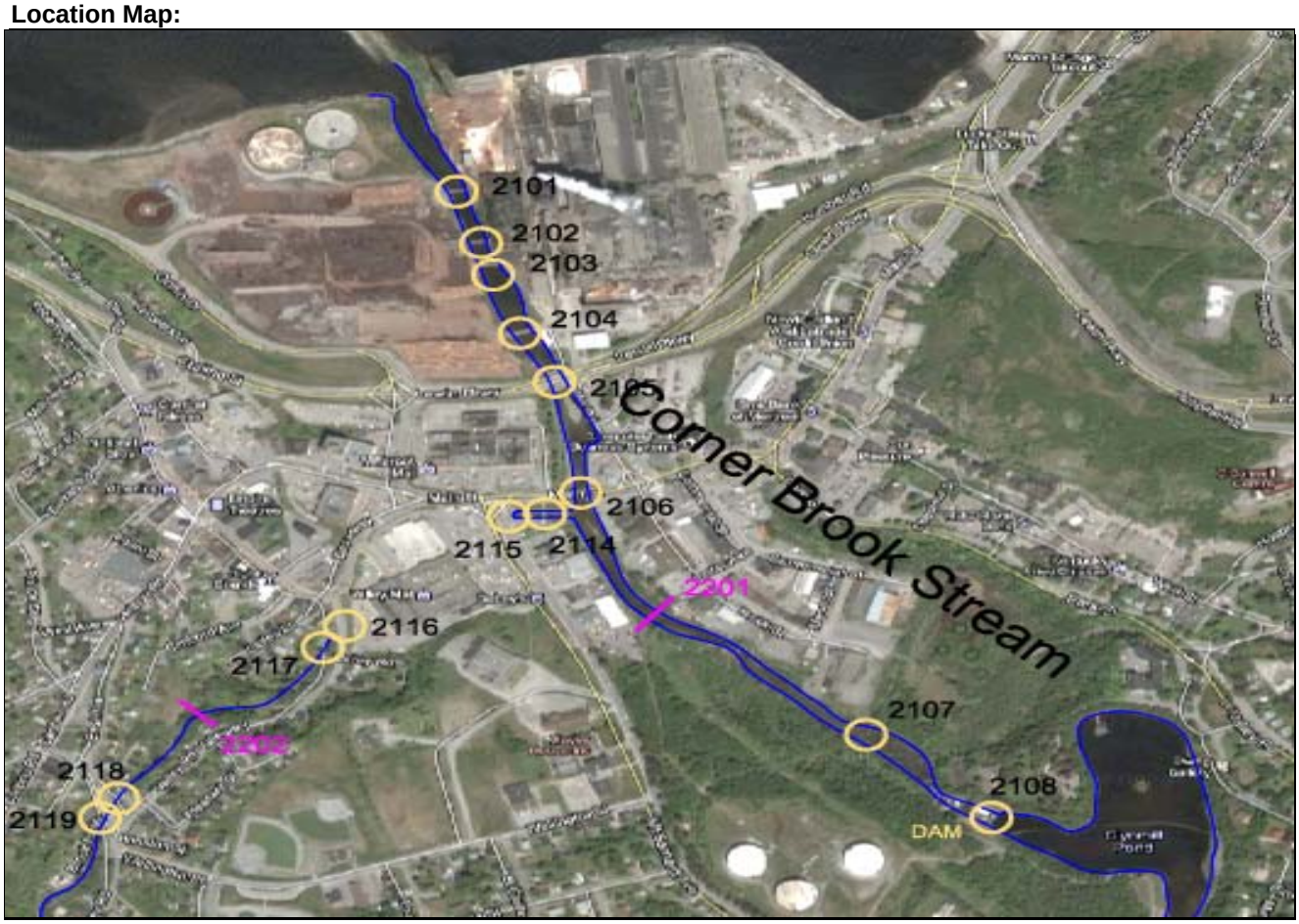
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2101**			
Watershed:	Corner Brook Stream	**Map Sheet(s):**	1	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	344999.4
			Northing	5424322.8
Road Name:	Corner Brook Pulp & Paper #1		**Control**	NAD83
Road Name Alias:	Corner Brook Pulp & Paper #1		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Steel
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0609-0612
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes: Walkway and pipe rack

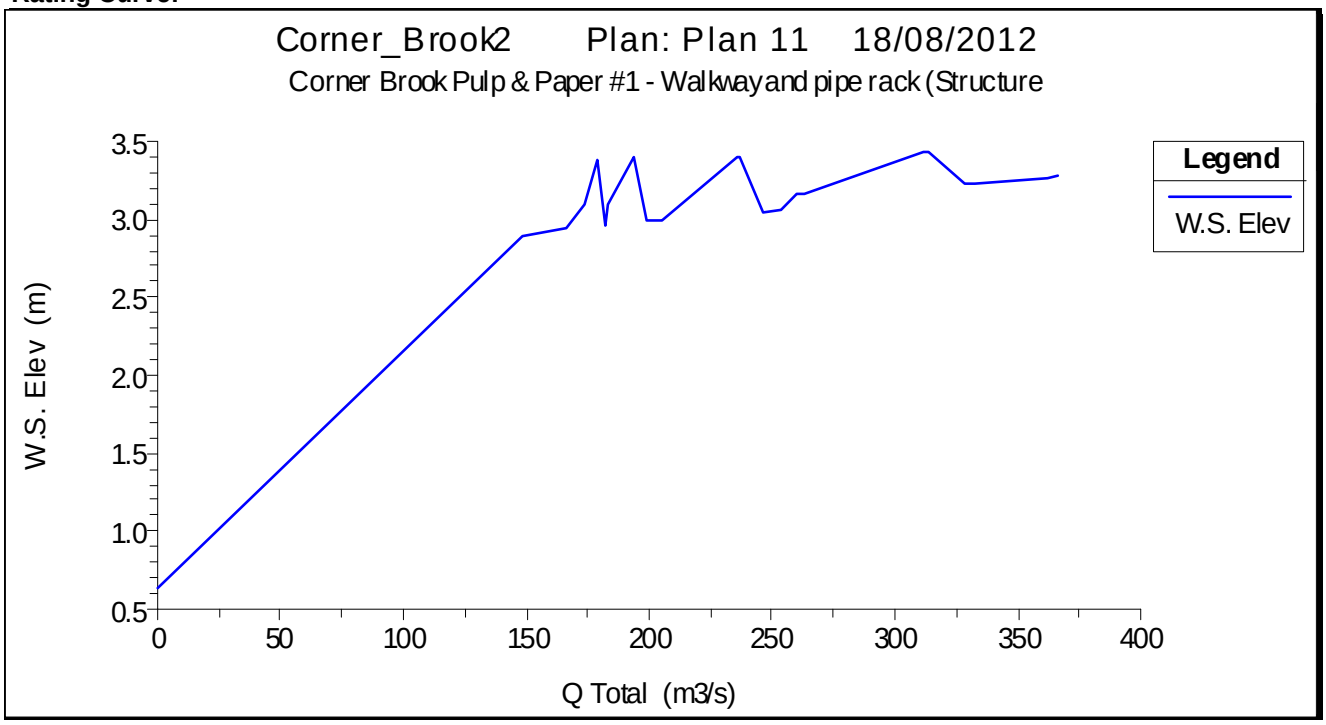
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2101**
Road Name: Corner Brook Pulp & Paper #1

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	2.5 m	
Span:	24.77 m	
Deck Thickness:	2.38 m	(minimum)
Top of Deck:	4.47 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	0.64						
	d/s:	0.55						
Type:		Bridge						
Material:		Steel						
Opening:	**B**	1.45						
	W	24.77						
Length:		2.5						
Slope:		0.036						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M001
Structure # :	152.50
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2101
Road Name: Corner Brook Pulp & Paper #1

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2101

Road Name: Corner Brook Pulp & Paper #1

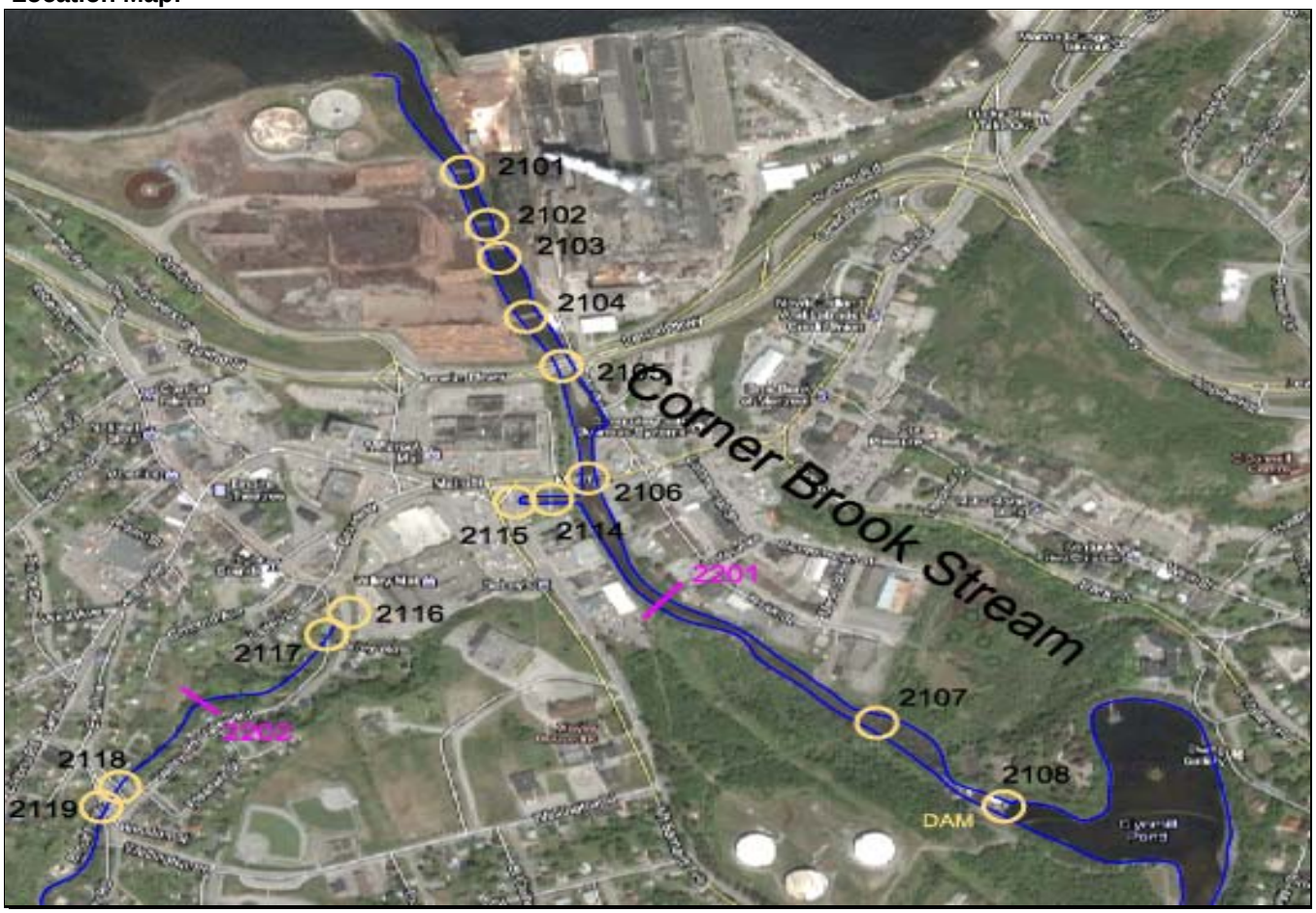
Description: View looking downstream from structure

Description: View of downstream face of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2102**			
Watershed:	Corner Brook Stream	**Map Sheet(s):**	1	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	345023.0
			Northing	5424247.5
Road Name:	Corner Brook Pulp & Paper #2		**Control**	NAD83
Road Name Alias:	Corner Brook Pulp & Paper #2		**Projection**	MTM Zone 3
Structure Type:	Overhead conveyor system		**Deck:**	Steel
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0613-0616
Organization(s):	AMEC			
Info Source(s):	-			
Date(s):	11/17/2011			

Location Map:



Notes: not modelled

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2102**
Road Name: Corner Brook Pulp & Paper #2

# of Bridge Piers or Arches:			
Skewed to Road?	N		
Road Width:		m	
Span:		m	
Deck Thickness:		m	(minimum)
Top of Deck:		m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:

Structure not modelled

HEC-RAS Data

Tributary :	CornerB-M001
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2102
Road Name: Corner Brook Pulp & Paper #2

Description: View of conveyor system from downstream side - note height above watercourse

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2102**

Road Name: Corner Brook Pulp & Paper #2

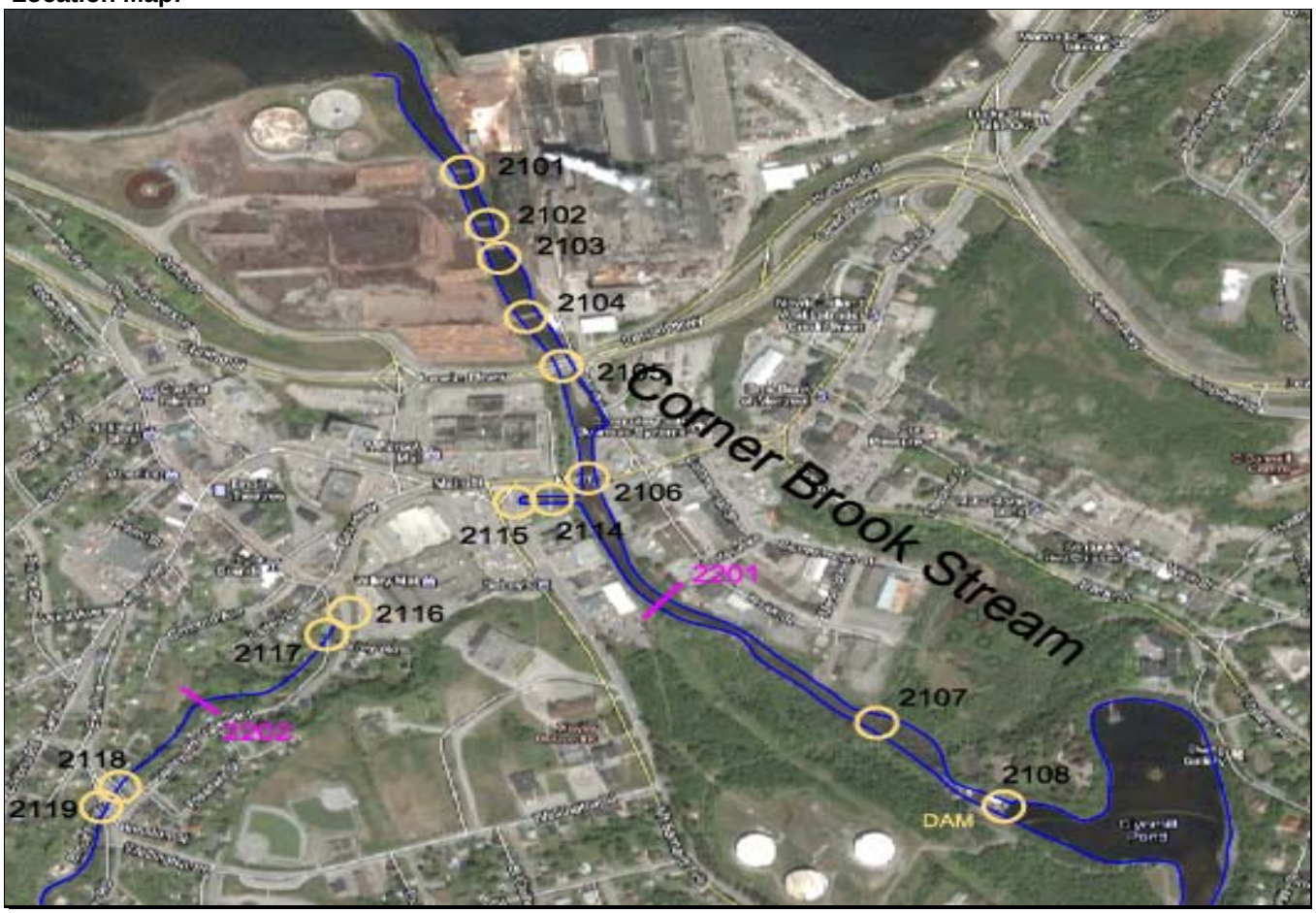
Description: View of bridge located just upstream conveyor system

Description: View looking upstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2103**			
Watershed:	Corner Brook Stream	**Map Sheet(s):**	1	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	345036.2
			Northing	5424211.2
Road Name:	Corner Brook Pulp & Paper #3		**Control**	NAD83
Road Name Alias:	Corner Brook Pulp & Paper #3		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Steel
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0617-0621
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes: abandoned stream crossing, just downstream of structure #2103, multiple piers

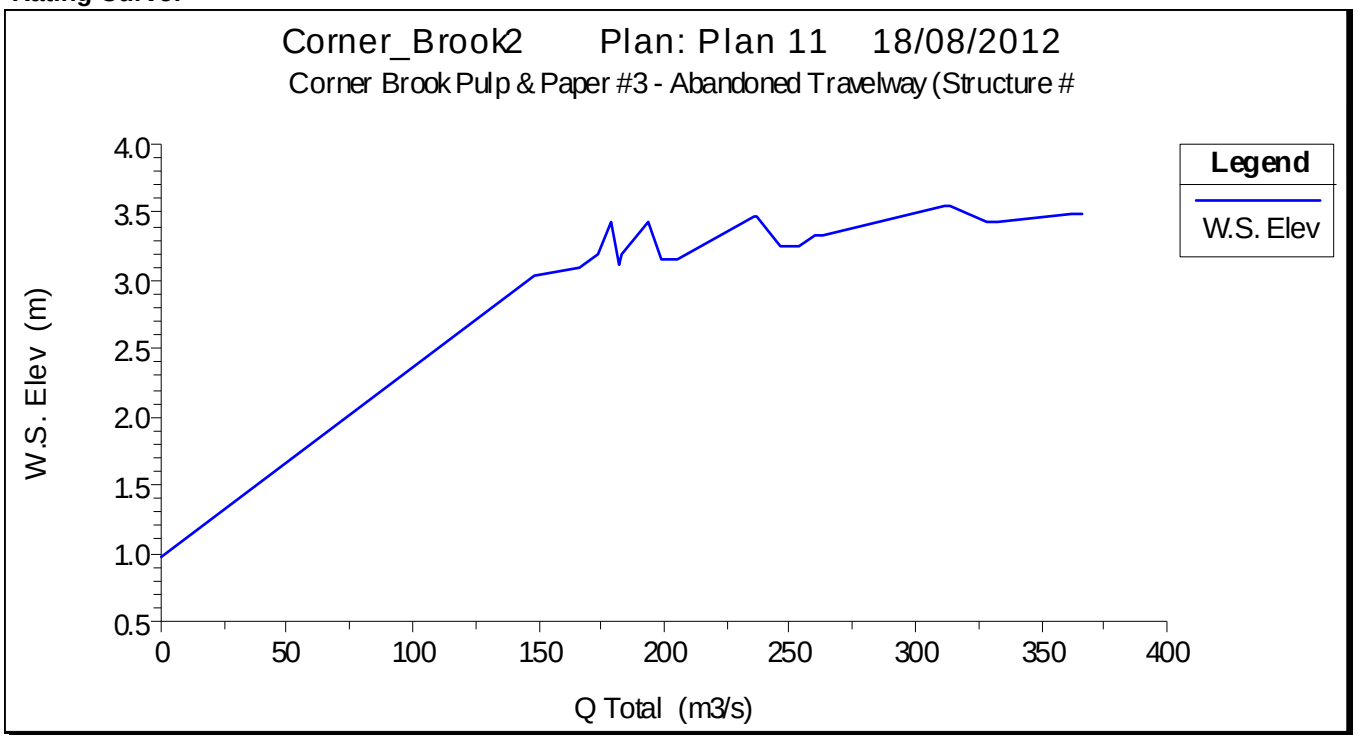
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2103**
Road Name: Corner Brook Pulp & Paper #3

# of Bridge Piers or Arches:	3	
Skewed to Road?	N	
Road Width:	5.5 m	
Span:	26.07 m	
Deck Thickness:	0.39 m	(minimum)
Top of Deck:	1.88 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	0.96						
	d/s:	1.01						
Type:		Bridge						
Material:		Wood/Steel						
Opening:	**B**	0.6						
	W	21.87						
Length:		5.5						
Slope:		-0.009						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M001
Structure # :	270.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2103
Road Name: Corner Brook Pulp & Paper #3

Description: View across structure

Description: View of downstream face of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2103**

Road Name: Corner Brook Pulp & Paper #3

Description: View of upstream face of structure

Description: View looking upstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2103-B

Watershed:	Corner Brook Stream	**Map Sheet(s):**	1	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	345033.9
			Northing	5424219.1
Road Name:	Corner Brook Pulp & Paper #4		**Control**	NAD83
Road Name Alias:	Corner Brook Pulp & Paper #4		**Projection**	MTM Zone 3
Structure Type:	Drop structure		**Deck:**	Wood
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0622-0625
Organization(s):	AMEC			
Info Source(s):	-			
Date(s):	11/17/2011			

Location Map:

Notes: not modelled

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2103-B
Road Name: Corner Brook Pulp & Paper #4

# of Bridge Piers or Arches:		
Skewed to Road?	N	
Road Width:	m	
Span:	m	
Deck Thickness:	m	(minimum)
Top of Deck:	m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:

Structure not modelled

HEC-RAS Data

Tributary :	CornerB-M001
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2103-B
Road Name: Corner Brook Pulp & Paper #4

Description: View across structure from right bank

Description: View across structure from right bank

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2103-B

Road Name: Corner Brook Pulp & Paper #4

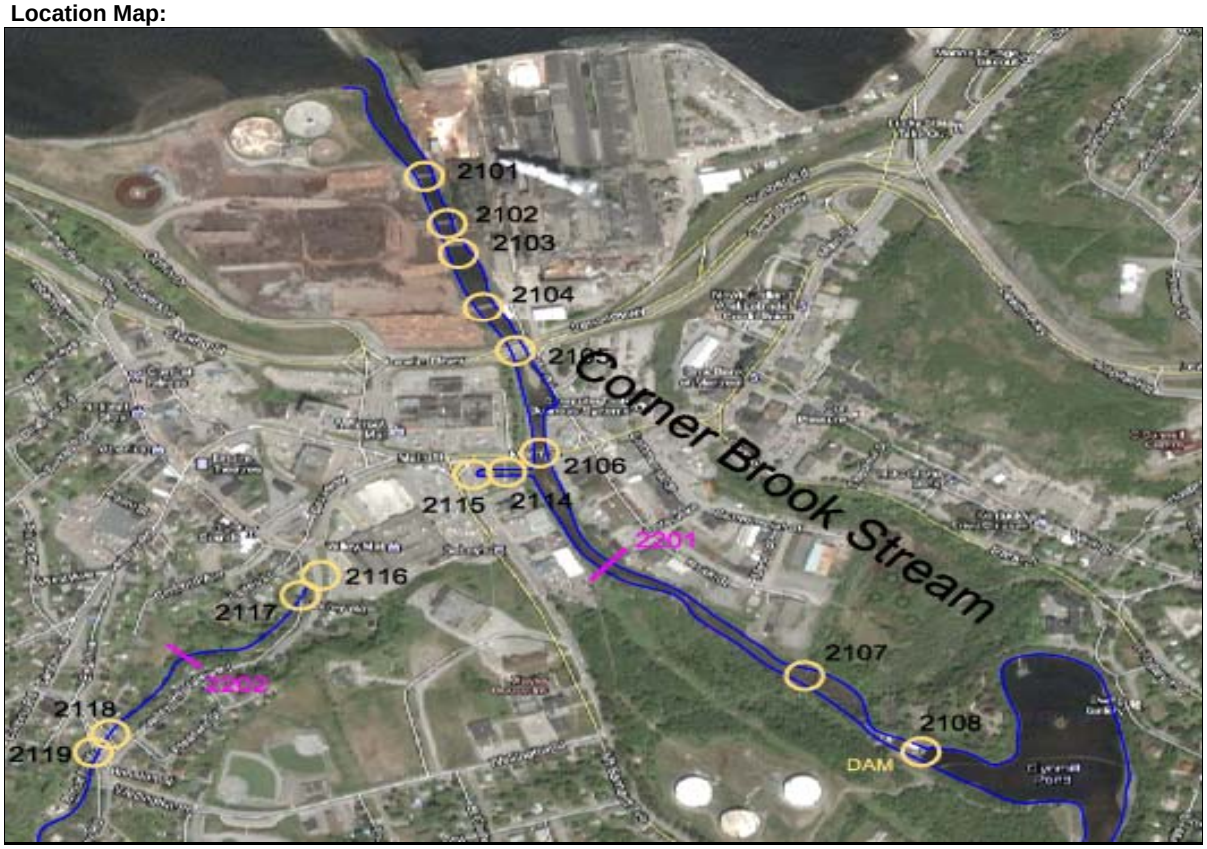
Description: Looking downstream

Description: Looking upstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2104**			
Watershed:	Corner Brook Stream	**Map Sheet(s):**	1	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	345074.5
			Northing	5424109.9
Road Name:	Corner Brook Pulp & Paper #5		**Control**	NAD83
Road Name Alias:	Corner Brook Pulp & Paper #5		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Wood
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0626-0629
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes: internal road bridge

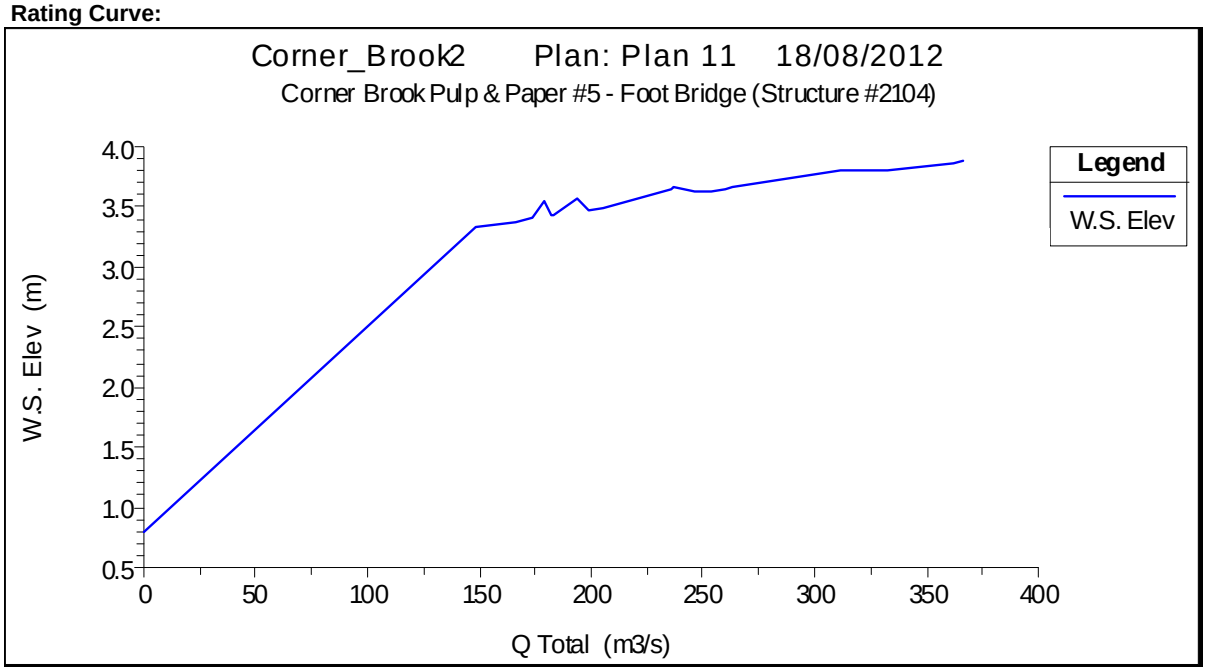
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2104**
Road Name: Corner Brook Pulp & Paper #5

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	4 m	
Span:	20.7 m	
Deck Thickness:	0.89 m	(minimum)
Top of Deck:	2.84 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	0.79						
	d/s:	0.79						
Type:		Bridge						
Material:		Steel						
Opening:	**B**	1.16						
	W	20.7						
Length:		4						
Slope:		0.000						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M001
Structure # :	380.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2104
Road Name: Corner Brook Pulp & Paper #5

Description: View of downstream face of structure

Description: Looking downstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2104

Road Name: Corner Brook Pulp & Paper #5

Description: View of upstream face of structure

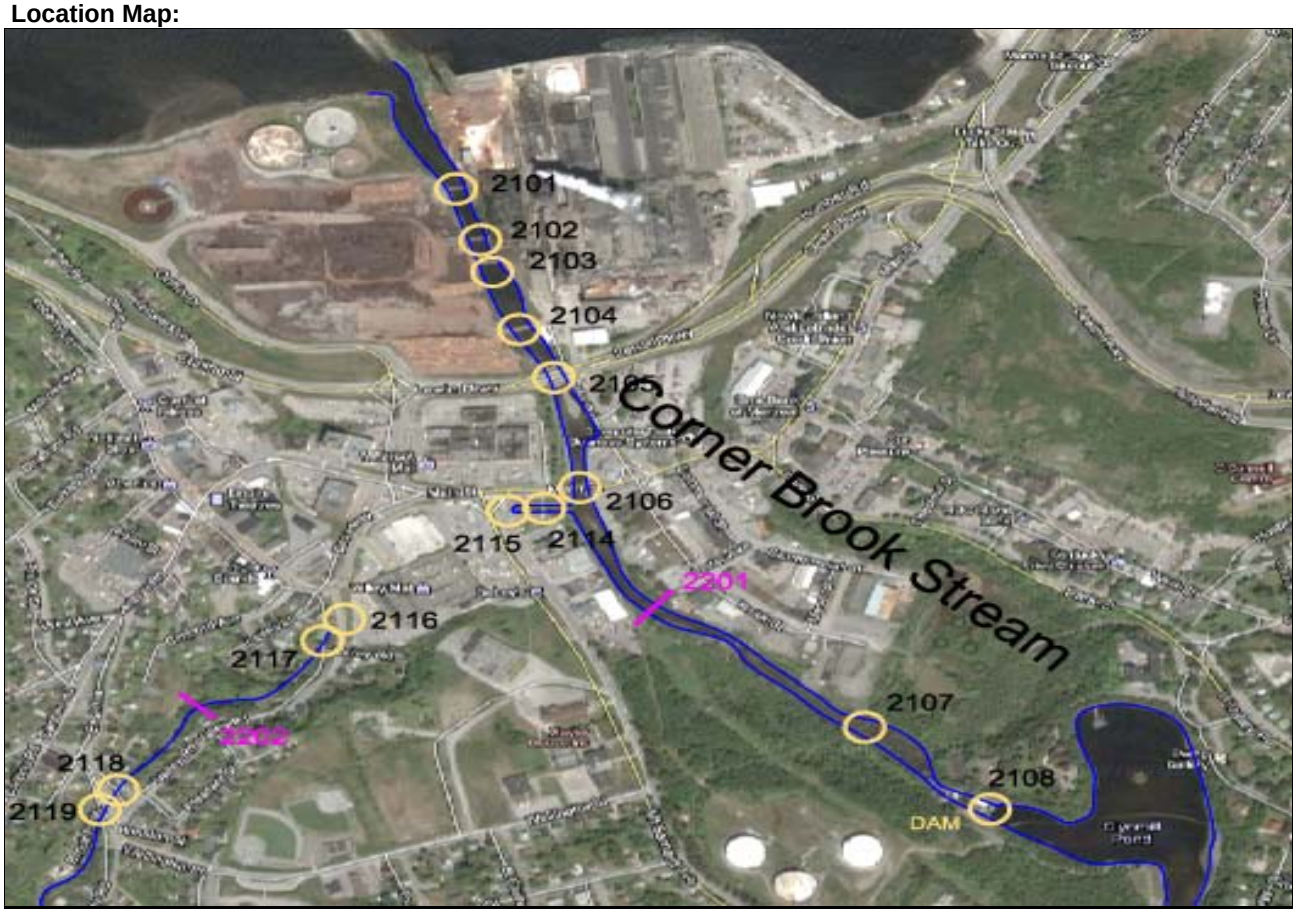
Description: Looking upstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2105-B

Watershed:	Corner Brook Stream	**Map Sheet(s):**	1	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	345115.5
			Northing	5424035.8
Road Name:	Lewin Parkway		**Control**	NAD83
Road Name Alias:	Lewin Parkway		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Asphalt
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0630-0634
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes: with open guard rails

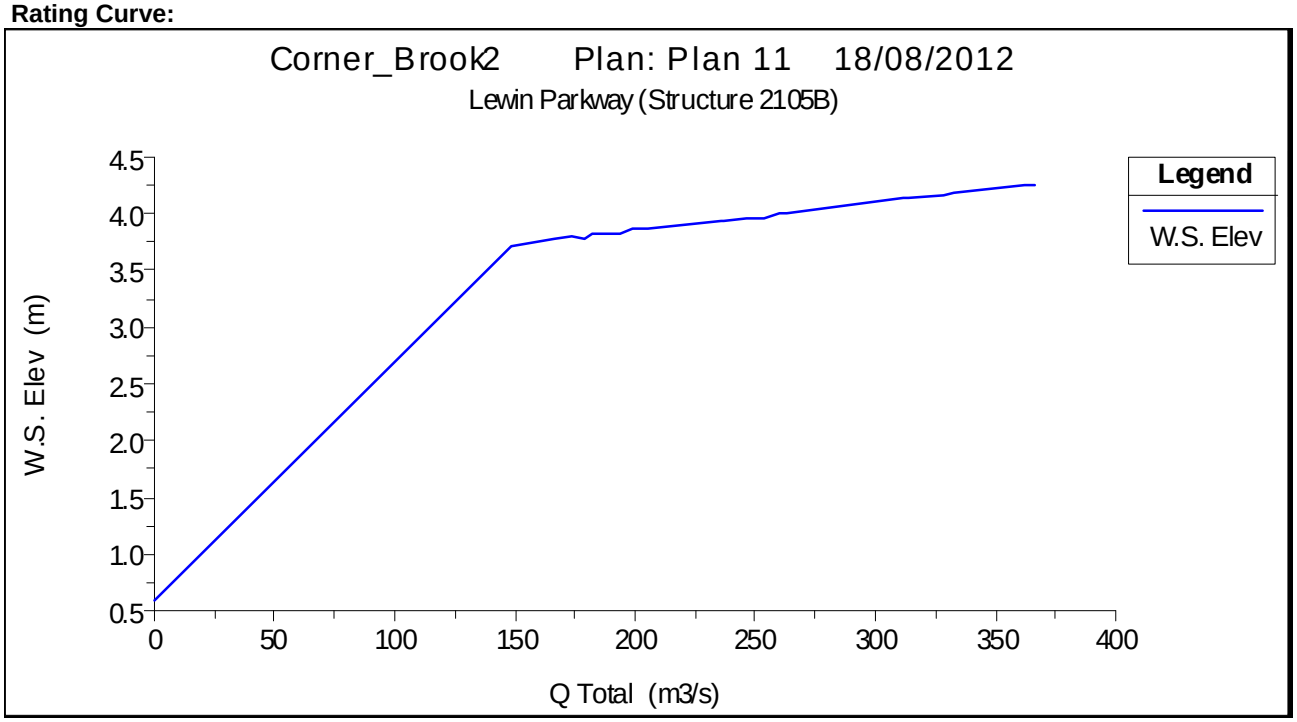
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2105-B
Road Name: Lewin Parkway

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	28.4 m	
Span:	23.63 m	
Deck Thickness:	0.67 m	(minimum)
Top of Deck:	2.67 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	0.58						
	d/s:	0.48						
Type:		Bridge						
Material:		Steel/Wood						
Opening:	**B**	1.42						
	W	23.63						
Length:		28.4						
Slope:		0.004						

Rating Curve:



HEC-RAS Data

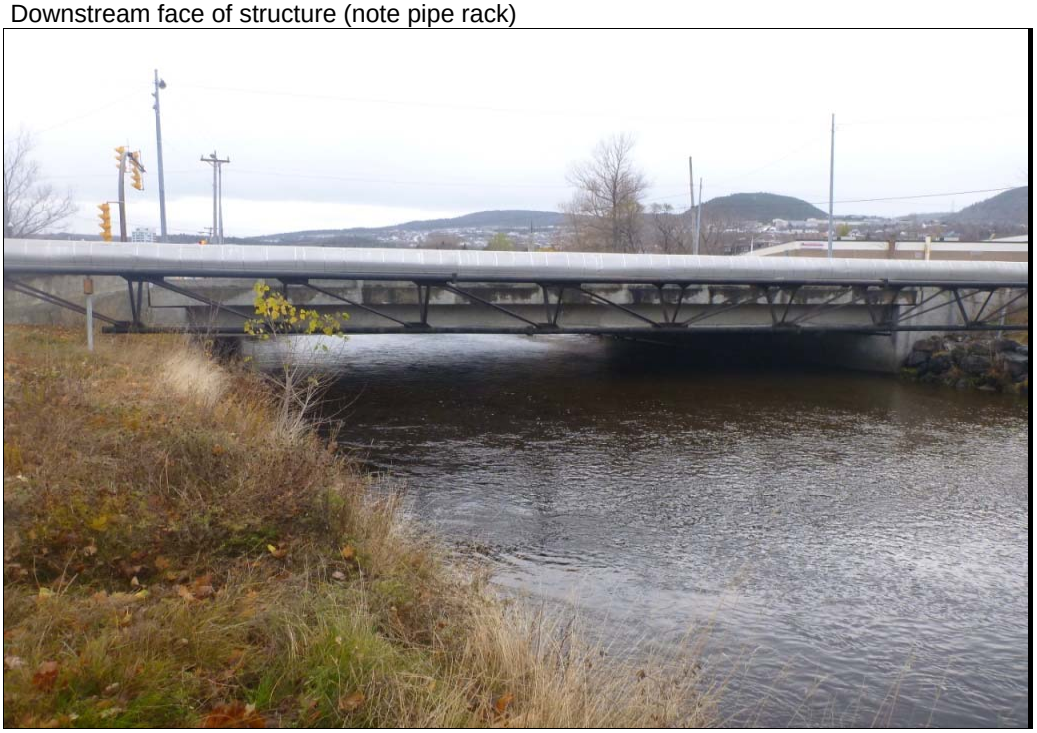
Tributary :	CornerB-M001
Structure # :	460.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2105-B
Road Name: Lewin Parkway

Description: Upstream face of structure

Description: Downstream face of structure (note pipe rack)



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2105-B

Road Name: Lewin Parkway

Description: View looking upstream

Description: View looking downstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2106
Watershed: Corner Brook Stream
Watercourse: Corner Brook Stream
Road Name: Main Street
Road Name Alias: Main Street

Map Sheet(s): 1,2
Location: **Easting** 345141.1
Northing 5423865.6
Control NAD83
Projection MTM Zone 3

Structure Type: Bridge
Deck: Asphalt

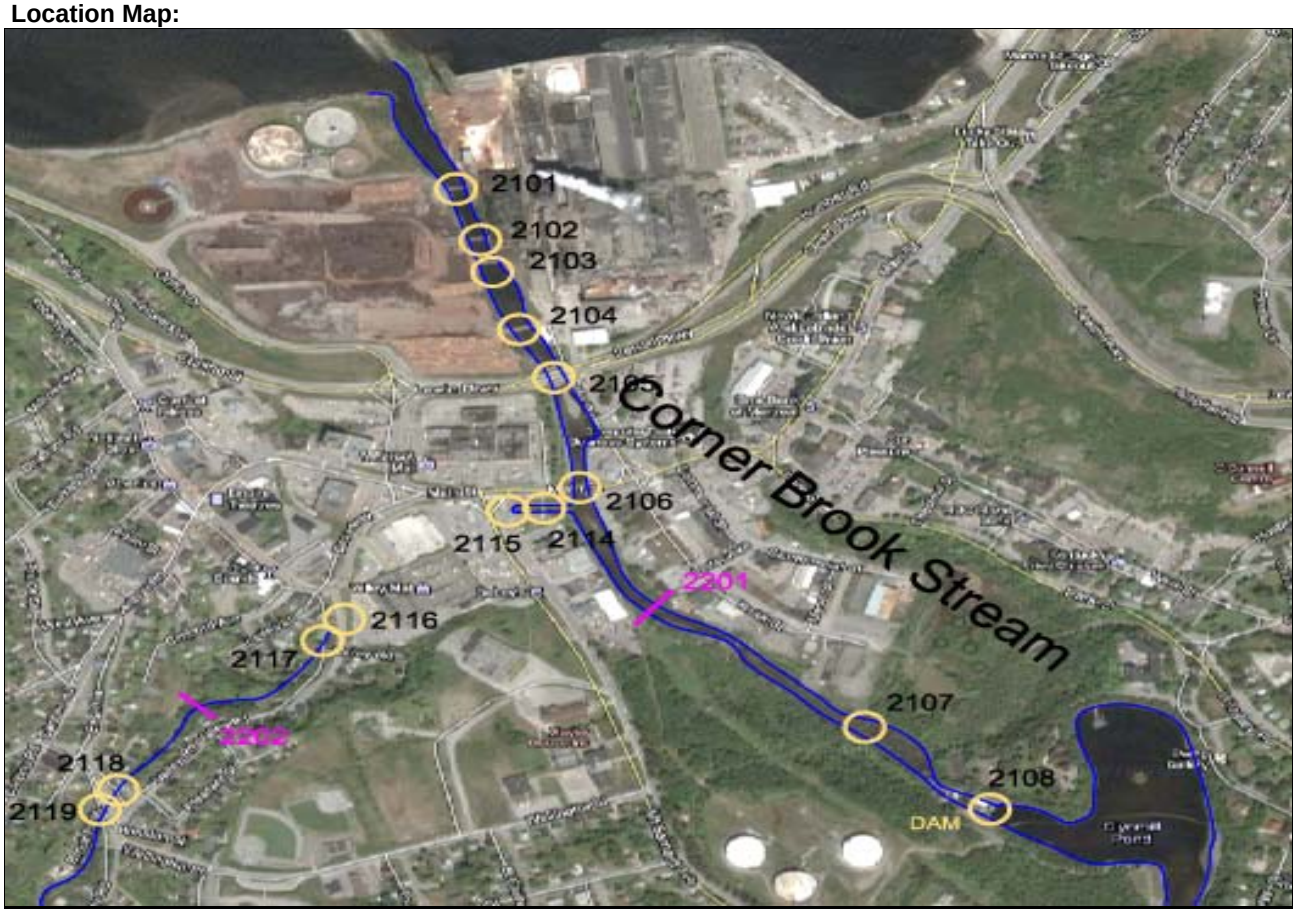
Observer(s): A. Peddle & J. Loughlin
Photos: 0635-0640

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:



Notes: one bridge pier, open guard rail

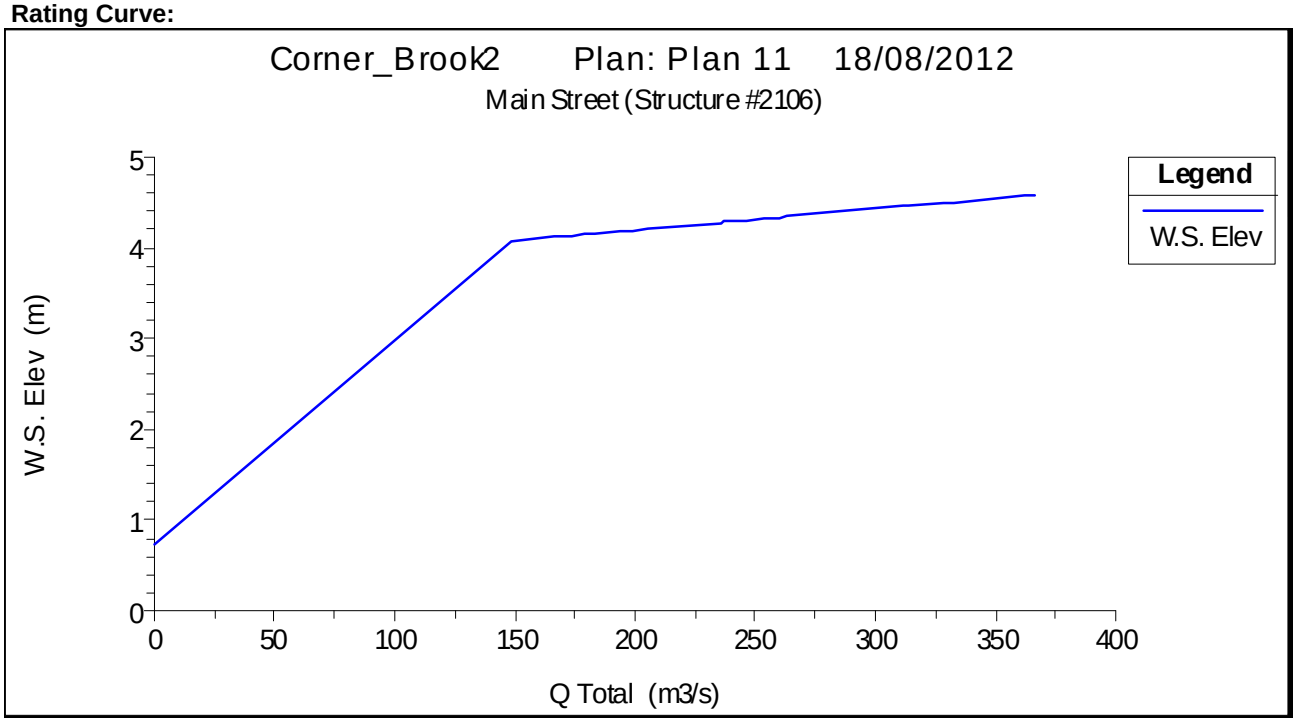
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2106**
Road Name: Main Street

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	17.2 m	
Span:	22.21 m	
Deck Thickness:	1.02 m	(minimum)
Top of Deck:	3.32 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	0.74						
	d/s:	0.83						
Type:		Bridge						
Material:		Concrete						
Opening:	**B**	1.56						
	W	22.21						
Length:		17.2						
Slope:		-0.005						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M001
Structure # :	635.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2106
Road Name: Main Street

Description: View of downstream face of structure

Description: View of upstream face of structure

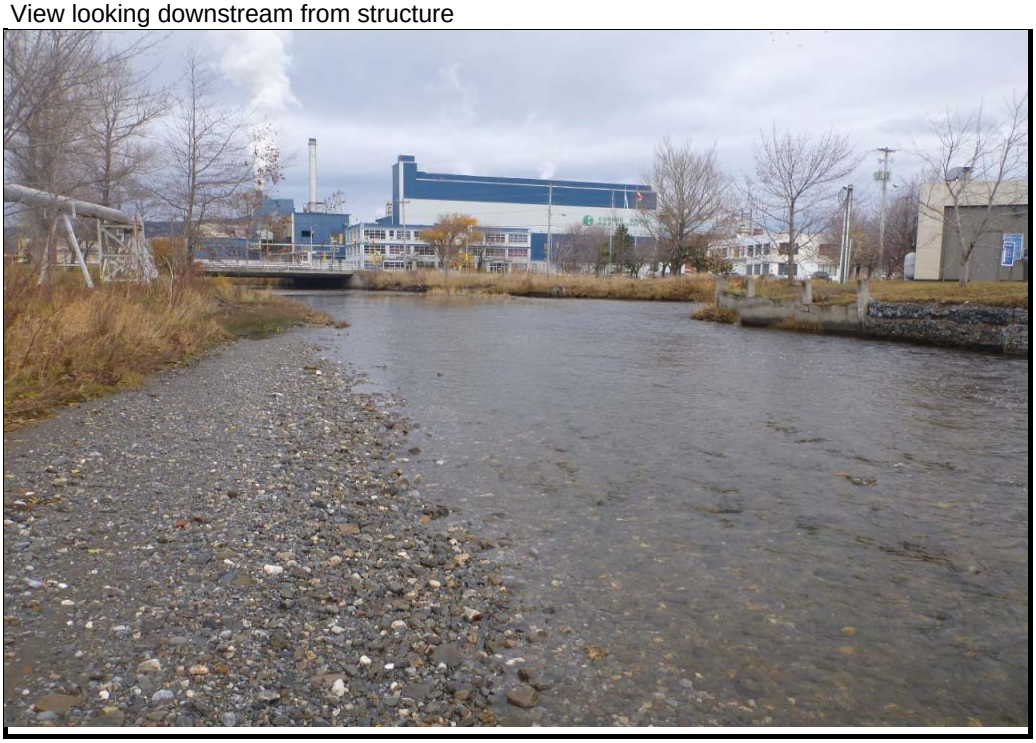
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2106

Road Name: Main Street

Description: View looking upstream from structure

Description: View looking downstream from structure



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2107
Watershed: Corner Brook Stream
Watercourse: Corner Brook Stream
Road Name: Trail
Road Name Alias: Pedestrian Bridge

Structure Type: Bridge

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Map Sheet(s): 1,2
Location:
Easting 345400.3
Northing 5423557.0
Control NAD83
Projection MTM Zone 3

Deck: Wood/Steel

Photos: 0647-0650

Location Map:

Notes: Pedestrian Bridge

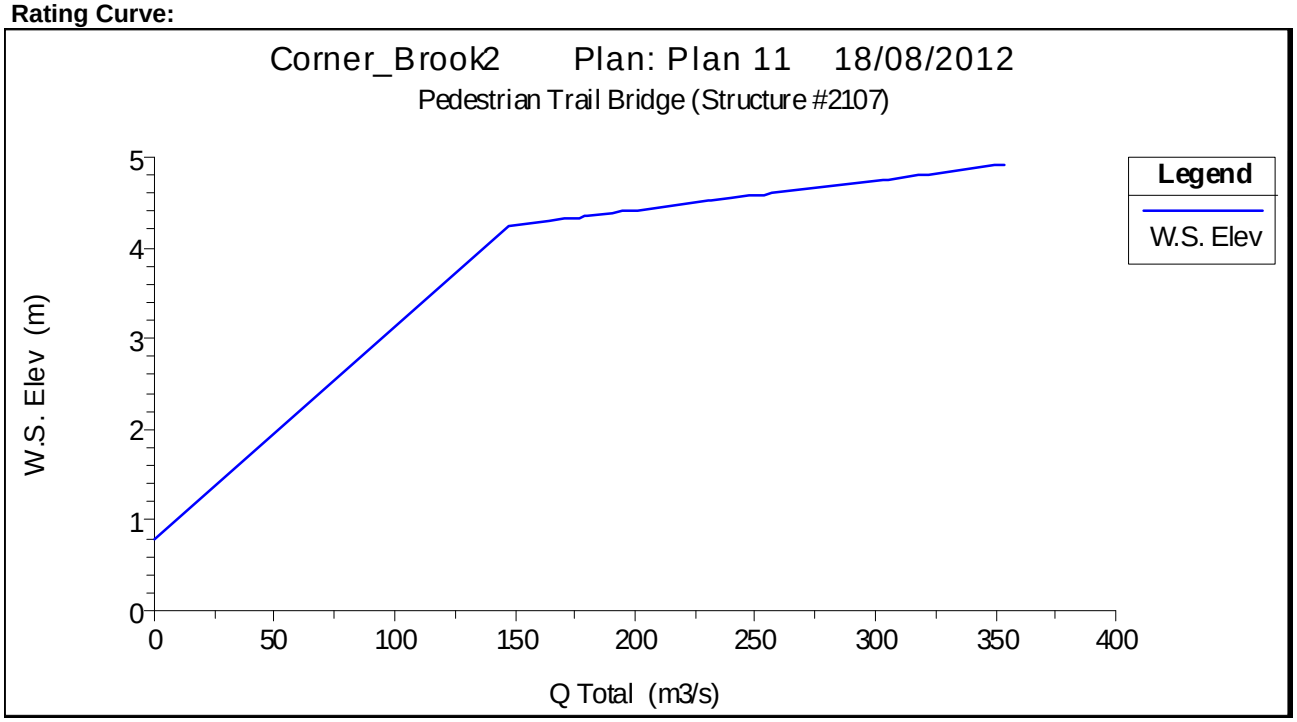
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2107**
Road Name: Trail

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	1.9 m	
Span:	21.35 m	
Deck Thickness:	0.3 m	(minimum)
Top of Deck:	3.17 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	0.8						
	d/s:	0.76						
Type:		Bridge						
Material:		Wood/Steel						
Opening:	**B**	2.22						
	W	21.35						
Length:		1.9						
Slope:		0.021						

Rating Curve:



HEC-RAS Data

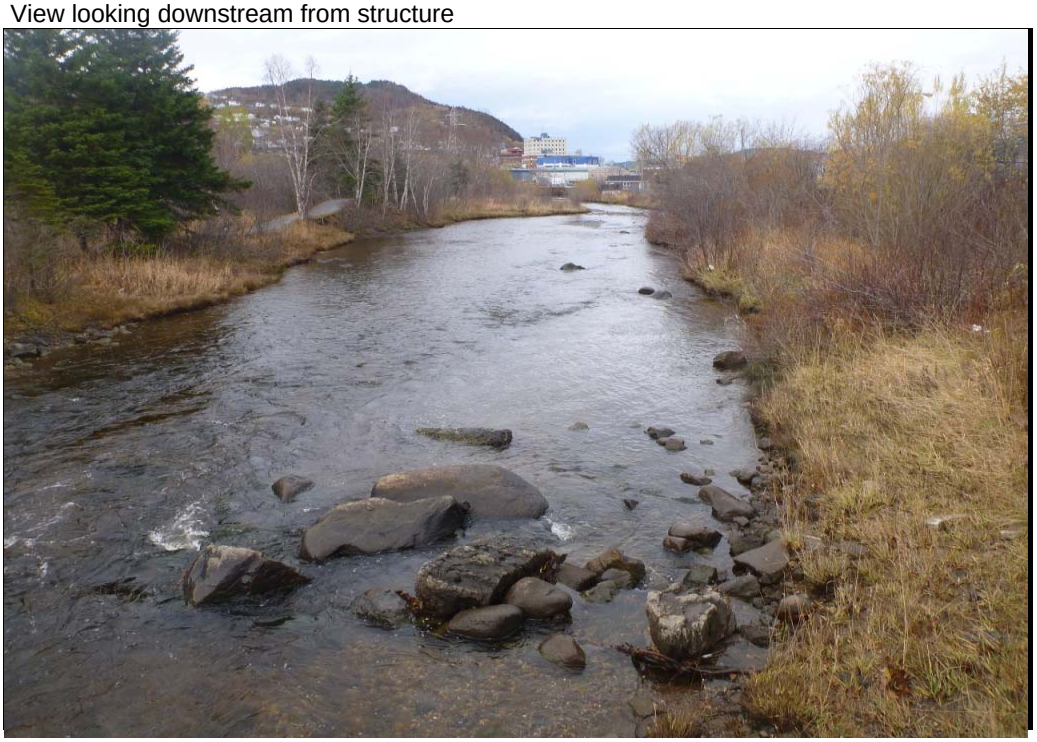
Tributary :	CornerB-M002
Structure # :	1,070.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2107
Road Name: Trail

Description: View of downstream face of structure

Description: View looking downstream from structure



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2107
Road Name: Trail

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2108
Watershed: Corner Brook Stream
Watercourse: Corner Brook Stream
Road Name: Glynmill Pond Dam
Road Name Alias: Glynmill Pond Dam

Map Sheet(s): 2
Location: **Easting** 345612.6
Northing 5423382.9
Control NAD83
Projection MTM Zone 3

Structure Type: Dam, Spillway
Deck: Concrete

Observer(s): A. Peddle & J. Loughlin
Photos: 0651-0657

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:

Notes: Dam, Spillway

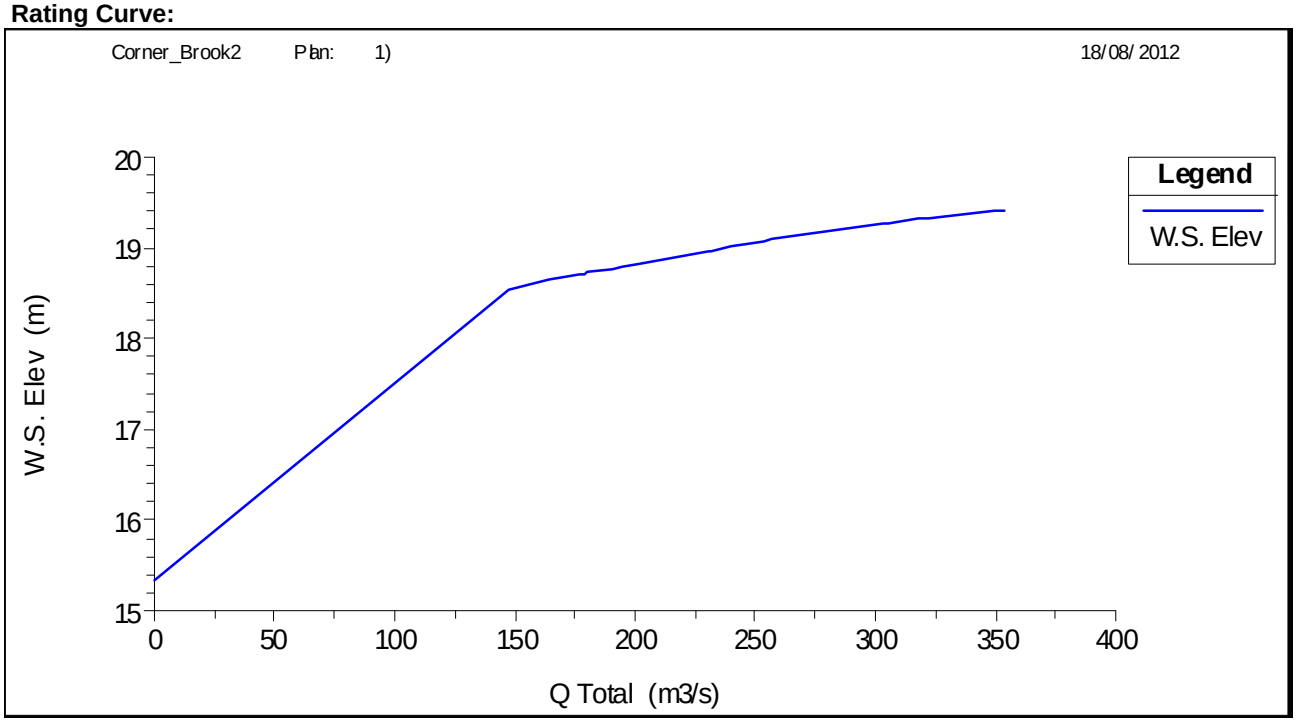
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2108**
Road Name: Glynmill Pond Dam

# of Bridge Piers or Arches:			
Skewed to Road?	N		
Road Width:		m	
Span:		m	
Deck Thickness:		m	(minimum)
Top of Deck:		m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:		Concrete						
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M002
Structure # :	
Modeled as :	Section / Rating Curve
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2108
Road Name: Glynmill Pond Dam

Description: View of downstream reach looking towards dam structure

Description: View of downstream face of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2108**

Road Name: Glynmill Pond Dam

Description: View looking downstream from dam

Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2109
Watershed: Corner Brook Stream
Watercourse: Corner Brook Stream
Road Name: Glynmill Pond Upstream Structure
Road Name Alias: Pedestrian Bridge

Map Sheet(s): 2,3
Location: **Easting** 345786.7
Northing 5423155.7
Control NAD83
Projection MTM Zone 3

Structure Type: Bridge
Deck: Wood/Steel

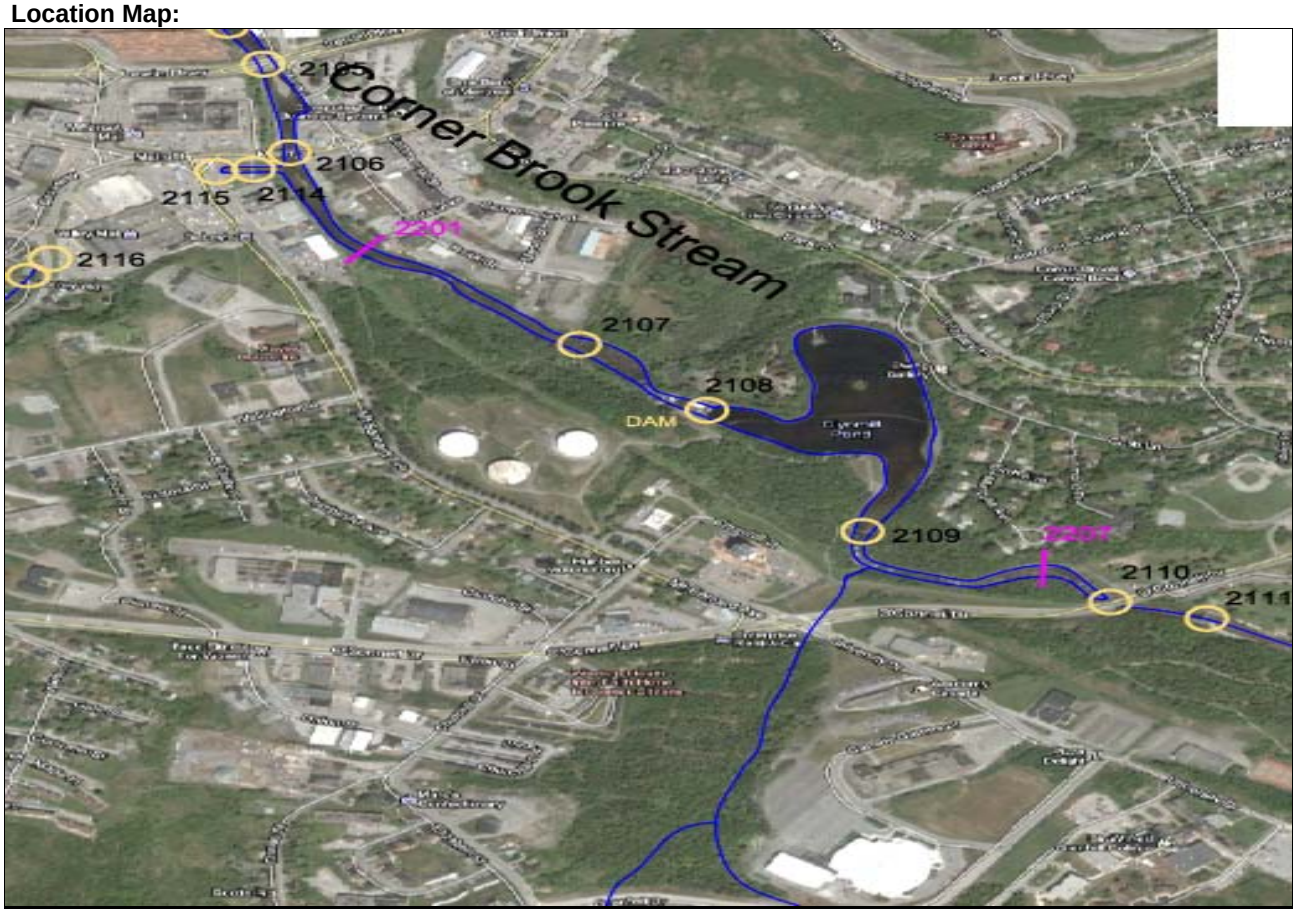
Observer(s): A. Peddle & J. Loughlin
Photos: 0658-0661

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:



Notes: Pedestrian Bridge

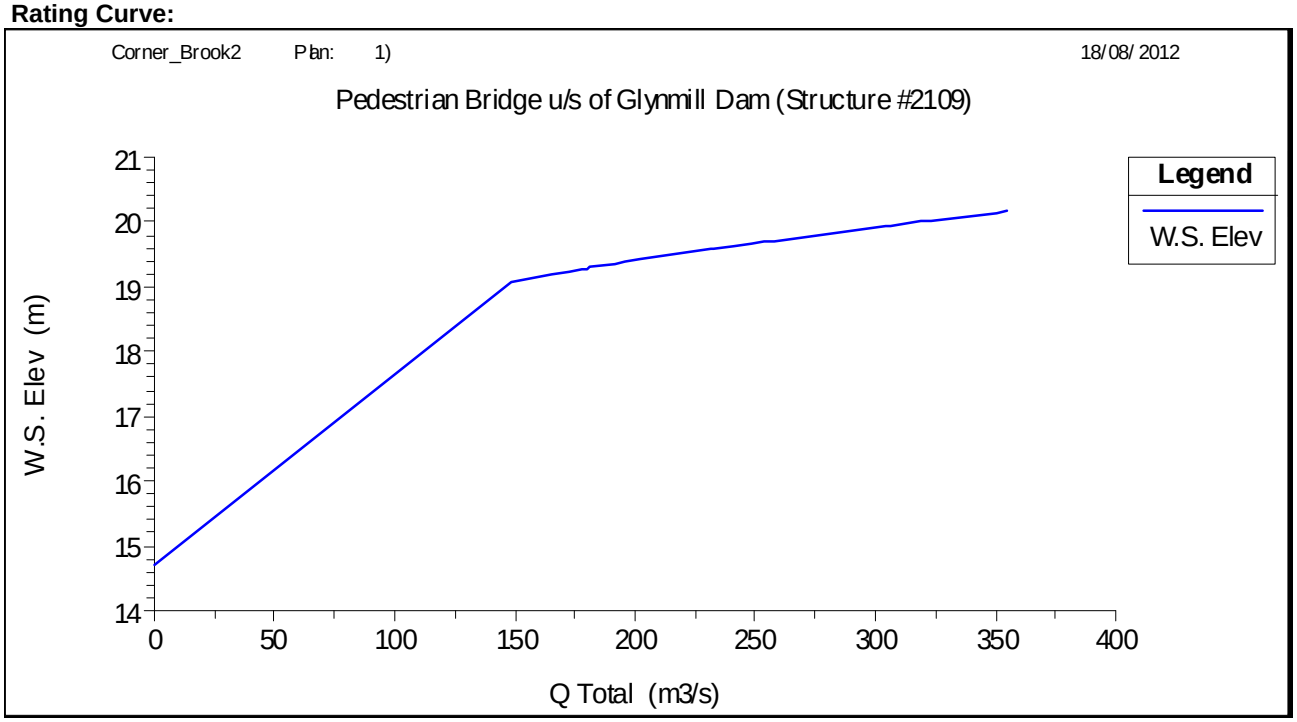
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2109**
Road Name: Glynmill Pond Upstream Structure

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	1.76 m	
Span:	22.52 m	
Deck Thickness:	0.15 m	(minimum)
Top of Deck:	18.17 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	14.72						
	d/s:	14.87						
Type:		Bridge						
Material:		Wood/Steel						
Opening:	**B**	3.33						
	W	22.52						
Length:		1.76						
Slope:		-0.085						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M002
Structure # :	1,772.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2109
Road Name: Glynmill Pond Upstream Structure

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2109

Road Name: Glynmill Pond Upstream Structure

Description: View of upstream face of structure

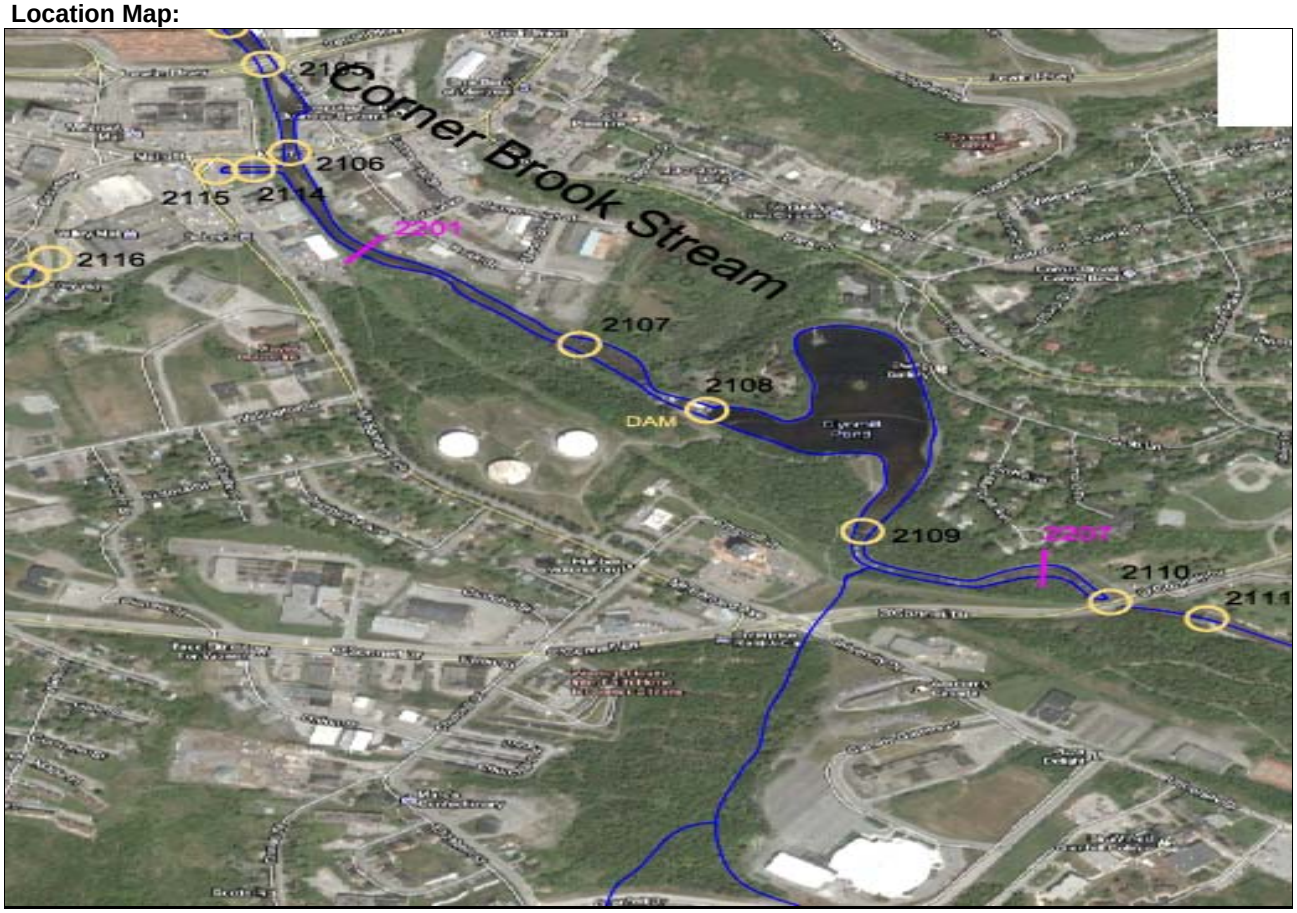
Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-A

Watershed:	Corner Brook Stream	**Map Sheet(s):**	2,3		
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	346043.7	
			Northing	5423042.6	
Road Name:	Pedestrian Bridge		**Control**	NAD83	
Road Name Alias:	Pedestrian Bridge		**Projection**	MTM Zone 3	
Structure Type:	Bridge		**Deck:**	Wood/Steel	
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0662-0665	
Organization(s):	AMEC				
Info Source(s):	Survey/Mapping				
Date(s):	11/17/2011				

Location Map:



Notes: Pedestrian Bridge

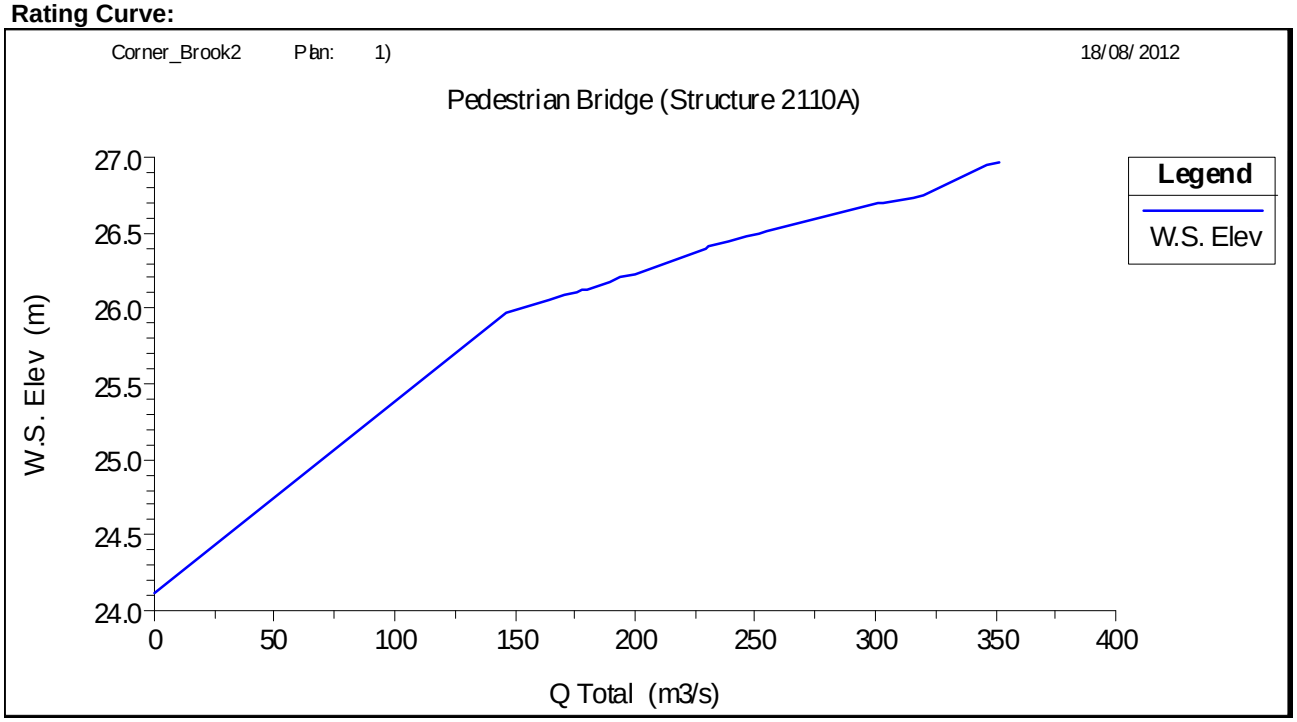
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-A
Road Name: Pedestrian Bridge

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	1.96 m	
Span:	30.38 m	
Deck Thickness:	0.3 m	(minimum)
Top of Deck:	29.36 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	24.12						
	d/s:	24.04						
Type:		Bridge						
Material:		Steel						
Opening:	**B**	5.23						
	W	30.38						
Length:		1.96						
Slope:		0.041						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M003
Structure # :	2,115.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-A
Road Name: Pedestrian Bridge

Description: View of upstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-A

Road Name: Pedestrian Bridge

Description: View of downstream face of structure

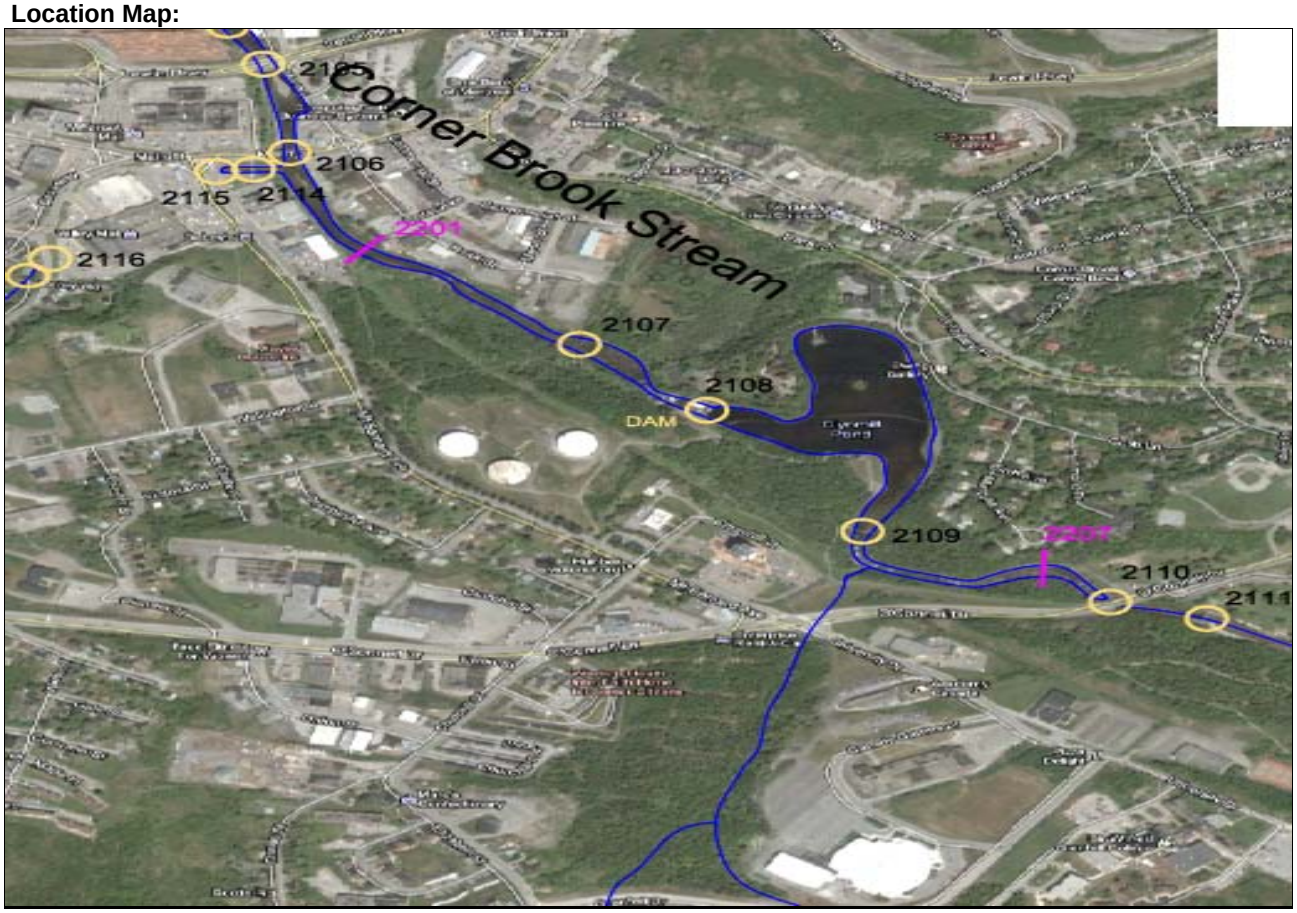
Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-B

Watershed:	Corner Brook Stream	**Map Sheet(s):**	2,3	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	346070.1
			Northing	5423023.2
Road Name:	Pipe Crossing		**Control**	NAD83
Road Name Alias:	Pipe Crossing		**Projection**	MTM Zone 3
Structure Type:	Pipe Crossing		**Deck:**	Pipe
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0666-0668
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes: not modelled

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-B
Road Name: Pipe Crossing

# of Bridge Piers or Arches:	0		
Skewed to Road?	N		
Road Width:		m	
Span:		m	
Deck Thickness:		m	(minimum)
Top of Deck:		m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:

HEC-RAS Data

Tributary :	CornerB-M003
Structure # :	
Modeled as :	
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-B
Road Name: Pipe Crossing

Description: View across pipeline

Description: View across pipeline

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-B

Road Name: Pipe Crossing

Description:

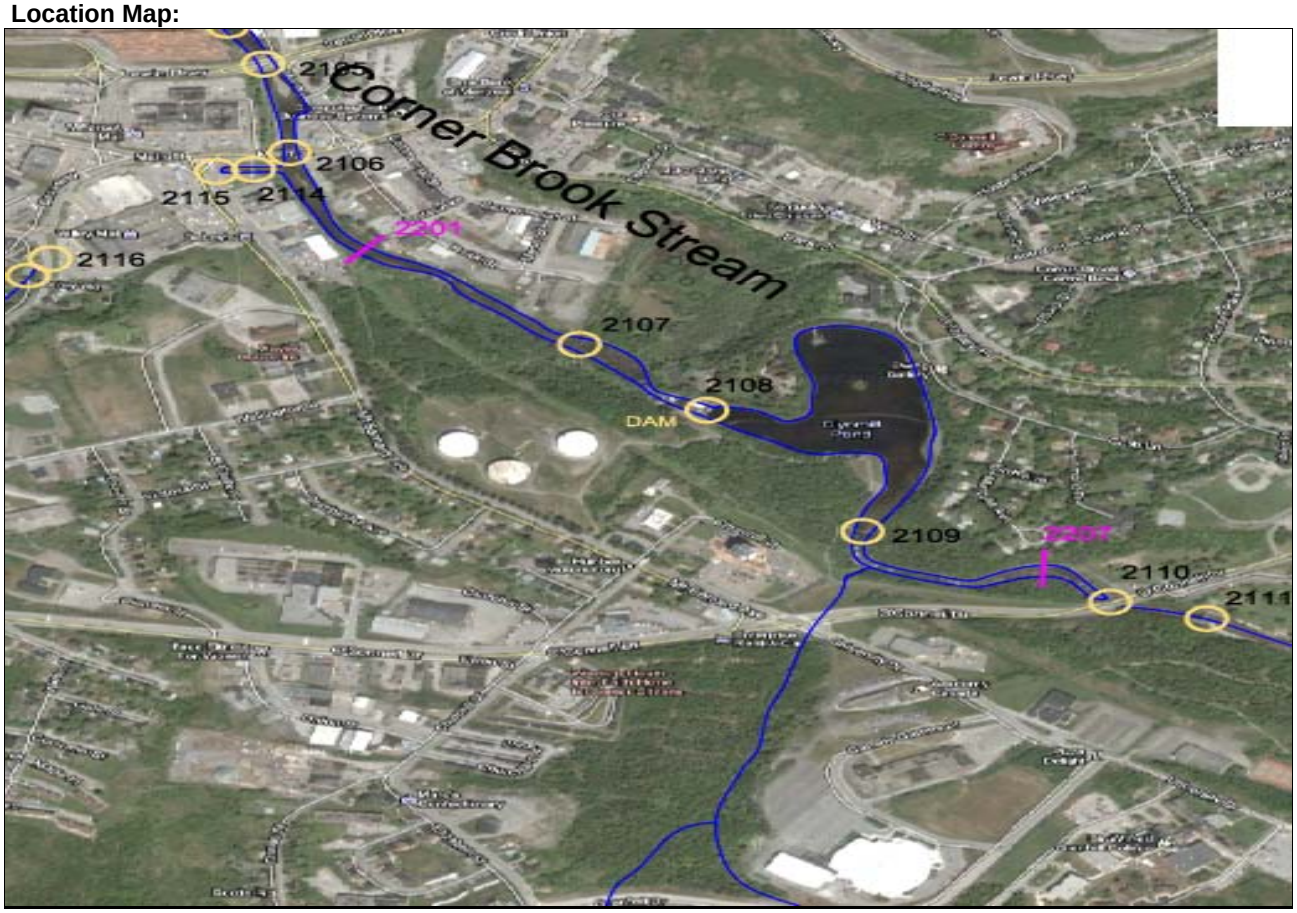
Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-C

Watershed:	Corner Brook Stream	**Map Sheet(s):**	2,3		
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	346075.0	
			Northing	5423018.8	
Road Name:	O'Connell Drive		**Control**	NAD83	
Road Name Alias:	O'Connell Drive		**Projection**	MTM Zone 3	
Structure Type:	Bridge		**Deck:**	Asphalt	
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0669-0674	
Organization(s):	AMEC				
Info Source(s):	Survey/Mapping				
Date(s):	11/17/2011				

Location Map:



Notes: with open guard rails

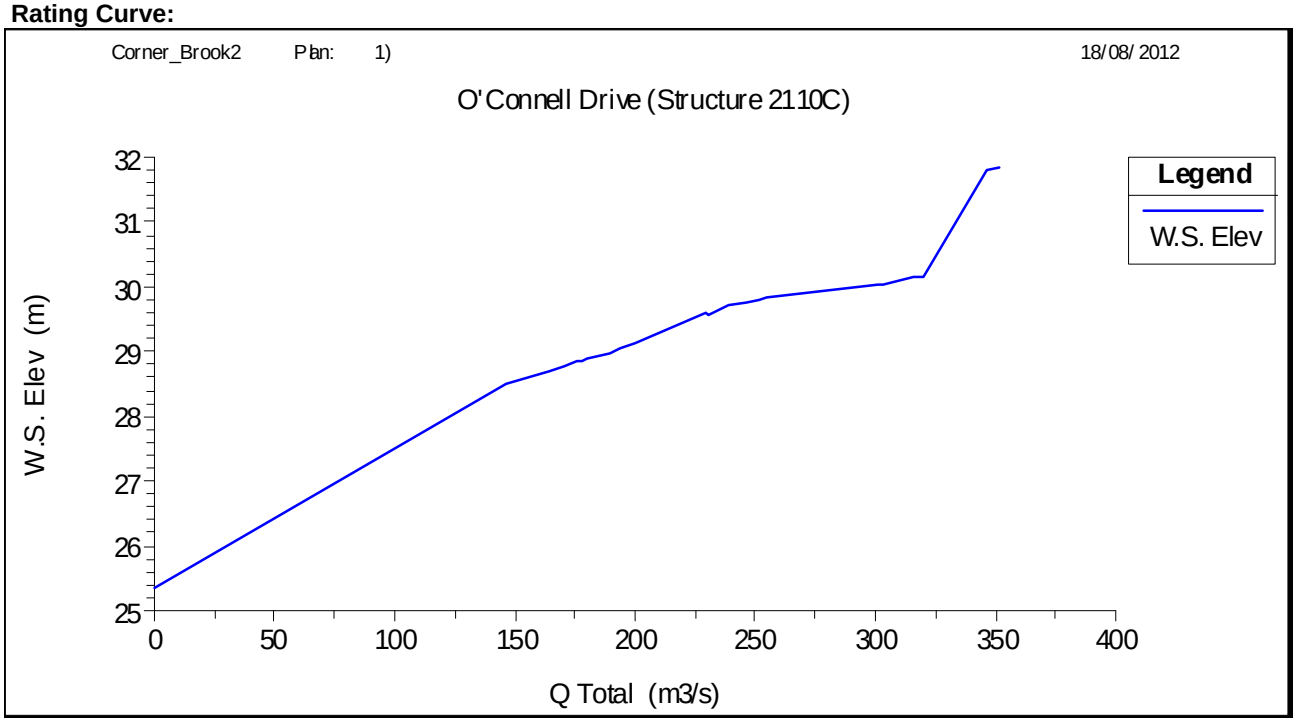
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-C
Road Name: O'Connell Drive

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	14 m	
Span:	16.02 m	
Deck Thickness:	0.87 m	(minimum)
Top of Deck:	30.52 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	25.35						
	d/s:	24.87						
Type:		Bridge						
Material:		Concrete						
Opening:	**B**	3.67						
	W	16.02						
Length:		14						
Slope:		0.034						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M003
Structure # :	2,150.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-C
Road Name: O'Connell Drive

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2110-C

Road Name: O'Connell Drive

Description: View of upstream face of structure

Description: View looking UPstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2111
Watershed: Corner Brook Stream
Watercourse: Corner Brook Stream
Road Name: Margaret Bowater Dam
Road Name Alias: Margaret Bowater Dam

Map Sheet(s): 2,3
Location: **Easting** 346178.3
Northing 5422992.2
Control NAD83
Projection MTM Zone 3

Structure Type: Dam
Deck: Concrete

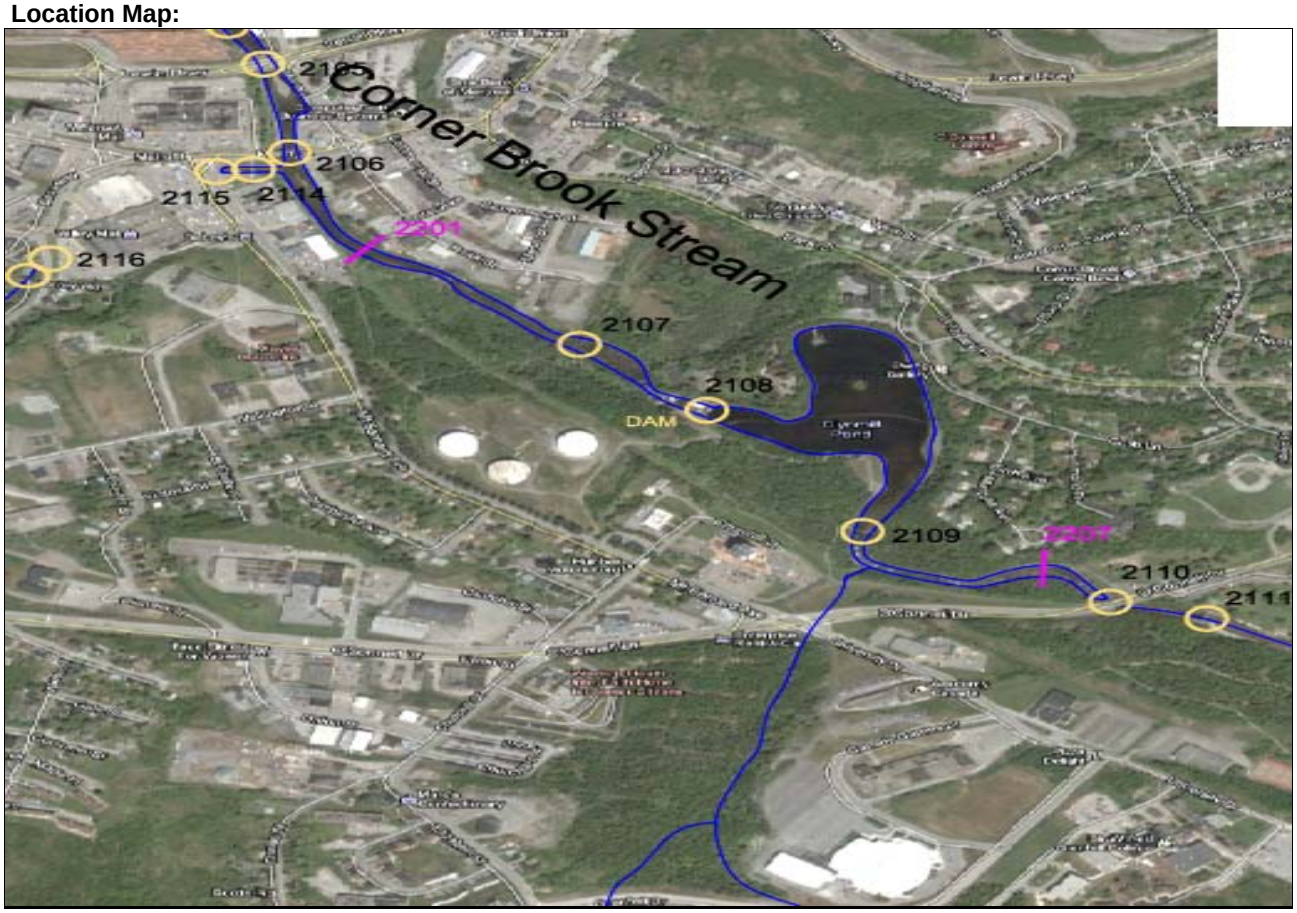
Observer(s): A. Peddle & J. Loughlin
Photos: 0675-0680

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:



Notes:

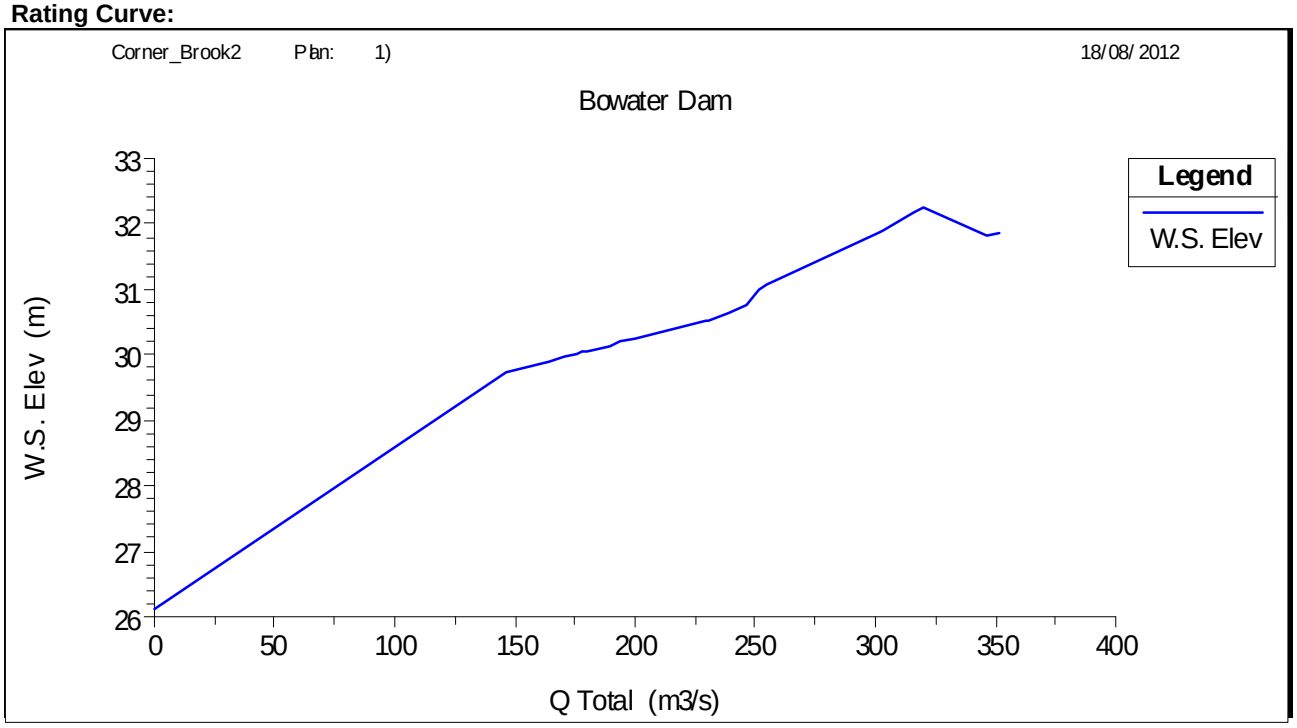
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2111
Road Name: Margaret Bowater Dam

# of Bridge Piers or Arches:			
Skewed to Road?	N		
Road Width:		m	
Span:		m	
Deck Thickness:		m	(minimum)
Top of Deck:		m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M003
Structure # :	
Modeled as :	Section / Rating Curve
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2111**
Road Name: Margaret Bowater Dam

Description: View of upstream face of structure

Description: View of downstream face of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2111**
Road Name: Margaret Bowater Dam

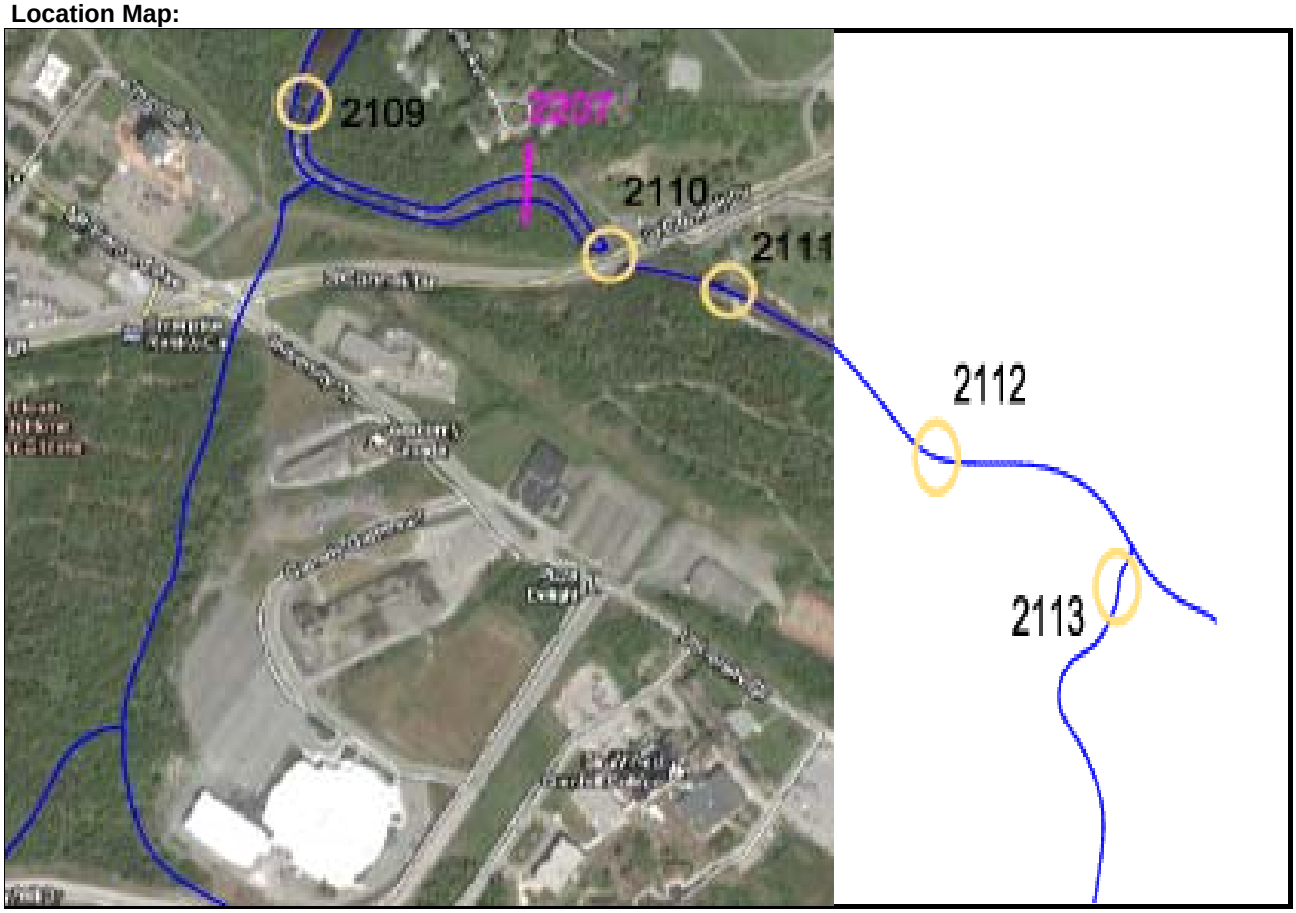
Description: View of area below dam

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2112**			
Watershed:	Corner Brook Stream	**Map Sheet(s):**	3	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	346405.2
			Northing	5422859.8
Road Name:	Unnamed Road		**Control**	NAD83
Road Name Alias:	Unnamed Road		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Wood
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0681-0685
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes: Timber Bridge (one pier)

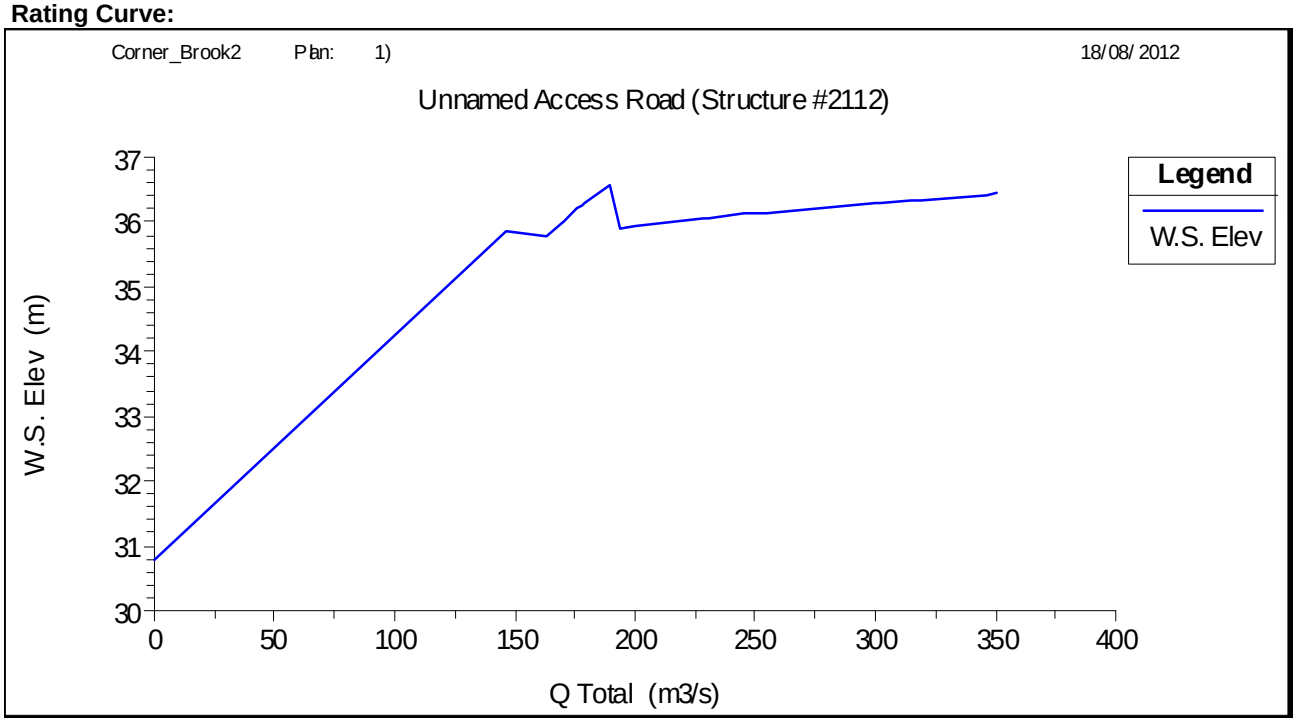
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2112
Road Name: Unnamed Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	4.8 m	
Span:	8.04 m	
Deck Thickness:	0.9 m	(minimum)
Top of Deck:	34.86 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	30.79						
	d/s:	30.35						
Type:		Bridge						
Material:		Concrete/Timber						
Opening:	**B**	3.17						
	W	8.04						
Length:		4.8						
Slope:		0.092						

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-M003
Structure # :	2,530.00
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2112**
Road Name: Unnamed Road

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2112**
Road Name: Unnamed Road

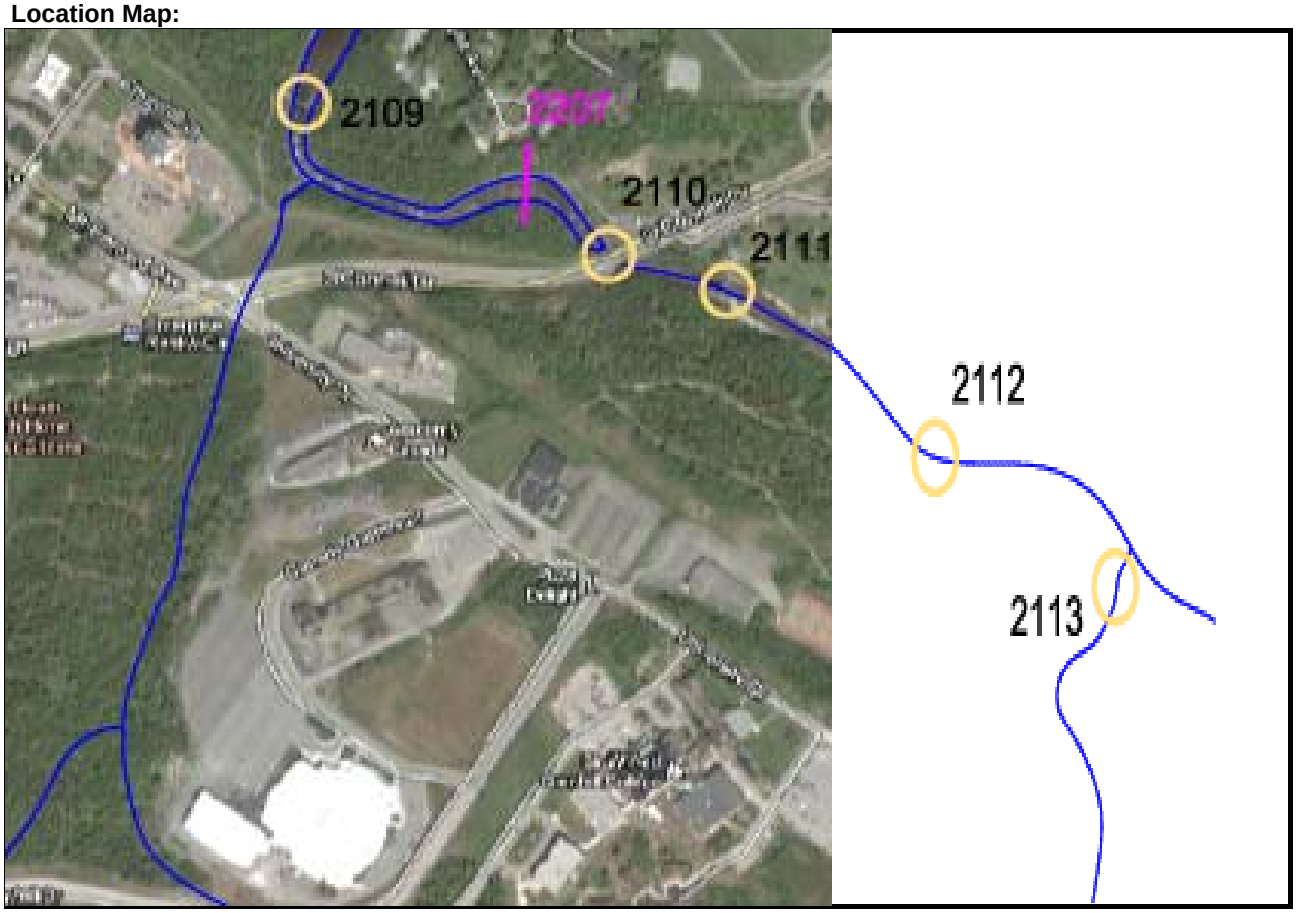
Description: View looking upstream from structure

Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2113**			
Watershed:	Corner Brook Stream	**Map Sheet(s):**	3	
Watercourse:	Corner Brook Stream	**Location:**	**Easting**	346595.3
			Northing	5422776.6
Road Name:	Unnamed Road		**Control**	NAD83
Road Name Alias:	Unnamed Road		**Projection**	MTM Zone 3
Structure Type:	Triple CSP culverts		**Deck:**	Gravel
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0686-0691
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes:

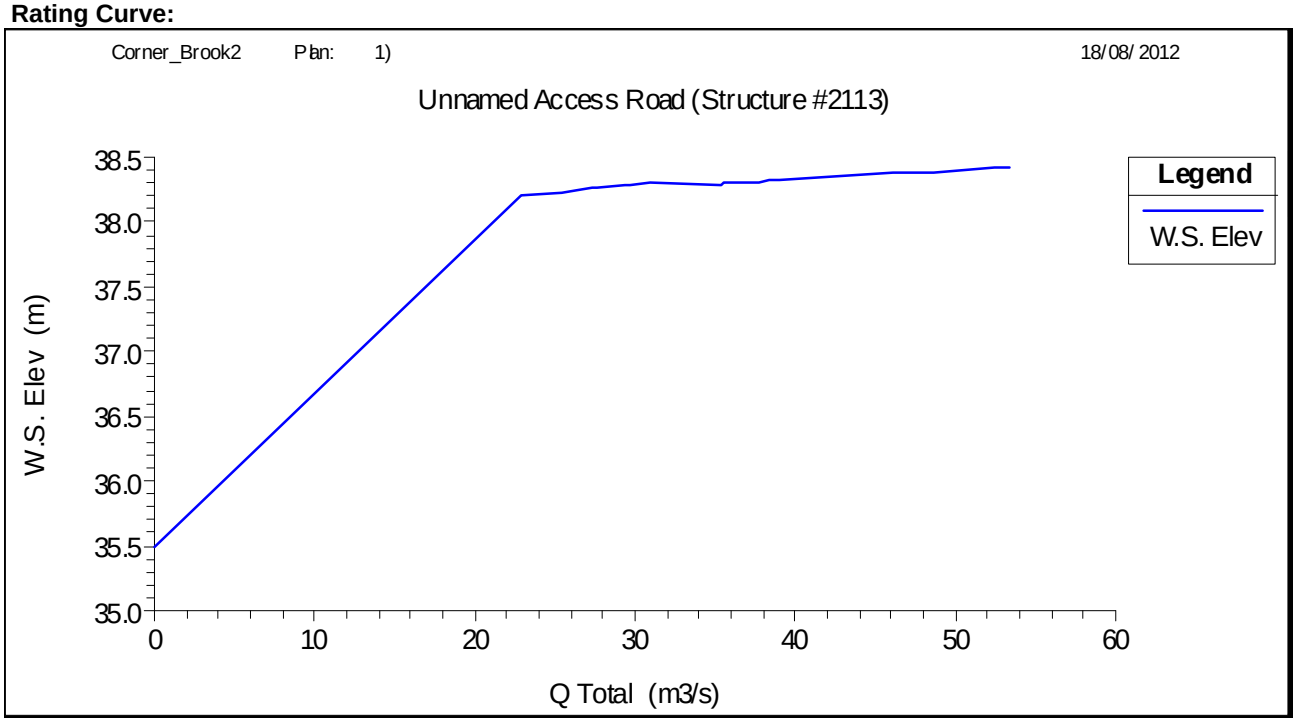
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2113**
Road Name: Unnamed Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	3.8 m	
Span:	3.82 m	
Deck Thickness:	1 m	(minimum)
Top of Deck:	38.06 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	35.91	35.49	35.37				
	d/s:	35.78	35.39	35.41				
Type:		Culvert	Culvert	Culvert				
Material:		CSP	CSP	CSP				
Opening:	**B**	1.15	1.15	1.15				
	W	1.15	1.15	1.15				
Length:		11.55	11.55	11.55				
Slope:		0.011	0.009	-0.003				

Rating Curve:



HEC-RAS Data

Tributary :	CornerB-TR001
Structure # :	25.00
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2113**
Road Name: Unnamed Road

Description: View looking upstream from structure

Description: View of upstream face of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2113**
Road Name: Unnamed Road

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2114
Watershed: Bell's Brook
Watercourse: Bell's Brook

Road Name: Pedestrian Bridge
Road Name Alias: Pedestrian Bridge

Structure Type: Bridge

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

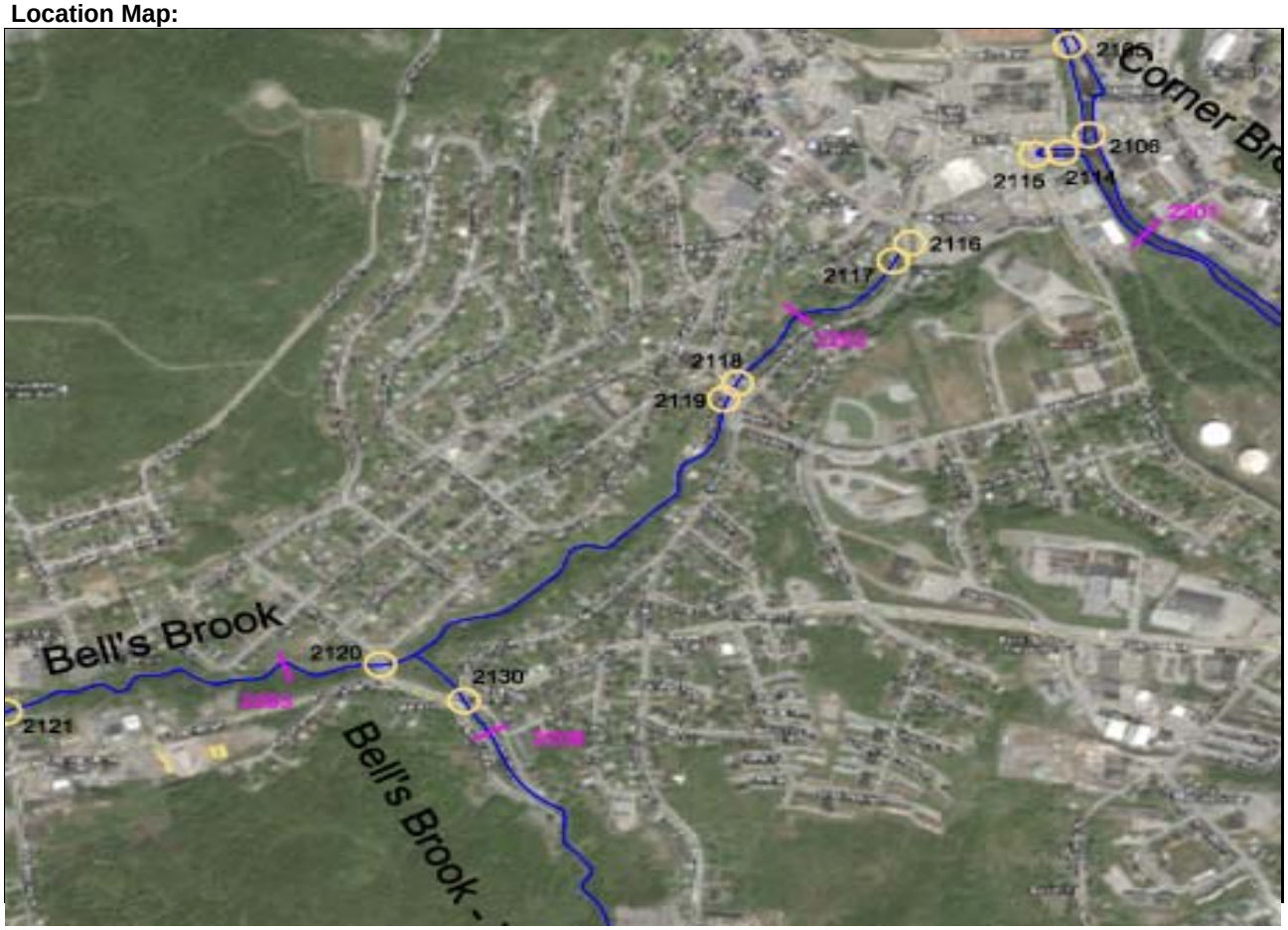
Date(s): 11/17/2011

Map Sheet(s): 1,2
Location:
Easting 345099.6
Northing 5423838.0
Control NAD83
Projection MTM Zone 3

Deck: Wood

Photos: 0641-0644

Location Map:



Notes: closed railing

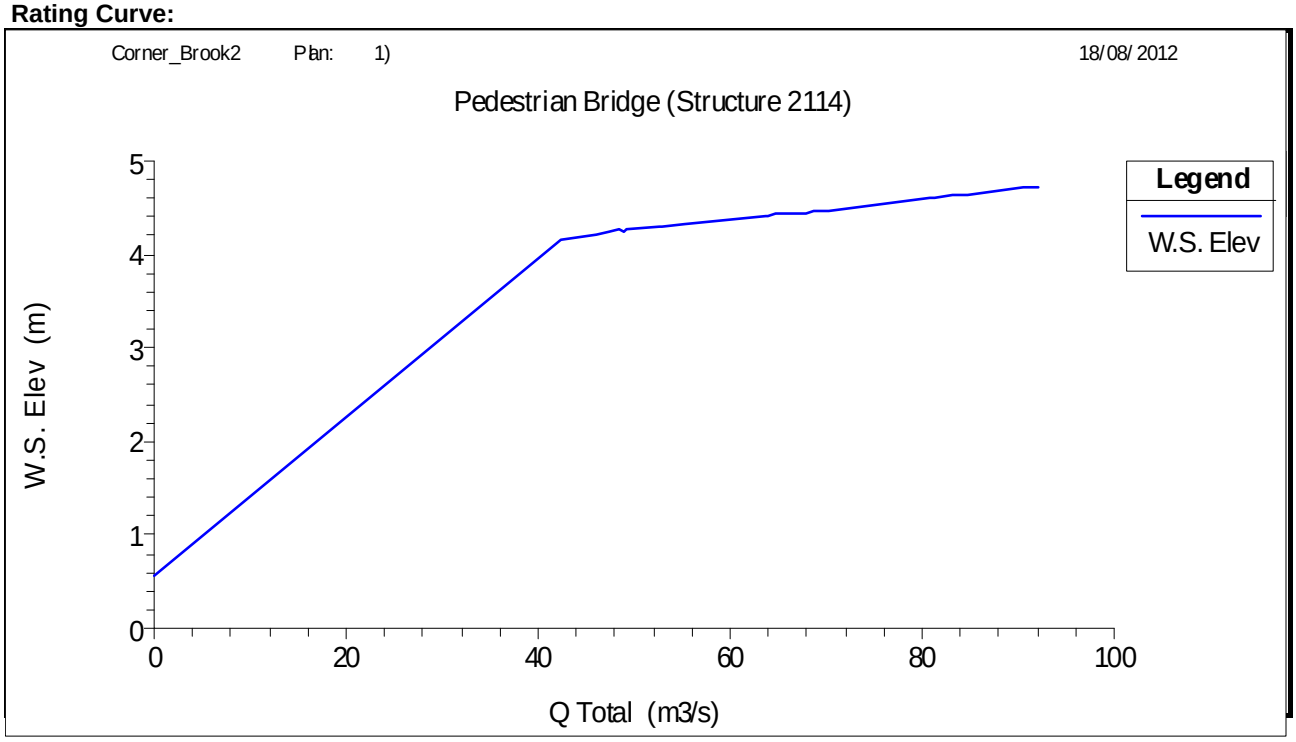
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2114
Road Name: Pedestrian Bridge

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	1.36 m	
Span:	11.43 m	
Deck Thickness:	0.19 m	(minimum)
Top of Deck:	2.8 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	0.56						
	d/s:	0.7						
Type:		Bridge						
Material:		Wood						
Opening:	**B**	2.05						
	W	11.43						
Length:		1.36						
Slope:		-0.103						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M001
Structure # :	43
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2114
Road Name: Pedestrian Bridge

Description: View of upstream face of structure

Description: View of pipe crossing immediately downstream of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2114

Road Name: Pedestrian Bridge

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2115
Watershed: Bell's Brook
Watercourse: Bell's Brook

Road Name: Valley Mall Culvert
Road Name Alias: Valley Mall Culvert

Structure Type: Culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

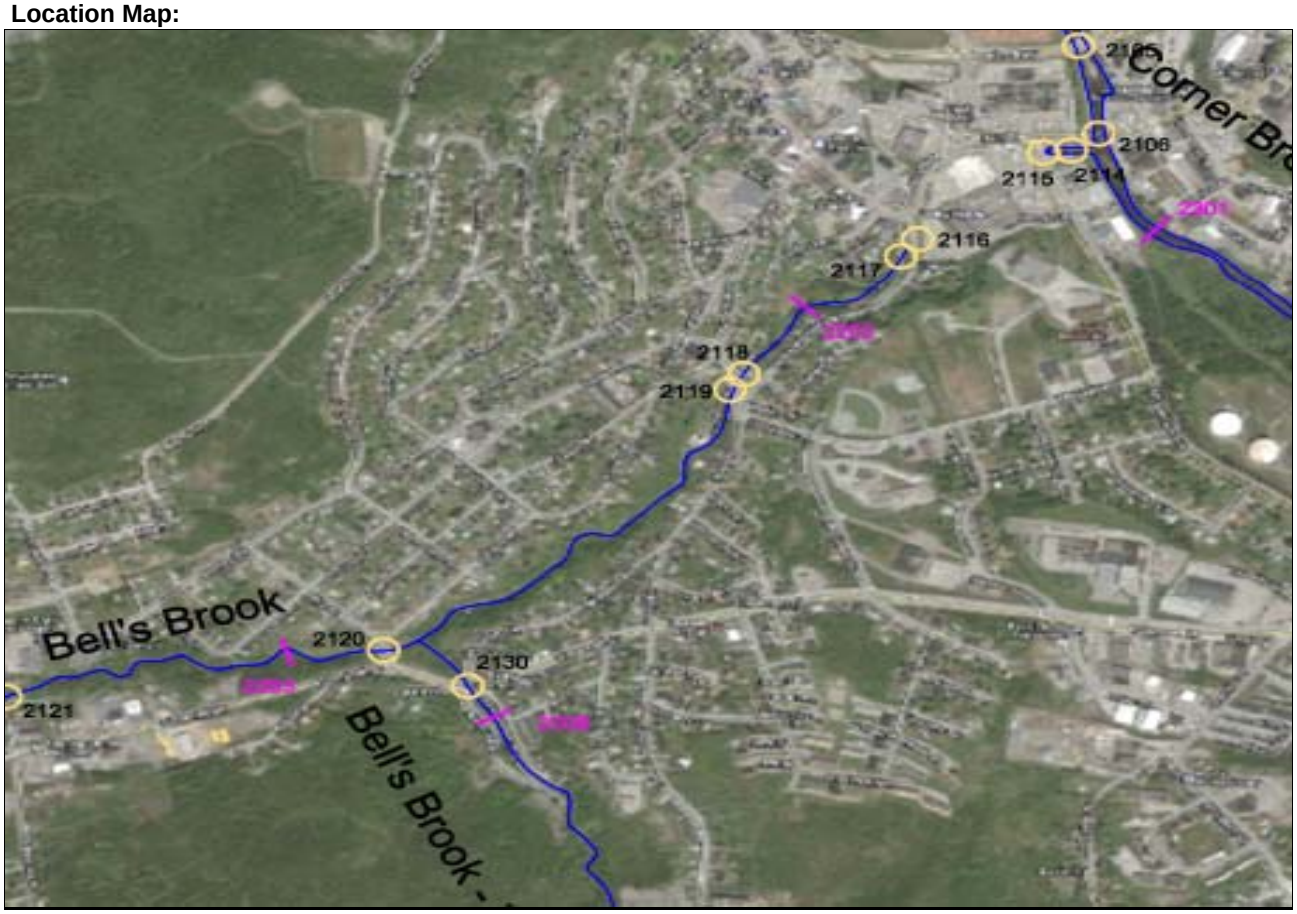
Date(s): 11/17/2011

Map Sheet(s): 1,2
Location:
Easting 345067.2
Northing 5423839.4
Control NAD83
Projection MTM Zone 3

Deck: Asphalt

Photos: 0645-0646

Location Map:



Notes:

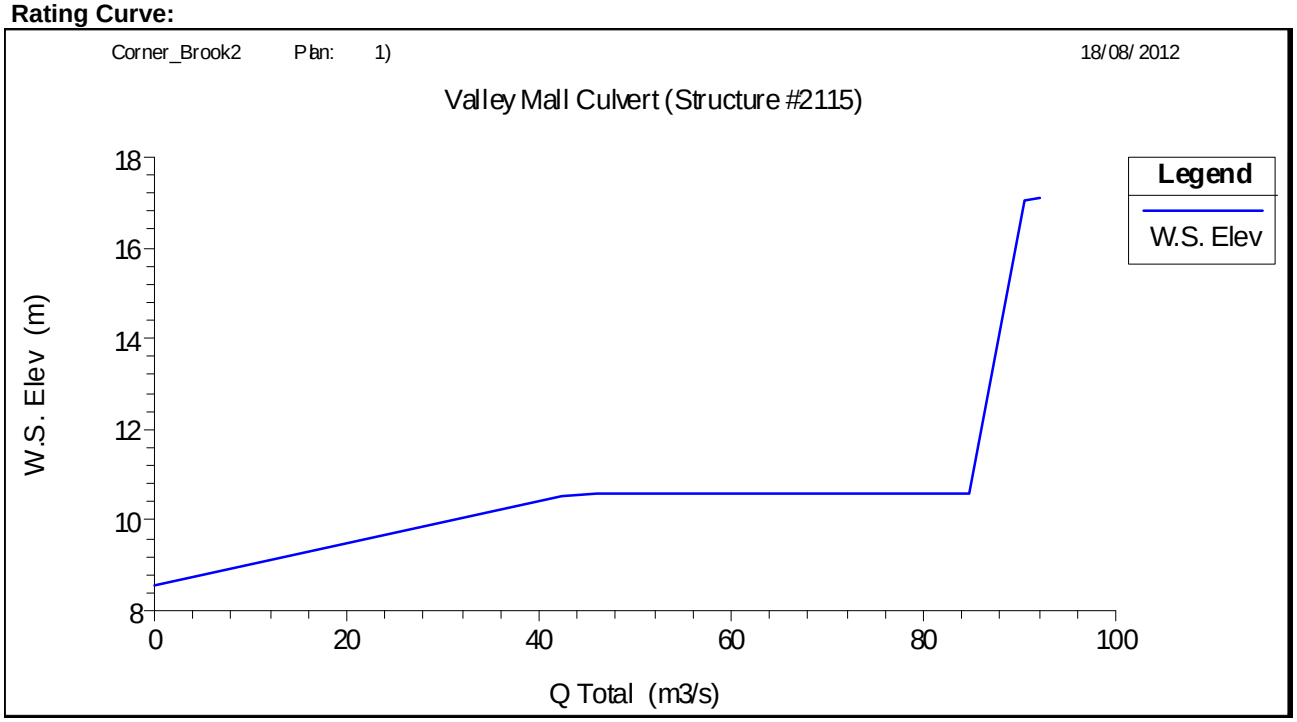
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2115**
Road Name: Valley Mall Culvert
(upstream field collected as originally as structure 2116 - data incorporated here)

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	330 m	
Span:	5 m	
Deck Thickness:	6.43 m	(minimum)
Top of Deck:	17 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	8.57						
	d/s:	0.83						
Type:		RectCulvert						
Material:		Concrete						
Opening:	**B**	2						
	W	5						
Length:		330						
Slope:		0.023						

Rating Curve:



HEC-RAS Data

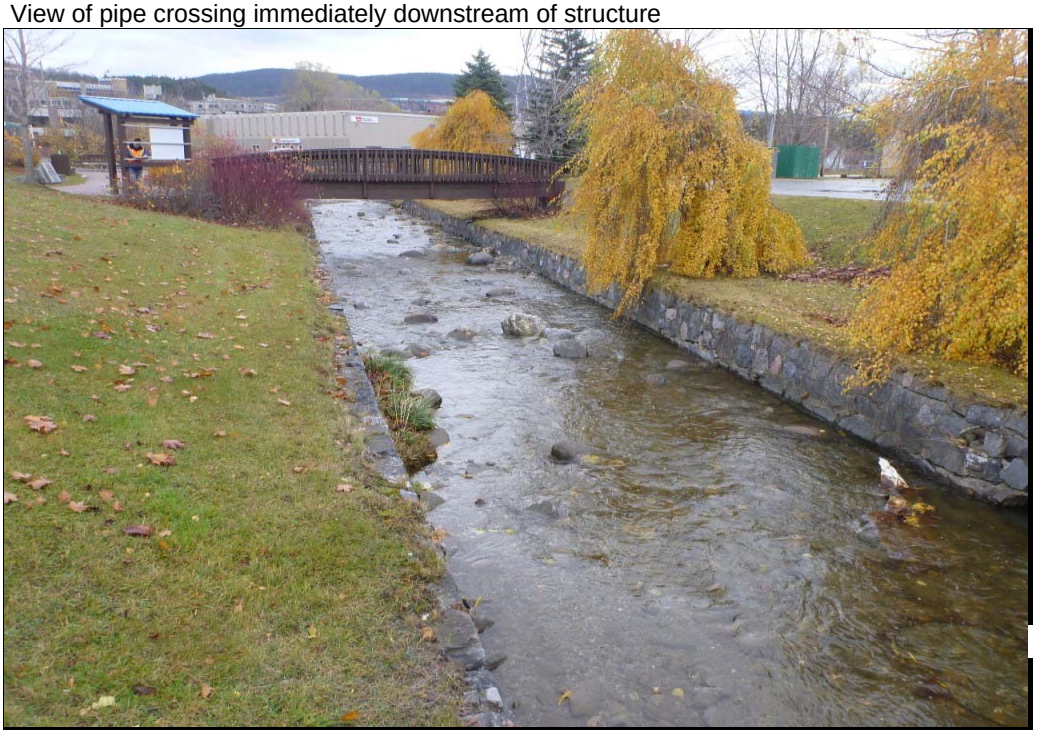
Tributary :	BellsB-M001
Structure # :	100
Modeled as :	RectCulvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2115
Road Name: Valley Mall Culvert

Description: View of downstream face of structure

Description: View of pipe crossing immediately downstream of structure



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2115

Road Name: Valley Mall Culvert

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2117
Watershed: Bell's Brook
Watercourse: Bell's Brook
Road Name: no structure at this location
Road Name Alias: no structure at this location

Map Sheet(s): -
Location: **Easting** 344783.9
Northing 5423569.9
Control NAD83
Projection MTM Zone 3

Structure Type: -
Deck: -

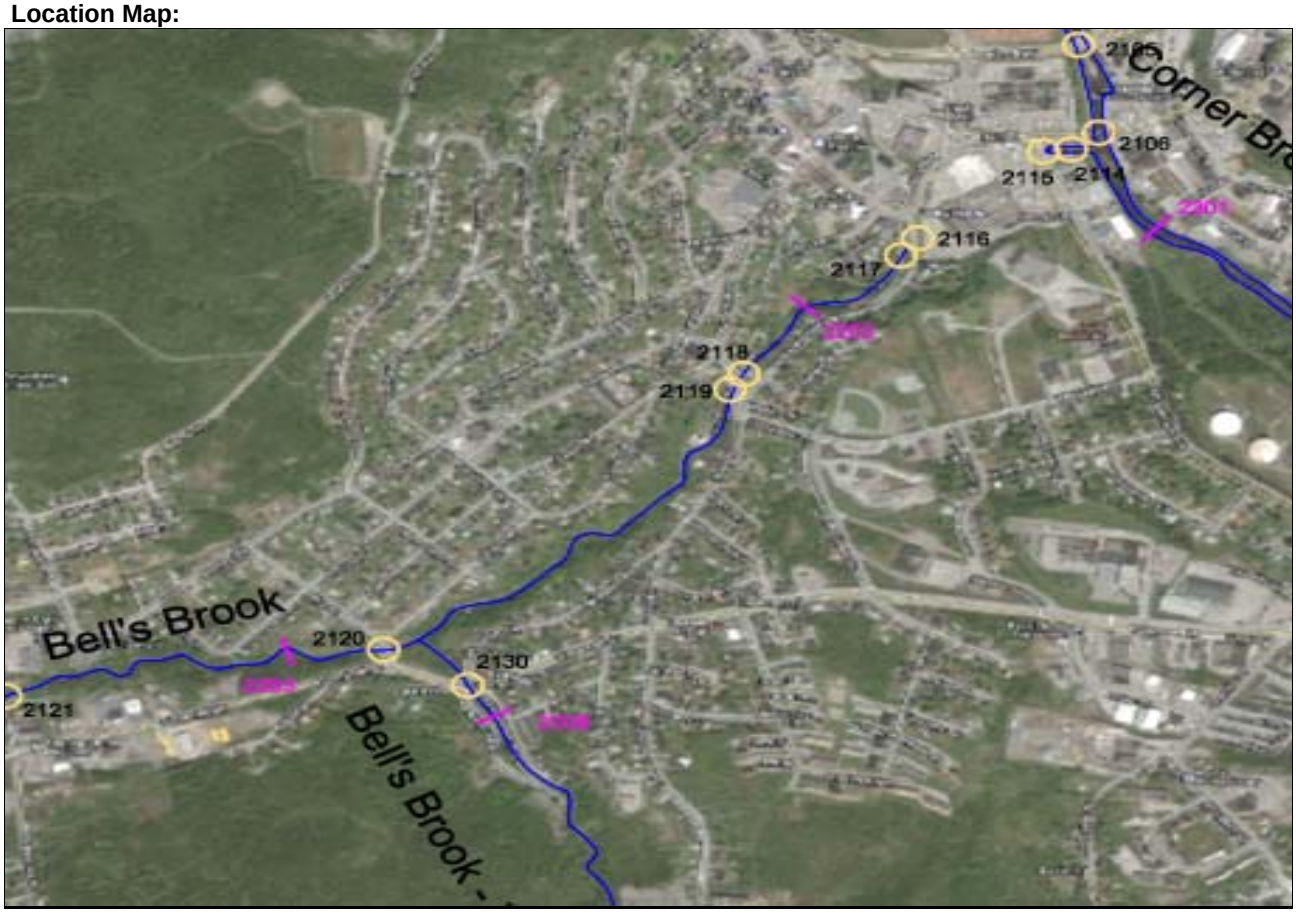
Observer(s): A. Peddle & J. Loughlin
Photos: -

Organization(s): AMEC

Info Source(s): -

Date(s): 11/17/2011

Location Map:



Notes: no structure at this location

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2117**
Road Name: no structure at this location

# of Bridge Piers or Arches:	0		
Skewed to Road?	N		
Road Width:		m	
Span:		m	
Deck Thickness:		m	(minimum)
Top of Deck:		m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:

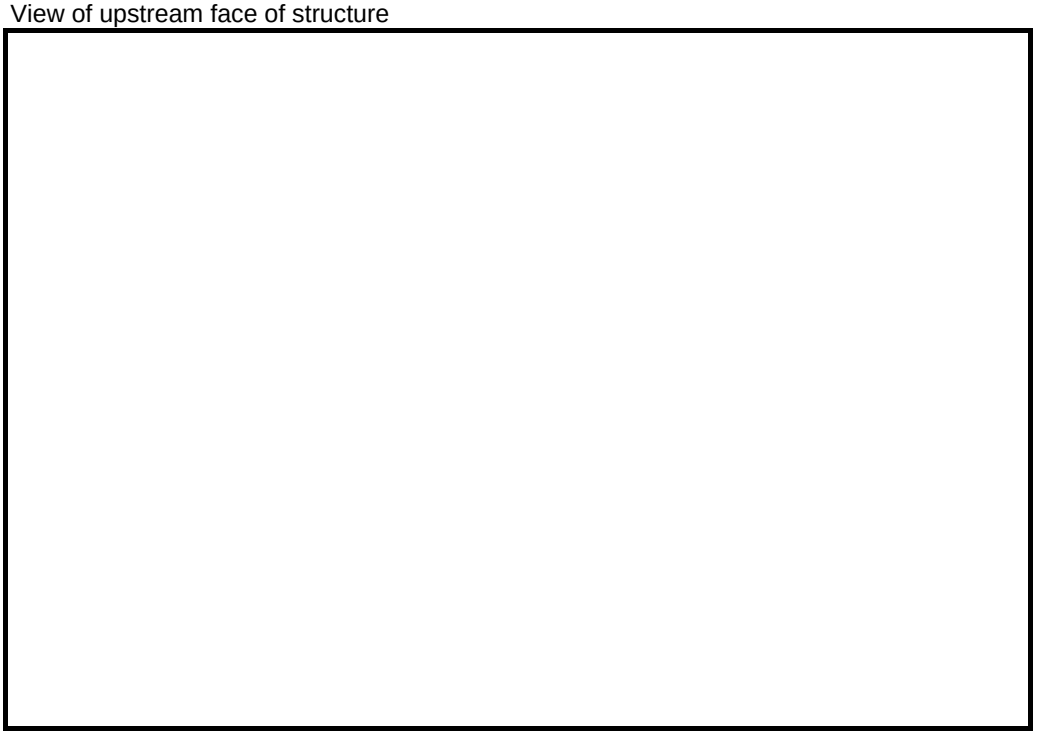
HEC-RAS Data

Tributary :	BellsB-M001
Structure # :	
Modeled as :	
Data from :	

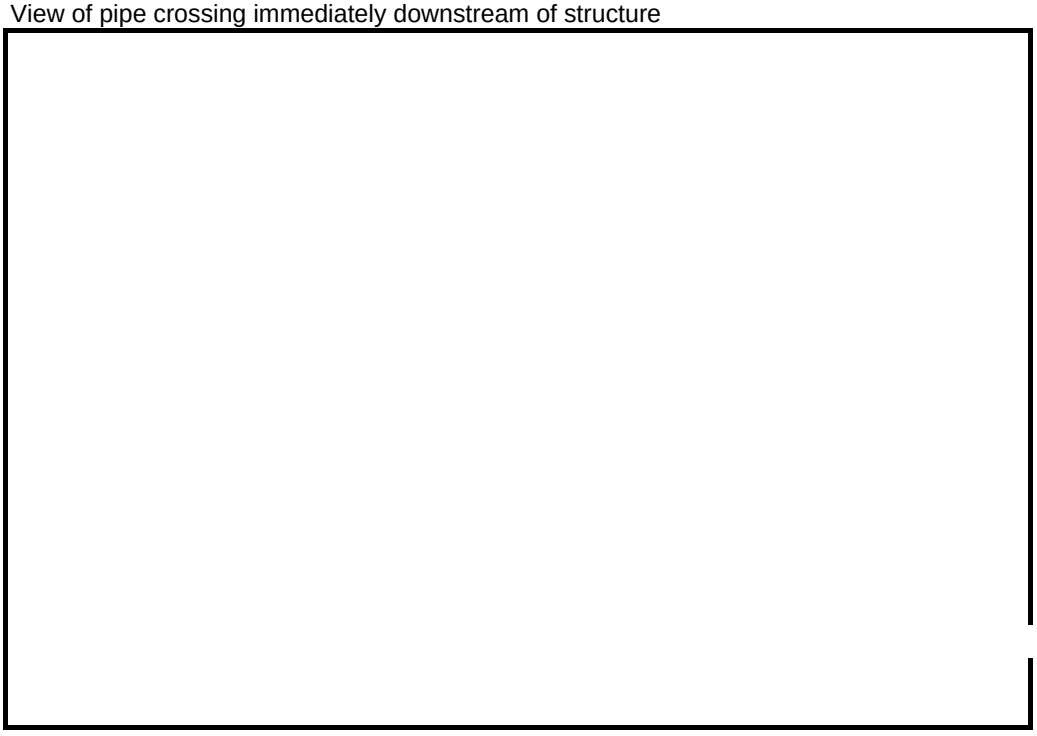
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2117**
Road Name: no structure at this location

Description: View of upstream face of structure



Description: View of pipe crossing immediately downstream of structure

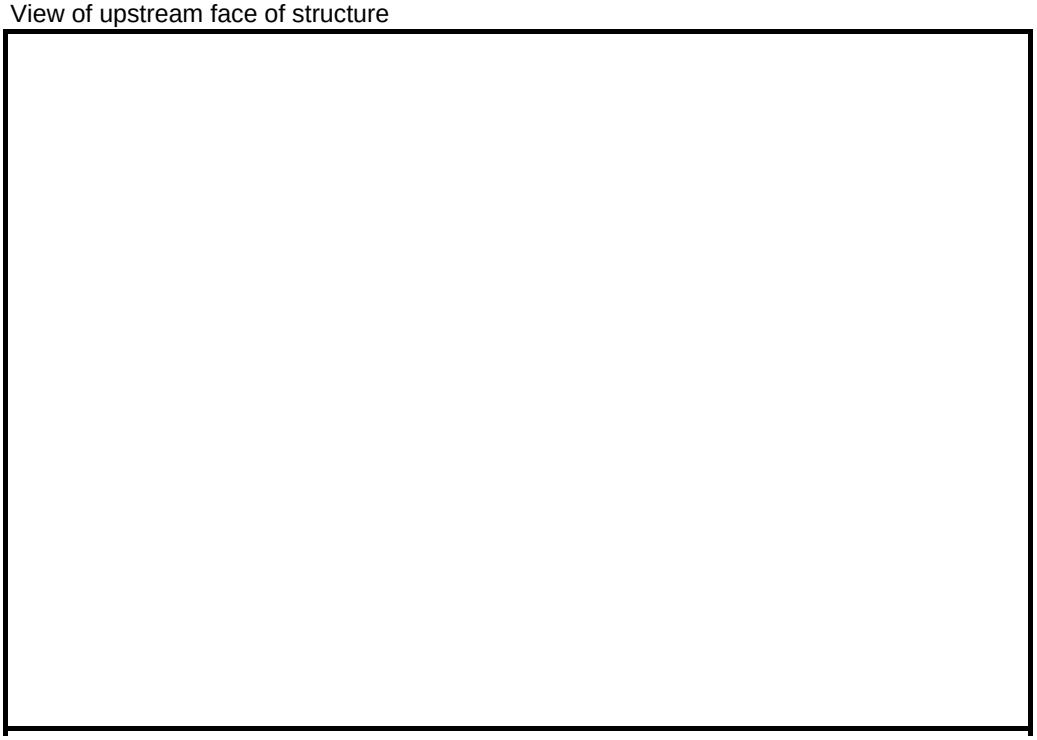


WATERCOURSE STRUCTURE INVENTORY FORM

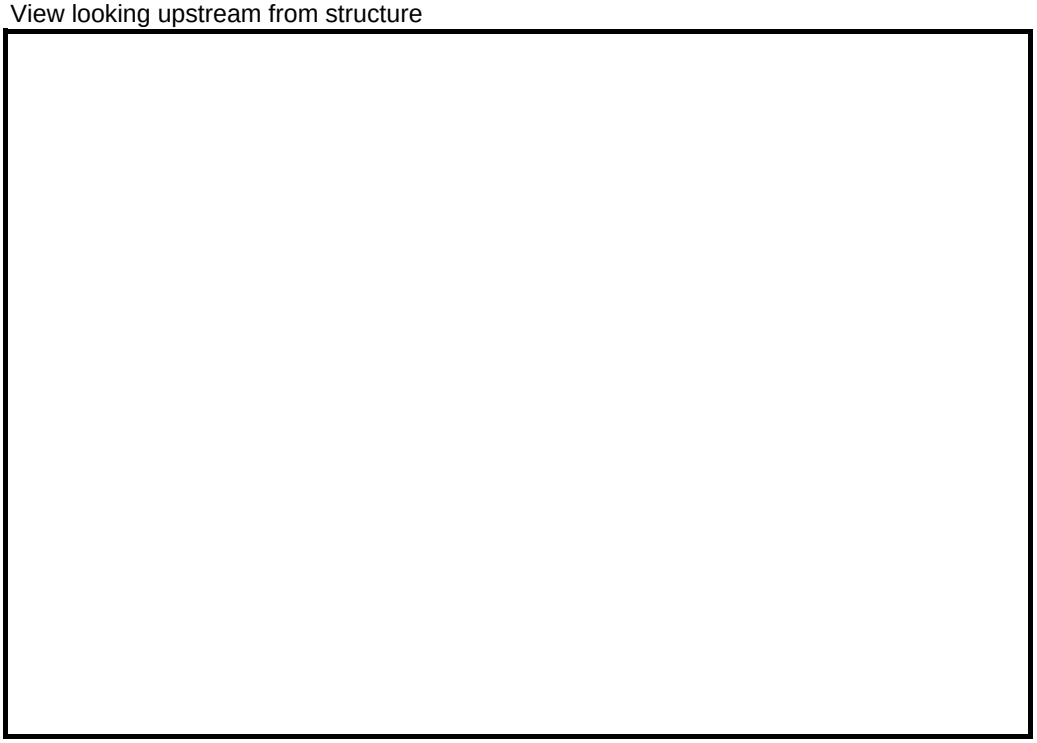
Structure #: **2117**

Road Name: no structure at this location

Description: View of upstream face of structure



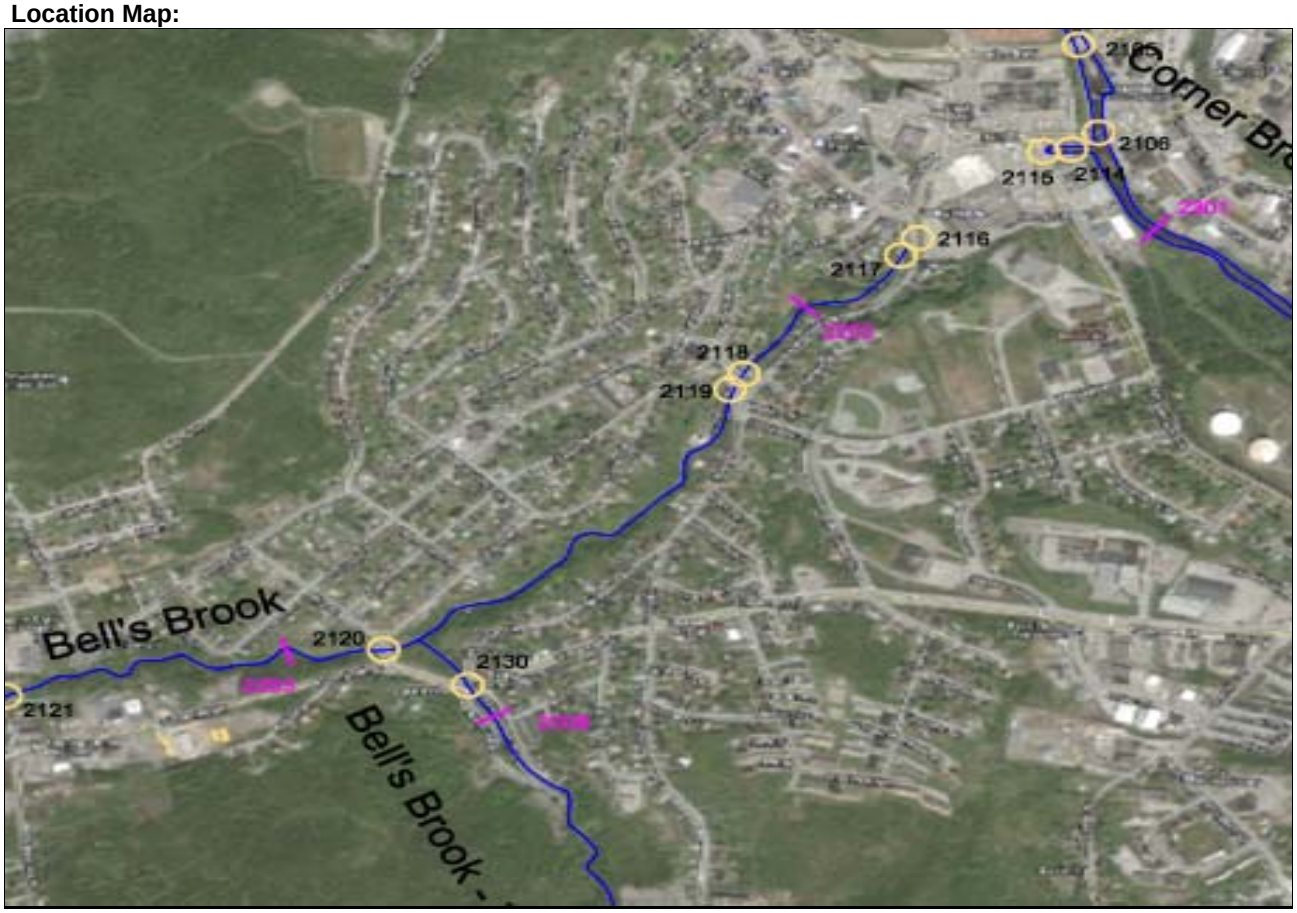
Description: View looking upstream from structure



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2118**			
Watershed:	Bell's Brook	**Map Sheet(s):**	4	
Watercourse:	Bell's Brook	**Location:**	**Easting**	344622.8
			Northing	5423409.1
Road Name:	Blackwood's Hill		**Control**	NAD83
Road Name Alias:	Blackwood's Hill		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Asphalt
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0695-0696
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes:

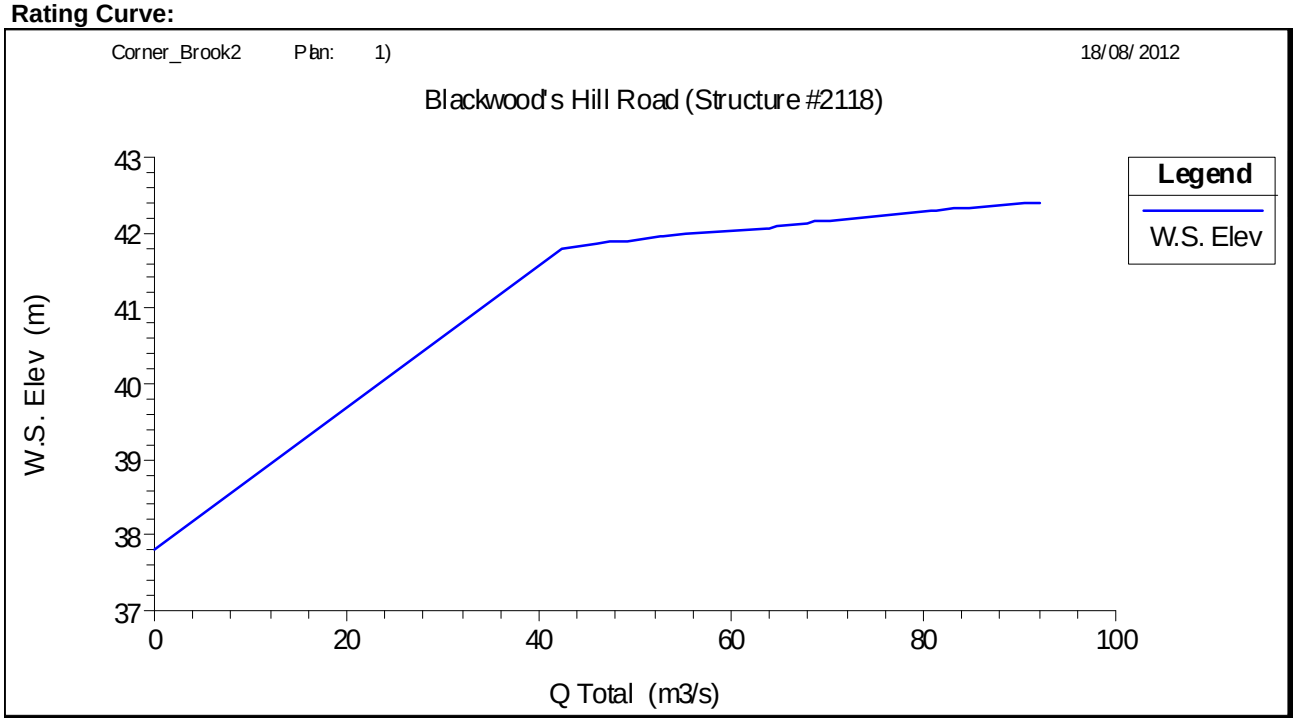
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2118
Road Name: Blackwood's Hill

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	6.5 m	
Span:	7.52 m	
Deck Thickness:	1.75 m	(minimum)
Top of Deck:	41.43 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	37.8						
	d/s:	34.33						
Type:		Bridge						
Material:		Concrete						
Opening:	**B**	1.88						
	W	7.52						
Length:		6.5						
Slope:		0.252						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M001
Structure # :	800
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2118**
Road Name: Blackwood's Hill

Description: View of downstream face of structure

Description: Top of road view looking north

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2118**
Road Name: Blackwood's Hill

Description: View looking downstream from structure

Description: View looking downstream from Structure 2119

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2119
Watershed: Bell's Brook
Watercourse: Bell's Brook
Road Name: Wellington Street
Road Name Alias: Wellington Street

Map Sheet(s): 4
Location: **Easting** 344604.3
Northing 5423379.3
Control NAD83
Projection MTM Zone 3

Structure Type: Twin CSP culverts
Deck: Asphalt

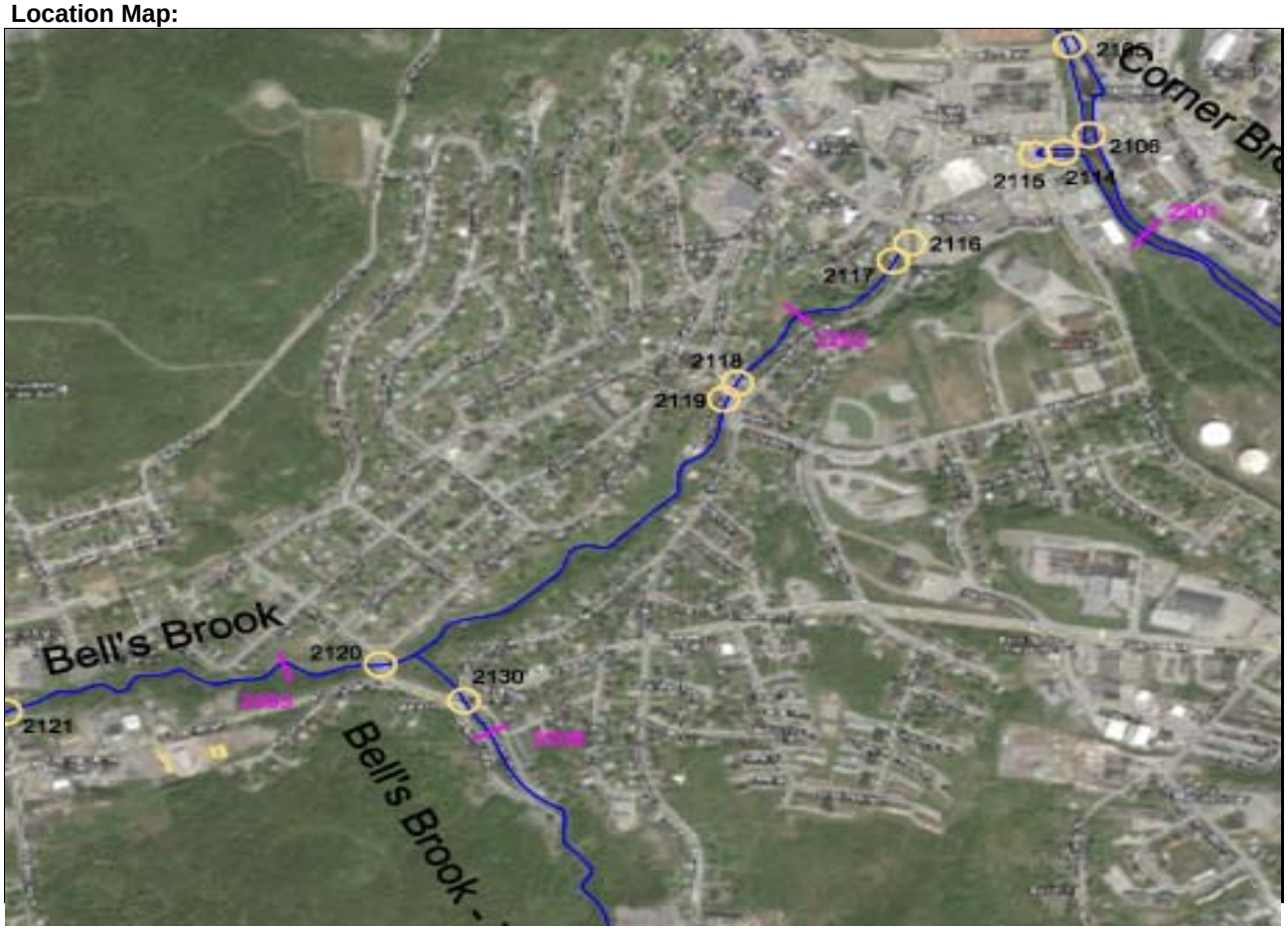
Observer(s): A. Peddle & J. Loughlin
Photos: 0697-0700

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:



Notes:

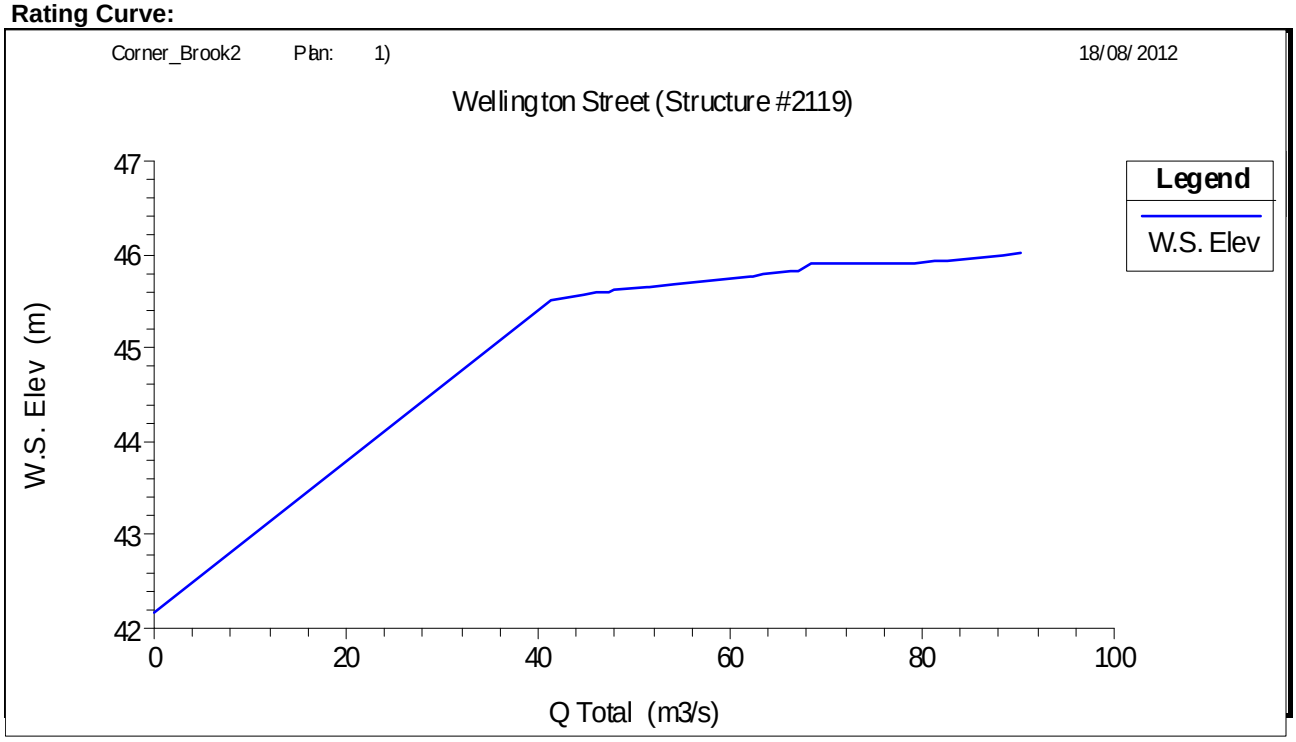
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2119**
Road Name: Wellington Street

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	16 m	
Span:	5.25 m	
Deck Thickness:	1.01 m	(minimum)
Top of Deck:	45.59 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	42.18						
	d/s:	38.54						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	2.4						
	W	2.4						
Length:		35.7						
Slope:		0.102						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M001
Structure # :	840
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2119**
Road Name: Wellington Street

Description: View of downstream face of structure

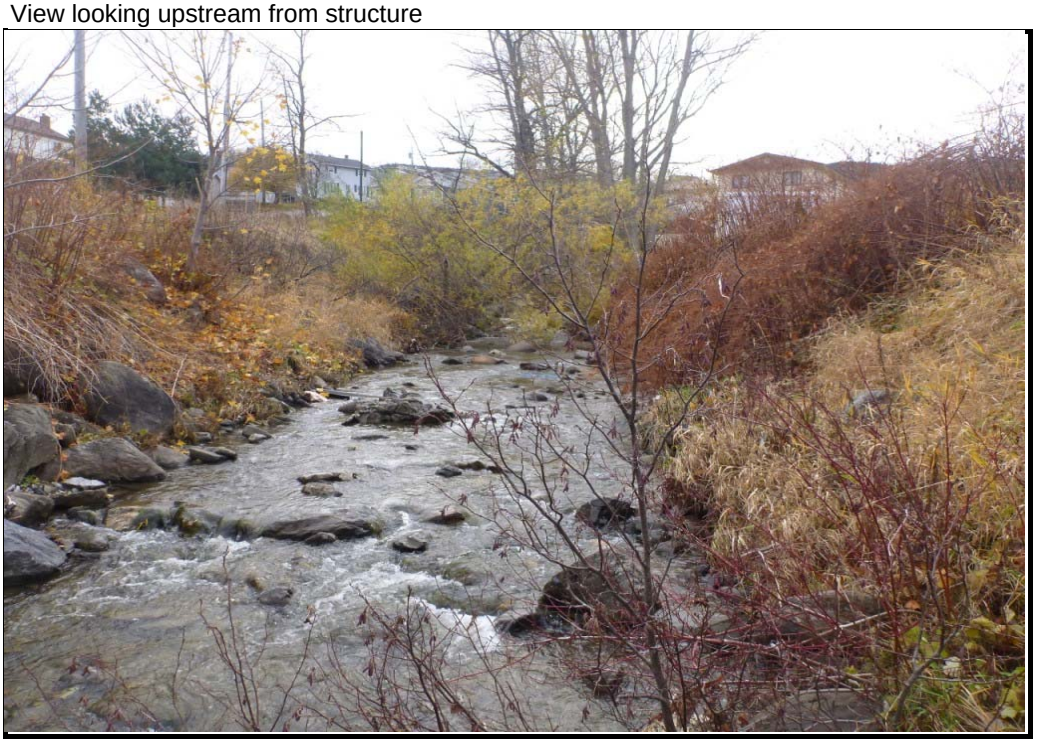
Description: View looking downstream from atop structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2119
Road Name: Wellington Street

Description: View of upstream face of structure

Description: View looking upstream from structure



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2120
Watershed: Bell's Brook
Watercourse: Bell's Brook
Road Name: Bliss Street
Road Name Alias: Bliss Street

Map Sheet(s): 5
Location: **Easting** 344087.4
Northing 5422880.2
Control NAD83
Projection MTM Zone 3

Structure Type: Single CSP culvert
Deck: Asphalt

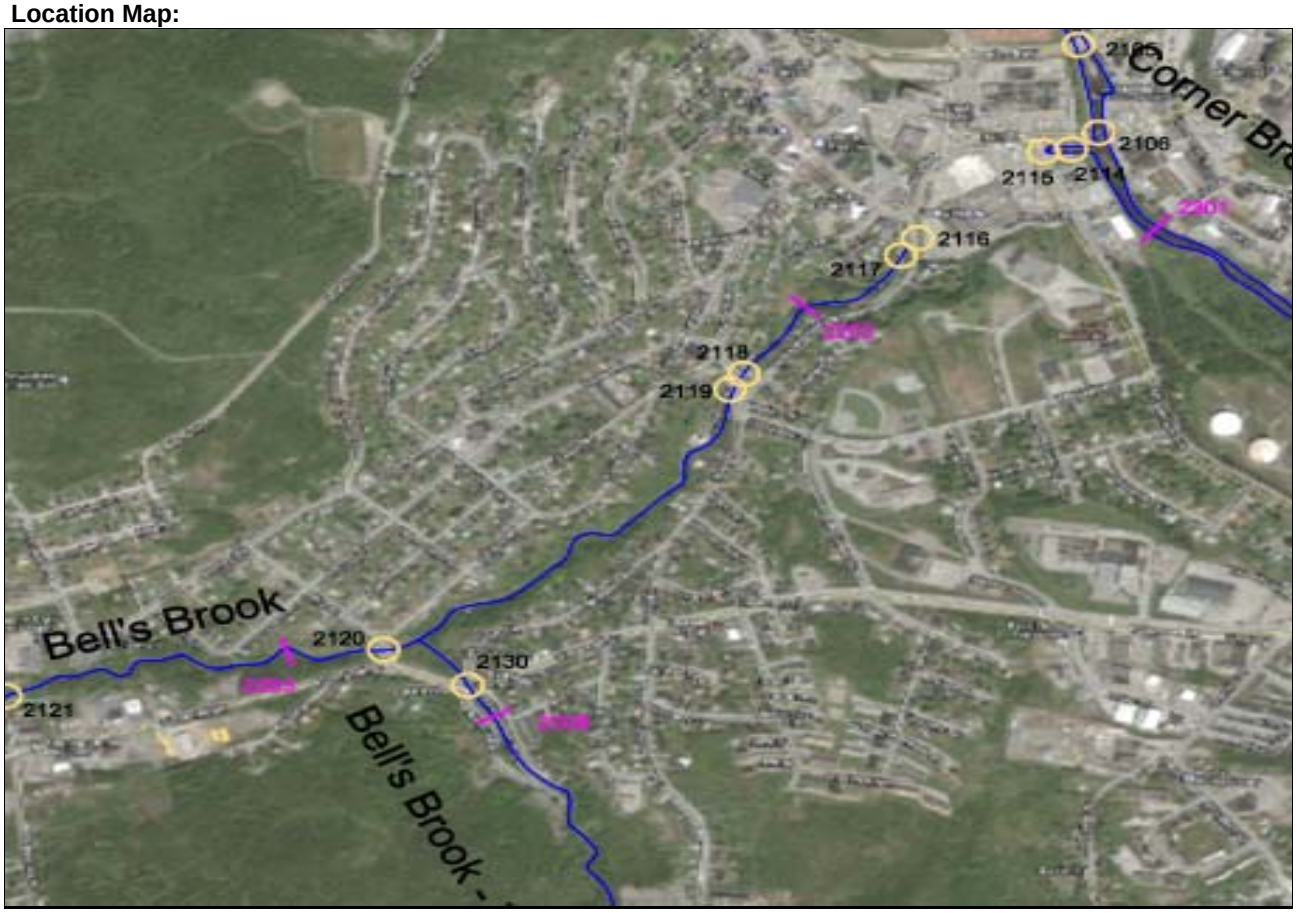
Observer(s): A. Peddle & J. Loughlin
Photos: 0701-0706

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:



Notes:

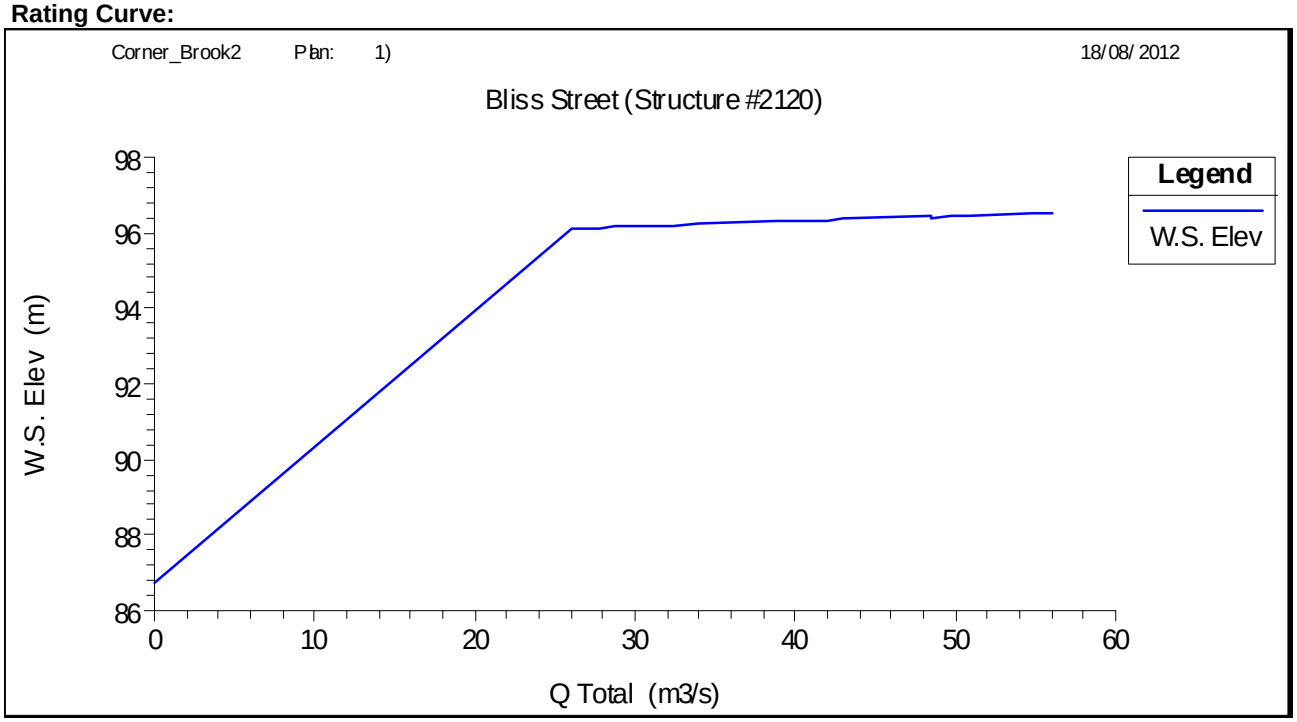
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2120
Road Name: Bliss Street

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	15.5 m	
Span:	1.8 m	
Deck Thickness:	7.34 m	(minimum)
Top of Deck:	95.86 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	86.72						
	d/s:	84.33						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	1.8						
	W	1.8						
Length:		56						
Slope:		0.043						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	1,650
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2120**
Road Name: Bliss Street

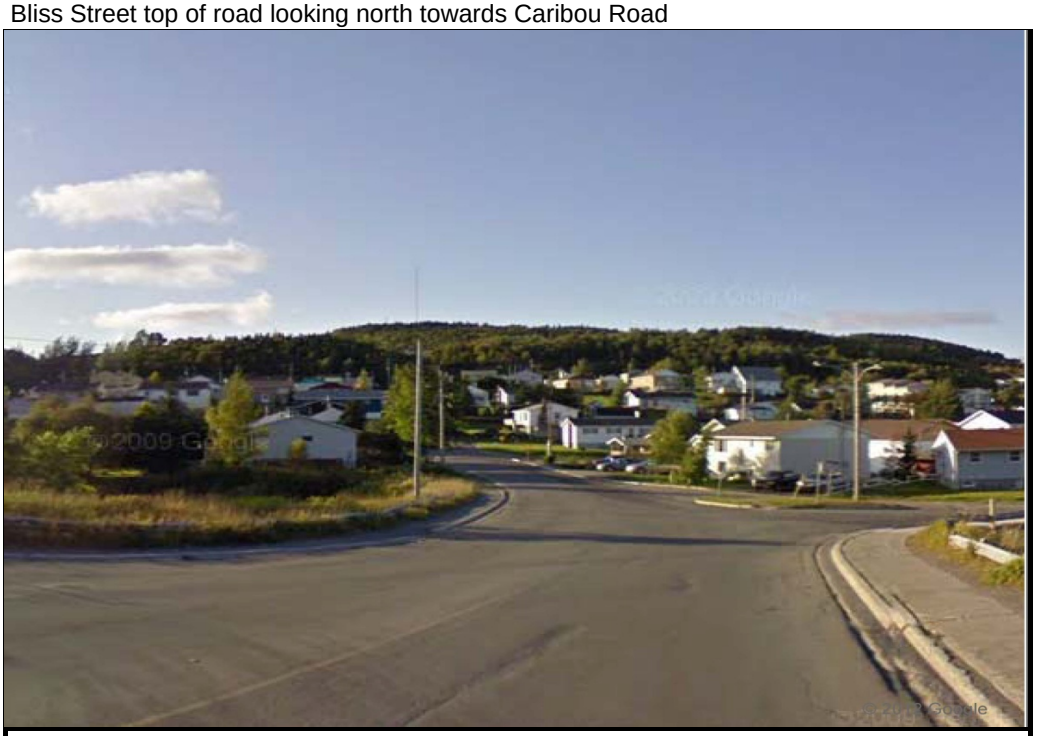
Description: View of upstream face of structure

Description: View of downstream face of structure

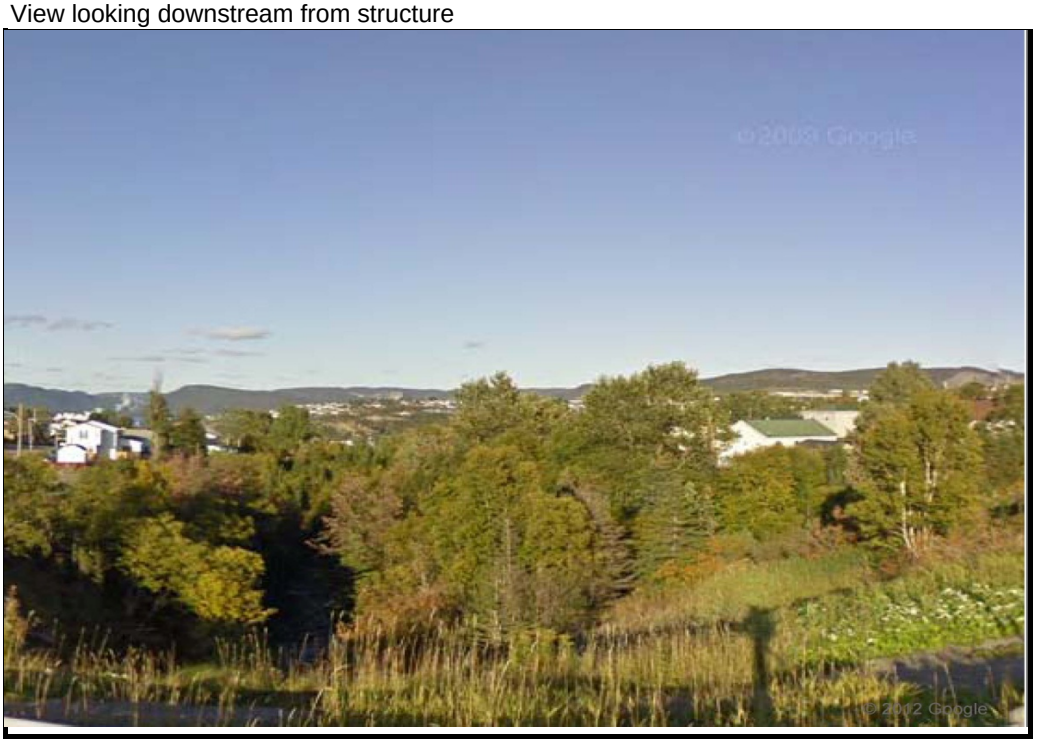
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2120**
Road Name: Bliss Street

Description: Bliss Street top of road looking north towards Caribou Road



Description: View looking downstream from structure

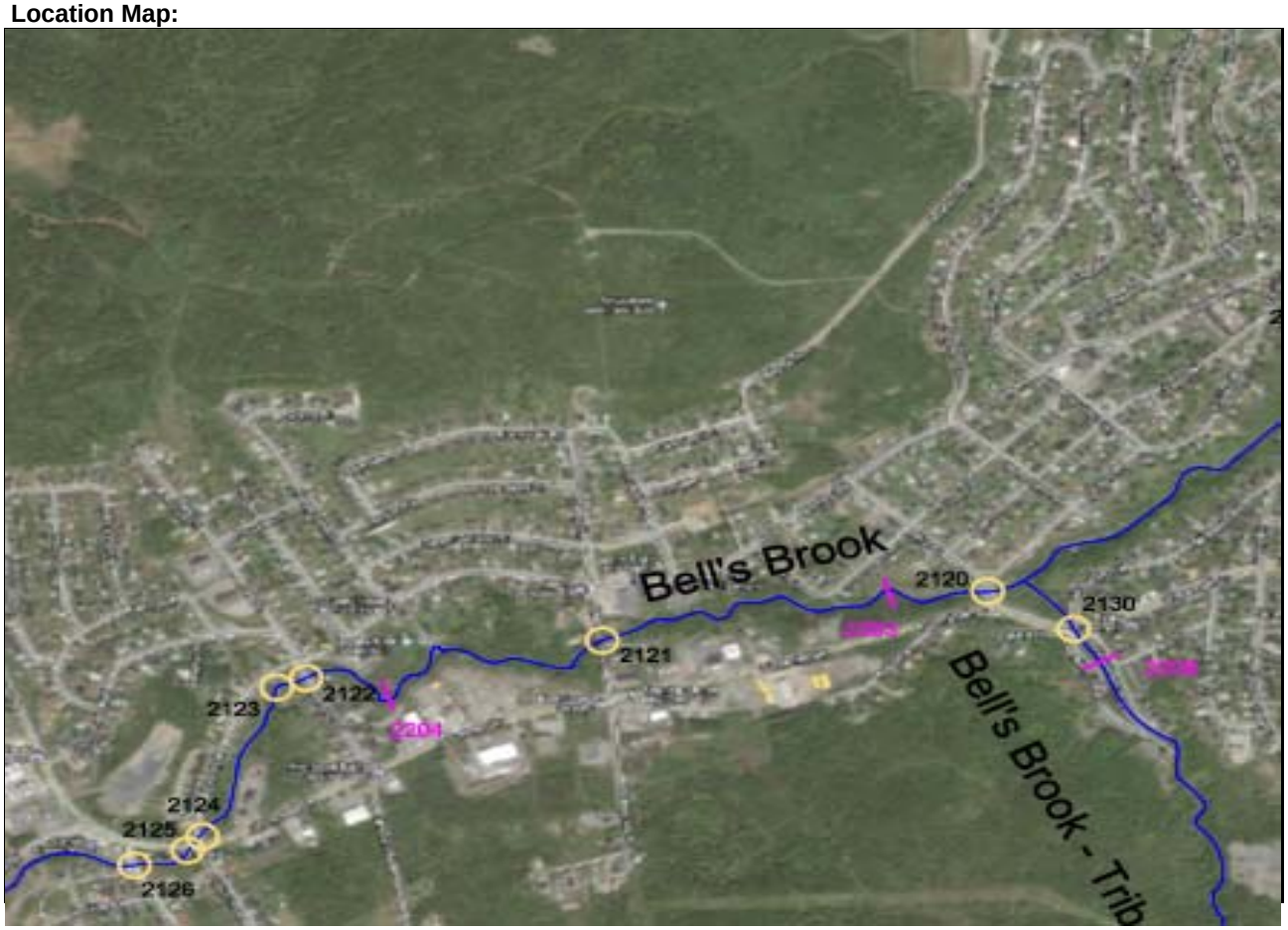


WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-A

Watershed:	Bell's Brook	**Map Sheet(s):**	5	
Watercourse:	Bell's Brook	**Location:**	**Easting**	343542.7
			Northing	5422788.2
Road Name:	Pipe Crossing		**Control**	NAD83
Road Name Alias:	Pipe Crossing		**Projection**	MTM Zone 3
Structure Type:	Pipe Crossing		**Deck:**	-
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0714-0719
Organization(s):	AMEC			
Info Source(s):	-			
Date(s):	11/17/2011			

Location Map:



Notes: not modelled

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-A
Road Name: Pipe Crossing

# of Bridge Piers or Arches:		
Skewed to Road?		
Road Width:	m	
Span:	m	
Deck Thickness:	m	(minimum)
Top of Deck:	m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:

HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-A
Road Name: Pipe Crossing

Description:

Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-A

Road Name: Pipe Crossing

Description:

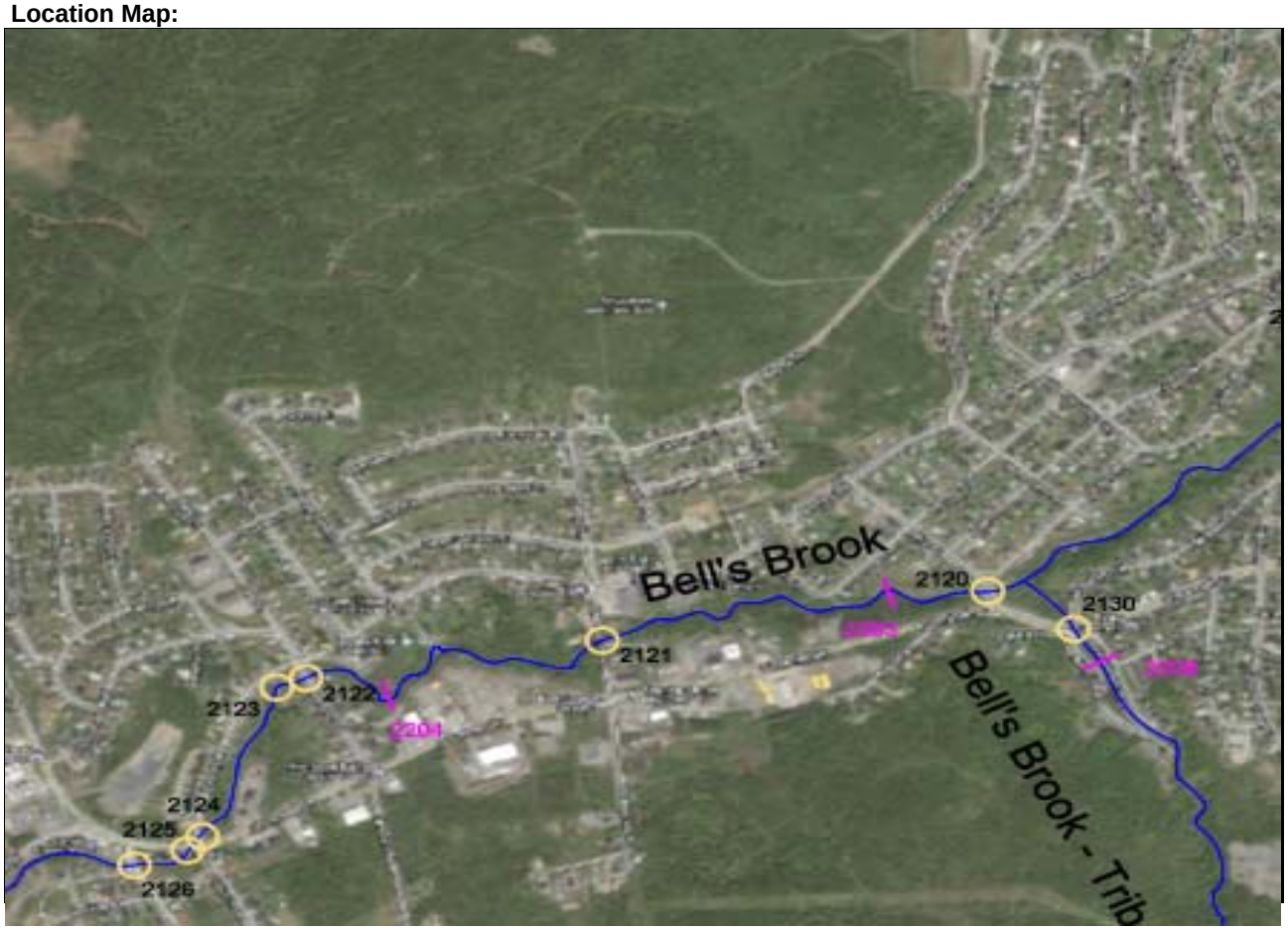
Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-B

Watershed:	Bell's Brook	**Map Sheet(s):**	5,6	
Watercourse:	Bell's Brook	**Location:**	**Easting**	343527.0
			Northing	5422783.3
Road Name:	Walbournes Road		**Control**	NAD83
Road Name Alias:	Walbournes Road		**Projection**	MTM Zone 3
Structure Type:	Bridge		**Deck:**	Asphalt
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0720-0725
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes:

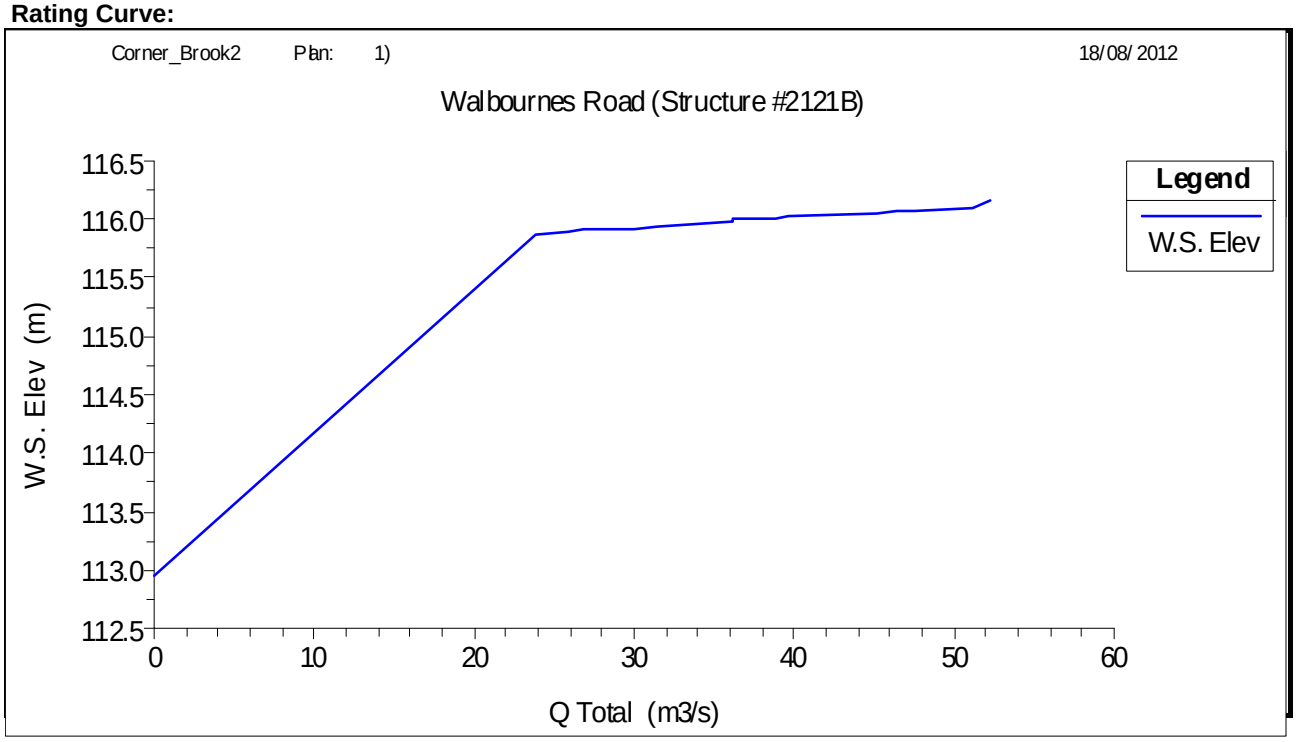
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-B
Road Name: Walbournes Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	6.5 m	
Span:	3.92 m	
Deck Thickness:	0.62 m	(minimum)
Top of Deck:	115.68 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	112.94						
	d/s:	111.75						
Type:		Bridge						
Material:		Concrete						
Opening:	**B**	2.14						
	W	3.92						
Length:		6.5						
Slope:		0.183						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	2,300
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-B
Road Name: Walbournes Road

Description: View of upstream face of structure

Description: Top of road looking north

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2121-B

Road Name: Walbournes Road

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2122
Watershed: Bell's Brook
Watercourse: Bell's Brook
Road Name: Boones Road
Road Name Alias: Boones Road

Map Sheet(s): 5,6
Location: **Easting** 343094.4
Northing 5422710.1
Control NAD83
Projection MTM Zone 3

Structure Type: Pipe Arch
Deck: Asphalt

Observer(s): A. Peddle & J. Loughlin
Photos: 0726-0729

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:

Notes:

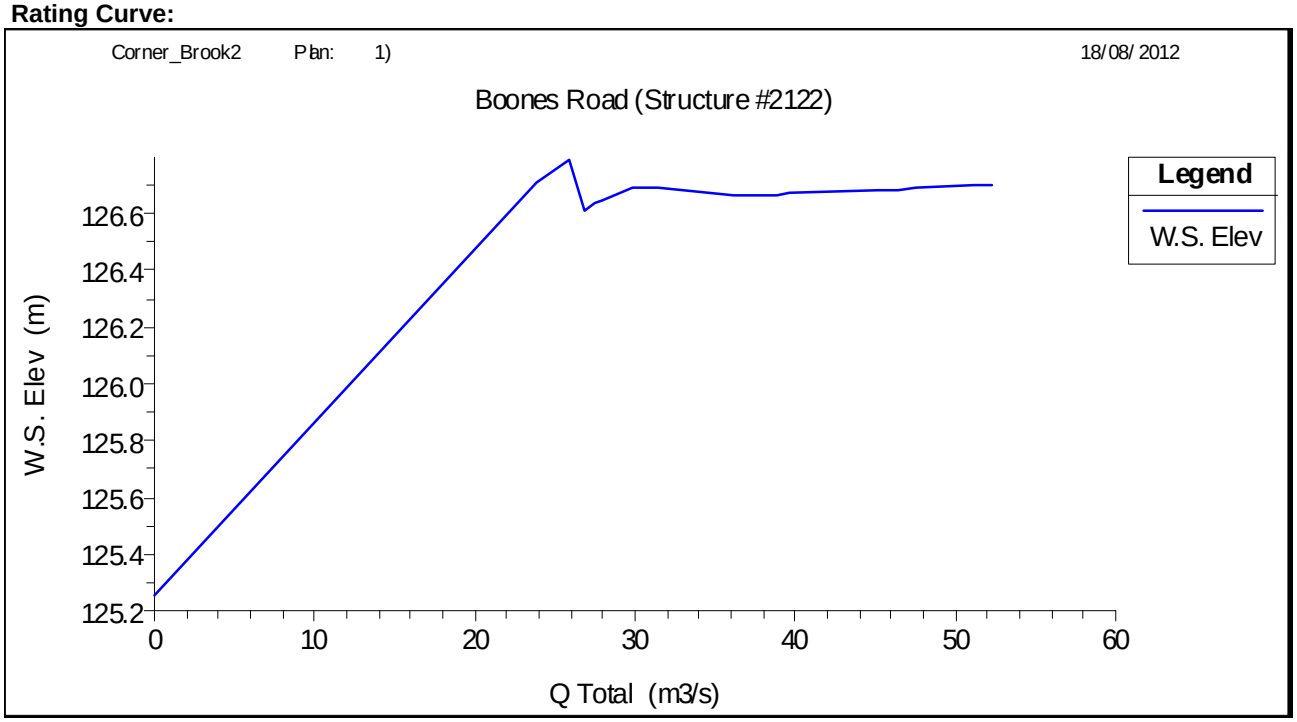
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2122
Road Name: Boones Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	6.5 m	
Span:	5.09 m	
Deck Thickness:	0.26 m	(minimum)
Top of Deck:	126.37 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	125.25						
	d/s:	124.44						
Type:		Arch						
Material:		CSP Arch						
Opening:	**B**							
	W							
Length:		6.5						
Slope:		0.125						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	2,890
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2122**
Road Name: Boones Road

Description: View of looking upstream from structure

Description: View of upstream face of structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2122**
Road Name: Boones Road

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2123
Watershed: Bell's Brook
Watercourse: Bell's Brook

Road Name: Driveway
Road Name Alias: Accessway

Structure Type: CSP culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Map Sheet(s): 5,6
Location:
Easting 343049.6
Northing 5422688.5
Control NAD83
Projection MTM Zone 3

Deck: Asphalt

Photos: 0730-0733

Location Map:

Notes:

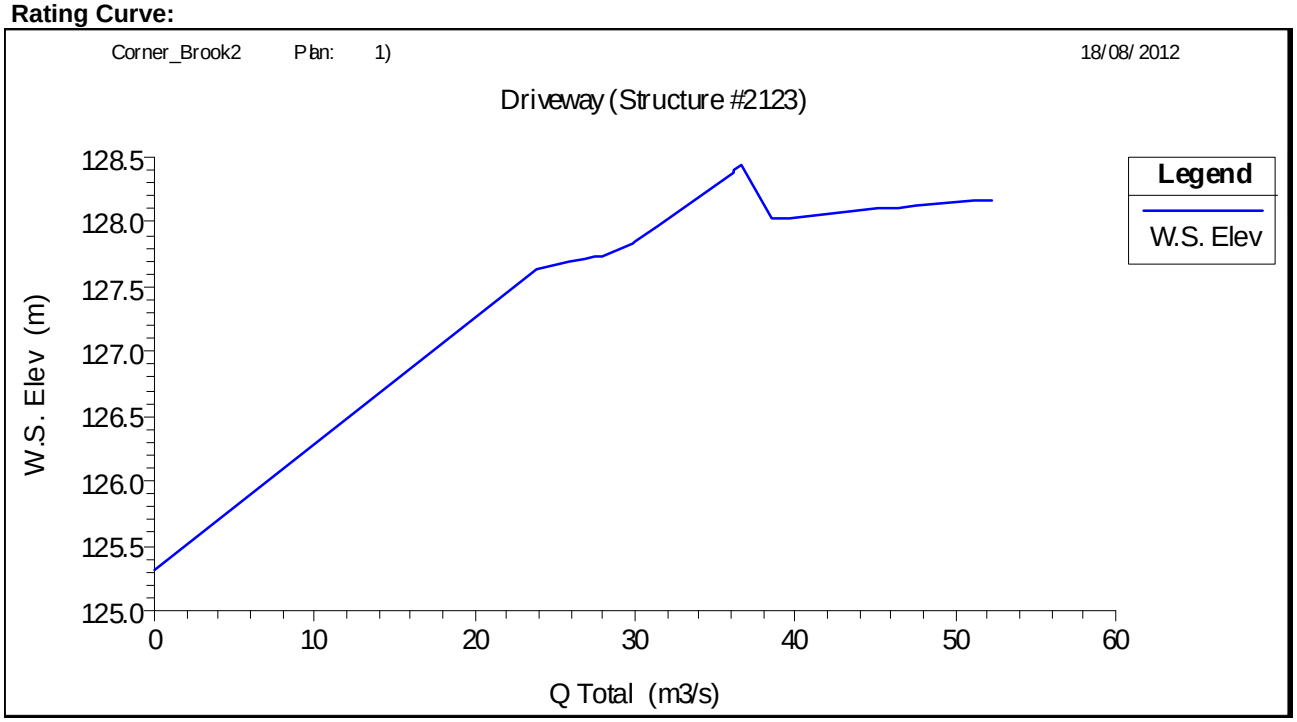
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2123**
Road Name: Driveway

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	5.5 m	
Span:	3.5 m	
Deck Thickness:	0.1 m	(minimum)
Top of Deck:	127.72 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	125.32						
	d/s:	125.12						
Type:		Arch						
Material:		CSP Arch						
Opening:	**B**	2.4						
	W	3.5						
Length:		5.5						
Slope:		0.036						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	2,940.01
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2123
Road Name: Driveway

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2123

Road Name: Driveway

Description: View of downstream face of structure

Description: Top of road view - flow from right to left

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2124**			
Watershed:	Bell's Brook	**Map Sheet(s):**	6	
Watercourse:	Bell's Brook	**Location:**	**Easting**	342933.6
			Northing	5422421.1
Road Name:	County Road / O'Connell Drive		**Control**	NAD83
Road Name Alias:	County Road / O'Connell Drive		**Projection**	MTM Zone 3
Structure Type:	CSP culvert		**Deck:**	Asphalt
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0734-0738
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:

Notes:

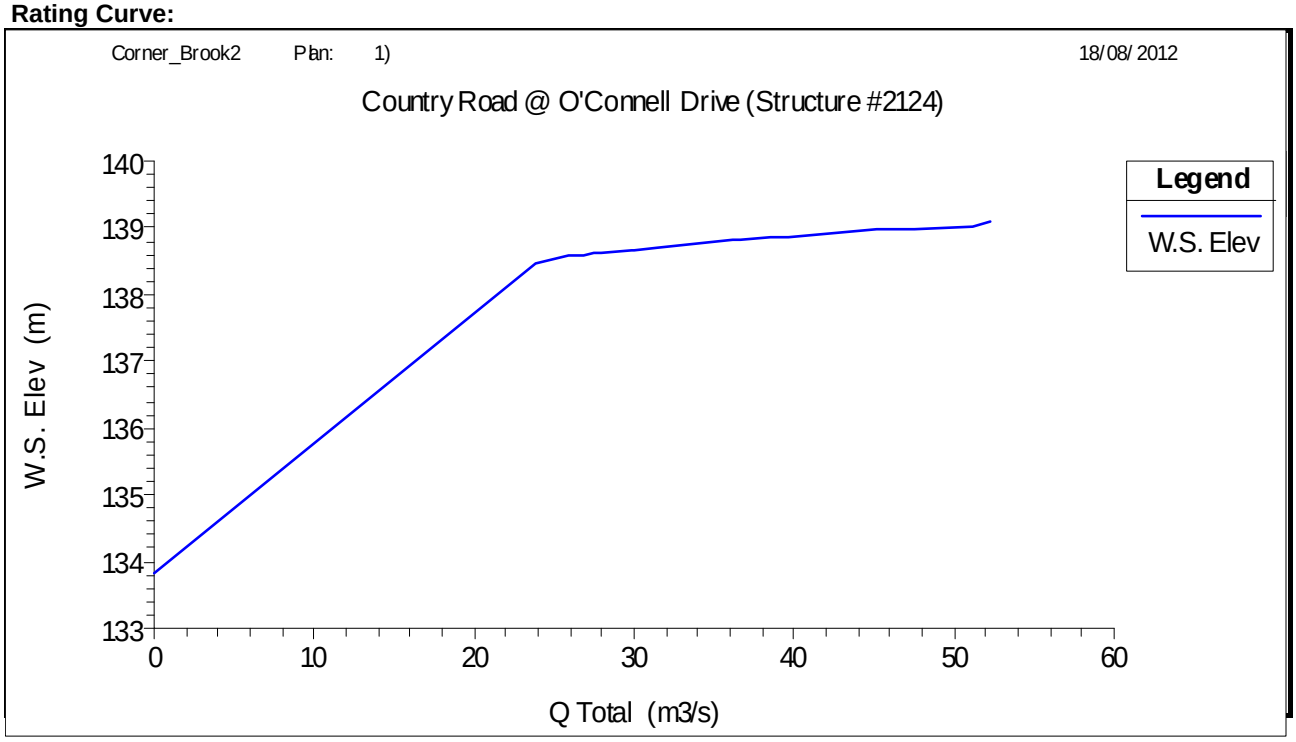
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2124**
Road Name: County Road / O'Connell Drive

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	33.7 m	
Span:	2.4 m	
Deck Thickness:	2.33 m	(minimum)
Top of Deck:	138.36 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	133.83						
	d/s:	132.04						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	2.4						
	W	2.4						
Length:		73.9						
Slope:		0.024						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	3,250
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2124
Road Name: County Road / O'Connell Drive

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2124

Road Name: County Road / O'Connell Drive

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2126**			
Watershed:	Bell's Brook	**Map Sheet(s):**	6	
Watercourse:	Bell's Brook	**Location:**	**Easting**	342841.2
			Northing	5422369.5
Road Name:	Reids Road		**Control**	NAD83
Road Name Alias:	Reids Road		**Projection**	MTM Zone 3
Structure Type:	CSP pipe arch		**Deck:**	Asphalt
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0739-0743
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:

Notes:

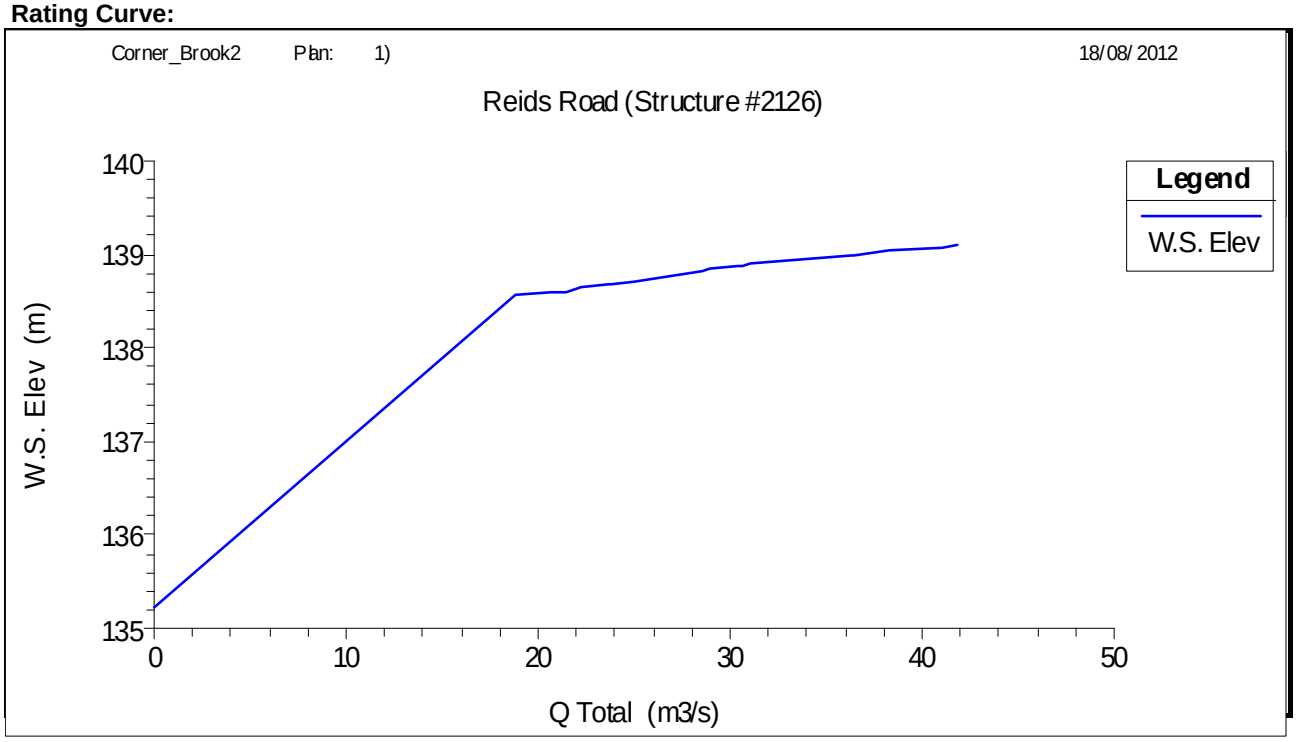
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2126**
Road Name: Reids Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	9.2 m	
Span:	2.5 m	
Deck Thickness:	0.44 m	(minimum)
Top of Deck:	138.08 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	135.48						
	d/s:	135.22						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	2.5						
	W	2.5						
Length:		25.2						
Slope:		0.010						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	3,375
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2126
Road Name: Reids Road

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2126

Road Name: Reids Road

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2126-B

Watershed:	Bell's Brook	**Map Sheet(s):**	6	
Watercourse:	Bell's Brook	**Location:**	**Easting**	342812.6
			Northing	5422367.7
Road Name:	Pipe Crossing		**Control**	NAD83
Road Name Alias:	Pipe Crossing		**Projection**	MTM Zone 3
Structure Type:	Pipe Crossing		**Deck:**	Pipe
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0744-0745
Organization(s):	AMEC			
Info Source(s):	-			
Date(s):	11/17/2011			

Location Map:

Notes: not modelled

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2126-B
Road Name: Pipe Crossing

# of Bridge Piers or Arches:			
Skewed to Road?			
Road Width:	m		
Span:	m		
Deck Thickness:	m	(minimum)	
Top of Deck:	m	(minimum)	

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:

HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2126-B
Road Name: Pipe Crossing

Description:

Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2126-B

Road Name: Pipe Crossing

Description:

Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2127
Watershed: Bell's Brook
Watercourse: Bell's Brook

Road Name: Carberry's Road
Road Name Alias: Carberry's Road

Structure Type: CSP culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

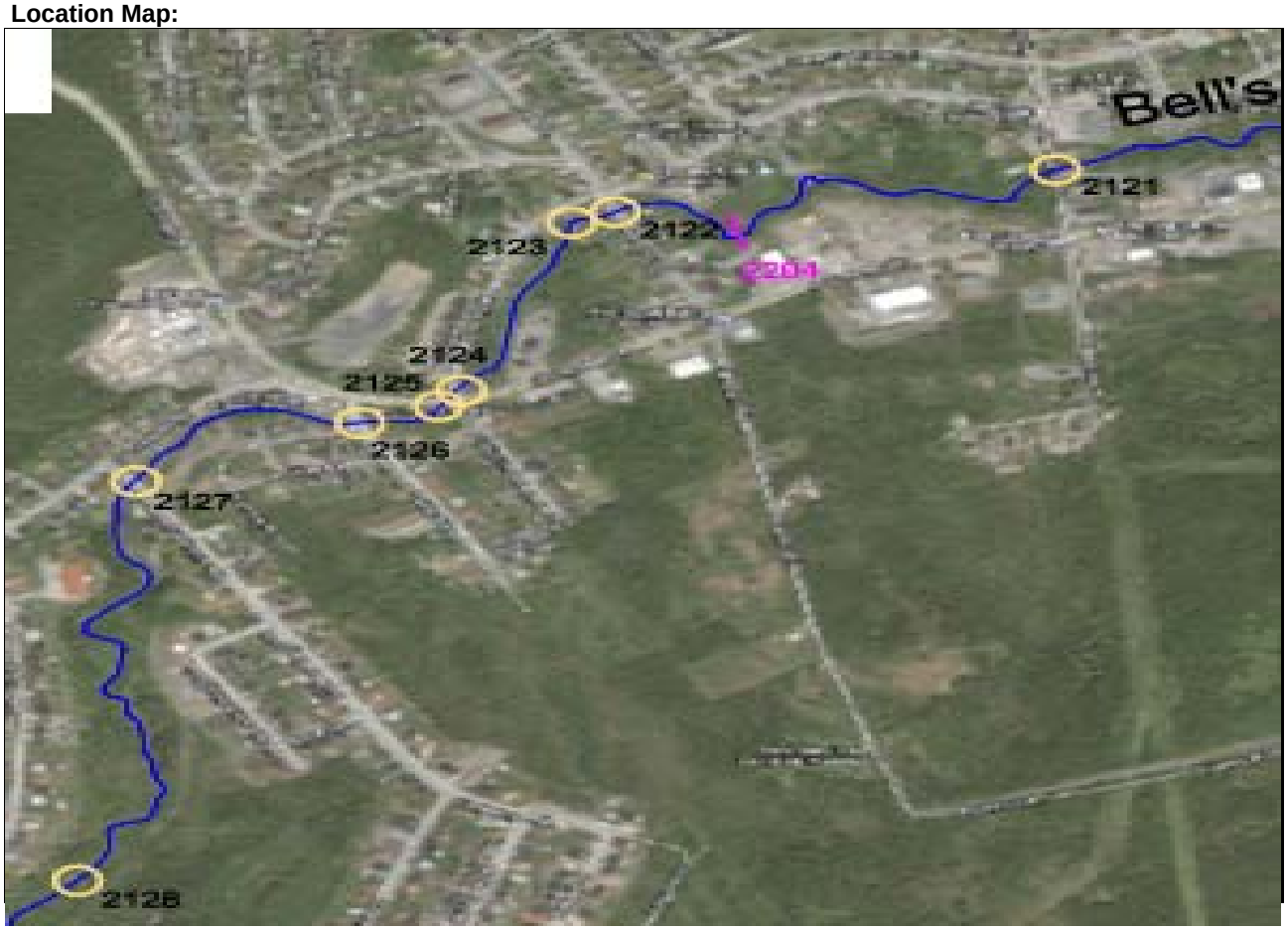
Date(s): 11/17/2011

Map Sheet(s): 6
Location:
Easting 342617.8
Northing 5422275.2
Control NAD83
Projection MTM Zone 3

Deck: Asphalt

Photos: 0746-0751

Location Map:



Notes:

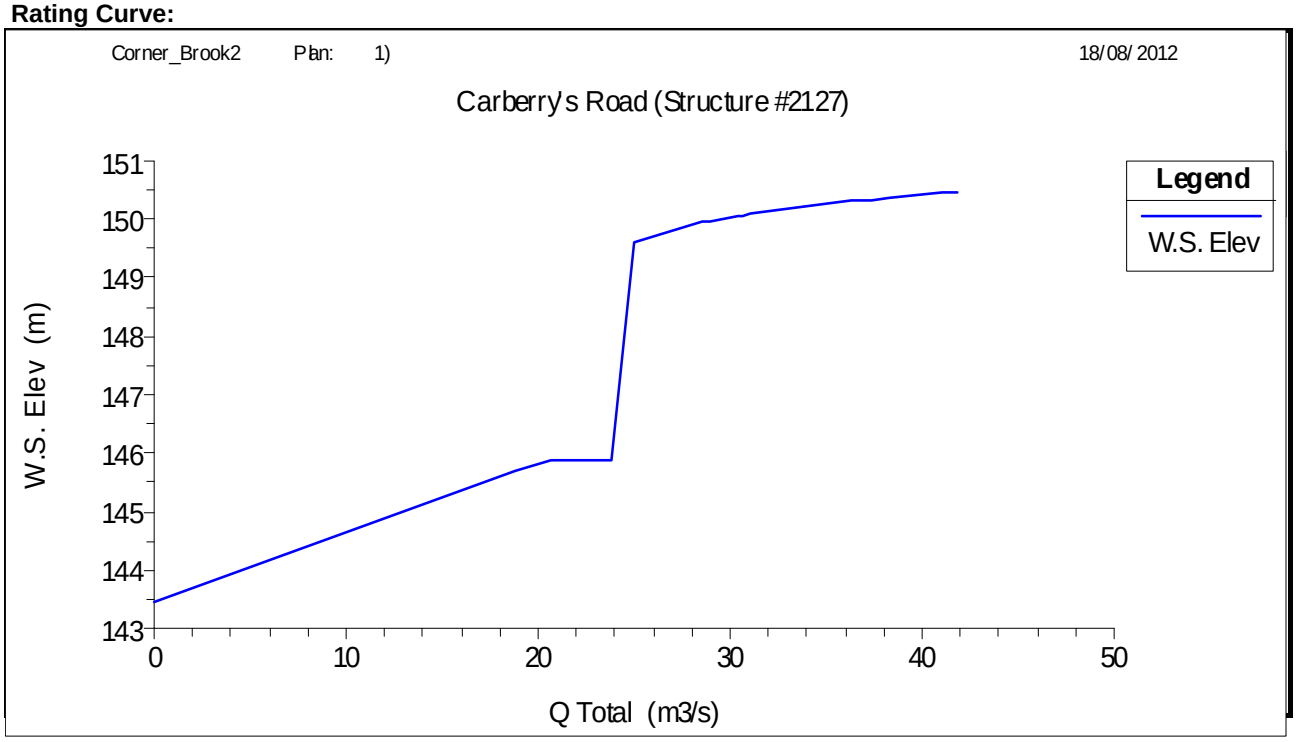
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2127
Road Name: Carberry's Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	10.2 m	
Span:	2.4 m	
Deck Thickness:	3.95 m	(minimum)
Top of Deck:	149.51 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	143.44						
	d/s:	142.47						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	2.4						
	W	2.4						
Length:		30.7						
Slope:		0.032						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	3,650
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2127**
Road Name: Carberry's Road

Description: View of upstream face of structure

Description: View looking upstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2127**
Road Name: Carberry's Road

Description: View of downstream face of structure

Description: View looking downstream from structure

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 2129
Watershed: Bell's Brook
Watercourse: Bell's Brook

Road Name: Ring Road
Road Name Alias: Ring Road

Structure Type: CSP culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Map Sheet(s): 7

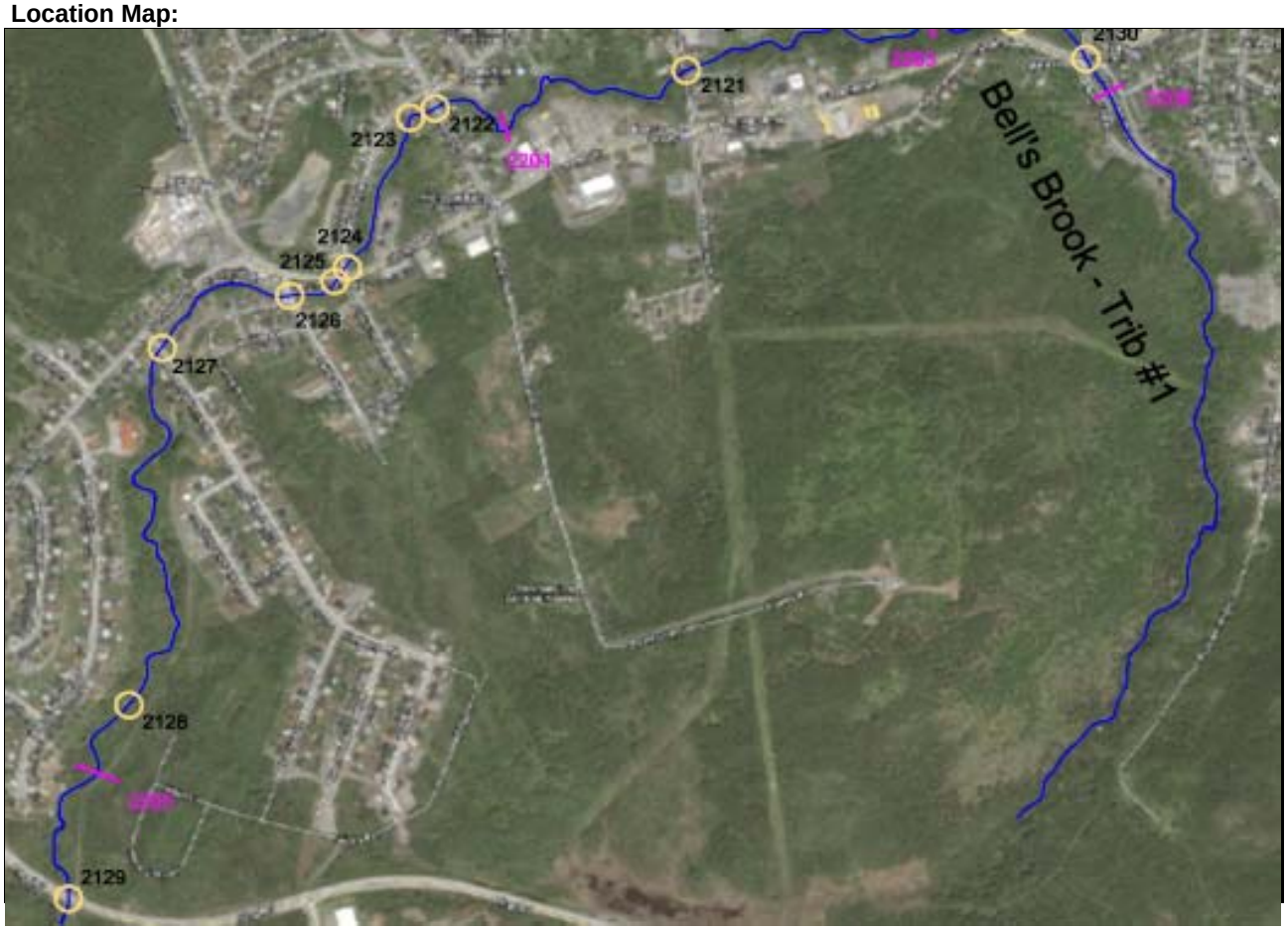
Location:

Easting	342432.4
Northing	5421308.8
Control	NAD83
Projection	MTM Zone 3

Deck: Asphalt

Photos: 0752-0755

Location Map:



Notes:

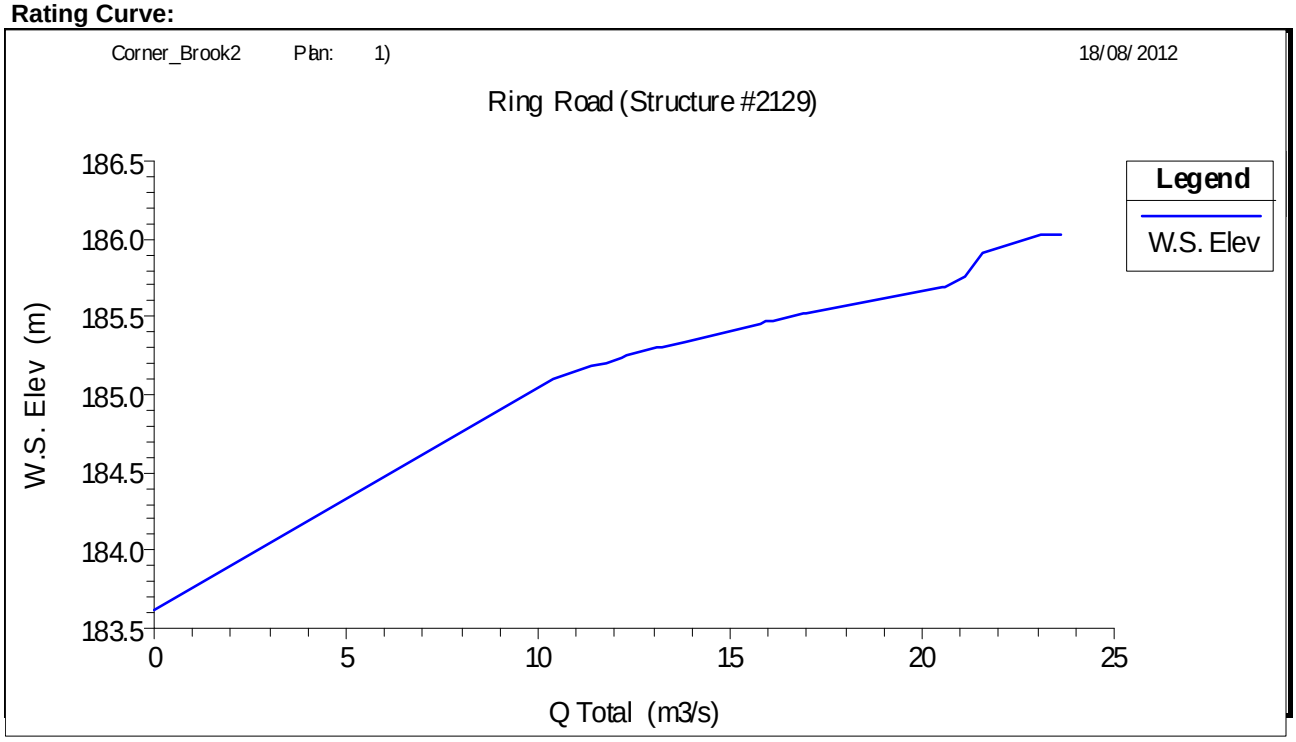
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2129**
Road Name: Ring Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	12.2 m	
Span:	2.4 m	
Deck Thickness:	7.66 m	(minimum)
Top of Deck:	193.64 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	183.55						
	d/s:	181.53						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	2.4						
	W	2.4						
Length:		45.5						
Slope:		0.044						

Rating Curve:



HEC-RAS Data

Tributary :	BellsB-M002
Structure # :	4,850
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2129**
Road Name: Ring Road

Description: View of downstream face of structure

Description: View looking downstream from atop Ring Road

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2129**
Road Name: Ring Road

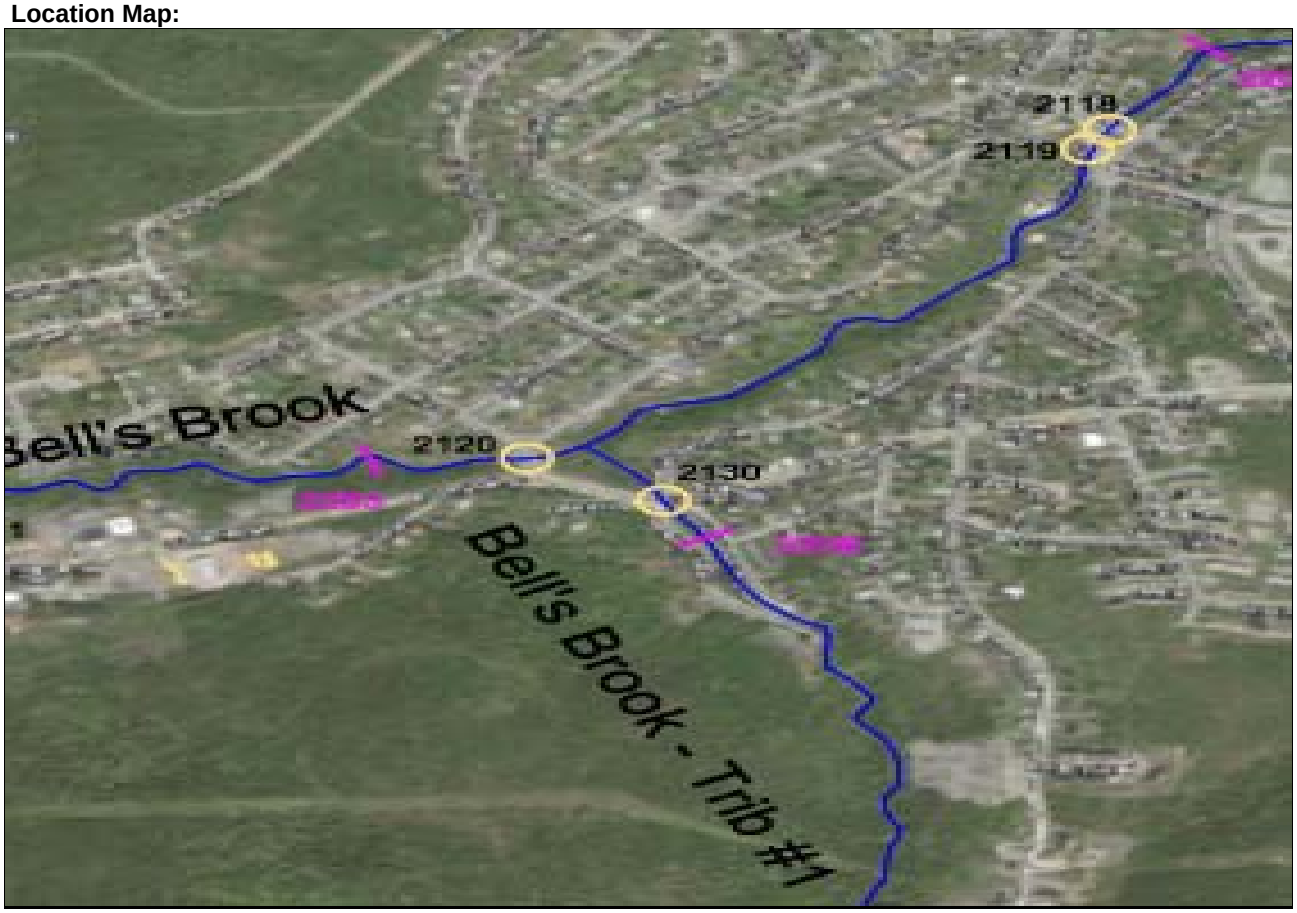
Description: View looking upstream from atop Ring Road

Description: Top of road view looking east

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #:	**2130**			
Watershed:	Bell's Brook	**Map Sheet(s):**	5	
Watercourse:	Bell's Brook - Tributary #1	**Location:**	**Easting**	344211.8
			Northing	5422804.6
Road Name:	O'Connell Drive / Mount Batten Road		**Control**	NAD83
Road Name Alias:	O'Connell Drive / Mount Batten Road		**Projection**	MTM Zone 3
Structure Type:	CSP culvert		**Deck:**	Asphalt
Observer(s):	A. Peddle & J. Loughlin		**Photos:**	0707-0713
Organization(s):	AMEC			
Info Source(s):	Survey/Mapping			
Date(s):	11/17/2011			

Location Map:



Notes:

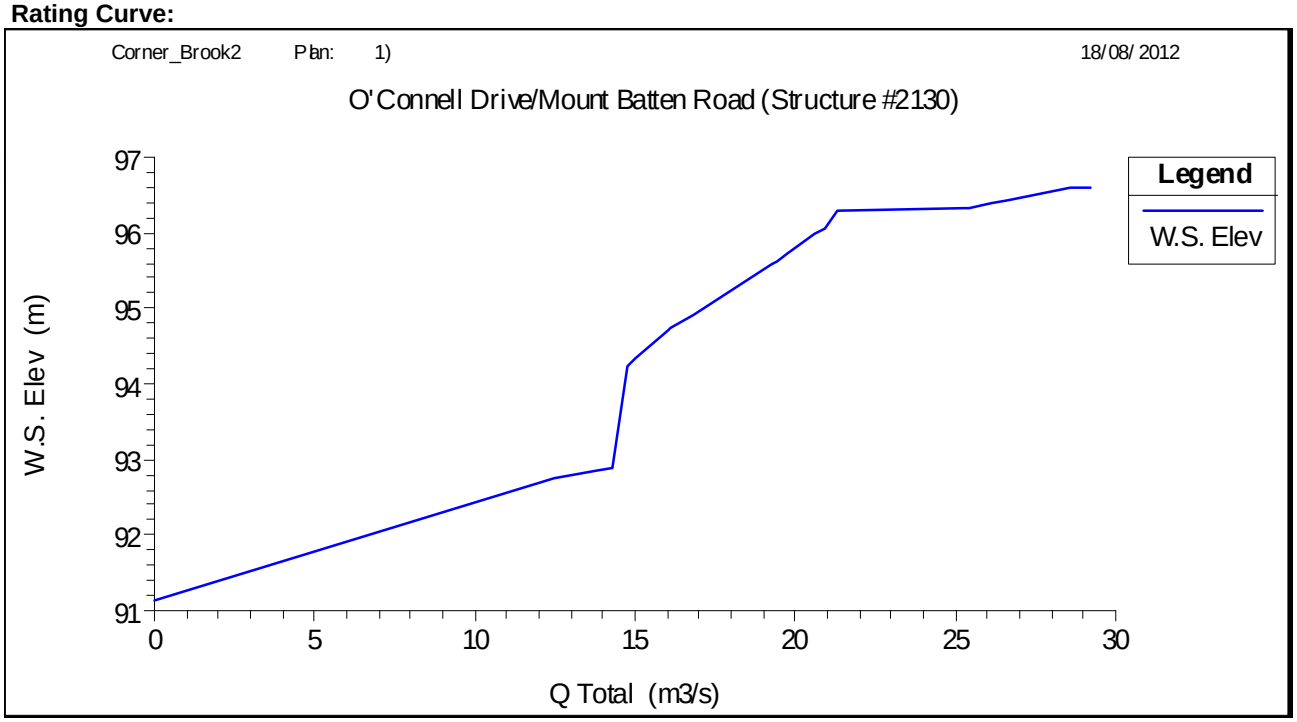
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2130**
Road Name: O'Connell Drive / Mount Batten Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	19.2 m	
Span:	2.4 m	
Deck Thickness:	3.53 m	(minimum)
Top of Deck:	97.05 m	(minimum)

Number of Structures:		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Invert Elev:	**u/s:**	91.13						
	d/s:	89.49						
Type:		Culvert						
Material:		CSP						
Opening:	**B**	2.4						
	W	2.4						
Length:		44.2						
Slope:		0.037						

Rating Curve:



HEC-RAS Data

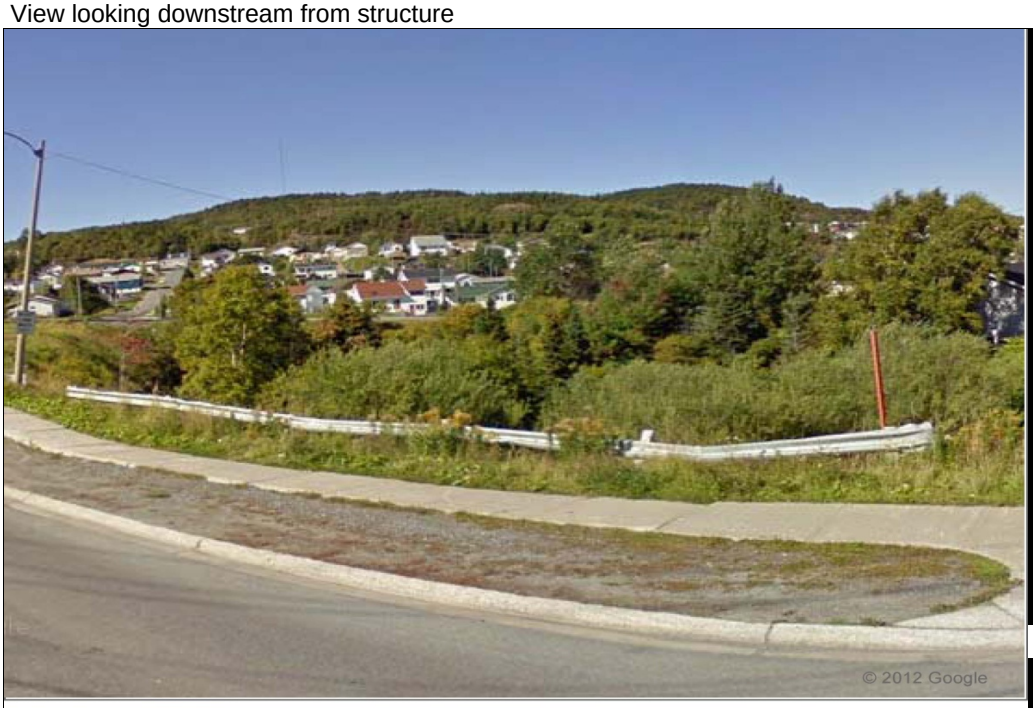
Tributary :	BellsB-TR001
Structure # :	100
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2130**
Road Name: O'Connell Drive / Mount Batten Road

Description: View of downstream face of structure

Description: View looking downstream from structure



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **2130**
Road Name: O'Connell Drive / Mount Batten Road

Description: View of upstream face of structure

Description: View looking upstream from structure

PETRIE'S BROOK WATERCOURSE CROSSINGS

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WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1101
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Barletts Avenue
Road Name Alias: Barletts Avenue

Structure Type: Single CSP culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

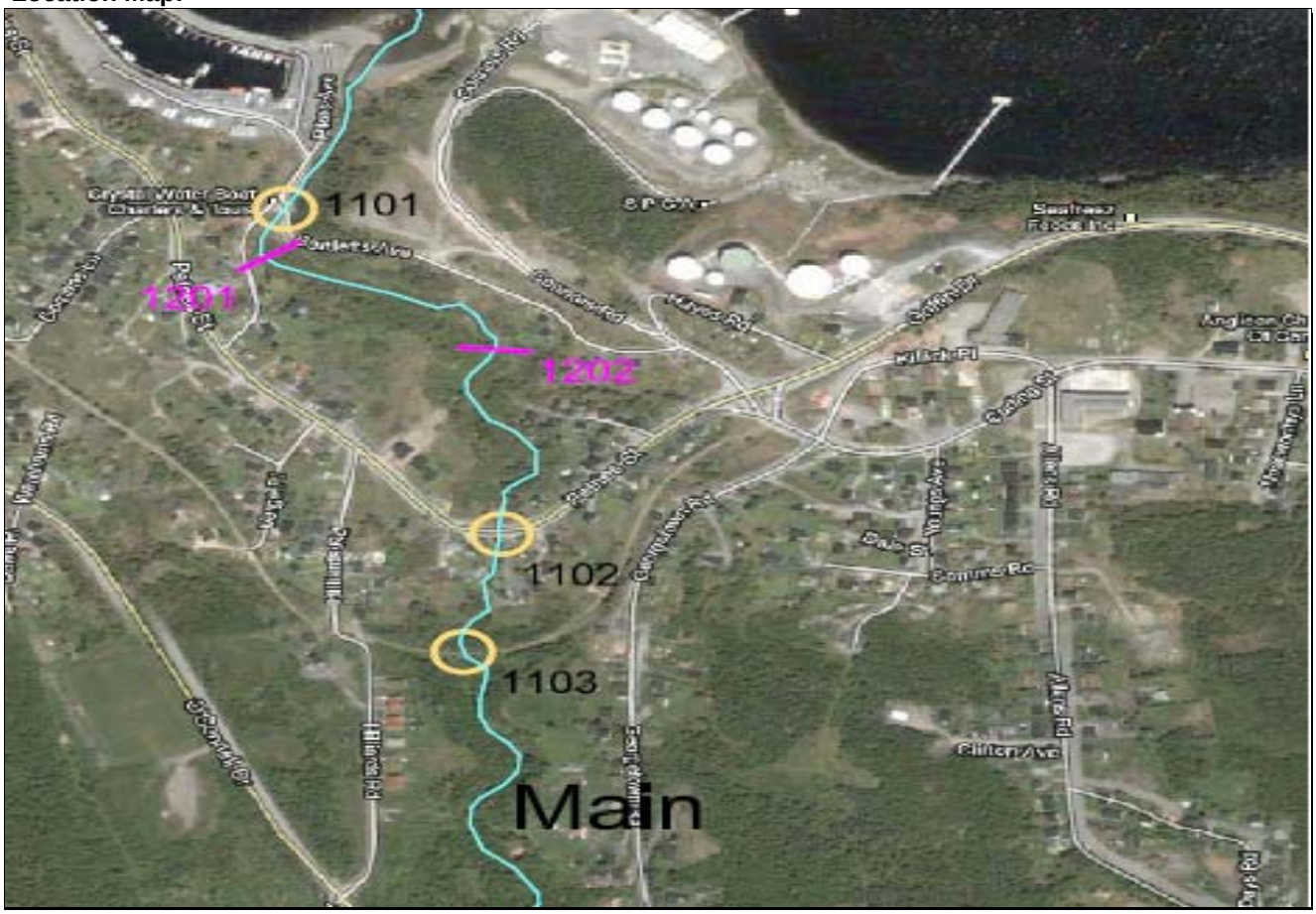
Map Sheet(s): 8
Location:

Easting	5425028.8
Northing	340094.9
Control	NAD83
Projection	MTM Zone 3

Deck: Gravel

Photos: 0556-0560

Location Map:



Notes:

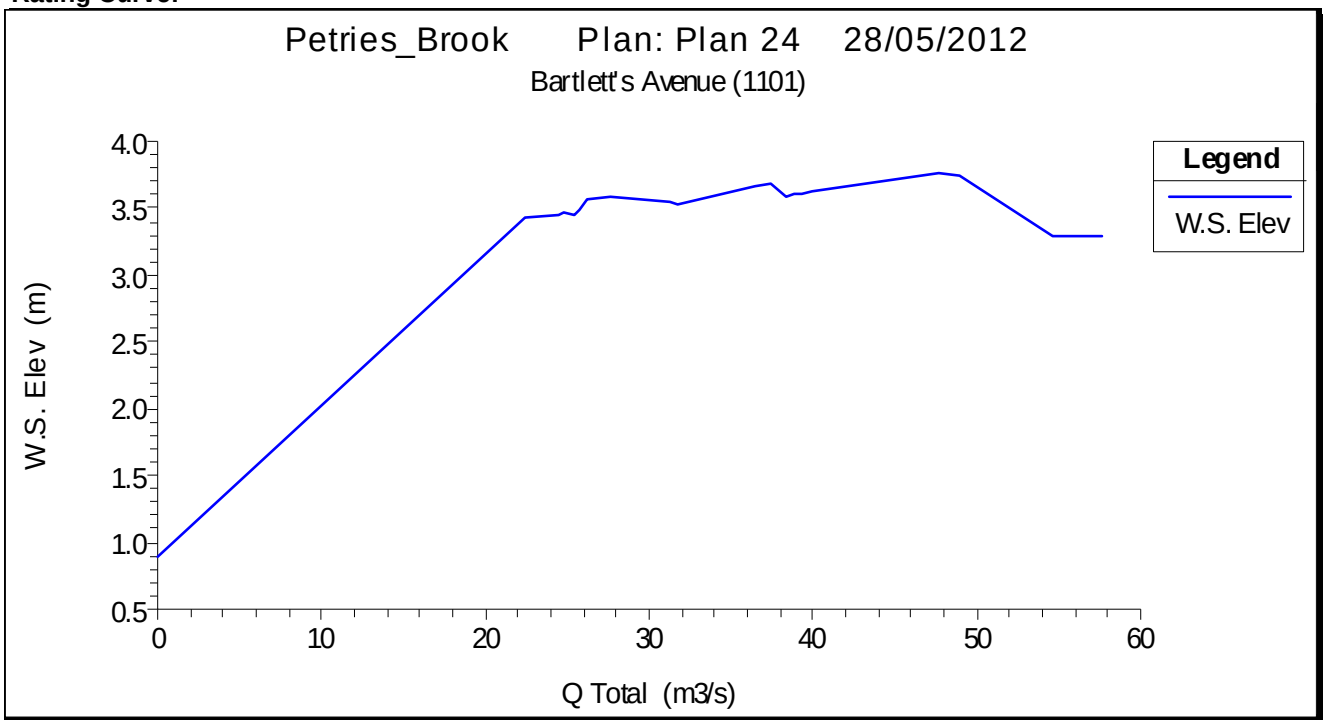
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1101**
Road Name: Barletts Avenue

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	7.6 m	
Span:	2.4 m	
Deck Thickness:	0.05 m	(minimum)
Top of Deck:	3.35 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	0.9						
	d/s:	0.48						
Type:		Culvert						
Material:		Steel						
Opening:	**B**							
	W	2.4						
Length:		15.4						
Slope:		0.027						

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	110
Modeled as :	Culvert
Data from :	Survey/Mapping

Structure #: 1101
Road Name: Barletts Avenue

Description: Downstream face of culvert, note culvert bottom is partially buried

Description: Looking downstream from culvert

Structure #: 1101

Road Name: Barletts Avenue

Description: Upstream face of culvert

Description: Looking upstream from culvert, note next culvert immediately upstream

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1101-1
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: N/A
Road Name Alias: N/A

Map Sheet(s): 8
Location: **Easting** 5425011.5
Northing 340084.9
Control NAD83
Projection MTM Zone 3

Structure Type: Twin CSP culvert

Deck: Gravel

Observer(s): A. Peddle & J. Loughlin

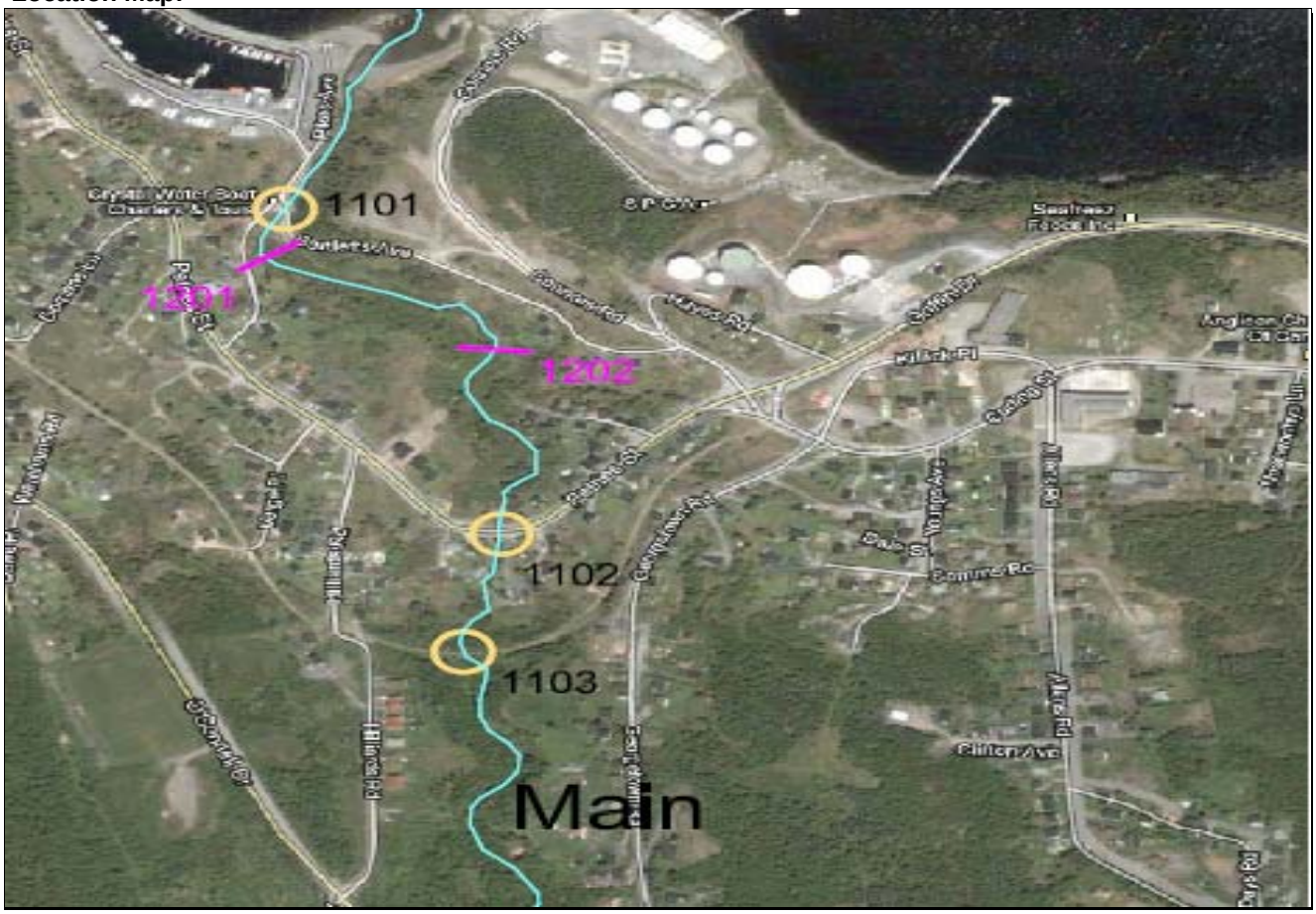
Photos: 0561-0564

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Location Map:



Notes:

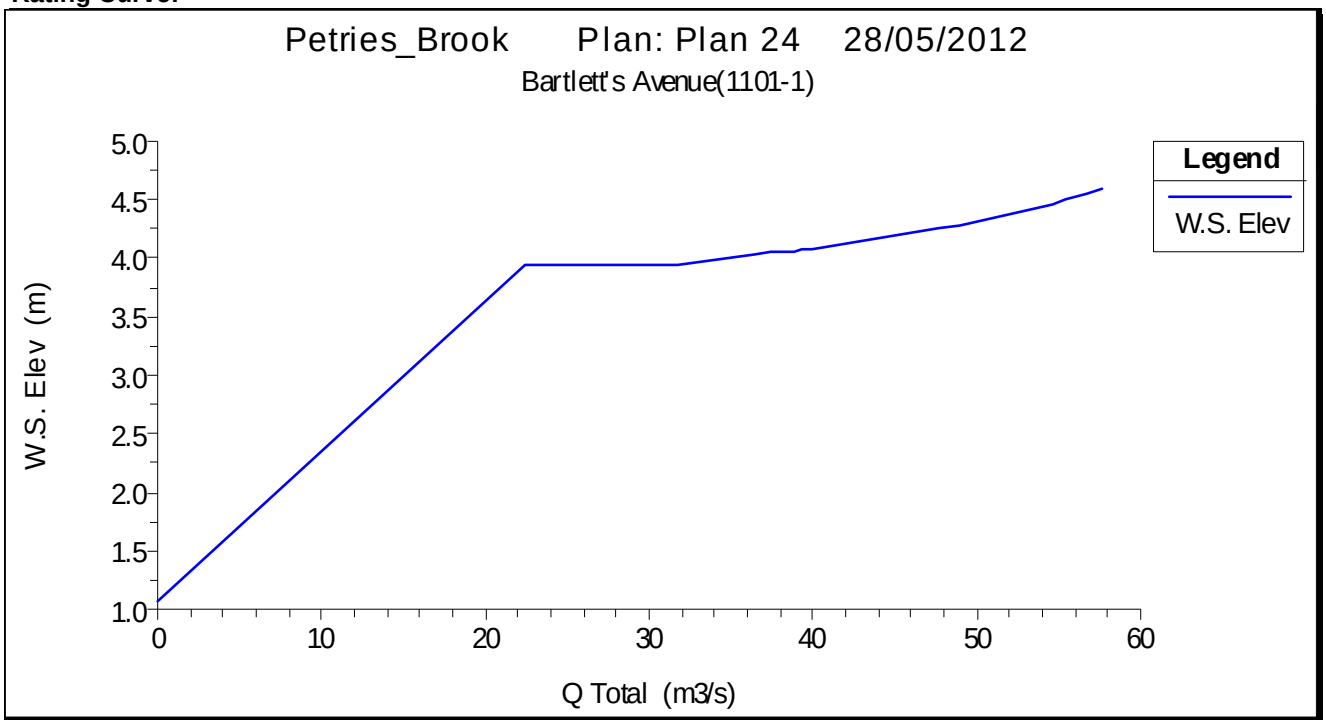
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1101-1
Road Name: N/A

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	9 m	
Span:	5.81 m	
Deck Thickness:	0.03 m	(minimum)
Top of Deck:	4.07 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	1.34	1.07					
	d/s:	1.24	0.94					
Type:		Culvert	Culvert					
Material:		Steel	Steel					
Opening:	**B**							
	W	2.7	2.7					
Length:		11.6	11.6					
Slope:		0.009	0.130					

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	130
Modeled as :	Culvert
Data from :	Survey/Mapping

Structure #: 1101-1
Road Name: N/A

Description: Downstream face of culvert

Description: Looking downstream from culvert

Structure #: 1101-1
Road Name: N/A

Description: Upstream face of culvert

Description: Looking upstream from culvert

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1102
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Petries Street
Road Name Alias: Petries Street

Structure Type: Single span bridge

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

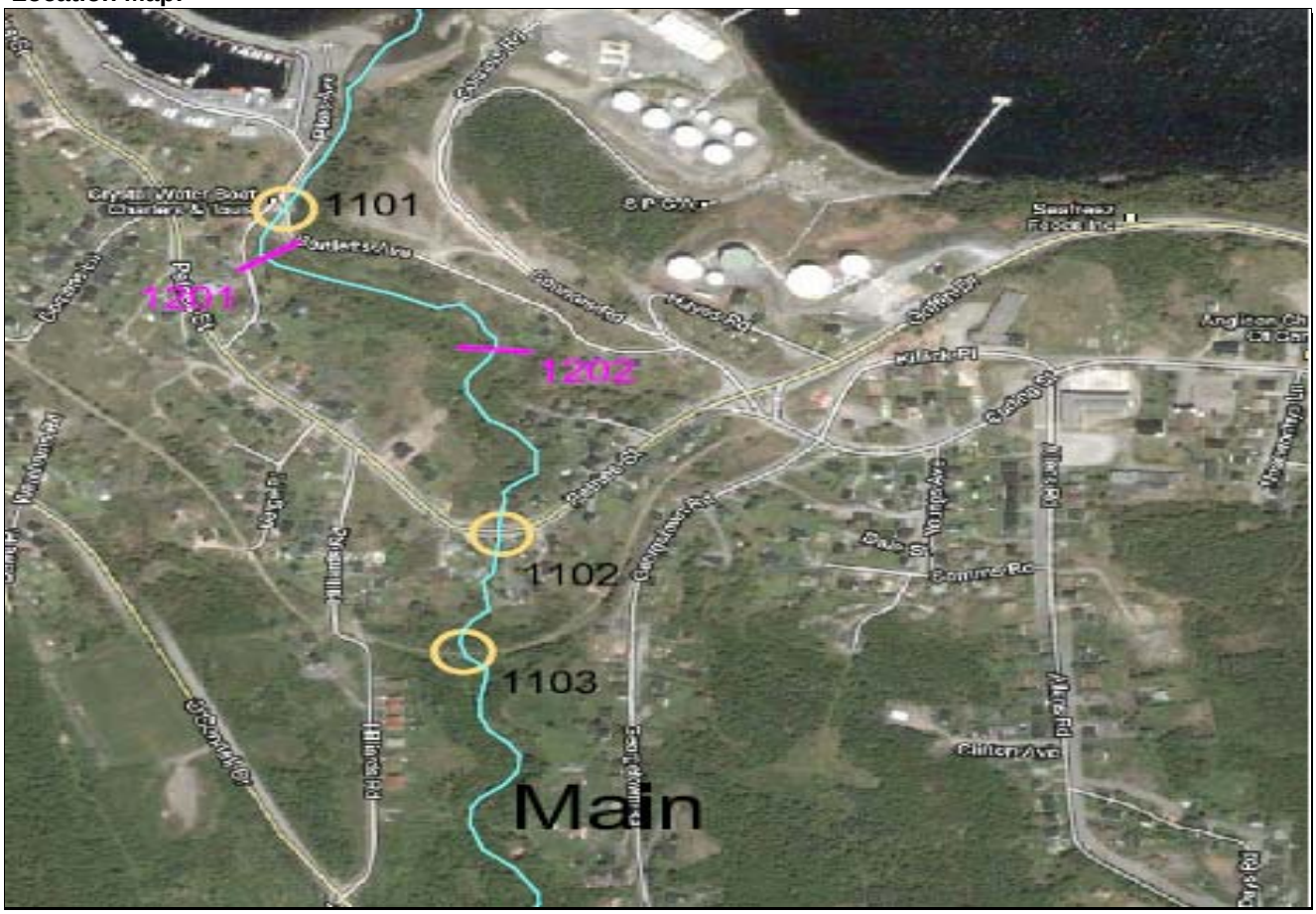
Date(s): 11/17/2011

Map Sheet(s): 8
Location:
Easting 5424665.6
Northing 340264.4
Control NAD83
Projection MTM Zone 3

Deck: Asphalt

Photos: 0565-0570

Location Map:



Notes:

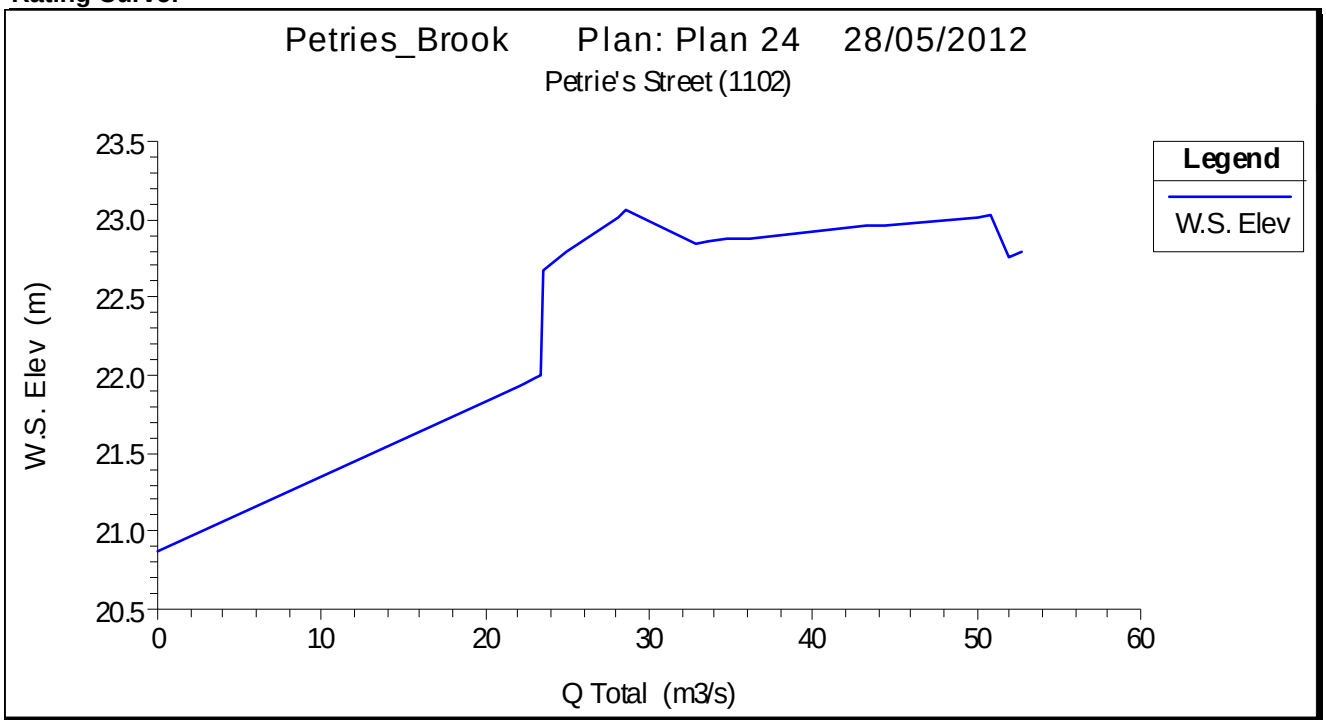
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1102**
Road Name: Petries Street

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	10.6 m	
Span:	6.05 m	
Deck Thickness:	0.64 m	(minimum)
Top of Deck:	22.14 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	20.84						
	d/s:	19.11						
Type:		Bridge						
Material:		Concrete						
Opening:	**B**	0.88						
	W	6.05						
Length:		24.01						
Slope:		0.072						

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	625
Modeled as :	Bridge
Data from :	Survey/Mapping

Structure #: 1102
Road Name: Petries Street

Description: Downstream face of bridge

Description: Looking downstream from bridge

Structure #: 1102

Road Name: Petries Street

Description: Upstream face of bridge

Description: Looking upstream from bridge

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1103
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Trail
Road Name Alias: Trail

Map Sheet(s): 8
Location: **Easting** 5424523.8
Northing 340229.3
Control NAD83
Projection MTM Zone 3

Structure Type: No structure at this location anymore
Deck: N/A

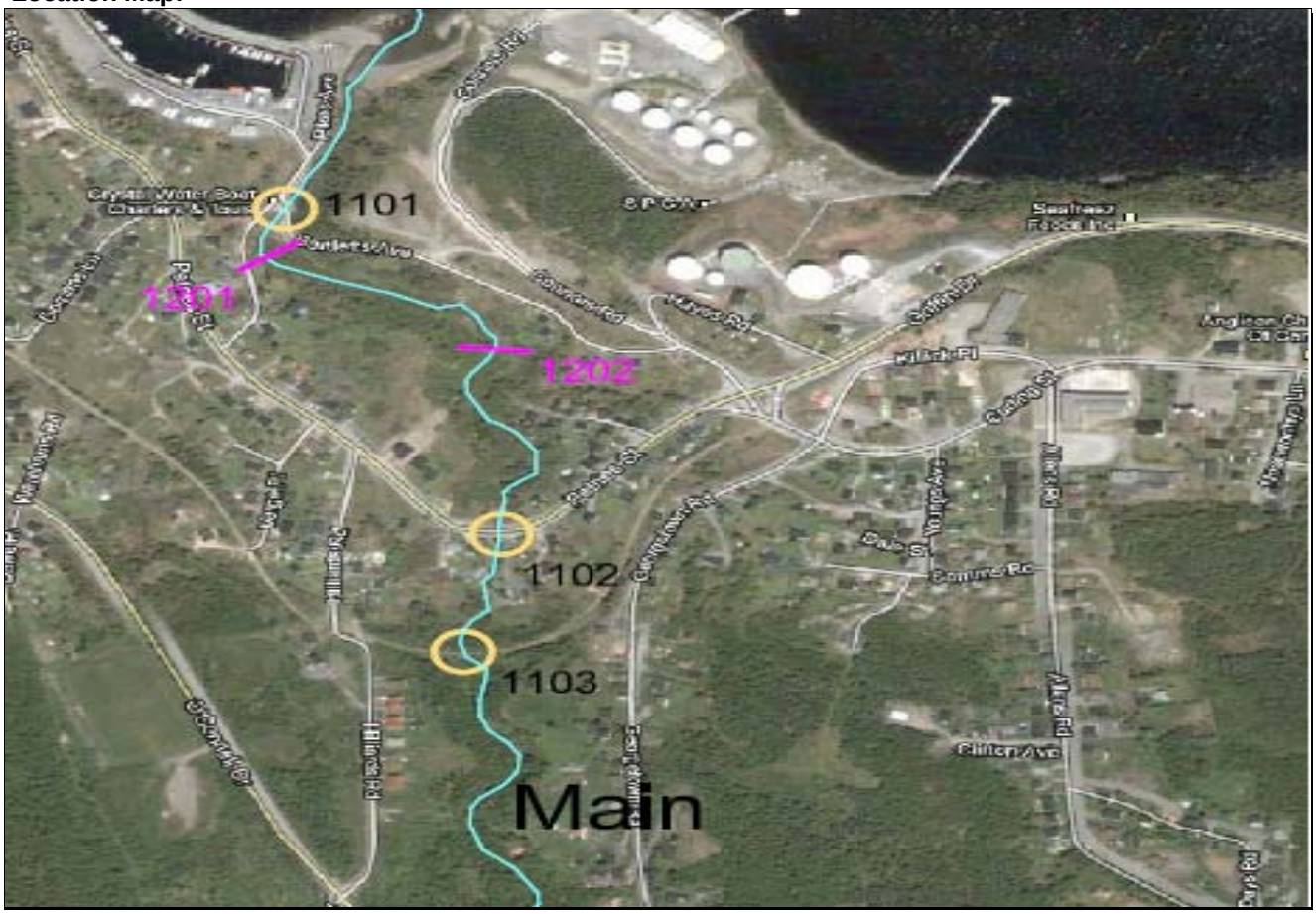
Observer(s): A. Peddle & J. Loughlin
Photos: 0571-0576

Organization(s): AMEC

Info Source(s):

Date(s): 11/17/2011

Location Map:



Notes: old rail line removed, at section 811.85

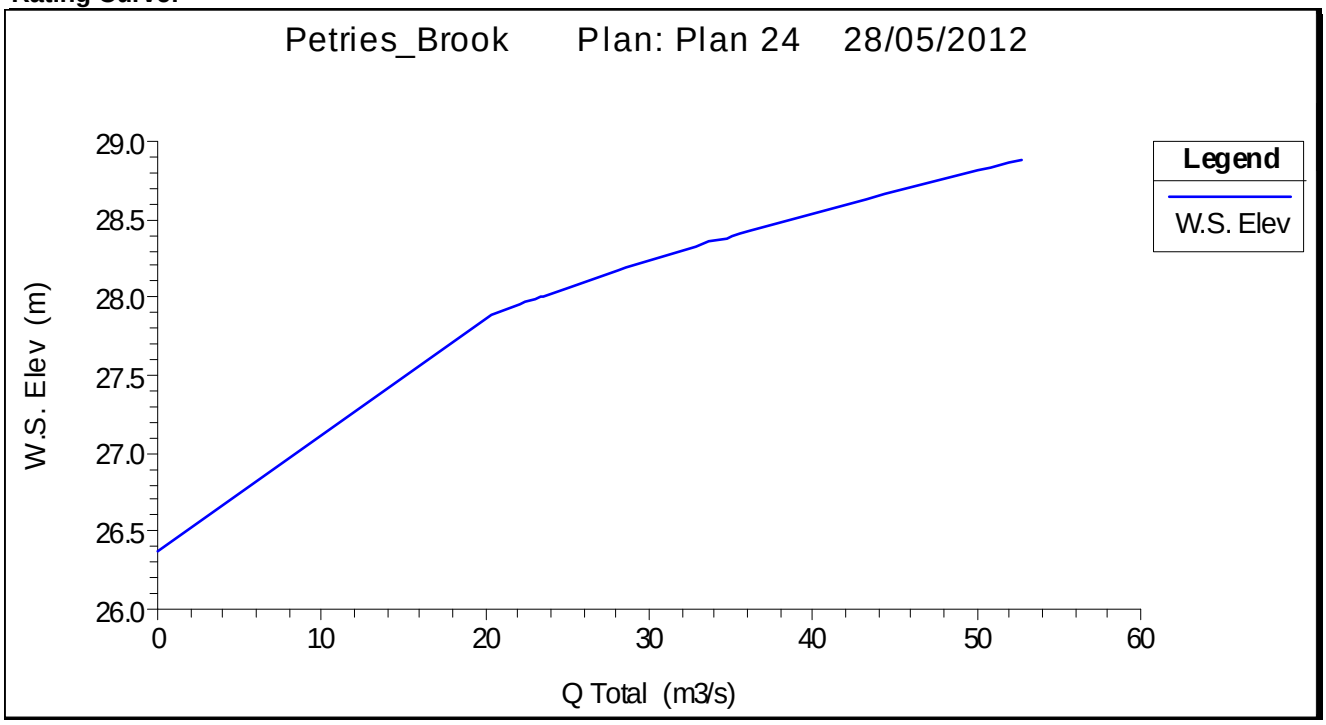
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1103**
Road Name: Trail

# of Bridge Piers or Arches:		
Skewed to Road?		
Road Width:	m	
Span:	m	
Deck Thickness:	m	(minimum)
Top of Deck:	m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1103
Road Name: Trail

Description: Overview of crossing location

Description: Looking downstream from crossing location

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1103**
Road Name: Trail

Description: Looking upstream from crossing location

Description:

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1104
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: O'Conner Drive
Road Name Alias: O'Conner Drive

Structure Type: Single CSP culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Map Sheet(s): 9
Location:
Easting 5424090.3
Northing 340262.3
Control NAD83
Projection MTM Zone 3

Deck: Asphalt

Photos: 0577-0581

Location Map:

Notes:

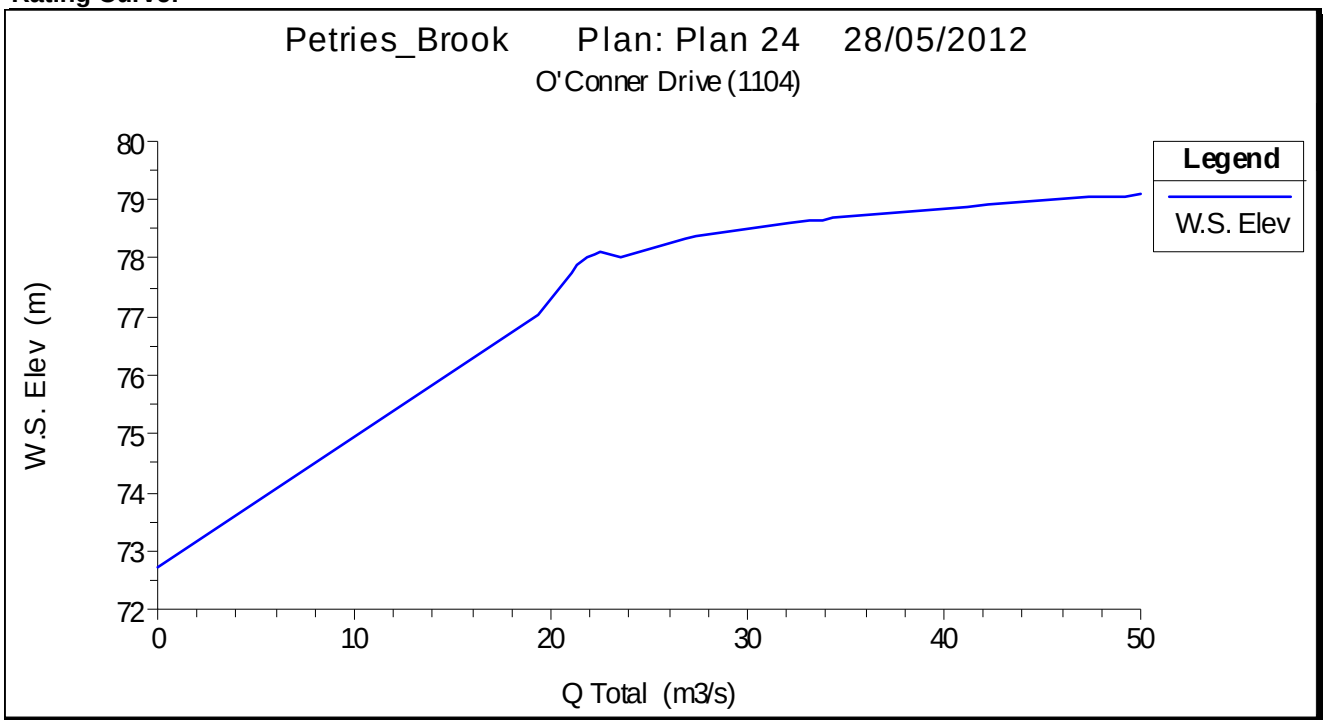
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1104**
Road Name: O'Conner Drive

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	7.7 m	
Span:	2.4 m	
Deck Thickness:	7.91 m	(minimum)
Top of Deck:	83 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	72.7						
	d/s:	70.47						
Type:		Culvert						
Material:		Steel						
Opening:	**B**							
	W	2.4						
Length:		43						
Slope:		0.052						

Rating Curve:



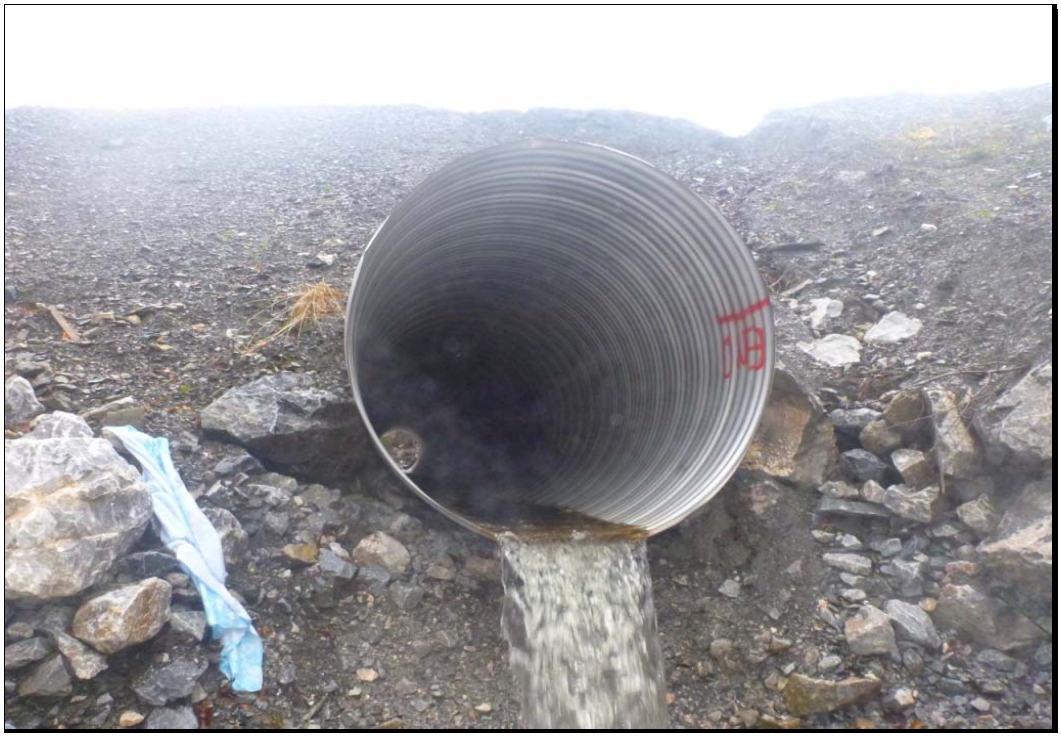
HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	1295
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1104
Road Name: O'Conner Drive

Description: Downstream face of culvert



Description: Looking downstream from crossing location

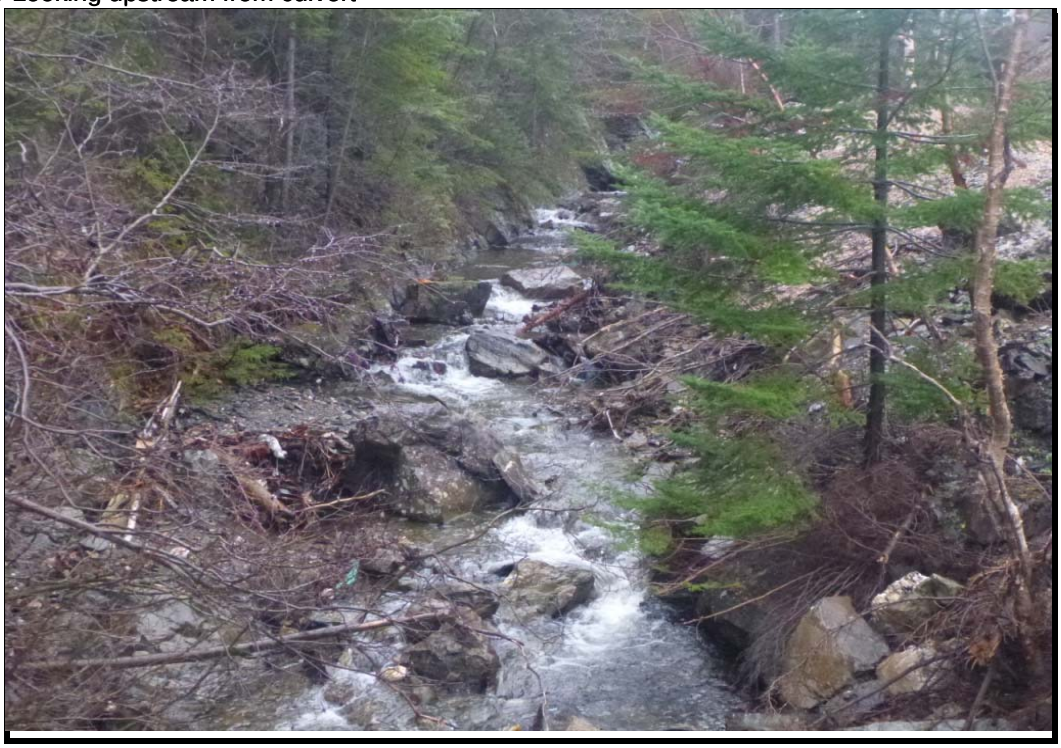
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1104

Road Name: O'Conner Drive

Description: Upstream face of culvert

Description: Looking upstream from culvert



WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1105
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Candow Drive
Road Name Alias: Candow Drive

Structure Type: Single CSP pipe-arch culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Map Sheet(s): 9

Location:

Easting	5423851.0
Northing	340290.8
Control	NAD83
Projection	MTM Zone 3

Deck: Gravel

Photos: 0582-0587

Location Map:

Notes:

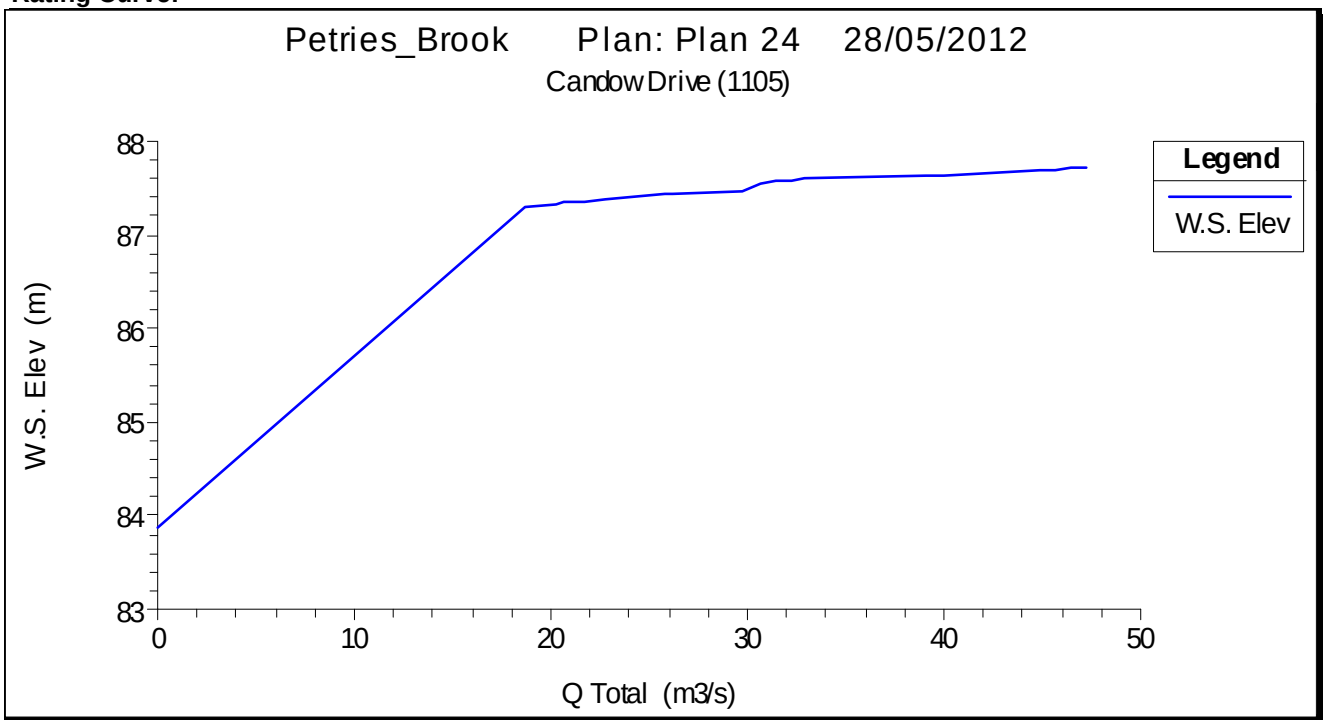
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1105**
Road Name: Candow Drive

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	6.2 m	
Span:	1.8 m	
Deck Thickness:	2.17 m	(minimum)
Top of Deck:	87 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	83.88						
	d/s:	83.19						
Type:		Culvert						
Material:		Steel						
Opening:	**B**	1.1						
	W	1.8						
Length:		7.5						
Slope:		0.092						

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	1560
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1105
Road Name: Candow Drive

Description: Downstream face of culvert

Description: Looking downstream from culvert

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1105

Road Name: Candow Drive

Description: Upstream face of culvert

Description: Looking upstream from culvert

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1106
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Georgetown Road
Road Name Alias: Georgetown Road

Structure Type: Single CSP pipe-arch culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

Date(s): 11/17/2011

Map Sheet(s): 9,10
Location:
Easting 5423516.1
Northing 340281.7
Control NAD83
Projection MTM Zone 3

Deck: Gravel

Photos: 0596-0600

Location Map:

Notes:

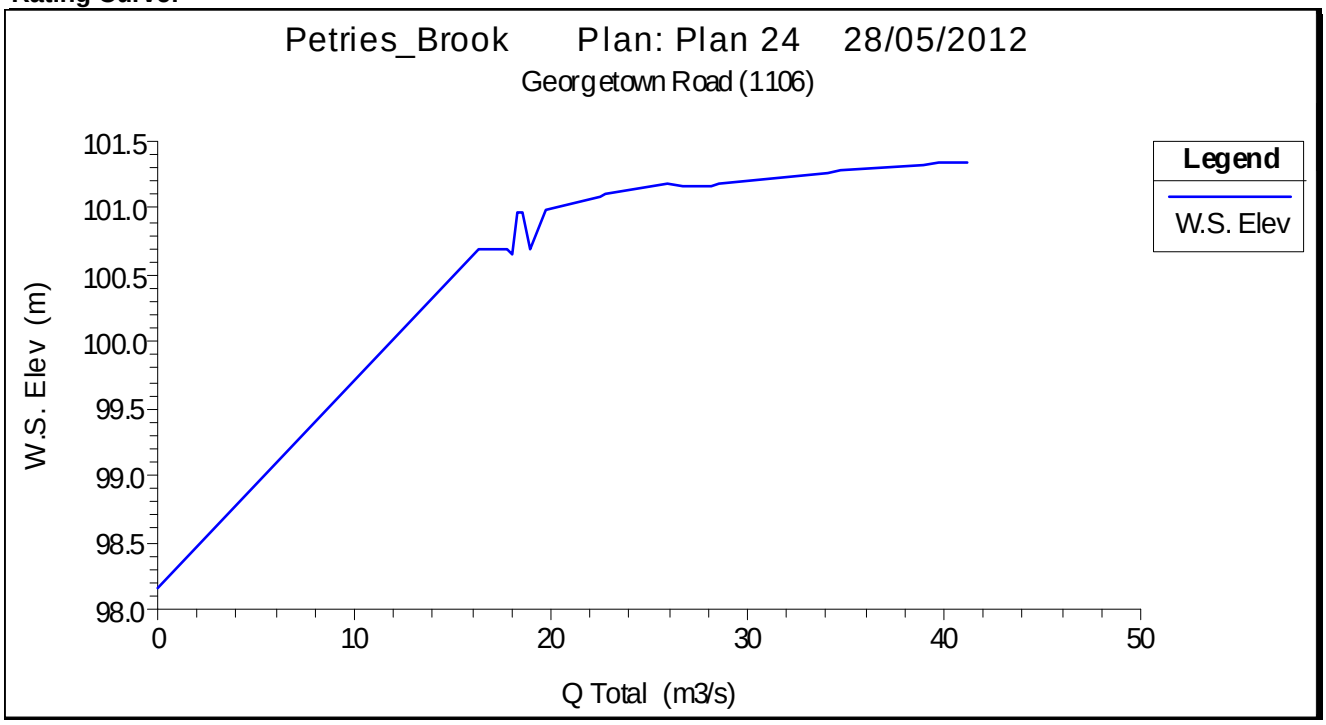
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1106**
Road Name: Georgetown Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	8.3 m	
Span:	1.75 m	
Deck Thickness:	0.73 m	(minimum)
Top of Deck:	100.64 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	98.16						
	d/s:	97.58						
Type:		Culvert						
Material:		Steel						
Opening:	**B**	1.75						
	W	2.5						
Length:		9.4						
Slope:		0.062						

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M001
Structure # :	1975
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1106
Road Name: Georgetown Road

Description: Downstream face of culvert

Description: Looking downstream from culvert

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1106

Road Name: Georgetown Road

Description: Upstream face of culvert

Description: Looking upstream from culvert

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1107
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Access Road
Road Name Alias: Access Road

Structure Type: Private ATV timber bridge

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s):

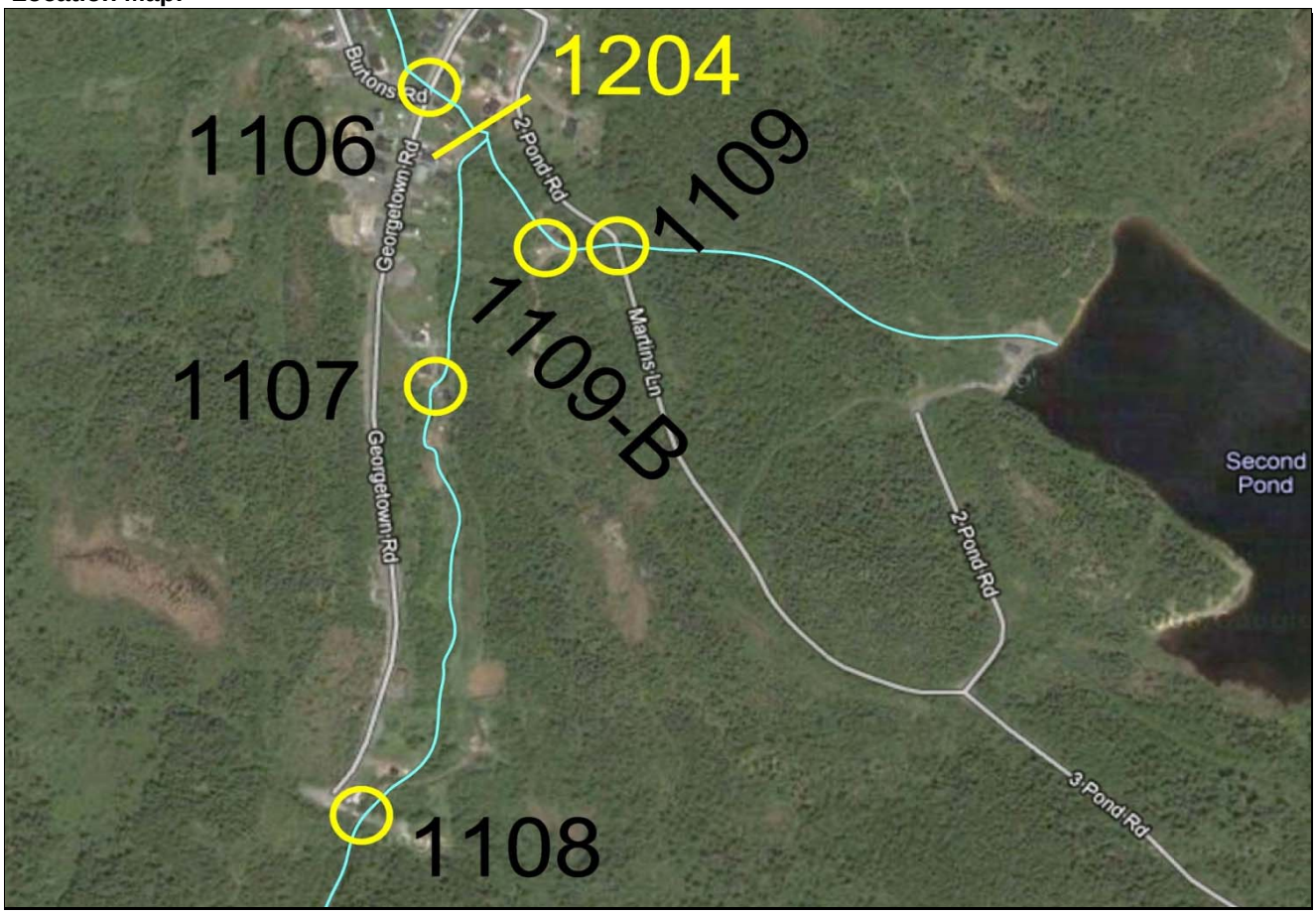
Date(s): 11/17/2011

Map Sheet(s): 10
Location: **Easting** 5423265.2
Northing 340285.9
Control NAD83
Projection MTM Zone 3

Deck: Timber

Photos: 0605-0608

Location Map:



Notes: Not modelled, near section 2243.62

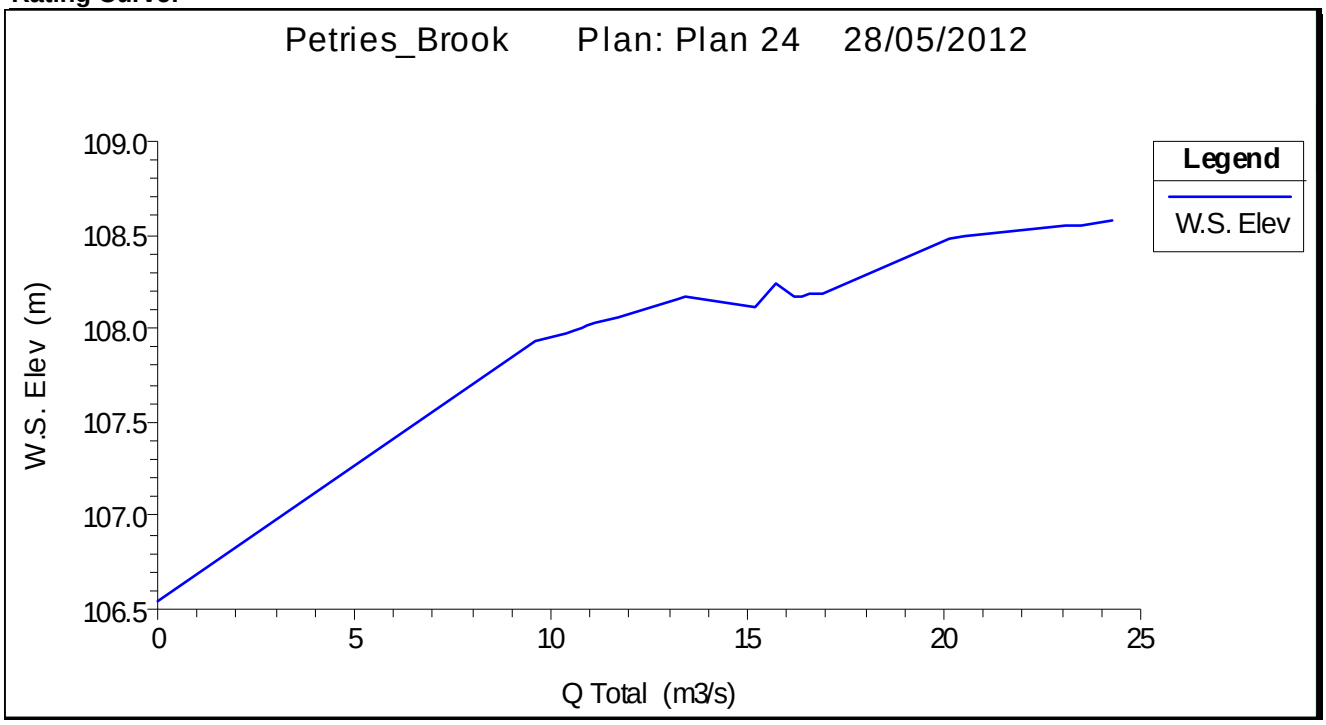
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1107**
Road Name: Access Road

# of Bridge Piers or Arches:		
Skewed to Road?		
Road Width:	m	
Span:	m	
Deck Thickness:	m	(minimum)
Top of Deck:	m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M002
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1107
Road Name: Access Road

Description: Downstream face of bridge

Description: Looking downstream from bridge

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1107

Road Name: Access Road

Description: Upstream face of bridge

Description: Looking upstream from bridge

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1108
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Access Road
Road Name Alias: Access Road

Structure Type: Timber bridge structure

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

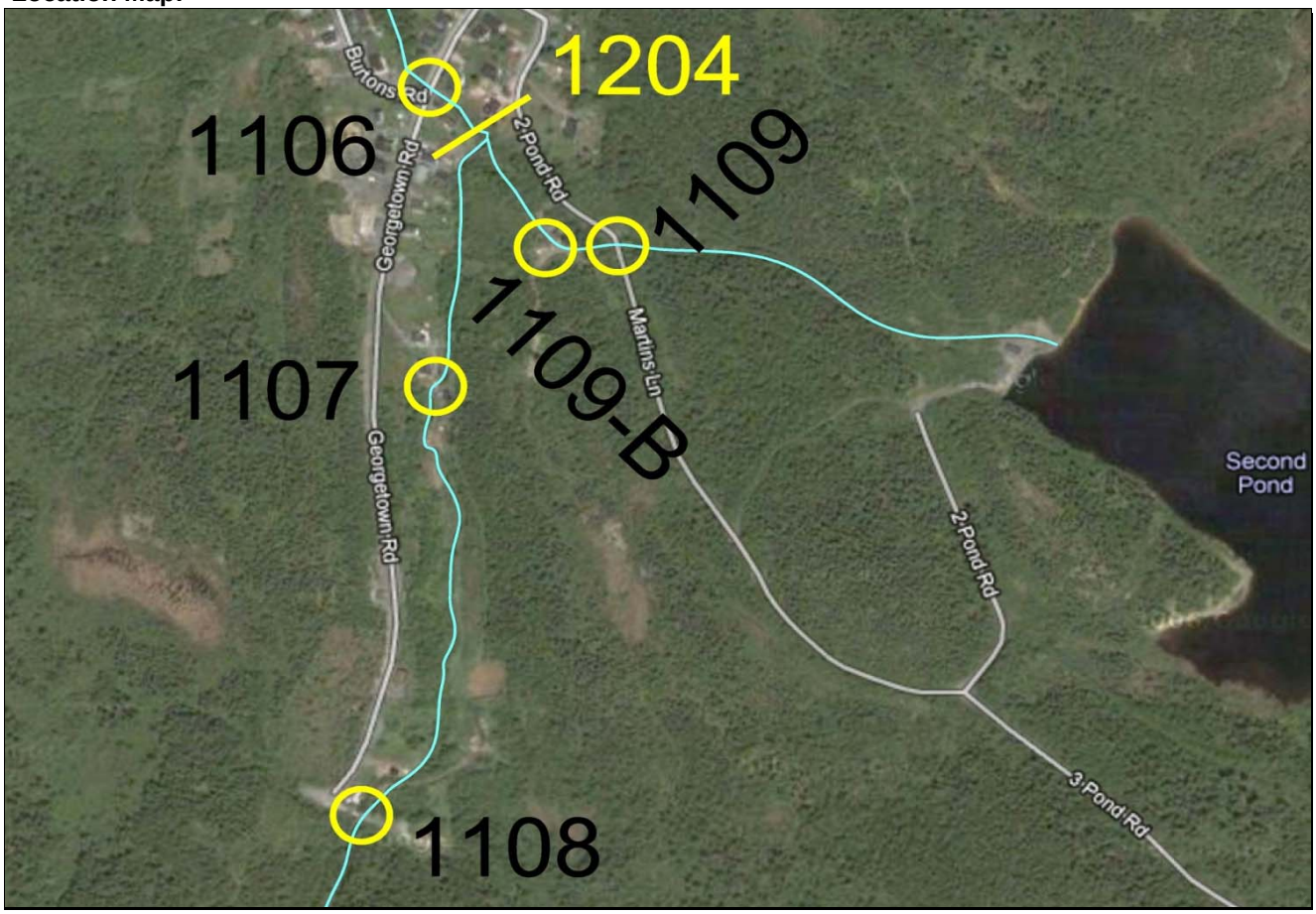
Date(s): 11/17/2011

Map Sheet(s): 10
Location:
Easting 5422899.5
Northing 340221.5
Control NAD83
Projection MTM Zone 3

Deck: Timber

Photos: 0601-0604

Location Map:



Notes:

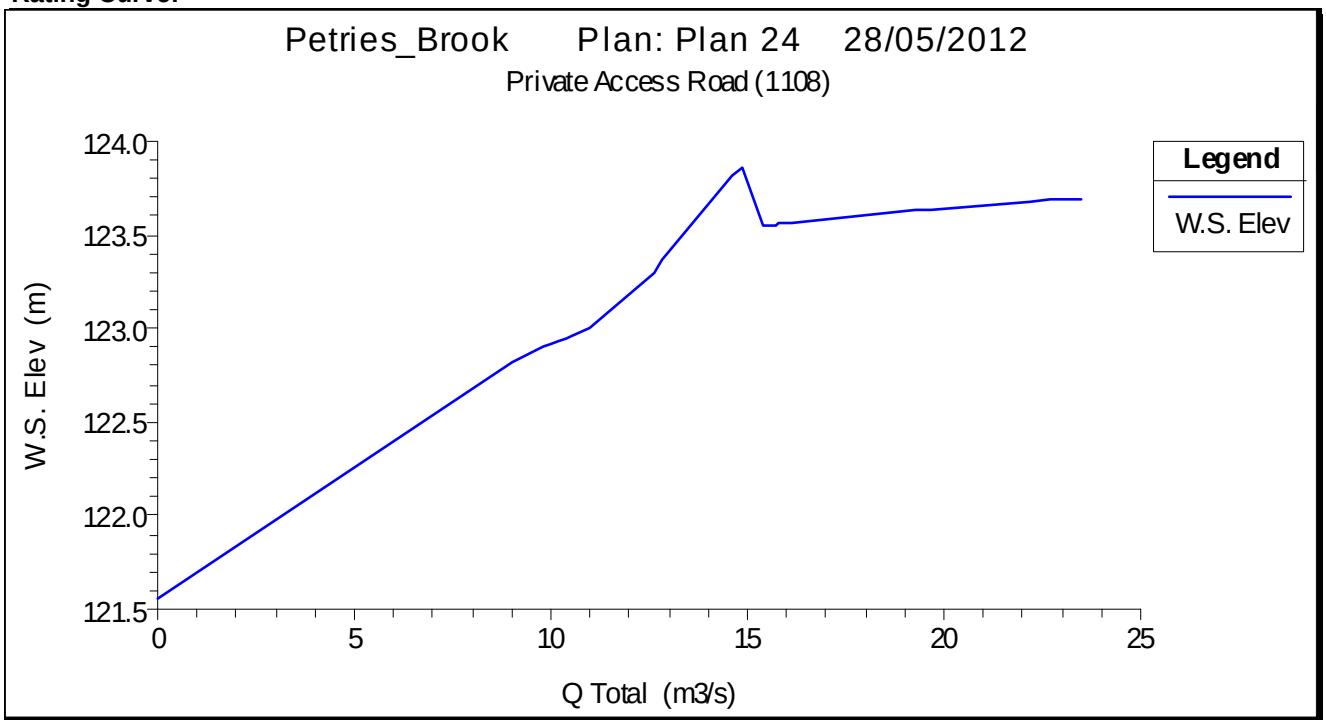
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1108**
Road Name: Access Road

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	2.8 m	
Span:	2.4 m	
Deck Thickness:	0.2 m	(minimum)
Top of Deck:	122.97 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	121.55						
	d/s:	121.23						
Type:		Bridge						
Material:		Timber						
Opening:	**B**	1.49						
	W	2.4						
Length:		5.5						
Slope:		0.058						

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-M002
Structure # :	2710
Modeled as :	Bridge
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1108
Road Name: Access Road

Description: Downstream face of bridge

Description: Looking downstream from bridge

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1108

Road Name: Access Road

Description: Upstream face of bridge

Description: Looking upstream from bridge

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: Two Ponds Road/Martins Lane
Road Name Alias: Two Ponds Road/Martins Lane

Structure Type: No structure at this location

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s):

Date(s): 11/17/2011

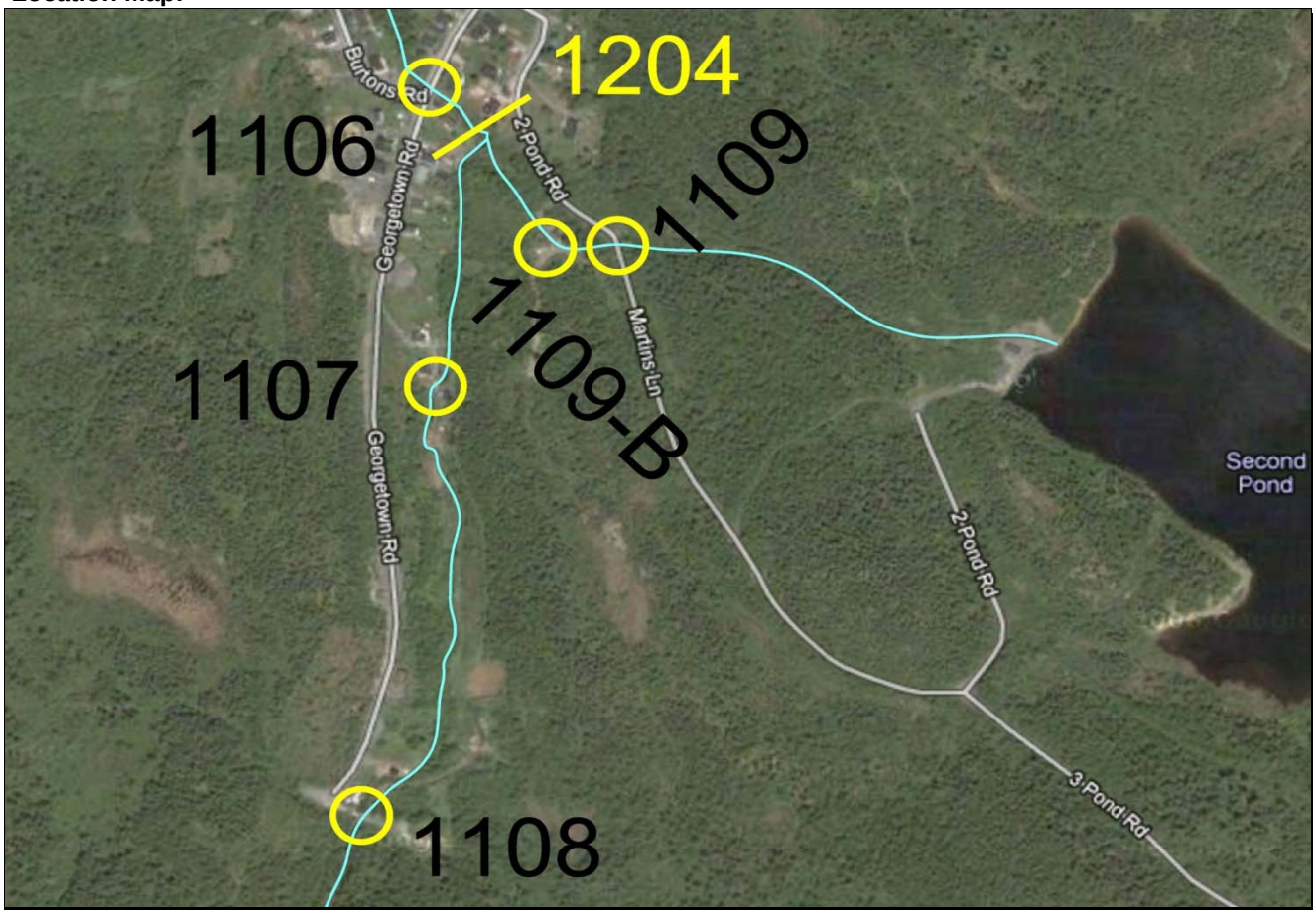
Map Sheet(s): 9,10
Location:

Easting	5423379.9
Northing	340434.3
Control	NAD83
Projection	MTM Zone 3

Deck: Gravel

Photos: 0592-0595

Location Map:



Notes: Watercourse crosses road, near section 147.34

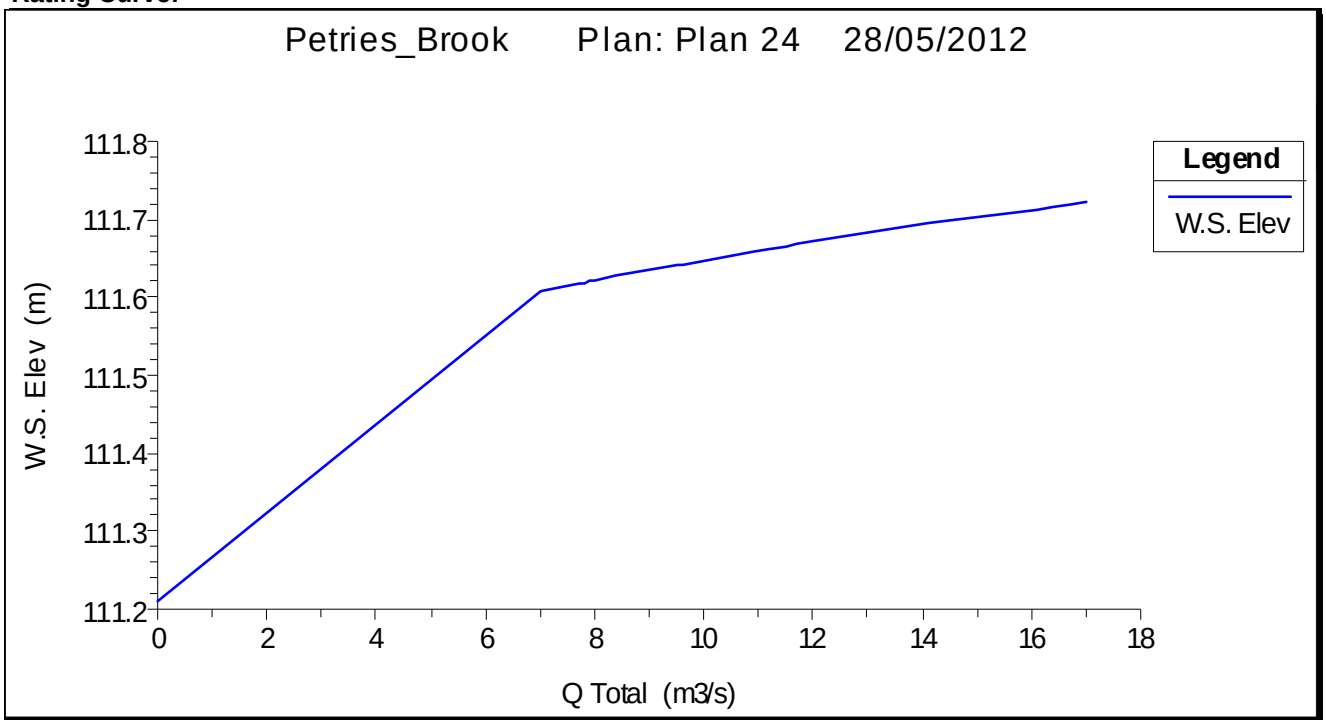
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: **1109**
Road Name: Two Ponds Road/Martins Lane

# of Bridge Piers or Arches:		
Skewed to Road?		
Road Width:	m	
Span:	m	
Deck Thickness:	m	(minimum)
Top of Deck:	m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**							
	d/s:							
Type:								
Material:								
Opening:	**B**							
	W							
Length:								
Slope:								

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-TR001
Structure # :	
Modeled as :	
Data from :	

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109
Road Name: Two Ponds Road/Martins Lane

Description: View towards downstream side of crossing

Description: Looking downstream from roadway

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109

Road Name: Two Ponds Road/Martins Lane

Description: View towards upstream side of crossing

Description: Looking upstream from roadway

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109-B
Watershed: Petrie's Brook
Watercourse: Petrie's Brook

Road Name: ATV Trail
Road Name Alias: ATV Trail

Structure Type: Single CSP culvert

Observer(s): A. Peddle & J. Loughlin

Organization(s): AMEC

Info Source(s): Survey/Mapping

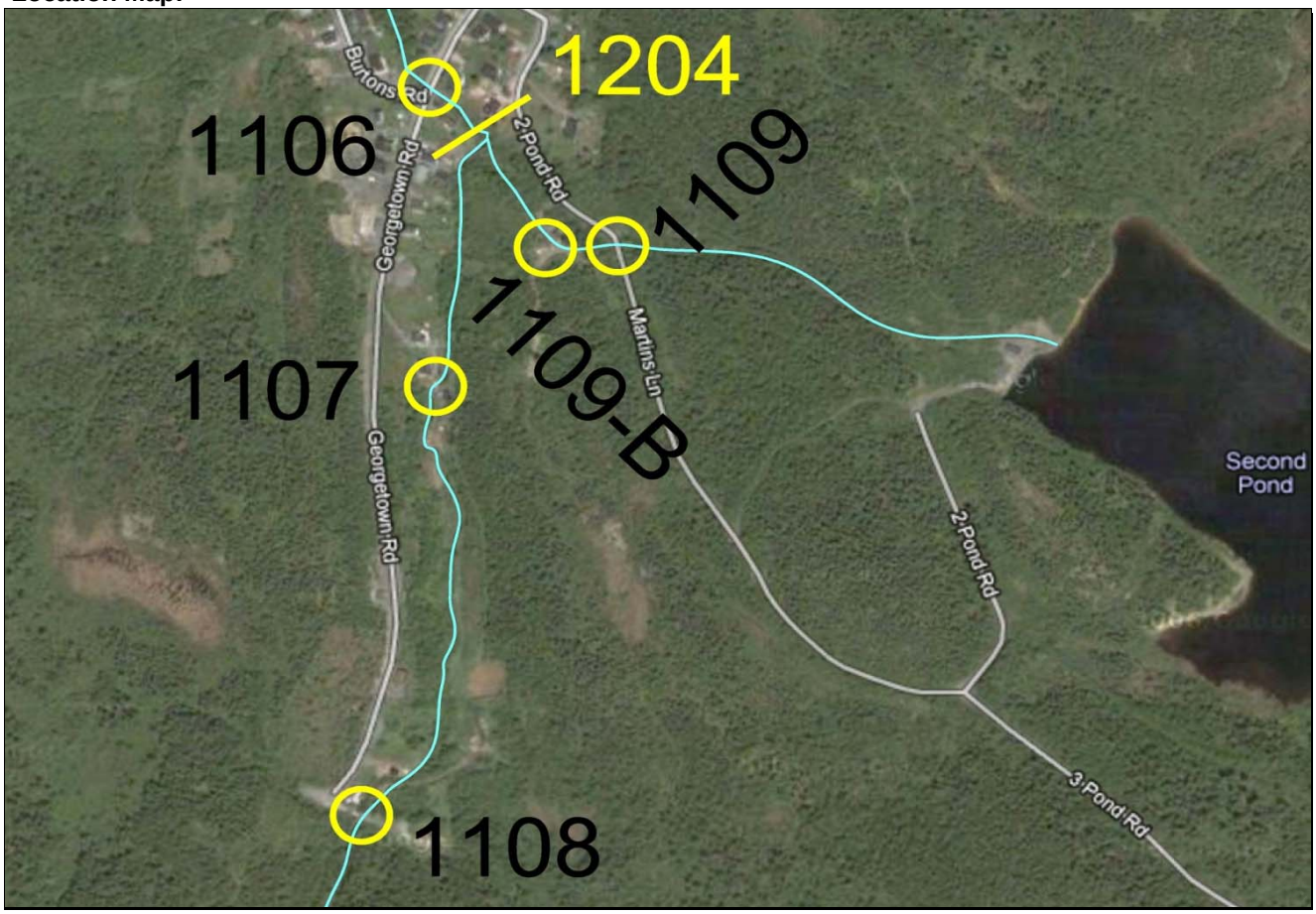
Date(s): 11/17/2011

Map Sheet(s): 9,10
Location:
Easting 5423416.4
Northing 340375.1
Control NAD83
Projection MTM Zone 3

Deck: Gravel

Photos: 0588-0591

Location Map:



Notes:

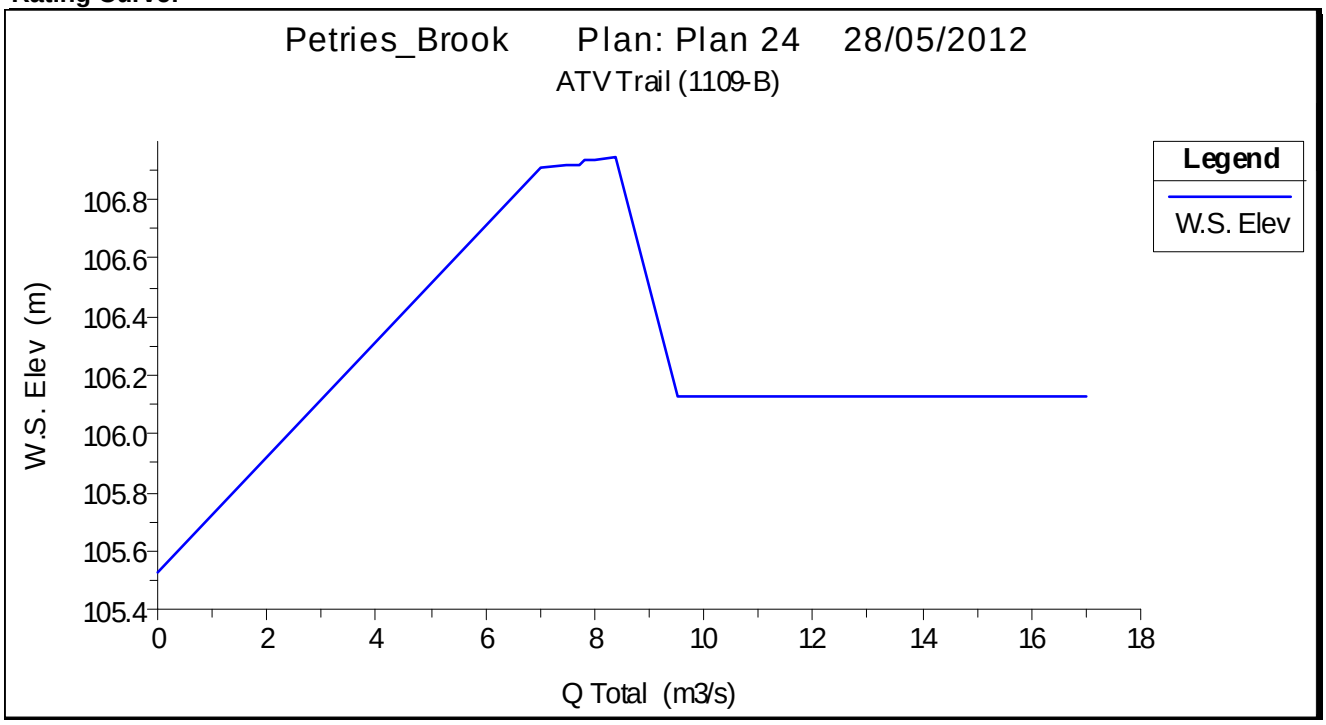
WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109-B
Road Name: ATV Trail

# of Bridge Piers or Arches:	0	
Skewed to Road?	N	
Road Width:	3.1 m	
Span:	0.6 m	
Deck Thickness:	0.21 m	(minimum)
Top of Deck:	106.34 m	(minimum)

Number of Structures:		1	2	3	4	5	6	7
Invert Elev:	**u/s:**	105.53						
	d/s:	105.28						
Type:		Culvert						
Material:		Steel						
Opening:	**B**							
	W	0.6						
Length:		3.7						
Slope:		0.068						

Rating Curve:



HEC-RAS Data

Tributary :	PetriesB-TR001
Structure # :	80
Modeled as :	Culvert
Data from :	Survey/Mapping

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109-B
Road Name: ATV Trail

Description: Downstream face of culvert

Description: Looking downstream from culvert

WATERCOURSE STRUCTURE INVENTORY FORM

Structure #: 1109-B
Road Name: ATV Trail

Description: Upstream face of culvert

Description: Looking upstream from culvert

APPENDIX C

LAND CLASSIFICATION REPORT

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GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR

FLOOD RISK MAPPING PROJECT
CORNER BROOK AND GOULDS AND PETTY HARBOUR

Land Cover Classification

Submitted to:

Water Resources Management Division
Department of Environment and Conservation
Government of Newfoundland and Labrador

Submitted by:
AMEC Environment & Infrastructure,
a Division of AMEC Americas Limited
2000 S. Colorado Blvd, Ste 2-1000,
Denver, CO 80222

March 2012
TA1112735

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Figure 3 Data inputs and land cover classification for Petty Harbour watershed.
Figure 4 Pan-sharpened natural color, multi-spectral, and classified land cover example.

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1.0 INTRODUCTION

To support modeling of hydrologic responses from development and to assess flood vulnerability, a land cover classification was conducted in 3 community flood watersheds on the island of Newfoundland and Labrador, Canada. Six (6) land cover classes were classified from 10-meter resolution, 4-band multispectral SPOT imagery captured between 2009 and 2011. The classes included forest, development, water, bare soil, non-forest vegetation, and wetland/marsh. Non-forest vegetation was then classified as open space in areas within municipal boundaries and as fields/pastures in areas outside municipal boundaries. The resulting areas of these 7 classes of land cover were summarized for each of the 3 watersheds. The data were used as an input to hydrologic models described in the main body of this report. This appendix documents the imagery and data sources provided to AMEC, the imagery classification methods, results, and provides recommendations for future similar studies.

2.0 IMAGERY AND DATA SOURCES

The inputs to the land cover classification were SPOT satellite imagery (2009 – 2011) and ancillary GIS data including watershed and municipal boundaries. Higher resolution QuickBird satellite was originally proposed but was not able to be provided to AMEC during the project, therefore available SPOT imagery was utilized. Western watershed data (Corner Brook and Petrie's Brook) were in UTM zone 22, while the eastern watershed (Petty Harbour) was within UTM zone 21. Vector data provided in the MTM projection and re-projected to corresponding UTM zone to match SPOT imagery.

2.1. Community Flood Watersheds

The delineation of community flood watershed boundaries is described in the main body of this report. The three (3) drainage basins analyzed in this study represent exclusive geographic areas (no overlap between watershed boundaries). Watersheds boundaries were buffered by 100 meters or more to ensure land cover classification data provided full coverage for computation of land cover metrics. Basin names and associated land cover metrics are presented in the Results section of this Appendix.

2.2. SPOT Satellite Imagery

All SPOT imagery was provided to AMEC by the Government of Newfoundland and Labrador, Department of Environment and Conservation, Water Resources Management Division with assistance from Iunctus Geomatics Corp. The SPOT images were delivered as previously ortho-rectified datasets and with a combination of clipped and/or full scenes that included 2.5-meter panchromatic, 2.5-meter fused natural color (3-band), and 10-meter resolution multispectral (4-band). Fused (panchromatic sharpened) natural color images were used for training and verification purposes while the 10-meter multispectral imagery was used for classification. Four image acquisition dates were included; one in 2009, one in 2010, and two in 2011. Exact dates were not readily available. Most SPOT imagery was provided by hard drive with supplemental images needed to fill gaps in coverage provided by Iunctus via FTP.

Recommendations at the end of this Appendix offer suggestions for improved data management of imagery ordering, tracking and delivery to vendors on future projects as well as other general best practices for leveraging remotely sensed imagery.

Additionally, the following description was provided by Iunctus to describe their image preprocessing methods and accuracies:

> *"The data set is derived from SPOT5 2.5m panchromatic and 10m multispectral raw image level 1A. It has been processed to Level 3A orthorectified dataset using the most accurate control available. This includes (in order of priority) 1) NRN from GeoBase; and 2) LANDSAT 7 ortho-imagery from GeoBase. The methodology ensures adequate distribution of the control points within the image. The parametric model was developed by Dr. Thierry Toutin at the Canada Centre for Remote Sensing (CCRS), Natural Resources Canada. This model is based on principles related to orbitography, photogrammetry, geodesy, and cartography. It reflects the physical reality of the complete viewing geometry and corrects distortions that occur due to platform, sensor, Earth, and cartography projection. The Digital Elevation Model (DEM) is the most accurate source available from GeoBase as of the date of orthorectification. This is the Canadian Digital Elevation Data (CDED). The CDED can be a combination of data at the 1:50 000 or 1:250 000 scale. Level 3A orthorectified images are resampled using an 8-point SinX method. The preprocessing applied to level 1A data for SPOT satellites is minimal. Only detector equalization is performed: it consists of compensating for the differences of sensitivities between the elementary detectors of the CCD (Charged Coupled Device) arrays, using a linear model. Absolute calibration coefficients posted in the ancillary data can be used to convert the pixel counts into irradiance values. No geometric corrections are performed, and, when displayed, the SPOT Scene image in level 1A is a square. Ancillary data (coordinates of the scene center as well as the four corners) describe the image location with an accuracy better than 500m (rms) for SPOT4 and an accuracy better than 30m (rms) for SPOT5."*

1.0 LAND COVER CLASSIFICATION

Land cover classification was performed through a multi-step process detailed below. General steps include; (1) image preprocessing and mosaicing, (2) ISODATA unsupervised classification and aggregation, (3) classification corrections and manual edits, (4) land cover tabulations by watershed, and (5) accuracy assessment. Accuracy assessment results are presented in the Results section.

3.1 Image Pre-processing

For the Petty Harbour watershed, one image dated in 2011 provided full coverage for classification and no additional imagery was required. For Corner Brook and Petrie's Brook, three imagery datasets were classified individually due to temporal variation between datasets. The pixel value variation between these datasets was significant enough that performing an

atmospheric correction process to apparent reflectance values would not have provided any benefit (see additional information in Recommendations).

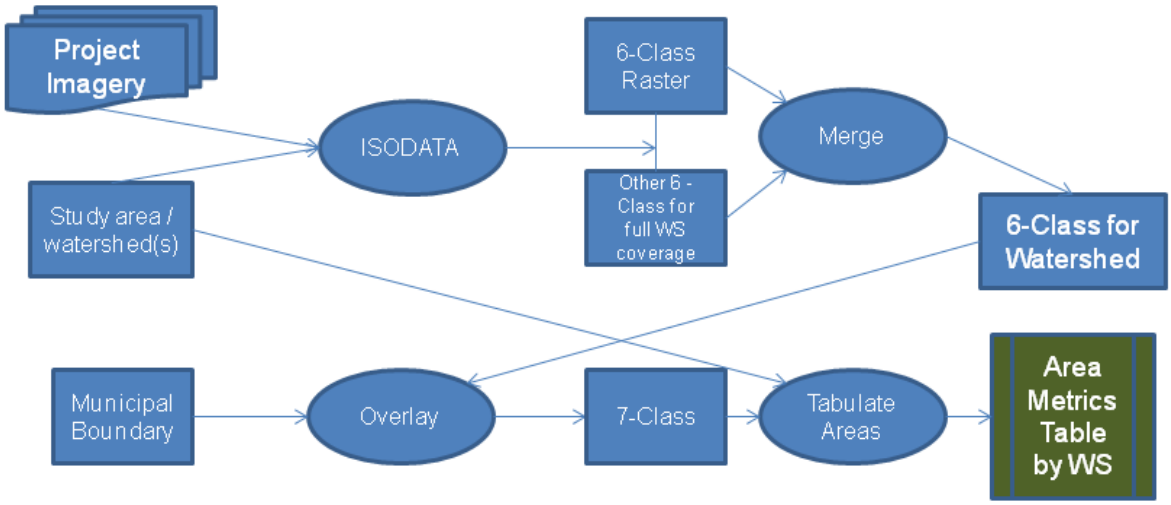

Figure 1
Graphical model of land cover/land use classification methods used in this study.

3.2. ISODATA Classification and Aggregation

Images and image groups with similar visual characteristics were then classified using the ISODATA (Iterative Self Organizing Data Analysis Techniques) algorithm within the software ERDAS Imagine. The ISODATA algorithm is an unsupervised classification that generates statistically significant clusters of similar pixels based on values within each band and the user-defined number of clusters to generate. The number of clusters selected for a particular classification was dependent on the overall size of the image or image group but ranged from 20 for small images to 100 for large images (the larger the image, the greater number of pixels, the greater number of clusters selected). Clusters are then manually assigned to each of the land cover classes using higher resolution aerial imagery. ISODATA is very similar to the Fuzzy K Means unsupervised classification used in the Stephenville, Newfoundland and Labrador land cover classification study. To create the 7th land cover class for current conditions, municipal area boundaries[1] were then used to separate non-forest vegetation into open space (municipal green space) vs. fields/pasture (agricultural land outside municipal boundaries). The classification at this point takes on more of a land cover / land use data set with the influence of supporting GIS data.

[1] Municipal boundaries provided by Charmaine Winter, Computer Programmer 1 (GIS), NL Dept. of Municipal Affairs, (709) 729-6666, cwinter@gov.nl.ca.

Table 1.
Final land cover classes for the Flood Risk study. Non-forest vegetation from the original classification is separated into Fields/Pastures or Open Space relative to municipal boundaries.

Class #	Final Land Cover Classes Descriptions
1	Forest
2	Developed
3	*Fields/Pastures
4	Wetland
5	Water
6	Barren
7	**Open Space
* Fields/Pastures = vegetation land cover outside municipal areas. **Open Space = vegetation land cover within municipal areas.	

3.3. Manual Corrections

Primary edits required to improve consistency across land cover mosaics involved fixes to shadows, clouds, and seamlines due to abrupt seasonal changes in adjacent images (for the western watershed), and additional classifications between confused ISODATA clusters (cluster confusion occurs when a single cluster represents more than one desired land cover class). Some seamlines were corrected manually by hand editing vector data, converting vector to raster, and merging into new mosaics, while other areas were corrected by adjusting ISODATA cluster values or increasing ISODATA cluster outputs generated. Results were verified against the original land cover mosaics for any potential seamline issues and then the data was merged into final mosaic land cover data sets. Minimal additional corrections to the data were performed.

3.4. Land Cover Tabulations by Watershed

The final 7-class land cover data set was then intersected with the 3 community flood watersheds to tabulate total area (in square kilometers) and percent coverage of each class by basin name. For Quality Assurance / Quality Control purposes, one watershed was selected and land cover metrics were calculated by hand then checked against automated metrics. These tables were then used as direct inputs to the HEC models and flood vulnerability assessment.

4.0 RESULTS

Results are presented for the overall classification and for each community flood watershed delineation boundary in Table 2. Accuracy assessment results detail the effectiveness of the classification methods employed in this study. Table 2 lists the three watersheds in the top row

by alphabetical order, while land cover area and percents occupy each row. Figures 2 and 3 illustrate data inputs and land cover classification maps for each watershed.

Table 2
Land cover metrics (area in square kilometres and percent of watershed area) per community flood watershed

Description	Land Cover (km^2) by Watershed		
	Petrie's Brook	**Corner Brook Stream**	**Petty Harbour River**
Total Area	*6.23*	*157.98*	*132.68*
Forest	3.42	72.00	74.80
Developed	0.21	5.40	4.06
Field/Pasture	0	31.35	0.16
Wetland	0.09	3.03	5.95
Water	0.27	17.39	11.71
Barren	0.29	5.50	1.29
Open Space	1.95	23.31	34.71

	Land Cover (% of total Area) by Watershed		
Forest	54.8	45.57	56.37
Developed	3.46	3.42	3.06
Field/Pasture	0	19.85	0.12
Wetland	1.4	1.92	4.48
Water	4.34	11.01	8.83
Barren	4.72	3.48	0.98
Open Space	31.28	14.75	26.16

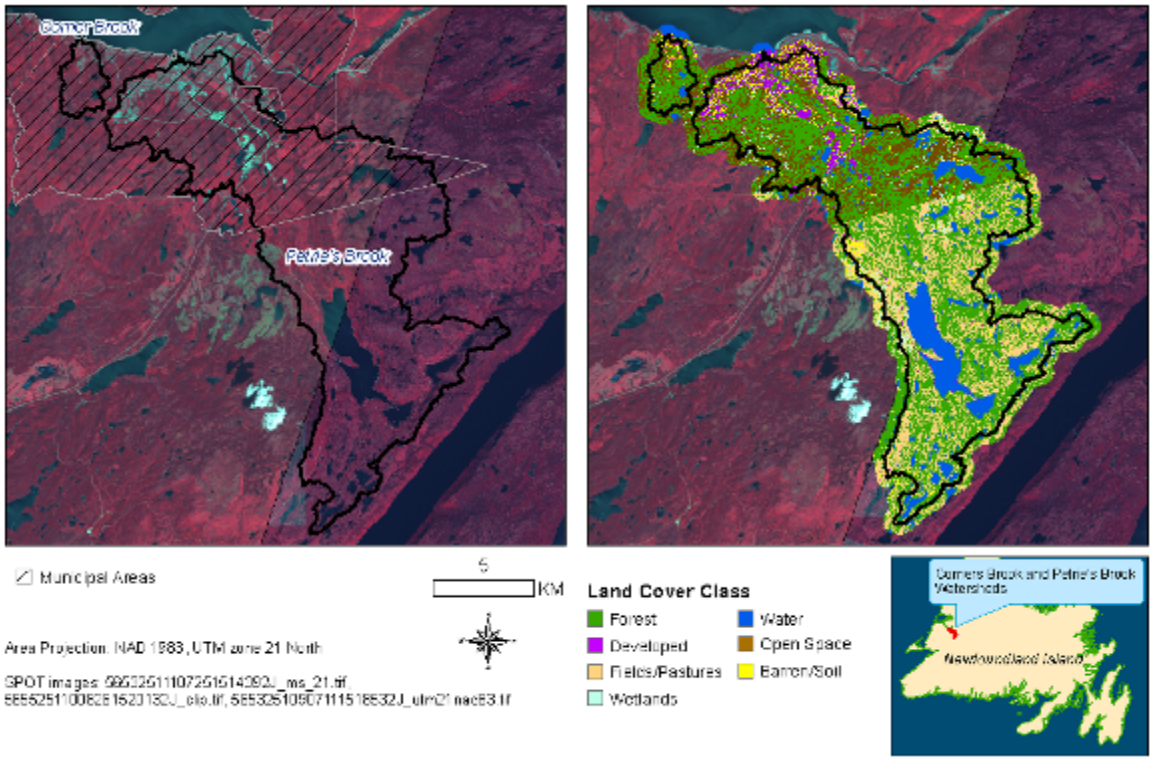

Figure 2: Data inputs and land cover classification for Corner Brook and Petrie's Brook watersheds.

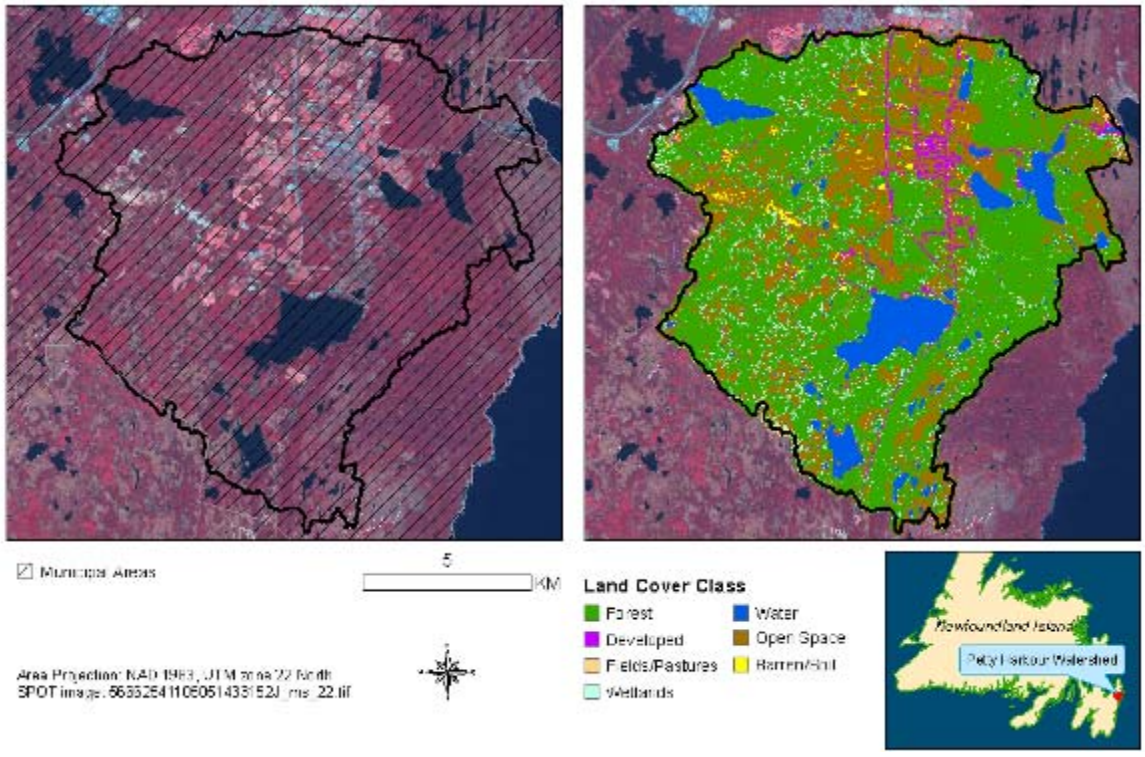

Figure 3: Data inputs and land cover classification for Petty Harbour watershed.

4.1. Accuracy Assessment

An accuracy assessment was completed to measure the effectiveness of classifying six classes of land cover derived from the 10-meter SPOT imagery. Classification accuracy was assessed by comparing ground truth (from 2.5 meter resolution, natural color, pan-sharpened SPOT images) to the classified land cover at each assessment point. When interpreting the accuracy assessment table (Table 2 below) a number of important precautions should be considered:

1. Ground truth data (2.5 m) used to assess the accuracy is of a higher spatial resolution than the data used in the classification (10 m). The difference in resolution and spatial shift can lead to exaggerated errors, since the larger pixels used in the classification can be a combination of a number of land cover classes (See Figure 3).
2. Ground truth data in some cases may be from a time period that differs from the time period of the classified imagery. While image dates are generally from the same period, not all 10-meter imagery used for classification had 2.5-meter imagery and vice versa. Spatial shifts and land cover change may have occurred between the ground truth image and classification image.
3. Ground truth data are natural color 3-band images, while the classification data use 4-bands. In natural color, wetlands and barren ground look very similar. Because of this, surrounding areas were also evaluated during the accuracy assessment to determine the probable ground class.
4. See Recommendations section for improved training and verification data and processes

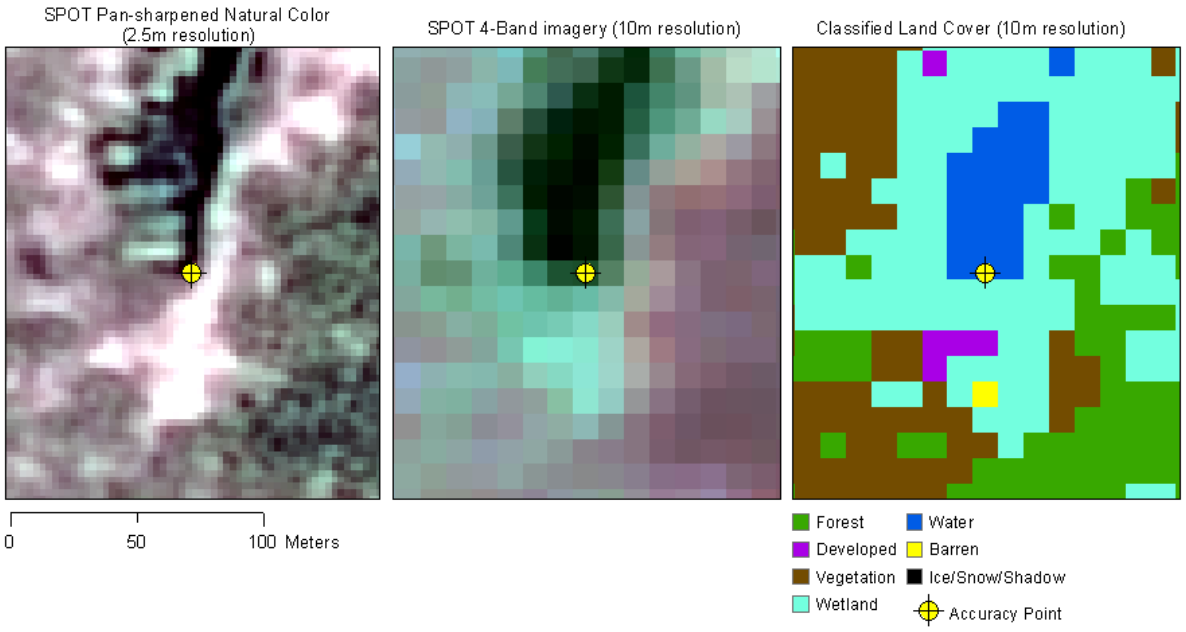

Figure 4
Pan-sharpened natural color, multi-spectral, and classified land cover example. Classified land cover is based on 10m resolution, multi-spectral imagery (center) while the 2.5m natural color imagery (left) was used to assess classification accuracy.

4.2. Procedures

A grid of 3,000 points was distributed randomly throughout the study area. Thirty (30) points per class were randomly selected and assessed for true on-the-ground land cover using the 2.5 meter pan-sharpened imagery (see Figure 4). Points falling on pixel edges, and points where interpretation of true land cover was obscured or difficult to discern were excluded.

Table 3
The error matrix (a) and accuracy statistics (b) for the accuracy assessment of the land cover classification of community watersheds in Newfoundland, Canada. Diagonal counts (in green) represent agreement between classified and ground truth data.

	Forest	Developed	Vegetation	Wetland	Water	Barren	Total (i)	Accuracy (ii)
Forest	33	0	1	1	0	1	36	91.70%
Developed	1	38	0	0	0	1	40	95.00%
N.F. Vegetation	1	0	41	0	0	1	43	95.30%
Wetland	0	0	2	20	0	0	22	90.90%
Water	0	0	0	1	31	0	32	96.90%
Barren	0	1	0	0	0	16	17	94.10%
Column Total	35	39	44	22	31	19	190	94.00%
Column Multiples	1260	1560	1892	484	992	323	179	
Sum of Diagonals (corrects)		179						
N (Total Points Assessed)		190						
Overall Accuracy		94.21%						

	Omission (iii)	Commission (iv)	Low Limit	Upper Limit
Forest	3	2	62.50%	100.00%
Developed	2	1	65.80%	100.00%
N.F. Vegetation	2	3	66.10%	100.00%
Wetland	2	2	61.70%	100.00%
Water	1	0	67.70%	100.00%
Barren	1	3	64.90%	100.00%

Column Definitions
i: Row totals: Points assessed per class.
ii: Percent accuracy by class.
iii: Points falsely omitted from the row class.
iv: Points falsely committed to column class.

4.3 Interpretation

Table 3a (top matrix) is referred to as a “standard error” or “confusion matrix” in a traditional accuracy assessment based on land cover at the location of each point. Data columns represent actual ground classes manually determined using 2.5 m pan-sharpened imagery. For example, 36 points were manually determined (by visually looking at the 2.5m pan-sharpened imagery) to be located on forest. Rows represent the classified land cover at the location of each point. For example, 35 points fell on land cover classified as forest. The values along the diagonals (in green) represent agreement between the ground truth and classified values. Percent correct for each class is presented in the Accuracy (ii) column and is calculated by dividing the number of correct points by the total number of points in the corresponding class (for example, the forest class accuracy is 33/36 = 91.7%). The average correct percentage across all six land cover classes is 94.0%. A total of 190 points were evaluated with 179 correct responses (overall accuracy of 94.21%).

Additional accuracy assessment metrics are presented in Table 3b (bottom matrix). The omission (iii) column represents points that were identified as the row class in the ground-truth data, but were classified as some other land cover class. The commission (iv) column represent points that were classified as the row class, but identified as another class in the ground-truth data. The upper and lower limit columns represent the 95% confidence intervals for each class. Intervals represent the range of accuracy percents expected through the random selection of another set of points. Out of 1,000 randomly selected set of points, 950 sets will generate accuracy percents within these value ranges.

Overall accuracy indicates that more than 9 out of 10 locations randomly checked by a user will be classified correctly. *Water* and non-forest *vegetation* have the highest accuracy, while *forests* and *wetland* classes have the lowest. Of the 22 accuracy assessment points falling on areas classified as *wetland*, 20 were verified as wetland, and 2 were non-forest *vegetation* (90.9% correct). Of the 36 accuracy assessment points falling on areas classified as *forest 33* were verified as *forests*, 1 was actually non-forest *vegetation*, 1 *wetland*, and 1 *barren*.

Table 3b indicates that barren land is likely overestimated in the classification (1 accuracy point should have been barren but was another class, and 3 points were classified as barren but should have been classified as something else). Forest is likely underestimated slightly.

5.0 RECOMMENDATIONS

The following general recommendations are offered to assist the Government of Newfoundland and Labrador in designing and implementing future studies that involve remote sensing and land cover classification.

1. Types of imagery for different scale classifications – unlike the Stephenville land cover study which used high-resolution QuickBird satellite imagery, this project utilized 10-meter resolution SPOT imagery. With coarser resolution, spectral mixing exists meaning some pixels contain a mixture of different features and cover types, compared to higher resolution images where individual pixel values represent more homogenous materials. Traditional spectral based classification techniques are adequate for medium resolution imagery, while object-based image analysis (OBIA) techniques are also an established method for higher resolution land cover classification. Given the relatively small geographic area of this project, using higher resolution imagery was feasible. This should be used as a guide for future studies with different resolution imagery and land use / land cover classes.

2. Image Quality and Specifications – remote sensing is more cost-effective when larger areas can be classified as a single process, or at least fewer processes. Satellite images from a single season and/or single year provide for a better product and greater efficiency. Additionally, the majority of multispectral 10-meter SPOT imagery used in the classification was clipped to watershed boundaries. Full SPOT scenes ortho-rectified in a mosaic specifically for classification study would yield better results.

3. Atmospheric Correction – this step is most useful when trying to separate features in imagery that have similar spectral signatures/responses or removing noise such as haze. It does not mitigate issues from different seasonal conditions in imagery and it was determined for this study that atmospheric correction would not provide a benefit across such varying seasons and years of imagery acquisition. It should be considered on a case-by-case, or project-by-project basis.

4. Training and Verification Samples – known features types from ground measurements or photographs assist in both training remote sensing software during classification as well as in verifying accuracy. The Stephenville land cover study used only 10 accuracy assessment points per land cover class (100 per class were used in this study) in part due to a lack of available ground truth samples, but that does not yield a statistically significant confidence level. Generally speaking, 2.5-meter, 3-band natural color SPOT imagery proved useful for the accuracy assessment for this study and could be used in others, however ground samples from the same time period as the image acquisition is more ideal. Now online imagery (Google, Bing) also provide additional resources.

5. Ancillary data from other mapping initiatives can be incorporated into land use / land cover data to improve accuracy and minimize QA/QC. Examples include building footprints generated from LiDAR or manual digitizing, forest industry stand delineations, and transportation data (street center lines) to name a few. Also consider implementing an island-wide impervious surface mapping initiative with the cost shared by numerous entities. This could be used as a mask during land cover classification projects to avoid confusion between bare soil, ice, snow and other bright features in satellite imagery.

APPENDIX D

DEVELOPMENT OF PROJECTED INTENSITY-DURATION-FREQUENCY CURVES

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GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR

FLOOD RISK MAPPING PROJECT
CORNER BROOK AND GOULDS/PETTY HARBOUR

Development of Projected Intensity-Duration-Frequency Curves

Submitted to:

Water Resources Management Division
Department of Environment and Conservation
Government of Newfoundland and Labrador

Submitted by:
AMEC Environment & Infrastructure
A Division of AMEC Americas Limited
1002 Walnut, Suite 200
Boulder, CO, USA
80302

March 26, 2012
TA1112735

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1.0 INTRODUCTION

This report provides an overview of the development of projected intensity-duration-frequency curves (IDF curves) for two areas of Newfoundland, Canada, Corner Brook and Goulds/Petty Harbour. The objective of the work described here is to develop IDF curves that reflect the changes in the characteristics of precipitation that might be caused by projected changes in climate. Three time frames were adopted for projections: 2020, 2050 and 2080.

Over the last four decades climate scientists have developed a theoretical framework and observational evidence to indicate that the average temperature of the Earth is increasing and that part of this increase can be attributed to emissions of greenhouse gases generated by human activities (IPCC, 2007). Modern climate simulation models, referred to as global climate models (GCMs, also referred to as general circulation models), have been used to develop quantitative projections of future changes in temperature, precipitation and other climate variables based on estimates of future emissions of greenhouse gases. These models show a consensus that global average temperature will increase, though the amount of projected temperature increase varies with latitude and is not evenly distributed seasonally. Because increases in global average temperature will cause increased evaporation, global average precipitation will also increase, although there is a high degree of uncertainty regarding the spatial and temporal distribution of those changes in precipitation, and precipitation in some areas of the globe will decrease.

Theory, and analysis of GCM outputs, indicates that warmer temperatures will change the characteristics of precipitation extremes (Kharin, et al., 2007). This scientific information along with recent flood events have motivated infrastructure planners to undertake efforts, like that described herein, to quantify the impact of projected climate change on the IDF curves used as one basis for design of drainage and flood infrastructure.

This work focused on two areas, Corner Brook and Goulds/Petty Harbour, in Newfoundland. Newfoundland is the island portion of the easternmost Canadian province, Newfoundland and Labrador, and is located between the Gulf of St. Lawrence and the Atlantic Ocean, one hundred kilometers northeast of Cape Breton Island of Nova Scotia. The climate in Newfoundland has been characterized by observations at a number of weather stations. The climates in the regions of Corner Brook and Petty Harbour were based on the Deer Lake station and the St. John's A weather station, respectively. Although climate measurements from a third station at Stephenville were studied, Deer Lake and St. John's A were determined to have the climate that best represented the sites in question.

In 2010, Environment Canada developed updated IDF curves based on historical observations from the stations at Deer Lake (data from 1966 through 2002), St. John's A (data from 1949 through 1996), and Stephenville A(data from 1967 through 2007). The documentation for these historical IDF curves included the record of the intensity of annual extreme precipitation events for nine event durations ranging from five minutes to 24 hours. Another historical IDF curve was developed by CBCL Limited based on a combination of data from the St. John's A station and a second station at Windsor Lake, nearby (data provided by WRMD). To obtain projected IDF curves, the precipitation intensities in the historical IDF curves were adjusted to reflect projected changes in climate using a statistical modeling technique that is described briefly in the following paragraph, and in more detail in the following sections of this report.

The approach selected for this work uses a statistical model that derives the sensitivity of extreme precipitation to climate conditions from the historical climate information for a site. In this case the historical climate was characterized by observations of monthly average temperature and monthly total precipitation at the Deer Lake, St. John's A and Stephenville weather stations. The statistical model, which is described in more detail below, was fitted to the local climate data and the historical monthly precipitation maxima using a form of regression. Information about future monthly average temperature and monthly total precipitation was obtained from the output of 48 runs of GCMs. Each GCM run was compared internally to establish a projected future *change* in temperature and precipitation. These changes were used to adjust the historical record of temperature and precipitation to reflect future conditions, which resulted in 48 future climate scenarios that were based on the historical record but which reflected the projected future change in climate. This approach, which is referred to as the *delta* approach, is used to reduce some of the inevitable bias inherent in projections of future climate.

The statistical model of extreme precipitation was then run against each of these adjusted records to obtain estimates of climate-impacted extreme precipitation intensities for each of the nine durations and six return intervals. These estimates reflect the bias in the statistical model, so one more run of the statistical model was made against the average historical climate conditions to provide a baseline set of extreme precipitation intensities. This set of baseline intensities were compared against each of the 48 estimates of climate-impacted intensities to determine the *change* in intensity attributable to the change in climate. These changes were then used to adjust the values in the historical IDF curve to obtain the final projected values of precipitation intensity. (This is another application of the delta approach.)

The 48 projections used to characterize future climate conditions produced an equal number of estimates of projected precipitation intensities for each duration and return interval. For reporting purposes, these results were aggregated into the mean,

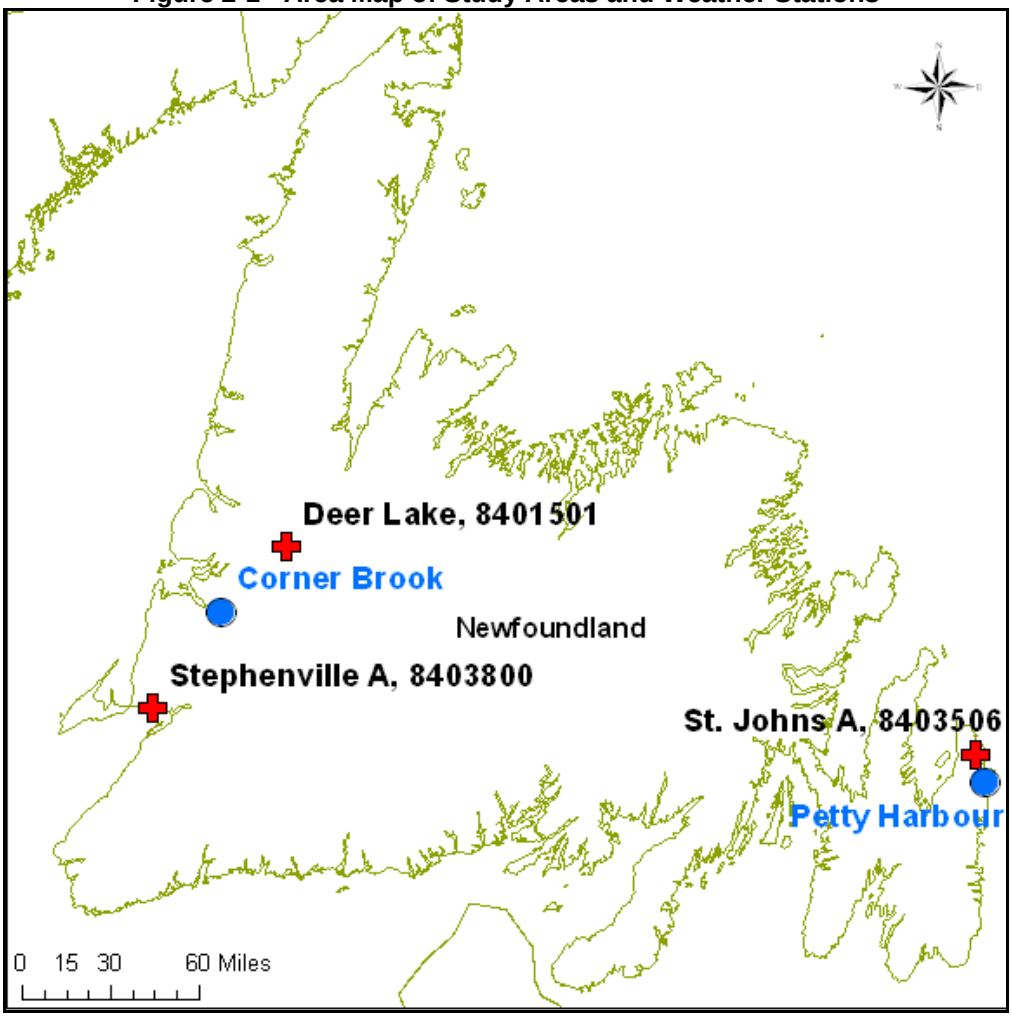
maximum and 90th percentile non-exceedance value of precipitation intensity for each duration and return interval.

This report also includes projected precipitation intensities developed by Lines et al. (2008) and Finnis (data provided by WRMD).

2.0 DATA

This section describes the three data sets used in this work; the local extreme precipitation event data, local monthly climate data and future projected data from the GCMs. The local conditions were characterized with three weather stations: Deer Lake (8401501), St. John's A (8403506) and Stephenville A (8403800). Figure 2-1 shows the location of the weather stations with respect to the study areas.

Figure 2-1 - Area Map of Study Areas and Weather Stations



2.1 Historical IDF curves

The historical IDF curve and underlying precipitation data were obtained from Environment Canada. Figure 2-2, Figure 2-3 and Figure 2-4 show the historical IDF curves for each of the three stations. Table 2-1, Table 2-3 and Table 2-5 show the historic IDF data in tabular form. Table 2-6 shows the values for the updated version of the historical IDF for the St. John's A station; this table was developed by combining data from the St. John's A station with data from a nearby station at Windsor Lake operated by the City of St. John's (data provided by WRMD). This station is referred to as the St. John's Composite record. Table 2-2, Table 2-4 and Table 2-7 show the underlying annual maximum precipitation values for the three Environment Canada stations; data for the St. John's Composite record were not available.

Figure 2-2 - Historical IDF Curve, Deer Lake Station, 8401501

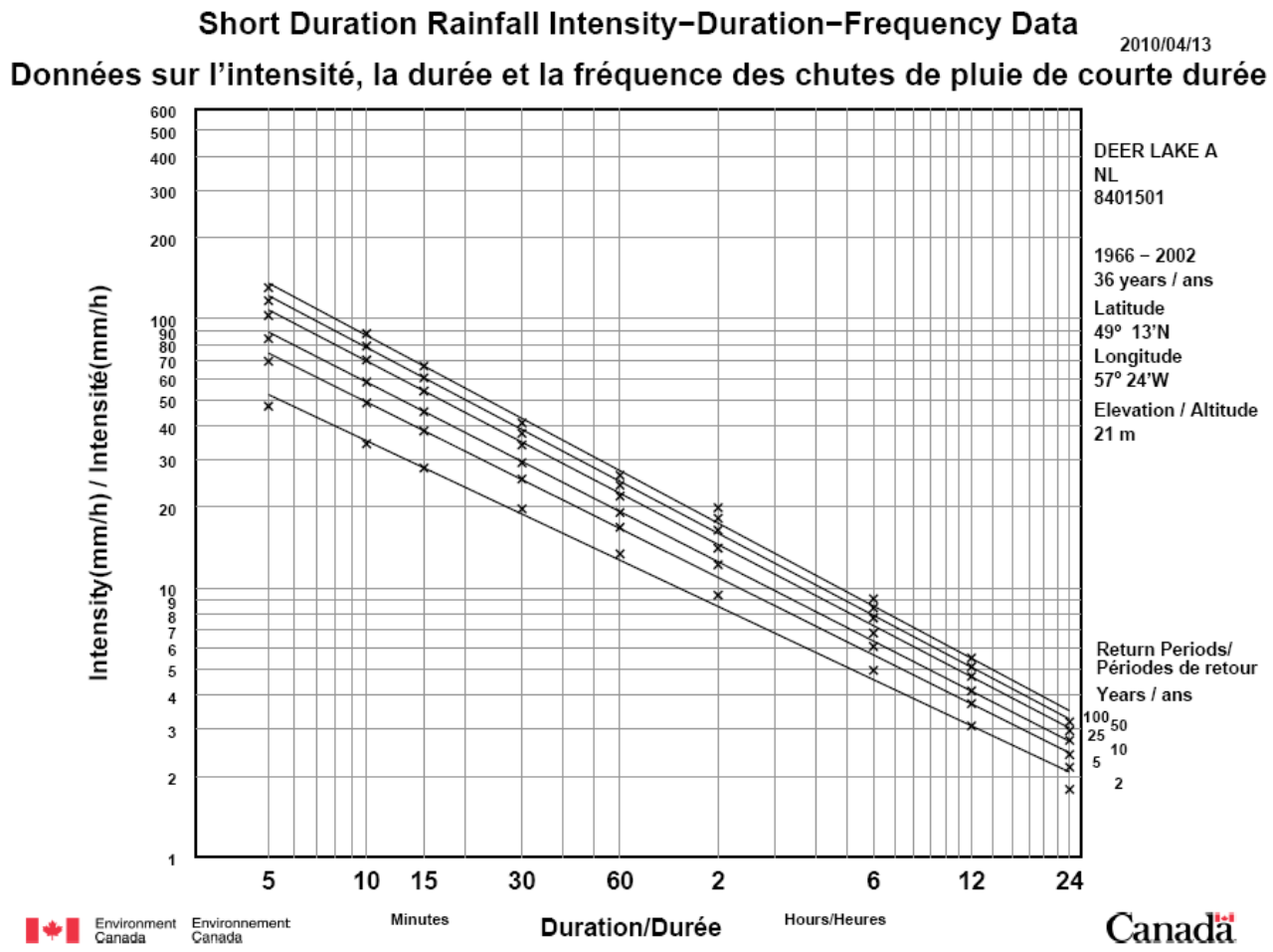


Table 2-1 - Historical IDF Table, Deer Lake Station, 8401501, Precipitation intensities over the specified duration, mm/hr

		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	47.3	69.5	84.1	98.2	102.7	116.4	130.0
	10 min	34.3	48.6	58.2	67.3	70.2	79.1	87.9
	15 min	27.9	38.3	45.1	51.7	53.8	60.2	66.6
	30 min	19.7	25.4	29.2	32.8	33.9	37.5	41.0
	1 hr	13.4	16.8	19.1	21.3	21.9	24.1	26.2
	2 hr	9.4	12.2	14.1	15.8	16.4	18.1	19.9
	6 hr	5.0	6.1	6.8	7.5	7.7	8.4	9.1
	12 hr	3.1	3.7	4.2	4.6	4.7	5.1	5.5
	24 hr	1.8	2.2	2.4	2.6	2.7	3.0	3.2

Table 2-2 - Historical Annual Maximum Precipitation Events Deer Lake Station, 8401501, mm

Year	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1966	2.8	3	4.6	6.3	9.9	13.7	21.8	25.9	29.2
1967	5.1	5.8	7.1	10.9	14.2	19.3	31.7	37.6	38.6
1968	4.1	6.1	8.9	12.2	13.2	21.3	41.1	52.1	64
1969	3	4.8	6.1	7.4	10.7	14.7	25.9	31	37.8
1970	2.8	3	4.1	6.9	13.2	23.4	38.1	39.6	40.1
1971	3.6	5.6	6.6	8.9	11.2	12.4	22.9	27.7	29.2
1972	4.6	4.8	5.3	7.4	9.7	15.7	27.4	36.6	45
1973	7.1	12.4	13.5	15.2	15.7	23.1	36.6	47	50.3
1974	2.8	5.3	7.4	9.1	13.7	16.8	28.2	32	43.9
1975	7.1	8.9	11.2	15.7	23.9	39.9	44.7	50.8	66.5
1976	3.8	3.8	4.3	6.9	9.7	13.2	25.7	39.1	42.4
1977	3.8	7.4	7.6	15	18.3	18.5	34.3	46.7	47.5
1978	6.9	10.8	13.9	16.5	19.6	36.1	36.1	36.1	45.9
1979	4	6.5	7.7	9.6	9.8	11.9	24.2	33.3	41.2
1980	3.1	4.9	5.8	7.1	10.1	15.3	34.3	55.7	62.7
1981	3.4	4.4	5.1	8.3	14.1	15	24.3	37.9	43.8
1982	1.9	3	4	6.4	12.7	21.5	30	30.2	38.3
1983	4	6.5	7.4	12.1	19.8	28.1	34	36.8	46.3
1984	11.6	12.8	12.8	12.8	12.8	17.8	31.1	33.8	43.3
1985	3.3	4.6	4.8	7.6	10.6	13	18.2	25.7	32.7
1986	2.2	4.3	5.4	7.3	10	13	21.5	28.2	39.9
1987	4	5.7	6.7	10.2	10.9	15.5	25.2	25.7	26.7
1988	8.3	10	11.9	14.1	16.2	18.9	31	39.8	39.8
1989	4	5	6.2	8.5	11.6	17.2	26.4	34.4	40.8
1990	6.2	9.2	11.2	12.5	16	21.9	22.8	37.3	38
1991	2.3	3.7	3.9	6.4	11.2	18.5	38.2	40.4	43
1993	1.8	3.2	4.8	6.7	9.7	17.8	28.7	31.9	40.8
1994	4.7	9.4	10.1	13.5	19.9	25.8	33.9	39.7	51.3
1995	2.8	3.6	4.7	9.2	13.5	23.1	44.9	54	70.1
1996	2.5	3.9	5.1	7.2	10.9	20.1	44.6	59	59.1
1997	3.6	5.1	6.6	10.1	12.4	13.4	21.1	30	35.6
1998	2.6	3.8	4.8	9.6	13.4	19.6	29.4	42.3	53.6
1999	3.3	5	7.5	14.8	21	24.3	25.2	39	41.4
2000	7.8	10.4	10.4	11.5	16.5	28.7	46.9	48.3	48.3
2001	5.2	7.5	9.7	13.3	18.3	24.2	27	31.5	38.2
2002	4.2	7.5	11.1	15.8	19.8	21.5	36.5	44.2	49.2

Figure 2-3 - Historical IDF Curve, Stephenville A Station, 8403800

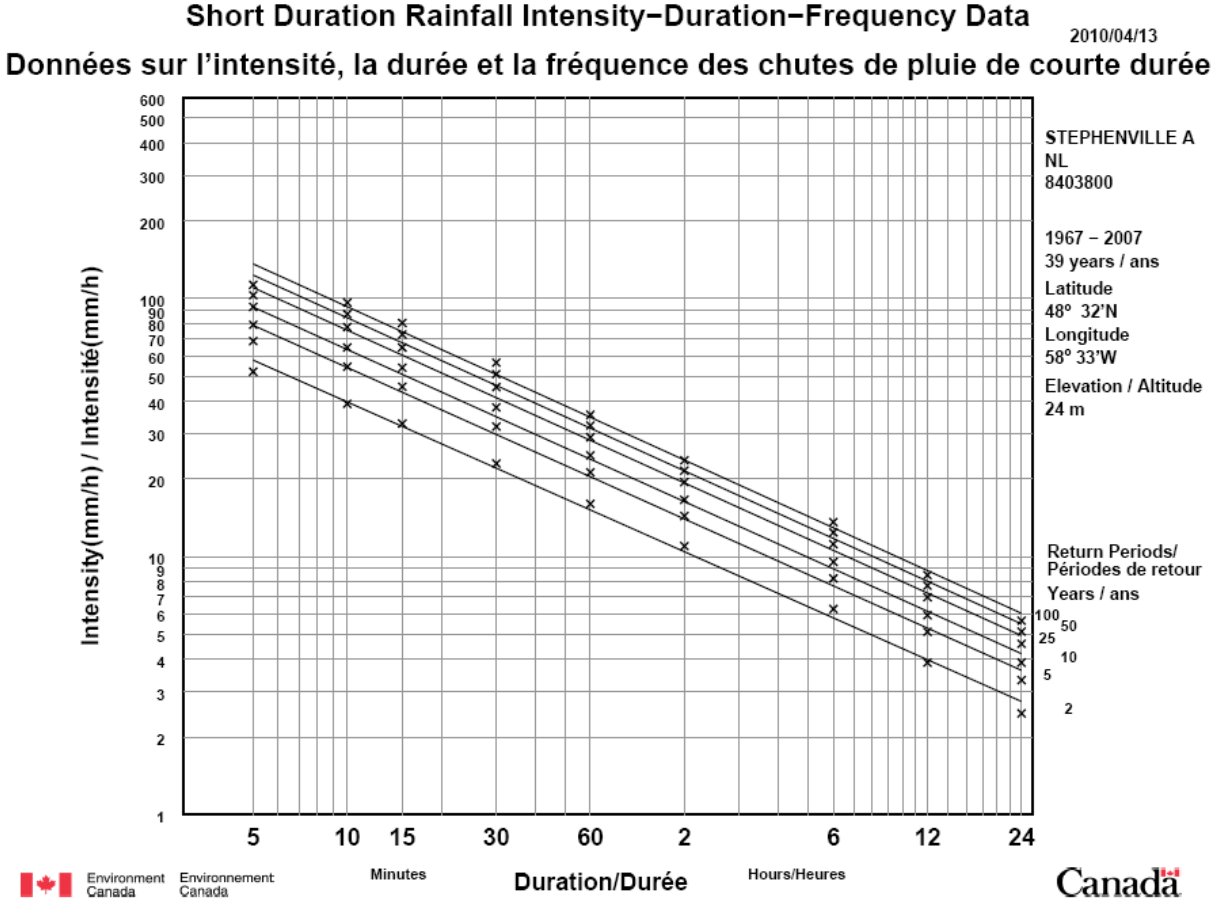


Table 2-3 - Historical IDF Table, Stephenville A Station, 8403800, Precipitation intensities over the specified duration, mm/hr

		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	52.0	68.3	79.1	89.4	92.7	102.8	112.8
	10 min	39.0	54.4	64.5	74.3	77.4	86.9	96.4
	15 min	32.8	45.5	53.9	62.0	64.5	72.4	80.3
	30 min	22.9	31.9	37.8	43.5	45.3	50.9	56.4
	1 hr	16.0	21.2	24.6	27.9	29.0	32.2	35.4
	2 hr	11.0	14.4	16.6	18.7	19.4	21.5	23.6
	6 hr	6.3	8.2	9.5	10.8	11.2	12.4	13.6
	12 hr	3.9	5.1	5.9	6.7	7.0	7.7	8.5
	24 hr	2.5	3.3	3.9	4.4	4.6	5.1	5.6

Table 2-4 - Historical Annual Maximum Precipitation Events Stephenville A Station, 8403800, mm

Year	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1967	4.3	7.9	8.9	14	18	18.5	25.4	38.6	51.8
1968	4.1	6.9	8.1	8.6	14	17	36.6	52.8	70.6
1969	2.3	3.3	4.1	5.8	7.6	14.5	29.7	48.3	58.4
1970	4.8	8.6	8.6	9.1	14	21.6	39.6	41.4	54.9
1971	3.8	5.6	7.9	11.2	16.8	21.6	37.6	47.5	57.4
1972	6.1	7.4	9.1	12.7	15.7	25.1	40.9	43.4	48.8
1973	2.8	5.3	7.1	10.7	20.6	37.6	49	52.8	89.7
1974	3.3	4.3	6.6	11.4	18.5	25.7	47	60.5	63
1975	5.6	8.6	9.4	9.9	14.5	16.3	32.8	36.3	41.1
1976	3	5.3	6.6	7.9	10.4	13.5	22.9	33.8	36.6
1978	2.3	3.3	4.6	7.9	11.2	17.3	23.5	34.3	42
1979	5.1	10.1	13.6	16.7	22.6	33.5	74.4	87.5	98
1980	4.6	6.4	7.8	11.4	18	19.6	36.3	44.4	59.4
1981	3.1	5	5.5	7.3	10.4	16	31.1	34	52.1
1982	3.3	4	5.4	6.6	11.1	14.2	30	35.7	44.8
1983	3.8	6	7.4	10	14.6	20.9	45.3	52.2	82.4
1984	4.5	5.5	6.8	10.2	13.8	18.2	28.1	41.1	63.2
1985	2.9	5.5	6.4	8	9.9	13.3	23	31.8	32.6
1986	3.6	6.2	7.3	10.4	16.8	22.3	23.7	33.8	46.1
1987	4.6	7.8	9.4	14	18	27.4	41	44	49.9
1988	6.5	10.8	14.2	21.7	22.2	22.4	53.1	56	56
1989	4.4	7.9	9.7	11.5	17.7	29.6	47.1	59.5	97.5
1990	9.4	18.7	23.2	33.2	41.5	46.3	51.5	54.6	88.9
1991	3.8	5.9	6.8	8.8	13.4	23.6	46.4	52.8	55.9
1993	6.8	11.7	14.8	20.7	21.6	25.4	32.4	42.2	56.5
1994	3.8	6.2	6.4	10.6	17.1	18.1	31.5	54.8	69.4
1995	7.9	8.8	10.8	14	26	45.3	82.5	97.6	134.5
1996	3.4	6.4	9.3	17.7	23.1	30.1	47.8	67.1	68.4
1997	6.1	8.8	9.9	13.8	14.5	17.1	24.7	31.4	46
1998	6.8	12.9	16.3	19.9	24.6	30.3	38.2	41.6	52.5
1999	5.1	5.1	6.5	10.8	18.2	25.1	32.8	37.9	40.4
2000	4.2	6.1	8.1	12	14.2	24.2	45.5	48.7	58.8
2001	3.5	4	5	8.5	12.7	18.3	33.5	40.4	57.9
2002	4.4	6.2	8.6	13.8	19.6	25.2	58	59.4	60.5
2003	6.1	7.1	10.7	14.7	16	19.9	36.6	41	52.7
2004	3.4	4.8	6	8.5	13.5	21.8	33.6	39.9	65.3
2005	4.8	6.2	9	13.2	14.6	24.4	60.3	106.6	138.4
2006	5.1	5.9	8.1	11.4	21.2	24.1	35.8	50.6	55.5
2007	5.4	5.8	8.4	11.2	13.6	20.6	43.3	47.9	62.6

Figure 2-4 - Historical IDF Curve, St. John's A Station, 8403506

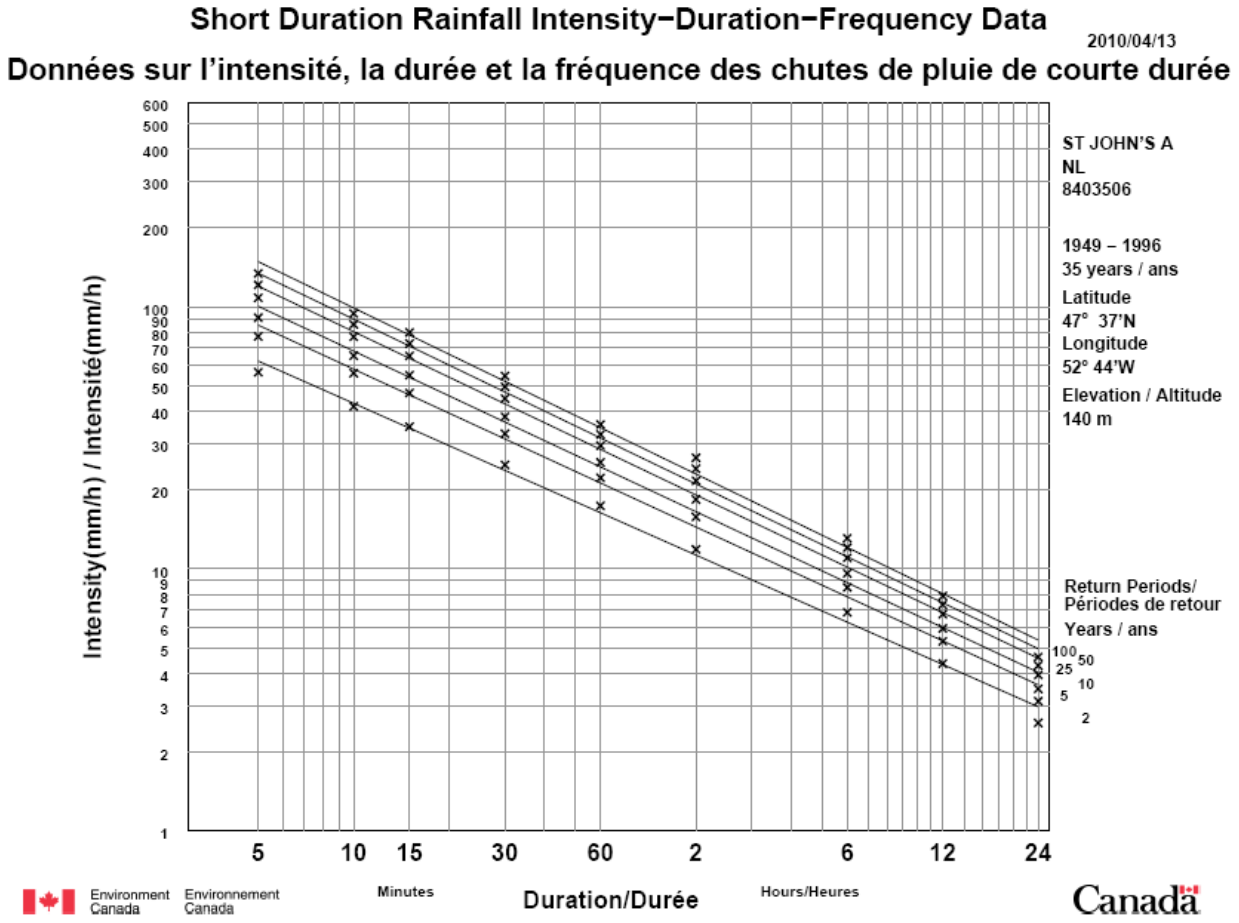


Table 2-5 - Historical IDF Table, St. John's A Station, 8403506, Precipitation intensities over the specified duration, mm/hr

		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	56.2	77.0	90.8	104.0	108.2	121.1	133.9
	10 min	41.6	55.7	65.0	74.0	76.8	85.6	94.2
	15 min	34.9	46.9	54.8	62.4	64.9	72.3	79.7
	30 min	24.9	32.8	38.0	43.0	44.6	49.5	54.4
	1 hr	17.4	22.3	25.5	28.6	29.5	32.5	35.5
	2 hr	11.9	15.8	18.4	20.9	21.7	24.1	26.5
	6 hr	6.8	8.5	9.6	10.7	11.0	12.0	13.1
	12 hr	4.4	5.3	5.9	6.5	6.7	7.3	7.9
	24 hr	2.6	3.1	3.5	3.8	3.9	4.3	4.6

Table 2-6 - Historical IDF Table, St. John's Composite Record, Updated March 2012, Precipitation intensities over the specified duration, mm/hr

		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	55.0	73.7	86.0	97.9	113.3	124.8
	10 min	41.6	54.6	63.0	71.4	82.2	90.0
	15 min	35.7	46.8	54.0	60.8	70.0	76.8
	30 min	26.2	34.4	39.8	45.2	51.8	57.0
	1 hr	18.7	24.7	28.6	32.4	37.3	40.9
	2 hr	12.9	17.5	20.5	23.4	27.1	29.9
	6 hr	7.4	9.6	11.1	12.5	14.3	15.7
	12 hr	4.7	6.1	7.1	8.0	9.2	10.1
	24 hr	2.8	3.6	4.1	4.6	5.2	5.7

Table 2-7 - Historical Annual Maximum Precipitation Events St. John's A Station, 8403506, mm

Year	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1949	8.9	8.9	10.2	17.5	28.2	52.6	61.7	62	63.5
1961	3	4.3	5.3	6.9	8.6	13.5	25.7	35.6	38.6
1962	2.8	4.6	4.6	8.1	13	20.6	33.8	54.9	59.7
1963	10.2	11.2	11.7	13.7	18.5	23.6	40.9	52.3	57.9
1964	4.3	6.9	7.9	11.2	19.3	28.2	54.9	72.6	77.5
1965	5.3	7.4	9.9	13	17.8	19.6	32.3	51.8	59.7
1966	8.4	13.2	17	25.4	29.7	43.7	48.5	64.5	85.3
1967	2.3	3.8	5.3	9.9	10.9	16.3	29.5	44.4	58.4
1968	6.3	12.7	13.7	14.7	17.5	22.4	41.9	55.1	61.7
1969	5.6	7.1	8.4	8.6	11.7	19	30.7	34.5	48.3
1970	5.6	7.1	10.7	15.2	16.3	19.6	42.4	62.5	87.4
1971	6.3	10.4	14.5	16	19	22.1	34.3	41.1	77.7
1972	4.8	5.3	6.6	10.9	15	20.6	47.8	72.6	89.2
1973	5.3	6.9	7.9	10.4	16.5	30	49.5	65.8	67.1
1974	3.6	5.6	6.3	9.9	16.3	22.4	42.4	53.3	72.9
1975	8.1	10.4	12.2	17.8	19	19.6	46.5	71.9	82.3
1976	3.6	4.8	6.1	8.4	12.7	19	33.8	42.2	53.6
1977	3.8	5.6	7.6	11.7	17.5	23.4	38.6	40.4	41.4
1978	4	5.9	7.4	7.6	12.9	13.1	27.1	37.6	43
1979	3.2	4.2	5.9	10.2	16.2	18.1	29.3	41.9	49.2
1980	3.2	6.1	7.4	12.2	17.4	23.9	33.6	41.6	69.8
1981	N/A	N/A	N/A	N/A	15	22.4	46.7	72.5	82.6
1982	5.1	9	12.9	17.1	24.5	35.9	80.3	82.4	84
1983	1.6	3.2	4.8	9.6	19.2	26.5	47.3	52.8	54.7
1984	5	9.9	13	21.5	27.1	36.6	61	74	75.3
1985	5.2	7.1	9.8	11.3	14.1	18.5	36	54.9	82.9
1986	3.1	4.8	7.2	14.3	23.3	27.9	40.2	58.9	70.6
1987	5.1	7.3	8.6	16.2	23.5	24.2	30.6	36.6	46.8
1988	6.6	10.6	13.2	17.4	23.4	25.9	44.8	45.8	49
1989	2.9	4.5	6.2	8	10.9	19.7	43.4	51.6	51.6
1990	3.7	5.9	6.5	12.6	19.2	28.5	48.1	68.7	85.2
1991	7.8	11.4	15.9	23.3	28.8	29.5	51.2	52.2	59.7
1993	4.4	7	7.6	11.5	20	31.3	47.6	49.4	55.3
1994	6.2	9.1	10.3	12.6	12.8	14.9	N/A	N/A	67.5
1995	5.2	9.8	14.5	16.6	27.6	46.7	55.9	58.8	61.6
1996	4.8	6.2	7.4	10.2	15.4	27.2	40.2	44	48.4

2.2 Local Climate Data

Local climate data were required to establish the sensitivity of extreme precipitation to monthly average precipitation and temperature. Local climate data were obtained from Environment Canada for the 11 elements shown in Table 2-8.

Table 2-8 - Historical Climate Data Elements

Element Description
Mean Max Daily Temp (°C)
Mean Daily Temp (°C)
Mean Min Daily Temp (°C)
Extreme Monthly Max Temp (°C)
Extreme Monthly Min Temp (°C)
Monthly Total Rain (mm)
Monthly Total Snow (cm)
Monthly Total Precip (mm)
Snow on Ground Last Day (cm)
Direction of Max Gust (10's deg)
Speed of Max Gust (km/h)

Data for all elements were available on a daily timestep. Table 2-9 summarizes the period of record, monthly total precipitation and monthly average temperature for the three stations.

Table 2-9 - Summary of Availability of Historic Monthly Data

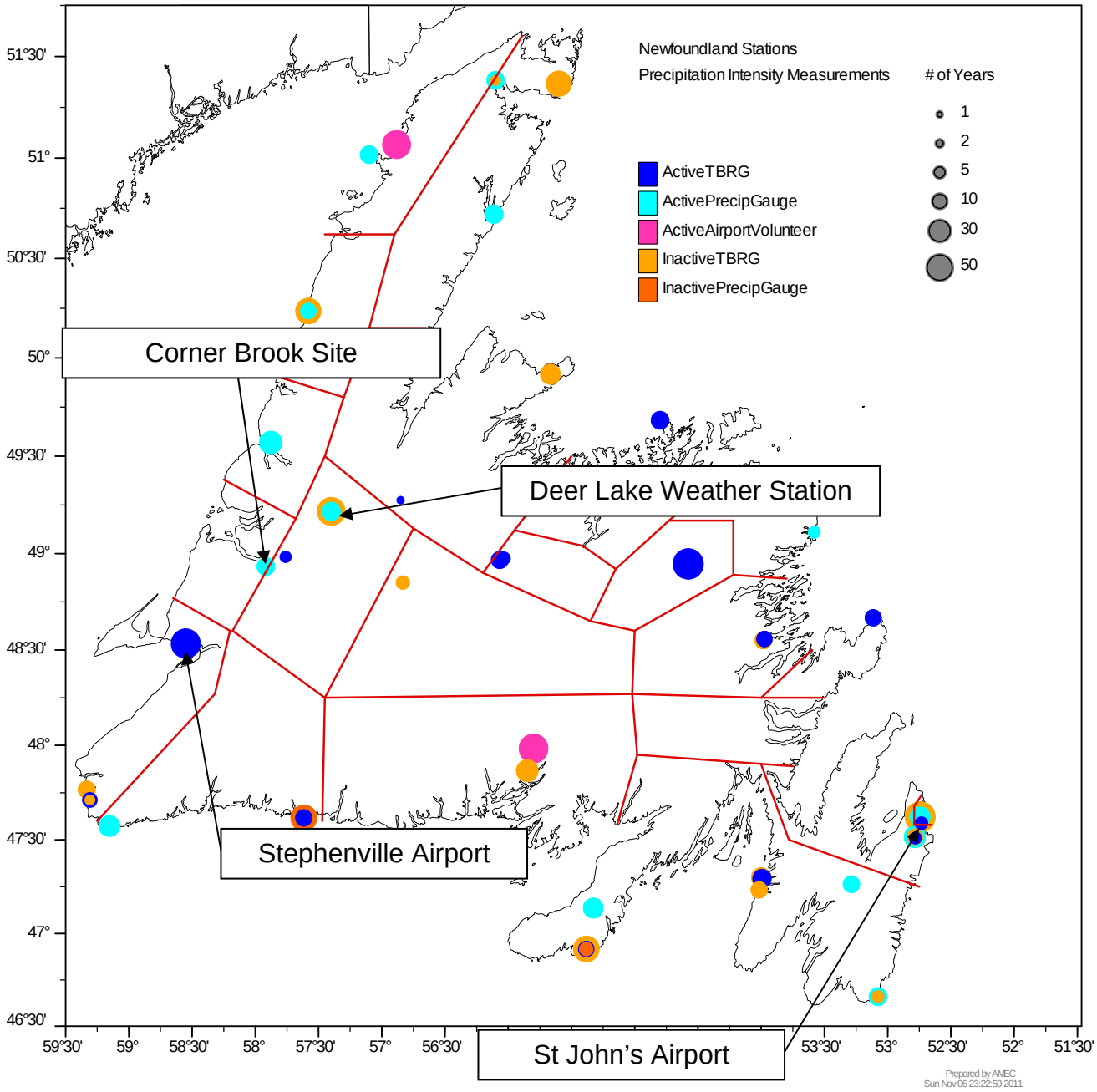
Month	Deer Lake, 8401501		Stephenville A, 8403800		St John's A, 8403506	
	Total Precip (count)	Mean Temp (count)	Total Precip (count)	Mean Temp (count)	Total Precip (count)	Mean Temp (count)
Jan	69	72	69	69	70	70
Feb	71	73	69	70	70	70
Mar	71	72	70	70	70	70
Apr	70	72	67	70	69	69
May	**70**	**70**	**67**	**69**	**70**	**70**
Jun	**70**	**72**	**68**	**69**	**69**	**69**
Jul	**72**	**72**	**69**	**69**	**69**	**69**
Aug	**68**	**70**	**69**	**69**	**69**	**69**
Sep	**70**	**70**	**68**	**69**	**69**	**69**
Oct	**69**	**71**	**68**	**69**	**69**	**69**
Nov	70	71	68	69	69	69
Dec	70	73	69	69	69	69
First Year of Data	1933	1933	1942	1942	1942	1942
Last Year of Data	2005	2005	2010	2010	2010	2010

Note: While datapoints are shown for all months, correspondence with Environment Canada staff indicated precipitation data for these stations are only valid from May to October. The stations have not been equipped with heating elements to allow them to measure snowfall water equivalent accurately.

Figure 2-1 shows the Deer Lake and Stephenville A stations to be approximately equidistant from the Corner Brook site. Further detailed meteorological analysis suggests that the Deer Lake site is considered more representative of the rainfall patterns over the Corner Brook watersheds. As shown in Figure 2-5, the Public Forecast Warning Areas used by Environment Canada place the Deer Lake station

within the same Warning Area as Corner Brook while the Stephenville A station falls into another Warning Area. Therefore the Deer Lake station is more representative of precipitation that contributes to flows at Corner Brook. Accordingly, projected IDF curves have been developed only for the Deer Lake and St. John's A Stations.

Figure 2-5 – Public Forecast Warning Areas and Project Sites
Government of Newfoundland and Labrador, (2011)



2.3 Projected Climate Data

The objective of this study is to estimate the sensitivity of extreme precipitation events at the two weather stations of interest (Deer Lake and St. John's A) to projected climate change. Development of information about projected climate conditions involves the following three elements, which are common to most climate impact studies:

- *Emissions scenarios.* Projections of future changes in climate attributed to human activity rely on projections of future concentrations of greenhouse gases (GHG), which in turn depend on current concentrations and future rates of GHG emissions. GHG emissions depend, in complex ways, on socio-economic development, technology, demographics and politics. The Intergovernmental Panel on Climate Change (IPCC) has developed a number of "storylines" of future global conditions, that are used as the basis for estimates of future GHG emissions. These storylines are documented in the Special Report on Emissions Scenarios (SRES) (Nakicenovic et al., 2000) and are often referred to as SRES scenarios. The IPCC did not assign a likelihood to the SRES scenarios—all are considered equally probable "alternative images of how the future might unfold" (Nakicenovic et al., 2000, Technical Summary). From the four SRES scenario "families" (A1, A2, B1, B2), only the B1, A1B (a member of the A1 family) and A2 scenarios have been used as the basis for projections on many GCMs. These have come to be known, respectively, as the "low", "medium" and "high" emissions scenarios, based on their impact on climate conditions in the year 2100.

- *Global Climate Simulation.* More than 20 GCMs are currently being developed, operated and maintained by national meteorological services, climate research centers and universities around the world. These models have been used to develop quantitative projections of future changes in climate variables, including temperature and precipitation, based on the SRES emissions scenarios. Each GCM is different, but many contain similarities in their conceptual approach and may even share simulation methods and codes. A single GCM will be used to generate many projections, each of which differ by the SRES scenario used to force the GCM, but also by the way in which the model run is initialized and constrained.

- *Downscaled Climate Projections.* GCMs operate on a grid that may range in scale from 100 to 200 miles on a side, and their output is provided at this same resolution. While each GCM grid cell covers from 10,000 to 40,000 square miles, a substantial watershed might cover a few hundred to a several thousand square miles, and many tributaries drain considerably smaller areas. Before GCM output can be used for analysis of local conditions, or for local hydrologic modeling, it must go through a process called downscaling, which relates the large scale GCM data to detailed

terrain and observed climate conditions. In addition, GCM projections contain bias, which is exhibited as systematic error in replicating observed conditions. These biases are usually reduced during downscaling with an *ex post* calibration process referred to as *bias correction*.

This project used a set of readily-available downscaled projections from the World Climate Research Programme's (WCRP's) Coupled Model Intercomparison Project Phase 3 (CMIP3) multi-model dataset (Meehl et al., 2007) that have been bias-corrected and spatially downscaled and archived by Maurer (2011). These data were downscaled as described by Maurer et al. (2009) using the bias-correction/spatial downscaling method (Wood et al., 2004) to a 0.5 degree grid, based on the 1950-1999 gridded observations of Adam and Lettenmaier (2003). The archive contains output from 48 model runs, or projections, of monthly precipitation and temperature, with each projection consisting of an overlap period from 1950 through 1999 and a projection period from 2000 through 2099. Each projection is the output from a run of one of 16 GCMs using one of the B1, A1B or A2 emissions scenarios. The GCMs in the archive are listed in Table 2-10.

Table 2-10 - GCMs in Maurer Archive
(after Maurer et al., 2009)

	Modeling Group, Country	IPCC Model I.D.
1	Bjerknes Centre for Climate Research	BCCR-BCM2.0
2	Canadian Centre for Climate Modeling and Analysis	CGCM3.1 (T47)
3	Météo-France/Centre National de Recherches Météorologiques, France	CNRM-CM3
4	CSIRO Atmospheric Research, Australia	CSIRO-Mk3.0
5	US Dept. of Commerce/NOAA/Geophysical Fluid Dynamics Laboratory, USA	GFDL-CM2.0
6	US Dept. of Commerce/NOAA/Geophysical Fluid Dynamics Laboratory, USA	GFDL-CM2.1
7	NASA/Goddard Institute for Space Studies, USA	GISS-ER
8	Institute for Numerical Mathematics, Russia	INM-CM3.0
9	Institut Pierre Simon Laplace, France	IPSL-CM4
10	Center for Climate System Research (The University of Tokyo), National Institute for Environmental Studies and Frontier Research Center for Global Change (JAMSTEC), Japan	MIROC3.2 (medres)
11	Meteorological Institute of the University of Bonn, Meteorological Research Institute of KMA	ECHO-G
12	Max Planck Institute for Meteorology, Germany	ECHAM5/MPI-OM
13	Meteorological Research Institute, Japan	MRI-CGCM2.3.2
14	National Center for Atmospheric Research, USA	PCM
15	National Center for Atmospheric Research, USA	CCSM3
16	Hadley Centre for Climate Prediction and Research/Met Office	UK UKMO-HadCM3

3.0 TIME FRAMES

Time frames adopted for this work are summarized in Table 3-1.

Table 3-1 - Project Time Frames

Description	Time Frame
Climate simulation overlap period	1950-1999
Climate simulation projection period	2000-2099
2020 projection averaging period	2005-2034
2050 projection averaging period	2035-2064
2080 projection averaging period	2065-2094

4.0 APPROACH

4.1 Candidate Approaches

The Canadian Standards Association (CSA) has published the *Technical Guide, Development interpretation and use of rainfall intensity-duration-frequency information: Guideline for Canadian water resources practitioners* (Technical Guide) (CSA, 2010), which provides background about the methodologies used to develop IDF curves based on current climate, and a discussion about methodologies that are potentially applicable to the development of IDF curves that reflect projected future climate conditions. Appendix 8 of the Technical Guide provides a review of several approaches that at the time it was compiled had been applied to estimate the sensitivity of extreme precipitation to projected climate change. For detail on the available methods, the reader is directed to the Technical Guide and the references therein. The methods are summarized below in several categories:

- *Extrapolation of trends.* Linear regression is applied to observed historical data to characterize the trend in short-term precipitation extremes and these statistical models are then used to extend the trend to future periods.

- *Direct interpretation of GCM output.* GCMs provide output at a daily time step and at a grid scale that can range from about 1 to 4 degrees (approximately 100 to 400 km on a side at the equator, with the longitudinal dimension decreasing with increasing latitude). Some studies (e.g. Kharin et al, 2007) have used daily GCM output to characterize daily precipitation extremes. These methods cannot directly address time steps shorter than the time step of the GCM.

- *Direct interpretation of Regional Climate Model Output.* Regional climate models (RCMs) use a finer grid scale than is used by a GCM (e.g. 25 km for an RCM versus 100-400 km for a GCM). Because RCMs are usually “nested”, that is their spatial

scope is relatively local and their boundary conditions are set by the results of a GCM run, use of an RCM is sometimes referred to as "dynamical downscaling." RCMs also run at a finer temporal resolution than GCMs and some RCMs can produce output at 1-hour time steps. These data have been used directly to characterize short-term precipitation, but cannot directly address time steps shorter than the time step of the RCM. Because RCMs are computationally expensive to run and their spatial extent is limited, there are fewer runs available. The results of an RCM run will reflect any biases in the GCM run on which it is based.

- *Applying scale factors to climate model output.* Scale factors relate short-term precipitation to longer-term precipitation, e.g. monthly average or total precipitation.

- *Applying statistical models to climate model output.* Statistical models can be developed to represent a functional relationship between short-term precipitation and a predictor variable, usually at a larger temporal and spatial scale (e.g. monthly total precipitation at a GCM or RCM resolution). The most common statistical model is a linear model developed using regression. Linear models of the parameters of extreme value distributions (e.g. Gumbel, Weibull) have also been used.

- *Conditional weather generators applied to climate model output.* Weather generators are stochastic models that generate time series of weather conditions. These models may be parametric (they rely on classical statistical distributions described by parameters) or they can be non-parametric (they rely on re-sampling analogs of weather from the historical data) or a combination of the two. When applied to investigating climate change impacts, weather generators are usually conditioned on large-scale weather variables using statistical models as described above or using non-parametric techniques like the K-nearest neighbor technique.

In the approaches described above, climate model output may be "raw" output at the native grid scale of the climate model (either a GCM or a RCM) or downscaled output.

Despite the remarkable improvements in the scientific state of knowledge about the processes that drive weather, and ultimately climate, there is considerable uncertainty about the sensitivity of climate to increasing greenhouse gas concentrations. Because of that uncertainty, and because of practical constraints, each of the methods described above have shortcomings. It is fair to say that all of the methods described above rely to some degree on an assumption that the relationships between large-scale and small-scale processes, both in time and space, will continue unchanged into the future. This is true of all approaches that use downscaling, scale factors and statistical models, including weather generators. Climate models simulate climate sensitivity, but even these models contain statistical sub-models and are limited in spatial and temporal resolution. In short, there is no perfect method to project climate impacts, there will be

considerable uncertainty regarding those projections, and this uncertainty should always be considered when making long-term decisions about investment, policy or infrastructure.

4.2 Selected Approach

Based on a review of available methods, and considering the objectives and constraints of the current work, an approach employing extreme value statistics was judged to be the best approach for estimating the sensitivity of short-term precipitation to projected climate. This approach, described in Towler, et al., (2010) (published after compilation of the Technical Guide), involves fitting linear models of the parameters of an extreme value distribution of a short-term variable to predictor variables, usually long term variables, referred to as "covariates". We refer to this statistical model as the "intensity model". The method, which is sometimes referred to as generalized linear models (GLM) (Furrer and Kaatz, 2007), allows modeling of variables that do not have a normal distribution as well as discrete variables, such as precipitation occurrence.

In the approach described below the climate predictor variables used to force the GLM model of climate sensitivity are developed using a *delta* approach and the final adjusted values of precipitation intensity are in turn calculated by a second application of the delta approach to the output of the GLM model. The delta approach and its application are described below.

4.3 Data Diagnostics

A diagnostic analysis was conducted to determine the strength of available long-term climate variables for predicting short-term precipitation. The available projected climate variables were monthly precipitation depth and monthly average temperature. These variables could also be calculated from the local historical climate record. Three variables, monthly total precipitation, monthly average temperature and the product of those two variables were tested for their strength as a predictor of extreme precipitation. The strength of a predictor was assessed using the coefficient of determination estimated using linear regression. These analyses were made using the statistical package "R" (http://www.r-project.org/).

The results of this analysis revealed that statistically significant predictors could not be found for annual precipitation extremes. However, significant predictors were found for many durations for many months. Table 4-1 and Table 4-2 show the occurrence of extreme precipitation at Deer Lake and St. John's A respectively: shaded cells indicate a month and duration for which snow was a possibility and, due to the lack of accurate snowfall recording at the stations, extreme precipitation data could not be verified. On this basis we elected to model the occurrence of monthly extremes between May and October, the maximum of which would represent the annual extreme.

In addition, in the set of extreme event data, there were a number of months where more missing values were reported for the 24-hour storm duration than for the other storm durations. For a given month and parameter, if more than 4 days data were missing, that month's data for the 24-hour storm duration were deemed unusable and were not used for the fitting and projection process.

Table 4-1 - Occurrence of Annual Extreme Precipitation, Deer Lake Station

		Occurrence of Annual Extreme Precipitation Event, Deer Lake Station													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	multiple	SUM
Event Duration	5 Minutes	1	1	-	-	1	-	12	15	4	1	-	-	3	38
	10 Minutes	-	-	-	-	-	2	12	15	4	1	1	-	3	38
	15 Minutes	-	-	-	-	1	4	14	16	1	1	1	-	-	38
	30 Minutes	-	-	-	-	1	5	15	15	1	-	-	-	1	38
	1 Hours	-	-	-	-	1	3	15	14	1	2	1	1	-	38
	2 Hours	-	-	-	-	2	3	11	12	3	3	4	-	-	38
	6 Hours	-	-	-	-	1	5	6	11	5	6	3	1	-	38
	12 Hours	-	-	-	-	1	4	6	7	9	7	2	1	1	38
	24 hours	-	-	1	-	1	6	5	6	7	8	3	1	-	38
SUM		1	1	1	-	9	32	96	111	35	29	15	4	8	342
%		0.3%	0.3%	0.3%	0.0%	2.6%	9.4%	28.1%	32.5%	10.2%	8.5%	4.4%	1.2%	2.3%	100.0%

Table 4-2 - Occurrence of Annual Extreme Precipitation, St. John's A Station

		Occurrence of Annual Extreme Precipitation Event, St. John's A Station													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	multiple	SUM
Event Duration	5Minutes	2	-	-	-	-	1	9	12	7	3	2	1	-	37
	10Minutes	1	-	-	-	-	1	10	13	7	1	2	1	1	37
	15Minutes	1	-	-	-	-	2	10	11	7	3	1	2	-	37
	30Minutes	1	-	-	-	-	2	9	11	6	3	3	1	1	37
	1Hours	1	-	-	-	-	2	10	13	6	3	1	-	1	37
	2Hours	2	-	-	-	-	3	9	9	4	6	2	1	1	37
	6Hours	2	-	-	-	1	3	4	7	5	3	7	4	1	37
	12Hours	1	1	-	2	2	2	3	7	5	3	7	4	-	37
	24hours	1	1	1	2	4	1	2	7	6	5	3	3	1	37
SUM		12	2	1	4	7	17	66	90	53	30	28	17	6	333
%		3.6%	0.6%	0.3%	1.2%	2.1%	5.1%	19.8%	27.0%	15.9%	9.0%	8.4%	5.1%	1.8%	100.0%

4.4 Use of Composite Historical IDF for St. John's Area

A second set of historical IDF curves were used to project IDF values for the St. John's area. This was done to account for a large precipitation event that took place in 2002, after the St. John's A station was taken offline. In order to include the effect of this storm, data from the St. John's A station with data was combined from a station at Windsor Lake, approximately 1.6 kilometer from the St. John's A station (updated data provided by WRMD). The record for the St. John's A station runs from 1949 through 1996, and the record for the Windsor Lake station runs from 1999 through 2010. The combined record from these two stations is referred to as the St. John's Composite.

It is important for any analysis of extreme events that all large storms are taken into account, though any analyst should exercise caution combining data from multiple stations. Without a significant period of overlap in the data record for two gauges, no accurate assumptions can be made about the homogeneity of the data recorded by the gauges. There are a number of reasons that a single gauge with a long record provides much higher-quality data than a composite dataset from multiple gauges:

- If two gauges are placed in separate climatic zones, different elevations or regions with varying land cover, they may not experience the same storms.
- Even if two stations are in close proximity they may return very different results for the same storm because, during precipitation events, rainfall is not deposited in a spatially uniform manner.
- There are many environmental factors that can impact the measurements taken by a precipitation gauge including proximity to buildings, localized wind patterns, and local obstructions.
- Gauges of the same type may not be calibrated in an identical way or maintained to the same standard of operation.

The projected IDFs in this report are developed based on the baseline historical IDFs at both the Environment Canada St. John's A site and for the St. John's Composite record.

4.5 Fitting Models

For this work the generalized extreme value (GEV) distribution was fit to the historical monthly precipitation maxima using potential predictor variables. The GEV distribution can assume three possible distribution types, known as the Gumbel, Fréchet and Weibull. The Gumbel is the distribution used by Environment Canada to estimate IDF curves and it is a relatively "light-tailed" distribution with a fixed shape. Using the

Frechet variant of the GEV would allow a model to be fit to the shape parameter, which would affect the “weight” of the tail, which is of the most interest in modeling extreme values. The strength of predictors was evaluated to condition the shape parameter of the Frechet distribution explicitly, but no variables showed appreciable strength. This may be because there are not a sufficiently large number of annual values to derive a significant relationship. Accordingly, the Gumbel distribution was adopted.

The GEV models were fitted using the extRemes package (http://cran.r-project.org/web/packages/estRemes/extRemes.pdf) in the statistical package “R” (http://www.r-project.org/). To allow for possible seasonal shifts in extreme event occurrence, seasonal models were fit for each storm duration. In the seasonal model fitting process, all predictor data across May to October were fit against all the data for each individual storm duration. For each duration, models for three principal predictors were evaluated: average precipitation, average temperature and the product of average temperature and average precipitation. For each duration, models based on different predictors were accepted based on statistical significance at a criterion of 0.05 and the best model was selected based on the Akaike Information Criterion (AIC) (explained in Towler, et al., 2010; referenced from Akaike 1974).

For the 9 different durations, statistically significant models were found for each station. Of these, the best predictor for 5 of the models was total monthly precipitation, for 11 models the best predictor was the product of monthly precipitation and temperature, and for the remaining 2 models the best predictor was average monthly temperature. The final model predictors are provided in Appendix A. The parameter selected as the best predictor for each of the month/duration combinations is shown in Table 4-3.

Table 4-3 - Best Predictor Variables

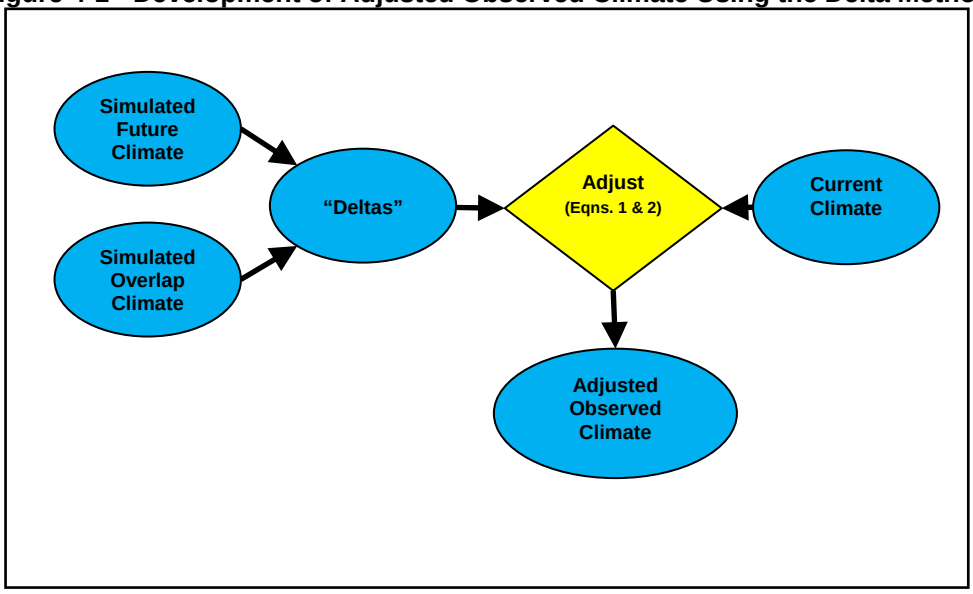
Best Models Chosen (Seasonal Fitting)		
Event Duration	Deer Lake	St John's A
5 min	PxT	T
10 min	T	PxT
15 min	PxT	PxT
30 min	PxT	PxT
1 h	PxT	PxT
2 h	PxT	PxT
6 h	PxT	P
12 h	P	P
24 h	P	P

T = Average Monthly Temperature
P = Total Monthly Precipitation
PxT = Product of P and T

4.6 Developing Projected Precipitation Intensity Values

The projected values of precipitation intensity, which make up the IDF curve, were developed using three applications of the "delta" method (Hamlet and Lettenmaier, 1999; Miller, et al., 2003). In this application the delta approach is preferred over using climate projections directly because the delta method reduces the bias inherent in climate simulations. In the delta method, climate projections are used to estimate the *change* in climate variables and this change is then used to adjust the observed record. The projected change is determined for each climate projection by comparing the climate condition during the overlap period from the climate condition at some future point in time. The overlap period is the period of time where the model simulation overlaps the observed climate. In the projections used in this work the overlap period is 1950 through 1999. In this work, the climate condition during the overlap period is represented as the average for the period 1950 through 1999 and the climate condition at the future point in time is represented as a 30-year average centered on that point in time. The projected IDF curves were based on three future time periods, 2020, 2050 and 2080. The method for adjusting climate variables is illustrated in Figure 4-1.

Figure 4-1 - Development of Adjusted Observed Climate Using the Delta Method



In adjusting precipitation the "delta" is in the form of a ratio as shown in Equation 1.

$$P_p = P_c \frac{P_{sf}}{P_{so}} \quad (1)$$

Where: P_{sf} is the simulated future precipitation, P_{so} is the simulated overlap precipitation, P_c is the current observed precipitation and P_p is the projected future precipitation.

In adjusting temperature, the "delta" was in the form of an offset, as shown in Equation 2.

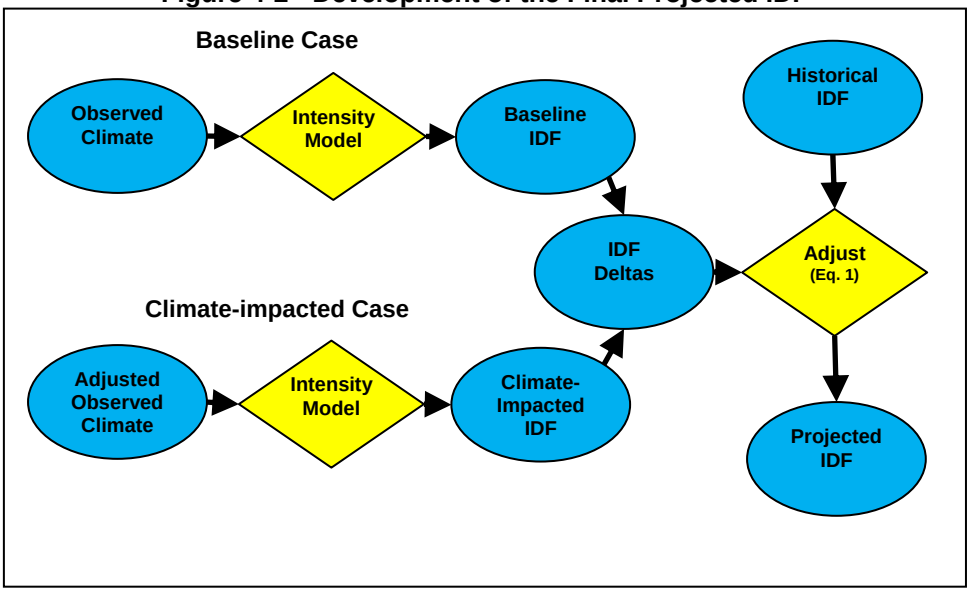
$$T_p = T_c + \left(T_{sf} - T_{so}\right) \quad (2)$$

Where: T_{sf} is the simulated future temperature, T_{so} is the simulated overlap temperature, T_c is the current observed temperature and T_p is the projected future temperature.

The GLM also exhibits inherent bias. In principal every aspect of the method Environment Canada uses to develop IDF curves could be duplicated which would allow for exact replication of the historical precipitation intensities. However, once the distributions are modified in the GLM framework to include covariates the method and results would deviate from those of Environment Canada. Further, the available GLM fitting routines use different statistical packages and a different method of fitting (maximum likelihood rather than the method of moments) than is used by Environment Canada. Because these differences will introduce bias into the estimates of precipitation intensities, a second application of the delta method was applied to adjust

the historical IDF curve. The calculation is done in the same manner as shown in Equations 1 and 2. The method is illustrated in Figure 4-2.

Figure 4-2 - Development of the Final Projected IDF



For each precipitation duration the intensity model is run once against the observed climate to generate a *baseline* intensity distribution. This distribution is used to develop estimates of baseline intensity for each return interval. The intensity model is then run again for each climate projection, this time using the adjusted observed climate value developed from that projection. This generates, for each projection, a *climate-impacted* probability distribution from which *climate impacted* precipitation intensities are generated for each return interval. The final projected precipitation intensities for each return interval are calculated using Equation 1.

The intensity models are estimated on a seasonal basis, that is by pooling all data for the months of May through October. This results in a model that captures the sensitivity of precipitation extremes to covariates (temperature, precipitation and the product of precipitation and temperature) exhibited over that season. This is done to increase the size of the data set used to estimate the statistical models, which increases their significance. The models are applied to estimate projected intensities on a monthly basis in order to capture shifts in extreme precipitation caused by projected seasonal shifts in temperature and precipitation.

Projected and observed intensities are first estimated for each month, each duration and each frequency. Then, for each GCM, duration and frequency, the maximum of the monthly intensities is taken as the annual maximum. This process is completed for each duration for both the baseline and the projected case to determine an annual maximum for each case. Then, the ratio of the calculated baseline annual maximum

and the calculated projected annual maximum is used as an estimate of the climate sensitivity of the annual extreme precipitation. This calculated climate sensitivity is then used to adjust the historical precipitation intensities in the same manner as is shown in Equation 1.

4.7 Treatment of Uncertainty

All measurements contain uncertainty, and estimates of future conditions are more uncertain than measurements. Each element of a climate impact analysis contains its own degree of uncertainty. These individual uncertainties do not add up in a straightforward way, but they do interact and each added element does increase the overall uncertainty of the final estimate of impact. The approach adopted for this work is intended to make the uncertainty arising from climate models as apparent as possible, so as to allow well-informed judgments regarding future water resources planning.

In North America, the available projections from GCMs show that temperature is highly likely to increase. However, projections of future precipitation are more uncertain; e.g. in some parts of North America model projections disagree on both the sign and magnitude of changes in precipitation. The sources of this uncertainty include the data and structure of the GCMs, the methods used to relate GCM projections to points or small areas on the earth's surface (downscaling), and the projections of future greenhouse gas emissions. Regardless of its source, uncertainty should at least be recognized and ideally should be quantified when climate projections are used for planning purposes.

As a practical matter, uncertainty in climate projections manifests in disagreement between individual projections of future climate conditions and impacts. There are 48 statistically downscaled projections of future climate conditions (monthly average temperature and precipitation) that are readily available for the study area. The most comprehensive picture of uncertainty in future conditions can be obtained by analyzing a large ensemble of projections, as recommended in the CSA Technical Guidelines. Accordingly, all of the available projections have been used to produce, for each duration period and frequency, an ensemble containing 48 estimates of precipitation intensity.

Neither the climate projections nor the results have been broken down according to the SRES emission scenarios because the intention was to represent the uncertainty in climate projections collectively, regardless of source.

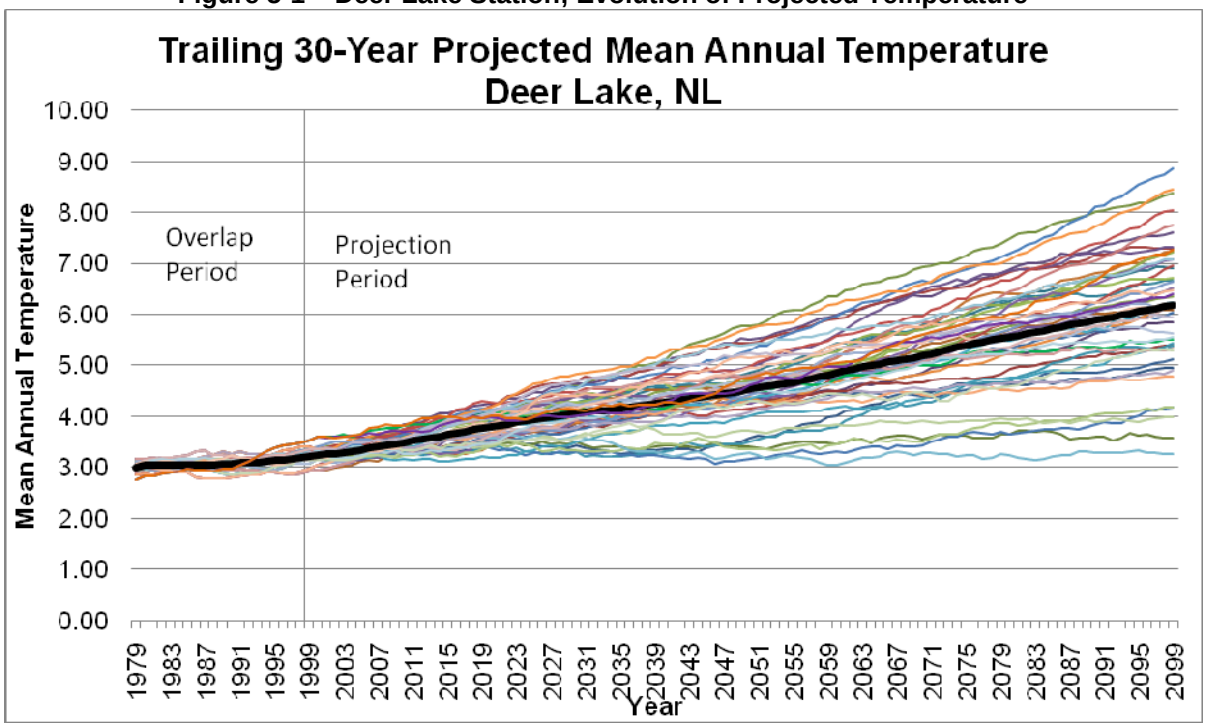
The overall results report the ensemble mean, the ensemble maximum and the 90th percentile non-exceedance value for each intensity estimate. How to interpret the range of projected results is a policy decision; some additional discussion regarding the interpretation of uncertainty is provided in Section 5.3.

5.0 RESULTS AND DISCUSSION

5.1 GCM Projections of Precipitation and Temperature

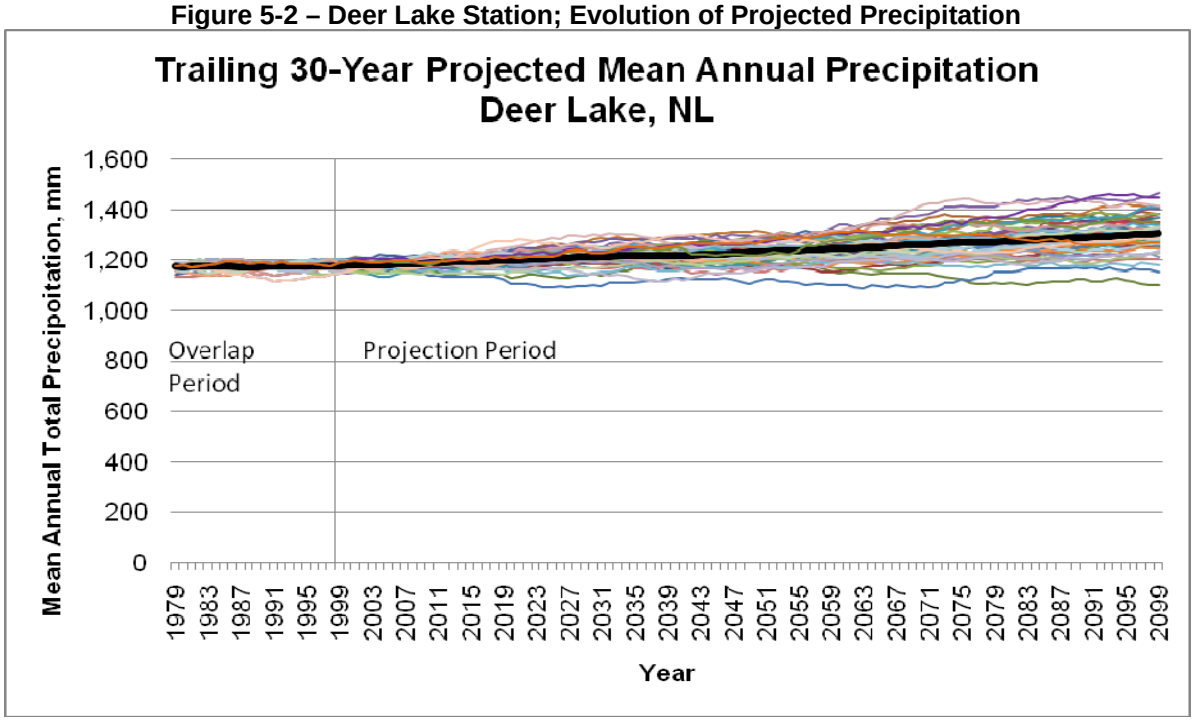
The evolution over time of projected precipitation, temperature and the product of precipitation and temperature for all 48 projections available in the Maurer archive for Deer Lake and St. John's A are shown as 30-year rolling mean values in Figure 5-1 through Figure 5-4.

Figure 5-1 – Deer Lake Station; Evolution of Projected Temperature



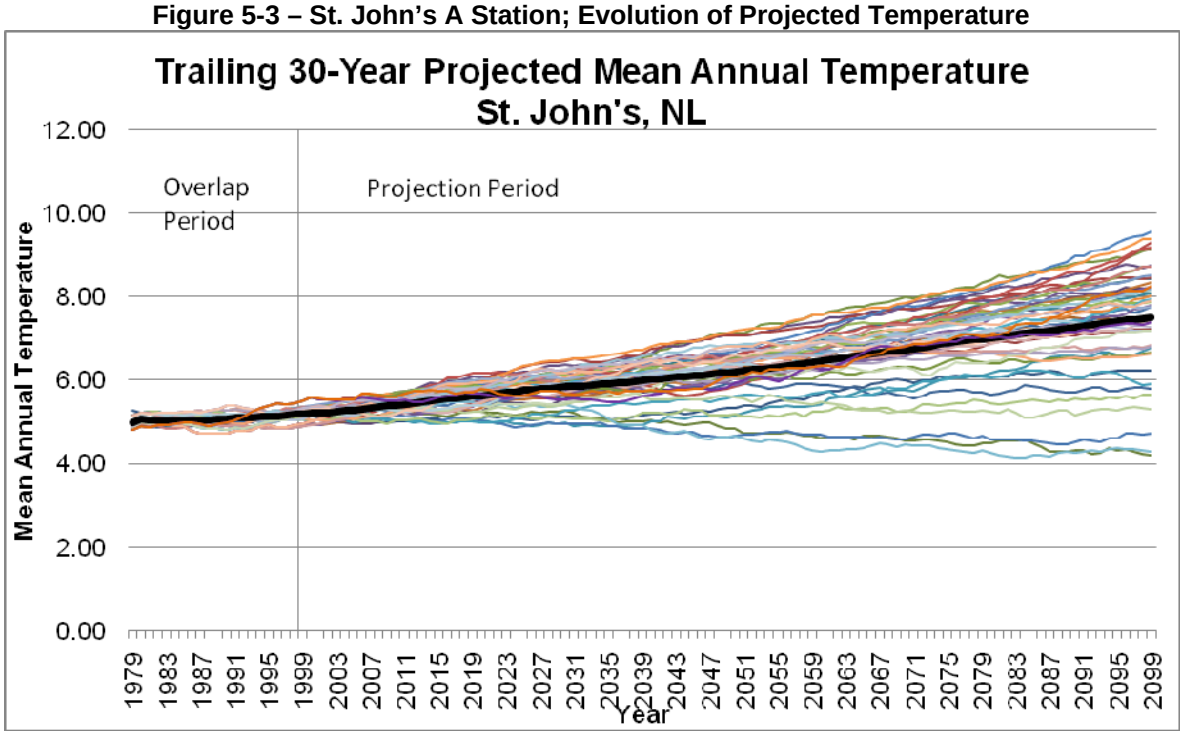
Vertical bar denotes end of overlap period and beginning of projection period. Thin, colored lines represent individual projections. Black line represents mean of all projections.

Figure 5-2 – Deer Lake Station; Evolution of Projected Precipitation



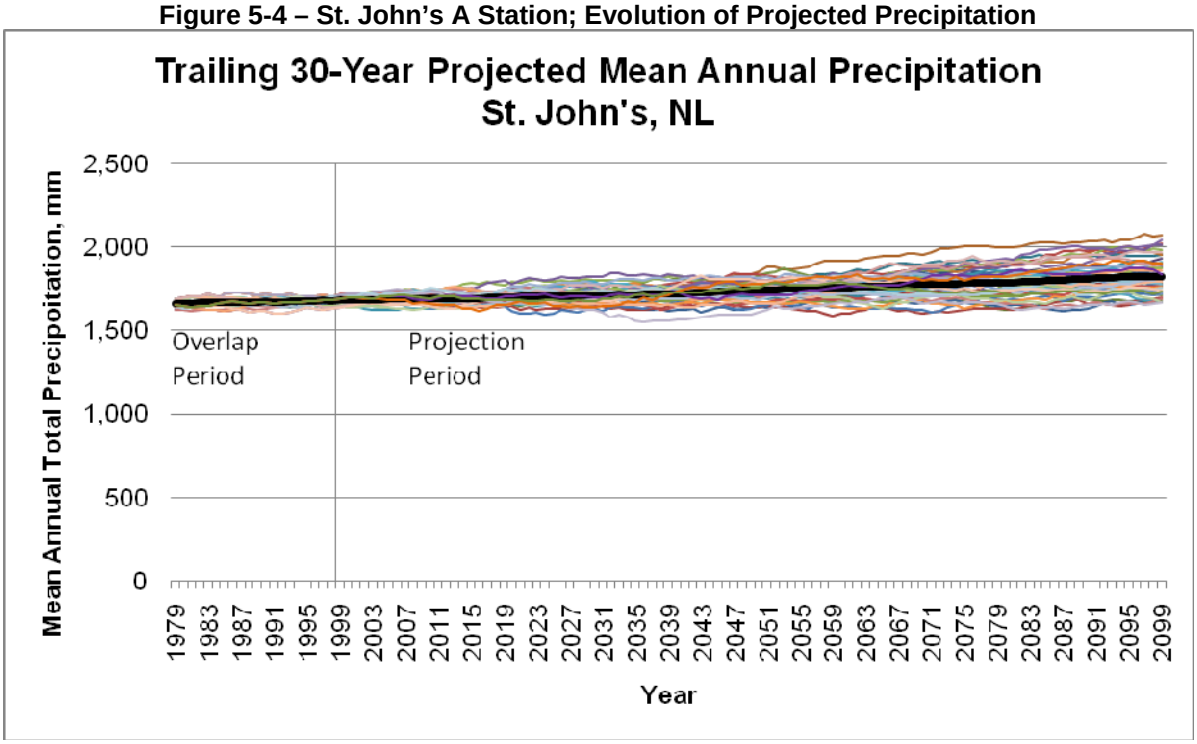
Vertical bar denotes end of overlap period and beginning of projection period. Thin, colored lines represent individual projections. Black line represents mean of all projections.

Figure 5-3 – St. John's A Station; Evolution of Projected Temperature



Vertical bar denotes end of overlap period and beginning of projection period. Thin, colored lines represent individual projections. Black line represents mean of all projections.

Figure 5-4 – St. John's A Station; Evolution of Projected Precipitation



Vertical bar denotes end of overlap period and beginning of projection period. Thin, colored lines represent individual projections. Black line represents mean of all projections.

Table 5-1 - Range of Projected Climate Variables, Deer Lake Site

		Deer Lake Site			
		Timeperiods			
		1999	2030	2050	2080
30-Year Average Annual Precipitation (mm)	Average	1177	1213	1231	1274
	Min	1148	1103	1117	1105
	Max	1205	1301	1317	1427
30-Year Average Annual Temperature (deg C)	Average	3.22	4.06	4.53	5.55
	Min	2.92	3.30	3.16	3.24
	Max	3.53	4.82	5.76	7.47

Table 5-2 - Range of Projected Climate Variables, St. John's A Site

		St. John's A Site			
		Timeperiods			
		1999	2030	2050	2080
30-Year Average Annual Precipitation (mm)	Average	1681	1681	1681	1681
	Min	1642	1642	1642	1642
	Max	1716	1716	1716	1716
30-Year Average Annual Temperature (deg C)	Average	5.20	5.84	6.21	7.01
	Min	4.90	4.96	4.66	4.27
	Max	5.49	6.48	7.19	8.41

5.2 Projections of Precipitation Intensities

Table 5-3 through Table 5-5 show the precipitation intensities from the historical IDF curves from Environment Canada for the Deer Lake, St. John's A, and the St. John's Composite record, respectively. These precipitation intensities were adjusted by the projected change, as described in Section 4.6, to obtain the projected precipitation intensities. These are shown for the Deer Lake Station in Table 5-6 to Table 5-8, for the St. John's A station in Tables 5-9 to 5-11 and for the St. John's Composite record in Tables 5-12 to 5-14. Projected precipitation intensities are reported as the maximum, mean and 90th percentile of the 48 values estimated.

In addition to the projections performed using the methodology outlined above, projections from other researchers for St. John's were compiled as well. Table 5-15 presents data for the 2020, 2050 and 2080 timeframes for modeling done by Finnis (as provided by WRMD), HadCM3 Global Climate Modeling downscaling (Lines 2008), and CGCM2 Global Climate Modeling downscaling (Lines 2008). All data are presented as precipitation intensities (mm/hr). Not all sources provided estimates for every time frame and return interval.

Table 5-3 - Historical IDF Table, Deer Lake Station, Precipitation intensities over the specified duration, mm/hr

		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	47.3	69.5	84.1	98.2	102.7	116.4	130.0
	10 min	34.3	48.6	58.2	67.3	70.2	79.1	87.9
	15 min	27.9	38.3	45.1	51.7	53.8	60.2	66.6
	30 min	19.7	25.4	29.2	32.8	33.9	37.5	41.0
	1 hr	13.4	16.8	19.1	21.3	21.9	24.1	26.2
	2 hr	9.4	12.2	14.1	15.8	16.4	18.1	19.9
	6 hr	5.0	6.1	6.8	7.5	7.7	8.4	9.1
	12 hr	3.1	3.7	4.2	4.6	4.7	5.1	5.5
	24 hr	1.8	2.2	2.4	2.6	2.7	3.0	3.2

Table 5-4 - Historical IDF Table, St. John's A Station, Precipitation intensities over the specified duration, mm/hr

		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	56.2	77.0	90.8	104.0	108.2	121.1	133.9
	10 min	41.6	55.7	65.0	74.0	76.8	85.6	94.2
	15 min	34.9	46.9	54.8	62.4	64.9	72.3	79.7
	30 min	24.9	32.8	38.0	43.0	44.6	49.5	54.4
	1 hr	17.4	22.3	25.5	28.6	29.5	32.5	35.5
	2 hr	11.9	15.8	18.4	20.9	21.7	24.1	26.5
	6 hr	6.8	8.5	9.6	10.7	11.0	12.0	13.1
	12 hr	4.4	5.3	5.9	6.5	6.7	7.3	7.9
	24 hr	2.6	3.1	3.5	3.8	3.9	4.3	4.6

Table 5-5 - St. John's Composite Record, Updated March 2012, Precipitation intensities over the specified duration, mm/hr

		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	55.0	73.7	86.0	97.9	113.3	124.8
	10 min	41.6	54.6	63.0	71.4	82.2	90.0
	15 min	35.7	46.8	54.0	60.8	70.0	76.8
	30 min	26.2	34.4	39.8	45.2	51.8	57.0
	1 hr	18.7	24.7	28.6	32.4	37.3	40.9
	2 hr	12.9	17.5	20.5	23.4	27.1	29.9
	6 hr	7.4	9.6	11.1	12.5	14.3	15.7
	12 hr	4.7	6.1	7.1	8.0	9.2	10.1
	24 hr	2.8	3.6	4.1	4.6	5.2	5.7

Table 5-6 - Deer Lake Projected IDF Tables, 2020 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2020 timeframe						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	51.8	73.9	88.1	101.9	106.3	119.6	132.9
	10 min	36.5	50.8	60.3	69.3	72.2	81.0	89.6
	15 min	29.9	40.2	46.9	53.4	55.4	61.7	68.0
	30 min	23.0	28.5	32.2	35.7	36.8	40.2	43.6
	1 hr	15.7	19.0	21.3	23.3	24.0	26.1	28.1
	2 hr	11.1	14.0	16.0	17.7	18.3	20.0	21.9
	6 hr	5.8	6.9	7.6	8.3	8.5	9.2	9.9
	12 hr	3.6	4.2	4.7	5.0	5.2	5.6	6.0
	24 hr	2.1	2.5	2.7	2.9	3.0	3.3	3.5

		90th Percentile, 2020 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	50.3	72.4	86.8	100.6	105.1	118.6	131.9
	10 min	36.1	50.4	59.9	68.9	71.8	80.6	89.3
	15 min	29.3	39.6	46.3	52.8	54.9	61.2	67.5
	30 min	21.9	27.5	31.2	34.7	35.8	39.3	42.8
	1 hr	14.9	18.3	20.6	22.7	23.3	25.4	27.5
	2 hr	10.6	13.4	15.4	17.1	17.7	19.4	21.2
	6 hr	5.6	6.6	7.3	8.0	8.2	8.9	9.6
	12 hr	3.5	4.0	4.5	4.9	5.0	5.4	5.8
	24 hr	2.0	2.4	2.6	2.8	2.9	3.2	3.4

		Mean, 2020 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	48.7	70.8	85.3	99.3	103.8	117.4	130.9
	10 min	35.3	49.6	59.2	68.2	71.1	79.9	88.7
	15 min	28.5	38.9	45.6	52.2	54.3	60.6	67.0
	30 min	20.7	26.3	30.1	33.7	34.8	38.3	41.8
	1 hr	14.1	17.5	19.8	21.9	22.5	24.7	26.8
	2 hr	9.9	12.7	14.7	16.4	17.0	18.7	20.5
	6 hr	5.3	6.3	7.0	7.7	7.9	8.6	9.3
	12 hr	3.2	3.8	4.3	4.7	4.8	5.2	5.6
	24 hr	1.9	2.3	2.5	2.7	2.8	3.1	3.3

Table 5-7 - Deer Lake Projected IDF Tables, 2050 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2050 timeframe						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	52.5	74.5	88.7	102.4	106.8	120.1	133.3
	10 min	38.3	52.5	62.0	70.8	73.7	82.4	91.0
	15 min	30.2	40.5	47.1	53.6	55.6	61.9	68.1
	30 min	23.4	29.0	32.7	36.1	37.2	40.6	44.0
	1 hr	16.0	19.3	21.6	23.6	24.3	26.4	28.4
	2 hr	11.4	14.3	16.2	18.0	18.6	20.3	22.1
	6 hr	6.0	7.0	7.7	8.4	8.6	9.3	10.0
	12 hr	3.7	4.3	4.8	5.1	5.3	5.7	6.1
	24 hr	2.2	2.6	2.7	3.0	3.0	3.3	3.5

		90th Percentile, 2050 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	51.4	73.4	87.8	101.5	105.9	119.3	132.6
	10 min	37.7	51.9	61.4	70.3	73.1	81.9	90.5
	15 min	29.8	40.0	46.7	53.2	55.3	61.5	67.8
	30 min	22.6	28.2	31.9	35.4	36.5	40.0	43.4
	1 hr	15.4	18.8	21.1	23.1	23.8	25.9	27.9
	2 hr	11.0	13.8	15.8	17.5	18.1	19.8	21.7
	6 hr	5.8	6.8	7.5	8.2	8.4	9.1	9.8
	12 hr	3.5	4.1	4.6	4.9	5.1	5.5	5.9
	24 hr	2.0	2.4	2.6	2.9	2.9	3.2	3.4

		Mean, 2050 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	49.4	71.5	85.9	99.8	104.3	117.9	131.3
	10 min	36.4	50.6	60.1	69.1	72.0	80.8	89.5
	15 min	28.8	39.2	45.9	52.5	54.5	60.9	67.2
	30 min	21.2	26.8	30.6	34.1	35.2	38.8	42.2
	1 hr	14.4	17.8	20.1	22.2	22.8	25.0	27.1
	2 hr	10.2	13.0	15.0	16.7	17.3	19.0	20.8
	6 hr	5.4	6.5	7.2	7.9	8.1	8.8	9.5
	12 hr	3.3	3.9	4.4	4.7	4.9	5.3	5.7
	24 hr	1.9	2.3	2.5	2.7	2.8	3.1	3.3

Table 5-8 - Deer Lake Projected IDF Tables, 2080 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2080 timeframe						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	55.8	77.7	91.7	105.1	109.4	122.4	135.4
	10 min	40.8	55.0	64.3	73.1	75.9	84.5	92.9
	15 min	31.8	41.9	48.5	54.8	56.8	63.0	69.1
	30 min	25.8	31.3	34.9	38.3	39.3	42.7	45.9
	1 hr	17.7	21.0	23.2	25.2	25.8	27.8	29.8
	2 hr	12.6	15.6	17.6	19.4	20.0	21.7	23.6
	6 hr	6.6	7.6	8.3	9.0	9.2	9.9	10.6
	12 hr	3.8	4.3	4.8	5.2	5.3	5.7	6.1
	24 hr	2.2	2.6	2.8	3.0	3.1	3.4	3.6

		90th Percentile, 2080 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	53.2	75.2	89.4	103.0	107.4	120.6	133.7
	10 min	39.8	54.0	63.4	72.2	75.0	83.6	92.2
	15 min	30.6	40.8	47.4	53.9	55.9	62.1	68.4
	30 min	24.0	29.5	33.2	36.6	37.6	41.1	44.4
	1 hr	16.3	19.7	21.9	24.0	24.6	26.7	28.7
	2 hr	11.6	14.6	16.5	18.3	18.9	20.6	22.5
	6 hr	6.1	7.2	7.8	8.5	8.7	9.4	10.1
	12 hr	3.6	4.2	4.7	5.0	5.1	5.5	6.0
	24 hr	2.1	2.5	2.7	2.9	3.0	3.3	3.5

		Mean, 2080 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	50.4	72.5	86.9	100.7	105.2	118.6	132.0
	10 min	37.5	51.7	61.2	70.1	73.0	81.7	90.4
	15 min	29.3	39.6	46.3	52.9	54.9	61.2	67.5
	30 min	22.0	27.6	31.3	34.8	35.9	39.4	42.8
	1 hr	15.0	18.3	20.6	22.7	23.3	25.5	27.5
	2 hr	10.6	13.5	15.4	17.1	17.7	19.4	21.3
	6 hr	5.6	6.7	7.4	8.1	8.3	9.0	9.7
	12 hr	3.3	3.9	4.4	4.8	4.9	5.3	5.7
	24 hr	1.9	2.3	2.5	2.8	2.8	3.1	3.3

Table 5-9 - St. John's A Projected IDF Tables, 2020 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2020 timeframe						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	59.1	79.7	93.3	106.4	110.5	123.2	135.9
	10 min	45.5	59.3	68.4	77.2	79.9	88.6	97.0
	15 min	38.3	50.1	57.9	65.5	67.9	75.2	82.5
	30 min	28.2	36.0	41.0	45.9	47.5	52.2	57.0
	1 hr	20.2	25.0	28.1	31.1	32.0	35.0	37.9
	2 hr	13.8	17.7	20.3	22.8	23.6	26.0	28.4
	6 hr	7.6	9.3	10.4	11.4	11.7	12.7	13.8
	12 hr	5.0	5.8	6.4	7.1	7.2	7.8	8.4
	24 hr	3.0	3.5	3.9	4.2	4.2	4.6	4.9

		90th Percentile, 2020 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	58.3	79.0	92.6	105.7	109.9	122.6	135.3
	10 min	44.6	58.5	67.7	76.5	79.3	87.9	96.4
	15 min	37.6	49.5	57.3	64.8	67.3	74.6	81.9
	30 min	27.5	35.3	40.4	45.3	46.9	51.7	56.5
	1 hr	19.6	24.4	27.6	30.6	31.5	34.4	37.4
	2 hr	13.4	17.3	19.9	22.4	23.2	25.6	28.0
	6 hr	7.4	9.0	10.1	11.2	11.5	12.5	13.6
	12 hr	4.8	5.7	6.3	6.9	7.1	7.7	8.3
	24 hr	2.9	3.3	3.7	4.1	4.1	4.5	4.8

		Mean, 2020 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	57.5	78.2	91.9	105.1	109.2	122.0	134.7
	10 min	42.6	56.6	65.9	74.8	77.6	86.4	94.9
	15 min	35.8	47.8	55.6	63.2	65.7	73.1	80.4
	30 min	25.8	33.6	38.8	43.8	45.4	50.2	55.1
	1 hr	18.1	23.0	26.2	29.2	30.2	33.2	36.1
	2 hr	12.4	16.3	18.9	21.4	22.2	24.6	27.0
	6 hr	6.9	8.6	9.7	10.7	11.1	12.1	13.2
	12 hr	4.4	5.3	5.9	6.6	6.7	7.3	7.9
	24 hr	2.6	3.1	3.5	3.9	3.9	4.3	4.6

Table 5-10 - St. John's A Projected IDF Tables, 2050 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2050 timeframe						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	60.9	81.3	94.8	107.8	111.9	124.5	137.0
	10 min	47.2	60.9	69.9	78.6	81.4	89.9	98.3
	15 min	39.9	51.6	59.3	66.8	69.3	76.5	83.8
	30 min	29.7	37.4	42.4	47.2	48.8	53.5	58.2
	1 hr	21.5	26.2	29.3	32.3	33.2	36.1	39.0
	2 hr	14.6	18.5	21.2	23.6	24.5	26.9	29.3
	6 hr	8.0	9.7	10.8	11.8	12.2	13.2	14.3
	12 hr	5.3	6.2	6.7	7.3	7.5	8.1	8.7
	24 hr	3.2	3.6	4.0	4.4	4.4	4.8	5.1

		90th Percentile, 2050 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	60.2	80.7	94.2	107.2	111.3	124.0	136.6
	10 min	45.0	58.9	68.0	76.8	79.6	88.2	96.7
	15 min	37.9	49.8	57.6	65.1	67.6	74.9	82.2
	30 min	27.8	35.6	40.7	45.6	47.1	51.9	56.7
	1 hr	19.9	24.7	27.8	30.8	31.7	34.7	37.6
	2 hr	13.6	17.5	20.1	22.6	23.4	25.8	28.2
	6 hr	7.7	9.3	10.4	11.5	11.8	12.8	13.9
	12 hr	5.0	5.9	6.5	7.1	7.3	7.9	8.5
	24 hr	3.0	3.5	3.9	4.2	4.3	4.7	5.0

		Mean, 2050 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	58.7	79.3	92.9	106.0	110.1	122.9	135.6
	10 min	43.2	57.2	66.4	75.3	78.1	86.8	95.4
	15 min	36.3	48.2	56.1	63.7	66.1	73.5	80.9
	30 min	26.3	34.1	39.3	44.2	45.8	50.6	55.5
	1 hr	18.6	23.4	26.6	29.6	30.6	33.5	36.5
	2 hr	12.7	16.6	19.2	21.7	22.5	24.9	27.3
	6 hr	7.0	8.7	9.8	10.8	11.2	12.2	13.3
	12 hr	4.5	5.4	6.0	6.6	6.8	7.4	8.0
	24 hr	2.7	3.2	3.6	3.9	4.0	4.4	4.7

Table 5-11 - St. John's A Projected IDF Tables, 2080 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2080 timeframe						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	63.7	83.9	97.3	110.1	114.1	126.6	139.0
	10 min	47.4	61.1	70.1	78.8	81.5	90.1	98.4
	15 min	40.0	51.8	59.5	67.0	69.4	76.7	83.9
	30 min	29.8	37.5	42.6	47.4	48.9	53.6	58.3
	1 hr	21.6	26.4	29.5	32.4	33.3	36.2	39.1
	2 hr	14.7	18.6	21.3	23.7	24.6	27.0	29.4
	6 hr	8.6	10.2	11.3	12.4	12.7	13.7	14.8
	12 hr	5.7	6.5	7.1	7.7	7.9	8.5	9.1
	24 hr	3.4	3.9	4.3	4.6	4.7	5.1	5.4

		90th Percentile, 2080 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	62.3	82.6	96.1	109.0	113.0	125.5	138.0
	10 min	46.0	59.8	68.9	77.6	80.4	89.0	97.4
	15 min	38.8	50.6	58.4	65.9	68.3	75.6	82.9
	30 min	28.7	36.4	41.5	46.4	47.9	52.6	57.4
	1 hr	20.6	25.4	28.5	31.5	32.4	35.3	38.2
	2 hr	14.0	18.0	20.6	23.1	23.9	26.3	28.7
	6 hr	7.7	9.4	10.4	11.5	11.8	12.8	13.9
	12 hr	5.0	5.9	6.5	7.1	7.3	7.9	8.5
	24 hr	3.0	3.5	3.9	4.2	4.3	4.7	5.0

		Mean, 2080 Time Period						
		Return period (years)						
		2	5	10	20	25	50	100
Storm Duration	5 min	60.0	80.5	94.0	107.0	111.1	123.8	136.4
	10 min	43.5	57.5	66.7	75.6	78.4	87.1	95.6
	15 min	36.6	48.5	56.4	64.0	66.4	73.8	81.1
	30 min	26.5	34.4	39.5	44.5	46.0	50.9	55.7
	1 hr	18.8	23.7	26.8	29.8	30.8	33.7	36.7
	2 hr	12.8	16.7	19.4	21.8	22.7	25.1	27.5
	6 hr	7.0	8.7	9.8	10.9	11.2	12.2	13.3
	12 hr	4.5	5.4	6.0	6.7	6.8	7.4	8.0
	24 hr	2.7	3.2	3.6	3.9	4.0	4.4	4.7

Table 5-12 - St. John's Composite Record, Updated March 2012 Projected IDF Tables, 2020 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2020 timeframe					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	57.9	76.3	88.4	100.1	115.3	126.6
	10 min	45.5	58.1	66.3	74.5	85.1	92.7
	15 min	39.2	50.0	57.1	63.7	72.8	79.5
	30 min	29.7	37.7	43.0	48.3	54.7	59.7
	1 hr	21.7	27.7	31.6	35.3	40.1	43.6
	2 hr	14.9	19.6	22.6	25.5	29.2	32.1
	6 hr	8.3	10.5	12.0	13.4	15.2	16.6
	12 hr	5.3	6.7	7.7	8.7	9.9	10.8
	24 hr	3.2	4.0	4.5	5.0	5.6	6.1

		90th Percentile, 2020 Time Period					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	57.1	75.6	87.7	99.5	114.7	126.1
	10 min	44.6	57.4	65.6	73.8	84.5	92.1
	15 min	38.5	49.4	56.4	63.1	72.2	78.9
	30 min	28.9	37.0	42.3	47.6	54.1	59.2
	1 hr	21.1	27.1	30.9	34.7	39.5	43.1
	2 hr	14.5	19.1	22.2	25.1	28.8	31.6
	6 hr	8.0	10.2	11.7	13.1	14.9	16.3
	12 hr	5.1	6.5	7.6	8.5	9.7	10.6
	24 hr	3.1	3.9	4.4	4.9	5.5	6.0

		Mean, 2020 Time Period					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	56.2	74.8	87.0	98.9	114.2	125.6
	10 min	42.6	55.5	63.9	72.2	83.0	90.7
	15 min	36.6	47.7	54.8	61.6	70.7	77.5
	30 min	27.1	35.3	40.6	46.0	52.6	57.7
	1 hr	19.5	25.5	29.4	33.2	38.0	41.6
	2 hr	13.4	18.1	21.1	24.0	27.7	30.5
	6 hr	7.5	9.7	11.2	12.6	14.4	15.8
	12 hr	4.7	6.1	7.1	8.0	9.3	10.2
	24 hr	2.8	3.6	4.1	4.6	5.2	5.7

Table 5-13 - St. John's Composite Record, Updated March 2012 Projected IDF Tables, 2050 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2050 timeframe					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	59.6	77.8	89.8	101.4	116.5	127.7
	10 min	47.2	59.7	67.8	75.9	86.3	93.9
	15 min	40.8	51.5	58.5	65.1	74.1	80.7
	30 min	31.2	39.2	44.4	49.6	56.0	61.0
	1 hr	23.1	29.1	32.9	36.6	41.4	44.9
	2 hr	15.8	20.5	23.6	26.5	30.2	33.0
	6 hr	8.7	10.9	12.5	13.9	15.7	17.1
	12 hr	5.7	7.1	8.1	9.0	10.2	11.1
	24 hr	3.4	4.2	4.7	5.2	5.8	6.4

		90th Percentile, 2050 Time Period					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	58.9	77.2	89.2	100.9	116.0	127.3
	10 min	45.0	57.7	65.9	74.1	84.7	92.4
	15 min	38.8	49.7	56.7	63.4	72.5	79.2
	30 min	29.3	37.3	42.6	47.9	54.3	59.4
	1 hr	21.4	27.4	31.2	35.0	39.8	43.3
	2 hr	14.7	19.4	22.4	25.3	29.0	31.8
	6 hr	8.3	10.5	12.1	13.5	15.3	16.7
	12 hr	5.4	6.8	7.8	8.7	9.9	10.8
	24 hr	3.2	4.0	4.5	5.1	5.7	6.2

		Mean, 2050 Time Period					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	57.4	75.9	88.0	99.8	115.0	126.3
	10 min	43.2	56.1	64.4	72.7	83.4	91.1
	15 min	37.1	48.1	55.3	62.0	71.2	77.9
	30 min	27.6	35.8	41.1	46.5	53.0	58.1
	1 hr	19.9	25.9	29.8	33.6	38.5	42.0
	2 hr	13.7	18.4	21.4	24.3	28.0	30.8
	6 hr	7.6	9.8	11.3	12.7	14.5	15.9
	12 hr	4.8	6.2	7.2	8.1	9.4	10.3
	24 hr	2.9	3.7	4.2	4.7	5.3	5.8

Table 5-14 - St. John's Composite Record, Updated March 2012 Projected IDF Tables, 2080 Time Period, Precipitation intensities over the specified duration, mm/hr

		Maximum, 2080 timeframe					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	62.4	80.3	92.1	103.6	118.4	129.5
	10 min	47.4	59.9	67.9	76.0	86.5	94.0
	15 min	40.9	51.7	58.6	65.2	74.2	80.9
	30 min	31.4	39.4	44.6	49.8	56.1	61.1
	1 hr	23.2	29.2	33.0	36.8	41.5	45.0
	2 hr	15.9	20.6	23.7	26.6	30.3	33.1
	6 hr	9.3	11.5	13.1	14.5	16.3	17.7
	12 hr	6.1	7.5	8.6	9.5	10.7	11.6
	24 hr	3.7	4.5	5.0	5.5	6.1	6.7

		90th Percentile, 2080 Time Period					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	61.0	79.1	91.0	102.5	117.5	128.6
	10 min	46.0	58.6	66.8	74.9	85.5	93.1
	15 min	39.7	50.5	57.5	64.2	73.2	79.9
	30 min	30.2	38.2	43.4	48.7	55.1	60.1
	1 hr	22.1	28.1	32.0	35.7	40.5	44.1
	2 hr	15.2	19.9	22.9	25.8	29.6	32.4
	6 hr	8.4	10.6	12.1	13.5	15.3	16.7
	12 hr	5.4	6.8	7.8	8.7	9.9	10.9
	24 hr	3.2	4.1	4.6	5.1	5.7	6.2

		Mean, 2080 Time Period					
		Return period (years)					
		2	5	10	20	50	100
Storm Duration	5 min	58.7	77.0	89.1	100.7	115.8	127.2
	10 min	43.5	56.4	64.6	72.9	83.6	91.3
	15 min	37.5	48.4	55.5	62.3	71.4	78.2
	30 min	27.9	36.1	41.4	46.7	53.2	58.4
	1 hr	20.2	26.2	30.1	33.9	38.7	42.3
	2 hr	13.9	18.5	21.6	24.5	28.2	31.0
	6 hr	7.6	9.8	11.3	12.7	14.5	15.9
	12 hr	4.9	6.3	7.3	8.2	9.4	10.3
	24 hr	2.9	3.7	4.2	4.7	5.3	5.8

Table 5-15 - St. John's A Projected IDF Tables, values from Other Researchers, 2020, 2050, 2080 timeframes, Precipitation Intensities, mm/hr

Historical Baseline							
		Return Interval					
Model Source	Storm Duration	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr
Finnis	24hr						
Lines (CGCM2)	24hr			3.2		3.8	4.1
Lines (HadCM3)	24hr			3.2		3.8	4.1
Finnis	12hr						

2020 Timeframe							
		Return Interval					
Model Source	Storm Duration	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr
Finnis	24hr						
Lines (CGCM2)	24hr			4.7	5.4	6.2	6.9
Lines (HadCM3)	24hr			4.3	4.8	5.4	5.8
Finnis	12hr						

2050 Timeframe							
		Return Interval					
Model Source	Storm Duration	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr
Finnis	24hr	3.2	3.9	4.5	5.0	5.7	6.3
Lines (CGCM2)	24hr			4.9	5.7	6.7	7.4
Lines (HadCM3)	24hr			5.8	6.9	8.3	9.3
Finnis	12hr	5.6	6.9	7.9	8.9	10.2	11.2

2080 Timeframe							
		Return Interval					
Model Source	Storm Duration	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr
Finnis	24hr						
Lines (CGCM2)	24hr			4.5	5.0	5.6	6.1
Lines (HadCM3)	24hr			4.6	5.3	6.1	6.8
Finnis	12hr						

5.3 Interpreting Uncertainty

Uncertainty reflects imperfection in our state of knowledge, as distinguished from variability, which is the effect of random processes. In practice, such a distinction is not as clear cut, for example, the variability in atmospheric processes leads to considerable uncertainty about tomorrow's weather. Nevertheless, it is important to respect the distinction, because while variability can be addressed in quantitative ways, uncertainty must be addressed, at least in part, by subjective judgment (Vick, 2002). Accordingly, deciding how to use the results of this work in the face of uncertainty will be a policy decision. Some background on the sources of uncertainty and suggestions on how to consider the results herein are provided in the following paragraphs.

Barsugli, et al. (2009) identified the following sources of uncertainty in projections of future climate conditions:

Climate Drivers—The anthropogenic component of climate drivers is greenhouse gas emissions which are formally quantified in emission scenarios. These scenarios in turn depend on projections of future socio-economic, demographic and technical factors.

Climate Sensitivity—This is represented by the climate models themselves. The imperfections in climate models arise from coarse resolution, limitations in simulation of feedback mechanisms, limited knowledge of initial conditions and a number of other factors.

Downscaling—This is required because of the coarse resolution of climate models and the local nature of impact assessments. All downscaling techniques introduce uncertainty.

In addition, there is uncertainty in the models used to assess impact. These can include hydrologic models, statistical models (as is the case in this work), hydraulic models and operations models.

Wilby and Harris (2006) found that the greatest uncertainty in climate impact studies arose from the climate models themselves, followed, in order, by the downscaling method, the hydrology model structure, hydrology model parameters (i.e. the calibration of the model) and finally by the uncertainty in future emissions scenarios.

Uncertainty in climate drivers and climate sensitivity can be represented by using a large number (an *ensemble*) of climate projections. Fortunately, reasonably large ensembles of climate projections are available and can be obtained with a relatively low effort. However, the readily available projections of climate conditions are derived using one downscaling technique, so the uncertainty inherent in downscaling is not represented in the projection ensemble. This uncertainty may be considerable.

The additional uncertainty arising from impact models is not ordinarily evaluated in impact studies, as using multiple hydrologic models, each with multiple calibrations along with multiple hydraulic or operations models, is simply too costly for most agencies. However, it is important to recognize that decision-makers have routinely relied on the results of impact models as the basis for planning and operational decisions, and thus have implicitly accepted the uncertainties in those models.

This work involves a statistical model that, strictly speaking, serves as a second downscaling method. The model takes as inputs projections of climate conditions, downscaled to average conditions over a 1/2 degree grid cell and further downscales those conditions to a single point, in this case the Deer Lake and St. John's A Stations. The model also relates monthly average conditions to monthly, and eventually annual, extreme events. The model assumes that there is a causal relationship between monthly values of the predictor variables (total precipitation and average temperature) and monthly and annual maximum precipitation intensities, and that that relationship will remain unchanged as climate evolves. It can be safely assumed that in strict terms this assumption will not hold up, but it is the basis, at some level, of all estimates of future conditions.

The results presented herein represent one estimate of the range of future extreme precipitation intensity. That range is informed by the range of future projections of monthly average climate conditions, which themselves reflect the range of emissions scenarios and the different degrees of climate sensitivity among the GCMs. However, it is exceedingly important to recognize that an ensemble of projections, such as the one used in this study, may not capture the full range of uncertainty. That is, there is some unknown and unknowable probability that the actual future conditions are not contained in the range of projections in any given ensemble. Further, as noted above, there is additional uncertainty inherent in the downscaling technique and the statistical model that are not reflected in the currently-available ensembles.

Accordingly, the results of this work should be used in combination with all relevant sources of information, including recent experience, and with careful professional judgment.

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Appendix A. Model Parameters

Table A1. Model Parameter Descriptions

Parameter	Description	Parameter	Description	Parameter	Description	Parameter	Description
Mu0	Location parameter	Xi	Shape parameter	Sigma SE	Standard error sigma	AIC	Akaike Information Criterion
Mu1	Slope of Mu	MU0 SE	Standard Error Mu0	Xi SE	Standard error Xi	p.val	P-value
Sigma	Scale parameter	MU1 SE	Standard Error Mu1	llh	Log likelihood		

Table A2. Deer Lake Model Parameter Values (Seasonal Fitted Model; 5 min, 10 min, 15 min, 30 min, 1 hr, 2 hr, 6 hr, 12 hr, 24 hr)

5_min	No Cov.	P	T	PxT
Mu0	1.41	1.00	0.58	1.06
Mu1		4.27E-03	0.08	3.65E-04
Sigma	0.79	0.75	0.75	0.68
Xi	0.27	0.29	0.16	0.31
MU0 SE	0.06	0.11	0.15	0.06
MU1 SE		1.07E-03	0.01	2.00E-06
Sigma SE	0.05	0.07	0.05	0.07
Xi SE	0.07	0.05	0.05	0.05
llh	-310.99	-304.25	-287.79	-285.04
AIC	623.99	610.51	577.59	572.08
p.val		0.02%	0.00%	0.00%

10_min	No Cov.	P	T	PxT
Mu0	2.08	1.47	0.99	2.03
Mu1		6.37E-03	0.10	4.78E-05
Sigma	1.14	1.07	1.07	1.18
Xi	0.25	0.28	0.18	0.27
MU0 SE	0.09	0.16	0.21	0.09
MU1 SE		1.47E-03	0.02	2.00E-06
Sigma SE	0.07	0.07	0.06	0.07
Xi SE	0.06	0.07	0.07	0.08
llh	-384.70	-376.29	-363.89	-382.56
AIC	771.41	754.58	729.78	767.12
p.val		0.00%	0.00%	3.83%

15_min	No Cov.	P	T	PxT
Mu0	2.67	1.80	1.37	2.20
Mu1		9.33E-03	0.12	5.06E-04
Sigma	1.37	1.28	1.28	1.19
Xi	0.22	0.25	0.18	0.23
MU0 SE	0.11	0.20	0.24	0.10
MU1 SE		1.87E-03	0.02	2.01E-06
Sigma SE	0.09	0.06	0.06	0.06
Xi SE	0.06	0.08	0.08	0.08
llh	-420.16	-409.05	-399.93	-396.36
AIC	842.31	820.11	801.85	794.73
p.val		0.00%	0.00%	0.00%

30_min	No Cov.	P	T	PxT
Mu0	3.95	2.37	2.21	2.11
Mu1		0.02	0.16	2.02E-03
Sigma	1.90	1.69	1.79	1.64
Xi	0.17	0.21	0.12	0.14
MU0 SE	0.15	0.26	0.36	0.12
MU1 SE		2.46E-03	0.03	NA
Sigma SE	0.12	0.06	0.06	NA
Xi SE	0.06	0.11	0.11	0.05
llh	-481.55	-462.75	-464.72	-429.08
AIC	965.10	927.50	931.44	860.16
p.val		0.00%	0.00%	0.00%

1_hr	No Cov.	P	T	PxT
Mu0	5.86	3.24	3.44	3.01
Mu1		0.03	0.22	2.88E-03
Sigma	2.64	2.33	2.54	1.90
Xi	0.09	0.10	0.04	0.14
MU0 SE	0.21	0.39	0.53	0.15
MU1 SE		3.77E-03	0.05	NA
Sigma SE	0.16	0.06	0.05	NA
Xi SE	0.05	0.14	0.15	NA
llh	-541.22	-516.50	-527.04	-479.07
AIC	1084.44	1035.00	1056.07	960.15
p.val		0.00%	0.00%	0.00%

2_hr	No Cov.	P	T	PxT
Mu0	8.46	3.66	5.61	3.91
Mu1		0.05	0.26	4.69E-03
Sigma	3.78	3.28	3.73	2.73
Xi	0.03	-0.03	-0.02	-7.16E-03
MU0 SE	0.30	0.61	0.79	0.39
MU1 SE		6.19E-03	0.07	3.46E-04
Sigma SE	0.22	0.05	0.05	0.07
Xi SE	0.05	0.18	0.21	0.17
llh	-608.40	-571.01	-599.72	-537.11
AIC	1218.80	1144.03	1201.44	1076.23
p.val		0.00%	0.00%	0.00%

6_hr	No Cov.	P	T	PxT
Mu0	14.09	4.62	11.99	7.24
Mu1		0.11	0.19	6.86E-03
Sigma	6.43	5.30	6.44	5.01
Xi	-0.02	-0.09	-0.04	-0.04
MU0 SE	0.50	1.01	1.29	0.70
MU1 SE		0.01	0.11	5.69E-04
Sigma SE	0.36	0.04	0.05	0.05
Xi SE	0.05	0.28	0.37	0.28
llh	-713.12	-662.34	-711.50	-659.46
AIC	1428.24	1326.68	1425.01	1320.93
p.val		0.00%	7.21%	0.00%

12_hr	No Cov.	P	T	PxT
Mu0	17.06	4.34	15.35	8.57
Mu1		0.15	0.15	8.33E-03
Sigma	8.17	6.54	8.17	6.48
Xi	-0.05	-0.12	-0.06	-0.05
MU0 SE	0.63	1.25	1.64	0.91
MU1 SE		0.01	0.13	7.07E-04
Sigma SE	0.45	0.04	0.05	0.04
Xi SE	0.05	0.33	0.45	0.35
llh	-758.95	-702.20	-758.31	-710.28
AIC	1519.91	1406.40	1518.61	1422.56
p.val		0.00%	25.52%	0.00%

24_hr	No Cov.	P	T	PxT
Mu0	19.09	4.97	18.78	10.08
Mu1		0.16	0.03	8.86E-03
Sigma	8.79	6.54	8.79	7.03
Xi	-0.04	-0.08	-0.04	-0.04
MU0 SE	0.68	1.24	1.75	0.98
MU1 SE		0.01	0.14	7.69E-04
Sigma SE	0.49	0.04	0.05	0.04
Xi SE	0.05	0.34	0.49	0.39
llh	-775.59	-706.72	-775.57	-728.59
AIC	1553.17	1415.44	1553.13	1459.18
p.val		0.00%	84.53%	0.00%

**Highlighted p.val cells indicate that the model was found to be statistically significant for that predictor variable. Yellow variable highlights indicate the minimum AIC of the three predictor variables and statistical significance*

Table A3. St John's Model Parameter Values (Seasonal Fitted Model; 5 min, 10 min, 15 min, 30 min, 1 hr, 2 hr, 6 hr, 12 hr, 24 hr)

5_min	No Cov.	P	T	PxT
Mu0	1.86	1.40	1.11	1.93
Mu1		4.10E-03	0.07	-1.95E-19
Sigma	0.97	0.92	0.93	1.26
Xi	0.21	0.24	0.20	0.10
MU0 SE	0.08	0.13	0.18	0.09
MU1 SE		9.55E-04	0.02	5.27E-06
Sigma SE	0.06	0.07	0.07	0.09
Xi SE	0.06	0.06	0.06	0.12
llh	-341.24	-333.34	-329.88	-349.68
AIC	684.49	668.69	661.77	701.36
p.val		0.01%	0.00%	0.00%

10_min	No Cov.	P	T	PxT
Mu0	2.82	2.01	1.55	2.16
Mu1		7.15E-03	0.12	4.28E-04
Sigma	1.44	1.33	1.38	1.16
Xi	0.15	0.21	0.12	0.14
MU0 SE	0.12	0.18	0.28	0.10
MU1 SE		1.37E-03	0.03	3.18E-06
Sigma SE	0.09	0.07	0.06	0.08
Xi SE	0.06	0.09	0.09	0.10
llh	-415.18	-404.73	-401.49	-400.75
AIC	832.35	811.47	804.98	803.51
p.val		0.00%	0.00%	0.00%

15_min	No Cov.	P	T	PxT
Mu0	3.65	2.51	2.09	2.98
Mu1		0.01	0.15	6.33E-04
Sigma	1.80	1.64	1.70	1.60
Xi	0.14	0.20	0.12	0.09
MU0 SE	0.14	0.23	0.33	0.13
MU1 SE		1.76E-03	0.03	7.12E-06
Sigma SE	0.11	0.06	0.05	0.05
Xi SE	0.06	0.10	0.10	0.11
llh	-458.28	-445.89	-444.13	-438.02
AIC	918.55	893.78	890.26	878.04
p.val		0.00%	0.00%	0.00%

30_min	No Cov.	P	T	PxT
Mu0	5.55	3.58	3.51	4.26
Mu1		0.02	0.20	1.37E-03
Sigma	2.56	2.25	2.44	2.18
Xi	0.11	0.18	0.10	0.14
MU0 SE	0.20	0.33	0.48	0.17
MU1 SE		2.50E-03	0.04	5.77E-06
Sigma SE	0.15	0.06	0.05	0.05
Xi SE	0.05	0.14	0.14	0.14
llh	-526.93	-509.23	-516.02	-495.65
AIC	1055.85	1020.46	1034.05	993.31
p.val		0.00%	0.00%	0.00%

1_hr	No Cov.	P	T	PxT
Mu0	8.16	5.08	5.37	5.60
Mu1		0.03	0.26	2.45E-03
Sigma	3.72	3.29	3.57	2.88
Xi	0.06	0.10	0.05	0.09
MU0 SE	0.29	0.50	0.72	0.23
MU1 SE		3.94E-03	0.06	7.39E-05
Sigma SE	0.21	0.05	0.05	0.05
Xi SE	0.05	0.19	0.21	0.16
llh	-596.66	-576.18	-587.73	-559.33
AIC	1195.32	1154.37	1177.47	1120.65
p.val		0.00%	0.00%	0.00%

2_hr	No Cov.	P	T	PxT
Mu0	11.75	6.53	8.76	8.14
Mu1		0.05	0.28	3.44E-03
Sigma	5.40	4.52	5.30	4.38
Xi	-0.01	0.03	-0.01	7.20E-03
MU0 SE	0.42	0.66	1.09	0.42
MU1 SE		5.18E-03	0.09	2.77E-04
Sigma SE	0.30	0.04	0.04	0.05
Xi SE	0.04	0.25	0.29	0.25
llh	-664.00	-632.21	-659.54	-624.97
AIC	1330.01	1266.42	1321.07	1251.94
p.val		0.00%	0.28%	0.00%

6_hr	No Cov.	P	T	PxT
Mu0	18.78	7.39	17.09	10.63
Mu1		0.11	0.15	7.68E-03
Sigma	9.15	6.75	9.12	7.13
Xi	-0.04	-0.01	-0.04	-0.03
MU0 SE	0.71	1.02	1.89	0.80
MU1 SE		8.23E-03	0.16	5.61E-04
Sigma SE	0.50	0.04	0.04	0.05
Xi SE	0.04	0.37	0.50	0.40
llh	-767.45	-709.19	-766.98	-718.62
AIC	1536.90	1420.38	1535.97	1439.24
p.val		0.00%	33.38%	0.00%

12_hr	No Cov.	P	T	PxT
Mu0	22.01	6.40	21.76	11.11
Mu1		0.15	0.02	0.01
Sigma	11.27	7.96	11.26	9.00
Xi	-0.04	-0.02	-0.04	-0.06
MU0 SE	0.88	1.28	2.34	1.15
MU1 SE		0.01	0.19	8.78E-04
Sigma SE	0.63	0.05	0.05	0.06
Xi SE	0.05	0.44	0.63	0.53
llh	-811.37	-741.87	-811.36	-764.36
AIC	1624.74	1485.73	1624.73	1530.73
p.val		0.00%	91.07%	0.00%

24_hr	No Cov.	P	T	PxT
Mu0	24.49	5.63	25.24	10.92
Mu1		0.19	-0.07	0.01
Sigma	12.37	7.96	12.38	9.14
Xi	-0.03	-1.24E-03	-0.03	-2.41E-03
MU0 SE	0.98	1.34	2.58	1.13
MU1 SE		0.01	0.21	8.21E-04
Sigma SE	0.72	0.06	0.05	0.06
Xi SE	0.06	0.48	0.72	0.56
llh	-832.60	-745.43	-832.55	-774.26
AIC	1667.20	1492.86	1667.10	1550.52
p.val		0.00%	75.24%	0.00%

**Highlighted p.val cells indicate that the model was found to be statistically significant for that predictor variable. Yellow variable highlights indicate the minimum AIC of the three predictor variables and statistical significance*

APPENDIX E

1:20 AND 1:100 AEP FLOOD RISK MAPPING – 2012 – EXISTING CONDITIONS

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Newfoundland Labrador

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Water Resource Management Division

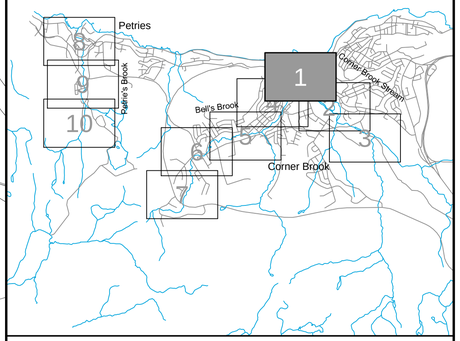
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)

172.33 / 171.24 — 1050.0 — BellsB-M002

Cross Section Number

Reach Identification

1:20 AEP Flood Water Level (elevation in metres)

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

C:\Work\NFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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Existing Conditions - 2012

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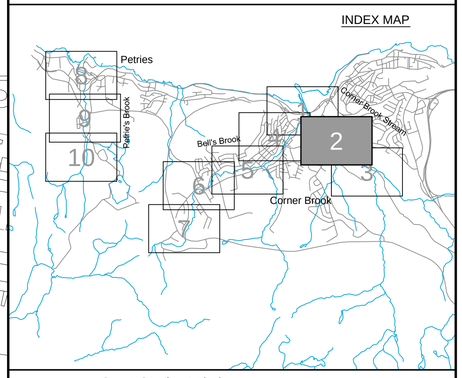

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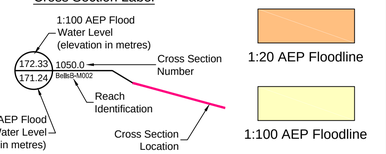

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 2 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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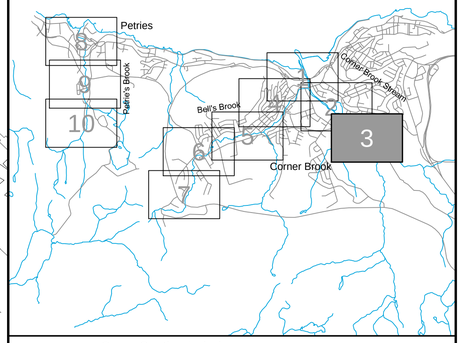

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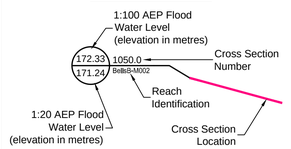

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

C:\Work\NFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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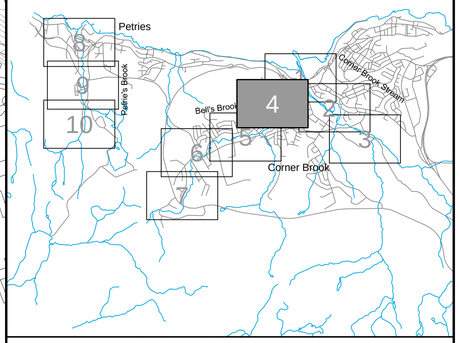

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)

172.33 / 171.24 — 1050.0 — BellsB-M002

Cross Section Number

Reach Identification

1:20 AEP Flood Water Level (elevation in metres)

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 4 of 10

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Flood Risk Map
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

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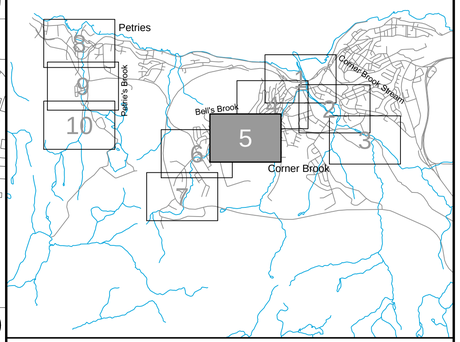

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)

172.33 / 171.24 — 1050.0 (BellsB-M002)

Cross Section Number

Reach Identification

1:20 AEP Flood Water Level (elevation in metres)

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 Metres 0 150 Metres

300 Feet 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 5 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Linds Rd
Happy Valley Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Dykes Rd
Burtons Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Shamrock Cr
Marshall Cr
Silver Cr
Carberrys Rd

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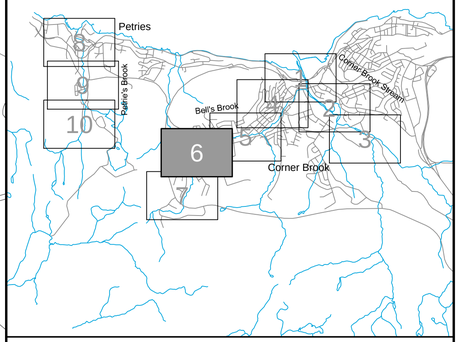

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)

172.33 / 171.24 — 1050.0 — BellsB-M002

Cross Section Number

Reach Identification

1:20 AEP Flood Water Level (elevation in metres)

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 6 of 10

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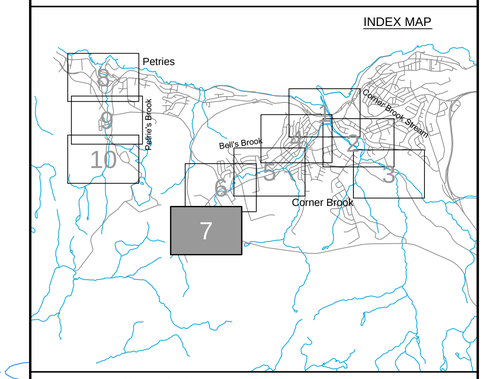

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)

172.33 / 171.24 — 1050.0 BellsB-M002

Cross Section Number

Reach Identification

1:20 AEP Flood Water Level (elevation in metres)

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 7 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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Corner Brook

Existing Conditions - 2012

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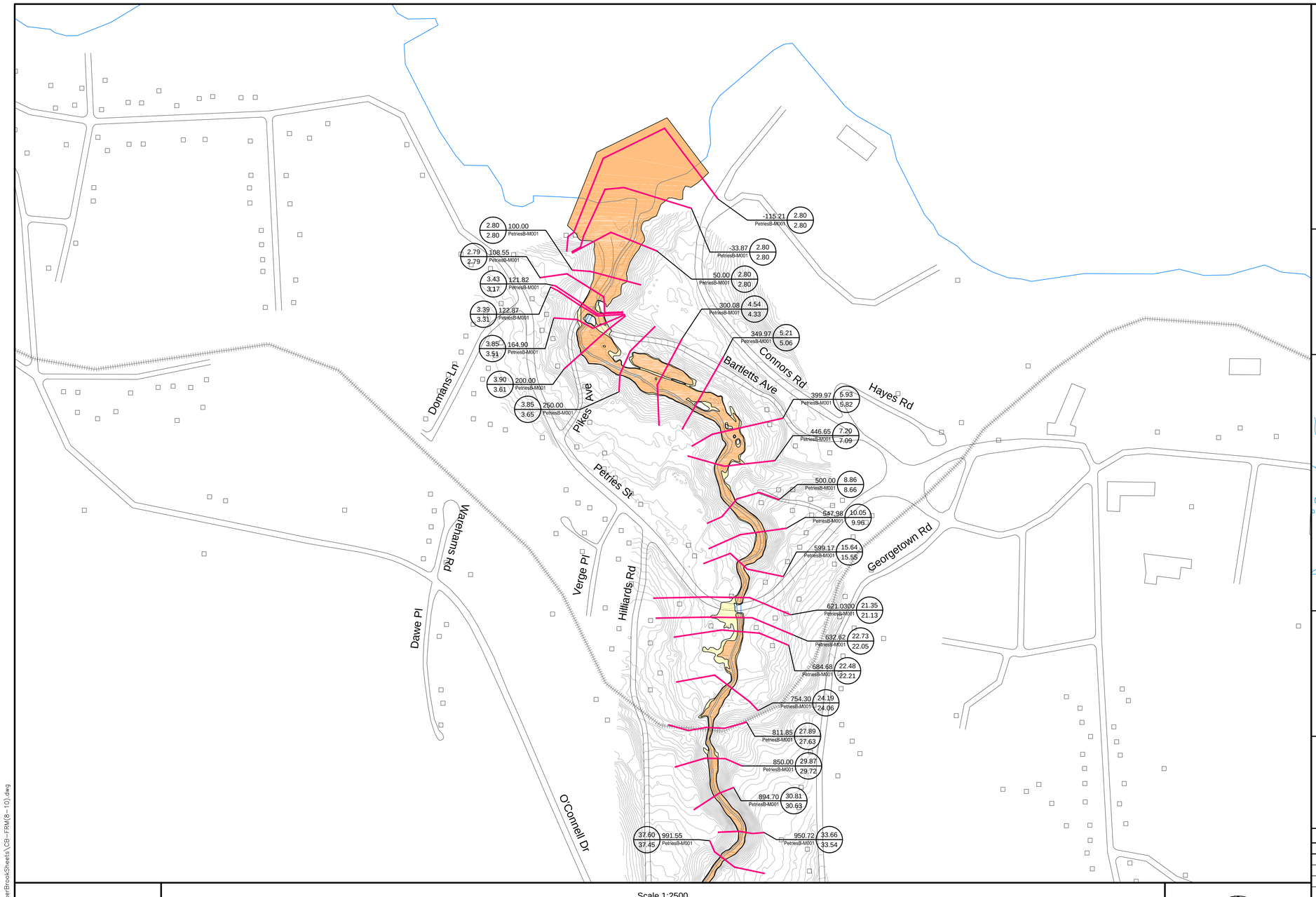
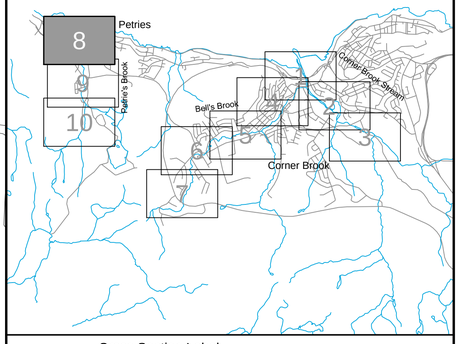


INDEX MAP



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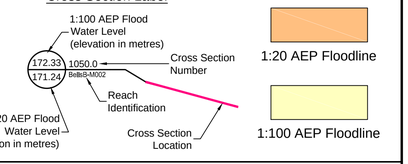

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

N

Sheet 8 of 10

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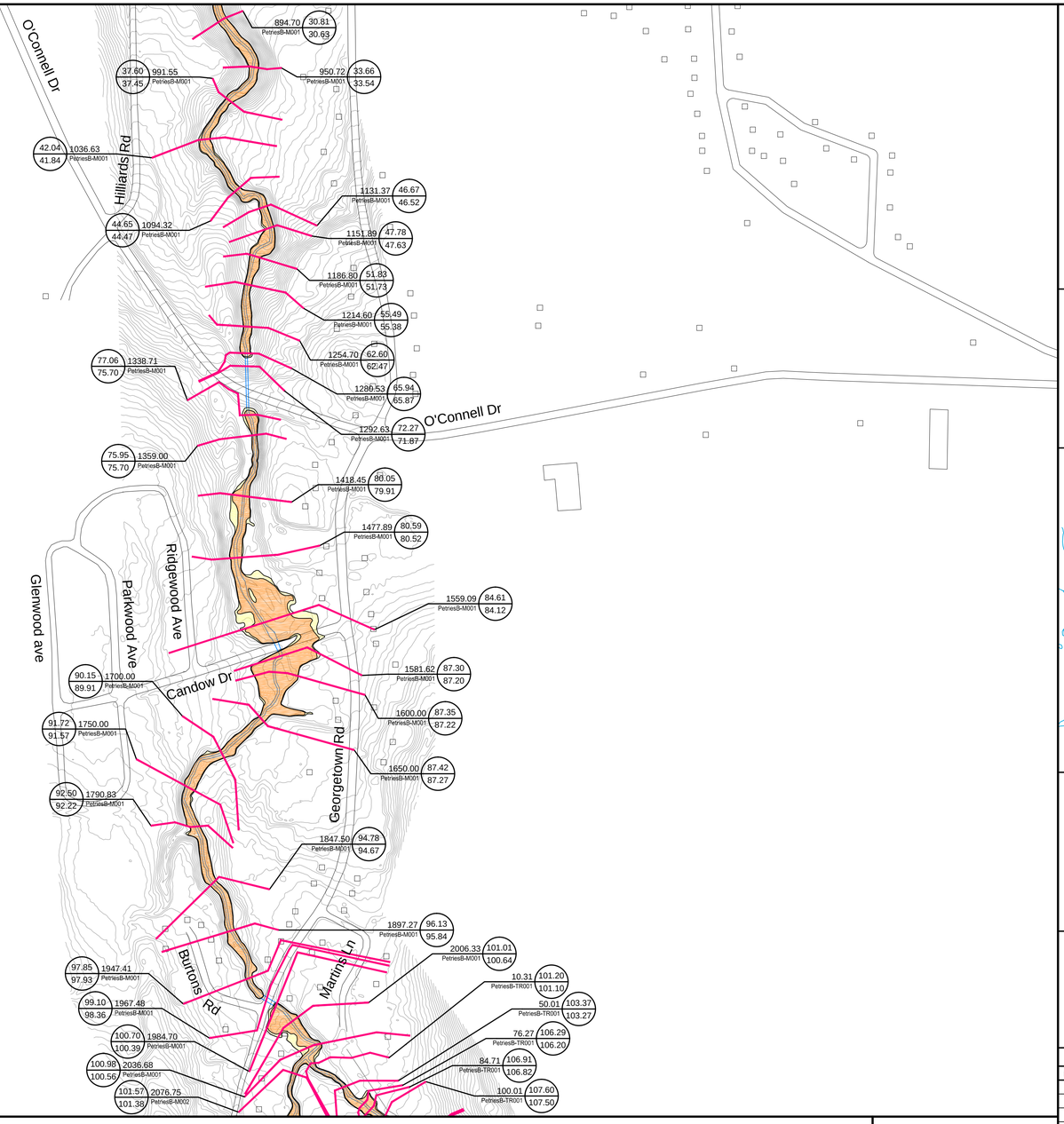

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

MTMNAD83
ZONE 3

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Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

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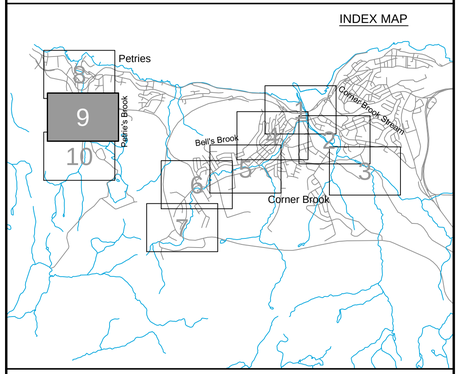
INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)

172.33 1050.0 171.24 BellsB-M002

Cross Section Number

Reach Identification

1:20 AEP Flood Water Level (elevation in metres)

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 9 of 10

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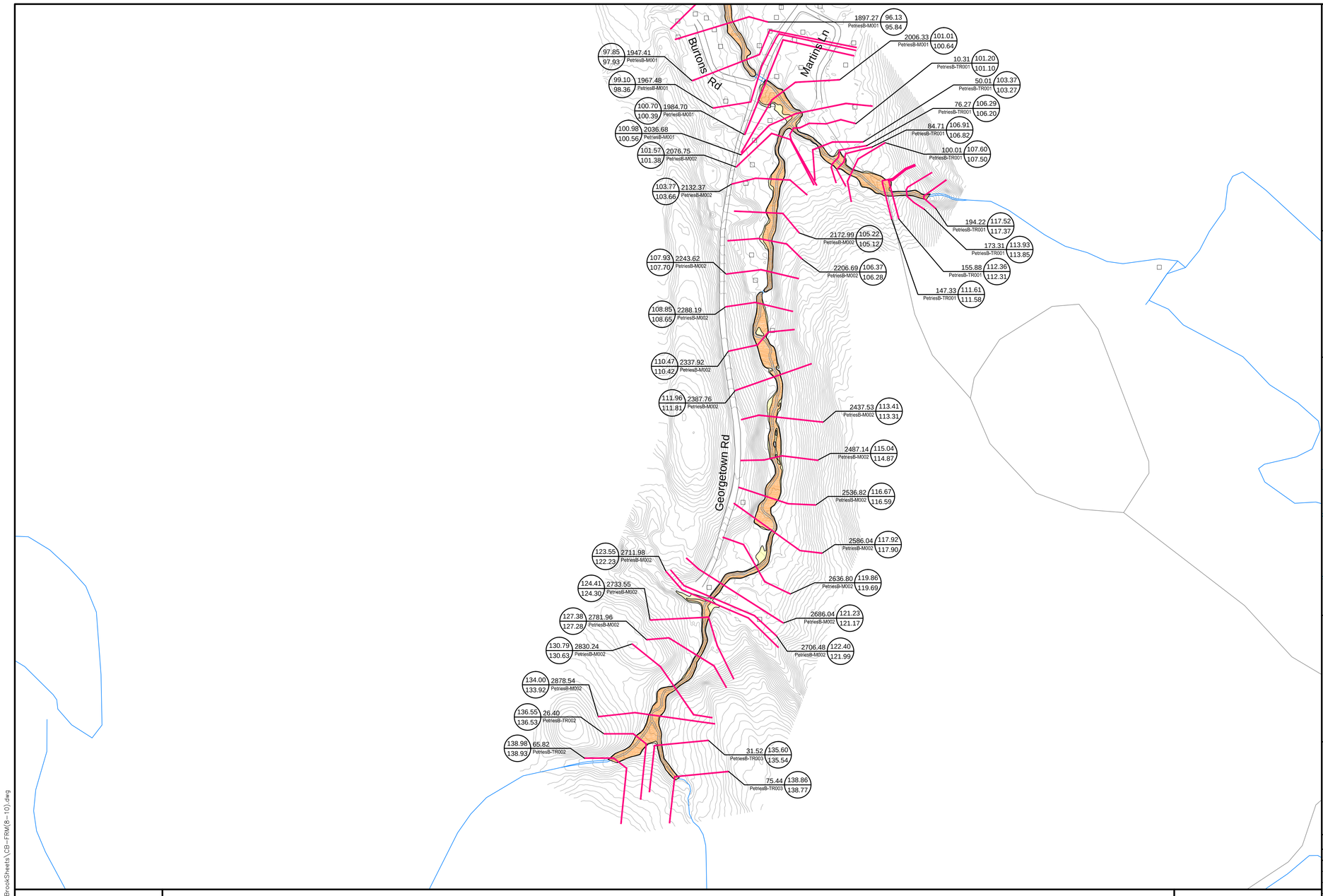

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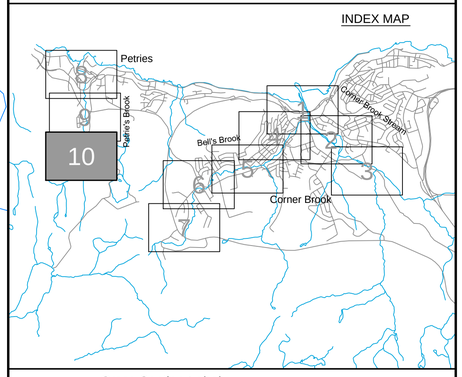
Flood Risk Map
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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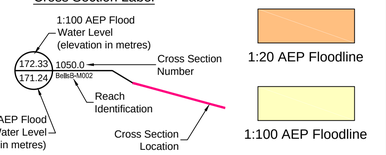

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

N

Sheet 10 of 10

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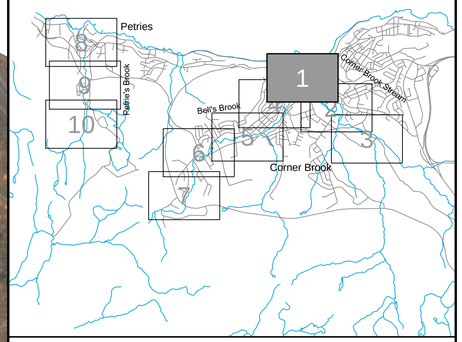

Cross Section Label

1050.0 BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

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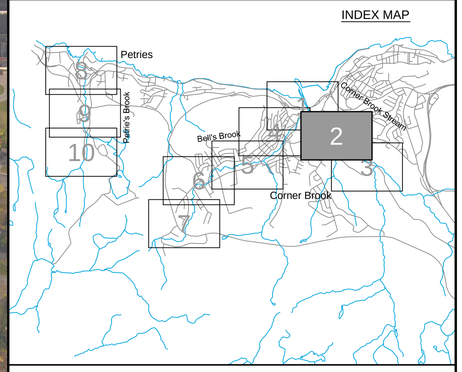

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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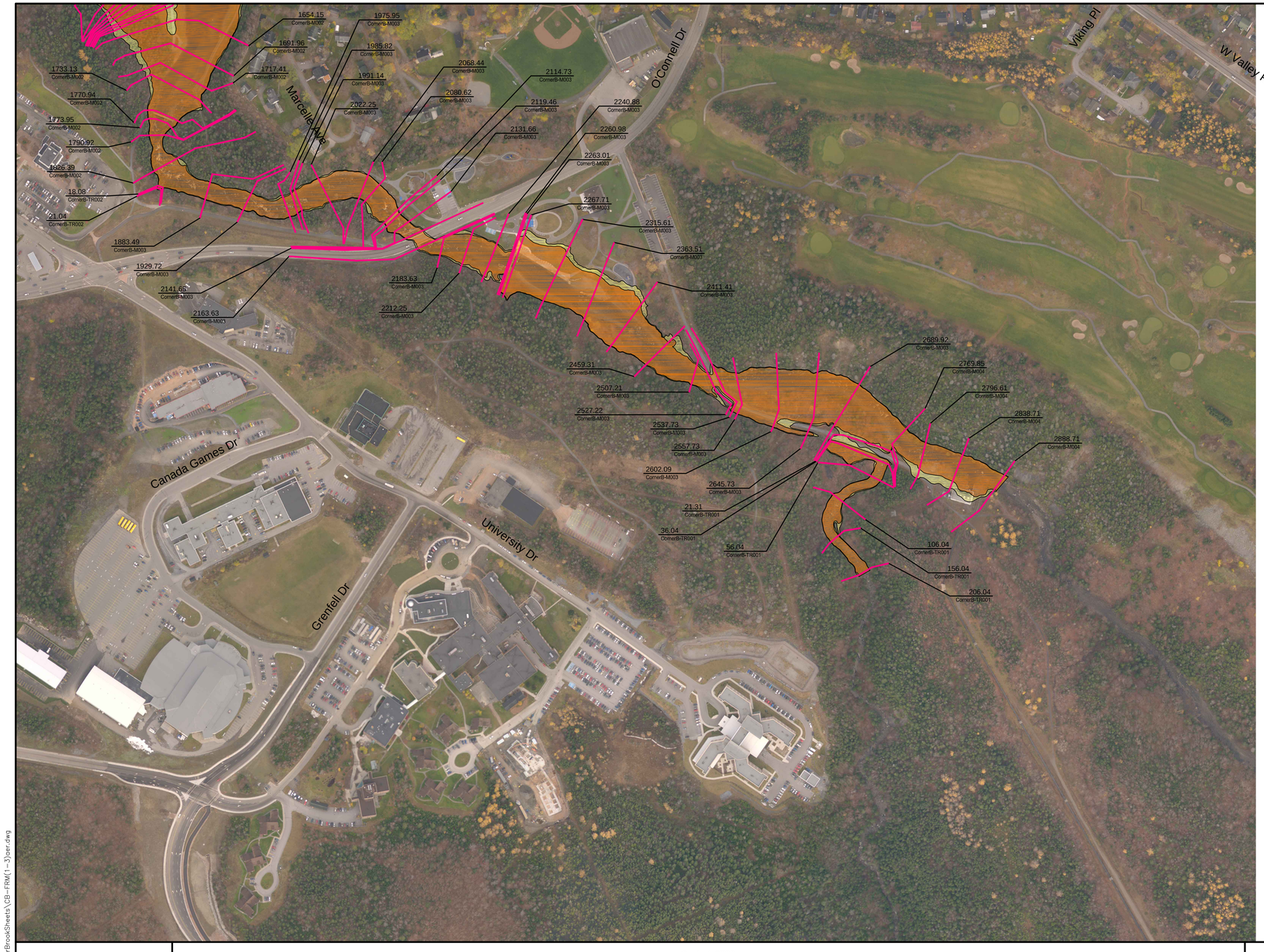

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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Corner Brook

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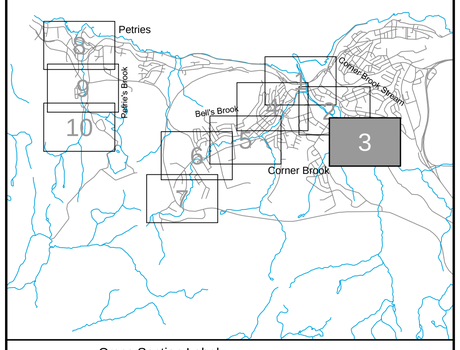

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

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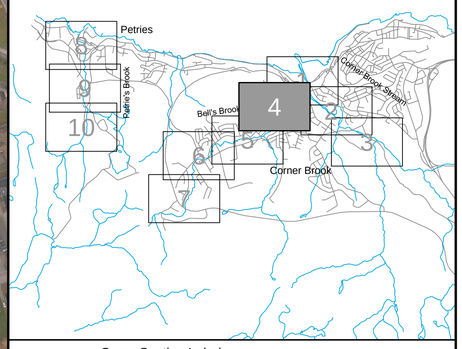

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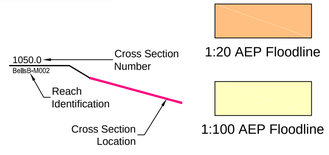

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Sheet 4 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(4-7)per.dwg

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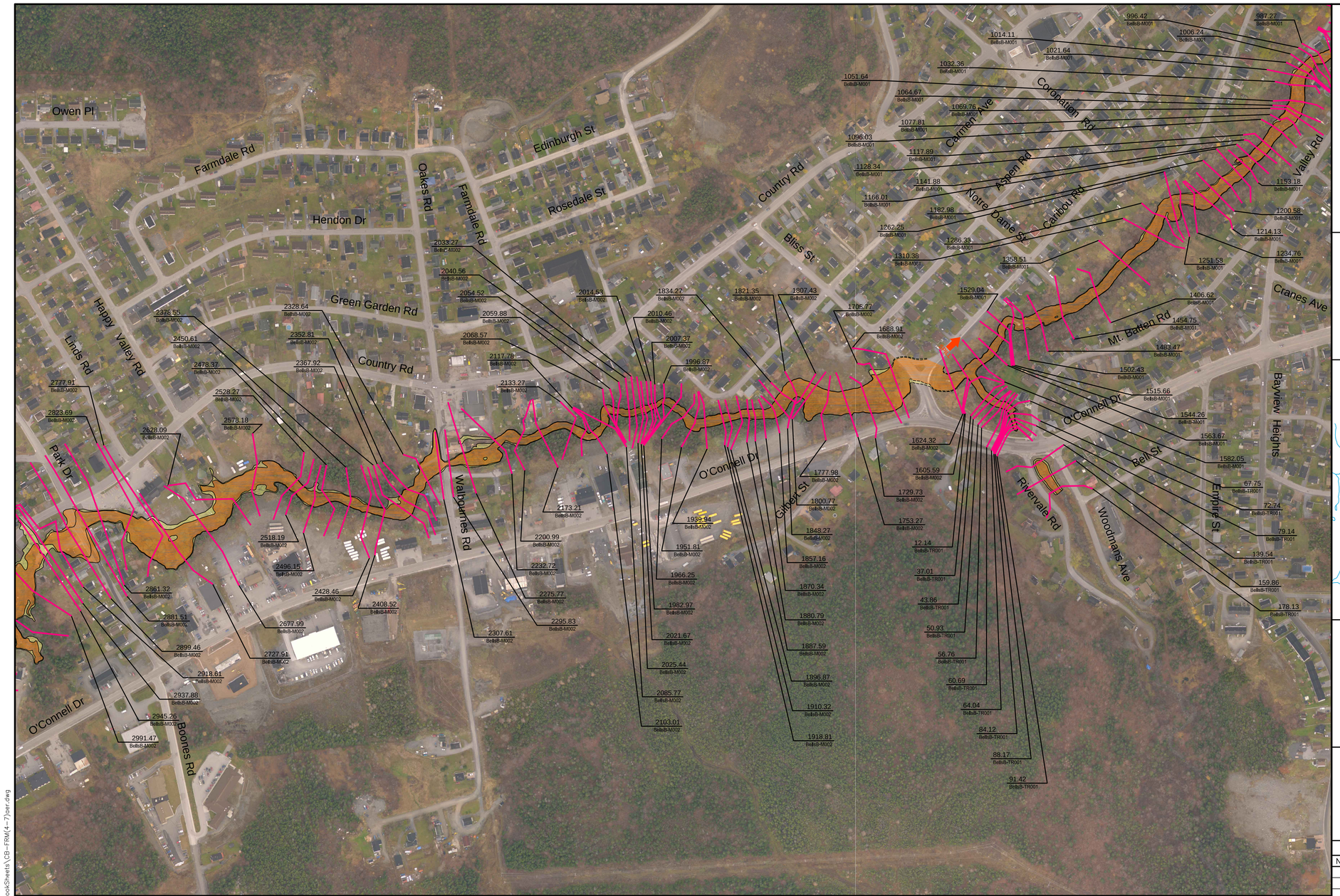

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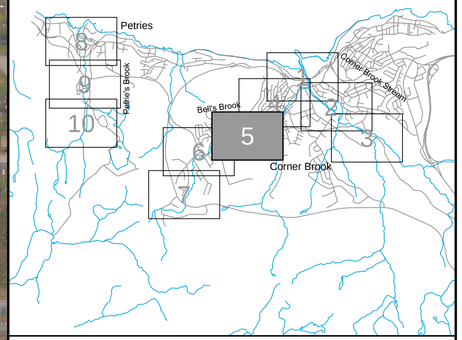
INDEX MAP



Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Sheet 5 of 10

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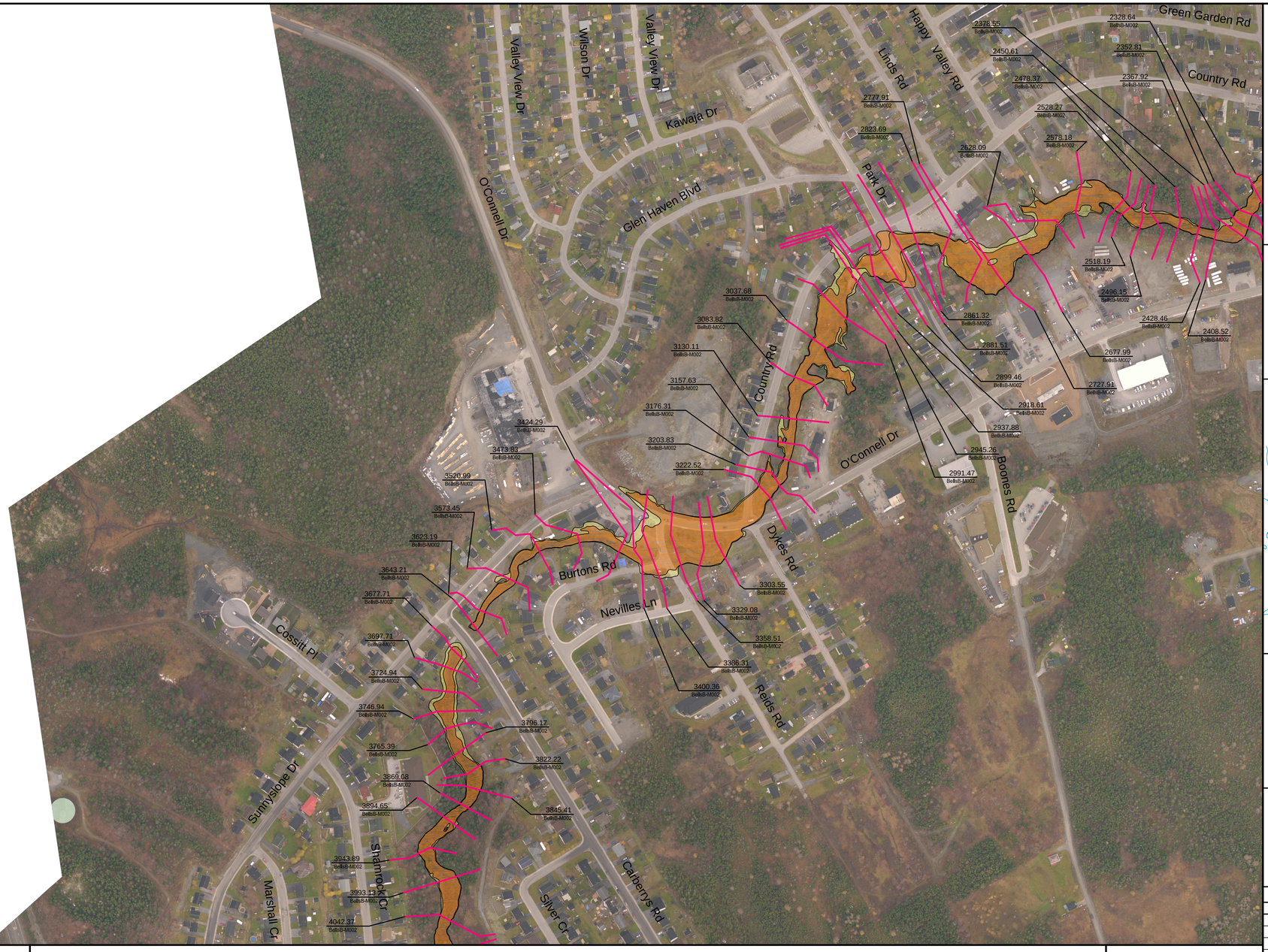


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

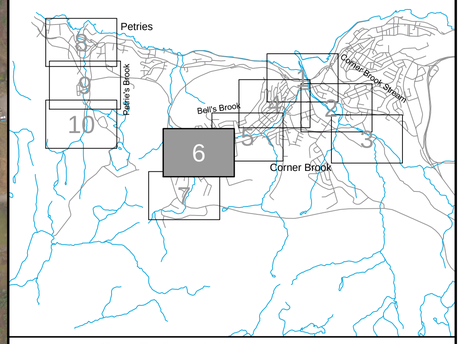
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Sheet 6 of 10

C:\Work\WF1D\CornerBrookSheets\CB-FRM(4-7)per.dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

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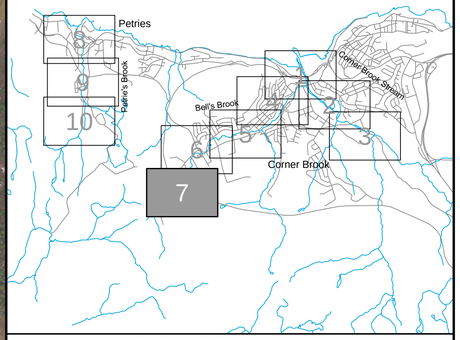

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 7 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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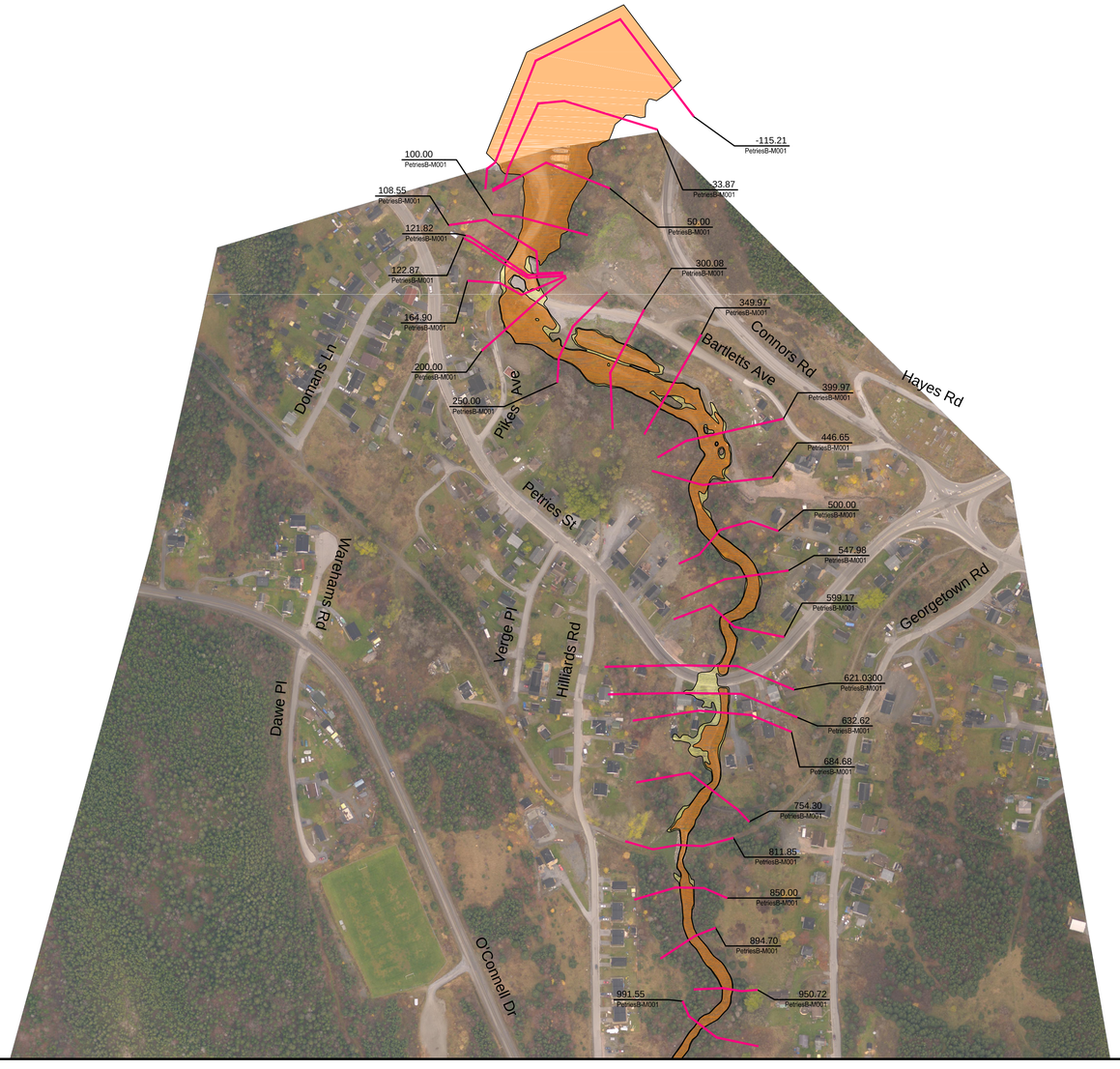
Feb 21/13 – richard.bartolo



MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

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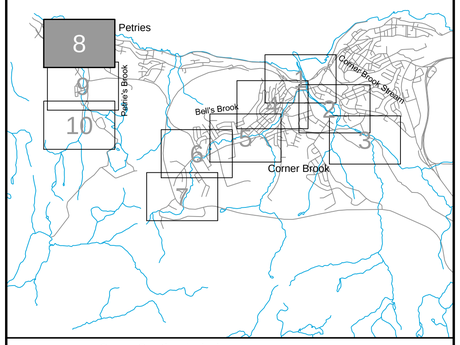

Cross Section Label

1050.0
BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 8 of 10

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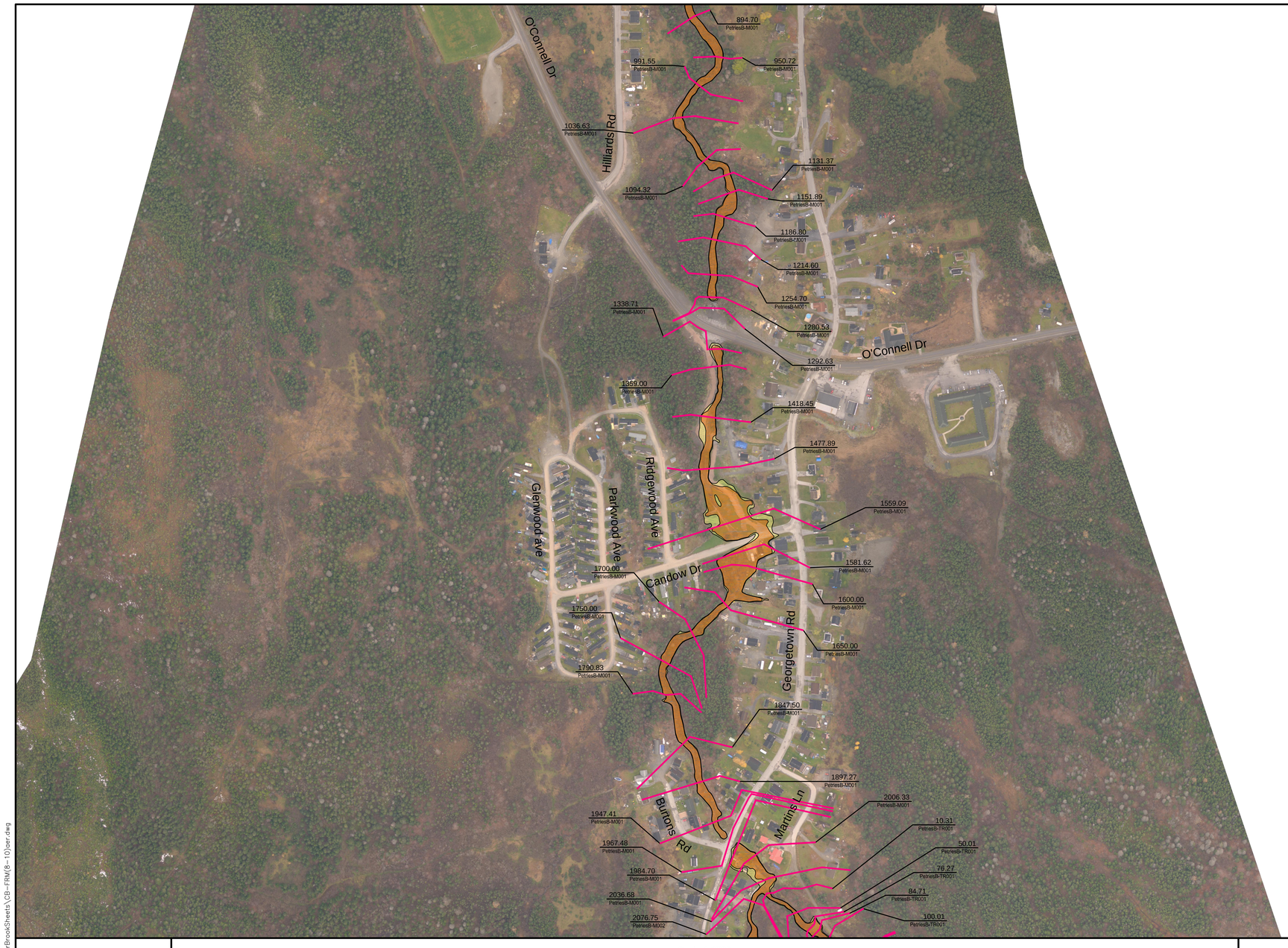

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Newfoundland Labrador

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Water Resource Management Division

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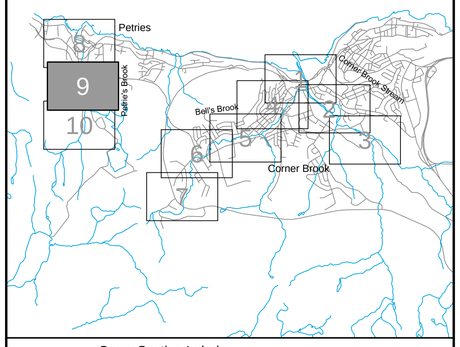

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 9 of 10

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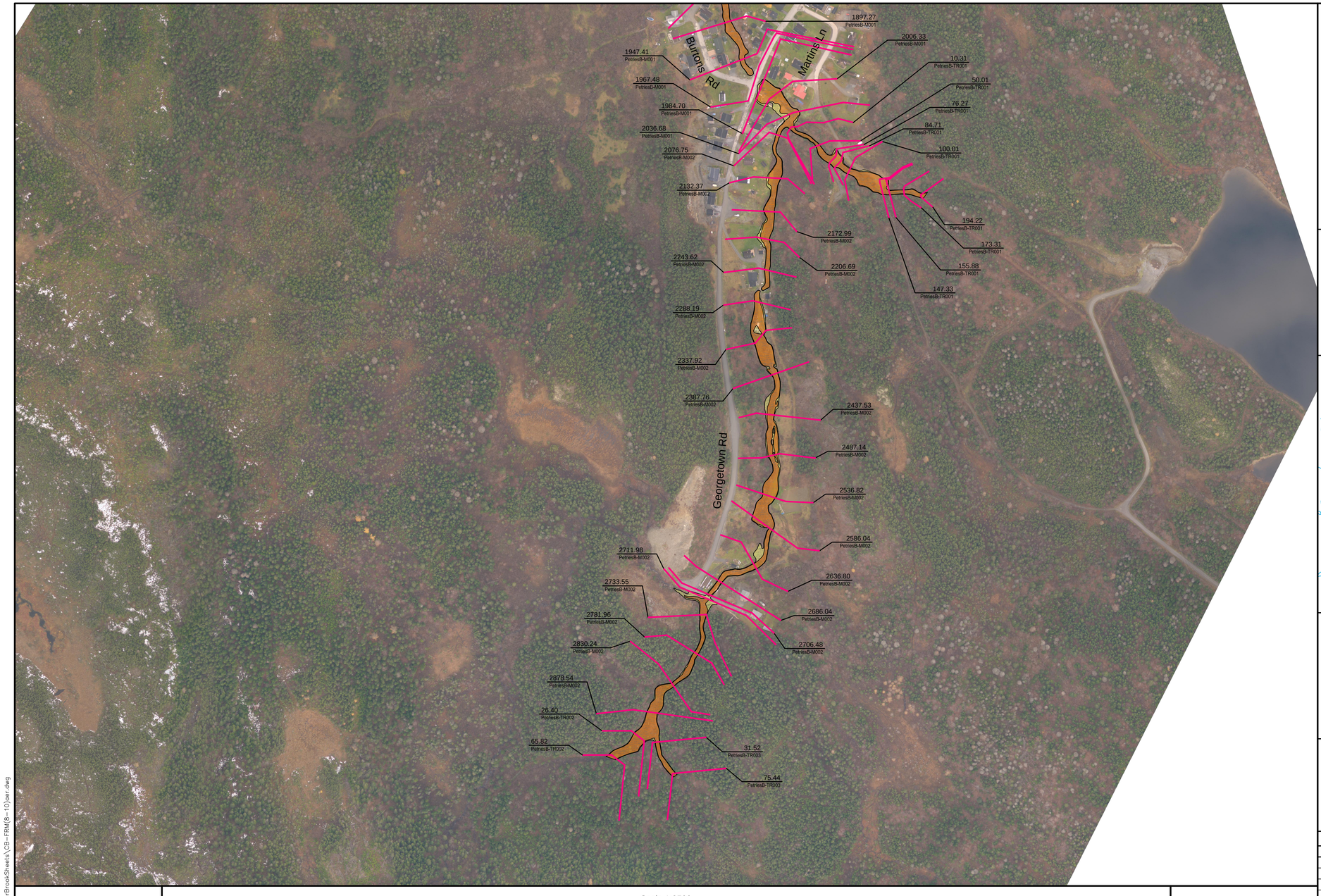


MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

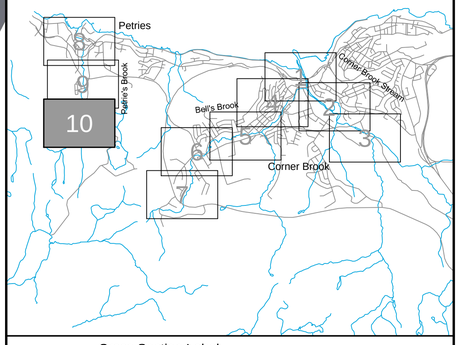
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 10 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(8-10)par.dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

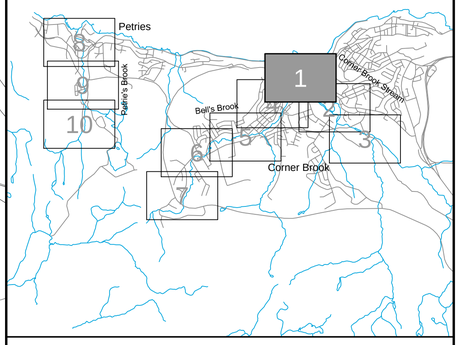
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 1 of 10

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Department of Environment and Conservation
Water Resource Management Division

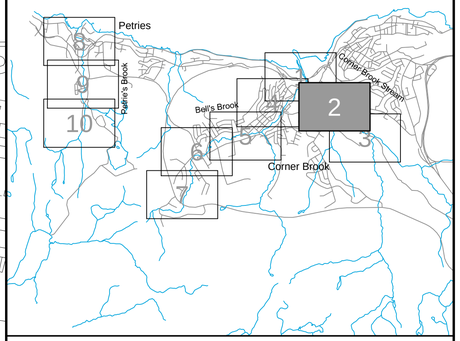
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylerR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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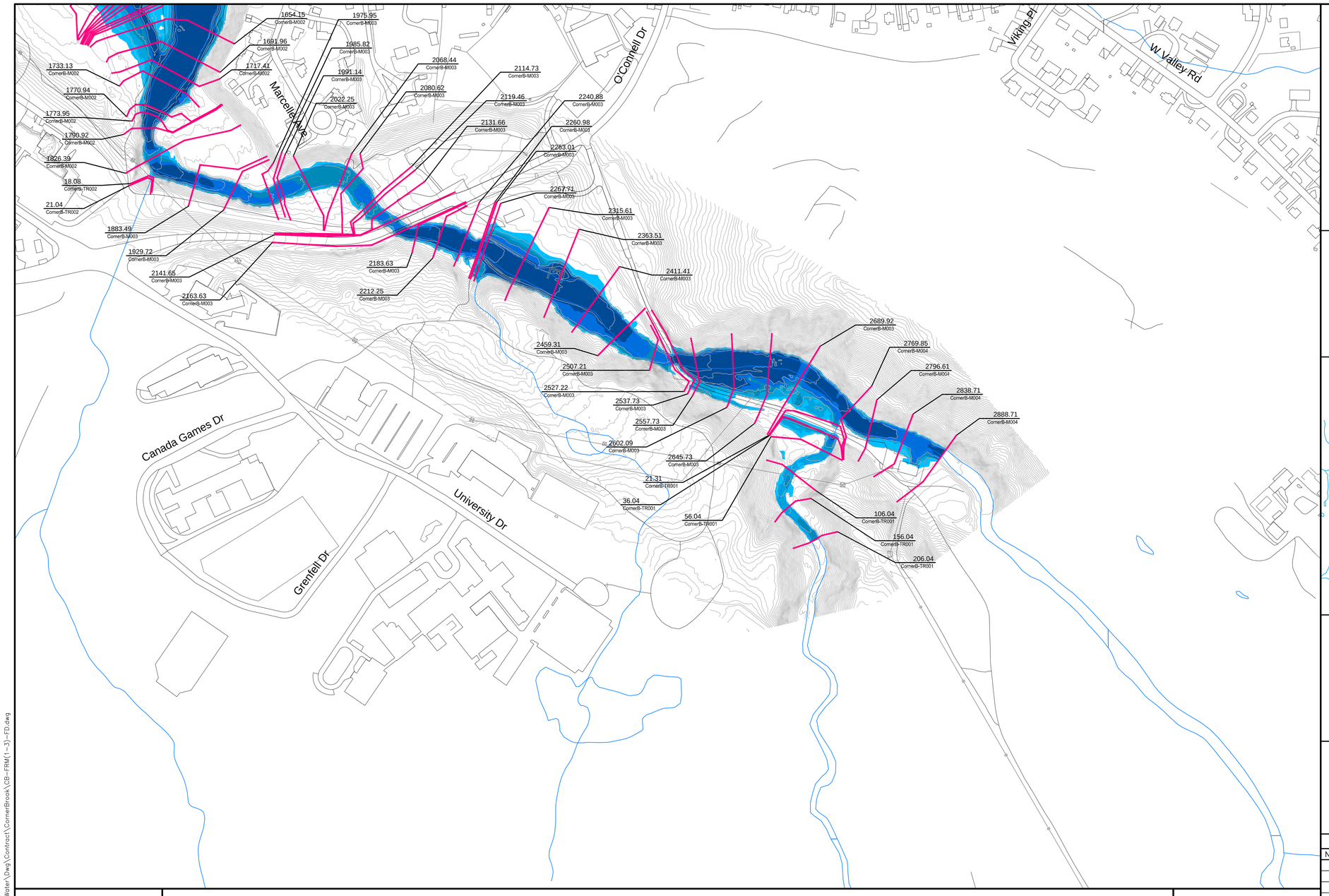


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

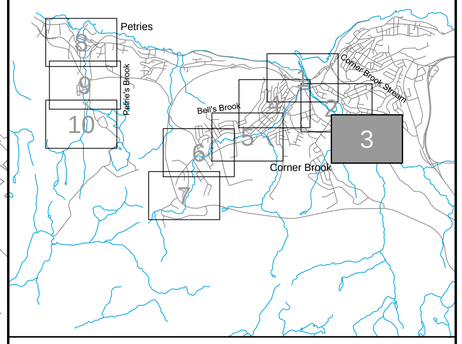
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 3 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

Feb 27/13 – richard.bartolo

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

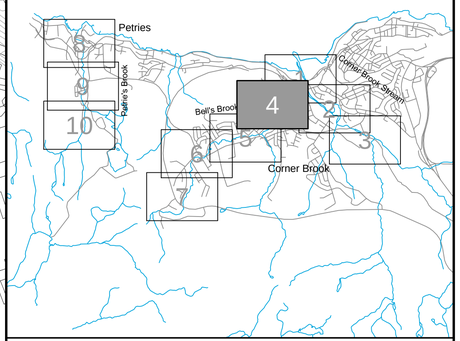
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 4 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

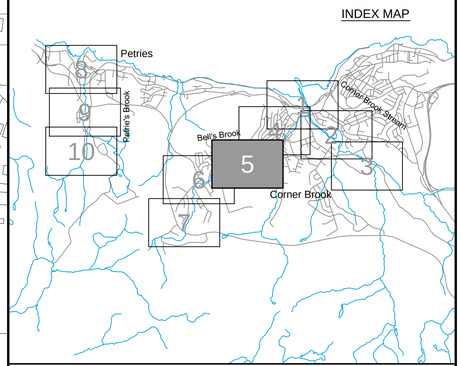
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 5 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Happy Valley Rd
Linds Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Boones Rd
Burtons Rd
Dykes Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Shamrock Cr
Marshall Cr
Silver Cr
Carberrys Rd

2328.64 2376.56 2450.61 2352.81 2478.37 2367.92 2528.27 2578.18 2777.91 2823.69 2628.09 2518.19 2496.15 2428.46 2408.52 2861.32 2881.51 2677.99 2899.46 2727.91 2918.61 2937.88 2945.26 2991.47 3037.68 3083.82 3130.11 3157.63 3176.31 3203.83 3222.52 3222.32 3303.55 3329.08 3358.51 3386.31 3400.36 3424.29 3473.83 3520.99 3573.46 3623.19 3643.21 3677.71 3697.71 3724.94 3746.94 3765.39 3796.17 3822.22 3869.08 3894.65 3845.41 3943.89 3993.13 4042.37

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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MTMNAD83
ZONE 3

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

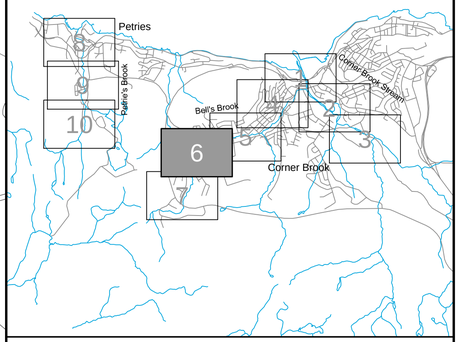
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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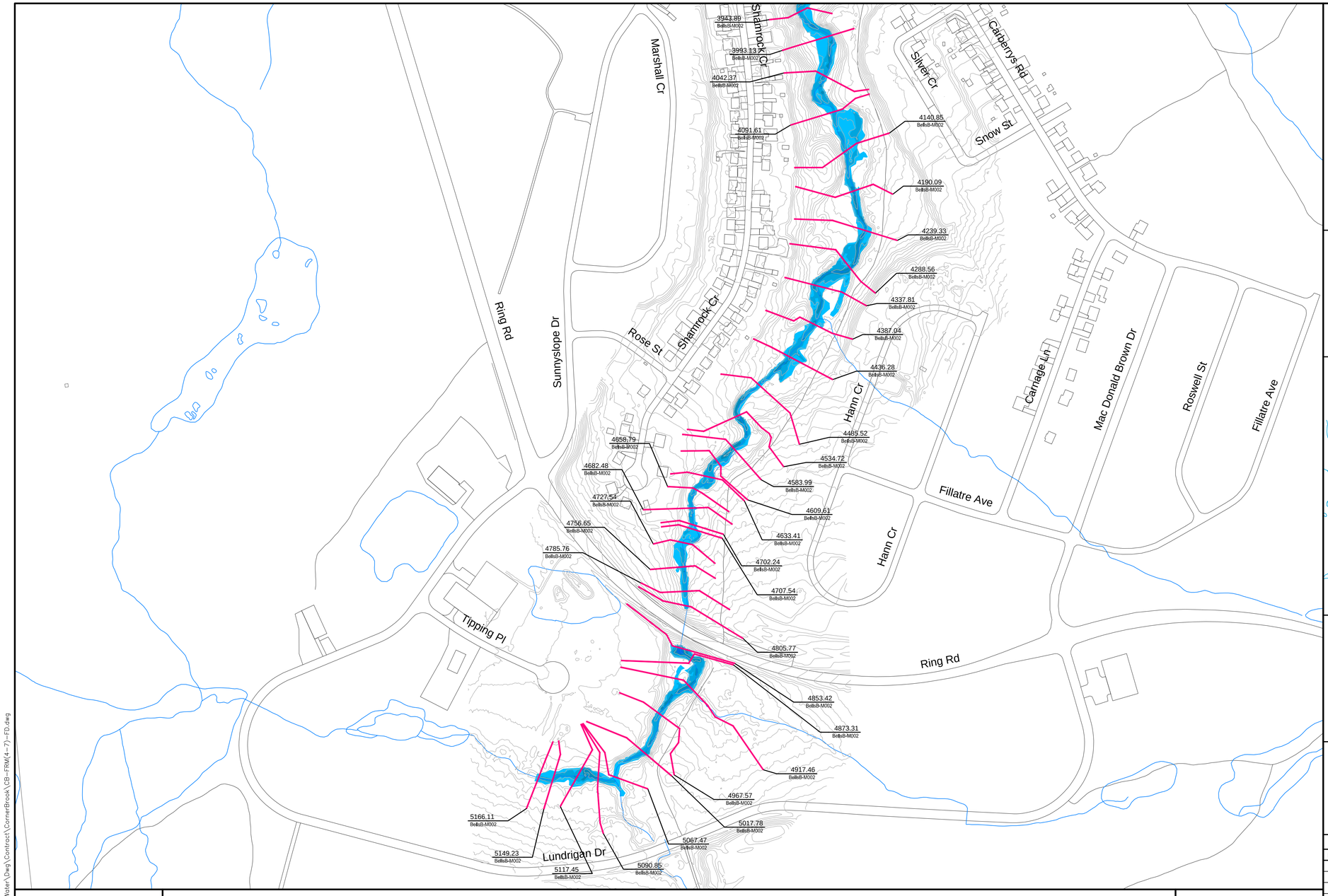
REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

Feb 27/13 – richard.bartolo



Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
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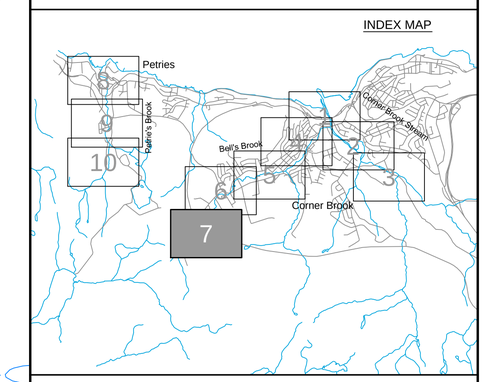

Cross Section Label

1050.0
DoyleR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
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- 1.0m - 1.5m
- 1.5m - 2.0m
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amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 7 of 10

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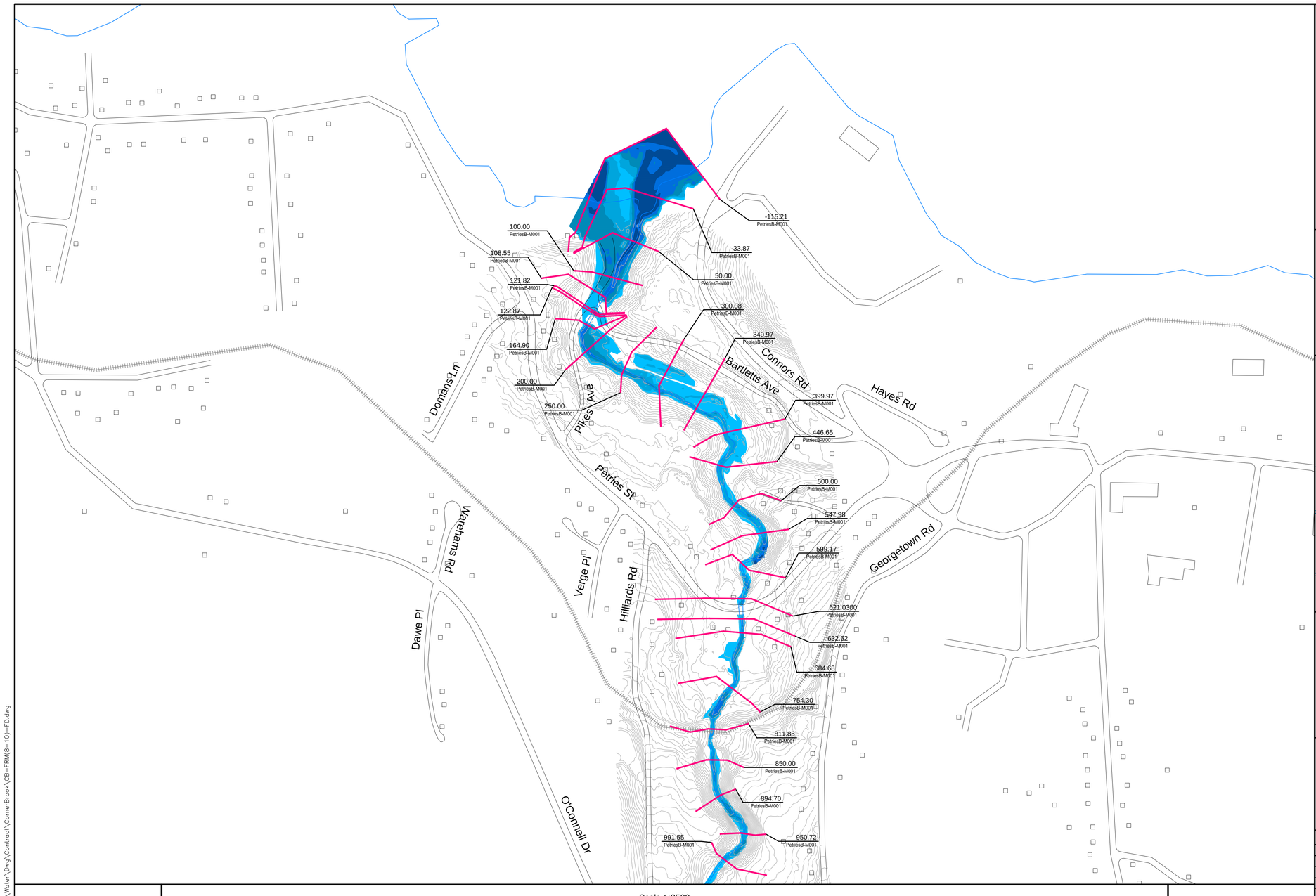
Feb 27/13 – richard.bartolo



Newfoundland Labrador

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Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

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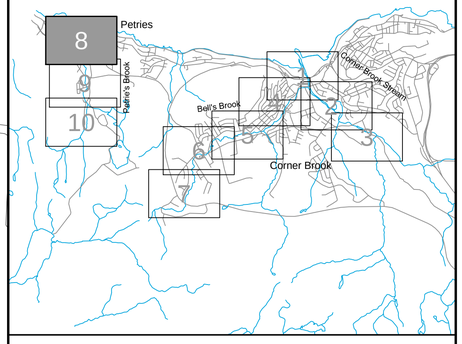

Cross Section Label

1050.0
DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

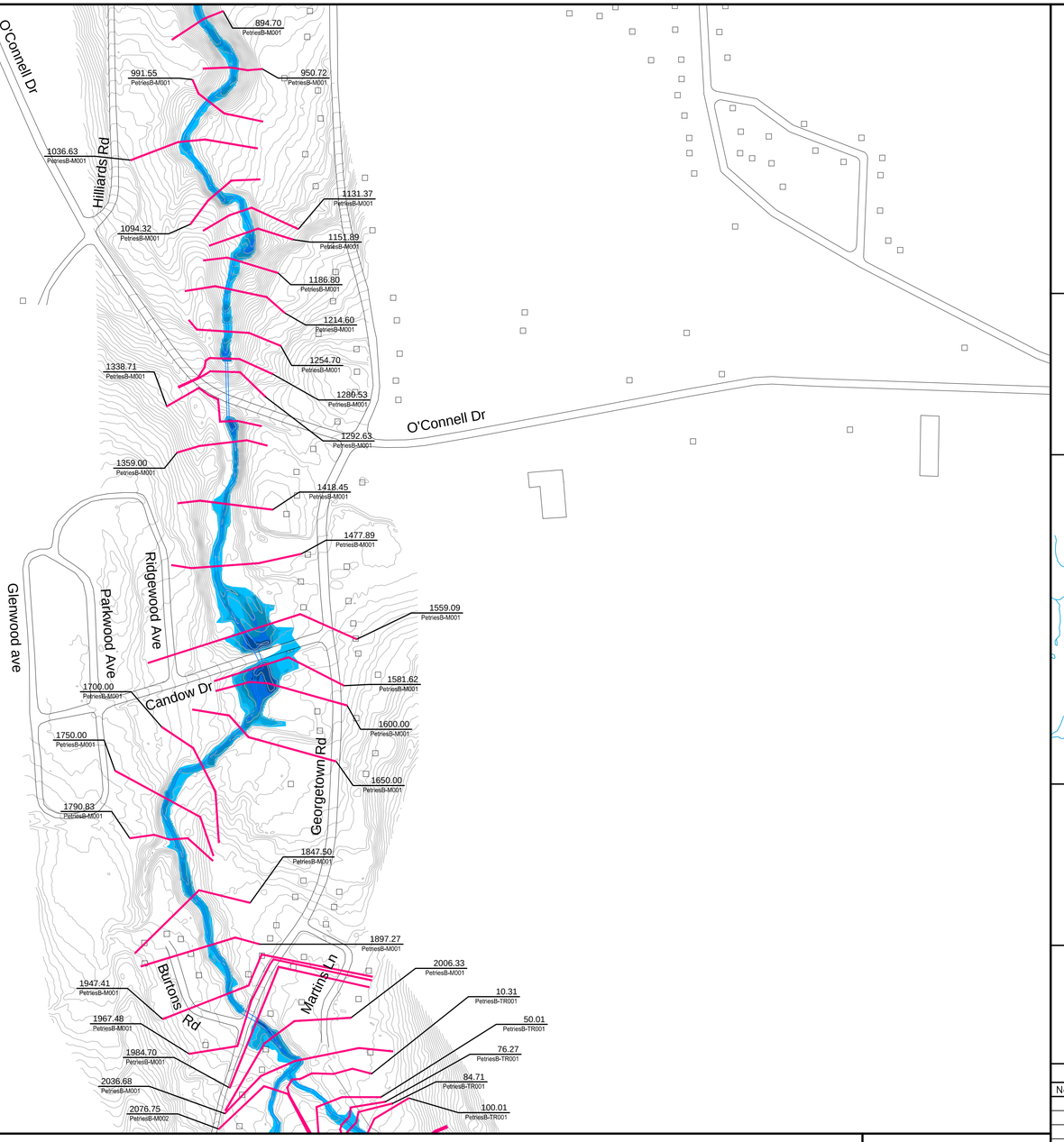
NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 8 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

Feb 27/13 – richard.bartolo



Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

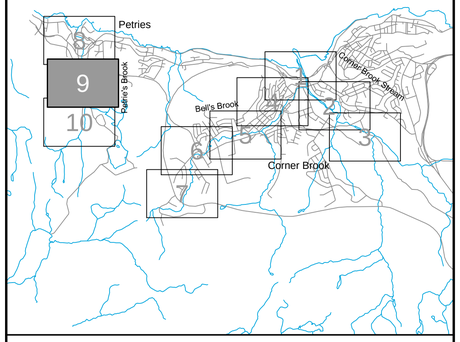
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 9 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

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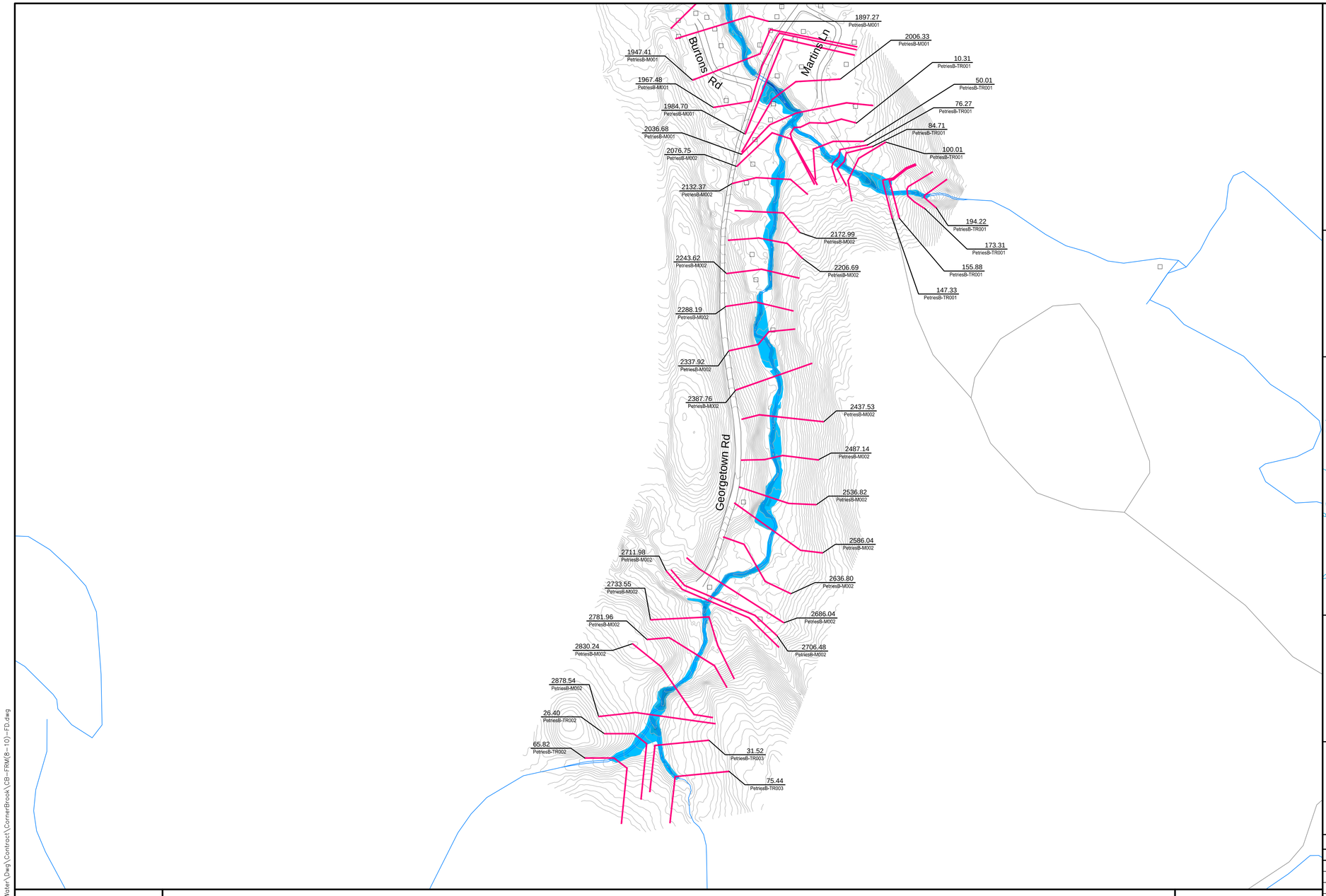


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

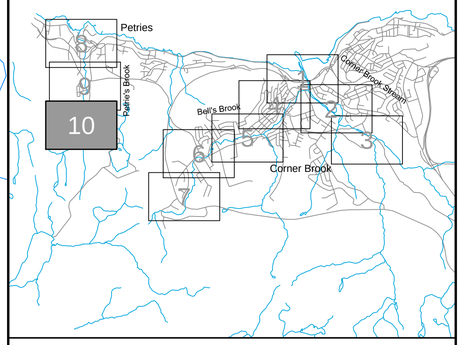
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 10 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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Water Resource Management Division

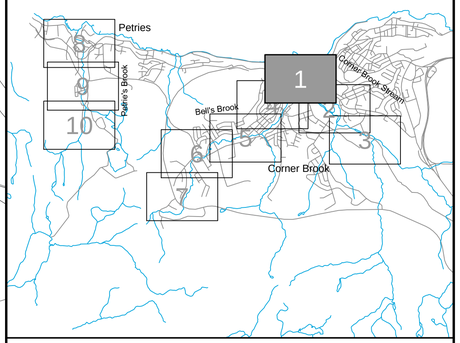
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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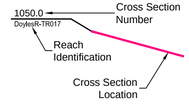

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 1 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

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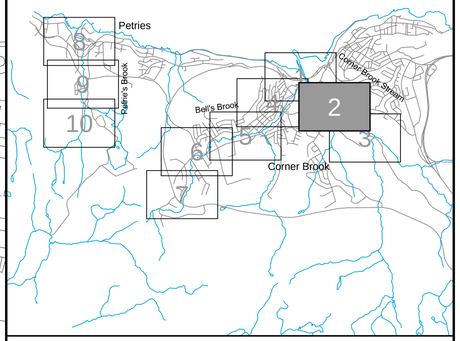
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoylerR-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

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Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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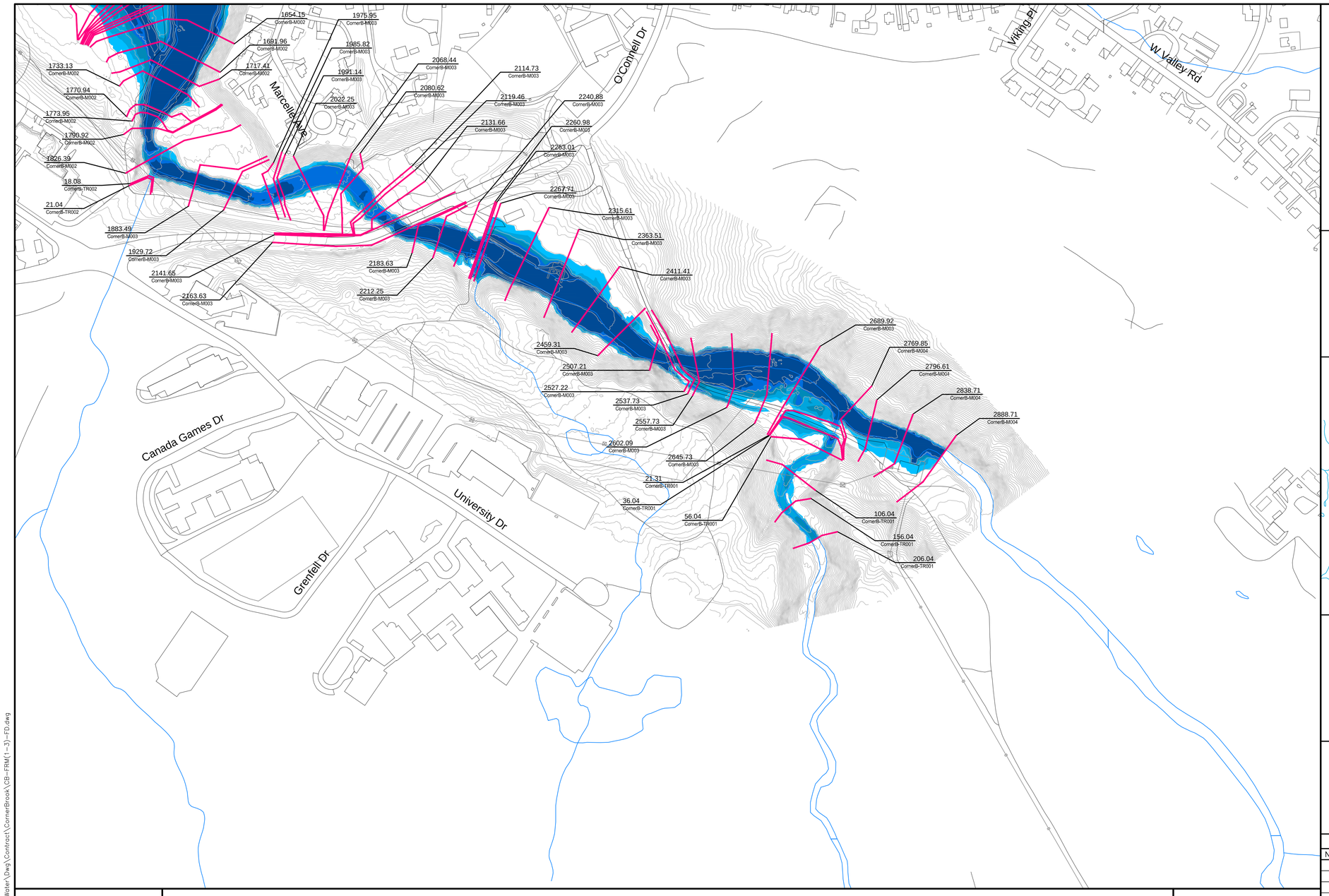

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Water Resource Management Division

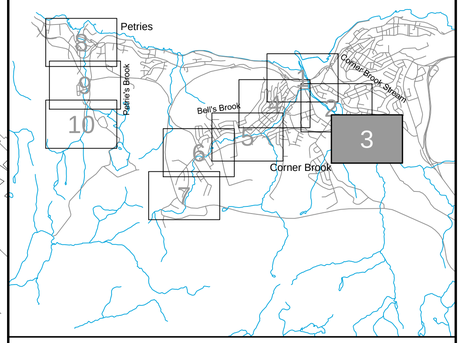
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoyleR-TR017

Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 3 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

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Water Resource Management Division

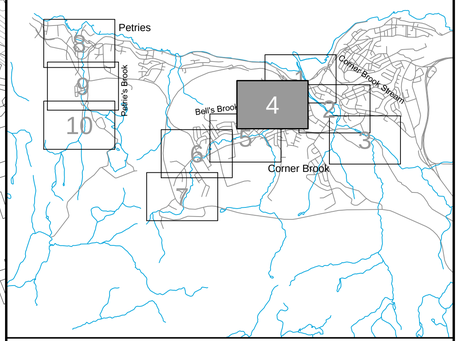
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoylesR-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 4 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Water Resource Management Division

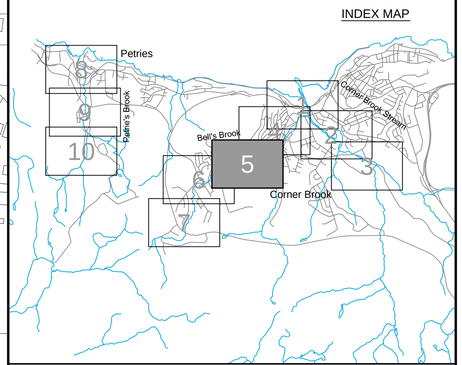
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 5 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Department of Environment and Conservation
Water Resource Management Division

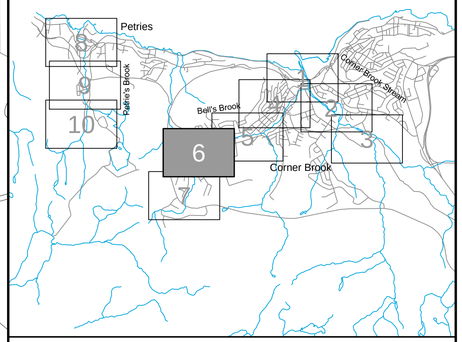
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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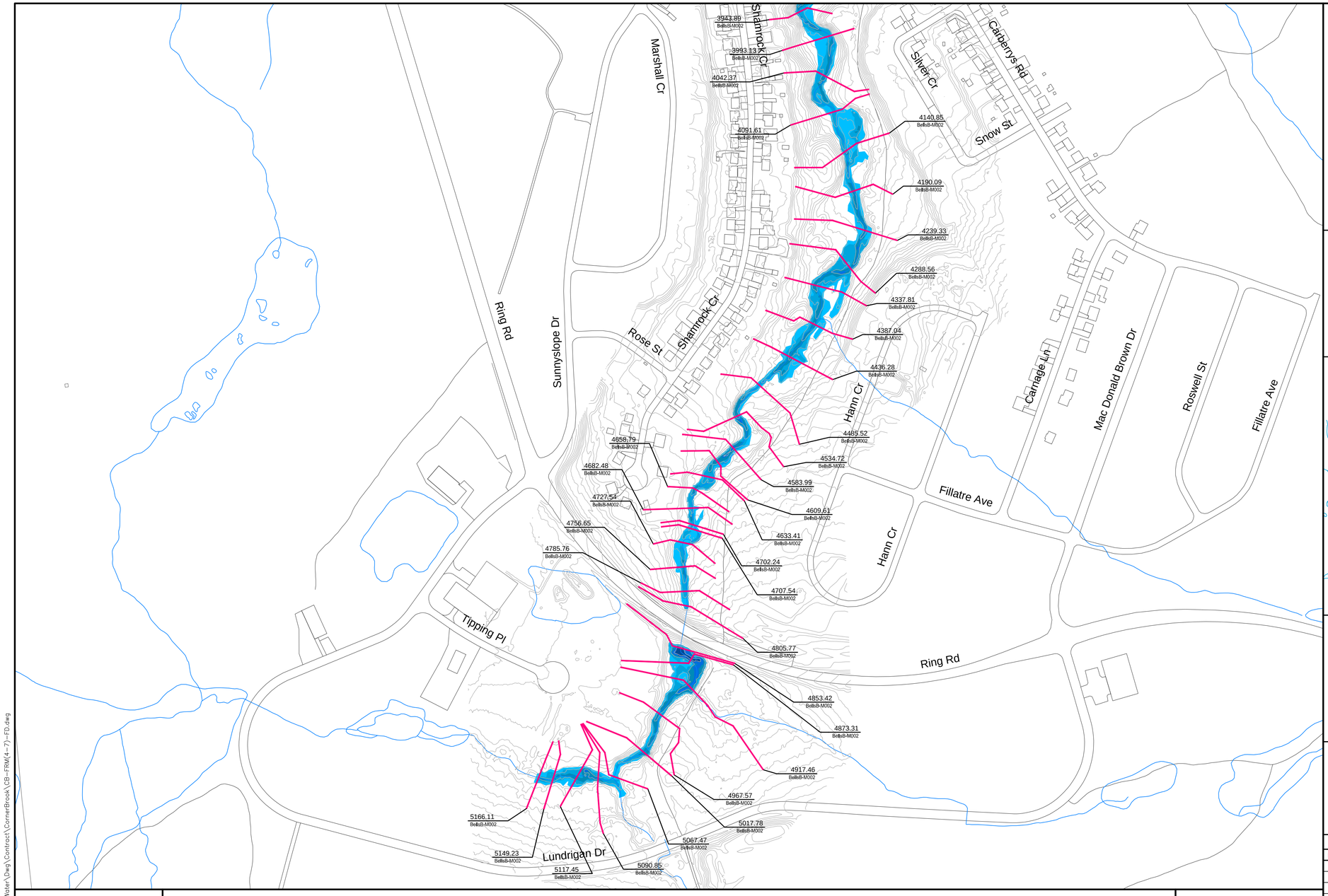


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

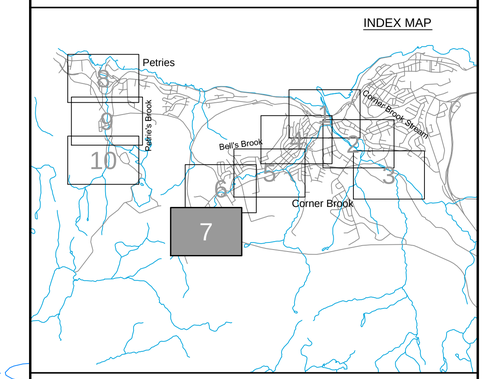
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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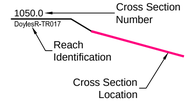

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 7 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4--7)-FD.dwg

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Newfoundland Labrador

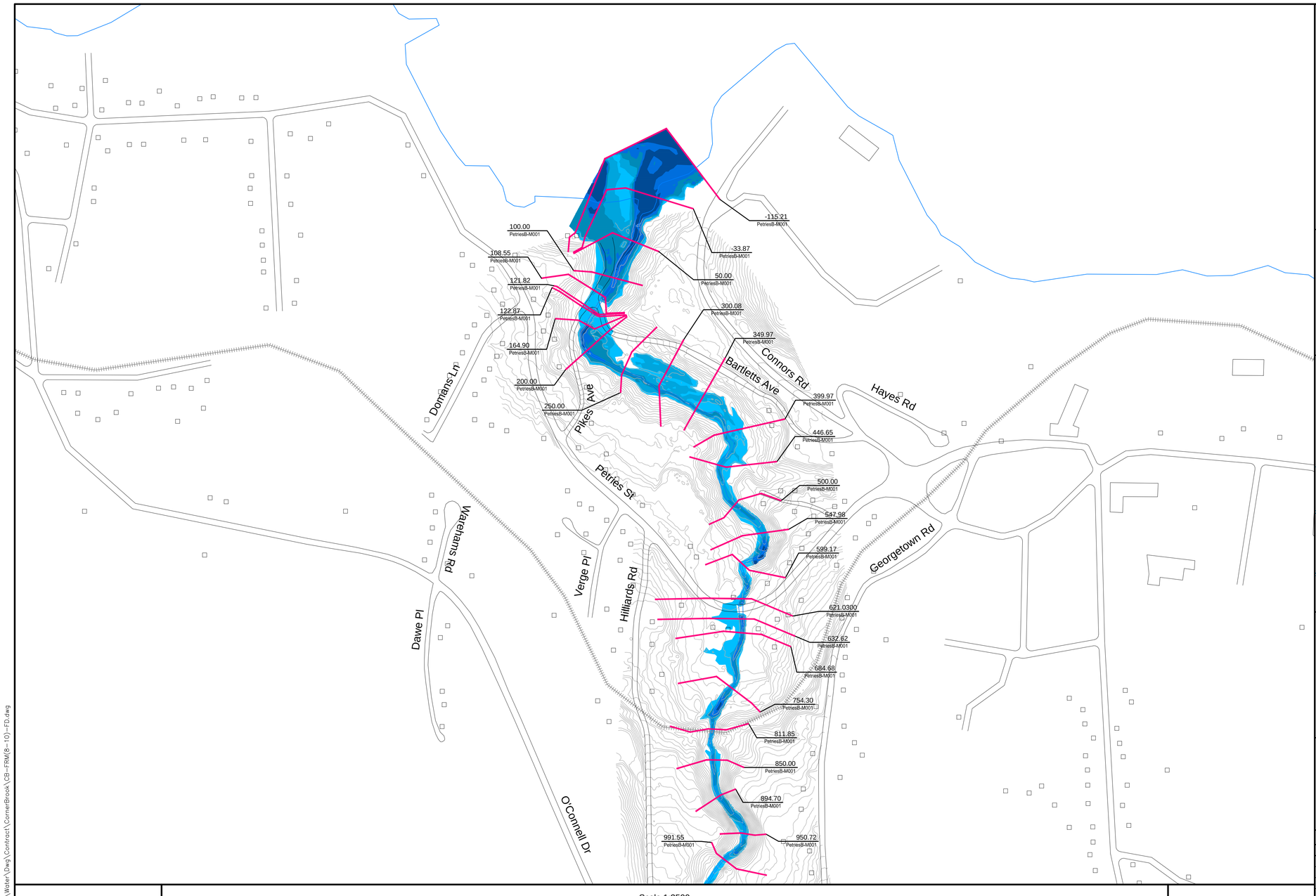
Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

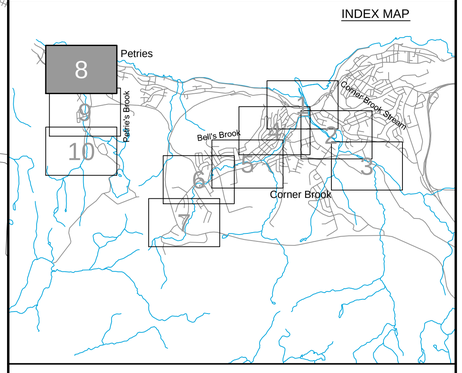
1:100 AEP Inundation Depth Mapping Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook



INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 8 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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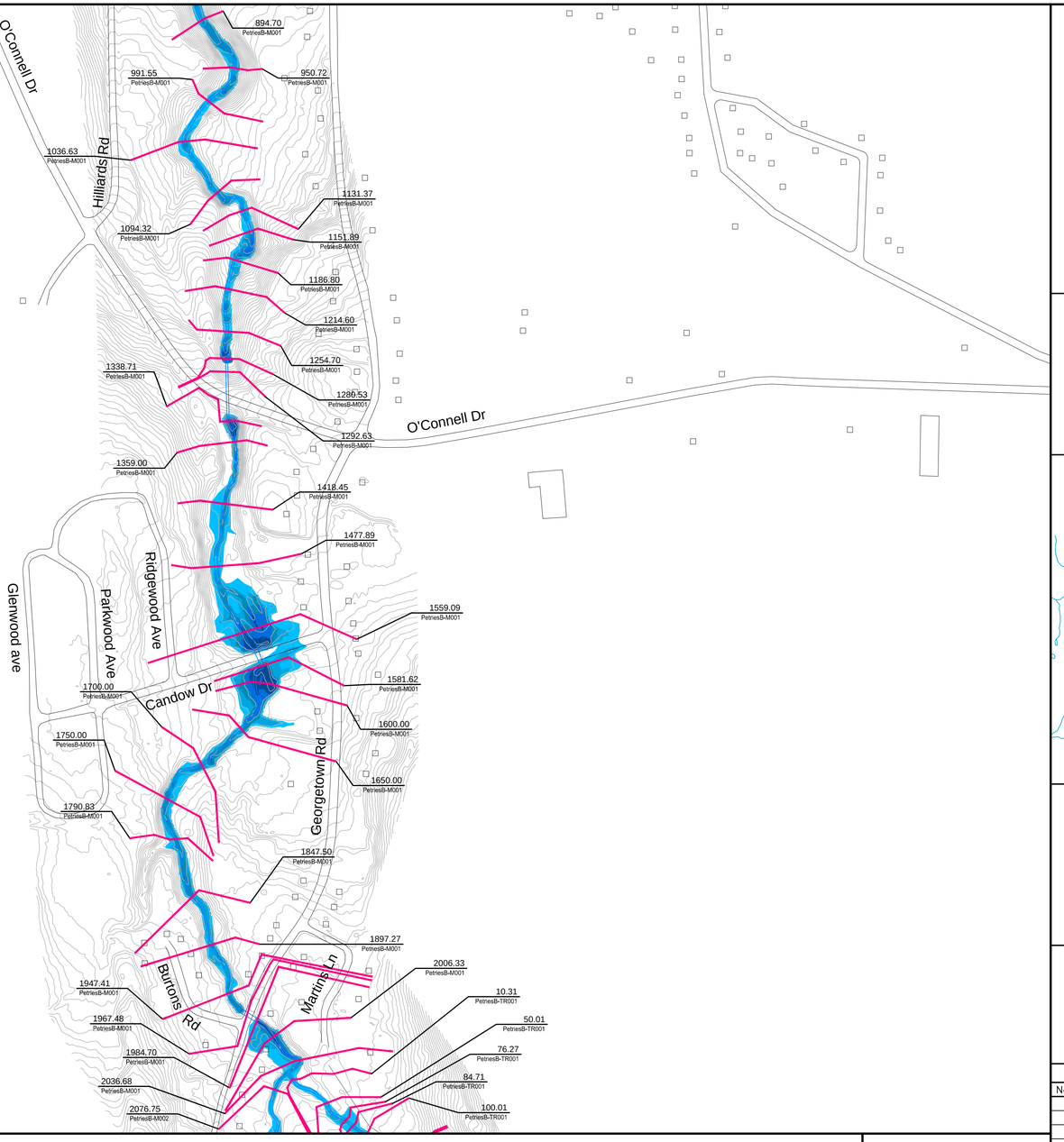


Department of Environment and Conservation
Water Resource Management Division

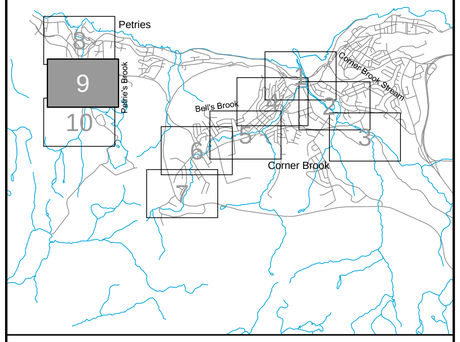
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 9 of 10

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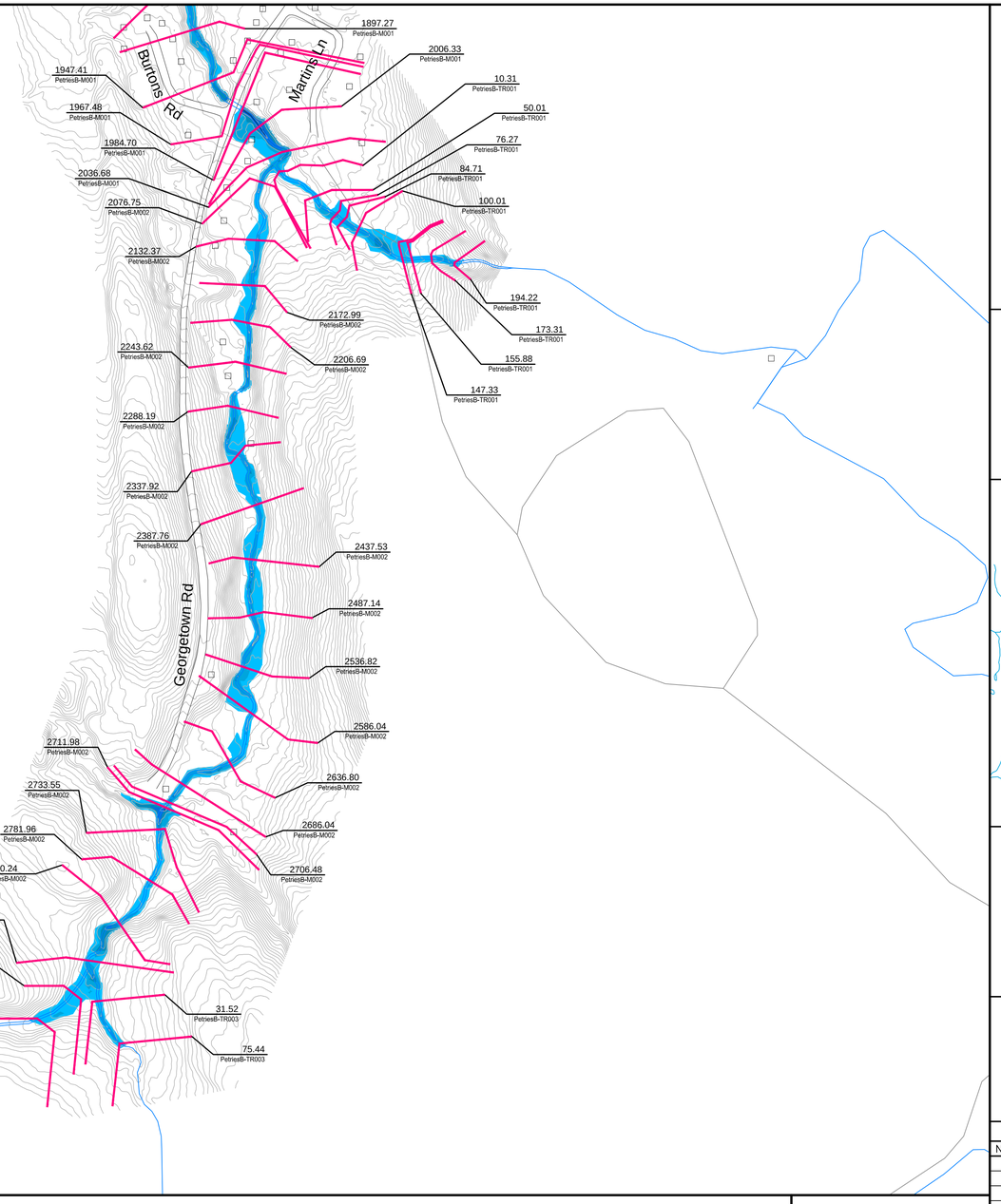


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

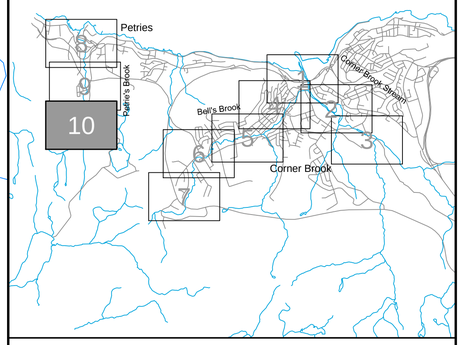
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Existing Conditions - 2012

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 10 of 10

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APPENDIX F

1:20 AND 1:100 AEP FLOOD RISK MAPPING – 2020

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

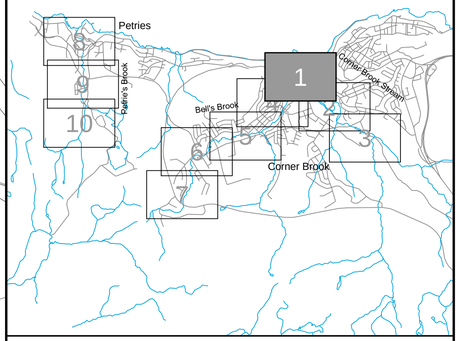
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 1 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

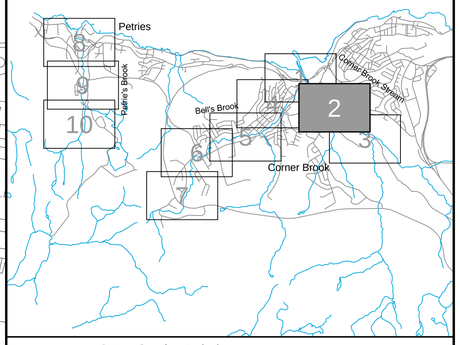
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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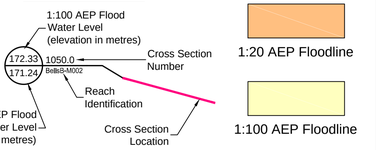

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 2 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

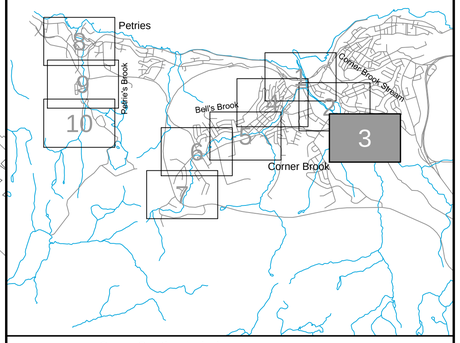
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

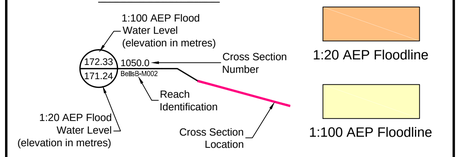
Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label



amec

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REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

C:\Work\NFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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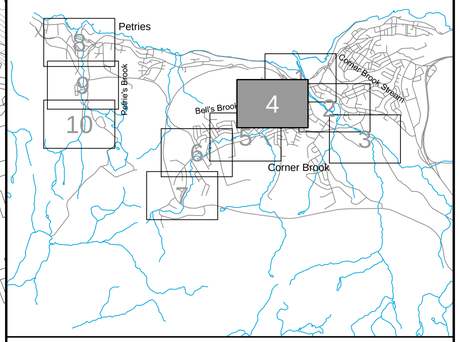
Flood Risk Map
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline
1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 4 of 10

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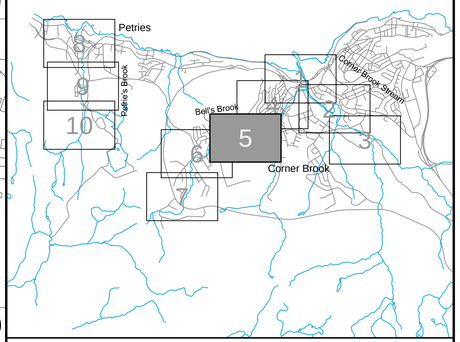

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

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MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 5 of 10

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Linds Rd
Happy Valley Rd
Park Dr
Country Rd
Green Garden Rd
Country Rd
O'Connell Dr
Dykes Rd
Burtons Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Shamrock Cr
Marshall Cr
Silver Cr
Carberrys Rd
Dykes Rd

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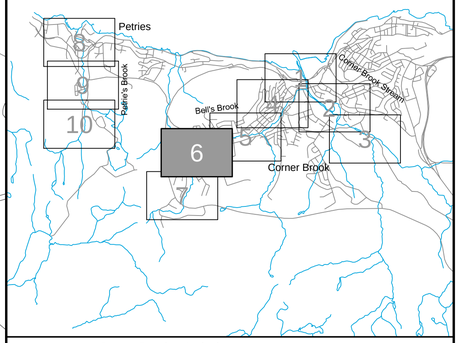

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
Cross Section Number
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1:20 AEP Floodline
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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 6 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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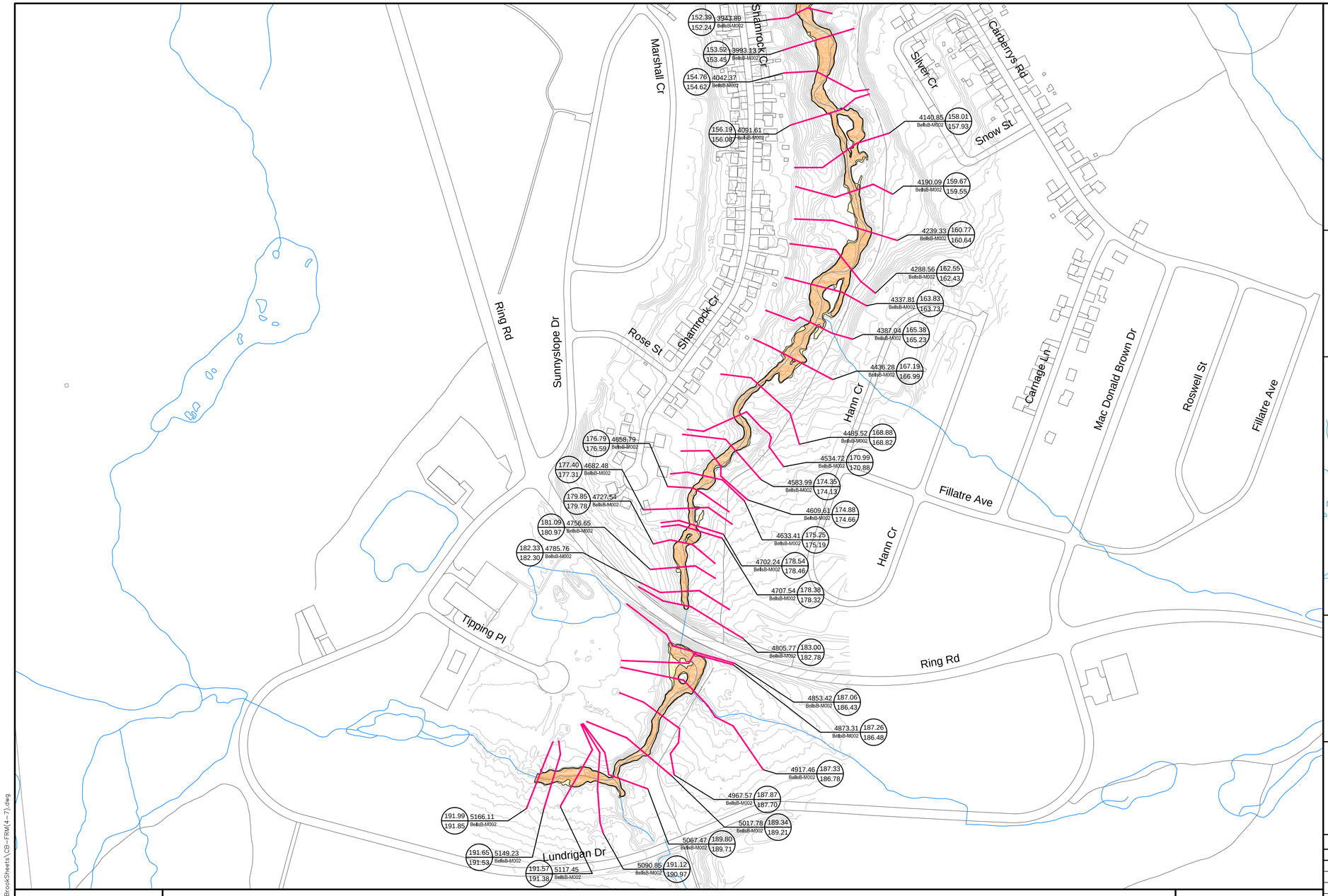

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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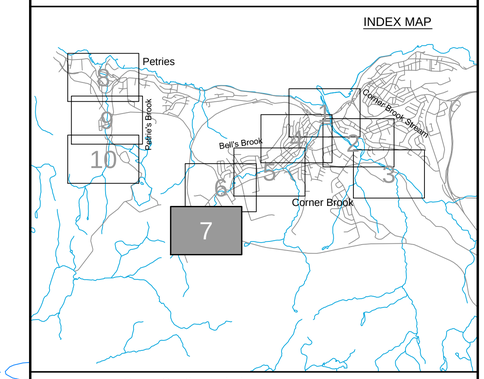

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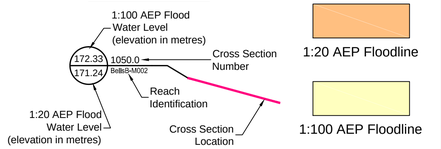

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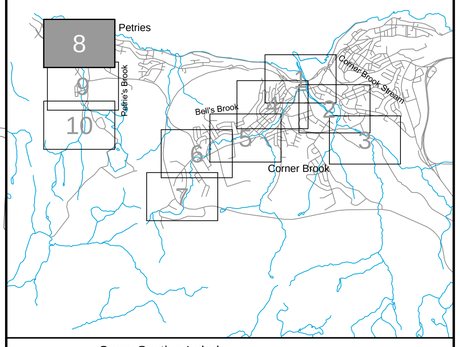

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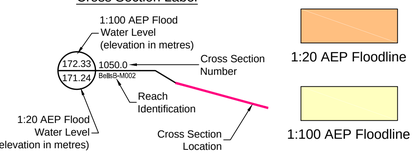

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No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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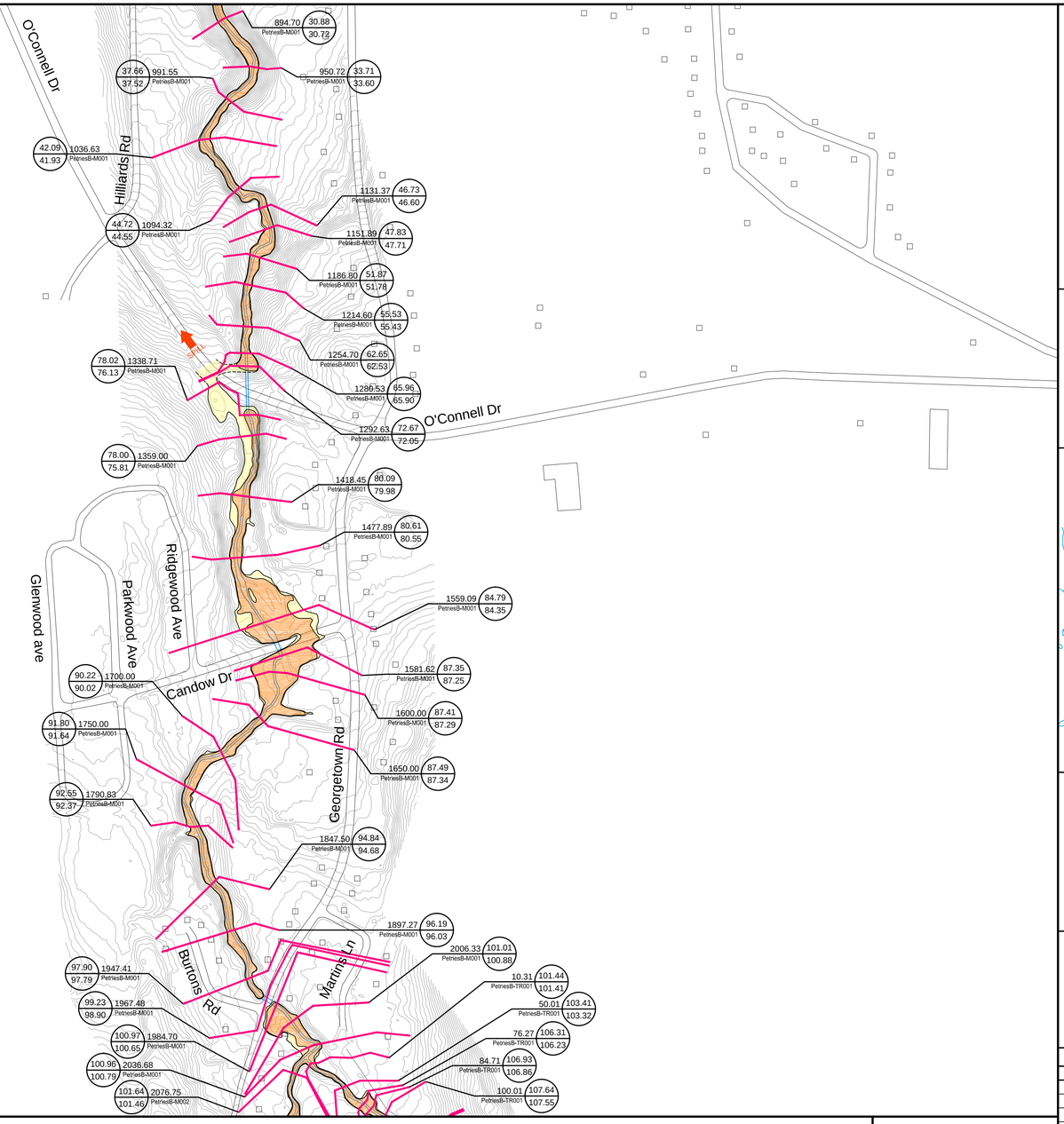

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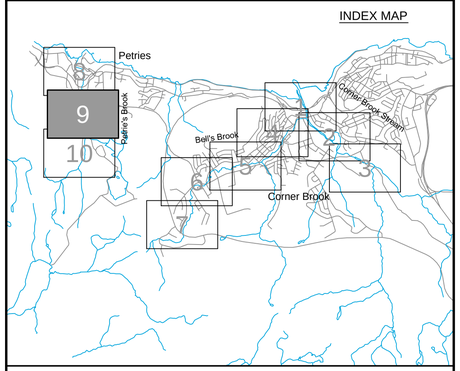

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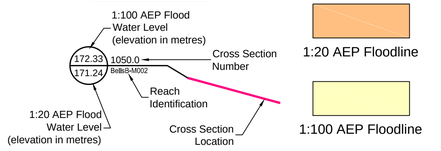

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 9 of 10

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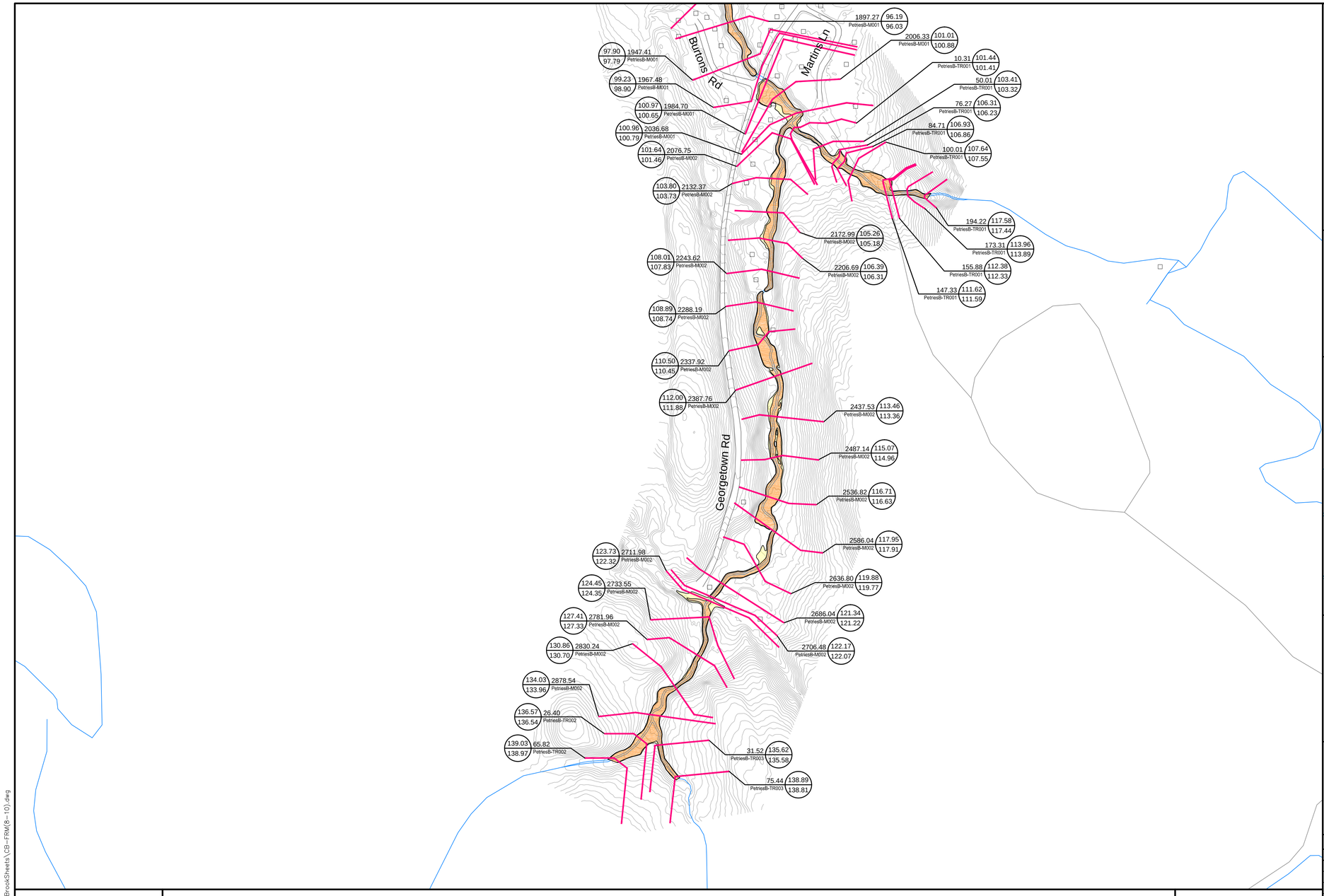

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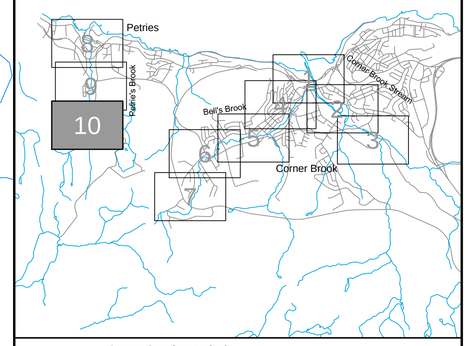

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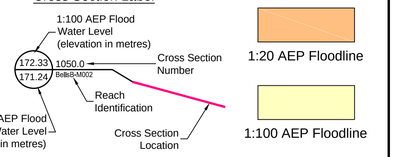

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 10 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

N

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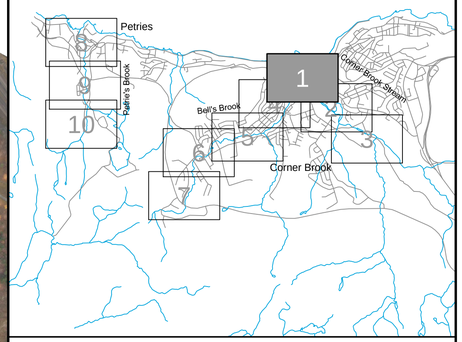

Cross Section Label

1050.0 BellsB-M002 — Cross Section Number; Reach Identification; Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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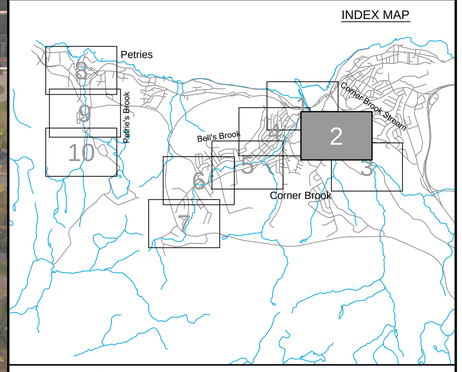

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

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1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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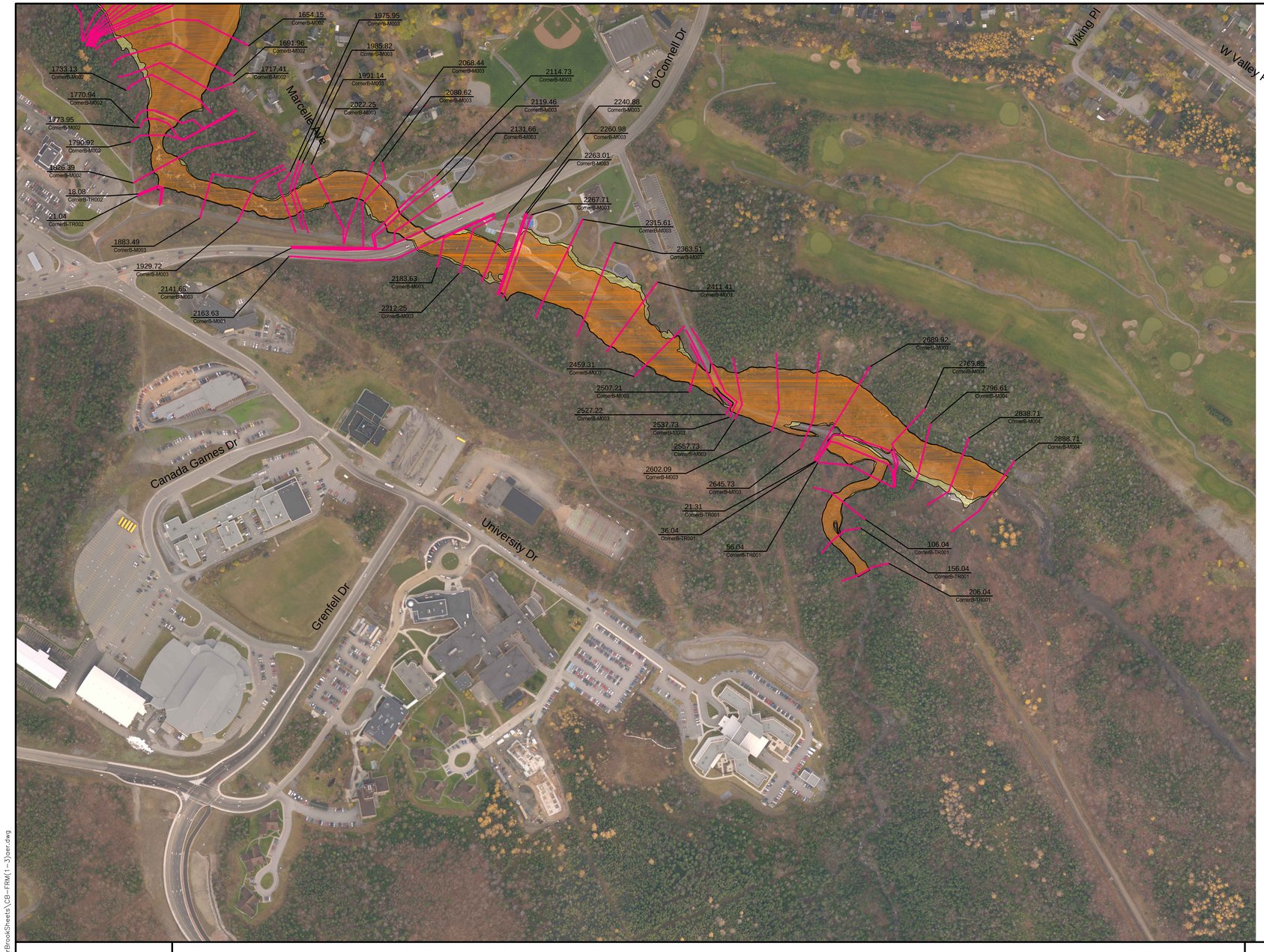

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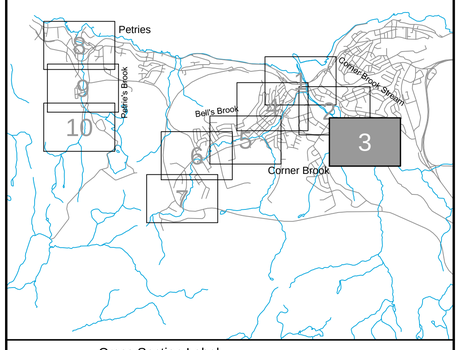

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No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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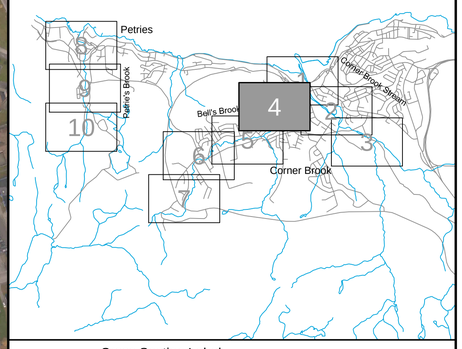

Cross Section Label

1050.0 BellsB-M002 — Cross Section Number; Reach Identification; Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Sheet 4 of 10

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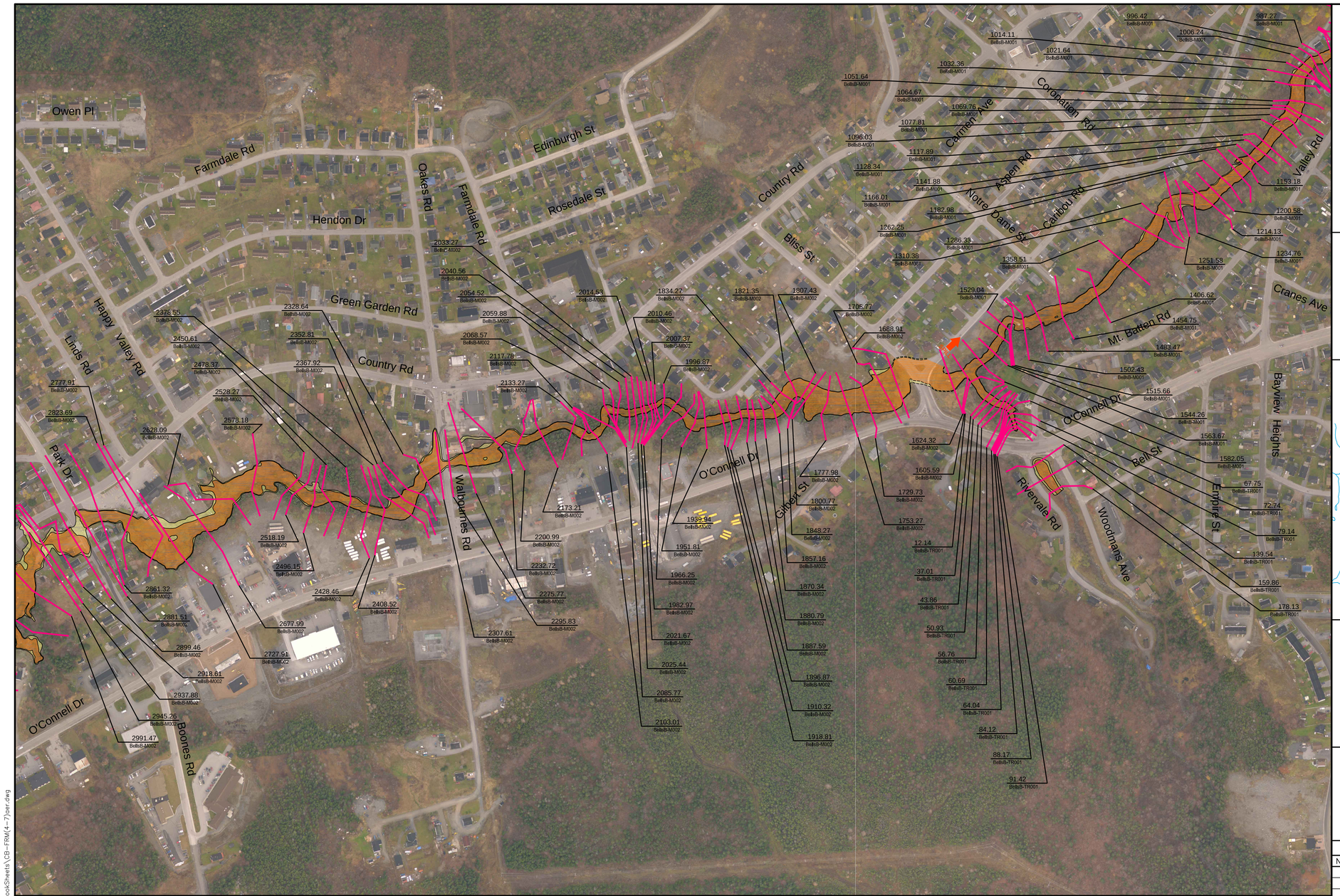

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

MTMNAD83
ZONE 3

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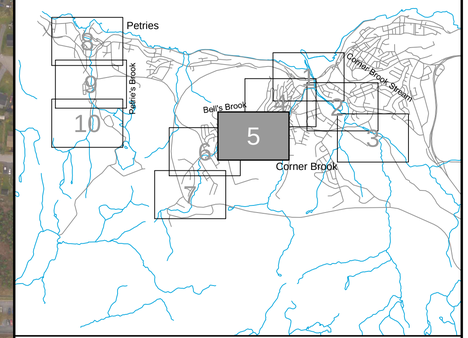

Cross Section Label

1050.0 BellsB-M002 — Cross Section Number; Reach Identification; Cross Section Location

1:20 AEP Floodline

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amec

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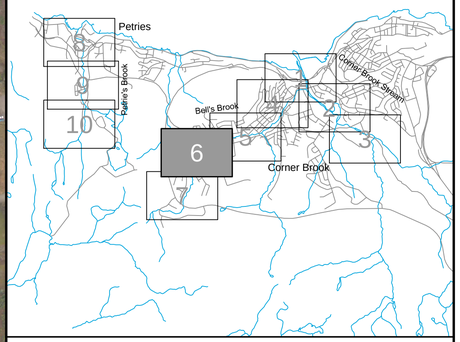

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1050.0
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Reach Identification
Cross Section Number
Cross Section Location

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1:100 AEP Floodline

amec

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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

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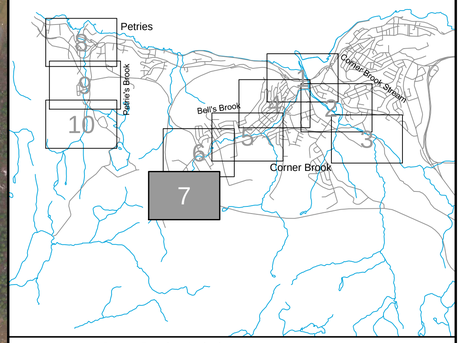

Cross Section Label

1050.0
Bell's Bk-M002

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Reach Identification

Cross Section Location

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1:100 AEP Floodline

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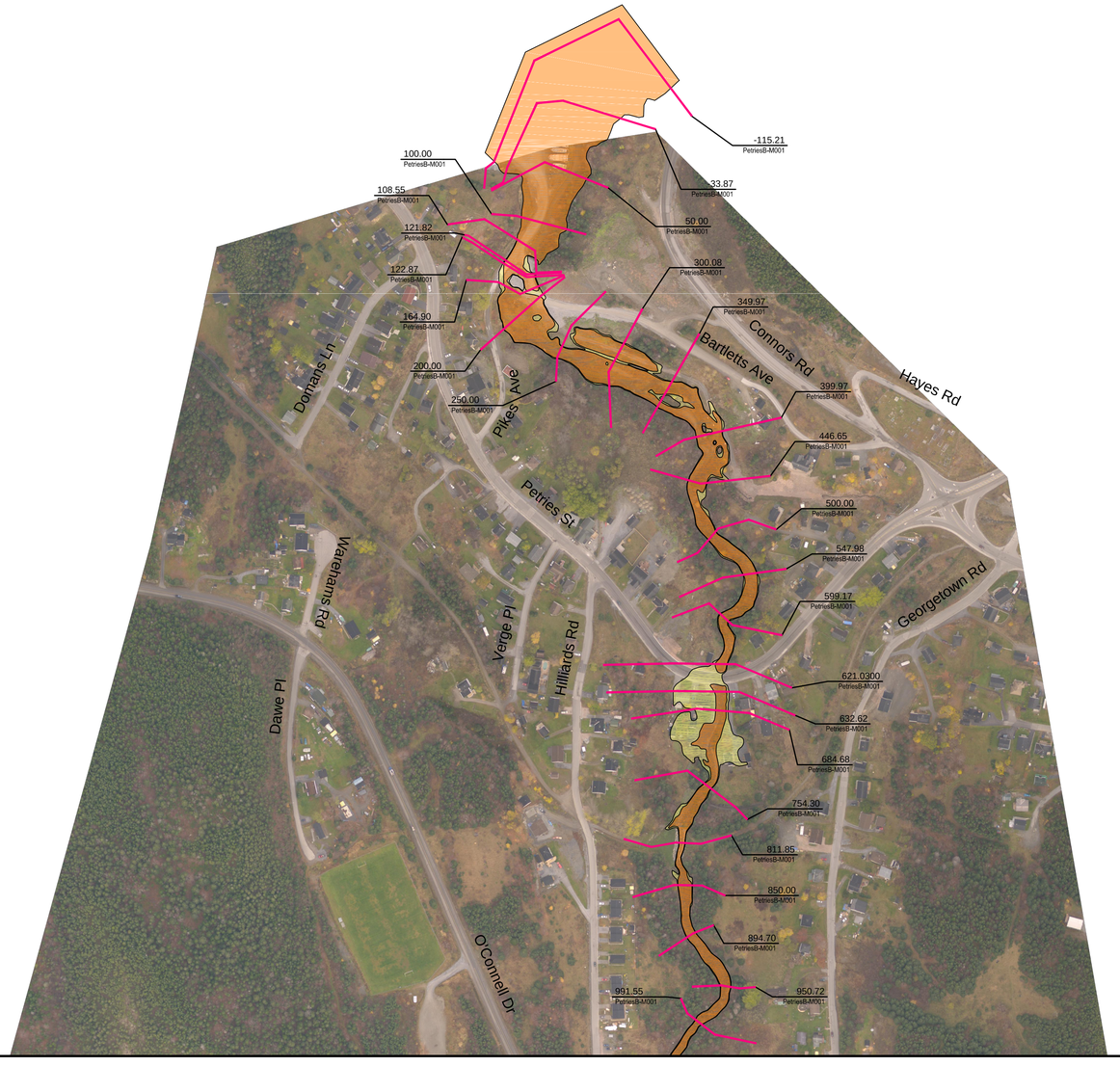

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

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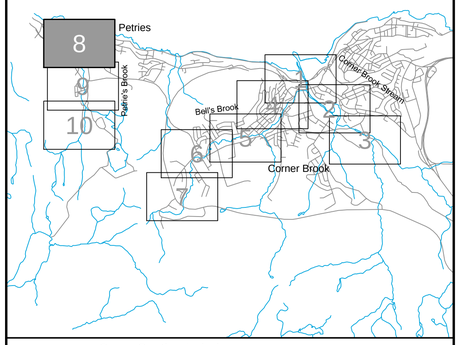

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1:100 AEP Floodline

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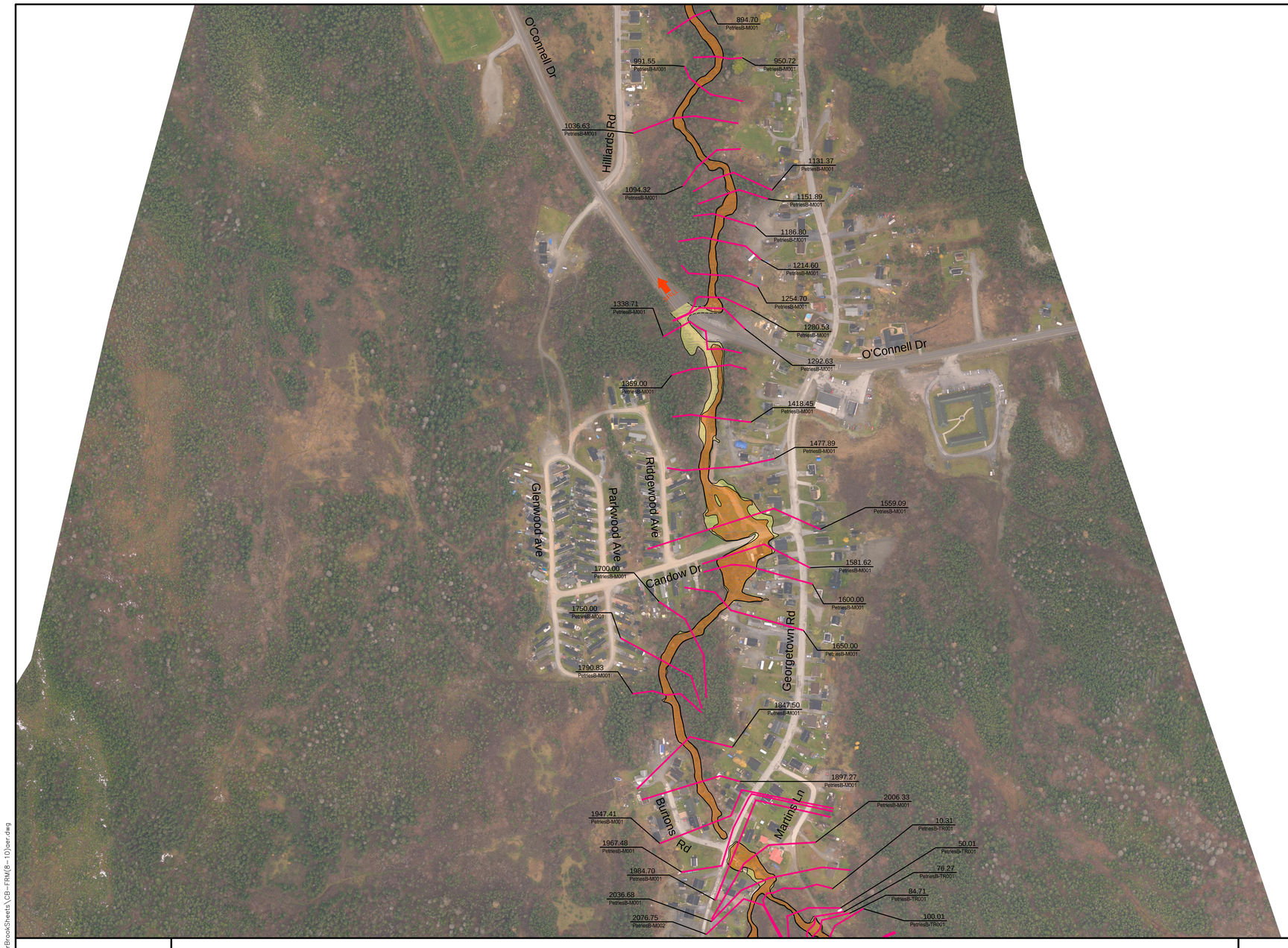

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

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Department of Environment and Conservation
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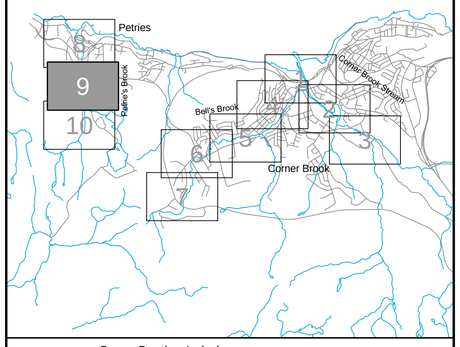
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 9 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(8-10)ar.dwg

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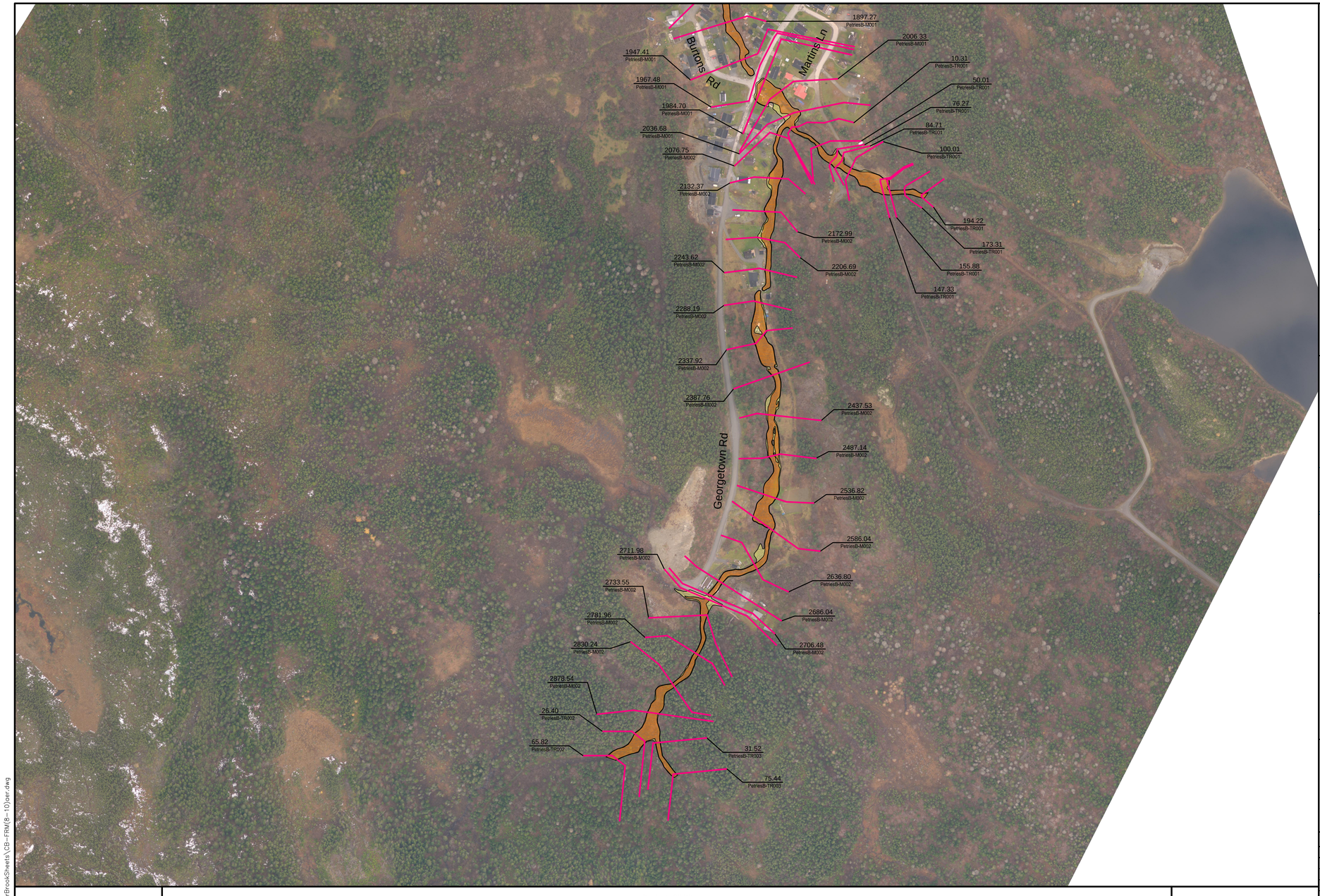


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

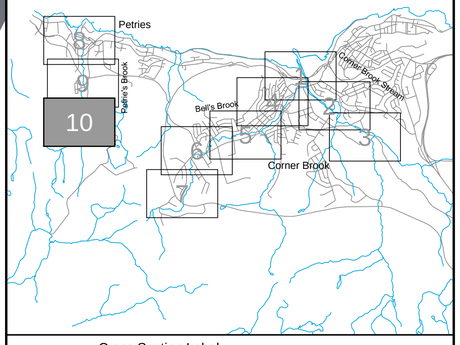
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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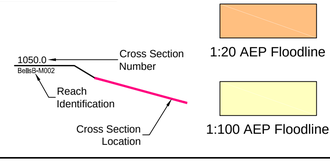

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Sheet 10 of 10

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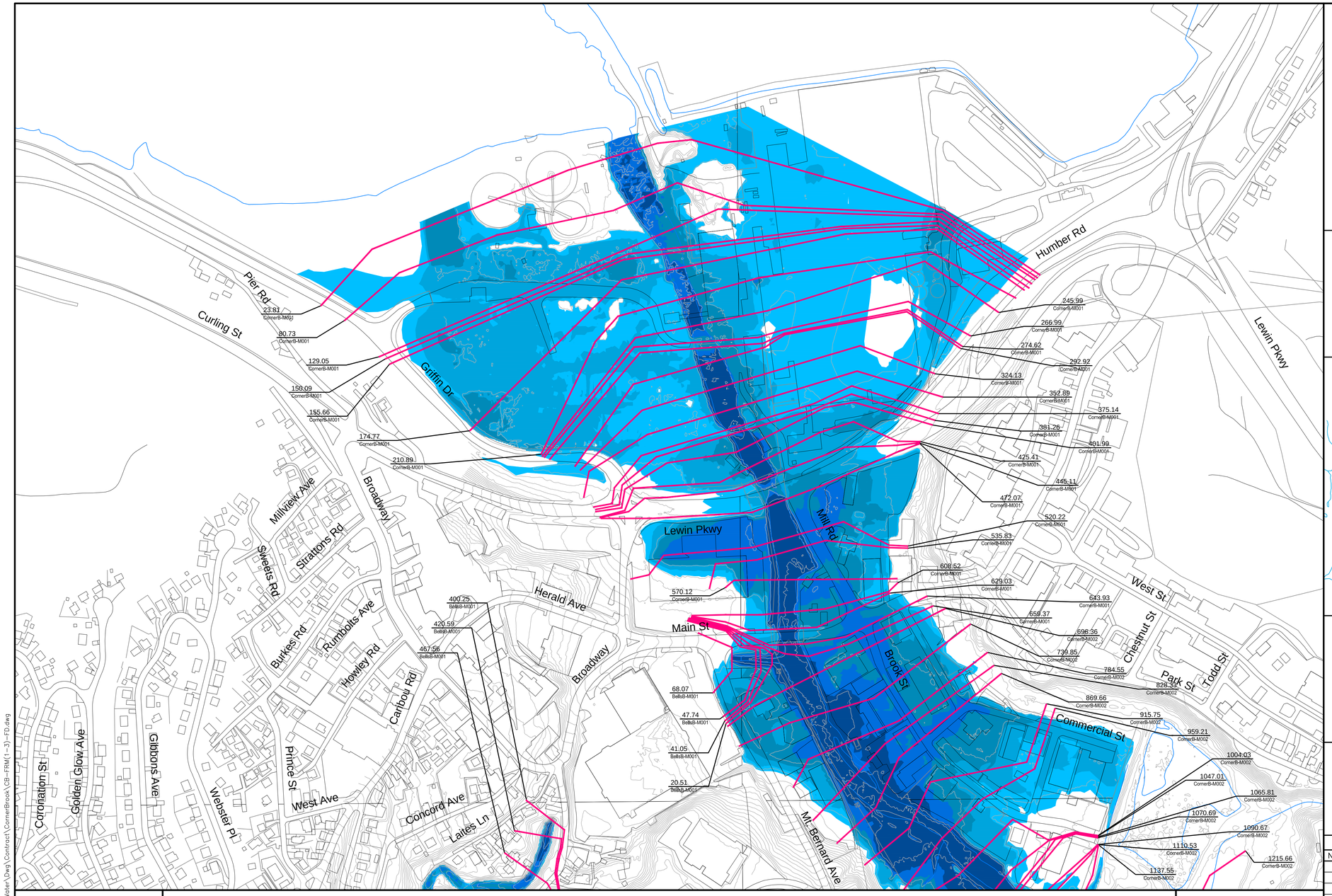

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Department of Environment and Conservation
Water Resource Management Division

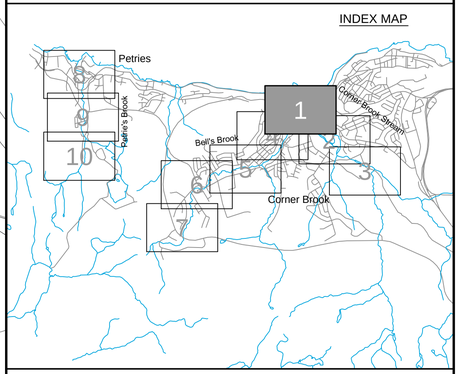
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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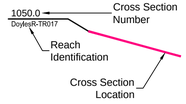

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 1 of 10

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Water Resource Management Division

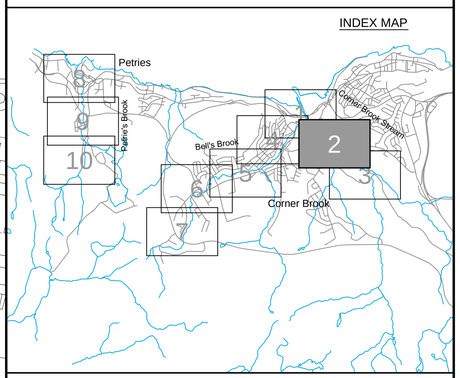
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylerR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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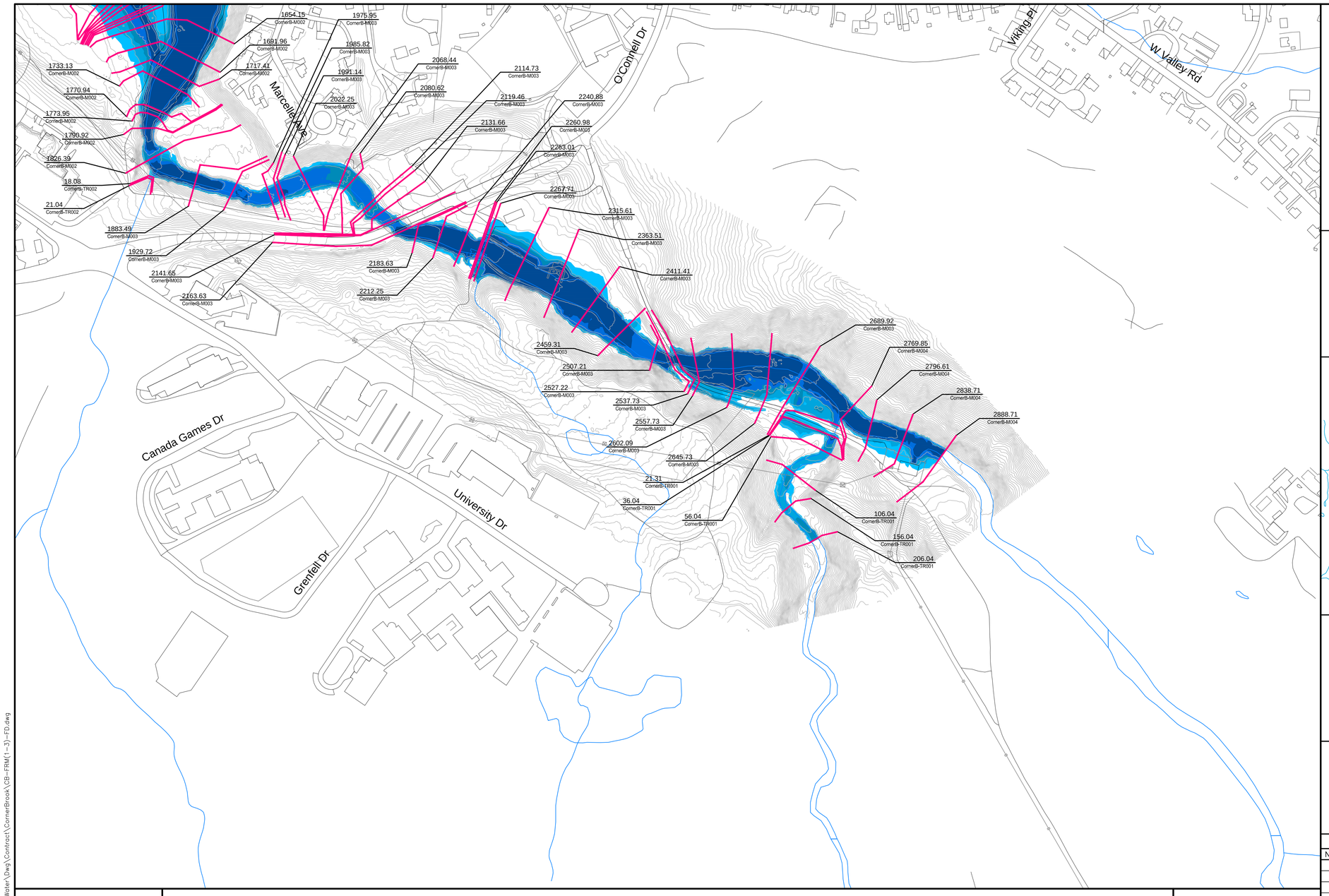

Newfoundland Labrador

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Water Resource Management Division

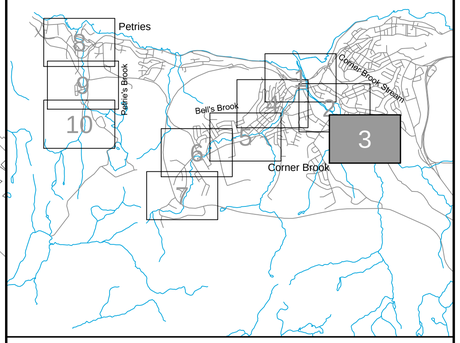
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoyleR-TR017

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 3 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

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Newfoundland Labrador

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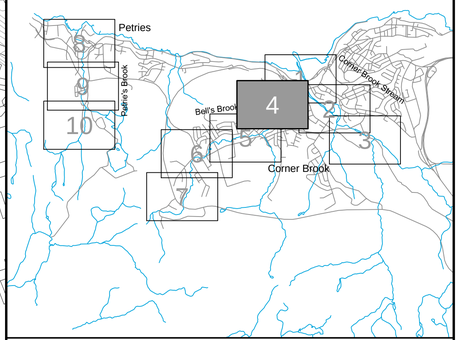
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 4 of 10

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Department of Environment and Conservation
Water Resource Management Division

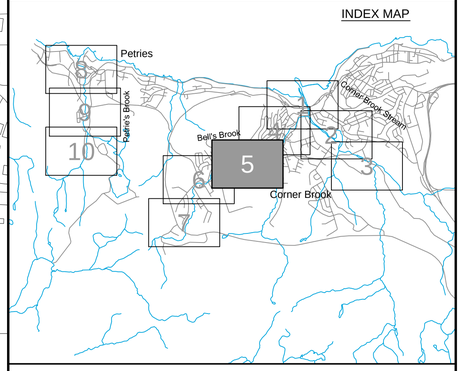
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 5 of 10

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Happy Valley Rd
Linds Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Boones Rd
Burtons Rd
Dykes Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Shamrock Cr
Marshall Cr
Silver Cr
Carberrys Rd

2328.64 2376.56 2352.81 2450.61 2367.92 2478.37 2526.27 2578.18 2628.09 2777.91 2823.69 2518.19 2496.15 2428.46 2408.52 2861.32 2881.51 2677.99 2899.46 2727.91 2918.61 2937.88 2945.26 2991.47 3037.68 3083.82 3130.11 3157.63 3176.31 3203.83 3222.52 3424.29 3473.83 3520.99 3573.46 3623.19 3643.21 3677.71 3697.71 3724.94 3746.94 3796.17 3765.39 3822.22 3869.08 3894.65 3845.41 3943.89 3993.13 4042.37 3303.55 3329.08 3358.51 3386.31 3400.36

Newfoundland Labrador

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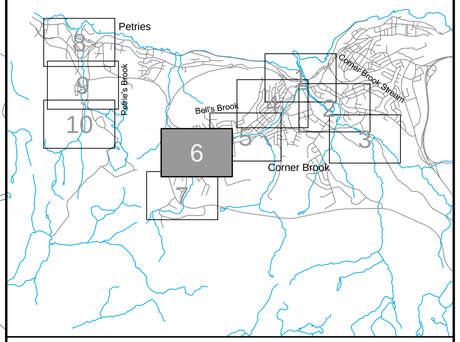
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 6 of 10

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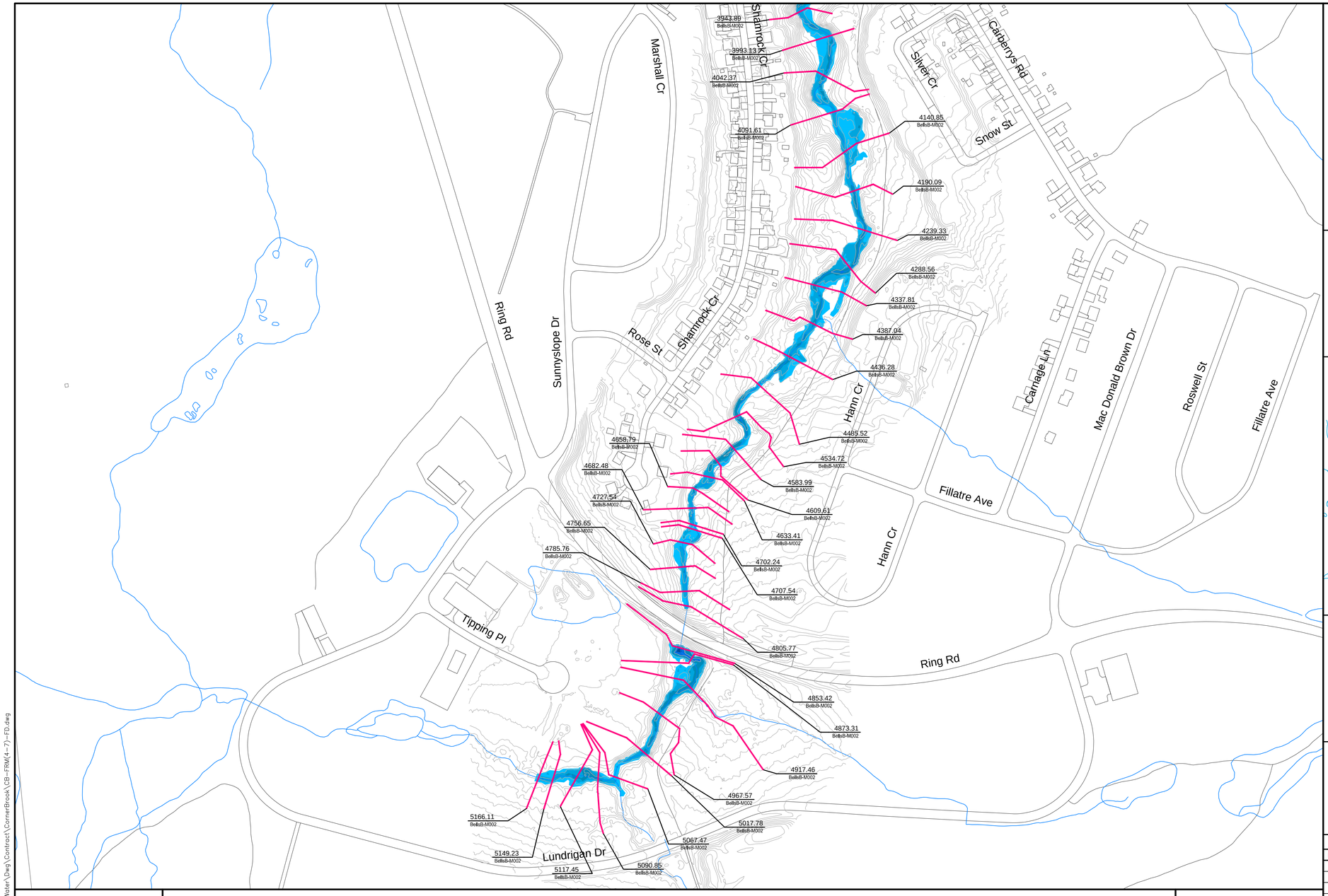


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

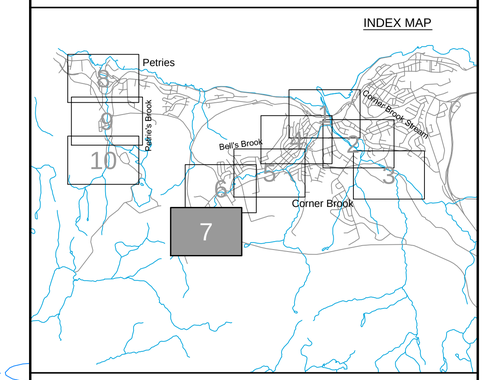
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoylesR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 7 of 10

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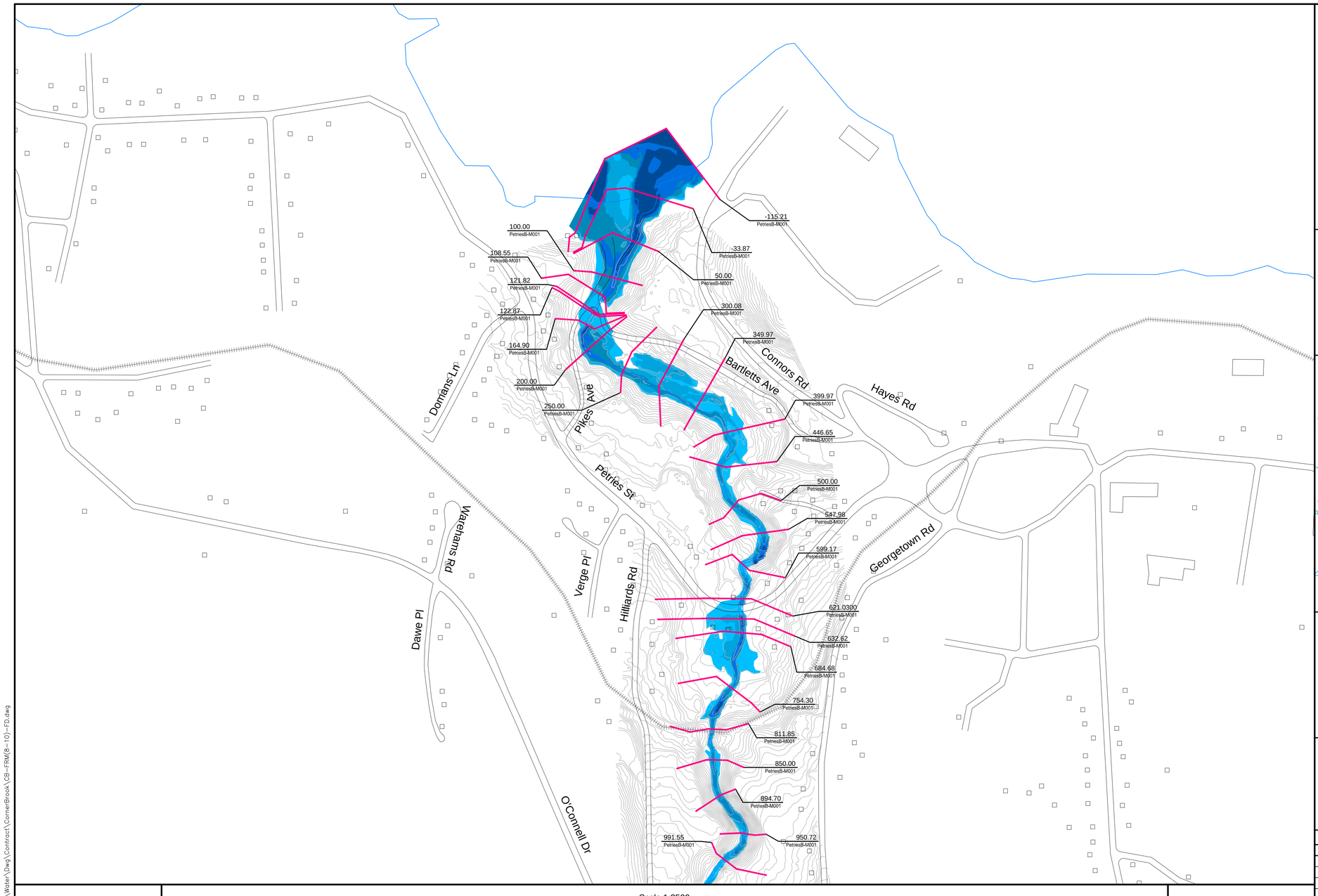


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

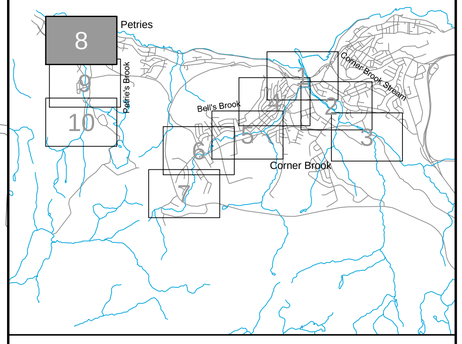
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 8 of 10

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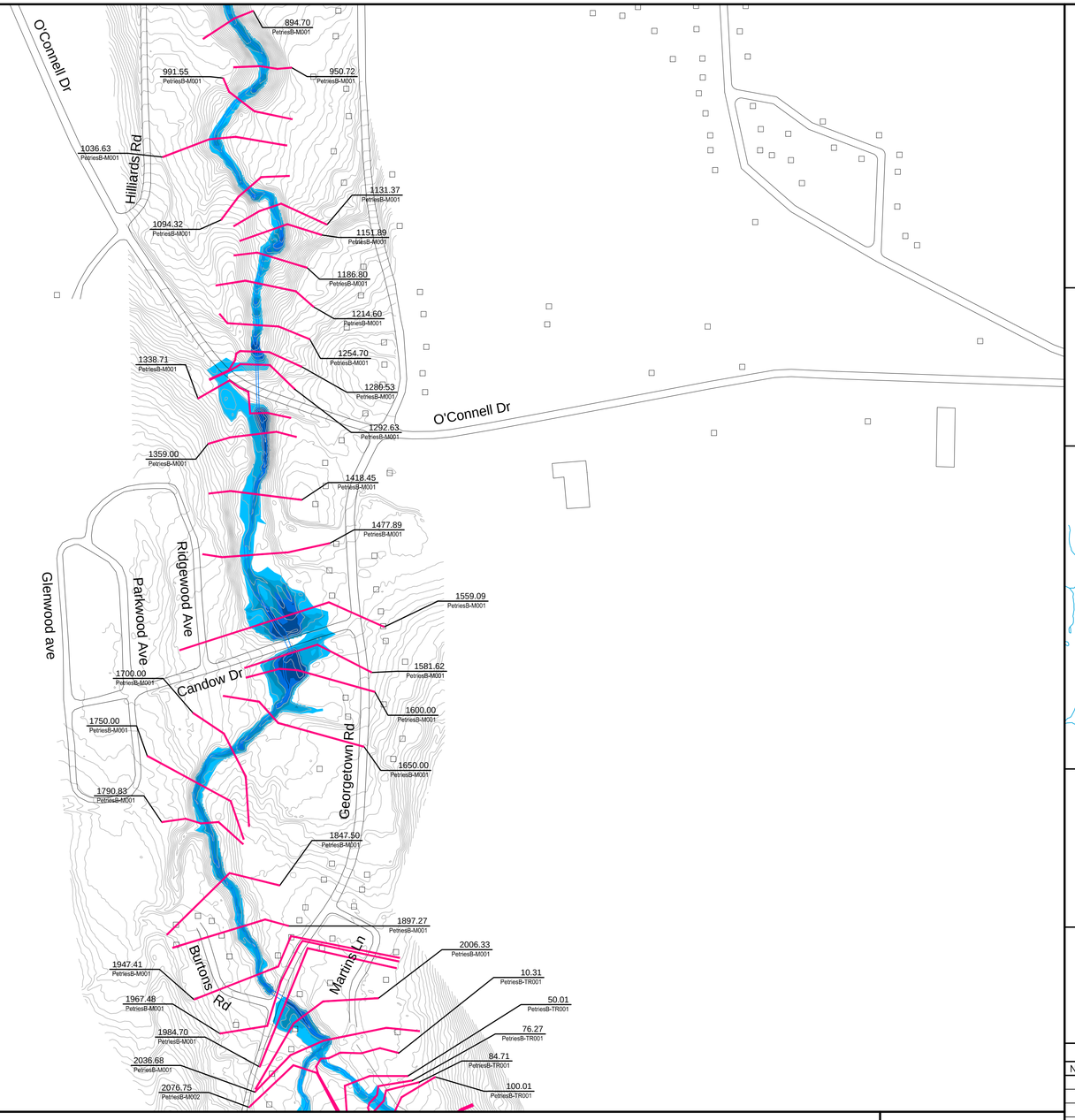

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

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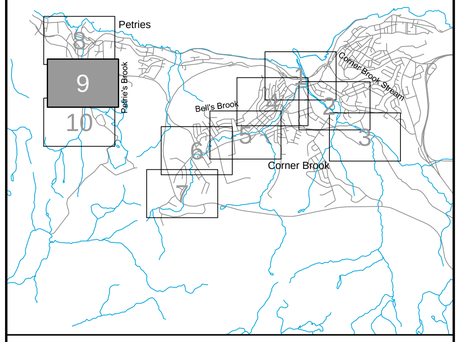
1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 9 of 10

P:\Work\TA11127335\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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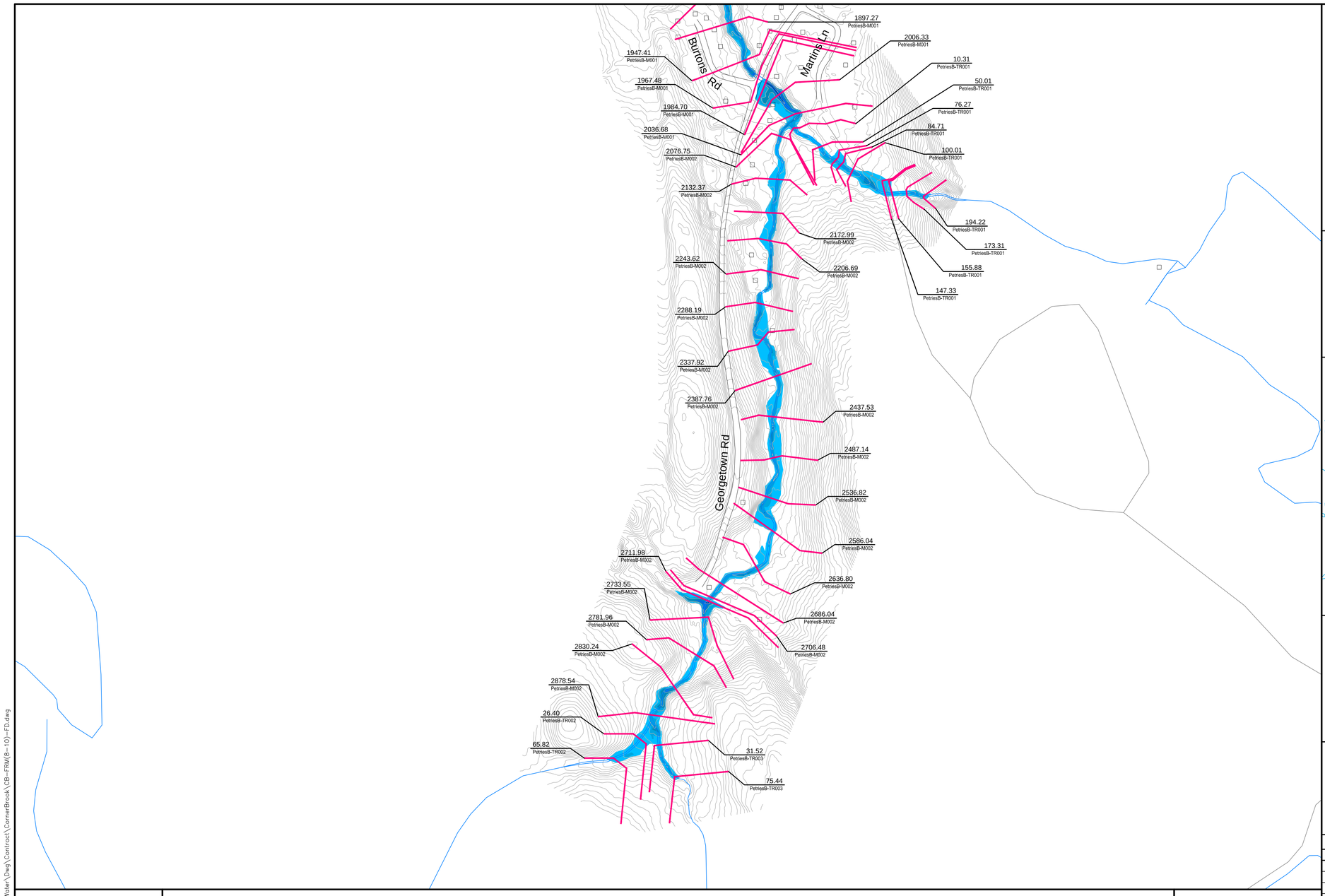

Newfoundland Labrador

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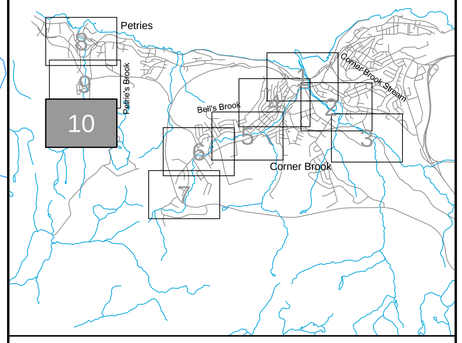
1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 10 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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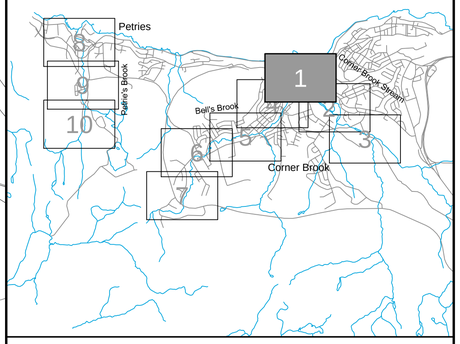
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 ← Cross Section Number
DoyleB-TR017 ← Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 1 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

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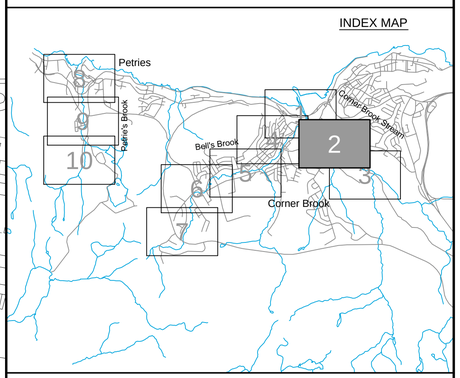
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylerR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

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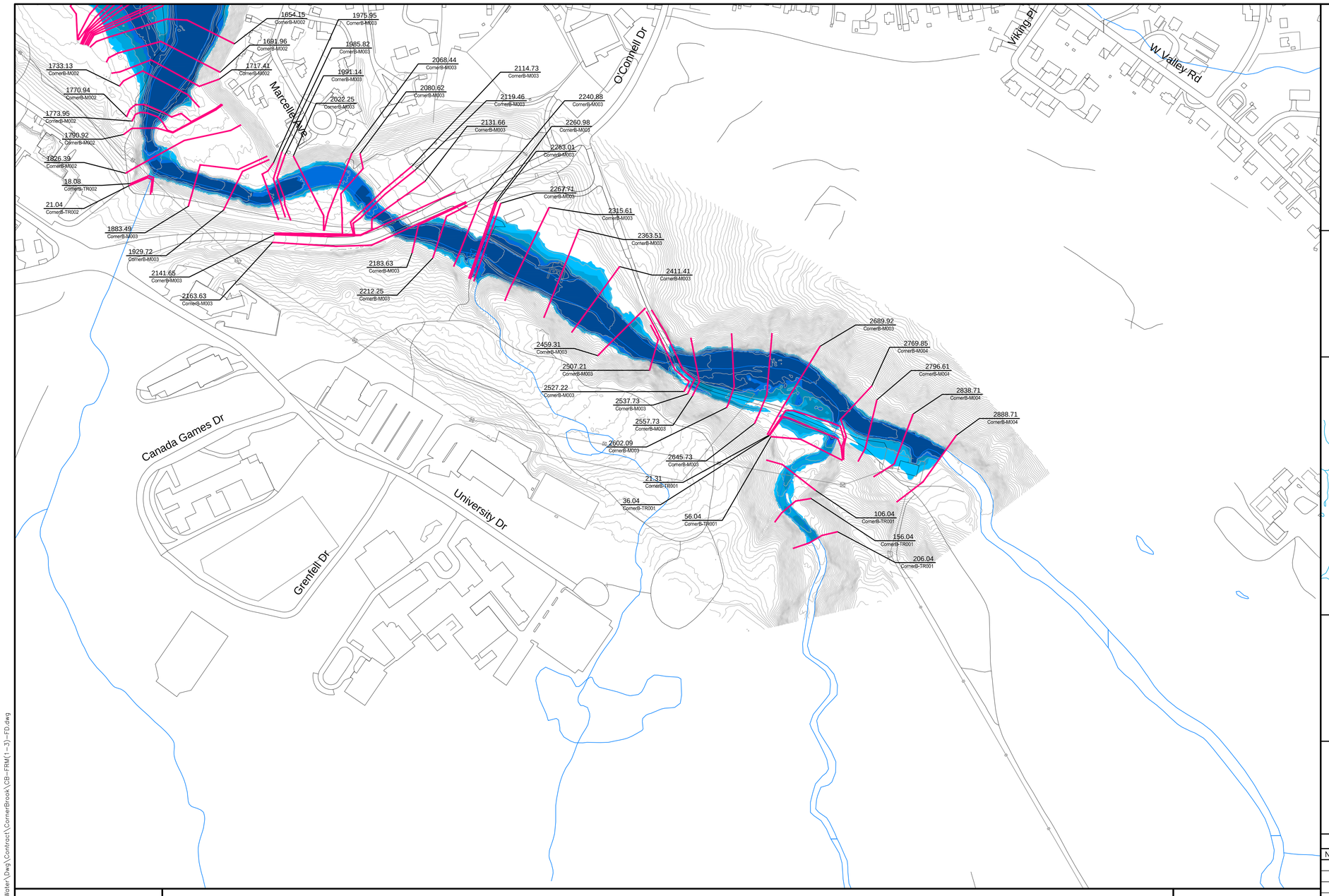

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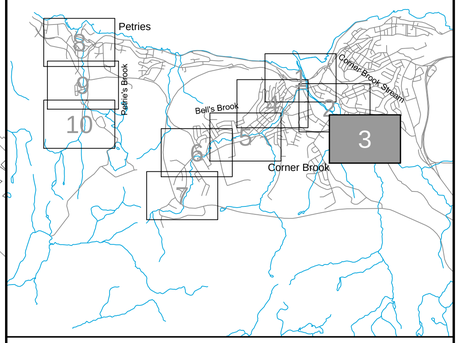
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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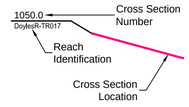

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 3 of 10

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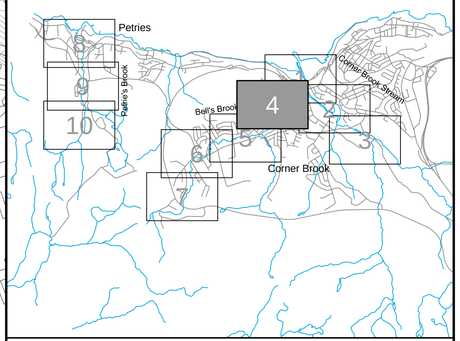
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleR-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

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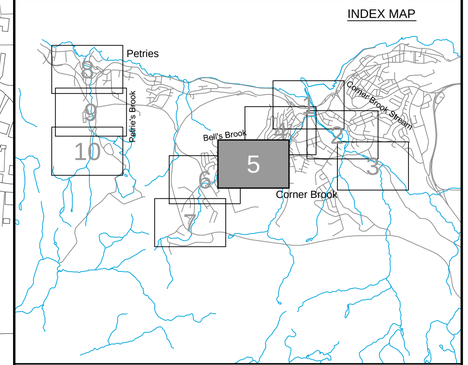
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 5 of 10

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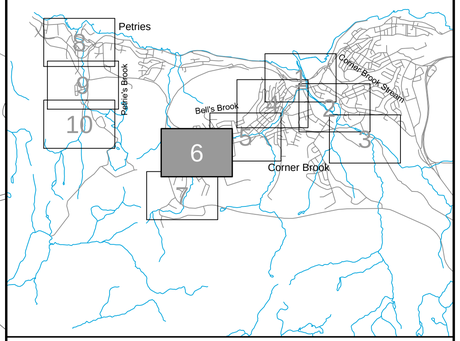
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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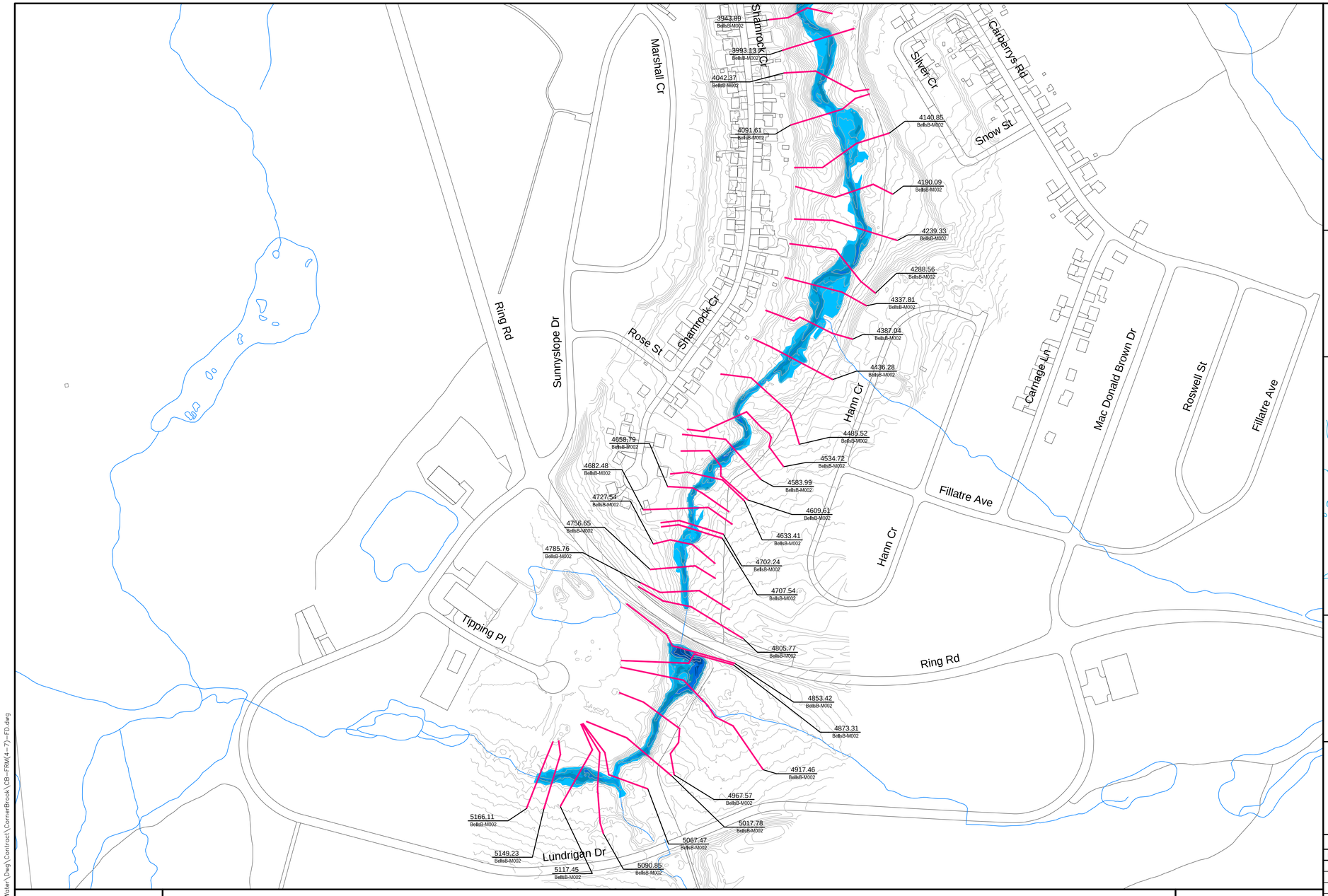

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Water Resource Management Division

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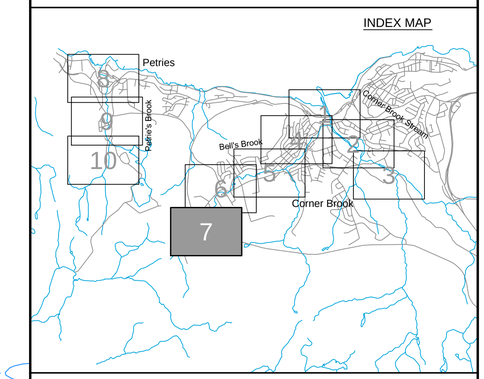
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleB-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 7 of 10

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Water Resource Management Division

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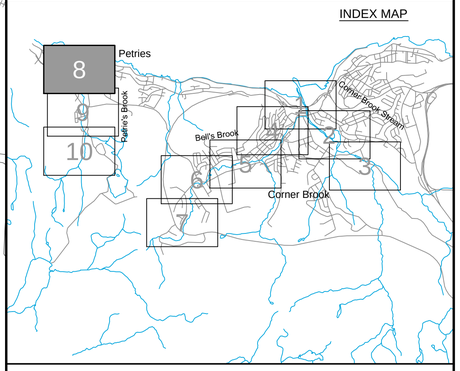
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleeR-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 8 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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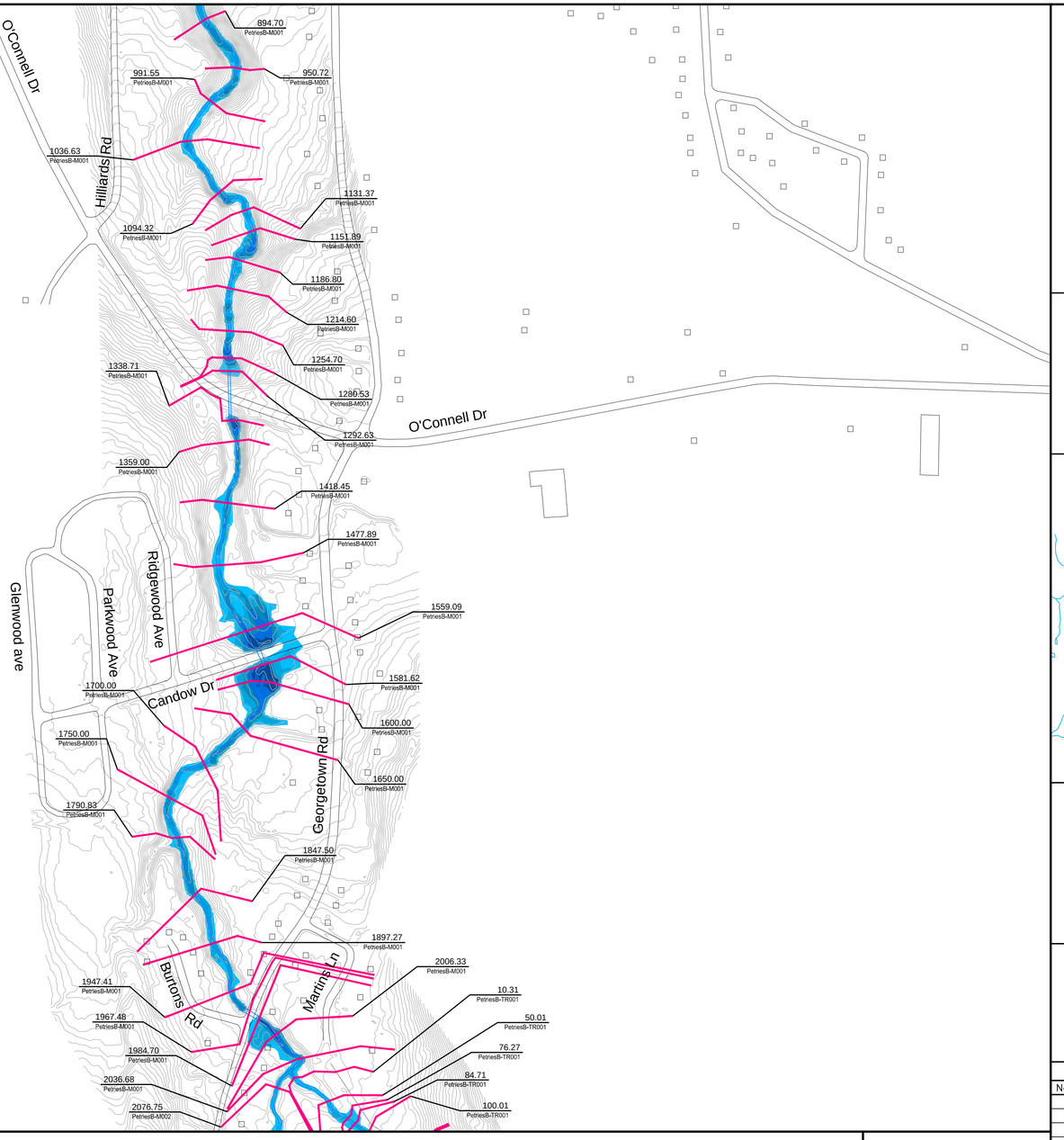

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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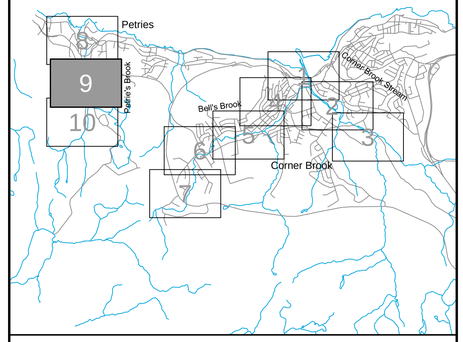
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

Sheet 9 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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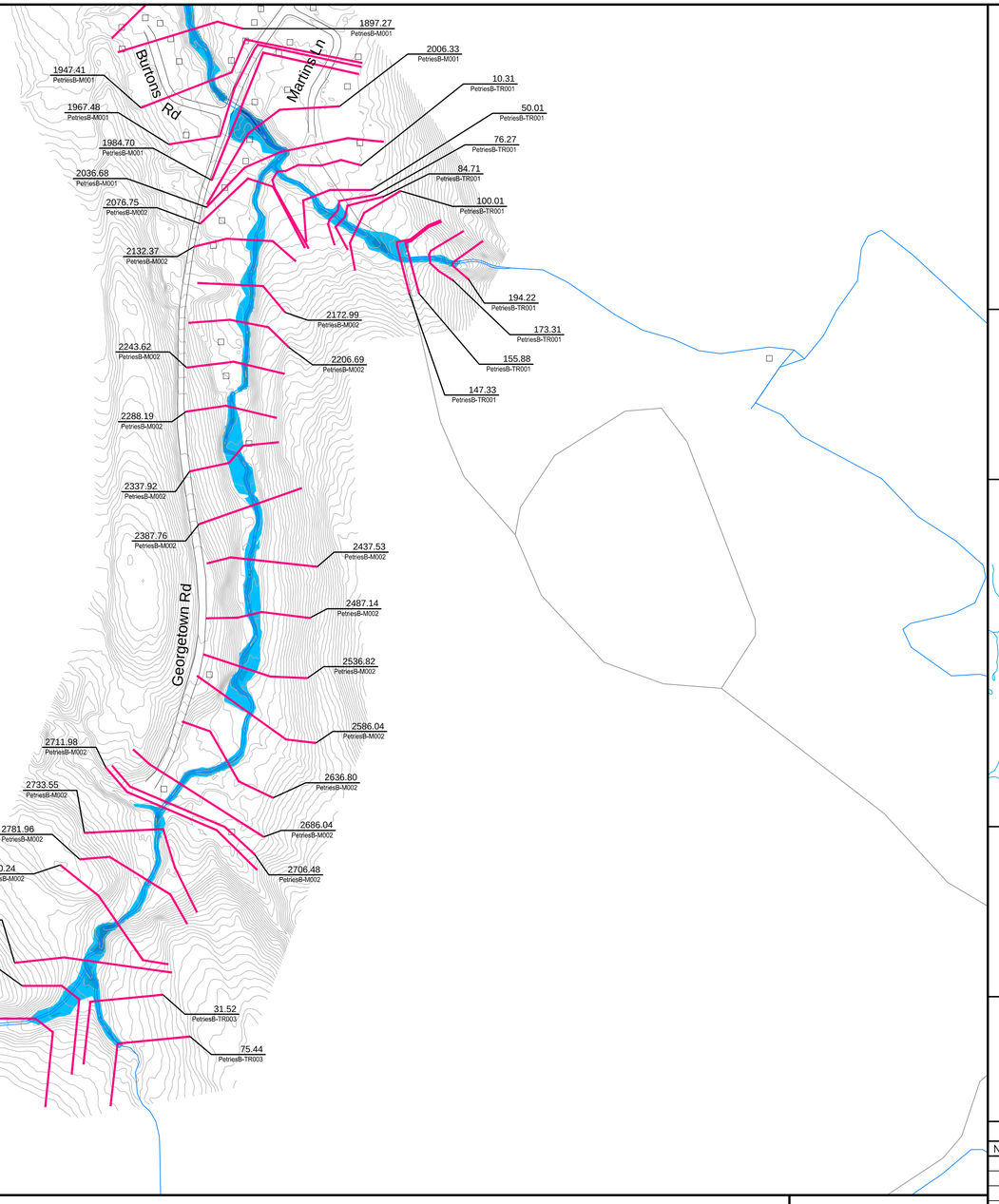

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Department of Environment and Conservation
Water Resource Management Division

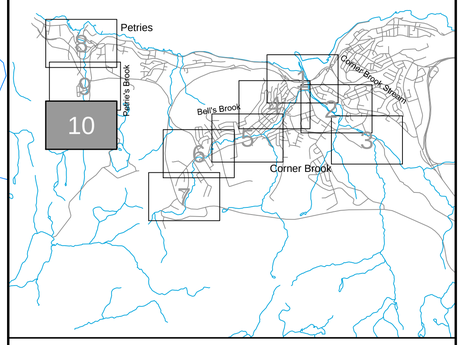
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2020
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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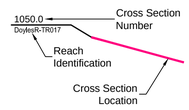

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 10 of 10

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APPENDIX G

1:20 AND 1:100 AEP FLOOD RISK MAPPING – 2050

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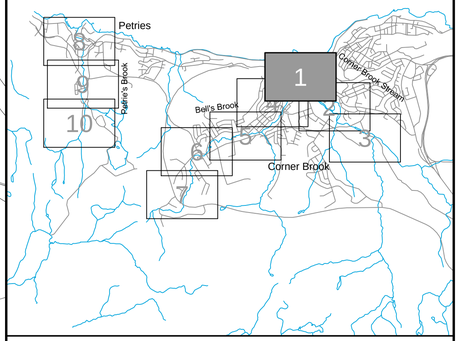
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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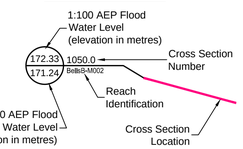

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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Department of Environment and Conservation
Water Resource Management Division

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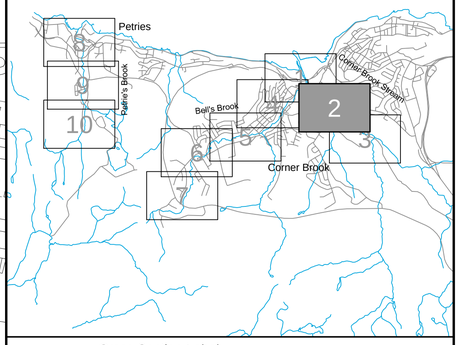
Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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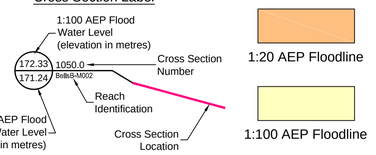

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 2 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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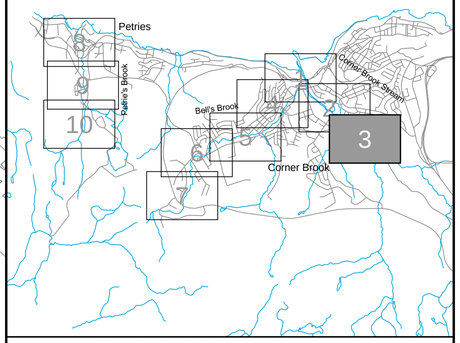
Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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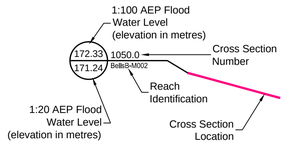

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 3 of 10

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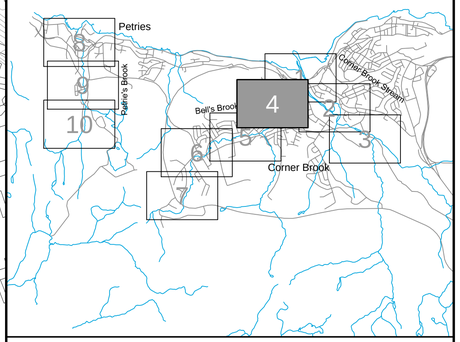
Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline
1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 4 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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Newfoundland Labrador

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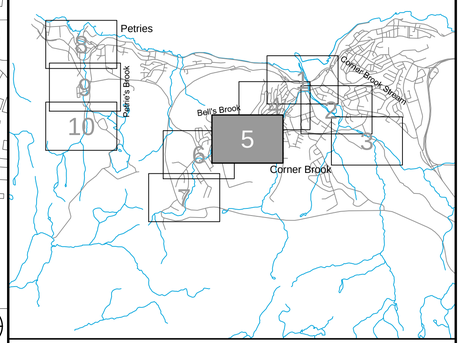
Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



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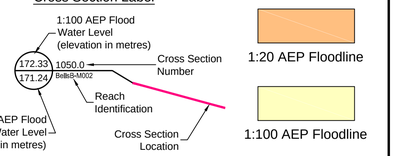

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 5 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Linds Rd
Happy Valley Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Dykes Rd
Burtons Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Marshall Cr
Shamrock Cr
Silver Cr
Carberrys Rd

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Department of Environment and Conservation
Water Resource Management Division

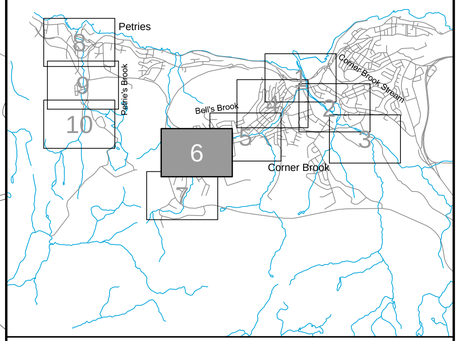
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline
1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

N

Sheet 6 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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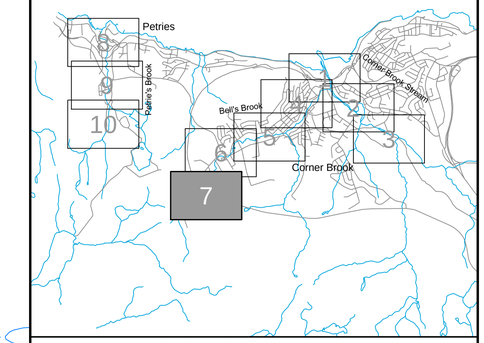

Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline
1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

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MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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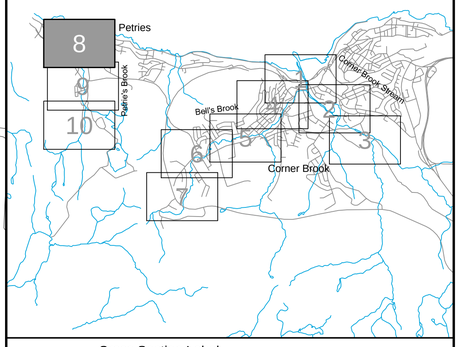

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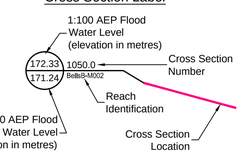

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 8 of 10

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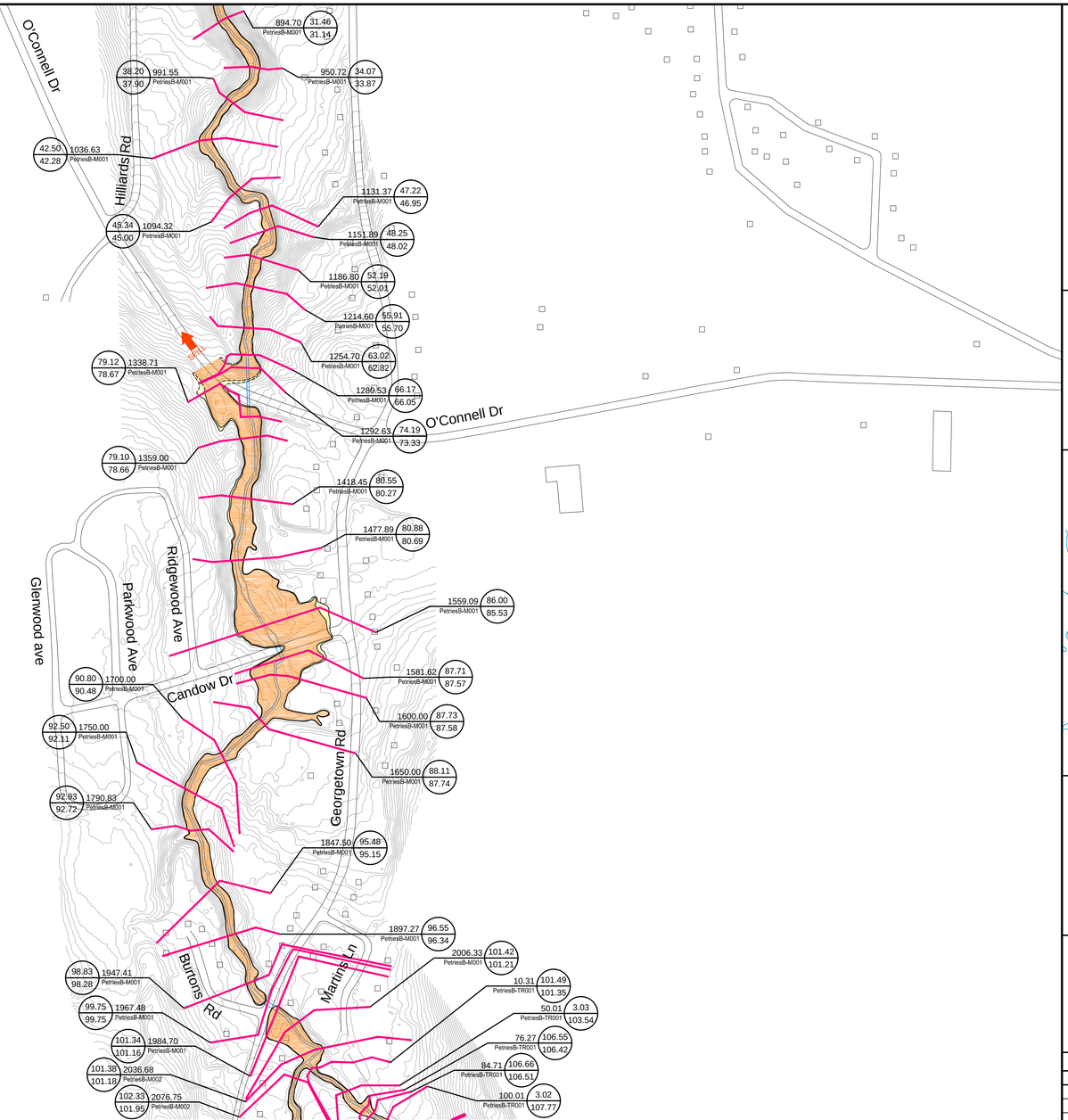

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

MTMNAD83
ZONE 3

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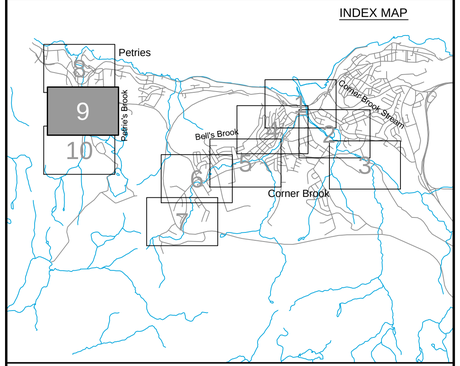

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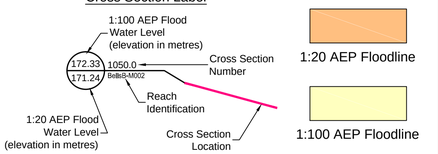

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REVISIONS

No.	Description	BY	DATE

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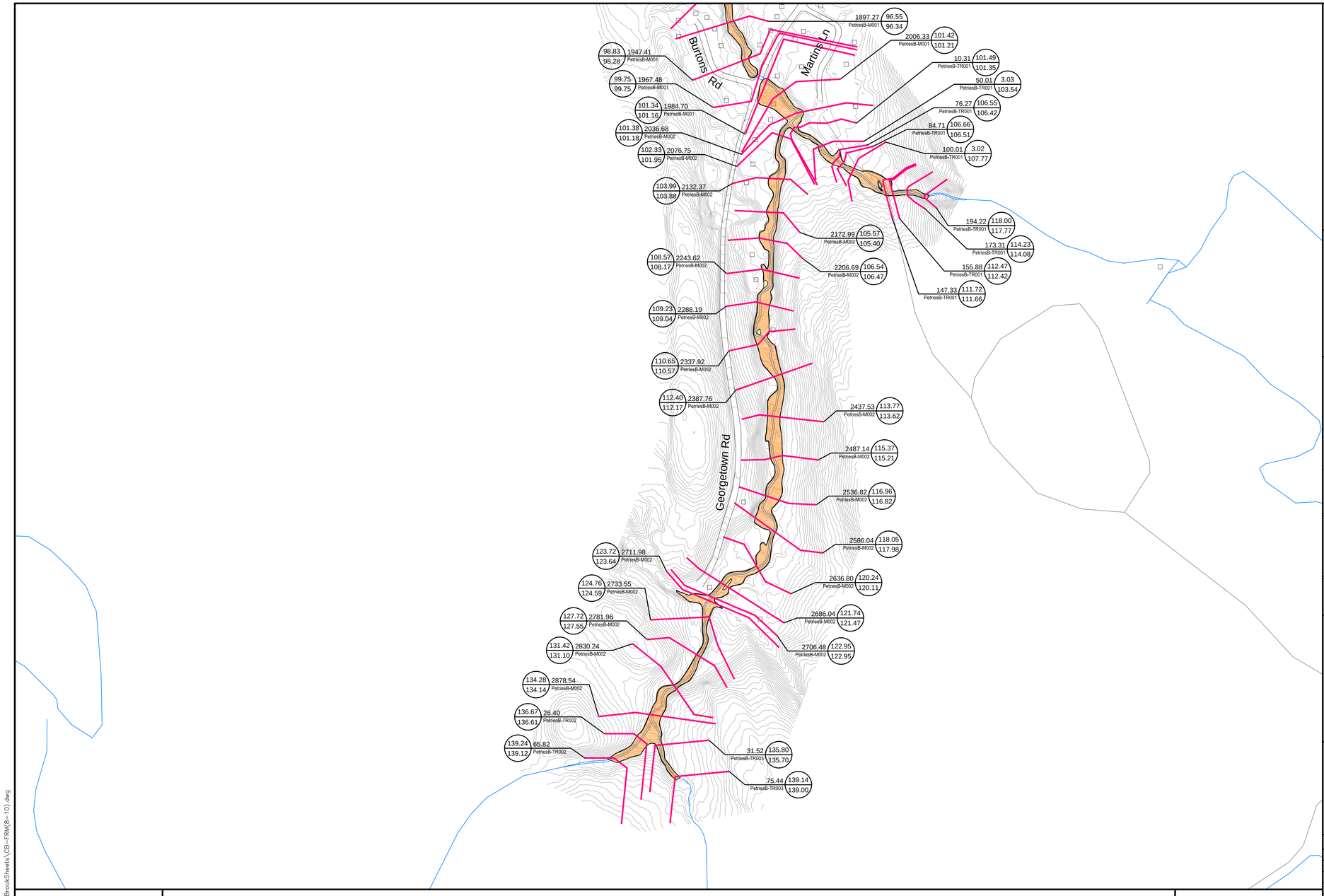

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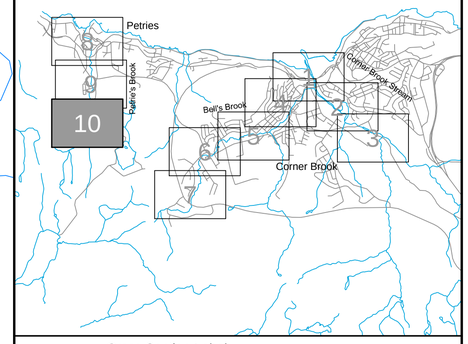

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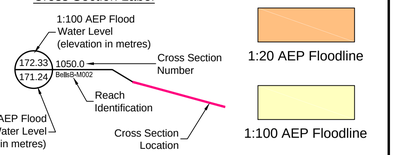

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

N

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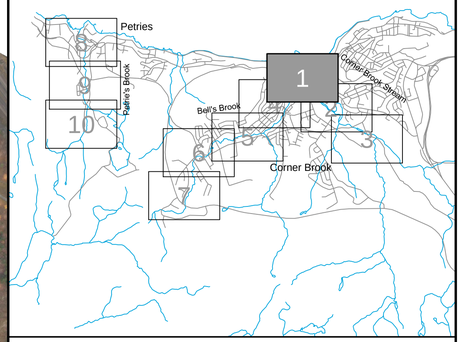

Cross Section Label

1050.0 BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

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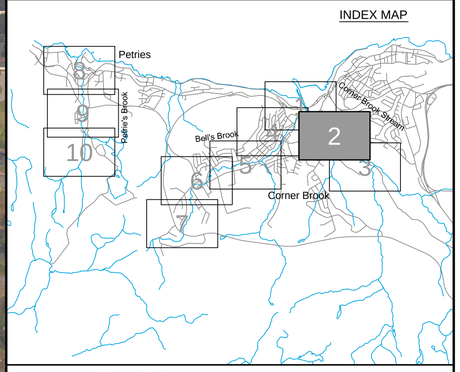

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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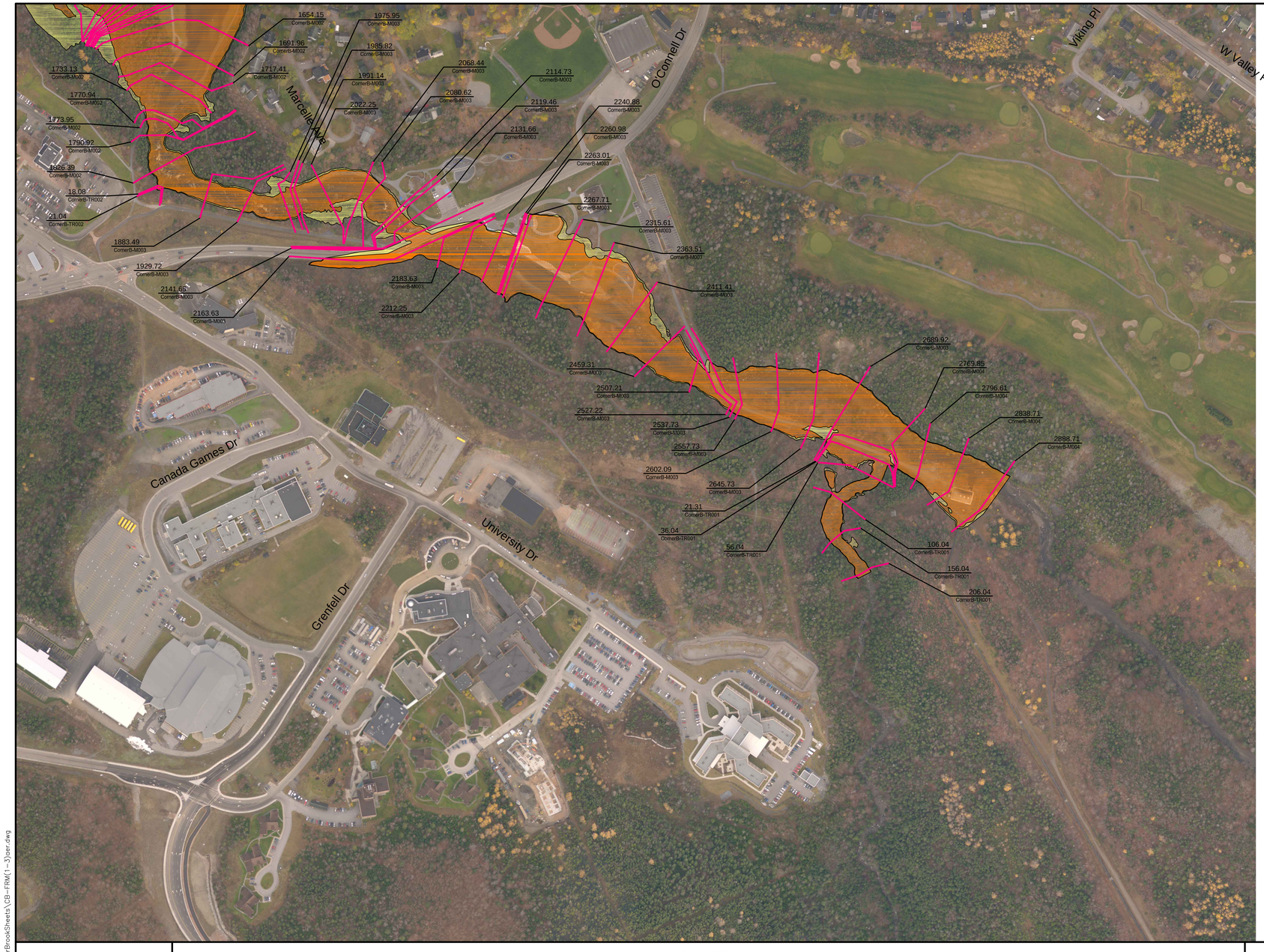

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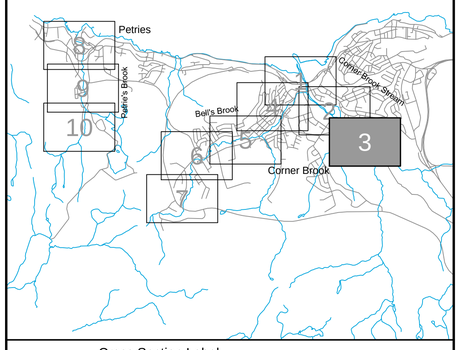

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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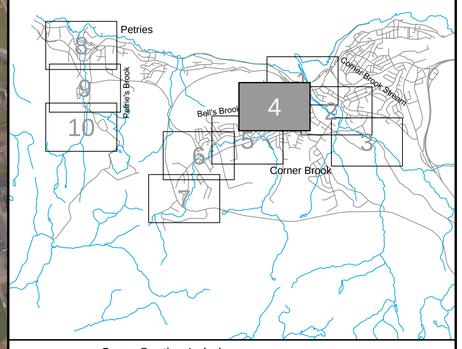

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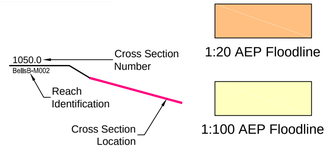

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 4 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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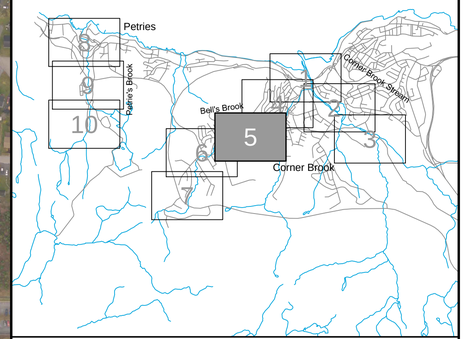

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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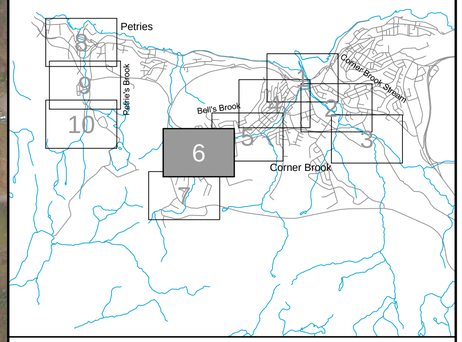

Cross Section Label

1050.0
BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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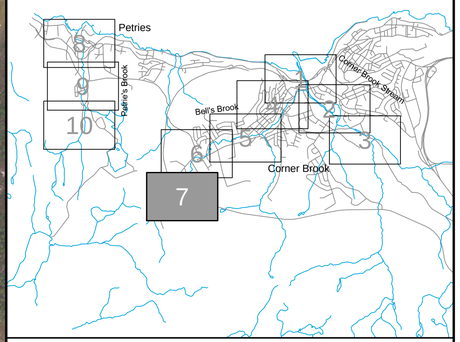

Cross Section Label

1050.0
BellsB-M002

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

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MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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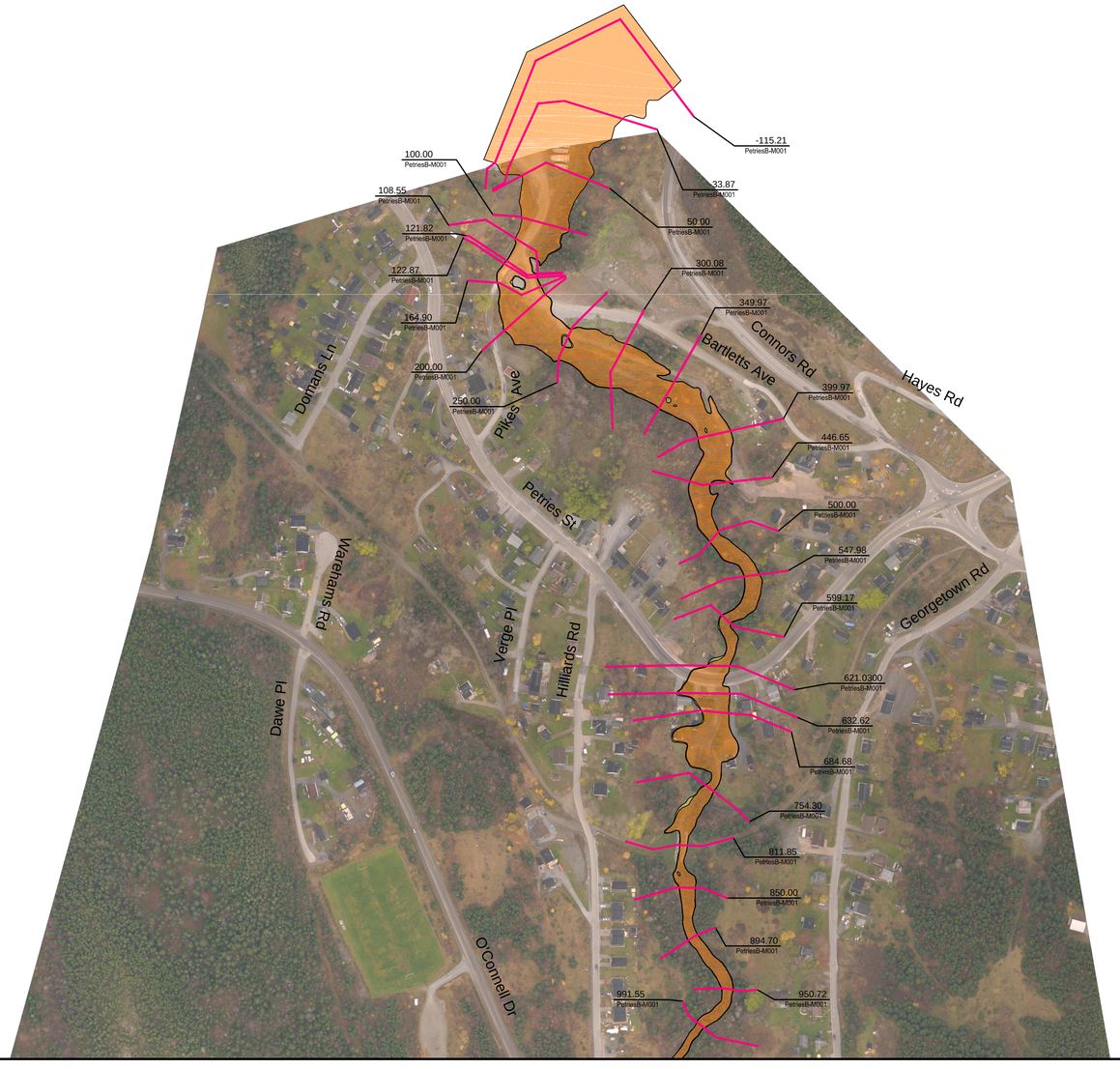

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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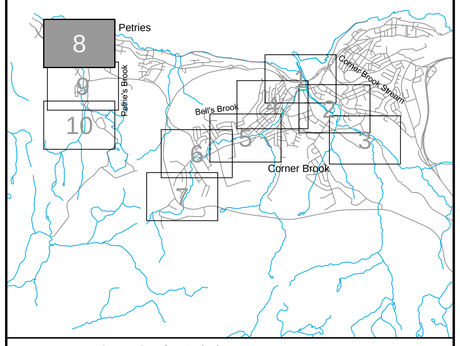

Cross Section Label

1050.0
BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

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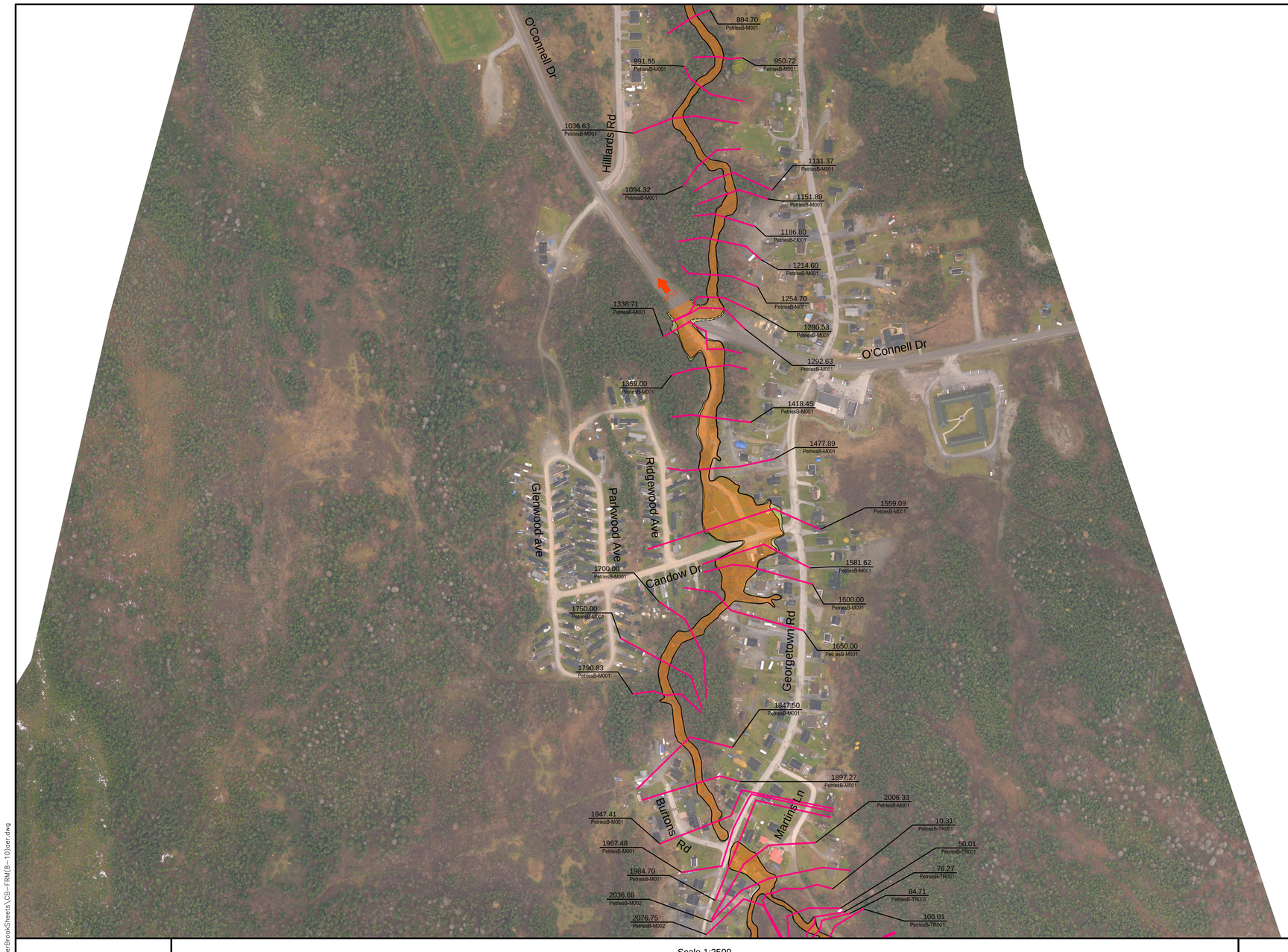

Scale 1:2500

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Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

MTMNAD83
ZONE 3

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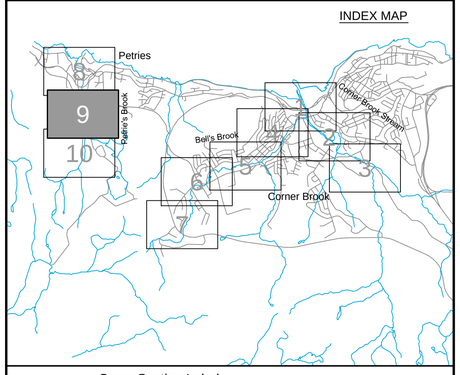

Cross Section Label

1050.0 BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

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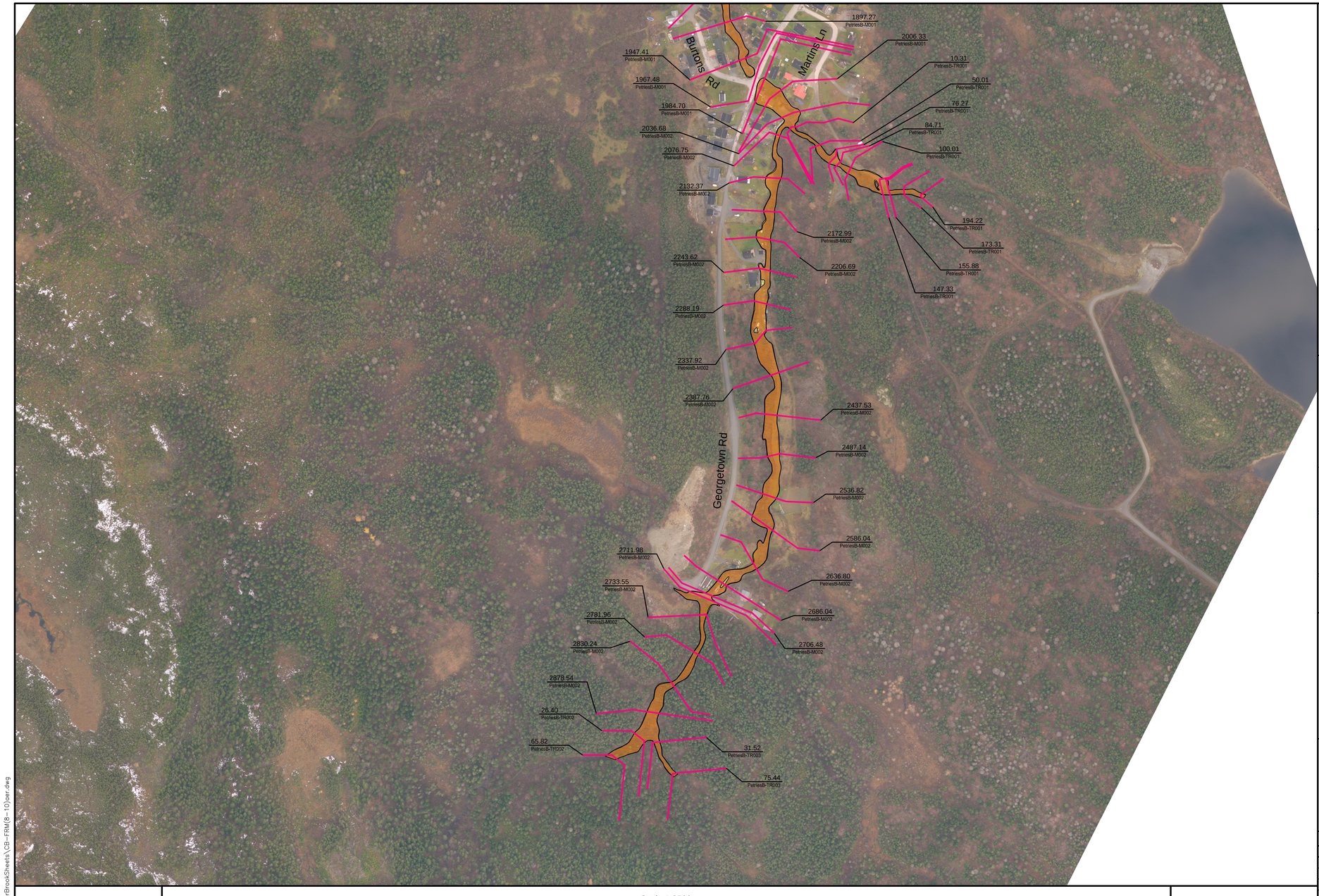

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

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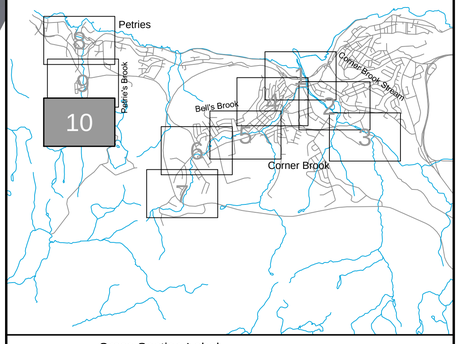

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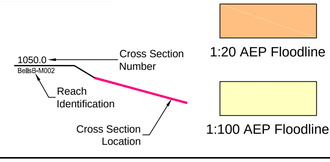

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

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1:20 AEP Inundation Depth Mapping
Corner Brook

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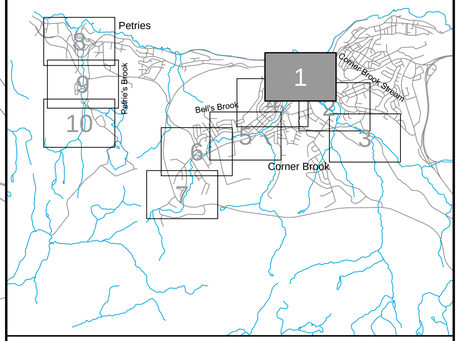
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

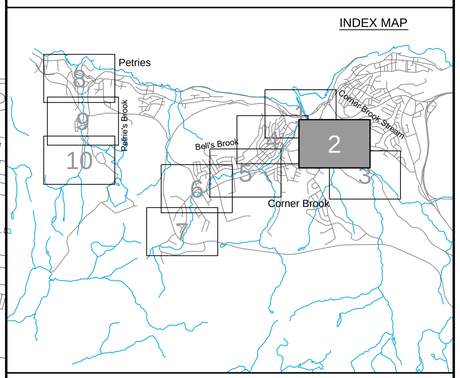
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylerR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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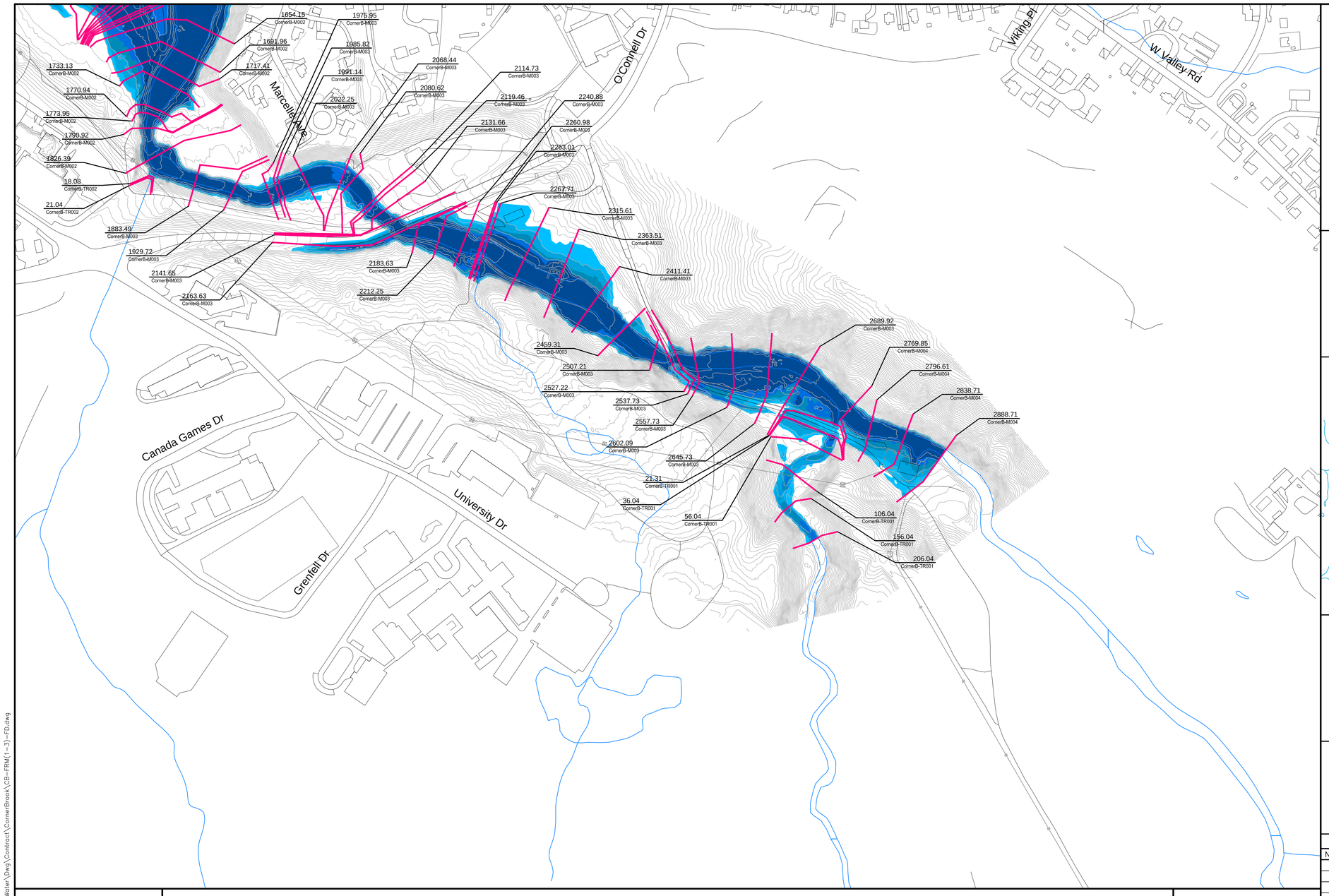

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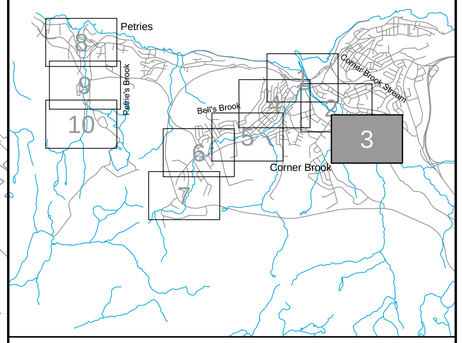
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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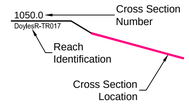

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 3 of 10

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

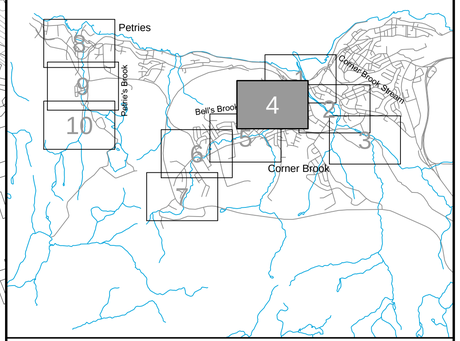
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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Sheet 4 of 10

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Department of Environment and Conservation
Water Resource Management Division

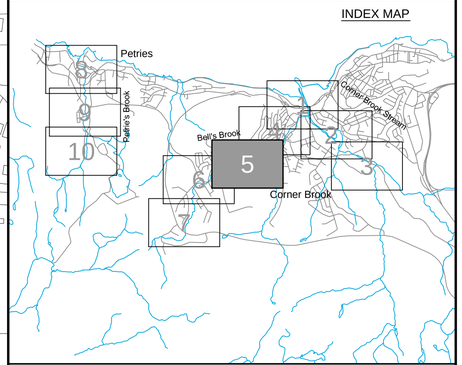
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation at the facilities at the time of LiDAR data capture.

Sheet 5 of 10

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Happy Valley Rd
Linds Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Boones Rd
Burtons Rd
Dykes Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Shamrock Cr
Marshall Cr
Silver Cr
Carberrys Rd

2328.64 2376.56 2450.61 2478.37 2352.81 2367.92 2528.27 2578.18 2777.91 2823.69 2628.09 2518.19 2496.15 2428.46 2408.52 2677.99 2727.91 2861.32 2881.51 2899.46 2918.61 2937.88 2945.26 2991.47 3037.68 3083.82 3130.11 3157.63 3176.31 3203.83 3222.52 3222.32 3303.55 3329.08 3358.51 3386.31 3400.36 3424.29 3473.83 3520.99 3573.46 3623.19 3643.21 3677.71 3697.71 3724.94 3746.94 3765.39 3796.17 3822.22 3869.08 3894.65 3845.41 3943.89 3993.13 4042.37

Bell's B-M002

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Water Resource Management Division

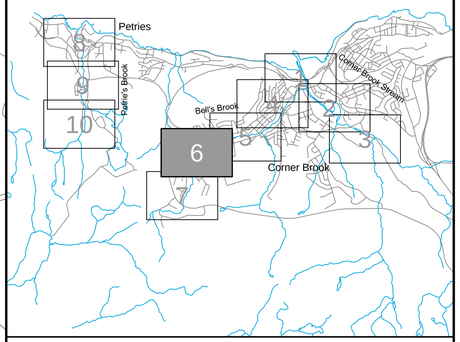
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoylesR-TR017

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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Sheet 6 of 10

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Department of Environment and Conservation
Water Resource Management Division

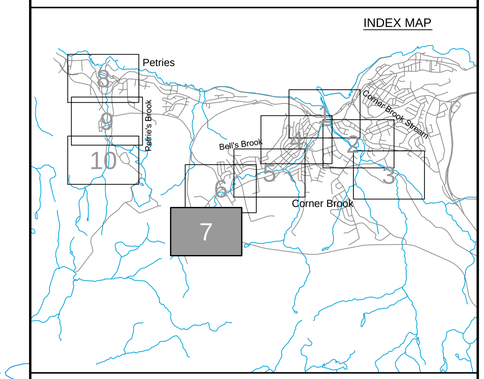
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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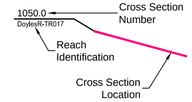

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

Sheet 7 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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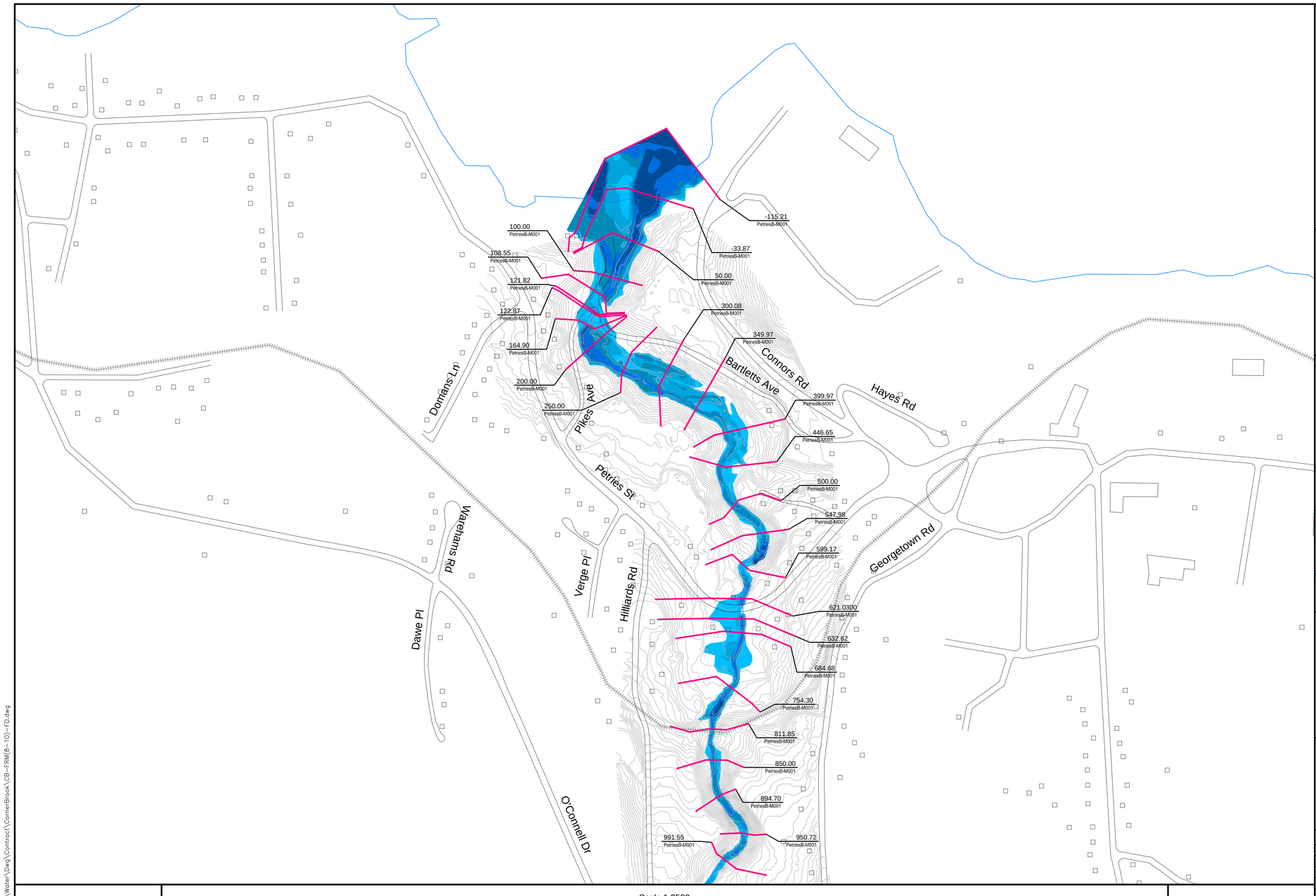

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Department of Environment and Conservation
Water Resource Management Division

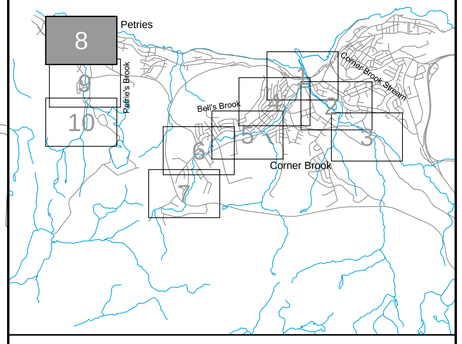
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoyleR-TR017

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 8 of 10

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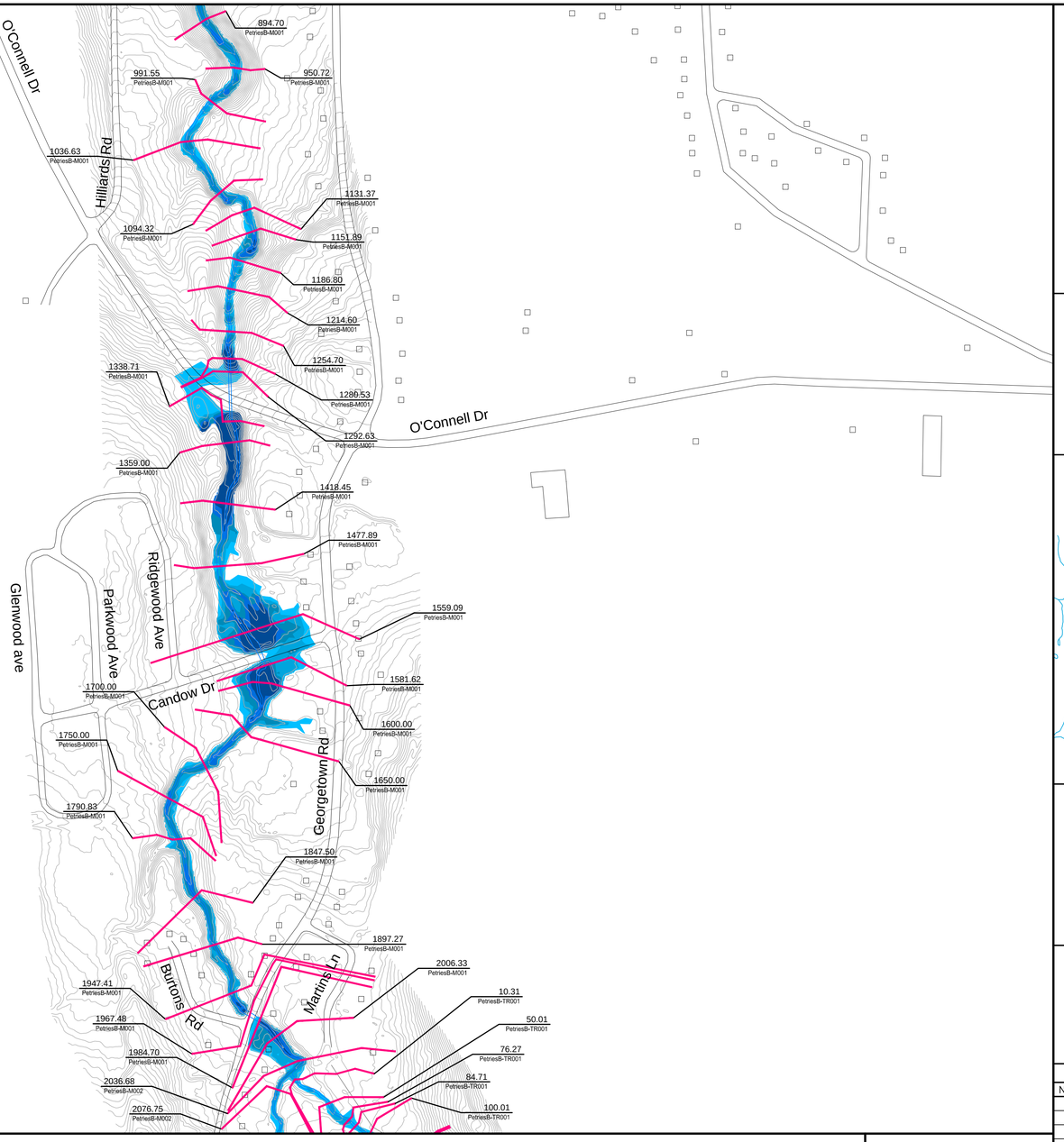


Department of Environment and Conservation
Water Resource Management Division

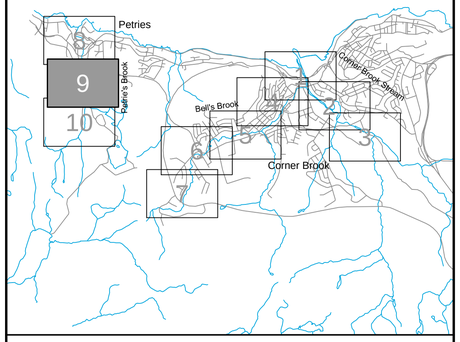
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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Sheet 9 of 10

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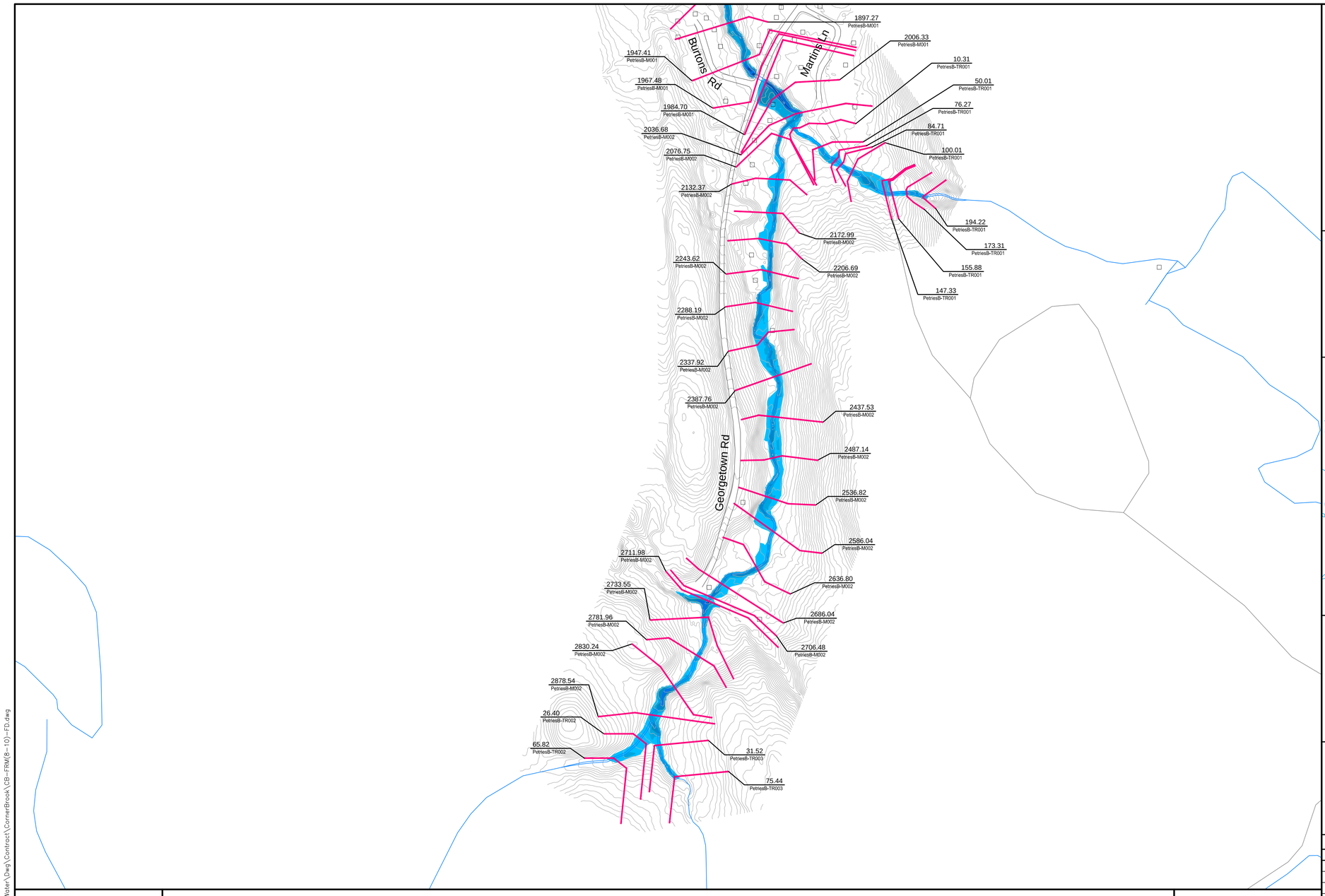

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Water Resource Management Division

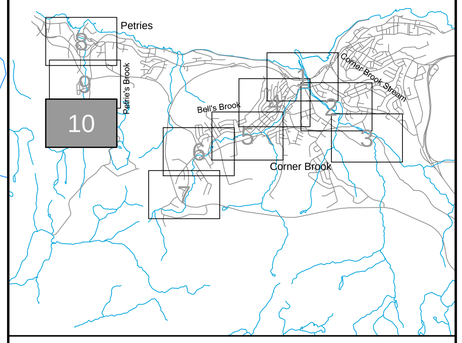
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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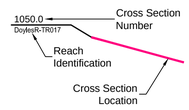

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 10 of 10

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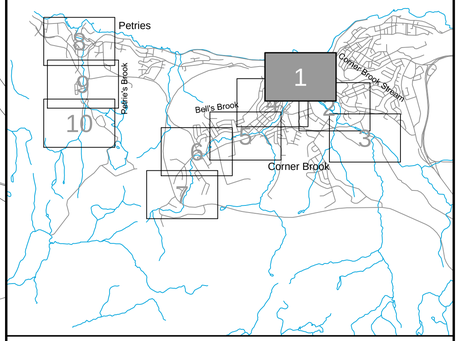
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — DoylesR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
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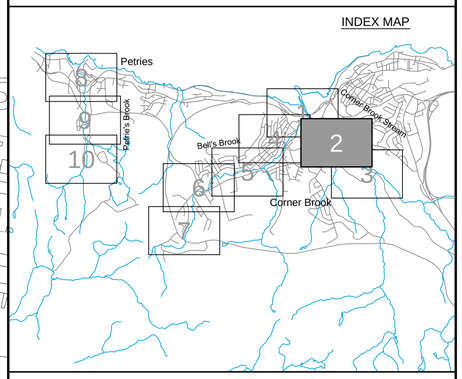
Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



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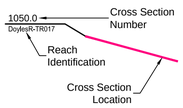

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 2 of 10

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1:100 AEP Inundation Depth Mapping
Corner Brook

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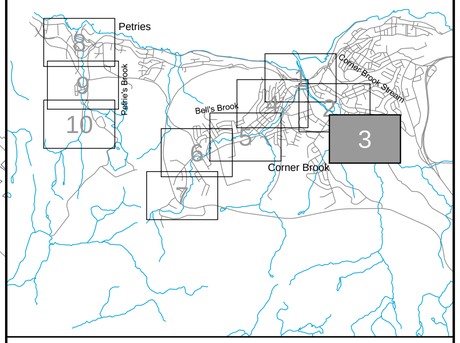
INDEX MAP



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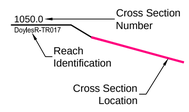

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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1:100 AEP Inundation Depth Mapping
Corner Brook

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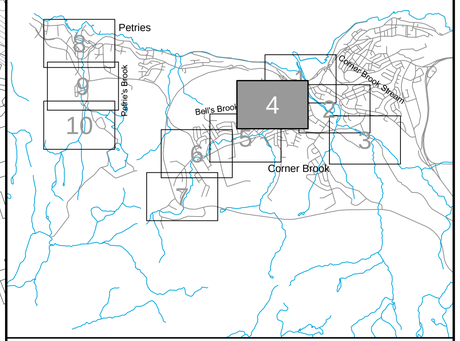
and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 4 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

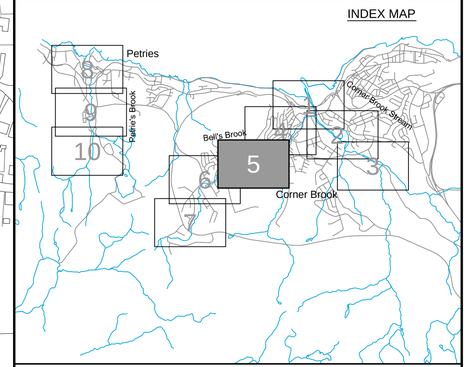
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 5 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Happy Valley Rd
Linds Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Boones Rd
Dykes Rd
Burtons Rd
Nevilles Ln
Reids Rd
Cossitt Pl
Sunnyslope Dr
Shamrock Cr
Marshall Cr
Silver Cr
Carberrys Rd

2376.55 BellsB-M002
2328.64 BellsB-M002
2450.61 BellsB-M002
2352.81 BellsB-M002
2478.37 BellsB-M002
2367.92 BellsB-M002
2528.27 BellsB-M002
2777.91 BellsB-M002
2578.18 BellsB-M002
2823.69 BellsB-M002
2628.09 BellsB-M002
2518.19 BellsB-M002
2496.15 BellsB-M002
2428.46 BellsB-M002
2408.52 BellsB-M002
2677.99 BellsB-M002
2727.91 BellsB-M002
2861.32 BellsB-M002
2881.51 BellsB-M002
2899.46 BellsB-M002
2918.61 BellsB-M002
2937.88 BellsB-M002
2945.26 BellsB-M002
2991.47 BellsB-M002
3037.68 BellsB-M002
3083.82 BellsB-M002
3130.11 BellsB-M002
3157.63 BellsB-M002
3176.31 BellsB-M002
3203.83 BellsB-M002
3222.52 BellsB-M002
3303.55 BellsB-M002
3329.08 BellsB-M002
3358.51 BellsB-M002
3386.31 BellsB-M002
3400.36 BellsB-M002
3424.29 BellsB-M002
3473.83 BellsB-M002
3520.99 BellsB-M002
3573.46 BellsB-M002
3623.19 BellsB-M002
3643.21 BellsB-M002
3677.71 BellsB-M002
3697.71 BellsB-M002
3724.94 BellsB-M002
3746.94 BellsB-M002
3765.39 BellsB-M002
3796.17 BellsB-M002
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3845.41 BellsB-M002
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3884.65 BellsB-M002
3943.89 BellsB-M002
3993.13 BellsB-M002
4042.37 BellsB-M002

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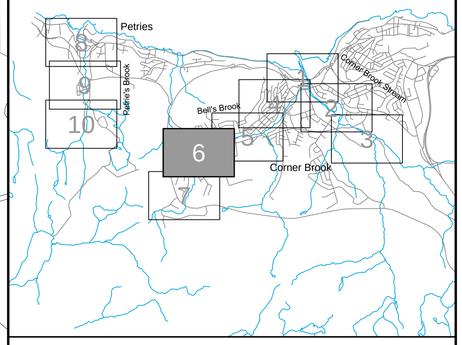
1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoylesR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 6 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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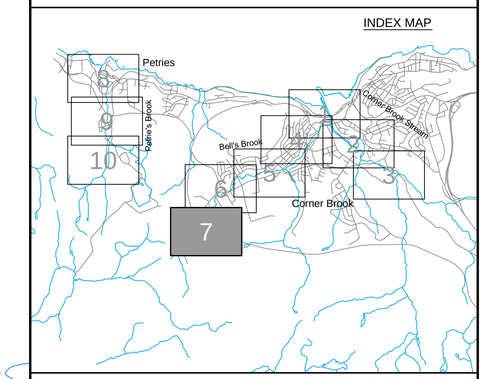
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



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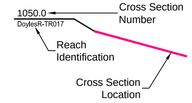

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

Sheet 7 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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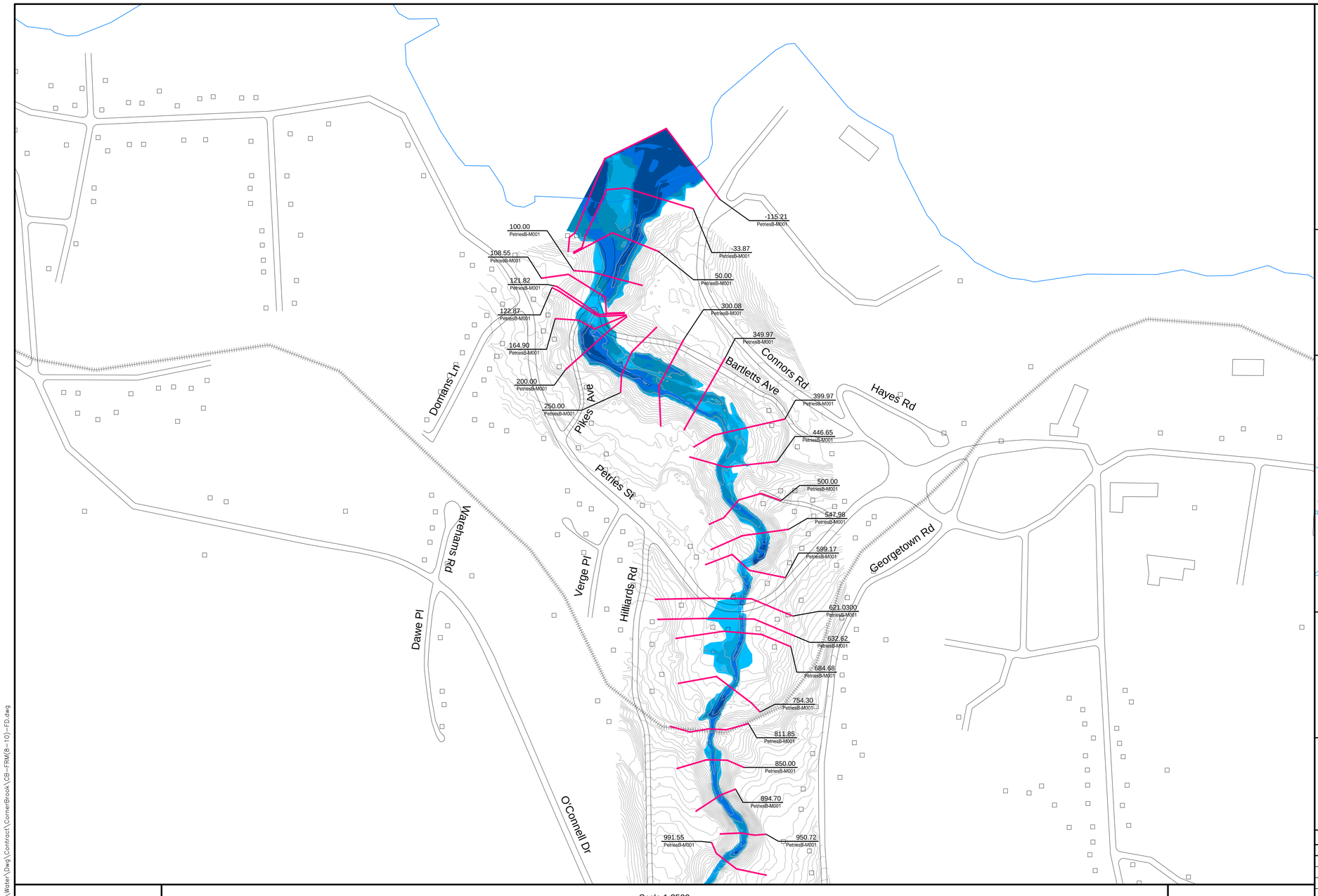

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Department of Environment and Conservation
Water Resource Management Division

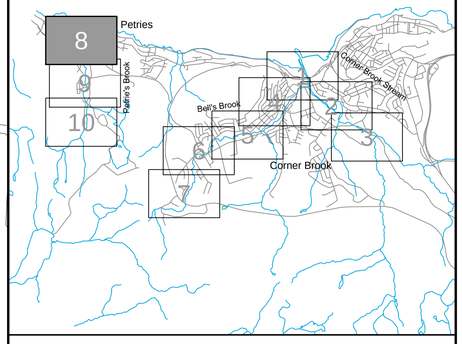
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



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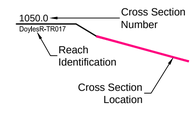

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 8 of 10

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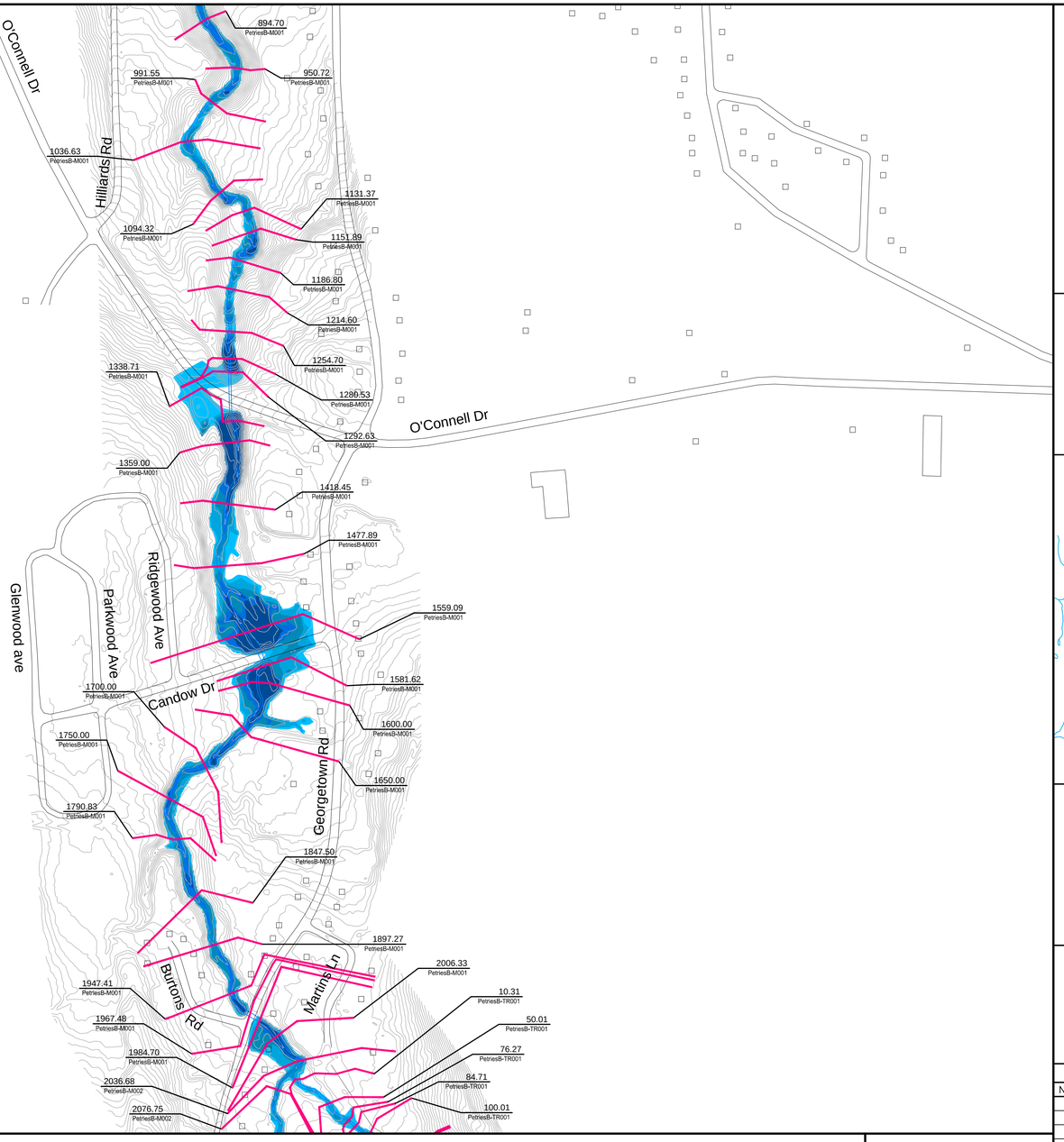

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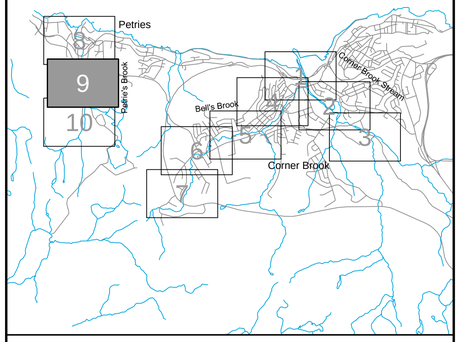
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 9 of 10

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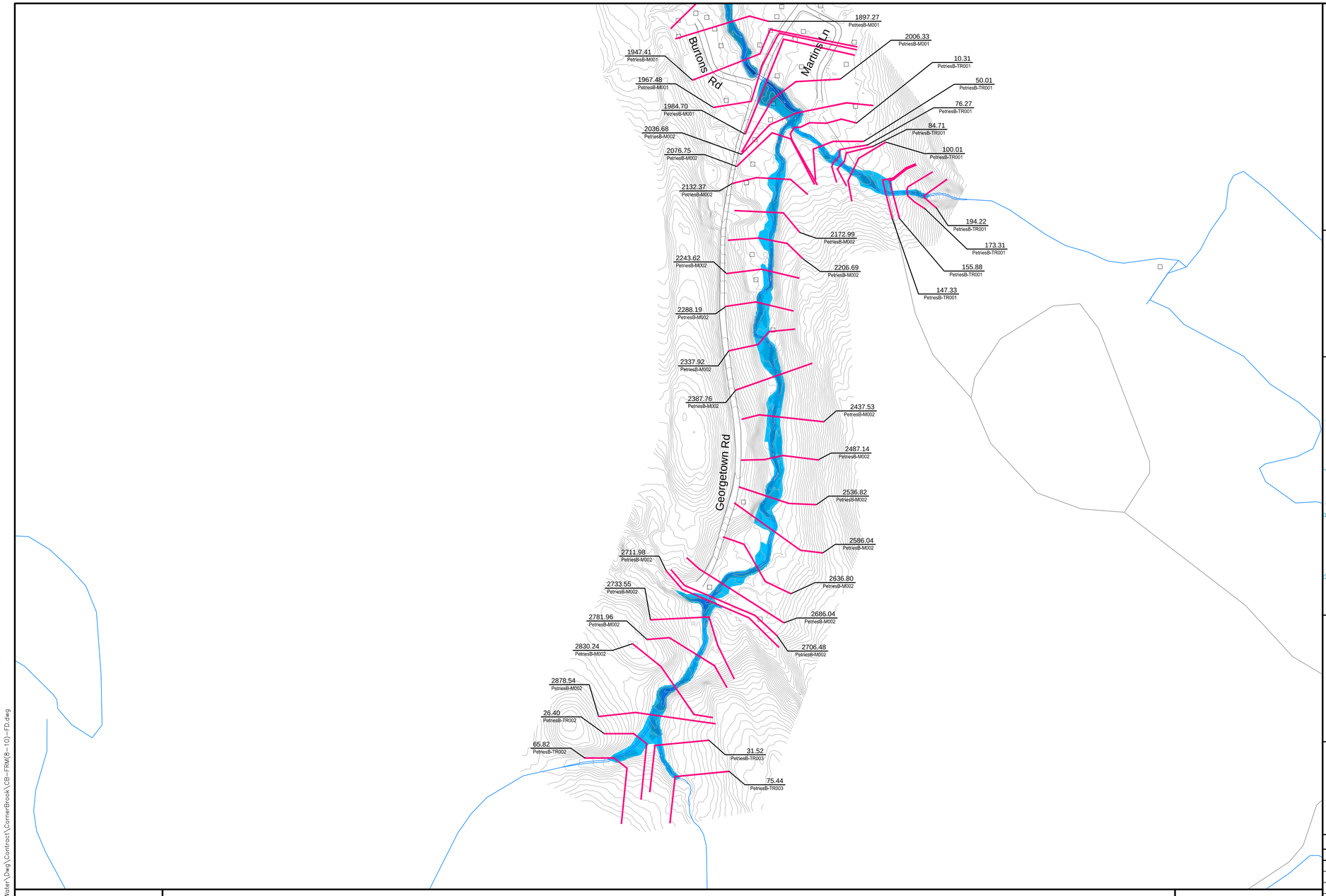


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

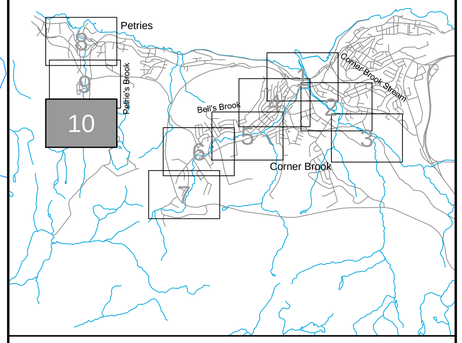
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2050
Finnis (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
- Cross Section Number
- Reach Identification
- Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 10 of 10

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APPENDIX H

1:20 AND 1:100 AEP FLOOD RISK MAPPING – 2080

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

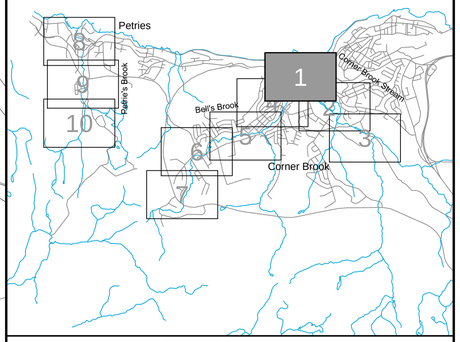
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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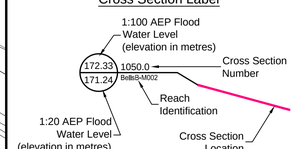

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 1 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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Department of Environment and Conservation
Water Resource Management Division

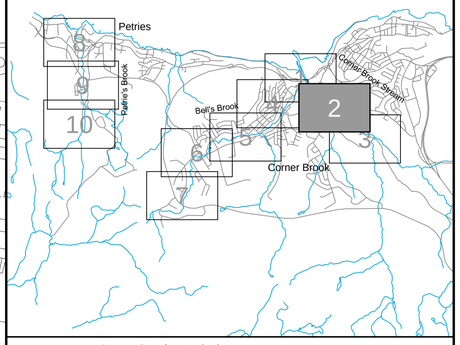
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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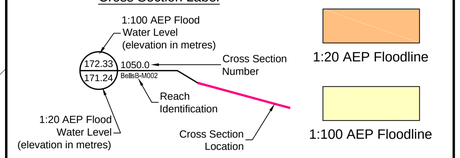

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 2 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

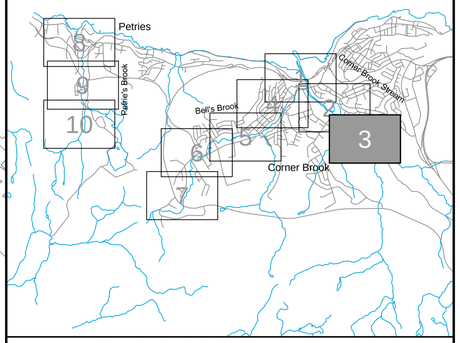
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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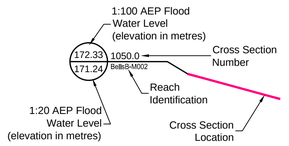

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

C:\Work\NFLD\CornerBrookSheets\CB-FRM(1-3).dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

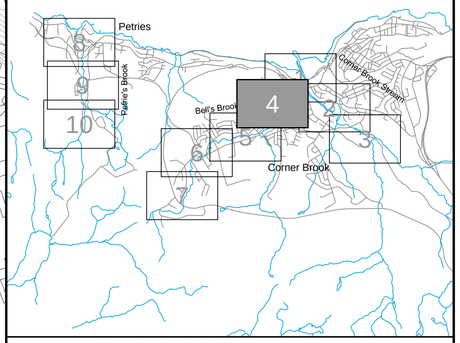
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33 / 171.24
1050.0 / BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline
1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 4 of 10

C:\Work\NFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

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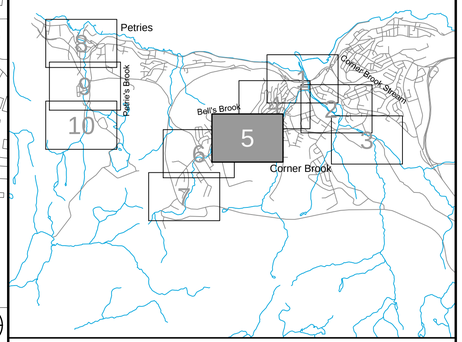
Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
BellsB-M002
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 5 of 10

C:\Work\WFLD\CornerBrookSheets\CB-FRM(4-7).dwg

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Valley View Dr
Wilson Dr
Valley View Dr
Kawaja Dr
Glen Haven Blvd
O'Connell Dr
Linds Rd
Happy Valley Rd
Park Dr
Green Garden Rd
Country Rd
Country Rd
O'Connell Dr
Dykes Rd
Burtons Rd
Nevilles Ln
Reids Rd
Sparks Rd
Cossitt Pl
Sunnyslope Dr
Shannock Cr
Marshall Cr
Silver Cr
Gairdenrys Rd

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

MTMNAD83
ZONE 3

C:\Work\NFLD\CornerBrookSheets\CB-FRM(4-7).dwg

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

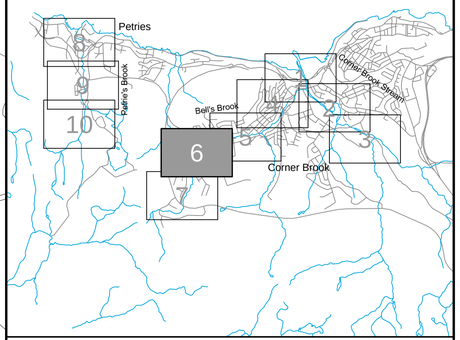
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1:100 AEP Flood Water Level (elevation in metres)
172.33
171.24
1050.0
Cross Section Number
Reach Identification
1:20 AEP Flood Water Level (elevation in metres)
Cross Section Location

1:20 AEP Floodline
1:100 AEP Floodline

amec

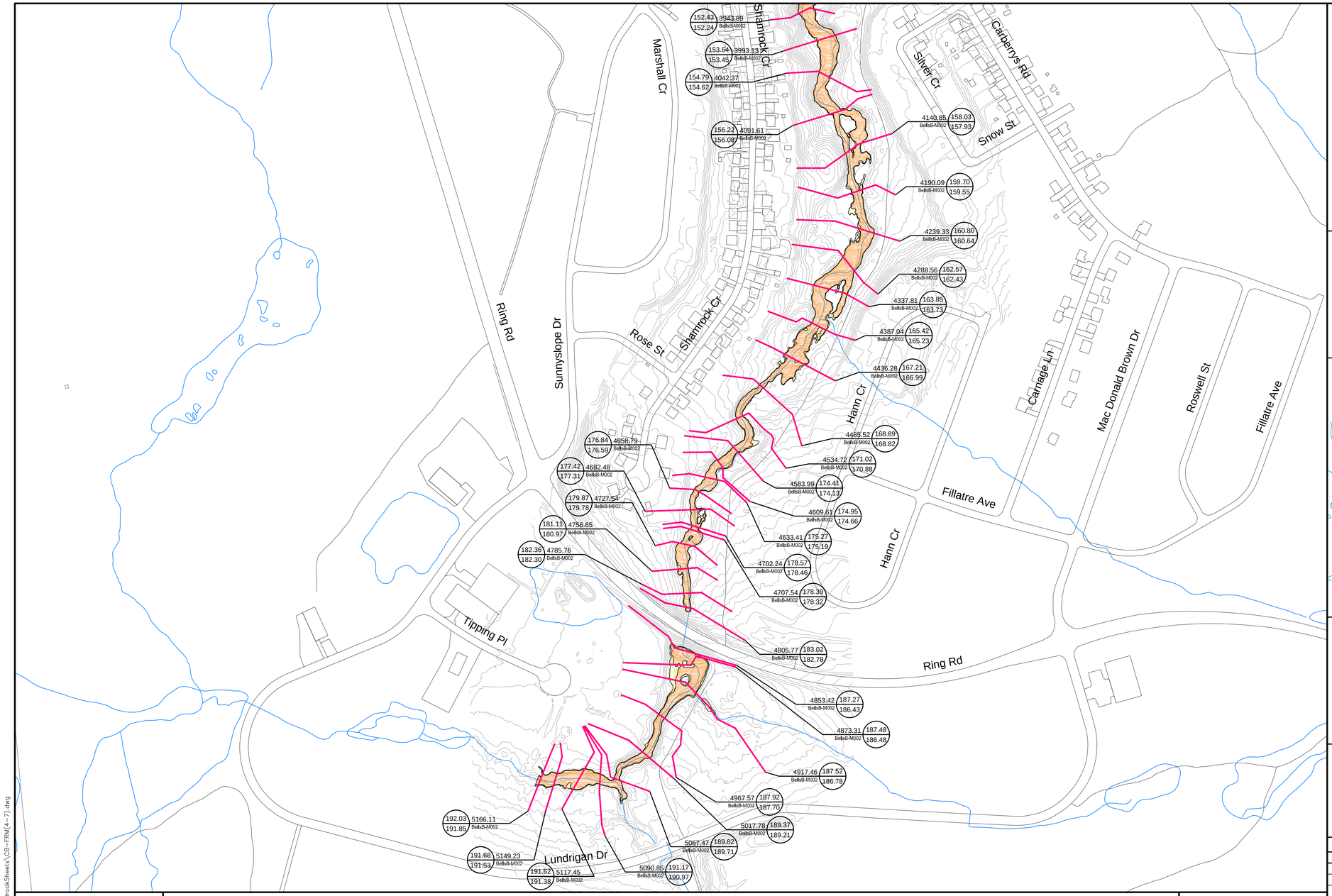
Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

Feb 21/13 – richard.bartolo



MTMNAD83
ZONE 3

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CONTOUR INTERVAL: 1.0 METRES

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

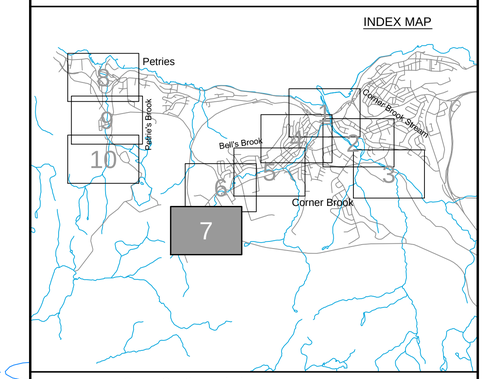
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



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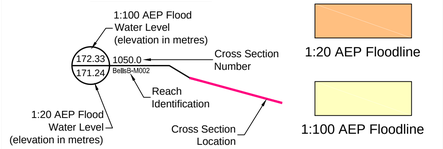

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

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Newfoundland Labrador

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Water Resource Management Division

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Flood Risk Map
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AMEC (Maximum IDF Relationship)

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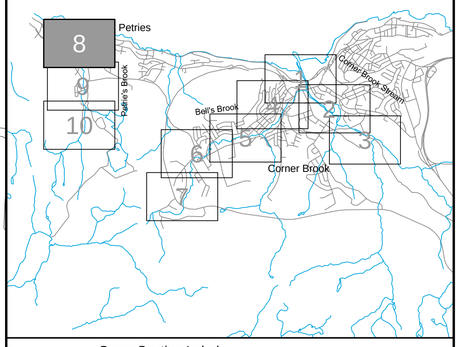

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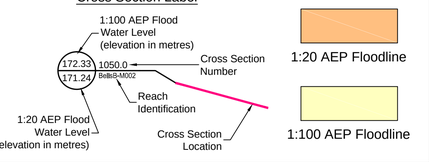

amec

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REVISIONS

No.	Description	BY	DATE

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Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

Sheet 8 of 10

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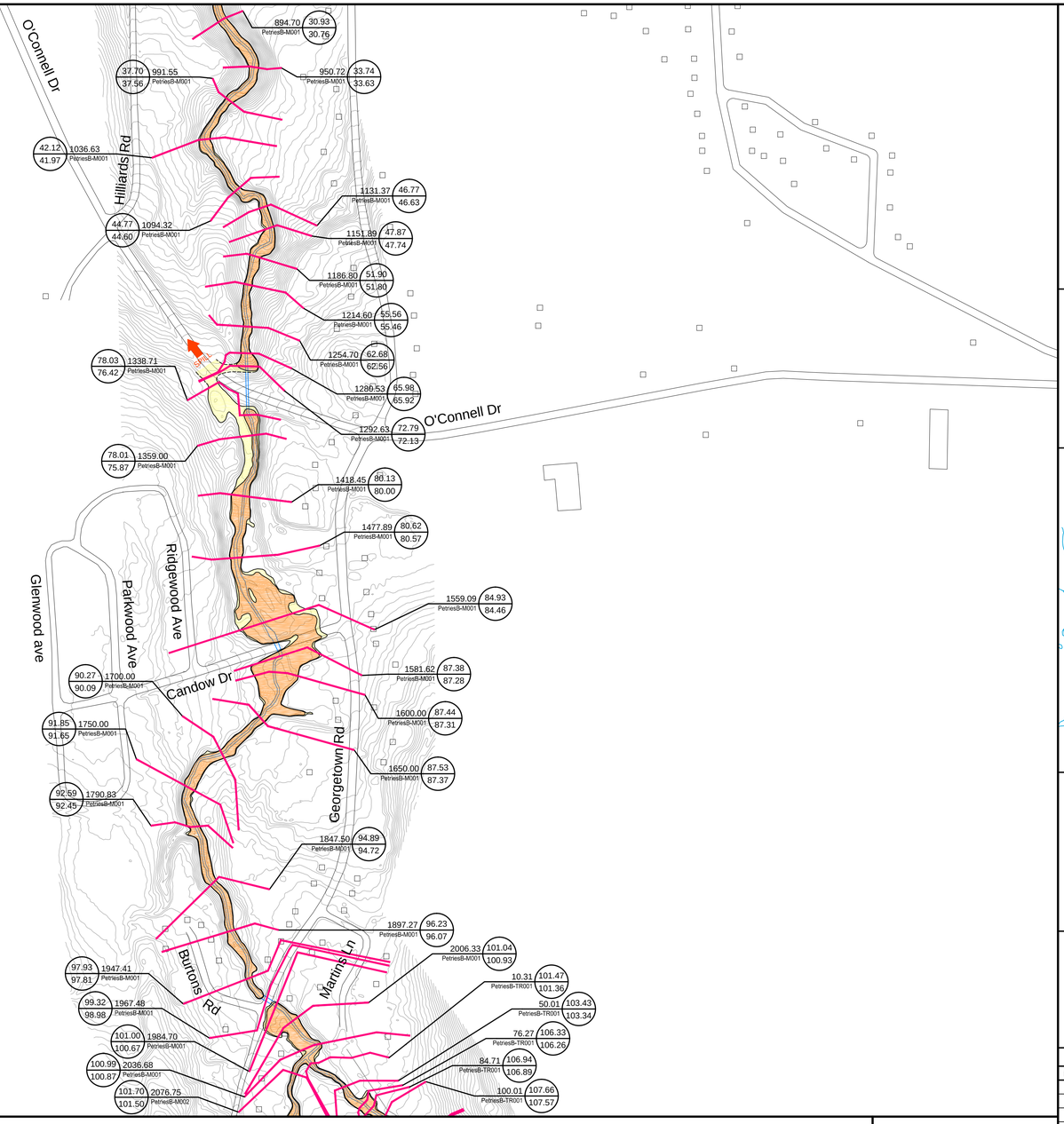

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CONTOUR INTERVAL: 1.0 METRES

MTMNAD83
ZONE 3

Newfoundland Labrador

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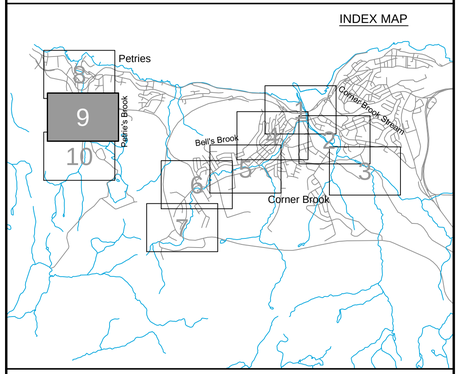

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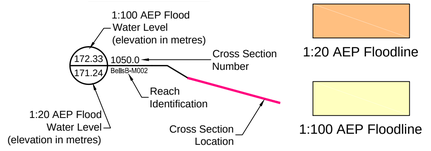

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REVISIONS

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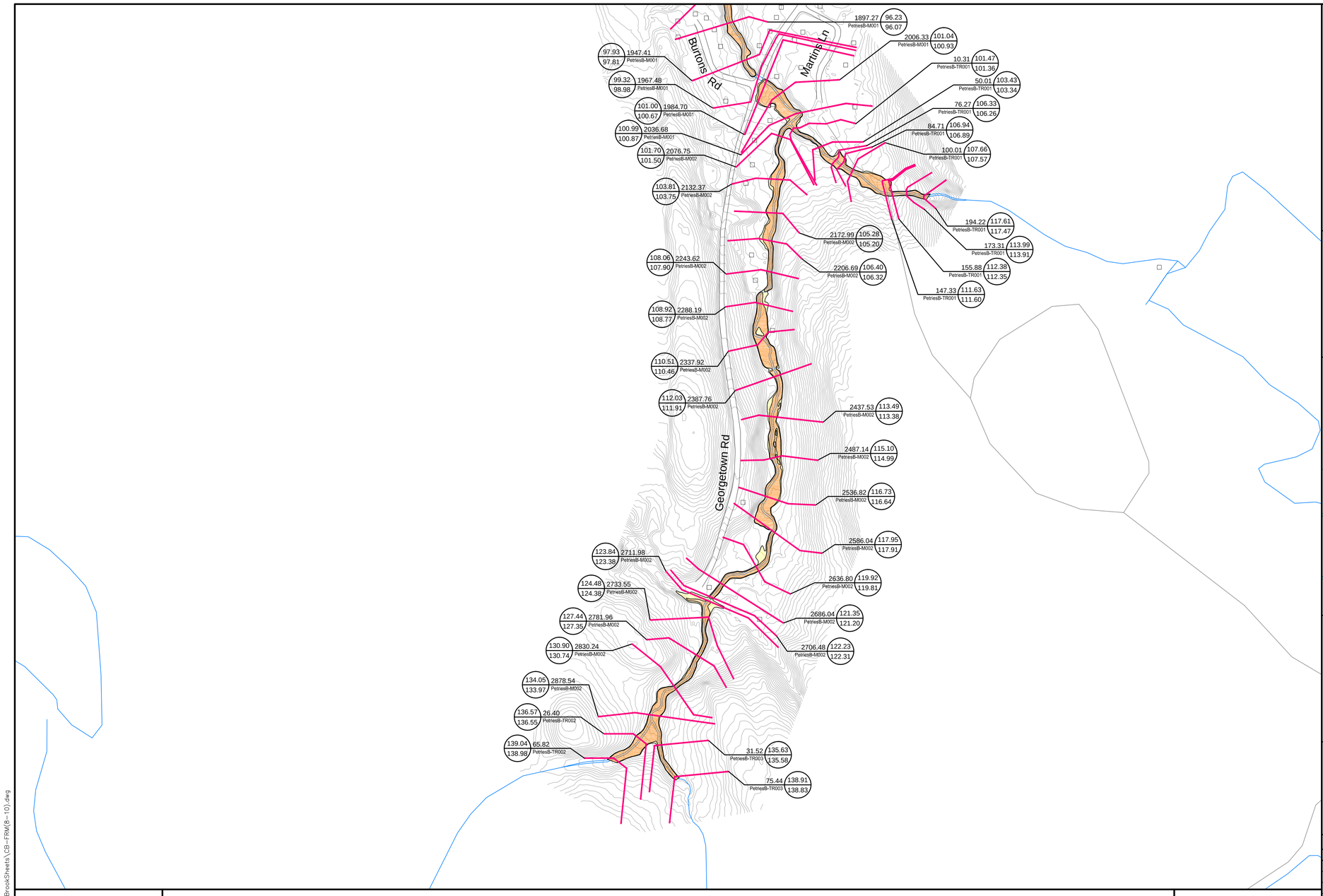

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Water Resource Management Division

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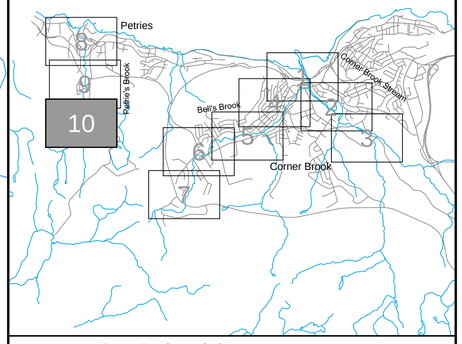

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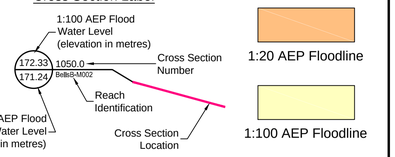

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

N

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
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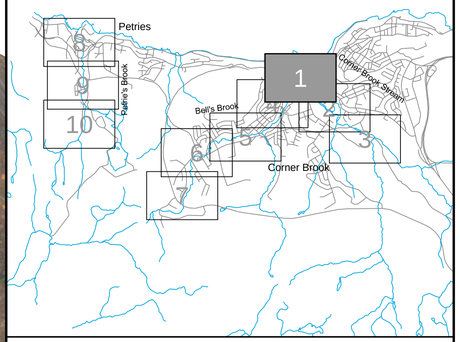

Cross Section Label

1050.0 BellsB-M002 — Cross Section Number; Reach Identification; Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 1 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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Department of Environment and Conservation
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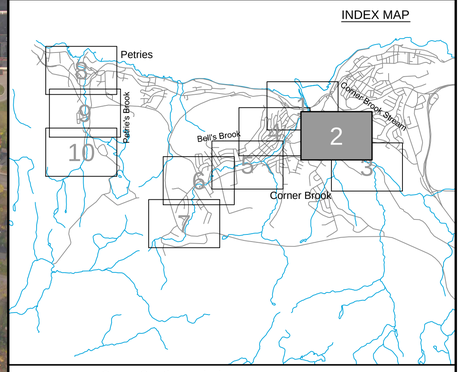
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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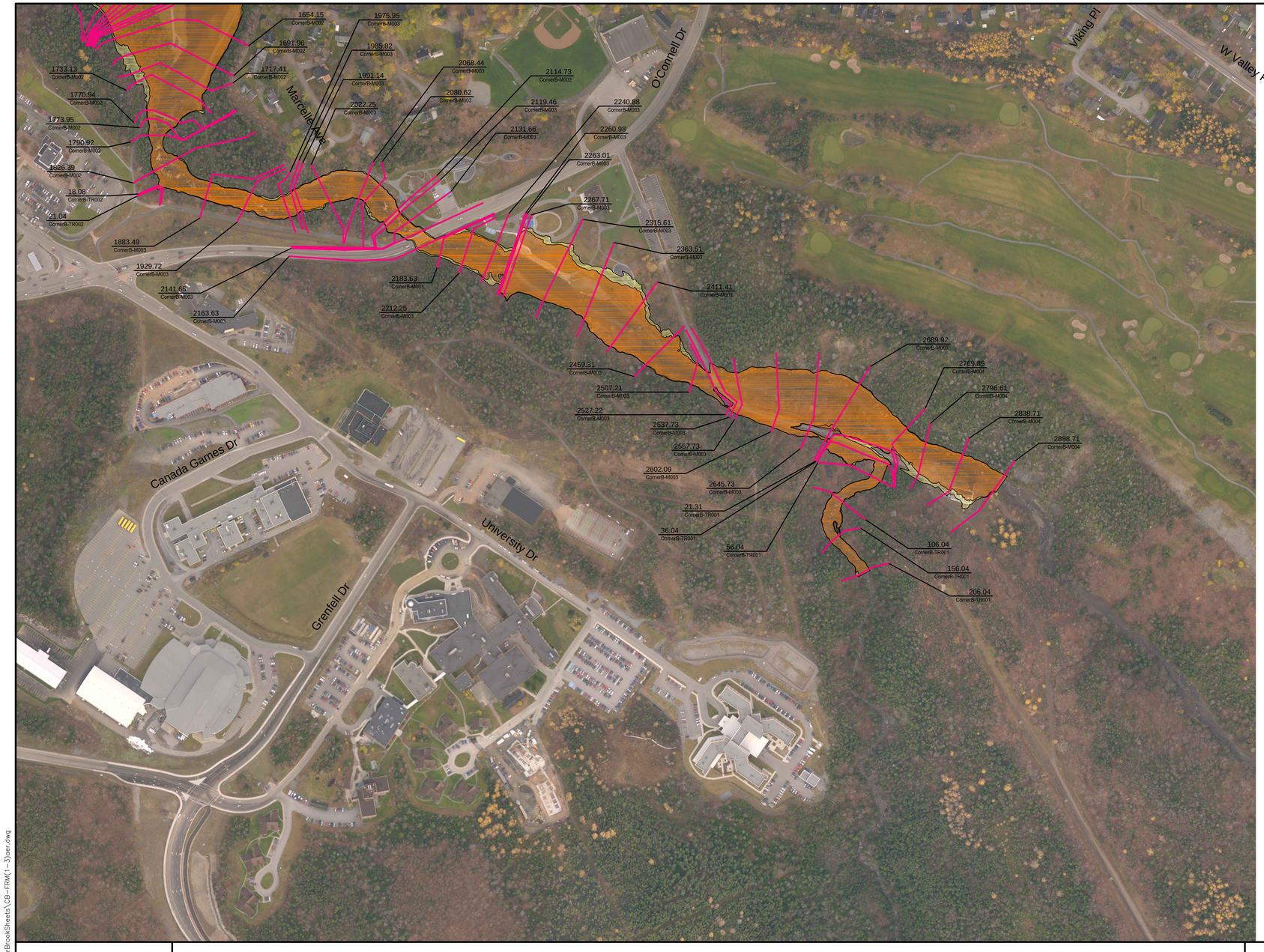

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

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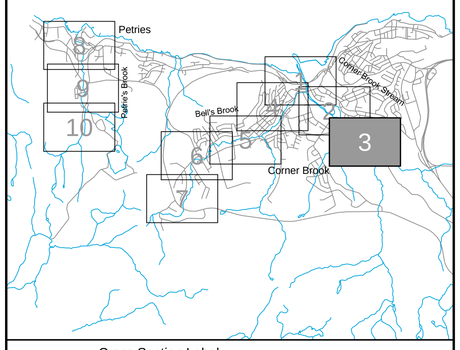

Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

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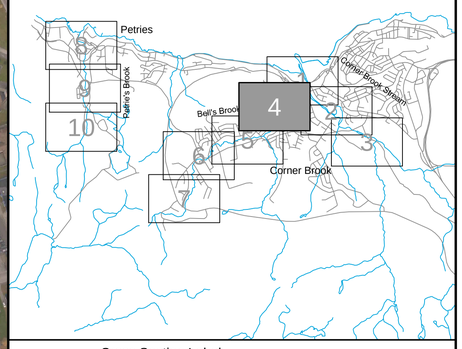

Cross Section Label

1050.0 BellsB-M002 — Cross Section Number; Reach Identification; Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

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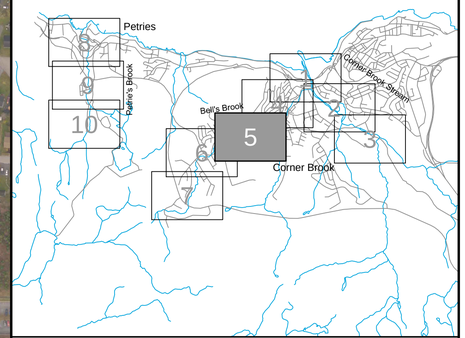

Cross Section Label

1050.0
BellsB-M002

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

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MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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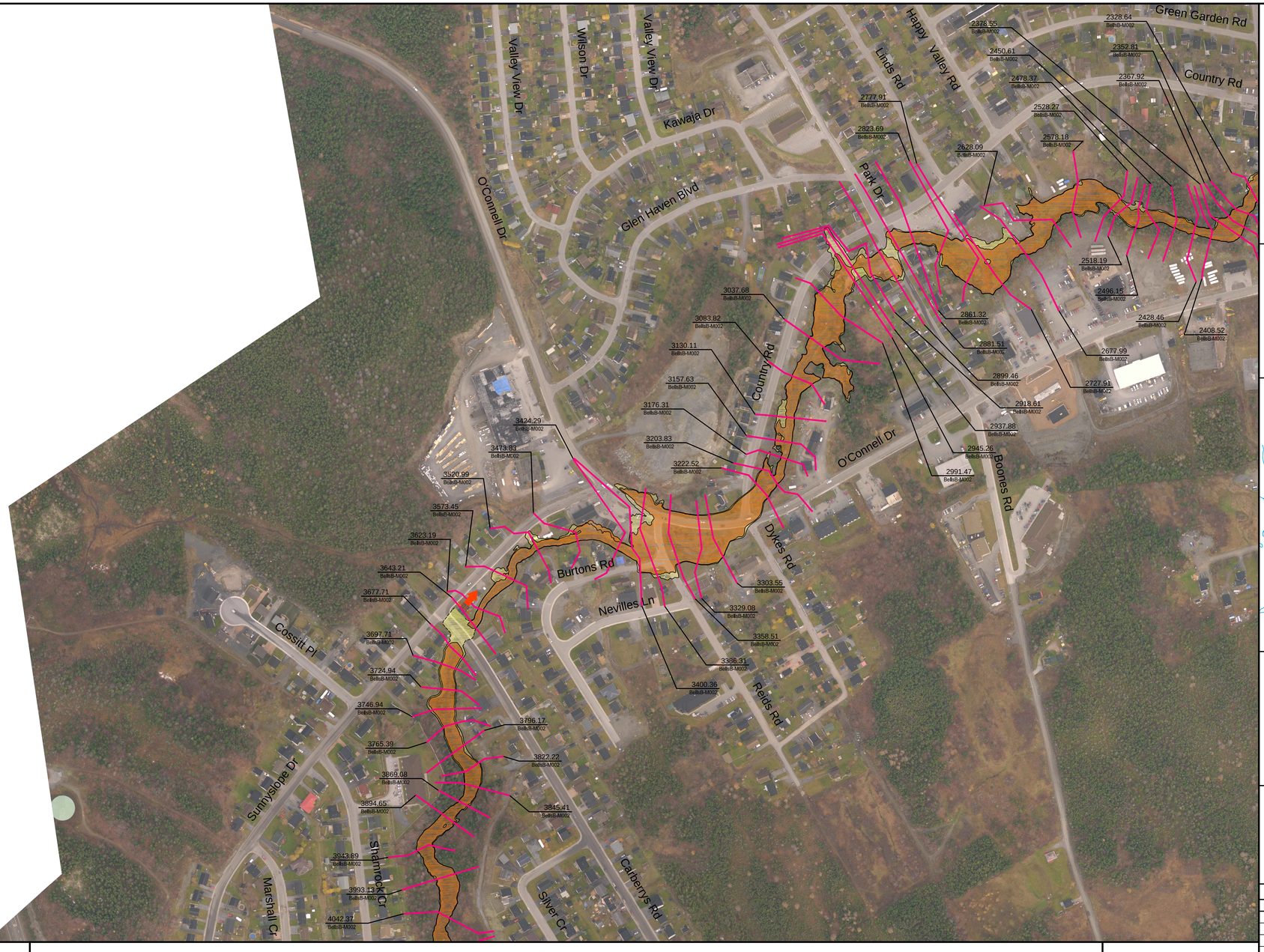

Newfoundland Labrador

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Water Resource Management Division

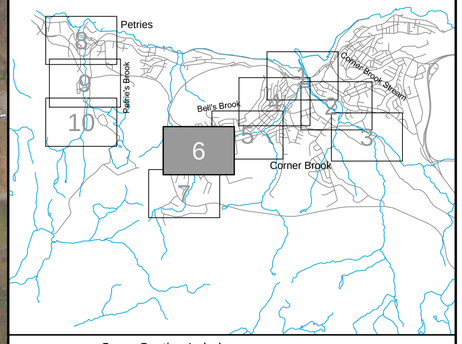
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
BellsB-M002

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
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Bell's Brook, Corner Brook Stream and Petrie's Brook

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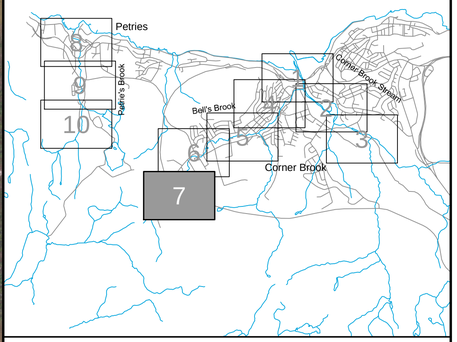

Cross Section Label

1050.0
BellsB-M002

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

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MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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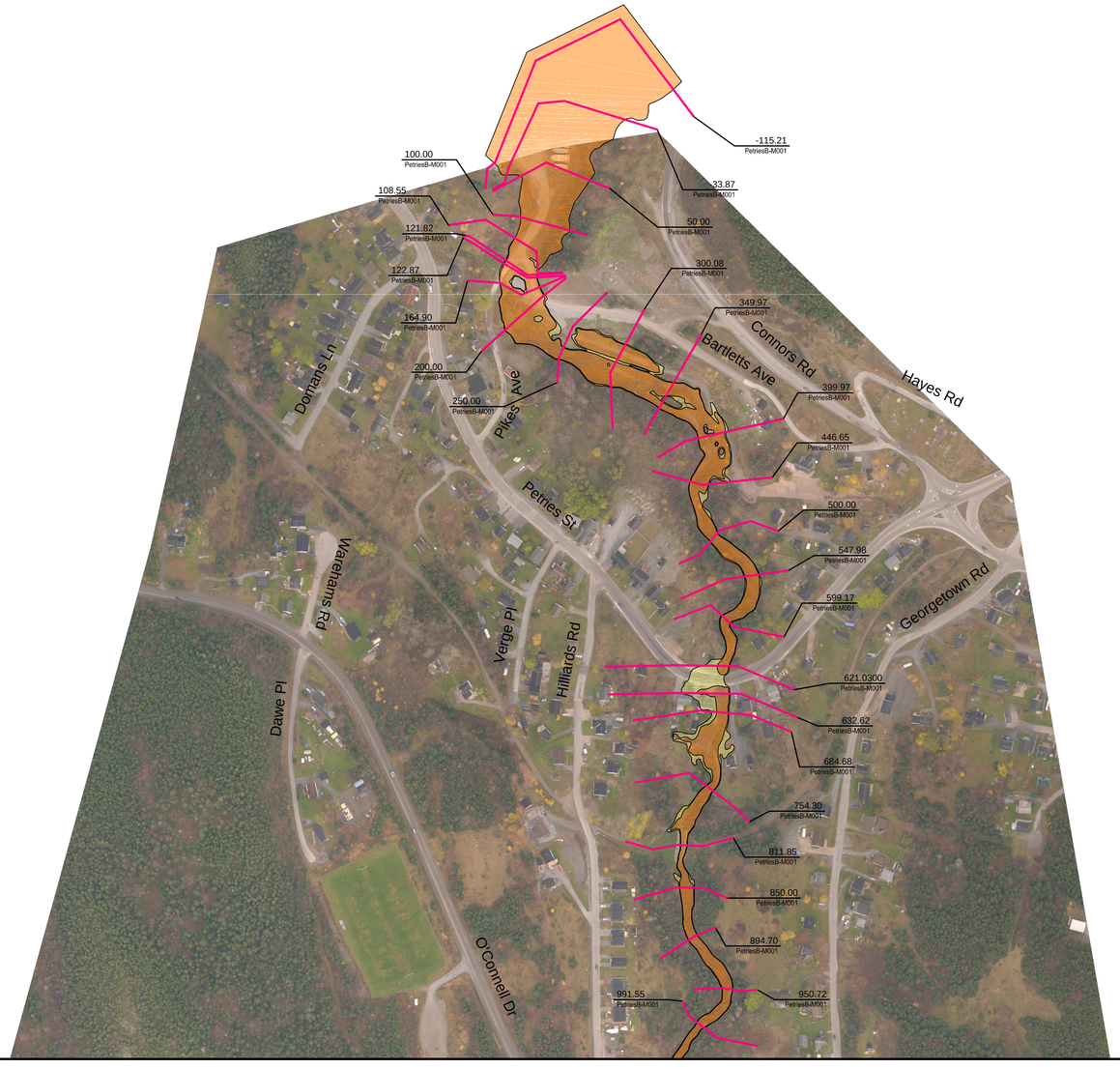

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

Newfoundland Labrador

Department of Environment and Conservation
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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

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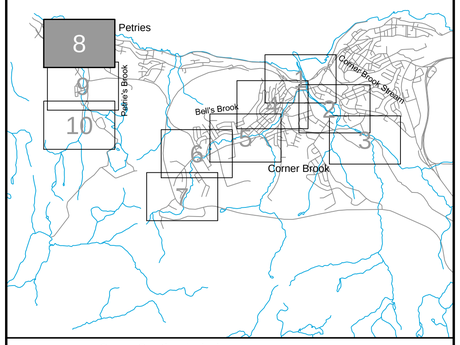

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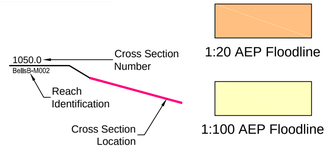

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REVISIONS

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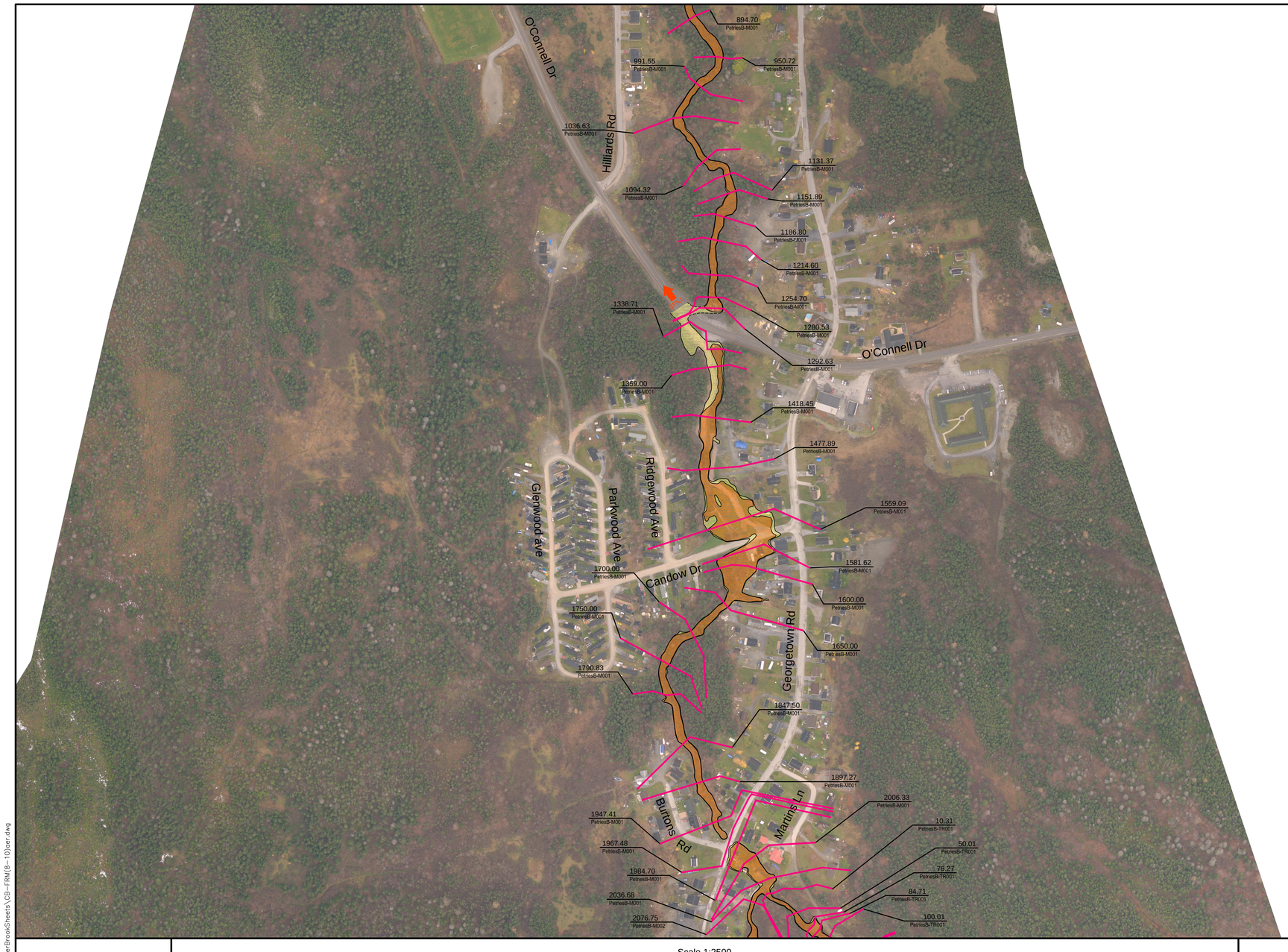

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
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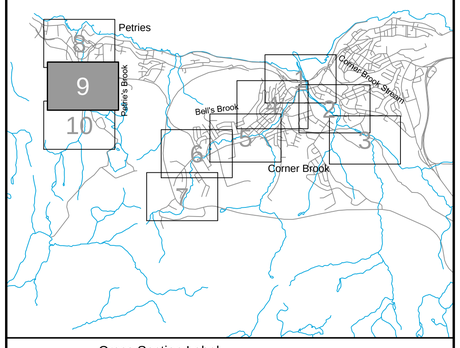

Cross Section Label

1050.0 BellsB-M002
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Floodline

1:100 AEP Floodline

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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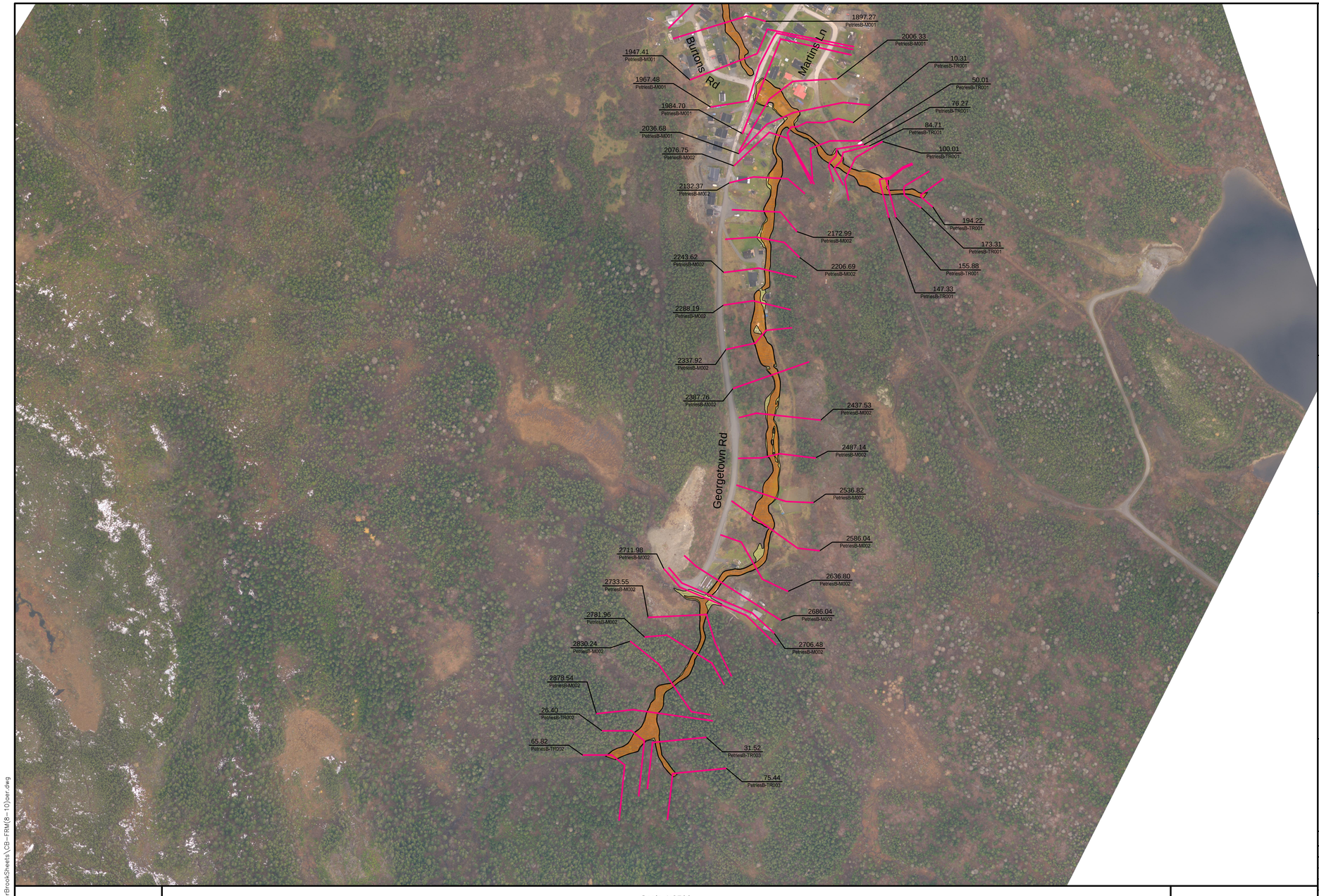
Feb 21/13 – richard.bartolo



Newfoundland Labrador

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Flood Risk Map
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

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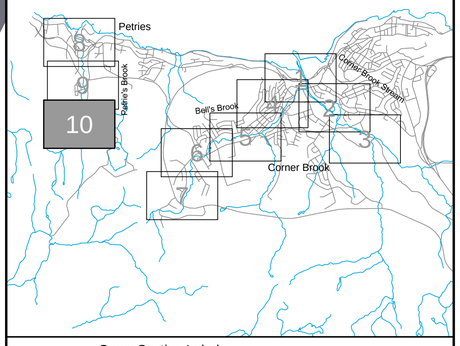

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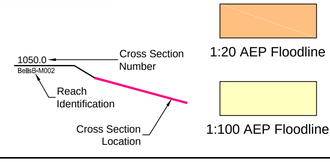

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

AERIAL PHOTOGRAPHY BY LEADING EDGE GEOMATICS, NOVEMBER 2011

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

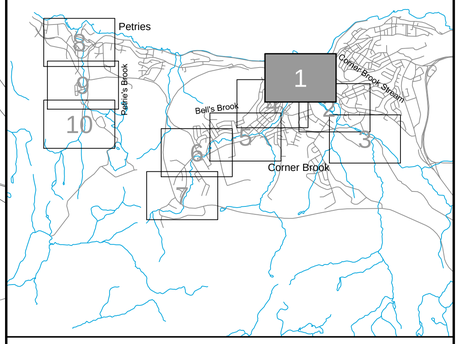
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 ← Cross Section Number
DoyleB-TR017 ← Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 1 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(1-3)-FD.dwg

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

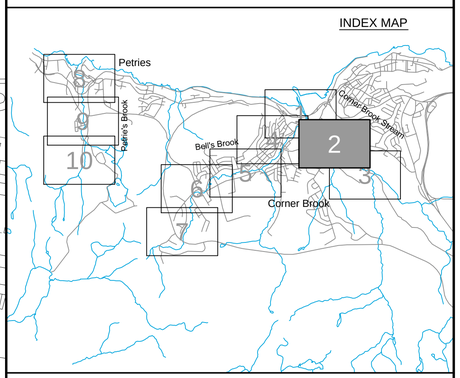
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoylerR-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 2 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

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1:20 AEP Inundation Depth Mapping
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AMEC (Maximum IDF Relationship)

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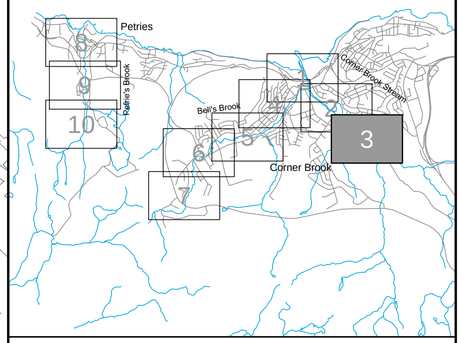

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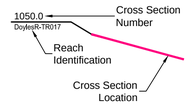

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

Sheet 3 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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Corner Brook

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Bell's Brook, Corner Brook Stream and Petrie's Brook

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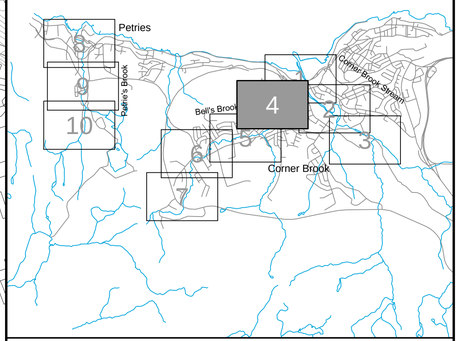

Cross Section Label

1050.0 DoyleR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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Sheet 4 of 10

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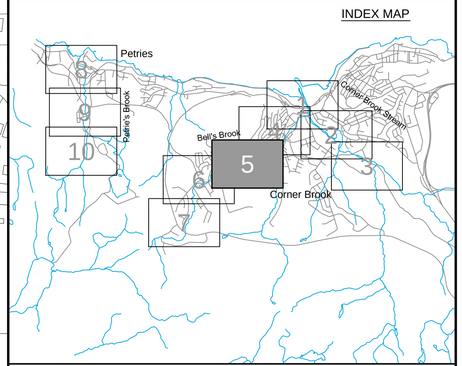
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream
and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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Sheet 5 of 10

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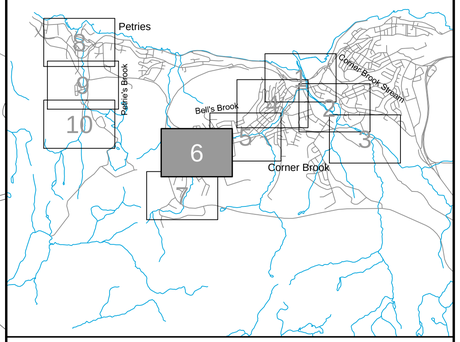
1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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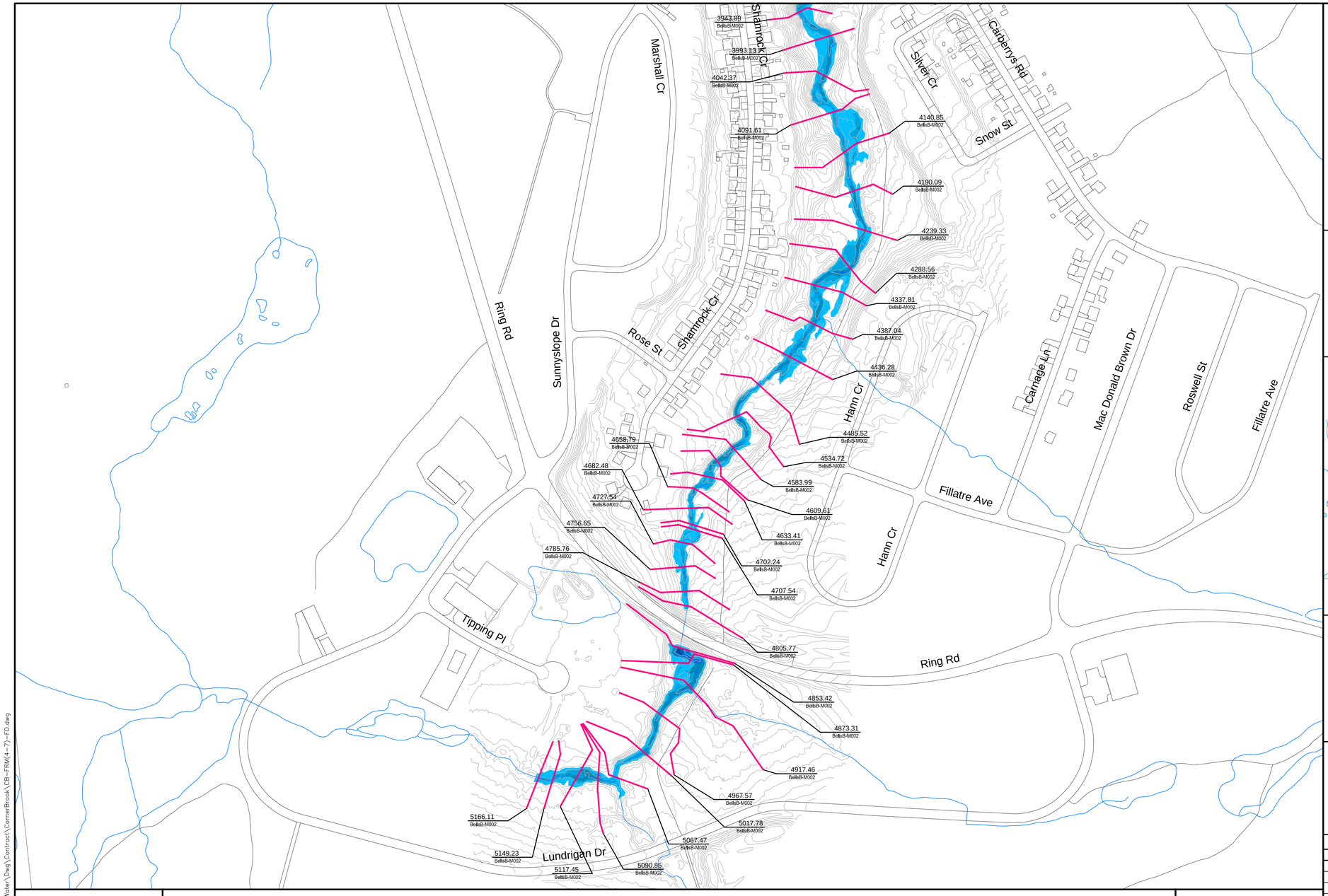

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Water Resource Management Division

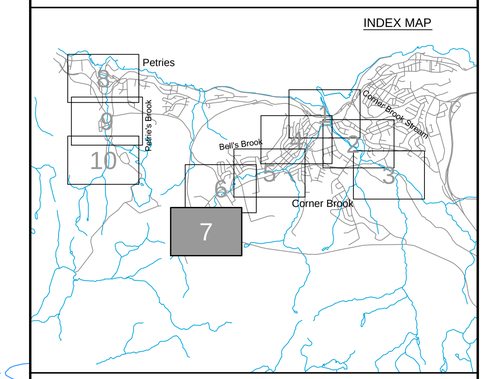
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 — Cross Section Number
DoyleB-TR017 — Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 7 of 10

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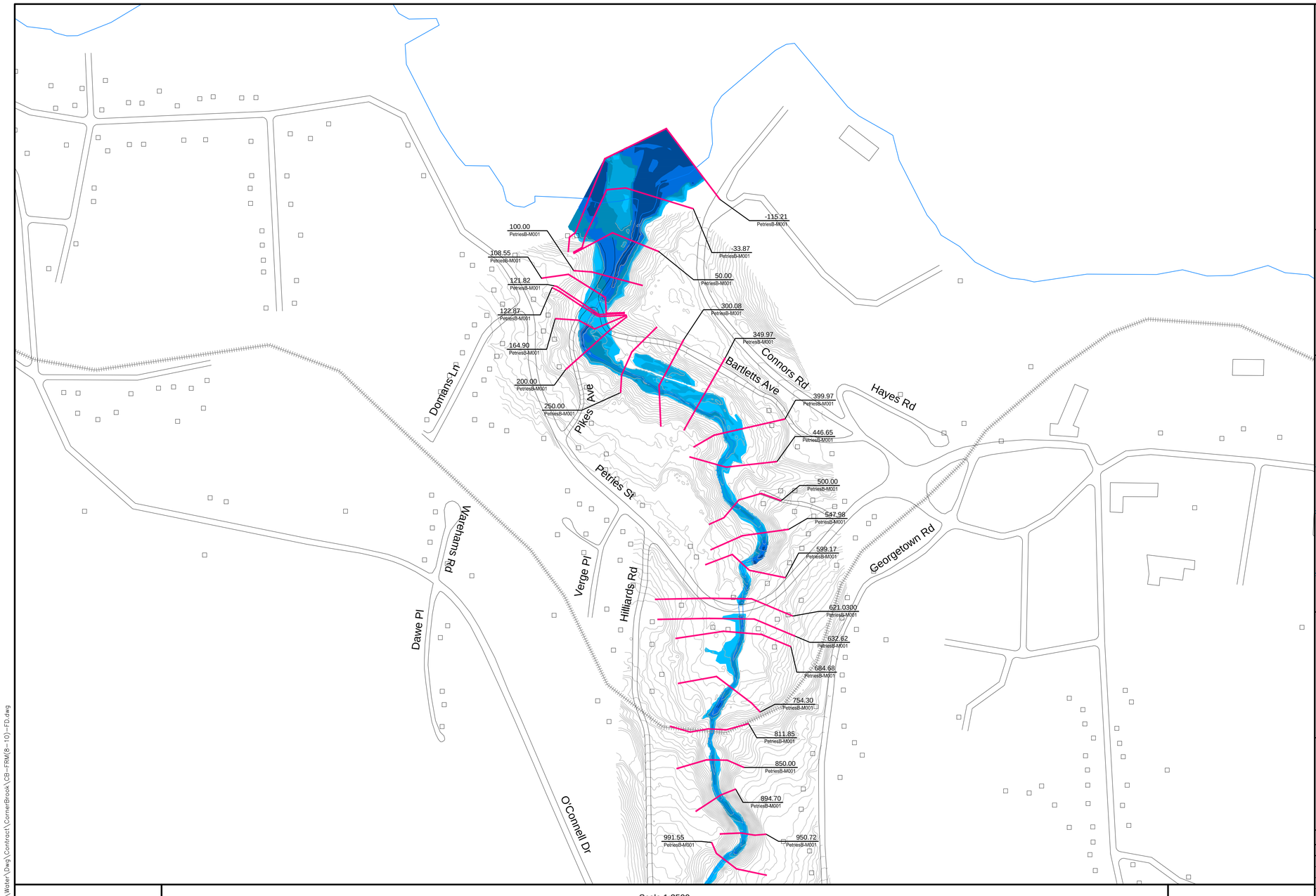

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Department of Environment and Conservation
Water Resource Management Division

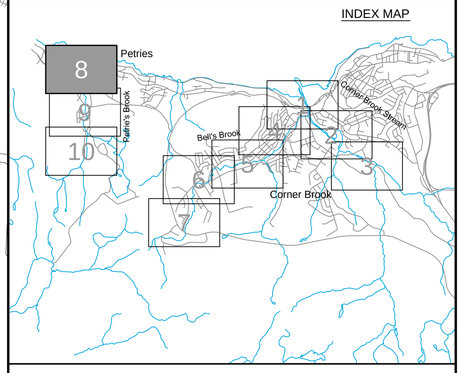
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0
DoyleB-TR017

Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 8 of 10

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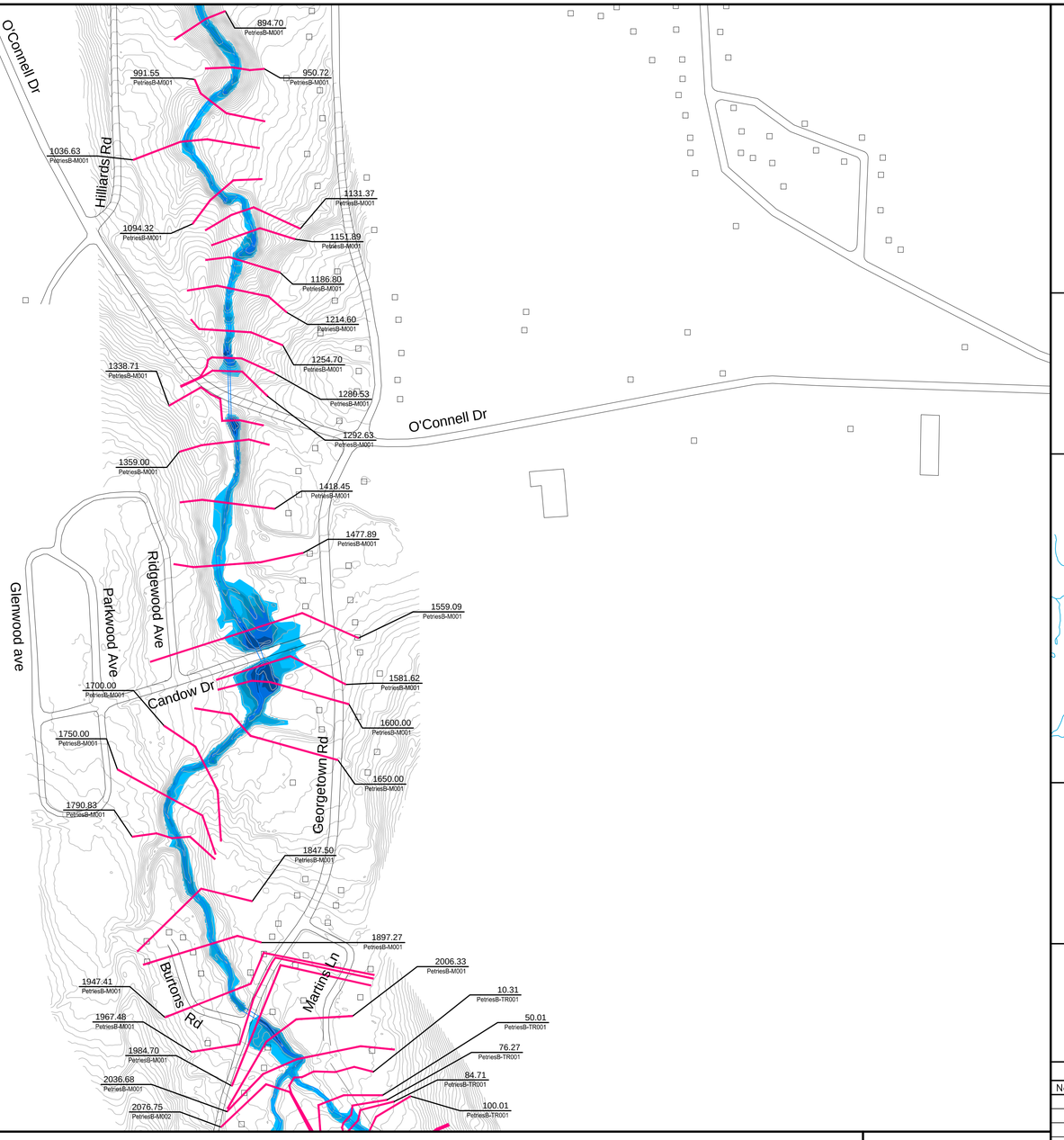


Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

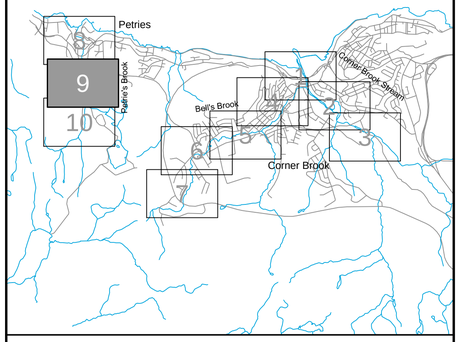
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017
Cross Section Number
Reach Identification
Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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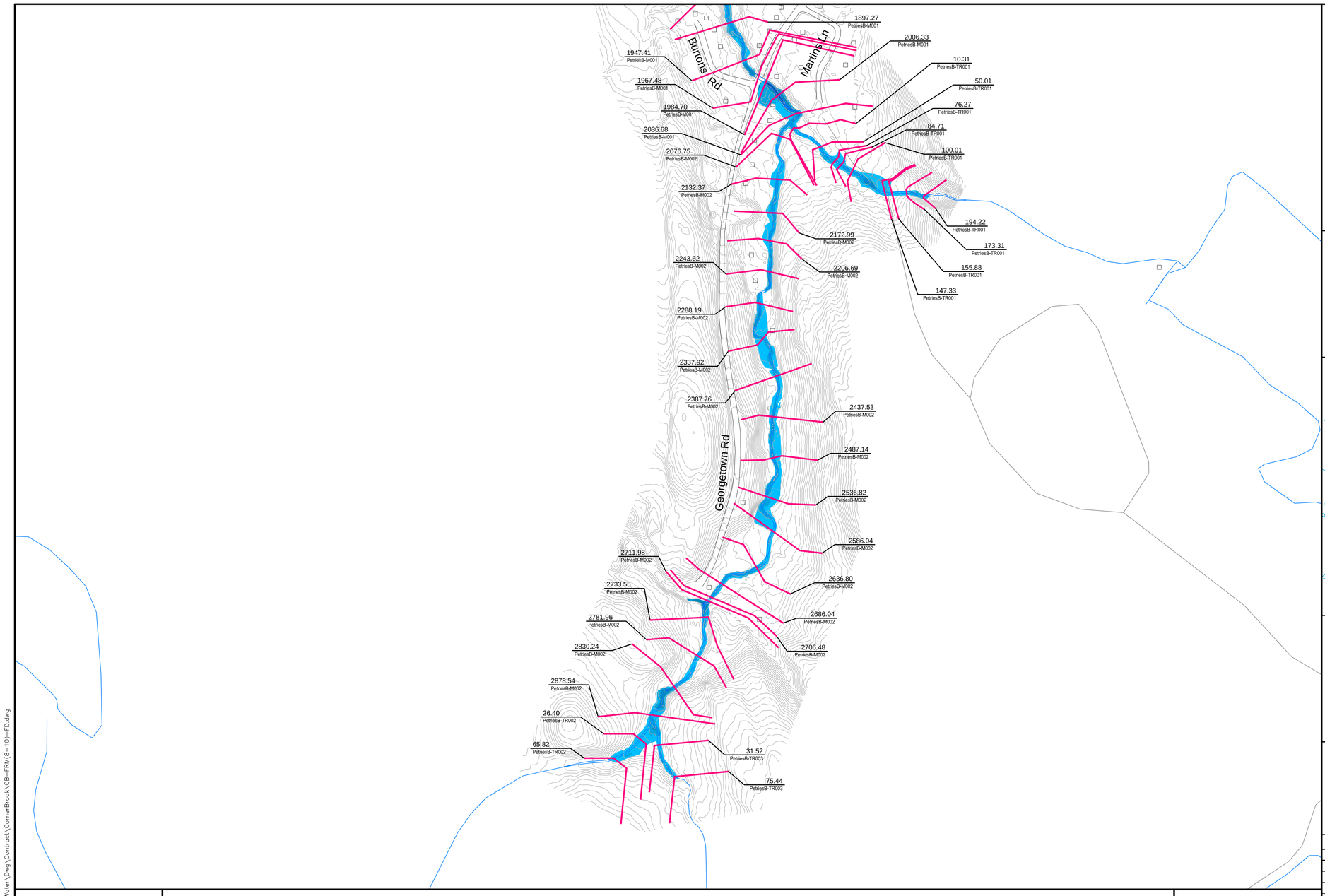
N

Sheet 9 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

Feb 27/13 – richard.bartolo



Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

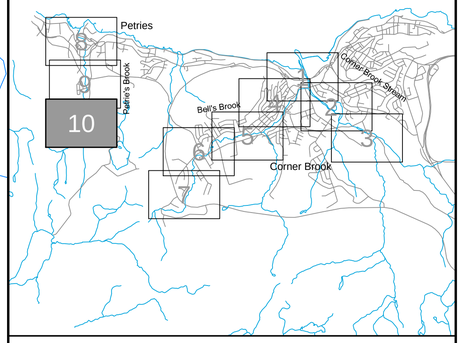
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:20 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoyleB-TR017

- Cross Section Number
- Reach Identification
- Cross Section Location

1:20 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
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amec

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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N

Sheet 10 of 10

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Newfoundland Labrador

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Water Resource Management Division

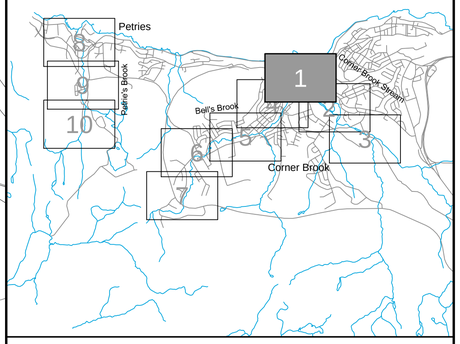
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 ← Cross Section Number
DoyleB-TR017 ← Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

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REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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Sheet 1 of 10

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Corner Brook

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Bell's Brook, Corner Brook Stream and Petrie's Brook

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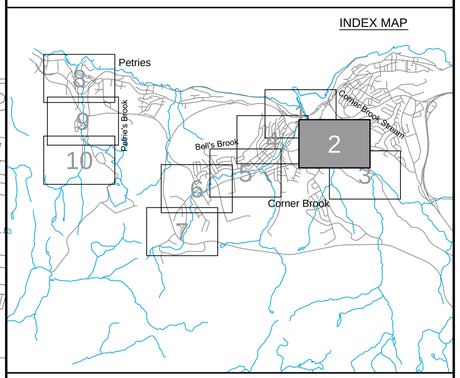

Cross Section Label

1050.0 DoylerR-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
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- 1.0m - 1.5m
- 1.5m - 2.0m
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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

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Sheet 2 of 10

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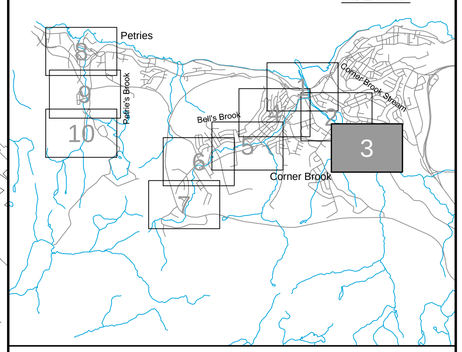

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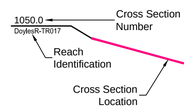

1:100 AEP Inundation Depth

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ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
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CONTOUR INTERVAL: 1.0 METRES

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Sheet 3 of 10

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Corner Brook

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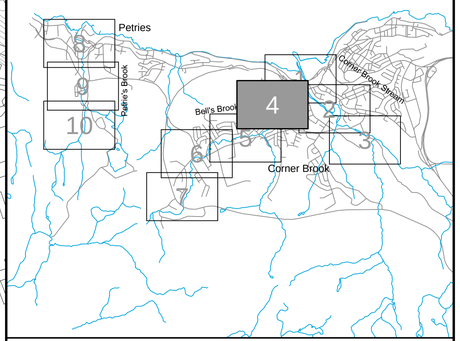

Cross Section Label

1050.0 — Cross Section Number
DoylesR-TR017 — Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
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REVISIONS

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MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
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N

Sheet 4 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

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Corner Brook

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and Petrie's Brook

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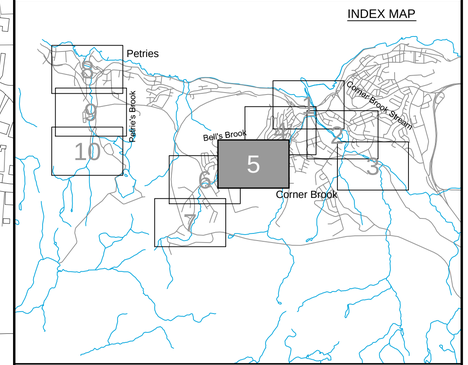

Cross Section Label

1050.0 DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
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REVISIONS

No.	Description	BY	DATE

Sheet 5 of 10

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

Feb 27/13 – richard.bartolo

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

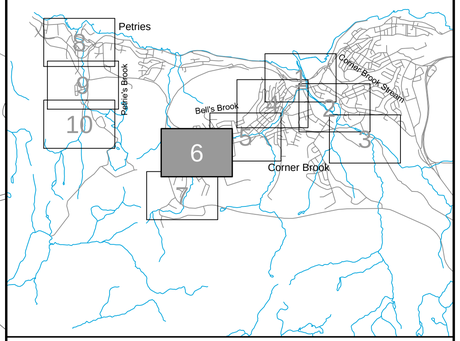
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label

1050.0 DoylesR-TR017

Cross Section Number
Reach Identification
Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 6 of 10

MTMNAD83
ZONE 3

Scale 1:2500

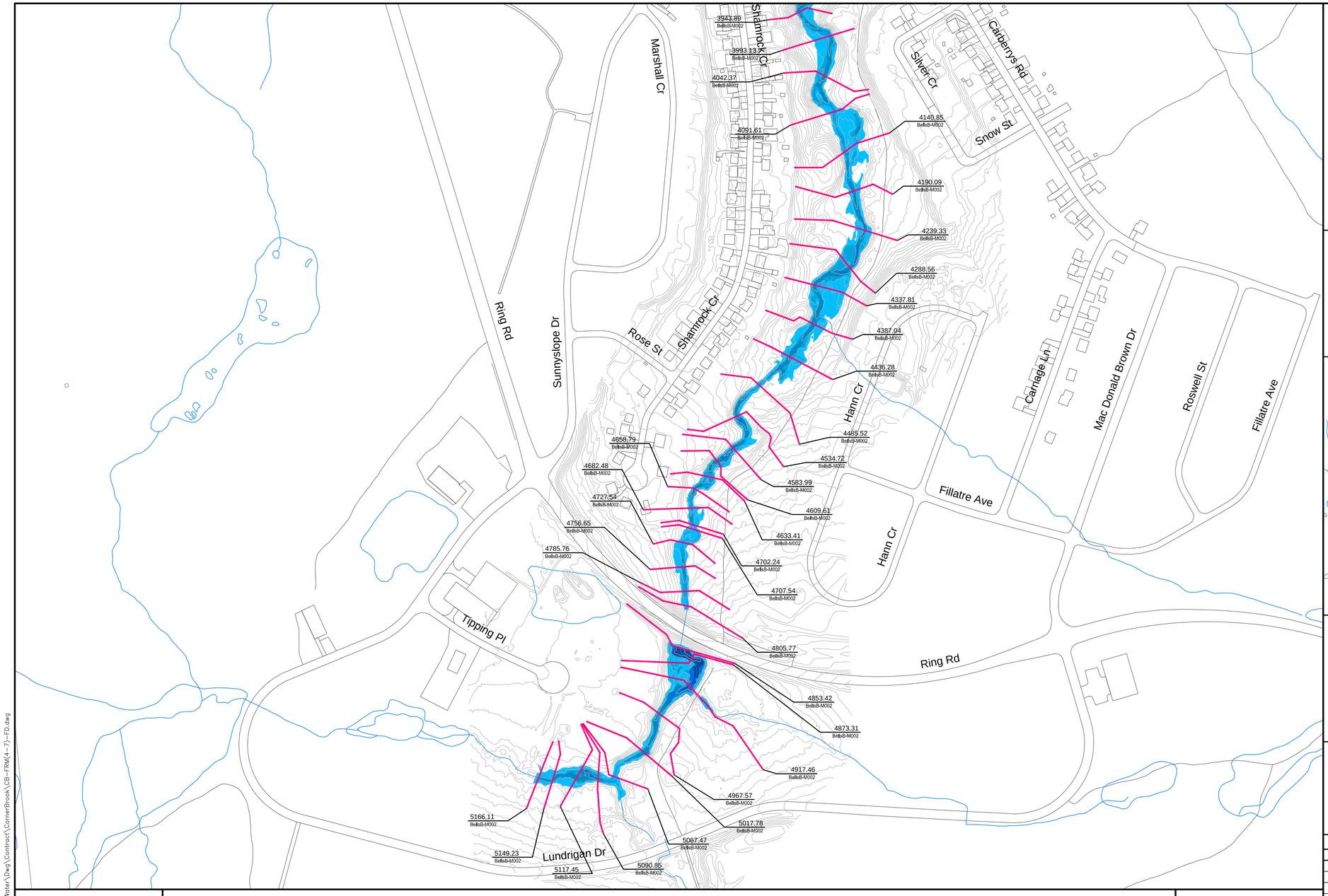
Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

P:\Work\TA11112735\Water\Dwg\Contract\CornerBrook\CB-FRM(4-7)-FD.dwg

Feb 27/13 – richard.bartolo



Newfoundland Labrador

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and Petrie's Brook

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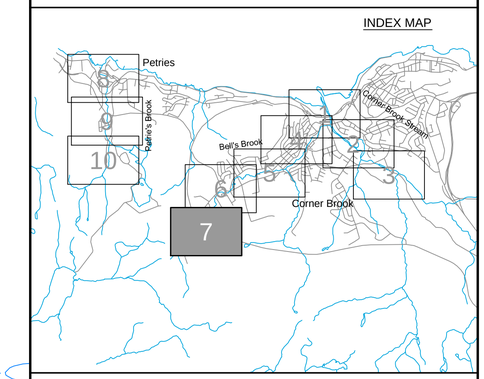

Cross Section Label

1050.0
DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5 - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

N

Sheet 7 of 10

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Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

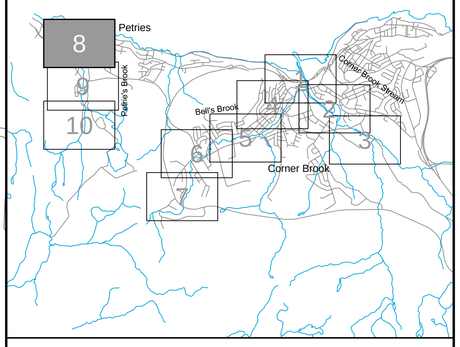
Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

1:100 AEP Inundation Depth Mapping
Corner Brook

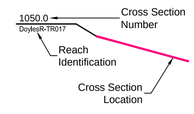
Climate Change Scenario - 2080
AMEC (Maximum IDF Relationship)

Bell's Brook, Corner Brook Stream and Petrie's Brook

INDEX MAP



Cross Section Label



1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

Metres 150 0 150 Metres
Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 8 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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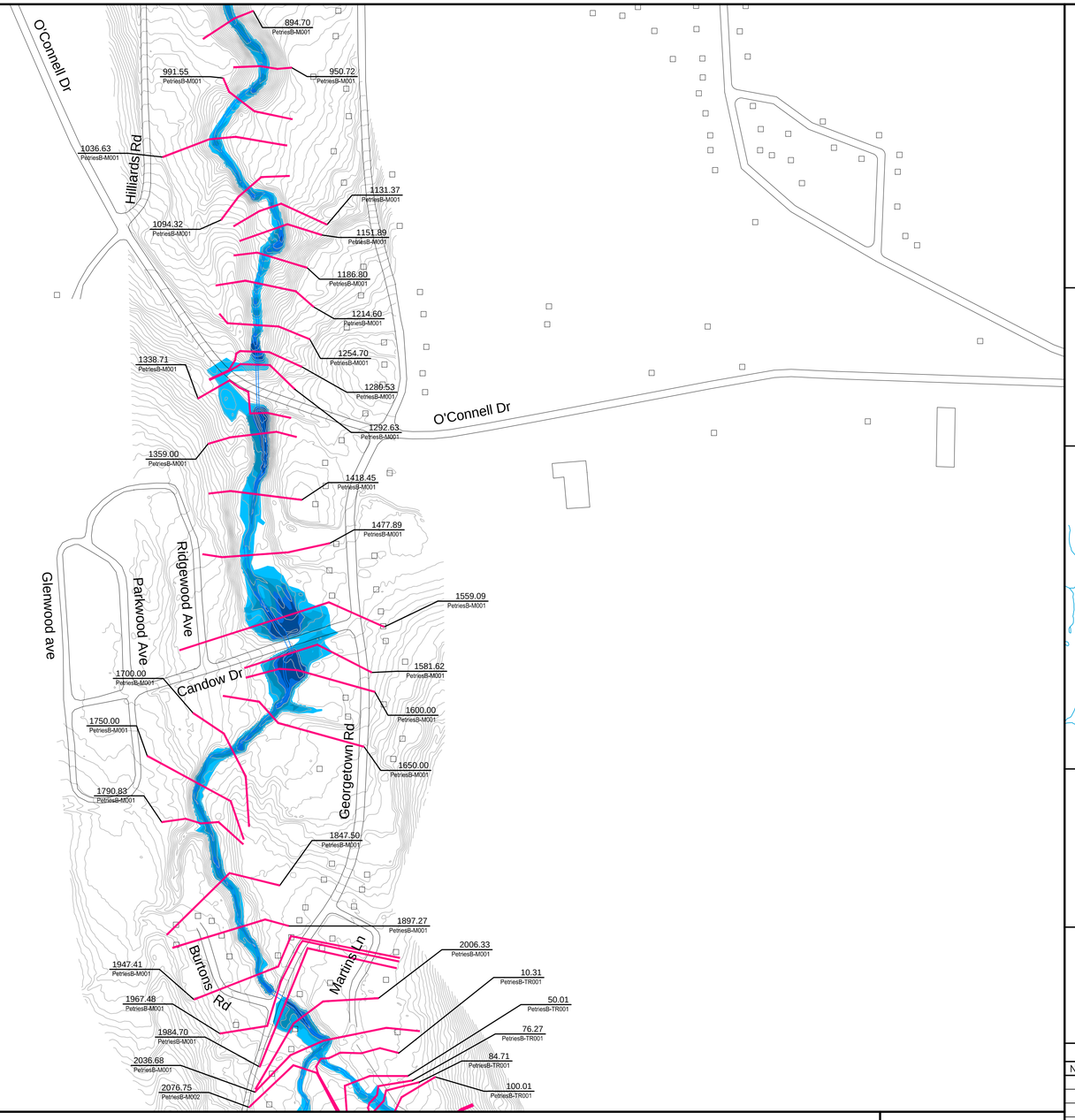

Scale 1:2500

Metres 150 0 150 Metres

Feet 300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

MTMNAD83
ZONE 3

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Newfoundland Labrador

Department of Environment and Conservation
Water Resource Management Division

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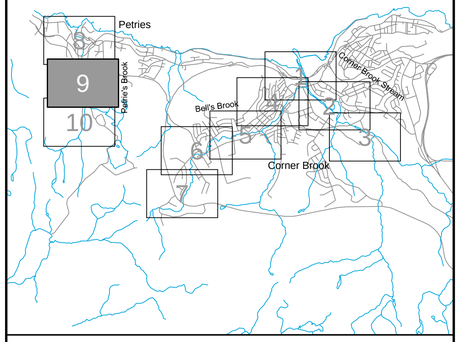

Cross Section Label

1050.0
DoyleB-TR017

Cross Section Number

Reach Identification

Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

Sheet 9 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

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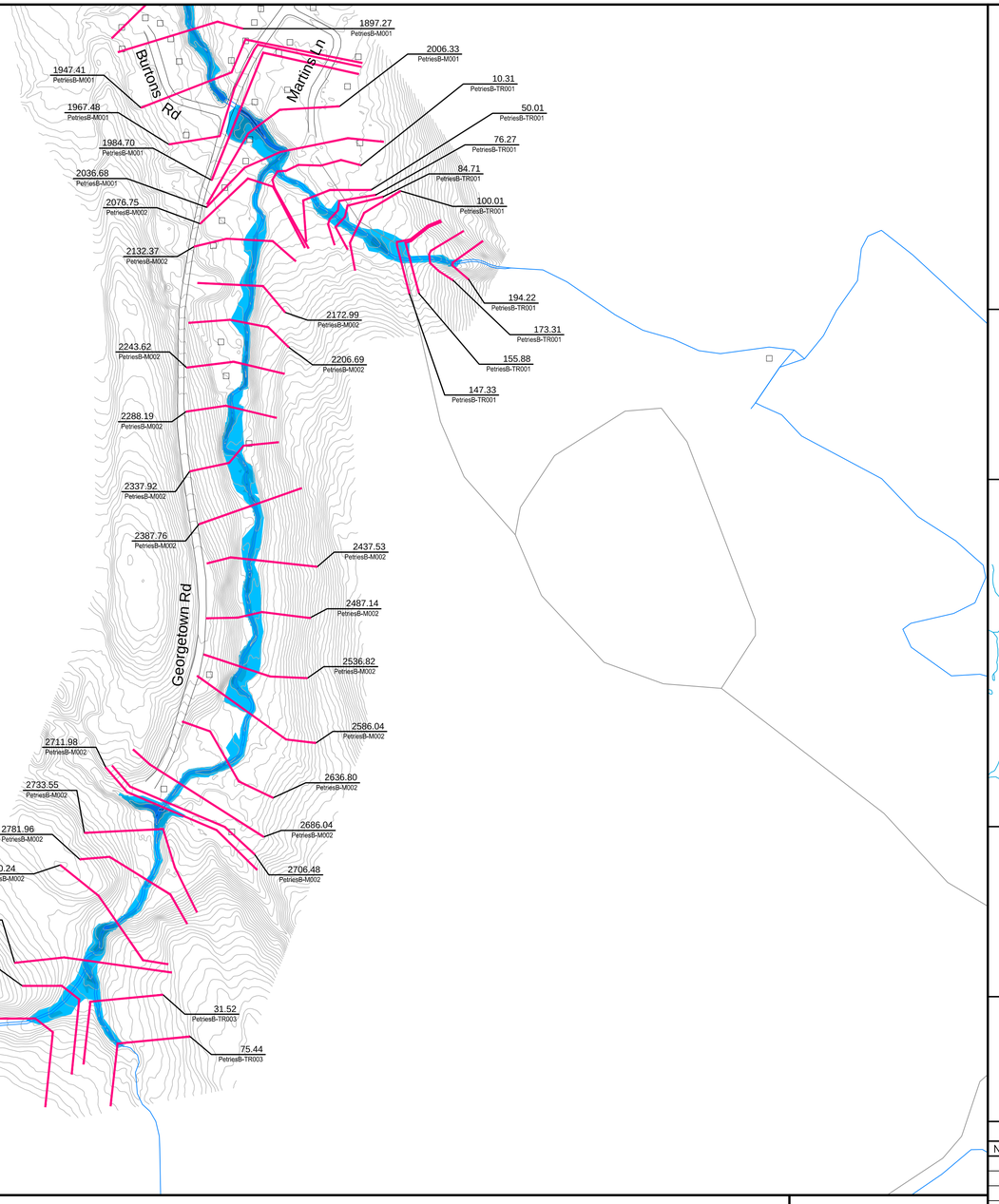

Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

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Corner Brook

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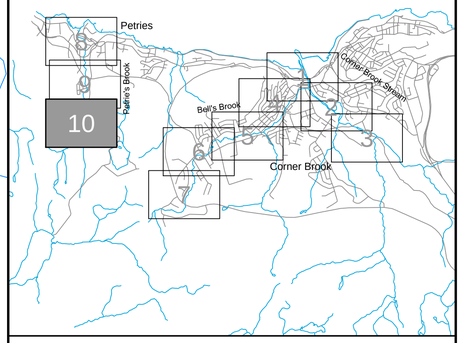

Cross Section Label

1050.0 DoyleB-TR017

- Cross Section Number
- Reach Identification
- Cross Section Location

1:100 AEP Inundation Depth

- 0.0m - 0.5m
- 0.5m - 1.0m
- 1.0m - 1.5m
- 1.5m - 2.0m
- Greater than 2.0m

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

REVISIONS

No.	Description	BY	DATE

MTMNAD83
ZONE 3

Scale 1:2500

150 0 150 Metres
300 0 300 600 900 Feet

CONTOUR INTERVAL: 1.0 METRES

NOTE:
Flood depths in ponds and lakes represent depth over the water surface elevation in the facilities at the time of LiDAR data capture.

Sheet 10 of 10

P:\Work\TA1112735\Water\Dwg\Contract\CornerBrook\CB-FRM(8-10)-FD.dwg

Feb 27/13 – richard.bartolo

APPENDIX I

TECHNICAL METHODS SUMMARY

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STATISTICAL ANALYSIS – DATA SCREENING SUMMARIES

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--- SPEARMAN TEST FOR INDEPENDENCE ---

CBPB NODE 02YL011 INSTANT
ANNUAL MAXIMUM DAILY FLOW SERIES 1995 TO 2010 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER SERIAL CORRELATION COEFF =-0.356 D.F.= 13
CORRESPONDS TO STUDENTS T =-1.374
CRITICAL T VALUE AT 5% LEVEL = 1.771 NOT SIGNIFICANT
- - - - 1% - = 2.650 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant serial dependence.

--- SPEARMAN TEST FOR TREND ---

CBPB NODE 02YL011 INSTANT
ANNUAL MAXIMUM DAILY FLOW SERIES 1995 TO 2010 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER CORRELATION COEFF = 0.323 D.F.= 14

CORRESPONDS TO STUDENTS T = 1.276
CRITICAL T VALUE AT 5% LEVEL = 2.145 NOT SIGNIFICANT
- - - - 1% - = 2.977 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the serial(lag-one) correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant trend.

--- RUN TEST FOR GENERAL RANDOMNESS ---

CBPB NODE 02YL011 INSTANT
ANNUAL MAXIMUM DAILY FLOW SERIES 1995 TO 2010 DRAINAGE AREA = 10101.00

THE NUMBER OF RUNS ABOVE AND BELOW THE MEDIAN (RUNAB) = 12
THE NUMBER OF OBSERVATIONS ABOVE THE MEDIAN(N1) = 8
THE NUMBER OF OBSERVATIONS BELOW THE MEDIAN(N2) = 8
Range at 5% level of significance: 5. to 13. NOT SIGNIFICANT

Interpretation: The null hypothesis is that the data are random.

At the 5% level of significance, the null hypothesis cannot be rejected. That is, the sample is significantly random.

--- MANN-WHITNEY SPLIT SAMPLE TEST FOR HOMOGENEITY ---

CBPB NODE 02YL011 INSTANT
ANNUAL MAXIMUM FLOW SERIES 1995 TO 2010 DRAINAGE AREA= 10101.00

SPLIT BY TIME SPAN, SUBSAMPLE 1 SAMPLE SIZE= 8
SUBSAMPLE 2 SAMPLE SIZE= 8

MANN-WHITNEY U =28.5 P= 0.380 NOT SIGNIFICANT

Interpretation: The null hypothesis is that there is no location difference between the two samples.

At the 5% level of significance, there is no significant location difference between the two samples. That is, they appear to be from the same population.

--- SPEARMAN TEST FOR INDEPENDENCE ---

CBPB NODE 02YL002 Watson outlier removed
ANNUAL MAXIMUM DAILY FLOW SERIES 1959 TO 2009 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER SERIAL CORRELATION COEFF =-0.056 D.F.= 48
CORRESPONDS TO STUDENTS T =-0.391
CRITICAL T VALUE AT 5% LEVEL = 1.679 NOT SIGNIFICANT
- - - - 1% - = 2.410 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant serial dependence.

--- SPEARMAN TEST FOR TREND ---

CBPB NODE 02YL002 Watson outlier removed
ANNUAL MAXIMUM DAILY FLOW SERIES 1959 TO 2009 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER CORRELATION COEFF =-0.223 D.F.= 49
CORRESPONDS TO STUDENTS T =-1.604
CRITICAL T VALUE AT 5% LEVEL =-2.012 NOT SIGNIFICANT
- - - - 1% - =-2.684 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the serial(lag-one) correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant trend.

--- RUN TEST FOR GENERAL RANDOMNESS ---

CBPB NODE 02YL002 Watson outlier removed
ANNUAL MAXIMUM DAILY FLOW SERIES 1959 TO 2009 DRAINAGE AREA = 10101.00

THE NUMBER OF RUNS ABOVE AND BELOW THE MEDIAN (RUNAB) = 29
THE NUMBER OF OBSERVATIONS ABOVE THE MEDIAN(N1) = 25
THE NUMBER OF OBSERVATIONS BELOW THE MEDIAN(N2) = 25

(NOTE: Z IS THE STANDARD NORMAL VARIATE.)

For this test, Z = 0.857
Critical Z value at the 5% level = 1.960 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the data are random.

At the 5% level of significance, the null hypothesis cannot be rejected. That is, the sample is significantly random.

--- MANN-WHITNEY SPLIT SAMPLE TEST FOR HOMOGENEITY ---

CBPB NODE 02YL002 Watson outlier removed
ANNUAL MAXIMUM FLOW SERIES 1959 TO 2009 DRAINAGE AREA= 10101.00

SPLIT BY TIME SPAN, SUBSAMPLE 1 SAMPLE SIZE= 24
SUBSAMPLE 2 SAMPLE SIZE= 27

(NOTE: Z IS THE STANDARD NORMAL VARIATE.)
For this test, Z = -0.679
CRITICAL Z VALUE AT 5% SIGNIFICANT LEVEL = -1.645 NOT SIGNIFICANT
- - - - 1% - - = -2.326 NOT SIGNIFICANT

Interpretation: The null hypothesis is that there is no
location difference between the two samples.

At the 5% level of significance, there is no significant
location difference between the two samples. That is, they
appear to be from the same population.

--- SPEARMAN TEST FOR INDEPENDENCE ---

CBPB NODE 02YL005 MCIVERS
ANNUAL MAXIMUM DAILY FLOW SERIES 1985 TO 2010 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER SERIAL CORRELATION COEFF = 0.038 D.F.= 23
CORRESPONDS TO STUDENTS T = 0.185
CRITICAL T VALUE AT 5% LEVEL = 1.714 NOT SIGNIFICANT
- - - - 1% - = 2.500 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant serial dependence.

--- SPEARMAN TEST FOR TREND ---

CBPB NODE 02YL005 MCIVERS
ANNUAL MAXIMUM DAILY FLOW SERIES 1985 TO 2010 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER CORRELATION COEFF = 0.568 D.F.= 24

CORRESPONDS TO STUDENTS T = 3.380

CRITICAL T VALUE AT 5% LEVEL = 2.064		SIGNIFICANT
- - - - 1% - = 2.797		SIGNIFICANT

Interpretation: The null hypothesis is that the serial(lag-one) correlation is zero.

At the 1% level of significance, the correlation is significantly different from zero. That is, the data display highly significant trend.

--- RUN TEST FOR GENERAL RANDOMNESS ---

CBPB NODE 02YL005 MCIVERS
ANNUAL MAXIMUM DAILY FLOW SERIES 1985 TO 2010 DRAINAGE AREA = 10101.00

THE NUMBER OF RUNS ABOVE AND BELOW THE MEDIAN (RUNAB) = 12
THE NUMBER OF OBSERVATIONS ABOVE THE MEDIAN(N1) = 13
THE NUMBER OF OBSERVATIONS BELOW THE MEDIAN(N2) = 13
Range at 5% level of significance: 9. to 19. NOT SIGNIFICANT

Interpretation: The null hypothesis is that the data are random.

At the 5% level of significance, the null hypothesis cannot be rejected. That is, the sample is significantly random.

--- MANN-WHITNEY SPLIT SAMPLE TEST FOR HOMOGENEITY ---

CBPB NODE 02YL005 MCIVERS
ANNUAL MAXIMUM FLOW SERIES 1985 TO 2010 DRAINAGE AREA= 10101.00

SPLIT BY TIME SPAN, SUBSAMPLE 1 SAMPLE SIZE= 13
SUBSAMPLE 2 SAMPLE SIZE= 13

MANN-WHITNEY U =	37.0		
CRITICAL U VALUE AT 5% SIGNIFICANT LEVEL =	51.0		SIGNIFICANT
- - - - 1% - - =	39.0		SIGNIFICANT

Interpretation: The null hypothesis is that there is no
location difference between the two samples.

At the 1% level of significance, the hypothesis of nolocation
difference between the samples is rejected.

--- SPEARMAN TEST FOR INDEPENDENCE ---

CBPB NODE 02YL004 PASADENA
ANNUAL MAXIMUM DAILY FLOW SERIES 1983 TO 2010 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER SERIAL CORRELATION COEFF =-0.022 D.F.= 25
CORRESPONDS TO STUDENTS T =-0.111
CRITICAL T VALUE AT 5% LEVEL = 1.708 NOT SIGNIFICANT
- - - - 1% - = 2.485 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant serial dependence.

--- SPEARMAN TEST FOR TREND ---

CBPB NODE 02YL004 PASADENA
ANNUAL MAXIMUM DAILY FLOW SERIES 1983 TO 2010 DRAINAGE AREA = 10101.00

SPEARMAN RANK ORDER CORRELATION COEFF = 0.359 D.F.= 26
CORRESPONDS TO STUDENTS T = 1.961
CRITICAL T VALUE AT 5% LEVEL = 2.056 NOT SIGNIFICANT
- - - - 1% - = 2.779 NOT SIGNIFICANT

Interpretation: The null hypothesis is that the serial(lag-one) correlation is zero.

At the 5% level of significance, the correlation is not significantly different from zero. That is, the data do not display significant trend.

--- RUN TEST FOR GENERAL RANDOMNESS ---

CBPB NODE 02YL004 PASADENA
ANNUAL MAXIMUM DAILY FLOW SERIES 1983 TO 2010 DRAINAGE AREA = 10101.00

THE NUMBER OF RUNS ABOVE AND BELOW THE MEDIAN (RUNAB) = 12
THE NUMBER OF OBSERVATIONS ABOVE THE MEDIAN(N1) = 14
THE NUMBER OF OBSERVATIONS BELOW THE MEDIAN(N2) = 14
Range at 5% level of significance: 10. to 20. NOT SIGNIFICANT

Interpretation: The null hypothesis is that the data are random.

At the 5% level of significance, the null hypothesis cannot be rejected. That is, the sample is significantly random.

--- MANN-WHITNEY SPLIT SAMPLE TEST FOR HOMOGENEITY ---

CBPB NODE 02YL004 PASADENA
ANNUAL MAXIMUM FLOW SERIES 1983 TO 2010 DRAINAGE AREA= 10101.00

SPLIT BY TIME SPAN, SUBSAMPLE 1 SAMPLE SIZE= 14
SUBSAMPLE 2 SAMPLE SIZE= 14

MANN-WHITNEY U =	54.0		
CRITICAL U VALUE AT 5% SIGNIFICANT LEVEL =	61.0		SIGNIFICANT
- - - - 1% - - =	47.0	NOT	SIGNIFICANT

Interpretation: The null hypothesis is that there is no
location difference between the two samples.

At the 5% level of significance, there is a significant difference
in location, but not so at the 1% level. That is, the
location difference is significant, but not highly so.

STATISTICAL ANALYSIS – WATER SURVEY OF CANADA FLOW DATA

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Environment Canada Environnement Canada

Canada

CORNER BROOK AT WATSONS BROOK POWERHOUSE (02YL002)

Station: 02YL002 Report Type: Peak Flow for 2010

Refresh Graph View

Peak Discharges (m^3/s)

Year	Maximum Instantaneous Discharge (m^3/s)	Minimum Instantaneous Discharge (m^3/s)	Maximum Daily Discharge (m^3/s)	Minimum Daily Discharge (m^3/s)
1959	----	----	12.5 on Nov 29	0.000 on Jul 28
1960	----	----	22.5 on May 10	2.16 on Sep 04
1961	----	----	21.4 on May 28	1.57 on Apr 10
1962	----	----	25.9 on Jun 11	0.983 on Jul 04
1963	----	----	20.6 on May 03	1.11 on Mar 25
1964	----	----	27.5 on Apr 17	1.34 on Dec 06
1965	----	----	21.8 on Jun 05	1.83 on Oct 25
1966	----	----	20.6 on May 29	1.34 on Sep 05
1967	----	----	18.2 on May 04	1.28 on Apr 20
1968	----	----	17.5 on Apr 17	0.000 on Mar 10
1969	----	----	29.2 on May 21	1.67 on Sep 02
1970	----	----	27.2 on Jun 04	1.28 on Nov 22
1971	----	----	36.8 on Apr 16	1.02 on Jul 15
1972	----	----	32.8 on May 17	1.54 on Apr 20
1973	----	----	34.8 on Aug 03	2.16 on Feb 02
1974	----	----	15.6 on Jun 16	2.03 on May 04
1975	----	----	26.9 on Dec 23	0.917 on Jun 26
1976	----	----	21.1 on Apr 04	1.41 on Jul 05
1977	----	----	44.7 on Dec 27	1.34 on Dec 06
1978	----	----	21.6 on May 18	0.883 on Jul 04
1979	----	----	35.4 on Mar 08	1.24 on May 23
1980	----	----	24.0 on Apr 26	1.41 on Apr 14
1981	----	----	19.5 on May 08	0.654 on Nov 19
1982	----	----	36.5 on Apr 30	0.886 on Nov 03
1983	----	----	32.3 on Jan 13	1.12 on Mar 30
1984	----	----	17.1 on May 15	1.28 on Dec 12
1985	----	----	29.4 on May 19	0.000 on Aug 30
1986	----	----	23.1 on Jan 28	0.949 on Jan 02
1987	----	----	25.2 on Apr 19	0.235 on Oct 09
1988	----	----	19.2 on May 13	0.949 on Sep 04
1989	----	----	15.1 on May 08	0.244 on Feb 20

Year	Maximum Instantaneous Discharge (m^3/s)	Minimum Instantaneous Discharge (m^3/s)	Maximum Daily Discharge (m^3/s)	Minimum Daily Discharge (m^3/s)
1990	----	----	25.1 on May 30	0.334 on Jan 12
1991	----	----	13.7 on Jan 17	0.637 on Dec 06
1992	----	----	33.1 on May 14	1.16 on Jan 09
1993	----	----	34.5 on Apr 23	1.79 on Feb 11
1994	----	----	29.3 on May 07	1.81 on Nov 04
1995	----	----	21.4 on Jun 09	1.99 on Dec 11
1996	----	----	41.5 on Feb 19	1.17 on Aug 30
1997	----	----	23.9 on May 06	0.640 on Nov 21
1998	----	----	33.0 on Mar 12	0.541 on Oct 20
1999	----	----	25.7 on Jan 26	0.465 on Jun 25
2000	----	----	33.5 on Feb 24	0.000 on May 01
2001	----	----	24.0 on May 12	0.468 on Aug 25
2002	----	----	22.0 on Nov 13	0.682 on Jun 17
2003	----	----	51.5 on Apr 01	0.538 on Apr 06
2004	----	----	44.0 on May 08	2.10 on Oct 19
2005	----	----	21.6 on May 03	1.71 on Jul 01
2006	----	----	25.8 on Jan 17	0.465 on Jul 05
2007	----	----	25.6 on May 21	0.465 on Oct 02
2008	----	----	22.5 on May 02	0.470 on Nov 13
2009	----	----	23.7 on Apr 24	1.47 on Oct 24
2010	----	----	5.95 on Oct 29	0.006 on Mar 18

In no event shall Environment Canada be liable for damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of, or inability to use this Environment Canada product, even if Environment Canada has been advised of the possibility of such damages.

Date Modified: 2010-04-30

Environment Canada Environnement Canada

Canada

SOUTH BROOK AT PASADENA (02YL004)

Station: 02YL004 Report Type: Peak Flow for 2011

Refresh Graph View

Peak Discharges (m^3/s)

Year	Maximum Instantaneous Discharge (m^3/s)	Minimum Instantaneous Discharge (m^3/s)	Maximum Daily Discharge (m^3/s)	Minimum Daily Discharge (m^3/s)
1983	159 at 17:30 NST on Jan 13	----	66.7 on Jan 13	0.185 B on Mar 02
1984	87.0 at 18:00 NST on Sep 02	----	30.2 on Sep 02	0.321 on Aug 07
1985	40.5 at 08:11 NST on Jun 07	----	24.6 on May 19	0.140 B on Feb 14
1986	48.5 at 20:30 NST on Jan 28	----	23.4 on Jan 28	0.214 on Jul 29
1987	84.6 E at 03:48 NST on Nov 22	----	32.8 on Nov 22	0.120 on Jul 30
1988	33.2 at 08:49 NST on Nov 29	----	17.8 on Nov 29	0.210 B on Jan 13
1989	29.0 at 03:15 NST on Oct 10	----	15.0 B on Apr 07	0.130 B on Feb 21
1990	41.0 at 16:35 NST on Dec 09	----	23.1 on Dec 09	0.158 B on Mar 17
1991	24.4 at 21:26 NST on Aug 31	----	12.0 on May 17	0.181 B on Feb 07
1992	37.3 at 18:07 NST on May 14	----	31.2 on May 14	0.129 B on Mar 08
1993	32.7 at 06:39 NST on May 16	----	25.4 on Apr 23	0.282 B on Mar 14
1994	----	----	35.0 B on Apr 09	0.170 B on Mar 04
1995	61.7 at 12:40 NST on Jun 08	----	21.9 on Jun 08	0.202 B on Feb 16
1996	----	----	24.8 B on Feb 18	0.204 on Sep 06
1997	24.3 at 20:00 NST on Jun 23	----	12.9 on May 05	0.184 B on Mar 26
1998	39.0 at 21:00 NST on Aug 12	----	24.9 on Sep 06	0.223 B on Jan 23
1999	24.4 at 14:30 NST on Nov 28	----	14.2 on May 06	0.161 on Aug 06
2000	36.5 at 07:30 NST on May 19	----	21.4 on May 19	0.258 on Aug 07
2001	27.8 at 15:30 NST on May 11	----	18.6 on May 11	0.146 on Aug 17
2002	34.7 at 09:30 NST on Sep 12	----	18.1 on Sep 12	0.184 B on Dec 31
2003	63.6 at 00:00 NST on Apr 01	----	39.3 B on Mar 31	0.217 on Sep 29
2004	31.0 at 22:30 NST on May 29	----	20.0 on Sep 21	0.117 E on Jun 25
2005	41.9 at 12:50 NST on Sep 27	----	23.6 on Sep 27	0.225 on Jul 09
2006	29.0 at 02:45 NST on Jan 16	----	21.6 on Jan 16	0.256 on Jul 21
2007	32.5 at 17:45 NST on Aug 09	----	13.8 on Aug 09	0.190 B on Mar 10
2008	50.3 at 20:30 NST on Dec 10	----	21.0 on Dec 13	0.260 on Jul 25
2009	46.9 at 03:30 NST on Jul 31	----	20.0 on Apr 23	0.217 B on Feb 27
2010	28.6 at 03:25 NST on May 04	----	19.2 on May 04	0.099 on Jul 22
2011	31.6 at 04:10 NST on Jul 22	0.22 at 20:30 NST on Jul 09	17.7 A on Apr 29	0.231 on Jul 09

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ANNUAL HYDROMETRIC

Year	Remark
2004	THE "E" FOR DISCHARGES BELOW 0.226 M3/S IS DUE TO CURVE EXTENSION.

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RATTLER BROOK NEAR MCIVERS (02YL005)

Station: 02YL005 Report Type: Peak Flow for 2011

Refresh Graph View

Peak Discharges (m^3/s)

Year	Maximum Instantaneous Discharge (m^3/s)	Minimum Instantaneous Discharge (m^3/s)	Maximum Daily Discharge (m^3/s)	Minimum Daily Discharge (m^3/s)
1985	----	----	24.8 on Apr 08	0.009 on Jul 15
1986	----	----	21.3 on Jan 28	0.007 on Aug 05
1987	14.6 E at 06:11 NST on Apr 19	----	9.53 on Apr 19	0.006 on Jul 21
1988	13.1 at 12:05 NST on Nov 29	----	8.17 on Nov 29	0.023 on Aug 17
1989	9.17 at 07:43 NST on Oct 10	----	6.49 on Oct 10	0.005 on Aug 03
1990	29.3 E at 16:09 NST on Dec 09	----	12.1 on Dec 09	0.008 on Aug 12
1991	8.38 at 10:26 NST on Sep 27	----	5.77 on May 05	0.021 B on Feb 15
1992	8.23 at 23:35 NST on May 13	----	6.81 on May 14	0.004 E on Aug 17
1993	9.16 at 20:27 NST on May 01	----	6.69 on Apr 23	0.015 E on Aug 18
1994	----	----	7.70 B on Apr 08	0.010 B on Mar 03
1995	12.5 at 13:53 NST on Jun 09	----	6.00 B on Jan 16	0.022 B on Jan 06
1996	----	----	8.00 B on Feb 18	0.010 on Sep 09
1997	6.44 E at 23:59 NST on Jan 01	----	5.13 on Jan 01	0.035 on Jul 10
1998	9.08 at 17:15 NST on May 11	----	6.46 on Mar 11	0.028 on Aug 09
1999	5.90 at 13:05 NST on Nov 28	----	4.05 on Nov 28	0.005 on Jul 22
2000	7.20 at 08:55 NST on May 19	----	4.45 on Apr 01	0.016 on Aug 07
2001	12.2 at 13:55 NST on Apr 28	----	8.81 on Apr 28	0.002 E on Aug 17
2002	7.20 at 13:10 NST on May 08	----	4.60 on May 08	0.029 on Jul 29
2003	----	----	9.69 B on Apr 01	0.008 E on Jun 30
2004	10.7 at 20:05 NST on Sep 10	----	4.56 on May 30	0.006 E on Jul 31
2005	21.3 E at 14:15 NST on Sep 27	----	9.37 E on Sep 27	0.010 on Jul 01
2006	14.7 E at 16:40 NST on Aug 12	----	5.95 E on Aug 12	0.011 on Jul 21
2007	9.62 E at 03:15 NST on May 21	----	5.72 E on May 10	0.016 A on Jul 18
2008	9.88 at 23:00 NST on Dec 10	----	5.73 on Dec 13	0.006 on Jul 24
2009	8.02 at 17:00 NST on Apr 23	----	5.92 on Apr 23	0.018 on Jul 25
2010	7.02 at 10:00 NST on May 04	----	4.74 on May 04	0.012 E on Aug 25
2011	7.74 E at 19:00 NST on Sep 06	0.02 at 18:00 NST on Aug 28	7.16 E on Apr 29	0.020 on Sep 05

In no event shall Environment Canada be liable for damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out

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Year	Remark
2001	THE "E" FOR DISCHARGES BELOW 0.009 M3/S IS DUE TO CURVE EXTENSION.
2003	THE "E" FOR DISCHARGES BELOW 0.016 M3/S IS DUE TO CURVE EXTENSION.
2004	THE "E" FOR DISCHARGES BELOW 0.010 M3/S AND ABOVE 5.24 M3/S IS DUE TO CURVE EXTENSION.
2005	THE "E" FOR DISCHARGES ABOVE 5.24 M3/S IS DUE TO CURVE EXTENSION.
2006	THE "E" FOR DISCHARGE ABOVE 5.24 CMS IS DUE TO CURVE EXTENSION.
2007	THE "E" FOR DISCHARGE ABOVE 3.32 CMS IS DUE TO CURVE EXTENSION.
2010	2010 THE "E" FOR DISCHARGES BELOW 0.018 CMS ARE DUE TO CURVE EXTENSION

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COPPER POND BROOK NEAR CORNER BROOK LAKE (02YL011)

Station: 02YL011 Report Type: Peak Flow for 2011

Refresh Graph View

Peak Discharges (m^3/s)

Year	Maximum Instantaneous Discharge (m^3/s)	Minimum Instantaneous Discharge (m^3/s)	Maximum Daily Discharge (m^3/s)	Minimum Daily Discharge (m^3/s)
1995	11.7 at 17:45 NST on Jun 08	----	6.62 on Jun 09	0.047 on Aug 21
1996	12.3 E at 08:00 NST on Feb 18	----	8.80 B on Feb 18	0.035 on Sep 09
1997	4.01 at 21:05 NST on May 17	----	3.20 on May 17	0.050 B on Mar 01
1998	10.3 E at 01:40 NST on May 04	----	7.83 E on May 04	0.056 on Aug 11
1999	4.10 at 00:00 NST on May 07	----	3.44 on May 07	0.016 E on Aug 06
2000	8.52 E at 10:40 NST on May 19	----	6.10 E on May 19	0.046 on Aug 09
2001	5.84 E at 00:10 NST on May 12	----	4.48 E on May 12	0.030 on Aug 17
2002	5.64 E at 13:25 NST on Nov 12	----	4.47 on Nov 12	0.070 B on Feb 10
2003	14.2 E at 02:00 NST on Apr 01	----	11.1 E on Apr 01	0.056 on Jul 01
2004	6.59 E at 05:15 NST on Dec 25	----	5.87 E on May 30	0.038 on Aug 26
2005	4.87 E at 22:25 NST on May 02	----	3.76 on May 03	0.056 on Jul 09
2006	6.54 E at 22:55 NST on Jan 16	----	5.92 E on Jan 16	0.055 on Jul 21
2007	5.64 E at 11:45 NST on May 12	----	5.09 E on May 12	0.050 B on Mar 10
2008	6.81 E at 02:25 NST on Dec 11	----	5.19 E on Dec 11	0.049 on Aug 04
2009	4.94 E at 23:00 NST on Apr 23	----	3.91 on Apr 24	0.064 B on Feb 27
2010	4.62 at 13:00 NST on May 04	----	3.76 on May 04	0.030 on Aug 24
2011	4.23 at 00:00 NST on Apr 30	0.04 at 17:30 NST on Sep 15	3.75 on Apr 30	0.044 on Sep 15

In no event shall Environment Canada be liable for damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of, or inability to use this Environment Canada product, even if Environment Canada has been advised of the possibility of such damages.

Date Modified: 2010-04-30

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ANNUAL HYDROMETRIC

Year	Remark
1998	THE "E" FOR DISCHARGES ABOVE 4.36 M3/S IS DUE TO CURVE EXTENSION.
1999	THE "E" FOR DISCHARGES BELOW 0.026 M3/S IS DUE TO CURVE EXTENSION.
2000	THE "E" FOR DISCHARGES ABOVE 4.36 M3/S IS DUE TO CURVE EXTENSION.
2001	THE "E" FOR DISCHARGES ABOVE 4.38 M3/S IS DUE TO CURVE EXTENSION.
2002	THE "E" FOR DISCHARGES ABOVE 4.94 M3/S IS DUE TO CURVE EXTENSION.
2003	THE "E" FOR DISCHARGES ABOVE 3.40 M3/S IS DUE TO CURVE EXTENSION.
2004	THE "E" FOR DISCHARGES ABOVE 4.72 M3/S IS DUE TO CURVE EXTENSION.
2005	THE "E" FOR DISCHARGES ABOVE 4.72 M3/S IS DUE TO CURVE EXTENSION.
2006	THE "E" FOR DISCHARGES ABOVE 4.72 CMS IS DUE TO CURVE EXTENSION.
2007	THE "E" FOR DISCHARGES ABOVE 4.72 CMS IS DUE TO CURVE EXTENSION.
2008	THE 'E' FOR DISCHARGE ABOVE 4.72CMS IS DUE TO CURVE EXTENSION
2009	2009 THE 'E' FOR DISCHARGE ABOVE 4.70 CMS IS DUE TO CURVE EXTENSION

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LAND USE CLASS COVERAGE BY HMS MODEL SUBCATCHMENT

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LAND USE CLASS COVERAGE BY HMS MODEL SUBCATCHMENT

Corner Brook Stream Watershed

Sub#	Landuse Class by Area and HMS Model Subcatchment (ha)								Total
	Barren/ Soil	Deforested	Developed	Fields/ Pastures	Forest	Open Space	Water	Wetlands	
W1	0.44	5.04	1.2		17.44	0.34	0.01		24.47
W11710	10.37	522.98	28.39	20.04	553.43	32.44	34.99	20.41	1223.05
W12150	0.95	0.2	3.61		3.29	1.35	0.01		9.41
W12770	2.29	196.94	1.58	4.98	683.46	4.49	11.14	6.1	910.98
W12860	0.12	33.48	0.14	1.11	38.28		0.06	2.57	75.76
W12940		1.1			5.6		0.09		6.79
W5130	5.33		5.5	0.15	0.17	0.2	1.6	0.21	13.16
W5140	2.94	0.29	10.39		2.28	1.91	0.03		17.84
W5150	2.1	1.27	3.53		5.04	5.83	0.02		17.79
W5160	13.04	0.38	8.54		0.99	3.15	0.12	1.76	27.98
W5170	6.2	0.02	6.53		0.29	0.96	0.8	0.63	15.43
W5180	8.78	1.17	21.31		16.16	13.92	1.63	0.35	63.32
W5190	3.96	0.11	6		7.46	6.5	0.22		24.25
W5220	40.92	22.67	23.64		29.6	13.66	0.84	8.15	139.48
W5230	0.98	2.48	1.42		6.78	1.44	2.16	0.28	15.54
W5240	7.35	0.93	31.33		7.96	5.65	1.35		54.57
W5250	15.5	7.62	24.09		26.33	22.23	2.01		97.78
W5280	0.17	1.62	0.54		5.45	0.86	1.56		10.2
W5300	1.6	0.46	6.72		5.96	1.39	0.06	0.04	16.23
W5310	29.14	15.99	9.28		3.44	8.35	0.06	6.42	72.68
W5320	2.46	1.07	7.09		5.88	2.46	0.53		19.49
W5330	0.64	4.29	0.72		9.36	0.61	0.48		16.1
W5340	0.86	5.37	5.61		19.94	1.96	0.13		33.87
W5370	5.59	27.67	1.61		47.82	2.58	0.01	2.08	87.36
W5390	10.55	16.42	6.77		21.02	4.07	0.18	2.02	61.03
W5410		8.2			37.59	0.08	0.04		45.91
W5440	31.61	26.56	13.16		34.82	11.05	0.09	8.65	125.94
W5520	18.38	45.28	17.81		73.25	11.89	0.66	6.74	174.01
W5540	25.21	39.99	12.55		29.93	6.62	0.13	7.8	122.23
W5550	11.48	18.21	4.73		50.14	8.64	0.18		93.38
W5630	7.59	36.06	17.49	5.79	117.05	4.76	1.21		189.95
W5640	0.59	13.4	1.56		48.37	0.9	0.66		65.48
W5680	0.74	17.91	10.84		27.24	0.99	0.02		57.74
W5690	0.86	12.79	0.62		16.07	0.42	0.35	1.33	32.44
W5700	1.92	92.02	0.93		125.03	4.16	0.09	5.57	229.72
W5710	0.91	2.34	1.47		0.72	0.27	0.01	0.49	6.21
W5720	0.15	0.57	0.09		6.6	0.04	0.02		7.47
W5730		2.83			13.04				15.87
W5760	0.71	16.57	0.31		34.56	1.52	0.23	1.47	55.37
W5770	9.34	104.4	14.21		108.81	7.3	0.14	5.16	249.36
W5790	6.85	209.43	13.05		570.57	48.29	1.73	9.78	859.7

W5860	1.1	91.34	4.07	0.74	164.49	10.69	18.92		291.35
W6050	0.19	3.01	0.56		17.15	0.17	2.84		23.92
W6070	0.12	10.4	1.23		57.9	0.3	1.58		71.53
W6190		31.08	0.15	0.74	120.94	1.96	38.74		193.61
W6430	0.35	93.39	1.32		134.09	6.14	6.32		241.61
W6490	2.65	58.65	21.57		71.21	10.99	27.3		192.37
W6510		60.62			163.89		1.3		225.81
W7640	11.29	759.14	3.37	47.59	1511.47	4.82	281.62		2619.3
W7860	24.37	1585.65	35.96	407.13	3175.15		1256.3	3.88	6488.41
W8550	0.41	4.15	1.25	1.16	13.25		3.88		24.1
W8580			0.02						0.02

Sub#	Landuse Class by Area and HMS Model Subcatchment (% of subcatchment area)								
	Barren/ Soil	Deforested	Developed	Fields/ Pastures	Forest	Open Space	Water	Wetlands	Total
W1	1.8%	20.6%	4.9%		71.3%	1.4%	0.0%		100%
W11710	0.8%	42.8%	2.3%	1.6%	45.2%	2.7%	2.9%	1.7%	100%
W12150	10.1%	2.1%	38.4%		35.0%	14.3%	0.1%		100%
W12770	0.3%	21.6%	0.2%	0.5%	75.0%	0.5%	1.2%	0.7%	100%
W12860	0.2%	44.2%	0.2%	1.5%	50.5%		0.1%	3.4%	100%
W12940		16.2%			82.5%		1.3%		100%
W5130	40.5%		41.8%	1.1%	1.3%	1.5%	12.2%	1.6%	100%
W5140	16.5%	1.6%	58.2%		12.8%	10.7%	0.2%		100%
W5150	11.8%	7.1%	19.8%		28.3%	32.8%	0.1%		100%
W5160	46.6%	1.4%	30.5%		3.5%	11.3%	0.4%	6.3%	100%
W5170	40.2%	0.1%	42.3%		1.9%	6.2%	5.2%	4.1%	100%
W5180	13.9%	1.8%	33.7%		25.5%	22.0%	2.6%	0.6%	100%
W5190	16.3%	0.5%	24.7%		30.8%	26.8%	0.9%		100%
W5220	29.3%	16.3%	16.9%		21.2%	9.8%	0.6%	5.8%	100%
W5230	6.3%	16.0%	9.1%		43.6%	9.3%	13.9%	1.8%	100%
W5240	13.5%	1.7%	57.4%		14.6%	10.4%	2.5%		100%
W5250	15.9%	7.8%	24.6%		26.9%	22.7%	2.1%		100%
W5280	1.7%	15.9%	5.3%		53.4%	8.4%	15.3%		100%
W5300	9.9%	2.8%	41.4%		36.7%	8.6%	0.4%	0.2%	100%
W5310	40.1%	22.0%	12.8%		4.7%	11.5%	0.1%	8.8%	100%
W5320	12.6%	5.5%	36.4%		30.2%	12.6%	2.7%		100%
W5330	4.0%	26.6%	4.5%		58.1%	3.8%	3.0%		100%
W5340	2.5%	15.9%	16.6%		58.9%	5.8%	0.4%		100%
W5370	6.4%	31.7%	1.8%		54.7%	3.0%	0.0%	2.4%	100%
W5390	17.3%	26.9%	11.1%		34.4%	6.7%	0.3%	3.3%	100%
W5410		17.9%			81.9%	0.2%	0.1%		100%
W5440	25.1%	21.1%	10.4%		27.6%	8.8%	0.1%	6.9%	100%
W5520	10.6%	26.0%	10.2%		42.1%	6.8%	0.4%	3.9%	100%
W5540	20.6%	32.7%	10.3%		24.5%	5.4%	0.1%	6.4%	100%
W5550	12.3%	19.5%	5.1%		53.7%	9.3%	0.2%		100%
W5630	4.0%	19.0%	9.2%	3.0%	61.6%	2.5%	0.6%		100%
W5640	0.9%	20.5%	2.4%		73.9%	1.4%	1.0%		100%

W5680	1.3%	31.0%	18.8%		47.2%	1.7%	0.0%		100%
W5690	2.7%	39.4%	1.9%		49.5%	1.3%	1.1%	4.1%	100%
W5700	0.8%	40.1%	0.4%		54.4%	1.8%	0.0%	2.4%	100%
W5710	14.7%	37.7%	23.7%		11.6%	4.3%	0.2%	7.9%	100%
W5720	2.0%	7.6%	1.2%		88.4%	0.5%	0.3%		100%
W5730		17.8%			82.2%				100%
W5760	1.3%	29.9%	0.6%		62.4%	2.7%	0.4%	2.7%	100%
W5770	3.7%	41.9%	5.7%		43.6%	2.9%	0.1%	2.1%	100%
W5790	0.8%	24.4%	1.5%		66.4%	5.6%	0.2%	1.1%	100%
W5860	0.4%	31.4%	1.4%	0.3%	56.5%	3.7%	6.5%		100%
W6050	0.8%	12.6%	2.3%		71.7%	0.7%	11.9%		100%
W6070	0.2%	14.5%	1.7%		80.9%	0.4%	2.2%		100%
W6190		16.1%	0.1%	0.4%	62.5%	1.0%	20.0%		100%
W6430	0.1%	38.7%	0.5%		55.5%	2.5%	2.6%		100%
W6490	1.4%	30.5%	11.2%		37.0%	5.7%	14.2%		100%
W6510		26.8%			72.6%		0.6%		100%
W7640	0.4%	29.0%	0.1%	1.8%	57.7%	0.2%	10.8%		100%
W7860	0.4%	24.4%	0.6%	6.3%	48.9%		19.4%	0.1%	100%
W8550	1.7%	17.2%	5.2%	4.8%	55.0%		16.1%		100%
W8580			100.0%						100%

Petrie's Brook

Sub#	Landuse Class by Area and HMS Model Subcatchment (ha)							
	Barren/ Soil	Deforested	Developed	Forest	Open Space	Water	Wetlands	Total
W1100		14.7		30.62			0.73	46.05
W1210		31.56		68.23		1.39	4.69	105.87
W1320		14.01		49.46			0.29	63.76
W1360	0.77		0.37	0.34	1.05		0.16	2.69
W1460	1.32	0.46	0.72	0.56	0.35		0.42	3.83
W680	2.45	0.22	2.05	0.41	1.31		0.55	6.99
W690	0.4	0.6	0.36	0.27	0.47		0.19	2.29
W700	2.19	2.19	0.96	5	2.81		0.66	13.81
W740	12.36	3.93	4.71	16.27	4.85	0.53	4.63	47.28
W760	3.33	2.88	1.21	5.89	3.91	0.01	1.36	18.59
W770		0.04		0.02				0.06
W780	0.04	0.3		0.23	0.02		0.01	0.6
W800	1.66	11.39	0.7	10.4	1.07		0.39	25.61
W810	0.78	0.54	0.51	1.37	0.42		0.26	3.88
W820	1.88	1.66	0.48	6.2	1.23	0.22	0.48	12.15
W860	2.37	5.55	1.06	14.84	1.28	0.11	0.57	25.78
W880	2.06	1.34	0.56	4.24	0.63	0.02	0.57	9.42
W890	0.11	5.84	0.02	4.43	0.1		0.08	10.58
W900				0.15				0.15
W920	1.22	1.29	0.43	1.15	0.5	0.01	0.45	5.05
W930	0.06	7.31		8.38			0.23	15.98
W970	0.06	21.13	0.02	28.93	0.12		0.09	50.35
W990	0.22	36.47	0.01	84.83	1.81	25.12	2.55	151.01

Sub#	Landuse Class by Area and HMS Model Subcatchment (% of subcatchment area)							
	Barren/ Soil	Deforested	Developed	Forest	Open Space	Water	Wetlands	Total
W1100		31.9%		66.5%			1.6%	100%
W1210		29.8%		64.4%		1.3%	4.4%	100%
W1320		22.0%		77.6%			0.5%	100%
W1360	28.6%		13.8%	12.6%	39.0%		5.9%	100%
W1460	34.5%	12.0%	18.8%	14.6%	9.1%		11.0%	100%
W680	35.1%	3.1%	29.3%	5.9%	18.7%		7.9%	100%
W690	17.5%	26.2%	15.7%	11.8%	20.5%		8.3%	100%
W700	15.9%	15.9%	7.0%	36.2%	20.3%		4.8%	100%
W740	26.1%	8.3%	10.0%	34.4%	10.3%	1.1%	9.8%	100%
W760	17.9%	15.5%	6.5%	31.7%	21.0%	0.1%	7.3%	100%
W770		66.7%		33.3%				100%
W780	6.7%	50.0%		38.3%	3.3%		1.7%	100%
W800	6.5%	44.5%	2.7%	40.6%	4.2%		1.5%	100%
W810	20.1%	13.9%	13.1%	35.3%	10.8%		6.7%	100%
W820	15.5%	13.7%	4.0%	51.0%	10.1%	1.8%	4.0%	100%
W860	9.2%	21.5%	4.1%	57.6%	5.0%	0.4%	2.2%	100%

W880	21.9%	14.2%	5.9%	45.0%	6.7%	0.2%	6.1%	100%
W890	1.0%	55.2%	0.2%	41.9%	0.9%		0.8%	100%
W900				100.0%				100%
W920	24.2%	25.5%	8.5%	22.8%	9.9%	0.2%	8.9%	100%
W930	0.4%	45.7%		52.4%			1.4%	100%
W970	0.1%	42.0%	0.0%	57.5%	0.2%		0.2%	100%
W990	0.1%	24.2%	0.0%	56.2%	1.2%	16.6%	1.7%	100%

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APPENDIX J

HEC-RAS REPORTS

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CORNER BROOK STREAM

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HEC-RAS Plan: Plan 20 Profile: 20-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20-Existing	127.500000	36.310	38.769330	38.7693	39.6831	0.00872	4.64	35.603	20.28	0.98
CornerB	M004	2838.71	20-Existing	127.500000	36.150	38.015160	38.2912	39.1281	0.01313	4.83	31.058	25.27	1.15
CornerB	M004	2796.61	20-Existing	127.500000	35.350	37.983570	37.4048	38.4428	0.00410	3.28	51.023	32.50	0.67
CornerB	M004	2769.85	20-Existing	127.500000	34.800	37.191860	37.1919	37.9779	0.01428	5.90	40.197	27.42	1.24
CornerB	TR001	206.04	20-Existing	22.900000	43.810	44.641840	44.8983	45.4876	0.04206	4.77	6.937	13.47	1.77
CornerB	TR001	156.04	20-Existing	22.900000	41.630	42.577240	42.8569	43.4257	0.04024	4.20	6.354	15.22	1.68
CornerB	TR001	106.04	20-Existing	22.900000	39.170	39.736690	40.0617	40.8448	0.06808	4.92	5.439	12.21	2.14
CornerB	TR001	56.04	20-Existing	22.900000	37.270	38.002490	38.1691	38.6146	0.02947	3.65	7.248	13.09	1.45
CornerB	TR001	36.04	20-Existing	22.900000	35.500	38.204770	37.2475	38.2077	0.00006	0.38	116.321	80.57	0.08
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20-Existing	22.900000	35.180	36.977240	36.9772	37.7479	0.01077	3.89	5.888	10.94	1.00
CornerB	M003	2689.92	20-Existing	140.100000	33.550	35.416110	35.8785	36.9226	0.02861	6.71	36.069	42.44	1.66
CornerB	M003	2645.73	20-Existing	140.100000	32.870	36.189660	34.5455	36.2814	0.00077	1.73	129.692	58.89	0.31
CornerB	M003	2602.09	20-Existing	140.100000	32.200	36.190840		36.2497	0.00037	1.32	166.866	66.92	0.22
CornerB	M003	2557.73	20-Existing	140.100000	31.340	36.151920		36.2319	0.00034	1.46	142.978	47.90	0.22
CornerB	M003	2537.73	20-Existing	140.100000	30.770	36.087330	34.1149	36.2179	0.00057	2.06	137.239	63.67	0.29
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20-Existing	140.100000	30.350	32.954470	33.5376	35.3307	0.01663	6.83	20.514	15.54	1.36
CornerB	M003	2507.21	20-Existing	140.100000	30.750	32.194660	32.9313	34.7272	0.05602	7.87	22.698	21.17	2.24
CornerB	M003	2459.31	20-Existing	140.100000	30.130	32.563480	31.9278	32.8845	0.00327	2.87	65.255	34.68	0.60
CornerB	M003	2411.41	20-Existing	140.100000	29.270	32.624700		32.7400	0.00109	2.00	115.917	56.31	0.36
CornerB	M003	2363.51	20-Existing	140.100000	28.770	32.624610		32.6948	0.00044	1.41	143.030	51.49	0.24
CornerB	M003	2315.61	20-Existing	140.100000	27.930	32.612610		32.6779	0.00025	1.23	151.744	52.84	0.18
CornerB	M003	2267.71	20-Existing	140.500000	26.300	32.608130		32.6666	0.00016	1.19	185.875	71.53	0.15
CornerB	M003	2263.01	20-Existing	140.500000	29.100	32.302220		32.5944	0.00395	2.59	71.593	69.92	0.67
CornerB	M003	2260.98	20-Existing	140.500000	25.800	29.711980		29.9454	0.00112	2.25	76.111	28.44	0.38
CornerB	M003	2240.88	20-Existing	140.500000	27.010	29.531890		29.8761	0.00319	2.71	60.902	37.73	0.59
CornerB	M003	2212.25	20-Existing	140.500000	26.870	29.456800		29.7843	0.00291	2.74	63.616	33.96	0.57
CornerB	M003	2183.63	20-Existing	140.500000	25.560	28.622650	28.6227	29.5902	0.00807	4.83	39.943	23.88	0.95
CornerB	M003	2163.63	20-Existing	140.500000	25.350	28.518200	27.8401	29.0957	0.00370	3.47	43.718	25.48	0.65
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20-Existing	140.500000	24.870	27.431570	27.7040	28.8176	0.01396	5.65	30.118	20.87	1.21
CornerB	M003	2131.66	20-Existing	140.500000	24.570	26.739670	27.2494	28.5135	0.02482	6.08	25.879	19.72	1.53
CornerB	M003	2119.46	20-Existing	140.500000	24.120	25.893220	26.5721	28.0961	0.03899	6.85	23.496	21.01	1.88
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20-Existing	140.500000	24.040	26.204360	26.6135	27.6755	0.01890	5.49	28.193	20.80	1.35
CornerB	M003	2080.62	20-Existing	140.500000	23.730	25.366640	25.8249	26.9124	0.02561	5.69	27.772	24.16	1.54
CornerB	M003	2068.44	20-Existing	140.500000	23.760	25.378650	25.6778	26.5308	0.01911	4.99	32.494	27.64	1.33
CornerB	M003	2022.25	20-Existing	140.500000	22.740	24.520140	24.8174	25.7028	0.01730	5.09	32.953	26.75	1.29
CornerB	M003	1991.14	20-Existing	140.500000	22.180	24.211820	24.3386	25.2067	0.01170	4.70	36.269	24.98	1.09
CornerB	M003	1985.82	20-Existing	140.500000	21.970	23.851180	24.1660	25.1079	0.01692	5.30	32.291	24.22	1.30
CornerB	M003	1975.95	20-Existing	140.500000	21.780	23.532410	23.9166	24.9052	0.02090	5.66	31.376	25.25	1.43
CornerB	M003	1929.72	20-Existing	140.500000	20.080	22.005370	22.5352	23.7871	0.02635	6.18	26.024	19.59	1.58
CornerB	M003	1883.49	20-Existing	140.500000	19.230	21.550710	21.7793	22.8182	0.01267	5.30	32.114	18.92	1.16
CornerB	TR002	21.04	20-Existing	8.700000	22.270	22.861170	23.3530	25.0579	0.15017	7.05	1.565	4.25	3.11
CornerB	TR002	18.08	20-Existing	8.700000	21.400	21.780500	22.1975	24.3446	0.38508	7.96	1.439	6.09	4.62
CornerB	M002	1826.39	20-Existing	142.000000	16.920	18.359060	19.1108	21.3040	0.12147	8.08	21.342	29.38	2.49
CornerB	M002	1790.92	20-Existing	142.000000	15.490	18.955900	18.3670	19.6368	0.00693	4.03	44.670	17.79	0.71
CornerB	M002	1773.95	20-Existing	142.000000	14.720	19.256760	17.3938	19.4438	0.00144	2.14	85.794	28.58	0.33
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20-Existing	142.000000	14.870	19.261190	17.1522	19.3895	0.00081	1.84	106.645	37.13	0.29
CornerB	M002	1733.13	20-Existing	142.000000	15.230	19.289350		19.3309	0.00024	0.96	183.895	72.98	0.15
CornerB	M002	1717.41	20-Existing	142.000000	15.120	19.290810		19.3253	0.00020	0.90	205.917	82.21	0.14
CornerB	M002	1691.96	20-Existing	142.000000	14.620	19.289210		19.3194	0.00017	0.85	231.087	100.89	0.13
CornerB	M002	1654.15	20-Existing	142.000000	13.870	19.294530		19.3112	0.00008	0.62	301.466	129.61	0.09
CornerB	M002	1613.91	20-Existing	142.000000	13.080	19.295440		19.3078	0.00004	0.52	351.571	148.78	0.07
CornerB	M002	1567.16	20-Existing	142.000000	12.150	19.301820		19.3043	0.00001	0.22	719.989	208.20	0.03
CornerB	M002	1551.89	20-Existing	142.000000	11.850	19.302790		19.3038	0.00000	0.14	1099.775	271.54	0.02
CornerB	M002	1539.91	20-Existing	141.500000	11.620	19.303090		19.3036	0.00000	0.10	1498.118	304.80	0.01
CornerB	M002	1526.59	20-Existing	141.500000	11.360	19.303080		19.3036	0.00000	0.10	1525.527	310.04	0.01
CornerB	M002	1517.99	20-Existing	141.500000	11.180	19.302850		19.3036	0.00000	0.12	1289.301	266.14	0.02
CornerB	M002	1505.64	20-Existing	141.500000	10.940	19.302260		19.3035	0.00000	0.16	960.579	195.72	0.02
CornerB	M002	1490.63	20-Existing	141.500000	10.640	19.300600		19.3033	0.00001	0.23	663.080	137.60	0.03
CornerB	M002	1463.65	20-Existing	141.500000	10.110	19.291420		19.3022	0.00002	0.48	362.362	85.06	0.06
CornerB	M002	1415.93	20-Existing	141.500000	9.170	19.290380		19.3011	0.00002	0.47	342.566	73.37	0.06
CornerB	M002	1386.11	20-Existing	141.500000	8.580	19.285350		19.2999	0.00003	0.55	311.881	76.83	0.07
CornerB	M002	1363.91	20-Existing	141.500000	8.140	19.275260		19.2982	0.00005	0.70	251.565	56.52	0.08
CornerB	M002	1356.61	20-Existing	141.500000	8.000	19.273110		19.2974	0.00014	0.89	259.533	71.77	0.09
CornerB	M002	1354.11	20-Existing	141.500000	15.350	19.053720		19.2766	0.00193	2.64	87.832	55.71	0.44
CornerB	M002	1352.01	20-Existing	141.500000	8.000	10.900330	10.9003	11.8179	0.02449	2.64	34.780	17.51	0.89
CornerB	M002	1347.51	20-Existing	141.500000	7.720	10.067300	10.4578	11.5559	0.03539	5.41	26.391	18.12	1.40
CornerB	M002	1336.58	20-Existing	141.500000	7.690	9.433307	9.9428	11.1003	0.04570	5.75	25.375	21.35	1.58
CornerB	M002	1326.83	20-Existing	141.500000	7.680	10.398160	9.6663	10.7156	0.00451	2.63	60.928	29.98	0.55
CornerB	M002	1317.22	20-Existing	141.500000	7.660	10.245860		10.6540	0.00672	2.93	53.293	30.48	0.65
CornerB	M002	1315.18	20-Existing	141.500000	7.280	9.832330	9.8323	10.5966	0.01719	4.16	39.563	27.14	1.00
CornerB	M002	1313.58	20-Existing	141.500000	6.480	9.005680	9.4323	10.4875	0.03897	5.64	28.312	23.24	1.47
CornerB	M002	1312.39	20-Existing	141.500000	6.230	8.559950	9.1255	10.4005	0.05073	6.18	25.110	21.83	1.66
CornerB	M002	1311.16	20-Existing	141.500000	5.920	8.153368	8.8002	10.2999	0.06985	6.56	22.534	21.28	1.90
CornerB	M002	1309.11	20-Existing	141.500000	5.910	7.757636	8.4633	10.1258	0.07813	6.87	21.337	20.42	2.01
CornerB	M002	1305.35	20-Existing	141.500000	5.370	7.138779	7.8852	9.7822	0.08566	7.43	21.345	22.83	2.13
CornerB	M002	1300.06	20-Existing	141.500000	5.060	6.669623	7.4081	9.2841	0.10413	7.21	20.266	22.26	2.28
CornerB	M002	1296.49	20-Existing	141.500000	4.910	6.779421	7.4212	8.8589	0.05506	6.51	23.274	19.29	1.75
CornerB	M002	1289.64	20-Existing	141.500000	4.710	6.796725	7.2631	8.4098	0.03802	5.79	26.714	20.09	1.48
CornerB	M002	1284.12	20-Existing	141.500000	4.410	6.869708	7.1464	8.1530	0.02292	5.22	30.581	19.43	1.19
CornerB	M002	1279.52	20-Existing	141.500000	4.230	6.454043	6.8893	8.0039	0.02977	5.65	27.459	18.97	1.34
CornerB	M002	1258.94	20-Existing	141.500000	3.530	5.173588	5.7824	7.1075	0.06264	6.41	25.108	26.44	1.84
CornerB	M002	1246.98	20-Existing	141.500000	3.370	4.728867	5.2475	6.4152	0.04329	5.81	25.503	24.53	1.69

HEC-RAS Plan: Plan 20 Profile: 20-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	20-Existing	141.500000	3.100	4.559288	4.9147	5.7444	0.03650	5.01	32.022	37.00	1.54
CornerB	M002	1215.66	20-Existing	141.500000	2.700	4.043635	4.3751	5.0969	0.02772	4.60	33.512	43.02	1.36
CornerB	M002	1206.83	20-Existing	141.500000	2.540	4.610518	4.2931	4.9046	0.00537	2.62	70.775	63.53	0.64
CornerB	M002	1194.69	20-Existing	141.500000	2.390	4.583452		4.8393	0.00452	2.51	76.831	63.65	0.59
CornerB	M002	1185.06	20-Existing	141.500000	2.260	4.571692		4.7864	0.00329	2.30	84.794	65.12	0.51
CornerB	M002	1142.41	20-Existing	141.500000	1.700	4.487678		4.6577	0.00255	2.11	96.239	71.61	0.46
CornerB	M002	1137.55	20-Existing	141.500000	1.600	4.127180	4.0500	4.5909	0.00892	3.17	55.758	60.74	0.80
CornerB	M002	1110.53	20-Existing	141.500000	1.390	4.054322		4.3970	0.00398	2.76	69.037	63.39	0.58
CornerB	M002	1090.67	20-Existing	141.500000	1.100	4.188503		4.2813	0.00117	1.62	135.328	86.36	0.32
CornerB	M002	1070.69	20-Existing	141.500000	0.800	4.203440	2.7650	4.2540	0.00052	1.24	179.287	88.72	0.22
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20-Existing	141.500000	0.760	4.194298	2.6860	4.2397	0.00047	1.19	180.447	86.06	0.21
CornerB	M002	1047.01	20-Existing	141.500000	0.750	4.180139		4.2300	0.00044	1.30	176.019	77.93	0.23
CornerB	M002	1004.03	20-Existing	141.500000	0.770	4.155220		4.2092	0.00042	1.28	196.783	125.90	0.23
CornerB	M002	959.21	20-Existing	141.500000	0.700	4.158487		4.1867	0.00032	1.11	286.088	274.68	0.20
CornerB	M002	915.75	20-Existing	140.700000	0.680	4.154642		4.1699	0.00023	0.91	359.005	294.25	0.17
CornerB	M002	869.66	20-Existing	140.700000	0.690	4.150516		4.1607	0.00013	0.70	402.656	220.95	0.12
CornerB	M002	828.33	20-Existing	135.900000	0.770	4.146510		4.1559	0.00013	0.68	391.365	217.98	0.13
CornerB	M002	784.55	20-Existing	135.900000	0.820	4.144530		4.1513	0.00009	0.57	410.792	229.66	0.10
CornerB	M002	739.85	20-Existing	135.900000	0.820	4.139794		4.1474	0.00009	0.54	419.489	266.01	0.10
CornerB	M002	696.36	20-Existing	135.900000	0.640	4.129482		4.1419	0.00013	0.70	363.737	266.03	0.13
CornerB	M001	659.37	20-Existing	142.900000	0.750	4.124515		4.1379	0.00014	0.68	345.641	228.95	0.13
CornerB	M001	643.93	20-Existing	142.900000	0.740	4.113416	2.7438	4.1345	0.00020	0.85	290.596	213.29	0.16
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20-Existing	142.900000	0.830	3.791115	2.6339	3.8442	0.00055	1.30	193.369	173.86	0.25
CornerB	M001	608.52	20-Existing	142.900000	0.760	3.782841		3.8304	0.00065	1.35	187.102	159.56	0.27
CornerB	M001	570.12	20-Existing	142.900000	0.610	3.782453		3.8059	0.00034	1.05	254.143	185.29	0.20
CornerB	M001	535.83	20-Existing	142.900000	0.560	3.770665	1.7736	3.7967	0.00019	0.85	264.051	218.34	0.15
CornerB	M001	520.22	20-Existing	142.900000	0.550	3.774247	1.8620	3.7915	0.00014	0.74	311.059	289.99	0.13
CornerB	M001	472.07	20-Existing	142.900000	0.580	3.734974	2.2470	3.7783	0.00037	1.15	217.700	194.89	0.21
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20-Existing	142.900000	0.440	3.330042	2.0102	3.4678	0.00095	1.78	133.866	195.76	0.33
CornerB	M001	425.41	20-Existing	142.900000	0.480	3.346279		3.4193	0.00069	1.46	210.495	276.00	0.28
CornerB	M001	401.99	20-Existing	142.900000	0.740	3.361472		3.3945	0.00040	1.07	296.921	333.16	0.21
CornerB	M001	381.26	20-Existing	142.900000	0.790	3.289658	2.5485	3.3746	0.00100	1.62	208.551	343.65	0.33
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20-Existing	142.900000	0.790	3.020806	2.4913	3.2637	0.00268	2.48	124.683	313.42	0.54
CornerB	M001	352.89	20-Existing	142.900000	0.680	3.026125		3.1756	0.00136	1.82	121.500	236.25	0.39
CornerB	M001	324.13	20-Existing	142.900000	0.670	3.024390		3.1274	0.00105	1.61	142.760	165.44	0.34
CornerB	M001	292.92	20-Existing	142.900000	0.650	3.016086		3.0893	0.00084	1.41	186.455	275.52	0.30
CornerB	M001	274.62	20-Existing	142.900000	0.960	2.997030	2.5971	3.0658	0.00181	1.82	200.055	321.58	0.43
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20-Existing	142.900000	1.010	2.966156	2.5571	3.0136	0.00168	1.74	222.355	348.12	0.41
CornerB	M001	245.99	20-Existing	142.900000	0.640	2.940850		2.9874	0.00102	1.46	252.688	395.94	0.33
CornerB	M001	210.89	20-Existing	142.900000	0.680	2.916183		2.9508	0.00086	1.26	258.158	354.32	0.29
CornerB	M001	174.77	20-Existing	142.900000	0.690	2.894050		2.9196	0.00078	1.08	281.034	413.12	0.27
CornerB	M001	155.66	20-Existing	142.900000	0.640	2.884452	2.4889	2.9021	0.00094	1.07	314.798	516.30	0.29
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20-Existing	142.900000	0.550	2.877517	2.4211	2.8923	0.00070	0.93	331.598	466.86	0.25
CornerB	M001	129.05	20-Existing	142.900000	0.400	2.856130		2.8746	0.00050	0.96	355.859	477.34	0.22
CornerB	M001	80.73	20-Existing	142.900000	0.200	2.826375		2.8517	0.00043	1.01	319.858	385.21	0.22
CornerB	M001	23.81	20-Existing	142.900000	0.320	2.799893	1.9522	2.8275	0.00045	0.96	308.449	431.13	0.22
BellsB	TR001	178.13	20-Existing	12.500000	92.910	94.057880	94.3911	95.0993	0.04303	4.58	2.948	5.04	1.68
BellsB	TR001	159.86	20-Existing	12.500000	92.150	93.932270	93.4852	94.0725	0.00300	1.94	9.452	9.63	0.51
BellsB	TR001	139.54	20-Existing	12.500000	91.130	93.827120	92.5428	94.0188	0.00194	1.94	6.447	8.35	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20-Existing	12.500000	89.490	90.837340	91.0486	91.8193	0.02092	4.42	2.921	3.56	1.26
BellsB	TR001	88.17	20-Existing	12.500000	88.470	89.302030	89.8130	91.3638	0.12078	6.70	2.231	4.97	2.76
BellsB	TR001	84.12	20-Existing	12.500000	87.660	88.356420	88.8342	90.6597	0.21298	6.80	1.957	6.05	3.48
BellsB	TR001	79.14	20-Existing	12.500000	86.530	87.246750	87.7833	89.7216	0.15735	7.14	1.985	5.39	3.16
BellsB	TR001	72.74	20-Existing	12.500000	85.760	86.371990	86.8520	88.5134	0.18840	6.54	2.027	6.28	3.29
BellsB	TR001	67.75	20-Existing	12.500000	85.040	85.569920	85.9491	87.4009	0.19764	6.27	2.308	7.98	3.32
BellsB	TR001	64.04	20-Existing	12.500000	84.470	85.145610	85.5418	86.7097	0.13509	5.54	2.256	5.71	2.80
BellsB	TR001	60.69	20-Existing	12.500000	84.140	85.075280	85.4347	86.2674	0.07516	4.95	2.773	6.37	2.17
BellsB	TR001	56.76	20-Existing	12.500000	83.970	84.869670	85.2092	85.9507	0.06808	4.62	2.774	6.41	2.06
BellsB	TR001	50.93	20-Existing	12.500000	83.680	84.671020	84.9376	85.5057	0.05828	4.15	3.291	8.24	1.90
BellsB	TR001	43.86	20-Existing	12.500000	83.340	84.201640	84.4485	85.0580	0.06826	4.17	3.268	9.78	2.02
BellsB	TR001	37.01	20-Existing	12.500000	82.980	83.852370	84.0873	84.6388	0.04958	4.12	3.582	8.90	1.79
BellsB	TR001	12.14	20-Existing	12.500000	82.150	82.985480	83.1360	83.5216	0.03589	3.44	4.281	9.90	1.51
BellsB	M002	5166.11	20-Existing	10.400000	190.790	191.777500	191.7156	191.9359	0.01112	2.37	8.157	17.09	0.81
BellsB	M002	5149.23	20-Existing	10.400000	190.570	191.475800	191.4758	191.7143	0.01491	2.50	6.261	13.65	0.92
BellsB	M002	5117.45	20-Existing	10.400000	189.910	191.284200	190.6770	191.3094	0.00143	1.10	18.255	22.66	0.31
BellsB	M002	5090.85	20-Existing	10.400000	189.620	190.889900	190.8899	191.1936	0.01346	2.95	5.909	10.23	0.90
BellsB	M002	5067.47	20-Existing	10.400000	189.180	189.660800	189.8972	190.4695	0.14177	5.26	3.079	8.97	2.59
BellsB	M002	5017.78	20-Existing	10.400000	188.120	189.143800	189.1438	189.3977	0.01630	2.92	6.189	11.50	0.98
BellsB	M002	4967.57	20-Existing	10.400000	186.550	187.625400	187.7873	188.1998	0.03595	3.97	3.847	6.90	1.38
BellsB	M002	4917.46	20-Existing	10.400000	185.690	186.679000	186.3936	186.7675	0.00511	1.68	9.849	16.93	0.56
BellsB	M002	4873.31	20-Existing	10.400000	184.610	186.114500	186.0497	186.4278	0.01099	2.89	5.628	8.04	0.82
BellsB	M002	4853.42	20-Existing	10.400000	183.550	186.150700	184.9632	186.3127	0.00170	1.78	5.833	23.63	0.37
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20-Existing	10.400000	181.530	182.768800	182.9185	183.5742	0.02359	3.98	2.616	5.43	1.22
BellsB	M002	4785.76	20-Existing	10.400000	181.350	182.215500	182.4189	182.8765	0.04369	4.00	3.387	6.94	1.54
BellsB	M002	4756.65	20-Existing	10.400000	180.120	180.936700	181.1389	181.5236	0.04774	4.14	4.015	11.14	1.60
BellsB	M002	4727.54	20-Existing	10.400000	179.020	179.722300	179.8993	180.2344	0.03899	3.73	4.366	13.26	1.54
BellsB	M002	4707.54	20-Existing	10.400000	177.960	178.298400	178.4683	178.9309	0.13166	4.24	3.507	16.38	2.54
BellsB	M002	4702.24	20-Existing	10.400000	177.650	178.442600	178.4470	178.6342	0.01477	2.39	6.851	17.32	0.96
BellsB	M002	4682.48	20-Existing	10.400000	176.630	177.252600	177.4802	178.0135	0.06598	4.25	3.407	12.18	1.95

HEC-RAS Plan: Plan 20 Profile: 20-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	20-Existing	10.400000	175.500	176.488600	176.6735	177.1248	0.02357	3.78	3.525	5.92	1.27
BellsB	M002	4633.41	20-Existing	10.400000	174.510	175.154600	175.4330	176.1001	0.08787	5.33	3.302	11.26	2.29
BellsB	M002	4609.61	20-Existing	10.400000	173.500	174.538500	174.3661	174.6977	0.00703	2.19	7.272	10.93	0.71
BellsB	M002	4583.99	20-Existing	10.400000	172.770	174.045100	174.0451	174.4411	0.01228	2.94	4.386	6.32	0.92
BellsB	M002	4534.72	20-Existing	10.400000	170.000	170.813000	171.2981	172.8183	0.12631	7.51	2.207	5.40	2.82
BellsB	M002	4485.52	20-Existing	10.400000	168.200	168.790100	168.9088	169.1792	0.04682	3.66	4.936	16.84	1.64
BellsB	M002	4436.28	20-Existing	18.800000	165.850	166.919100	167.0521	167.5158	0.02810	4.42	7.373	13.45	1.42
BellsB	M002	4387.04	20-Existing	18.800000	164.060	165.162600	165.4216	165.9505	0.03497	5.02	6.400	11.27	1.60
BellsB	M002	4337.81	20-Existing	18.800000	162.600	163.684900	163.8768	164.2586	0.03144	4.59	8.389	21.02	1.48
BellsB	M002	4288.56	20-Existing	18.800000	161.300	162.378500	162.5171	162.8424	0.02877	4.25	8.774	19.78	1.39
BellsB	M002	4239.33	20-Existing	18.800000	159.650	160.577800	160.8058	161.3108	0.03912	4.57	6.528	14.09	1.63
BellsB	M002	4190.09	20-Existing	18.800000	158.430	159.489600	159.5951	159.9199	0.02016	3.64	8.738	17.04	1.20
BellsB	M002	4140.85	20-Existing	18.800000	157.300	157.889000	157.9917	158.2648	0.05614	4.20	8.103	22.38	1.83
BellsB	M002	4091.61	20-Existing	18.800000	155.300	156.034200	156.0846	156.3386	0.03060	3.69	9.128	19.63	1.42
BellsB	M002	4042.37	20-Existing	18.800000	153.740	154.554500	154.6353	154.9606	0.02481	3.45	7.987	14.69	1.29
BellsB	M002	3993.13	20-Existing	18.800000	152.650	153.410800	153.4702	153.7090	0.02931	3.41	9.491	22.37	1.33
BellsB	M002	3943.89	20-Existing	18.800000	151.360	152.170400	152.2199	152.4933	0.02536	3.45	9.108	18.49	1.30
BellsB	M002	3894.65	20-Existing	18.800000	149.520	150.970700	151.1348	151.5147	0.01886	3.84	8.300	17.23	1.15
BellsB	M002	3869.08	20-Existing	18.800000	148.870	149.966800	150.2471	150.8285	0.03737	4.70	5.658	10.01	1.60
BellsB	M002	3845.41	20-Existing	18.800000	148.370	149.552500	149.6043	150.0448	0.02258	3.77	7.784	15.55	1.19
BellsB	M002	3822.22	20-Existing	18.800000	147.710	149.000600	148.6110	149.0911	0.00401	1.81	16.212	18.12	0.52
BellsB	M002	3796.17	20-Existing	18.800000	146.890	148.469000	148.4690	148.8914	0.01197	3.30	8.393	11.02	0.90
BellsB	M002	3765.39	20-Existing	18.800000	146.400	148.004100	148.0541	148.4916	0.01406	3.41	7.344	9.20	0.94
BellsB	M002	3746.94	20-Existing	18.800000	145.760	147.624100	146.9535	147.6814	0.00157	1.41	20.622	19.04	0.34
BellsB	M002	3724.94	20-Existing	18.800000	145.320	147.402100		147.6121	0.00431	2.28	11.022	9.79	0.55
BellsB	M002	3697.71	20-Existing	18.800000	145.050	147.442600		147.5144	0.00122	1.42	17.396	11.25	0.30
BellsB	M002	3677.71	20-Existing	18.800000	143.440	147.234300	145.4464	147.4716	0.00149	2.16	8.712	15.06	0.36
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20-Existing	18.800000	142.470	144.396600	144.3966	145.3154	0.01121	4.25	4.427	9.08	1.00
BellsB	M002	3623.19	20-Existing	18.800000	142.100	143.521500	143.9463	144.8074	0.04473	5.53	4.336	6.66	1.70
BellsB	M002	3573.45	20-Existing	18.800000	140.890	142.188200	142.4175	142.9818	0.02696	4.27	5.504	8.84	1.36
BellsB	M002	3520.99	20-Existing	18.800000	139.300	140.703700	140.9213	141.5596	0.02654	4.47	5.266	7.45	1.34
BellsB	M002	3473.83	20-Existing	18.800000	137.980	139.586200	139.8027	140.2948	0.02318	4.45	6.017	8.44	1.24
BellsB	M002	3424.29	20-Existing	18.800000	136.490	138.474400	137.9476	138.6744	0.00307	2.15	11.124	10.14	0.51
BellsB	M002	3400.36	20-Existing	18.800000	135.960	138.578200		138.6067	0.00030	0.84	29.528	19.45	0.17
BellsB	M002	3386.31	20-Existing	18.800000	135.480	138.550800	137.2950	138.5987	0.00040	1.14	35.543	58.65	0.21
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20-Existing	18.800000	135.220	138.525900	137.0150	138.5290	0.00003	0.33	104.620	61.83	0.06
BellsB	M002	3329.08	20-Existing	23.800000	134.960	138.524200		138.5277	0.00004	0.41	112.799	56.19	0.07
BellsB	M002	3303.55	20-Existing	23.800000	133.820	138.491000	136.0717	138.5231	0.00021	1.04	49.968	49.29	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20-Existing	23.800000	131.390	134.042300	134.0423	135.1205	0.01127	4.60	5.173	17.98	1.00
BellsB	M002	3203.83	20-Existing	23.800000	131.130	132.308000	132.8358	134.3571	0.09930	6.89	4.695	11.19	2.48
BellsB	M002	3176.31	20-Existing	23.800000	130.020	131.352700	131.7116	132.4517	0.04189	5.38	6.666	11.84	1.69
BellsB	M002	3157.63	20-Existing	23.800000	129.890	131.209100	131.3311	131.6688	0.02685	4.11	10.175	18.93	1.29
BellsB	M002	3130.11	20-Existing	23.800000	128.680	130.190900	130.3766	130.9803	0.02133	4.32	7.086	7.78	1.25
BellsB	M002	3083.82	20-Existing	23.800000	127.940	129.515800	129.6918	130.0744	0.01580	3.91	10.944	23.95	1.10
BellsB	M002	3037.68	20-Existing	23.800000	127.110	127.939400	128.1888	128.7582	0.06066	5.34	8.064	21.70	2.00
BellsB	M002	2991.47	20-Existing	23.800000	126.280	127.980000	127.2327	128.0007	0.00067	0.95	40.771	43.03	0.24
BellsB	M002	2945.26	20-Existing	23.800000	125.320	127.640900	126.9959	127.9108	0.00474	2.33	11.217	17.76	0.52
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20-Existing	23.800000	125.120	126.796400	126.7964	127.6347	0.01131	4.06	5.867	4.69	1.00
BellsB	M002	2918.61	20-Existing	23.800000	124.990	126.736300	126.9195	127.2784	0.01229	3.77	10.409	25.91	0.99
BellsB	M002	2899.46	20-Existing	23.800000	125.250	126.711500	126.6901	126.8505	0.00323	1.96	23.973	80.22	0.53
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20-Existing	23.800000	124.440	125.818100	125.8181	126.4572	0.01116	3.54	6.719	19.69	1.00
BellsB	M002	2861.32	20-Existing	23.800000	123.640	124.576700	124.9371	125.8200	0.06278	5.81	5.923	14.15	2.14
BellsB	M002	2823.69	20-Existing	23.800000	123.230	124.252700	124.2702	124.5106	0.01930	3.15	13.442	28.87	1.07
BellsB	M002	2777.91	20-Existing	23.800000	122.770	123.892000	123.6716	123.9339	0.00344	1.46	32.351	58.96	0.46
BellsB	M002	2727.91	20-Existing	23.800000	122.210	123.418600	123.4186	123.7049	0.01445	3.01	13.290	23.45	0.94
BellsB	M002	2677.99	20-Existing	23.800000	121.130	122.626400	122.5438	122.9688	0.01156	2.98	10.709	12.93	0.86
BellsB	M002	2628.09	20-Existing	23.800000	120.690	122.149600	122.1496	122.4123	0.01133	3.09	15.743	30.21	0.87
BellsB	M002	2578.18	20-Existing	23.800000	119.940	121.361700	121.4596	121.7336	0.01617	3.49	13.296	28.10	1.01
BellsB	M002	2528.27	20-Existing	23.800000	119.100	120.720400	120.7204	121.1053	0.01317	3.40	11.366	14.90	0.93
BellsB	M002	2518.19	20-Existing	23.800000	118.620	120.003300	120.2814	120.8550	0.03504	4.82	7.679	12.93	1.46
BellsB	M002	2496.15	20-Existing	23.800000	118.530	120.241000	119.9389	120.4095	0.00593	2.42	16.765	19.33	0.63
BellsB	M002	2478.37	20-Existing	23.800000	117.970	119.995400		120.2925	0.00689	2.89	12.775	12.46	0.70
BellsB	M002	2450.61	20-Existing	23.800000	117.550	119.506100	119.5061	120.0177	0.01192	3.78	9.989	10.41	0.92
BellsB	M002	2428.46	20-Existing	23.800000	117.190	118.366100	118.7075	119.4528	0.05687	5.21	6.607	13.63	1.78
BellsB	M002	2408.52	20-Existing	23.800000	116.630	117.846700	118.0496	118.4889	0.04069	4.54	8.774	17.68	1.51
BellsB	M002	2378.55	20-Existing	23.800000	116.150	117.532100	117.5321	117.9146	0.01930	3.78	11.702	19.10	1.09
BellsB	M002	2367.92	20-Existing	23.800000	115.610	116.661600	116.9216	117.5309	0.05126	5.16	7.857	17.28	1.74
BellsB	M002	2352.81	20-Existing	23.800000	115.070	116.205000	116.4069	116.8675	0.03619	4.55	8.701	16.20	1.48
BellsB	M002	2328.64	20-Existing	23.800000	113.990	115.907900	115.7047	116.1875	0.00783	2.99	14.238	18.28	0.74
BellsB	M002	2307.61	20-Existing	23.800000	112.940	116.059100	115.0553	116.0849	0.00043	0.91	48.389	46.61	0.18
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20-Existing	23.800000	111.750	113.059400	113.5480	114.7039	0.07152	5.68	4.192	4.34	1.78
BellsB	M002	2275.77	20-Existing	26.000000	112.060	113.784000	113.7840	114.1485	0.01246	3.57	12.934	19.42	0.92
BellsB	M002	2232.72	20-Existing	26.000000	110.580	112.211800	112.5523	113.2609	0.02894	5.03	7.551	12.51	1.37
BellsB	M002	2200.99	20-Existing	26.000000	109.610	111.081700	111.4491	112.2132	0.04001	5.32	6.833	9.89	1.57
BellsB	M002	2173.21	20-Existing	26.000000	108.980	111.039300	111.0393	111.6346	0.01196	3.76	9.379	8.79	0.88
BellsB	M002	2133.27	20-Existing	26.000000	107.790	109.041400	109.5274	110.6169	0.06277	6.26	5.830	9.69	1.95
BellsB	M002	2117.78	20-Existing	26.000000	107.460	108.843200	109.1206	109.7783	0.02996	4.82	7.424	9.78	1.40
BellsB	M002	2103.01	20-Existing	26.000000	106.450	107.790100	108.1938	109.1061	0.05808	5.94	6.220	9.44	1.84
BellsB	M002	2085.77	20-Existing	26.000000	105.170	106.552000	107.0344	108.0343	0.05954	6.40	5.779	7.53	1.90
BellsB	M002	2068.57	20-Existing	26.000000	104.360	105.331000	105.7572	106.8843	0.08754	6.55	5.887	11.58	2.27
BellsB	M002	2059.88	20-Existing	26.000000	103.560	104.832500	105.3002	106.2849	0.05312	5.76	5.825	8.79	1.81

HEC-RAS Plan: Plan 20 Profile: 20-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	20-Existing	26.000000	103.130	104.374700	104.8336	105.9441	0.07149	6.43	5.664	8.32	2.06
BellsB	M002	2040.56	20-Existing	26.000000	102.390	104.509300	104.1250	104.9078	0.00630	3.16	11.528	7.92	0.71
BellsB	M002	2033.27	20-Existing	26.000000	102.080	104.209900	104.2099	104.8201	0.01360	3.86	9.046	7.93	0.94
BellsB	M002	2025.44	20-Existing	26.000000	101.580	102.870600	103.3943	104.5246	0.05510	6.01	5.239	7.03	1.84
BellsB	M002	2021.67	20-Existing	26.000000	101.430	103.180000	103.4869	104.1874	0.02793	4.72	6.778	7.87	1.31
BellsB	M002	2014.53	20-Existing	26.000000	99.960	101.358700	102.0076	103.6866	0.12622	6.77	3.888	5.78	2.50
BellsB	M002	2010.46	20-Existing	26.000000	99.080	100.103600	100.7987	103.0515	0.15651	8.36	3.947	6.59	2.97
BellsB	M002	2007.37	20-Existing	26.000000	98.520	99.814900	100.5334	102.5479	0.13446	7.40	3.701	5.24	2.61
BellsB	M002	1996.87	20-Existing	26.000000	97.970	98.980620	99.6000	101.1961	0.09732	7.22	4.549	6.39	2.43
BellsB	M002	1982.97	20-Existing	26.000000	97.730	98.849600	99.1911	99.9716	0.04582	5.44	6.449	7.76	1.71
BellsB	M002	1966.25	20-Existing	26.000000	96.750	98.682730	98.8130	99.3928	0.01810	4.18	8.451	8.74	1.07
BellsB	M002	1951.81	20-Existing	26.000000	96.560	98.649770	98.0747	98.7908	0.00351	2.09	17.859	13.92	0.49
BellsB	M002	1939.94	20-Existing	26.000000	96.290	98.209620	98.2096	98.6812	0.01195	3.36	10.382	11.57	0.88
BellsB	M002	1918.81	20-Existing	26.000000	95.860	97.779470	97.5898	98.1327	0.00874	3.17	12.097	10.86	0.78
BellsB	M002	1910.32	20-Existing	26.000000	95.580	97.427850	97.4279	98.0200	0.01286	3.63	8.918	8.49	0.94
BellsB	M002	1896.87	20-Existing	26.000000	94.380	95.781140	96.3082	97.5605	0.07076	6.47	5.250	7.66	1.99
BellsB	M002	1887.59	20-Existing	26.000000	93.870	96.016570	95.4412	96.1834	0.00350	2.18	17.291	13.01	0.51
BellsB	M002	1880.79	20-Existing	26.000000	93.330	96.028820		96.1542	0.00178	1.85	20.405	12.11	0.38
BellsB	M002	1870.34	20-Existing	26.000000	92.770	96.040440		96.1302	0.00095	1.62	24.523	10.26	0.29
BellsB	M002	1857.16	20-Existing	26.000000	91.880	96.060100		96.1092	0.00049	1.22	32.519	14.19	0.20
BellsB	M002	1848.27	20-Existing	26.000000	91.910	96.071430		96.1002	0.00023	0.92	43.078	16.38	0.15
BellsB	M002	1834.27	20-Existing	26.000000	90.880	96.073230		96.0959	0.00014	0.81	49.867	17.05	0.12
BellsB	M002	1821.35	20-Existing	26.000000	90.900	96.079520		96.0912	0.00008	0.66	66.928	20.27	0.09
BellsB	M002	1807.43	20-Existing	26.000000	89.830	96.080880		96.0894	0.00005	0.55	79.441	21.22	0.07
BellsB	M002	1800.77	20-Existing	26.000000	89.590	96.081370		96.0887	0.00005	0.54	84.396	22.30	0.07
BellsB	M002	1777.98	20-Existing	26.000000	88.770	96.083890		96.0868	0.00002	0.35	130.258	29.67	0.04
BellsB	M002	1753.27	20-Existing	26.000000	88.220	96.082880		96.0864	0.00002	0.38	124.092	29.22	0.04
BellsB	M002	1729.73	20-Existing	26.000000	88.170	96.083530		96.0856	0.00001	0.31	153.645	32.04	0.04
BellsB	M002	1705.77	20-Existing	26.000000	87.600	96.083980		96.0852	0.00000	0.24	240.389	60.52	0.03
BellsB	M002	1688.91	20-Existing	26.000000	86.720	96.082860	89.5121	96.0850	0.00001	0.27	198.185	60.92	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20-Existing	26.000000	83.970	86.744540	86.7445	88.1279	0.00854	5.21	4.989	18.51	1.00
BellsB	M002	1605.59	20-Existing	26.000000	81.490	82.205980	82.7973	86.6906	0.56377	9.89	2.970	10.69	5.60
BellsB	M001	1582.05	20-Existing	41.300010	80.410	81.446820	82.2692	85.0813	0.13483	8.64	5.255	8.41	3.16
BellsB	M001	1563.67	20-Existing	41.300010	79.960	81.169470	81.7415	83.0823	0.05355	6.55	7.777	10.25	2.09
BellsB	M001	1544.26	20-Existing	41.300010	79.040	80.737430	81.2020	82.2228	0.02796	5.87	9.238	9.08	1.58
BellsB	M001	1529.04	20-Existing	41.300010	78.240	79.353910	79.9979	81.5611	0.05745	6.80	6.835	8.12	2.17
BellsB	M001	1515.66	20-Existing	41.300010	77.300	79.006790	79.5563	80.7709	0.04458	6.04	7.582	7.32	1.69
BellsB	M001	1502.43	20-Existing	41.300010	69.640	70.199620	71.0378	78.4713	1.11853	12.74	3.246	9.84	7.00
BellsB	M001	1483.47	20-Existing	41.300010	68.890	69.847910	70.2796	71.4736	0.11313	6.25	8.140	16.22	2.48
BellsB	M001	1454.75	20-Existing	41.300010	68.030	69.426350	69.5055	69.9921	0.02092	4.18	14.198	15.68	1.19
BellsB	M001	1406.62	20-Existing	41.300010	66.490	68.416020	68.4772	69.1136	0.01571	4.29	13.047	11.08	1.06
BellsB	M001	1358.51	20-Existing	41.300010	65.170	66.553630	66.9574	67.8684	0.04355	5.46	9.265	11.56	1.66
BellsB	M001	1310.38	20-Existing	41.300010	63.800	65.246010	65.5141	66.1217	0.02689	4.55	11.953	15.91	1.33
BellsB	M001	1286.33	20-Existing	41.300010	62.810	64.116420	64.4714	65.2252	0.05242	5.48	10.541	18.05	1.78
BellsB	M001	1262.25	20-Existing	41.300010	62.090	64.324970	64.3358	64.6553	0.00899	3.39	22.039	29.16	0.79
BellsB	M001	1251.58	20-Existing	41.300010	61.460	62.972470	63.3557	64.3657	0.04905	6.61	9.700	11.42	1.82
BellsB	M001	1234.76	20-Existing	41.300010	60.570	62.014390	62.4508	63.4685	0.06039	6.65	10.282	18.57	1.95
BellsB	M001	1214.13	20-Existing	41.300010	59.550	61.453330	60.9141	61.6166	0.00361	2.09	27.214	22.24	0.52
BellsB	M001	1200.58	20-Existing	41.300010	58.900	60.925760	60.9258	61.4929	0.01174	3.79	15.220	14.20	0.92
BellsB	M001	1182.98	20-Existing	41.300010	58.590	60.597900	60.6865	61.2575	0.01434	4.17	14.255	14.04	1.02
BellsB	M001	1166.01	20-Existing	41.300010	58.390	59.687870	60.0453	60.8207	0.04251	5.33	10.863	16.88	1.64
BellsB	M001	1153.18	20-Existing	41.300010	57.700	59.386420	59.6531	60.2699	0.03328	5.60	13.205	19.53	1.48
BellsB	M001	1141.88	20-Existing	41.300010	56.720	57.948150	58.4556	59.6664	0.06775	6.24	8.148	12.65	2.03
BellsB	M001	1128.34	20-Existing	41.300010	56.530	57.659760	57.9505	58.6292	0.05251	5.36	10.327	14.56	1.76
BellsB	M001	1117.89	20-Existing	41.300010	55.580	56.769580	57.1654	58.0023	0.06353	6.35	9.776	12.97	1.97
BellsB	M001	1096.03	20-Existing	41.300010	54.610	56.182580	56.4257	57.0329	0.02680	4.60	12.149	15.49	1.33
BellsB	M001	1077.81	20-Existing	41.300010	54.240	55.266530	55.6438	56.3814	0.05122	5.30	10.478	16.57	1.77
BellsB	M001	1069.76	20-Existing	41.300010	53.700	54.405180	54.7688	55.6668	0.11821	6.04	9.329	18.89	2.51
BellsB	M001	1064.67	20-Existing	41.300010	53.190	53.926110	54.2569	55.0668	0.10967	5.80	9.859	20.24	2.41
BellsB	M001	1051.64	20-Existing	41.300010	51.970	52.970480	53.3192	54.1457	0.06286	5.52	10.305	17.73	1.93
BellsB	M001	1032.36	20-Existing	41.300010	50.970	52.372120	52.5948	53.1651	0.03458	5.08	12.704	16.06	1.49
BellsB	M001	1021.64	20-Existing	41.300010	50.030	51.349910	51.7567	52.6629	0.04955	5.48	9.639	15.44	1.75
BellsB	M001	1014.11	20-Existing	41.300010	49.460	50.952620	51.3850	52.3098	0.04462	5.56	9.282	13.14	1.67
BellsB	M001	1006.24	20-Existing	41.300010	49.150	50.332400	50.7980	51.8972	0.05848	5.98	8.691	13.63	1.91
BellsB	M001	996.42	20-Existing	41.300010	48.110	49.359520	49.8831	51.2258	0.08427	7.01	8.078	13.11	2.23
BellsB	M001	987.27	20-Existing	41.300010	47.170	48.597730	49.1765	50.5565	0.06299	6.74	7.836	10.62	2.01
BellsB	M001	973.52	20-Existing	41.300010	46.790	48.093520	48.6186	49.7166	0.04520	5.86	8.178	11.78	1.82
BellsB	M001	951.43	20-Existing	41.300010	45.770	47.209400	47.6885	48.7151	0.04691	5.97	9.082	14.80	1.83
BellsB	M001	931.51	20-Existing	41.300010	44.860	46.066720	46.5246	47.5601	0.07281	7.16	8.598	13.03	2.25
BellsB	M001	925.41	20-Existing	41.300010	44.690	46.287790	46.5399	47.1099	0.02424	5.08	12.659	17.98	1.34
BellsB	M001	901.68	20-Existing	41.300010	43.690	45.071320	45.4668	46.3642	0.03612	5.69	9.308	10.81	1.67
BellsB	M001	877.27	20-Existing	41.300010	43.180	45.393390	44.9472	45.6933	0.00461	2.82	19.400	13.55	0.64
BellsB	M001	857.41	20-Existing	41.300010	42.160	45.519970	44.3715	45.5944	0.00072	1.48	46.612	38.87	0.27
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20-Existing	42.499990	38.540	42.040500	40.8911	42.4784	0.00299	2.99	14.808	11.66	0.53
BellsB	M001	810.13	20-Existing	42.499990	37.800	42.217200	39.7693	42.2899	0.00049	1.28	44.516	27.62	0.20
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20-Existing	42.499990	34.330	36.421780	37.2351	39.0247	0.06421	7.18	6.095	7.83	1.99
BellsB	M001	782.27	20-Existing	42.499990	33.920	34.785970	35.4242	37.5410	0.17766	7.86	6.150	10.97	3.09
BellsB	M001	772.73	20-Existing	42.499990	30.940	32.498470	33.2522	35.8803	0.16330	10.37	6.616	9.64	2.93
BellsB	M001	766.74	20-Existing	42.499990	30.650	32.434570	33.1128	34.8713	0.09644	9.08	7.804	9.77	2.34
BellsB	M001	760.32	20-Existing	42.499990	30.340	31.882870	32.5681	34.3050	0.07913	7.98	7.706	9.91	2.24
BellsB	M001	755.97	20-Existing	42.499990	30.050	31.586030	32.2076	33.9246	0.08395	7.45	7.604	11.00	2.23
BellsB	M001	749.69	20-Existing	42.499990	29.300	30.902600	31.5689	33.3731	0.08509	8.01	7.576	9.97	2.28
BellsB	M001	742.14	20-Existing	42.499990	28.380	29.575140	30.3506	32.6192	0.10474	8.20	6.329	8.51	2.57
BellsB	M001	736.73	20-Existing	42.499990	28.240	29.026590	29.6944	31.8465	0.16734	8.02	6.103	10.56	3.07

HEC-RAS Plan: Plan 20 Profile: 20-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	20-Existing	42.499990	27.350	28.425890	28.8769	30.0255	0.06834	6.13	8.597	14.34	2.03
BellsB	M001	712.04	20-Existing	42.499990	26.270	27.761460	28.2682	29.3862	0.05348	6.10	8.581	10.56	1.82
BellsB	M001	702.42	20-Existing	42.499990	26.040	27.342270	27.7912	28.8057	0.05496	5.93	9.042	11.89	1.85
BellsB	M001	691.68	20-Existing	42.499990	25.030	26.566170	27.0718	28.1909	0.05695	5.92	8.106	10.36	1.85
BellsB	M001	686.22	20-Existing	42.499990	24.460	25.669470	26.2700	27.7679	0.08517	6.47	6.896	10.08	2.22
BellsB	M001	675.26	20-Existing	42.499990	24.080	25.243360	25.7335	26.8413	0.05946	5.95	8.179	10.45	1.92
BellsB	M001	668.37	20-Existing	42.499990	23.580	24.892080	25.3586	26.4376	0.05444	5.87	8.575	11.74	1.84
BellsB	M001	655.45	20-Existing	42.499990	23.020	24.191850	24.6415	25.7104	0.05733	5.77	8.590	12.72	1.86
BellsB	M001	636.88	20-Existing	42.499990	21.460	22.784610	23.3138	24.5648	0.06192	6.07	7.731	10.18	1.95
BellsB	M001	619.06	20-Existing	42.499990	20.820	22.341370	22.7207	23.5712	0.03645	5.36	9.980	11.41	1.54
BellsB	M001	608.48	20-Existing	42.499990	20.130	21.514720	22.0127	23.0882	0.04834	5.74	8.452	11.36	1.75
BellsB	M001	592.31	20-Existing	42.499990	18.950	20.355730	20.8968	22.1441	0.06977	6.80	8.398	11.07	2.07
BellsB	M001	582.72	20-Existing	42.499990	18.140	19.228040	19.8263	21.3502	0.09005	7.05	7.486	10.06	2.34
BellsB	M001	577.91	20-Existing	42.499990	17.660	19.205340	19.7709	20.9436	0.04368	6.34	8.601	8.78	1.73
BellsB	M001	561.51	20-Existing	42.499990	17.020	18.405630	18.8926	20.0319	0.06707	6.37	9.055	13.17	2.02
BellsB	M001	553.07	20-Existing	42.499990	16.350	17.478910	18.0812	19.4243	0.07195	6.31	7.449	10.38	2.09
BellsB	M001	541.54	20-Existing	42.499990	15.410	16.589460	17.1409	18.5233	0.08515	6.22	7.270	11.65	2.21
BellsB	M001	529.17	20-Existing	42.499990	14.850	15.971540	16.4309	17.4885	0.06405	5.50	8.029	8.98	1.76
BellsB	M001	514.53	20-Existing	42.499990	14.210	15.324050	15.6873	16.5163	0.05614	5.25	9.679	11.95	1.67
BellsB	M001	467.56	20-Existing	42.499990	11.610	12.792990	13.1514	14.0096	0.04946	4.95	9.089	10.22	1.57
BellsB	M001	420.59	20-Existing	42.499990	8.750	11.993620	10.9582	12.2400	0.00308	2.34	22.379	11.49	0.44
BellsB	M001	400.25	20-Existing	42.499990	8.570	11.820340	10.5128	12.1687	0.00288	2.62	16.252	6.39	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20-Existing	42.499990	0.830	4.090851	2.7767	4.2121	0.00088	1.78	42.959	48.30	0.32
BellsB	M001	47.74	20-Existing	42.499990	0.560	4.136351	2.6847	4.1490	0.00016	0.79	127.975	122.11	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20-Existing	42.499990	0.700	4.133519	2.6999	4.1432	0.00013	0.72	137.565	128.32	0.13
BellsB	M001	20.51	20-Existing	42.499990	0.570	4.129322		4.1409	0.00017	0.78	131.230	137.47	0.14

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2020-Max

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	AMEC-20-2020-Max	152.900000	36.310	38.952500	38.9525	40.0421	0.00949	5.09	39.368	20.94	1.03
CornerB	M004	2838.71	AMEC-20-2020-Max	152.900000	36.150	38.199730	38.5626	39.4638	0.01327	5.18	36.144	29.83	1.17
CornerB	M004	2796.61	AMEC-20-2020-Max	152.900000	35.350	38.210200	37.6259	38.7347	0.00422	3.53	59.040	38.32	0.69
CornerB	M004	2769.85	AMEC-20-2020-Max	152.900000	34.800	37.437920	37.4379	38.2703	0.01367	6.17	47.274	30.11	1.24
CornerB	TR001	206.04	AMEC-20-2020-Max	27.300000	43.810	44.709250	44.9966	45.6416	0.04203	5.06	7.857	13.81	1.80
CornerB	TR001	156.04	AMEC-20-2020-Max	27.300000	41.630	42.640490	42.9398	43.5823	0.04009	4.46	7.359	16.58	1.70
CornerB	TR001	106.04	AMEC-20-2020-Max	27.300000	39.170	39.795930	40.1607	41.0338	0.06672	5.22	6.174	12.59	2.16
CornerB	TR001	56.04	AMEC-20-2020-Max	27.300000	37.270	38.063750	38.2632	38.7740	0.03046	3.94	8.058	13.35	1.50
CornerB	TR001	36.04	AMEC-20-2020-Max	27.300000	35.500	38.250060	37.4383	38.2540	0.00008	0.44	119.985	81.22	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	AMEC-20-2020-Max	27.300000	35.180	37.164420	37.1644	38.0353	0.01044	4.13	6.603	78.50	1.00
CornerB	M003	2689.92	AMEC-20-2020-Max	168.100000	33.550	35.524510	35.8990	37.1852	0.03002	7.17	40.722	43.39	1.72
CornerB	M003	2645.73	AMEC-20-2020-Max	168.100000	32.870	36.341630	34.7294	36.4575	0.00092	1.95	138.970	63.17	0.34
CornerB	M003	2602.09	AMEC-20-2020-Max	168.100000	32.200	36.344300		36.4188	0.00044	1.50	177.171	67.37	0.24
CornerB	M003	2557.73	AMEC-20-2020-Max	168.100000	31.340	36.291640		36.3963	0.00044	1.67	149.688	48.16	0.25
CornerB	M003	2537.73	AMEC-20-2020-Max	168.100000	30.770	36.215030	34.5299	36.3791	0.00071	2.34	145.401	64.05	0.32
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	AMEC-20-2020-Max	168.100000	30.350	33.949430	33.9494	35.7201	0.00799	5.90	28.513	21.11	1.00
CornerB	M003	2507.21	AMEC-20-2020-Max	168.100000	30.750	32.361390	33.1657	35.1005	0.05181	8.22	26.261	21.58	2.20
CornerB	M003	2459.31	AMEC-20-2020-Max	168.100000	30.130	32.712130	32.1112	33.1120	0.00377	3.21	70.462	35.56	0.65
CornerB	M003	2411.41	AMEC-20-2020-Max	168.100000	29.270	32.797600		32.9392	0.00125	2.22	125.924	59.44	0.39
CornerB	M003	2363.51	AMEC-20-2020-Max	168.100000	28.770	32.795350		32.8860	0.00054	1.61	151.910	52.93	0.26
CornerB	M003	2315.61	AMEC-20-2020-Max	168.100000	27.930	32.780080		32.8653	0.00031	1.41	160.769	54.94	0.21
CornerB	M003	2267.71	AMEC-20-2020-Max	168.500000	26.300	32.775200		32.8507	0.00020	1.36	198.156	75.49	0.17
CornerB	M003	2263.01	AMEC-20-2020-Max	168.500000	29.100	32.451070		32.7740	0.00393	2.75	82.186	72.40	0.68
CornerB	M003	2260.98	AMEC-20-2020-Max	168.500000	25.800	29.991640		30.2691	0.00122	2.47	84.127	28.88	0.40
CornerB	M003	2240.88	AMEC-20-2020-Max	168.500000	27.010	29.866070		30.2126	0.00271	2.74	73.848	39.74	0.55
CornerB	M003	2212.25	AMEC-20-2020-Max	168.500000	26.870	29.792540		30.1358	0.00260	2.83	75.333	35.84	0.55
CornerB	M003	2183.63	AMEC-20-2020-Max	168.500000	25.560	28.929630	28.9296	29.9499	0.00754	5.02	47.703	26.68	0.94
CornerB	M003	2163.63	AMEC-20-2020-Max	168.500000	25.350	28.861180	28.1066	29.5159	0.00361	3.70	49.212	30.49	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	AMEC-20-2020-Max	168.500000	24.870	27.595670	27.9767	29.2737	0.01544	6.23	32.745	21.45	1.29
CornerB	M003	2131.66	AMEC-20-2020-Max	168.500000	24.570	26.896540	27.5382	28.9585	0.02567	6.58	29.026	20.40	1.58
CornerB	M003	2119.46	AMEC-20-2020-Max	168.500000	24.120	26.042290	26.8038	28.5349	0.03871	7.32	26.677	21.67	1.91
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	AMEC-20-2020-Max	168.500000	24.040	26.328860	26.8628	28.1257	0.02110	6.08	30.821	21.41	1.45
CornerB	M003	2080.62	AMEC-20-2020-Max	168.500000	23.730	25.495470	26.1423	27.3117	0.02694	6.19	30.926	24.81	1.60
CornerB	M003	2068.44	AMEC-20-2020-Max	168.500000	23.760	25.474950	25.9233	26.9032	0.02183	5.57	35.187	28.28	1.44
CornerB	M003	2022.25	AMEC-20-2020-Max	168.500000	22.740	24.710330	25.0468	26.0063	0.01650	5.36	38.175	28.17	1.29
CornerB	M003	1991.14	AMEC-20-2020-Max	168.500000	22.180	24.470600	24.6016	25.5276	0.01061	4.88	43.065	27.55	1.06
CornerB	M003	1985.82	AMEC-20-2020-Max	168.500000	21.970	24.062550	24.3580	25.4278	0.01595	5.56	37.536	25.41	1.28
CornerB	M003	1975.95	AMEC-20-2020-Max	168.500000	21.780	23.719990	24.1513	25.2294	0.02011	5.98	36.231	26.51	1.42
CornerB	M003	1929.72	AMEC-20-2020-Max	168.500000	20.080	22.206430	22.7866	24.1612	0.02478	6.50	30.028	20.24	1.56
CornerB	M003	1883.49	AMEC-20-2020-Max	168.500000	19.230	21.777020	22.0417	23.2114	0.01267	5.66	36.464	19.52	1.18
CornerB	TR002	21.04	AMEC-20-2020-Max	10.100000	22.270	22.904440	23.4372	25.3125	0.15017	7.43	1.753	4.44	3.15
CornerB	TR002	18.08	AMEC-20-2020-Max	10.100000	21.400	21.806720	22.2643	24.6011	0.37993	8.36	1.599	6.17	4.65
CornerB	M002	1826.39	AMEC-20-2020-Max	170.300000	16.920	18.464530	19.2779	21.6903	0.11998	8.55	24.467	29.89	2.52
CornerB	M002	1790.92	AMEC-20-2020-Max	170.300000	15.490	19.115760	18.6739	19.9865	0.00836	4.57	47.541	18.13	0.79
CornerB	M002	1773.95	AMEC-20-2020-Max	170.300000	14.720	19.511470	17.6263	19.7420	0.00166	2.39	93.219	29.72	0.36
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	AMEC-20-2020-Max	170.300000	14.870	19.525000	17.3687	19.6792	0.00091	2.03	116.533	37.83	0.31
CornerB	M002	1733.13	AMEC-20-2020-Max	170.300000	15.230	19.560290		19.6099	0.00026	1.06	204.386	78.27	0.17
CornerB	M002	1717.41	AMEC-20-2020-Max	170.300000	15.120	19.562550		19.6035	0.00022	0.99	228.906	86.92	0.15
CornerB	M002	1691.96	AMEC-20-2020-Max	170.300000	14.620	19.561490		19.5967	0.00018	0.93	259.393	106.85	0.14
CornerB	M002	1654.15	AMEC-20-2020-Max	170.300000	13.870	19.567830		19.5874	0.00009	0.68	338.123	137.25	0.10
CornerB	M002	1613.91	AMEC-20-2020-Max	170.300000	13.080	19.568820		19.5836	0.00004	0.57	392.961	152.75	0.08
CornerB	M002	1567.16	AMEC-20-2020-Max	170.300000	12.150	19.576350		19.5794	0.00001	0.25	777.557	210.55	0.03
CornerB	M002	1551.89	AMEC-20-2020-Max	170.300000	11.850	19.577550		19.5788	0.00000	0.16	1174.618	273.25	0.02
CornerB	M002	1539.91	AMEC-20-2020-Max	169.600000	11.620	19.577940		19.5786	0.00000	0.12	1582.117	306.44	0.01
CornerB	M002	1526.59	AMEC-20-2020-Max	169.600000	11.360	19.577920		19.5786	0.00000	0.12	1610.955	311.61	0.01
CornerB	M002	1517.99	AMEC-20-2020-Max	169.600000	11.180	19.577620		19.5785	0.00000	0.14	1362.660	267.85	0.02
CornerB	M002	1505.64	AMEC-20-2020-Max	169.600000	10.940	19.576850		19.5784	0.00000	0.18	1014.646	197.97	0.02
CornerB	M002	1490.63	AMEC-20-2020-Max	169.600000	10.640	19.574700		19.5782	0.00001	0.27	701.141	140.12	0.03
CornerB	M002	1463.65	AMEC-20-2020-Max	169.600000	10.110	19.562830		19.5768	0.00003	0.55	385.992	89.07	0.07
CornerB	M002	1415.93	AMEC-20-2020-Max	169.600000	9.170	19.561460		19.5754	0.00003	0.53	362.652	74.82	0.06
CornerB	M002	1386.11	AMEC-20-2020-Max	169.600000	8.580	19.555230		19.5740	0.00004	0.63	332.772	77.99	0.07
CornerB	M002	1363.91	AMEC-20-2020-Max	169.600000	8.140	19.542100		19.5718	0.00006	0.80	266.769	57.44	0.09
CornerB	M002	1356.61	AMEC-20-2020-Max	169.600000	8.000	19.541040		19.5709	0.00017	1.00	278.903	72.81	0.10
CornerB	M002	1354.11	AMEC-20-2020-Max	169.600000	15.350	19.334100		19.5512	0.00179	2.67	103.634	57.01	0.43
CornerB	M002	1352.01	AMEC-20-2020-Max	169.600000	8.000	11.140820	11.1408	12.1711	0.02559	3.12	38.992	17.51	0.93
CornerB	M002	1347.51	AMEC-20-2020-Max	169.600000	7.720	10.287430	10.6985	11.9122	0.03235	5.66	30.414	18.43	1.37
CornerB	M002	1336.58	AMEC-20-2020-Max	169.600000	7.690	9.593046	10.1702	11.4750	0.04469	6.13	28.857	22.24	1.59
CornerB	M002	1326.83	AMEC-20-2020-Max	169.600000	7.680	10.643930	9.8560	11.0090	0.00457	2.83	68.377	30.64	0.56
CornerB	M002	1317.22	AMEC-20-2020-Max	169.600000	7.660	10.497140		10.9485	0.00643	3.09	61.073	31.37	0.65
CornerB	M002	1315.18	AMEC-20-2020-Max	169.600000	7.280	10.038360	10.0384	10.8873	0.01661	4.40	45.258	28.16	1.01
CornerB	M002	1313.58	AMEC-20-2020-Max	169.600000	6.480	9.212061	9.6605	10.7798	0.03518	5.84	33.216	24.28	1.42
CornerB	M002	1312.39	AMEC-20-2020-Max	169.600000	6.230	8.760824	9.3453	10.6950	0.04523	6.38	29.591	22.79	1.60
CornerB	M002	1311.16	AMEC-20-2020-Max	169.600000	5.920	8.336718	9.0224	10.5972	0.06150	6.76	26.501	22.00	1.83
CornerB	M002	1309.11	AMEC-20-2020-Max	169.600000	5.910	7.937232	8.6942	10.4399	0.06893	7.09	25.069	21.14	1.94
CornerB	M002	1305.35	AMEC-20-2020-Max	169.600000	5.370	7.294927	8.1035	10.1196	0.07948	7.75	25.015	24.06	2.09
CornerB	M002	1300.06	AMEC-20-2020-Max	169.600000	5.060	6.807634	7.6161	9.6643	0.09660	7.56	23.384	22.86	2.24
CornerB	M002	1296.49	AMEC-20-2020-Max	169.600000	4.910	6.959598	7.6663	9.2446	0.05196	6.85	26.817	20.03	1.73
CornerB	M002	1289.64	AMEC-20-2020-Max	169.600000	4.710	6.957847	7.4925	8.8123	0.03865	6.23	29.984	20.50	1.51
CornerB	M002	1284.12	AMEC-20-2020-Max	169.600000	4.410	7.068317	7.4015	8.5361	0.02329	5.61	34.512	20.15	1.22
CornerB	M002	1279.52	AMEC-20-2020-Max	169.600000	4.230	6.659539	7.1438	8.3904	0.02912	6.00	31.452	19.89	1.35
CornerB	M002	1258.94	AMEC-20-2020-Max	169.600000	3.530	5.297997	5.9842	7.4938	0.06342	6.88	28.474	27.66	1.88
CornerB	M002	1246.98	AMEC-20-2020-Max	169.600000	3.370	4.862049	5.4490	6.7876	0.04320	6.22	28.822	25.31	1.72

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2020-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	AMEC-20-2020-Max	169.600000	3.100	4.628748	5.0758	6.0956	0.04184	5.59	34.615	37.65	1.67
CornerB	M002	1215.66	AMEC-20-2020-Max	169.600000	2.700	4.157172	4.5436	5.3571	0.02833	4.95	38.580	46.25	1.39
CornerB	M002	1206.83	AMEC-20-2020-Max	169.600000	2.540	4.797832	4.4383	5.1097	0.00509	2.73	83.081	67.10	0.63
CornerB	M002	1194.69	AMEC-20-2020-Max	169.600000	2.390	4.777412		5.0469	0.00427	2.61	89.294	64.81	0.59
CornerB	M002	1185.06	AMEC-20-2020-Max	169.600000	2.260	4.764652		4.9959	0.00323	2.42	97.483	66.41	0.52
CornerB	M002	1142.41	AMEC-20-2020-Max	169.600000	1.700	4.678050		4.8686	0.00260	2.26	110.884	82.81	0.47
CornerB	M002	1137.55	AMEC-20-2020-Max	169.600000	1.600	4.224124	4.2032	4.7896	0.01019	3.52	61.966	67.32	0.87
CornerB	M002	1110.53	AMEC-20-2020-Max	169.600000	1.390	4.100309	3.7646	4.5624	0.00527	3.22	72.008	65.83	0.67
CornerB	M002	1090.67	AMEC-20-2020-Max	169.600000	1.100	4.291512		4.4073	0.00141	1.82	144.251	87.69	0.35
CornerB	M002	1070.69	AMEC-20-2020-Max	169.600000	0.800	4.309458	2.9046	4.3744	0.00065	1.41	188.714	89.13	0.25
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	AMEC-20-2020-Max	169.600000	0.760	4.297759	2.8082	4.3564	0.00058	1.36	189.373	86.48	0.24
CornerB	M002	1047.01	AMEC-20-2020-Max	169.600000	0.750	4.278680		4.3440	0.00055	1.49	183.723	78.41	0.26
CornerB	M002	1004.03	AMEC-20-2020-Max	169.600000	0.770	4.249029		4.3179	0.00053	1.46	208.731	129.74	0.26
CornerB	M002	959.21	AMEC-20-2020-Max	169.600000	0.700	4.256233		4.2894	0.00038	1.23	313.164	279.35	0.22
CornerB	M002	915.75	AMEC-20-2020-Max	168.800000	0.680	4.251520		4.2697	0.00027	1.01	387.564	295.32	0.18
CornerB	M002	869.66	AMEC-20-2020-Max	168.800000	0.690	4.245844		4.2588	0.00016	0.80	423.806	222.80	0.14
CornerB	M002	828.33	AMEC-20-2020-Max	163.800000	0.770	4.240790		4.2529	0.00016	0.78	412.027	220.20	0.14
CornerB	M002	784.55	AMEC-20-2020-Max	163.800000	0.820	4.238375		4.2472	0.00011	0.65	432.430	231.50	0.12
CornerB	M002	739.85	AMEC-20-2020-Max	163.800000	0.820	4.232562		4.2423	0.00011	0.62	444.367	270.20	0.11
CornerB	M002	696.36	AMEC-20-2020-Max	163.800000	0.640	4.220241		4.2356	0.00016	0.79	387.915	266.77	0.14
CornerB	M001	659.37	AMEC-20-2020-Max	173.300000	0.750	4.213292		4.2305	0.00017	0.78	366.116	232.34	0.14
CornerB	M001	643.93	AMEC-20-2020-Max	173.300000	0.740	4.199481	2.9676	4.2264	0.00026	0.97	309.104	216.81	0.18
CornerB	M001	635		Bridge									
CornerB	M001	629.03	AMEC-20-2020-Max	173.300000	0.830	3.899014	2.9666	3.9620	0.00063	1.44	212.391	178.60	0.27
CornerB	M001	608.52	AMEC-20-2020-Max	173.300000	0.760	3.887643		3.9473	0.00079	1.53	204.053	162.76	0.30
CornerB	M001	570.12	AMEC-20-2020-Max	173.300000	0.610	3.888637		3.9173	0.00040	1.17	273.864	186.16	0.22
CornerB	M001	535.83	AMEC-20-2020-Max	173.300000	0.560	3.873417	1.9301	3.9062	0.00023	0.97	282.588	220.06	0.17
CornerB	M001	520.22	AMEC-20-2020-Max	173.300000	0.550	3.877792	2.0206	3.8997	0.00018	0.84	330.705	291.54	0.15
CornerB	M001	472.07	AMEC-20-2020-Max	173.300000	0.580	3.830720	2.4591	3.8837	0.00045	1.29	236.678	201.16	0.23
CornerB	M001	460		Bridge									
CornerB	M001	445.11	AMEC-20-2020-Max	173.300000	0.440	3.406040	2.2229	3.5871	0.00124	2.06	149.491	213.79	0.38
CornerB	M001	425.41	AMEC-20-2020-Max	173.300000	0.480	3.433620		3.5195	0.00081	1.62	235.251	290.90	0.31
CornerB	M001	401.99	AMEC-20-2020-Max	173.300000	0.740	3.451792		3.4902	0.00047	1.19	327.245	338.33	0.23
CornerB	M001	381.26	AMEC-20-2020-Max	173.300000	0.790	3.377714	3.0864	3.4685	0.00110	1.73	238.952	346.83	0.35
CornerB	M001	380		Bridge									
CornerB	M001	375.14	AMEC-20-2020-Max	173.300000	0.790	3.134918	3.1100	3.3614	0.00261	2.53	161.965	340.00	0.53
CornerB	M001	352.89	AMEC-20-2020-Max	173.300000	0.680	3.109969	2.2510	3.2937	0.00165	2.05	143.476	289.12	0.43
CornerB	M001	324.13	AMEC-20-2020-Max	173.300000	0.670	3.100385		3.2366	0.00135	1.86	156.962	205.85	0.39
CornerB	M001	292.92	AMEC-20-2020-Max	173.300000	0.650	3.097218		3.1863	0.00101	1.58	210.035	308.20	0.33
CornerB	M001	274.62	AMEC-20-2020-Max	173.300000	0.960	3.081105	2.7093	3.1564	0.00197	1.96	228.192	347.66	0.45
CornerB	M001	270		Bridge									
CornerB	M001	266.99	AMEC-20-2020-Max	173.300000	1.010	3.049964	2.6428	3.1013	0.00180	1.86	252.309	366.95	0.43
CornerB	M001	245.99	AMEC-20-2020-Max	173.300000	0.640	3.020938		3.0729	0.00115	1.58	285.657	424.86	0.35
CornerB	M001	210.89	AMEC-20-2020-Max	173.300000	0.680	2.989275		3.0316	0.00103	1.41	285.246	386.67	0.32
CornerB	M001	174.77	AMEC-20-2020-Max	173.300000	0.690	2.964555		2.9947	0.00089	1.19	311.018	437.39	0.29
CornerB	M001	155.66	AMEC-20-2020-Max	173.300000	0.640	2.954643	2.5297	2.9747	0.00103	1.16	352.790	558.92	0.31
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	AMEC-20-2020-Max	173.300000	0.550	2.946729	2.4768	2.9643	0.00079	1.02	365.793	512.47	0.27
CornerB	M001	129.05	AMEC-20-2020-Max	173.300000	0.400	2.922165		2.9439	0.00058	1.06	387.824	505.17	0.24
CornerB	M001	80.73	AMEC-20-2020-Max	173.300000	0.200	2.884151		2.9161	0.00054	1.15	342.414	395.62	0.24
CornerB	M001	23.81	AMEC-20-2020-Max	173.300000	0.320	2.849880	2.0637	2.8854	0.00057	1.10	330.537	452.60	0.25
BellsB	TR001	178.13	AMEC-20-2020-Max	14.800000	92.910	94.133790	94.5107	95.3045	0.04302	4.88	3.342	5.35	1.70
BellsB	TR001	159.86	AMEC-20-2020-Max	14.800000	92.150	94.403260	93.5799	94.4914	0.00140	1.59	14.446	11.58	0.36
BellsB	TR001	139.54	AMEC-20-2020-Max	14.800000	91.130	94.248160	92.7114	94.4490	0.00168	1.99	7.458	9.84	0.36
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	AMEC-20-2020-Max	14.800000	89.490	90.993420	91.2165	92.0765	0.01976	4.65	3.295	3.67	1.25
BellsB	TR001	88.17	AMEC-20-2020-Max	14.800000	88.470	89.366590	89.9323	91.6055	0.11606	7.03	2.559	5.18	2.76
BellsB	TR001	84.12	AMEC-20-2020-Max	14.800000	87.660	88.402430	88.9273	90.9198	0.20217	7.14	2.242	6.35	3.45
BellsB	TR001	79.14	AMEC-20-2020-Max	14.800000	86.530	87.301350	87.8847	90.0100	0.15292	7.52	2.291	5.81	3.17
BellsB	TR001	72.74	AMEC-20-2020-Max	14.800000	85.760	86.412520	86.9318	88.8301	0.18860	6.98	2.289	6.64	3.35
BellsB	TR001	67.75	AMEC-20-2020-Max	14.800000	85.040	85.601880	86.0321	87.6799	0.20489	6.72	2.564	8.03	3.42
BellsB	TR001	64.04	AMEC-20-2020-Max	14.800000	84.470	85.189960	85.6400	86.9593	0.13602	5.89	2.516	5.97	2.85
BellsB	TR001	60.69	AMEC-20-2020-Max	14.800000	84.140	85.122290	85.5180	86.4910	0.08127	5.33	3.081	6.74	2.27
BellsB	TR001	56.76	AMEC-20-2020-Max	14.800000	83.970	84.920840	85.2923	86.1553	0.06878	4.95	3.114	6.87	2.11
BellsB	TR001	50.93	AMEC-20-2020-Max	14.800000	83.680	84.709890	85.0194	85.6958	0.06249	4.52	3.620	8.67	1.99
BellsB	TR001	43.86	AMEC-20-2020-Max	14.800000	83.340	84.240140	84.5249	85.2224	0.07057	4.49	3.648	9.92	2.08
BellsB	TR001	37.01	AMEC-20-2020-Max	14.800000	82.980	83.901710	84.1699	84.7860	0.05026	4.40	4.025	9.07	1.83
BellsB	TR001	12.14	AMEC-20-2020-Max	14.800000	82.150	83.033530	83.2129	83.6440	0.03667	3.68	4.760	10.06	1.55
BellsB	M002	5166.11	AMEC-20-2020-Max	12.200000	190.790	191.847100	191.7793	192.0071	0.01050	2.43	9.365	17.63	0.80
BellsB	M002	5149.23	AMEC-20-2020-Max	12.200000	190.570	191.537400	191.5374	191.7921	0.01472	2.62	7.119	14.22	0.93
BellsB	M002	5117.45	AMEC-20-2020-Max	12.200000	189.910	191.382400	190.7284	191.4094	0.00141	1.14	20.514	23.33	0.31
BellsB	M002	5090.85	AMEC-20-2020-Max	12.200000	189.620	190.973600	190.9736	191.2937	0.01330	3.08	6.797	11.00	0.91
BellsB	M002	5067.47	AMEC-20-2020-Max	12.200000	189.180	189.703100	189.9628	190.5804	0.13652	5.50	3.461	9.12	2.58
BellsB	M002	5017.78	AMEC-20-2020-Max	12.200000	188.120	189.206500	189.2065	189.4829	0.01659	3.08	6.923	11.91	1.00
BellsB	M002	4967.57	AMEC-20-2020-Max	12.200000	186.550	187.708700	187.8654	188.3045	0.03365	4.09	4.434	7.19	1.35
BellsB	M002	4917.46	AMEC-20-2020-Max	12.200000	185.690	186.783300	186.4536	186.8720	0.00455	1.70	11.707	18.69	0.54
BellsB	M002	4873.31	AMEC-20-2020-Max	12.200000	184.610	186.483900		186.6585	0.00488	2.28	9.309	13.05	0.57
BellsB	M002	4853.42	AMEC-20-2020-Max	12.200000	183.550	186.427400	185.1040	186.6071	0.00164	1.88	6.498	26.11	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	AMEC-20-2020-Max	12.200000	181.530	182.788300	183.0574	183.8580	0.03060	4.58	2.663	5.50	1.39
BellsB	M002	4785.76	AMEC-20-2020-Max	12.200000	181.350	182.295000	182.4995	182.9736	0.03958	4.09	3.956	7.36	1.49
BellsB	M002	4756.65	AMEC-20-2020-Max	12.200000	180.120	180.970400	181.1894	181.6461	0.05267	4.50	4.399	11.68	1.70
BellsB	M002	4727.54	AMEC-20-2020-Max	12.200000	179.020	179.781900	179.9451	180.3152	0.03691	3.87	5.256	16.21	1.52
BellsB	M002	4707.54	AMEC-20-2020-Max	12.200000	177.960	178.319300	178.5108	179.0346	0.13692	4.53	3.851	16.50	2.62
BellsB	M002	4702.24	AMEC-20-2020-Max	12.200000	177.650	178.470100	178.4891	178.6973	0.01676	2.62	7.330	17.44	1.03
BellsB	M002	4682.48	AMEC-20-2020-Max	12.200000	176.630	177.307800	177.5284	178.0546	0.05817	4.29	4.114	13.48	1.86

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2020-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	AMEC-20-2020-Max	12.200000	175.500	176.583500	176.7735	177.2529	0.02217	3.91	4.114	6.50	1.25
BellsB	M002	4633.41	AMEC-20-2020-Max	12.200000	174.510	175.186700	175.4797	176.2434	0.09348	5.71	3.674	11.88	2.38
BellsB	M002	4609.61	AMEC-20-2020-Max	12.200000	173.500	174.657300	174.4314	174.8147	0.00609	2.20	8.609	11.58	0.68
BellsB	M002	4583.99	AMEC-20-2020-Max	12.200000	172.770	174.134400	174.1344	174.5715	0.01237	3.12	4.968	6.72	0.93
BellsB	M002	4534.72	AMEC-20-2020-Max	12.200000	170.000	170.876600	171.3831	172.9513	0.12061	7.76	2.563	5.82	2.80
BellsB	M002	4485.52	AMEC-20-2020-Max	12.200000	168.200	168.819200	168.9577	169.2562	0.04986	3.92	5.433	17.38	1.71
BellsB	M002	4436.28	AMEC-20-2020-Max	21.900000	165.850	166.994000	167.2829	167.6100	0.02712	4.56	8.404	14.08	1.42
BellsB	M002	4387.04	AMEC-20-2020-Max	21.900000	164.060	165.236400	165.5075	166.0737	0.03478	5.25	7.261	12.03	1.61
BellsB	M002	4337.81	AMEC-20-2020-Max	21.900000	162.600	163.732600	163.9351	164.3463	0.03280	4.84	9.429	22.41	1.53
BellsB	M002	4288.56	AMEC-20-2020-Max	21.900000	161.300	162.431400	162.5665	162.9074	0.02840	4.37	9.828	20.00	1.40
BellsB	M002	4239.33	AMEC-20-2020-Max	21.900000	159.650	160.638700	160.8810	161.4067	0.03822	4.75	7.403	14.65	1.63
BellsB	M002	4190.09	AMEC-20-2020-Max	21.900000	158.430	159.548100	159.6694	160.0130	0.02064	3.83	9.754	17.71	1.23
BellsB	M002	4140.85	AMEC-20-2020-Max	21.900000	157.300	157.927500	158.0380	158.3352	0.05572	4.38	8.968	22.60	1.85
BellsB	M002	4091.61	AMEC-20-2020-Max	21.900000	155.300	156.084800	156.1411	156.4157	0.03061	3.87	10.133	20.11	1.43
BellsB	M002	4042.37	AMEC-20-2020-Max	21.900000	153.740	154.618600	154.7068	155.0558	0.02419	3.60	8.937	14.97	1.29
BellsB	M002	3993.13	AMEC-20-2020-Max	21.900000	152.650	153.446800	153.5262	153.7865	0.03149	3.66	10.305	22.88	1.39
BellsB	M002	3943.89	AMEC-20-2020-Max	21.900000	151.360	152.238600	152.2853	152.5734	0.02375	3.54	10.395	19.27	1.27
BellsB	M002	3894.65	AMEC-20-2020-Max	21.900000	149.520	151.028800	151.2027	151.6091	0.01958	4.05	9.316	17.72	1.18
BellsB	M002	3869.08	AMEC-20-2020-Max	21.900000	148.870	150.058700	150.3389	150.9360	0.03419	4.81	6.616	10.82	1.55
BellsB	M002	3845.41	AMEC-20-2020-Max	21.900000	148.370	149.605100	149.7923	150.1615	0.02447	4.06	8.654	17.52	1.25
BellsB	M002	3822.22	AMEC-20-2020-Max	21.900000	147.710	149.120900	148.6768	149.2151	0.00372	1.86	18.418	18.55	0.51
BellsB	M002	3796.17	AMEC-20-2020-Max	21.900000	146.890	148.580000	148.5800	149.0230	0.01166	3.43	9.670	12.01	0.90
BellsB	M002	3765.39	AMEC-20-2020-Max	21.900000	146.400	148.331100	148.1547	148.6573	0.00753	2.89	10.569	10.52	0.72
BellsB	M002	3746.94	AMEC-20-2020-Max	21.900000	145.760	148.528100		148.5480	0.00034	0.86	39.646	22.79	0.17
BellsB	M002	3724.94	AMEC-20-2020-Max	21.900000	145.320	148.464800		148.5322	0.00083	1.37	23.156	13.04	0.26
BellsB	M002	3697.71	AMEC-20-2020-Max	21.900000	145.050	148.475000		148.5075	0.00036	1.00	30.588	14.31	0.18
BellsB	M002	3677.71	AMEC-20-2020-Max	21.900000	143.440	148.287600	145.6457	148.4810	0.00087	1.95	11.240	18.10	0.29
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	AMEC-20-2020-Max	21.900000	142.470	144.588500	144.5885	145.6114	0.01094	4.48	4.888	9.45	1.00
BellsB	M002	3623.19	AMEC-20-2020-Max	21.900000	142.100	143.578100	144.0581	145.0674	0.04912	6.00	4.722	7.00	1.80
BellsB	M002	3573.45	AMEC-20-2020-Max	21.900000	140.890	142.264500	142.6994	143.1265	0.02712	4.50	6.200	9.40	1.38
BellsB	M002	3520.99	AMEC-20-2020-Max	21.900000	139.300	140.796000	140.9470	141.7112	0.02611	4.67	5.976	7.94	1.35
BellsB	M002	3473.83	AMEC-20-2020-Max	21.900000	137.980	139.668800	139.8433	140.4370	0.02373	4.69	6.735	8.94	1.26
BellsB	M002	3424.29	AMEC-20-2020-Max	21.900000	136.490	138.525600	138.0665	138.7757	0.00372	2.41	11.653	10.50	0.56
BellsB	M002	3400.36	AMEC-20-2020-Max	21.900000	135.960	138.652800		138.6918	0.00040	0.98	31.405	28.51	0.20
BellsB	M002	3386.31	AMEC-20-2020-Max	21.900000	135.480	138.630300	137.4910	138.6832	0.00045	1.22	40.507	66.18	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	AMEC-20-2020-Max	21.900000	135.220	138.646500	137.2093	138.6502	0.00004	0.37	112.336	66.20	0.06
BellsB	M002	3329.08	AMEC-20-2020-Max	27.500000	134.960	138.644500		138.6487	0.00005	0.44	119.619	57.14	0.07
BellsB	M002	3303.55	AMEC-20-2020-Max	27.500000	133.820	138.608200	136.2865	138.6436	0.00024	1.11	54.141	50.16	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	AMEC-20-2020-Max	27.500000	131.390	134.259000	134.2590	135.4475	0.01093	4.83	5.694	19.03	1.00
BellsB	M002	3203.83	AMEC-20-2020-Max	27.500000	131.130	132.350700	132.9409	134.6463	0.10583	7.37	5.187	11.85	2.58
BellsB	M002	3176.31	AMEC-20-2020-Max	27.500000	130.020	131.411100	131.8045	132.6236	0.04394	5.72	7.377	12.48	1.74
BellsB	M002	3157.63	AMEC-20-2020-Max	27.500000	129.890	131.242500	131.3915	131.7734	0.03010	4.45	10.809	19.02	1.38
BellsB	M002	3130.11	AMEC-20-2020-Max	27.500000	128.680	130.352600	130.5021	131.1241	0.01799	4.31	8.388	8.32	1.17
BellsB	M002	3083.82	AMEC-20-2020-Max	27.500000	127.940	129.527100	129.7520	130.2361	0.02002	4.42	11.217	24.03	1.24
BellsB	M002	3037.68	AMEC-20-2020-Max	27.500000	127.110	128.003700	128.2448	128.7872	0.05409	5.33	9.536	23.84	1.92
BellsB	M002	2991.47	AMEC-20-2020-Max	27.500000	126.280	128.111100	127.2749	128.1320	0.00061	0.96	46.512	44.58	0.23
BellsB	M002	2945.26	AMEC-20-2020-Max	27.500000	125.320	127.721700	127.1671	128.0393	0.00539	2.54	13.144	29.09	0.55
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	AMEC-20-2020-Max	27.500000	125.120	126.966600	126.9666	127.8890	0.01094	4.26	6.463	4.99	1.00
BellsB	M002	2918.61	AMEC-20-2020-Max	27.500000	124.990	126.606000	126.9675	127.5924	0.02427	4.99	7.935	13.05	1.36
BellsB	M002	2899.46	AMEC-20-2020-Max	27.500000	125.250	126.467000	126.7337	127.1000	0.01452	3.66	10.025	33.49	1.08
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	AMEC-20-2020-Max	27.500000	124.440	125.950100	125.9501	126.1072	0.00320	1.97	18.405	21.10	0.54
BellsB	M002	2861.32	AMEC-20-2020-Max	27.500000	123.640	124.694000	125.0094	125.6888	0.04374	5.34	7.703	16.19	1.83
BellsB	M002	2823.69	AMEC-20-2020-Max	27.500000	123.230	124.300600	124.3317	124.5810	0.02000	3.32	14.859	30.34	1.10
BellsB	M002	2777.91	AMEC-20-2020-Max	27.500000	122.770	123.959400	123.7027	124.0019	0.00324	1.48	36.359	59.92	0.45
BellsB	M002	2727.91	AMEC-20-2020-Max	27.500000	122.210	123.507300	123.5073	123.7883	0.01325	3.04	15.699	34.01	0.92
BellsB	M002	2677.99	AMEC-20-2020-Max	27.500000	121.130	122.684600	122.6438	123.0861	0.01285	3.24	11.474	13.33	0.92
BellsB	M002	2628.09	AMEC-20-2020-Max	27.500000	120.690	122.218600	122.2186	122.4877	0.01133	3.20	17.908	32.61	0.87
BellsB	M002	2578.18	AMEC-20-2020-Max	27.500000	119.940	121.526800	121.5124	121.7681	0.00993	2.98	18.166	30.90	0.81
BellsB	M002	2528.27	AMEC-20-2020-Max	27.500000	119.100	120.810700	120.8107	121.2182	0.01313	3.54	12.743	15.58	0.94
BellsB	M002	2518.19	AMEC-20-2020-Max	27.500000	118.620	120.081600	120.3718	120.9692	0.03436	5.00	8.722	13.72	1.46
BellsB	M002	2496.15	AMEC-20-2020-Max	27.500000	118.530	120.363100	120.0081	120.5592	0.00637	2.65	19.921	28.63	0.66
BellsB	M002	2478.37	AMEC-20-2020-Max	27.500000	117.970	120.127500		120.4395	0.00674	3.00	14.472	13.22	0.70
BellsB	M002	2450.61	AMEC-20-2020-Max	27.500000	117.550	119.632900	119.6329	120.1686	0.01169	3.92	11.355	11.14	0.92
BellsB	M002	2428.46	AMEC-20-2020-Max	27.500000	117.190	118.422500	118.7949	119.6004	0.05806	5.49	7.399	14.48	1.82
BellsB	M002	2408.52	AMEC-20-2020-Max	27.500000	116.630	117.895900	118.1224	118.6045	0.04285	4.83	9.666	18.59	1.56
BellsB	M002	2378.55	AMEC-20-2020-Max	27.500000	116.150	117.671000	117.6710	118.0180	0.01609	3.71	14.661	23.50	1.01
BellsB	M002	2367.92	AMEC-20-2020-Max	27.500000	115.610	116.705000	116.9925	117.6546	0.05396	5.46	8.615	17.61	1.80
BellsB	M002	2352.81	AMEC-20-2020-Max	27.500000	115.070	116.263900	116.4755	116.9651	0.03630	4.74	9.664	16.49	1.50
BellsB	M002	2328.64	AMEC-20-2020-Max	27.500000	113.990	115.884600	115.7476	116.2768	0.01111	3.53	13.819	17.71	0.88
BellsB	M002	2307.61	AMEC-20-2020-Max	27.500000	112.940	116.105600	115.2121	116.1368	0.00051	1.01	50.572	47.26	0.20
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	AMEC-20-2020-Max	27.500000	111.750	113.250900	113.7021	114.8106	0.05412	5.54	4.980	5.08	1.60
BellsB	M002	2275.77	AMEC-20-2020-Max	29.599990	112.060	113.873200	113.8732	114.2420	0.01212	3.65	14.767	21.68	0.92
BellsB	M002	2232.72	AMEC-20-2020-Max	29.599990	110.580	112.292300	112.6336	113.3707	0.02857	5.19	8.575	12.93	1.37
BellsB	M002	2200.99	AMEC-20-2020-Max	29.599990	109.610	111.160900	111.5458	112.3402	0.03907	5.50	7.631	10.25	1.57
BellsB	M002	2173.21	AMEC-20-2020-Max	29.599990	108.980	111.165200	111.1652	111.7914	0.01178	3.90	10.523	9.37	0.89
BellsB	M002	2133.27	AMEC-20-2020-Max	29.599990	107.790	109.107900	109.6128	110.7783	0.06263	6.51	6.493	10.25	1.97
BellsB	M002	2117.78	AMEC-20-2020-Max	29.599990	107.460	108.919200	109.1882	109.9296	0.03034	5.05	8.184	10.25	1.42
BellsB	M002	2103.01	AMEC-20-2020-Max	29.599990	106.450	107.857900	108.2822	109.2523	0.05768	6.17	6.869	9.72	1.85
BellsB	M002	2085.77	AMEC-20-2020-Max	29.599990	105.170	106.637400	107.1403	108.1970	0.05788	6.62	6.435	7.85	1.90
BellsB	M002	2068.57	AMEC-20-2020-Max	29.599990	104.360	105.377900	105.8347	107.0544	0.08963	6.87	6.436	11.82	2.31
BellsB	M002	2059.88	AMEC-20-2020-Max	29.599990	103.560	104.909700	105.3949	106.4489	0.05199	5.98	6.527	9.39	1.81

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2020-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	AMEC-20-2020-Max	29.599990	103.130	104.443200	104.9317	106.1124	0.07063	6.68	6.239	8.44	2.07
BellsB	M002	2040.56	AMEC-20-2020-Max	29.599990	102.390	104.623700	104.2616	105.0725	0.00666	3.37	12.450	8.19	0.74
BellsB	M002	2033.27	AMEC-20-2020-Max	29.599990	102.080	104.326200	104.3262	104.9832	0.01361	4.03	9.987	8.25	0.95
BellsB	M002	2025.44	AMEC-20-2020-Max	29.599990	101.580	102.962800	103.5068	104.6889	0.05241	6.19	5.906	7.43	1.82
BellsB	M002	2021.67	AMEC-20-2020-Max	29.599990	101.430	103.271500	103.6055	104.3554	0.02793	4.93	7.518	8.30	1.32
BellsB	M002	2014.53	AMEC-20-2020-Max	29.599990	99.960	101.441000	102.1214	103.8640	0.11457	6.92	4.377	6.12	2.43
BellsB	M002	2010.46	AMEC-20-2020-Max	29.599990	99.080	100.171600	100.9119	103.2643	0.14929	8.62	4.399	6.73	2.94
BellsB	M002	2007.37	AMEC-20-2020-Max	29.599990	98.520	99.894550	100.6664	102.7890	0.12647	7.64	4.124	5.39	2.57
BellsB	M002	1996.87	AMEC-20-2020-Max	29.599990	97.970	99.044110	99.7263	101.4817	0.09854	7.60	4.960	6.54	2.47
BellsB	M002	1982.97	AMEC-20-2020-Max	29.599990	97.730	98.901960	99.2981	100.1958	0.04973	5.85	6.859	7.90	1.80
BellsB	M002	1966.25	AMEC-20-2020-Max	29.599990	96.750	98.750300	98.9247	99.5553	0.01964	4.48	9.047	8.90	1.12
BellsB	M002	1951.81	AMEC-20-2020-Max	29.599990	96.560	98.764120	98.1570	98.9178	0.00356	2.19	19.464	14.15	0.50
BellsB	M002	1939.94	AMEC-20-2020-Max	29.599990	96.290	98.306590	98.3066	98.8064	0.01187	3.49	11.521	11.92	0.89
BellsB	M002	1918.81	AMEC-20-2020-Max	29.599990	95.860	97.932210	97.6880	98.2856	0.00795	3.20	13.793	11.34	0.76
BellsB	M002	1910.32	AMEC-20-2020-Max	29.599990	95.580	97.553860	97.5539	98.1761	0.01235	3.75	10.016	8.94	0.93
BellsB	M002	1896.87	AMEC-20-2020-Max	29.599990	94.380	95.859660	96.4162	97.7236	0.06878	6.68	5.862	7.92	1.99
BellsB	M002	1887.59	AMEC-20-2020-Max	29.599990	93.870	96.087200	95.5362	96.2820	0.00392	2.37	18.215	13.15	0.54
BellsB	M002	1880.79	AMEC-20-2020-Max	29.599990	93.330	96.099280		96.2493	0.00206	2.03	21.263	12.25	0.41
BellsB	M002	1870.34	AMEC-20-2020-Max	29.599990	92.770	96.111420		96.2217	0.00114	1.80	25.256	10.39	0.32
BellsB	M002	1857.16	AMEC-20-2020-Max	29.599990	91.880	96.136450		96.1960	0.00058	1.35	33.609	14.35	0.22
BellsB	M002	1848.27	AMEC-20-2020-Max	29.599990	91.910	96.149990		96.1853	0.00028	1.02	44.374	16.61	0.16
BellsB	M002	1834.27	AMEC-20-2020-Max	29.599990	90.880	96.152150		96.1801	0.00017	0.90	51.222	17.26	0.13
BellsB	M002	1821.35	AMEC-20-2020-Max	29.599990	90.900	96.159850		96.1743	0.00010	0.74	68.566	20.50	0.10
BellsB	M002	1807.43	AMEC-20-2020-Max	29.599990	89.830	96.161510		96.1721	0.00006	0.61	81.160	21.42	0.08
BellsB	M002	1800.77	AMEC-20-2020-Max	29.599990	89.590	96.162120		96.1713	0.00006	0.61	86.206	22.52	0.08
BellsB	M002	1777.98	AMEC-20-2020-Max	29.599990	88.770	96.165260		96.1689	0.00002	0.39	132.682	29.91	0.05
BellsB	M002	1753.27	AMEC-20-2020-Max	29.599990	88.220	96.164000		96.1683	0.00002	0.43	126.473	29.50	0.05
BellsB	M002	1729.73	AMEC-20-2020-Max	29.599990	88.170	96.164810		96.1674	0.00001	0.35	156.258	32.28	0.04
BellsB	M002	1705.77	AMEC-20-2020-Max	29.599990	87.600	96.165360		96.1669	0.00001	0.27	245.404	62.73	0.03
BellsB	M002	1688.91	AMEC-20-2020-Max	29.599990	86.720	96.163960	89.7640	96.1667	0.00001	0.30	203.231	63.50	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	AMEC-20-2020-Max	29.599990	83.970	86.996540	86.9965	88.5032	0.00828	5.44	5.443	19.04	1.00
BellsB	M002	1605.59	AMEC-20-2020-Max	29.599990	81.490	82.235460	82.8633	87.0234	0.53701	10.24	3.293	11.17	5.55
BellsB	M001	1582.05	AMEC-20-2020-Max	47.300010	80.410	81.513050	82.4063	85.4563	0.13183	9.03	5.821	8.67	3.17
BellsB	M001	1563.67	AMEC-20-2020-Max	47.300010	79.960	81.229280	81.8604	83.4030	0.05674	7.01	8.397	10.49	2.18
BellsB	M001	1544.26	AMEC-20-2020-Max	47.300010	79.040	80.832780	81.3435	82.4820	0.02876	6.22	10.118	9.40	1.62
BellsB	M001	1529.04	AMEC-20-2020-Max	47.300010	78.240	79.447050	80.1433	81.8207	0.05518	7.07	7.601	8.34	2.16
BellsB	M001	1515.66	AMEC-20-2020-Max	47.300010	77.300	79.110550	79.7107	81.0467	0.04450	6.35	8.354	7.56	1.71
BellsB	M001	1502.43	AMEC-20-2020-Max	47.300010	69.640	70.241870	71.1649	78.7646	1.01822	12.94	3.671	10.30	6.79
BellsB	M001	1483.47	AMEC-20-2020-Max	47.300010	68.890	69.888650	70.3722	71.7117	0.11792	6.65	8.803	16.32	2.56
BellsB	M001	1454.75	AMEC-20-2020-Max	47.300010	68.030	69.495290	69.6018	70.1325	0.02209	4.45	15.286	15.90	1.23
BellsB	M001	1406.62	AMEC-20-2020-Max	47.300010	66.490	68.584000	68.6084	69.2875	0.01418	4.35	14.955	11.63	1.02
BellsB	M001	1358.51	AMEC-20-2020-Max	47.300010	65.170	66.623890	67.0687	68.0876	0.04513	5.80	10.084	11.77	1.71
BellsB	M001	1310.38	AMEC-20-2020-Max	47.300010	63.800	65.323900	65.6240	66.2790	0.02739	4.79	13.223	16.70	1.36
BellsB	M001	1286.33	AMEC-20-2020-Max	47.300010	62.810	64.177930	64.5529	65.3701	0.05287	5.73	11.678	18.93	1.81
BellsB	M001	1262.25	AMEC-20-2020-Max	47.300010	62.090	64.369300	64.3993	64.7448	0.01010	3.65	23.334	29.26	0.84
BellsB	M001	1251.58	AMEC-20-2020-Max	47.300010	61.460	63.102590	63.7717	64.4595	0.04331	6.61	11.225	12.03	1.74
BellsB	M001	1234.76	AMEC-20-2020-Max	47.300010	60.570	62.075430	62.5588	63.6052	0.06125	6.92	11.445	19.54	1.98
BellsB	M001	1214.13	AMEC-20-2020-Max	47.300010	59.550	61.602170	61.0001	61.7734	0.00342	2.15	30.596	23.20	0.51
BellsB	M001	1200.58	AMEC-20-2020-Max	47.300010	58.900	61.051090	61.0511	61.6505	0.01154	3.94	17.045	14.90	0.92
BellsB	M001	1182.98	AMEC-20-2020-Max	47.300010	58.590	60.709010	60.8069	61.4165	0.01443	4.36	15.855	14.77	1.03
BellsB	M001	1166.01	AMEC-20-2020-Max	47.300010	58.390	59.757450	60.1176	60.9718	0.04279	5.57	12.065	17.59	1.66
BellsB	M001	1153.18	AMEC-20-2020-Max	47.300010	57.700	59.444570	59.7348	60.4033	0.03516	5.91	14.346	19.73	1.53
BellsB	M001	1141.88	AMEC-20-2020-Max	47.300010	56.720	58.033880	58.5577	59.7994	0.06326	6.38	9.255	13.19	1.99
BellsB	M001	1128.34	AMEC-20-2020-Max	47.300010	56.530	57.722460	58.0517	58.7941	0.05353	5.65	11.249	14.86	1.80
BellsB	M001	1117.89	AMEC-20-2020-Max	47.300010	55.580	56.848170	57.2680	58.1693	0.06266	6.62	10.813	13.41	1.98
BellsB	M001	1096.03	AMEC-20-2020-Max	47.300010	54.610	56.256410	56.5276	57.1876	0.02759	4.85	13.305	15.81	1.36
BellsB	M001	1077.81	AMEC-20-2020-Max	47.300010	54.240	55.336770	55.7387	56.5339	0.05052	5.53	11.674	17.44	1.78
BellsB	M001	1069.76	AMEC-20-2020-Max	47.300010	53.700	54.452750	54.8432	55.8240	0.11646	6.31	10.233	19.13	2.52
BellsB	M001	1064.67	AMEC-20-2020-Max	47.300010	53.190	53.968810	54.3288	55.2265	0.11063	6.10	10.727	20.41	2.45
BellsB	M001	1051.64	AMEC-20-2020-Max	47.300010	51.970	53.026030	53.4047	54.3021	0.06353	5.80	11.297	18.01	1.96
BellsB	M001	1032.36	AMEC-20-2020-Max	47.300010	50.970	52.448940	52.6843	53.3041	0.03475	5.31	13.953	16.45	1.51
BellsB	M001	1021.64	AMEC-20-2020-Max	47.300010	50.030	51.427470	51.8416	52.8071	0.04809	5.67	10.870	16.31	1.75
BellsB	M001	1014.11	AMEC-20-2020-Max	47.300010	49.460	51.042060	51.4961	52.4651	0.04311	5.75	10.497	14.01	1.66
BellsB	M001	1006.24	AMEC-20-2020-Max	47.300010	49.150	50.405650	50.8948	52.0618	0.05742	6.21	9.706	14.10	1.91
BellsB	M001	996.42	AMEC-20-2020-Max	47.300010	48.110	49.428230	49.9885	51.4018	0.08318	7.28	8.994	13.56	2.24
BellsB	M001	987.27	AMEC-20-2020-Max	47.300010	47.170	48.688150	49.2973	50.7487	0.06105	6.98	8.824	11.23	2.00
BellsB	M001	973.52	AMEC-20-2020-Max	47.300010	46.790	48.171450	48.7272	49.9272	0.04511	6.13	9.128	12.60	1.84
BellsB	M001	951.43	AMEC-20-2020-Max	47.300010	45.770	47.271590	47.7877	48.9196	0.04859	6.30	10.032	15.74	1.88
BellsB	M001	931.51	AMEC-20-2020-Max	47.300010	44.860	46.135330	46.6209	47.7352	0.07258	7.47	9.510	13.57	2.27
BellsB	M001	925.41	AMEC-20-2020-Max	47.300010	44.690	46.338010	46.6320	47.2703	0.02672	5.45	13.571	18.37	1.42
BellsB	M001	901.68	AMEC-20-2020-Max	47.300010	43.690	45.179380	45.5870	46.5170	0.03375	5.83	10.496	11.17	1.64
BellsB	M001	877.27	AMEC-20-2020-Max	47.300010	43.180	45.439340	45.0705	45.8093	0.00554	3.14	20.026	13.70	0.71
BellsB	M001	857.41	AMEC-20-2020-Max	47.300010	42.160	45.601870	45.0560	45.6876	0.00082	1.61	49.849	40.17	0.29
BellsB	M001	840		Culvert									
BellsB	M001	816.09	AMEC-20-2020-Max	48.400000	38.540	42.082450	41.0808	42.6359	0.00371	3.36	14.999	11.80	0.59
BellsB	M001	810.13	AMEC-20-2020-Max	48.400000	37.800	42.308940	39.9114	42.3953	0.00057	1.41	47.156	29.92	0.22
BellsB	M001	800		Bridge									
BellsB	M001	796.37	AMEC-20-2020-Max	48.400000	34.330	36.556020	37.4330	39.2800	0.05945	7.37	6.861	8.24	1.95
BellsB	M001	782.27	AMEC-20-2020-Max	48.400000	33.920	34.837530	35.5365	37.8329	0.17557	8.22	6.718	11.09	3.11
BellsB	M001	772.73	AMEC-20-2020-Max	48.400000	30.940	32.567510	33.3557	36.1716	0.16585	10.82	7.298	10.13	2.98
BellsB	M001	766.74	AMEC-20-2020-Max	48.400000	30.650	32.509230	33.2195	35.1345	0.09960	9.53	8.551	10.23	2.40
BellsB	M001	760.32	AMEC-20-2020-Max	48.400000	30.340	31.962470	32.6824	34.5569	0.07981	8.34	8.513	10.37	2.27
BellsB	M001	755.97	AMEC-20-2020-Max	48.400000	30.050	31.654120	32.3252	34.1709	0.08521	7.81	8.365	11.28	2.27
BellsB	M001	749.69	AMEC-20-2020-Max	48.400000	29.300	30.977940	31.6957	33.6135	0.08570	8.35	8.335	10.19	2.31
BellsB	M001	742.14	AMEC-20-2020-Max	48.400000	28.380	29.662600	30.4822	32.8711	0.10043	8.47	7.091	8.92	2.55
BellsB	M001	736.73	AMEC-20-2020-Max	48.400000	28.240	29.080850	29.8019	32.1412	0.16513	8.38	6.681	10.71	3.08

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2020-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	AMEC-20-2020-Max	48.400000	27.350	28.470210	28.9631	30.2574	0.07256	6.52	9.236	14.48	2.11
BellsB	M001	712.04	AMEC-20-2020-Max	48.400000	26.270	27.841900	28.3857	29.5939	0.05334	6.38	9.444	10.90	1.84
BellsB	M001	702.42	AMEC-20-2020-Max	48.400000	26.040	27.409580	27.8971	29.0132	0.05599	6.24	9.852	12.16	1.89
BellsB	M001	691.68	AMEC-20-2020-Max	48.400000	25.030	26.645320	27.1825	28.3962	0.05618	6.17	8.941	10.74	1.86
BellsB	M001	686.22	AMEC-20-2020-Max	48.400000	24.460	25.746230	26.3737	27.9802	0.08162	6.71	7.680	10.34	2.21
BellsB	M001	675.26	AMEC-20-2020-Max	48.400000	24.080	25.311700	25.8513	27.0705	0.06020	6.27	8.900	10.66	1.95
BellsB	M001	668.37	AMEC-20-2020-Max	48.400000	23.580	24.954170	25.4648	26.6576	0.05613	6.20	9.311	11.97	1.89
BellsB	M001	655.45	AMEC-20-2020-Max	48.400000	23.020	24.253080	24.7435	25.9063	0.05826	6.05	9.374	12.91	1.90
BellsB	M001	636.88	AMEC-20-2020-Max	48.400000	21.460	22.865270	23.4371	24.7670	0.06019	6.31	8.562	10.44	1.95
BellsB	M001	619.06	AMEC-20-2020-Max	48.400000	20.820	22.417090	22.8403	23.7718	0.03749	5.66	10.855	11.70	1.58
BellsB	M001	608.48	AMEC-20-2020-Max	48.400000	20.130	21.598770	22.1161	23.2884	0.04767	5.98	9.513	13.33	1.76
BellsB	M001	592.31	AMEC-20-2020-Max	48.400000	18.950	20.429090	21.0095	22.3531	0.06980	7.10	9.222	11.40	2.09
BellsB	M001	582.72	AMEC-20-2020-Max	48.400000	18.140	19.305580	19.9483	21.5695	0.08697	7.31	8.273	10.24	2.34
BellsB	M001	577.91	AMEC-20-2020-Max	48.400000	17.660	19.318850	19.9202	21.1622	0.04214	6.57	9.628	9.32	1.73
BellsB	M001	561.51	AMEC-20-2020-Max	48.400000	17.020	18.460090	18.9858	20.2706	0.07051	6.76	9.778	13.41	2.09
BellsB	M001	553.07	AMEC-20-2020-Max	48.400000	16.350	17.554230	18.1899	19.6565	0.07070	6.59	8.248	10.86	2.09
BellsB	M001	541.54	AMEC-20-2020-Max	48.400000	15.410	16.651970	17.2357	18.7677	0.08487	6.53	8.020	12.39	2.24
BellsB	M001	529.17	AMEC-20-2020-Max	48.400000	14.850	16.049320	16.5581	17.7266	0.06425	5.79	8.734	9.15	1.78
BellsB	M001	514.53	AMEC-20-2020-Max	48.400000	14.210	15.384800	15.7966	16.7271	0.05877	5.59	10.411	12.15	1.73
BellsB	M001	467.56	AMEC-20-2020-Max	48.400000	11.610	12.881770	13.2696	14.1969	0.04804	5.16	10.006	10.42	1.57
BellsB	M001	420.59	AMEC-20-2020-Max	48.400000	8.750	12.446560	11.1133	12.6608	0.00226	2.21	27.938	12.90	0.39
BellsB	M001	400.25	AMEC-20-2020-Max	48.400000	8.570	12.245310	10.6911	12.5987	0.00248	2.63	18.377	6.58	0.44
BellsB	M001	100		Culvert									
BellsB	M001	68.07	AMEC-20-2020-Max	48.400000	0.830	4.181650	2.9513	4.3096	0.00094	1.87	47.368	48.82	0.33
BellsB	M001	47.74	AMEC-20-2020-Max	48.400000	0.560	4.229356	3.2511	4.2427	0.00016	0.83	139.587	127.61	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	AMEC-20-2020-Max	48.400000	0.700	4.226692	2.9002	4.2367	0.00014	0.74	149.643	130.95	0.13
BellsB	M001	20.51	AMEC-20-2020-Max	48.400000	0.570	4.222837		4.2346	0.00017	0.80	144.234	140.65	0.14

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2050-Max

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	AMEC-20-2050-Max	154.600000	36.310	38.962110	38.9621	40.0669	0.00957	5.13	39.570	21.02	1.04
CornerB	M004	2838.71	AMEC-20-2050-Max	154.600000	36.150	38.209690	38.5799	39.4856	0.01332	5.21	36.442	30.08	1.17
CornerB	M004	2796.61	AMEC-20-2050-Max	154.600000	35.350	38.224200	37.6414	38.7529	0.00423	3.55	59.579	38.74	0.70
CornerB	M004	2769.85	AMEC-20-2050-Max	154.600000	34.800	37.453820	37.4538	38.2885	0.01362	6.19	47.754	30.28	1.24
CornerB	TR001	206.04	AMEC-20-2050-Max	27.600000	43.810	44.713650	45.0020	45.6519	0.04203	5.07	7.918	13.84	1.80
CornerB	TR001	156.04	AMEC-20-2050-Max	27.600000	41.630	42.644550	42.9449	43.5925	0.04009	4.48	7.427	16.67	1.70
CornerB	TR001	106.04	AMEC-20-2050-Max	27.600000	39.170	39.799870	40.1672	41.0461	0.06662	5.24	6.223	12.62	2.16
CornerB	TR001	56.04	AMEC-20-2050-Max	27.600000	37.270	38.067720	38.2753	38.7846	0.03052	3.96	8.111	13.37	1.50
CornerB	TR001	36.04	AMEC-20-2050-Max	27.600000	35.500	38.254120	37.4528	38.2581	0.00008	0.44	120.315	81.28	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	AMEC-20-2050-Max	27.600000	35.180	37.180460	37.1805	38.0543	0.01035	4.14	6.664	78.64	1.00
CornerB	M003	2689.92	AMEC-20-2050-Max	170.000000	33.550	35.531580	35.9041	37.2021	0.03010	7.20	41.028	43.45	1.73
CornerB	M003	2645.73	AMEC-20-2050-Max	170.000000	32.870	36.361320	34.7410	36.4779	0.00092	1.96	140.219	63.64	0.34
CornerB	M003	2602.09	AMEC-20-2050-Max	170.000000	32.200	36.364120		36.4391	0.00044	1.50	178.506	67.43	0.24
CornerB	M003	2557.73	AMEC-20-2050-Max	170.000000	31.340	36.310790		36.4165	0.00044	1.68	150.611	48.20	0.25
CornerB	M003	2537.73	AMEC-20-2050-Max	170.000000	30.770	36.234990	34.5544	36.3993	0.00071	2.35	146.679	64.09	0.32
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	AMEC-20-2050-Max	170.000000	30.350	33.976030	33.9760	35.7601	0.00797	5.92	28.727	21.56	1.00
CornerB	M003	2507.21	AMEC-20-2050-Max	170.000000	30.750	32.369030	33.1819	35.1363	0.05199	8.26	26.426	21.60	2.20
CornerB	M003	2459.31	AMEC-20-2050-Max	170.000000	30.130	32.720990	32.1193	33.1268	0.00381	3.24	70.778	35.66	0.66
CornerB	M003	2411.41	AMEC-20-2050-Max	170.000000	29.270	32.808480		32.9518	0.00126	2.24	126.572	59.63	0.39
CornerB	M003	2363.51	AMEC-20-2050-Max	170.000000	28.770	32.805890		32.8982	0.00055	1.63	152.469	53.14	0.27
CornerB	M003	2315.61	AMEC-20-2050-Max	170.000000	27.930	32.790480		32.8771	0.00031	1.42	161.341	55.09	0.21
CornerB	M003	2267.71	AMEC-20-2050-Max	170.400000	26.300	32.785590		32.8623	0.00020	1.38	198.941	75.74	0.18
CornerB	M003	2263.01	AMEC-20-2050-Max	170.400000	29.100	32.459530		32.7851	0.00394	2.76	82.800	72.54	0.68
CornerB	M003	2260.98	AMEC-20-2050-Max	170.400000	25.800	30.009820		30.2902	0.00123	2.48	84.653	28.91	0.40
CornerB	M003	2240.88	AMEC-20-2050-Max	170.400000	27.010	29.887680		30.2346	0.00269	2.75	74.708	39.87	0.55
CornerB	M003	2212.25	AMEC-20-2050-Max	170.400000	26.870	29.814090		30.1585	0.00258	2.83	76.107	35.96	0.55
CornerB	M003	2183.63	AMEC-20-2050-Max	170.400000	25.560	28.947830	28.9478	29.9728	0.00753	5.04	48.190	26.85	0.94
CornerB	M003	2163.63	AMEC-20-2050-Max	170.400000	25.350	28.880840	28.1232	29.5419	0.00362	3.72	49.527	30.79	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	AMEC-20-2050-Max	170.400000	24.870	27.614860	27.9977	29.2982	0.01534	6.24	33.053	21.52	1.29
CornerB	M003	2131.66	AMEC-20-2050-Max	170.400000	24.570	26.909840	27.5541	28.9825	0.02557	6.59	29.298	20.46	1.58
CornerB	M003	2119.46	AMEC-20-2050-Max	170.400000	24.120	26.053260	26.8188	28.5600	0.03858	7.34	26.915	21.72	1.91
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	AMEC-20-2050-Max	170.400000	24.040	26.340910	26.8781	28.1506	0.02108	6.11	31.079	21.47	1.45
CornerB	M003	2080.62	AMEC-20-2050-Max	170.400000	23.730	25.504810	26.1575	27.3364	0.02696	6.21	31.158	24.86	1.60
CornerB	M003	2068.44	AMEC-20-2050-Max	170.400000	23.760	25.482250	25.9360	26.9270	0.02195	5.60	35.393	28.33	1.45
CornerB	M003	2022.25	AMEC-20-2050-Max	170.400000	22.740	24.722260	25.0662	26.0264	0.01647	5.38	38.512	28.26	1.29
CornerB	M003	1991.14	AMEC-20-2050-Max	170.400000	22.180	24.487430	24.6291	25.5486	0.01056	4.89	43.530	27.75	1.06
CornerB	M003	1985.82	AMEC-20-2050-Max	170.400000	21.970	24.075890	24.3720	25.4489	0.01590	5.58	37.876	25.49	1.28
CornerB	M003	1975.95	AMEC-20-2050-Max	170.400000	21.780	23.731960	24.1663	25.2506	0.02008	6.00	36.549	26.59	1.42
CornerB	M003	1929.72	AMEC-20-2050-Max	170.400000	20.080	22.219730	22.8026	24.1854	0.02468	6.52	30.298	20.28	1.56
CornerB	M003	1883.49	AMEC-20-2050-Max	170.400000	19.230	21.791900	22.0592	23.2371	0.01266	5.69	36.754	19.56	1.18
CornerB	TR002	21.04	AMEC-20-2050-Max	10.300000	22.270	22.910360	23.4485	25.3474	0.15017	7.48	1.779	4.47	3.16
CornerB	TR002	18.08	AMEC-20-2050-Max	10.300000	21.400	21.810360	22.2736	24.6364	0.37917	8.41	1.622	6.18	4.66
CornerB	M002	1826.39	AMEC-20-2050-Max	172.200000	16.920	18.471260	19.2890	21.7157	0.11991	8.58	24.669	29.92	2.52
CornerB	M002	1790.92	AMEC-20-2050-Max	172.200000	15.490	19.124610	18.6934	20.0092	0.00847	4.61	47.702	18.15	0.79
CornerB	M002	1773.95	AMEC-20-2050-Max	172.200000	14.720	19.527450	17.6419	19.7609	0.00167	2.40	93.694	29.79	0.36
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	AMEC-20-2050-Max	172.200000	14.870	19.541410	17.3826	19.6974	0.00092	2.05	117.154	37.87	0.31
CornerB	M002	1733.13	AMEC-20-2050-Max	172.200000	15.230	19.577200		19.6273	0.00027	1.07	205.712	78.60	0.17
CornerB	M002	1717.41	AMEC-20-2050-Max	172.200000	15.120	19.579510		19.6209	0.00022	0.99	230.383	87.20	0.15
CornerB	M002	1691.96	AMEC-20-2050-Max	172.200000	14.620	19.578500		19.6140	0.00018	0.93	261.213	107.18	0.14
CornerB	M002	1654.15	AMEC-20-2050-Max	172.200000	13.870	19.584910		19.6047	0.00009	0.68	340.469	137.34	0.10
CornerB	M002	1613.91	AMEC-20-2050-Max	172.200000	13.080	19.585910		19.6008	0.00004	0.57	395.572	152.88	0.08
CornerB	M002	1567.16	AMEC-20-2050-Max	172.200000	12.150	19.593500		19.5966	0.00001	0.25	781.170	210.64	0.03
CornerB	M002	1551.89	AMEC-20-2050-Max	172.200000	11.850	19.594720		19.5960	0.00000	0.16	1179.311	273.36	0.02
CornerB	M002	1539.91	AMEC-20-2050-Max	171.400000	11.620	19.595120		19.5958	0.00000	0.12	1587.381	306.55	0.02
CornerB	M002	1526.59	AMEC-20-2050-Max	171.400000	11.360	19.595100		19.5958	0.00000	0.12	1616.309	311.71	0.01
CornerB	M002	1517.99	AMEC-20-2050-Max	171.400000	11.180	19.594800		19.5957	0.00000	0.14	1367.261	267.97	0.02
CornerB	M002	1505.64	AMEC-20-2050-Max	171.400000	10.940	19.594010		19.5956	0.00000	0.18	1018.044	198.08	0.02
CornerB	M002	1490.63	AMEC-20-2050-Max	171.400000	10.640	19.591830		19.5954	0.00001	0.27	703.542	140.28	0.03
CornerB	M002	1463.65	AMEC-20-2050-Max	171.400000	10.110	19.579790		19.5939	0.00003	0.55	387.504	89.32	0.07
CornerB	M002	1415.93	AMEC-20-2050-Max	171.400000	9.170	19.578390		19.5926	0.00003	0.54	363.919	74.91	0.06
CornerB	M002	1386.11	AMEC-20-2050-Max	171.400000	8.580	19.572080		19.5911	0.00004	0.64	334.088	78.07	0.07
CornerB	M002	1363.91	AMEC-20-2050-Max	171.400000	8.140	19.558750		19.5889	0.00007	0.81	267.726	57.50	0.09
CornerB	M002	1356.61	AMEC-20-2050-Max	171.400000	8.000	19.557790		19.5880	0.00017	1.01	280.123	72.88	0.10
CornerB	M002	1354.11	AMEC-20-2050-Max	171.400000	15.350	19.351520		19.5683	0.00179	2.67	104.628	57.09	0.43
CornerB	M002	1352.01	AMEC-20-2050-Max	171.400000	8.000	11.151510	11.1515	12.1929	0.02579	3.15	39.179	17.51	0.94
CornerB	M002	1347.51	AMEC-20-2050-Max	171.400000	7.720	10.301280	10.7128	11.9341	0.03218	5.67	30.669	18.44	1.36
CornerB	M002	1336.58	AMEC-20-2050-Max	171.400000	7.690	9.602909	10.1838	11.4980	0.04463	6.15	29.076	22.29	1.59
CornerB	M002	1326.83	AMEC-20-2050-Max	171.400000	7.680	10.659010	9.8673	11.0271	0.00458	2.84	68.840	30.68	0.56
CornerB	M002	1317.22	AMEC-20-2050-Max	171.400000	7.660	10.512670		10.9666	0.00641	3.10	61.561	31.41	0.65
CornerB	M002	1315.18	AMEC-20-2050-Max	171.400000	7.280	10.051140	10.0511	10.9051	0.01658	4.42	45.619	28.22	1.01
CornerB	M002	1313.58	AMEC-20-2050-Max	171.400000	6.480	9.224847	9.6743	10.7978	0.03498	5.85	33.527	24.35	1.42
CornerB	M002	1312.39	AMEC-20-2050-Max	171.400000	6.230	8.773239	9.3590	10.7133	0.04494	6.39	29.875	22.85	1.60
CornerB	M002	1311.16	AMEC-20-2050-Max	171.400000	5.920	8.348062	9.0368	10.6157	0.06106	6.78	26.751	22.04	1.82
CornerB	M002	1309.11	AMEC-20-2050-Max	171.400000	5.910	7.948274	8.7084	10.4596	0.06846	7.10	25.302	21.18	1.93
CornerB	M002	1305.35	AMEC-20-2050-Max	171.400000	5.370	7.304189	8.1169	10.1401	0.07918	7.77	25.238	24.09	2.09
CornerB	M002	1300.06	AMEC-20-2050-Max	171.400000	5.060	6.816377	7.6286	9.6867	0.09613	7.58	23.584	22.89	2.24
CornerB	M002	1296.49	AMEC-20-2050-Max	171.400000	4.910	6.971103	7.6813	9.2674	0.05175	6.87	27.047	20.08	1.73
CornerB	M002	1289.64	AMEC-20-2050-Max	171.400000	4.710	6.968316	7.5077	8.8365	0.03864	6.25	30.199	20.52	1.51
CornerB	M002	1284.12	AMEC-20-2050-Max	171.400000	4.410	7.081098	7.4163	8.5593	0.02328	5.63	34.770	20.20	1.22
CornerB	M002	1279.52	AMEC-20-2050-Max	171.400000	4.230	6.672525	7.1548	8.4137	0.02907	6.02	31.711	19.95	1.35
CornerB	M002	1258.94	AMEC-20-2050-Max	171.400000	3.530	5.305697	5.9964	7.5172	0.06345	6.90	28.687	27.73	1.88
CornerB	M002	1246.98	AMEC-20-2050-Max	171.400000	3.370	4.870350	5.4610	6.8104	0.04319	6.25	29.032	25.35	1.72

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2050-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	AMEC-20-2050-Max	171.400000	3.100	4.633537	5.0612	6.1168	0.04210	5.63	34.795	37.69	1.67
CornerB	M002	1215.66	AMEC-20-2050-Max	171.400000	2.700	4.163588	4.5539	5.3736	0.02840	4.97	38.878	46.43	1.40
CornerB	M002	1206.83	AMEC-20-2050-Max	171.400000	2.540	4.809468	4.4516	5.1221	0.00507	2.74	83.863	67.19	0.63
CornerB	M002	1194.69	AMEC-20-2050-Max	171.400000	2.390	4.789103		5.0595	0.00426	2.61	90.052	64.87	0.58
CornerB	M002	1185.06	AMEC-20-2050-Max	171.400000	2.260	4.776292		5.0086	0.00323	2.43	98.257	66.48	0.52
CornerB	M002	1142.41	AMEC-20-2050-Max	171.400000	1.700	4.690272		4.8814	0.00260	2.26	111.896	82.90	0.47
CornerB	M002	1137.55	AMEC-20-2050-Max	171.400000	1.600	4.229962	4.2165	4.8018	0.01027	3.54	62.360	67.72	0.87
CornerB	M002	1110.53	AMEC-20-2050-Max	171.400000	1.390	4.101401	3.7788	4.5726	0.00537	3.25	72.080	65.89	0.67
CornerB	M002	1090.67	AMEC-20-2050-Max	171.400000	1.100	4.297092		4.4145	0.00143	1.83	144.742	88.15	0.35
CornerB	M002	1070.69	AMEC-20-2050-Max	171.400000	0.800	4.315239	2.9158	4.3812	0.00066	1.43	189.229	89.15	0.25
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	AMEC-20-2050-Max	171.400000	0.760	4.303464	2.8168	4.3630	0.00059	1.37	189.866	86.50	0.24
CornerB	M002	1047.01	AMEC-20-2050-Max	171.400000	0.750	4.283807		4.3502	0.00056	1.50	184.125	78.43	0.26
CornerB	M002	1004.03	AMEC-20-2050-Max	171.400000	0.770	4.253774		4.3238	0.00054	1.47	209.347	130.04	0.26
CornerB	M002	959.21	AMEC-20-2050-Max	171.400000	0.700	4.261258		4.2948	0.00038	1.24	314.569	279.59	0.22
CornerB	M002	915.75	AMEC-20-2050-Max	170.600000	0.680	4.256480		4.2748	0.00027	1.01	389.029	295.38	0.18
CornerB	M002	869.66	AMEC-20-2050-Max	170.600000	0.690	4.250698		4.2639	0.00016	0.80	424.888	222.89	0.14
CornerB	M002	828.33	AMEC-20-2050-Max	165.500000	0.770	4.245582		4.2578	0.00017	0.79	413.083	220.31	0.14
CornerB	M002	784.55	AMEC-20-2050-Max	165.500000	0.820	4.243137		4.2521	0.00011	0.65	433.533	231.59	0.12
CornerB	M002	739.85	AMEC-20-2050-Max	165.500000	0.820	4.237254		4.2471	0.00011	0.63	445.635	270.39	0.12
CornerB	M002	696.36	AMEC-20-2050-Max	165.500000	0.640	4.224794		4.2403	0.00016	0.79	389.130	266.80	0.14
CornerB	M001	659.37	AMEC-20-2050-Max	175.000000	0.750	4.217753		4.2352	0.00017	0.78	367.153	232.51	0.14
CornerB	M001	643.93	AMEC-20-2050-Max	175.000000	0.740	4.203784	2.9793	4.2310	0.00026	0.98	310.037	216.98	0.18
CornerB	M001	635		Bridge									
CornerB	M001	629.03	AMEC-20-2050-Max	175.000000	0.830	3.904659	2.9762	3.9682	0.00064	1.44	213.400	178.84	0.27
CornerB	M001	608.52	AMEC-20-2050-Max	175.000000	0.760	3.893208		3.9534	0.00080	1.54	204.959	162.86	0.30
CornerB	M001	570.12	AMEC-20-2050-Max	175.000000	0.610	3.894202		3.9232	0.00041	1.17	274.900	186.20	0.22
CornerB	M001	535.83	AMEC-20-2050-Max	175.000000	0.560	3.878789	1.9388	3.9119	0.00024	0.97	283.558	220.15	0.17
CornerB	M001	520.22	AMEC-20-2050-Max	175.000000	0.550	3.883208	2.0339	3.9054	0.00018	0.85	331.735	291.62	0.15
CornerB	M001	472.07	AMEC-20-2050-Max	175.000000	0.580	3.835708	2.4708	3.8892	0.00045	1.30	237.682	201.46	0.23
CornerB	M001	460		Bridge									
CornerB	M001	445.11	AMEC-20-2050-Max	175.000000	0.440	3.411227	2.2342	3.5939	0.00125	2.07	150.603	214.83	0.38
CornerB	M001	425.41	AMEC-20-2050-Max	175.000000	0.480	3.439214		3.5256	0.00082	1.63	236.881	291.85	0.31
CornerB	M001	401.99	AMEC-20-2050-Max	175.000000	0.740	3.457485		3.4961	0.00047	1.19	329.172	338.65	0.23
CornerB	M001	381.26	AMEC-20-2050-Max	175.000000	0.790	3.383744	3.0926	3.4743	0.00110	1.74	241.044	347.05	0.35
CornerB	M001	380		Bridge									
CornerB	M001	375.14	AMEC-20-2050-Max	175.000000	0.790	3.228156	3.1150	3.3883	0.00191	2.22	194.648	358.41	0.46
CornerB	M001	352.89	AMEC-20-2050-Max	175.000000	0.680	3.194454		3.3500	0.00138	1.93	169.967	333.37	0.39
CornerB	M001	324.13	AMEC-20-2050-Max	175.000000	0.670	3.177169		3.3040	0.00122	1.81	175.727	263.44	0.37
CornerB	M001	292.92	AMEC-20-2050-Max	175.000000	0.650	3.182827		3.2571	0.00083	1.48	237.837	340.97	0.30
CornerB	M001	274.62	AMEC-20-2050-Max	175.000000	0.960	3.176741	2.7148	3.2308	0.00141	1.71	262.432	365.18	0.38
CornerB	M001	270		Bridge									
CornerB	M001	266.99	AMEC-20-2050-Max	175.000000	1.010	3.157954	2.6503	3.1936	0.00122	1.59	292.672	379.18	0.36
CornerB	M001	245.99	AMEC-20-2050-Max	175.000000	0.640	3.139323		3.1744	0.00077	1.35	336.717	443.20	0.29
CornerB	M001	210.89	AMEC-20-2050-Max	175.000000	0.680	3.114598		3.1466	0.00075	1.26	335.941	417.45	0.28
CornerB	M001	174.77	AMEC-20-2050-Max	175.000000	0.690	3.099491		3.1202	0.00058	1.01	373.284	490.52	0.24
CornerB	M001	155.66	AMEC-20-2050-Max	175.000000	0.640	3.094722	2.5315	3.1074	0.00059	0.93	434.845	608.57	0.24
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	AMEC-20-2050-Max	175.000000	0.550	3.089877	2.4803	3.1017	0.00048	0.84	442.217	552.80	0.21
CornerB	M001	129.05	AMEC-20-2050-Max	175.000000	0.400	3.075905		3.0895	0.00035	0.86	475.999	620.17	0.19
CornerB	M001	80.73	AMEC-20-2050-Max	175.000000	0.200	3.050471		3.0718	0.00036	0.98	416.998	516.02	0.20
CornerB	M001	23.81	AMEC-20-2050-Max	175.000000	0.320	3.030017	2.0690	3.0524	0.00035	0.92	420.404	540.00	0.20
BellsB	TR001	178.13	AMEC-20-2050-Max	15.000000	92.910	94.140100	94.5204	95.3216	0.04302	4.90	3.376	5.38	1.70
BellsB	TR001	159.86	AMEC-20-2050-Max	15.000000	92.150	94.499990	93.5886	94.5784	0.00118	1.51	15.585	11.98	0.34
BellsB	TR001	139.54	AMEC-20-2050-Max	15.000000	91.130	94.345410	92.7275	94.5394	0.00155	1.95	7.691	10.12	0.35
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	AMEC-20-2050-Max	15.000000	89.490	91.006620	91.2332	92.0982	0.01968	4.66	3.327	3.90	1.25
BellsB	TR001	88.17	AMEC-20-2050-Max	15.000000	88.470	89.371970	89.9419	91.6258	0.11572	7.06	2.587	5.19	2.76
BellsB	TR001	84.12	AMEC-20-2050-Max	15.000000	87.660	88.406270	88.9347	90.9415	0.20137	7.17	2.266	6.37	3.45
BellsB	TR001	79.14	AMEC-20-2050-Max	15.000000	86.530	87.305860	87.8929	90.0338	0.15259	7.55	2.317	5.84	3.17
BellsB	TR001	72.74	AMEC-20-2050-Max	15.000000	85.760	86.415970	86.9383	88.8556	0.18850	7.02	2.312	6.66	3.35
BellsB	TR001	67.75	AMEC-20-2050-Max	15.000000	85.040	85.604610	86.0386	87.7026	0.20532	6.75	2.586	8.04	3.43
BellsB	TR001	64.04	AMEC-20-2050-Max	15.000000	84.470	85.193580	85.6476	86.9810	0.13591	5.92	2.538	5.99	2.85
BellsB	TR001	60.69	AMEC-20-2050-Max	15.000000	84.140	85.125960	85.5255	86.5107	0.08185	5.36	3.106	6.77	2.28
BellsB	TR001	56.76	AMEC-20-2050-Max	15.000000	83.970	84.924940	85.2953	86.1730	0.06890	4.98	3.142	6.91	2.11
BellsB	TR001	50.93	AMEC-20-2050-Max	15.000000	83.680	84.713130	85.0258	85.7119	0.06282	4.55	3.648	8.70	2.00
BellsB	TR001	43.86	AMEC-20-2050-Max	15.000000	83.340	84.243340	84.5310	85.2363	0.07076	4.52	3.679	9.93	2.09
BellsB	TR001	37.01	AMEC-20-2050-Max	15.000000	82.980	83.904910	84.1766	84.8010	0.05061	4.43	4.054	9.08	1.84
BellsB	TR001	12.14	AMEC-20-2050-Max	15.000000	82.150	83.037760	83.2189	83.6540	0.03668	3.70	4.803	10.07	1.55
BellsB	M002	5166.11	AMEC-20-2050-Max	12.300000	190.790	191.850900	191.7824	192.0110	0.01046	2.43	9.432	17.65	0.80
BellsB	M002	5149.23	AMEC-20-2050-Max	12.300000	190.570	191.540500	191.5405	191.7962	0.01472	2.63	7.163	14.25	0.93
BellsB	M002	5117.45	AMEC-20-2050-Max	12.300000	189.910	191.387500	190.7310	191.4146	0.00141	1.15	20.633	23.37	0.31
BellsB	M002	5090.85	AMEC-20-2050-Max	12.300000	189.620	190.978500	190.9785	191.2990	0.01326	3.08	6.851	11.05	0.91
BellsB	M002	5067.47	AMEC-20-2050-Max	12.300000	189.180	189.705200	189.9620	190.5869	0.13643	5.52	3.481	9.13	2.58
BellsB	M002	5017.78	AMEC-20-2050-Max	12.300000	188.120	189.207900	189.2079	189.4875	0.01676	3.10	6.940	11.92	1.01
BellsB	M002	4967.57	AMEC-20-2050-Max	12.300000	186.550	187.715100	187.8701	188.3085	0.03327	4.09	4.480	7.22	1.35
BellsB	M002	4917.46	AMEC-20-2050-Max	12.300000	185.690	186.792700	186.4569	186.8805	0.00446	1.69	11.883	18.85	0.53
BellsB	M002	4873.31	AMEC-20-2050-Max	12.300000	184.610	186.506300		186.6745	0.00465	2.25	9.606	13.47	0.56
BellsB	M002	4853.42	AMEC-20-2050-Max	12.300000	183.550	186.442900	185.1068	186.6234	0.00163	1.88	6.535	26.25	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	AMEC-20-2050-Max	12.300000	181.530	182.797000	183.0668	183.8675	0.03031	4.58	2.683	5.54	1.38
BellsB	M002	4785.76	AMEC-20-2050-Max	12.300000	181.350	182.293800	182.5040	182.9866	0.04048	4.13	3.947	7.36	1.50
BellsB	M002	4756.65	AMEC-20-2050-Max	12.300000	180.120	180.974600	181.1903	181.6465	0.05210	4.49	4.449	11.75	1.69
BellsB	M002	4727.54	AMEC-20-2050-Max	12.300000	179.020	179.782900	179.9473	180.3215	0.03724	3.89	5.271	16.21	1.53
BellsB	M002	4707.54	AMEC-20-2050-Max	12.300000	177.960	178.321100	178.5133	179.0367	0.13605	4.53	3.880	16.51	2.61
BellsB	M002	4702.24	AMEC-20-2050-Max	12.300000	177.650	178.473300	178.4914	178.7003	0.01667	2.62	7.386	17.46	1.03
BellsB	M002	4682.48	AMEC-20-2050-Max	12.300000	176.630	177.309900	177.5312	178.0594	0.05816	4.30	4.143	13.53	1.86

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2050-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	AMEC-20-2050-Max	12.300000	175.500	176.588700	176.7793	177.2595	0.02209	3.92	4.148	6.53	1.25
BellsB	M002	4633.41	AMEC-20-2050-Max	12.300000	174.510	175.188400	175.4822	176.2510	0.09378	5.73	3.694	11.92	2.39
BellsB	M002	4609.61	AMEC-20-2050-Max	12.300000	173.500	174.663600	174.4349	174.8209	0.00605	2.20	8.682	11.61	0.68
BellsB	M002	4583.99	AMEC-20-2050-Max	12.300000	172.770	174.139200	174.1392	174.5784	0.01237	3.13	5.000	6.74	0.93
BellsB	M002	4534.72	AMEC-20-2050-Max	12.300000	170.000	170.879900	171.3836	172.9584	0.12034	7.77	2.583	5.85	2.80
BellsB	M002	4485.52	AMEC-20-2050-Max	12.300000	168.200	168.820700	168.9601	169.2604	0.05002	3.94	5.460	17.41	1.71
BellsB	M002	4436.28	AMEC-20-2050-Max	22.200000	165.850	167.001100	167.2887	167.6186	0.02703	4.57	8.503	14.14	1.41
BellsB	M002	4387.04	AMEC-20-2050-Max	22.200000	164.060	165.243100	165.5161	166.0851	0.03477	5.27	7.342	12.10	1.61
BellsB	M002	4337.81	AMEC-20-2050-Max	22.200000	162.600	163.736800	163.9405	164.3542	0.03293	4.86	9.523	22.52	1.53
BellsB	M002	4288.56	AMEC-20-2050-Max	22.200000	161.300	162.436500	162.5708	162.9134	0.02835	4.39	9.930	20.03	1.40
BellsB	M002	4239.33	AMEC-20-2050-Max	22.200000	159.650	160.644300	160.8880	161.4158	0.03816	4.76	7.485	14.70	1.63
BellsB	M002	4190.09	AMEC-20-2050-Max	22.200000	158.430	159.553600	159.6807	160.0217	0.02068	3.85	9.850	17.77	1.23
BellsB	M002	4140.85	AMEC-20-2050-Max	22.200000	157.300	157.931100	158.0425	158.3419	0.05569	4.40	9.049	22.62	1.85
BellsB	M002	4091.61	AMEC-20-2050-Max	22.200000	155.300	156.089500	156.1465	156.4229	0.03060	3.88	10.229	20.15	1.43
BellsB	M002	4042.37	AMEC-20-2050-Max	22.200000	153.740	154.624600	154.7130	155.0647	0.02413	3.62	9.026	15.00	1.29
BellsB	M002	3993.13	AMEC-20-2050-Max	22.200000	152.650	153.450200	153.5309	153.7937	0.03166	3.68	10.385	22.93	1.39
BellsB	M002	3943.89	AMEC-20-2050-Max	22.200000	151.360	152.245000	152.2910	152.5809	0.02361	3.55	10.520	19.34	1.27
BellsB	M002	3894.65	AMEC-20-2050-Max	22.200000	149.520	151.034200	151.2091	151.6178	0.01965	4.06	9.411	17.77	1.19
BellsB	M002	3869.08	AMEC-20-2050-Max	22.200000	148.870	150.067200	150.3475	150.9459	0.03393	4.82	6.708	10.90	1.55
BellsB	M002	3845.41	AMEC-20-2050-Max	22.200000	148.370	149.608400	149.7982	150.1737	0.02480	4.09	8.711	17.64	1.26
BellsB	M002	3822.22	AMEC-20-2050-Max	22.200000	147.710	149.132900	148.6826	149.2274	0.00369	1.86	18.642	18.59	0.51
BellsB	M002	3796.17	AMEC-20-2050-Max	22.200000	146.890	148.586200	148.5862	149.0350	0.01176	3.45	9.745	12.06	0.90
BellsB	M002	3765.39	AMEC-20-2050-Max	22.200000	146.400	148.478900	148.1647	148.7326	0.00537	2.58	12.167	11.07	0.61
BellsB	M002	3746.94	AMEC-20-2050-Max	22.200000	145.760	148.629300		148.6475	0.00029	0.83	41.972	23.17	0.16
BellsB	M002	3724.94	AMEC-20-2050-Max	22.200000	145.320	148.571700		148.6334	0.00073	1.32	24.568	13.37	0.25
BellsB	M002	3697.71	AMEC-20-2050-Max	22.200000	145.050	148.581000		148.6114	0.00032	0.97	32.121	14.62	0.17
BellsB	M002	3677.71	AMEC-20-2050-Max	22.200000	143.440	148.396000	145.6644	148.5858	0.00083	1.93	11.500	18.37	0.28
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	AMEC-20-2050-Max	22.200000	142.470	144.610800	144.6108	145.6392	0.01084	4.49	4.941	9.49	1.00
BellsB	M002	3623.19	AMEC-20-2050-Max	22.200000	142.100	143.583100	144.0680	145.0923	0.04954	6.05	4.758	7.03	1.81
BellsB	M002	3573.45	AMEC-20-2050-Max	22.200000	140.890	142.271600	142.7021	143.1398	0.02713	4.52	6.266	9.45	1.38
BellsB	M002	3520.99	AMEC-20-2050-Max	22.200000	139.300	140.804500	140.9541	141.7252	0.02607	4.69	6.044	7.98	1.35
BellsB	M002	3473.83	AMEC-20-2050-Max	22.200000	137.980	139.676400	139.8480	140.4500	0.02378	4.71	6.803	8.99	1.27
BellsB	M002	3424.29	AMEC-20-2050-Max	22.200000	136.490	138.533700	138.0790	138.7874	0.00376	2.43	11.738	10.55	0.57
BellsB	M002	3400.36	AMEC-20-2050-Max	22.200000	135.960	138.662900		138.7023	0.00040	0.98	31.696	29.19	0.20
BellsB	M002	3386.31	AMEC-20-2050-Max	22.200000	135.480	138.641000	137.5049	138.6938	0.00045	1.23	41.216	67.19	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	AMEC-20-2050-Max	22.200000	135.220	138.665600	137.2255	138.6694	0.00004	0.37	113.611	66.89	0.06
BellsB	M002	3329.08	AMEC-20-2050-Max	28.000000	134.960	138.663700		138.6678	0.00005	0.45	120.713	57.29	0.07
BellsB	M002	3303.55	AMEC-20-2050-Max	28.000000	133.820	138.627200	136.3149	138.6628	0.00024	1.12	54.821	50.31	0.17
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	AMEC-20-2050-Max	28.000000	131.390	134.285600	134.2856	135.4905	0.01092	4.86	5.757	19.16	1.00
BellsB	M002	3203.83	AMEC-20-2050-Max	28.000000	131.130	132.356200	132.9518	134.6840	0.10666	7.43	5.252	11.94	2.60
BellsB	M002	3176.31	AMEC-20-2050-Max	28.000000	130.020	131.418500	131.8161	132.6461	0.04421	5.76	7.470	12.56	1.75
BellsB	M002	3157.63	AMEC-20-2050-Max	28.000000	129.890	131.246900	131.3960	131.7874	0.03052	4.49	10.891	19.03	1.39
BellsB	M002	3130.11	AMEC-20-2050-Max	28.000000	128.680	130.373200	130.5271	131.1435	0.01766	4.32	8.560	8.39	1.16
BellsB	M002	3083.82	AMEC-20-2050-Max	28.000000	127.940	129.529000	129.7591	130.2579	0.02057	4.49	11.262	24.05	1.25
BellsB	M002	3037.68	AMEC-20-2050-Max	28.000000	127.110	128.010800	128.2521	128.7921	0.05354	5.34	9.707	23.97	1.91
BellsB	M002	2991.47	AMEC-20-2050-Max	28.000000	126.280	128.126100	127.2817	128.1471	0.00061	0.96	47.182	44.76	0.23
BellsB	M002	2945.26	AMEC-20-2050-Max	28.000000	125.320	127.733100	127.1906	128.0541	0.00543	2.56	13.482	30.23	0.56
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	AMEC-20-2050-Max	28.000000	125.120	126.991000	126.9910	127.9225	0.01086	4.28	6.548	5.03	1.00
BellsB	M002	2918.61	AMEC-20-2050-Max	28.000000	124.990	126.615300	126.9705	127.6212	0.02456	5.04	8.059	13.62	1.37
BellsB	M002	2899.46	AMEC-20-2050-Max	28.000000	125.250	126.467300	126.7403	127.1227	0.01503	3.72	10.035	33.51	1.10
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	AMEC-20-2050-Max	28.000000	124.440	125.950100	125.9501	126.1130	0.00331	2.01	18.405	21.10	0.55
BellsB	M002	2861.32	AMEC-20-2050-Max	28.000000	123.640	124.704100	125.0187	125.6936	0.04304	5.34	7.867	16.37	1.82
BellsB	M002	2823.69	AMEC-20-2050-Max	28.000000	123.230	124.305900	124.3390	124.5902	0.02017	3.35	15.020	30.50	1.11
BellsB	M002	2777.91	AMEC-20-2050-Max	28.000000	122.770	123.965000	123.7066	124.0081	0.00327	1.49	36.692	60.00	0.46
BellsB	M002	2727.91	AMEC-20-2050-Max	28.000000	122.210	123.523900	123.5239	123.7981	0.01281	3.02	16.288	36.89	0.90
BellsB	M002	2677.99	AMEC-20-2050-Max	28.000000	121.130	122.690400	122.6590	123.1014	0.01309	3.28	11.551	13.37	0.93
BellsB	M002	2628.09	AMEC-20-2050-Max	28.000000	120.690	122.229100	122.2291	122.4973	0.01125	3.21	18.253	32.98	0.87
BellsB	M002	2578.18	AMEC-20-2050-Max	28.000000	119.940	121.539600	121.5190	121.7775	0.00974	2.97	18.563	31.12	0.80
BellsB	M002	2528.27	AMEC-20-2050-Max	28.000000	119.100	120.822500	120.8225	121.2328	0.01312	3.56	12.927	15.67	0.94
BellsB	M002	2518.19	AMEC-20-2050-Max	28.000000	118.620	120.091700	120.3829	120.9840	0.03429	5.02	8.861	13.82	1.47
BellsB	M002	2496.15	AMEC-20-2050-Max	28.000000	118.530	120.382700	120.0186	120.5764	0.00623	2.64	20.486	28.87	0.66
BellsB	M002	2478.37	AMEC-20-2050-Max	28.000000	117.970	120.144600		120.4585	0.00672	3.02	14.698	13.32	0.70
BellsB	M002	2450.61	AMEC-20-2050-Max	28.000000	117.550	119.649000	119.6490	120.1880	0.01167	3.94	11.535	11.23	0.92
BellsB	M002	2428.46	AMEC-20-2050-Max	28.000000	117.190	118.429700	118.8098	119.6194	0.05821	5.53	7.504	14.58	1.82
BellsB	M002	2408.52	AMEC-20-2050-Max	28.000000	116.630	117.902200	118.1313	118.6194	0.04312	4.86	9.784	18.70	1.57
BellsB	M002	2378.55	AMEC-20-2050-Max	28.000000	116.150	117.684800	117.6848	118.0304	0.01591	3.71	14.987	23.94	1.01
BellsB	M002	2367.92	AMEC-20-2050-Max	28.000000	115.610	116.711500	117.0016	117.6681	0.05406	5.49	8.729	17.66	1.81
BellsB	M002	2352.81	AMEC-20-2050-Max	28.000000	115.070	116.271600	116.4842	116.9778	0.03631	4.76	9.791	16.53	1.50
BellsB	M002	2328.64	AMEC-20-2050-Max	28.000000	113.990	115.882400	115.7522	116.2909	0.01159	3.60	13.780	17.66	0.89
BellsB	M002	2307.61	AMEC-20-2050-Max	28.000000	112.940	116.113600	115.2334	116.1453	0.00052	1.02	50.950	47.37	0.20
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	AMEC-20-2050-Max	28.000000	111.750	113.290100	113.7211	114.8074	0.05049	5.46	5.142	5.24	1.55
BellsB	M002	2275.77	AMEC-20-2050-Max	30.099990	112.060	113.884300	113.8843	114.2542	0.01210	3.67	15.009	21.96	0.92
BellsB	M002	2232.72	AMEC-20-2050-Max	30.099990	110.580	112.303300	112.6459	113.3847	0.02850	5.21	8.717	12.99	1.37
BellsB	M002	2200.99	AMEC-20-2050-Max	30.099990	109.610	111.171700	111.5588	112.3570	0.03894	5.52	7.742	10.30	1.57
BellsB	M002	2173.21	AMEC-20-2050-Max	30.099990	108.980	111.182200	111.1822	111.8122	0.01175	3.92	10.683	9.45	0.89
BellsB	M002	2133.27	AMEC-20-2050-Max	30.099990	107.790	109.116700	109.6255	110.7999	0.06262	6.55	6.583	10.32	1.97
BellsB	M002	2117.78	AMEC-20-2050-Max	30.099990	107.460	108.929100	109.1809	109.9501	0.03041	5.08	8.286	10.31	1.43
BellsB	M002	2103.01	AMEC-20-2050-Max	30.099990	106.450	107.867000	108.2948	109.2720	0.05764	6.20	6.957	9.76	1.85
BellsB	M002	2085.77	AMEC-20-2050-Max	30.099990	105.170	106.648800	107.1546	108.2188	0.05768	6.65	6.525	7.89	1.90
BellsB	M002	2068.57	AMEC-20-2050-Max	30.099990	104.360	105.384200	105.8494	107.0771	0.08987	6.91	6.511	11.85	2.32
BellsB	M002	2059.88	AMEC-20-2050-Max	30.099990	103.560	104.919900	105.4065	106.4708	0.05187	6.01	6.623	9.47	1.82

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2050-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	AMEC-20-2050-Max	30.099990	103.130	104.452600	104.9456	106.1349	0.07049	6.71	6.318	8.46	2.07
BellsB	M002	2040.56	AMEC-20-2050-Max	30.099990	102.390	104.638600	104.2789	105.0945	0.00671	3.40	12.572	8.23	0.74
BellsB	M002	2033.27	AMEC-20-2050-Max	30.099990	102.080	104.343300	104.3433	105.0050	0.01357	4.05	10.129	8.30	0.95
BellsB	M002	2025.44	AMEC-20-2050-Max	30.099990	101.580	102.975100	103.5229	104.7110	0.05210	6.21	5.998	7.48	1.81
BellsB	M002	2021.67	AMEC-20-2050-Max	30.099990	101.430	103.283600	103.6210	104.3780	0.02794	4.96	7.618	8.35	1.32
BellsB	M002	2014.53	AMEC-20-2050-Max	30.099990	99.960	101.452100	102.1384	103.8877	0.11318	6.94	4.446	6.17	2.42
BellsB	M002	2010.46	AMEC-20-2050-Max	30.099990	99.080	100.181000	100.9265	103.2914	0.14826	8.65	4.463	6.75	2.94
BellsB	M002	2007.37	AMEC-20-2050-Max	30.099990	98.520	99.905540	100.6842	102.8200	0.12538	7.66	4.183	5.41	2.56
BellsB	M002	1996.87	AMEC-20-2050-Max	30.099990	97.970	99.052800	99.7428	101.5196	0.09864	7.65	5.016	6.56	2.47
BellsB	M002	1982.97	AMEC-20-2050-Max	30.099990	97.730	98.909240	99.3136	100.2262	0.05020	5.91	6.917	7.92	1.81
BellsB	M002	1966.25	AMEC-20-2050-Max	30.099990	96.750	98.759000	98.9385	99.5776	0.01987	4.52	9.124	8.92	1.13
BellsB	M002	1951.81	AMEC-20-2050-Max	30.099990	96.560	98.779490	98.1675	98.9349	0.00357	2.21	19.682	14.17	0.50
BellsB	M002	1939.94	AMEC-20-2050-Max	30.099990	96.290	98.319410	98.3194	98.8232	0.01187	3.51	11.674	11.96	0.89
BellsB	M002	1918.81	AMEC-20-2050-Max	30.099990	95.860	97.952340	97.7009	98.3061	0.00786	3.21	14.022	11.41	0.75
BellsB	M002	1910.32	AMEC-20-2050-Max	30.099990	95.580	97.570630	97.5706	98.1970	0.01229	3.76	10.166	9.01	0.93
BellsB	M002	1896.87	AMEC-20-2050-Max	30.099990	94.380	95.870260	96.4305	97.7452	0.06852	6.71	5.946	7.96	1.98
BellsB	M002	1887.59	AMEC-20-2050-Max	30.099990	93.870	96.109950	95.5477	96.3049	0.00387	2.37	18.515	13.20	0.54
BellsB	M002	1880.79	AMEC-20-2050-Max	30.099990	93.330	96.121320		96.2727	0.00206	2.05	21.533	12.29	0.41
BellsB	M002	1870.34	AMEC-20-2050-Max	30.099990	92.770	96.132990		96.2452	0.00115	1.81	25.480	10.43	0.32
BellsB	M002	1857.16	AMEC-20-2050-Max	30.099990	91.880	96.158680		96.2191	0.00059	1.36	33.928	14.40	0.22
BellsB	M002	1848.27	AMEC-20-2050-Max	30.099990	91.910	96.172360		96.2082	0.00028	1.03	44.746	16.68	0.16
BellsB	M002	1834.27	AMEC-20-2050-Max	30.099990	90.880	96.174550		96.2030	0.00018	0.91	51.609	17.32	0.13
BellsB	M002	1821.35	AMEC-20-2050-Max	30.099990	90.900	96.182400		96.1971	0.00010	0.75	69.029	20.56	0.10
BellsB	M002	1807.43	AMEC-20-2050-Max	30.099990	89.830	96.184090		96.1949	0.00006	0.62	81.644	21.47	0.08
BellsB	M002	1800.77	AMEC-20-2050-Max	30.099990	89.590	96.184720		96.1940	0.00006	0.61	86.716	22.59	0.08
BellsB	M002	1777.98	AMEC-20-2050-Max	30.099990	88.770	96.187920		96.1916	0.00002	0.40	133.360	29.98	0.05
BellsB	M002	1753.27	AMEC-20-2050-Max	30.099990	88.220	96.186620		96.1911	0.00002	0.43	127.142	29.66	0.05
BellsB	M002	1729.73	AMEC-20-2050-Max	30.099990	88.170	96.187460		96.1901	0.00001	0.35	156.990	32.35	0.04
BellsB	M002	1705.77	AMEC-20-2050-Max	30.099990	87.600	96.188020		96.1896	0.00001	0.28	246.832	63.34	0.03
BellsB	M002	1688.91	AMEC-20-2050-Max	30.099990	86.720	96.186590	89.7991	96.1894	0.00001	0.30	204.676	64.22	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	AMEC-20-2050-Max	30.099990	83.970	87.029520	87.0295	88.5540	0.00826	5.47	5.502	19.14	1.00
BellsB	M002	1605.59	AMEC-20-2050-Max	30.099990	81.490	82.239390	82.8775	87.0693	0.53395	10.29	3.337	11.24	5.54
BellsB	M001	1582.05	AMEC-20-2050-Max	48.000000	80.410	81.520090	82.4216	85.5030	0.13176	9.08	5.882	8.69	3.17
BellsB	M001	1563.67	AMEC-20-2050-Max	48.000000	79.960	81.235700	81.8731	83.4411	0.05715	7.07	8.465	10.52	2.19
BellsB	M001	1544.26	AMEC-20-2050-Max	48.000000	79.040	80.842930	81.3616	82.5124	0.02888	6.26	10.214	9.43	1.62
BellsB	M001	1529.04	AMEC-20-2050-Max	48.000000	78.240	79.457440	80.1596	81.8507	0.05497	7.10	7.688	8.37	2.16
BellsB	M001	1515.66	AMEC-20-2050-Max	48.000000	77.300	79.122180	79.7283	81.0780	0.04449	6.38	8.442	7.58	1.71
BellsB	M001	1502.43	AMEC-20-2050-Max	48.000000	69.640	70.246640	71.1752	78.7978	1.00829	12.96	3.721	10.35	6.77
BellsB	M001	1483.47	AMEC-20-2050-Max	48.000000	68.890	69.893200	70.3823	71.7392	0.11846	6.69	8.877	16.33	2.57
BellsB	M001	1454.75	AMEC-20-2050-Max	48.000000	68.030	69.502850	69.6125	70.1485	0.02223	4.48	15.407	15.93	1.24
BellsB	M001	1406.62	AMEC-20-2050-Max	48.000000	66.490	68.603170	68.6228	69.3072	0.01402	4.35	15.179	11.70	1.02
BellsB	M001	1358.51	AMEC-20-2050-Max	48.000000	65.170	66.631900	67.0817	68.1123	0.04529	5.83	10.179	11.79	1.71
BellsB	M001	1310.38	AMEC-20-2050-Max	48.000000	63.800	65.332420	65.6347	66.2969	0.02746	4.82	13.366	16.79	1.36
BellsB	M001	1286.33	AMEC-20-2050-Max	48.000000	62.810	64.184790	64.5616	65.3864	0.05291	5.76	11.808	19.03	1.81
BellsB	M001	1262.25	AMEC-20-2050-Max	48.000000	62.090	64.371220	64.4064	64.7556	0.01033	3.69	23.390	29.26	0.85
BellsB	M001	1251.58	AMEC-20-2050-Max	48.000000	61.460	63.117920	63.7789	64.4697	0.04268	6.60	11.410	12.10	1.73
BellsB	M001	1234.76	AMEC-20-2050-Max	48.000000	60.570	62.082330	62.5679	63.6204	0.06133	6.95	11.580	19.65	1.98
BellsB	M001	1214.13	AMEC-20-2050-Max	48.000000	59.550	61.618870	61.0098	61.7910	0.00340	2.16	30.984	23.31	0.51
BellsB	M001	1200.58	AMEC-20-2050-Max	48.000000	58.900	61.065000	61.0650	61.6682	0.01152	3.96	17.252	14.98	0.92
BellsB	M001	1182.98	AMEC-20-2050-Max	48.000000	58.590	60.721370	60.8199	61.4343	0.01444	4.38	16.038	14.85	1.03
BellsB	M001	1166.01	AMEC-20-2050-Max	48.000000	58.390	59.764810	60.1282	60.9889	0.04286	5.60	12.194	17.64	1.66
BellsB	M001	1153.18	AMEC-20-2050-Max	48.000000	57.700	59.451170	59.7445	60.4182	0.03536	5.94	14.476	19.75	1.53
BellsB	M001	1141.88	AMEC-20-2050-Max	48.000000	56.720	58.043510	58.5703	59.8147	0.06281	6.40	9.383	13.25	1.99
BellsB	M001	1128.34	AMEC-20-2050-Max	48.000000	56.530	57.729480	58.0628	58.8129	0.05365	5.69	11.354	14.89	1.80
BellsB	M001	1117.89	AMEC-20-2050-Max	48.000000	55.580	56.857100	57.2794	58.1879	0.06255	6.64	10.933	13.46	1.98
BellsB	M001	1096.03	AMEC-20-2050-Max	48.000000	54.610	56.264720	56.5389	57.2051	0.02767	4.88	13.436	15.85	1.36
BellsB	M001	1077.81	AMEC-20-2050-Max	48.000000	54.240	55.344610	55.7468	56.5509	0.05045	5.55	11.811	17.53	1.78
BellsB	M001	1069.76	AMEC-20-2050-Max	48.000000	53.700	54.458210	54.8523	55.8416	0.11623	6.34	10.338	19.15	2.52
BellsB	M001	1064.67	AMEC-20-2050-Max	48.000000	53.190	53.973720	54.3376	55.2444	0.11068	6.14	10.827	20.43	2.45
BellsB	M001	1051.64	AMEC-20-2050-Max	48.000000	51.970	53.032300	53.4143	54.3198	0.06360	5.83	11.410	18.05	1.96
BellsB	M001	1032.36	AMEC-20-2050-Max	48.000000	50.970	52.457550	52.6949	53.3199	0.03477	5.34	14.095	16.49	1.51
BellsB	M001	1021.64	AMEC-20-2050-Max	48.000000	50.030	51.436040	51.8524	52.8230	0.04794	5.69	11.011	16.40	1.74
BellsB	M001	1014.11	AMEC-20-2050-Max	48.000000	49.460	51.052110	51.5095	52.4823	0.04295	5.77	10.638	14.11	1.66
BellsB	M001	1006.24	AMEC-20-2050-Max	48.000000	49.150	50.413980	50.9055	52.0800	0.05729	6.24	9.824	14.15	1.91
BellsB	M001	996.42	AMEC-20-2050-Max	48.000000	48.110	49.436000	50.0000	51.4213	0.08305	7.31	9.100	13.61	2.24
BellsB	M001	987.27	AMEC-20-2050-Max	48.000000	47.170	48.698290	49.3107	50.7700	0.06085	7.01	8.938	11.30	2.00
BellsB	M001	973.52	AMEC-20-2050-Max	48.000000	46.790	48.180170	48.7403	49.9504	0.04509	6.17	9.238	12.69	1.85
BellsB	M001	951.43	AMEC-20-2050-Max	48.000000	45.770	47.278500	47.7984	48.9424	0.04877	6.34	10.141	15.85	1.89
BellsB	M001	931.51	AMEC-20-2050-Max	48.000000	44.860	46.142990	46.6321	47.7549	0.07257	7.50	9.614	13.63	2.27
BellsB	M001	925.41	AMEC-20-2050-Max	48.000000	44.690	46.343690	46.6421	47.2885	0.02699	5.49	13.676	18.41	1.42
BellsB	M001	901.68	AMEC-20-2050-Max	48.000000	43.690	45.190330	45.6049	46.5367	0.03364	5.86	10.618	11.21	1.64
BellsB	M001	877.27	AMEC-20-2050-Max	48.000000	43.180	45.451220	45.0845	45.8263	0.00557	3.16	20.189	13.74	0.71
BellsB	M001	857.41	AMEC-20-2050-Max	48.000000	42.160	45.616750	45.0705	45.7030	0.00083	1.62	50.449	40.41	0.29
BellsB	M001	840		Culvert									
BellsB	M001	816.09	AMEC-20-2050-Max	49.200010	38.540	42.086170	41.1061	42.6568	0.00382	3.41	15.015	11.81	0.60
BellsB	M001	810.13	AMEC-20-2050-Max	49.200010	37.800	42.320110	39.9289	42.4084	0.00058	1.42	47.492	30.21	0.22
BellsB	M001	800		Bridge									
BellsB	M001	796.37	AMEC-20-2050-Max	49.200010	34.330	36.574210	37.4531	39.3112	0.05881	7.39	6.968	8.29	1.94
BellsB	M001	782.27	AMEC-20-2050-Max	49.200010	33.920	34.844580	35.5510	37.8694	0.17509	8.26	6.797	11.11	3.11
BellsB	M001	772.73	AMEC-20-2050-Max	49.200010	30.940	32.576500	33.3682	36.2090	0.16615	10.88	7.390	10.19	2.99
BellsB	M001	766.74	AMEC-20-2050-Max	49.200010	30.650	32.518950	33.2326	35.1685	0.09999	9.58	8.650	10.29	2.41
BellsB	M001	760.32	AMEC-20-2050-Max	49.200010	30.340	31.973210	32.6974	34.5876	0.07980	8.38	8.625	10.43	2.27
BellsB	M001	755.97	AMEC-20-2050-Max	49.200010	30.050	31.662410	32.3405	34.2052	0.08550	7.86	8.459	11.30	2.28
BellsB	M001	749.69	AMEC-20-2050-Max	49.200010	29.300	30.987530	31.7121	33.6466	0.08584	8.40	8.433	10.22	2.31
BellsB	M001	742.14	AMEC-20-2050-Max	49.200010	28.380	29.673860	30.5042	32.9052	0.09998	8.51	7.191	8.98	2.55
BellsB	M001	736.73	AMEC-20-2050-Max	49.200010	28.240	29.088000	29.8169	32.1802	0.16486	8.42	6.757	10.74	3.09

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2050-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	AMEC-20-2050-Max	49.200010	27.350	28.475960	28.9756	30.2884	0.07311	6.57	9.319	14.50	2.12
BellsB	M001	712.04	AMEC-20-2050-Max	49.200010	26.270	27.852650	28.4004	29.6203	0.05328	6.41	9.561	10.94	1.84
BellsB	M001	702.42	AMEC-20-2050-Max	49.200010	26.040	27.418530	27.9114	29.0402	0.05609	6.28	9.961	12.19	1.89
BellsB	M001	691.68	AMEC-20-2050-Max	49.200010	25.030	26.655670	27.1987	28.4232	0.05609	6.20	9.053	10.79	1.86
BellsB	M001	686.22	AMEC-20-2050-Max	49.200010	24.460	25.756220	26.3866	28.0082	0.08121	6.74	7.783	10.37	2.20
BellsB	M001	675.26	AMEC-20-2050-Max	49.200010	24.080	25.320740	25.8664	27.1006	0.06027	6.31	8.997	10.69	1.96
BellsB	M001	668.37	AMEC-20-2050-Max	49.200010	23.580	24.962300	25.4814	26.6867	0.05634	6.24	9.408	12.00	1.89
BellsB	M001	655.45	AMEC-20-2050-Max	49.200010	23.020	24.261050	24.7567	25.9324	0.05838	6.09	9.477	12.93	1.90
BellsB	M001	636.88	AMEC-20-2050-Max	49.200010	21.460	22.875820	23.4531	24.7937	0.05999	6.34	8.673	10.47	1.95
BellsB	M001	619.06	AMEC-20-2050-Max	49.200010	20.820	22.426980	22.8558	23.7982	0.03763	5.69	10.971	11.74	1.59
BellsB	M001	608.48	AMEC-20-2050-Max	49.200010	20.130	21.608410	22.1282	23.3123	0.04767	6.02	9.641	13.36	1.76
BellsB	M001	592.31	AMEC-20-2050-Max	49.200010	18.950	20.439210	21.0235	22.3785	0.06967	7.14	9.338	11.45	2.09
BellsB	M001	582.72	AMEC-20-2050-Max	49.200010	18.140	19.316080	19.9639	21.5973	0.08651	7.34	8.381	10.27	2.33
BellsB	M001	577.91	AMEC-20-2050-Max	49.200010	17.660	19.333850	19.9355	21.1900	0.04194	6.60	9.768	9.39	1.73
BellsB	M001	561.51	AMEC-20-2050-Max	49.200010	17.020	18.467390	18.9997	20.3016	0.07090	6.81	9.876	13.45	2.09
BellsB	M001	553.07	AMEC-20-2050-Max	49.200010	16.350	17.564740	18.2037	19.6872	0.07046	6.63	8.362	10.98	2.09
BellsB	M001	541.54	AMEC-20-2050-Max	49.200010	15.410	16.660140	17.2494	18.7998	0.08484	6.57	8.121	12.50	2.24
BellsB	M001	529.17	AMEC-20-2050-Max	49.200010	14.850	16.059620	16.5748	17.7580	0.06426	5.82	8.828	9.17	1.78
BellsB	M001	514.53	AMEC-20-2050-Max	49.200010	14.210	15.392770	15.8113	16.7551	0.05910	5.63	10.508	12.18	1.74
BellsB	M001	467.56	AMEC-20-2050-Max	49.200010	11.610	12.893630	13.2851	14.2213	0.04784	5.19	10.130	10.45	1.57
BellsB	M001	420.59	AMEC-20-2050-Max	49.200010	8.750	12.518510	11.1336	12.7269	0.00215	2.19	28.873	13.08	0.38
BellsB	M001	400.25	AMEC-20-2050-Max	49.200010	8.570	12.314540	10.7144	12.6663	0.00240	2.63	18.723	6.62	0.43
BellsB	M001	100		Culvert									
BellsB	M001	68.07	AMEC-20-2050-Max	49.200010	0.830	4.185005	2.9763	4.3162	0.00096	1.90	47.532	48.84	0.33
BellsB	M001	47.74	AMEC-20-2050-Max	49.200010	0.560	4.233957	3.2575	4.2476	0.00017	0.84	140.175	127.88	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	AMEC-20-2050-Max	49.200010	0.700	4.231243	2.9149	4.2415	0.00014	0.75	150.240	131.08	0.13
BellsB	M001	20.51	AMEC-20-2050-Max	49.200010	0.570	4.227322		4.2393	0.00017	0.81	144.865	140.80	0.14

HEC-RAS Plan: Plan 20 Profile: FINNIS-20-2050-M

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	FINNIS-20-2050-M	293.999900	36.310	40.249350	40.4924	41.2511	0.00600	5.36	106.413	79.38	0.88
CornerB	M004	2838.71	FINNIS-20-2050-M	293.999900	36.150	38.977240	39.6332	40.7392	0.01316	6.43	66.864	49.76	1.23
CornerB	M004	2796.61	FINNIS-20-2050-M	293.999900	35.350	39.277800	38.8311	39.9326	0.00376	4.19	105.854	45.95	0.69
CornerB	M004	2769.85	FINNIS-20-2050-M	293.999900	34.800	38.480000	38.4800	39.5069	0.01222	7.34	85.524	45.42	1.24
CornerB	TR001	206.04	FINNIS-20-2050-M	52.400010	43.810	45.023450	45.4813	46.3822	0.04200	6.30	12.482	15.63	1.90
CornerB	TR001	156.04	FINNIS-20-2050-M	52.400010	41.630	42.906930	43.3233	44.2843	0.04148	5.63	12.436	20.98	1.83
CornerB	TR001	106.04	FINNIS-20-2050-M	52.400010	39.170	40.091510	40.6244	41.8679	0.05814	6.38	10.179	14.51	2.16
CornerB	TR001	56.04	FINNIS-20-2050-M	52.400010	37.270	38.339310	38.7619	39.5715	0.03502	5.27	12.251	24.66	1.70
CornerB	TR001	36.04	FINNIS-20-2050-M	52.400010	35.500	38.420590	38.0000	38.4320	0.00020	0.76	134.046	83.69	0.15
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	FINNIS-20-2050-M	52.400010	35.180	37.854580	37.4999	37.9021	0.00084	1.40	81.150	84.55	0.29
CornerB	M003	2689.92	FINNIS-20-2050-M	326.899900	33.550	36.081040	36.8008	38.3339	0.03194	8.88	67.195	53.08	1.86
CornerB	M003	2645.73	FINNIS-20-2050-M	326.899900	32.870	37.039180	35.5277	37.3143	0.00180	3.09	188.650	78.93	0.49
CornerB	M003	2602.09	FINNIS-20-2050-M	326.899900	32.200	37.065340		37.2319	0.00082	2.28	226.513	69.43	0.34
CornerB	M003	2557.73	FINNIS-20-2050-M	326.899900	31.340	36.911310		37.1818	0.00099	2.73	179.889	49.31	0.38
CornerB	M003	2537.73	FINNIS-20-2050-M	326.899900	30.770	36.788090	35.6752	37.1483	0.00149	3.62	182.441	65.40	0.47
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	FINNIS-20-2050-M	326.899900	30.350	34.448330	34.7296	36.4747	0.00894	6.53	61.727	28.81	1.05
CornerB	M003	2507.21	FINNIS-20-2050-M	326.899900	30.750	33.617770	34.3126	36.0805	0.02109	7.99	55.605	25.38	1.56
CornerB	M003	2459.31	FINNIS-20-2050-M	326.899900	30.130	32.203430	33.0533	34.8232	0.03279	8.12	53.034	33.22	1.85
CornerB	M003	2411.41	FINNIS-20-2050-M	326.899900	29.270	33.565040	32.2804	33.8430	0.00195	3.19	176.538	72.33	0.51
CornerB	M003	2363.51	FINNIS-20-2050-M	326.899900	28.770	33.508670		33.7627	0.00123	2.73	198.283	77.94	0.41
CornerB	M003	2315.61	FINNIS-20-2050-M	326.899900	27.930	33.489120		33.7099	0.00068	2.30	205.912	72.56	0.32
CornerB	M003	2267.71	FINNIS-20-2050-M	327.700100	26.300	33.491400		33.6717	0.00044	2.19	259.610	94.72	0.26
CornerB	M003	2263.01	FINNIS-20-2050-M	327.700100	29.100	33.043740		33.5651	0.00452	3.61	127.977	82.12	0.77
CornerB	M003	2260.98	FINNIS-20-2050-M	327.700100	25.800	32.256190		32.5434	0.00077	2.67	187.809	66.88	0.34
CornerB	M003	2240.88	FINNIS-20-2050-M	327.700100	27.010	32.259850		32.5059	0.00087	2.43	184.957	59.54	0.35
CornerB	M003	2212.25	FINNIS-20-2050-M	327.700100	26.870	32.198580		32.4764	0.00098	2.65	180.373	59.85	0.37
CornerB	M003	2183.63	FINNIS-20-2050-M	327.700100	25.560	32.120600		32.4408	0.00120	3.27	193.493	69.80	0.42
CornerB	M003	2163.63	FINNIS-20-2050-M	327.700100	25.350	32.270660	29.3945	32.3597	0.00034	1.83	418.120	185.57	0.23
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	FINNIS-20-2050-M	327.700100	24.870	28.579790	29.2957	31.4086	0.01671	8.17	48.501	25.08	1.43
CornerB	M003	2131.66	FINNIS-20-2050-M	327.700100	24.570	27.656050	28.7300	31.0295	0.02700	8.57	46.055	24.68	1.72
CornerB	M003	2119.46	FINNIS-20-2050-M	327.700100	24.120	26.743130	27.9356	30.5967	0.03726	9.27	42.891	24.51	1.99
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	FINNIS-20-2050-M	327.700100	24.040	27.028710	27.9987	30.1719	0.02466	8.19	47.024	24.85	1.65
CornerB	M003	2080.62	FINNIS-20-2050-M	327.700100	23.730	26.081850	27.0668	29.2242	0.03142	8.30	48.970	43.25	1.83
CornerB	M003	2068.44	FINNIS-20-2050-M	327.700100	23.760	25.961960	26.9227	28.7471	0.03044	7.91	51.348	40.36	1.78
CornerB	M003	2022.25	FINNIS-20-2050-M	327.700100	22.740	25.433180	26.1578	27.5045	0.01759	6.96	61.272	39.19	1.41
CornerB	M003	1991.14	FINNIS-20-2050-M	327.700100	22.180	25.475670	25.6637	26.9313	0.00937	5.92	74.192	33.30	1.07
CornerB	M003	1985.82	FINNIS-20-2050-M	327.700100	21.970	25.169550	25.5703	26.8532	0.01143	6.38	70.948	36.41	1.17
CornerB	M003	1975.95	FINNIS-20-2050-M	327.700100	21.780	24.618890	24.7515	26.6713	0.01692	7.19	62.798	32.62	1.40
CornerB	M003	1929.72	FINNIS-20-2050-M	327.700100	20.080	23.243230	23.9811	25.8178	0.01825	7.60	52.748	23.59	1.45
CornerB	M003	1883.49	FINNIS-20-2050-M	327.700100	19.230	22.931480	23.3271	25.0193	0.01133	6.99	60.747	22.55	1.19
CornerB	TR002	21.04	FINNIS-20-2050-M	19.100000	22.270	23.127980	23.8732	26.6344	0.15014	9.27	2.850	5.32	3.33
CornerB	TR002	18.08	FINNIS-20-2050-M	19.100000	21.400	21.953600	22.6248	25.9380	0.34587	10.20	2.538	6.61	4.72
CornerB	M002	1826.39	FINNIS-20-2050-M	331.499900	16.920	21.838810	20.1427	22.1743	0.00247	3.02	145.626	40.81	0.45
CornerB	M002	1790.92	FINNIS-20-2050-M	331.499900	15.490	20.130340	20.1303	21.8670	0.01225	6.57	67.308	21.01	1.00
CornerB	M002	1773.95	FINNIS-20-2050-M	331.499900	14.720	20.813560	18.7668	21.2446	0.00232	3.35	135.234	34.40	0.45
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	FINNIS-20-2050-M	331.499900	14.870	20.829100	18.4940	21.1091	0.00124	2.81	168.136	41.32	0.37
CornerB	M002	1733.13	FINNIS-20-2050-M	331.499900	15.230	20.907390		20.9876	0.00032	1.41	326.903	101.25	0.19
CornerB	M002	1717.41	FINNIS-20-2050-M	331.499900	15.120	20.913230		20.9785	0.00027	1.30	360.148	104.45	0.17
CornerB	M002	1691.96	FINNIS-20-2050-M	331.499900	14.620	20.916600		20.9684	0.00021	1.19	414.685	121.58	0.16
CornerB	M002	1654.15	FINNIS-20-2050-M	331.499900	13.870	20.927100		20.9563	0.00011	0.88	530.041	145.34	0.11
CornerB	M002	1613.91	FINNIS-20-2050-M	331.499900	13.080	20.927460		20.9519	0.00006	0.77	608.001	165.14	0.10
CornerB	M002	1567.16	FINNIS-20-2050-M	331.499900	12.150	20.939090		20.9455	0.00001	0.37	1070.916	222.30	0.04
CornerB	M002	1551.89	FINNIS-20-2050-M	331.499900	11.850	20.941520		20.9443	0.00001	0.24	1552.515	280.23	0.03
CornerB	M002	1539.91	FINNIS-20-2050-M	331.400000	11.620	20.942320		20.9439	0.00000	0.18	2005.009	312.81	0.02
CornerB	M002	1526.59	FINNIS-20-2050-M	331.400000	11.360	20.942290		20.9439	0.00000	0.18	2040.843	317.77	0.02
CornerB	M002	1517.99	FINNIS-20-2050-M	331.400000	11.180	20.941550		20.9438	0.00000	0.21	1735.813	284.82	0.02
CornerB	M002	1505.64	FINNIS-20-2050-M	331.400000	10.940	20.939650		20.9436	0.00001	0.28	1290.058	205.50	0.03
CornerB	M002	1490.63	FINNIS-20-2050-M	331.400000	10.640	20.934410		20.9430	0.00001	0.42	899.711	150.70	0.05
CornerB	M002	1463.65	FINNIS-20-2050-M	331.400000	10.110	20.907810		20.9399	0.00006	0.85	515.296	100.43	0.10
CornerB	M002	1415.93	FINNIS-20-2050-M	331.400000	9.170	20.901890		20.9369	0.00005	0.86	480.070	104.87	0.09
CornerB	M002	1386.11	FINNIS-20-2050-M	331.400000	8.580	20.890420		20.9342	0.00008	0.99	441.304	84.98	0.11
CornerB	M002	1363.91	FINNIS-20-2050-M	331.400000	8.140	20.855550		20.9290	0.00013	1.29	347.148	69.71	0.14
CornerB	M002	1356.61	FINNIS-20-2050-M	331.400000	8.000	20.863160		20.9233	0.00033	1.50	381.143	84.87	0.15
CornerB	M002	1354.11	FINNIS-20-2050-M	331.400000	15.350	20.667350		20.9041	0.00148	2.94	184.800	70.86	0.41
CornerB	M002	1352.01	FINNIS-20-2050-M	331.400000	8.000	12.284300	12.2843	13.9171	0.02956	4.99	59.022	17.52	1.05
CornerB	M002	1347.51	FINNIS-20-2050-M	331.400000	7.720	11.357860	11.9023	13.6645	0.02458	6.78	50.962	20.04	1.29
CornerB	M002	1336.58	FINNIS-20-2050-M	331.400000	7.690	10.331980	11.2324	13.2571	0.04212	7.76	46.775	26.11	1.65
CornerB	M002	1326.83	FINNIS-20-2050-M	331.400000	7.680	11.745810	10.7868	12.3729	0.00503	3.76	103.737	33.54	0.62
CornerB	M002	1317.22	FINNIS-20-2050-M	331.400000	7.660	11.621540		12.3137	0.00599	3.89	98.130	34.55	0.67
CornerB	M002	1315.18	FINNIS-20-2050-M	331.400000	7.280	11.055480	11.0555	12.2455	0.01393	5.33	76.492	33.04	0.99
CornerB	M002	1313.58	FINNIS-20-2050-M	331.400000	6.480	10.226170	10.7047	12.1444	0.02445	6.64	60.258	28.95	1.28
CornerB	M002	1312.39	FINNIS-20-2050-M	331.400000	6.230	9.751205	10.4255	12.0715	0.03028	7.18	54.416	27.26	1.42
CornerB	M002	1311.16	FINNIS-20-2050-M	331.400000	5.920	9.265874	10.0994	11.9877	0.03898	7.56	48.624	25.65	1.58
CornerB	M002	1309.11	FINNIS-20-2050-M	331.400000	5.910	8.851525	9.7892	11.8735	0.04359	7.93	46.062	24.79	1.68
CornerB	M002	1305.35	FINNIS-20-2050-M	331.400000	5.370	8.047244	9.1174	11.6120	0.06014	8.98	44.081	26.63	1.95
CornerB	M002	1300.06	FINNIS-20-2050-M	331.400000	5.060	7.532098	8.6358	11.2729	0.06799	8.77	40.804	25.11	2.04
CornerB	M002	1296.49	FINNIS-20-2050-M	331.400000	4.910	7.914492	8.8023	10.8517	0.03724	7.93	47.707	23.45	1.59
CornerB	M002	1289.64	FINNIS-20-2050-M	331.400000	4.710	7.890442	8.6541	10.5281	0.03199	7.55	50.191	22.84	1.48
CornerB	M002	1284.12	FINNIS-20-2050-M	331.400000	4.410	8.164466	8.6361	10.2214	0.01988	6.81	58.776	24.06	1.20
CornerB	M002	1279.52	FINNIS-20-2050-M	331.400000	4.230	7.696285	8.3948	10.0876	0.02442	7.25	54.475	24.55	1.32
CornerB	M002	1258.94	FINNIS-20-2050-M	331.400000	3.530	5.887641	6.9387	9.2302	0.06331	8.73	46.471	33.20	1.99
CornerB	M002	1246.98	FINNIS-20-2050-M	331.400000	3.370	5.516532	6.5197	8.5224	0.04073	7.88	46.672	29.47	1.79

HEC-RAS Plan: Plan 20 Profile: FINNIS-20-2050-M (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	FINNIS-20-2050-M	331.400000	3.100	5.004071	5.9057	7.8449	0.05727	7.90	49.396	41.12	2.04
CornerB	M002	1215.66	FINNIS-20-2050-M	331.400000	2.700	4.564321	5.2588	6.7420	0.03779	6.87	59.769	57.83	1.69
CornerB	M002	1206.83	FINNIS-20-2050-M	331.400000	2.540	4.575510	5.1156	6.2853	0.03197	6.29	68.567	62.63	1.55
CornerB	M002	1194.69	FINNIS-20-2050-M	331.400000	2.390	5.451944	4.9944	5.8935	0.00506	3.44	134.292	68.61	0.67
CornerB	M002	1185.06	FINNIS-20-2050-M	331.400000	2.260	5.432231		5.8297	0.00417	3.27	143.287	70.72	0.61
CornerB	M002	1142.41	FINNIS-20-2050-M	331.400000	1.700	5.347850		5.6576	0.00331	3.00	167.824	87.48	0.55
CornerB	M002	1137.55	FINNIS-20-2050-M	331.400000	1.600	4.977109	4.9682	5.5785	0.00779	3.94	134.298	122.63	0.81
CornerB	M002	1110.53	FINNIS-20-2050-M	331.400000	1.390	4.837141	4.8371	5.3860	0.00529	3.86	154.825	144.23	0.70
CornerB	M002	1090.67	FINNIS-20-2050-M	331.400000	1.100	4.818713	3.8453	5.0389	0.00232	2.62	218.490	156.46	0.46
CornerB	M002	1070.69	FINNIS-20-2050-M	331.400000	0.800	4.832407	3.5210	4.9857	0.00132	2.22	250.722	138.16	0.36
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	FINNIS-20-2050-M	331.400000	0.760	4.798166	3.4260	4.9428	0.00123	2.17	244.919	130.86	0.35
CornerB	M002	1047.01	FINNIS-20-2050-M	331.400000	0.750	4.727280		4.9081	0.00131	2.49	225.603	112.35	0.41
CornerB	M002	1004.03	FINNIS-20-2050-M	331.400000	0.770	4.685171		4.8443	0.00110	2.29	271.598	160.16	0.38
CornerB	M002	959.21	FINNIS-20-2050-M	331.400000	0.700	4.723044		4.7804	0.00065	1.76	448.153	296.77	0.29
CornerB	M002	915.75	FINNIS-20-2050-M	330.999900	0.680	4.714322		4.7471	0.00044	1.40	525.421	300.43	0.23
CornerB	M002	869.66	FINNIS-20-2050-M	330.999900	0.690	4.698879		4.7293	0.00032	1.24	526.787	232.73	0.20
CornerB	M002	828.33	FINNIS-20-2050-M	324.300100	0.770	4.687360		4.7174	0.00035	1.25	515.036	243.21	0.21
CornerB	M002	784.55	FINNIS-20-2050-M	324.300100	0.820	4.682982		4.7049	0.00024	1.03	537.945	247.68	0.17
CornerB	M002	739.85	FINNIS-20-2050-M	324.300100	0.820	4.672409		4.6948	0.00022	0.96	567.172	288.20	0.17
CornerB	M002	696.36	FINNIS-20-2050-M	324.300100	0.640	4.650465		4.6821	0.00029	1.16	503.530	271.21	0.19
CornerB	M001	659.37	FINNIS-20-2050-M	344.800100	0.750	4.632148		4.6720	0.00034	1.21	466.450	246.55	0.21
CornerB	M001	643.93	FINNIS-20-2050-M	344.800100	0.740	4.604615	3.4853	4.6636	0.00051	1.48	400.157	232.20	0.25
CornerB	M001	635		Bridge									
CornerB	M001	629.03	FINNIS-20-2050-M	344.800100	0.830	4.357799	3.5494	4.4718	0.00104	2.03	298.711	197.70	0.36
CornerB	M001	608.52	FINNIS-20-2050-M	344.800100	0.760	4.336680		4.4505	0.00129	2.18	279.675	176.05	0.39
CornerB	M001	570.12	FINNIS-20-2050-M	344.800100	0.610	4.339282		4.3996	0.00070	1.69	358.589	190.04	0.29
CornerB	M001	535.83	FINNIS-20-2050-M	344.800100	0.560	4.303936	2.8154	4.3777	0.00048	1.50	361.190	228.17	0.25
CornerB	M001	520.22	FINNIS-20-2050-M	344.800100	0.550	4.312729	2.9255	4.3645	0.00037	1.32	414.562	298.91	0.22
CornerB	M001	472.07	FINNIS-20-2050-M	344.800100	0.580	4.217932	3.4553	4.3317	0.00090	1.98	324.450	287.50	0.34
CornerB	M001	460		Bridge									
CornerB	M001	445.11	FINNIS-20-2050-M	344.800100	0.440	3.790986	3.6176	4.1002	0.00216	2.95	244.383	271.10	0.52
CornerB	M001	425.41	FINNIS-20-2050-M	344.800100	0.480	3.850739		3.9761	0.00121	2.17	366.761	333.55	0.38
CornerB	M001	401.99	FINNIS-20-2050-M	344.800100	0.740	3.872586		3.9335	0.00071	1.62	474.666	362.30	0.29
CornerB	M001	381.26	FINNIS-20-2050-M	344.800100	0.790	3.803898	3.4320	3.9073	0.00131	2.10	390.268	364.80	0.39
CornerB	M001	380		Bridge									
CornerB	M001	375.14	FINNIS-20-2050-M	344.800100	0.790	3.720258	3.4305	3.8377	0.00157	2.29	377.361	383.96	0.43
CornerB	M001	352.89	FINNIS-20-2050-M	344.800100	0.680	3.609277		3.7845	0.00169	2.36	340.434	432.76	0.45
CornerB	M001	324.13	FINNIS-20-2050-M	344.800100	0.670	3.404544	2.9973	3.7099	0.00287	2.95	241.974	341.00	0.58
CornerB	M001	292.92	FINNIS-20-2050-M	344.800100	0.650	3.421951		3.5981	0.00193	2.39	328.991	429.00	0.47
CornerB	M001	274.62	FINNIS-20-2050-M	344.800100	0.960	3.431766	3.0382	3.5321	0.00250	2.47	363.600	440.39	0.52
CornerB	M001	270		Bridge									
CornerB	M001	266.99	FINNIS-20-2050-M	344.800100	1.010	3.398319	2.9751	3.4697	0.00225	2.33	388.569	429.94	0.49
CornerB	M001	245.99	FINNIS-20-2050-M	344.800100	0.640	3.357785		3.4321	0.00160	2.07	442.239	522.84	0.42
CornerB	M001	210.89	FINNIS-20-2050-M	344.800100	0.680	3.296762		3.3734	0.00174	2.02	416.420	467.96	0.43
CornerB	M001	174.77	FINNIS-20-2050-M	344.800100	0.690	3.258506		3.3124	0.00140	1.67	456.261	544.11	0.38
CornerB	M001	155.66	FINNIS-20-2050-M	344.800100	0.640	3.250319	2.7123	3.2815	0.00130	1.47	533.313	657.11	0.36
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	FINNIS-20-2050-M	344.800100	0.550	3.237925	2.6496	3.2693	0.00113	1.37	526.833	590.28	0.33
CornerB	M001	129.05	FINNIS-20-2050-M	344.800100	0.400	3.201863		3.2386	0.00091	1.45	557.997	732.93	0.31
CornerB	M001	80.73	FINNIS-20-2050-M	344.800100	0.200	3.118358		3.1868	0.00114	1.78	452.437	528.10	0.36
CornerB	M001	23.81	FINNIS-20-2050-M	344.800100	0.320	3.030017	2.5069	3.1171	0.00138	1.81	420.404	540.00	0.38
BellsB	TR001	178.13	FINNIS-20-2050-M	28.600010	92.910	96.582160	95.0711	96.6640	0.00070	1.55	30.447	16.84	0.27
BellsB	TR001	159.86	FINNIS-20-2050-M	28.600010	92.150	96.601410		96.6443	0.00030	1.22	52.911	39.31	0.19
BellsB	TR001	139.54	FINNIS-20-2050-M	28.600010	91.130	96.567730	93.5726	96.6339	0.00054	1.39	41.051	44.99	0.19
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	FINNIS-20-2050-M	28.600010	89.490	92.101970	92.1020	93.3448	0.01053	4.99	5.956	10.44	1.00
BellsB	TR001	88.17	FINNIS-20-2050-M	28.600010	88.470	89.691970	90.4781	92.7317	0.09836	8.45	4.415	6.26	2.71
BellsB	TR001	84.12	FINNIS-20-2050-M	28.600010	87.660	88.633390	89.3561	92.1125	0.16544	8.58	3.878	7.82	3.35
BellsB	TR001	79.14	FINNIS-20-2050-M	28.600010	86.530	87.560520	88.3585	91.2966	0.13820	9.17	4.012	7.37	3.21
BellsB	TR001	72.74	FINNIS-20-2050-M	28.600010	85.760	86.618650	87.2959	90.2344	0.17753	8.74	3.840	8.42	3.46
BellsB	TR001	67.75	FINNIS-20-2050-M	28.600010	85.040	85.768580	86.4360	89.0573	0.21349	8.59	3.929	8.36	3.69
BellsB	TR001	64.04	FINNIS-20-2050-M	28.600010	84.470	85.403360	86.1019	88.3064	0.13212	7.58	3.892	6.93	3.00
BellsB	TR001	60.69	FINNIS-20-2050-M	28.600010	84.140	85.325420	85.9373	87.7841	0.10024	7.25	4.613	8.35	2.66
BellsB	TR001	56.76	FINNIS-20-2050-M	28.600010	83.970	85.130670	85.7088	87.3502	0.08357	6.74	4.764	8.87	2.45
BellsB	TR001	50.93	FINNIS-20-2050-M	28.600010	83.680	84.884910	85.3843	86.7586	0.08353	6.33	5.306	10.59	2.41
BellsB	TR001	43.86	FINNIS-20-2050-M	28.600010	83.340	84.419780	84.8843	86.1185	0.08242	6.02	5.485	10.54	2.38
BellsB	TR001	37.01	FINNIS-20-2050-M	28.600010	82.980	84.128460	84.5644	85.5878	0.05627	5.78	6.170	9.85	2.04
BellsB	TR001	12.14	FINNIS-20-2050-M	28.600010	82.150	83.267010	83.5710	84.2875	0.04010	4.84	7.194	10.79	1.72
BellsB	M002	5166.11	FINNIS-20-2050-M	23.100000	190.790	192.194300	192.0179	192.3736	0.00863	2.71	15.945	20.27	0.76
BellsB	M002	5149.23	FINNIS-20-2050-M	23.100000	190.570	191.824300	191.8243	192.1723	0.01479	3.21	11.568	16.74	0.98
BellsB	M002	5117.45	FINNIS-20-2050-M	23.100000	189.910	191.839900	190.9861	191.8779	0.00143	1.39	31.912	26.62	0.33
BellsB	M002	5090.85	FINNIS-20-2050-M	23.100000	189.620	191.349400	191.3494	191.7547	0.01329	3.71	11.583	14.47	0.95
BellsB	M002	5067.47	FINNIS-20-2050-M	23.100000	189.180	189.943600	190.2907	191.0791	0.10525	6.39	5.761	9.99	2.43
BellsB	M002	5017.78	FINNIS-20-2050-M	23.100000	188.120	189.515400	189.5154	189.8974	0.01723	3.78	10.827	13.22	1.07
BellsB	M002	4967.57	FINNIS-20-2050-M	23.100000	186.550	188.838200	188.2798	189.0406	0.00481	2.63	14.811	11.18	0.58
BellsB	M002	4917.46	FINNIS-20-2050-M	23.100000	185.690	188.961100		188.9667	0.00010	0.53	87.036	43.43	0.09
BellsB	M002	4873.31	FINNIS-20-2050-M	23.100000	184.610	188.960100		188.9634	0.00006	0.47	112.297	54.95	0.07
BellsB	M002	4853.42	FINNIS-20-2050-M	23.100000	183.550	188.756300	185.8378	188.9424	0.00074	1.91	12.088	45.46	0.27
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	FINNIS-20-2050-M	23.100000	181.530	183.797000	183.7970	184.8490	0.01271	4.54	5.083	10.47	1.00
BellsB	M002	4785.76	FINNIS-20-2050-M	23.100000	181.350	182.399300	182.9061	184.1189	0.08683	6.59	4.753	7.93	2.25
BellsB	M002	4756.65	FINNIS-20-2050-M	23.100000	180.120	181.206400	181.4488	181.9980	0.04803	5.19	7.550	14.56	1.70
BellsB	M002	4727.54	FINNIS-20-2050-M	23.100000	179.020	179.957200	180.1712	180.6691	0.04073	4.76	8.165	16.98	1.66
BellsB	M002	4707.54	FINNIS-20-2050-M	23.100000	177.960	178.462000	178.7251	179.3958	0.11218	5.30	6.266	17.34	2.53
BellsB	M002	4702.24	FINNIS-20-2050-M	23.100000	177.650	178.655000	178.7115	179.0167	0.02041	3.40	10.628	18.24	1.18
BellsB	M002	4682.48	FINNIS-20-2050-M	23.100000	176.630	177.533000	177.7861	178.3517	0.04574	4.80	7.486	16.28	1.75

HEC-RAS Plan: Plan 20 Profile: FINNIS-20-2050-M (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	FINNIS-20-2050-M	23.100000	175.500	177.118800	177.2387	177.7814	0.01406	4.15	8.471	9.78	1.07
BellsB	M002	4633.41	FINNIS-20-2050-M	23.100000	174.510	175.335600	175.7130	176.9461	0.11737	7.44	5.658	14.77	2.77
BellsB	M002	4609.61	FINNIS-20-2050-M	23.100000	173.500	175.205000	174.7738	175.3782	0.00425	2.42	15.720	14.36	0.61
BellsB	M002	4583.99	FINNIS-20-2050-M	23.100000	172.770	174.655600	174.6556	175.1832	0.00999	3.60	9.304	9.93	0.89
BellsB	M002	4534.72	FINNIS-20-2050-M	23.100000	170.000	171.151800	171.9298	173.7365	0.11388	9.21	4.418	7.65	2.86
BellsB	M002	4485.52	FINNIS-20-2050-M	23.100000	168.200	168.957600	169.1778	169.6512	0.06304	5.14	8.017	19.96	2.00
BellsB	M002	4436.28	FINNIS-20-2050-M	40.999990	165.850	167.334200	167.5494	168.0193	0.02464	5.23	16.587	30.40	1.41
BellsB	M002	4387.04	FINNIS-20-2050-M	40.999990	164.060	165.614100	165.9336	166.6128	0.03162	6.11	12.530	15.87	1.62
BellsB	M002	4337.81	FINNIS-20-2050-M	40.999990	162.600	163.933200	164.2027	164.7919	0.04170	6.15	14.431	27.48	1.78
BellsB	M002	4288.56	FINNIS-20-2050-M	40.999990	161.300	162.723600	162.8471	163.2576	0.02498	4.87	15.876	21.88	1.37
BellsB	M002	4239.33	FINNIS-20-2050-M	40.999990	159.650	160.938400	161.3996	161.9040	0.03576	5.60	12.208	17.42	1.66
BellsB	M002	4190.09	FINNIS-20-2050-M	40.999990	158.430	159.838200	160.0194	160.4866	0.02270	4.77	15.414	21.66	1.34
BellsB	M002	4140.85	FINNIS-20-2050-M	40.999990	157.300	158.125700	158.2892	158.7138	0.05448	5.28	13.549	23.64	1.92
BellsB	M002	4091.61	FINNIS-20-2050-M	40.999990	155.300	156.342200	156.4247	156.8126	0.03051	4.71	15.618	22.51	1.50
BellsB	M002	4042.37	FINNIS-20-2050-M	40.999990	153.740	154.962400	155.0598	155.5498	0.02115	4.28	14.346	16.50	1.28
BellsB	M002	3993.13	FINNIS-20-2050-M	40.999990	152.650	153.607500	153.7842	154.2150	0.04455	4.99	14.148	24.86	1.71
BellsB	M002	3943.89	FINNIS-20-2050-M	40.999990	151.360	152.586800	152.5868	152.9839	0.01872	4.01	17.800	23.26	1.20
BellsB	M002	3894.65	FINNIS-20-2050-M	40.999990	149.520	151.314600	151.5451	152.0736	0.02224	4.98	14.728	20.15	1.31
BellsB	M002	3869.08	FINNIS-20-2050-M	40.999990	148.870	150.509900	150.8399	151.4584	0.02499	5.30	12.397	14.80	1.42
BellsB	M002	3845.41	FINNIS-20-2050-M	40.999990	148.370	150.449900	150.1216	150.6492	0.00519	2.75	25.603	22.20	0.63
BellsB	M002	3822.22	FINNIS-20-2050-M	40.999990	147.710	150.521100		150.5689	0.00079	1.38	47.591	22.65	0.27
BellsB	M002	3796.17	FINNIS-20-2050-M	40.999990	146.890	150.461100		150.5428	0.00098	1.71	40.257	19.11	0.30
BellsB	M002	3765.39	FINNIS-20-2050-M	40.999990	146.400	150.435600		150.5165	0.00079	1.62	39.667	17.20	0.27
BellsB	M002	3746.94	FINNIS-20-2050-M	40.999990	145.760	150.478600		150.4915	0.00011	0.73	91.342	30.22	0.11
BellsB	M002	3724.94	FINNIS-20-2050-M	40.999990	145.320	150.441000		150.4845	0.00031	1.19	54.910	19.09	0.17
BellsB	M002	3697.71	FINNIS-20-2050-M	40.999990	145.050	150.447100		150.4731	0.00017	0.95	64.750	20.35	0.13
BellsB	M002	3677.71	FINNIS-20-2050-M	40.999990	143.440	150.454700	146.7015	150.4674	0.00005	0.63	98.542	27.66	0.08
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	FINNIS-20-2050-M	40.999990	142.470	145.652100	145.6521	147.1992	0.00945	5.51	7.440	12.27	1.00
BellsB	M002	3623.19	FINNIS-20-2050-M	40.999990	142.100	143.842600	144.5802	146.4704	0.07019	8.25	6.788	8.62	2.23
BellsB	M002	3573.45	FINNIS-20-2050-M	40.999990	140.890	142.607500	142.9798	143.8816	0.03098	5.78	11.785	27.06	1.55
BellsB	M002	3520.99	FINNIS-20-2050-M	40.999990	139.300	141.164100	141.4741	142.2930	0.02713	5.67	13.380	32.41	1.44
BellsB	M002	3473.83	FINNIS-20-2050-M	40.999990	137.980	140.203300	140.5034	141.0286	0.02031	5.38	15.052	27.55	1.23
BellsB	M002	3424.29	FINNIS-20-2050-M	40.999990	136.490	138.203800	138.6950	139.7057	0.02752	5.77	8.608	8.52	1.49
BellsB	M002	3400.36	FINNIS-20-2050-M	40.999990	135.960	139.060000	137.5878	139.1307	0.00067	1.40	55.131	76.66	0.26
BellsB	M002	3386.31	FINNIS-20-2050-M	40.999990	135.480	139.062500	138.1001	139.1146	0.00050	1.42	77.815	102.68	0.24
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	FINNIS-20-2050-M	40.999990	135.220	139.097100	137.6502	139.1052	0.00007	0.57	145.842	82.58	0.09
BellsB	M002	3329.08	FINNIS-20-2050-M	51.099990	134.960	139.092800		139.1021	0.00010	0.68	146.048	61.22	0.11
BellsB	M002	3303.55	FINNIS-20-2050-M	51.099990	133.820	139.025800	137.4997	139.0927	0.00045	1.62	69.507	53.57	0.23
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	FINNIS-20-2050-M	51.099990	131.390	135.478300	135.4783	137.2687	0.00947	5.93	8.620	24.36	1.00
BellsB	M002	3203.83	FINNIS-20-2050-M	51.099990	131.130	132.564800	133.2357	136.2533	0.13741	9.79	8.244	17.74	3.06
BellsB	M002	3176.31	FINNIS-20-2050-M	51.099990	130.020	131.682300	132.2518	133.5709	0.05614	7.49	11.166	15.46	2.05
BellsB	M002	3157.63	FINNIS-20-2050-M	51.099990	129.890	131.418400	131.7084	132.3849	0.04660	6.13	14.193	19.46	1.76
BellsB	M002	3130.11	FINNIS-20-2050-M	51.099990	128.680	131.091200	131.2328	131.7726	0.01052	4.39	19.698	20.96	0.96
BellsB	M002	3083.82	FINNIS-20-2050-M	51.099990	127.940	129.694700	130.0606	130.9270	0.03354	6.20	15.342	25.06	1.63
BellsB	M002	3037.68	FINNIS-20-2050-M	51.099990	127.110	128.279600	128.5336	129.0613	0.04142	5.70	16.805	29.16	1.76
BellsB	M002	2991.47	FINNIS-20-2050-M	51.099990	126.280	128.474500	127.5352	128.5122	0.00086	1.29	63.496	48.88	0.28
BellsB	M002	2945.26	FINNIS-20-2050-M	51.099990	125.320	128.157600	128.1576	128.4108	0.00470	2.69	34.745	65.01	0.53
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	FINNIS-20-2050-M	51.099990	125.120	128.130300	128.1303	128.3660	0.00406	2.67	38.537	77.36	0.50
BellsB	M002	2918.61	FINNIS-20-2050-M	51.099990	124.990	126.944800	127.3289	127.9958	0.02382	5.73	16.383	31.40	1.40
BellsB	M002	2899.46	FINNIS-20-2050-M	51.099990	125.250	126.678100	126.9175	127.4682	0.01804	4.56	21.331	77.52	1.24
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	FINNIS-20-2050-M	51.099990	124.440	126.014200	126.0142	126.4869	0.00915	3.44	19.781	21.79	0.92
BellsB	M002	2861.32	FINNIS-20-2050-M	51.099990	123.640	125.047800	125.3564	126.0119	0.03080	5.63	14.481	21.92	1.63
BellsB	M002	2823.69	FINNIS-20-2050-M	51.099990	123.230	124.488100	124.6159	124.9589	0.02838	4.48	21.086	36.10	1.35
BellsB	M002	2777.91	FINNIS-20-2050-M	51.099990	122.770	124.220600	123.8621	124.2845	0.00373	1.83	52.494	63.65	0.51
BellsB	M002	2727.91	FINNIS-20-2050-M	51.099990	122.210	123.881900	123.8819	124.1016	0.00941	3.11	37.821	69.00	0.81
BellsB	M002	2677.99	FINNIS-20-2050-M	51.099990	121.130	123.117200	123.2265	123.5668	0.01146	3.72	26.243	55.09	0.91
BellsB	M002	2628.09	FINNIS-20-2050-M	51.099990	120.690	122.380800	122.5299	122.8898	0.02032	4.62	23.627	37.45	1.19
BellsB	M002	2578.18	FINNIS-20-2050-M	51.099990	119.940	122.052100	121.7861	122.2208	0.00550	2.75	37.073	41.05	0.64
BellsB	M002	2528.27	FINNIS-20-2050-M	51.099990	119.100	121.251200	121.2512	121.7991	0.01376	4.33	20.366	19.26	1.00
BellsB	M002	2518.19	FINNIS-20-2050-M	51.099990	118.620	121.121900	120.8162	121.4048	0.00635	3.27	29.012	27.04	0.70
BellsB	M002	2496.15	FINNIS-20-2050-M	51.099990	118.530	121.175400		121.2787	0.00241	2.14	44.772	32.41	0.44
BellsB	M002	2478.37	FINNIS-20-2050-M	51.099990	117.970	120.763700		121.1871	0.00694	3.70	24.823	20.39	0.74
BellsB	M002	2450.61	FINNIS-20-2050-M	51.099990	117.550	120.245000	120.2450	120.9129	0.01130	4.66	19.289	14.87	0.95
BellsB	M002	2428.46	FINNIS-20-2050-M	51.099990	117.190	118.705700	119.1985	120.3128	0.06201	6.78	12.103	18.74	1.97
BellsB	M002	2408.52	FINNIS-20-2050-M	51.099990	116.630	118.138200	118.5002	119.1956	0.05248	6.20	14.714	23.07	1.80
BellsB	M002	2378.55	FINNIS-20-2050-M	51.099990	116.150	118.051800	118.0851	118.4446	0.01557	4.30	25.908	35.58	1.04
BellsB	M002	2367.92	FINNIS-20-2050-M	51.099990	115.610	117.010500	117.3521	118.0886	0.04765	6.20	14.354	19.96	1.77
BellsB	M002	2352.81	FINNIS-20-2050-M	51.099990	115.070	116.592600	116.8466	117.4747	0.03454	5.56	15.352	18.12	1.53
BellsB	M002	2328.64	FINNIS-20-2050-M	51.099990	113.990	116.215000	116.3772	116.8551	0.01587	4.76	20.995	25.73	1.08
BellsB	M002	2307.61	FINNIS-20-2050-M	51.099990	112.940	116.343100	115.7194	116.4102	0.00106	1.53	62.195	50.58	0.28
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	FINNIS-20-2050-M	54.800010	111.750	115.230700	115.2307	115.6802	0.00551	3.31	27.929	37.97	0.59
BellsB	M002	2275.77	FINNIS-20-2050-M	54.800010	112.060	113.856800	114.2896	115.1792	0.04375	6.90	14.416	21.27	1.74
BellsB	M002	2232.72	FINNIS-20-2050-M	54.800010	110.580	112.873700	113.1305	113.8114	0.01924	5.32	16.973	15.90	1.19
BellsB	M002	2200.99	FINNIS-20-2050-M	54.800010	109.610	112.533500	112.0564	112.8801	0.00555	3.39	27.266	19.18	0.67
BellsB	M002	2173.21	FINNIS-20-2050-M	54.800010	108.980	111.870000	111.8700	112.6303	0.01071	4.55	18.179	12.10	0.89
BellsB	M002	2133.27	FINNIS-20-2050-M	54.800010	107.790	109.474100	110.1200	111.6447	0.06203	7.84	10.803	13.27	2.06
BellsB	M002	2117.78	FINNIS-20-2050-M	54.800010	107.460	109.380000	109.8103	110.7642	0.03030	6.19	14.306	17.72	1.50
BellsB	M002	2103.01	FINNIS-20-2050-M	54.800010	106.450	108.251000	108.8198	110.0858	0.05498	7.35	10.968	11.07	1.90
BellsB	M002	2085.77	FINNIS-20-2050-M	54.800010	105.170	107.123400	107.7538	109.1092	0.05133	7.77	10.719	9.76	1.89
BellsB	M002	2068.57	FINNIS-20-2050-M	54.800010	104.360	105.655900	106.3051	108.0112	0.09541	8.48	9.920	13.24	2.50
BellsB	M002	2059.88	FINNIS-20-2050-M	54.800010	103.560	105.306800	105.9115	107.3583	0.05052	7.24	10.783	11.49	1.88

HEC-RAS Plan: Plan 20 Profile: FINNIS-20-2050-M (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	FINNIS-20-2050-M	54.800010	103.130	104.879500	105.5353	107.0467	0.06192	7.86	10.091	9.22	2.05
BellsB	M002	2040.56	FINNIS-20-2050-M	54.800010	102.390	104.434800	105.0482	106.3811	0.03217	6.97	10.945	7.74	1.59
BellsB	M002	2033.27	FINNIS-20-2050-M	54.800010	102.080	104.760200	105.0396	105.9822	0.02002	5.64	13.830	9.48	1.20
BellsB	M002	2025.44	FINNIS-20-2050-M	54.800010	101.580	103.464100	104.1537	105.6584	0.04510	7.27	10.167	9.57	1.79
BellsB	M002	2021.67	FINNIS-20-2050-M	54.800010	101.430	103.743400	104.2569	105.3387	0.03031	6.22	11.952	10.47	1.44
BellsB	M002	2014.53	FINNIS-20-2050-M	54.800010	99.960	101.922800	102.7761	104.8746	0.07842	7.77	7.809	8.12	2.17
BellsB	M002	2010.46	FINNIS-20-2050-M	54.800010	99.080	100.600000	101.5963	104.4049	0.11453	9.85	7.483	7.66	2.75
BellsB	M002	2007.37	FINNIS-20-2050-M	54.800010	98.520	100.399500	101.4220	104.0532	0.09102	8.72	7.085	6.34	2.35
BellsB	M002	1996.87	FINNIS-20-2050-M	54.800010	97.970	99.439700	100.4364	103.0597	0.09658	9.46	7.731	7.48	2.59
BellsB	M002	1982.97	FINNIS-20-2050-M	54.800010	97.730	99.228950	99.9522	101.5869	0.06578	8.03	9.583	8.76	2.16
BellsB	M002	1966.25	FINNIS-20-2050-M	54.800010	96.750	99.092650	99.5469	100.6189	0.03048	6.34	12.232	9.72	1.44
BellsB	M002	1951.81	FINNIS-20-2050-M	54.800010	96.560	99.417170	98.6338	99.6529	0.00388	2.78	29.113	15.40	0.55
BellsB	M002	1939.94	FINNIS-20-2050-M	54.800010	96.290	98.841560	98.8416	99.5261	0.01199	4.27	18.410	13.84	0.94
BellsB	M002	1918.81	FINNIS-20-2050-M	54.800010	95.860	98.760810	98.2665	99.1605	0.00598	3.56	24.266	13.93	0.70
BellsB	M002	1910.32	FINNIS-20-2050-M	54.800010	95.580	98.239270	98.2393	99.0531	0.01100	4.46	16.980	11.37	0.93
BellsB	M002	1896.87	FINNIS-20-2050-M	54.800010	94.380	96.327350	97.0265	98.6164	0.05865	7.74	9.926	9.41	1.94
BellsB	M002	1887.59	FINNIS-20-2050-M	54.800010	93.870	95.348060	96.0605	97.9189	0.08969	8.21	9.229	10.99	2.40
BellsB	M002	1880.79	FINNIS-20-2050-M	54.800010	93.330	95.090530	95.7695	97.3604	0.05473	7.44	9.937	10.20	1.94
BellsB	M002	1870.34	FINNIS-20-2050-M	54.800010	92.770	96.340910	95.0793	96.6607	0.00305	3.08	27.690	10.82	0.53
BellsB	M002	1857.16	FINNIS-20-2050-M	54.800010	91.880	96.424500		96.5863	0.00146	2.25	37.860	15.20	0.35
BellsB	M002	1848.27	FINNIS-20-2050-M	54.800010	91.910	96.460620		96.5582	0.00071	1.71	49.680	17.55	0.26
BellsB	M002	1834.27	FINNIS-20-2050-M	54.800010	90.880	96.466360		96.5447	0.00046	1.52	56.778	18.10	0.21
BellsB	M002	1821.35	FINNIS-20-2050-M	54.800010	90.900	96.487890		96.5291	0.00027	1.26	75.456	21.54	0.17
BellsB	M002	1807.43	FINNIS-20-2050-M	54.800010	89.830	96.492370		96.5231	0.00017	1.05	88.398	22.37	0.13
BellsB	M002	1800.77	FINNIS-20-2050-M	54.800010	89.590	96.494270		96.5207	0.00016	1.04	93.841	23.45	0.13
BellsB	M002	1777.98	FINNIS-20-2050-M	54.800010	88.770	96.503280		96.5141	0.00006	0.68	142.958	30.89	0.08
BellsB	M002	1753.27	FINNIS-20-2050-M	54.800010	88.220	96.499460		96.5124	0.00006	0.75	136.753	31.78	0.08
BellsB	M002	1729.73	FINNIS-20-2050-M	54.800010	88.170	96.501920		96.5097	0.00004	0.60	167.313	33.30	0.07
BellsB	M002	1705.77	FINNIS-20-2050-M	54.800010	87.600	96.503700		96.5082	0.00002	0.47	267.453	66.78	0.05
BellsB	M002	1688.91	FINNIS-20-2050-M	54.800010	86.720	96.499610	91.3000	96.5075	0.00002	0.52	226.338	74.19	0.05
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	FINNIS-20-2050-M	54.800010	83.970	88.530320	88.5303	90.8036	0.00723	6.68	8.204	23.93	1.00
BellsB	M002	1605.59	FINNIS-20-2050-M	54.800010	81.490	82.403540	83.3062	89.0593	0.45555	12.27	5.388	13.32	5.46
BellsB	M001	1582.05	FINNIS-20-2050-M	88.300000	80.410	81.892390	83.1594	87.6029	0.11987	11.07	9.374	10.12	3.21
BellsB	M001	1563.67	FINNIS-20-2050-M	88.300000	79.960	81.567700	82.5736	85.3577	0.07103	9.44	12.180	11.84	2.55
BellsB	M001	1544.26	FINNIS-20-2050-M	88.300000	79.040	81.309760	82.1867	84.1150	0.03561	8.32	14.977	10.98	1.88
BellsB	M001	1529.04	FINNIS-20-2050-M	88.300000	78.240	79.955640	80.9706	83.4172	0.04983	8.67	12.129	9.43	2.19
BellsB	M001	1515.66	FINNIS-20-2050-M	88.300000	77.300	79.682270	80.6266	82.6608	0.04519	8.03	13.054	8.89	1.82
BellsB	M001	1502.43	FINNIS-20-2050-M	88.300000	69.640	70.486390	71.6738	80.4489	0.64294	14.09	6.491	12.66	5.83
BellsB	M001	1483.47	FINNIS-20-2050-M	88.300000	68.890	70.109250	70.8843	73.2684	0.14579	8.90	12.466	16.89	2.98
BellsB	M001	1454.75	FINNIS-20-2050-M	88.300000	68.030	69.830190	70.1504	71.0164	0.03127	6.15	20.794	16.99	1.52
BellsB	M001	1406.62	FINNIS-20-2050-M	88.300000	66.490	69.348580	69.3486	70.2754	0.01259	5.17	24.814	14.16	1.02
BellsB	M001	1358.51	FINNIS-20-2050-M	88.300000	65.170	67.113040	67.7437	69.1499	0.04180	7.04	16.190	13.20	1.74
BellsB	M001	1310.38	FINNIS-20-2050-M	88.300000	63.800	65.694980	66.1709	67.2155	0.03335	6.28	20.103	20.19	1.57
BellsB	M001	1286.33	FINNIS-20-2050-M	88.300000	62.810	64.487960	64.9861	66.1802	0.05674	7.08	18.105	21.89	1.95
BellsB	M001	1262.25	FINNIS-20-2050-M	88.300000	62.090	64.562180	64.7496	65.3224	0.01911	5.35	29.016	29.66	1.17
BellsB	M001	1251.58	FINNIS-20-2050-M	88.300000	61.460	63.766830	64.1570	65.0358	0.02939	6.97	24.482	29.79	1.52
BellsB	M001	1234.76	FINNIS-20-2050-M	88.300000	60.570	62.409460	62.9467	64.2988	0.06336	8.25	19.018	25.83	2.09
BellsB	M001	1214.13	FINNIS-20-2050-M	88.300000	59.550	62.421890	61.5269	62.6403	0.00285	2.52	51.812	28.59	0.50
BellsB	M001	1200.58	FINNIS-20-2050-M	88.300000	58.900	61.719900	61.7199	62.5125	0.01112	4.75	28.280	18.78	0.95
BellsB	M001	1182.98	FINNIS-20-2050-M	88.300000	58.590	61.313030	61.4738	62.2724	0.01472	5.33	25.976	18.74	1.09
BellsB	M001	1166.01	FINNIS-20-2050-M	88.300000	58.390	60.135700	60.6492	61.7981	0.04390	6.82	19.231	20.70	1.76
BellsB	M001	1153.18	FINNIS-20-2050-M	88.300000	57.700	59.772430	60.1979	61.1665	0.04339	7.47	20.997	20.84	1.75
BellsB	M001	1141.88	FINNIS-20-2050-M	88.300000	56.720	58.517940	59.1610	60.5832	0.04833	7.19	16.369	16.21	1.86
BellsB	M001	1128.34	FINNIS-20-2050-M	88.300000	56.530	58.083470	58.6053	59.7445	0.05676	7.14	16.926	16.59	1.95
BellsB	M001	1117.89	FINNIS-20-2050-M	88.300000	55.580	57.277670	57.8547	59.1173	0.06038	8.04	17.072	15.59	2.05
BellsB	M001	1096.03	FINNIS-20-2050-M	88.300000	54.610	56.670850	57.0965	58.0771	0.03087	6.17	20.232	17.62	1.51
BellsB	M001	1077.81	FINNIS-20-2050-M	88.300000	54.240	55.703610	56.2183	57.3896	0.05024	6.81	19.217	23.17	1.87
BellsB	M001	1069.76	FINNIS-20-2050-M	88.300000	53.700	54.741680	55.3020	56.6948	0.10348	7.63	15.972	20.55	2.53
BellsB	M001	1064.67	FINNIS-20-2050-M	88.300000	53.190	54.221530	54.7727	56.1614	0.11117	7.66	16.012	21.42	2.60
BellsB	M001	1051.64	FINNIS-20-2050-M	88.300000	51.970	53.343540	53.9083	55.2138	0.06574	7.22	17.278	19.66	2.09
BellsB	M001	1032.36	FINNIS-20-2050-M	88.300000	50.970	52.866370	53.2351	54.1193	0.03680	6.62	21.258	18.56	1.63
BellsB	M001	1021.64	FINNIS-20-2050-M	88.300000	50.030	51.824270	52.3621	53.6166	0.04496	6.76	17.784	18.14	1.78
BellsB	M001	1014.11	FINNIS-20-2050-M	88.300000	49.460	51.502460	52.0853	53.3067	0.03903	6.78	17.702	17.04	1.67
BellsB	M001	1006.24	FINNIS-20-2050-M	88.300000	49.150	50.818660	51.4499	52.9368	0.05163	7.32	15.950	15.81	1.91
BellsB	M001	996.42	FINNIS-20-2050-M	88.300000	48.110	49.821650	50.4834	52.3419	0.07627	8.58	14.825	16.09	2.26
BellsB	M001	987.27	FINNIS-20-2050-M	88.300000	47.170	49.178670	49.9564	51.7603	0.05360	8.17	14.900	13.43	1.98
BellsB	M001	973.52	FINNIS-20-2050-M	88.300000	46.790	48.586080	49.2729	51.0268	0.04496	7.55	15.258	16.97	1.94
BellsB	M001	951.43	FINNIS-20-2050-M	88.300000	45.770	47.595530	48.3193	50.0158	0.05652	8.03	15.924	20.64	2.11
BellsB	M001	931.51	FINNIS-20-2050-M	88.300000	44.860	46.509150	47.1798	48.7028	0.07211	9.04	15.141	16.55	2.38
BellsB	M001	925.41	FINNIS-20-2050-M	88.300000	44.690	46.629370	47.1242	48.1832	0.03805	7.32	19.249	20.62	1.74
BellsB	M001	901.68	FINNIS-20-2050-M	88.300000	43.690	45.783590	46.2836	47.4283	0.02656	6.68	17.863	13.21	1.55
BellsB	M001	877.27	FINNIS-20-2050-M	88.300000	43.180	45.385170	45.7618	46.7714	0.02141	6.06	19.289	13.53	1.38
BellsB	M001	857.41	FINNIS-20-2050-M	88.300000	42.160	45.986280	45.0279	46.1535	0.00151	2.36	66.468	46.29	0.40
BellsB	M001	840		Culvert									
BellsB	M001	816.09	FINNIS-20-2050-M	90.400000	38.540	42.263650	42.2637	43.9982	0.01084	5.94	15.823	12.40	1.01
BellsB	M001	810.13	FINNIS-20-2050-M	90.400000	37.800	42.762080	40.7905	42.9502	0.00117	2.16	63.299	41.33	0.32
BellsB	M001	800		Bridge									
BellsB	M001	796.37	FINNIS-20-2050-M	90.400000	34.330	37.446920	38.3304	40.3759	0.03604	7.89	13.003	10.42	1.64
BellsB	M001	782.27	FINNIS-20-2050-M	90.400000	33.920	35.208860	36.1953	39.1606	0.13572	9.56	10.980	11.85	2.93
BellsB	M001	772.73	FINNIS-20-2050-M	90.400000	30.940	32.950940	33.9776	37.6602	0.17193	13.03	11.673	12.27	3.16
BellsB	M001	766.74	FINNIS-20-2050-M	90.400000	30.650	32.928920	33.8584	36.5226	0.11065	11.72	13.377	12.50	2.63
BellsB	M001	760.32	FINNIS-20-2050-M	90.400000	30.340	32.420980	33.3449	35.8834	0.08011	10.12	13.867	12.77	2.38
BellsB	M001	755.97	FINNIS-20-2050-M	90.400000	30.050	32.067960	33.0069	35.5181	0.08576	9.53	13.224	12.21	2.39
BellsB	M001	749.69	FINNIS-20-2050-M	90.400000	29.300	31.438060	32.4209	34.9639	0.08430	10.09	13.323	11.49	2.40
BellsB	M001	742.14	FINNIS-20-2050-M	90.400000	28.380	30.166380	31.2914	34.2828	0.08451	9.95	12.013	10.46	2.49
BellsB	M001	736.73	FINNIS-20-2050-M	90.400000	28.240	29.439580	30.4737	33.6871	0.14016	10.01	10.713	11.77	3.03

HEC-RAS Plan: Plan 20 Profile: FINNIS-20-2050-M (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	FINNIS-20-2050-M	90.400000	27.350	28.737340	29.5176	31.7010	0.09099	8.58	13.219	15.34	2.46
BellsB	M001	712.04	FINNIS-20-2050-M	90.400000	26.270	28.298900	29.0708	30.8476	0.05400	7.93	14.844	12.73	1.95
BellsB	M001	702.42	FINNIS-20-2050-M	90.400000	26.040	27.807090	28.5548	30.2632	0.05995	7.91	15.002	13.76	2.05
BellsB	M001	691.68	FINNIS-20-2050-M	90.400000	25.030	27.096700	27.8765	29.6389	0.05457	7.62	14.283	12.93	1.94
BellsB	M001	686.22	FINNIS-20-2050-M	90.400000	24.460	26.194280	27.0888	29.2527	0.06949	8.02	12.654	11.87	2.17
BellsB	M001	675.26	FINNIS-20-2050-M	90.400000	24.080	25.732020	26.5488	28.4257	0.06101	7.90	13.692	12.17	2.08
BellsB	M001	668.37	FINNIS-20-2050-M	90.400000	23.580	25.320280	26.0962	27.9978	0.06317	7.96	13.948	13.36	2.10
BellsB	M001	655.45	FINNIS-20-2050-M	90.400000	23.020	24.606100	25.3489	27.1400	0.06338	7.68	14.121	13.98	2.08
BellsB	M001	636.88	FINNIS-20-2050-M	90.400000	21.460	23.332630	24.1471	26.0088	0.05481	7.67	13.784	11.91	1.97
BellsB	M001	619.06	FINNIS-20-2050-M	90.400000	20.820	22.851600	23.5317	24.9950	0.04271	7.31	16.296	13.34	1.77
BellsB	M001	608.48	FINNIS-20-2050-M	90.400000	20.130	21.986240	22.7192	24.4635	0.05195	7.55	14.970	14.85	1.92
BellsB	M001	592.31	FINNIS-20-2050-M	90.400000	18.950	20.867540	21.6556	23.5350	0.06766	8.64	14.656	13.38	2.17
BellsB	M001	582.72	FINNIS-20-2050-M	90.400000	18.140	19.796880	20.6878	22.8314	0.07119	8.64	13.587	11.40	2.26
BellsB	M001	577.91	FINNIS-20-2050-M	90.400000	17.660	19.943600	20.7349	22.4213	0.03807	7.90	16.390	12.33	1.74
BellsB	M001	561.51	FINNIS-20-2050-M	90.400000	17.020	18.825340	19.5967	21.5400	0.07622	8.55	14.973	15.00	2.28
BellsB	M001	553.07	FINNIS-20-2050-M	90.400000	16.350	17.986550	18.8100	20.9340	0.06543	8.04	13.917	14.58	2.14
BellsB	M001	541.54	FINNIS-20-2050-M	90.400000	15.410	17.014830	17.8390	20.0876	0.08160	8.08	13.078	14.58	2.32
BellsB	M001	529.17	FINNIS-20-2050-M	90.400000	14.850	16.562630	17.3377	19.0693	0.05823	7.15	13.715	10.26	1.81
BellsB	M001	514.53	FINNIS-20-2050-M	90.400000	14.210	15.738780	16.4494	18.0754	0.07188	7.48	14.925	13.34	2.01
BellsB	M001	467.56	FINNIS-20-2050-M	90.400000	11.610	17.155040	13.9974	17.2599	0.00056	1.60	79.936	28.22	0.22
BellsB	M001	420.59	FINNIS-20-2050-M	90.400000	8.750	17.178840		17.2280	0.00021	1.22	140.607	55.19	0.14
BellsB	M001	400.25	FINNIS-20-2050-M	90.400000	8.570	17.064350	11.7884	17.2115	0.00060	1.82	74.967	54.16	0.20
BellsB	M001	100		Culvert									
BellsB	M001	68.07	FINNIS-20-2050-M	90.400000	0.830	4.599524	4.1814	4.7872	0.00140	2.48	72.003	66.89	0.41
BellsB	M001	47.74	FINNIS-20-2050-M	90.400000	0.560	4.670842	3.5506	4.6901	0.00022	1.04	200.174	144.57	0.17
BellsB	M001	43		Bridge									
BellsB	M001	41.05	FINNIS-20-2050-M	90.400000	0.700	4.668062	3.5270	4.6830	0.00019	0.94	210.192	143.41	0.15
BellsB	M001	20.51	FINNIS-20-2050-M	90.400000	0.570	4.665045		4.6807	0.00021	0.98	209.386	154.69	0.16

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2080-Max

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	AMEC-20-2080-Max	152.900000	36.310	38.952500	38.9525	40.0421	0.00949	5.09	39.368	20.94	1.03
CornerB	M004	2838.71	AMEC-20-2080-Max	152.900000	36.150	38.199730	38.5626	39.4638	0.01327	5.18	36.144	29.83	1.17
CornerB	M004	2796.61	AMEC-20-2080-Max	152.900000	35.350	38.210200	37.6259	38.7347	0.00422	3.53	59.040	38.32	0.69
CornerB	M004	2769.85	AMEC-20-2080-Max	152.900000	34.800	37.437920	37.4379	38.2703	0.01367	6.17	47.274	30.11	1.24
CornerB	TR001	206.04	AMEC-20-2080-Max	27.300000	43.810	44.709250	44.9966	45.6416	0.04203	5.06	7.857	13.81	1.80
CornerB	TR001	156.04	AMEC-20-2080-Max	27.300000	41.630	42.640490	42.9398	43.5823	0.04009	4.46	7.359	16.58	1.70
CornerB	TR001	106.04	AMEC-20-2080-Max	27.300000	39.170	39.795930	40.1607	41.0338	0.06672	5.22	6.174	12.59	2.16
CornerB	TR001	56.04	AMEC-20-2080-Max	27.300000	37.270	38.063750	38.2632	38.7740	0.03046	3.94	8.058	13.35	1.50
CornerB	TR001	36.04	AMEC-20-2080-Max	27.300000	35.500	38.250060	37.4383	38.2540	0.00008	0.44	119.985	81.22	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	AMEC-20-2080-Max	27.300000	35.180	37.164420	37.1644	38.0353	0.01044	4.13	6.603	78.50	1.00
CornerB	M003	2689.92	AMEC-20-2080-Max	168.100000	33.550	35.524510	35.8990	37.1852	0.03002	7.17	40.722	43.39	1.72
CornerB	M003	2645.73	AMEC-20-2080-Max	168.100000	32.870	36.341630	34.7294	36.4575	0.00092	1.95	138.970	63.17	0.34
CornerB	M003	2602.09	AMEC-20-2080-Max	168.100000	32.200	36.344300		36.4188	0.00044	1.50	177.171	67.37	0.24
CornerB	M003	2557.73	AMEC-20-2080-Max	168.100000	31.340	36.291640		36.3963	0.00044	1.67	149.688	48.16	0.25
CornerB	M003	2537.73	AMEC-20-2080-Max	168.100000	30.770	36.215030	34.5299	36.3791	0.00071	2.34	145.401	64.05	0.32
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	AMEC-20-2080-Max	168.100000	30.350	33.949430	33.9494	35.7201	0.00799	5.90	28.513	21.11	1.00
CornerB	M003	2507.21	AMEC-20-2080-Max	168.100000	30.750	32.361390	33.1657	35.1005	0.05181	8.22	26.261	21.58	2.20
CornerB	M003	2459.31	AMEC-20-2080-Max	168.100000	30.130	32.712130	32.1112	33.1120	0.00377	3.21	70.462	35.56	0.65
CornerB	M003	2411.41	AMEC-20-2080-Max	168.100000	29.270	32.797600		32.9392	0.00125	2.22	125.924	59.44	0.39
CornerB	M003	2363.51	AMEC-20-2080-Max	168.100000	28.770	32.795350		32.8860	0.00054	1.61	151.910	52.93	0.26
CornerB	M003	2315.61	AMEC-20-2080-Max	168.100000	27.930	32.780080		32.8653	0.00031	1.41	160.769	54.94	0.21
CornerB	M003	2267.71	AMEC-20-2080-Max	168.500000	26.300	32.775200		32.8507	0.00020	1.36	198.156	75.49	0.17
CornerB	M003	2263.01	AMEC-20-2080-Max	168.500000	29.100	32.451070		32.7740	0.00393	2.75	82.186	72.40	0.68
CornerB	M003	2260.98	AMEC-20-2080-Max	168.500000	25.800	29.991640		30.2691	0.00122	2.47	84.127	28.88	0.40
CornerB	M003	2240.88	AMEC-20-2080-Max	168.500000	27.010	29.866070		30.2126	0.00271	2.74	73.848	39.74	0.55
CornerB	M003	2212.25	AMEC-20-2080-Max	168.500000	26.870	29.792540		30.1358	0.00260	2.83	75.333	35.84	0.55
CornerB	M003	2183.63	AMEC-20-2080-Max	168.500000	25.560	28.929630	28.9296	29.9499	0.00754	5.02	47.703	26.68	0.94
CornerB	M003	2163.63	AMEC-20-2080-Max	168.500000	25.350	28.861180	28.1066	29.5159	0.00361	3.70	49.212	30.49	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	AMEC-20-2080-Max	168.500000	24.870	27.595670	27.9767	29.2737	0.01544	6.23	32.745	21.45	1.29
CornerB	M003	2131.66	AMEC-20-2080-Max	168.500000	24.570	26.896540	27.5382	28.9585	0.02567	6.58	29.026	20.40	1.58
CornerB	M003	2119.46	AMEC-20-2080-Max	168.500000	24.120	26.042290	26.8038	28.5349	0.03871	7.32	26.677	21.67	1.91
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	AMEC-20-2080-Max	168.500000	24.040	26.328860	26.8628	28.1257	0.02110	6.08	30.821	21.41	1.45
CornerB	M003	2080.62	AMEC-20-2080-Max	168.500000	23.730	25.495470	26.1423	27.3117	0.02694	6.19	30.926	24.81	1.60
CornerB	M003	2068.44	AMEC-20-2080-Max	168.500000	23.760	25.474950	25.9233	26.9032	0.02183	5.57	35.187	28.28	1.44
CornerB	M003	2022.25	AMEC-20-2080-Max	168.500000	22.740	24.710330	25.0468	26.0063	0.01650	5.36	38.175	28.17	1.29
CornerB	M003	1991.14	AMEC-20-2080-Max	168.500000	22.180	24.470600	24.6016	25.5276	0.01061	4.88	43.065	27.55	1.06
CornerB	M003	1985.82	AMEC-20-2080-Max	168.500000	21.970	24.062550	24.3580	25.4278	0.01595	5.56	37.536	25.41	1.28
CornerB	M003	1975.95	AMEC-20-2080-Max	168.500000	21.780	23.719990	24.1513	25.2294	0.02011	5.98	36.231	26.51	1.42
CornerB	M003	1929.72	AMEC-20-2080-Max	168.500000	20.080	22.206430	22.7866	24.1612	0.02478	6.50	30.028	20.24	1.56
CornerB	M003	1883.49	AMEC-20-2080-Max	168.500000	19.230	21.777020	22.0417	23.2114	0.01267	5.66	36.464	19.52	1.18
CornerB	TR002	21.04	AMEC-20-2080-Max	10.100000	22.270	22.904440	23.4372	25.3125	0.15017	7.43	1.753	4.44	3.15
CornerB	TR002	18.08	AMEC-20-2080-Max	10.100000	21.400	21.806720	22.2643	24.6011	0.37993	8.36	1.599	6.17	4.65
CornerB	M002	1826.39	AMEC-20-2080-Max	170.300000	16.920	18.464530	19.2779	21.6903	0.11998	8.55	24.467	29.89	2.52
CornerB	M002	1790.92	AMEC-20-2080-Max	170.300000	15.490	19.115760	18.6739	19.9865	0.00836	4.57	47.541	18.13	0.79
CornerB	M002	1773.95	AMEC-20-2080-Max	170.300000	14.720	19.511470	17.6263	19.7420	0.00166	2.39	93.219	29.72	0.36
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	AMEC-20-2080-Max	170.300000	14.870	19.525000	17.3687	19.6792	0.00091	2.03	116.533	37.83	0.31
CornerB	M002	1733.13	AMEC-20-2080-Max	170.300000	15.230	19.560290		19.6099	0.00026	1.06	204.386	78.27	0.17
CornerB	M002	1717.41	AMEC-20-2080-Max	170.300000	15.120	19.562550		19.6035	0.00022	0.99	228.906	86.92	0.15
CornerB	M002	1691.96	AMEC-20-2080-Max	170.300000	14.620	19.561490		19.5967	0.00018	0.93	259.393	106.85	0.14
CornerB	M002	1654.15	AMEC-20-2080-Max	170.300000	13.870	19.567830		19.5874	0.00009	0.68	338.123	137.25	0.10
CornerB	M002	1613.91	AMEC-20-2080-Max	170.300000	13.080	19.568820		19.5836	0.00004	0.57	392.961	152.75	0.08
CornerB	M002	1567.16	AMEC-20-2080-Max	170.300000	12.150	19.576350		19.5794	0.00001	0.25	777.557	210.55	0.03
CornerB	M002	1551.89	AMEC-20-2080-Max	170.300000	11.850	19.577550		19.5788	0.00000	0.16	1174.618	273.25	0.02
CornerB	M002	1539.91	AMEC-20-2080-Max	169.600000	11.620	19.577940		19.5786	0.00000	0.12	1582.117	306.44	0.01
CornerB	M002	1526.59	AMEC-20-2080-Max	169.600000	11.360	19.577920		19.5786	0.00000	0.12	1610.955	311.61	0.01
CornerB	M002	1517.99	AMEC-20-2080-Max	169.600000	11.180	19.577620		19.5785	0.00000	0.14	1362.660	267.85	0.02
CornerB	M002	1505.64	AMEC-20-2080-Max	169.600000	10.940	19.576850		19.5784	0.00000	0.18	1014.646	197.97	0.02
CornerB	M002	1490.63	AMEC-20-2080-Max	169.600000	10.640	19.574700		19.5782	0.00001	0.27	701.141	140.12	0.03
CornerB	M002	1463.65	AMEC-20-2080-Max	169.600000	10.110	19.562830		19.5768	0.00003	0.55	385.992	89.07	0.07
CornerB	M002	1415.93	AMEC-20-2080-Max	169.600000	9.170	19.561460		19.5754	0.00003	0.53	362.652	74.82	0.06
CornerB	M002	1386.11	AMEC-20-2080-Max	169.600000	8.580	19.555230		19.5740	0.00004	0.63	332.772	77.99	0.07
CornerB	M002	1363.91	AMEC-20-2080-Max	169.600000	8.140	19.542100		19.5718	0.00006	0.80	266.769	57.44	0.09
CornerB	M002	1356.61	AMEC-20-2080-Max	169.600000	8.000	19.541040		19.5709	0.00017	1.00	278.903	72.81	0.10
CornerB	M002	1354.11	AMEC-20-2080-Max	169.600000	15.350	19.334100		19.5512	0.00179	2.67	103.634	57.01	0.43
CornerB	M002	1352.01	AMEC-20-2080-Max	169.600000	8.000	11.140820	11.1408	12.1711	0.02559	3.12	38.992	17.51	0.93
CornerB	M002	1347.51	AMEC-20-2080-Max	169.600000	7.720	10.287430	10.6985	11.9122	0.03235	5.66	30.414	18.43	1.37
CornerB	M002	1336.58	AMEC-20-2080-Max	169.600000	7.690	9.593046	10.1702	11.4750	0.04469	6.13	28.857	22.24	1.59
CornerB	M002	1326.83	AMEC-20-2080-Max	169.600000	7.680	10.643930	9.8560	11.0090	0.00457	2.83	68.377	30.64	0.56
CornerB	M002	1317.22	AMEC-20-2080-Max	169.600000	7.660	10.497140		10.9485	0.00643	3.09	61.073	31.37	0.65
CornerB	M002	1315.18	AMEC-20-2080-Max	169.600000	7.280	10.038360	10.0384	10.8873	0.01661	4.40	45.258	28.16	1.01
CornerB	M002	1313.58	AMEC-20-2080-Max	169.600000	6.480	9.212061	9.6605	10.7798	0.03518	5.84	33.216	24.28	1.42
CornerB	M002	1312.39	AMEC-20-2080-Max	169.600000	6.230	8.760824	9.3453	10.6950	0.04523	6.38	29.591	22.79	1.60
CornerB	M002	1311.16	AMEC-20-2080-Max	169.600000	5.920	8.336718	9.0224	10.5972	0.06150	6.76	26.501	22.00	1.83
CornerB	M002	1309.11	AMEC-20-2080-Max	169.600000	5.910	7.937232	8.6942	10.4399	0.06893	7.09	25.069	21.14	1.94
CornerB	M002	1305.35	AMEC-20-2080-Max	169.600000	5.370	7.294927	8.1035	10.1196	0.07948	7.75	25.015	24.06	2.09
CornerB	M002	1300.06	AMEC-20-2080-Max	169.600000	5.060	6.807634	7.6161	9.6643	0.09660	7.56	23.384	22.86	2.24
CornerB	M002	1296.49	AMEC-20-2080-Max	169.600000	4.910	6.959598	7.6663	9.2446	0.05196	6.85	26.817	20.03	1.73
CornerB	M002	1289.64	AMEC-20-2080-Max	169.600000	4.710	6.957847	7.4925	8.8123	0.03865	6.23	29.984	20.50	1.51
CornerB	M002	1284.12	AMEC-20-2080-Max	169.600000	4.410	7.068317	7.4015	8.5361	0.02329	5.61	34.512	20.15	1.22
CornerB	M002	1279.52	AMEC-20-2080-Max	169.600000	4.230	6.659539	7.1438	8.3904	0.02912	6.00	31.452	19.89	1.35
CornerB	M002	1258.94	AMEC-20-2080-Max	169.600000	3.530	5.297997	5.9842	7.4938	0.06342	6.88	28.474	27.66	1.88
CornerB	M002	1246.98	AMEC-20-2080-Max	169.600000	3.370	4.862049	5.4490	6.7876	0.04320	6.22	28.822	25.31	1.72

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2080-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	AMEC-20-2080-Max	169.600000	3.100	4.628748	5.0758	6.0956	0.04184	5.59	34.615	37.65	1.67
CornerB	M002	1215.66	AMEC-20-2080-Max	169.600000	2.700	4.157172	4.5436	5.3571	0.02833	4.95	38.580	46.25	1.39
CornerB	M002	1206.83	AMEC-20-2080-Max	169.600000	2.540	4.797574	4.4383	5.1096	0.00510	2.73	83.064	67.10	0.63
CornerB	M002	1194.69	AMEC-20-2080-Max	169.600000	2.390	4.777139		5.0467	0.00427	2.61	89.276	64.81	0.59
CornerB	M002	1185.06	AMEC-20-2080-Max	169.600000	2.260	4.764371		4.9957	0.00323	2.42	97.465	66.40	0.52
CornerB	M002	1142.41	AMEC-20-2080-Max	169.600000	1.700	4.677691		4.8684	0.00261	2.26	110.854	82.81	0.47
CornerB	M002	1137.55	AMEC-20-2080-Max	169.600000	1.600	4.227007	4.2032	4.7897	0.01013	3.51	62.160	67.52	0.86
CornerB	M002	1110.53	AMEC-20-2080-Max	169.600000	1.390	4.104398	3.7646	4.5639	0.00523	3.21	72.277	66.05	0.66
CornerB	M002	1090.67	AMEC-20-2080-Max	169.600000	1.100	4.294385		4.4097	0.00140	1.82	144.504	87.93	0.35
CornerB	M002	1070.69	AMEC-20-2080-Max	169.600000	0.800	4.312227	2.9046	4.3770	0.00065	1.41	188.961	89.14	0.25
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	AMEC-20-2080-Max	169.600000	0.760	4.300573	2.8082	4.3591	0.00058	1.36	189.616	86.49	0.23
CornerB	M002	1047.01	AMEC-20-2080-Max	169.600000	0.750	4.281540		4.3466	0.00055	1.49	183.947	78.42	0.26
CornerB	M002	1004.03	AMEC-20-2080-Max	169.600000	0.770	4.252067		4.3207	0.00053	1.45	209.125	129.93	0.25
CornerB	M002	959.21	AMEC-20-2080-Max	169.600000	0.700	4.259344		4.2923	0.00038	1.23	314.034	279.50	0.22
CornerB	M002	915.75	AMEC-20-2080-Max	168.800000	0.680	4.254657		4.2727	0.00027	1.01	388.490	295.36	0.18
CornerB	M002	869.66	AMEC-20-2080-Max	168.800000	0.690	4.248992		4.2619	0.00016	0.80	424.508	222.86	0.14
CornerB	M002	828.33	AMEC-20-2080-Max	163.800000	0.770	4.243965		4.2560	0.00016	0.78	412.727	220.27	0.14
CornerB	M002	784.55	AMEC-20-2080-Max	163.800000	0.820	4.241564		4.2504	0.00011	0.65	433.169	231.56	0.12
CornerB	M002	739.85	AMEC-20-2080-Max	163.800000	0.820	4.235785		4.2455	0.00011	0.62	445.238	270.33	0.11
CornerB	M002	696.36	AMEC-20-2080-Max	163.800000	0.640	4.223551		4.2388	0.00015	0.79	388.798	266.79	0.14
CornerB	M001	659.37	AMEC-20-2080-Max	173.300000	0.750	4.216625		4.2338	0.00017	0.78	366.891	232.47	0.14
CornerB	M001	643.93	AMEC-20-2080-Max	173.300000	0.740	4.202908	2.9676	4.2296	0.00025	0.97	309.847	216.95	0.17
CornerB	M001	635		Bridge									
CornerB	M001	629.03	AMEC-20-2080-Max	173.300000	0.830	3.882023	2.9666	3.9471	0.00066	1.46	209.363	177.89	0.28
CornerB	M001	608.52	AMEC-20-2080-Max	173.300000	0.760	3.870163		3.9319	0.00082	1.56	201.210	162.46	0.31
CornerB	M001	570.12	AMEC-20-2080-Max	173.300000	0.610	3.871225		3.9008	0.00042	1.18	270.624	186.01	0.22
CornerB	M001	535.83	AMEC-20-2080-Max	173.300000	0.560	3.855608	1.9301	3.8892	0.00024	0.98	279.371	219.76	0.17
CornerB	M001	520.22	AMEC-20-2080-Max	173.300000	0.550	3.860130	2.0206	3.8826	0.00018	0.85	327.346	291.27	0.15
CornerB	M001	472.07	AMEC-20-2080-Max	173.300000	0.580	3.811021	2.4591	3.8660	0.00046	1.31	232.727	199.99	0.24
CornerB	M001	460		Bridge									
CornerB	M001	445.11	AMEC-20-2080-Max	173.300000	0.440	3.522213	2.2229	3.6635	0.00097	1.87	175.686	237.17	0.34
CornerB	M001	425.41	AMEC-20-2080-Max	173.300000	0.480	3.544935		3.6099	0.00062	1.45	268.663	307.79	0.27
CornerB	M001	401.99	AMEC-20-2080-Max	173.300000	0.740	3.558013		3.5877	0.00036	1.07	363.506	344.41	0.20
CornerB	M001	381.26	AMEC-20-2080-Max	173.300000	0.790	3.515714	3.0864	3.5732	0.00072	1.45	287.158	351.81	0.29
CornerB	M001	380		Bridge									
CornerB	M001	375.14	AMEC-20-2080-Max	173.300000	0.790	3.468405	3.1100	3.5319	0.00082	1.56	282.270	371.01	0.31
CornerB	M001	352.89	AMEC-20-2080-Max	173.300000	0.680	3.433595		3.5106	0.00071	1.47	264.978	425.54	0.29
CornerB	M001	324.13	AMEC-20-2080-Max	173.300000	0.670	3.414899		3.4900	0.00071	1.47	245.545	348.80	0.29
CornerB	M001	292.92	AMEC-20-2080-Max	173.300000	0.650	3.417723		3.4627	0.00049	1.21	327.180	427.49	0.24
CornerB	M001	274.62	AMEC-20-2080-Max	173.300000	0.960	3.419706	2.7093	3.4459	0.00066	1.26	358.314	436.28	0.27
CornerB	M001	270		Bridge									
CornerB	M001	266.99	AMEC-20-2080-Max	173.300000	1.010	3.412412	2.6428	3.4298	0.00054	1.15	394.656	433.90	0.24
CornerB	M001	245.99	AMEC-20-2080-Max	173.300000	0.640	3.404394		3.4209	0.00035	0.99	467.005	539.83	0.20
CornerB	M001	210.89	AMEC-20-2080-Max	173.300000	0.680	3.393040		3.4083	0.00034	0.92	462.810	495.70	0.19
CornerB	M001	174.77	AMEC-20-2080-Max	173.300000	0.690	3.386199		3.3966	0.00026	0.74	530.100	637.23	0.16
CornerB	M001	155.66	AMEC-20-2080-Max	173.300000	0.640	3.385149	2.5297	3.3910	0.00022	0.64	630.791	770.86	0.15
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	AMEC-20-2080-Max	173.300000	0.550	3.383305	2.4768	3.3890	0.00019	0.59	622.665	700.09	0.14
CornerB	M001	129.05	AMEC-20-2080-Max	173.300000	0.400	3.378700		3.3844	0.00014	0.59	691.659	759.17	0.12
CornerB	M001	80.73	AMEC-20-2080-Max	173.300000	0.200	3.368302		3.3773	0.00015	0.68	603.736	622.23	0.13
CornerB	M001	23.81	AMEC-20-2080-Max	173.300000	0.320	3.360115	2.0637	3.3694	0.00014	0.64	612.672	621.28	0.13
BellsB	TR001	178.13	AMEC-20-2080-Max	16.000000	92.910	94.171010	94.5673	95.4054	0.04302	5.02	3.544	5.51	1.71
BellsB	TR001	159.86	AMEC-20-2080-Max	16.000000	92.150	94.869190	93.6315	94.9231	0.00068	1.28	20.287	13.50	0.26
BellsB	TR001	139.54	AMEC-20-2080-Max	16.000000	91.130	94.715120	92.7979	94.8925	0.00123	1.87	8.578	11.18	0.32
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	AMEC-20-2080-Max	16.000000	89.490	91.043330	91.3041	92.2224	0.02055	4.85	3.415	5.02	1.28
BellsB	TR001	88.17	AMEC-20-2080-Max	16.000000	88.470	89.395870	89.9882	91.7443	0.11564	7.22	2.712	5.27	2.77
BellsB	TR001	84.12	AMEC-20-2080-Max	16.000000	87.660	88.424200	88.9746	91.0592	0.19906	7.32	2.382	6.48	3.46
BellsB	TR001	79.14	AMEC-20-2080-Max	16.000000	86.530	87.327280	87.9299	90.1578	0.15173	7.72	2.444	6.00	3.18
BellsB	TR001	72.74	AMEC-20-2080-Max	16.000000	85.760	86.432650	86.9700	88.9842	0.18837	7.19	2.424	6.81	3.37
BellsB	TR001	67.75	AMEC-20-2080-Max	16.000000	85.040	85.617810	86.0675	87.8184	0.20789	6.93	2.693	8.06	3.47
BellsB	TR001	64.04	AMEC-20-2080-Max	16.000000	84.470	85.211140	85.6812	87.0901	0.13562	6.07	2.644	6.06	2.87
BellsB	TR001	60.69	AMEC-20-2080-Max	16.000000	84.140	85.143250	85.5622	86.6125	0.08394	5.53	3.224	6.91	2.32
BellsB	TR001	56.76	AMEC-20-2080-Max	16.000000	83.970	84.943720	85.3315	86.2654	0.07001	5.13	3.274	7.08	2.14
BellsB	TR001	50.93	AMEC-20-2080-Max	16.000000	83.680	84.728490	85.0574	85.7935	0.06463	4.70	3.783	8.87	2.03
BellsB	TR001	43.86	AMEC-20-2080-Max	16.000000	83.340	84.258930	84.5611	85.3054	0.07170	4.65	3.834	9.98	2.11
BellsB	TR001	37.01	AMEC-20-2080-Max	16.000000	82.980	83.924850	84.2095	84.8628	0.05093	4.54	4.236	9.15	1.85
BellsB	TR001	12.14	AMEC-20-2080-Max	16.000000	82.150	83.057430	83.2477	83.7051	0.03698	3.80	5.002	10.13	1.57
BellsB	M002	5166.11	AMEC-20-2080-Max	12.200000	190.790	191.847100	191.7793	192.0071	0.01050	2.43	9.365	17.63	0.80
BellsB	M002	5149.23	AMEC-20-2080-Max	12.200000	190.570	191.537400	191.5374	191.7921	0.01472	2.62	7.119	14.22	0.93
BellsB	M002	5117.45	AMEC-20-2080-Max	12.200000	189.910	191.382400	190.7284	191.4094	0.00141	1.14	20.514	23.33	0.31
BellsB	M002	5090.85	AMEC-20-2080-Max	12.200000	189.620	190.973600	190.9736	191.2937	0.01330	3.08	6.797	11.00	0.91
BellsB	M002	5067.47	AMEC-20-2080-Max	12.200000	189.180	189.703100	189.9628	190.5804	0.13652	5.50	3.461	9.12	2.58
BellsB	M002	5017.78	AMEC-20-2080-Max	12.200000	188.120	189.206500	189.2065	189.4829	0.01659	3.08	6.923	11.91	1.00
BellsB	M002	4967.57	AMEC-20-2080-Max	12.200000	186.550	187.708700	187.8654	188.3045	0.03365	4.09	4.434	7.19	1.35
BellsB	M002	4917.46	AMEC-20-2080-Max	12.200000	185.690	186.783300	186.4536	186.8720	0.00455	1.70	11.707	18.69	0.54
BellsB	M002	4873.31	AMEC-20-2080-Max	12.200000	184.610	186.483900		186.6585	0.00488	2.28	9.309	13.05	0.57
BellsB	M002	4853.42	AMEC-20-2080-Max	12.200000	183.550	186.427400	185.1040	186.6071	0.00164	1.88	6.498	26.11	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	AMEC-20-2080-Max	12.200000	181.530	182.788300	183.0574	183.8580	0.03060	4.58	2.663	5.50	1.39
BellsB	M002	4785.76	AMEC-20-2080-Max	12.200000	181.350	182.295000	182.4995	182.9736	0.03958	4.09	3.956	7.36	1.49
BellsB	M002	4756.65	AMEC-20-2080-Max	12.200000	180.120	180.970400	181.1894	181.6461	0.05267	4.50	4.399	11.68	1.70
BellsB	M002	4727.54	AMEC-20-2080-Max	12.200000	179.020	179.781900	179.9451	180.3152	0.03691	3.87	5.256	16.21	1.52
BellsB	M002	4707.54	AMEC-20-2080-Max	12.200000	177.960	178.319300	178.5108	179.0346	0.13692	4.53	3.851	16.50	2.62
BellsB	M002	4702.24	AMEC-20-2080-Max	12.200000	177.650	178.470100	178.4891	178.6973	0.01676	2.62	7.330	17.44	1.03
BellsB	M002	4682.48	AMEC-20-2080-Max	12.200000	176.630	177.307800	177.5284	178.0546	0.05817	4.29	4.114	13.48	1.86

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2080-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	AMEC-20-2080-Max	12.200000	175.500	176.583500	176.7735	177.2529	0.02217	3.91	4.114	6.50	1.25
BellsB	M002	4633.41	AMEC-20-2080-Max	12.200000	174.510	175.186700	175.4797	176.2434	0.09348	5.71	3.674	11.88	2.38
BellsB	M002	4609.61	AMEC-20-2080-Max	12.200000	173.500	174.657300	174.4314	174.8147	0.00609	2.20	8.609	11.58	0.68
BellsB	M002	4583.99	AMEC-20-2080-Max	12.200000	172.770	174.134400	174.1344	174.5715	0.01237	3.12	4.968	6.72	0.93
BellsB	M002	4534.72	AMEC-20-2080-Max	12.200000	170.000	170.876600	171.3831	172.9513	0.12061	7.76	2.563	5.82	2.80
BellsB	M002	4485.52	AMEC-20-2080-Max	12.200000	168.200	168.819200	168.9577	169.2562	0.04986	3.92	5.433	17.38	1.71
BellsB	M002	4436.28	AMEC-20-2080-Max	21.900000	165.850	166.994000	167.2829	167.6100	0.02712	4.56	8.404	14.08	1.42
BellsB	M002	4387.04	AMEC-20-2080-Max	21.900000	164.060	165.236400	165.5075	166.0737	0.03478	5.25	7.261	12.03	1.61
BellsB	M002	4337.81	AMEC-20-2080-Max	21.900000	162.600	163.732600	163.9351	164.3463	0.03280	4.84	9.429	22.41	1.53
BellsB	M002	4288.56	AMEC-20-2080-Max	21.900000	161.300	162.431400	162.5665	162.9074	0.02840	4.37	9.828	20.00	1.40
BellsB	M002	4239.33	AMEC-20-2080-Max	21.900000	159.650	160.638700	160.8810	161.4067	0.03822	4.75	7.403	14.65	1.63
BellsB	M002	4190.09	AMEC-20-2080-Max	21.900000	158.430	159.548100	159.6694	160.0130	0.02064	3.83	9.754	17.71	1.23
BellsB	M002	4140.85	AMEC-20-2080-Max	21.900000	157.300	157.927500	158.0380	158.3352	0.05572	4.38	8.968	22.60	1.85
BellsB	M002	4091.61	AMEC-20-2080-Max	21.900000	155.300	156.084800	156.1411	156.4157	0.03061	3.87	10.133	20.11	1.43
BellsB	M002	4042.37	AMEC-20-2080-Max	21.900000	153.740	154.618600	154.7068	155.0558	0.02419	3.60	8.937	14.97	1.29
BellsB	M002	3993.13	AMEC-20-2080-Max	21.900000	152.650	153.446800	153.5262	153.7865	0.03149	3.66	10.305	22.88	1.39
BellsB	M002	3943.89	AMEC-20-2080-Max	21.900000	151.360	152.238600	152.2853	152.5734	0.02375	3.54	10.395	19.27	1.27
BellsB	M002	3894.65	AMEC-20-2080-Max	21.900000	149.520	151.028800	151.2027	151.6091	0.01958	4.05	9.316	17.72	1.18
BellsB	M002	3869.08	AMEC-20-2080-Max	21.900000	148.870	150.058700	150.3389	150.9360	0.03419	4.81	6.616	10.82	1.55
BellsB	M002	3845.41	AMEC-20-2080-Max	21.900000	148.370	149.605100	149.7923	150.1615	0.02447	4.06	8.654	17.52	1.25
BellsB	M002	3822.22	AMEC-20-2080-Max	21.900000	147.710	149.120900	148.6768	149.2151	0.00372	1.86	18.418	18.55	0.51
BellsB	M002	3796.17	AMEC-20-2080-Max	21.900000	146.890	148.580000	148.5800	149.0230	0.01166	3.43	9.670	12.01	0.90
BellsB	M002	3765.39	AMEC-20-2080-Max	21.900000	146.400	148.331100	148.1547	148.6573	0.00753	2.89	10.569	10.52	0.72
BellsB	M002	3746.94	AMEC-20-2080-Max	21.900000	145.760	148.528100		148.5480	0.00034	0.86	39.646	22.79	0.17
BellsB	M002	3724.94	AMEC-20-2080-Max	21.900000	145.320	148.464800		148.5322	0.00083	1.37	23.156	13.04	0.26
BellsB	M002	3697.71	AMEC-20-2080-Max	21.900000	145.050	148.475000		148.5075	0.00036	1.00	30.588	14.31	0.18
BellsB	M002	3677.71	AMEC-20-2080-Max	21.900000	143.440	148.287600	145.6457	148.4810	0.00087	1.95	11.240	18.10	0.29
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	AMEC-20-2080-Max	21.900000	142.470	144.588500	144.5885	145.6114	0.01094	4.48	4.888	9.45	1.00
BellsB	M002	3623.19	AMEC-20-2080-Max	21.900000	142.100	143.578100	144.0581	145.0674	0.04912	6.00	4.722	7.00	1.80
BellsB	M002	3573.45	AMEC-20-2080-Max	21.900000	140.890	142.264500	142.6994	143.1265	0.02712	4.50	6.200	9.40	1.38
BellsB	M002	3520.99	AMEC-20-2080-Max	21.900000	139.300	140.796000	140.9470	141.7112	0.02611	4.67	5.976	7.94	1.35
BellsB	M002	3473.83	AMEC-20-2080-Max	21.900000	137.980	139.668800	139.8433	140.4370	0.02373	4.69	6.735	8.94	1.26
BellsB	M002	3424.29	AMEC-20-2080-Max	21.900000	136.490	138.525600	138.0665	138.7757	0.00372	2.41	11.653	10.50	0.56
BellsB	M002	3400.36	AMEC-20-2080-Max	21.900000	135.960	138.652800		138.6918	0.00040	0.98	31.405	28.51	0.20
BellsB	M002	3386.31	AMEC-20-2080-Max	21.900000	135.480	138.630300	137.4910	138.6832	0.00045	1.22	40.507	66.18	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	AMEC-20-2080-Max	21.900000	135.220	138.646500	137.2093	138.6502	0.00004	0.37	112.336	66.20	0.06
BellsB	M002	3329.08	AMEC-20-2080-Max	27.500000	134.960	138.644500		138.6487	0.00005	0.44	119.619	57.14	0.07
BellsB	M002	3303.55	AMEC-20-2080-Max	27.500000	133.820	138.608200	136.2865	138.6436	0.00024	1.11	54.141	50.16	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	AMEC-20-2080-Max	27.500000	131.390	134.259000	134.2590	135.4475	0.01093	4.83	5.694	19.03	1.00
BellsB	M002	3203.83	AMEC-20-2080-Max	27.500000	131.130	132.350700	132.9409	134.6463	0.10583	7.37	5.187	11.85	2.58
BellsB	M002	3176.31	AMEC-20-2080-Max	27.500000	130.020	131.411100	131.8045	132.6236	0.04394	5.72	7.377	12.48	1.74
BellsB	M002	3157.63	AMEC-20-2080-Max	27.500000	129.890	131.242500	131.3915	131.7734	0.03010	4.45	10.809	19.02	1.38
BellsB	M002	3130.11	AMEC-20-2080-Max	27.500000	128.680	130.352600	130.5021	131.1241	0.01799	4.31	8.388	8.32	1.17
BellsB	M002	3083.82	AMEC-20-2080-Max	27.500000	127.940	129.527100	129.7520	130.2361	0.02002	4.42	11.217	24.03	1.24
BellsB	M002	3037.68	AMEC-20-2080-Max	27.500000	127.110	128.003700	128.2448	128.7872	0.05409	5.33	9.536	23.84	1.92
BellsB	M002	2991.47	AMEC-20-2080-Max	27.500000	126.280	128.111100	127.2749	128.1320	0.00061	0.96	46.512	44.58	0.23
BellsB	M002	2945.26	AMEC-20-2080-Max	27.500000	125.320	127.721700	127.1671	128.0393	0.00539	2.54	13.144	29.09	0.55
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	AMEC-20-2080-Max	27.500000	125.120	126.966600	126.9666	127.8890	0.01094	4.26	6.463	4.99	1.00
BellsB	M002	2918.61	AMEC-20-2080-Max	27.500000	124.990	126.606000	126.9675	127.5924	0.02427	4.99	7.935	13.05	1.36
BellsB	M002	2899.46	AMEC-20-2080-Max	27.500000	125.250	126.467000	126.7337	127.1000	0.01452	3.66	10.025	33.49	1.08
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	AMEC-20-2080-Max	27.500000	124.440	125.950100	125.9501	126.1072	0.00320	1.97	18.405	21.10	0.54
BellsB	M002	2861.32	AMEC-20-2080-Max	27.500000	123.640	124.694000	125.0094	125.6888	0.04374	5.34	7.703	16.19	1.83
BellsB	M002	2823.69	AMEC-20-2080-Max	27.500000	123.230	124.300600	124.3317	124.5810	0.02000	3.32	14.859	30.34	1.10
BellsB	M002	2777.91	AMEC-20-2080-Max	27.500000	122.770	123.959400	123.7027	124.0019	0.00324	1.48	36.359	59.92	0.45
BellsB	M002	2727.91	AMEC-20-2080-Max	27.500000	122.210	123.507300	123.5073	123.7883	0.01325	3.04	15.699	34.01	0.92
BellsB	M002	2677.99	AMEC-20-2080-Max	27.500000	121.130	122.684600	122.6438	123.0861	0.01285	3.24	11.474	13.33	0.92
BellsB	M002	2628.09	AMEC-20-2080-Max	27.500000	120.690	122.218600	122.2186	122.4877	0.01133	3.20	17.908	32.61	0.87
BellsB	M002	2578.18	AMEC-20-2080-Max	27.500000	119.940	121.526800	121.5124	121.7681	0.00993	2.98	18.166	30.90	0.81
BellsB	M002	2528.27	AMEC-20-2080-Max	27.500000	119.100	120.810700	120.8107	121.2182	0.01313	3.54	12.743	15.58	0.94
BellsB	M002	2518.19	AMEC-20-2080-Max	27.500000	118.620	120.081600	120.3718	120.9692	0.03436	5.00	8.722	13.72	1.46
BellsB	M002	2496.15	AMEC-20-2080-Max	27.500000	118.530	120.363100	120.0081	120.5592	0.00637	2.65	19.921	28.63	0.66
BellsB	M002	2478.37	AMEC-20-2080-Max	27.500000	117.970	120.127500		120.4395	0.00674	3.00	14.472	13.22	0.70
BellsB	M002	2450.61	AMEC-20-2080-Max	27.500000	117.550	119.632900	119.6329	120.1686	0.01169	3.92	11.355	11.14	0.92
BellsB	M002	2428.46	AMEC-20-2080-Max	27.500000	117.190	118.422500	118.7949	119.6004	0.05806	5.49	7.399	14.48	1.82
BellsB	M002	2408.52	AMEC-20-2080-Max	27.500000	116.630	117.895900	118.1224	118.6045	0.04285	4.83	9.666	18.59	1.56
BellsB	M002	2378.55	AMEC-20-2080-Max	27.500000	116.150	117.671000	117.6710	118.0180	0.01609	3.71	14.661	23.50	1.01
BellsB	M002	2367.92	AMEC-20-2080-Max	27.500000	115.610	116.705000	116.9925	117.6546	0.05396	5.46	8.615	17.61	1.80
BellsB	M002	2352.81	AMEC-20-2080-Max	27.500000	115.070	116.263900	116.4755	116.9651	0.03630	4.74	9.664	16.49	1.50
BellsB	M002	2328.64	AMEC-20-2080-Max	27.500000	113.990	115.884600	115.7476	116.2768	0.01111	3.53	13.819	17.71	0.88
BellsB	M002	2307.61	AMEC-20-2080-Max	27.500000	112.940	116.105600	115.2121	116.1368	0.00051	1.01	50.572	47.26	0.20
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	AMEC-20-2080-Max	27.500000	111.750	113.250900	113.7021	114.8106	0.05412	5.54	4.980	5.08	1.60
BellsB	M002	2275.77	AMEC-20-2080-Max	29.599990	112.060	113.873200	113.8732	114.2420	0.01212	3.65	14.767	21.68	0.92
BellsB	M002	2232.72	AMEC-20-2080-Max	29.599990	110.580	112.292300	112.6336	113.3707	0.02857	5.19	8.575	12.93	1.37
BellsB	M002	2200.99	AMEC-20-2080-Max	29.599990	109.610	111.160900	111.5458	112.3402	0.03907	5.50	7.631	10.25	1.57
BellsB	M002	2173.21	AMEC-20-2080-Max	29.599990	108.980	111.165200	111.1652	111.7914	0.01178	3.90	10.523	9.37	0.89
BellsB	M002	2133.27	AMEC-20-2080-Max	29.599990	107.790	109.107900	109.6128	110.7783	0.06263	6.51	6.493	10.25	1.97
BellsB	M002	2117.78	AMEC-20-2080-Max	29.599990	107.460	108.919200	109.1882	109.9296	0.03034	5.05	8.184	10.25	1.42
BellsB	M002	2103.01	AMEC-20-2080-Max	29.599990	106.450	107.857900	108.2822	109.2523	0.05768	6.17	6.869	9.72	1.85
BellsB	M002	2085.77	AMEC-20-2080-Max	29.599990	105.170	106.637400	107.1403	108.1970	0.05788	6.62	6.435	7.85	1.90
BellsB	M002	2068.57	AMEC-20-2080-Max	29.599990	104.360	105.377900	105.8347	107.0544	0.08963	6.87	6.436	11.82	2.31
BellsB	M002	2059.88	AMEC-20-2080-Max	29.599990	103.560	104.909700	105.3949	106.4489	0.05199	5.98	6.527	9.39	1.81

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2080-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	AMEC-20-2080-Max	29.599990	103.130	104.443200	104.9317	106.1124	0.07063	6.68	6.239	8.44	2.07
BellsB	M002	2040.56	AMEC-20-2080-Max	29.599990	102.390	104.623700	104.2616	105.0725	0.00666	3.37	12.450	8.19	0.74
BellsB	M002	2033.27	AMEC-20-2080-Max	29.599990	102.080	104.326200	104.3262	104.9832	0.01361	4.03	9.987	8.25	0.95
BellsB	M002	2025.44	AMEC-20-2080-Max	29.599990	101.580	102.962800	103.5068	104.6889	0.05241	6.19	5.906	7.43	1.82
BellsB	M002	2021.67	AMEC-20-2080-Max	29.599990	101.430	103.271500	103.6055	104.3554	0.02793	4.93	7.518	8.30	1.32
BellsB	M002	2014.53	AMEC-20-2080-Max	29.599990	99.960	101.441000	102.1214	103.8640	0.11457	6.92	4.377	6.12	2.43
BellsB	M002	2010.46	AMEC-20-2080-Max	29.599990	99.080	100.171600	100.9119	103.2643	0.14929	8.62	4.399	6.73	2.94
BellsB	M002	2007.37	AMEC-20-2080-Max	29.599990	98.520	99.894550	100.6664	102.7890	0.12647	7.64	4.124	5.39	2.57
BellsB	M002	1996.87	AMEC-20-2080-Max	29.599990	97.970	99.044110	99.7263	101.4817	0.09854	7.60	4.960	6.54	2.47
BellsB	M002	1982.97	AMEC-20-2080-Max	29.599990	97.730	98.901960	99.2981	100.1958	0.04973	5.85	6.859	7.90	1.80
BellsB	M002	1966.25	AMEC-20-2080-Max	29.599990	96.750	98.750300	98.9247	99.5553	0.01964	4.48	9.047	8.90	1.12
BellsB	M002	1951.81	AMEC-20-2080-Max	29.599990	96.560	98.764120	98.1570	98.9178	0.00356	2.19	19.464	14.15	0.50
BellsB	M002	1939.94	AMEC-20-2080-Max	29.599990	96.290	98.306590	98.3066	98.8064	0.01187	3.49	11.521	11.92	0.89
BellsB	M002	1918.81	AMEC-20-2080-Max	29.599990	95.860	97.932210	97.6880	98.2856	0.00795	3.20	13.793	11.34	0.76
BellsB	M002	1910.32	AMEC-20-2080-Max	29.599990	95.580	97.553860	97.5539	98.1761	0.01235	3.75	10.016	8.94	0.93
BellsB	M002	1896.87	AMEC-20-2080-Max	29.599990	94.380	95.859660	96.4162	97.7236	0.06878	6.68	5.862	7.92	1.99
BellsB	M002	1887.59	AMEC-20-2080-Max	29.599990	93.870	96.087200	95.5362	96.2820	0.00392	2.37	18.215	13.15	0.54
BellsB	M002	1880.79	AMEC-20-2080-Max	29.599990	93.330	96.099280		96.2493	0.00206	2.03	21.263	12.25	0.41
BellsB	M002	1870.34	AMEC-20-2080-Max	29.599990	92.770	96.111420		96.2217	0.00114	1.80	25.256	10.39	0.32
BellsB	M002	1857.16	AMEC-20-2080-Max	29.599990	91.880	96.136450		96.1960	0.00058	1.35	33.609	14.35	0.22
BellsB	M002	1848.27	AMEC-20-2080-Max	29.599990	91.910	96.149990		96.1853	0.00028	1.02	44.374	16.61	0.16
BellsB	M002	1834.27	AMEC-20-2080-Max	29.599990	90.880	96.152150		96.1801	0.00017	0.90	51.222	17.26	0.13
BellsB	M002	1821.35	AMEC-20-2080-Max	29.599990	90.900	96.159850		96.1743	0.00010	0.74	68.566	20.50	0.10
BellsB	M002	1807.43	AMEC-20-2080-Max	29.599990	89.830	96.161510		96.1721	0.00006	0.61	81.160	21.42	0.08
BellsB	M002	1800.77	AMEC-20-2080-Max	29.599990	89.590	96.162120		96.1713	0.00006	0.61	86.206	22.52	0.08
BellsB	M002	1777.98	AMEC-20-2080-Max	29.599990	88.770	96.165260		96.1689	0.00002	0.39	132.682	29.91	0.05
BellsB	M002	1753.27	AMEC-20-2080-Max	29.599990	88.220	96.164000		96.1683	0.00002	0.43	126.473	29.50	0.05
BellsB	M002	1729.73	AMEC-20-2080-Max	29.599990	88.170	96.164810		96.1674	0.00001	0.35	156.258	32.28	0.04
BellsB	M002	1705.77	AMEC-20-2080-Max	29.599990	87.600	96.165360		96.1669	0.00001	0.27	245.404	62.73	0.03
BellsB	M002	1688.91	AMEC-20-2080-Max	29.599990	86.720	96.163960	89.7640	96.1667	0.00001	0.30	203.231	63.50	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	AMEC-20-2080-Max	29.599990	83.970	86.996540	86.9965	88.5032	0.00828	5.44	5.443	19.04	1.00
BellsB	M002	1605.59	AMEC-20-2080-Max	29.599990	81.490	82.235460	82.8633	87.0234	0.53701	10.24	3.293	11.17	5.55
BellsB	M001	1582.05	AMEC-20-2080-Max	47.300010	80.410	81.513050	82.4063	85.4563	0.13183	9.03	5.821	8.67	3.17
BellsB	M001	1563.67	AMEC-20-2080-Max	47.300010	79.960	81.229280	81.8604	83.4030	0.05674	7.01	8.397	10.49	2.18
BellsB	M001	1544.26	AMEC-20-2080-Max	47.300010	79.040	80.832780	81.3435	82.4820	0.02876	6.22	10.118	9.40	1.62
BellsB	M001	1529.04	AMEC-20-2080-Max	47.300010	78.240	79.447050	80.1433	81.8207	0.05518	7.07	7.601	8.34	2.16
BellsB	M001	1515.66	AMEC-20-2080-Max	47.300010	77.300	79.110550	79.7107	81.0467	0.04450	6.35	8.354	7.56	1.71
BellsB	M001	1502.43	AMEC-20-2080-Max	47.300010	69.640	70.241870	71.1649	78.7646	1.01822	12.94	3.671	10.30	6.79
BellsB	M001	1483.47	AMEC-20-2080-Max	47.300010	68.890	69.888650	70.3722	71.7117	0.11792	6.65	8.803	16.32	2.56
BellsB	M001	1454.75	AMEC-20-2080-Max	47.300010	68.030	69.495290	69.6018	70.1325	0.02209	4.45	15.286	15.90	1.23
BellsB	M001	1406.62	AMEC-20-2080-Max	47.300010	66.490	68.584000	68.6084	69.2875	0.01418	4.35	14.955	11.63	1.02
BellsB	M001	1358.51	AMEC-20-2080-Max	47.300010	65.170	66.623890	67.0687	68.0876	0.04513	5.80	10.084	11.77	1.71
BellsB	M001	1310.38	AMEC-20-2080-Max	47.300010	63.800	65.323900	65.6240	66.2790	0.02739	4.79	13.223	16.70	1.36
BellsB	M001	1286.33	AMEC-20-2080-Max	47.300010	62.810	64.177930	64.5529	65.3701	0.05287	5.73	11.678	18.93	1.81
BellsB	M001	1262.25	AMEC-20-2080-Max	47.300010	62.090	64.369300	64.3993	64.7448	0.01010	3.65	23.334	29.26	0.84
BellsB	M001	1251.58	AMEC-20-2080-Max	47.300010	61.460	63.102590	63.7717	64.4595	0.04331	6.61	11.225	12.03	1.74
BellsB	M001	1234.76	AMEC-20-2080-Max	47.300010	60.570	62.075430	62.5588	63.6052	0.06125	6.92	11.445	19.54	1.98
BellsB	M001	1214.13	AMEC-20-2080-Max	47.300010	59.550	61.602170	61.0001	61.7734	0.00342	2.15	30.596	23.20	0.51
BellsB	M001	1200.58	AMEC-20-2080-Max	47.300010	58.900	61.051090	61.0511	61.6505	0.01154	3.94	17.045	14.90	0.92
BellsB	M001	1182.98	AMEC-20-2080-Max	47.300010	58.590	60.709010	60.8069	61.4165	0.01443	4.36	15.855	14.77	1.03
BellsB	M001	1166.01	AMEC-20-2080-Max	47.300010	58.390	59.757450	60.1176	60.9718	0.04279	5.57	12.065	17.59	1.66
BellsB	M001	1153.18	AMEC-20-2080-Max	47.300010	57.700	59.444570	59.7348	60.4033	0.03516	5.91	14.346	19.73	1.53
BellsB	M001	1141.88	AMEC-20-2080-Max	47.300010	56.720	58.033880	58.5577	59.7994	0.06326	6.38	9.255	13.19	1.99
BellsB	M001	1128.34	AMEC-20-2080-Max	47.300010	56.530	57.722460	58.0517	58.7941	0.05353	5.65	11.249	14.86	1.80
BellsB	M001	1117.89	AMEC-20-2080-Max	47.300010	55.580	56.848170	57.2680	58.1693	0.06266	6.62	10.813	13.41	1.98
BellsB	M001	1096.03	AMEC-20-2080-Max	47.300010	54.610	56.256410	56.5276	57.1876	0.02759	4.85	13.305	15.81	1.36
BellsB	M001	1077.81	AMEC-20-2080-Max	47.300010	54.240	55.336770	55.7387	56.5339	0.05052	5.53	11.674	17.44	1.78
BellsB	M001	1069.76	AMEC-20-2080-Max	47.300010	53.700	54.452750	54.8432	55.8240	0.11646	6.31	10.233	19.13	2.52
BellsB	M001	1064.67	AMEC-20-2080-Max	47.300010	53.190	53.968810	54.3288	55.2265	0.11063	6.10	10.727	20.41	2.45
BellsB	M001	1051.64	AMEC-20-2080-Max	47.300010	51.970	53.026030	53.4047	54.3021	0.06353	5.80	11.297	18.01	1.96
BellsB	M001	1032.36	AMEC-20-2080-Max	47.300010	50.970	52.448940	52.6843	53.3041	0.03475	5.31	13.953	16.45	1.51
BellsB	M001	1021.64	AMEC-20-2080-Max	47.300010	50.030	51.427470	51.8416	52.8071	0.04809	5.67	10.870	16.31	1.75
BellsB	M001	1014.11	AMEC-20-2080-Max	47.300010	49.460	51.042060	51.4961	52.4651	0.04311	5.75	10.497	14.01	1.66
BellsB	M001	1006.24	AMEC-20-2080-Max	47.300010	49.150	50.405650	50.8948	52.0618	0.05742	6.21	9.706	14.10	1.91
BellsB	M001	996.42	AMEC-20-2080-Max	47.300010	48.110	49.428230	49.9885	51.4018	0.08318	7.28	8.994	13.56	2.24
BellsB	M001	987.27	AMEC-20-2080-Max	47.300010	47.170	48.688150	49.2973	50.7487	0.06105	6.98	8.824	11.23	2.00
BellsB	M001	973.52	AMEC-20-2080-Max	47.300010	46.790	48.171450	48.7272	49.9272	0.04511	6.13	9.128	12.60	1.84
BellsB	M001	951.43	AMEC-20-2080-Max	47.300010	45.770	47.271590	47.7877	48.9196	0.04859	6.30	10.032	15.74	1.88
BellsB	M001	931.51	AMEC-20-2080-Max	47.300010	44.860	46.135330	46.6209	47.7352	0.07258	7.47	9.510	13.57	2.27
BellsB	M001	925.41	AMEC-20-2080-Max	47.300010	44.690	46.338010	46.6320	47.2703	0.02672	5.45	13.571	18.37	1.42
BellsB	M001	901.68	AMEC-20-2080-Max	47.300010	43.690	45.179380	45.5870	46.5170	0.03375	5.83	10.496	11.17	1.64
BellsB	M001	877.27	AMEC-20-2080-Max	47.300010	43.180	45.439340	45.0705	45.8093	0.00554	3.14	20.026	13.70	0.71
BellsB	M001	857.41	AMEC-20-2080-Max	47.300010	42.160	45.601870	45.0560	45.6876	0.00082	1.61	49.849	40.17	0.29
BellsB	M001	840		Culvert									
BellsB	M001	816.09	AMEC-20-2080-Max	48.400000	38.540	42.082450	41.0808	42.6359	0.00371	3.36	14.999	11.80	0.59
BellsB	M001	810.13	AMEC-20-2080-Max	48.400000	37.800	42.308940	39.9114	42.3953	0.00057	1.41	47.156	29.92	0.22
BellsB	M001	800		Bridge									
BellsB	M001	796.37	AMEC-20-2080-Max	48.400000	34.330	36.556020	37.4330	39.2800	0.05945	7.37	6.861	8.24	1.95
BellsB	M001	782.27	AMEC-20-2080-Max	48.400000	33.920	34.837530	35.5365	37.8329	0.17557	8.22	6.718	11.09	3.11
BellsB	M001	772.73	AMEC-20-2080-Max	48.400000	30.940	32.567510	33.3557	36.1716	0.16585	10.82	7.298	10.13	2.98
BellsB	M001	766.74	AMEC-20-2080-Max	48.400000	30.650	32.509230	33.2195	35.1345	0.09960	9.53	8.551	10.23	2.40
BellsB	M001	760.32	AMEC-20-2080-Max	48.400000	30.340	31.962470	32.6824	34.5569	0.07981	8.34	8.513	10.37	2.27
BellsB	M001	755.97	AMEC-20-2080-Max	48.400000	30.050	31.654120	32.3252	34.1709	0.08521	7.81	8.365	11.28	2.27
BellsB	M001	749.69	AMEC-20-2080-Max	48.400000	29.300	30.977940	31.6957	33.6135	0.08570	8.35	8.335	10.19	2.31
BellsB	M001	742.14	AMEC-20-2080-Max	48.400000	28.380	29.662600	30.4822	32.8711	0.10043	8.47	7.091	8.92	2.55
BellsB	M001	736.73	AMEC-20-2080-Max	48.400000	28.240	29.080850	29.8019	32.1412	0.16513	8.38	6.681	10.71	3.08

HEC-RAS Plan: Plan 20 Profile: AMEC-20-2080-Max (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	AMEC-20-2080-Max	48.400000	27.350	28.470210	28.9631	30.2574	0.07256	6.52	9.236	14.48	2.11
BellsB	M001	712.04	AMEC-20-2080-Max	48.400000	26.270	27.841900	28.3857	29.5939	0.05334	6.38	9.444	10.90	1.84
BellsB	M001	702.42	AMEC-20-2080-Max	48.400000	26.040	27.409580	27.8971	29.0132	0.05599	6.24	9.852	12.16	1.89
BellsB	M001	691.68	AMEC-20-2080-Max	48.400000	25.030	26.645320	27.1825	28.3962	0.05618	6.17	8.941	10.74	1.86
BellsB	M001	686.22	AMEC-20-2080-Max	48.400000	24.460	25.746230	26.3737	27.9802	0.08162	6.71	7.680	10.34	2.21
BellsB	M001	675.26	AMEC-20-2080-Max	48.400000	24.080	25.311700	25.8513	27.0705	0.06020	6.27	8.900	10.66	1.95
BellsB	M001	668.37	AMEC-20-2080-Max	48.400000	23.580	24.954170	25.4648	26.6576	0.05613	6.20	9.311	11.97	1.89
BellsB	M001	655.45	AMEC-20-2080-Max	48.400000	23.020	24.253080	24.7435	25.9063	0.05826	6.05	9.374	12.91	1.90
BellsB	M001	636.88	AMEC-20-2080-Max	48.400000	21.460	22.865270	23.4371	24.7670	0.06019	6.31	8.562	10.44	1.95
BellsB	M001	619.06	AMEC-20-2080-Max	48.400000	20.820	22.417090	22.8403	23.7718	0.03749	5.66	10.855	11.70	1.58
BellsB	M001	608.48	AMEC-20-2080-Max	48.400000	20.130	21.598770	22.1161	23.2884	0.04767	5.98	9.513	13.33	1.76
BellsB	M001	592.31	AMEC-20-2080-Max	48.400000	18.950	20.429090	21.0095	22.3531	0.06980	7.10	9.222	11.40	2.09
BellsB	M001	582.72	AMEC-20-2080-Max	48.400000	18.140	19.305580	19.9483	21.5695	0.08697	7.31	8.273	10.24	2.34
BellsB	M001	577.91	AMEC-20-2080-Max	48.400000	17.660	19.318850	19.9202	21.1622	0.04214	6.57	9.628	9.32	1.73
BellsB	M001	561.51	AMEC-20-2080-Max	48.400000	17.020	18.460090	18.9858	20.2706	0.07051	6.76	9.778	13.41	2.09
BellsB	M001	553.07	AMEC-20-2080-Max	48.400000	16.350	17.554230	18.1899	19.6565	0.07070	6.59	8.248	10.86	2.09
BellsB	M001	541.54	AMEC-20-2080-Max	48.400000	15.410	16.651970	17.2357	18.7677	0.08487	6.53	8.020	12.39	2.24
BellsB	M001	529.17	AMEC-20-2080-Max	48.400000	14.850	16.049320	16.5581	17.7266	0.06425	5.79	8.734	9.15	1.78
BellsB	M001	514.53	AMEC-20-2080-Max	48.400000	14.210	15.384800	15.7966	16.7271	0.05877	5.59	10.411	12.15	1.73
BellsB	M001	467.56	AMEC-20-2080-Max	48.400000	11.610	12.881770	13.2696	14.1969	0.04804	5.16	10.006	10.42	1.57
BellsB	M001	420.59	AMEC-20-2080-Max	48.400000	8.750	12.446560	11.1133	12.6608	0.00226	2.21	27.938	12.90	0.39
BellsB	M001	400.25	AMEC-20-2080-Max	48.400000	8.570	12.245310	10.6911	12.5987	0.00248	2.63	18.377	6.58	0.44
BellsB	M001	100		Culvert									
BellsB	M001	68.07	AMEC-20-2080-Max	48.400000	0.830	4.185296	2.9513	4.3122	0.00093	1.87	47.546	48.84	0.33
BellsB	M001	47.74	AMEC-20-2080-Max	48.400000	0.560	4.232610	3.2511	4.2458	0.00016	0.82	140.003	127.80	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	AMEC-20-2080-Max	48.400000	0.700	4.229976	2.9002	4.2400	0.00014	0.74	150.074	131.05	0.13
BellsB	M001	20.51	AMEC-20-2080-Max	48.400000	0.570	4.226169		4.2378	0.00017	0.80	144.703	140.76	0.14

HEC-RAS Plan: Plan 20 Profile: 100-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100-Existing	178.700000	36.310	39.111680	39.1117	40.4098	0.01047	5.58	42.810	22.31	1.09
CornerB	M004	2838.71	100-Existing	178.700000	36.150	38.336980	38.7912	39.7842	0.01410	5.58	40.471	33.22	1.22
CornerB	M004	2796.61	100-Existing	178.700000	35.350	38.416720	37.8251	38.9929	0.00428	3.74	67.541	42.95	0.71
CornerB	M004	2769.85	100-Existing	178.700000	34.800	37.664920	37.6649	38.5333	0.01310	6.40	54.390	32.59	1.23
CornerB	TR001	206.04	100-Existing	32.100000	43.810	44.777430	45.0859	45.8001	0.04203	5.34	8.812	14.21	1.82
CornerB	TR001	156.04	100-Existing	32.100000	41.630	42.702130	43.0425	43.7385	0.04015	4.73	8.422	17.91	1.73
CornerB	TR001	106.04	100-Existing	32.100000	39.170	39.857410	40.2624	41.2212	0.06503	5.50	6.960	12.99	2.17
CornerB	TR001	56.04	100-Existing	32.100000	37.270	38.124430	38.4934	38.9407	0.03152	4.24	8.876	13.61	1.55
CornerB	TR001	36.04	100-Existing	32.100000	35.500	38.344020	37.6358	38.3488	0.00009	0.49	127.681	82.58	0.10
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100-Existing	32.100000	35.180	37.366860	37.3669	38.3316	0.00998	4.35	7.376	80.27	1.00
CornerB	M003	2689.92	100-Existing	196.300000	33.550	35.625860	36.2206	37.4281	0.03111	7.57	45.163	44.27	1.77
CornerB	M003	2645.73	100-Existing	196.300000	32.870	36.505510	34.8885	36.6432	0.00104	2.14	149.647	67.12	0.36
CornerB	M003	2602.09	100-Existing	196.300000	32.200	36.509600		36.5987	0.00051	1.65	188.348	67.87	0.26
CornerB	M003	2557.73	100-Existing	196.300000	31.340	36.442600		36.5720	0.00052	1.87	156.980	48.44	0.27
CornerB	M003	2537.73	100-Existing	196.300000	30.770	36.359230	34.8801	36.5522	0.00083	2.57	154.656	64.32	0.35
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100-Existing	196.300000	30.350	34.350050	34.3501	35.1322	0.00355	4.05	58.960	27.49	0.66
CornerB	M003	2507.21	100-Existing	196.300000	30.750	32.914070	33.3988	34.6894	0.02223	6.70	38.570	23.05	1.52
CornerB	M003	2459.31	100-Existing	196.300000	30.130	32.833900	32.2834	33.3310	0.00441	3.58	74.912	37.92	0.71
CornerB	M003	2411.41	100-Existing	196.300000	29.270	32.956570		33.1238	0.00140	2.43	135.599	62.23	0.42
CornerB	M003	2363.51	100-Existing	196.300000	28.770	32.946450		33.0641	0.00067	1.84	160.207	57.47	0.30
CornerB	M003	2315.61	100-Existing	196.300000	27.930	32.930090		33.0377	0.00037	1.58	169.264	58.51	0.23
CornerB	M003	2267.71	100-Existing	196.600000	26.300	32.925890		33.0191	0.00024	1.53	209.800	79.06	0.19
CornerB	M003	2263.01	100-Existing	196.600000	29.100	32.582260		32.9375	0.00398	2.91	91.825	74.55	0.69
CornerB	M003	2260.98	100-Existing	196.600000	25.800	30.253840		30.5738	0.00131	2.67	91.762	29.70	0.42
CornerB	M003	2240.88	100-Existing	196.600000	27.010	30.179970		30.5297	0.00238	2.78	86.593	41.26	0.53
CornerB	M003	2212.25	100-Existing	196.600000	26.870	30.100960		30.4603	0.00239	2.91	86.645	37.49	0.54
CornerB	M003	2183.63	100-Existing	196.600000	25.560	29.188220	29.1882	30.2764	0.00736	5.25	54.939	29.38	0.94
CornerB	M003	2163.63	100-Existing	196.600000	25.350	29.187430	28.3567	29.9151	0.00353	3.91	54.439	34.57	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100-Existing	196.600000	24.870	27.766820	28.2314	29.7027	0.01632	6.71	35.485	22.06	1.34
CornerB	M003	2131.66	100-Existing	196.600000	24.570	27.044810	27.7769	29.3751	0.02624	7.02	32.098	21.05	1.62
CornerB	M003	2119.46	100-Existing	196.600000	24.120	26.180870	27.0252	28.9482	0.03851	7.74	29.722	22.27	1.93
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100-Existing	196.600000	24.040	26.463330	27.1061	28.5355	0.02225	6.56	33.746	22.08	1.50
CornerB	M003	2080.62	100-Existing	196.600000	23.730	25.618730	26.4108	27.6860	0.02782	6.62	34.023	25.44	1.65
CornerB	M003	2068.44	100-Existing	196.600000	23.760	25.568950	26.1294	27.2640	0.02404	6.08	37.874	28.91	1.53
CornerB	M003	2022.25	100-Existing	196.600000	22.740	24.877440	25.2627	26.2948	0.01618	5.64	42.986	29.42	1.29
CornerB	M003	1991.14	100-Existing	196.600000	22.180	24.712110	24.8523	25.8154	0.00976	5.02	50.053	29.93	1.04
CornerB	M003	1985.82	100-Existing	196.600000	21.970	24.270120	24.5884	25.7176	0.01493	5.76	42.934	26.59	1.26
CornerB	M003	1975.95	100-Existing	196.600000	21.780	23.900480	24.3622	25.5230	0.01928	6.24	41.126	27.73	1.42
CornerB	M003	1929.72	100-Existing	196.600000	20.080	22.400540	23.0156	24.5043	0.02336	6.76	34.018	20.87	1.55
CornerB	M003	1883.49	100-Existing	196.600000	19.230	21.992650	22.3033	23.5782	0.01258	5.98	40.733	20.08	1.19
CornerB	TR002	21.04	100-Existing	12.200000	22.270	22.963950	23.5545	25.6640	0.15016	7.94	2.025	4.70	3.20
CornerB	TR002	18.08	100-Existing	12.200000	21.400	21.843960	22.3572	24.9539	0.37148	8.88	1.831	6.28	4.68
CornerB	M002	1826.39	100-Existing	198.600000	16.920	18.561840	19.4488	22.0558	0.11889	8.98	27.399	30.37	2.54
CornerB	M002	1790.92	100-Existing	198.600000	15.490	19.255110	18.9452	20.3283	0.00983	5.09	50.089	18.43	0.86
CornerB	M002	1773.95	100-Existing	198.600000	14.720	19.756710	17.8585	20.0285	0.00184	2.61	100.640	30.81	0.38
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100-Existing	198.600000	14.870	19.772410	17.5716	19.9516	0.00100	2.20	125.974	38.49	0.32
CornerB	M002	1733.13	100-Existing	198.600000	15.230	19.815060		19.8720	0.00029	1.15	224.960	83.24	0.17
CornerB	M002	1717.41	100-Existing	198.600000	15.120	19.818100		19.8649	0.00024	1.06	251.667	91.21	0.16
CornerB	M002	1691.96	100-Existing	198.600000	14.620	19.817930		19.8572	0.00019	0.99	287.338	110.45	0.14
CornerB	M002	1654.15	100-Existing	198.600000	13.870	19.825270		19.8471	0.00009	0.73	373.645	138.71	0.10
CornerB	M002	1613.91	100-Existing	198.600000	13.080	19.826150		19.8430	0.00005	0.62	432.515	154.68	0.08
CornerB	M002	1567.16	100-Existing	198.600000	12.150	19.834640		19.8383	0.00001	0.28	832.132	212.03	0.04
CornerB	M002	1551.89	100-Existing	198.600000	11.850	19.836070		19.8376	0.00000	0.18	1245.470	274.86	0.02
CornerB	M002	1539.91	100-Existing	197.500000	11.620	19.836550		19.8374	0.00000	0.13	1661.564	307.99	0.02
CornerB	M002	1526.59	100-Existing	197.500000	11.360	19.836530		19.8373	0.00000	0.13	1691.729	313.08	0.02
CornerB	M002	1517.99	100-Existing	197.500000	11.180	19.836150		19.8373	0.00000	0.15	1432.132	269.58	0.02
CornerB	M002	1505.64	100-Existing	197.500000	10.940	19.835200		19.8372	0.00000	0.20	1066.000	199.59	0.02
CornerB	M002	1490.63	100-Existing	197.500000	10.640	19.832530		19.8368	0.00001	0.30	737.573	142.49	0.04
CornerB	M002	1463.65	100-Existing	197.500000	10.110	19.817960		19.8351	0.00004	0.61	409.197	92.84	0.07
CornerB	M002	1415.93	100-Existing	197.500000	9.170	19.816130		19.8335	0.00003	0.60	381.957	77.07	0.07
CornerB	M002	1386.11	100-Existing	197.500000	8.580	19.808780		19.8318	0.00005	0.70	352.688	79.09	0.08
CornerB	M002	1363.91	100-Existing	197.500000	8.140	19.792490		19.8291	0.00008	0.90	281.261	58.31	0.10
CornerB	M002	1356.61	100-Existing	197.500000	8.000	19.792480		19.8277	0.00020	1.10	297.334	73.79	0.11
CornerB	M002	1354.11	100-Existing	197.500000	15.350	19.593710		19.8086	0.00169	2.70	118.591	58.22	0.42
CornerB	M002	1352.01	100-Existing	197.500000	8.000	11.357410	11.3574	12.5016	0.02666	3.53	42.786	17.52	0.97
CornerB	M002	1347.51	100-Existing	197.500000	7.720	10.495050	10.9256	12.2450	0.03007	5.88	34.268	18.71	1.34
CornerB	M002	1336.58	100-Existing	197.500000	7.690	9.741263	10.3836	11.8197	0.04381	6.46	32.214	23.06	1.60
CornerB	M002	1326.83	100-Existing	197.500000	7.680	10.867750	10.0301	11.2790	0.00464	3.01	75.301	31.23	0.57
CornerB	M002	1317.22	100-Existing	197.500000	7.660	10.726760		11.2193	0.00622	3.24	68.351	32.02	0.65
CornerB	M002	1315.18	100-Existing	197.500000	7.280	10.226770	10.2268	11.1556	0.01622	4.63	50.654	29.12	1.01
CornerB	M002	1313.58	100-Existing	197.500000	6.480	9.406226	9.8652	11.0480	0.03229	6.01	38.027	25.25	1.39
CornerB	M002	1312.39	100-Existing	197.500000	6.230	8.949465	9.5645	10.9664	0.04117	6.55	33.976	23.69	1.56
CornerB	M002	1311.16	100-Existing	197.500000	5.920	8.509880	9.2336	10.8728	0.05543	6.94	30.369	22.67	1.77
CornerB	M002	1309.11	100-Existing	197.500000	5.910	8.107654	8.9055	10.7269	0.06211	7.28	28.729	21.82	1.87
CornerB	M002	1305.35	100-Existing	197.500000	5.370	7.436111	8.3001	10.4212	0.07501	8.02	28.446	24.54	2.06
CornerB	M002	1300.06	100-Existing	197.500000	5.060	6.941620	7.8132	9.9933	0.08966	7.84	26.480	23.35	2.20
CornerB	M002	1296.49	100-Existing	197.500000	4.910	7.136285	7.8927	9.5790	0.04866	7.11	30.420	20.76	1.71
CornerB	M002	1289.64	100-Existing	197.500000	4.710	7.119526	7.7211	9.1706	0.03820	6.57	33.331	20.90	1.53
CornerB	M002	1284.12	100-Existing	197.500000	4.410	7.263775	7.6456	8.8823	0.02310	5.92	38.521	20.86	1.23
CornerB	M002	1279.52	100-Existing	197.500000	4.230	6.854383	7.3886	8.7388	0.02833	6.29	35.415	20.78	1.35
CornerB	M002	1258.94	100-Existing	197.500000	3.530	5.412992	6.1667	7.8463	0.06383	7.28	31.719	28.78	1.91
CornerB	M002	1246.98	100-Existing	197.500000	3.370	4.984325	5.6704	7.1362	0.04318	6.59	31.960	26.01	1.75

HEC-RAS Plan: Plan 20 Profile: 100-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	100-Existing	197.500000	3.100	4.696799	5.1356	6.4301	0.04606	6.10	37.198	38.28	1.77
CornerB	M002	1215.66	100-Existing	197.500000	2.700	4.248036	4.6935	5.6107	0.02974	5.31	42.900	48.84	1.44
CornerB	M002	1206.83	100-Existing	197.500000	2.540	4.958497	4.5838	5.2881	0.00494	2.84	93.950	68.14	0.63
CornerB	M002	1194.69	100-Existing	197.500000	2.390	4.937384		5.2278	0.00423	2.73	99.733	65.71	0.59
CornerB	M002	1185.06	100-Existing	197.500000	2.260	4.923645		5.1766	0.00328	2.55	108.126	67.47	0.53
CornerB	M002	1142.41	100-Existing	197.500000	1.700	4.841834		5.0460	0.00262	2.37	124.533	83.84	0.47
CornerB	M002	1137.55	100-Existing	197.500000	1.600	4.378185	4.3782	4.9653	0.00968	3.64	73.144	77.79	0.86
CornerB	M002	1110.53	100-Existing	197.500000	1.390	4.106644	3.9412	4.7278	0.00707	3.73	72.426	66.17	0.77
CornerB	M002	1090.67	100-Existing	197.500000	1.100	4.376645		4.5214	0.00170	2.04	153.128	123.82	0.39
CornerB	M002	1070.69	100-Existing	197.500000	0.800	4.400270	3.0566	4.4805	0.00078	1.58	196.824	89.48	0.27
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100-Existing	197.500000	0.760	4.385914	2.9322	4.4589	0.00070	1.52	197.012	86.84	0.26
CornerB	M002	1047.01	100-Existing	197.500000	0.750	4.360901		4.4431	0.00068	1.67	190.186	78.79	0.29
CornerB	M002	1004.03	100-Existing	197.500000	0.770	4.326002		4.4114	0.00064	1.63	218.907	134.67	0.28
CornerB	M002	959.21	100-Existing	197.500000	0.700	4.338039		4.3763	0.00044	1.34	336.177	283.26	0.23
CornerB	M002	915.75	100-Existing	196.600000	0.680	4.332382		4.3536	0.00031	1.10	411.480	296.21	0.19
CornerB	M002	869.66	100-Existing	196.600000	0.690	4.325055		4.3410	0.00019	0.89	441.515	224.33	0.15
CornerB	M002	828.33	100-Existing	190.800000	0.770	4.318970		4.3339	0.00020	0.87	429.310	222.20	0.15
CornerB	M002	784.55	100-Existing	190.800000	0.820	4.316128		4.3271	0.00013	0.72	450.489	233.02	0.13
CornerB	M002	739.85	100-Existing	190.800000	0.820	4.309261		4.3212	0.00013	0.69	465.211	273.34	0.13
CornerB	M002	696.36	100-Existing	190.800000	0.640	4.294904		4.3132	0.00018	0.87	407.855	267.37	0.15
CornerB	M001	659.37	100-Existing	201.000000	0.750	4.286327		4.3073	0.00020	0.86	383.187	235.13	0.16
CornerB	M001	643.93	100-Existing	201.000000	0.740	4.270010	3.1401	4.3024	0.00030	1.07	324.497	219.69	0.19
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100-Existing	201.000000	0.830	3.981298	3.0829	4.0538	0.00072	1.56	227.228	182.03	0.29
CornerB	M001	608.52	100-Existing	201.000000	0.760	3.968446		4.0373	0.00089	1.66	217.261	164.15	0.32
CornerB	M001	570.12	100-Existing	201.000000	0.610	3.969475		4.0034	0.00046	1.27	288.939	186.81	0.23
CornerB	M001	535.83	100-Existing	201.000000	0.560	3.950934	2.0624	3.9903	0.00028	1.07	296.609	221.35	0.19
CornerB	M001	520.22	100-Existing	201.000000	0.550	3.956084	2.2140	3.9827	0.00021	0.93	345.634	292.70	0.16
CornerB	M001	472.07	100-Existing	201.000000	0.580	3.901370	2.9876	3.9638	0.00052	1.41	251.038	205.36	0.25
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100-Existing	201.000000	0.440	3.465171	2.4000	3.6801	0.00147	2.27	162.485	225.69	0.42
CornerB	M001	425.41	100-Existing	201.000000	0.480	3.500406		3.5982	0.00093	1.76	255.059	302.29	0.33
CornerB	M001	401.99	100-Existing	201.000000	0.740	3.521175		3.5647	0.00053	1.28	350.857	342.30	0.25
CornerB	M001	381.26	100-Existing	201.000000	0.790	3.443551	3.1641	3.5411	0.00120	1.84	261.865	349.21	0.37
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100-Existing	201.000000	0.790	3.253151	3.1792	3.4437	0.00230	2.46	203.623	359.72	0.51
CornerB	M001	352.89	100-Existing	201.000000	0.680	3.150396	2.3594	3.3809	0.00205	2.31	155.688	314.82	0.48
CornerB	M001	324.13	100-Existing	201.000000	0.670	3.131440		3.3113	0.00175	2.14	163.936	251.60	0.44
CornerB	M001	292.92	100-Existing	201.000000	0.650	3.135072		3.2448	0.00124	1.77	221.984	322.95	0.37
CornerB	M001	274.62	100-Existing	201.000000	0.960	3.118706	2.7779	3.2073	0.00231	2.15	241.468	357.35	0.49
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100-Existing	201.000000	1.010	3.081847	2.7132	3.1435	0.00214	2.05	264.112	372.29	0.47
CornerB	M001	245.99	100-Existing	201.000000	0.640	3.044897		3.1085	0.00141	1.77	295.879	427.74	0.39
CornerB	M001	210.89	100-Existing	201.000000	0.680	3.002575		3.0576	0.00133	1.61	290.426	392.04	0.37
CornerB	M001	174.77	100-Existing	201.000000	0.690	2.969588		3.0095	0.00118	1.37	313.223	439.13	0.34
CornerB	M001	155.66	100-Existing	201.000000	0.640	2.956201	2.5630	2.9830	0.00137	1.34	353.662	559.61	0.35
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100-Existing	201.000000	0.550	2.945393	2.5110	2.9691	0.00107	1.18	365.108	512.03	0.31
CornerB	M001	129.05	100-Existing	201.000000	0.400	2.910446		2.9409	0.00081	1.24	381.974	492.95	0.29
CornerB	M001	80.73	100-Existing	201.000000	0.200	2.854408		2.9009	0.00079	1.38	330.727	390.26	0.29
CornerB	M001	23.81	100-Existing	201.000000	0.320	2.799893	2.1492	2.8544	0.00089	1.35	308.449	431.13	0.30
BellsB	TR001	178.13	100-Existing	17.700000	92.910	95.216510	94.6466	95.4045	0.00268	2.12	11.697	10.56	0.49
BellsB	TR001	159.86	100-Existing	17.700000	92.150	95.304530		95.3439	0.00042	1.12	26.556	15.30	0.21
BellsB	TR001	139.54	100-Existing	17.700000	91.130	95.144750	92.9090	95.3178	0.00103	1.84	9.609	13.67	0.29
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100-Existing	17.700000	89.490	91.147790	91.4224	92.4009	0.01994	5.00	3.666	5.33	1.28
BellsB	TR001	88.17	100-Existing	17.700000	88.470	89.438590	90.0578	91.9114	0.11341	7.45	2.940	5.41	2.77
BellsB	TR001	84.12	100-Existing	17.700000	87.660	88.455010	89.0437	91.2341	0.19354	7.54	2.584	6.68	3.44
BellsB	TR001	79.14	100-Existing	17.700000	86.530	87.363110	87.9969	90.3467	0.14951	7.96	2.664	6.27	3.19
BellsB	TR001	72.74	100-Existing	17.700000	85.760	86.460460	87.0210	89.1873	0.18735	7.45	2.617	7.05	3.39
BellsB	TR001	67.75	100-Existing	17.700000	85.040	85.639710	86.1233	88.0071	0.21140	7.21	2.869	8.10	3.52
BellsB	TR001	64.04	100-Existing	17.700000	84.470	85.240120	85.7459	87.2697	0.13502	6.32	2.821	6.19	2.89
BellsB	TR001	60.69	100-Existing	17.700000	84.140	85.171260	85.6207	86.7837	0.08683	5.80	3.421	7.13	2.38
BellsB	TR001	56.76	100-Existing	17.700000	83.970	84.973450	85.3869	86.4220	0.07208	5.38	3.488	7.36	2.19
BellsB	TR001	50.93	100-Existing	17.700000	83.680	84.753020	85.1084	85.9313	0.06769	4.96	4.004	9.14	2.10
BellsB	TR001	43.86	100-Existing	17.700000	83.340	84.284620	84.6088	85.4187	0.07302	4.85	4.092	10.07	2.15
BellsB	TR001	37.01	100-Existing	17.700000	82.980	83.957280	84.2623	84.9653	0.05148	4.72	4.534	9.26	1.88
BellsB	TR001	12.14	100-Existing	17.700000	82.150	83.089560	83.2935	83.7899	0.03748	3.96	5.329	10.23	1.59
BellsB	M002	5166.11	100-Existing	14.600000	190.790	191.934100	191.8346	192.0969	0.00983	2.49	10.927	18.29	0.78
BellsB	M002	5149.23	100-Existing	14.600000	190.570	191.610200	191.6102	191.8874	0.01469	2.77	8.179	14.90	0.94
BellsB	M002	5117.45	100-Existing	14.600000	189.910	191.500900	190.7957	191.5302	0.00139	1.20	23.326	24.15	0.31
BellsB	M002	5090.85	100-Existing	14.600000	189.620	191.068800	191.0688	191.4131	0.01337	3.25	7.887	11.88	0.92
BellsB	M002	5067.47	100-Existing	14.600000	189.180	189.759400	190.0401	190.7067	0.12780	5.75	3.982	9.33	2.55
BellsB	M002	5017.78	100-Existing	14.600000	188.120	189.288100	189.2881	189.5869	0.01652	3.24	7.916	12.39	1.01
BellsB	M002	4967.57	100-Existing	14.600000	186.550	187.808900	187.9716	188.4379	0.03176	4.25	5.173	7.55	1.34
BellsB	M002	4917.46	100-Existing	14.600000	185.690	187.083800	186.5330	187.1407	0.00223	1.42	18.091	23.82	0.39
BellsB	M002	4873.31	100-Existing	14.600000	184.610	186.958700		187.0466	0.00207	1.76	17.909	23.14	0.39
BellsB	M002	4853.42	100-Existing	14.600000	183.550	186.803700	185.2773	187.0020	0.00152	1.97	7.401	29.49	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100-Existing	14.600000	181.530	182.825100	183.2361	184.2602	0.03931	5.31	2.751	5.65	1.58
BellsB	M002	4785.76	100-Existing	14.600000	181.350	182.364700	182.6055	183.1323	0.04058	4.39	4.482	7.74	1.53
BellsB	M002	4756.65	100-Existing	14.600000	180.120	181.023700	181.2574	181.7634	0.05413	4.78	5.044	12.53	1.74
BellsB	M002	4727.54	100-Existing	14.600000	179.020	179.827900	179.9971	180.3958	0.03745	4.08	6.005	16.41	1.55
BellsB	M002	4707.54	100-Existing	14.600000	177.960	178.353000	178.5618	179.1243	0.13024	4.74	4.411	16.70	2.60
BellsB	M002	4702.24	100-Existing	14.600000	177.650	178.514700	178.5473	178.7749	0.01793	2.83	8.112	17.64	1.07
BellsB	M002	4682.48	100-Existing	14.600000	176.630	177.365800	177.5926	178.1226	0.05356	4.40	4.926	14.35	1.82

HEC-RAS Plan: Plan 20 Profile: 100-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	100-Existing	14.600000	175.500	176.706000	176.8958	177.3979	0.02021	4.04	4.956	7.25	1.22
BellsB	M002	4633.41	100-Existing	14.600000	174.510	175.225100	175.5365	176.4199	0.10008	6.16	4.144	12.63	2.49
BellsB	M002	4609.61	100-Existing	14.600000	173.500	174.796500	174.5192	174.9560	0.00539	2.25	10.272	12.32	0.65
BellsB	M002	4583.99	100-Existing	14.600000	172.770	174.272700	174.2727	174.7321	0.01143	3.24	5.955	7.56	0.91
BellsB	M002	4534.72	100-Existing	14.600000	170.000	170.944400	171.4914	173.1786	0.12017	8.19	2.974	6.27	2.83
BellsB	M002	4485.52	100-Existing	14.600000	168.200	168.854900	169.0094	169.3512	0.05316	4.23	6.066	18.05	1.78
BellsB	M002	4436.28	100-Existing	26.500000	165.850	167.141400	167.3604	167.7917	0.02469	4.75	11.053	25.65	1.38
BellsB	M002	4387.04	100-Existing	26.500000	164.060	165.314700	165.6305	166.2737	0.03735	5.70	8.234	12.82	1.69
BellsB	M002	4337.81	100-Existing	26.500000	162.600	163.800600	164.0060	164.4451	0.03334	5.10	11.010	24.13	1.56
BellsB	M002	4288.56	100-Existing	26.500000	161.300	162.501900	162.6395	163.0035	0.02830	4.57	11.248	20.30	1.41
BellsB	M002	4239.33	100-Existing	26.500000	159.650	160.723300	160.9788	161.5351	0.03689	4.96	8.675	15.43	1.63
BellsB	M002	4190.09	100-Existing	26.500000	158.430	159.625800	159.7541	160.1405	0.02134	4.10	11.164	18.61	1.26
BellsB	M002	4140.85	100-Existing	26.500000	157.300	157.981400	158.1053	158.4328	0.05488	4.62	10.194	22.88	1.86
BellsB	M002	4091.61	100-Existing	26.500000	155.300	156.153400	156.2147	156.5223	0.03073	4.11	11.533	20.75	1.46
BellsB	M002	4042.37	100-Existing	26.500000	153.740	154.708700	154.7971	155.1872	0.02329	3.80	10.305	15.37	1.29
BellsB	M002	3993.13	100-Existing	26.500000	152.650	153.494200	153.5908	153.8955	0.03458	4.00	11.406	23.54	1.47
BellsB	M002	3943.89	100-Existing	26.500000	151.360	152.336500	152.3657	152.6831	0.02156	3.65	12.337	20.39	1.24
BellsB	M002	3894.65	100-Existing	26.500000	149.520	151.105000	151.2915	151.7391	0.02063	4.33	10.691	18.37	1.23
BellsB	M002	3869.08	100-Existing	26.500000	148.870	150.182800	150.4790	151.0806	0.03083	4.95	8.028	11.92	1.51
BellsB	M002	3845.41	100-Existing	26.500000	148.370	149.689500	149.8849	150.3327	0.02638	4.43	10.165	18.16	1.31
BellsB	M002	3822.22	100-Existing	26.500000	147.710	149.871600	148.7574	149.9128	0.00095	1.26	33.353	21.19	0.28
BellsB	M002	3796.17	100-Existing	26.500000	146.890	149.813900		149.8840	0.00105	1.54	28.494	17.23	0.30
BellsB	M002	3765.39	100-Existing	26.500000	146.400	149.793800		149.8556	0.00074	1.38	29.297	15.11	0.25
BellsB	M002	3746.94	100-Existing	26.500000	145.760	149.827300		149.8358	0.00009	0.59	72.466	27.74	0.09
BellsB	M002	3724.94	100-Existing	26.500000	145.320	149.801700		149.8307	0.00024	0.95	43.330	17.14	0.15
BellsB	M002	3697.71	100-Existing	26.500000	145.050	149.805800		149.8224	0.00013	0.74	52.324	18.39	0.11
BellsB	M002	3677.71	100-Existing	26.500000	143.440	149.811200	145.9153	149.8185	0.00003	0.47	82.490	22.92	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100-Existing	26.500000	142.470	144.868800	144.8688	146.0260	0.01042	4.77	5.560	9.99	1.00
BellsB	M002	3623.19	100-Existing	26.500000	142.100	143.652800	144.1989	145.4332	0.05500	6.63	5.263	7.46	1.93
BellsB	M002	3573.45	100-Existing	26.500000	140.890	142.360900	142.7803	143.3285	0.02787	4.83	7.139	10.10	1.42
BellsB	M002	3520.99	100-Existing	26.500000	139.300	140.888200	140.9184	141.9611	0.02835	5.10	6.731	8.47	1.42
BellsB	M002	3473.83	100-Existing	26.500000	137.980	139.793000	139.8298	140.6115	0.02335	4.92	7.893	9.70	1.27
BellsB	M002	3424.29	100-Existing	26.500000	136.490	138.623100	138.2488	138.9370	0.00443	2.72	12.709	11.18	0.62
BellsB	M002	3400.36	100-Existing	26.500000	135.960	138.787900		138.8331	0.00045	1.07	36.901	53.28	0.21
BellsB	M002	3386.31	100-Existing	26.500000	135.480	138.772300	137.7574	138.8245	0.00046	1.28	50.853	79.62	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100-Existing	26.500000	135.220	138.798600	137.4781	138.8032	0.00004	0.42	122.823	71.70	0.07
BellsB	M002	3329.08	100-Existing	33.400010	134.960	138.796200		138.8014	0.00006	0.50	128.373	58.33	0.08
BellsB	M002	3303.55	100-Existing	33.400010	133.820	138.753800	136.6125	138.7955	0.00028	1.23	59.407	51.25	0.18
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100-Existing	33.400010	131.390	134.588800	134.5888	135.9401	0.01045	5.15	6.485	20.64	1.00
BellsB	M002	3203.83	100-Existing	33.400010	131.130	132.410700	133.0256	135.0814	0.11542	8.06	5.927	12.81	2.73
BellsB	M002	3176.31	100-Existing	33.400010	130.020	131.493500	131.9353	132.8774	0.04696	6.21	8.442	13.39	1.82
BellsB	M002	3157.63	100-Existing	33.400010	129.890	131.290300	131.4782	131.9362	0.03506	4.94	11.721	19.14	1.50
BellsB	M002	3130.11	100-Existing	33.400010	128.680	130.540400	130.5404	131.3611	0.01649	4.50	10.010	8.95	1.15
BellsB	M002	3083.82	100-Existing	33.400010	127.940	129.568300	129.8390	130.4429	0.02450	4.99	12.213	24.34	1.38
BellsB	M002	3037.68	100-Existing	33.400010	127.110	128.084200	128.3260	128.8484	0.04870	5.40	11.517	25.36	1.85
BellsB	M002	2991.47	100-Existing	33.400010	126.280	128.255100	127.3479	128.2785	0.00061	1.02	53.057	46.29	0.24
BellsB	M002	2945.26	100-Existing	33.400010	125.320	127.996000	127.4239	128.2026	0.00359	2.25	24.900	56.64	0.46
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100-Existing	33.400010	125.120	127.420200	127.4202	128.1871	0.01036	3.93	9.432	9.97	0.83
BellsB	M002	2918.61	100-Existing	33.400010	124.990	126.731400	127.0590	127.8214	0.02472	5.34	10.282	25.79	1.40
BellsB	M002	2899.46	100-Existing	33.400010	125.250	126.509500	126.7915	127.2893	0.01766	4.13	11.487	35.32	1.20
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100-Existing	33.400010	124.440	125.950100	125.9501	126.1819	0.00471	2.40	18.405	21.10	0.66
BellsB	M002	2861.32	100-Existing	33.400010	123.640	124.807000	125.1101	125.7490	0.03694	5.33	9.642	18.15	1.72
BellsB	M002	2823.69	100-Existing	33.400010	123.230	124.356500	124.4083	124.6858	0.02227	3.65	16.603	32.06	1.18
BellsB	M002	2777.91	100-Existing	33.400010	122.770	124.025200	123.7432	124.0745	0.00351	1.60	40.330	60.86	0.48
BellsB	M002	2727.91	100-Existing	33.400010	122.210	123.671600	123.6439	123.8871	0.00960	2.84	23.613	62.37	0.80
BellsB	M002	2677.99	100-Existing	33.400010	121.130	122.752400	122.7374	123.2647	0.01546	3.68	12.393	13.79	1.02
BellsB	M002	2628.09	100-Existing	33.400010	120.690	122.320400	122.3204	122.5931	0.01109	3.32	21.414	36.08	0.87
BellsB	M002	2578.18	100-Existing	33.400010	119.940	121.675500	121.5846	121.8832	0.00802	2.87	22.949	33.42	0.74
BellsB	M002	2528.27	100-Existing	33.400010	119.100	120.933300	120.9333	121.3823	0.01342	3.78	14.710	16.51	0.96
BellsB	M002	2518.19	100-Existing	33.400010	118.620	120.196300	120.5028	121.1332	0.03341	5.24	10.363	14.93	1.47
BellsB	M002	2496.15	100-Existing	33.400010	118.530	120.613500	120.1313	120.7535	0.00415	2.35	27.268	29.90	0.55
BellsB	M002	2478.37	100-Existing	33.400010	117.970	120.318900		120.6517	0.00655	3.16	17.106	14.32	0.70
BellsB	M002	2450.61	100-Existing	33.400010	117.550	119.810300	119.8103	120.3839	0.01152	4.14	13.422	12.16	0.92
BellsB	M002	2428.46	100-Existing	33.400010	117.190	118.503900	118.9203	119.8091	0.05945	5.88	8.628	15.70	1.87
BellsB	M002	2408.52	100-Existing	33.400010	116.630	117.966600	118.2281	118.7717	0.04572	5.23	11.027	19.89	1.63
BellsB	M002	2378.55	100-Existing	33.400010	116.150	117.810400	117.8104	118.1499	0.01473	3.79	18.245	27.92	0.98
BellsB	M002	2367.92	100-Existing	33.400010	115.610	116.781700	117.0928	117.7955	0.05398	5.76	9.988	18.20	1.83
BellsB	M002	2352.81	100-Existing	33.400010	115.070	116.352200	116.5798	117.1085	0.03619	5.00	11.139	16.93	1.51
BellsB	M002	2328.64	100-Existing	33.400010	113.990	115.854800	116.0053	116.4700	0.01772	4.40	13.302	16.99	1.10
BellsB	M002	2307.61	100-Existing	33.400010	112.940	116.175000	115.4800	116.2148	0.00065	1.15	53.886	48.24	0.22
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100-Existing	33.400010	111.750	113.573500	113.9328	115.0091	0.03653	5.31	6.309	6.34	1.36
BellsB	M002	2275.77	100-Existing	35.900010	112.060	114.015300	114.0153	114.3843	0.01149	3.76	18.105	25.29	0.90
BellsB	M002	2232.72	100-Existing	35.900010	110.580	112.421100	112.7816	113.5406	0.02791	5.43	10.283	13.61	1.37
BellsB	M002	2200.99	100-Existing	35.900010	109.610	111.976700	111.7023	112.3060	0.00663	3.16	17.892	14.81	0.70
BellsB	M002	2173.21	100-Existing	35.900010	108.980	111.378400	111.3784	112.0376	0.01122	4.07	12.626	10.35	0.88
BellsB	M002	2133.27	100-Existing	35.900010	107.790	109.210800	109.7625	111.0420	0.06300	6.93	7.592	11.10	2.01
BellsB	M002	2117.78	100-Existing	35.900010	107.460	109.046700	109.5144	110.1769	0.03065	5.40	9.559	11.43	1.45
BellsB	M002	2103.01	100-Existing	35.900010	106.450	107.966000	108.4329	109.4928	0.05734	6.53	7.944	10.16	1.87
BellsB	M002	2085.77	100-Existing	35.900010	105.170	106.774600	107.3138	108.4591	0.05570	6.96	7.548	8.37	1.89
BellsB	M002	2068.57	100-Existing	35.900010	104.360	105.454400	105.9709	107.3271	0.09223	7.36	7.356	12.21	2.38
BellsB	M002	2059.88	100-Existing	35.900010	103.560	105.031400	105.5336	106.7068	0.05061	6.33	7.729	10.34	1.82

HEC-RAS Plan: Plan 20 Profile: 100-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	100-Existing	35.900010	103.130	104.559100	105.1001	106.3780	0.06851	7.05	7.229	8.65	2.07
BellsB	M002	2040.56	100-Existing	35.900010	102.390	103.952200	104.4732	105.6383	0.03909	6.36	7.468	6.69	1.67
BellsB	M002	2033.27	100-Existing	35.900010	102.080	104.529700	104.5297	105.2448	0.01318	4.26	11.722	8.81	0.96
BellsB	M002	2025.44	100-Existing	35.900010	101.580	104.154200	103.7065	104.4834	0.00472	2.95	17.622	11.84	0.61
BellsB	M002	2021.67	100-Existing	35.900010	101.430	103.786600	103.7866	104.4252	0.01186	3.95	12.408	10.67	0.91
BellsB	M002	2014.53	100-Existing	35.900010	99.960	101.595300	102.2937	104.0571	0.09346	7.00	5.371	6.76	2.26
BellsB	M002	2010.46	100-Existing	35.900010	99.080	100.294900	101.1049	103.5278	0.13351	8.90	5.246	7.00	2.84
BellsB	M002	2007.37	100-Existing	35.900010	98.520	100.037500	100.8765	103.1130	0.11139	7.91	4.913	5.66	2.47
BellsB	M002	1996.87	100-Existing	35.900010	97.970	99.153390	99.9214	101.9202	0.09817	8.15	5.688	6.80	2.51
BellsB	M002	1982.97	100-Existing	35.900010	97.730	98.993300	99.4836	100.5640	0.05468	6.48	7.592	8.14	1.91
BellsB	M002	1966.25	100-Existing	35.900010	96.750	98.852400	99.0943	99.8311	0.02242	4.99	9.967	9.14	1.21
BellsB	M002	1951.81	100-Existing	35.900010	96.560	98.949310	98.2830	99.1243	0.00364	2.36	22.117	14.50	0.51
BellsB	M002	1939.94	100-Existing	35.900010	96.290	98.456860	98.4569	99.0085	0.01192	3.72	13.352	12.46	0.91
BellsB	M002	1918.81	100-Existing	35.900010	95.860	98.171710	97.8544	98.5328	0.00710	3.29	16.600	12.09	0.73
BellsB	M002	1910.32	100-Existing	35.900010	95.580	97.750520	97.7505	98.4256	0.01181	3.95	11.844	9.64	0.93
BellsB	M002	1896.87	100-Existing	35.900010	94.380	95.988960	96.5813	97.9801	0.06559	7.01	6.914	8.36	1.97
BellsB	M002	1887.59	100-Existing	35.900010	93.870	95.104120	95.6766	97.2320	0.09594	7.29	6.645	10.19	2.39
BellsB	M002	1880.79	100-Existing	35.900010	93.330	96.174920	95.3451	96.3779	0.00270	2.37	22.195	12.40	0.47
BellsB	M002	1870.34	100-Existing	35.900010	92.770	96.189070		96.3422	0.00154	2.12	26.068	10.54	0.37
BellsB	M002	1857.16	100-Existing	35.900010	91.880	96.225310		96.3067	0.00078	1.58	34.893	14.58	0.26
BellsB	M002	1848.27	100-Existing	35.900010	91.910	96.243610		96.2922	0.00038	1.20	45.942	16.90	0.19
BellsB	M002	1834.27	100-Existing	35.900010	90.880	96.246540		96.2852	0.00024	1.06	52.863	17.52	0.15
BellsB	M002	1821.35	100-Existing	35.900010	90.900	96.257230		96.2773	0.00014	0.87	70.575	20.79	0.12
BellsB	M002	1807.43	100-Existing	35.900010	89.830	96.259490		96.2743	0.00008	0.72	83.270	21.67	0.09
BellsB	M002	1800.77	100-Existing	35.900010	89.590	96.260360		96.2731	0.00008	0.72	88.432	22.80	0.09
BellsB	M002	1777.98	100-Existing	35.900010	88.770	96.264730		96.2699	0.00003	0.47	135.671	30.20	0.06
BellsB	M002	1753.27	100-Existing	35.900010	88.220	96.262930		96.2691	0.00003	0.51	129.426	30.18	0.06
BellsB	M002	1729.73	100-Existing	35.900010	88.170	96.264100		96.2678	0.00002	0.41	159.478	32.58	0.05
BellsB	M002	1705.77	100-Existing	35.900010	87.600	96.264880		96.2671	0.00001	0.32	251.763	64.62	0.04
BellsB	M002	1688.91	100-Existing	35.900010	86.720	96.262930	90.1807	96.2667	0.00001	0.36	209.671	66.65	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100-Existing	35.900010	83.970	87.410720	87.4107	89.1251	0.00794	5.80	6.188	20.29	1.00
BellsB	M002	1605.59	100-Existing	35.900010	81.490	82.283040	82.9891	87.5793	0.50443	10.82	3.843	11.95	5.49
BellsB	M001	1582.05	100-Existing	57.200000	80.410	81.612680	82.6202	86.0505	0.12886	9.63	6.701	8.99	3.19
BellsB	M001	1563.67	100-Existing	57.200000	79.960	81.319010	82.0543	83.9179	0.06152	7.71	9.355	10.86	2.30
BellsB	M001	1544.26	100-Existing	57.200000	79.040	80.968140	81.5832	82.9010	0.03049	6.79	11.420	9.84	1.69
BellsB	M001	1529.04	100-Existing	57.200000	78.240	79.586980	80.3583	82.2326	0.05283	7.50	8.793	8.67	2.16
BellsB	M001	1515.66	100-Existing	57.200000	77.300	79.267480	79.9631	81.4743	0.04453	6.82	9.568	7.92	1.74
BellsB	M001	1502.43	100-Existing	57.200000	69.640	70.306770	71.3049	79.2145	0.90196	13.25	4.362	11.00	6.52
BellsB	M001	1483.47	100-Existing	57.200000	68.890	69.950610	70.5076	72.0916	0.12481	7.24	9.819	16.48	2.67
BellsB	M001	1454.75	100-Existing	57.200000	68.030	69.595130	69.7403	70.3545	0.02410	4.88	16.890	16.23	1.30
BellsB	M001	1406.62	100-Existing	57.200000	66.490	68.803640	68.8036	69.5566	0.01334	4.55	17.590	12.36	1.01
BellsB	M001	1358.51	100-Existing	57.200000	65.170	66.748110	67.2545	68.3882	0.04498	6.19	11.569	12.13	1.73
BellsB	M001	1310.38	100-Existing	57.200000	63.800	65.433370	65.7756	66.5261	0.02870	5.19	15.113	17.83	1.41
BellsB	M001	1286.33	100-Existing	57.200000	62.810	64.268780	64.6693	65.5892	0.05364	6.11	13.455	20.16	1.84
BellsB	M001	1262.25	100-Existing	57.200000	62.090	64.412670	64.4993	64.8935	0.01276	4.16	24.604	29.35	0.95
BellsB	M001	1251.58	100-Existing	57.200000	61.460	63.312750	63.8754	64.6081	0.03590	6.57	13.860	13.05	1.62
BellsB	M001	1234.76	100-Existing	57.200000	60.570	62.167480	62.6598	63.8144	0.06252	7.34	13.322	21.26	2.02
BellsB	M001	1214.13	100-Existing	57.200000	59.550	61.827850	61.1421	62.0115	0.00320	2.25	35.998	24.67	0.50
BellsB	M001	1200.58	100-Existing	57.200000	58.900	61.233600	61.2336	61.8879	0.01143	4.17	19.858	15.92	0.93
BellsB	M001	1182.98	100-Existing	57.200000	58.590	60.883870	60.9934	61.6527	0.01430	4.61	18.538	15.92	1.04
BellsB	M001	1166.01	100-Existing	57.200000	58.390	59.858460	60.3015	61.2004	0.04347	5.94	13.877	18.29	1.70
BellsB	M001	1153.18	100-Existing	57.200000	57.700	59.534200	59.8594	60.6054	0.03763	6.35	16.128	20.03	1.59
BellsB	M001	1141.88	100-Existing	57.200000	56.720	58.165020	58.7274	60.0071	0.05780	6.60	11.038	14.00	1.94
BellsB	M001	1128.34	100-Existing	57.200000	56.530	57.817890	58.1993	59.0506	0.05498	6.09	12.689	15.32	1.85
BellsB	M001	1117.89	100-Existing	57.200000	55.580	56.967900	57.4198	58.4233	0.06150	7.01	12.459	14.08	1.99
BellsB	M001	1096.03	100-Existing	57.200000	54.610	56.368680	56.6739	57.4259	0.02866	5.22	15.108	16.30	1.41
BellsB	M001	1077.81	100-Existing	57.200000	54.240	55.453690	55.9057	56.7694	0.04872	5.85	13.819	19.77	1.78
BellsB	M001	1069.76	100-Existing	57.200000	53.700	54.525280	54.9639	56.0726	0.11466	6.73	11.633	19.48	2.55
BellsB	M001	1064.67	100-Existing	57.200000	53.190	54.033580	54.4493	55.4813	0.11246	6.57	12.057	20.67	2.51
BellsB	M001	1051.64	100-Existing	57.200000	51.970	53.110350	53.5438	54.5471	0.06459	6.21	12.835	18.45	2.00
BellsB	M001	1032.36	100-Existing	57.200000	50.970	52.564580	52.8377	53.5196	0.03514	5.67	15.889	17.03	1.54
BellsB	M001	1021.64	100-Existing	57.200000	50.030	51.538840	51.9863	53.0262	0.04678	5.97	12.741	17.22	1.75
BellsB	M001	1014.11	100-Existing	57.200000	49.460	51.171360	51.6253	52.6963	0.04156	6.04	12.385	15.08	1.66
BellsB	M001	1006.24	100-Existing	57.200000	49.150	50.519200	51.0365	52.3040	0.05558	6.54	11.349	14.83	1.91
BellsB	M001	996.42	100-Existing	57.200000	48.110	49.534110	50.1487	51.6630	0.08127	7.66	10.465	14.24	2.25
BellsB	M001	987.27	100-Existing	57.200000	47.170	48.821180	49.4719	51.0308	0.05876	7.33	10.369	11.92	2.00
BellsB	M001	973.52	100-Existing	57.200000	46.790	48.288570	48.9017	50.2355	0.04488	6.54	10.676	13.84	1.87
BellsB	M001	951.43	100-Existing	57.200000	45.770	47.362960	47.9328	49.2272	0.05105	6.80	11.533	17.12	1.95
BellsB	M001	931.51	100-Existing	57.200000	44.860	46.238270	46.7817	48.0018	0.07244	7.92	10.950	14.39	2.30
BellsB	M001	925.41	100-Existing	57.200000	44.690	46.415280	46.7647	47.5178	0.03026	6.00	15.013	18.96	1.52
BellsB	M001	901.68	100-Existing	57.200000	43.690	45.343290	45.7805	46.7585	0.03106	6.06	12.372	11.73	1.60
BellsB	M001	877.27	100-Existing	57.200000	43.180	45.475820	45.2586	45.9916	0.00756	3.71	20.529	13.82	0.83
BellsB	M001	857.41	100-Existing	57.200000	42.160	45.717300	45.2389	45.8221	0.00099	1.81	54.592	42.01	0.32
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100-Existing	58.500000	38.540	42.124330	41.3888	42.9127	0.00520	4.01	15.189	11.94	0.70
BellsB	M001	810.13	100-Existing	58.500000	37.800	42.454730	40.1410	42.5639	0.00070	1.60	51.786	33.59	0.25
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100-Existing	58.500000	34.330	36.782820	37.6731	39.6309	0.05195	7.59	8.261	8.93	1.87
BellsB	M001	782.27	100-Existing	58.500000	33.920	34.926320	35.7088	38.2518	0.16785	8.69	7.712	11.28	3.10
BellsB	M001	772.73	100-Existing	58.500000	30.940	32.675530	33.5192	36.6125	0.16888	11.50	8.434	10.89	3.05
BellsB	M001	766.74	100-Existing	58.500000	30.650	32.625870	33.3787	35.5387	0.10383	10.19	9.786	10.95	2.48
BellsB	M001	760.32	100-Existing	58.500000	30.340	32.089410	32.8603	34.9362	0.08015	8.86	9.875	11.09	2.31
BellsB	M001	755.97	100-Existing	58.500000	30.050	31.760070	32.5057	34.5563	0.08692	8.34	9.572	11.51	2.32
BellsB	M001	749.69	100-Existing	58.500000	29.300	31.098230	31.8892	33.9928	0.08624	8.87	9.581	10.53	2.35
BellsB	M001	742.14	100-Existing	58.500000	28.380	29.798640	30.7068	33.2664	0.09519	8.90	8.345	9.49	2.53
BellsB	M001	736.73	100-Existing	58.500000	28.240	29.169840	29.9832	32.6000	0.16063	8.90	7.646	10.98	3.10

HEC-RAS Plan: Plan 20 Profile: 100-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	100-Existing	58.500000	27.350	28.540040	29.1133	30.6396	0.07888	7.11	10.255	14.71	2.22
BellsB	M001	712.04	100-Existing	58.500000	26.270	27.969840	28.5787	29.9194	0.05296	6.79	10.872	11.41	1.86
BellsB	M001	702.42	100-Existing	58.500000	26.040	27.517640	28.0792	29.3424	0.05716	6.70	11.189	12.59	1.94
BellsB	M001	691.68	100-Existing	58.500000	25.030	26.769620	27.3767	28.7252	0.05530	6.57	10.314	11.34	1.88
BellsB	M001	686.22	100-Existing	58.500000	24.460	25.867420	26.5746	28.3183	0.07718	7.07	8.958	10.75	2.19
BellsB	M001	675.26	100-Existing	58.500000	24.080	25.422840	26.0331	27.4346	0.06080	6.73	10.106	11.04	2.00
BellsB	M001	668.37	100-Existing	58.500000	23.580	25.052440	25.6469	27.0127	0.05852	6.70	10.506	12.34	1.95
BellsB	M001	655.45	100-Existing	58.500000	23.020	24.349680	24.8964	26.2239	0.05961	6.50	10.636	13.20	1.95
BellsB	M001	636.88	100-Existing	58.500000	21.460	22.993150	23.6289	25.0910	0.05797	6.68	9.923	10.84	1.95
BellsB	M001	619.06	100-Existing	58.500000	20.820	22.536350	23.0242	24.0939	0.03900	6.11	12.278	12.16	1.64
BellsB	M001	608.48	100-Existing	58.500000	20.130	21.707910	22.2787	23.5968	0.04863	6.41	10.990	13.75	1.80
BellsB	M001	592.31	100-Existing	58.500000	18.950	20.549860	21.1851	22.6657	0.06872	7.52	10.633	11.95	2.11
BellsB	M001	582.72	100-Existing	58.500000	18.140	19.433970	20.1440	21.9072	0.08184	7.69	9.608	10.54	2.31
BellsB	M001	577.91	100-Existing	58.500000	17.660	19.496890	20.1684	21.4998	0.04015	6.92	11.364	10.18	1.72
BellsB	M001	561.51	100-Existing	58.500000	17.020	18.555020	19.1541	20.6223	0.07328	7.30	11.072	13.83	2.16
BellsB	M001	553.07	100-Existing	58.500000	16.350	17.680760	18.3519	20.0122	0.06783	6.99	9.716	12.35	2.09
BellsB	M001	541.54	100-Existing	58.500000	15.410	16.752500	17.3998	19.1435	0.08386	6.98	9.337	13.89	2.26
BellsB	M001	529.17	100-Existing	58.500000	14.850	16.176450	16.7694	18.1052	0.06396	6.22	9.914	9.42	1.81
BellsB	M001	514.53	100-Existing	58.500000	14.210	15.478960	15.9731	17.0776	0.06304	6.12	11.570	12.47	1.82
BellsB	M001	467.56	100-Existing	58.500000	11.610	13.026130	13.4668	14.4944	0.04588	5.47	11.534	10.76	1.56
BellsB	M001	420.59	100-Existing	58.500000	8.750	13.430770	11.3592	13.5796	0.00118	1.90	41.908	15.66	0.29
BellsB	M001	400.25	100-Existing	58.500000	8.570	13.209870	10.9779	13.5338	0.00166	2.52	23.200	7.03	0.37
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100-Existing	58.500000	0.830	1.976145	3.2364	7.2847	0.10642	10.21	5.731	5.59	3.04
BellsB	M001	47.74	100-Existing	58.500000	0.560	4.305261	3.3176	4.3218	0.00020	0.93	149.444	132.09	0.16
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100-Existing	58.500000	0.700	4.302223	3.3386	4.3147	0.00017	0.84	159.615	133.08	0.14
BellsB	M001	20.51	100-Existing	58.500000	0.570	4.297903		4.3121	0.00020	0.90	154.888	143.12	0.16

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2020-Ma

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	AMEC-100-2020-Ma	201.500000	36.310	39.077100	39.0771	40.7774	0.01393	6.38	42.044	22.01	1.26
CornerB	M004	2838.71	AMEC-100-2020-Ma	201.500000	36.150	38.470590	38.9659	40.0214	0.01415	5.82	45.129	36.51	1.24
CornerB	M004	2796.61	AMEC-100-2020-Ma	201.500000	35.350	38.591920	37.8824	39.1938	0.00422	3.87	75.123	43.60	0.71
CornerB	M004	2769.85	AMEC-100-2020-Ma	201.500000	34.800	37.856540	37.8565	38.7444	0.01254	6.55	60.835	34.68	1.22
CornerB	TR001	206.04	AMEC-100-2020-Ma	36.000000	43.810	44.829450	45.1663	45.9217	0.04202	5.55	9.559	14.51	1.84
CornerB	TR001	156.04	AMEC-100-2020-Ma	36.000000	41.630	42.747790	43.0999	43.8557	0.04029	4.92	9.265	18.88	1.75
CornerB	TR001	106.04	AMEC-100-2020-Ma	36.000000	39.170	39.905240	40.3342	41.3620	0.06366	5.71	7.589	13.30	2.17
CornerB	TR001	56.04	AMEC-100-2020-Ma	36.000000	37.270	38.170700	38.5757	39.0708	0.03226	4.46	9.511	13.81	1.58
CornerB	TR001	36.04	AMEC-100-2020-Ma	36.000000	35.500	38.297630	37.7896	38.3040	0.00012	0.56	123.865	81.91	0.11
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	AMEC-100-2020-Ma	36.000000	35.180	37.499860	37.4999	37.5703	0.00126	1.53	51.711	81.44	0.34
CornerB	M003	2689.92	AMEC-100-2020-Ma	222.800000	33.550	35.720090	36.3503	37.6276	0.03156	7.88	49.373	45.09	1.80
CornerB	M003	2645.73	AMEC-100-2020-Ma	222.800000	32.870	36.625600	35.0311	36.7862	0.00117	2.33	157.881	70.02	0.39
CornerB	M003	2602.09	AMEC-100-2020-Ma	222.800000	32.200	36.630840		36.7355	0.00058	1.79	196.599	68.23	0.28
CornerB	M003	2557.73	AMEC-100-2020-Ma	222.800000	31.340	36.548260		36.7041	0.00061	2.06	162.108	48.64	0.29
CornerB	M003	2537.73	AMEC-100-2020-Ma	222.800000	30.770	36.455150	34.8801	36.6813	0.00097	2.80	160.835	64.50	0.38
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	AMEC-100-2020-Ma	222.800000	30.350	34.350050	34.3501	35.3577	0.00457	4.59	58.959	27.49	0.74
CornerB	M003	2507.21	AMEC-100-2020-Ma	222.800000	30.750	33.122930	33.5968	34.9462	0.02013	6.82	43.456	23.74	1.47
CornerB	M003	2459.31	AMEC-100-2020-Ma	222.800000	30.130	32.935850	32.4445	33.5267	0.00499	3.91	78.903	40.19	0.76
CornerB	M003	2411.41	AMEC-100-2020-Ma	222.800000	29.270	33.096780		33.2872	0.00153	2.60	144.487	64.56	0.44
CornerB	M003	2363.51	AMEC-100-2020-Ma	222.800000	28.770	33.077420		33.2225	0.00079	2.05	168.047	62.26	0.32
CornerB	M003	2315.61	AMEC-100-2020-Ma	222.800000	27.930	33.060890		33.1903	0.00044	1.74	177.134	61.82	0.25
CornerB	M003	2267.71	AMEC-100-2020-Ma	223.300000	26.300	33.057490		33.1680	0.00028	1.67	220.410	82.19	0.21
CornerB	M003	2263.01	AMEC-100-2020-Ma	223.300000	29.100	32.695870		33.0819	0.00403	3.05	100.402	76.42	0.70
CornerB	M003	2260.98	AMEC-100-2020-Ma	223.300000	25.800	30.490290		30.8485	0.00137	2.83	99.255	34.16	0.43
CornerB	M003	2240.88	AMEC-100-2020-Ma	223.300000	27.010	30.457280		30.8120	0.00217	2.82	98.165	42.20	0.51
CornerB	M003	2212.25	AMEC-100-2020-Ma	223.300000	26.870	30.371450		30.7467	0.00225	2.99	96.977	38.90	0.53
CornerB	M003	2183.63	AMEC-100-2020-Ma	223.300000	25.560	29.788600	29.4268	30.6116	0.00468	4.69	74.544	35.93	0.77
CornerB	M003	2163.63	AMEC-100-2020-Ma	223.300000	25.350	29.832650	28.5844	30.4946	0.00258	3.73	64.775	41.30	0.58
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	AMEC-100-2020-Ma	223.300000	24.870	28.113660	28.4670	29.9651	0.01326	6.59	41.038	23.32	1.24
CornerB	M003	2131.66	AMEC-100-2020-Ma	223.300000	24.570	27.245650	27.9959	29.6276	0.02370	7.13	36.413	21.92	1.57
CornerB	M003	2119.46	AMEC-100-2020-Ma	223.300000	24.120	26.337900	27.2226	29.2251	0.03587	7.94	33.271	22.94	1.89
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	AMEC-100-2020-Ma	223.300000	24.040	26.647370	27.3053	28.8106	0.02077	6.73	37.894	23.00	1.48
CornerB	M003	2080.62	AMEC-100-2020-Ma	223.300000	23.730	25.749050	26.5640	27.9853	0.02737	6.91	37.380	26.10	1.66
CornerB	M003	2068.44	AMEC-100-2020-Ma	223.300000	23.760	25.670750	26.2643	27.5702	0.02497	6.46	40.852	29.59	1.57
CornerB	M003	2022.25	AMEC-100-2020-Ma	223.300000	22.740	25.013710	25.4667	26.5607	0.01628	5.92	47.064	30.43	1.31
CornerB	M003	1991.14	AMEC-100-2020-Ma	223.300000	22.180	24.866700	25.0286	26.0697	0.00990	5.27	54.733	30.61	1.06
CornerB	M003	1985.82	AMEC-100-2020-Ma	223.300000	21.970	24.467930	24.8212	25.9787	0.01399	5.92	48.330	28.18	1.24
CornerB	M003	1975.95	AMEC-100-2020-Ma	223.300000	21.780	24.057230	24.5599	25.7875	0.01877	6.48	45.555	28.79	1.42
CornerB	M003	1929.72	AMEC-100-2020-Ma	223.300000	20.080	22.579420	23.2308	24.8057	0.02214	6.98	37.802	21.44	1.53
CornerB	M003	1883.49	AMEC-100-2020-Ma	223.300000	19.230	22.191670	22.5298	23.9040	0.01240	6.24	44.782	20.61	1.20
CornerB	TR002	21.04	AMEC-100-2020-Ma	13.500000	22.270	22.998170	23.6238	25.8667	0.15016	8.23	2.188	4.85	3.23
CornerB	TR002	18.08	AMEC-100-2020-Ma	13.500000	21.400	21.865810	22.4110	25.1600	0.36676	9.17	1.969	6.35	4.70
CornerB	M002	1826.39	AMEC-100-2020-Ma	225.800000	16.920	18.650060	19.5854	22.3866	0.11783	9.35	30.097	30.80	2.56
CornerB	M002	1790.92	AMEC-100-2020-Ma	225.800000	15.490	19.365820	19.2124	20.6521	0.01135	5.58	52.143	18.67	0.93
CornerB	M002	1773.95	AMEC-100-2020-Ma	225.800000	14.720	19.983390	18.0000	20.2928	0.00198	2.79	107.738	31.82	0.40
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	AMEC-100-2020-Ma	225.800000	14.870	20.000120	17.7577	20.2022	0.00107	2.35	134.807	39.09	0.34
CornerB	M002	1733.13	AMEC-100-2020-Ma	225.800000	15.230	20.049970		20.1133	0.00030	1.22	245.052	87.82	0.18
CornerB	M002	1717.41	AMEC-100-2020-Ma	225.800000	15.120	20.053690		20.1055	0.00025	1.13	273.622	95.17	0.16
CornerB	M002	1691.96	AMEC-100-2020-Ma	225.800000	14.620	20.054550		20.0970	0.00020	1.04	313.726	112.65	0.15
CornerB	M002	1654.15	AMEC-100-2020-Ma	225.800000	13.870	20.062650		20.0863	0.00010	0.77	406.734	140.07	0.11
CornerB	M002	1613.91	AMEC-100-2020-Ma	225.800000	13.080	20.063410		20.0822	0.00005	0.66	469.426	156.40	0.09
CornerB	M002	1567.16	AMEC-100-2020-Ma	225.800000	12.150	20.072710		20.0770	0.00001	0.30	882.775	213.40	0.04
CornerB	M002	1551.89	AMEC-100-2020-Ma	225.800000	11.850	20.074370		20.0762	0.00000	0.19	1311.145	276.35	0.02
CornerB	M002	1539.91	AMEC-100-2020-Ma	224.600000	11.620	20.074910		20.0759	0.00000	0.14	1735.148	309.41	0.02
CornerB	M002	1526.59	AMEC-100-2020-Ma	224.600000	11.360	20.074890		20.0759	0.00000	0.14	1766.519	314.45	0.02
CornerB	M002	1517.99	AMEC-100-2020-Ma	224.600000	11.180	20.074450		20.0758	0.00000	0.17	1496.560	271.17	0.02
CornerB	M002	1505.64	AMEC-100-2020-Ma	224.600000	10.940	20.073310		20.0757	0.00000	0.22	1113.703	201.09	0.03
CornerB	M002	1490.63	AMEC-100-2020-Ma	224.600000	10.640	20.070120		20.0753	0.00001	0.32	771.686	144.67	0.04
CornerB	M002	1463.65	AMEC-100-2020-Ma	224.600000	10.110	20.052940		20.0733	0.00004	0.67	431.409	95.82	0.08
CornerB	M002	1415.93	AMEC-100-2020-Ma	224.600000	9.170	20.050440		20.0714	0.00004	0.66	400.419	82.23	0.08
CornerB	M002	1386.11	AMEC-100-2020-Ma	224.600000	8.580	20.042200		20.0694	0.00005	0.77	371.268	80.16	0.09
CornerB	M002	1363.91	AMEC-100-2020-Ma	224.600000	8.140	20.022710		20.0663	0.00009	0.98	294.784	59.22	0.11
CornerB	M002	1356.61	AMEC-100-2020-Ma	224.600000	8.000	20.023920		20.0641	0.00023	1.19	314.516	74.70	0.12
CornerB	M002	1354.11	AMEC-100-2020-Ma	224.600000	15.350	19.830280		20.0454	0.00161	2.73	132.494	59.32	0.41
CornerB	M002	1352.01	AMEC-100-2020-Ma	224.600000	8.000	11.559060	11.5591	12.8078	0.02746	3.88	46.318	17.52	0.99
CornerB	M002	1347.51	AMEC-100-2020-Ma	224.600000	7.720	10.686690	11.1407	12.5531	0.02837	6.08	37.879	18.97	1.32
CornerB	M002	1336.58	AMEC-100-2020-Ma	224.600000	7.690	9.875447	10.5829	12.1361	0.04319	6.76	35.357	23.80	1.61
CornerB	M002	1326.83	AMEC-100-2020-Ma	224.600000	7.680	11.069420	10.2033	11.5246	0.00471	3.18	81.652	31.76	0.58
CornerB	M002	1317.22	AMEC-100-2020-Ma	224.600000	7.660	10.933110		11.4655	0.00610	3.38	75.017	32.60	0.65
CornerB	M002	1315.18	AMEC-100-2020-Ma	224.600000	7.280	10.408070	10.4081	11.4000	0.01567	4.80	56.016	30.04	1.01
CornerB	M002	1313.58	AMEC-100-2020-Ma	224.600000	6.480	9.582371	10.0450	11.2949	0.03024	6.17	42.546	26.05	1.36
CornerB	M002	1312.39	AMEC-100-2020-Ma	224.600000	6.230	9.120963	9.7571	11.2178	0.03829	6.71	38.106	24.47	1.52
CornerB	M002	1311.16	AMEC-100-2020-Ma	224.600000	5.920	8.670129	9.4240	11.1269	0.05097	7.10	34.051	23.29	1.72
CornerB	M002	1309.11	AMEC-100-2020-Ma	224.600000	5.910	8.264969	9.0982	10.9918	0.05714	7.45	32.210	22.45	1.83
CornerB	M002	1305.35	AMEC-100-2020-Ma	224.600000	5.370	7.565950	8.4819	10.6979	0.07151	8.27	31.661	24.98	2.04
CornerB	M002	1300.06	AMEC-100-2020-Ma	224.600000	5.060	7.065886	7.9982	10.2921	0.08428	8.08	29.409	23.77	2.17
CornerB	M002	1296.49	AMEC-100-2020-Ma	224.600000	4.910	7.300265	8.0948	9.8796	0.04599	7.33	33.881	21.44	1.68
CornerB	M002	1289.64	AMEC-100-2020-Ma	224.600000	4.710	7.274673	7.9231	9.4902	0.03737	6.85	36.604	21.29	1.53
CornerB	M002	1284.12	AMEC-100-2020-Ma	224.600000	4.410	7.447523	7.8679	9.1938	0.02275	6.18	42.417	21.54	1.24
CornerB	M002	1279.52	AMEC-100-2020-Ma	224.600000	4.230	7.032320	7.6109	9.0526	0.02765	6.55	39.183	21.55	1.35
CornerB	M002	1258.94	AMEC-100-2020-Ma	224.600000	3.530	5.518308	6.3305	8.1637	0.06397	7.63	34.804	29.81	1.93
CornerB	M002	1246.98	AMEC-100-2020-Ma	224.600000	3.370	5.098689	5.7718	7.4513	0.04289	6.91	34.974	26.70	1.76

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2020-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	AMEC-100-2020-Ma	224.600000	3.100	4.763011	5.4861	6.7373	0.04916	6.53	39.753	38.89	1.84
CornerB	M002	1215.66	AMEC-100-2020-Ma	224.600000	2.700	4.325408	4.8594	5.8488	0.03126	5.64	46.764	51.04	1.49
CornerB	M002	1206.83	AMEC-100-2020-Ma	224.600000	2.540	5.088453	4.7343	5.4426	0.00497	2.97	102.857	68.92	0.64
CornerB	M002	1194.69	AMEC-100-2020-Ma	224.600000	2.390	5.065526		5.3827	0.00434	2.87	108.200	66.43	0.60
CornerB	M002	1185.06	AMEC-100-2020-Ma	224.600000	2.260	5.050681		5.3297	0.00342	2.70	116.750	68.31	0.54
CornerB	M002	1142.41	AMEC-100-2020-Ma	224.600000	1.700	4.970085		5.1924	0.00272	2.49	135.336	84.63	0.49
CornerB	M002	1137.55	AMEC-100-2020-Ma	224.600000	1.600	4.668623	4.6055	5.1284	0.00663	3.32	99.729	104.29	0.73
CornerB	M002	1110.53	AMEC-100-2020-Ma	224.600000	1.390	4.185749	4.1857	4.9052	0.00795	4.04	77.826	70.37	0.82
CornerB	M002	1090.67	AMEC-100-2020-Ma	224.600000	1.100	4.465106	3.4511	4.6313	0.00190	2.20	164.949	140.44	0.41
CornerB	M002	1070.69	AMEC-100-2020-Ma	224.600000	0.800	4.485530	3.1700	4.5871	0.00095	1.77	205.606	121.97	0.30
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	AMEC-100-2020-Ma	224.600000	0.760	4.474549	3.0699	4.5613	0.00081	1.67	205.049	110.54	0.28
CornerB	M002	1047.01	AMEC-100-2020-Ma	224.600000	0.750	4.443532		4.5425	0.00079	1.84	196.747	84.09	0.32
CornerB	M002	1004.03	AMEC-100-2020-Ma	224.600000	0.770	4.405089		4.5058	0.00074	1.78	229.759	139.75	0.31
CornerB	M002	959.21	AMEC-100-2020-Ma	224.600000	0.700	4.422564		4.4646	0.00048	1.42	360.290	287.30	0.24
CornerB	M002	915.75	AMEC-100-2020-Ma	223.800000	0.680	4.416010		4.4398	0.00034	1.17	436.291	297.14	0.20
CornerB	M002	869.66	AMEC-100-2020-Ma	223.800000	0.690	4.407066		4.4259	0.00022	0.97	459.978	225.92	0.17
CornerB	M002	828.33	AMEC-100-2020-Ma	217.900000	0.770	4.399811		4.4178	0.00023	0.96	447.459	226.81	0.17
CornerB	M002	784.55	AMEC-100-2020-Ma	217.900000	0.820	4.396687		4.4098	0.00015	0.79	469.324	234.59	0.14
CornerB	M002	739.85	AMEC-100-2020-Ma	217.900000	0.820	4.388912		4.4030	0.00015	0.75	487.113	276.60	0.14
CornerB	M002	696.36	AMEC-100-2020-Ma	217.900000	0.640	4.372827		4.3940	0.00021	0.94	428.714	268.00	0.16
CornerB	M001	659.37	AMEC-100-2020-Ma	230.700000	0.750	4.362128		4.3871	0.00023	0.94	401.120	238.03	0.17
CornerB	M001	643.93	AMEC-100-2020-Ma	230.700000	0.740	4.343261	3.2164	4.3814	0.00035	1.17	340.699	222.68	0.21
CornerB	M001	635		Bridge									
CornerB	M001	629.03	AMEC-100-2020-Ma	230.700000	0.830	4.037129	3.3017	4.1234	0.00084	1.71	237.456	184.35	0.32
CornerB	M001	608.52	AMEC-100-2020-Ma	230.700000	0.760	4.021790		4.1044	0.00105	1.82	226.045	165.37	0.35
CornerB	M001	570.12	AMEC-100-2020-Ma	230.700000	0.610	4.023044		4.0643	0.00055	1.40	298.958	187.25	0.26
CornerB	M001	535.83	AMEC-100-2020-Ma	230.700000	0.560	3.999970	2.1954	4.0484	0.00034	1.19	305.495	222.24	0.21
CornerB	M001	520.22	AMEC-100-2020-Ma	230.700000	0.550	4.006249	2.5394	4.0391	0.00026	1.04	355.234	293.43	0.18
CornerB	M001	472.07	AMEC-100-2020-Ma	230.700000	0.580	3.939368	3.1215	4.0162	0.00064	1.58	258.884	207.61	0.28
CornerB	M001	460		Bridge									
CornerB	M001	445.11	AMEC-100-2020-Ma	230.700000	0.440	3.543738	2.5391	3.7826	0.00163	2.44	180.831	240.60	0.44
CornerB	M001	425.41	AMEC-100-2020-Ma	230.700000	0.480	3.585768		3.6896	0.00099	1.85	281.303	311.31	0.34
CornerB	M001	401.99	AMEC-100-2020-Ma	230.700000	0.740	3.607004		3.6540	0.00057	1.36	380.448	347.21	0.26
CornerB	M001	381.26	AMEC-100-2020-Ma	230.700000	0.790	3.533856	3.2490	3.6302	0.00120	1.89	293.547	352.46	0.37
CornerB	M001	380		Bridge									
CornerB	M001	375.14	AMEC-100-2020-Ma	230.700000	0.790	3.419624	3.2588	3.5529	0.00171	2.21	264.234	368.45	0.44
CornerB	M001	352.89	AMEC-100-2020-Ma	230.700000	0.680	3.229240	2.5827	3.4761	0.00220	2.45	181.778	345.24	0.50
CornerB	M001	324.13	AMEC-100-2020-Ma	230.700000	0.670	3.190204		3.4043	0.00205	2.36	179.181	266.59	0.48
CornerB	M001	292.92	AMEC-100-2020-Ma	230.700000	0.650	3.201473		3.3249	0.00138	1.91	244.260	347.99	0.39
CornerB	M001	274.62	AMEC-100-2020-Ma	230.700000	0.960	3.192180	2.8511	3.2811	0.00231	2.21	268.088	367.48	0.49
CornerB	M001	270		Bridge									
CornerB	M001	266.99	AMEC-100-2020-Ma	230.700000	1.010	3.157561	2.8044	3.2196	0.00212	2.09	292.523	379.12	0.47
CornerB	M001	245.99	AMEC-100-2020-Ma	230.700000	0.640	3.121178		3.1850	0.00141	1.82	328.735	436.59	0.39
CornerB	M001	210.89	AMEC-100-2020-Ma	230.700000	0.680	3.069601		3.1335	0.00151	1.76	317.323	409.56	0.40
CornerB	M001	174.77	AMEC-100-2020-Ma	230.700000	0.690	3.036588		3.0797	0.00124	1.44	343.414	461.97	0.35
CornerB	M001	155.66	AMEC-100-2020-Ma	230.700000	0.640	3.024142	2.5994	3.0520	0.00137	1.38	392.668	586.59	0.36
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	AMEC-100-2020-Ma	230.700000	0.550	3.012896	2.5404	3.0385	0.00109	1.23	400.414	533.26	0.32
CornerB	M001	129.05	AMEC-100-2020-Ma	230.700000	0.400	2.976759		3.0091	0.00085	1.30	416.783	555.72	0.29
CornerB	M001	80.73	AMEC-100-2020-Ma	230.700000	0.200	2.912923		2.9655	0.00089	1.48	353.872	400.81	0.31
CornerB	M001	23.81	AMEC-100-2020-Ma	230.700000	0.320	2.849880	2.2372	2.9128	0.00102	1.47	330.537	452.60	0.33
BellsB	TR001	178.13	AMEC-100-2020-Ma	19.800000	92.910	95.859710	94.7358	95.9514	0.00099	1.56	19.494	13.56	0.31
BellsB	TR001	159.86	AMEC-100-2020-Ma	19.800000	92.150	95.897540		95.9241	0.00024	0.95	36.317	17.54	0.16
BellsB	TR001	139.54	AMEC-100-2020-Ma	19.800000	91.130	95.738070	93.0468	95.9023	0.00081	1.80	11.033	20.54	0.27
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	AMEC-100-2020-Ma	19.800000	89.490	91.276860	91.5562	92.6110	0.01911	5.16	3.976	5.72	1.27
BellsB	TR001	88.17	AMEC-100-2020-Ma	19.800000	88.470	89.488980	90.1470	92.1070	0.11100	7.70	3.216	5.57	2.77
BellsB	TR001	84.12	AMEC-100-2020-Ma	19.800000	87.660	88.491150	89.1125	91.4401	0.18797	7.79	2.830	6.91	3.43
BellsB	TR001	79.14	AMEC-100-2020-Ma	19.800000	86.530	87.404060	88.0777	90.5656	0.14759	8.25	2.926	6.51	3.20
BellsB	TR001	72.74	AMEC-100-2020-Ma	19.800000	85.760	86.493320	87.0788	89.4215	0.18587	7.75	2.853	7.33	3.42
BellsB	TR001	67.75	AMEC-100-2020-Ma	19.800000	85.040	85.665610	86.1853	88.2317	0.21507	7.52	3.080	8.14	3.58
BellsB	TR001	64.04	AMEC-100-2020-Ma	19.800000	84.470	85.274280	85.8184	87.4845	0.13441	6.59	3.035	6.35	2.92
BellsB	TR001	60.69	AMEC-100-2020-Ma	19.800000	84.140	85.204070	85.6861	86.9890	0.09002	6.12	3.659	7.39	2.45
BellsB	TR001	56.76	AMEC-100-2020-Ma	19.800000	83.970	85.007750	85.4590	86.6107	0.07454	5.67	3.746	7.69	2.24
BellsB	TR001	50.93	AMEC-100-2020-Ma	19.800000	83.680	84.781280	85.1668	86.0988	0.07130	5.25	4.267	9.45	2.17
BellsB	TR001	43.86	AMEC-100-2020-Ma	19.800000	83.340	84.313750	84.6622	85.5587	0.07499	5.10	4.387	10.17	2.20
BellsB	TR001	37.01	AMEC-100-2020-Ma	19.800000	82.980	83.994680	84.3207	85.0895	0.05229	4.94	4.883	9.39	1.91
BellsB	TR001	12.14	AMEC-100-2020-Ma	19.800000	82.150	83.127330	83.3503	83.8913	0.03803	4.15	5.717	10.35	1.62
BellsB	M002	5166.11	AMEC-100-2020-Ma	16.200000	190.790	191.990800	191.8707	192.1547	0.00939	2.52	11.976	18.72	0.77
BellsB	M002	5149.23	AMEC-100-2020-Ma	16.200000	190.570	191.650200	191.6502	191.9465	0.01501	2.89	8.783	15.26	0.96
BellsB	M002	5117.45	AMEC-100-2020-Ma	16.200000	189.910	191.572600	190.8347	191.6035	0.00139	1.24	25.075	24.64	0.31
BellsB	M002	5090.85	AMEC-100-2020-Ma	16.200000	189.620	191.130100	191.1301	191.4857	0.01326	3.34	8.632	12.45	0.93
BellsB	M002	5067.47	AMEC-100-2020-Ma	16.200000	189.180	189.794400	190.0915	190.7893	0.12381	5.91	4.310	9.45	2.53
BellsB	M002	5017.78	AMEC-100-2020-Ma	16.200000	188.120	189.338400	189.3384	189.6503	0.01644	3.34	8.544	12.57	1.02
BellsB	M002	4967.57	AMEC-100-2020-Ma	16.200000	186.550	187.872700	188.0376	188.5208	0.03063	4.35	5.662	7.77	1.33
BellsB	M002	4917.46	AMEC-100-2020-Ma	16.200000	185.690	187.328300	186.5795	187.3680	0.00132	1.22	24.427	28.01	0.31
BellsB	M002	4873.31	AMEC-100-2020-Ma	16.200000	184.610	187.255900		187.3136	0.00129	1.52	26.305	38.69	0.31
BellsB	M002	4853.42	AMEC-100-2020-Ma	16.200000	183.550	187.064800	185.3905	187.2723	0.00143	2.02	8.028	31.82	0.35
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	AMEC-100-2020-Ma	16.200000	181.530	183.020100	183.3494	184.3107	0.02867	5.03	3.219	6.47	1.39
BellsB	M002	4785.76	AMEC-100-2020-Ma	16.200000	181.350	182.323900	182.6627	183.4067	0.06056	5.19	4.171	7.52	1.85
BellsB	M002	4756.65	AMEC-100-2020-Ma	16.200000	180.120	181.088700	181.2988	181.7577	0.04561	4.63	5.894	13.57	1.62
BellsB	M002	4727.54	AMEC-100-2020-Ma	16.200000	179.020	179.845200	180.0367	180.4752	0.04076	4.32	6.291	16.49	1.63
BellsB	M002	4707.54	AMEC-100-2020-Ma	16.200000	177.960	178.377700	178.5950	179.1655	0.12219	4.81	4.825	16.85	2.55
BellsB	M002	4702.24	AMEC-100-2020-Ma	16.200000	177.650	178.557100	178.5803	178.8210	0.01708	2.87	8.863	17.82	1.06
BellsB	M002	4682.48	AMEC-100-2020-Ma	16.200000	176.630	177.395000	177.6374	178.1855	0.05349	4.54	5.350	14.69	1.83

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2020-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	AMEC-100-2020-Ma	16.200000	175.500	176.786700	176.9760	177.4818	0.01886	4.08	5.562	7.75	1.19
BellsB	M002	4633.41	AMEC-100-2020-Ma	16.200000	174.510	175.248300	175.5671	176.5305	0.10407	6.44	4.443	13.08	2.55
BellsB	M002	4609.61	AMEC-100-2020-Ma	16.200000	173.500	174.882900	174.5679	175.0441	0.00505	2.28	11.356	12.75	0.64
BellsB	M002	4583.99	AMEC-100-2020-Ma	16.200000	172.770	174.354900	174.3549	174.8290	0.01103	3.31	6.597	8.07	0.91
BellsB	M002	4534.72	AMEC-100-2020-Ma	16.200000	170.000	170.987300	171.5154	173.3056	0.11915	8.42	3.249	6.56	2.84
BellsB	M002	4485.52	AMEC-100-2020-Ma	16.200000	168.200	168.876500	169.0435	169.4119	0.05529	4.42	6.461	18.45	1.83
BellsB	M002	4436.28	AMEC-100-2020-Ma	29.300010	165.850	167.187300	167.3959	167.8431	0.02448	4.84	12.273	27.58	1.38
BellsB	M002	4387.04	AMEC-100-2020-Ma	29.300010	164.060	165.376300	165.6982	166.3513	0.03621	5.81	9.044	13.45	1.68
BellsB	M002	4337.81	AMEC-100-2020-Ma	29.300010	162.600	163.830800	164.0494	164.5156	0.03492	5.31	11.750	24.89	1.60
BellsB	M002	4288.56	AMEC-100-2020-Ma	29.300010	161.300	162.547200	162.6845	163.0543	0.02755	4.64	12.172	20.49	1.40
BellsB	M002	4239.33	AMEC-100-2020-Ma	29.300010	159.650	160.768700	161.0080	161.6130	0.03663	5.10	9.386	15.85	1.64
BellsB	M002	4190.09	AMEC-100-2020-Ma	29.300010	158.430	159.670000	159.7847	160.2121	0.02164	4.24	11.999	19.12	1.28
BellsB	M002	4140.85	AMEC-100-2020-Ma	29.300010	157.300	158.011700	158.1444	158.4902	0.05469	4.76	10.890	23.04	1.87
BellsB	M002	4091.61	AMEC-100-2020-Ma	29.300010	155.300	156.192900	156.2582	156.5830	0.03070	4.24	12.362	21.12	1.47
BellsB	M002	4042.37	AMEC-100-2020-Ma	29.300010	153.740	154.760700	154.8497	155.2628	0.02283	3.91	11.109	15.60	1.29
BellsB	M002	3993.13	AMEC-100-2020-Ma	29.300010	152.650	153.519500	153.6334	153.9591	0.03647	4.20	12.006	23.83	1.52
BellsB	M002	3943.89	AMEC-100-2020-Ma	29.300010	151.360	152.392900	152.4173	152.7460	0.02050	3.71	13.505	21.04	1.22
BellsB	M002	3894.65	AMEC-100-2020-Ma	29.300010	149.520	151.148100	151.3481	151.8120	0.02114	4.48	11.490	18.74	1.25
BellsB	M002	3869.08	AMEC-100-2020-Ma	29.300010	148.870	150.252500	150.5308	151.1617	0.02930	5.02	8.880	12.53	1.48
BellsB	M002	3845.41	AMEC-100-2020-Ma	29.300010	148.370	149.719400	149.9332	150.4204	0.02825	4.66	10.712	18.34	1.36
BellsB	M002	3822.22	AMEC-100-2020-Ma	29.300010	147.710	150.056800	148.8101	150.0968	0.00083	1.25	37.317	21.61	0.26
BellsB	M002	3796.17	AMEC-100-2020-Ma	29.300010	146.890	150.002900		150.0710	0.00095	1.53	31.804	17.78	0.29
BellsB	M002	3765.39	AMEC-100-2020-Ma	29.300010	146.400	149.982800		150.0453	0.00070	1.40	32.211	15.73	0.25
BellsB	M002	3746.94	AMEC-100-2020-Ma	29.300010	145.760	150.016400		150.0255	0.00009	0.61	77.781	28.46	0.10
BellsB	M002	3724.94	AMEC-100-2020-Ma	29.300010	145.320	149.989500		150.0202	0.00024	0.99	46.602	17.71	0.15
BellsB	M002	3697.71	AMEC-100-2020-Ma	29.300010	145.050	149.993800		150.0117	0.00013	0.78	55.836	18.97	0.11
BellsB	M002	3677.71	AMEC-100-2020-Ma	29.300010	143.440	149.999500	146.0815	150.0075	0.00004	0.49	86.872	23.62	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	AMEC-100-2020-Ma	29.300010	142.470	145.030700	145.0307	146.2666	0.01017	4.93	5.949	10.34	1.00
BellsB	M002	3623.19	AMEC-100-2020-Ma	29.300010	142.100	143.693900	144.2821	145.6467	0.05832	6.98	5.574	7.71	1.99
BellsB	M002	3573.45	AMEC-100-2020-Ma	29.300010	140.890	142.498100	142.8226	143.5493	0.02582	5.00	8.983	23.79	1.39
BellsB	M002	3520.99	AMEC-100-2020-Ma	29.300010	139.300	141.024400	141.3456	142.1579	0.02656	5.28	9.235	26.92	1.40
BellsB	M002	3473.83	AMEC-100-2020-Ma	29.300010	137.980	139.807200	140.3155	140.7735	0.02733	5.35	8.030	9.78	1.38
BellsB	M002	3424.29	AMEC-100-2020-Ma	29.300010	136.490	137.919700	138.3511	139.2186	0.03016	5.28	6.410	7.07	1.50
BellsB	M002	3400.36	AMEC-100-2020-Ma	29.300010	135.960	138.852900	137.3278	138.9010	0.00047	1.13	40.704	63.27	0.22
BellsB	M002	3386.31	AMEC-100-2020-Ma	29.300010	135.480	138.839600	137.9189	138.8923	0.00047	1.31	56.433	86.00	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	AMEC-100-2020-Ma	29.300010	135.220	138.876400	137.6501	138.8816	0.00005	0.45	128.513	74.52	0.07
BellsB	M002	3329.08	AMEC-100-2020-Ma	37.099990	134.960	138.873600		138.8795	0.00007	0.54	132.913	58.94	0.09
BellsB	M002	3303.55	AMEC-100-2020-Ma	37.099990	133.820	138.826900	136.8131	138.8731	0.00031	1.31	62.087	51.79	0.19
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	AMEC-100-2020-Ma	37.099990	131.390	134.785200	134.7852	136.2342	0.01021	5.33	6.956	21.60	1.00
BellsB	M002	3203.83	AMEC-100-2020-Ma	37.099990	131.130	132.444500	133.0739	135.3405	0.12101	8.46	6.369	13.35	2.81
BellsB	M002	3176.31	AMEC-100-2020-Ma	37.099990	130.020	131.539200	132.0104	133.0288	0.04884	6.49	9.066	13.89	1.87
BellsB	M002	3157.63	AMEC-100-2020-Ma	37.099990	129.890	131.319400	131.5269	132.0335	0.03773	5.22	12.279	19.21	1.56
BellsB	M002	3130.11	AMEC-100-2020-Ma	37.099990	128.680	130.812800	131.0029	131.5042	0.01153	4.18	13.979	20.10	0.98
BellsB	M002	3083.82	AMEC-100-2020-Ma	37.099990	127.940	129.566100	129.8936	130.6555	0.03054	5.57	12.158	24.32	1.53
BellsB	M002	3037.68	AMEC-100-2020-Ma	37.099990	127.110	128.141300	128.3767	128.8637	0.04355	5.33	12.994	26.34	1.77
BellsB	M002	2991.47	AMEC-100-2020-Ma	37.099990	126.280	128.315100	127.3882	128.3411	0.00065	1.07	55.857	47.00	0.25
BellsB	M002	2945.26	AMEC-100-2020-Ma	37.099990	125.320	127.965900	127.9659	128.2496	0.00488	2.60	23.240	53.61	0.54
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	AMEC-100-2020-Ma	37.099990	125.120	127.550000	127.5500	128.2047	0.01040	3.68	11.787	12.09	0.77
BellsB	M002	2918.61	AMEC-100-2020-Ma	37.099990	124.990	126.792600	127.2059	127.8300	0.02351	5.35	11.909	27.39	1.37
BellsB	M002	2899.46	AMEC-100-2020-Ma	37.099990	125.250	126.571700	126.8230	127.3307	0.01682	4.17	14.016	52.60	1.18
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	AMEC-100-2020-Ma	37.099990	124.440	125.950100	125.9501	126.2361	0.00582	2.66	18.407	21.10	0.73
BellsB	M002	2861.32	AMEC-100-2020-Ma	37.099990	123.640	124.869500	125.1695	125.7951	0.03427	5.35	10.811	19.24	1.67
BellsB	M002	2823.69	AMEC-100-2020-Ma	37.099990	123.230	124.386500	124.4548	124.7478	0.02377	3.84	17.578	32.98	1.22
BellsB	M002	2777.91	AMEC-100-2020-Ma	37.099990	122.770	124.092000	123.7708	124.1408	0.00324	1.60	44.426	61.82	0.46
BellsB	M002	2727.91	AMEC-100-2020-Ma	37.099990	122.210	123.789600	123.7896	123.9770	0.00801	2.75	31.508	67.82	0.74
BellsB	M002	2677.99	AMEC-100-2020-Ma	37.099990	121.130	122.784100	122.7856	123.3759	0.01740	3.97	12.834	14.01	1.08
BellsB	M002	2628.09	AMEC-100-2020-Ma	37.099990	120.690	122.357600	122.3631	122.6483	0.01170	3.47	22.768	36.75	0.90
BellsB	M002	2578.18	AMEC-100-2020-Ma	37.099990	119.940	121.756500	121.6361	121.9541	0.00735	2.84	25.709	34.80	0.71
BellsB	M002	2528.27	AMEC-100-2020-Ma	37.099990	119.100	121.012700	121.0127	121.4770	0.01325	3.88	16.046	17.11	0.96
BellsB	M002	2518.19	AMEC-100-2020-Ma	37.099990	118.620	120.711500	120.5789	121.0424	0.00882	3.36	19.520	20.61	0.80
BellsB	M002	2496.15	AMEC-100-2020-Ma	37.099990	118.530	120.752700		120.8758	0.00345	2.25	31.473	30.52	0.51
BellsB	M002	2478.37	AMEC-100-2020-Ma	37.099990	117.970	120.422500		120.7784	0.00667	3.29	18.629	15.37	0.71
BellsB	M002	2450.61	AMEC-100-2020-Ma	37.099990	117.550	119.902200	119.9022	120.5066	0.01167	4.29	14.564	12.69	0.94
BellsB	M002	2428.46	AMEC-100-2020-Ma	37.099990	117.190	118.552200	118.9785	119.9219	0.05975	6.08	9.404	16.43	1.89
BellsB	M002	2408.52	AMEC-100-2020-Ma	37.099990	116.630	118.006800	118.2875	118.8687	0.04733	5.45	11.841	20.64	1.67
BellsB	M002	2378.55	AMEC-100-2020-Ma	37.099990	116.150	117.843200	117.8749	118.2233	0.01626	4.04	19.178	28.96	1.04
BellsB	M002	2367.92	AMEC-100-2020-Ma	37.099990	115.610	116.834400	117.1480	117.8559	0.05204	5.85	10.958	18.61	1.81
BellsB	M002	2352.81	AMEC-100-2020-Ma	37.099990	115.070	116.406200	116.6402	117.1903	0.03579	5.13	12.061	17.19	1.52
BellsB	M002	2328.64	AMEC-100-2020-Ma	37.099990	113.990	115.958300	116.1084	116.5668	0.01662	4.44	15.191	19.50	1.08
BellsB	M002	2307.61	AMEC-100-2020-Ma	37.099990	112.940	116.212500	115.5360	116.2580	0.00074	1.23	55.706	48.76	0.24
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	AMEC-100-2020-Ma	39.899990	111.750	114.165800	114.1658	115.2313	0.01763	4.58	8.750	8.66	1.00
BellsB	M002	2275.77	AMEC-100-2020-Ma	39.899990	112.060	113.743200	114.0915	114.7059	0.03355	5.75	12.163	18.38	1.50
BellsB	M002	2232.72	AMEC-100-2020-Ma	39.899990	110.580	112.586600	112.8645	113.5066	0.02129	5.06	12.608	14.47	1.22
BellsB	M002	2200.99	AMEC-100-2020-Ma	39.899990	109.610	112.107200	111.7925	112.4371	0.00625	3.20	19.870	15.49	0.69
BellsB	M002	2173.21	AMEC-100-2020-Ma	39.899990	108.980	111.506500	111.5065	112.1786	0.01084	4.16	13.989	10.91	0.87
BellsB	M002	2133.27	AMEC-100-2020-Ma	39.899990	107.790	109.270700	109.8486	111.1934	0.06317	7.17	8.271	11.60	2.03
BellsB	M002	2117.78	AMEC-100-2020-Ma	39.899990	107.460	109.122800	109.5818	110.3192	0.03070	5.60	10.461	12.30	1.47
BellsB	M002	2103.01	AMEC-100-2020-Ma	39.899990	106.450	108.028900	108.5178	109.6341	0.05715	6.74	8.589	10.36	1.89
BellsB	M002	2085.77	AMEC-100-2020-Ma	39.899990	105.170	106.855900	107.4151	108.6123	0.05454	7.16	8.242	8.70	1.89
BellsB	M002	2068.57	AMEC-100-2020-Ma	39.899990	104.360	105.499800	106.0467	107.4883	0.09348	7.63	7.915	12.44	2.41
BellsB	M002	2059.88	AMEC-100-2020-Ma	39.899990	103.560	105.100200	105.6158	106.8600	0.05021	6.54	8.458	10.88	1.83

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2020-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	AMEC-100-2020-Ma	39.899990	103.130	104.629400	105.1961	106.5352	0.06720	7.25	7.841	8.77	2.07
BellsB	M002	2040.56	AMEC-100-2020-Ma	39.899990	102.390	104.059000	104.6040	105.8141	0.03741	6.52	8.194	6.92	1.66
BellsB	M002	2033.27	AMEC-100-2020-Ma	39.899990	102.080	104.651700	104.6517	105.3988	0.01292	4.38	12.819	9.16	0.96
BellsB	M002	2025.44	AMEC-100-2020-Ma	39.899990	101.580	103.196200	103.8096	105.1075	0.04744	6.64	7.755	8.43	1.78
BellsB	M002	2021.67	AMEC-100-2020-Ma	39.899990	101.430	103.498600	103.9018	104.7824	0.02819	5.47	9.523	9.36	1.36
BellsB	M002	2014.53	AMEC-100-2020-Ma	39.899990	99.960	101.657100	102.4417	104.3104	0.09326	7.28	5.797	7.02	2.28
BellsB	M002	2010.46	AMEC-100-2020-Ma	39.899990	99.080	100.355900	101.2278	103.7841	0.13196	9.21	5.678	7.13	2.86
BellsB	M002	2007.37	AMEC-100-2020-Ma	39.899990	98.520	100.111000	100.9971	103.3748	0.10846	8.16	5.334	5.80	2.47
BellsB	M002	1996.87	AMEC-100-2020-Ma	39.899990	97.970	99.214780	100.0345	102.2012	0.09906	8.49	6.110	6.94	2.54
BellsB	M002	1982.97	AMEC-100-2020-Ma	39.899990	97.730	99.044650	99.5936	100.7965	0.05790	6.86	8.013	8.27	1.98
BellsB	M002	1966.25	AMEC-100-2020-Ma	39.899990	96.750	98.907870	99.2091	100.0037	0.02428	5.30	10.478	9.27	1.27
BellsB	M002	1951.81	AMEC-100-2020-Ma	39.899990	96.560	99.059370	98.3685	99.2472	0.00369	2.45	23.725	14.71	0.52
BellsB	M002	1939.94	AMEC-100-2020-Ma	39.899990	96.290	98.538540	98.5385	99.1277	0.01214	3.87	14.382	12.75	0.92
BellsB	M002	1918.81	AMEC-100-2020-Ma	39.899990	95.860	98.310910	97.9503	98.6787	0.00673	3.34	18.313	12.53	0.72
BellsB	M002	1910.32	AMEC-100-2020-Ma	39.899990	95.580	97.861410	97.8614	98.5716	0.01164	4.08	12.935	10.04	0.93
BellsB	M002	1896.87	AMEC-100-2020-Ma	39.899990	94.380	96.066440	96.6899	98.1284	0.06379	7.18	7.572	8.62	1.97
BellsB	M002	1887.59	AMEC-100-2020-Ma	39.899990	93.870	95.158450	95.7684	97.3944	0.09477	7.52	7.204	10.37	2.39
BellsB	M002	1880.79	AMEC-100-2020-Ma	39.899990	93.330	96.210100	95.4454	96.4515	0.00317	2.59	22.633	12.47	0.51
BellsB	M002	1870.34	AMEC-100-2020-Ma	39.899990	92.770	96.225860		96.4100	0.00183	2.33	26.457	10.60	0.41
BellsB	M002	1857.16	AMEC-100-2020-Ma	39.899990	91.880	96.270390		96.3673	0.00091	1.73	35.554	14.72	0.28
BellsB	M002	1848.27	AMEC-100-2020-Ma	39.899990	91.910	96.292120		96.3501	0.00044	1.31	46.766	17.04	0.21
BellsB	M002	1834.27	AMEC-100-2020-Ma	39.899990	90.880	96.295600		96.3418	0.00028	1.16	53.726	17.65	0.16
BellsB	M002	1821.35	AMEC-100-2020-Ma	39.899990	90.900	96.308360		96.3325	0.00016	0.96	71.642	20.95	0.13
BellsB	M002	1807.43	AMEC-100-2020-Ma	39.899990	89.830	96.311070		96.3289	0.00010	0.79	84.392	21.83	0.10
BellsB	M002	1800.77	AMEC-100-2020-Ma	39.899990	89.590	96.312130		96.3275	0.00010	0.79	89.616	22.94	0.10
BellsB	M002	1777.98	AMEC-100-2020-Ma	39.899990	88.770	96.317370		96.3236	0.00003	0.52	137.265	30.35	0.06
BellsB	M002	1753.27	AMEC-100-2020-Ma	39.899990	88.220	96.315200		96.3226	0.00004	0.56	131.012	30.54	0.06
BellsB	M002	1729.73	AMEC-100-2020-Ma	39.899990	88.170	96.316600		96.3211	0.00002	0.45	161.193	32.74	0.05
BellsB	M002	1705.77	AMEC-100-2020-Ma	39.899990	87.600	96.317570		96.3202	0.00001	0.36	255.180	65.09	0.04
BellsB	M002	1688.91	AMEC-100-2020-Ma	39.899990	86.720	96.315200	90.4334	96.3198	0.00001	0.39	213.198	68.32	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	AMEC-100-2020-Ma	39.899990	83.970	87.660400	87.6604	89.5011	0.00777	6.01	6.638	21.05	1.00
BellsB	M002	1605.59	AMEC-100-2020-Ma	39.899990	81.490	82.311160	83.0591	87.9121	0.48914	11.15	4.185	12.41	5.47
BellsB	M001	1582.05	AMEC-100-2020-Ma	63.699990	80.410	81.675960	82.7414	86.4023	0.12645	9.97	7.278	9.25	3.19
BellsB	M001	1563.67	AMEC-100-2020-Ma	63.699990	79.960	81.375240	82.1732	84.2371	0.06398	8.12	9.972	11.08	2.36
BellsB	M001	1544.26	AMEC-100-2020-Ma	63.699990	79.040	81.047570	81.7240	83.1680	0.03167	7.14	12.213	10.11	1.74
BellsB	M001	1529.04	AMEC-100-2020-Ma	63.699990	78.240	79.671110	80.4948	82.4938	0.05188	7.76	9.529	8.84	2.16
BellsB	M001	1515.66	AMEC-100-2020-Ma	63.699990	77.300	79.364220	80.1133	81.7361	0.04448	7.09	10.345	8.14	1.76
BellsB	M001	1502.43	AMEC-100-2020-Ma	63.699990	69.640	70.346630	71.3909	79.4916	0.83596	13.43	4.809	11.41	6.36
BellsB	M001	1483.47	AMEC-100-2020-Ma	63.699990	68.890	69.987720	70.5916	72.3386	0.12926	7.61	10.432	16.58	2.74
BellsB	M001	1454.75	AMEC-100-2020-Ma	63.699990	68.030	69.652660	69.8272	70.4960	0.02551	5.15	17.829	16.41	1.35
BellsB	M001	1406.62	AMEC-100-2020-Ma	63.699990	66.490	68.934280	68.9343	69.7209	0.01299	4.67	19.233	12.79	1.01
BellsB	M001	1358.51	AMEC-100-2020-Ma	63.699990	65.170	66.827160	67.3662	68.5674	0.04454	6.41	12.537	12.36	1.74
BellsB	M001	1310.38	AMEC-100-2020-Ma	63.699990	63.800	65.497080	65.8745	66.6798	0.02962	5.43	16.270	18.48	1.45
BellsB	M001	1286.33	AMEC-100-2020-Ma	63.699990	62.810	64.323360	64.7381	65.7238	0.05416	6.34	14.577	20.93	1.87
BellsB	M001	1262.25	AMEC-100-2020-Ma	63.699990	62.090	64.444660	64.5527	64.9876	0.01426	4.45	25.545	29.42	1.01
BellsB	M001	1251.58	AMEC-100-2020-Ma	63.699990	61.460	63.549510	63.9539	64.7237	0.02844	6.38	18.323	24.81	1.47
BellsB	M001	1234.76	AMEC-100-2020-Ma	63.699990	60.570	62.211150	62.7189	63.9876	0.06585	7.69	14.268	22.08	2.09
BellsB	M001	1214.13	AMEC-100-2020-Ma	63.699990	59.550	61.964900	61.2276	62.1562	0.00310	2.31	39.440	25.56	0.50
BellsB	M001	1200.58	AMEC-100-2020-Ma	63.699990	58.900	61.341240	61.3412	62.0315	0.01144	4.32	21.604	16.53	0.94
BellsB	M001	1182.98	AMEC-100-2020-Ma	63.699990	58.590	60.986360	61.1091	61.7954	0.01431	4.77	20.204	16.59	1.05
BellsB	M001	1166.01	AMEC-100-2020-Ma	63.699990	58.390	59.921560	60.3804	61.3366	0.04362	6.15	15.045	18.74	1.71
BellsB	M001	1153.18	AMEC-100-2020-Ma	63.699990	57.700	59.587660	59.9348	60.7328	0.03917	6.62	17.204	20.21	1.64
BellsB	M001	1141.88	AMEC-100-2020-Ma	63.699990	56.720	58.245230	58.8367	60.1367	0.05512	6.73	12.181	14.51	1.92
BellsB	M001	1128.34	AMEC-100-2020-Ma	63.699990	56.530	57.877880	58.2864	59.2069	0.05550	6.33	13.617	15.60	1.88
BellsB	M001	1117.89	AMEC-100-2020-Ma	63.699990	55.580	57.040200	57.5155	58.5800	0.06101	7.24	13.492	14.49	2.01
BellsB	M001	1096.03	AMEC-100-2020-Ma	63.699990	54.610	56.437180	56.7680	57.5730	0.02926	5.45	16.234	16.60	1.43
BellsB	M001	1077.81	AMEC-100-2020-Ma	63.699990	54.240	55.514980	55.9769	56.9106	0.04872	6.07	15.069	20.81	1.80
BellsB	M001	1069.76	AMEC-100-2020-Ma	63.699990	53.700	54.573270	55.0445	56.2152	0.11201	6.95	12.574	19.74	2.55
BellsB	M001	1064.67	AMEC-100-2020-Ma	63.699990	53.190	54.074930	54.5237	55.6356	0.11265	6.83	12.915	20.83	2.54
BellsB	M001	1051.64	AMEC-100-2020-Ma	63.699990	51.970	53.163060	53.6250	54.6963	0.06492	6.44	13.814	18.72	2.03
BellsB	M001	1032.36	AMEC-100-2020-Ma	63.699990	50.970	52.632690	52.9284	53.6554	0.03562	5.89	17.060	17.37	1.56
BellsB	M001	1021.64	AMEC-100-2020-Ma	63.699990	50.030	51.603240	52.0746	53.1579	0.04633	6.16	13.856	17.41	1.76
BellsB	M001	1014.11	AMEC-100-2020-Ma	63.699990	49.460	51.247350	51.7846	52.8337	0.04083	6.21	13.548	15.53	1.66
BellsB	M001	1006.24	AMEC-100-2020-Ma	63.699990	49.150	50.587610	51.1324	52.4470	0.05455	6.72	12.376	15.14	1.91
BellsB	M001	996.42	AMEC-100-2020-Ma	63.699990	48.110	49.599290	50.2514	51.8197	0.08007	7.88	11.407	14.66	2.25
BellsB	M001	987.27	AMEC-100-2020-Ma	63.699990	47.170	48.901570	49.5837	51.1996	0.05752	7.53	11.341	12.26	1.99
BellsB	M001	973.52	AMEC-100-2020-Ma	63.699990	46.790	48.358850	49.0123	50.4181	0.04475	6.77	11.674	14.58	1.88
BellsB	M001	951.43	AMEC-100-2020-Ma	63.699990	45.770	47.417920	47.9926	49.4092	0.05234	7.09	12.497	17.95	1.99
BellsB	M001	931.51	AMEC-100-2020-Ma	63.699990	44.860	46.300510	46.8721	48.1637	0.07238	8.18	11.861	14.89	2.32
BellsB	M001	925.41	AMEC-100-2020-Ma	63.699990	44.690	46.462680	46.8417	47.6706	0.03231	6.32	15.921	19.32	1.58
BellsB	M001	901.68	AMEC-100-2020-Ma	63.699990	43.690	45.443430	45.8937	46.9090	0.02977	6.20	13.564	12.06	1.58
BellsB	M001	877.27	AMEC-100-2020-Ma	63.699990	43.180	45.090190	45.3700	46.1998	0.02074	5.35	15.443	12.55	1.32
BellsB	M001	857.41	AMEC-100-2020-Ma	63.699990	42.160	45.791930	45.3368	45.9080	0.00108	1.92	57.772	43.20	0.34
BellsB	M001	840		Culvert									
BellsB	M001	816.09	AMEC-100-2020-Ma	65.200000	38.540	42.121140	41.5835	43.1023	0.00648	4.47	15.175	11.93	0.78
BellsB	M001	810.13	AMEC-100-2020-Ma	65.200000	37.800	42.538500	40.2861	42.6629	0.00079	1.72	54.688	35.70	0.26
BellsB	M001	800		Bridge									
BellsB	M001	796.37	AMEC-100-2020-Ma	65.200000	34.330	36.927420	37.8234	39.8294	0.04789	7.70	9.223	9.37	1.82
BellsB	M001	782.27	AMEC-100-2020-Ma	65.200000	33.920	34.984780	35.8141	38.4914	0.16179	8.94	8.375	11.40	3.08
BellsB	M001	772.73	AMEC-100-2020-Ma	65.200000	30.940	32.741390	33.6238	36.8743	0.17029	11.89	9.167	11.36	3.08
BellsB	M001	766.74	AMEC-100-2020-Ma	65.200000	30.650	32.696910	33.4922	35.7815	0.10608	10.58	10.580	11.39	2.52
BellsB	M001	760.32	AMEC-100-2020-Ma	65.200000	30.340	32.166750	32.9703	35.1669	0.08035	9.17	10.750	11.53	2.33
BellsB	M001	755.97	AMEC-100-2020-Ma	65.200000	30.050	31.826960	32.6130	34.7898	0.08747	8.65	10.348	11.66	2.35
BellsB	M001	749.69	AMEC-100-2020-Ma	65.200000	29.300	31.173760	32.0045	34.2230	0.08622	9.18	10.384	10.74	2.37
BellsB	M001	742.14	AMEC-100-2020-Ma	65.200000	28.380	29.880430	30.8393	33.5066	0.09271	9.16	9.129	9.70	2.52
BellsB	M001	736.73	AMEC-100-2020-Ma	65.200000	28.240	29.228200	30.0957	32.8644	0.15644	9.19	8.291	11.15	3.09

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2020-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	AMEC-100-2020-Ma	65.200000	27.350	28.584150	29.2064	30.8786	0.08221	7.47	10.907	14.85	2.29
BellsB	M001	712.04	AMEC-100-2020-Ma	65.200000	26.270	28.047260	28.7007	30.1252	0.05296	7.05	11.767	11.72	1.88
BellsB	M001	702.42	AMEC-100-2020-Ma	65.200000	26.040	27.584290	28.1883	29.5486	0.05781	6.98	12.037	12.86	1.96
BellsB	M001	691.68	AMEC-100-2020-Ma	65.200000	25.030	26.846190	27.4958	28.9291	0.05486	6.80	11.197	11.71	1.89
BellsB	M001	686.22	AMEC-100-2020-Ma	65.200000	24.460	25.942150	26.6954	28.5292	0.07498	7.29	9.770	11.01	2.18
BellsB	M001	675.26	AMEC-100-2020-Ma	65.200000	24.080	25.492920	26.1540	27.6603	0.06095	7.01	10.888	11.29	2.02
BellsB	M001	668.37	AMEC-100-2020-Ma	65.200000	23.580	25.113680	25.7487	27.2337	0.05973	7.00	11.269	12.58	1.99
BellsB	M001	655.45	AMEC-100-2020-Ma	65.200000	23.020	24.408110	24.9964	26.4287	0.06061	6.78	11.412	13.38	1.98
BellsB	M001	636.88	AMEC-100-2020-Ma	65.200000	21.460	23.070950	23.7431	25.2975	0.05704	6.91	10.776	11.09	1.95
BellsB	M001	619.06	AMEC-100-2020-Ma	65.200000	20.820	22.609340	23.1354	24.2958	0.03988	6.39	13.175	12.43	1.67
BellsB	M001	608.48	AMEC-100-2020-Ma	65.200000	20.130	21.773140	22.3800	23.7906	0.04935	6.67	11.896	14.01	1.83
BellsB	M001	592.31	AMEC-100-2020-Ma	65.200000	18.950	20.623410	21.2969	22.8622	0.06832	7.78	11.524	12.28	2.13
BellsB	M001	582.72	AMEC-100-2020-Ma	65.200000	18.140	19.514650	20.2744	22.1183	0.07912	7.91	10.466	10.73	2.30
BellsB	M001	577.91	AMEC-100-2020-Ma	65.200000	17.660	19.603000	20.2909	21.7099	0.03936	7.14	12.471	10.69	1.72
BellsB	M001	561.51	AMEC-100-2020-Ma	65.200000	17.020	18.615970	19.2585	20.8332	0.07426	7.60	11.923	14.10	2.19
BellsB	M001	553.07	AMEC-100-2020-Ma	65.200000	16.350	17.756110	18.4563	20.2261	0.06659	7.23	10.680	13.24	2.10
BellsB	M001	541.54	AMEC-100-2020-Ma	65.200000	15.410	16.811610	17.5012	19.3635	0.08354	7.25	10.163	14.06	2.28
BellsB	M001	529.17	AMEC-100-2020-Ma	65.200000	14.850	16.261990	16.8969	18.3272	0.06270	6.45	10.728	9.61	1.81
BellsB	M001	514.53	AMEC-100-2020-Ma	65.200000	14.210	15.538360	16.0818	17.2983	0.06526	6.44	12.317	12.67	1.86
BellsB	M001	467.56	AMEC-100-2020-Ma	65.200000	11.610	13.114220	13.5854	14.6836	0.04497	5.67	12.491	10.96	1.56
BellsB	M001	420.59	AMEC-100-2020-Ma	65.200000	8.750	14.175430	11.5076	14.2897	0.00076	1.70	54.512	18.19	0.24
BellsB	M001	400.25	AMEC-100-2020-Ma	65.200000	8.570	13.952560	11.1579	14.2515	0.00126	2.42	26.914	7.48	0.33
BellsB	M001	100		Culvert									
BellsB	M001	68.07	AMEC-100-2020-Ma	65.200000	0.830	2.067910	3.9336	7.7207	0.10226	10.53	6.190	5.97	3.02
BellsB	M001	47.74	AMEC-100-2020-Ma	65.200000	0.560	4.385159	3.3806	4.4024	0.00021	0.96	160.158	135.57	0.16
BellsB	M001	43		Bridge									
BellsB	M001	41.05	AMEC-100-2020-Ma	65.200000	0.700	4.382196	3.3860	4.3953	0.00017	0.86	170.348	135.34	0.15
BellsB	M001	20.51	AMEC-100-2020-Ma	65.200000	0.570	4.378233		4.3928	0.00021	0.92	166.462	145.04	0.16

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2050-Ma

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	AMEC-100-2050-Ma	203.800000	36.310	39.818400	40.1013	40.8058	0.00601	4.95	72.904	76.14	0.86
CornerB	M004	2838.71	AMEC-100-2050-Ma	203.800000	36.150	38.333890	38.9845	40.2237	0.01844	6.38	40.368	33.14	1.40
CornerB	M004	2796.61	AMEC-100-2050-Ma	203.800000	35.350	38.611790	37.8788	39.2143	0.00420	3.87	75.990	43.68	0.71
CornerB	M004	2769.85	AMEC-100-2050-Ma	203.800000	34.800	37.868740	37.8687	38.7647	0.01260	6.58	61.259	34.82	1.22
CornerB	TR001	206.04	AMEC-100-2050-Ma	36.600000	43.810	44.836910	45.1738	45.9407	0.04207	5.58	9.667	14.55	1.84
CornerB	TR001	156.04	AMEC-100-2050-Ma	36.600000	41.630	42.754290	43.1083	43.8728	0.04033	4.95	9.388	18.96	1.75
CornerB	TR001	106.04	AMEC-100-2050-Ma	36.600000	39.170	39.912530	40.3457	41.3825	0.06342	5.73	7.686	13.35	2.17
CornerB	TR001	56.04	AMEC-100-2050-Ma	36.600000	37.270	38.177560	38.5838	39.0905	0.03238	4.49	9.606	13.84	1.59
CornerB	TR001	36.04	AMEC-100-2050-Ma	36.600000	35.500	38.307310	37.8131	38.3138	0.00012	0.57	124.658	82.05	0.11
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	AMEC-100-2050-Ma	36.600000	35.180	37.499860	37.4999	37.5726	0.00130	1.56	51.711	81.44	0.35
CornerB	M003	2689.92	AMEC-100-2050-Ma	225.200000	33.550	35.728380	36.3618	37.6451	0.03159	7.91	49.747	45.16	1.80
CornerB	M003	2645.73	AMEC-100-2050-Ma	225.200000	32.870	36.636150	35.0425	36.7989	0.00118	2.34	158.621	70.28	0.39
CornerB	M003	2602.09	AMEC-100-2050-Ma	225.200000	32.200	36.641480		36.7476	0.00058	1.80	197.325	68.26	0.28
CornerB	M003	2557.73	AMEC-100-2050-Ma	225.200000	31.340	36.557430		36.7158	0.00062	2.07	162.555	48.65	0.30
CornerB	M003	2537.73	AMEC-100-2050-Ma	225.200000	30.770	36.463470	34.8801	36.6927	0.00098	2.82	161.371	64.52	0.38
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	AMEC-100-2050-Ma	225.200000	30.350	34.350050	34.3501	35.3795	0.00467	4.64	58.959	27.49	0.75
CornerB	M003	2507.21	AMEC-100-2050-Ma	225.200000	30.750	33.140010	33.6097	34.9702	0.02001	6.83	43.862	23.79	1.47
CornerB	M003	2459.31	AMEC-100-2050-Ma	225.200000	30.130	32.944820	32.4599	33.5437	0.00504	3.94	79.264	40.32	0.76
CornerB	M003	2411.41	AMEC-100-2050-Ma	225.200000	29.270	33.108970		33.3015	0.00154	2.62	145.275	64.76	0.44
CornerB	M003	2363.51	AMEC-100-2050-Ma	225.200000	28.770	33.088760		33.2363	0.00080	2.06	168.755	62.67	0.33
CornerB	M003	2315.61	AMEC-100-2050-Ma	225.200000	27.930	33.072210		33.2036	0.00044	1.76	177.835	62.10	0.25
CornerB	M003	2267.71	AMEC-100-2050-Ma	225.700000	26.300	33.068910		33.1810	0.00028	1.69	221.351	82.46	0.21
CornerB	M003	2263.01	AMEC-100-2050-Ma	225.700000	29.100	32.705840		33.0945	0.00404	3.06	101.165	76.58	0.71
CornerB	M003	2260.98	AMEC-100-2050-Ma	225.700000	25.800	30.522060		30.8812	0.00136	2.84	100.352	34.88	0.43
CornerB	M003	2240.88	AMEC-100-2050-Ma	225.700000	27.010	30.491040		30.8435	0.00212	2.82	99.591	42.31	0.51
CornerB	M003	2212.25	AMEC-100-2050-Ma	225.700000	26.870	30.405650		30.7792	0.00221	2.99	98.310	39.07	0.52
CornerB	M003	2183.63	AMEC-100-2050-Ma	225.700000	25.560	29.855430		30.6497	0.00444	4.63	76.969	36.66	0.75
CornerB	M003	2163.63	AMEC-100-2050-Ma	225.700000	25.350	29.884320	28.6015	30.5435	0.00253	3.72	65.603	41.83	0.58
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	AMEC-100-2050-Ma	225.700000	24.870	28.120900	28.4869	30.0014	0.01342	6.64	41.154	23.35	1.25
CornerB	M003	2131.66	AMEC-100-2050-Ma	225.700000	24.570	27.255250	28.0149	29.6630	0.02383	7.17	36.623	21.96	1.57
CornerB	M003	2119.46	AMEC-100-2050-Ma	225.700000	24.120	26.347990	27.2414	29.2594	0.03592	7.98	33.503	22.98	1.89
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	AMEC-100-2050-Ma	225.700000	24.040	26.656190	27.3228	28.8447	0.02090	6.77	38.097	23.04	1.48
CornerB	M003	2080.62	AMEC-100-2050-Ma	225.700000	23.730	25.757990	26.5734	28.0162	0.02747	6.95	37.614	26.14	1.66
CornerB	M003	2068.44	AMEC-100-2050-Ma	225.700000	23.760	25.678120	26.2749	27.5994	0.02512	6.50	41.070	29.64	1.58
CornerB	M003	2022.25	AMEC-100-2050-Ma	225.700000	22.740	25.025350	25.4700	26.5841	0.01629	5.94	47.419	30.51	1.31
CornerB	M003	1991.14	AMEC-100-2050-Ma	225.700000	22.180	24.880200	25.0431	26.0919	0.00991	5.30	55.147	30.67	1.06
CornerB	M003	1985.82	AMEC-100-2050-Ma	225.700000	21.970	24.486120	24.8410	26.0014	0.01390	5.93	48.844	28.36	1.24
CornerB	M003	1975.95	AMEC-100-2050-Ma	225.700000	21.780	24.070890	24.5743	25.8104	0.01873	6.50	45.949	28.88	1.42
CornerB	M003	1929.72	AMEC-100-2050-Ma	225.700000	20.080	22.595240	23.2493	24.8318	0.02204	7.00	38.141	21.49	1.53
CornerB	M003	1883.49	AMEC-100-2050-Ma	225.700000	19.230	22.209140	22.5497	23.9324	0.01238	6.27	45.143	20.65	1.20
CornerB	TR002	21.04	AMEC-100-2050-Ma	13.700000	22.270	23.003280	23.6336	25.8970	0.15016	8.27	2.213	4.87	3.24
CornerB	TR002	18.08	AMEC-100-2050-Ma	13.700000	21.400	21.869120	22.4191	25.1907	0.36602	9.21	1.990	6.36	4.70
CornerB	M002	1826.39	AMEC-100-2050-Ma	228.200000	16.920	18.657550	19.5984	22.4155	0.11777	9.38	30.328	30.83	2.56
CornerB	M002	1790.92	AMEC-100-2050-Ma	228.200000	15.490	19.377200	19.2340	20.6809	0.01147	5.62	52.355	18.69	0.93
CornerB	M002	1773.95	AMEC-100-2050-Ma	228.200000	14.720	20.004600	18.0000	20.3169	0.00199	2.81	108.414	31.90	0.40
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	AMEC-100-2050-Ma	228.200000	14.870	20.021370	17.7717	20.2253	0.00107	2.36	135.638	39.15	0.34
CornerB	M002	1733.13	AMEC-100-2050-Ma	228.200000	15.230	20.071820		20.1356	0.00030	1.22	246.976	88.25	0.18
CornerB	M002	1717.41	AMEC-100-2050-Ma	228.200000	15.120	20.075590		20.1278	0.00025	1.13	275.711	95.54	0.16
CornerB	M002	1691.96	AMEC-100-2050-Ma	228.200000	14.620	20.076540		20.1192	0.00020	1.05	316.206	112.88	0.15
CornerB	M002	1654.15	AMEC-100-2050-Ma	228.200000	13.870	20.084710		20.1085	0.00010	0.77	409.824	140.19	0.11
CornerB	M002	1613.91	AMEC-100-2050-Ma	228.200000	13.080	20.085460		20.1043	0.00005	0.66	472.875	156.54	0.09
CornerB	M002	1567.16	AMEC-100-2050-Ma	228.200000	12.150	20.094820		20.0992	0.00001	0.30	887.494	213.53	0.04
CornerB	M002	1551.89	AMEC-100-2050-Ma	228.200000	11.850	20.096490		20.0983	0.00000	0.19	1317.260	276.49	0.02
CornerB	M002	1539.91	AMEC-100-2050-Ma	227.200000	11.620	20.097040		20.0980	0.00000	0.14	1741.995	309.51	0.02
CornerB	M002	1526.59	AMEC-100-2050-Ma	227.200000	11.360	20.097020		20.0980	0.00000	0.14	1773.478	314.60	0.02
CornerB	M002	1517.99	AMEC-100-2050-Ma	227.200000	11.180	20.096570		20.0979	0.00000	0.17	1502.560	271.31	0.02
CornerB	M002	1505.64	AMEC-100-2050-Ma	227.200000	10.940	20.095410		20.0978	0.00000	0.22	1118.149	201.23	0.03
CornerB	M002	1490.63	AMEC-100-2050-Ma	227.200000	10.640	20.092170		20.0974	0.00001	0.33	774.878	144.87	0.04
CornerB	M002	1463.65	AMEC-100-2050-Ma	227.200000	10.110	20.074760		20.0954	0.00004	0.67	433.501	95.94	0.08
CornerB	M002	1415.93	AMEC-100-2050-Ma	227.200000	9.170	20.072170		20.0935	0.00004	0.66	402.212	82.80	0.08
CornerB	M002	1386.11	AMEC-100-2050-Ma	227.200000	8.580	20.063840		20.0915	0.00005	0.77	373.004	80.28	0.09
CornerB	M002	1363.91	AMEC-100-2050-Ma	227.200000	8.140	20.044010		20.0883	0.00009	0.99	296.047	59.42	0.11
CornerB	M002	1356.61	AMEC-100-2050-Ma	227.200000	8.000	20.045370		20.0861	0.00023	1.19	316.119	74.80	0.12
CornerB	M002	1354.11	AMEC-100-2050-Ma	227.200000	15.350	19.852070		20.0674	0.00160	2.73	133.788	59.42	0.41
CornerB	M002	1352.01	AMEC-100-2050-Ma	227.200000	8.000	11.576820	11.5768	12.8366	0.02756	3.91	46.629	17.52	0.99
CornerB	M002	1347.51	AMEC-100-2050-Ma	227.200000	7.720	10.704570	11.1608	12.5820	0.02823	6.10	38.218	18.99	1.32
CornerB	M002	1336.58	AMEC-100-2050-Ma	227.200000	7.690	9.887836	10.6007	12.1657	0.04314	6.78	35.653	23.87	1.61
CornerB	M002	1326.83	AMEC-100-2050-Ma	227.200000	7.680	11.087880	10.2191	11.5474	0.00471	3.19	82.239	31.81	0.58
CornerB	M002	1317.22	AMEC-100-2050-Ma	227.200000	7.660	10.951920		11.4882	0.00609	3.40	75.631	32.65	0.65
CornerB	M002	1315.18	AMEC-100-2050-Ma	227.200000	7.280	10.426110	10.4261	11.4227	0.01560	4.81	56.559	30.13	1.00
CornerB	M002	1313.58	AMEC-100-2050-Ma	227.200000	6.480	9.599056	10.0638	11.3177	0.03005	6.18	42.981	26.13	1.36
CornerB	M002	1312.39	AMEC-100-2050-Ma	227.200000	6.230	9.137453	9.7749	11.2404	0.03802	6.73	38.511	24.54	1.52
CornerB	M002	1311.16	AMEC-100-2050-Ma	227.200000	5.920	8.685509	9.4415	11.1498	0.05056	7.11	34.410	23.35	1.72
CornerB	M002	1309.11	AMEC-100-2050-Ma	227.200000	5.910	8.280231	9.1170	11.0151	0.05666	7.46	32.553	22.51	1.82
CornerB	M002	1305.35	AMEC-100-2050-Ma	227.200000	5.370	7.578450	8.4980	10.7223	0.07115	8.29	31.973	25.03	2.04
CornerB	M002	1300.06	AMEC-100-2050-Ma	227.200000	5.060	7.077819	8.0155	10.3186	0.08376	8.10	29.693	23.80	2.16
CornerB	M002	1296.49	AMEC-100-2050-Ma	227.200000	4.910	7.316129	8.1132	9.9064	0.04571	7.35	34.221	21.51	1.68
CornerB	M002	1289.64	AMEC-100-2050-Ma	227.200000	4.710	7.289834	7.9425	9.5190	0.03725	6.87	36.927	21.33	1.53
CornerB	M002	1284.12	AMEC-100-2050-Ma	227.200000	4.410	7.465461	7.8884	9.2221	0.02269	6.20	42.804	21.61	1.24
CornerB	M002	1279.52	AMEC-100-2050-Ma	227.200000	4.230	7.049301	7.6316	9.0811	0.02758	6.57	39.550	21.62	1.35
CornerB	M002	1258.94	AMEC-100-2050-Ma	227.200000	3.530	5.528162	6.3453	8.1928	0.06397	7.66	35.098	29.91	1.93
CornerB	M002	1246.98	AMEC-100-2050-Ma	227.200000	3.370	5.109472	5.7845	7.4804	0.04285	6.94	35.262	26.77	1.76

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2050-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	AMEC-100-2050-Ma	227.200000	3.100	4.769238	5.4978	6.7662	0.04943	6.57	39.995	38.95	1.85
CornerB	M002	1215.66	AMEC-100-2050-Ma	227.200000	2.700	4.332236	4.8710	5.8716	0.03142	5.68	47.113	51.23	1.50
CornerB	M002	1206.83	AMEC-100-2050-Ma	227.200000	2.540	5.099306	4.7460	5.4563	0.00498	2.98	103.605	68.99	0.64
CornerB	M002	1194.69	AMEC-100-2050-Ma	227.200000	2.390	5.076141		5.3963	0.00436	2.89	108.905	66.49	0.60
CornerB	M002	1185.06	AMEC-100-2050-Ma	227.200000	2.260	5.061165		5.3431	0.00344	2.72	117.467	68.38	0.55
CornerB	M002	1142.41	AMEC-100-2050-Ma	227.200000	1.700	4.980418		5.2049	0.00273	2.50	136.211	84.69	0.49
CornerB	M002	1137.55	AMEC-100-2050-Ma	227.200000	1.600	4.699321	4.6088	5.1430	0.00634	3.28	102.940	104.91	0.71
CornerB	M002	1110.53	AMEC-100-2050-Ma	227.200000	1.390	4.197729	4.1977	4.9218	0.00797	4.06	78.673	71.04	0.83
CornerB	M002	1090.67	AMEC-100-2050-Ma	227.200000	1.100	4.470026	3.4617	4.6389	0.00193	2.22	165.642	141.17	0.41
CornerB	M002	1070.69	AMEC-100-2050-Ma	227.200000	0.800	4.490699	3.1700	4.5941	0.00096	1.78	206.237	122.21	0.30
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	AMEC-100-2050-Ma	227.200000	0.760	4.479354	3.0792	4.5677	0.00083	1.68	205.591	115.30	0.28
CornerB	M002	1047.01	AMEC-100-2050-Ma	227.200000	0.750	4.450733		4.5514	0.00081	1.86	197.362	86.69	0.32
CornerB	M002	1004.03	AMEC-100-2050-Ma	227.200000	0.770	4.411948		4.5141	0.00075	1.80	230.719	140.19	0.31
CornerB	M002	959.21	AMEC-100-2050-Ma	227.200000	0.700	4.429959		4.4724	0.00048	1.43	362.416	287.66	0.25
CornerB	M002	915.75	AMEC-100-2050-Ma	226.400000	0.680	4.423316		4.4473	0.00035	1.18	438.462	297.22	0.21
CornerB	M002	869.66	AMEC-100-2050-Ma	226.400000	0.690	4.414213		4.4334	0.00022	0.97	461.593	226.06	0.17
CornerB	M002	828.33	AMEC-100-2050-Ma	220.400000	0.770	4.406856		4.4251	0.00023	0.96	449.058	227.21	0.17
CornerB	M002	784.55	AMEC-100-2050-Ma	220.400000	0.820	4.403705		4.4170	0.00016	0.79	470.971	234.73	0.14
CornerB	M002	739.85	AMEC-100-2050-Ma	220.400000	0.820	4.395846		4.4102	0.00015	0.76	489.032	276.88	0.14
CornerB	M002	696.36	AMEC-100-2050-Ma	220.400000	0.640	4.379601		4.4010	0.00021	0.94	430.530	268.06	0.16
CornerB	M001	659.37	AMEC-100-2050-Ma	233.500000	0.750	4.368686		4.3940	0.00024	0.95	402.682	238.28	0.17
CornerB	M001	643.93	AMEC-100-2050-Ma	233.500000	0.740	4.349568	3.2244	4.3882	0.00035	1.18	342.104	222.94	0.21
CornerB	M001	635		Bridge									
CornerB	M001	629.03	AMEC-100-2050-Ma	233.500000	0.830	4.046269	3.3089	4.1332	0.00085	1.72	239.142	184.73	0.32
CornerB	M001	608.52	AMEC-100-2050-Ma	233.500000	0.760	4.030805		4.1141	0.00105	1.83	227.537	165.65	0.35
CornerB	M001	570.12	AMEC-100-2050-Ma	233.500000	0.610	4.032090		4.0738	0.00055	1.41	300.652	187.32	0.26
CornerB	M001	535.83	AMEC-100-2050-Ma	233.500000	0.560	4.008711	2.2078	4.0578	0.00034	1.20	307.081	222.41	0.21
CornerB	M001	520.22	AMEC-100-2050-Ma	233.500000	0.550	4.015057	2.5389	4.0484	0.00026	1.05	356.923	293.54	0.18
CornerB	M001	472.07	AMEC-100-2050-Ma	233.500000	0.580	3.947696	3.1305	4.0252	0.00064	1.58	260.615	208.11	0.28
CornerB	M001	460		Bridge									
CornerB	M001	445.11	AMEC-100-2050-Ma	233.500000	0.440	3.562743	2.5390	3.7973	0.00161	2.43	185.429	243.17	0.44
CornerB	M001	425.41	AMEC-100-2050-Ma	233.500000	0.480	3.604223		3.7059	0.00097	1.84	287.063	312.90	0.34
CornerB	M001	401.99	AMEC-100-2050-Ma	233.500000	0.740	3.624724		3.6710	0.00056	1.35	386.609	348.23	0.26
CornerB	M001	381.26	AMEC-100-2050-Ma	233.500000	0.790	3.555671	3.2545	3.6480	0.00116	1.86	301.244	353.25	0.36
CornerB	M001	380		Bridge									
CornerB	M001	375.14	AMEC-100-2050-Ma	233.500000	0.790	3.456148	3.2626	3.5764	0.00155	2.13	277.726	370.37	0.42
CornerB	M001	352.89	AMEC-100-2050-Ma	233.500000	0.680	3.288040	2.6029	3.5080	0.00196	2.35	203.562	415.19	0.47
CornerB	M001	324.13	AMEC-100-2050-Ma	233.500000	0.670	3.254830		3.4443	0.00181	2.25	196.922	282.41	0.45
CornerB	M001	292.92	AMEC-100-2050-Ma	233.500000	0.650	3.267193		3.3741	0.00120	1.81	267.812	365.67	0.37
CornerB	M001	274.62	AMEC-100-2050-Ma	233.500000	0.960	3.263131	2.8567	3.3355	0.00187	2.03	294.562	380.05	0.45
CornerB	M001	270		Bridge									
CornerB	M001	266.99	AMEC-100-2050-Ma	233.500000	1.010	3.238519	2.8098	3.2877	0.00163	1.89	323.540	385.36	0.42
CornerB	M001	245.99	AMEC-100-2050-Ma	233.500000	0.640	3.208740		3.2604	0.00113	1.67	368.361	468.51	0.35
CornerB	M001	210.89	AMEC-100-2050-Ma	233.500000	0.680	3.171061		3.2197	0.00113	1.57	359.874	431.73	0.34
CornerB	M001	174.77	AMEC-100-2050-Ma	233.500000	0.690	3.147661		3.1800	0.00088	1.27	397.496	514.77	0.30
CornerB	M001	155.66	AMEC-100-2050-Ma	233.500000	0.640	3.140841	2.5999	3.1604	0.00088	1.16	463.244	622.96	0.29
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	AMEC-100-2050-Ma	233.500000	0.550	3.133287	2.5455	3.1520	0.00073	1.06	466.453	563.79	0.26
CornerB	M001	129.05	AMEC-100-2050-Ma	233.500000	0.400	3.111174		3.1329	0.00055	1.10	498.091	632.57	0.24
CornerB	M001	80.73	AMEC-100-2050-Ma	233.500000	0.200	3.067609		3.1038	0.00061	1.28	425.868	519.05	0.26
CornerB	M001	23.81	AMEC-100-2050-Ma	233.500000	0.320	3.030017	2.2445	3.0699	0.00063	1.22	420.404	540.00	0.26
BellsB	TR001	178.13	AMEC-100-2050-Ma	20.100000	92.910	95.953400	94.7457	96.0371	0.00087	1.50	20.783	13.97	0.29
BellsB	TR001	159.86	AMEC-100-2050-Ma	20.100000	92.150	95.987340		96.0125	0.00022	0.93	37.906	17.86	0.16
BellsB	TR001	139.54	AMEC-100-2050-Ma	20.100000	91.130	95.828350	93.0657	95.9911	0.00079	1.79	11.250	21.58	0.26
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	AMEC-100-2050-Ma	20.100000	89.490	91.297600	91.5778	92.6388	0.01891	5.18	4.025	5.78	1.26
BellsB	TR001	88.17	AMEC-100-2050-Ma	20.100000	88.470	89.496190	90.1590	92.1325	0.11057	7.73	3.257	5.59	2.77
BellsB	TR001	84.12	AMEC-100-2050-Ma	20.100000	87.660	88.496290	89.1211	91.4670	0.18709	7.82	2.866	6.95	3.43
BellsB	TR001	79.14	AMEC-100-2050-Ma	20.100000	86.530	87.409800	88.0887	90.5946	0.14726	8.28	2.963	6.54	3.20
BellsB	TR001	72.74	AMEC-100-2050-Ma	20.100000	85.760	86.497900	87.0866	89.4536	0.18565	7.79	2.887	7.37	3.42
BellsB	TR001	67.75	AMEC-100-2050-Ma	20.100000	85.040	85.669260	86.1941	88.2626	0.21548	7.57	3.109	8.15	3.58
BellsB	TR001	64.04	AMEC-100-2050-Ma	20.100000	84.470	85.279070	85.8285	87.5143	0.13430	6.63	3.066	6.37	2.92
BellsB	TR001	60.69	AMEC-100-2050-Ma	20.100000	84.140	85.208630	85.6909	87.0177	0.09044	6.16	3.693	7.42	2.46
BellsB	TR001	56.76	AMEC-100-2050-Ma	20.100000	83.970	85.012470	85.4685	86.6372	0.07488	5.71	3.783	7.74	2.25
BellsB	TR001	50.93	AMEC-100-2050-Ma	20.100000	83.680	84.785170	85.1747	86.1225	0.07179	5.30	4.304	9.50	2.18
BellsB	TR001	43.86	AMEC-100-2050-Ma	20.100000	83.340	84.317770	84.6706	85.5783	0.07526	5.13	4.428	10.19	2.21
BellsB	TR001	37.01	AMEC-100-2050-Ma	20.100000	82.980	83.999800	84.3297	85.1071	0.05241	4.97	4.931	9.41	1.91
BellsB	TR001	12.14	AMEC-100-2050-Ma	20.100000	82.150	83.132560	83.3582	83.9055	0.03810	4.17	5.772	10.37	1.62
BellsB	M002	5166.11	AMEC-100-2050-Ma	16.400000	190.790	191.997300	191.8748	192.1616	0.00936	2.53	12.098	18.77	0.77
BellsB	M002	5149.23	AMEC-100-2050-Ma	16.400000	190.570	191.655600	191.6556	191.9537	0.01502	2.90	8.864	15.30	0.96
BellsB	M002	5117.45	AMEC-100-2050-Ma	16.400000	189.910	191.581200	190.8394	191.6124	0.00139	1.24	25.288	24.70	0.31
BellsB	M002	5090.85	AMEC-100-2050-Ma	16.400000	189.620	191.137800	191.1378	191.4945	0.01324	3.35	8.728	12.52	0.93
BellsB	M002	5067.47	AMEC-100-2050-Ma	16.400000	189.180	189.798500	190.0981	190.7998	0.12346	5.93	4.349	9.47	2.53
BellsB	M002	5017.78	AMEC-100-2050-Ma	16.400000	188.120	189.344100	189.3441	189.6581	0.01647	3.35	8.615	12.60	1.02
BellsB	M002	4967.57	AMEC-100-2050-Ma	16.400000	186.550	187.881000	188.0455	188.5306	0.03045	4.36	5.726	7.80	1.32
BellsB	M002	4917.46	AMEC-100-2050-Ma	16.400000	185.690	187.359100	186.5852	187.3972	0.00125	1.20	25.297	28.54	0.30
BellsB	M002	4873.31	AMEC-100-2050-Ma	16.400000	184.610	187.294800		187.3472	0.00117	1.47	27.877	42.02	0.30
BellsB	M002	4853.42	AMEC-100-2050-Ma	16.400000	183.550	187.098300	185.4003	187.3067	0.00141	2.02	8.108	32.11	0.35
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	AMEC-100-2050-Ma	16.400000	181.530	183.012900	183.3595	184.3498	0.02991	5.12	3.202	6.42	1.42
BellsB	M002	4785.76	AMEC-100-2050-Ma	16.400000	181.350	182.334300	182.6702	183.4056	0.05905	5.16	4.249	7.58	1.83
BellsB	M002	4756.65	AMEC-100-2050-Ma	16.400000	180.120	181.090700	181.3038	181.7698	0.04620	4.67	5.921	13.60	1.63
BellsB	M002	4727.54	AMEC-100-2050-Ma	16.400000	179.020	179.849400	180.0412	180.4795	0.04058	4.33	6.360	16.51	1.62
BellsB	M002	4707.54	AMEC-100-2050-Ma	16.400000	177.960	178.380200	178.5987	179.1734	0.12204	4.83	4.866	16.86	2.55
BellsB	M002	4702.24	AMEC-100-2050-Ma	16.400000	177.650	178.559600	178.5842	178.8271	0.01725	2.89	8.908	17.83	1.06
BellsB	M002	4682.48	AMEC-100-2050-Ma	16.400000	176.630	177.399600	177.6423	178.1897	0.05311	4.55	5.417	14.74	1.83

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2050-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	AMEC-100-2050-Ma	16.400000	175.500	176.796500	176.9851	177.4919	0.01871	4.09	5.637	7.80	1.19
BellsB	M002	4633.41	AMEC-100-2050-Ma	16.400000	174.510	175.251100	175.5719	176.5437	0.10452	6.47	4.480	13.13	2.56
BellsB	M002	4609.61	AMEC-100-2050-Ma	16.400000	173.500	174.893400	174.5744	175.0549	0.00501	2.28	11.490	12.80	0.64
BellsB	M002	4583.99	AMEC-100-2050-Ma	16.400000	172.770	174.364500	174.3645	174.8406	0.01100	3.32	6.675	8.13	0.91
BellsB	M002	4534.72	AMEC-100-2050-Ma	16.400000	170.000	170.992500	171.5208	173.3199	0.11897	8.45	3.284	6.59	2.84
BellsB	M002	4485.52	AMEC-100-2050-Ma	16.400000	168.200	168.879100	169.0474	169.4193	0.05555	4.44	6.509	18.50	1.84
BellsB	M002	4436.28	AMEC-100-2050-Ma	29.700010	165.850	167.193100	167.4055	167.8508	0.02450	4.86	12.434	27.82	1.38
BellsB	M002	4387.04	AMEC-100-2050-Ma	29.700010	164.060	165.385100	165.7074	166.3616	0.03603	5.83	9.162	13.54	1.68
BellsB	M002	4337.81	AMEC-100-2050-Ma	29.700010	162.600	163.834800	164.0558	164.5257	0.03516	5.34	11.850	24.99	1.61
BellsB	M002	4288.56	AMEC-100-2050-Ma	29.700010	161.300	162.553600	162.6909	163.0614	0.02744	4.64	12.303	20.52	1.40
BellsB	M002	4239.33	AMEC-100-2050-Ma	29.700010	159.650	160.774600	161.0067	161.6246	0.03666	5.13	9.479	15.91	1.64
BellsB	M002	4190.09	AMEC-100-2050-Ma	29.700010	158.430	159.676300	159.7913	160.2219	0.02167	4.26	12.120	19.19	1.28
BellsB	M002	4140.85	AMEC-100-2050-Ma	29.700010	157.300	158.015800	158.1493	158.4984	0.05472	4.78	10.984	23.06	1.88
BellsB	M002	4091.61	AMEC-100-2050-Ma	29.700010	155.300	156.198600	156.2642	156.5914	0.03067	4.26	12.481	21.17	1.47
BellsB	M002	4042.37	AMEC-100-2050-Ma	29.700010	153.740	154.767900	154.8574	155.2733	0.02277	3.92	11.222	15.64	1.29
BellsB	M002	3993.13	AMEC-100-2050-Ma	29.700010	152.650	153.523300	153.6429	153.9678	0.03667	4.23	12.096	23.88	1.53
BellsB	M002	3943.89	AMEC-100-2050-Ma	29.700010	151.360	152.400500	152.4239	152.7548	0.02039	3.72	13.665	21.12	1.22
BellsB	M002	3894.65	AMEC-100-2050-Ma	29.700010	149.520	151.154100	151.3556	151.8220	0.02121	4.50	11.604	18.79	1.25
BellsB	M002	3869.08	AMEC-100-2050-Ma	29.700010	148.870	150.262100	150.5393	151.1730	0.02910	5.03	9.001	12.62	1.48
BellsB	M002	3845.41	AMEC-100-2050-Ma	29.700010	148.370	149.723600	149.9403	150.4327	0.02850	4.70	10.788	18.36	1.37
BellsB	M002	3822.22	AMEC-100-2050-Ma	29.700010	147.710	150.085500	148.8165	150.1253	0.00081	1.25	37.938	21.67	0.26
BellsB	M002	3796.17	AMEC-100-2050-Ma	29.700010	146.890	150.032300		150.0999	0.00094	1.53	32.328	17.87	0.29
BellsB	M002	3765.39	AMEC-100-2050-Ma	29.700010	146.400	150.012200		150.0747	0.00069	1.40	32.675	15.82	0.24
BellsB	M002	3746.94	AMEC-100-2050-Ma	29.700010	145.760	150.045800		150.0549	0.00009	0.61	78.618	28.57	0.10
BellsB	M002	3724.94	AMEC-100-2050-Ma	29.700010	145.320	150.018800		150.0496	0.00024	0.99	47.122	17.80	0.15
BellsB	M002	3697.71	AMEC-100-2050-Ma	29.700010	145.050	150.023100		150.0411	0.00013	0.78	56.392	19.06	0.11
BellsB	M002	3677.71	AMEC-100-2050-Ma	29.700010	143.440	150.028800	146.1058	150.0369	0.00004	0.50	87.567	23.88	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	AMEC-100-2050-Ma	29.700010	142.470	145.053200	145.0532	146.3003	0.01014	4.95	6.003	10.41	1.00
BellsB	M002	3623.19	AMEC-100-2050-Ma	29.700010	142.100	143.699600	144.2920	145.6764	0.05877	7.03	5.618	7.74	2.00
BellsB	M002	3573.45	AMEC-100-2050-Ma	29.700010	140.890	142.503500	142.8286	143.5636	0.02598	5.03	9.113	24.32	1.40
BellsB	M002	3520.99	AMEC-100-2050-Ma	29.700010	139.300	141.029500	141.3505	142.1656	0.02664	5.30	9.374	27.12	1.40
BellsB	M002	3473.83	AMEC-100-2050-Ma	29.700010	137.980	139.819300	140.3232	140.7831	0.02706	5.35	8.150	9.86	1.37
BellsB	M002	3424.29	AMEC-100-2050-Ma	29.700010	136.490	137.930100	138.3635	139.2369	0.03006	5.30	6.484	7.10	1.50
BellsB	M002	3400.36	AMEC-100-2050-Ma	29.700010	135.960	138.862300	137.3374	138.9108	0.00048	1.13	41.308	64.61	0.22
BellsB	M002	3386.31	AMEC-100-2050-Ma	29.700010	135.480	138.849500	137.9421	138.9020	0.00047	1.31	57.286	86.93	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	AMEC-100-2050-Ma	29.700010	135.220	138.886400	137.6501	138.8917	0.00005	0.45	129.261	74.88	0.08
BellsB	M002	3329.08	AMEC-100-2050-Ma	37.599990	134.960	138.883600		138.8896	0.00007	0.54	133.502	59.02	0.09
BellsB	M002	3303.55	AMEC-100-2050-Ma	37.599990	133.820	138.836200	136.8398	138.8831	0.00031	1.32	62.432	51.86	0.19
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	AMEC-100-2050-Ma	37.599990	131.390	134.809400	134.8094	136.2732	0.01020	5.36	7.015	21.72	1.00
BellsB	M002	3203.83	AMEC-100-2050-Ma	37.599990	131.130	132.448900	133.0831	135.3747	0.12174	8.52	6.427	13.42	2.82
BellsB	M002	3176.31	AMEC-100-2050-Ma	37.599990	130.020	131.545200	132.0200	133.0488	0.04910	6.53	9.148	13.95	1.88
BellsB	M002	3157.63	AMEC-100-2050-Ma	37.599990	129.890	131.323200	131.5328	132.0465	0.03808	5.25	12.352	19.22	1.57
BellsB	M002	3130.11	AMEC-100-2050-Ma	37.599990	128.680	130.826500	131.0090	131.5129	0.01140	4.18	14.256	20.15	0.98
BellsB	M002	3083.82	AMEC-100-2050-Ma	37.599990	127.940	129.570900	129.9000	130.6672	0.03070	5.60	12.275	24.36	1.54
BellsB	M002	3037.68	AMEC-100-2050-Ma	37.599990	127.110	128.146800	128.3832	128.8710	0.04343	5.34	13.138	26.43	1.77
BellsB	M002	2991.47	AMEC-100-2050-Ma	37.599990	126.280	128.318200	127.3934	128.3448	0.00067	1.08	56.003	47.03	0.25
BellsB	M002	2945.26	AMEC-100-2050-Ma	37.599990	125.320	128.008700	128.0087	128.2579	0.00435	2.49	25.626	57.49	0.51
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	AMEC-100-2050-Ma	37.599990	125.120	127.920500	127.9205	128.2126	0.00451	2.68	23.795	58.86	0.52
BellsB	M002	2918.61	AMEC-100-2050-Ma	37.599990	124.990	126.797200	127.0928	127.8421	0.02368	5.38	12.036	27.52	1.38
BellsB	M002	2899.46	AMEC-100-2050-Ma	37.599990	125.250	126.575600	126.8266	127.3400	0.01694	4.19	14.228	54.03	1.18
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	AMEC-100-2050-Ma	37.599990	124.440	125.950100	125.9501	126.2439	0.00597	2.70	18.407	21.10	0.74
BellsB	M002	2861.32	AMEC-100-2050-Ma	37.599990	123.640	124.877300	125.1771	125.8014	0.03397	5.35	10.962	19.36	1.67
BellsB	M002	2823.69	AMEC-100-2050-Ma	37.599990	123.230	124.390500	124.4638	124.7559	0.02395	3.87	17.710	33.10	1.23
BellsB	M002	2777.91	AMEC-100-2050-Ma	37.599990	122.770	124.091600	123.7745	124.1419	0.00333	1.62	44.403	61.81	0.47
BellsB	M002	2727.91	AMEC-100-2050-Ma	37.599990	122.210	123.806900		123.9817	0.00749	2.68	32.681	68.04	0.72
BellsB	M002	2677.99	AMEC-100-2050-Ma	37.599990	121.130	122.794000	122.7696	123.3978	0.01755	4.01	12.974	14.78	1.09
BellsB	M002	2628.09	AMEC-100-2050-Ma	37.599990	120.690	122.367500	122.3675	122.6551	0.01154	3.46	23.134	36.93	0.90
BellsB	M002	2578.18	AMEC-100-2050-Ma	37.599990	119.940	121.767400	121.6424	121.9638	0.00727	2.84	26.091	34.98	0.71
BellsB	M002	2528.27	AMEC-100-2050-Ma	37.599990	119.100	121.022500	121.0225	121.4894	0.01325	3.90	16.214	17.19	0.96
BellsB	M002	2518.19	AMEC-100-2050-Ma	37.599990	118.620	120.729700	120.5887	121.0567	0.00865	3.35	19.897	20.81	0.79
BellsB	M002	2496.15	AMEC-100-2050-Ma	37.599990	118.530	120.772300		120.8932	0.00336	2.23	32.070	30.61	0.50
BellsB	M002	2478.37	AMEC-100-2050-Ma	37.599990	117.970	120.434600		120.7960	0.00673	3.32	18.817	15.61	0.71
BellsB	M002	2450.61	AMEC-100-2050-Ma	37.599990	117.550	119.914500	119.9145	120.5228	0.01168	4.31	14.721	12.77	0.94
BellsB	M002	2428.46	AMEC-100-2050-Ma	37.599990	117.190	118.558300	118.9901	119.9374	0.05985	6.11	9.504	16.52	1.89
BellsB	M002	2408.52	AMEC-100-2050-Ma	37.599990	116.630	118.012000	118.2952	118.8815	0.04754	5.48	11.948	20.73	1.68
BellsB	M002	2378.55	AMEC-100-2050-Ma	37.599990	116.150	117.853500	117.8833	118.2322	0.01613	4.04	19.477	29.29	1.04
BellsB	M002	2367.92	AMEC-100-2050-Ma	37.599990	115.610	116.840700	117.1549	117.8659	0.05195	5.87	11.075	18.66	1.81
BellsB	M002	2352.81	AMEC-100-2050-Ma	37.599990	115.070	116.413300	116.6479	117.2011	0.03574	5.15	12.183	17.23	1.52
BellsB	M002	2328.64	AMEC-100-2050-Ma	37.599990	113.990	115.970500	116.1193	116.5788	0.01652	4.45	15.430	19.80	1.08
BellsB	M002	2307.61	AMEC-100-2050-Ma	37.599990	112.940	116.218100	115.5443	116.2643	0.00075	1.25	55.977	48.84	0.24
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	AMEC-100-2050-Ma	40.500000	111.750	114.192100	114.1921	115.2631	0.01743	4.59	8.858	8.76	1.00
BellsB	M002	2275.77	AMEC-100-2050-Ma	40.500000	112.060	113.734100	114.1012	114.7517	0.03562	5.90	11.997	18.15	1.55
BellsB	M002	2232.72	AMEC-100-2050-Ma	40.500000	110.580	112.605100	112.8763	113.5132	0.02085	5.04	12.875	14.57	1.21
BellsB	M002	2200.99	AMEC-100-2050-Ma	40.500000	109.610	112.124900	111.8054	112.4570	0.00625	3.22	20.145	15.67	0.69
BellsB	M002	2173.21	AMEC-100-2050-Ma	40.500000	108.980	111.523000	111.5230	112.1986	0.01082	4.18	14.170	10.97	0.87
BellsB	M002	2133.27	AMEC-100-2050-Ma	40.500000	107.790	109.279600	109.8610	111.2140	0.06312	7.20	8.376	11.68	2.03
BellsB	M002	2117.78	AMEC-100-2050-Ma	40.500000	107.460	109.134000	109.5919	110.3398	0.03070	5.63	10.599	12.44	1.47
BellsB	M002	2103.01	AMEC-100-2050-Ma	40.500000	106.450	108.038100	108.5299	109.6545	0.05711	6.77	8.685	10.39	1.89
BellsB	M002	2085.77	AMEC-100-2050-Ma	40.500000	105.170	106.867800	107.4297	108.6346	0.05437	7.19	8.346	8.75	1.89
BellsB	M002	2068.57	AMEC-100-2050-Ma	40.500000	104.360	105.506700	106.0575	107.5101	0.09352	7.67	8.001	12.48	2.42
BellsB	M002	2059.88	AMEC-100-2050-Ma	40.500000	103.560	105.110300	105.6282	106.8814	0.05012	6.56	8.569	10.96	1.83

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2050-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	AMEC-100-2050-Ma	40.500000	103.130	104.640000	105.2093	106.5573	0.06696	7.28	7.934	8.79	2.07
BellsB	M002	2040.56	AMEC-100-2050-Ma	40.500000	102.390	104.074800	104.6230	105.8393	0.03716	6.54	8.304	6.95	1.65
BellsB	M002	2033.27	AMEC-100-2050-Ma	40.500000	102.080	104.491600	104.6693	105.4525	0.01808	4.92	11.389	8.70	1.12
BellsB	M002	2025.44	AMEC-100-2050-Ma	40.500000	101.580	103.205600	103.8246	105.1383	0.04762	6.68	7.836	8.47	1.79
BellsB	M002	2021.67	AMEC-100-2050-Ma	40.500000	101.430	103.504800	103.9179	104.8129	0.02862	5.52	9.581	9.38	1.37
BellsB	M002	2014.53	AMEC-100-2050-Ma	40.500000	99.960	101.667900	102.4595	104.3391	0.09269	7.31	5.873	7.06	2.27
BellsB	M002	2010.46	AMEC-100-2050-Ma	40.500000	99.080	100.366100	101.2468	103.8125	0.13117	9.24	5.750	7.16	2.85
BellsB	M002	2007.37	AMEC-100-2050-Ma	40.500000	98.520	100.123000	101.0153	103.4060	0.10763	8.19	5.404	5.82	2.46
BellsB	M002	1996.87	AMEC-100-2050-Ma	40.500000	97.970	99.224250	100.0515	102.2397	0.09902	8.54	6.176	6.96	2.55
BellsB	M002	1982.97	AMEC-100-2050-Ma	40.500000	97.730	99.052670	99.6096	100.8297	0.05827	6.91	8.080	8.30	1.99
BellsB	M002	1966.25	AMEC-100-2050-Ma	40.500000	96.750	98.916100	99.2244	100.0291	0.02454	5.34	10.554	9.29	1.27
BellsB	M002	1951.81	AMEC-100-2050-Ma	40.500000	96.560	99.074970	98.3802	99.2648	0.00369	2.46	23.955	14.74	0.52
BellsB	M002	1939.94	AMEC-100-2050-Ma	40.500000	96.290	98.552120	98.5521	99.1451	0.01212	3.89	14.555	12.80	0.92
BellsB	M002	1918.81	AMEC-100-2050-Ma	40.500000	95.860	98.331100	97.9640	98.6999	0.00668	3.35	18.567	12.59	0.72
BellsB	M002	1910.32	AMEC-100-2050-Ma	40.500000	95.580	97.877160	97.8772	98.5928	0.01163	4.10	13.094	10.09	0.93
BellsB	M002	1896.87	AMEC-100-2050-Ma	40.500000	94.380	96.077740	96.7055	98.1497	0.06354	7.21	7.669	8.65	1.96
BellsB	M002	1887.59	AMEC-100-2050-Ma	40.500000	93.870	95.166540	95.7812	97.4173	0.09455	7.55	7.288	10.40	2.39
BellsB	M002	1880.79	AMEC-100-2050-Ma	40.500000	93.330	96.216340	95.4595	96.4634	0.00323	2.62	22.711	12.49	0.52
BellsB	M002	1870.34	AMEC-100-2050-Ma	40.500000	92.770	96.232280		96.4211	0.00187	2.36	26.525	10.62	0.41
BellsB	M002	1857.16	AMEC-100-2050-Ma	40.500000	91.880	96.278080		96.3773	0.00093	1.75	35.667	14.75	0.28
BellsB	M002	1848.27	AMEC-100-2050-Ma	40.500000	91.910	96.300340		96.3598	0.00045	1.33	46.906	17.07	0.21
BellsB	M002	1834.27	AMEC-100-2050-Ma	40.500000	90.880	96.303910		96.3513	0.00029	1.17	53.872	17.67	0.17
BellsB	M002	1821.35	AMEC-100-2050-Ma	40.500000	90.900	96.316990		96.3417	0.00017	0.97	71.823	20.98	0.13
BellsB	M002	1807.43	AMEC-100-2050-Ma	40.500000	89.830	96.319750		96.3380	0.00010	0.80	84.582	21.85	0.10
BellsB	M002	1800.77	AMEC-100-2050-Ma	40.500000	89.590	96.320840		96.3366	0.00010	0.80	89.816	22.97	0.10
BellsB	M002	1777.98	AMEC-100-2050-Ma	40.500000	88.770	96.326230		96.3326	0.00003	0.52	137.534	30.38	0.06
BellsB	M002	1753.27	AMEC-100-2050-Ma	40.500000	88.220	96.323990		96.3316	0.00004	0.57	131.281	30.60	0.07
BellsB	M002	1729.73	AMEC-100-2050-Ma	40.500000	88.170	96.325430		96.3300	0.00002	0.46	161.483	32.77	0.05
BellsB	M002	1705.77	AMEC-100-2050-Ma	40.500000	87.600	96.326430		96.3291	0.00001	0.36	255.757	65.17	0.04
BellsB	M002	1688.91	AMEC-100-2050-Ma	40.500000	86.720	96.324000	90.4654	96.3287	0.00001	0.40	213.801	68.60	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	AMEC-100-2050-Ma	40.500000	83.970	87.697930	87.6979	89.5564	0.00774	6.04	6.705	21.16	1.00
BellsB	M002	1605.59	AMEC-100-2050-Ma	40.500000	81.490	82.315250	83.0691	87.9612	0.48716	11.20	4.236	12.47	5.47
BellsB	M001	1582.05	AMEC-100-2050-Ma	64.599980	80.410	81.684110	82.7573	86.4536	0.12632	10.02	7.353	9.28	3.20
BellsB	M001	1563.67	AMEC-100-2050-Ma	64.599980	79.960	81.382550	82.1891	84.2818	0.06435	8.17	10.053	11.11	2.37
BellsB	M001	1544.26	AMEC-100-2050-Ma	64.599980	79.040	81.058000	81.7428	83.2047	0.03184	7.18	12.319	10.14	1.74
BellsB	M001	1529.04	AMEC-100-2050-Ma	64.599980	78.240	79.682830	80.5130	82.5277	0.05171	7.80	9.633	8.87	2.16
BellsB	M001	1515.66	AMEC-100-2050-Ma	64.599980	77.300	79.377300	80.1332	81.7713	0.04447	7.13	10.452	8.17	1.76
BellsB	M001	1502.43	AMEC-100-2050-Ma	64.599980	69.640	70.352040	71.4024	79.5293	0.82603	13.46	4.871	11.45	6.34
BellsB	M001	1483.47	AMEC-100-2050-Ma	64.599980	68.890	69.992540	70.6030	72.3735	0.12994	7.66	10.512	16.59	2.75
BellsB	M001	1454.75	AMEC-100-2050-Ma	64.599980	68.030	69.660100	69.8426	70.5155	0.02572	5.19	17.951	16.44	1.36
BellsB	M001	1406.62	AMEC-100-2050-Ma	64.599980	66.490	68.951350	68.9514	69.7430	0.01296	4.69	19.451	12.85	1.01
BellsB	M001	1358.51	AMEC-100-2050-Ma	64.599980	65.170	66.838040	67.3811	68.5911	0.04446	6.43	12.671	12.39	1.74
BellsB	M001	1310.38	AMEC-100-2050-Ma	64.599980	63.800	65.505460	65.8831	66.7007	0.02975	5.46	16.425	18.56	1.45
BellsB	M001	1286.33	AMEC-100-2050-Ma	64.599980	62.810	64.329880	64.7471	65.7416	0.05428	6.37	14.713	20.97	1.87
BellsB	M001	1262.25	AMEC-100-2050-Ma	64.599980	62.090	64.449250	64.5604	65.0004	0.01445	4.48	25.680	29.43	1.01
BellsB	M001	1251.58	AMEC-100-2050-Ma	64.599980	61.460	63.561890	63.9616	64.7363	0.02833	6.40	18.634	25.35	1.47
BellsB	M001	1234.76	AMEC-100-2050-Ma	64.599980	60.570	62.218950	62.7271	64.0017	0.06580	7.72	14.441	22.23	2.09
BellsB	M001	1214.13	AMEC-100-2050-Ma	64.599980	59.550	61.983440	61.2389	62.1757	0.00308	2.32	39.915	25.68	0.50
BellsB	M001	1200.58	AMEC-100-2050-Ma	64.599980	58.900	61.354660	61.3547	62.0507	0.01146	4.34	21.826	16.60	0.94
BellsB	M001	1182.98	AMEC-100-2050-Ma	64.599980	58.590	61.000060	61.1245	61.8145	0.01432	4.79	20.432	16.68	1.05
BellsB	M001	1166.01	AMEC-100-2050-Ma	64.599980	58.390	59.929930	60.3909	61.3552	0.04365	6.18	15.202	18.79	1.72
BellsB	M001	1153.18	AMEC-100-2050-Ma	64.599980	57.700	59.594930	59.9447	60.7498	0.03936	6.66	17.351	20.24	1.64
BellsB	M001	1141.88	AMEC-100-2050-Ma	64.599980	56.720	58.256030	58.8501	60.1542	0.05479	6.75	12.339	14.57	1.91
BellsB	M001	1128.34	AMEC-100-2050-Ma	64.599980	56.530	57.885960	58.2990	59.2280	0.05556	6.37	13.743	15.64	1.88
BellsB	M001	1117.89	AMEC-100-2050-Ma	64.599980	55.580	57.049840	57.5328	58.6012	0.06096	7.28	13.632	14.54	2.01
BellsB	M001	1096.03	AMEC-100-2050-Ma	64.599980	54.610	56.446380	56.7804	57.5929	0.02933	5.48	16.387	16.64	1.43
BellsB	M001	1077.81	AMEC-100-2050-Ma	64.599980	54.240	55.522670	55.9873	56.9294	0.04876	6.10	15.229	20.91	1.80
BellsB	M001	1069.76	AMEC-100-2050-Ma	64.599980	53.700	54.579870	55.0548	56.2340	0.11162	6.97	12.704	19.77	2.54
BellsB	M001	1064.67	AMEC-100-2050-Ma	64.599980	53.190	54.080570	54.5337	55.6563	0.11264	6.87	13.032	20.85	2.54
BellsB	M001	1051.64	AMEC-100-2050-Ma	64.599980	51.970	53.170160	53.6357	54.7165	0.06496	6.48	13.947	18.76	2.03
BellsB	M001	1032.36	AMEC-100-2050-Ma	64.599980	50.970	52.642060	52.9404	53.6734	0.03566	5.92	17.223	17.42	1.57
BellsB	M001	1021.64	AMEC-100-2050-Ma	64.599980	50.030	51.611850	52.0863	53.1759	0.04628	6.18	14.006	17.44	1.76
BellsB	M001	1014.11	AMEC-100-2050-Ma	64.599980	49.460	51.257490	51.8020	52.8524	0.04075	6.23	13.706	15.59	1.66
BellsB	M001	1006.24	AMEC-100-2050-Ma	64.599980	49.150	50.596570	51.1452	52.4664	0.05444	6.75	12.511	15.16	1.91
BellsB	M001	996.42	AMEC-100-2050-Ma	64.599980	48.110	49.608110	50.2640	51.8405	0.07990	7.91	11.536	14.71	2.25
BellsB	M001	987.27	AMEC-100-2050-Ma	64.599980	47.170	48.912460	49.5987	51.2220	0.05736	7.56	11.475	12.31	1.99
BellsB	M001	973.52	AMEC-100-2050-Ma	64.599980	46.790	48.368200	49.0270	50.4425	0.04474	6.80	11.811	14.67	1.89
BellsB	M001	951.43	AMEC-100-2050-Ma	64.599980	45.770	47.425190	48.0009	49.4336	0.05251	7.12	12.628	18.06	2.00
BellsB	M001	931.51	AMEC-100-2050-Ma	64.599980	44.860	46.308880	46.8832	48.1853	0.07237	8.22	11.986	14.96	2.32
BellsB	M001	925.41	AMEC-100-2050-Ma	64.599980	44.690	46.469240	46.8527	47.6909	0.03256	6.36	16.048	19.37	1.59
BellsB	M001	901.68	AMEC-100-2050-Ma	64.599980	43.690	45.456150	45.9086	46.9305	0.02966	6.22	13.717	12.11	1.58
BellsB	M001	877.27	AMEC-100-2050-Ma	64.599980	43.180	45.101830	45.3847	46.2224	0.02078	5.38	15.589	12.59	1.33
BellsB	M001	857.41	AMEC-100-2050-Ma	64.599980	42.160	45.791140	45.3485	45.9106	0.00111	1.95	57.738	43.19	0.34
BellsB	M001	840		Culvert									
BellsB	M001	816.09	AMEC-100-2050-Ma	66.200000	38.540	42.117200	41.6140	43.1311	0.00671	4.54	15.157	11.91	0.79
BellsB	M001	810.13	AMEC-100-2050-Ma	66.200000	37.800	42.549370	40.3057	42.6761	0.00081	1.74	55.078	35.97	0.26
BellsB	M001	800		Bridge									
BellsB	M001	796.37	AMEC-100-2050-Ma	66.200000	34.330	36.948760	37.8450	39.8567	0.04733	7.71	9.370	9.43	1.81
BellsB	M001	782.27	AMEC-100-2050-Ma	66.200000	33.920	34.993560	35.8288	38.5244	0.16081	8.97	8.475	11.42	3.07
BellsB	M001	772.73	AMEC-100-2050-Ma	66.200000	30.940	32.750940	33.6393	36.9112	0.17045	11.95	9.276	11.43	3.09
BellsB	M001	766.74	AMEC-100-2050-Ma	66.200000	30.650	32.707200	33.5081	35.8160	0.10636	10.64	10.697	11.46	2.53
BellsB	M001	760.32	AMEC-100-2050-Ma	66.200000	30.340	32.177940	32.9861	35.1999	0.08037	9.22	10.879	11.60	2.33
BellsB	M001	755.97	AMEC-100-2050-Ma	66.200000	30.050	31.836760	32.6282	34.8233	0.08752	8.69	10.462	11.69	2.35
BellsB	M001	749.69	AMEC-100-2050-Ma	66.200000	29.300	31.184700	32.0203	34.2566	0.08622	9.22	10.502	10.77	2.37
BellsB	M001	742.14	AMEC-100-2050-Ma	66.200000	28.380	29.892340	30.8581	33.5414	0.09237	9.20	9.245	9.74	2.52
BellsB	M001	736.73	AMEC-100-2050-Ma	66.200000	28.240	29.236910	30.1119	32.9012	0.15575	9.23	8.388	11.17	3.09

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2050-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	AMEC-100-2050-Ma	66.200000	27.350	28.590620	29.2198	30.9133	0.08266	7.52	11.003	14.87	2.30
BellsB	M001	712.04	AMEC-100-2050-Ma	66.200000	26.270	28.058390	28.7172	30.1552	0.05297	7.08	11.898	11.77	1.88
BellsB	M001	702.42	AMEC-100-2050-Ma	66.200000	26.040	27.593940	28.2039	29.5786	0.05790	7.03	12.161	12.90	1.97
BellsB	M001	691.68	AMEC-100-2050-Ma	66.200000	25.030	26.857090	27.5129	28.9592	0.05483	6.84	11.325	11.77	1.89
BellsB	M001	686.22	AMEC-100-2050-Ma	66.200000	24.460	25.952990	26.7139	28.5599	0.07468	7.32	9.890	11.04	2.18
BellsB	M001	675.26	AMEC-100-2050-Ma	66.200000	24.080	25.503120	26.1713	27.6930	0.06097	7.05	11.003	11.33	2.02
BellsB	M001	668.37	AMEC-100-2050-Ma	66.200000	23.580	25.122530	25.7632	27.2661	0.05990	7.04	11.380	12.61	1.99
BellsB	M001	655.45	AMEC-100-2050-Ma	66.200000	23.020	24.416620	25.0107	26.4584	0.06074	6.82	11.526	13.41	1.99
BellsB	M001	636.88	AMEC-100-2050-Ma	66.200000	21.460	23.082270	23.7593	25.3274	0.05691	6.94	10.901	11.12	1.95
BellsB	M001	619.06	AMEC-100-2050-Ma	66.200000	20.820	22.619880	23.1503	24.3252	0.04001	6.43	13.306	12.47	1.67
BellsB	M001	608.48	AMEC-100-2050-Ma	66.200000	20.130	21.782450	22.3942	23.8190	0.04946	6.71	12.026	14.04	1.83
BellsB	M001	592.31	AMEC-100-2050-Ma	66.200000	18.950	20.633990	21.3130	22.8909	0.06828	7.82	11.654	12.33	2.13
BellsB	M001	582.72	AMEC-100-2050-Ma	66.200000	18.140	19.526450	20.2929	22.1489	0.07874	7.95	10.592	10.76	2.30
BellsB	M001	577.91	AMEC-100-2050-Ma	66.200000	17.660	19.618170	20.3107	21.7403	0.03926	7.17	12.634	10.76	1.72
BellsB	M001	561.51	AMEC-100-2050-Ma	66.200000	17.020	18.624870	19.2735	20.8637	0.07438	7.64	12.049	14.14	2.19
BellsB	M001	553.07	AMEC-100-2050-Ma	66.200000	16.350	17.766840	18.4714	20.2570	0.06645	7.26	10.823	13.37	2.10
BellsB	M001	541.54	AMEC-100-2050-Ma	66.200000	15.410	16.820210	17.5158	19.3951	0.08349	7.28	10.284	14.08	2.28
BellsB	M001	529.17	AMEC-100-2050-Ma	66.200000	14.850	16.274070	16.9152	18.3604	0.06258	6.48	10.844	9.63	1.81
BellsB	M001	514.53	AMEC-100-2050-Ma	66.200000	14.210	15.545960	16.0975	17.3332	0.06577	6.49	12.413	12.70	1.87
BellsB	M001	467.56	AMEC-100-2050-Ma	66.200000	11.610	14.131950	13.6024	14.5797	0.00632	3.10	24.834	13.30	0.64
BellsB	M001	420.59	AMEC-100-2050-Ma	66.200000	8.750	14.292890		14.4025	0.00072	1.68	56.671	18.58	0.24
BellsB	M001	400.25	AMEC-100-2050-Ma	66.200000	8.570	14.070140	11.1831	14.3653	0.00121	2.41	27.502	7.59	0.33
BellsB	M001	100		Culvert									
BellsB	M001	68.07	AMEC-100-2050-Ma	66.200000	0.830	2.083122	3.9458	7.7701	0.10121	10.57	6.266	6.05	3.01
BellsB	M001	47.74	AMEC-100-2050-Ma	66.200000	0.560	4.392021	3.3893	4.4096	0.00021	0.97	161.089	135.79	0.16
BellsB	M001	43		Bridge									
BellsB	M001	41.05	AMEC-100-2050-Ma	66.200000	0.700	4.389021	3.3913	4.4023	0.00018	0.87	171.273	135.54	0.15
BellsB	M001	20.51	AMEC-100-2050-Ma	66.200000	0.570	4.385035		4.3998	0.00021	0.93	167.449	145.20	0.16

HEC-RAS Plan: Plan 20 Profile: FINNIS-100-2050-

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	FINNIS-100-2050-	422.400100	36.310	40.731620	40.9103	41.7641	0.00600	5.81	145.468	82.13	0.90
CornerB	M004	2838.71	FINNIS-100-2050-	422.400100	36.150	39.602190	40.0883	41.2943	0.01073	6.65	103.275	63.51	1.15
CornerB	M004	2796.61	FINNIS-100-2050-	422.400100	35.350	39.660960	39.4200	40.6440	0.00512	5.21	123.658	46.97	0.82
CornerB	M004	2769.85	FINNIS-100-2050-	422.400100	34.800	39.266730	39.2667	40.2053	0.00941	7.35	126.589	56.08	1.12
CornerB	TR001	206.04	FINNIS-100-2050-	75.600010	43.810	45.256460	45.7758	46.9466	0.04201	7.14	16.352	17.64	1.96
CornerB	TR001	156.04	FINNIS-100-2050-	75.600010	41.630	43.082780	43.5812	44.7962	0.04346	6.44	16.315	22.78	1.92
CornerB	TR001	106.04	FINNIS-100-2050-	75.600010	39.170	40.320470	41.0111	42.4499	0.05279	7.08	13.672	16.00	2.13
CornerB	TR001	56.04	FINNIS-100-2050-	75.600010	37.270	38.493080	38.9464	40.1174	0.04027	6.22	17.821	47.32	1.87
CornerB	TR001	36.04	FINNIS-100-2050-	75.600010	35.500	38.559770	38.0000	38.5795	0.00033	1.00	145.833	85.70	0.19
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	FINNIS-100-2050-	75.600010	35.180	38.574830	37.5366	38.5986	0.00035	1.08	145.703	95.68	0.20
CornerB	M003	2689.92	FINNIS-100-2050-	471.500100	33.550	36.466220	37.1669	39.0322	0.03166	9.79	88.533	59.30	1.90
CornerB	M003	2645.73	FINNIS-100-2050-	471.500100	32.870	37.542150	36.0812	37.9173	0.00219	3.69	229.324	82.81	0.55
CornerB	M003	2602.09	FINNIS-100-2050-	471.500100	32.200	37.560840		37.8166	0.00113	2.86	261.240	70.64	0.40
CornerB	M003	2557.73	FINNIS-100-2050-	471.500100	31.340	37.274110		37.7375	0.00157	3.60	197.941	50.27	0.48
CornerB	M003	2537.73	FINNIS-100-2050-	471.500100	30.770	37.103770	36.4359	37.6868	0.00234	4.69	203.279	66.96	0.60
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	FINNIS-100-2050-	471.500100	30.350	35.800820	36.0195	37.2625	0.00507	5.98	127.169	59.53	0.83
CornerB	M003	2507.21	FINNIS-100-2050-	471.500100	30.750	34.905120	35.1431	36.9451	0.01080	7.43	90.593	28.91	1.19
CornerB	M003	2459.31	FINNIS-100-2050-	471.500100	30.130	32.648670	33.8534	35.9844	0.03250	9.27	68.225	35.06	1.90
CornerB	M003	2411.41	FINNIS-100-2050-	471.500100	29.270	34.126710	32.8032	34.4988	0.00228	3.76	218.815	76.89	0.56
CornerB	M003	2363.51	FINNIS-100-2050-	471.500100	28.770	34.050880		34.4036	0.00154	3.30	243.149	84.95	0.47
CornerB	M003	2315.61	FINNIS-100-2050-	471.500100	27.930	33.994660		34.3446	0.00099	2.94	246.947	89.56	0.39
CornerB	M003	2267.71	FINNIS-100-2050-	472.600000	26.300	34.019310		34.2810	0.00061	2.72	309.809	95.46	0.32
CornerB	M003	2263.01	FINNIS-100-2050-	472.600000	29.100	33.380800	33.1321	34.1289	0.00552	4.38	157.842	94.57	0.87
CornerB	M003	2260.98	FINNIS-100-2050-	472.600000	25.800	32.354440		32.9168	0.00150	3.75	194.496	69.24	0.48
CornerB	M003	2240.88	FINNIS-100-2050-	472.600000	27.010	32.361040		32.8449	0.00167	3.41	191.053	60.94	0.49
CornerB	M003	2212.25	FINNIS-100-2050-	472.600000	26.870	32.208540		32.7833	0.00202	3.82	180.970	60.08	0.54
CornerB	M003	2183.63	FINNIS-100-2050-	472.600000	25.560	31.964300		32.6986	0.00282	4.93	182.863	66.40	0.64
CornerB	M003	2163.63	FINNIS-100-2050-	472.600000	25.350	32.332190	30.8732	32.5066	0.00066	2.58	429.609	187.86	0.32
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	FINNIS-100-2050-	472.600000	24.870	29.999200	29.9992	31.8971	0.00811	7.20	100.605	33.72	1.05
CornerB	M003	2131.66	FINNIS-100-2050-	472.600000	24.570	28.785190	29.5577	31.5323	0.01424	7.96	77.501	31.05	1.33
CornerB	M003	2119.46	FINNIS-100-2050-	472.600000	24.120	29.383890	28.7092	30.6822	0.00476	5.60	122.881	45.76	0.81
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	FINNIS-100-2050-	472.600000	24.040	28.771440	28.7714	30.5220	0.00732	6.35	96.440	34.57	0.98
CornerB	M003	2080.62	FINNIS-100-2050-	472.600000	23.730	26.664220	27.6214	29.8229	0.02453	8.63	75.795	47.51	1.68
CornerB	M003	2068.44	FINNIS-100-2050-	472.600000	23.760	26.571880	27.4289	29.4550	0.02341	8.28	80.774	54.54	1.63
CornerB	M003	2022.25	FINNIS-100-2050-	472.600000	22.740	27.399200	26.7899	28.1408	0.00345	4.54	164.656	63.17	0.69
CornerB	M003	1991.14	FINNIS-100-2050-	472.600000	22.180	26.400910	26.4009	27.9132	0.00725	6.19	106.885	37.37	0.98
CornerB	M003	1985.82	FINNIS-100-2050-	472.600000	21.970	25.773760	26.2661	27.8138	0.01140	7.19	93.887	39.30	1.21
CornerB	M003	1975.95	FINNIS-100-2050-	472.600000	21.780	25.280860	26.0243	27.6374	0.01529	7.91	93.083	51.37	1.38
CornerB	M003	1929.72	FINNIS-100-2050-	472.600000	20.080	24.129660	24.8854	26.9274	0.01414	8.04	75.012	26.61	1.34
CornerB	M003	1883.49	FINNIS-100-2050-	472.600000	19.230	24.041420	24.0467	26.2557	0.00864	7.33	87.397	25.47	1.09
CornerB	TR002	21.04	FINNIS-100-2050-	27.600000	22.270	23.292180	24.1933	27.6171	0.15013	10.52	3.769	5.87	3.44
CornerB	TR002	18.08	FINNIS-100-2050-	27.600000	21.400	22.071300	22.9062	26.9342	0.32193	11.41	3.338	6.98	4.72
CornerB	M002	1826.39	FINNIS-100-2050-	477.800000	16.920	23.187780	20.7704	23.5575	0.00199	3.23	203.239	45.69	0.42
CornerB	M002	1790.92	FINNIS-100-2050-	477.800000	15.490	21.156330	21.1563	23.2442	0.01159	7.34	90.261	23.78	1.00
CornerB	M002	1773.95	FINNIS-100-2050-	477.800000	14.720	21.754140	19.6109	22.3443	0.00269	3.99	169.313	38.25	0.49
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	FINNIS-100-2050-	477.800000	14.870	21.750370	19.2889	22.1452	0.00148	3.39	208.594	47.13	0.42
CornerB	M002	1733.13	FINNIS-100-2050-	477.800000	15.230	21.875060		21.9732	0.00034	1.61	431.711	113.60	0.20
CornerB	M002	1717.41	FINNIS-100-2050-	477.800000	15.120	21.882440		21.9631	0.00028	1.48	464.807	111.47	0.18
CornerB	M002	1691.96	FINNIS-100-2050-	477.800000	14.620	21.888570		21.9514	0.00022	1.35	536.977	129.93	0.16
CornerB	M002	1654.15	FINNIS-100-2050-	477.800000	13.870	21.900630		21.9380	0.00012	1.02	680.459	164.67	0.12
CornerB	M002	1613.91	FINNIS-100-2050-	477.800000	13.080	21.900690		21.9332	0.00007	0.92	783.386	196.80	0.11
CornerB	M002	1567.16	FINNIS-100-2050-	477.800000	12.150	21.915650		21.9251	0.00002	0.46	1298.103	243.52	0.05
CornerB	M002	1551.89	FINNIS-100-2050-	477.800000	11.850	21.919120		21.9234	0.00001	0.30	1839.816	309.04	0.03
CornerB	M002	1539.91	FINNIS-100-2050-	477.900000	11.620	21.920270		21.9229	0.00000	0.23	2325.203	343.61	0.03
CornerB	M002	1526.59	FINNIS-100-2050-	477.900000	11.360	21.920230		21.9228	0.00000	0.23	2366.900	350.81	0.03
CornerB	M002	1517.99	FINNIS-100-2050-	477.900000	11.180	21.919110		21.9226	0.00001	0.27	2026.580	310.06	0.03
CornerB	M002	1505.64	FINNIS-100-2050-	477.900000	10.940	21.916010		21.9223	0.00001	0.36	1504.844	236.17	0.04
CornerB	M002	1490.63	FINNIS-100-2050-	477.900000	10.640	21.907700		21.9214	0.00002	0.53	1061.074	182.85	0.06
CornerB	M002	1463.65	FINNIS-100-2050-	477.900000	10.110	21.864930		21.9166	0.00008	1.08	629.671	142.08	0.12
CornerB	M002	1415.93	FINNIS-100-2050-	477.900000	9.170	21.859930		21.9128	0.00007	1.07	585.022	112.59	0.11
CornerB	M002	1386.11	FINNIS-100-2050-	477.900000	8.580	21.839720		21.9086	0.00011	1.25	531.437	113.19	0.13
CornerB	M002	1363.91	FINNIS-100-2050-	477.900000	8.140	21.784610		21.9007	0.00019	1.64	428.624	105.71	0.17
CornerB	M002	1356.61	FINNIS-100-2050-	477.900000	8.000	21.802540		21.8896	0.00045	1.88	470.446	108.36	0.17
CornerB	M002	1354.11	FINNIS-100-2050-	477.900000	15.350	21.622840		21.8716	0.00133	3.11	265.723	98.24	0.40
CornerB	M002	1352.01	FINNIS-100-2050-	477.900000	8.000	13.175080	13.1751	15.2729	0.03104	6.07	74.627	17.52	1.09
CornerB	M002	1347.51	FINNIS-100-2050-	477.900000	7.720	12.113760	12.8204	15.0110	0.02270	7.63	66.581	21.28	1.29
CornerB	M002	1336.58	FINNIS-100-2050-	477.900000	7.690	10.835350	12.0132	14.5944	0.04227	8.89	60.434	28.04	1.71
CornerB	M002	1326.83	FINNIS-100-2050-	477.900000	7.680	10.356810	11.4965	14.1240	0.05478	9.06	59.691	29.86	1.90
CornerB	M002	1317.22	FINNIS-100-2050-	477.900000	7.660	12.383840	11.5813	13.2870	0.00608	4.49	125.287	36.73	0.70
CornerB	M002	1315.18	FINNIS-100-2050-	477.900000	7.280	11.739570	11.7396	13.2125	0.01343	6.01	99.773	35.02	1.00
CornerB	M002	1313.58	FINNIS-100-2050-	477.900000	6.480	10.993200	11.4760	13.1229	0.02019	7.11	83.685	32.14	1.22
CornerB	M002	1312.39	FINNIS-100-2050-	477.900000	6.230	10.502910	11.1902	13.0553	0.02459	7.66	76.089	30.38	1.33
CornerB	M002	1311.16	FINNIS-100-2050-	477.900000	5.920	9.992238	10.8743	12.9768	0.03056	8.03	68.278	28.47	1.47
CornerB	M002	1309.11	FINNIS-100-2050-	477.900000	5.910	9.566550	10.5763	12.8803	0.03413	8.42	64.829	27.72	1.55
CornerB	M002	1305.35	FINNIS-100-2050-	477.900000	5.370	8.639798	9.8727	12.6404	0.05036	9.66	60.461	28.66	1.86
CornerB	M002	1300.06	FINNIS-100-2050-	477.900000	5.060	8.118468	9.3990	12.3565	0.05462	9.42	56.005	26.70	1.91
CornerB	M002	1296.49	FINNIS-100-2050-	477.900000	4.910	8.704620	9.6564	11.9006	0.02911	8.40	67.178	25.83	1.47
CornerB	M002	1289.64	FINNIS-100-2050-	477.900000	4.710	8.731635	9.5164	11.6286	0.02499	8.02	70.376	25.15	1.37
CornerB	M002	1284.12	FINNIS-100-2050-	477.900000	4.410	9.113826	9.5036	11.3422	0.01593	7.23	83.161	27.30	1.12
CornerB	M002	1279.52	FINNIS-100-2050-	477.900000	4.230	8.491382	9.2308	11.2090	0.02121	7.88	75.433	28.03	1.28
CornerB	M002	1258.94	FINNIS-100-2050-	477.900000	3.530	6.317593	7.5588	10.3839	0.06130	9.80	61.419	36.33	2.02
CornerB	M002	1246.98	FINNIS-100-2050-	477.900000	3.370	5.988492	7.0982	9.6901	0.03894	8.89	66.030	48.87	1.81
CornerB	M002	1233.83	FINNIS-100-2050-	477.900000	3.100	5.341671	6.3625	9.0698	0.05857	9.13	66.156	64.07	2.14
CornerB	M002	1215.66	FINNIS-100-2050-	477.900000	2.700	4.816099	5.6934	7.8443	0.04534	8.25	75.231	64.99	1.89
CornerB	M002	1206.83	FINNIS-100-2050-	477.900000	2.540	4.789769	5.5377	7.2986	0.04117	7.74	82.540	67.04	1.80

HEC-RAS Plan: Plan 20 Profile: FINNIS-100-2050- (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1194.69	FINNIS-100-2050-	477.900000	2.390	4.866256	5.4224	6.7445	0.02841	6.92	95.074	65.31	1.52
CornerB	M002	1185.06	FINNIS-100-2050-	477.900000	2.260	5.738667	5.3110	6.3545	0.00576	4.12	165.240	72.56	0.73
CornerB	M002	1142.41	FINNIS-100-2050-	477.900000	1.700	5.627383		6.1108	0.00472	3.80	192.586	89.69	0.67
CornerB	M002	1137.55	FINNIS-100-2050-	477.900000	1.600	5.428374	5.4284	6.0345	0.00700	4.18	198.778	155.08	0.79
CornerB	M002	1110.53	FINNIS-100-2050-	477.900000	1.390	5.077682	5.1788	5.8255	0.00707	4.69	190.354	151.22	0.82
CornerB	M002	1090.67	FINNIS-100-2050-	477.900000	1.100	5.259774	4.3427	5.5156	0.00247	2.94	289.948	167.59	0.49
CornerB	M002	1070.69	FINNIS-100-2050-	477.900000	0.800	5.252636	3.9096	5.4614	0.00164	2.65	311.782	150.62	0.41
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	FINNIS-100-2050-	477.900000	0.760	5.196062	3.8059	5.4002	0.00158	2.63	300.271	145.07	0.40
CornerB	M002	1047.01	FINNIS-100-2050-	477.900000	0.750	5.067567		5.3456	0.00185	3.13	267.314	132.23	0.49
CornerB	M002	1004.03	FINNIS-100-2050-	477.900000	0.770	5.025956		5.2508	0.00147	2.79	329.912	182.11	0.44
CornerB	M002	959.21	FINNIS-100-2050-	477.900000	0.700	5.095593		5.1635	0.00073	1.98	559.960	302.96	0.31
CornerB	M002	915.75	FINNIS-100-2050-	477.900000	0.680	5.082825		5.1256	0.00052	1.63	636.868	304.17	0.26
CornerB	M002	869.66	FINNIS-100-2050-	477.900000	0.690	5.057465		5.1035	0.00044	1.54	612.274	245.30	0.24
CornerB	M002	828.33	FINNIS-100-2050-	470.500000	0.770	5.041720		5.0872	0.00049	1.57	604.766	261.86	0.25
CornerB	M002	784.55	FINNIS-100-2050-	470.500000	0.820	5.035869		5.0696	0.00033	1.30	629.803	270.73	0.21
CornerB	M002	739.85	FINNIS-100-2050-	470.500000	0.820	5.022735		5.0556	0.00029	1.17	670.640	301.90	0.19
CornerB	M002	696.36	FINNIS-100-2050-	470.500000	0.640	4.994930		5.0391	0.00036	1.39	597.714	275.64	0.22
CornerB	M001	659.37	FINNIS-100-2050-	499.999900	0.750	4.967399		5.0257	0.00045	1.47	551.226	259.34	0.24
CornerB	M001	643.93	FINNIS-100-2050-	499.999900	0.740	4.931331	3.7799	5.0148	0.00065	1.78	478.276	246.31	0.29
CornerB	M001	635		Bridge									
CornerB	M001	629.03	FINNIS-100-2050-	499.999900	0.830	4.710530	3.9052	4.8573	0.00122	2.36	370.874	211.35	0.39
CornerB	M001	608.52	FINNIS-100-2050-	499.999900	0.760	4.673513		4.8293	0.00158	2.58	341.858	193.17	0.44
CornerB	M001	570.12	FINNIS-100-2050-	499.999900	0.610	4.677545		4.7652	0.00089	2.03	423.672	195.61	0.34
CornerB	M001	535.83	FINNIS-100-2050-	499.999900	0.560	4.624181	3.4546	4.7355	0.00067	1.88	421.972	240.80	0.30
CornerB	M001	520.22	FINNIS-100-2050-	499.999900	0.550	4.637154	3.2499	4.7167	0.00052	1.66	479.859	308.49	0.26
CornerB	M001	472.07	FINNIS-100-2050-	499.999900	0.580	4.533992	3.7515	4.6752	0.00109	2.30	421.725	322.40	0.38
CornerB	M001	460		Bridge									
CornerB	M001	445.11	FINNIS-100-2050-	499.999900	0.440	4.065539	3.9586	4.4413	0.00265	3.45	325.168	308.82	0.58
CornerB	M001	425.41	FINNIS-100-2050-	499.999900	0.480	4.140988		4.2886	0.00142	2.48	466.779	355.44	0.42
CornerB	M001	401.99	FINNIS-100-2050-	499.999900	0.740	4.161392		4.2396	0.00087	1.90	581.792	380.89	0.33
CornerB	M001	381.26	FINNIS-100-2050-	499.999900	0.790	4.094897	3.6195	4.2107	0.00143	2.34	498.583	379.63	0.42
CornerB	M001	380		Bridge									
CornerB	M001	375.14	FINNIS-100-2050-	499.999900	0.790	4.022479	3.6093	4.1425	0.00159	2.46	495.665	398.94	0.44
CornerB	M001	352.89	FINNIS-100-2050-	499.999900	0.680	3.950515		4.0995	0.00150	2.40	490.049	444.14	0.43
CornerB	M001	324.13	FINNIS-100-2050-	499.999900	0.670	3.662742	3.6627	4.0171	0.00335	3.38	350.448	458.63	0.63
CornerB	M001	292.92	FINNIS-100-2050-	499.999900	0.650	3.631804	3.2880	3.8517	0.00242	2.82	426.629	500.13	0.53
CornerB	M001	274.62	FINNIS-100-2050-	499.999900	0.960	3.652033	3.2886	3.7689	0.00277	2.77	468.661	512.49	0.56
CornerB	M001	270		Bridge									
CornerB	M001	266.99	FINNIS-100-2050-	499.999900	1.010	3.613580	3.1486	3.7025	0.00257	2.64	487.553	489.07	0.54
CornerB	M001	245.99	FINNIS-100-2050-	499.999900	0.640	3.572673		3.6598	0.00183	2.34	561.931	582.90	0.46
CornerB	M001	210.89	FINNIS-100-2050-	499.999900	0.680	3.484195		3.5870	0.00224	2.43	509.193	521.97	0.50
CornerB	M001	174.77	FINNIS-100-2050-	499.999900	0.690	3.432080		3.5081	0.00186	2.03	559.346	637.65	0.44
CornerB	M001	155.66	FINNIS-100-2050-	499.999900	0.640	3.423571	2.8402	3.4675	0.00163	1.76	660.461	773.44	0.40
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	FINNIS-100-2050-	499.999900	0.550	3.407682	2.7726	3.4525	0.00144	1.65	639.850	709.84	0.38
CornerB	M001	129.05	FINNIS-100-2050-	499.999900	0.400	3.364632		3.4140	0.00117	1.73	680.982	758.75	0.36
CornerB	M001	80.73	FINNIS-100-2050-	499.999900	0.200	3.235240		3.3407	0.00175	2.27	521.269	617.21	0.45
CornerB	M001	23.81	FINNIS-100-2050-	499.999900	0.320	3.030017	2.7629	3.2131	0.00289	2.62	420.404	540.00	0.56
BellsB	TR001	178.13	FINNIS-100-2050-	41.700010	92.910	97.006110	95.5000	97.1233	0.00089	1.89	38.121	20.08	0.31
BellsB	TR001	159.86	FINNIS-100-2050-	41.700010	92.150	97.041100		97.0941	0.00037	1.44	76.402	63.09	0.21
BellsB	TR001	139.54	FINNIS-100-2050-	41.700010	91.130	97.054570	94.2763	97.0793	0.00027	1.04	86.269	51.89	0.14
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	FINNIS-100-2050-	41.700010	89.490	92.814480	92.8145	94.4102	0.00971	5.66	7.666	14.84	1.00
BellsB	TR001	88.17	FINNIS-100-2050-	41.700010	88.470	89.917530	90.8734	93.6889	0.09626	9.58	5.919	7.08	2.78
BellsB	TR001	84.12	FINNIS-100-2050-	41.700010	87.660	88.798250	89.6575	93.0721	0.15622	9.66	5.255	8.88	3.38
BellsB	TR001	79.14	FINNIS-100-2050-	41.700010	86.530	87.746330	88.6923	92.2728	0.13413	10.33	5.487	8.54	3.27
BellsB	TR001	72.74	FINNIS-100-2050-	41.700010	85.760	86.767140	87.5980	91.2442	0.17392	9.92	5.364	11.20	3.55
BellsB	TR001	67.75	FINNIS-100-2050-	41.700010	85.040	85.906320	86.7662	90.0839	0.20493	9.76	5.102	8.67	3.75
BellsB	TR001	64.04	FINNIS-100-2050-	41.700010	84.470	85.568180	86.4377	89.3476	0.12869	8.70	5.096	7.67	3.08
BellsB	TR001	60.69	FINNIS-100-2050-	41.700010	84.140	85.469960	86.2649	88.8100	0.11095	8.57	5.883	9.11	2.88
BellsB	TR001	56.76	FINNIS-100-2050-	41.700010	83.970	85.274330	86.0310	88.3175	0.09398	8.00	6.074	9.36	2.67
BellsB	TR001	50.93	FINNIS-100-2050-	41.700010	83.680	85.009800	85.6574	87.6308	0.09649	7.58	6.702	11.55	2.66
BellsB	TR001	43.86	FINNIS-100-2050-	41.700010	83.340	84.551530	85.1678	86.8778	0.09011	7.11	6.905	11.00	2.56
BellsB	TR001	37.01	FINNIS-100-2050-	41.700010	82.980	84.289610	84.8697	86.2701	0.06153	6.81	7.803	10.41	2.20
BellsB	TR001	12.14	FINNIS-100-2050-	41.700010	82.150	83.436520	83.8574	84.8253	0.04306	5.69	9.068	11.32	1.84
BellsB	M002	5166.11	FINNIS-100-2050-	33.400010	190.790	193.757800	192.1930	193.7727	0.00039	0.98	83.044	63.53	0.18
BellsB	M002	5149.23	FINNIS-100-2050-	33.400010	190.570	193.737400		193.7645	0.00045	1.09	71.345	58.07	0.20
BellsB	M002	5117.45	FINNIS-100-2050-	33.400010	189.910	193.744800		193.7516	0.00014	0.70	115.106	64.70	0.12
BellsB	M002	5090.85	FINNIS-100-2050-	33.400010	189.620	193.719000	191.6112	193.7443	0.00037	1.14	69.674	48.80	0.18
BellsB	M002	5067.47	FINNIS-100-2050-	33.400010	189.180	193.726100	190.5632	193.7356	0.00013	0.78	109.433	59.04	0.12
BellsB	M002	5017.78	FINNIS-100-2050-	33.400010	188.120	193.721200	189.7390	193.7305	0.00009	0.70	98.107	28.69	0.10
BellsB	M002	4967.57	FINNIS-100-2050-	33.400010	186.550	193.719300		193.7263	0.00006	0.65	155.270	80.21	0.08
BellsB	M002	4917.46	FINNIS-100-2050-	33.400010	185.690	193.723800		193.7240	0.00000	0.13	652.006	170.50	0.01
BellsB	M002	4873.31	FINNIS-100-2050-	33.400010	184.610	193.723500		193.7239	0.00000	0.18	463.820	110.76	0.02
BellsB	M002	4853.42	FINNIS-100-2050-	33.400010	183.550	193.723500	186.4199	193.7238	0.00000	0.16	547.120	134.64	0.02
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	FINNIS-100-2050-	33.400010	181.530	184.382600	184.3826	185.7324	0.01177	5.15	6.489	15.67	1.00
BellsB	M002	4785.76	FINNIS-100-2050-	33.400010	181.350	182.540600	183.1916	184.9083	0.10110	7.86	5.927	8.69	2.49
BellsB	M002	4756.65	FINNIS-100-2050-	33.400010	180.120	181.328000	181.6526	182.3621	0.05592	6.07	9.381	15.57	1.87
BellsB	M002	4727.54	FINNIS-100-2050-	33.400010	179.020	180.104700	180.3493	180.9144	0.03949	5.22	10.718	17.64	1.68
BellsB	M002	4707.54	FINNIS-100-2050-	33.400010	177.960	178.572000	178.8986	179.6974	0.10297	5.87	8.210	17.99	2.51
BellsB	M002	4702.24	FINNIS-100-2050-	33.400010	177.650	178.771300	178.8818	179.2809	0.02477	4.09	12.778	18.74	1.33
BellsB	M002	4682.48	FINNIS-100-2050-	33.400010	176.630	178.146300	177.9774	178.3927	0.00760	2.89	19.596	23.20	0.79
BellsB	M002	4658.79	FINNIS-100-2050-	33.400010	175.500	177.534000	177.5340	178.1585	0.01056	4.22	13.102	12.65	0.96
BellsB	M002	4633.41	FINNIS-100-2050-	33.400010	174.510	175.435900	175.8879	177.4181	0.12982	8.52	7.217	15.95	2.98
BellsB	M002	4609.61	FINNIS-100-2050-	33.400010	173.500	175.609600	175.0248	175.7982	0.00363	2.59	21.940	16.39	0.58
BellsB	M002	4583.99	FINNIS-100-2050-	33.400010	172.770	174.932300	174.9323	175.6007	0.01091	4.17	12.289	11.66	0.96
BellsB	M002	4534.72	FINNIS-100-2050-	33.400010	170.000	171.368700	172.0741	174.0951	0.10176	9.86	6.233	9.09	2.79
BellsB	M002	4485.52	FINNIS-100-2050-	33.400010	168.200	169.053100	169.3360	169.9686	0.07278	6.03	10.009	21.73	2.19

HEC-RAS Plan: Plan 20 Profile: FINNIS-100-2050- (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4436.28	FINNIS-100-2050-	59.700010	165.850	167.527400	167.7416	168.2397	0.02414	5.65	22.695	32.85	1.43
BellsB	M002	4387.04	FINNIS-100-2050-	59.700010	164.060	165.929000	166.2386	166.9438	0.02704	6.44	18.034	19.08	1.54
BellsB	M002	4337.81	FINNIS-100-2050-	59.700010	162.600	164.061600	164.4641	165.1631	0.05036	7.23	18.169	30.72	1.98
BellsB	M002	4288.56	FINNIS-100-2050-	59.700010	161.300	162.961700	163.0988	163.5432	0.02281	5.21	21.540	26.47	1.35
BellsB	M002	4239.33	FINNIS-100-2050-	59.700010	159.650	161.227700	161.6132	162.3154	0.03174	6.12	18.968	33.58	1.62
BellsB	M002	4190.09	FINNIS-100-2050-	59.700010	158.430	160.005200	160.2667	160.8711	0.02706	5.65	19.176	23.41	1.50
BellsB	M002	4140.85	FINNIS-100-2050-	59.700010	157.300	158.321600	158.4907	158.9902	0.04625	5.66	18.297	24.88	1.84
BellsB	M002	4091.61	FINNIS-100-2050-	59.700010	155.300	156.511000	156.6604	157.1401	0.03384	5.50	19.545	24.02	1.62
BellsB	M002	4042.37	FINNIS-100-2050-	59.700010	153.740	155.269500	155.3434	155.9377	0.01808	4.64	19.624	17.86	1.23
BellsB	M002	3993.13	FINNIS-100-2050-	59.700010	152.650	153.717600	153.9843	154.5951	0.05588	6.05	16.947	25.95	1.95
BellsB	M002	3943.89	FINNIS-100-2050-	59.700010	151.360	152.833100	152.8331	153.3086	0.01824	4.51	23.993	27.08	1.22
BellsB	M002	3894.65	FINNIS-100-2050-	59.700010	149.520	151.542300	151.7876	152.4104	0.02273	5.53	19.515	21.85	1.35
BellsB	M002	3869.08	FINNIS-100-2050-	59.700010	148.870	150.832500	151.1219	151.8349	0.02183	5.67	17.947	18.25	1.37
BellsB	M002	3845.41	FINNIS-100-2050-	59.700010	148.370	150.916400	150.3655	151.1141	0.00405	2.81	36.462	24.35	0.58
BellsB	M002	3822.22	FINNIS-100-2050-	59.700010	147.710	150.971400		151.0396	0.00094	1.66	57.983	23.50	0.30
BellsB	M002	3796.17	FINNIS-100-2050-	59.700010	146.890	150.890200		151.0070	0.00123	2.08	48.726	20.36	0.34
BellsB	M002	3765.39	FINNIS-100-2050-	59.700010	146.400	150.850400		150.9724	0.00107	2.02	47.082	18.55	0.32
BellsB	M002	3746.94	FINNIS-100-2050-	59.700010	145.760	150.915000		150.9357	0.00017	0.93	104.892	31.89	0.13
BellsB	M002	3724.94	FINNIS-100-2050-	59.700010	145.320	150.854800		150.9250	0.00046	1.53	63.073	20.36	0.21
BellsB	M002	3697.71	FINNIS-100-2050-	59.700010	145.050	150.864700		150.9076	0.00026	1.23	73.499	21.56	0.17
BellsB	M002	3677.71	FINNIS-100-2050-	59.700010	143.440	150.876600	147.5853	150.8985	0.00009	0.83	111.001	31.40	0.10
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	FINNIS-100-2050-	59.700010	142.470	146.535200	146.5352	148.5221	0.00869	6.25	9.560	25.66	1.00
BellsB	M002	3623.19	FINNIS-100-2050-	59.700010	142.100	144.029000	144.9459	147.6357	0.08535	9.89	8.502	9.76	2.51
BellsB	M002	3573.45	FINNIS-100-2050-	59.700010	140.890	142.729300	143.1786	144.3427	0.03890	6.84	15.275	30.26	1.76
BellsB	M002	3520.99	FINNIS-100-2050-	59.700010	139.300	141.319700	141.6466	142.4413	0.02781	6.11	18.629	34.69	1.48
BellsB	M002	3473.83	FINNIS-100-2050-	59.700010	137.980	140.446300	140.7038	141.1794	0.01831	5.52	23.127	38.91	1.19
BellsB	M002	3424.29	FINNIS-100-2050-	59.700010	136.490	138.711500	139.4062	140.1000	0.01874	5.76	13.724	11.79	1.29
BellsB	M002	3400.36	FINNIS-100-2050-	59.700010	135.960	139.281800	137.9342	139.3681	0.00083	1.65	74.425	97.32	0.30
BellsB	M002	3386.31	FINNIS-100-2050-	59.700010	135.480	139.290900	138.6529	139.3453	0.00057	1.57	101.886	108.13	0.26
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	FINNIS-100-2050-	59.700010	135.220	139.320200	137.6502	139.3338	0.00012	0.75	165.188	90.82	0.12
BellsB	M002	3329.08	FINNIS-100-2050-	75.200000	134.960	139.311400		139.3282	0.00017	0.92	159.764	64.25	0.14
BellsB	M002	3303.55	FINNIS-100-2050-	75.200000	133.820	139.290300	138.2400	139.3223	0.00026	1.27	129.660	58.65	0.18
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	FINNIS-100-2050-	75.200000	131.390	135.860100	135.8601	135.9672	0.00085	1.83	63.848	25.72	0.30
BellsB	M002	3203.83	FINNIS-100-2050-	75.200000	131.130	132.909100	133.4623	135.2454	0.07192	8.56	15.943	26.99	2.32
BellsB	M002	3176.31	FINNIS-100-2050-	75.200000	130.020	132.044600	132.5902	133.7311	0.04089	7.48	17.483	19.43	1.82
BellsB	M002	3157.63	FINNIS-100-2050-	75.200000	129.890	131.626000	131.9768	132.8044	0.04718	6.84	18.288	19.99	1.81
BellsB	M002	3130.11	FINNIS-100-2050-	75.200000	128.680	131.498700	131.5583	132.1668	0.00919	4.61	28.495	22.22	0.93
BellsB	M002	3083.82	FINNIS-100-2050-	75.200000	127.940	129.869400	130.2897	131.3336	0.03768	7.09	19.761	25.53	1.76
BellsB	M002	3037.68	FINNIS-100-2050-	75.200000	127.110	128.469000	128.7640	129.3483	0.04005	6.25	23.019	36.45	1.78
BellsB	M002	2991.47	FINNIS-100-2050-	75.200000	126.280	128.683500	127.7373	128.7432	0.00120	1.63	73.973	51.36	0.34
BellsB	M002	2945.26	FINNIS-100-2050-	75.200000	125.320	128.336000	128.3360	128.6147	0.00549	3.04	47.150	74.02	0.58
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	FINNIS-100-2050-	75.200000	125.120	128.299600	128.2996	128.5536	0.00479	3.01	52.417	86.61	0.55
BellsB	M002	2918.61	FINNIS-100-2050-	75.200000	124.990	127.185900	127.5074	128.1961	0.02290	6.14	26.986	56.40	1.41
BellsB	M002	2899.46	FINNIS-100-2050-	75.200000	125.250	126.785200	127.0504	127.6662	0.02126	5.20	30.102	86.15	1.36
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	FINNIS-100-2050-	75.200000	124.440	126.515400	126.5787	126.8778	0.00548	3.26	44.058	89.10	0.75
BellsB	M002	2861.32	FINNIS-100-2050-	75.200000	123.640	125.254900	125.5978	126.4062	0.03169	6.34	19.344	25.04	1.70
BellsB	M002	2823.69	FINNIS-100-2050-	75.200000	123.230	124.629000	124.8255	125.2579	0.03388	5.30	26.486	39.91	1.51
BellsB	M002	2777.91	FINNIS-100-2050-	75.200000	122.770	124.436600	123.9950	124.5192	0.00397	2.09	66.580	66.74	0.53
BellsB	M002	2727.91	FINNIS-100-2050-	75.200000	122.210	123.956100	123.6236	124.2959	0.01439	3.97	42.975	69.96	1.01
BellsB	M002	2677.99	FINNIS-100-2050-	75.200000	121.130	123.438400	123.4384	123.7598	0.00825	3.55	45.180	61.99	0.80
BellsB	M002	2628.09	FINNIS-100-2050-	75.200000	120.690	122.572600	122.7191	123.1800	0.02284	5.30	31.657	48.06	1.29
BellsB	M002	2578.18	FINNIS-100-2050-	75.200000	119.940	122.452500	122.0357	122.6038	0.00412	2.70	53.985	43.43	0.57
BellsB	M002	2528.27	FINNIS-100-2050-	75.200000	119.100	121.628900	121.6289	122.2444	0.01304	4.75	28.361	23.07	1.01
BellsB	M002	2518.19	FINNIS-100-2050-	75.200000	118.620	121.644700	121.1167	121.8946	0.00476	3.26	45.059	32.76	0.63
BellsB	M002	2496.15	FINNIS-100-2050-	75.200000	118.530	121.685700		121.7943	0.00206	2.24	61.890	34.69	0.42
BellsB	M002	2478.37	FINNIS-100-2050-	75.200000	117.970	121.291400		121.7131	0.00600	3.90	37.299	26.90	0.71
BellsB	M002	2450.61	FINNIS-100-2050-	75.200000	117.550	120.714500	120.7145	121.4546	0.01081	5.12	26.959	17.65	0.95
BellsB	M002	2428.46	FINNIS-100-2050-	75.200000	117.190	118.914600	119.4610	120.8372	0.06454	7.69	16.335	21.56	2.06
BellsB	M002	2408.52	FINNIS-100-2050-	75.200000	116.630	118.320200	118.7492	119.6522	0.05851	7.18	19.218	26.45	1.94
BellsB	M002	2378.55	FINNIS-100-2050-	75.200000	116.150	118.222300	118.3599	118.7532	0.01996	5.18	32.434	40.98	1.19
BellsB	M002	2367.92	FINNIS-100-2050-	75.200000	115.610	117.304900	117.5116	118.3877	0.03869	6.43	20.562	22.22	1.66
BellsB	M002	2352.81	FINNIS-100-2050-	75.200000	115.070	116.873300	117.1399	117.8908	0.03246	6.12	20.621	19.41	1.53
BellsB	M002	2328.64	FINNIS-100-2050-	75.200000	113.990	116.471400	116.7076	117.2407	0.01782	5.47	28.394	31.96	1.17
BellsB	M002	2307.61	FINNIS-100-2050-	75.200000	112.940	116.565800	115.8056	116.6642	0.00148	1.90	73.787	53.52	0.34
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	FINNIS-100-2050-	81.000000	111.750	115.563400	115.5634	116.0363	0.00597	3.68	41.103	41.23	0.63
BellsB	M002	2275.77	FINNIS-100-2050-	81.000000	112.060	114.126400	114.5444	115.5132	0.04153	7.45	21.055	27.78	1.74
BellsB	M002	2232.72	FINNIS-100-2050-	81.000000	110.580	113.287900	113.2879	114.2858	0.01745	5.73	23.995	18.09	1.17
BellsB	M002	2200.99	FINNIS-100-2050-	81.000000	109.610	113.194400	112.5449	113.5182	0.00425	3.45	41.887	24.53	0.61
BellsB	M002	2173.21	FINNIS-100-2050-	81.000000	108.980	112.362200	112.3622	113.2788	0.01101	5.17	24.470	13.46	0.93
BellsB	M002	2133.27	FINNIS-100-2050-	81.000000	107.790	109.760300	110.5098	112.2671	0.06082	8.73	14.907	15.41	2.10
BellsB	M002	2117.78	FINNIS-100-2050-	81.000000	107.460	109.618500	110.1450	111.3465	0.03447	7.19	18.672	18.75	1.63
BellsB	M002	2103.01	FINNIS-100-2050-	81.000000	106.450	108.621100	109.2581	110.6721	0.04824	7.95	15.284	12.25	1.85
BellsB	M002	2085.77	FINNIS-100-2050-	81.000000	105.170	107.522600	108.2453	109.7882	0.04675	8.52	14.887	11.12	1.87
BellsB	M002	2068.57	FINNIS-100-2050-	81.000000	104.360	105.895700	106.6814	108.7445	0.09458	9.56	13.242	14.47	2.57
BellsB	M002	2059.88	FINNIS-100-2050-	81.000000	103.560	105.619700	106.3583	108.0804	0.04978	8.15	14.457	11.99	1.93
BellsB	M002	2054.52	FINNIS-100-2050-	81.000000	103.130	105.277000	106.0554	107.7947	0.05468	8.64	13.893	9.90	2.00
BellsB	M002	2040.56	FINNIS-100-2050-	81.000000	102.390	105.010400	105.6845	107.1834	0.02665	7.54	15.794	9.11	1.51
BellsB	M002	2033.27	FINNIS-100-2050-	81.000000	102.080	105.085000	105.6270	106.8823	0.02548	6.96	17.061	10.41	1.38
BellsB	M002	2025.44	FINNIS-100-2050-	81.000000	101.580	103.811900	104.6472	106.5281	0.04579	8.30	13.733	10.84	1.86
BellsB	M002	2021.67	FINNIS-100-2050-	81.000000	101.430	104.062200	104.7510	106.2031	0.03471	7.38	15.517	11.90	1.58
BellsB	M002	2014.53	FINNIS-100-2050-	81.000000	99.960	102.297200	103.2821	105.7378	0.06786	8.55	11.142	9.68	2.10
BellsB	M002	2010.46	FINNIS-100-2050-	81.000000	99.080	100.977200	102.1370	105.3173	0.09672	10.72	10.529	8.49	2.64
BellsB	M002	2007.37	FINNIS-100-2050-	81.000000	98.520	100.848900	102.0772	105.0128	0.07371	9.44	10.124	7.19	2.21
BellsB	M002	1996.87	FINNIS-100-2050-	81.000000	97.970	99.808160	101.0143	104.1565	0.08723	10.55	10.644	8.33	2.56

HEC-RAS Plan: Plan 20 Profile: FINNIS-100-2050- (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	1982.97	FINNIS-100-2050-	81.000000	97.730	99.531980	100.5015	102.7238	0.07056	9.47	12.358	9.56	2.31
BellsB	M002	1966.25	FINNIS-100-2050-	81.000000	96.750	99.374050	100.0581	101.5844	0.03828	7.77	15.055	10.32	1.65
BellsB	M002	1951.81	FINNIS-100-2050-	81.000000	96.560	99.923450	99.0350	100.2416	0.00425	3.27	37.155	16.37	0.59
BellsB	M002	1939.94	FINNIS-100-2050-	81.000000	96.290	99.331470	99.2820	100.1113	0.01096	4.69	25.599	15.48	0.93
BellsB	M002	1918.81	FINNIS-100-2050-	81.000000	95.860	99.406230		99.8565	0.00531	3.88	33.719	15.36	0.68
BellsB	M002	1910.32	FINNIS-100-2050-	81.000000	95.580	98.773940	98.7739	99.7431	0.01053	5.00	23.566	13.26	0.94
BellsB	M002	1896.87	FINNIS-100-2050-	81.000000	94.380	96.724590	97.5275	99.3113	0.05229	8.46	13.892	10.55	1.90
BellsB	M002	1887.59	FINNIS-100-2050-	81.000000	93.870	95.643390	96.4949	98.6644	0.08193	9.09	12.618	11.95	2.38
BellsB	M002	1880.79	FINNIS-100-2050-	81.000000	93.330	95.437080	96.2496	98.1297	0.05196	8.33	13.595	10.91	1.95
BellsB	M002	1870.34	FINNIS-100-2050-	81.000000	92.770	96.356410	95.6696	97.0474	0.00655	4.52	27.857	10.84	0.78
BellsB	M002	1857.16	FINNIS-100-2050-	81.000000	91.880	96.564220		96.8817	0.00277	3.17	40.014	15.63	0.49
BellsB	M002	1848.27	FINNIS-100-2050-	81.000000	91.910	96.636970		96.8268	0.00133	2.40	52.821	18.08	0.36
BellsB	M002	1834.27	FINNIS-100-2050-	81.000000	90.880	96.648060		96.8013	0.00087	2.14	60.111	18.58	0.29
BellsB	M002	1821.35	FINNIS-100-2050-	81.000000	90.900	96.690380		96.7711	0.00051	1.77	79.886	22.21	0.24
BellsB	M002	1807.43	FINNIS-100-2050-	81.000000	89.830	96.698930		96.7596	0.00032	1.48	93.082	22.99	0.18
BellsB	M002	1800.77	FINNIS-100-2050-	81.000000	89.590	96.701980		96.7553	0.00032	1.49	98.826	25.19	0.18
BellsB	M002	1777.98	FINNIS-100-2050-	81.000000	88.770	96.720510		96.7420	0.00011	0.97	149.739	31.53	0.11
BellsB	M002	1753.27	FINNIS-100-2050-	81.000000	88.220	96.712940		96.7387	0.00013	1.06	143.690	33.21	0.12
BellsB	M002	1729.73	FINNIS-100-2050-	81.000000	88.170	96.717740		96.7335	0.00007	0.86	174.612	34.38	0.09
BellsB	M002	1705.77	FINNIS-100-2050-	81.000000	87.600	96.721590		96.7303	0.00003	0.66	282.217	68.75	0.07
BellsB	M002	1688.91	FINNIS-100-2050-	81.000000	86.720	96.713580	92.6539	96.7290	0.00004	0.74	242.943	81.01	0.08
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	FINNIS-100-2050-	81.000000	83.970	89.886290	89.8863	92.8365	0.00663	7.61	10.644	30.82	1.00
BellsB	M002	1605.59	FINNIS-100-2050-	81.000000	81.490	82.539480	83.6813	90.8381	0.42699	13.89	7.225	13.70	5.49
BellsB	M001	1582.05	FINNIS-100-2050-	130.200000	80.410	82.197830	83.7495	89.3866	0.11495	12.60	12.654	11.36	3.27
BellsB	M001	1563.67	FINNIS-100-2050-	130.200000	79.960	81.839500	83.1602	87.0520	0.07929	11.23	15.493	12.54	2.78
BellsB	M001	1544.26	FINNIS-100-2050-	130.200000	79.040	81.662340	82.8697	85.5811	0.04138	10.00	19.051	12.11	2.09
BellsB	M001	1529.04	FINNIS-100-2050-	130.200000	78.240	80.352830	81.6736	84.8436	0.04913	9.98	16.039	10.25	2.25
BellsB	M001	1515.66	FINNIS-100-2050-	130.200000	77.300	80.113960	81.4517	84.0641	0.04740	9.39	17.113	9.91	1.93
BellsB	M001	1502.43	FINNIS-100-2050-	130.200000	69.640	70.691910	72.1310	81.8550	0.49478	15.06	9.268	14.17	5.38
BellsB	M001	1483.47	FINNIS-100-2050-	130.200000	68.890	70.285300	71.3000	74.7393	0.16533	10.66	15.480	17.35	3.27
BellsB	M001	1454.75	FINNIS-100-2050-	130.200000	68.030	70.054590	70.5936	71.8729	0.04098	7.66	24.674	17.53	1.78
BellsB	M001	1406.62	FINNIS-100-2050-	130.200000	66.490	69.976040	69.9760	71.0532	0.01153	5.71	34.345	16.16	1.02
BellsB	M001	1358.51	FINNIS-100-2050-	130.200000	65.170	67.533640	68.2918	69.9852	0.03862	7.86	21.999	14.43	1.74
BellsB	M001	1310.38	FINNIS-100-2050-	130.200000	63.800	65.956900	66.6151	68.0175	0.03886	7.48	25.670	22.29	1.73
BellsB	M001	1286.33	FINNIS-100-2050-	130.200000	62.810	64.717670	65.3431	66.8704	0.06022	8.11	23.213	22.59	2.07
BellsB	M001	1262.25	FINNIS-100-2050-	130.200000	62.090	64.722850	65.0426	65.8604	0.02667	6.63	33.809	30.00	1.40
BellsB	M001	1251.58	FINNIS-100-2050-	130.200000	61.460	63.996970	64.4625	65.5256	0.03379	8.00	31.475	30.94	1.66
BellsB	M001	1234.76	FINNIS-100-2050-	130.200000	60.570	62.653470	63.2455	64.7458	0.06254	9.02	25.774	28.81	2.13
BellsB	M001	1214.13	FINNIS-100-2050-	130.200000	59.550	63.047500	61.9532	63.3070	0.00267	2.81	70.997	32.72	0.50
BellsB	M001	1200.58	FINNIS-100-2050-	130.200000	58.900	62.252270	62.2523	63.1739	0.01068	5.29	39.142	22.03	0.96
BellsB	M001	1182.98	FINNIS-100-2050-	130.200000	58.590	61.761060	61.9932	62.9278	0.01521	6.06	35.035	21.69	1.14
BellsB	M001	1166.01	FINNIS-100-2050-	130.200000	58.390	60.437450	61.0440	62.4298	0.04368	7.68	25.688	21.91	1.81
BellsB	M001	1153.18	FINNIS-100-2050-	130.200000	57.700	60.049360	60.5694	61.7828	0.04685	8.52	26.898	21.78	1.86
BellsB	M001	1141.88	FINNIS-100-2050-	130.200000	56.720	58.903830	59.6315	61.2218	0.04235	7.82	23.078	18.43	1.80
BellsB	M001	1128.34	FINNIS-100-2050-	130.200000	56.530	58.395260	59.0551	60.4903	0.05587	8.12	22.334	18.09	2.00
BellsB	M001	1117.89	FINNIS-100-2050-	130.200000	55.580	57.621480	58.3365	59.8770	0.05898	9.07	22.684	17.06	2.09
BellsB	M001	1096.03	FINNIS-100-2050-	130.200000	54.610	57.000820	57.5588	58.8131	0.03275	7.15	26.270	18.96	1.60
BellsB	M001	1077.81	FINNIS-100-2050-	130.200000	54.240	55.944990	56.5653	58.0866	0.05395	7.88	25.137	25.32	2.00
BellsB	M001	1069.76	FINNIS-100-2050-	130.200000	53.700	54.994090	55.6908	57.3849	0.09359	8.52	21.286	21.55	2.50
BellsB	M001	1064.67	FINNIS-100-2050-	130.200000	53.190	54.451060	55.1507	56.8904	0.10433	8.65	21.034	22.34	2.62
BellsB	M001	1051.64	FINNIS-100-2050-	130.200000	51.970	53.606470	54.3148	55.9707	0.06610	8.25	22.624	21.02	2.17
BellsB	M001	1032.36	FINNIS-100-2050-	130.200000	50.970	53.188120	53.6761	54.8053	0.03894	7.65	27.497	20.21	1.73
BellsB	M001	1021.64	FINNIS-100-2050-	130.200000	50.030	52.143690	52.8039	54.3010	0.04359	7.59	23.748	19.20	1.81
BellsB	M001	1014.11	FINNIS-100-2050-	130.200000	49.460	51.860460	52.5118	53.9965	0.03762	7.57	24.364	19.93	1.69
BellsB	M001	1006.24	FINNIS-100-2050-	130.200000	49.150	51.164490	51.7991	53.6442	0.04757	8.07	21.590	16.81	1.90
BellsB	M001	996.42	FINNIS-100-2050-	130.200000	48.110	50.135330	51.0467	53.0856	0.07254	9.52	20.188	18.11	2.28
BellsB	M001	987.27	FINNIS-100-2050-	130.200000	47.170	49.579010	50.3213	52.5478	0.04922	8.99	20.616	15.12	1.97
BellsB	M001	973.52	FINNIS-100-2050-	130.200000	46.790	48.887310	49.8765	51.8686	0.04602	8.60	20.849	20.15	2.02
BellsB	M001	951.43	FINNIS-100-2050-	130.200000	45.770	47.833560	48.6556	50.8407	0.06148	9.25	21.265	24.24	2.26
BellsB	M001	931.51	FINNIS-100-2050-	130.200000	44.860	46.799770	47.6056	49.4510	0.07203	10.19	20.300	18.96	2.45
BellsB	M001	925.41	FINNIS-100-2050-	130.200000	44.690	46.869050	47.5157	48.9126	0.04445	8.60	24.416	22.50	1.92
BellsB	M001	901.68	FINNIS-100-2050-	130.200000	43.690	46.309860	46.8336	48.1297	0.02220	7.19	25.285	14.99	1.47
BellsB	M001	877.27	FINNIS-100-2050-	130.200000	43.180	45.823460	46.3221	47.5770	0.02145	6.94	25.534	14.97	1.43
BellsB	M001	857.41	FINNIS-100-2050-	130.200000	42.160	46.235450	45.6123	46.4944	0.00227	3.02	78.515	50.42	0.50
BellsB	M001	840		Culvert									
BellsB	M001	816.09	FINNIS-100-2050-	133.200000	38.540	42.798240	42.7982	44.3185	0.00937	6.07	28.064	15.46	0.96
BellsB	M001	810.13	FINNIS-100-2050-	133.200000	37.800	42.994530	41.6998	43.3097	0.00192	2.86	73.584	47.17	0.42
BellsB	M001	800		Bridge									
BellsB	M001	796.37	FINNIS-100-2050-	133.200000	34.330	39.073090	39.0731	40.6849	0.01047	6.04	25.232	14.02	0.97
BellsB	M001	782.27	FINNIS-100-2050-	133.200000	33.920	35.639530	36.7510	39.6309	0.08970	9.71	16.272	12.72	2.52
BellsB	M001	772.73	FINNIS-100-2050-	133.200000	30.940	33.281820	34.5155	38.4316	0.15556	13.93	15.818	12.79	3.10
BellsB	M001	766.74	FINNIS-100-2050-	133.200000	30.650	33.276050	34.3832	37.3613	0.10687	12.80	17.855	13.30	2.65
BellsB	M001	760.32	FINNIS-100-2050-	133.200000	30.340	32.791940	33.8901	36.7466	0.07592	11.13	18.757	13.59	2.39
BellsB	M001	755.97	FINNIS-100-2050-	133.200000	30.050	32.453970	33.5757	36.4111	0.07765	10.46	18.117	13.14	2.36
BellsB	M001	749.69	FINNIS-100-2050-	133.200000	29.300	31.845360	33.0173	35.9003	0.07777	11.11	18.241	12.65	2.39
BellsB	M001	742.14	FINNIS-100-2050-	133.200000	28.380	30.604330	31.9185	35.2858	0.07326	10.86	16.863	11.75	2.41
BellsB	M001	736.73	FINNIS-100-2050-	133.200000	28.240	29.768620	31.0237	34.7548	0.11923	10.98	14.743	12.73	2.92
BellsB	M001	722.61	FINNIS-100-2050-	133.200000	27.350	28.968680	29.9767	32.8856	0.09784	9.97	16.853	16.08	2.62
BellsB	M001	712.04	FINNIS-100-2050-	133.200000	26.270	28.641410	29.6203	31.9205	0.05634	9.16	19.440	14.07	2.06
BellsB	M001	702.42	FINNIS-100-2050-	133.200000	26.040	28.122380	29.0820	31.3132	0.06241	9.16	19.540	15.03	2.16
BellsB	M001	691.68	FINNIS-100-2050-	133.200000	25.030	27.442020	28.4379	30.6762	0.05519	8.75	19.034	14.59	2.02
BellsB	M001	686.22	FINNIS-100-2050-	133.200000	24.460	26.558710	27.6529	30.2991	0.06415	9.00	17.236	13.42	2.17
BellsB	M001	675.26	FINNIS-100-2050-	133.200000	24.080	26.076600	27.1117	29.5217	0.06058	9.06	18.101	13.42	2.15
BellsB	M001	668.37	FINNIS-100-2050-	133.200000	23.580	25.620280	26.6020	29.0891	0.06577	9.20	18.121	14.39	2.21
BellsB	M001	655.45	FINNIS-100-2050-	133.200000	23.020	24.893810	25.8467	28.1886	0.06578	8.87	18.270	14.86	2.19
BellsB	M001	636.88	FINNIS-100-2050-	133.200000	21.460	23.701430	24.6985	27.0582	0.05321	8.72	18.391	13.07	2.02
BellsB	M001	619.06	FINNIS-100-2050-	133.200000	20.820	23.189990	24.0839	26.0264	0.04619	8.56	21.025	14.62	1.90
BellsB	M001	608.48	FINNIS-100-2050-	133.200000	20.130	22.280320	23.2354	25.4601	0.05537	8.74	19.497	15.94	2.04
BellsB	M001	592.31	FINNIS-100-2050-	133.200000	18.950	21.199790	21.9785	24.5251	0.06833	9.84	19.330	14.71	2.25

HEC-RAS Plan: Plan 20 Profile: FINNIS-100-2050- (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	582.72	FINNIS-100-2050-	133.200000	18.140	20.215000	21.2878	23.8632	0.06327	9.60	18.581	12.49	2.22
BellsB	M001	577.91	FINNIS-100-2050-	133.200000	17.660	20.373960	21.2960	23.4612	0.03899	9.05	22.085	14.01	1.82
BellsB	M001	561.51	FINNIS-100-2050-	133.200000	17.020	19.126830	20.1116	22.5529	0.07760	9.79	19.653	16.05	2.37
BellsB	M001	553.07	FINNIS-100-2050-	133.200000	16.350	18.305190	19.3487	21.9482	0.06489	9.15	18.758	15.75	2.20
BellsB	M001	541.54	FINNIS-100-2050-	133.200000	15.410	17.313980	18.3397	21.1195	0.07830	9.15	17.528	15.18	2.36
BellsB	M001	529.17	FINNIS-100-2050-	133.200000	14.850	17.010480	17.9719	20.1234	0.05289	8.04	18.528	11.23	1.80
BellsB	M001	514.53	FINNIS-100-2050-	133.200000	14.210	16.040310	16.9850	19.1967	0.07675	8.80	19.083	14.24	2.14
BellsB	M001	467.56	FINNIS-100-2050-	133.200000	11.610	17.653670	14.5899	17.8229	0.00083	2.06	94.912	32.02	0.27
BellsB	M001	420.59	FINNIS-100-2050-	133.200000	8.750	17.697510		17.7719	0.00031	1.56	172.560	67.97	0.17
BellsB	M001	400.25	FINNIS-100-2050-	133.200000	8.570	17.529510	12.7357	17.7474	0.00091	2.32	102.716	65.15	0.25
BellsB	M001	100		Culvert									
BellsB	M001	68.07	FINNIS-100-2050-	133.200000	0.830	4.944995	4.5164	5.1561	0.00158	2.79	97.231	79.22	0.44
BellsB	M001	47.74	FINNIS-100-2050-	133.200000	0.560	5.023761	3.7586	5.0477	0.00026	1.19	253.157	155.69	0.18
BellsB	M001	43		Bridge									
BellsB	M001	41.05	FINNIS-100-2050-	133.200000	0.700	5.020726	3.7109	5.0401	0.00022	1.08	263.165	157.41	0.17
BellsB	M001	20.51	FINNIS-100-2050-	133.200000	0.570	5.018459		5.0375	0.00024	1.10	266.478	168.72	0.17

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2080-Ma

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	AMEC-100-2080-Ma	215.400000	36.310	39.143490	39.1435	40.9786	0.01458	6.64	43.524	22.58	1.29
CornerB	M004	2838.71	AMEC-100-2080-Ma	215.400000	36.150	38.520800	39.0772	40.1832	0.01482	6.05	46.993	37.75	1.27
CornerB	M004	2796.61	AMEC-100-2080-Ma	215.400000	35.350	38.705320	37.8479	39.3144	0.00412	3.92	80.091	44.03	0.71
CornerB	M004	2769.85	AMEC-100-2080-Ma	215.400000	34.800	37.937840	37.9378	38.8651	0.01275	6.72	63.691	35.57	1.23
CornerB	TR001	206.04	AMEC-100-2080-Ma	38.800000	43.810	44.864870	45.2174	46.0064	0.04206	5.69	10.076	14.71	1.85
CornerB	TR001	156.04	AMEC-100-2080-Ma	38.800000	41.630	42.777580	43.1438	43.9345	0.04049	5.05	9.833	19.27	1.76
CornerB	TR001	106.04	AMEC-100-2080-Ma	38.800000	39.170	39.938920	40.3874	41.4563	0.06258	5.84	8.041	13.52	2.17
CornerB	TR001	56.04	AMEC-100-2080-Ma	38.800000	37.270	38.202260	38.6117	39.1620	0.03278	4.61	9.949	13.95	1.60
CornerB	TR001	36.04	AMEC-100-2080-Ma	38.800000	35.500	38.323510	37.8970	38.3307	0.00013	0.60	125.990	82.28	0.12
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	AMEC-100-2080-Ma	38.800000	35.180	37.499860	37.4999	37.5816	0.00146	1.65	51.711	81.44	0.37
CornerB	M003	2689.92	AMEC-100-2080-Ma	237.400000	33.550	35.770050	36.4164	37.7324	0.03174	8.04	51.637	45.52	1.81
CornerB	M003	2645.73	AMEC-100-2080-Ma	237.400000	32.870	36.690800	35.1075	36.8636	0.00124	2.42	162.497	71.54	0.40
CornerB	M003	2602.09	AMEC-100-2080-Ma	237.400000	32.200	36.696510		36.8098	0.00061	1.87	201.086	68.43	0.29
CornerB	M003	2557.73	AMEC-100-2080-Ma	237.400000	31.340	36.604930		36.7758	0.00066	2.16	164.868	48.74	0.31
CornerB	M003	2537.73	AMEC-100-2080-Ma	237.400000	30.770	36.507510	34.8801	36.7518	0.00104	2.92	164.215	64.60	0.39
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	AMEC-100-2080-Ma	237.400000	30.350	34.350110	34.3501	35.4941	0.00519	4.89	58.961	27.49	0.79
CornerB	M003	2507.21	AMEC-100-2080-Ma	237.400000	30.750	33.220720	33.7157	35.0951	0.01959	6.92	45.793	24.06	1.46
CornerB	M003	2459.31	AMEC-100-2080-Ma	237.400000	30.130	32.986310	32.5356	33.6279	0.00530	4.08	80.950	40.95	0.79
CornerB	M003	2411.41	AMEC-100-2080-Ma	237.400000	29.270	33.167580		33.3710	0.00160	2.70	149.099	65.73	0.45
CornerB	M003	2363.51	AMEC-100-2080-Ma	237.400000	28.770	33.143140		33.3036	0.00086	2.15	172.218	64.66	0.34
CornerB	M003	2315.61	AMEC-100-2080-Ma	237.400000	27.930	33.126410		33.2683	0.00047	1.83	181.238	63.47	0.26
CornerB	M003	2267.71	AMEC-100-2080-Ma	237.900000	26.300	33.123720		33.2438	0.00030	1.75	225.898	83.40	0.22
CornerB	M003	2263.01	AMEC-100-2080-Ma	237.900000	29.100	32.747130		33.1540	0.00413	3.14	104.340	77.26	0.72
CornerB	M003	2260.98	AMEC-100-2080-Ma	237.900000	25.800	30.675890		31.0404	0.00133	2.87	105.984	38.35	0.43
CornerB	M003	2240.88	AMEC-100-2080-Ma	237.900000	27.010	30.653340		30.9975	0.00195	2.79	106.503	42.86	0.49
CornerB	M003	2212.25	AMEC-100-2080-Ma	237.900000	26.870	30.569440		30.9376	0.00206	2.98	104.776	39.88	0.51
CornerB	M003	2183.63	AMEC-100-2080-Ma	237.900000	25.560	30.110210		30.8246	0.00376	4.44	86.671	39.56	0.70
CornerB	M003	2163.63	AMEC-100-2080-Ma	237.900000	25.350	30.084620	28.7043	30.7500	0.00240	3.74	68.812	81.18	0.57
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	AMEC-100-2080-Ma	237.900000	24.870	28.208120	28.5909	30.1589	0.01341	6.77	42.551	23.68	1.25
CornerB	M003	2131.66	AMEC-100-2080-Ma	237.900000	24.570	27.325530	28.1052	29.8183	0.02366	7.30	38.203	22.84	1.57
CornerB	M003	2119.46	AMEC-100-2080-Ma	237.900000	24.120	26.403770	27.3271	29.4170	0.03580	8.13	34.791	23.22	1.90
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	AMEC-100-2080-Ma	237.900000	24.040	26.710840	27.4098	29.0016	0.02121	6.93	39.363	23.31	1.50
CornerB	M003	2080.62	AMEC-100-2080-Ma	237.900000	23.730	25.806510	26.6378	28.1640	0.02774	7.11	38.888	26.39	1.68
CornerB	M003	2068.44	AMEC-100-2080-Ma	237.900000	23.760	25.717790	26.3297	27.7428	0.02574	6.68	42.251	29.90	1.60
CornerB	M003	2022.25	AMEC-100-2080-Ma	237.900000	22.740	25.082120	25.5254	26.7014	0.01639	6.07	49.162	30.89	1.32
CornerB	M003	1991.14	AMEC-100-2080-Ma	237.900000	22.180	24.964550	25.1215	26.1985	0.00973	5.36	57.750	31.04	1.06
CornerB	M003	1985.82	AMEC-100-2080-Ma	237.900000	21.970	24.588080	24.9430	26.1112	0.01326	5.96	51.790	29.48	1.22
CornerB	M003	1975.95	AMEC-100-2080-Ma	237.900000	21.780	24.141290	24.6371	25.9232	0.01847	6.59	47.999	29.35	1.41
CornerB	M003	1929.72	AMEC-100-2080-Ma	237.900000	20.080	22.675420	23.3436	24.9618	0.02151	7.09	39.875	21.75	1.52
CornerB	M003	1883.49	AMEC-100-2080-Ma	237.900000	19.230	22.297370	22.6523	24.0745	0.01229	6.37	46.975	20.88	1.20
CornerB	TR002	21.04	AMEC-100-2080-Ma	14.500000	22.270	23.023340	23.6720	26.0160	0.15016	8.44	2.312	4.96	3.25
CornerB	TR002	18.08	AMEC-100-2080-Ma	14.500000	21.400	21.882180	22.4558	25.3112	0.36307	9.38	2.074	6.40	4.71
CornerB	M002	1826.39	AMEC-100-2080-Ma	240.300000	16.920	18.694460	19.6632	22.5616	0.11756	9.54	31.469	31.01	2.57
CornerB	M002	1790.92	AMEC-100-2080-Ma	240.300000	15.490	19.406390	19.3323	20.8242	0.01235	5.86	52.902	18.76	0.97
CornerB	M002	1773.95	AMEC-100-2080-Ma	240.300000	14.720	20.099060	18.0000	20.4275	0.00205	2.89	111.441	32.20	0.41
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	AMEC-100-2080-Ma	240.300000	14.870	20.115950	17.8522	20.3301	0.00110	2.43	139.353	39.40	0.34
CornerB	M002	1733.13	AMEC-100-2080-Ma	240.300000	15.230	20.169730		20.2362	0.00031	1.25	255.709	90.16	0.18
CornerB	M002	1717.41	AMEC-100-2080-Ma	240.300000	15.120	20.173780		20.2281	0.00026	1.16	285.172	97.18	0.17
CornerB	M002	1691.96	AMEC-100-2080-Ma	240.300000	14.620	20.175150		20.2193	0.00020	1.07	327.386	113.90	0.15
CornerB	M002	1654.15	AMEC-100-2080-Ma	240.300000	13.870	20.183650		20.2083	0.00010	0.79	423.724	140.76	0.11
CornerB	M002	1613.91	AMEC-100-2080-Ma	240.300000	13.080	20.184370		20.2040	0.00005	0.68	488.389	157.17	0.09
CornerB	M002	1567.16	AMEC-100-2080-Ma	240.300000	12.150	20.194070		20.1987	0.00001	0.31	908.715	214.10	0.04
CornerB	M002	1551.89	AMEC-100-2080-Ma	240.300000	11.850	20.195840		20.1978	0.00000	0.20	1344.756	277.00	0.02
CornerB	M002	1539.91	AMEC-100-2080-Ma	238.900000	11.620	20.196420		20.1975	0.00000	0.15	1772.774	309.89	0.02
CornerB	M002	1526.59	AMEC-100-2080-Ma	238.900000	11.360	20.196400		20.1975	0.00000	0.15	1804.769	315.08	0.02
CornerB	M002	1517.99	AMEC-100-2080-Ma	238.900000	11.180	20.195920		20.1974	0.00000	0.17	1529.548	271.97	0.02
CornerB	M002	1505.64	AMEC-100-2080-Ma	238.900000	10.940	20.194670		20.1972	0.00000	0.23	1138.154	201.85	0.03
CornerB	M002	1490.63	AMEC-100-2080-Ma	238.900000	10.640	20.191210		20.1968	0.00001	0.34	789.272	145.78	0.04
CornerB	M002	1463.65	AMEC-100-2080-Ma	238.900000	10.110	20.172730		20.1947	0.00004	0.69	442.926	96.47	0.08
CornerB	M002	1415.93	AMEC-100-2080-Ma	238.900000	9.170	20.169760		20.1926	0.00004	0.69	410.420	85.40	0.08
CornerB	M002	1386.11	AMEC-100-2080-Ma	238.900000	8.580	20.161070		20.1906	0.00006	0.80	380.836	80.83	0.09
CornerB	M002	1363.91	AMEC-100-2080-Ma	238.900000	8.140	20.139700		20.1872	0.00009	1.03	301.774	60.24	0.11
CornerB	M002	1356.61	AMEC-100-2080-Ma	238.900000	8.000	20.141740		20.1845	0.00024	1.23	323.348	75.22	0.12
CornerB	M002	1354.11	AMEC-100-2080-Ma	238.900000	15.350	19.950120		20.1659	0.00157	2.75	139.636	59.87	0.41
CornerB	M002	1352.01	AMEC-100-2080-Ma	238.900000	8.000	11.653360	11.6534	12.9648	0.02807	4.06	47.970	17.52	1.01
CornerB	M002	1347.51	AMEC-100-2080-Ma	238.900000	7.720	10.783830	11.2503	12.7108	0.02764	6.18	39.728	19.10	1.32
CornerB	M002	1336.58	AMEC-100-2080-Ma	238.900000	7.690	9.942409	10.6785	12.2977	0.04297	6.91	36.963	24.17	1.62
CornerB	M002	1326.83	AMEC-100-2080-Ma	238.900000	7.680	11.170870	10.2891	11.6489	0.00474	3.26	84.888	32.03	0.59
CornerB	M002	1317.22	AMEC-100-2080-Ma	238.900000	7.660	11.036900		11.5900	0.00605	3.45	78.416	32.89	0.65
CornerB	M002	1315.18	AMEC-100-2080-Ma	238.900000	7.280	10.499670	10.4997	11.5236	0.01543	4.89	58.790	30.52	1.00
CornerB	M002	1313.58	AMEC-100-2080-Ma	238.900000	6.480	9.672698	10.1419	11.4193	0.02929	6.24	44.918	26.46	1.35
CornerB	M002	1312.39	AMEC-100-2080-Ma	238.900000	6.230	9.211168	9.8536	11.3407	0.03683	6.78	40.332	24.87	1.51
CornerB	M002	1311.16	AMEC-100-2080-Ma	238.900000	5.920	8.754305	9.5209	11.2511	0.04879	7.17	36.026	23.62	1.70
CornerB	M002	1309.11	AMEC-100-2080-Ma	238.900000	5.910	8.348193	9.2004	11.1188	0.05464	7.52	34.092	22.78	1.80
CornerB	M002	1305.35	AMEC-100-2080-Ma	238.900000	5.370	7.634167	8.5686	10.8304	0.06959	8.38	33.373	25.22	2.03
CornerB	M002	1300.06	AMEC-100-2080-Ma	238.900000	5.060	7.131137	8.0879	10.4359	0.08151	8.19	30.966	23.96	2.15
CornerB	M002	1296.49	AMEC-100-2080-Ma	238.900000	4.910	7.386940	8.1934	10.0245	0.04452	7.43	35.754	21.80	1.67
CornerB	M002	1289.64	AMEC-100-2080-Ma	238.900000	4.710	7.357876	8.0283	9.6462	0.03671	6.97	38.384	21.50	1.53
CornerB	M002	1284.12	AMEC-100-2080-Ma	238.900000	4.410	7.545844	7.9784	9.3470	0.02241	6.29	44.552	21.90	1.23
CornerB	M002	1279.52	AMEC-100-2080-Ma	238.900000	4.230	7.124981	7.7231	9.2072	0.02723	6.66	41.198	21.94	1.35
CornerB	M002	1258.94	AMEC-100-2080-Ma	238.900000	3.530	5.571984	6.4165	8.3216	0.06394	7.80	36.418	30.33	1.94
CornerB	M002	1246.98	AMEC-100-2080-Ma	238.900000	3.370	5.156489	6.0776	7.6116	0.04275	7.07	36.527	27.05	1.77

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2080-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1233.83	AMEC-100-2080-Ma	238.900000	3.100	4.797160	5.5569	6.8945	0.05056	6.74	41.086	39.20	1.87
CornerB	M002	1215.66	AMEC-100-2080-Ma	238.900000	2.700	4.362203	4.9185	5.9732	0.03215	5.82	48.661	52.08	1.52
CornerB	M002	1206.83	AMEC-100-2080-Ma	238.900000	2.540	5.154371	4.8005	5.5209	0.00498	3.03	107.413	69.32	0.64
CornerB	M002	1194.69	AMEC-100-2080-Ma	238.900000	2.390	5.130500		5.4613	0.00439	2.94	112.528	66.80	0.61
CornerB	M002	1185.06	AMEC-100-2080-Ma	238.900000	2.260	5.115189		5.4075	0.00349	2.77	121.171	68.75	0.55
CornerB	M002	1142.41	AMEC-100-2080-Ma	238.900000	1.700	5.035704		5.2670	0.00276	2.55	140.903	85.03	0.49
CornerB	M002	1137.55	AMEC-100-2080-Ma	238.900000	1.600	4.783227	4.6411	5.2082	0.00589	3.24	111.862	108.81	0.69
CornerB	M002	1110.53	AMEC-100-2080-Ma	238.900000	1.390	4.273671	4.2737	4.9939	0.00772	4.08	84.232	75.36	0.82
CornerB	M002	1090.67	AMEC-100-2080-Ma	238.900000	1.100	4.507705	3.5157	4.6850	0.00200	2.28	171.065	146.54	0.42
CornerB	M002	1070.69	AMEC-100-2080-Ma	238.900000	0.800	4.528506	3.1699	4.6382	0.00101	1.84	210.891	123.97	0.31
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	AMEC-100-2080-Ma	238.900000	0.760	4.507354	3.1401	4.6082	0.00092	1.78	208.853	117.18	0.30
CornerB	M002	1047.01	AMEC-100-2080-Ma	238.900000	0.750	4.480815		4.5892	0.00086	1.93	200.078	92.18	0.33
CornerB	M002	1004.03	AMEC-100-2080-Ma	238.900000	0.770	4.440362		4.5496	0.00080	1.86	234.728	142.01	0.32
CornerB	M002	959.21	AMEC-100-2080-Ma	238.900000	0.700	4.460813		4.5051	0.00050	1.47	371.311	288.80	0.25
CornerB	M002	915.75	AMEC-100-2080-Ma	238.000000	0.680	4.453774		4.4790	0.00036	1.21	447.520	297.55	0.21
CornerB	M002	869.66	AMEC-100-2080-Ma	238.000000	0.690	4.443942		4.4644	0.00023	1.01	468.322	226.64	0.17
CornerB	M002	828.33	AMEC-100-2080-Ma	231.800000	0.770	4.436076		4.4557	0.00025	1.00	455.722	228.88	0.18
CornerB	M002	784.55	AMEC-100-2080-Ma	231.800000	0.820	4.432787		4.4471	0.00016	0.82	477.805	235.29	0.14
CornerB	M002	739.85	AMEC-100-2080-Ma	231.800000	0.820	4.424520		4.4398	0.00016	0.78	496.988	278.06	0.14
CornerB	M002	696.36	AMEC-100-2080-Ma	231.800000	0.640	4.407467		4.4301	0.00022	0.97	438.003	268.28	0.17
CornerB	M001	659.37	AMEC-100-2080-Ma	244.900000	0.750	4.395924		4.4228	0.00025	0.98	409.184	239.05	0.17
CornerB	M001	643.93	AMEC-100-2080-Ma	244.900000	0.740	4.375812	3.2545	4.4167	0.00037	1.21	347.969	224.02	0.21
CornerB	M001	635		Bridge									
CornerB	M001	629.03	AMEC-100-2080-Ma	244.900000	0.830	4.091770	3.3406	4.1801	0.00085	1.74	247.591	186.62	0.32
CornerB	M001	608.52	AMEC-100-2080-Ma	244.900000	0.760	4.076072		4.1611	0.00106	1.86	235.067	167.05	0.35
CornerB	M001	570.12	AMEC-100-2080-Ma	244.900000	0.610	4.077474		4.1204	0.00056	1.43	309.162	187.69	0.26
CornerB	M001	535.83	AMEC-100-2080-Ma	244.900000	0.560	4.053192	2.2568	4.1040	0.00035	1.23	315.167	223.28	0.21
CornerB	M001	520.22	AMEC-100-2080-Ma	244.900000	0.550	4.059710	2.6644	4.0944	0.00027	1.07	365.495	294.07	0.18
CornerB	M001	472.07	AMEC-100-2080-Ma	244.900000	0.580	3.992019	3.2166	4.0709	0.00065	1.61	269.897	210.74	0.28
CornerB	M001	460		Bridge									
CornerB	M001	445.11	AMEC-100-2080-Ma	244.900000	0.440	3.649217	2.6070	3.8623	0.00147	2.37	206.963	254.89	0.42
CornerB	M001	425.41	AMEC-100-2080-Ma	244.900000	0.480	3.687339		3.7788	0.00088	1.78	313.368	320.06	0.33
CornerB	M001	401.99	AMEC-100-2080-Ma	244.900000	0.740	3.704679		3.7475	0.00051	1.32	414.633	352.77	0.25
CornerB	M001	381.26	AMEC-100-2080-Ma	244.900000	0.790	3.650590	3.2745	3.7279	0.00098	1.75	334.940	356.98	0.34
CornerB	M001	380		Bridge									
CornerB	M001	375.14	AMEC-100-2080-Ma	244.900000	0.790	3.587359	3.2821	3.6741	0.00115	1.89	326.774	377.25	0.37
CornerB	M001	352.89	AMEC-100-2080-Ma	244.900000	0.680	3.527281		3.6410	0.00107	1.85	305.061	430.01	0.35
CornerB	M001	324.13	AMEC-100-2080-Ma	244.900000	0.670	3.452246		3.6023	0.00138	2.06	259.132	378.13	0.40
CornerB	M001	292.92	AMEC-100-2080-Ma	244.900000	0.650	3.467765		3.5473	0.00087	1.62	349.020	445.36	0.32
CornerB	M001	274.62	AMEC-100-2080-Ma	244.900000	0.960	3.472312	2.8821	3.5176	0.00112	1.67	381.736	454.21	0.35
CornerB	M001	270		Bridge									
CornerB	M001	266.99	AMEC-100-2080-Ma	244.900000	1.010	3.459453	2.8290	3.4903	0.00095	1.54	415.378	447.13	0.32
CornerB	M001	245.99	AMEC-100-2080-Ma	244.900000	0.640	3.445179		3.4748	0.00063	1.33	489.325	554.70	0.27
CornerB	M001	210.89	AMEC-100-2080-Ma	244.900000	0.680	3.423909		3.4523	0.00063	1.26	478.249	504.60	0.26
CornerB	M001	174.77	AMEC-100-2080-Ma	244.900000	0.690	3.411321		3.4307	0.00047	1.02	546.111	637.46	0.22
CornerB	M001	155.66	AMEC-100-2080-Ma	244.900000	0.640	3.409401	2.6117	3.4203	0.00041	0.88	649.506	772.58	0.20
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	AMEC-100-2080-Ma	244.900000	0.550	3.405795	2.5564	3.4166	0.00035	0.81	638.512	709.09	0.19
CornerB	M001	129.05	AMEC-100-2080-Ma	244.900000	0.400	3.397080		3.4080	0.00026	0.81	705.617	759.73	0.17
CornerB	M001	80.73	AMEC-100-2080-Ma	244.900000	0.200	3.376629		3.3943	0.00029	0.96	608.919	622.50	0.18
CornerB	M001	23.81	AMEC-100-2080-Ma	244.900000	0.320	3.360115	2.2711	3.3787	0.00028	0.90	612.672	621.28	0.18
BellsB	TR001	178.13	AMEC-100-2080-Ma	21.400000	92.910	96.256210	94.7924	96.3219	0.00062	1.36	25.216	15.31	0.25
BellsB	TR001	159.86	AMEC-100-2080-Ma	21.400000	92.150	96.279690		96.3036	0.00019	0.91	43.454	21.78	0.15
BellsB	TR001	139.54	AMEC-100-2080-Ma	21.400000	91.130	96.119360	93.1522	96.2829	0.00073	1.79	11.949	35.24	0.26
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	AMEC-100-2080-Ma	21.400000	89.490	91.666610	91.6666	92.6892	0.01114	4.52	4.911	7.39	1.00
BellsB	TR001	88.17	AMEC-100-2080-Ma	21.400000	88.470	89.541260	90.2104	92.1388	0.10206	7.71	3.512	5.74	2.69
BellsB	TR001	84.12	AMEC-100-2080-Ma	21.400000	87.660	88.524290	89.1559	91.5094	0.17644	7.86	3.063	7.13	3.36
BellsB	TR001	79.14	AMEC-100-2080-Ma	21.400000	86.530	87.438580	88.1349	90.6675	0.14251	8.38	3.154	6.70	3.17
BellsB	TR001	72.74	AMEC-100-2080-Ma	21.400000	85.760	86.519120	87.1172	89.5679	0.18257	7.93	3.045	7.56	3.41
BellsB	TR001	67.75	AMEC-100-2080-Ma	21.400000	85.040	85.685570	86.2372	88.3874	0.21493	7.74	3.243	8.18	3.60
BellsB	TR001	64.04	AMEC-100-2080-Ma	21.400000	84.470	85.299670	85.8769	87.6400	0.13366	6.79	3.198	6.46	2.94
BellsB	TR001	60.69	AMEC-100-2080-Ma	21.400000	84.140	85.228230	85.7329	87.1392	0.09206	6.34	3.840	7.58	2.49
BellsB	TR001	56.76	AMEC-100-2080-Ma	21.400000	83.970	85.032570	85.5085	86.7500	0.07625	5.88	3.940	7.93	2.28
BellsB	TR001	50.93	AMEC-100-2080-Ma	21.400000	83.680	84.801830	85.2078	86.2233	0.07380	5.47	4.463	9.68	2.22
BellsB	TR001	43.86	AMEC-100-2080-Ma	21.400000	83.340	84.334890	84.7035	85.6628	0.07637	5.28	4.603	10.25	2.24
BellsB	TR001	37.01	AMEC-100-2080-Ma	21.400000	82.980	84.021510	84.3665	85.1825	0.05295	5.10	5.136	9.48	1.93
BellsB	TR001	12.14	AMEC-100-2080-Ma	21.400000	82.150	83.154820	83.3973	83.9664	0.03842	4.28	6.003	10.44	1.64
BellsB	M002	5166.11	AMEC-100-2080-Ma	17.400000	190.790	192.028900	191.9016	192.1954	0.00922	2.56	12.696	19.01	0.77
BellsB	M002	5149.23	AMEC-100-2080-Ma	17.400000	190.570	191.682700	191.6827	191.9888	0.01498	2.95	9.282	15.53	0.96
BellsB	M002	5117.45	AMEC-100-2080-Ma	17.400000	189.910	191.623800	190.8592	191.6560	0.00139	1.27	26.347	24.99	0.32
BellsB	M002	5090.85	AMEC-100-2080-Ma	17.400000	189.620	191.171300	191.1713	191.5372	0.01330	3.42	9.152	12.83	0.93
BellsB	M002	5067.47	AMEC-100-2080-Ma	17.400000	189.180	189.821800	190.1308	190.8424	0.11963	6.00	4.570	9.55	2.51
BellsB	M002	5017.78	AMEC-100-2080-Ma	17.400000	188.120	189.368600	189.3686	189.6961	0.01680	3.44	8.925	12.68	1.03
BellsB	M002	4967.57	AMEC-100-2080-Ma	17.400000	186.550	187.925000	188.0842	188.5764	0.02925	4.38	6.073	7.96	1.31
BellsB	M002	4917.46	AMEC-100-2080-Ma	17.400000	185.690	187.523100	186.6130	187.5536	0.00091	1.10	30.210	31.35	0.26
BellsB	M002	4873.31	AMEC-100-2080-Ma	17.400000	184.610	187.482300		187.5187	0.00082	1.29	36.549	47.41	0.25
BellsB	M002	4853.42	AMEC-100-2080-Ma	17.400000	183.550	187.268600	185.4738	187.4812	0.00135	2.04	8.517	33.60	0.35
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	AMEC-100-2080-Ma	17.400000	181.530	183.027900	183.4303	184.4995	0.03244	5.37	3.237	6.52	1.48
BellsB	M002	4785.76	AMEC-100-2080-Ma	17.400000	181.350	182.359700	182.7084	183.4681	0.05899	5.27	4.443	7.71	1.84
BellsB	M002	4756.65	AMEC-100-2080-Ma	17.400000	180.120	181.106600	181.3278	181.8131	0.04731	4.79	6.137	13.73	1.66
BellsB	M002	4727.54	AMEC-100-2080-Ma	17.400000	179.020	179.867800	180.0629	180.5062	0.04031	4.39	6.664	16.59	1.62
BellsB	M002	4707.54	AMEC-100-2080-Ma	17.400000	177.960	178.392700	178.6190	179.2099	0.12068	4.91	5.079	16.94	2.55
BellsB	M002	4702.24	AMEC-100-2080-Ma	17.400000	177.650	178.574100	178.5997	178.8569	0.01786	2.98	9.167	17.89	1.09
BellsB	M002	4682.48	AMEC-100-2080-Ma	17.400000	176.630	177.421300	177.6665	178.2134	0.05156	4.58	5.740	14.99	1.81

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2080-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4658.79	AMEC-100-2080-Ma	17.400000	175.500	176.844500	177.0297	177.5412	0.01801	4.12	6.019	8.10	1.17
BellsB	M002	4633.41	AMEC-100-2080-Ma	17.400000	174.510	175.265100	175.5944	176.6080	0.10665	6.63	4.665	13.40	2.60
BellsB	M002	4609.61	AMEC-100-2080-Ma	17.400000	173.500	174.945900	174.6068	175.1082	0.00482	2.30	12.168	13.06	0.63
BellsB	M002	4583.99	AMEC-100-2080-Ma	17.400000	172.770	174.408500	174.4085	174.8974	0.01092	3.38	7.039	8.40	0.91
BellsB	M002	4534.72	AMEC-100-2080-Ma	17.400000	170.000	171.019400	171.5443	173.3820	0.11754	8.56	3.463	6.77	2.84
BellsB	M002	4485.52	AMEC-100-2080-Ma	17.400000	168.200	168.891800	169.0675	169.4561	0.05681	4.56	6.746	18.73	1.86
BellsB	M002	4436.28	AMEC-100-2080-Ma	31.100000	165.850	167.213700	167.4273	167.8756	0.02449	4.91	13.016	28.68	1.39
BellsB	M002	4387.04	AMEC-100-2080-Ma	31.100000	164.060	165.415000	165.7395	166.3971	0.03546	5.87	9.572	13.85	1.67
BellsB	M002	4337.81	AMEC-100-2080-Ma	31.100000	162.600	163.848500	164.0779	164.5605	0.03600	5.45	12.195	25.34	1.63
BellsB	M002	4288.56	AMEC-100-2080-Ma	31.100000	161.300	162.575800	162.7128	163.0864	0.02707	4.67	12.759	20.61	1.40
BellsB	M002	4239.33	AMEC-100-2080-Ma	31.100000	159.650	160.796600	161.0072	161.6615	0.03650	5.19	9.832	16.11	1.64
BellsB	M002	4190.09	AMEC-100-2080-Ma	31.100000	158.430	159.697200	159.8650	160.2563	0.02183	4.33	12.523	19.43	1.29
BellsB	M002	4140.85	AMEC-100-2080-Ma	31.100000	157.300	158.030600	158.1664	158.5261	0.05458	4.84	11.325	23.14	1.88
BellsB	M002	4091.61	AMEC-100-2080-Ma	31.100000	155.300	156.217300	156.2894	156.6208	0.03070	4.32	12.879	21.35	1.47
BellsB	M002	4042.37	AMEC-100-2080-Ma	31.100000	153.740	154.793300	154.8843	155.3097	0.02254	3.97	11.621	15.75	1.29
BellsB	M002	3993.13	AMEC-100-2080-Ma	31.100000	152.650	153.534200	153.6621	153.9998	0.03781	4.33	12.358	24.00	1.55
BellsB	M002	3943.89	AMEC-100-2080-Ma	31.100000	151.360	152.428500	152.4423	152.7850	0.01986	3.74	14.261	21.44	1.21
BellsB	M002	3894.65	AMEC-100-2080-Ma	31.100000	149.520	151.173900	151.3811	151.8578	0.02150	4.58	11.977	18.96	1.26
BellsB	M002	3869.08	AMEC-100-2080-Ma	31.100000	148.870	150.295200	150.4994	151.2118	0.02847	5.07	9.423	12.91	1.47
BellsB	M002	3845.41	AMEC-100-2080-Ma	31.100000	148.370	149.738300	149.9646	150.4744	0.02932	4.80	11.060	18.45	1.39
BellsB	M002	3822.22	AMEC-100-2080-Ma	31.100000	147.710	150.153600	148.8387	150.1939	0.00080	1.26	39.418	21.83	0.26
BellsB	M002	3796.17	AMEC-100-2080-Ma	31.100000	146.890	150.100300		150.1689	0.00093	1.55	33.549	18.06	0.28
BellsB	M002	3765.39	AMEC-100-2080-Ma	31.100000	146.400	150.079600		150.1438	0.00070	1.42	33.749	16.04	0.25
BellsB	M002	3746.94	AMEC-100-2080-Ma	31.100000	145.760	150.114100		150.1236	0.00009	0.62	80.578	28.83	0.10
BellsB	M002	3724.94	AMEC-100-2080-Ma	31.100000	145.320	150.085900		150.1182	0.00025	1.01	48.324	18.01	0.15
BellsB	M002	3697.71	AMEC-100-2080-Ma	31.100000	145.050	150.090400		150.1093	0.00014	0.80	57.683	19.27	0.12
BellsB	M002	3677.71	AMEC-100-2080-Ma	31.100000	143.440	150.096300	146.1810	150.1050	0.00004	0.51	89.200	24.48	0.07
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	AMEC-100-2080-Ma	31.100000	142.470	145.127000	145.1270	146.4172	0.01009	5.03	6.180	10.64	1.00
BellsB	M002	3623.19	AMEC-100-2080-Ma	31.100000	142.100	143.719100	144.3298	145.7795	0.06031	7.19	5.771	7.86	2.04
BellsB	M002	3573.45	AMEC-100-2080-Ma	31.100000	140.890	142.518500	142.8489	143.6057	0.02661	5.13	9.480	24.72	1.42
BellsB	M002	3520.99	AMEC-100-2080-Ma	31.100000	139.300	141.047900	141.3674	142.1874	0.02679	5.36	9.880	27.85	1.41
BellsB	M002	3473.83	AMEC-100-2080-Ma	31.100000	137.980	139.989000	140.3492	140.8902	0.02292	5.28	10.224	17.26	1.28
BellsB	M002	3424.29	AMEC-100-2080-Ma	31.100000	136.490	137.920700	138.4024	139.3811	0.03389	5.60	6.417	7.07	1.59
BellsB	M002	3400.36	AMEC-100-2080-Ma	31.100000	135.960	138.917100	137.3703	138.9759	0.00055	1.23	44.950	67.65	0.24
BellsB	M002	3386.31	AMEC-100-2080-Ma	31.100000	135.480	138.916700	138.1000	138.9640	0.00043	1.28	63.337	93.29	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	AMEC-100-2080-Ma	31.100000	135.220	138.940700	137.6501	138.9462	0.00005	0.46	133.382	76.85	0.08
BellsB	M002	3329.08	AMEC-100-2080-Ma	39.899990	134.960	138.937500		138.9440	0.00007	0.56	136.695	59.44	0.09
BellsB	M002	3303.55	AMEC-100-2080-Ma	39.899990	133.820	138.888200	136.9581	138.9371	0.00033	1.36	64.354	52.25	0.20
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	AMEC-100-2080-Ma	39.899990	131.390	134.920200	134.9202	136.4503	0.01014	5.48	7.280	22.26	1.00
BellsB	M002	3203.83	AMEC-100-2080-Ma	39.899990	131.130	132.472000	133.1132	135.5316	0.12418	8.74	6.744	14.15	2.86
BellsB	M002	3176.31	AMEC-100-2080-Ma	39.899990	130.020	131.570600	132.0625	133.1432	0.05042	6.71	9.507	14.23	1.91
BellsB	M002	3157.63	AMEC-100-2080-Ma	39.899990	129.890	131.340200	131.5601	132.1063	0.03971	5.42	12.678	19.26	1.60
BellsB	M002	3130.11	AMEC-100-2080-Ma	39.899990	128.680	130.879400	131.0531	131.5583	0.01111	4.20	15.325	20.31	0.97
BellsB	M002	3083.82	AMEC-100-2080-Ma	39.899990	127.940	129.593300	129.9288	130.7171	0.03133	5.72	12.824	24.52	1.56
BellsB	M002	3037.68	AMEC-100-2080-Ma	39.899990	127.110	128.171100	128.4119	128.9048	0.04298	5.40	13.785	26.85	1.76
BellsB	M002	2991.47	AMEC-100-2080-Ma	39.899990	126.280	128.347800	127.4229	128.3761	0.00070	1.12	57.397	47.38	0.25
BellsB	M002	2945.26	AMEC-100-2080-Ma	39.899990	125.320	128.041300	128.0413	128.2873	0.00435	2.51	27.530	59.14	0.51
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	AMEC-100-2080-Ma	39.899990	125.120	127.976500	127.9765	128.2458	0.00426	2.63	27.315	66.86	0.51
BellsB	M002	2918.61	AMEC-100-2080-Ma	39.899990	124.990	126.824100	127.2322	127.8749	0.02382	5.45	12.784	28.22	1.39
BellsB	M002	2899.46	AMEC-100-2080-Ma	39.899990	125.250	126.597200	126.8441	127.3675	0.01710	4.26	15.480	61.82	1.19
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	AMEC-100-2080-Ma	39.899990	124.440	125.950100	125.9501	126.2809	0.00673	2.86	18.407	21.10	0.78
BellsB	M002	2861.32	AMEC-100-2080-Ma	39.899990	123.640	124.912100	125.2113	125.8316	0.03280	5.37	11.644	19.88	1.65
BellsB	M002	2823.69	AMEC-100-2080-Ma	39.899990	123.230	124.408300	124.4858	124.7927	0.02481	3.98	18.303	33.65	1.25
BellsB	M002	2777.91	AMEC-100-2080-Ma	39.899990	122.770	124.119300	123.7910	124.1713	0.00335	1.65	46.123	62.21	0.47
BellsB	M002	2727.91	AMEC-100-2080-Ma	39.899990	122.210	123.810200	123.8102	124.0035	0.00828	2.82	32.905	68.08	0.75
BellsB	M002	2677.99	AMEC-100-2080-Ma	39.899990	121.130	122.933500	123.1223	123.4554	0.01363	3.76	16.778	40.40	0.97
BellsB	M002	2628.09	AMEC-100-2080-Ma	39.899990	120.690	122.301300	122.3739	122.7218	0.01720	4.10	20.726	35.73	1.09
BellsB	M002	2578.18	AMEC-100-2080-Ma	39.899990	119.940	121.818400	121.6718	122.0084	0.00687	2.81	27.897	35.85	0.69
BellsB	M002	2528.27	AMEC-100-2080-Ma	39.899990	119.100	121.064200	121.0642	121.5455	0.01334	3.97	16.937	17.52	0.97
BellsB	M002	2518.19	AMEC-100-2080-Ma	39.899990	118.620	120.810700	120.6320	121.1222	0.00794	3.31	21.618	21.71	0.76
BellsB	M002	2496.15	AMEC-100-2080-Ma	39.899990	118.530	120.857500		120.9708	0.00303	2.18	34.697	30.99	0.48
BellsB	M002	2478.37	AMEC-100-2080-Ma	39.899990	117.970	120.489200		120.8736	0.00697	3.43	19.698	16.69	0.73
BellsB	M002	2450.61	AMEC-100-2080-Ma	39.899990	117.550	119.969600	119.9696	120.5956	0.01175	4.39	15.433	13.12	0.95
BellsB	M002	2428.46	AMEC-100-2080-Ma	39.899990	117.190	118.586100	119.0260	120.0047	0.06012	6.23	9.970	16.94	1.90
BellsB	M002	2408.52	AMEC-100-2080-Ma	39.899990	116.630	118.035400	118.3305	118.9388	0.04847	5.61	12.439	21.17	1.70
BellsB	M002	2378.55	AMEC-100-2080-Ma	39.899990	116.150	117.909900	117.9264	118.2710	0.01505	3.99	21.180	31.08	1.01
BellsB	M002	2367.92	AMEC-100-2080-Ma	39.899990	115.610	116.868000	117.1869	117.9140	0.05182	5.96	11.587	18.87	1.81
BellsB	M002	2352.81	AMEC-100-2080-Ma	39.899990	115.070	116.443900	116.6819	117.2525	0.03574	5.24	12.713	17.38	1.52
BellsB	M002	2328.64	AMEC-100-2080-Ma	39.899990	113.990	116.023000	116.1663	116.6314	0.01615	4.49	16.504	21.08	1.07
BellsB	M002	2307.61	AMEC-100-2080-Ma	39.899990	112.940	116.241200	115.5790	116.2908	0.00080	1.30	57.108	49.17	0.25
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	AMEC-100-2080-Ma	43.099990	111.750	114.281100	114.2811	115.3995	0.01726	4.69	9.225	9.11	1.00
BellsB	M002	2275.77	AMEC-100-2080-Ma	43.099990	112.060	113.735300	114.1410	114.8840	0.04019	6.27	12.018	18.18	1.64
BellsB	M002	2232.72	AMEC-100-2080-Ma	43.099990	110.580	112.662100	112.9196	113.5661	0.02025	5.08	13.715	14.87	1.20
BellsB	M002	2200.99	AMEC-100-2080-Ma	43.099990	109.610	112.203500	111.8595	112.5405	0.00612	3.26	21.404	16.35	0.69
BellsB	M002	2173.21	AMEC-100-2080-Ma	43.099990	108.980	111.589400	111.5894	112.2832	0.01083	4.26	14.906	11.20	0.88
BellsB	M002	2133.27	AMEC-100-2080-Ma	43.099990	107.790	109.318200	109.9130	111.2980	0.06281	7.32	8.832	12.00	2.03
BellsB	M002	2117.78	AMEC-100-2080-Ma	43.099990	107.460	109.180400	109.6346	110.4261	0.03074	5.75	11.190	13.02	1.48
BellsB	M002	2103.01	AMEC-100-2080-Ma	43.099990	106.450	108.077900	108.5820	109.7407	0.05688	6.89	9.100	10.51	1.89
BellsB	M002	2085.77	AMEC-100-2080-Ma	43.099990	105.170	106.918500	107.4904	108.7286	0.05368	7.30	8.795	8.97	1.89
BellsB	M002	2068.57	AMEC-100-2080-Ma	43.099990	104.360	105.535100	106.0997	107.6089	0.09412	7.84	8.358	12.62	2.44
BellsB	M002	2059.88	AMEC-100-2080-Ma	43.099990	103.560	105.149100	105.6845	106.9742	0.05018	6.70	8.998	11.12	1.84

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2080-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2054.52	AMEC-100-2080-Ma	43.099990	103.130	104.685800	105.2625	106.6499	0.06584	7.39	8.339	8.87	2.06
BellsB	M002	2040.56	AMEC-100-2080-Ma	43.099990	102.390	104.142700	104.7084	105.9456	0.03612	6.63	8.781	7.09	1.64
BellsB	M002	2033.27	AMEC-100-2080-Ma	43.099990	102.080	104.684600	104.7437	105.5189	0.01419	4.64	13.122	9.26	1.00
BellsB	M002	2025.44	AMEC-100-2080-Ma	43.099990	101.580	103.262900	103.8894	105.2211	0.04620	6.76	8.327	8.71	1.77
BellsB	M002	2021.67	AMEC-100-2080-Ma	43.099990	101.430	103.563900	103.9862	104.8989	0.02814	5.61	10.143	9.66	1.37
BellsB	M002	2014.53	AMEC-100-2080-Ma	43.099990	99.960	101.719500	102.5270	104.4328	0.08868	7.38	6.244	7.28	2.24
BellsB	M002	2010.46	AMEC-100-2080-Ma	43.099990	99.080	100.411400	101.3200	103.9209	0.12716	9.35	6.077	7.25	2.83
BellsB	M002	2007.37	AMEC-100-2080-Ma	43.099990	98.520	100.176200	101.0975	103.5283	0.10370	8.29	5.716	5.92	2.44
BellsB	M002	1996.87	AMEC-100-2080-Ma	43.099990	97.970	99.265510	100.1235	102.3985	0.09857	8.72	6.465	7.06	2.56
BellsB	M002	1982.97	AMEC-100-2080-Ma	43.099990	97.730	99.086510	99.6768	100.9727	0.05984	7.13	8.362	8.38	2.02
BellsB	M002	1966.25	AMEC-100-2080-Ma	43.099990	96.750	98.950820	99.2846	100.1387	0.02567	5.54	10.878	9.37	1.31
BellsB	M002	1951.81	AMEC-100-2080-Ma	43.099990	96.560	99.142110	98.4305	99.3403	0.00373	2.52	24.949	14.87	0.53
BellsB	M002	1939.94	AMEC-100-2080-Ma	43.099990	96.290	98.605880	98.6059	99.2189	0.01216	3.97	15.248	12.99	0.93
BellsB	M002	1918.81	AMEC-100-2080-Ma	43.099990	95.860	98.416810	98.0217	98.7903	0.00649	3.39	19.657	12.86	0.71
BellsB	M002	1910.32	AMEC-100-2080-Ma	43.099990	95.580	97.942740	97.9427	98.6827	0.01160	4.18	13.763	10.32	0.93
BellsB	M002	1896.87	AMEC-100-2080-Ma	43.099990	94.380	96.126020	96.7708	98.2400	0.06246	7.32	8.091	8.81	1.96
BellsB	M002	1887.59	AMEC-100-2080-Ma	43.099990	93.870	95.201190	95.8389	97.5144	0.09358	7.68	7.650	10.51	2.40
BellsB	M002	1880.79	AMEC-100-2080-Ma	43.099990	93.330	96.236310	95.5195	96.5102	0.00355	2.76	22.960	12.53	0.54
BellsB	M002	1870.34	AMEC-100-2080-Ma	43.099990	92.770	96.253390		96.4640	0.00207	2.49	26.750	10.65	0.44
BellsB	M002	1857.16	AMEC-100-2080-Ma	43.099990	91.880	96.305180		96.4152	0.00103	1.85	36.068	14.83	0.30
BellsB	M002	1848.27	AMEC-100-2080-Ma	43.099990	91.910	96.329830		96.3958	0.00050	1.40	47.410	17.16	0.22
BellsB	M002	1834.27	AMEC-100-2080-Ma	43.099990	90.880	96.333770		96.3864	0.00032	1.24	54.401	17.75	0.17
BellsB	M002	1821.35	AMEC-100-2080-Ma	43.099990	90.900	96.348290		96.3758	0.00018	1.03	72.481	21.08	0.14
BellsB	M002	1807.43	AMEC-100-2080-Ma	43.099990	89.830	96.351360		96.3717	0.00011	0.85	85.274	21.95	0.11
BellsB	M002	1800.77	AMEC-100-2080-Ma	43.099990	89.590	96.352570		96.3701	0.00011	0.85	90.546	23.06	0.11
BellsB	M002	1777.98	AMEC-100-2080-Ma	43.099990	88.770	96.358560		96.3657	0.00004	0.55	138.518	30.47	0.06
BellsB	M002	1753.27	AMEC-100-2080-Ma	43.099990	88.220	96.356060		96.3646	0.00004	0.60	132.266	30.81	0.07
BellsB	M002	1729.73	AMEC-100-2080-Ma	43.099990	88.170	96.357680		96.3628	0.00002	0.48	162.541	32.86	0.05
BellsB	M002	1705.77	AMEC-100-2080-Ma	43.099990	87.600	96.358800		96.3618	0.00001	0.38	257.871	65.47	0.04
BellsB	M002	1688.91	AMEC-100-2080-Ma	43.099990	86.720	96.356080	90.6267	96.3613	0.00001	0.42	216.018	69.62	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	AMEC-100-2080-Ma	43.099990	83.970	87.855110	87.8551	89.7929	0.00764	6.17	6.988	21.64	1.00
BellsB	M002	1605.59	AMEC-100-2080-Ma	43.099990	81.490	82.332600	83.1101	88.1703	0.47923	11.41	4.455	12.76	5.46
BellsB	M001	1582.05	AMEC-100-2080-Ma	68.800000	80.410	81.722770	82.8275	86.6754	0.12517	10.23	7.715	9.44	3.20
BellsB	M001	1563.67	AMEC-100-2080-Ma	68.800000	79.960	81.416980	82.2612	84.4835	0.06582	8.42	10.438	11.25	2.41
BellsB	M001	1544.26	AMEC-100-2080-Ma	68.800000	79.040	81.106180	81.8288	83.3726	0.03257	7.40	12.811	10.30	1.77
BellsB	M001	1529.04	AMEC-100-2080-Ma	68.800000	78.240	79.734260	80.6028	82.6927	0.05128	7.96	10.092	8.97	2.17
BellsB	M001	1515.66	AMEC-100-2080-Ma	68.800000	77.300	79.435390	80.2231	81.9369	0.04458	7.30	10.931	8.31	1.77
BellsB	M001	1502.43	AMEC-100-2080-Ma	68.800000	69.640	70.376940	71.4562	79.7025	0.78343	13.58	5.159	11.68	6.23
BellsB	M001	1483.47	AMEC-100-2080-Ma	68.800000	68.890	70.014600	70.6441	72.5355	0.13306	7.90	10.879	16.65	2.79
BellsB	M001	1454.75	AMEC-100-2080-Ma	68.800000	68.030	69.693620	69.9103	70.6058	0.02669	5.37	18.504	16.54	1.39
BellsB	M001	1406.62	AMEC-100-2080-Ma	68.800000	66.490	69.029300	69.0293	69.8440	0.01282	4.78	20.463	13.10	1.01
BellsB	M001	1358.51	AMEC-100-2080-Ma	68.800000	65.170	66.888240	67.4484	68.6990	0.04406	6.56	13.297	12.54	1.75
BellsB	M001	1310.38	AMEC-100-2080-Ma	68.800000	63.800	65.543650	65.9481	66.7960	0.03033	5.61	17.141	18.95	1.47
BellsB	M001	1286.33	AMEC-100-2080-Ma	68.800000	62.810	64.359760	64.7851	65.8234	0.05480	6.50	15.343	21.15	1.89
BellsB	M001	1262.25	AMEC-100-2080-Ma	68.800000	62.090	64.470410	64.6063	65.0592	0.01533	4.65	26.303	29.47	1.04
BellsB	M001	1251.58	AMEC-100-2080-Ma	68.800000	61.460	63.615410	63.9987	64.7920	0.02792	6.47	20.053	27.69	1.46
BellsB	M001	1234.76	AMEC-100-2080-Ma	68.800000	60.570	62.254880	62.7663	64.0633	0.06549	7.83	15.252	22.91	2.09
BellsB	M001	1214.13	AMEC-100-2080-Ma	68.800000	59.550	62.067230	61.2888	62.2644	0.00303	2.36	42.090	26.23	0.50
BellsB	M001	1200.58	AMEC-100-2080-Ma	68.800000	58.900	61.422270	61.4223	62.1384	0.01142	4.43	22.962	16.98	0.95
BellsB	M001	1182.98	AMEC-100-2080-Ma	68.800000	58.590	61.062100	61.1943	61.9015	0.01434	4.89	21.480	17.09	1.06
BellsB	M001	1166.01	AMEC-100-2080-Ma	68.800000	58.390	59.968450	60.4389	61.4399	0.04376	6.31	15.931	19.06	1.73
BellsB	M001	1153.18	AMEC-100-2080-Ma	68.800000	57.700	59.628260	59.9924	60.8280	0.04021	6.82	18.028	20.35	1.66
BellsB	M001	1141.88	AMEC-100-2080-Ma	68.800000	56.720	58.305550	58.9101	60.2344	0.05334	6.83	13.068	14.88	1.90
BellsB	M001	1128.34	AMEC-100-2080-Ma	68.800000	56.530	57.921840	58.3539	59.3274	0.05605	6.53	14.307	15.82	1.90
BellsB	M001	1117.89	AMEC-100-2080-Ma	68.800000	55.580	57.093500	57.5945	58.6993	0.06083	7.42	14.272	14.78	2.02
BellsB	M001	1096.03	AMEC-100-2080-Ma	68.800000	54.610	56.488480	56.8436	57.6841	0.02968	5.61	17.092	16.82	1.45
BellsB	M001	1077.81	AMEC-100-2080-Ma	68.800000	54.240	55.557680	56.0330	57.0154	0.04898	6.23	15.969	21.35	1.82
BellsB	M001	1069.76	AMEC-100-2080-Ma	68.800000	53.700	54.610230	55.1018	56.3205	0.10988	7.10	13.307	19.94	2.54
BellsB	M001	1064.67	AMEC-100-2080-Ma	68.800000	53.190	54.106550	54.5789	55.7514	0.11255	7.02	13.576	20.96	2.55
BellsB	M001	1051.64	AMEC-100-2080-Ma	68.800000	51.970	53.202700	53.6814	54.8094	0.06515	6.62	14.561	18.93	2.04
BellsB	M001	1032.36	AMEC-100-2080-Ma	68.800000	50.970	52.684880	52.9945	53.7566	0.03585	6.05	17.973	17.63	1.58
BellsB	M001	1021.64	AMEC-100-2080-Ma	68.800000	50.030	51.651360	52.1397	53.2590	0.04606	6.30	14.698	17.57	1.76
BellsB	M001	1014.11	AMEC-100-2080-Ma	68.800000	49.460	51.303220	51.8523	52.9396	0.04046	6.34	14.424	15.86	1.66
BellsB	M001	1006.24	AMEC-100-2080-Ma	68.800000	49.150	50.637490	51.2038	52.5563	0.05398	6.86	13.134	15.28	1.92
BellsB	M001	996.42	AMEC-100-2080-Ma	68.800000	48.110	49.648740	50.3231	51.9344	0.07908	8.04	12.139	14.97	2.25
BellsB	M001	987.27	AMEC-100-2080-Ma	68.800000	47.170	48.962610	49.6726	51.3238	0.05657	7.68	12.097	12.52	1.99
BellsB	M001	973.52	AMEC-100-2080-Ma	68.800000	46.790	48.410730	49.0760	50.5532	0.04470	6.94	12.444	15.12	1.89
BellsB	M001	951.43	AMEC-100-2080-Ma	68.800000	45.770	47.458260	48.0360	49.5449	0.05329	7.30	13.234	18.56	2.02
BellsB	M001	931.51	AMEC-100-2080-Ma	68.800000	44.860	46.347080	46.9397	48.2838	0.07231	8.38	12.563	15.26	2.33
BellsB	M001	925.41	AMEC-100-2080-Ma	68.800000	44.690	46.499290	46.9019	47.7839	0.03368	6.55	16.633	19.60	1.62
BellsB	M001	901.68	AMEC-100-2080-Ma	68.800000	43.690	45.518460	45.9722	47.0231	0.02893	6.31	14.478	12.32	1.57
BellsB	M001	877.27	AMEC-100-2080-Ma	68.800000	43.180	45.619500	45.4513	46.2419	0.00844	4.10	22.549	14.30	0.88
BellsB	M001	857.41	AMEC-100-2080-Ma	68.800000	42.160	45.928490	45.0279	46.0389	0.00101	1.91	63.819	45.37	0.33
BellsB	M001	840		Culvert									
BellsB	M001	816.09	AMEC-100-2080-Ma	70.500000	38.540	42.089200	41.7321	43.2588	0.00782	4.88	15.029	11.82	0.85
BellsB	M001	810.13	AMEC-100-2080-Ma	70.500000	37.800	42.593760	40.3899	42.7309	0.00087	1.81	56.699	37.09	0.28
BellsB	M001	800		Bridge									
BellsB	M001	796.37	AMEC-100-2080-Ma	70.500000	34.330	37.039380	37.9364	39.9666	0.04500	7.76	10.005	9.66	1.78
BellsB	M001	782.27	AMEC-100-2080-Ma	70.500000	33.920	35.031550	35.8953	38.6579	0.15638	9.11	8.911	11.50	3.05
BellsB	M001	772.73	AMEC-100-2080-Ma	70.500000	30.940	32.791250	33.7043	37.0632	0.17094	12.18	9.742	11.71	3.10
BellsB	M001	766.74	AMEC-100-2080-Ma	70.500000	30.650	32.751370	33.5709	35.9550	0.10727	10.86	11.209	11.73	2.55
BellsB	M001	760.32	AMEC-100-2080-Ma	70.500000	30.340	32.226300	33.0556	35.3346	0.08024	9.39	11.447	11.90	2.34
BellsB	M001	755.97	AMEC-100-2080-Ma	70.500000	30.050	31.878700	32.7019	34.9619	0.08757	8.87	10.954	11.78	2.37
BellsB	M001	749.69	AMEC-100-2080-Ma	70.500000	29.300	31.231320	32.0989	34.3960	0.08611	9.40	11.008	10.91	2.38
BellsB	M001	742.14	AMEC-100-2080-Ma	70.500000	28.380	29.942910	30.9343	33.6867	0.09091	9.35	9.741	9.87	2.52
BellsB	M001	736.73	AMEC-100-2080-Ma	70.500000	28.240	29.274000	30.1796	33.0551	0.15280	9.39	8.805	11.28	3.08

HEC-RAS Plan: Plan 20 Profile: AMEC-100-2080-Ma (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	722.61	AMEC-100-2080-Ma	70.500000	27.350	28.617970	29.2758	31.0606	0.08448	7.73	11.411	14.96	2.33
BellsB	M001	712.04	AMEC-100-2080-Ma	70.500000	26.270	28.105040	28.7865	30.2829	0.05305	7.24	12.451	11.96	1.90
BellsB	M001	702.42	AMEC-100-2080-Ma	70.500000	26.040	27.634710	28.2687	29.7056	0.05826	7.19	12.691	13.06	1.98
BellsB	M001	691.68	AMEC-100-2080-Ma	70.500000	25.030	26.903040	27.5842	29.0863	0.05470	6.99	11.870	11.99	1.90
BellsB	M001	686.22	AMEC-100-2080-Ma	70.500000	24.460	25.998770	26.7858	28.6893	0.07349	7.46	10.399	11.20	2.18
BellsB	M001	675.26	AMEC-100-2080-Ma	70.500000	24.080	25.546280	26.2441	27.8311	0.06100	7.22	11.496	11.49	2.03
BellsB	M001	668.37	AMEC-100-2080-Ma	70.500000	23.580	25.159940	25.8239	27.4028	0.06059	7.22	11.855	12.75	2.02
BellsB	M001	655.45	AMEC-100-2080-Ma	70.500000	23.020	24.452530	25.0772	26.5847	0.06127	6.98	12.009	13.52	2.01
BellsB	M001	636.88	AMEC-100-2080-Ma	70.500000	21.460	23.130290	23.8293	25.4531	0.05635	7.07	11.439	11.27	1.95
BellsB	M001	619.06	AMEC-100-2080-Ma	70.500000	20.820	22.664440	23.2243	24.4495	0.04051	6.60	13.865	12.64	1.69
BellsB	M001	608.48	AMEC-100-2080-Ma	70.500000	20.130	21.821560	22.4524	23.9393	0.04994	6.87	12.578	14.20	1.85
BellsB	M001	592.31	AMEC-100-2080-Ma	70.500000	18.950	20.679070	21.3802	23.0102	0.06801	7.98	12.214	12.53	2.13
BellsB	M001	582.72	AMEC-100-2080-Ma	70.500000	18.140	19.576790	20.3695	22.2770	0.07713	8.08	11.137	10.87	2.29
BellsB	M001	577.91	AMEC-100-2080-Ma	70.500000	17.660	19.681990	20.3886	21.8680	0.03887	7.31	13.330	11.07	1.72
BellsB	M001	561.51	AMEC-100-2080-Ma	70.500000	17.020	18.662690	19.3364	20.9914	0.07481	7.82	12.587	14.31	2.21
BellsB	M001	553.07	AMEC-100-2080-Ma	70.500000	16.350	17.810800	18.5387	20.3861	0.06599	7.41	11.422	13.81	2.10
BellsB	M001	541.54	AMEC-100-2080-Ma	70.500000	15.410	16.856430	17.5767	19.5290	0.08327	7.44	10.796	14.19	2.29
BellsB	M001	529.17	AMEC-100-2080-Ma	70.500000	14.850	16.327440	16.9892	18.4954	0.06177	6.61	11.362	9.75	1.82
BellsB	M001	514.53	AMEC-100-2080-Ma	70.500000	14.210	15.582010	16.1627	17.4717	0.06710	6.69	12.874	12.82	1.90
BellsB	M001	467.56	AMEC-100-2080-Ma	70.500000	11.610	14.722430	13.6715	15.0211	0.00321	2.56	33.093	14.70	0.48
BellsB	M001	420.59	AMEC-100-2080-Ma	70.500000	8.750	14.816450		14.9078	0.00054	1.55	66.866	20.36	0.21
BellsB	M001	400.25	AMEC-100-2080-Ma	70.500000	8.570	14.595420	11.2953	14.8744	0.00101	2.34	30.128	8.68	0.30
BellsB	M001	100		Culvert									
BellsB	M001	68.07	AMEC-100-2080-Ma	70.500000	0.830	2.139631	3.9940	8.0448	0.09910	10.77	6.548	6.35	3.00
BellsB	M001	47.74	AMEC-100-2080-Ma	70.500000	0.560	4.420446	3.4213	4.4392	0.00023	1.01	164.962	136.68	0.17
BellsB	M001	43		Bridge									
BellsB	M001	41.05	AMEC-100-2080-Ma	70.500000	0.700	4.417284	3.4183	4.4316	0.00019	0.91	175.115	136.33	0.15
BellsB	M001	20.51	AMEC-100-2080-Ma	70.500000	0.570	4.413200		4.4289	0.00022	0.96	171.548	145.87	0.16

CORNER BROOK STREAM

CLIMATE CHANGE PROFILE COMPARISON TABLES

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Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M001	20.51	BellsB-M001-20.51	4.3	4.38	4.38	5.02	4.41
BellsB	M001	41.05	BellsB-M001-41.05	4.3	4.38	4.39	5.02	4.42
BellsB	M001	43	BellsB-M001-43	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M001	47.74	BellsB-M001-47.74	4.3	4.38	4.39	5.02	4.42
BellsB	M001	68.07	BellsB-M001-68.07	1.98	2.07	2.08	4.95	2.14
BellsB	M001	100	BellsB-M001-100	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M001	400.25	BellsB-M001-400.25	13.21	13.95	14.07	17.53	14.6
BellsB	M001	420.59	BellsB-M001-420.59	13.43	14.18	14.29	17.69	14.82
BellsB	M001	467.56	BellsB-M001-467.56	13.03	13.11	14.13	17.65	14.72
BellsB	M001	514.53	BellsB-M001-514.53	15.48	15.54	15.55	16.04	15.58
BellsB	M001	529.17	BellsB-M001-529.17	16.18	16.26	16.27	17.01	16.33
BellsB	M001	541.54	BellsB-M001-541.54	16.75	16.81	16.82	17.31	16.86
BellsB	M001	553.07	BellsB-M001-553.07	17.68	17.76	17.77	18.31	17.81
BellsB	M001	561.51	BellsB-M001-561.51	18.55	18.62	18.62	19.13	18.66
BellsB	M001	577.91	BellsB-M001-577.91	19.49	19.6	19.61	20.37	19.68
BellsB	M001	582.72	BellsB-M001-582.72	19.43	19.51	19.53	20.22	19.58
BellsB	M001	592.31	BellsB-M001-592.31	20.55	20.62	20.63	21.2	20.68
BellsB	M001	608.48	BellsB-M001-608.48	21.71	21.77	21.78	22.28	21.82
BellsB	M001	619.06	BellsB-M001-619.06	22.53	22.61	22.62	23.19	22.67
BellsB	M001	636.88	BellsB-M001-636.88	22.99	23.07	23.08	23.7	23.13
BellsB	M001	655.45	BellsB-M001-655.45	24.35	24.41	24.42	24.89	24.45
BellsB	M001	668.37	BellsB-M001-668.37	25.05	25.11	25.12	25.62	25.16
BellsB	M001	675.26	BellsB-M001-675.26	25.42	25.49	25.5	26.08	25.55
BellsB	M001	686.22	BellsB-M001-686.22	25.87	25.94	25.95	26.56	26
BellsB	M001	691.68	BellsB-M001-691.68	26.77	26.85	26.86	27.44	26.9
BellsB	M001	702.42	BellsB-M001-702.42	27.52	27.59	27.6	28.12	27.63
BellsB	M001	712.04	BellsB-M001-712.04	27.97	28.05	28.06	28.64	28.1
BellsB	M001	722.61	BellsB-M001-722.61	28.54	28.58	28.59	28.97	28.62

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M001	736.73	BellsB-M001-736.73	29.17	29.23	29.24	29.77	29.27
BellsB	M001	742.14	BellsB-M001-742.14	29.8	29.88	29.89	30.6	29.94
BellsB	M001	749.69	BellsB-M001-749.69	31.1	31.17	31.18	31.84	31.23
BellsB	M001	755.97	BellsB-M001-755.97	31.76	31.83	31.84	32.44	31.88
BellsB	M001	760.32	BellsB-M001-760.32	32.09	32.17	32.18	32.78	32.23
BellsB	M001	766.74	BellsB-M001-766.74	32.63	32.7	32.71	33.26	32.75
BellsB	M001	772.73	BellsB-M001-772.73	32.68	32.74	32.75	33.26	32.79
BellsB	M001	782.27	BellsB-M001-782.27	34.93	34.98	34.99	35.59	35.03
BellsB	M001	796.37	BellsB-M001-796.37	36.78	36.93	36.95	38.41	37.04
BellsB	M001	800	BellsB-M001-800	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M001	810.13	BellsB-M001-810.13	42.45	42.54	42.55	42.99	42.59
BellsB	M001	816.09	BellsB-M001-816.09	42.12	42.12	42.12	42.79	42.09
BellsB	M001	840	BellsB-M001-840	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M001	857.41	BellsB-M001-857.41	45.72	45.79	45.79	46.24	45.93
BellsB	M001	877.27	BellsB-M001-877.27	45.48	45.08	45.09	45.82	45.62
BellsB	M001	901.68	BellsB-M001-901.68	45.34	45.44	45.46	46.31	45.52
BellsB	M001	925.41	BellsB-M001-925.41	46.41	46.46	46.47	46.87	46.5
BellsB	M001	931.51	BellsB-M001-931.51	46.24	46.3	46.31	46.8	46.35
BellsB	M001	951.43	BellsB-M001-951.43	47.36	47.42	47.42	47.83	47.46
BellsB	M001	973.52	BellsB-M001-973.52	48.29	48.36	48.37	48.89	48.41
BellsB	M001	987.27	BellsB-M001-987.27	48.82	48.9	48.91	49.58	48.96
BellsB	M001	996.42	BellsB-M001-996.42	49.53	49.6	49.61	50.13	49.65
BellsB	M001	1006.24	BellsB-M001-1006.24	50.52	50.59	50.6	51.16	50.64
BellsB	M001	1014.11	BellsB-M001-1014.11	51.17	51.25	51.26	51.86	51.31
BellsB	M001	1021.64	BellsB-M001-1021.64	51.54	51.6	51.61	52.14	51.65
BellsB	M001	1032.36	BellsB-M001-1032.36	52.56	52.63	52.64	53.19	52.68
BellsB	M001	1051.64	BellsB-M001-1051.64	53.11	53.16	53.17	53.61	53.2
BellsB	M001	1064.67	BellsB-M001-1064.67	54.04	54.07	54.08	54.45	54.11

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M001	1069.76	BellsB-M001-1069.76	54.53	54.57	54.58	54.99	54.61
BellsB	M001	1077.81	BellsB-M001-1077.81	55.46	55.51	55.52	55.95	55.56
BellsB	M001	1096.03	BellsB-M001-1096.03	56.37	56.44	56.44	57	56.49
BellsB	M001	1117.89	BellsB-M001-1117.89	56.97	57.04	57.05	57.62	57.09
BellsB	M001	1128.34	BellsB-M001-1128.34	57.82	57.88	57.89	58.4	57.92
BellsB	M001	1141.88	BellsB-M001-1141.88	58.17	58.25	58.26	58.9	58.31
BellsB	M001	1153.18	BellsB-M001-1153.18	59.53	59.59	59.6	60.05	59.63
BellsB	M001	1166.01	BellsB-M001-1166.01	59.86	59.92	59.93	60.44	59.97
BellsB	M001	1182.98	BellsB-M001-1182.98	60.88	60.97	60.99	61.77	61.05
BellsB	M001	1200.58	BellsB-M001-1200.58	61.23	61.34	61.36	62.24	61.42
BellsB	M001	1214.13	BellsB-M001-1214.13	61.83	61.96	61.98	63.05	62.07
BellsB	M001	1234.76	BellsB-M001-1234.76	62.17	62.21	62.22	62.65	62.25
BellsB	M001	1251.58	BellsB-M001-1251.58	63.31	63.55	63.56	64	63.62
BellsB	M001	1262.25	BellsB-M001-1262.25	64.41	64.45	64.45	64.72	64.48
BellsB	M001	1286.33	BellsB-M001-1286.33	64.27	64.32	64.33	64.72	64.36
BellsB	M001	1310.38	BellsB-M001-1310.38	65.43	65.49	65.5	65.96	65.54
BellsB	M001	1358.51	BellsB-M001-1358.51	66.76	66.86	66.84	67.53	66.89
BellsB	M001	1406.62	BellsB-M001-1406.62	68.77	68.83	68.94	69.97	69.02
BellsB	M001	1454.75	BellsB-M001-1454.75	69.6	69.65	69.66	70.06	69.69
BellsB	M001	1483.47	BellsB-M001-1483.47	69.95	69.99	69.99	70.29	70.01
BellsB	M001	1502.43	BellsB-M001-1502.43	70.31	70.35	70.35	70.69	70.38
BellsB	M001	1515.66	BellsB-M001-1515.66	79.27	79.36	79.38	80.11	79.43
BellsB	M001	1529.04	BellsB-M001-1529.04	79.59	79.67	79.68	80.35	79.73
BellsB	M001	1544.26	BellsB-M001-1544.26	80.96	81.05	81.06	81.66	81.11
BellsB	M001	1563.67	BellsB-M001-1563.67	81.32	81.38	81.38	81.84	81.42
BellsB	M001	1582.05	BellsB-M001-1582.05	81.61	81.68	81.68	82.2	81.72
BellsB	M002	1605.59	BellsB-M002-1605.59	82.28	82.31	82.32	82.54	82.33
BellsB	M002	1624.32	BellsB-M002-1624.32	87.41	87.66	87.7	89.88	87.85

Corner Brook Stream
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				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M002	1650	BellsB-M002-1650	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	1688.91	BellsB-M002-1688.91	96.26	96.31	96.34	96.72	96.36
BellsB	M002	1705.77	BellsB-M002-1705.77	96.26	96.31	96.34	96.73	96.36
BellsB	M002	1729.73	BellsB-M002-1729.73	96.26	96.31	96.34	96.72	96.36
BellsB	M002	1753.27	BellsB-M002-1753.27	96.26	96.31	96.34	96.72	96.36
BellsB	M002	1777.98	BellsB-M002-1777.98	96.26	96.31	96.34	96.73	96.36
BellsB	M002	1800.77	BellsB-M002-1800.77	96.26	96.3	96.33	96.71	96.35
BellsB	M002	1807.43	BellsB-M002-1807.43	96.26	96.3	96.33	96.71	96.35
BellsB	M002	1821.35	BellsB-M002-1821.35	96.26	96.3	96.33	96.7	96.35
BellsB	M002	1834.27	BellsB-M002-1834.27	96.25	96.29	96.32	96.65	96.34
BellsB	M002	1848.27	BellsB-M002-1848.27	96.24	96.28	96.31	96.64	96.33
BellsB	M002	1857.16	BellsB-M002-1857.16	96.23	96.26	96.29	96.57	96.31
BellsB	M002	1870.34	BellsB-M002-1870.34	96.19	96.22	96.25	96.37	96.26
BellsB	M002	1880.79	BellsB-M002-1880.79	96.18	96.2	96.23	95.44	96.24
BellsB	M002	1887.59	BellsB-M002-1887.59	95.1	95.16	95.17	95.64	95.2
BellsB	M002	1896.87	BellsB-M002-1896.87	95.99	96.07	96.08	96.72	96.13
BellsB	M002	1910.32	BellsB-M002-1910.32	97.74	97.85	97.87	98.77	97.94
BellsB	M002	1918.81	BellsB-M002-1918.81	98.17	98.31	98.33	99.4	98.42
BellsB	M002	1939.94	BellsB-M002-1939.94	98.45	98.54	98.55	99.33	98.61
BellsB	M002	1951.81	BellsB-M002-1951.81	98.95	99.06	99.08	99.92	99.14
BellsB	M002	1966.25	BellsB-M002-1966.25	98.85	98.91	98.92	99.37	98.95
BellsB	M002	1982.97	BellsB-M002-1982.97	98.99	99.04	99.05	99.53	99.09
BellsB	M002	1996.87	BellsB-M002-1996.87	99.15	99.21	99.22	99.81	99.27
BellsB	M002	2007.37	BellsB-M002-2007.37	100.04	100.11	100.12	100.85	100.18
BellsB	M002	2010.46	BellsB-M002-2010.46	100.29	100.36	100.37	100.98	100.41
BellsB	M002	2014.53	BellsB-M002-2014.53	101.6	101.65	101.67	102.3	101.72
BellsB	M002	2021.67	BellsB-M002-2021.67	103.79	103.48	103.5	104.06	103.56
BellsB	M002	2025.44	BellsB-M002-2025.44	104.15	103.19	103.21	103.81	103.26

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				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M002	2033.27	BellsB-M002-2033.27	104.4	104.48	104.49	105.09	104.68
BellsB	M002	2040.56	BellsB-M002-2040.56	103.95	104.06	104.07	105.01	104.14
BellsB	M002	2054.52	BellsB-M002-2054.52	104.56	104.63	104.64	105.28	104.68
BellsB	M002	2059.88	BellsB-M002-2059.88	105.03	105.1	105.11	105.62	105.15
BellsB	M002	2068.57	BellsB-M002-2068.57	105.45	105.5	105.51	105.9	105.54
BellsB	M002	2085.77	BellsB-M002-2085.77	106.77	106.86	106.87	107.53	106.92
BellsB	M002	2103.01	BellsB-M002-2103.01	107.97	108.03	108.04	108.62	108.08
BellsB	M002	2117.78	BellsB-M002-2117.78	109.05	109.12	109.14	109.62	109.18
BellsB	M002	2133.27	BellsB-M002-2133.27	109.21	109.27	109.28	109.76	109.32
BellsB	M002	2173.21	BellsB-M002-2173.21	111.37	111.5	111.51	112.37	111.58
BellsB	M002	2200.99	BellsB-M002-2200.99	111.99	112.11	112.13	113.2	112.21
BellsB	M002	2232.72	BellsB-M002-2232.72	112.42	112.5	112.55	113.24	112.58
BellsB	M002	2275.77	BellsB-M002-2275.77	114.02	114.08	114	114.13	114.11
BellsB	M002	2295.83	BellsB-M002-2295.83	113.56	113.58	113.61	115.56	113.72
BellsB	M002	2300	BellsB-M002-2300	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M002	2307.61	BellsB-M002-2307.61	116.18	116.21	116.22	116.57	116.24
BellsB	M002	2328.64	BellsB-M002-2328.64	115.85	115.95	115.97	116.47	116.02
BellsB	M002	2352.81	BellsB-M002-2352.81	116.35	116.41	116.41	116.87	116.45
BellsB	M002	2367.92	BellsB-M002-2367.92	116.79	116.83	116.84	117.3	116.87
BellsB	M002	2378.55	BellsB-M002-2378.55	117.76	117.85	117.86	118.22	117.9
BellsB	M002	2408.52	BellsB-M002-2408.52	117.97	118.01	118.01	118.32	118.03
BellsB	M002	2428.46	BellsB-M002-2428.46	118.51	118.55	118.56	118.92	118.59
BellsB	M002	2450.61	BellsB-M002-2450.61	119.8	119.89	119.9	120.71	119.97
BellsB	M002	2478.37	BellsB-M002-2478.37	120.33	120.43	120.44	121.29	120.49
BellsB	M002	2496.15	BellsB-M002-2496.15	120.62	120.76	120.78	121.69	120.86
BellsB	M002	2518.19	BellsB-M002-2518.19	120.6	120.72	120.74	121.65	120.81
BellsB	M002	2528.27	BellsB-M002-2528.27	120.94	121	121.01	121.62	121.05
BellsB	M002	2578.18	BellsB-M002-2578.18	121.67	121.76	121.77	122.46	121.82

Corner Brook Stream
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				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M002	2628.09	BellsB-M002-2628.09	122.31	122.36	122.36	122.57	122.3
BellsB	M002	2677.99	BellsB-M002-2677.99	122.76	122.79	122.8	123.44	122.93
BellsB	M002	2727.91	BellsB-M002-2727.91	123.67	123.79	123.81	123.95	123.81
BellsB	M002	2777.91	BellsB-M002-2777.91	124.02	124.09	124.09	124.44	124.12
BellsB	M002	2823.69	BellsB-M002-2823.69	124.36	124.39	124.39	124.63	124.41
BellsB	M002	2861.32	BellsB-M002-2861.32	124.81	124.87	124.88	125.25	124.91
BellsB	M002	2881.51	BellsB-M002-2881.51	125.95	125.95	125.95	126.52	125.95
BellsB	M002	2890	BellsB-M002-2890	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M002	2899.46	BellsB-M002-2899.46	126.51	126.57	126.58	126.78	126.6
BellsB	M002	2918.61	BellsB-M002-2918.61	126.73	126.79	126.8	127.18	126.83
BellsB	M002	2937.88	BellsB-M002-2937.88	127.42	127.55	127.92	128.3	127.98
BellsB	M002	2940.01	BellsB-M002-2940.01	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	2945.26	BellsB-M002-2945.26	127.99	127.97	128.01	128.34	128.04
BellsB	M002	2991.47	BellsB-M002-2991.47	128.25	128.31	128.32	128.68	128.35
BellsB	M002	3037.68	BellsB-M002-3037.68	128.07	128.14	128.15	128.47	128.17
BellsB	M002	3083.82	BellsB-M002-3083.82	129.59	129.57	129.57	129.87	129.59
BellsB	M002	3130.11	BellsB-M002-3130.11	130.45	130.8	130.82	131.52	130.88
BellsB	M002	3157.63	BellsB-M002-3157.63	131.29	131.32	131.32	131.63	131.34
BellsB	M002	3176.31	BellsB-M002-3176.31	131.49	131.54	131.54	132.04	131.57
BellsB	M002	3203.83	BellsB-M002-3203.83	132.41	132.44	132.45	132.91	132.47
BellsB	M002	3222.52	BellsB-M002-3222.52	134.59	134.78	134.81	135.86	134.92
BellsB	M002	3250	BellsB-M002-3250	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	3303.55	BellsB-M002-3303.55	138.76	138.82	138.83	139.28	138.88
BellsB	M002	3329.08	BellsB-M002-3329.08	138.8	138.87	138.88	139.3	138.93
BellsB	M002	3358.51	BellsB-M002-3358.51	138.8	138.87	138.88	139.31	138.94
BellsB	M002	3375	BellsB-M002-3375	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	3386.31	BellsB-M002-3386.31	138.78	138.84	138.85	139.28	138.9
BellsB	M002	3400.36	BellsB-M002-3400.36	138.79	138.85	138.86	139.27	138.9

Corner Brook Stream
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				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M002	3424.29	BellsB-M002-3424.29	138.63	137.92	137.93	138.71	137.92
BellsB	M002	3473.83	BellsB-M002-3473.83	139.79	139.81	139.82	140.45	139.99
BellsB	M002	3520.99	BellsB-M002-3520.99	140.89	141.03	141.03	141.32	141.05
BellsB	M002	3573.45	BellsB-M002-3573.45	142.36	142.5	142.5	142.73	142.52
BellsB	M002	3623.19	BellsB-M002-3623.19	143.65	143.69	143.7	144.03	143.72
BellsB	M002	3643.21	BellsB-M002-3643.21	144.87	145.02	145.05	146.53	145.13
BellsB	M002	3650	BellsB-M002-3650	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	3677.71	BellsB-M002-3677.71	149.81	150.01	150.02	150.88	150.1
BellsB	M002	3697.71	BellsB-M002-3697.71	149.81	150	150.01	150.87	150.09
BellsB	M002	3724.94	BellsB-M002-3724.94	149.8	150	150.01	150.86	150.09
BellsB	M002	3746.94	BellsB-M002-3746.94	149.83	150.03	150.03	150.92	150.12
BellsB	M002	3765.39	BellsB-M002-3765.39	149.79	149.99	150	150.85	150.08
BellsB	M002	3796.17	BellsB-M002-3796.17	149.81	150.01	150.02	150.89	150.1
BellsB	M002	3822.22	BellsB-M002-3822.22	149.87	150.07	150.08	150.97	150.16
BellsB	M002	3845.41	BellsB-M002-3845.41	149.69	149.72	149.73	150.92	149.74
BellsB	M002	3869.08	BellsB-M002-3869.08	150.18	150.25	150.26	150.83	150.3
BellsB	M002	3894.65	BellsB-M002-3894.65	151.1	151.15	151.15	151.54	151.17
BellsB	M002	3943.89	BellsB-M002-3943.89	152.33	152.39	152.4	152.83	152.43
BellsB	M002	3993.13	BellsB-M002-3993.13	153.5	153.52	153.52	153.72	153.54
BellsB	M002	4042.37	BellsB-M002-4042.37	154.71	154.76	154.77	155.27	154.79
BellsB	M002	4091.61	BellsB-M002-4091.61	156.15	156.19	156.2	156.51	156.22
BellsB	M002	4140.85	BellsB-M002-4140.85	157.98	158.01	158.02	158.32	158.03
BellsB	M002	4190.09	BellsB-M002-4190.09	159.63	159.67	159.68	160.01	159.7
BellsB	M002	4239.33	BellsB-M002-4239.33	160.72	160.77	160.78	161.23	160.8
BellsB	M002	4288.56	BellsB-M002-4288.56	162.5	162.55	162.55	162.96	162.57
BellsB	M002	4337.81	BellsB-M002-4337.81	163.8	163.83	163.83	164.06	163.85
BellsB	M002	4387.04	BellsB-M002-4387.04	165.31	165.38	165.39	165.93	165.42
BellsB	M002	4436.28	BellsB-M002-4436.28	167.14	167.19	167.19	167.53	167.21

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				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	M002	4485.52	BellsB-M002-4485.52	168.85	168.88	168.88	169.05	168.89
BellsB	M002	4534.72	BellsB-M002-4534.72	170.95	170.99	170.99	171.37	171.02
BellsB	M002	4583.99	BellsB-M002-4583.99	174.27	174.35	174.36	174.93	174.41
BellsB	M002	4609.61	BellsB-M002-4609.61	174.8	174.88	174.9	175.61	174.95
BellsB	M002	4633.41	BellsB-M002-4633.41	175.23	175.25	175.25	175.43	175.27
BellsB	M002	4658.79	BellsB-M002-4658.79	176.7	176.79	176.8	177.55	176.84
BellsB	M002	4682.48	BellsB-M002-4682.48	177.37	177.4	177.4	178.14	177.42
BellsB	M002	4702.24	BellsB-M002-4702.24	178.51	178.54	178.55	178.78	178.57
BellsB	M002	4707.54	BellsB-M002-4707.54	178.35	178.38	178.38	178.57	178.39
BellsB	M002	4727.54	BellsB-M002-4727.54	179.82	179.85	179.85	180.1	179.87
BellsB	M002	4756.65	BellsB-M002-4756.65	181.03	181.09	181.09	181.33	181.11
BellsB	M002	4785.76	BellsB-M002-4785.76	182.35	182.33	182.34	182.54	182.36
BellsB	M002	4805.77	BellsB-M002-4805.77	182.85	183	183	184.38	183.02
BellsB	M002	4850	BellsB-M002-4850	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	4853.42	BellsB-M002-4853.42	186.8	187.06	187.1	193.75	187.27
BellsB	M002	4873.31	BellsB-M002-4873.31	186.96	187.26	187.29	193.75	187.48
BellsB	M002	4917.46	BellsB-M002-4917.46	187.08	187.33	187.36	193.75	187.52
BellsB	M002	4967.57	BellsB-M002-4967.57	187.8	187.87	187.88	193.74	187.92
BellsB	M002	5017.78	BellsB-M002-5017.78	189.29	189.34	189.35	193.74	189.37
BellsB	M002	5067.47	BellsB-M002-5067.47	189.76	189.8	189.8	193.75	189.82
BellsB	M002	5090.85	BellsB-M002-5090.85	191.07	191.12	191.13	193.74	191.17
BellsB	M002	5117.45	BellsB-M002-5117.45	191.5	191.57	191.58	193.77	191.62
BellsB	M002	5149.23	BellsB-M002-5149.23	191.6	191.65	191.66	193.76	191.68
BellsB	M002	5166.11	BellsB-M002-5166.11	191.94	191.99	192	193.78	192.03
BellsB	TR001	12.14	BellsB-TR001-12.14	83.09	83.13	83.13	83.44	83.15
BellsB	TR001	37.01	BellsB-TR001-37.01	83.96	83.99	84	84.29	84.02
BellsB	TR001	43.86	BellsB-TR001-43.86	84.29	84.31	84.32	84.55	84.33
BellsB	TR001	50.93	BellsB-TR001-50.93	84.76	84.78	84.79	85.01	84.8

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				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
BellsB	TR001	56.76	BellsB-TR001-56.76	84.97	85.01	85.01	85.27	85.03
BellsB	TR001	60.69	BellsB-TR001-60.69	85.17	85.2	85.21	85.47	85.23
BellsB	TR001	64.04	BellsB-TR001-64.04	85.24	85.27	85.28	85.57	85.3
BellsB	TR001	67.75	BellsB-TR001-67.75	85.64	85.67	85.67	85.91	85.69
BellsB	TR001	72.74	BellsB-TR001-72.74	86.46	86.49	86.5	86.77	86.52
BellsB	TR001	79.14	BellsB-TR001-79.14	87.36	87.4	87.41	87.75	87.44
BellsB	TR001	84.12	BellsB-TR001-84.12	88.46	88.49	88.5	88.8	88.52
BellsB	TR001	88.17	BellsB-TR001-88.17	89.44	89.49	89.5	89.92	89.54
BellsB	TR001	91.42	BellsB-TR001-91.42	91.15	91.28	91.3	92.81	91.67
BellsB	TR001	100	BellsB-TR001-100	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	TR001	139.54	BellsB-TR001-139.54	95.14	95.74	95.83	97.05	96.12
BellsB	TR001	159.86	BellsB-TR001-159.86	95.3	95.9	95.99	97.04	96.28
BellsB	TR001	178.13	BellsB-TR001-178.13	95.22	95.86	95.95	97.01	96.26
CornerB	M001	23.81	CornerB-M001-23.81	2.8	2.85	3.03	3.03	3.36
CornerB	M001	80.73	CornerB-M001-80.73	2.85	2.91	3.07	3.24	3.38
CornerB	M001	129.05	CornerB-M001-129.05	2.91	2.98	3.11	3.36	3.4
CornerB	M001	150.09	CornerB-M001-150.09	2.95	3.01	3.13	3.41	3.41
CornerB	M001	152.5	CornerB-M001-152.5	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	155.66	CornerB-M001-155.66	2.96	3.02	3.14	3.42	3.41
CornerB	M001	174.77	CornerB-M001-174.77	2.97	3.04	3.15	3.43	3.41
CornerB	M001	210.89	CornerB-M001-210.89	3	3.07	3.17	3.49	3.42
CornerB	M001	245.99	CornerB-M001-245.99	3.05	3.12	3.21	3.57	3.45
CornerB	M001	266.99	CornerB-M001-266.99	3.08	3.16	3.24	3.61	3.46
CornerB	M001	270	CornerB-M001-270	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	274.62	CornerB-M001-274.62	3.12	3.2	3.26	3.65	3.47
CornerB	M001	292.92	CornerB-M001-292.92	3.14	3.2	3.27	3.63	3.47
CornerB	M001	324.13	CornerB-M001-324.13	3.13	3.19	3.26	3.66	3.45
CornerB	M001	352.89	CornerB-M001-352.89	3.16	3.23	3.29	3.95	3.53

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
CornerB	M001	375.14	CornerB-M001-375.14	3.26	3.42	3.46	4.02	3.59
CornerB	M001	380	CornerB-M001-380	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	381.26	CornerB-M001-381.26	3.44	3.53	3.56	4.1	3.65
CornerB	M001	401.99	CornerB-M001-401.99	3.52	3.61	3.63	4.16	3.71
CornerB	M001	425.41	CornerB-M001-425.41	3.5	3.58	3.61	4.14	3.69
CornerB	M001	445.11	CornerB-M001-445.11	3.46	3.54	3.56	4.07	3.65
CornerB	M001	460	CornerB-M001-460	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	472.07	CornerB-M001-472.07	3.9	3.95	3.95	4.53	3.99
CornerB	M001	520.22	CornerB-M001-520.22	3.96	4.02	4.01	4.64	4.06
CornerB	M001	535.83	CornerB-M001-535.83	3.95	4.01	4.01	4.62	4.05
CornerB	M001	570.12	CornerB-M001-570.12	3.97	4.03	4.03	4.68	4.08
CornerB	M001	608.52	CornerB-M001-608.52	3.97	4.03	4.03	4.67	4.08
CornerB	M001	629.03	CornerB-M001-629.03	3.98	4.05	4.05	4.71	4.09
CornerB	M001	635	CornerB-M001-635	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	643.93	CornerB-M001-643.93	4.27	4.34	4.35	4.93	4.38
CornerB	M001	659.37	CornerB-M001-659.37	4.29	4.36	4.37	4.97	4.4
CornerB	M002	696.36	CornerB-M002-696.36	4.29	4.37	4.38	5	4.41
CornerB	M002	739.85	CornerB-M002-739.85	4.31	4.39	4.4	5.02	4.42
CornerB	M002	784.55	CornerB-M002-784.55	4.32	4.4	4.4	5.04	4.43
CornerB	M002	828.33	CornerB-M002-828.33	4.32	4.4	4.41	5.04	4.44
CornerB	M002	869.66	CornerB-M002-869.66	4.32	4.41	4.41	5.06	4.44
CornerB	M002	915.75	CornerB-M002-915.75	4.33	4.42	4.42	5.08	4.45
CornerB	M002	959.21	CornerB-M002-959.21	4.34	4.42	4.43	5.1	4.46
CornerB	M002	1004.03	CornerB-M002-1004.03	4.33	4.4	4.41	5.03	4.44
CornerB	M002	1047.01	CornerB-M002-1047.01	4.36	4.44	4.45	5.07	4.48
CornerB	M002	1065.81	CornerB-M002-1065.81	4.39	4.47	4.48	5.2	4.51
CornerB	M002	1070	CornerB-M002-1070	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M002	1070.69	CornerB-M002-1070.69	4.4	4.48	4.5	5.25	4.53

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
CornerB	M002	1090.67	CornerB-M002-1090.67	4.38	4.46	4.48	5.26	4.51
CornerB	M002	1110.53	CornerB-M002-1110.53	4.11	4.18	4.19	5.08	4.26
CornerB	M002	1137.55	CornerB-M002-1137.55	4.37	4.67	4.69	5.43	4.8
CornerB	M002	1142.41	CornerB-M002-1142.41	4.84	4.97	4.98	5.63	5.04
CornerB	M002	1185.06	CornerB-M002-1185.06	4.92	5.05	5.06	5.74	5.12
CornerB	M002	1194.69	CornerB-M002-1194.69	4.94	5.07	5.08	4.86	5.13
CornerB	M002	1206.83	CornerB-M002-1206.83	4.96	5.09	5.1	4.79	5.16
CornerB	M002	1215.66	CornerB-M002-1215.66	4.25	4.33	4.33	4.82	4.36
CornerB	M002	1233.83	CornerB-M002-1233.83	4.7	4.76	4.77	5.34	4.8
CornerB	M002	1246.98	CornerB-M002-1246.98	4.98	5.1	5.11	5.99	5.16
CornerB	M002	1258.94	CornerB-M002-1258.94	5.41	5.52	5.53	6.32	5.57
CornerB	M002	1279.52	CornerB-M002-1279.52	6.85	7.02	7.04	8.49	7.12
CornerB	M002	1284.12	CornerB-M002-1284.12	7.25	7.42	7.44	9.09	7.52
CornerB	M002	1289.64	CornerB-M002-1289.64	7.12	7.27	7.28	8.72	7.35
CornerB	M002	1296.49	CornerB-M002-1296.49	7.13	7.3	7.32	8.71	7.39
CornerB	M002	1300.06	CornerB-M002-1300.06	6.94	7.07	7.08	8.12	7.13
CornerB	M002	1305.35	CornerB-M002-1305.35	7.43	7.57	7.58	8.64	7.63
CornerB	M002	1309.11	CornerB-M002-1309.11	8.11	8.26	8.28	9.57	8.35
CornerB	M002	1311.16	CornerB-M002-1311.16	8.51	8.67	8.68	10	8.75
CornerB	M002	1312.39	CornerB-M002-1312.39	8.95	9.12	9.14	10.51	9.21
CornerB	M002	1313.58	CornerB-M002-1313.58	9.41	9.58	9.6	10.99	9.67
CornerB	M002	1315.18	CornerB-M002-1315.18	10.23	10.4	10.42	11.73	10.5
CornerB	M002	1317.22	CornerB-M002-1317.22	10.73	10.94	10.96	12.39	11.04
CornerB	M002	1326.83	CornerB-M002-1326.83	10.87	11.07	11.09	10.35	11.18
CornerB	M002	1336.58	CornerB-M002-1336.58	9.74	9.88	9.89	10.84	9.94
CornerB	M002	1347.51	CornerB-M002-1347.51	10.49	10.69	10.7	12.11	10.78
CornerB	M002	1352.01	CornerB-M002-1352.01	11.34	11.55	11.57	13.17	11.65
CornerB	M002	1354.11	CornerB-M002-1354.11	19.59	19.83	19.85	21.62	19.95

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
CornerB	M002	1356.61	CornerB-M002-1356.61	19.79	20.02	20.05	21.8	20.14
CornerB	M002	1363.91	CornerB-M002-1363.91	19.79	20.02	20.04	21.78	20.14
CornerB	M002	1386.11	CornerB-M002-1386.11	19.81	20.04	20.06	21.84	20.16
CornerB	M002	1415.93	CornerB-M002-1415.93	19.82	20.05	20.07	21.86	20.17
CornerB	M002	1463.65	CornerB-M002-1463.65	19.82	20.05	20.07	21.86	20.17
CornerB	M002	1490.63	CornerB-M002-1490.63	19.83	20.07	20.09	21.91	20.19
CornerB	M002	1505.64	CornerB-M002-1505.64	19.84	20.07	20.1	21.92	20.19
CornerB	M002	1517.99	CornerB-M002-1517.99	19.84	20.07	20.1	21.92	20.2
CornerB	M002	1526.59	CornerB-M002-1526.59	19.84	20.07	20.1	21.92	20.2
CornerB	M002	1539.91	CornerB-M002-1539.91	19.84	20.07	20.1	21.92	20.2
CornerB	M002	1551.89	CornerB-M002-1551.89	19.84	20.07	20.1	21.92	20.2
CornerB	M002	1567.16	CornerB-M002-1567.16	19.83	20.07	20.09	21.92	20.19
CornerB	M002	1613.91	CornerB-M002-1613.91	19.83	20.06	20.09	21.9	20.18
CornerB	M002	1654.15	CornerB-M002-1654.15	19.83	20.06	20.08	21.9	20.18
CornerB	M002	1691.96	CornerB-M002-1691.96	19.82	20.05	20.08	21.89	20.18
CornerB	M002	1717.41	CornerB-M002-1717.41	19.82	20.05	20.08	21.88	20.17
CornerB	M002	1733.13	CornerB-M002-1733.13	19.82	20.05	20.07	21.88	20.17
CornerB	M002	1770.94	CornerB-M002-1770.94	19.77	20	20.02	21.75	20.12
CornerB	M002	1772	CornerB-M002-1772	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M002	1773.95	CornerB-M002-1773.95	19.76	19.98	20	21.75	20.1
CornerB	M002	1790.92	CornerB-M002-1790.92	19.25	19.36	19.38	21.15	19.4
CornerB	M002	1826.39	CornerB-M002-1826.39	18.56	18.65	18.66	23.19	18.69
CornerB	M003	1883.49	CornerB-M003-1883.49	21.99	22.18	22.19	24.05	22.3
CornerB	M003	1929.72	CornerB-M003-1929.72	22.4	22.58	22.6	24.12	22.68
CornerB	M003	1975.95	CornerB-M003-1975.95	23.9	24.06	24.07	25.27	24.14
CornerB	M003	1985.82	CornerB-M003-1985.82	24.26	24.48	24.49	25.76	24.59
CornerB	M003	1991.14	CornerB-M003-1991.14	24.69	24.87	24.88	26.39	24.95
CornerB	M003	2022.25	CornerB-M003-2022.25	24.87	25.01	25.02	27.4	25.08

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
CornerB	M003	2068.44	CornerB-M003-2068.44	25.58	25.68	25.69	26.57	25.72
CornerB	M003	2080.62	CornerB-M003-2080.62	25.62	25.75	25.76	26.66	25.81
CornerB	M003	2114.73	CornerB-M003-2114.73	26.46	26.64	26.65	28.77	26.71
CornerB	M003	2115	CornerB-M003-2115	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M003	2119.46	CornerB-M003-2119.46	26.18	26.34	26.35	29.38	26.4
CornerB	M003	2131.66	CornerB-M003-2131.66	27.05	27.24	27.26	28.78	27.33
CornerB	M003	2141.65	CornerB-M003-2141.65	27.77	28.11	28.12	30	28.22
CornerB	M003	2150	CornerB-M003-2150	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M003	2163.63	CornerB-M003-2163.63	29.19	29.84	29.88	32.33	30.08
CornerB	M003	2183.63	CornerB-M003-2183.63	29.18	29.8	29.86	31.97	30.11
CornerB	M003	2212.25	CornerB-M003-2212.25	30.1	30.37	30.41	32.21	30.57
CornerB	M003	2240.88	CornerB-M003-2240.88	30.18	30.46	30.49	32.36	30.65
CornerB	M003	2260.98	CornerB-M003-2260.98	30.25	30.49	30.52	32.35	30.68
CornerB	M003	2263.01	CornerB-M003-2263.01	32.58	32.7	32.71	33.38	32.75
CornerB	M003	2267.71	CornerB-M003-2267.71	32.93	33.06	33.07	34.08	33.12
CornerB	M003	2315.61	CornerB-M003-2315.61	32.93	33.06	33.07	34.06	33.13
CornerB	M003	2363.51	CornerB-M003-2363.51	32.95	33.08	33.09	34.11	33.14
CornerB	M003	2411.41	CornerB-M003-2411.41	32.96	33.1	33.11	34.19	33.17
CornerB	M003	2459.31	CornerB-M003-2459.31	32.83	32.94	32.95	32.63	32.99
CornerB	M003	2507.21	CornerB-M003-2507.21	32.91	33.12	33.15	35.14	33.23
CornerB	M003	2527.22	CornerB-M003-2527.22	34.35	34.35	34.35	36.29	34.35
CornerB	M003	2530	CornerB-M003-2530	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M003	2537.73	CornerB-M003-2537.73	36.36	36.45	36.46	37.06	36.51
CornerB	M003	2557.73	CornerB-M003-2557.73	36.44	36.55	36.56	37.24	36.61
CornerB	M003	2602.09	CornerB-M003-2602.09	36.51	36.63	36.64	37.54	36.7
CornerB	M003	2645.73	CornerB-M003-2645.73	36.51	36.62	36.64	37.52	36.69
CornerB	M003	2689.92	CornerB-M003-2689.92	35.63	35.72	35.73	36.47	35.77
CornerB	M004	2769.85	CornerB-M004-2769.85	37.66	37.87	37.87	39.27	37.93

Corner Brook Stream
CB - Mixed Flow - 100 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**100-Existing**	**100-AMEC-2020**	**100-AMEC-2050**	**100-Finnis-2050**	**100-AMEC-2080**
CornerB	M004	2796.61	CornerB-M004-2796.61	38.42	38.59	38.61	39.66	38.71
CornerB	M004	2838.71	CornerB-M004-2838.71	38.34	38.46	38.46	39.61	38.53
CornerB	M004	2888.71	CornerB-M004-2888.71	39.1	39.08	39.14	40.73	39.15
CornerB	TR001	21.31	CornerB-TR001-21.31	37.37	37.5	37.5	38.58	37.5
CornerB	TR001	25	CornerB-TR001-25	Culvert	Culvert	Culvert	Culvert	Culvert
CornerB	TR001	36.04	CornerB-TR001-36.04	38.34	38.31	38.31	38.56	38.33
CornerB	TR001	56.04	CornerB-TR001-56.04	38.12	38.17	38.18	38.49	38.2
CornerB	TR001	106.04	CornerB-TR001-106.04	39.86	39.91	39.91	40.32	39.94
CornerB	TR001	156.04	CornerB-TR001-156.04	42.7	42.75	42.75	43.08	42.78
CornerB	TR001	206.04	CornerB-TR001-206.04	44.78	44.83	44.84	45.26	44.86
CornerB	TR002	18.08	CornerB-TR002-18.08	21.84	21.87	21.87	22.07	21.88
CornerB	TR002	21.04	CornerB-TR002-21.04	22.96	23	23	23.29	23.02

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M001	20.51	BellsB-M001-20.51	4.13	4.22	4.23	4.67	4.23
BellsB	M001	41.05	BellsB-M001-41.05	4.13	4.23	4.23	4.67	4.23
BellsB	M001	43	BellsB-M001-43	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M001	47.74	BellsB-M001-47.74	4.14	4.23	4.23	4.67	4.23
BellsB	M001	68.07	BellsB-M001-68.07	4.09	4.18	4.18	4.6	4.18
BellsB	M001	100	BellsB-M001-100	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M001	400.25	BellsB-M001-400.25	11.82	12.25	12.31	17.06	12.25
BellsB	M001	420.59	BellsB-M001-420.59	11.99	12.45	12.52	17.18	12.45
BellsB	M001	467.56	BellsB-M001-467.56	12.79	12.88	12.89	17.16	12.88
BellsB	M001	514.53	BellsB-M001-514.53	15.32	15.38	15.39	15.74	15.38
BellsB	M001	529.17	BellsB-M001-529.17	15.97	16.05	16.06	16.56	16.05
BellsB	M001	541.54	BellsB-M001-541.54	16.59	16.65	16.66	17.01	16.65
BellsB	M001	553.07	BellsB-M001-553.07	17.48	17.55	17.56	17.99	17.55
BellsB	M001	561.51	BellsB-M001-561.51	18.41	18.46	18.47	18.82	18.46
BellsB	M001	577.91	BellsB-M001-577.91	19.2	19.32	19.33	19.94	19.32
BellsB	M001	582.72	BellsB-M001-582.72	19.23	19.31	19.32	19.8	19.31
BellsB	M001	592.31	BellsB-M001-592.31	20.36	20.43	20.44	20.87	20.43
BellsB	M001	608.48	BellsB-M001-608.48	21.51	21.6	21.61	21.98	21.6
BellsB	M001	619.06	BellsB-M001-619.06	22.34	22.42	22.43	22.85	22.42
BellsB	M001	636.88	BellsB-M001-636.88	22.78	22.87	22.88	23.33	22.87
BellsB	M001	655.45	BellsB-M001-655.45	24.19	24.25	24.26	24.61	24.25
BellsB	M001	668.37	BellsB-M001-668.37	24.89	24.95	24.96	25.32	24.95
BellsB	M001	675.26	BellsB-M001-675.26	25.24	25.31	25.32	25.73	25.31
BellsB	M001	686.22	BellsB-M001-686.22	25.67	25.75	25.76	26.19	25.75
BellsB	M001	691.68	BellsB-M001-691.68	26.56	26.64	26.65	27.1	26.64
BellsB	M001	702.42	BellsB-M001-702.42	27.34	27.41	27.42	27.81	27.41
BellsB	M001	712.04	BellsB-M001-712.04	27.76	27.84	27.85	28.3	27.84
BellsB	M001	722.61	BellsB-M001-722.61	28.43	28.47	28.48	28.74	28.47
BellsB	M001	736.73	BellsB-M001-736.73	29.03	29.08	29.09	29.44	29.08

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M001	742.14	BellsB-M001-742.14	29.57	29.66	29.67	30.17	29.66
BellsB	M001	749.69	BellsB-M001-749.69	30.9	30.98	30.99	31.44	30.98
BellsB	M001	755.97	BellsB-M001-755.97	31.59	31.65	31.66	32.07	31.65
BellsB	M001	760.32	BellsB-M001-760.32	31.88	31.96	31.97	32.42	31.96
BellsB	M001	766.74	BellsB-M001-766.74	32.43	32.51	32.52	32.93	32.51
BellsB	M001	772.73	BellsB-M001-772.73	32.5	32.57	32.58	32.95	32.57
BellsB	M001	782.27	BellsB-M001-782.27	34.79	34.84	34.84	35.21	34.84
BellsB	M001	796.37	BellsB-M001-796.37	36.42	36.56	36.57	37.45	36.56
BellsB	M001	800	BellsB-M001-800	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M001	810.13	BellsB-M001-810.13	42.22	42.31	42.32	42.77	42.31
BellsB	M001	816.09	BellsB-M001-816.09	42.04	42.08	42.09	42.26	42.08
BellsB	M001	840	BellsB-M001-840	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M001	857.41	BellsB-M001-857.41	45.52	45.6	45.62	45.99	45.6
BellsB	M001	877.27	BellsB-M001-877.27	45.4	45.45	45.46	45.38	45.45
BellsB	M001	901.68	BellsB-M001-901.68	45.07	45.18	45.19	45.78	45.18
BellsB	M001	925.41	BellsB-M001-925.41	46.29	46.34	46.34	46.63	46.34
BellsB	M001	931.51	BellsB-M001-931.51	46.07	46.13	46.14	46.51	46.13
BellsB	M001	951.43	BellsB-M001-951.43	47.21	47.27	47.28	47.59	47.27
BellsB	M001	973.52	BellsB-M001-973.52	48.09	48.17	48.18	48.59	48.17
BellsB	M001	987.27	BellsB-M001-987.27	48.6	48.69	48.7	49.18	48.69
BellsB	M001	996.42	BellsB-M001-996.42	49.36	49.43	49.44	49.82	49.43
BellsB	M001	1006.24	BellsB-M001-1006.24	50.33	50.41	50.41	50.82	50.41
BellsB	M001	1014.11	BellsB-M001-1014.11	50.95	51.04	51.05	51.51	51.04
BellsB	M001	1021.64	BellsB-M001-1021.64	51.35	51.43	51.44	51.82	51.43
BellsB	M001	1032.36	BellsB-M001-1032.36	52.37	52.45	52.46	52.87	52.45
BellsB	M001	1051.64	BellsB-M001-1051.64	52.97	53.02	53.03	53.34	53.02
BellsB	M001	1064.67	BellsB-M001-1064.67	53.93	53.97	53.97	54.22	53.97
BellsB	M001	1069.76	BellsB-M001-1069.76	54.41	54.45	54.46	54.74	54.45
BellsB	M001	1077.81	BellsB-M001-1077.81	55.27	55.34	55.34	55.7	55.34

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M001	1096.03	BellsB-M001-1096.03	56.18	56.25	56.26	56.67	56.25
BellsB	M001	1117.89	BellsB-M001-1117.89	56.77	56.85	56.86	57.28	56.85
BellsB	M001	1128.34	BellsB-M001-1128.34	57.66	57.72	57.73	58.08	57.72
BellsB	M001	1141.88	BellsB-M001-1141.88	57.95	58.03	58.04	58.52	58.03
BellsB	M001	1153.18	BellsB-M001-1153.18	59.39	59.45	59.45	59.77	59.45
BellsB	M001	1166.01	BellsB-M001-1166.01	59.69	59.76	59.77	60.13	59.76
BellsB	M001	1182.98	BellsB-M001-1182.98	60.61	60.73	60.74	61.33	60.73
BellsB	M001	1200.58	BellsB-M001-1200.58	60.92	61.04	61.05	61.72	61.04
BellsB	M001	1214.13	BellsB-M001-1214.13	61.45	61.6	61.62	62.42	61.6
BellsB	M001	1234.76	BellsB-M001-1234.76	62.01	62.08	62.08	62.41	62.08
BellsB	M001	1251.58	BellsB-M001-1251.58	62.97	63.1	63.12	63.77	63.1
BellsB	M001	1262.25	BellsB-M001-1262.25	64.34	64.37	64.37	64.56	64.37
BellsB	M001	1286.33	BellsB-M001-1286.33	64.12	64.18	64.19	64.49	64.18
BellsB	M001	1310.38	BellsB-M001-1310.38	65.25	65.32	65.33	65.69	65.32
BellsB	M001	1358.51	BellsB-M001-1358.51	66.55	66.63	66.63	67.11	66.63
BellsB	M001	1406.62	BellsB-M001-1406.62	68.41	68.58	68.6	69.35	68.58
BellsB	M001	1454.75	BellsB-M001-1454.75	69.43	69.5	69.5	69.83	69.5
BellsB	M001	1483.47	BellsB-M001-1483.47	69.85	69.89	69.89	70.11	69.89
BellsB	M001	1502.43	BellsB-M001-1502.43	70.2	70.24	70.25	70.49	70.24
BellsB	M001	1515.66	BellsB-M001-1515.66	79.01	79.11	79.12	79.68	79.11
BellsB	M001	1529.04	BellsB-M001-1529.04	79.35	79.45	79.46	79.95	79.45
BellsB	M001	1544.26	BellsB-M001-1544.26	80.74	80.83	80.84	81.31	80.83
BellsB	M001	1563.67	BellsB-M001-1563.67	81.17	81.23	81.23	81.57	81.23
BellsB	M001	1582.05	BellsB-M001-1582.05	81.45	81.51	81.52	81.89	81.51
BellsB	M002	1605.59	BellsB-M002-1605.59	82.21	82.24	82.24	82.4	82.24
BellsB	M002	1624.32	BellsB-M002-1624.32	86.75	86.99	87.03	88.53	86.99
BellsB	M002	1650	BellsB-M002-1650	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	1688.91	BellsB-M002-1688.91	96.11	96.16	96.17	96.48	96.16
BellsB	M002	1705.77	BellsB-M002-1705.77	96.11	96.16	96.17	96.49	96.16

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M002	1729.73	BellsB-M002-1729.73	96.11	96.16	96.17	96.49	96.16
BellsB	M002	1753.27	BellsB-M002-1753.27	96.11	96.16	96.17	96.48	96.16
BellsB	M002	1777.98	BellsB-M002-1777.98	96.11	96.16	96.17	96.49	96.16
BellsB	M002	1800.77	BellsB-M002-1800.77	96.1	96.16	96.17	96.48	96.16
BellsB	M002	1807.43	BellsB-M002-1807.43	96.1	96.16	96.17	96.48	96.16
BellsB	M002	1821.35	BellsB-M002-1821.35	96.1	96.16	96.17	96.47	96.16
BellsB	M002	1834.27	BellsB-M002-1834.27	96.1	96.15	96.16	96.45	96.15
BellsB	M002	1848.27	BellsB-M002-1848.27	96.09	96.15	96.16	96.44	96.15
BellsB	M002	1857.16	BellsB-M002-1857.16	96.08	96.14	96.14	96.41	96.14
BellsB	M002	1870.34	BellsB-M002-1870.34	96.06	96.11	96.12	96.32	96.11
BellsB	M002	1880.79	BellsB-M002-1880.79	96.05	96.1	96.1	95.09	96.1
BellsB	M002	1887.59	BellsB-M002-1887.59	96.04	96.09	96.09	95.35	96.09
BellsB	M002	1896.87	BellsB-M002-1896.87	95.78	95.86	95.87	96.33	95.86
BellsB	M002	1910.32	BellsB-M002-1910.32	97.43	97.55	97.56	98.23	97.55
BellsB	M002	1918.81	BellsB-M002-1918.81	97.79	97.94	97.96	98.76	97.94
BellsB	M002	1939.94	BellsB-M002-1939.94	98.2	98.29	98.31	98.85	98.29
BellsB	M002	1951.81	BellsB-M002-1951.81	98.65	98.77	98.78	99.42	98.77
BellsB	M002	1966.25	BellsB-M002-1966.25	98.69	98.76	98.77	99.09	98.76
BellsB	M002	1982.97	BellsB-M002-1982.97	98.85	98.9	98.91	99.23	98.9
BellsB	M002	1996.87	BellsB-M002-1996.87	98.98	99.04	99.05	99.44	99.04
BellsB	M002	2007.37	BellsB-M002-2007.37	99.81	99.9	99.91	100.4	99.9
BellsB	M002	2010.46	BellsB-M002-2010.46	100.1	100.17	100.19	100.6	100.17
BellsB	M002	2014.53	BellsB-M002-2014.53	101.36	101.44	101.46	101.92	101.44
BellsB	M002	2021.67	BellsB-M002-2021.67	103.18	103.27	103.62	103.73	103.27
BellsB	M002	2025.44	BellsB-M002-2025.44	102.87	102.96	103.97	103.46	102.96
BellsB	M002	2033.27	BellsB-M002-2033.27	104.2	104.33	104.34	104.73	104.33
BellsB	M002	2040.56	BellsB-M002-2040.56	104.51	104.63	104.65	104.43	104.63
BellsB	M002	2054.52	BellsB-M002-2054.52	104.37	104.44	104.45	104.88	104.44
BellsB	M002	2059.88	BellsB-M002-2059.88	104.83	104.91	104.92	105.31	104.91

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M002	2068.57	BellsB-M002-2068.57	105.33	105.38	105.38	105.66	105.38
BellsB	M002	2085.77	BellsB-M002-2085.77	106.55	106.64	106.65	107.12	106.64
BellsB	M002	2103.01	BellsB-M002-2103.01	107.79	107.86	107.87	108.25	107.86
BellsB	M002	2117.78	BellsB-M002-2117.78	108.84	108.92	108.93	109.38	108.92
BellsB	M002	2133.27	BellsB-M002-2133.27	109.04	109.11	109.12	109.48	109.11
BellsB	M002	2173.21	BellsB-M002-2173.21	111.03	111.17	111.18	111.86	111.17
BellsB	M002	2200.99	BellsB-M002-2200.99	111.08	111.16	111.17	112.54	111.16
BellsB	M002	2232.72	BellsB-M002-2232.72	112.21	112.29	112.31	112.87	112.29
BellsB	M002	2275.77	BellsB-M002-2275.77	113.79	113.88	113.88	113.86	113.88
BellsB	M002	2295.83	BellsB-M002-2295.83	113.05	113.24	113.27	115.23	113.24
BellsB	M002	2300	BellsB-M002-2300	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M002	2307.61	BellsB-M002-2307.61	116.06	116.11	116.11	116.34	116.11
BellsB	M002	2328.64	BellsB-M002-2328.64	115.91	115.89	115.89	116.21	115.89
BellsB	M002	2352.81	BellsB-M002-2352.81	116.2	116.26	116.27	116.59	116.26
BellsB	M002	2367.92	BellsB-M002-2367.92	116.66	116.71	116.72	117.01	116.71
BellsB	M002	2378.55	BellsB-M002-2378.55	117.54	117.6	117.61	118.05	117.6
BellsB	M002	2408.52	BellsB-M002-2408.52	117.85	117.9	117.9	118.14	117.9
BellsB	M002	2428.46	BellsB-M002-2428.46	118.37	118.42	118.43	118.71	118.42
BellsB	M002	2450.61	BellsB-M002-2450.61	119.5	119.62	119.64	120.23	119.62
BellsB	M002	2478.37	BellsB-M002-2478.37	120	120.13	120.15	120.77	120.13
BellsB	M002	2496.15	BellsB-M002-2496.15	120.24	120.37	120.39	121.18	120.37
BellsB	M002	2518.19	BellsB-M002-2518.19	120.01	120.08	120.09	121.13	120.08
BellsB	M002	2528.27	BellsB-M002-2528.27	120.66	120.81	120.82	121.25	120.81
BellsB	M002	2578.18	BellsB-M002-2578.18	121.36	121.53	121.54	122.05	121.53
BellsB	M002	2628.09	BellsB-M002-2628.09	122.15	122.21	122.22	122.38	122.21
BellsB	M002	2677.99	BellsB-M002-2677.99	122.62	122.69	122.69	123.12	122.69
BellsB	M002	2727.91	BellsB-M002-2727.91	123.41	123.51	123.53	123.88	123.51
BellsB	M002	2777.91	BellsB-M002-2777.91	123.89	123.96	123.97	124.22	123.96
BellsB	M002	2823.69	BellsB-M002-2823.69	124.25	124.3	124.31	124.49	124.3

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M002	2861.32	BellsB-M002-2861.32	124.58	124.69	124.7	125.05	124.69
BellsB	M002	2881.51	BellsB-M002-2881.51	125.82	125.95	125.95	126.01	125.95
BellsB	M002	2890	BellsB-M002-2890	Bridge	Bridge	Bridge	Bridge	Bridge
BellsB	M002	2899.46	BellsB-M002-2899.46	126.42	126.46	126.47	126.68	126.46
BellsB	M002	2918.61	BellsB-M002-2918.61	126.67	126.61	126.61	126.94	126.61
BellsB	M002	2937.88	BellsB-M002-2937.88	126.8	126.97	126.99	128.13	126.97
BellsB	M002	2940.01	BellsB-M002-2940.01	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	2945.26	BellsB-M002-2945.26	127.64	127.72	127.73	128.16	127.72
BellsB	M002	2991.47	BellsB-M002-2991.47	127.98	128.11	128.13	128.47	128.11
BellsB	M002	3037.68	BellsB-M002-3037.68	127.94	128	128.01	128.28	128
BellsB	M002	3083.82	BellsB-M002-3083.82	129.51	129.53	129.53	129.69	129.53
BellsB	M002	3130.11	BellsB-M002-3130.11	130.19	130.35	130.37	131.09	130.35
BellsB	M002	3157.63	BellsB-M002-3157.63	131.21	131.24	131.25	131.42	131.24
BellsB	M002	3176.31	BellsB-M002-3176.31	131.35	131.41	131.42	131.68	131.41
BellsB	M002	3203.83	BellsB-M002-3203.83	132.31	132.35	132.36	132.56	132.35
BellsB	M002	3222.52	BellsB-M002-3222.52	134.04	134.26	134.29	135.48	134.26
BellsB	M002	3250	BellsB-M002-3250	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	3303.55	BellsB-M002-3303.55	138.48	138.61	138.63	139.04	138.61
BellsB	M002	3329.08	BellsB-M002-3329.08	138.52	138.65	138.66	139.1	138.65
BellsB	M002	3358.51	BellsB-M002-3358.51	138.52	138.65	138.67	139.11	138.65
BellsB	M002	3375	BellsB-M002-3375	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	3386.31	BellsB-M002-3386.31	138.56	138.63	138.65	139.08	138.63
BellsB	M002	3400.36	BellsB-M002-3400.36	138.58	138.65	138.67	139.08	138.65
BellsB	M002	3424.29	BellsB-M002-3424.29	138.48	138.53	138.54	138.21	138.53
BellsB	M002	3473.83	BellsB-M002-3473.83	139.59	139.67	139.68	140.21	139.67
BellsB	M002	3520.99	BellsB-M002-3520.99	140.7	140.79	140.8	141.16	140.79
BellsB	M002	3573.45	BellsB-M002-3573.45	142.19	142.27	142.27	142.61	142.27
BellsB	M002	3623.19	BellsB-M002-3623.19	143.52	143.58	143.58	143.84	143.58
BellsB	M002	3643.21	BellsB-M002-3643.21	144.39	144.59	144.61	145.65	144.59

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M002	3650	BellsB-M002-3650	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	3677.71	BellsB-M002-3677.71	147.23	148.29	148.4	150.44	148.29
BellsB	M002	3697.71	BellsB-M002-3697.71	147.44	148.48	148.58	150.44	148.48
BellsB	M002	3724.94	BellsB-M002-3724.94	147.4	148.46	148.57	150.43	148.46
BellsB	M002	3746.94	BellsB-M002-3746.94	147.63	148.53	148.63	150.47	148.53
BellsB	M002	3765.39	BellsB-M002-3765.39	148.02	148.34	148.48	150.43	148.34
BellsB	M002	3796.17	BellsB-M002-3796.17	148.46	148.58	148.59	150.45	148.58
BellsB	M002	3822.22	BellsB-M002-3822.22	149	149.12	149.13	150.51	149.12
BellsB	M002	3845.41	BellsB-M002-3845.41	149.55	149.6	149.61	150.44	149.6
BellsB	M002	3869.08	BellsB-M002-3869.08	149.97	150.06	150.07	150.51	150.06
BellsB	M002	3894.65	BellsB-M002-3894.65	150.97	151.03	151.04	151.35	151.03
BellsB	M002	3943.89	BellsB-M002-3943.89	152.17	152.24	152.24	152.5	152.24
BellsB	M002	3993.13	BellsB-M002-3993.13	153.41	153.45	153.45	153.61	153.45
BellsB	M002	4042.37	BellsB-M002-4042.37	154.55	154.62	154.62	154.96	154.62
BellsB	M002	4091.61	BellsB-M002-4091.61	156.03	156.08	156.09	156.34	156.08
BellsB	M002	4140.85	BellsB-M002-4140.85	157.89	157.93	157.93	158.13	157.93
BellsB	M002	4190.09	BellsB-M002-4190.09	159.49	159.55	159.55	159.84	159.55
BellsB	M002	4239.33	BellsB-M002-4239.33	160.58	160.64	160.64	160.94	160.64
BellsB	M002	4288.56	BellsB-M002-4288.56	162.38	162.43	162.44	162.72	162.43
BellsB	M002	4337.81	BellsB-M002-4337.81	163.69	163.73	163.74	163.93	163.73
BellsB	M002	4387.04	BellsB-M002-4387.04	165.16	165.23	165.24	165.61	165.23
BellsB	M002	4436.28	BellsB-M002-4436.28	166.92	166.99	167	167.34	166.99
BellsB	M002	4485.52	BellsB-M002-4485.52	168.79	168.82	168.82	168.96	168.82
BellsB	M002	4534.72	BellsB-M002-4534.72	170.81	170.88	170.88	171.15	170.88
BellsB	M002	4583.99	BellsB-M002-4583.99	174.05	174.13	174.14	174.65	174.13
BellsB	M002	4609.61	BellsB-M002-4609.61	174.54	174.66	174.66	175.21	174.66
BellsB	M002	4633.41	BellsB-M002-4633.41	175.16	175.19	175.19	175.34	175.19
BellsB	M002	4658.79	BellsB-M002-4658.79	176.49	176.59	176.59	177.11	176.59
BellsB	M002	4682.48	BellsB-M002-4682.48	177.25	177.31	177.31	177.54	177.31

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	M002	4702.24	BellsB-M002-4702.24	178.44	178.46	178.47	178.64	178.46
BellsB	M002	4707.54	BellsB-M002-4707.54	178.3	178.32	178.32	178.46	178.32
BellsB	M002	4727.54	BellsB-M002-4727.54	179.72	179.78	179.78	179.96	179.78
BellsB	M002	4756.65	BellsB-M002-4756.65	180.93	180.97	180.98	181.21	180.97
BellsB	M002	4785.76	BellsB-M002-4785.76	182.22	182.3	182.29	182.4	182.3
BellsB	M002	4805.77	BellsB-M002-4805.77	182.76	182.78	182.8	183.79	182.78
BellsB	M002	4850	BellsB-M002-4850	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	M002	4853.42	BellsB-M002-4853.42	186.15	186.43	186.44	188.76	186.43
BellsB	M002	4873.31	BellsB-M002-4873.31	186.11	186.48	186.51	188.96	186.48
BellsB	M002	4917.46	BellsB-M002-4917.46	186.68	186.78	186.79	188.96	186.78
BellsB	M002	4967.57	BellsB-M002-4967.57	187.63	187.7	187.71	188.84	187.7
BellsB	M002	5017.78	BellsB-M002-5017.78	189.14	189.21	189.21	189.51	189.21
BellsB	M002	5067.47	BellsB-M002-5067.47	189.66	189.71	189.7	189.94	189.71
BellsB	M002	5090.85	BellsB-M002-5090.85	190.89	190.97	190.98	191.35	190.97
BellsB	M002	5117.45	BellsB-M002-5117.45	191.28	191.38	191.39	191.84	191.38
BellsB	M002	5149.23	BellsB-M002-5149.23	191.48	191.53	191.54	191.82	191.53
BellsB	M002	5166.11	BellsB-M002-5166.11	191.78	191.85	191.85	192.2	191.85
BellsB	TR001	12.14	BellsB-TR001-12.14	82.99	83.03	83.04	83.27	83.06
BellsB	TR001	37.01	BellsB-TR001-37.01	83.85	83.9	83.91	84.13	83.93
BellsB	TR001	43.86	BellsB-TR001-43.86	84.2	84.24	84.24	84.42	84.26
BellsB	TR001	50.93	BellsB-TR001-50.93	84.67	84.71	84.71	84.88	84.73
BellsB	TR001	56.76	BellsB-TR001-56.76	84.87	84.92	84.92	85.13	84.95
BellsB	TR001	60.69	BellsB-TR001-60.69	85.08	85.12	85.13	85.32	85.14
BellsB	TR001	64.04	BellsB-TR001-64.04	85.15	85.19	85.19	85.4	85.21
BellsB	TR001	67.75	BellsB-TR001-67.75	85.57	85.6	85.6	85.77	85.62
BellsB	TR001	72.74	BellsB-TR001-72.74	86.37	86.41	86.42	86.62	86.43
BellsB	TR001	79.14	BellsB-TR001-79.14	87.25	87.3	87.31	87.56	87.33
BellsB	TR001	84.12	BellsB-TR001-84.12	88.36	88.4	88.41	88.63	88.42
BellsB	TR001	88.17	BellsB-TR001-88.17	89.3	89.37	89.37	89.69	89.4

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
BellsB	TR001	91.42	BellsB-TR001-91.42	90.84	90.99	91.01	92.1	91.04
BellsB	TR001	100	BellsB-TR001-100	Culvert	Culvert	Culvert	Culvert	Culvert
BellsB	TR001	139.54	BellsB-TR001-139.54	93.83	94.25	94.35	96.58	94.72
BellsB	TR001	159.86	BellsB-TR001-159.86	93.93	94.4	94.5	96.61	94.87
BellsB	TR001	178.13	BellsB-TR001-178.13	94.06	94.13	94.14	96.59	94.17
CornerB	M001	23.81	CornerB-M001-23.81	2.8	2.85	3.03	3.03	3.36
CornerB	M001	80.73	CornerB-M001-80.73	2.83	2.88	3.05	3.12	3.37
CornerB	M001	129.05	CornerB-M001-129.05	2.86	2.92	3.08	3.2	3.38
CornerB	M001	150.09	CornerB-M001-150.09	2.88	2.95	3.09	3.24	3.38
CornerB	M001	152.5	CornerB-M001-152.5	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	155.66	CornerB-M001-155.66	2.88	2.95	3.09	3.25	3.39
CornerB	M001	174.77	CornerB-M001-174.77	2.89	2.96	3.1	3.26	3.39
CornerB	M001	210.89	CornerB-M001-210.89	2.92	2.99	3.11	3.3	3.39
CornerB	M001	245.99	CornerB-M001-245.99	2.94	3.02	3.14	3.36	3.4
CornerB	M001	266.99	CornerB-M001-266.99	2.97	3.05	3.16	3.4	3.41
CornerB	M001	270	CornerB-M001-270	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	274.62	CornerB-M001-274.62	3	3.08	3.18	3.43	3.42
CornerB	M001	292.92	CornerB-M001-292.92	3.02	3.1	3.18	3.42	3.42
CornerB	M001	324.13	CornerB-M001-324.13	3.03	3.1	3.18	3.41	3.42
CornerB	M001	352.89	CornerB-M001-352.89	3.03	3.12	3.2	3.6	3.44
CornerB	M001	375.14	CornerB-M001-375.14	3.03	3.14	3.24	3.72	3.47
CornerB	M001	380	CornerB-M001-380	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	381.26	CornerB-M001-381.26	3.29	3.38	3.39	3.8	3.52
CornerB	M001	401.99	CornerB-M001-401.99	3.36	3.45	3.46	3.87	3.56
CornerB	M001	425.41	CornerB-M001-425.41	3.35	3.43	3.44	3.85	3.55
CornerB	M001	445.11	CornerB-M001-445.11	3.33	3.41	3.41	3.79	3.52
CornerB	M001	460	CornerB-M001-460	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	472.07	CornerB-M001-472.07	3.73	3.83	3.83	4.22	3.81
CornerB	M001	520.22	CornerB-M001-520.22	3.77	3.88	3.88	4.31	3.86

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
CornerB	M001	535.83	CornerB-M001-535.83	3.77	3.87	3.88	4.3	3.85
CornerB	M001	570.12	CornerB-M001-570.12	3.78	3.89	3.89	4.34	3.87
CornerB	M001	608.52	CornerB-M001-608.52	3.78	3.89	3.89	4.34	3.87
CornerB	M001	629.03	CornerB-M001-629.03	3.79	3.9	3.9	4.36	3.88
CornerB	M001	635	CornerB-M001-635	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M001	643.93	CornerB-M001-643.93	4.11	4.2	4.2	4.61	4.2
CornerB	M001	659.37	CornerB-M001-659.37	4.12	4.21	4.22	4.63	4.22
CornerB	M002	696.36	CornerB-M002-696.36	4.13	4.22	4.22	4.65	4.22
CornerB	M002	739.85	CornerB-M002-739.85	4.14	4.23	4.24	4.67	4.24
CornerB	M002	784.55	CornerB-M002-784.55	4.14	4.24	4.24	4.68	4.24
CornerB	M002	828.33	CornerB-M002-828.33	4.15	4.24	4.25	4.69	4.24
CornerB	M002	869.66	CornerB-M002-869.66	4.15	4.25	4.25	4.7	4.25
CornerB	M002	915.75	CornerB-M002-915.75	4.15	4.25	4.26	4.71	4.25
CornerB	M002	959.21	CornerB-M002-959.21	4.16	4.26	4.26	4.72	4.26
CornerB	M002	1004.03	CornerB-M002-1004.03	4.16	4.25	4.25	4.69	4.25
CornerB	M002	1047.01	CornerB-M002-1047.01	4.18	4.28	4.28	4.73	4.28
CornerB	M002	1065.81	CornerB-M002-1065.81	4.19	4.3	4.3	4.8	4.3
CornerB	M002	1070	CornerB-M002-1070	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M002	1070.69	CornerB-M002-1070.69	4.2	4.31	4.31	4.83	4.31
CornerB	M002	1090.67	CornerB-M002-1090.67	4.19	4.29	4.3	4.82	4.29
CornerB	M002	1110.53	CornerB-M002-1110.53	4.05	4.1	4.1	4.84	4.1
CornerB	M002	1137.55	CornerB-M002-1137.55	4.13	4.22	4.23	4.98	4.23
CornerB	M002	1142.41	CornerB-M002-1142.41	4.49	4.68	4.69	5.35	4.68
CornerB	M002	1185.06	CornerB-M002-1185.06	4.57	4.76	4.78	5.43	4.76
CornerB	M002	1194.69	CornerB-M002-1194.69	4.58	4.78	4.79	5.45	4.78
CornerB	M002	1206.83	CornerB-M002-1206.83	4.61	4.8	4.81	4.58	4.8
CornerB	M002	1215.66	CornerB-M002-1215.66	4.05	4.16	4.17	4.56	4.16
CornerB	M002	1233.83	CornerB-M002-1233.83	4.56	4.63	4.63	5	4.63
CornerB	M002	1246.98	CornerB-M002-1246.98	4.73	4.86	4.87	5.51	4.86

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
CornerB	M002	1258.94	CornerB-M002-1258.94	5.17	5.3	5.31	5.89	5.3
CornerB	M002	1279.52	CornerB-M002-1279.52	6.46	6.66	6.67	7.68	6.66
CornerB	M002	1284.12	CornerB-M002-1284.12	6.87	7.06	7.08	8.13	7.06
CornerB	M002	1289.64	CornerB-M002-1289.64	6.8	6.96	6.97	7.88	6.96
CornerB	M002	1296.49	CornerB-M002-1296.49	6.78	6.96	6.97	7.91	6.96
CornerB	M002	1300.06	CornerB-M002-1300.06	6.67	6.81	6.82	7.53	6.81
CornerB	M002	1305.35	CornerB-M002-1305.35	7.14	7.29	7.3	8.05	7.29
CornerB	M002	1309.11	CornerB-M002-1309.11	7.76	7.94	7.95	8.85	7.94
CornerB	M002	1311.16	CornerB-M002-1311.16	8.15	8.34	8.35	9.26	8.34
CornerB	M002	1312.39	CornerB-M002-1312.39	8.56	8.76	8.77	9.75	8.76
CornerB	M002	1313.58	CornerB-M002-1313.58	9.01	9.22	9.23	10.22	9.22
CornerB	M002	1315.18	CornerB-M002-1315.18	9.82	10.04	10.05	11.04	10.04
CornerB	M002	1317.22	CornerB-M002-1317.22	10.25	10.5	10.51	11.64	10.5
CornerB	M002	1326.83	CornerB-M002-1326.83	10.4	10.64	10.66	11.76	10.64
CornerB	M002	1336.58	CornerB-M002-1336.58	9.43	9.59	9.6	10.33	9.59
CornerB	M002	1347.51	CornerB-M002-1347.51	10.07	10.29	10.3	11.36	10.29
CornerB	M002	1352.01	CornerB-M002-1352.01	10.9	11.14	11.14	12.29	11.14
CornerB	M002	1354.11	CornerB-M002-1354.11	19.05	19.33	19.35	20.67	19.33
CornerB	M002	1356.61	CornerB-M002-1356.61	19.27	19.54	19.56	20.86	19.54
CornerB	M002	1363.91	CornerB-M002-1363.91	19.28	19.54	19.56	20.86	19.54
CornerB	M002	1386.11	CornerB-M002-1386.11	19.29	19.56	19.57	20.89	19.56
CornerB	M002	1415.93	CornerB-M002-1415.93	19.29	19.56	19.58	20.9	19.56
CornerB	M002	1463.65	CornerB-M002-1463.65	19.29	19.56	19.58	20.91	19.56
CornerB	M002	1490.63	CornerB-M002-1490.63	19.3	19.57	19.59	20.93	19.57
CornerB	M002	1505.64	CornerB-M002-1505.64	19.3	19.58	19.59	20.94	19.58
CornerB	M002	1517.99	CornerB-M002-1517.99	19.3	19.58	19.59	20.94	19.58
CornerB	M002	1526.59	CornerB-M002-1526.59	19.3	19.58	19.6	20.94	19.58
CornerB	M002	1539.91	CornerB-M002-1539.91	19.3	19.58	19.6	20.94	19.58
CornerB	M002	1551.89	CornerB-M002-1551.89	19.3	19.58	19.59	20.94	19.58

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
CornerB	M002	1567.16	CornerB-M002-1567.16	19.3	19.58	19.59	20.94	19.58
CornerB	M002	1613.91	CornerB-M002-1613.91	19.3	19.57	19.59	20.93	19.57
CornerB	M002	1654.15	CornerB-M002-1654.15	19.29	19.57	19.58	20.93	19.57
CornerB	M002	1691.96	CornerB-M002-1691.96	19.29	19.56	19.58	20.92	19.56
CornerB	M002	1717.41	CornerB-M002-1717.41	19.29	19.56	19.58	20.91	19.56
CornerB	M002	1733.13	CornerB-M002-1733.13	19.29	19.56	19.58	20.91	19.56
CornerB	M002	1770.94	CornerB-M002-1770.94	19.26	19.53	19.54	20.83	19.53
CornerB	M002	1772	CornerB-M002-1772	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M002	1773.95	CornerB-M002-1773.95	19.26	19.51	19.53	20.81	19.51
CornerB	M002	1790.92	CornerB-M002-1790.92	18.96	19.12	19.13	20.13	19.12
CornerB	M002	1826.39	CornerB-M002-1826.39	18.36	18.46	18.47	21.84	18.46
CornerB	M003	1883.49	CornerB-M003-1883.49	21.54	21.78	21.79	22.93	21.78
CornerB	M003	1929.72	CornerB-M003-1929.72	22.01	22.21	22.22	23.24	22.21
CornerB	M003	1975.95	CornerB-M003-1975.95	23.52	23.71	23.72	24.61	23.71
CornerB	M003	1985.82	CornerB-M003-1985.82	23.84	24.06	24.07	25.15	24.06
CornerB	M003	1991.14	CornerB-M003-1991.14	24.2	24.45	24.46	25.44	24.45
CornerB	M003	2022.25	CornerB-M003-2022.25	24.52	24.71	24.72	25.44	24.71
CornerB	M003	2068.44	CornerB-M003-2068.44	25.38	25.46	25.48	25.97	25.46
CornerB	M003	2080.62	CornerB-M003-2080.62	25.36	25.49	25.5	26.08	25.49
CornerB	M003	2114.73	CornerB-M003-2114.73	26.19	26.32	26.34	27.03	26.32
CornerB	M003	2115	CornerB-M003-2115	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M003	2119.46	CornerB-M003-2119.46	25.89	26.04	26.05	26.74	26.04
CornerB	M003	2131.66	CornerB-M003-2131.66	26.74	26.9	26.91	27.65	26.9
CornerB	M003	2141.65	CornerB-M003-2141.65	27.43	27.59	27.61	28.58	27.59
CornerB	M003	2150	CornerB-M003-2150	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M003	2163.63	CornerB-M003-2163.63	28.52	28.86	28.88	32.27	28.86
CornerB	M003	2183.63	CornerB-M003-2183.63	28.62	28.92	28.94	32.12	28.92
CornerB	M003	2212.25	CornerB-M003-2212.25	29.46	29.8	29.82	32.2	29.8
CornerB	M003	2240.88	CornerB-M003-2240.88	29.53	29.87	29.89	32.26	29.87

Corner Brook Stream
CB - Mixed Flow - 20 year

				1	2	3	4	5
Reach	**Reach Name**	**Section No.**	**HEC ref.**	**20-Existing**	**20-AMEC-2020**	**20-AMEC-2050**	**20-Finnis-2050**	**20-AMEC-2080**
CornerB	M003	2260.98	CornerB-M003-2260.98	29.71	29.99	30.01	32.26	29.99
CornerB	M003	2263.01	CornerB-M003-2263.01	32.3	32.45	32.46	33.04	32.45
CornerB	M003	2267.71	CornerB-M003-2267.71	32.61	32.78	32.79	33.49	32.78
CornerB	M003	2315.61	CornerB-M003-2315.61	32.61	32.78	32.79	33.49	32.78
CornerB	M003	2363.51	CornerB-M003-2363.51	32.62	32.8	32.81	33.51	32.8
CornerB	M003	2411.41	CornerB-M003-2411.41	32.62	32.8	32.81	33.57	32.8
CornerB	M003	2459.31	CornerB-M003-2459.31	32.56	32.71	32.72	32.2	32.71
CornerB	M003	2507.21	CornerB-M003-2507.21	32.2	32.36	32.37	33.61	32.36
CornerB	M003	2527.22	CornerB-M003-2527.22	32.95	33.95	33.98	34.45	33.95
CornerB	M003	2530	CornerB-M003-2530	Bridge	Bridge	Bridge	Bridge	Bridge
CornerB	M003	2537.73	CornerB-M003-2537.73	36.09	36.22	36.23	36.79	36.22
CornerB	M003	2557.73	CornerB-M003-2557.73	36.15	36.29	36.31	36.91	36.29
CornerB	M003	2602.09	CornerB-M003-2602.09	36.19	36.35	36.36	37.07	36.35
CornerB	M003	2645.73	CornerB-M003-2645.73	36.19	36.34	36.36	37.04	36.34
CornerB	M003	2689.92	CornerB-M003-2689.92	35.42	35.52	35.53	36.08	35.52
CornerB	M004	2769.85	CornerB-M004-2769.85	37.18	37.44	37.45	38.47	37.44
CornerB	M004	2796.61	CornerB-M004-2796.61	37.99	38.21	38.22	39.29	38.21
CornerB	M004	2838.71	CornerB-M004-2838.71	38	38.2	38.21	38.98	38.2
CornerB	M004	2888.71	CornerB-M004-2888.71	38.77	38.96	38.97	40.25	38.96
CornerB	TR001	21.31	CornerB-TR001-21.31	36.98	37.17	37.18	37.85	37.17
CornerB	TR001	25	CornerB-TR001-25	Culvert	Culvert	Culvert	Culvert	Culvert
CornerB	TR001	36.04	CornerB-TR001-36.04	38.2	38.26	38.26	38.42	38.26
CornerB	TR001	56.04	CornerB-TR001-56.04	38	38.06	38.07	38.34	38.06
CornerB	TR001	106.04	CornerB-TR001-106.04	39.74	39.8	39.8	40.09	39.8
CornerB	TR001	156.04	CornerB-TR001-156.04	42.58	42.64	42.64	42.91	42.64
CornerB	TR001	206.04	CornerB-TR001-206.04	44.64	44.71	44.71	45.02	44.71
CornerB	TR002	18.08	CornerB-TR002-18.08	21.78	21.81	21.81	21.95	21.81
CornerB	TR002	21.04	CornerB-TR002-21.04	22.86	22.9	22.91	23.13	22.9

PETRIE'S BROOK

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Petrie's Brook - Existing Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	20Year-Existing	3.1	138.52	138.93	138.93	139.05	0.029686	1.98	2.55	11.02	1.12
TR002	26.4	PetriesB-TR002-26.4	20Year-Existing	3.1	136.29	136.53	136.6	136.73	0.162301	2.92	1.94	16.67	2.35
TR003	75.44	PetriesB-TR003-75.44	20Year-Existing	1.9	138.22	138.77	138.78	138.91	0.018003	1.81	1.46	5.81	0.9
TR003	31.52	PetriesB-TR003-31.52	20Year-Existing	1.9	135.25	135.54	135.75	136.64	0.385899	4.84	0.46	3.35	3.66
M002	2878.54	PetriesB-M002-2878.54	20Year-Existing	6.2	133.44	133.92	133.98	134.16	0.051156	3.02	3.62	12.68	1.53
M002	2830.24	PetriesB-M002-2830.24	20Year-Existing	6.2	129.86	130.63	130.91	131.52	0.063039	4.43	1.78	4.15	1.8
M002	2781.96	PetriesB-M002-2781.96	20Year-Existing	6.2	126.6	127.28	127.54	128.11	0.08029	4.49	1.94	5.39	1.96
M002	2733.55	PetriesB-M002-2733.55	20Year-Existing	6.2	123.62	124.3	124.5	124.92	0.055089	3.97	2.48	8.01	1.68
M002	2711.98	PetriesB-M002-2711.98	20Year-Existing	6.2	121.55	122.23	122.57	123.4	0.086709	5.31	1.38	3.99	2.14
M002	2710	PetriesB-M002-2710	20Year-Existing	Bridge									
M002	2706.48	PetriesB-M002-2706.48	20Year-Existing	6.2	121.23	121.99	122.15	122.65	0.032905	3.6	1.72	5.27	1.36
M002	2686.04	PetriesB-M002-2686.04	20Year-Existing	6.2	120.42	121.17	121.37	121.78	0.049632	3.84	2.09	5.11	1.57
M002	2636.8	PetriesB-M002-2636.8	20Year-Existing	6.6	118.88	119.69	119.77	120.04	0.026183	3.07	2.94	6.36	1.17
M002	2586.04	PetriesB-M002-2586.04	20Year-Existing	6.6	117.62	117.9	117.95	118.06	0.087801	2.29	3.8	25.36	1.73
M002	2536.82	PetriesB-M002-2536.82	20Year-Existing	6.6	115.95	116.59	116.59	116.73	0.023307	2.3	4.67	15.42	1.04
M002	2487.14	PetriesB-M002-2487.14	20Year-Existing	6.6	114	114.87	115.07	115.34	0.030076	3.42	2.74	8.21	1.28
M002	2437.53	PetriesB-M002-2437.53	20Year-Existing	6.6	112.56	113.31	113.43	113.7	0.036378	3.33	2.97	8.21	1.37
M002	2387.76	PetriesB-M002-2387.76	20Year-Existing	6.6	110.97	111.81	111.9	112.16	0.026473	3.11	3.16	7.6	1.19
M002	2337.92	PetriesB-M002-2337.92	20Year-Existing	6.6	109.55	110.42	110.54	110.77	0.030122	3.19	4.05	20.47	1.24
M002	2288.19	PetriesB-M002-2288.19	20Year-Existing	6.6	107.88	108.65	108.77	109.13	0.03715	3.43	2.54	6.25	1.39
M002	2243.62	PetriesB-M002-2243.62	20Year-Existing	6.6	106.54	107.7	107.77	108.09	0.024339	3.05	2.69	4.85	1.06
M002	2206.69	PetriesB-M002-2206.69	20Year-Existing	6.6	105.39	106.28	106.49	106.86	0.046693	3.7	2.28	8.24	1.47
M002	2172.99	PetriesB-M002-2172.99	20Year-Existing	6.6	104.44	105.12	105.21	105.43	0.035217	3.04	3.19	10.44	1.3
M002	2132.37	PetriesB-M002-2132.37	20Year-Existing	6.6	102.85	103.66	103.69	104.03	0.033167	3.14	3.03	10	1.3
M002	2076.75	PetriesB-M002-2076.75	20Year-Existing	6.6	100.37	101.38	101.56	102	0.040026	3.75	2.11	4.1	1.39
TR001	194.22	PetriesB-TR001-194.22	20Year-Existing	4.9	116.47	117.37	117.37	117.63	0.016769	2.63	2.77	5.74	0.95
TR001	173.31	PetriesB-TR001-173.31	20Year-Existing	4.9	113.43	113.85	114.27	116.37	0.528232	7.51	0.78	3.66	4.55
TR001	155.88	PetriesB-TR001-155.88	20Year-Existing	4.9	111.89	112.31	112.41	112.56	0.073611	3.08	2.8	15.15	1.73
TR001	147.33	PetriesB-TR001-147.33	20Year-Existing	4.9	111.21	111.58	111.68	112.01	0.155841	4	2.4	20.37	2.49
TR001	100.01	PetriesB-TR001-100.01	20Year-Existing	4.9	106.9	107.5	107.65	107.97	0.053464	3.51	1.99	6.31	1.61
TR001	84.71	PetriesB-TR001-84.71	20Year-Existing	4.9	105.53	106.82	106.48	106.88	0.003917	1.24	5.37	8.46	0.38
TR001	80	PetriesB-TR001-80	20Year-Existing	Culvert									
TR001	76.27	PetriesB-TR001-76.27	20Year-Existing	4.9	105.28	106.2	106.2	106.34	0.010165	2.07	4.34	14.54	0.73
TR001	50.01	PetriesB-TR001-50.01	20Year-Existing	4.9	102.82	103.27	103.62	105.1	0.294345	6.37	0.93	4.1	3.54
TR001	10.31	PetriesB-TR001-10.31	20Year-Existing	4.9	100.43	101.1	101.17	101.42	0.028879	2.8	2.23	5.95	1.21
M001	2036.68	PetriesB-M001-2036.68	20Year-Existing	11.3	99.58	100.56	100.62	100.88	0.024574	3.28	5.56	12.12	1.15
M001	2006.33	PetriesB-M001-2006.33	20Year-Existing	11.3	98.58	100.64	99.87	100.68	0.001051	1.18	16.75	21.95	0.28
M001	1984.7	PetriesB-M001-1984.7	20Year-Existing	11.3	98.16	100.39	99.56	100.62	0.003104	2.15	5.25	15.34	0.47
M001	1975	PetriesB-M001-1975	20Year-Existing	Culvert									
M001	1967.48	PetriesB-M001-1967.48	20Year-Existing	11.3	97.22	98.36	98.74	99.66	0.052033	5.05	2.24	5.65	1.7
M001	1947.41	PetriesB-M001-1947.41	20Year-Existing	11.3	96.71	97.93	98.01	98.41	0.021893	3.54	4.27	6.27	1.12
M001	1897.27	PetriesB-M001-1897.27	20Year-Existing	11.3	94.94	95.84	96.12	96.73	0.055438	4.81	3.11	5.99	1.75
M001	1847.5	PetriesB-M001-1847.5	20Year-Existing	11.3	93.5	94.67	94.67	95.03	0.019554	3.24	5.04	7.24	1.04
M001	1790.83	PetriesB-M001-1790.83	20Year-Existing	12.9	91.16	92.22	92.39	93.19	0.053728	5.01	3.8	7.04	1.72
M001	1750	PetriesB-M001-1750	20Year-Existing	12.9	90.25	91.57	91.6	91.95	0.016231	3.35	6.41	9.56	1
M001	1700	PetriesB-M001-1700	20Year-Existing	12.9	88.86	89.91	90.14	90.67	0.043982	4.66	4.26	7.35	1.59
M001	1650	PetriesB-M001-1650	20Year-Existing	12.9	86.29	87.27	87.56	88.18	0.056848	5	3.81	6.6	1.74
M001	1600	PetriesB-M001-1600	20Year-Existing	12.9	84.49	87.22	85.56	87.23	0.00007	0.39	68.35	42.12	0.08
M001	1581.62	PetriesB-M001-1581.62	20Year-Existing	12.9	83.85	87.2	85.67	87.22	0.000261	0.81	30.87	58.9	0.15
M001	1560	PetriesB-M001-1560	20Year-Existing	Culvert									

Petrie's Brook - Existing Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	20Year-Existing	12.9	82.32	84.12	84.12	85	0.013237	4.14	3.11	41.56	1
M001	1477.89	PetriesB-M001-1477.89	20Year-Existing	12.9	79.96	80.52	80.91	83.09	0.422271	8.21	2.32	10.26	4.31
M001	1418.45	PetriesB-M001-1418.45	20Year-Existing	13.4	78.38	79.91	79.97	80.22	0.013058	3.12	8.08	15.95	0.88
M001	1359	PetriesB-M001-1359	20Year-Existing	13.4	74.82	75.7	76.32	78.2	0.138563	7.55	2.29	4.29	2.78
M001	1338.71	PetriesB-M001-1338.71	20Year-Existing	13.4	72.61	75.7	74.25	75.88	0.001485	1.91	7	10.77	0.36
M001	1295	PetriesB-M001-1295	20Year-Existing	Culvert									
M001	1292.63	PetriesB-M001-1292.63	20Year-Existing	13.4	70.47	71.87	72.09	72.91	0.024941	4.82	3.16	15.47	1.32
M001	1280.53	PetriesB-M001-1280.53	20Year-Existing	13.4	65.5	65.87	66.34	70.8	1.387916	9.84	1.36	7.01	7.13
M001	1254.7	PetriesB-M001-1254.7	20Year-Existing	13.4	61.55	62.47	62.9	64.09	0.086939	6.54	3.27	7.49	2.45
M001	1214.6	PetriesB-M001-1214.6	20Year-Existing	13.4	54.66	55.38	55.89	58.04	0.312581	8.71	2.33	6.86	4.03
M001	1186.8	PetriesB-M001-1186.8	20Year-Existing	13.4	51	51.73	52.05	52.88	0.106349	6.12	3.71	9.3	2.59
M001	1151.89	PetriesB-M001-1151.89	20Year-Existing	13.4	46.66	47.63	48.08	49.36	0.101301	6.76	3.12	7.3	2.57
M001	1131.36	PetriesB-M001-1131.36	20Year-Existing	13.5	45.4	46.52	46.87	47.66	0.057312	5.51	3.83	7.32	1.91
M001	1094.32	PetriesB-M001-1094.32	20Year-Existing	13.5	43.36	44.47	44.82	45.62	0.056025	5.51	3.65	6.17	1.9
M001	1036.63	PetriesB-M001-1036.63	20Year-Existing	14.1	40.61	41.84	42.21	42.8	0.041953	5.09	4.39	7.73	1.68
M001	991.55	PetriesB-M001-991.55	20Year-Existing	14.1	36.47	37.45	37.94	39.47	0.15462	7.34	2.84	6.47	2.9
M001	950.72	PetriesB-M001-950.72	20Year-Existing	14.1	32.56	33.54	33.87	34.65	0.08381	5.81	3.92	8.44	2.22
M001	894.7	PetriesB-M001-894.7	20Year-Existing	14.1	29.5	30.63	30.83	31.32	0.041798	4.68	4.91	8.06	1.6
M001	850	PetriesB-M001-850	20Year-Existing	14.1	28.24	29.72	29.83	30.14	0.016192	3.51	6.1	11.31	1.04
M001	811.85	PetriesB-M001-811.85	20Year-Existing	14.1	26.37	27.63	28.01	28.86	0.085976	4.99	2.97	4.82	1.82
M001	754.3	PetriesB-M001-754.3	20Year-Existing	14.1	22.84	24.06	24.48	25.13	0.049308	5.15	3.69	6.7	1.8
M001	684.68	PetriesB-M001-684.68	20Year-Existing	14.1	20.6	22.21	22.3	22.86	0.021898	4.06	4.58	6.18	1.18
M001	632.62	PetriesB-M001-632.62	20Year-Existing	14.1	20.87	22.05	21.74	22.27	0.005287	2.3	6.99	7.02	0.68
M001	625	PetriesB-M001-625	20Year-Existing	Bridge									
M001	621.03	PetriesB-M001-621.03	20Year-Existing	14.1	19.91	21.13	21.13	21.54	0.011339	3.12	5.32	7.77	0.97
M001	599.17	PetriesB-M001-599.17	20Year-Existing	14.1	15.17	15.55	16.01	18.87	0.629684	9.47	1.92	8.7	5.78
M001	547.98	PetriesB-M001-547.98	20Year-Existing	14.1	9.22	9.96	10.2	10.76	0.067708	4.55	3.95	10.86	2.07
M001	500	PetriesB-M001-500	20Year-Existing	14.1	7.42	8.66	8.73	9.11	0.019207	3.59	5.99	9.13	1.18
M001	446.65	PetriesB-M001-446.65	20Year-Existing	14.1	6.07	7.09	7.28	7.74	0.036046	4.19	5.67	15.4	1.55
M001	399.97	PetriesB-M001-399.97	20Year-Existing	15.3	4.59	5.82	5.94	6.32	0.025207	3.56	6.74	21.96	1.31
M001	349.97	PetriesB-M001-349.97	20Year-Existing	15.3	3.89	5.06	5.06	5.29	0.017163	2.96	8.66	18.94	1.04
M001	300.08	PetriesB-M001-300.08	20Year-Existing	15.3	3.07	4.33	4.17	4.38	0.004646	1.59	17.37	37.12	0.52
M001	250	PetriesB-M001-250	20Year-Existing	15.3	2.39	3.65	3.65	3.99	0.014407	3.34	6.92	10.27	1.05
M001	200	PetriesB-M001-200	20Year-Existing	15.3	1.6	3.61	2.97	3.63	0.000552	0.88	30.62	35.45	0.21
M001	164.9	PetriesB-M001-164.9	20Year-Existing	15.3	1.25	3.51	2.39	3.6	0.00098	1.44	11.89	21.41	0.31
M001	130	PetriesB-M001-130	20Year-Existing	Culvert									
M001	122.87	PetriesB-M001-122.87	20Year-Existing	15.3	1	3.31	2.21	3.41	0.00099	1.44	11.41	20.71	0.32
M001	121.82	PetriesB-M001-121.82	20Year-Existing	15.3	0.97	3.17	2.67	3.37	0.002455	2.3	11.22	20.92	0.5
M001	110	PetriesB-M001-110	20Year-Existing	Culvert									
M001	108.55	PetriesB-M001-108.55	20Year-Existing	15.3	0.48	2.79	2.14	2.84	0.000719	1.15	22.81	25.56	0.25
M001	100	PetriesB-M001-100	20Year-Existing	15.3	0.79	2.8		2.81	0.000255	0.69	42.54	40.63	0.16
M001	50	PetriesB-M001-50	20Year-Existing	15.3	0.56	2.8		2.8	0.000053	0.34	78.92	63.8	0.07
M001	-33.87	PetriesB-M001--33.87	20Year-Existing	15.3	0.46	2.8		2.8	0.000018	0.2	99.24	79.66	0.04
M001	-115.21	PetriesB-M001--115.21	20Year-Existing	15.3	-0.85	2.8	-0.03	2.8	0.000001	0.07	337.95	154.15	0.01

Petrie's Brook - Existing Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	100Year-Existing	4	138.52	138.98	138.98	139.12	0.028071	2.12	3.11	11.64	1.12
TR002	26.4	PetriesB-TR002-26.4	100Year-Existing	4	136.29	136.55	136.62	136.79	0.179619	3.29	2.23	17.06	2.51
TR003	75.44	PetriesB-TR003-75.44	100Year-Existing	2.8	138.22	138.86	138.86	139.03	0.018	2.06	2.03	6.93	0.93
TR003	31.52	PetriesB-TR003-31.52	100Year-Existing	2.8	135.25	135.6	135.88	136.83	0.310631	5.22	0.67	4.02	3.44
M002	2878.54	PetriesB-M002-2878.54	100Year-Existing	9	133.44	134	134.07	134.3	0.053023	3.46	4.64	13.54	1.61
M002	2830.24	PetriesB-M002-2830.24	100Year-Existing	9	129.86	130.79	131.11	131.81	0.054441	4.82	2.52	4.78	1.74
M002	2781.96	PetriesB-M002-2781.96	100Year-Existing	9	126.6	127.38	127.71	128.5	0.090814	5.31	2.47	5.96	2.14
M002	2733.55	PetriesB-M002-2733.55	100Year-Existing	9	123.62	124.41	124.62	125.11	0.053705	4.41	3.39	8.69	1.7
M002	2711.98	PetriesB-M002-2711.98	100Year-Existing	9	121.55	123.55	122.83	123.58	0.000991	1.21	19.18	35.23	0.28
M002	2710	PetriesB-M002-2710	100Year-Existing	Bridge									
M002	2706.48	PetriesB-M002-2706.48	100Year-Existing	9	121.23	122.4	122.4	122.96	0.01535	3.33	2.7	6.45	1
M002	2686.04	PetriesB-M002-2686.04	100Year-Existing	9	120.42	121.23	121.52	122.22	0.073271	4.96	2.4	5.44	1.93
M002	2636.8	PetriesB-M002-2636.8	100Year-Existing	9.6	118.88	119.86	119.93	120.25	0.023407	3.35	4.07	7.35	1.15
M002	2586.04	PetriesB-M002-2586.04	100Year-Existing	9.6	117.62	117.92	118.01	118.19	0.130421	2.98	4.28	26.14	2.15
M002	2536.82	PetriesB-M002-2536.82	100Year-Existing	9.6	115.95	116.67	116.67	116.85	0.02451	2.61	5.95	16.31	1.09
M002	2487.14	PetriesB-M002-2487.14	100Year-Existing	9.6	114	115.04	115.18	115.52	0.026317	3.66	4.62	13.71	1.24
M002	2437.53	PetriesB-M002-2437.53	100Year-Existing	9.6	112.56	113.41	113.6	113.93	0.04114	3.93	3.9	10.25	1.49
M002	2387.76	PetriesB-M002-2387.76	100Year-Existing	9.6	110.97	111.96	112.04	112.35	0.024285	3.39	4.41	8.96	1.18
M002	2337.92	PetriesB-M002-2337.92	100Year-Existing	9.6	109.55	110.47	110.6	110.9	0.036655	3.7	5.2	21.32	1.38
M002	2288.19	PetriesB-M002-2288.19	100Year-Existing	9.6	107.88	108.85	109.01	109.35	0.027864	3.58	4.09	13.5	1.26
M002	2243.62	PetriesB-M002-2243.62	100Year-Existing	9.6	106.54	107.93	107.96	108.33	0.019097	3.18	3.91	5.71	0.98
M002	2206.69	PetriesB-M002-2206.69	100Year-Existing	9.6	105.39	106.37	106.58	107.15	0.057486	4.47	3.36	15.31	1.67
M002	2172.99	PetriesB-M002-2172.99	100Year-Existing	9.6	104.44	105.22	105.31	105.57	0.034275	3.34	4.27	11.62	1.31
M002	2132.37	PetriesB-M002-2132.37	100Year-Existing	9.6	102.85	103.77	103.9	104.19	0.033273	3.52	4.55	16.71	1.34
M002	2076.75	PetriesB-M002-2076.75	100Year-Existing	9.6	100.37	101.57	101.77	102.28	0.035506	4.09	2.92	4.64	1.36
TR001	194.22	PetriesB-TR001-194.22	100Year-Existing	7	116.47	117.52	117.52	117.82	0.016313	2.92	3.7	6.52	0.97
TR001	173.31	PetriesB-TR001-173.31	100Year-Existing	7	113.43	113.93	114.4	116.61	0.407931	7.88	1.11	4.23	4.18
TR001	155.88	PetriesB-TR001-155.88	100Year-Existing	7	111.89	112.36	112.46	112.69	0.084647	3.64	3.68	19.83	1.9
TR001	147.33	PetriesB-TR001-147.33	100Year-Existing	7	111.21	111.61	111.73	112.11	0.165977	4.45	3.05	21.22	2.62
TR001	100.01	PetriesB-TR001-100.01	100Year-Existing	7	106.9	107.6	107.77	108.14	0.049989	3.86	2.68	7.11	1.6
TR001	84.71	PetriesB-TR001-84.71	100Year-Existing	7	105.53	106.91	106.6	107	0.006409	1.67	6.18	11.6	0.49
TR001	80	PetriesB-TR001-80	100Year-Existing	Culvert									
TR001	76.27	PetriesB-TR001-76.27	100Year-Existing	7	105.28	106.29	106.29	106.44	0.011097	2.31	5.72	16.57	0.77
TR001	50.01	PetriesB-TR001-50.01	100Year-Existing	7	102.82	103.37	103.76	105.2	0.220095	6.55	1.37	4.82	3.19
TR001	10.31	PetriesB-TR001-10.31	100Year-Existing	7	100.43	101.2	101.31	101.61	0.031307	3.24	2.83	6.56	1.3
M001	2036.68	PetriesB-M001-2036.68	100Year-Existing	16.3	99.58	100.98	100.72	101.11	0.006917	2.29	13.16	21.97	0.66
M001	2006.33	PetriesB-M001-2006.33	100Year-Existing	16.3	98.58	101.01		101.04	0.000745	1.12	26.31	27.05	0.24
M001	1984.7	PetriesB-M001-1984.7	100Year-Existing	16.3	98.16	100.7	99.91	100.99	0.003425	2.48	7.76	22.79	0.51
M001	1975	PetriesB-M001-1975	100Year-Existing	Culvert									
M001	1967.48	PetriesB-M001-1967.48	100Year-Existing	16.3	97.22	99.1	99.1	99.91	0.014586	4	4.08	9.22	1
M001	1947.41	PetriesB-M001-1947.41	100Year-Existing	16.3	96.71	97.85	98.25	99.1	0.061069	5.63	3.83	6	1.85
M001	1897.27	PetriesB-M001-1897.27	100Year-Existing	16.3	94.94	96.13	96.33	96.85	0.030905	4.46	5.04	7.17	1.38
M001	1847.5	PetriesB-M001-1847.5	100Year-Existing	16.3	93.5	94.78	94.89	95.34	0.02759	4.11	5.8	7.57	1.26
M001	1790.83	PetriesB-M001-1790.83	100Year-Existing	18.7	91.16	92.5	92.79	93.44	0.038768	5.12	6.31	12.23	1.53
M001	1750	PetriesB-M001-1750	100Year-Existing	18.7	90.25	91.72	91.81	92.24	0.020202	4.04	7.85	10.22	1.13
M001	1700	PetriesB-M001-1700	100Year-Existing	18.7	88.86	90.15	90.37	90.94	0.034846	4.87	6.14	8.35	1.47
M001	1650	PetriesB-M001-1650	100Year-Existing	18.7	86.29	87.42	87.81	88.62	0.062456	5.85	4.86	7.25	1.87
M001	1600	PetriesB-M001-1600	100Year-Existing	18.7	84.49	87.35	85.66	87.35	0.00012	0.52	73.5	42.96	0.1
M001	1581.62	PetriesB-M001-1581.62	100Year-Existing	18.7	83.85	87.3	86.16	87.34	0.000453	1.09	34.67	63.6	0.19
M001	1560	PetriesB-M001-1560	100Year-Existing	Culvert									

Petrie's Brook - Existing Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	100Year-Existing	18.7	82.32	84.61	84.61	85.73	0.012221	4.69	3.98	56.01	1
M001	1477.89	PetriesB-M001-1477.89	100Year-Existing	18.7	79.96	80.59	81.07	83.78	0.448988	9.4	2.99	10.87	4.56
M001	1418.45	PetriesB-M001-1418.45	100Year-Existing	19.3	78.38	80.05	80.13	80.43	0.015079	3.59	10.43	17.41	0.96
M001	1359	PetriesB-M001-1359	100Year-Existing	19.3	74.82	75.95	76.63	78.39	0.096997	7.65	3.44	4.9	2.44
M001	1338.71	PetriesB-M001-1338.71	100Year-Existing	19.3	72.61	77.06	74.65	77.24	0.000861	1.88	10.26	14.78	0.29
M001	1295	PetriesB-M001-1295	100Year-Existing	Culvert									
M001	1292.63	PetriesB-M001-1292.63	100Year-Existing	19.3	70.47	72.27	72.51	73.53	0.021508	5.32	4.12	17.08	1.28
M001	1280.53	PetriesB-M001-1280.53	100Year-Existing	19.3	65.5	65.94	66.5	71.45	1.261021	10.4	1.86	8.19	6.97
M001	1254.7	PetriesB-M001-1254.7	100Year-Existing	19.3	61.55	62.6	63.11	64.59	0.090736	7.45	4.27	8.14	2.57
M001	1214.6	PetriesB-M001-1214.6	100Year-Existing	19.3	54.66	55.49	56.09	58.56	0.282988	9.55	3.14	7.44	3.98
M001	1186.8	PetriesB-M001-1186.8	100Year-Existing	19.3	51	51.83	52.25	53.33	0.115094	7.1	4.68	9.94	2.77
M001	1151.89	PetriesB-M001-1151.89	100Year-Existing	19.3	46.66	47.78	48.29	49.78	0.096962	7.5	4.27	8.43	2.6
M001	1131.36	PetriesB-M001-1131.36	100Year-Existing	19.2	45.4	46.67	47.09	48.06	0.059788	6.26	4.96	8.05	2
M001	1094.32	PetriesB-M001-1094.32	100Year-Existing	19.2	43.36	44.65	45.07	46.02	0.053804	6.14	4.82	6.73	1.93
M001	1036.63	PetriesB-M001-1036.63	100Year-Existing	20.4	40.61	42.04	42.41	43.24	0.042643	5.83	6.14	11.03	1.74
M001	991.55	PetriesB-M001-991.55	100Year-Existing	20.4	36.47	37.6	38.17	39.95	0.14447	8.12	3.83	7.03	2.9
M001	950.72	PetriesB-M001-950.72	100Year-Existing	20.4	32.56	33.66	34.08	35.09	0.089426	6.71	5.03	9.19	2.35
M001	894.7	PetriesB-M001-894.7	100Year-Existing	20.4	29.5	30.81	31.05	31.65	0.041288	5.28	6.42	8.63	1.65
M001	850	PetriesB-M001-850	100Year-Existing	20.4	28.24	29.87	29.99	30.39	0.01831	4.04	7.86	12.61	1.13
M001	811.85	PetriesB-M001-811.85	100Year-Existing	20.4	26.37	27.89	28.29	29.15	0.061352	5.13	4.34	5.62	1.62
M001	754.3	PetriesB-M001-754.3	100Year-Existing	20.4	22.84	24.19	24.83	25.67	0.05821	6.16	4.6	7.39	2
M001	684.68	PetriesB-M001-684.68	100Year-Existing	20.4	20.6	22.48	22.85	23.23	0.020983	4.54	6.78	10.8	1.2
M001	632.62	PetriesB-M001-632.62	100Year-Existing	20.4	20.87	22.73	21.97	22.83	0.001841	1.84	20.81	34.56	0.43
M001	625	PetriesB-M001-625	100Year-Existing	Bridge									
M001	621.03	PetriesB-M001-621.03	100Year-Existing	20.4	19.91	21.35	21.35	21.89	0.011464	3.57	6.69	13.53	1
M001	599.17	PetriesB-M001-599.17	100Year-Existing	20.4	15.17	15.64	16.18	19.21	0.485269	9.98	2.7	9.39	5.31
M001	547.98	PetriesB-M001-547.98	100Year-Existing	20.4	9.22	10.05	10.36	11.13	0.07436	5.33	4.96	11.74	2.23
M001	500	PetriesB-M001-500	100Year-Existing	20.4	7.42	8.86	8.94	9.4	0.018619	4.02	7.95	10.06	1.2
M001	446.65	PetriesB-M001-446.65	100Year-Existing	20.4	6.07	7.2	7.48	7.99	0.039717	4.81	7.38	17.64	1.67
M001	399.97	PetriesB-M001-399.97	100Year-Existing	22.1	4.59	5.93	6.13	6.47	0.025323	3.91	9.27	24	1.34
M001	349.97	PetriesB-M001-349.97	100Year-Existing	22.1	3.89	5.21	5.21	5.47	0.016667	3.24	11.48	21.05	1.05
M001	300.08	PetriesB-M001-300.08	100Year-Existing	22.1	3.07	4.54	4.25	4.58	0.003212	1.51	25.44	40.76	0.45
M001	250	PetriesB-M001-250	100Year-Existing	22.1	2.39	3.85	3.85	4.26	0.013917	3.71	9.17	11.38	1.06
M001	200	PetriesB-M001-200	100Year-Existing	22.4	1.6	3.9	3.07	3.92	0.000567	0.98	42.53	46.24	0.22
M001	164.9	PetriesB-M001-164.9	100Year-Existing	22.4	1.25	3.85	2.65	3.9	0.000694	1.33	33.23	39.15	0.27
M001	130	PetriesB-M001-130	100Year-Existing	Culvert									
M001	122.87	PetriesB-M001-122.87	100Year-Existing	22.4	1	3.39	2.48	3.58	0.001864	2.03	11.87	22.48	0.44
M001	121.82	PetriesB-M001-121.82	100Year-Existing	22.4	0.97	3.43	3.2	3.54	0.001611	1.99	21.73	25.38	0.41
M001	110	PetriesB-M001-110	100Year-Existing	Culvert									
M001	108.55	PetriesB-M001-108.55	100Year-Existing	22.4	0.48	2.79	2.6	2.88	0.001572	1.69	22.6	25.39	0.37
M001	100	PetriesB-M001-100	100Year-Existing	22.4	0.79	2.8		2.82	0.000546	1.01	42.52	40.62	0.23
M001	50	PetriesB-M001-50	100Year-Existing	22.4	0.56	2.8		2.81	0.000113	0.5	78.91	63.8	0.11
M001	-33.87	PetriesB-M001--33.87	100Year-Existing	22.4	0.46	2.8		2.8	0.000039	0.3	99.15	79.65	0.06
M001	-115.21	PetriesB-M001--115.21	100Year-Existing	22.4	-0.85	2.8	0.13	2.8	0.000003	0.11	337.95	154.15	0.02

Petrie's Brook - 2020 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	AMEC-20yr-2020-Max	3.7	138.52	138.97	138.97	139.1	0.028294	2.07	2.94	11.47	1.12
TR002	26.4	PetriesB-TR002-26.4	AMEC-20yr-2020-Max	3.7	136.29	136.54	136.61	136.77	0.173879	3.17	2.14	16.93	2.46
TR003	75.44	PetriesB-TR003-75.44	AMEC-20yr-2020-Max	2.3	138.22	138.81	138.81	138.97	0.019225	1.97	1.67	6.22	0.94
TR003	31.52	PetriesB-TR003-31.52	AMEC-20yr-2020-Max	2.3	135.25	135.58	135.81	136.67	0.314316	4.87	0.57	3.73	3.4
M002	2878.54	PetriesB-M002-2878.54	AMEC-20yr-2020-Max	7.4	133.44	133.96	134.02	134.22	0.051398	3.21	4.09	13.07	1.56
M002	2830.24	PetriesB-M002-2830.24	AMEC-20yr-2020-Max	7.4	129.86	130.7	131	131.66	0.059368	4.63	2.09	4.43	1.78
M002	2781.96	PetriesB-M002-2781.96	AMEC-20yr-2020-Max	7.4	126.6	127.33	127.62	128.28	0.085343	4.87	2.17	5.64	2.04
M002	2733.55	PetriesB-M002-2733.55	AMEC-20yr-2020-Max	7.4	123.62	124.35	124.55	125	0.05411	4.16	2.89	8.32	1.69
M002	2711.98	PetriesB-M002-2711.98	AMEC-20yr-2020-Max	7.4	121.55	122.32	122.69	123.57	0.077992	5.49	1.59	4.2	2.07
M002	2710	PetriesB-M002-2710	AMEC-20yr-2020-Max	Bridge									
M002	2706.48	PetriesB-M002-2706.48	AMEC-20yr-2020-Max	7.4	121.23	122.07	122.26	122.83	0.032705	3.86	1.92	5.51	1.38
M002	2686.04	PetriesB-M002-2686.04	AMEC-20yr-2020-Max	7.4	120.42	121.22	121.44	121.93	0.054386	4.2	2.31	5.35	1.66
M002	2636.8	PetriesB-M002-2636.8	AMEC-20yr-2020-Max	8	118.88	119.77	119.84	120.15	0.025499	3.25	3.43	6.81	1.18
M002	2586.04	PetriesB-M002-2586.04	AMEC-20yr-2020-Max	8	117.62	117.91	117.97	118.11	0.100756	2.57	4.13	25.89	1.88
M002	2536.82	PetriesB-M002-2536.82	AMEC-20yr-2020-Max	8	115.95	116.63	116.63	116.79	0.02459	2.48	5.23	15.82	1.08
M002	2487.14	PetriesB-M002-2487.14	AMEC-20yr-2020-Max	8	114	114.96	115.14	115.44	0.02786	3.54	3.59	11.84	1.25
M002	2437.53	PetriesB-M002-2437.53	AMEC-20yr-2020-Max	8	112.56	113.36	113.5	113.82	0.039436	3.65	3.39	9.11	1.44
M002	2387.76	PetriesB-M002-2387.76	AMEC-20yr-2020-Max	8	110.97	111.88	111.97	112.25	0.024936	3.24	3.78	8.39	1.18
M002	2337.92	PetriesB-M002-2337.92	AMEC-20yr-2020-Max	8	109.55	110.45	110.56	110.84	0.033731	3.46	4.61	21.09	1.32
M002	2288.19	PetriesB-M002-2288.19	AMEC-20yr-2020-Max	8	107.88	108.74	108.8	109.22	0.032588	3.5	3.1	6.92	1.33
M002	2243.62	PetriesB-M002-2243.62	AMEC-20yr-2020-Max	8	106.54	107.83	107.86	108.2	0.019837	3.04	3.36	5.34	0.98
M002	2206.69	PetriesB-M002-2206.69	AMEC-20yr-2020-Max	8	105.39	106.31	106.53	107.02	0.055762	4.17	2.57	10.67	1.62
M002	2172.99	PetriesB-M002-2172.99	AMEC-20yr-2020-Max	8	104.44	105.18	105.26	105.49	0.03336	3.14	3.77	11.13	1.28
M002	2132.37	PetriesB-M002-2132.37	AMEC-20yr-2020-Max	8	102.85	103.73	103.85	104.14	0.032456	3.35	3.92	15.9	1.31
M002	2076.75	PetriesB-M002-2076.75	AMEC-20yr-2020-Max	8	100.37	101.46	101.67	102.15	0.039138	3.97	2.46	4.34	1.4
TR001	194.22	PetriesB-TR001-194.22	AMEC-20yr-2020-Max	5.8	116.47	117.44	117.44	117.71	0.016701	2.77	3.17	6.09	0.96
TR001	173.31	PetriesB-TR001-173.31	AMEC-20yr-2020-Max	5.8	113.43	113.89	114.33	116.48	0.465364	7.68	0.92	3.92	4.36
TR001	155.88	PetriesB-TR001-155.88	AMEC-20yr-2020-Max	5.8	111.89	112.33	112.43	112.61	0.078317	3.31	3.13	16.14	1.8
TR001	147.33	PetriesB-TR001-147.33	AMEC-20yr-2020-Max	5.8	111.21	111.59	111.7	112.06	0.160553	4.21	2.69	20.76	2.55
TR001	100.01	PetriesB-TR001-100.01	AMEC-20yr-2020-Max	5.8	106.9	107.55	107.71	108.05	0.051796	3.67	2.29	6.67	1.6
TR001	84.71	PetriesB-TR001-84.71	AMEC-20yr-2020-Max	5.8	105.53	106.86	106.53	106.93	0.004979	1.43	5.71	9.57	0.43
TR001	80	PetriesB-TR001-80	AMEC-20yr-2020-Max	Culvert									
TR001	76.27	PetriesB-TR001-76.27	AMEC-20yr-2020-Max	5.8	105.28	106.23	106.23	106.38	0.010858	2.2	4.9	15.4	0.75
TR001	50.01	PetriesB-TR001-50.01	AMEC-20yr-2020-Max	5.8	102.82	103.32	103.69	105.14	0.254145	6.44	1.12	4.45	3.36
TR001	10.31	PetriesB-TR001-10.31	AMEC-20yr-2020-Max	5.8	100.43	101.41	101.24	101.54	0.006618	1.82	4.42	7.93	0.63
M001	2036.68	PetriesB-M001-2036.68	AMEC-20yr-2020-Max	13.5	99.58	100.79	100.7	101.01	0.013067	2.83	9.09	20.91	0.88
M001	2006.33	PetriesB-M001-2006.33	AMEC-20yr-2020-Max	13.5	98.58	100.88		100.9	0.000773	1.1	22.63	26.46	0.24
M001	1984.7	PetriesB-M001-1984.7	AMEC-20yr-2020-Max	13.5	98.16	100.65	99.72	100.86	0.002516	2.1	7.56	21.7	0.44
M001	1975	PetriesB-M001-1975	AMEC-20yr-2020-Max	Culvert									
M001	1967.48	PetriesB-M001-1967.48	AMEC-20yr-2020-Max	13.5	97.22	98.9	98.9	99.62	0.015319	3.76	3.59	8.23	1
M001	1947.41	PetriesB-M001-1947.41	AMEC-20yr-2020-Max	13.5	96.71	97.79	98.12	98.84	0.056003	5.13	3.44	5.75	1.75
M001	1897.27	PetriesB-M001-1897.27	AMEC-20yr-2020-Max	13.5	94.94	96.03	96.21	96.68	0.031246	4.21	4.37	6.81	1.37
M001	1847.5	PetriesB-M001-1847.5	AMEC-20yr-2020-Max	13.5	93.5	94.68	94.77	95.18	0.02707	3.83	5.1	7.27	1.23
M001	1790.83	PetriesB-M001-1790.83	AMEC-20yr-2020-Max	15.5	91.16	92.37	92.7	93.25	0.041106	4.87	4.94	8.31	1.54
M001	1750	PetriesB-M001-1750	AMEC-20yr-2020-Max	15.5	90.25	91.64	91.69	92.08	0.018123	3.68	7.08	9.87	1.06
M001	1700	PetriesB-M001-1700	AMEC-20yr-2020-Max	15.5	88.86	90.02	90.25	90.79	0.038555	4.73	5.13	7.83	1.52
M001	1650	PetriesB-M001-1650	AMEC-20yr-2020-Max	15.5	86.29	87.34	87.67	88.39	0.060233	5.42	4.28	6.89	1.81
M001	1600	PetriesB-M001-1600	AMEC-20yr-2020-Max	15.5	84.49	87.29	85.6	87.29	0.00009	0.44	71.11	42.56	0.09
M001	1581.62	PetriesB-M001-1581.62	AMEC-20yr-2020-Max	15.5	83.85	87.25	85.9	87.29	0.000337	0.93	32.99	61.3	0.17
M001	1560	PetriesB-M001-1560	AMEC-20yr-2020-Max	Culvert									

Petrie's Brook - 2020 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	AMEC-20yr-2020-Max	15.5	82.32	84.35	84.35	85.34	0.012693	4.4	3.52	47.98	1
M001	1477.89	PetriesB-M001-1477.89	AMEC-20yr-2020-Max	15.5	79.96	80.55	80.99	83.41	0.436161	8.78	2.63	10.54	4.43
M001	1418.45	PetriesB-M001-1418.45	AMEC-20yr-2020-Max	16.1	78.38	79.98	80.03	80.32	0.01396	3.34	9.23	16.73	0.91
M001	1359	PetriesB-M001-1359	AMEC-20yr-2020-Max	16.1	74.82	75.81	76.47	78.3	0.116377	7.61	2.8	4.58	2.61
M001	1338.71	PetriesB-M001-1338.71	AMEC-20yr-2020-Max	16.1	72.61	76.13	74.44	76.34	0.00135	2	8.04	11.86	0.35
M001	1295	PetriesB-M001-1295	AMEC-20yr-2020-Max	Culvert									
M001	1292.63	PetriesB-M001-1292.63	AMEC-20yr-2020-Max	16.1	70.47	72.05	72.29	73.21	0.023465	5.08	3.6	16.28	1.31
M001	1280.53	PetriesB-M001-1280.53	AMEC-20yr-2020-Max	16.1	65.5	65.9	66.41	71.11	1.320933	10.11	1.59	7.58	7.04
M001	1254.7	PetriesB-M001-1254.7	AMEC-20yr-2020-Max	16.1	61.55	62.53	63	64.33	0.088878	6.98	3.74	7.8	2.51
M001	1214.6	PetriesB-M001-1214.6	AMEC-20yr-2020-Max	16.1	54.66	55.43	55.98	58.3	0.297578	9.13	2.71	7.15	4.01
M001	1186.8	PetriesB-M001-1186.8	AMEC-20yr-2020-Max	16.1	51	51.78	52.14	53.09	0.110672	6.6	4.17	9.63	2.68
M001	1151.89	PetriesB-M001-1151.89	AMEC-20yr-2020-Max	16.1	46.66	47.7	48.19	49.57	0.098742	7.12	3.66	7.89	2.58
M001	1131.36	PetriesB-M001-1131.36	AMEC-20yr-2020-Max	16.1	45.4	46.6	46.98	47.85	0.058632	5.88	4.36	7.7	1.96
M001	1094.32	PetriesB-M001-1094.32	AMEC-20yr-2020-Max	16.1	43.36	44.56	44.94	45.81	0.054905	5.82	4.19	6.44	1.92
M001	1036.63	PetriesB-M001-1036.63	AMEC-20yr-2020-Max	17	40.61	41.93	42.3	43	0.042621	5.45	5.1	8.47	1.71
M001	991.55	PetriesB-M001-991.55	AMEC-20yr-2020-Max	17	36.47	37.52	38.05	39.68	0.147598	7.69	3.32	6.75	2.89
M001	950.72	PetriesB-M001-950.72	AMEC-20yr-2020-Max	17	32.56	33.6	33.97	34.86	0.086844	6.25	4.44	8.8	2.29
M001	894.7	PetriesB-M001-894.7	AMEC-20yr-2020-Max	17	29.5	30.72	30.93	31.48	0.041426	4.97	5.63	8.37	1.62
M001	850	PetriesB-M001-850	AMEC-20yr-2020-Max	17	28.24	29.8	29.92	30.27	0.017221	3.77	6.95	11.99	1.08
M001	811.85	PetriesB-M001-811.85	AMEC-20yr-2020-Max	17	26.37	27.76	28.15	29	0.072281	5.06	3.6	5.2	1.71
M001	754.3	PetriesB-M001-754.3	AMEC-20yr-2020-Max	17	22.84	24.12	24.54	25.4	0.054299	5.66	4.11	7.02	1.91
M001	684.68	PetriesB-M001-684.68	AMEC-20yr-2020-Max	17	20.6	22.34	22.58	23.04	0.021235	4.28	5.45	7.26	1.19
M001	632.62	PetriesB-M001-632.62	AMEC-20yr-2020-Max	17	20.87	22.25	21.85	22.52	0.005631	2.64	9.25	14.35	0.72
M001	625	PetriesB-M001-625	AMEC-20yr-2020-Max	Bridge									
M001	621.03	PetriesB-M001-621.03	AMEC-20yr-2020-Max	17	19.91	21.24	21.24	21.71	0.011398	3.34	5.98	9.24	0.98
M001	599.17	PetriesB-M001-599.17	AMEC-20yr-2020-Max	17	15.17	15.59	16.1	19.03	0.550492	9.72	2.28	9.04	5.54
M001	547.98	PetriesB-M001-547.98	AMEC-20yr-2020-Max	17	9.22	10	10.28	10.94	0.070968	4.93	4.43	11.31	2.15
M001	500	PetriesB-M001-500	AMEC-20yr-2020-Max	17	7.42	8.76	8.84	9.25	0.018863	3.8	6.92	9.59	1.19
M001	446.65	PetriesB-M001-446.65	AMEC-20yr-2020-Max	17	6.07	7.14	7.35	7.86	0.038209	4.51	6.46	15.89	1.62
M001	399.97	PetriesB-M001-399.97	AMEC-20yr-2020-Max	18.5	4.59	5.87	6.07	6.4	0.025244	3.74	7.98	23	1.32
M001	349.97	PetriesB-M001-349.97	AMEC-20yr-2020-Max	18.5	3.89	5.14	5.14	5.38	0.016775	3.09	10.04	19.96	1.04
M001	300.08	PetriesB-M001-300.08	AMEC-20yr-2020-Max	18.5	3.07	4.43	4.2	4.48	0.003716	1.53	21.32	38.69	0.48
M001	250	PetriesB-M001-250	AMEC-20yr-2020-Max	18.5	2.39	3.75	3.75	4.12	0.014297	3.54	7.97	10.81	1.06
M001	200	PetriesB-M001-200	AMEC-20yr-2020-Max	18.6	1.6	3.76	3.03	3.77	0.00052	0.9	36.06	41.18	0.21
M001	164.9	PetriesB-M001-164.9	AMEC-20yr-2020-Max	18.6	1.25	3.7	2.51	3.76	0.00064	1.23	25.2	36.58	0.26
M001	130	PetriesB-M001-130	AMEC-20yr-2020-Max	Culvert									
M001	122.87	PetriesB-M001-122.87	AMEC-20yr-2020-Max	18.6	1	3.33	2.34	3.47	0.001409	1.73	11.54	21.22	0.38
M001	121.82	PetriesB-M001-121.82	AMEC-20yr-2020-Max	18.6	0.97	3.35	2.89	3.45	0.00134	1.78	19.93	24.09	0.38
M001	110	PetriesB-M001-110	AMEC-20yr-2020-Max	Culvert									
M001	108.55	PetriesB-M001-108.55	AMEC-20yr-2020-Max	18.6	0.48	2.84	2.36	2.9	0.000947	1.34	24.04	26.49	0.29
M001	100	PetriesB-M001-100	AMEC-20yr-2020-Max	18.6	0.79	2.85		2.86	0.000329	0.8	44.57	41.04	0.18
M001	50	PetriesB-M001-50	AMEC-20yr-2020-Max	18.6	0.56	2.85		2.85	0.000069	0.39	82.11	64.04	0.09
M001	-33.87	PetriesB-M001--33.87	AMEC-20yr-2020-Max	18.6	0.46	2.85		2.85	0.000024	0.24	103.2	80.17	0.05
M001	-115.21	PetriesB-M001--115.21	AMEC-20yr-2020-Max	18.6	-0.85	2.85	0.06	2.85	0.000002	0.09	345.68	155.32	0.02

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Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	AMEC-100yr-2020-Max	5	138.52	139.03	139.03	139.18	0.027711	2.28	3.66	12.16	1.13
TR002	26.4	PetriesB-TR002-26.4	AMEC-100yr-2020-Max	5	136.29	136.57	136.65	136.85	0.180169	3.55	2.58	17.49	2.56
TR003	75.44	PetriesB-TR003-75.44	AMEC-100yr-2020-Max	3.2	138.22	138.89	138.9	139.08	0.018001	2.15	2.27	7.33	0.94
TR003	31.52	PetriesB-TR003-31.52	AMEC-100yr-2020-Max	3.2	135.25	135.62	135.91	136.9	0.290166	5.36	0.76	4.27	3.37
M002	2878.54	PetriesB-M002-2878.54	AMEC-100yr-2020-Max	10.2	133.44	134.03	134.11	134.36	0.053484	3.62	5.05	13.89	1.63
M002	2830.24	PetriesB-M002-2830.24	AMEC-100yr-2020-Max	10.2	129.86	130.86	131.19	131.91	0.051539	4.95	2.84	5.03	1.71
M002	2781.96	PetriesB-M002-2781.96	AMEC-100yr-2020-Max	10.2	126.6	127.41	127.78	128.64	0.094248	5.61	2.68	6.17	2.2
M002	2733.55	PetriesB-M002-2733.55	AMEC-100yr-2020-Max	10.2	123.62	124.45	124.68	125.19	0.053649	4.57	3.74	8.93	1.72
M002	2711.98	PetriesB-M002-2711.98	AMEC-100yr-2020-Max	10.2	121.55	123.73	123.16	123.75	0.000648	1.03	25.89	41.27	0.23
M002	2710	PetriesB-M002-2710	AMEC-100yr-2020-Max	Bridge									
M002	2706.48	PetriesB-M002-2706.48	AMEC-100yr-2020-Max	10.2	121.23	122.17	122.5	123.3	0.041367	4.71	2.17	5.8	1.59
M002	2686.04	PetriesB-M002-2686.04	AMEC-100yr-2020-Max	10.2	120.42	121.34	121.76	122.17	0.052587	4.63	3	6.04	1.68
M002	2636.8	PetriesB-M002-2636.8	AMEC-100yr-2020-Max	10.8	118.88	119.88	119.99	120.34	0.02671	3.64	4.24	7.48	1.23
M002	2586.04	PetriesB-M002-2586.04	AMEC-100yr-2020-Max	10.8	117.62	117.95	118.02	118.2	0.106939	2.92	4.94	27.24	1.98
M002	2536.82	PetriesB-M002-2536.82	AMEC-100yr-2020-Max	10.8	115.95	116.71	116.71	116.89	0.02347	2.66	6.55	16.69	1.08
M002	2487.14	PetriesB-M002-2487.14	AMEC-100yr-2020-Max	10.8	114	115.07	115.22	115.57	0.02701	3.8	5.09	14.17	1.26
M002	2437.53	PetriesB-M002-2437.53	AMEC-100yr-2020-Max	10.8	112.56	113.46	113.66	113.99	0.039614	4.02	4.41	11.26	1.48
M002	2387.76	PetriesB-M002-2387.76	AMEC-100yr-2020-Max	10.8	110.97	112	112.09	112.42	0.024832	3.54	4.79	9.28	1.2
M002	2337.92	PetriesB-M002-2337.92	AMEC-100yr-2020-Max	10.8	109.55	110.5	110.63	110.93	0.037687	3.83	5.67	21.5	1.41
M002	2288.19	PetriesB-M002-2288.19	AMEC-100yr-2020-Max	10.8	107.88	108.89	109.04	109.4	0.027308	3.66	4.66	14.09	1.26
M002	2243.62	PetriesB-M002-2243.62	AMEC-100yr-2020-Max	10.8	106.54	108.01	108.02	108.42	0.018081	3.24	4.38	6.05	0.97
M002	2206.69	PetriesB-M002-2206.69	AMEC-100yr-2020-Max	10.8	105.39	106.39	106.6	107.24	0.062396	4.73	3.62	15.43	1.75
M002	2172.99	PetriesB-M002-2172.99	AMEC-100yr-2020-Max	10.8	104.44	105.26	105.36	105.61	0.033216	3.41	4.71	12	1.31
M002	2132.37	PetriesB-M002-2132.37	AMEC-100yr-2020-Max	10.8	102.85	103.8	103.94	104.24	0.03426	3.65	4.96	17.07	1.36
M002	2076.75	PetriesB-M002-2076.75	AMEC-100yr-2020-Max	10.8	100.37	101.64	101.85	102.37	0.033006	4.16	3.28	4.86	1.33
TR001	194.22	PetriesB-TR001-194.22	AMEC-100yr-2020-Max	7.8	116.47	117.58	117.58	117.89	0.016049	3	4.05	6.77	0.97
TR001	173.31	PetriesB-TR001-173.31	AMEC-100yr-2020-Max	7.8	113.43	113.96	114.43	116.7	0.380331	8.01	1.24	4.43	4.09
TR001	155.88	PetriesB-TR001-155.88	AMEC-100yr-2020-Max	7.8	111.89	112.38	112.48	112.73	0.088076	3.82	4.02	21.63	1.95
TR001	147.33	PetriesB-TR001-147.33	AMEC-100yr-2020-Max	7.8	111.21	111.62	111.75	112.14	0.168908	4.6	3.28	21.49	2.66
TR001	100.01	PetriesB-TR001-100.01	AMEC-100yr-2020-Max	7.8	106.9	107.64	107.81	108.2	0.04903	3.97	2.94	7.38	1.6
TR001	84.71	PetriesB-TR001-84.71	AMEC-100yr-2020-Max	7.8	105.53	106.93	106.64	107.04	0.007305	1.81	6.49	12.72	0.53
TR001	80	PetriesB-TR001-80	AMEC-100yr-2020-Max	Culvert									
TR001	76.27	PetriesB-TR001-76.27	AMEC-100yr-2020-Max	7.8	105.28	106.31	106.31	106.48	0.01159	2.41	6.16	17.18	0.79
TR001	50.01	PetriesB-TR001-50.01	AMEC-100yr-2020-Max	7.8	102.82	103.41	103.81	105.23	0.201402	6.6	1.54	5.07	3.09
TR001	10.31	PetriesB-TR001-10.31	AMEC-100yr-2020-Max	7.8	100.43	101.44	101.36	101.64	0.010757	2.36	4.61	8.08	0.8
M001	2036.68	PetriesB-M001-2036.68	AMEC-100yr-2020-Max	18.3	99.58	100.96	100.7	101.14	0.00964	2.68	12.71	21.89	0.77
M001	2006.33	PetriesB-M001-2006.33	AMEC-100yr-2020-Max	18.3	98.58	101.01		101.05	0.000942	1.26	26.28	27.04	0.27
M001	1984.7	PetriesB-M001-1984.7	AMEC-100yr-2020-Max	18.3	98.16	100.97	100.04	101.03	0.000923	1.33	24.04	29.26	0.27
M001	1975	PetriesB-M001-1975	AMEC-100yr-2020-Max	Culvert									
M001	1967.48	PetriesB-M001-1967.48	AMEC-100yr-2020-Max	18.3	97.22	99.23	99.23	100.11	0.014386	4.17	4.39	9.89	1
M001	1947.41	PetriesB-M001-1947.41	AMEC-100yr-2020-Max	18.3	96.71	97.9	98.32	99.28	0.064059	5.95	4.1	6.16	1.91
M001	1897.27	PetriesB-M001-1897.27	AMEC-100yr-2020-Max	18.3	94.94	96.19	96.41	96.95	0.03091	4.63	5.49	7.41	1.39
M001	1847.5	PetriesB-M001-1847.5	AMEC-100yr-2020-Max	18.3	93.5	94.84	94.96	95.45	0.027634	4.27	6.29	7.78	1.27
M001	1790.83	PetriesB-M001-1790.83	AMEC-100yr-2020-Max	21	91.16	92.55	92.86	93.53	0.039301	5.31	6.94	12.6	1.55
M001	1750	PetriesB-M001-1750	AMEC-100yr-2020-Max	21	90.25	91.8	91.88	92.33	0.019701	4.15	8.65	10.55	1.13
M001	1700	PetriesB-M001-1700	AMEC-100yr-2020-Max	21	88.86	90.22	90.45	91.05	0.034608	5.05	6.71	8.64	1.48
M001	1650	PetriesB-M001-1650	AMEC-100yr-2020-Max	21	86.29	87.49	87.88	88.76	0.061675	6.06	5.33	7.52	1.88
M001	1600	PetriesB-M001-1600	AMEC-100yr-2020-Max	21	84.49	87.41	85.69	87.41	0.000136	0.56	76.19	43.4	0.11
M001	1581.62	PetriesB-M001-1581.62	AMEC-100yr-2020-Max	21	83.85	87.35	86.34	87.4	0.000516	1.17	36.97	67.08	0.21
M001	1560	PetriesB-M001-1560	AMEC-100yr-2020-Max	Culvert									

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M001	1559.09	PetriesB-M001-1559.09	AMEC-100yr-2020-Max	21	82.32	84.79	84.79	86	0.011875	4.88	4.31	66.71	1
M001	1477.89	PetriesB-M001-1477.89	AMEC-100yr-2020-Max	21	79.96	80.61	81.12	84.04	0.458971	9.82	3.23	11.02	4.65
M001	1418.45	PetriesB-M001-1418.45	AMEC-100yr-2020-Max	21.8	78.38	80.09	80.19	80.51	0.015919	3.77	11.29	17.89	0.99
M001	1359	PetriesB-M001-1359	AMEC-100yr-2020-Max	21.8	74.82	77.99	76.75	78.11	0.001484	1.99	22.49	17.4	0.36
M001	1338.71	PetriesB-M001-1338.71	AMEC-100yr-2020-Max	21.8	72.61	78.01	74.81	78.08	0.00032	1.31	34.17	36.37	0.18
M001	1295	PetriesB-M001-1295	AMEC-100yr-2020-Max	Culvert									
M001	1292.63	PetriesB-M001-1292.63	AMEC-100yr-2020-Max	21.8	70.47	72.67	72.67	73.73	0.013679	4.87	5.09	18.55	1.06
M001	1280.53	PetriesB-M001-1280.53	AMEC-100yr-2020-Max	21.8	65.5	65.96	66.56	71.76	1.246059	10.67	2.04	8.59	6.98
M001	1254.7	PetriesB-M001-1254.7	AMEC-100yr-2020-Max	21.8	61.55	62.65	63.19	64.79	0.09267	7.8	4.66	8.37	2.62
M001	1214.6	PetriesB-M001-1214.6	AMEC-100yr-2020-Max	21.8	54.66	55.53	56.18	58.76	0.274358	9.86	3.46	7.66	3.96
M001	1186.8	PetriesB-M001-1186.8	AMEC-100yr-2020-Max	21.8	51	51.87	52.31	53.51	0.118438	7.47	5.05	10.16	2.84
M001	1151.89	PetriesB-M001-1151.89	AMEC-100yr-2020-Max	21.8	46.66	47.83	48.37	49.94	0.096114	7.77	4.73	8.79	2.61
M001	1131.36	PetriesB-M001-1131.36	AMEC-100yr-2020-Max	21.8	45.4	46.73	47.18	48.22	0.060185	6.54	5.46	8.33	2.03
M001	1094.32	PetriesB-M001-1094.32	AMEC-100yr-2020-Max	21.8	43.36	44.72	45.18	46.19	0.052973	6.38	5.33	6.96	1.93
M001	1036.63	PetriesB-M001-1036.63	AMEC-100yr-2020-Max	23	40.61	42.09	42.47	43.38	0.044159	6.11	6.71	11.43	1.79
M001	991.55	PetriesB-M001-991.55	AMEC-100yr-2020-Max	23	36.47	37.66	38.26	40.07	0.136913	8.3	4.26	7.27	2.86
M001	950.72	PetriesB-M001-950.72	AMEC-100yr-2020-Max	23	32.56	33.71	34.15	35.27	0.092707	7.06	5.43	9.42	2.42
M001	894.7	PetriesB-M001-894.7	AMEC-100yr-2020-Max	23	29.5	30.88	31.14	31.77	0.040988	5.48	7	8.83	1.66
M001	850	PetriesB-M001-850	AMEC-100yr-2020-Max	23	28.24	29.92	30.06	30.48	0.018944	4.22	8.53	13.01	1.15
M001	811.85	PetriesB-M001-811.85	AMEC-100yr-2020-Max	23	26.37	27.99	28.39	29.26	0.055532	5.19	4.9	5.91	1.56
M001	754.3	PetriesB-M001-754.3	AMEC-100yr-2020-Max	23	22.84	24.24	24.59	25.86	0.0605	6.49	4.98	7.67	2.05
M001	684.68	PetriesB-M001-684.68	AMEC-100yr-2020-Max	23	20.6	23.03	22.89	23.18	0.003921	2.42	18.87	31.37	0.55
M001	632.62	PetriesB-M001-632.62	AMEC-100yr-2020-Max	23	20.87	23.07	22.06	23.12	0.000913	1.45	35.29	48.1	0.31
M001	625	PetriesB-M001-625	AMEC-100yr-2020-Max	Bridge									
M001	621.03	PetriesB-M001-621.03	AMEC-100yr-2020-Max	23	19.91	21.44	21.44	22.02	0.011409	3.72	7.21	16.73	1.01
M001	599.17	PetriesB-M001-599.17	AMEC-100yr-2020-Max	23	15.17	15.67	16.25	19.35	0.449597	10.18	3.01	9.62	5.19
M001	547.98	PetriesB-M001-547.98	AMEC-100yr-2020-Max	23	9.22	10.08	10.42	11.27	0.076733	5.61	5.34	11.99	2.29
M001	500	PetriesB-M001-500	AMEC-100yr-2020-Max	23	7.42	8.93	9.02	9.51	0.018504	4.18	8.7	10.39	1.21
M001	446.65	PetriesB-M001-446.65	AMEC-100yr-2020-Max	23	6.07	7.24	7.53	8.08	0.04102	5.03	8.08	18.74	1.71
M001	399.97	PetriesB-M001-399.97	AMEC-100yr-2020-Max	25	4.59	5.97	6.17	6.54	0.025632	4.05	10.24	24.87	1.36
M001	349.97	PetriesB-M001-349.97	AMEC-100yr-2020-Max	25	3.89	5.25	5.25	5.53	0.017582	3.42	12.36	21.89	1.09
M001	300.08	PetriesB-M001-300.08	AMEC-100yr-2020-Max	25	3.07	4.61	4.28	4.66	0.002833	1.48	28.66	41.21	0.43
M001	250	PetriesB-M001-250	AMEC-100yr-2020-Max	25	2.39	3.93	3.93	4.36	0.013928	3.86	10.03	11.78	1.07
M001	200	PetriesB-M001-200	AMEC-100yr-2020-Max	25.4	1.6	3.91	3.18	3.93	0.000719	1.11	42.73	46.27	0.25
M001	164.9	PetriesB-M001-164.9	AMEC-100yr-2020-Max	25.4	1.25	3.84	2.75	3.9	0.000926	1.53	32.69	38.89	0.31
M001	130	PetriesB-M001-130	AMEC-100yr-2020-Max	Culvert									
M001	122.87	PetriesB-M001-122.87	AMEC-100yr-2020-Max	25.4	1	3.4	2.58	3.64	0.002373	2.3	11.9	22.63	0.5
M001	121.82	PetriesB-M001-121.82	AMEC-100yr-2020-Max	25.4	0.97	3.44	3.2	3.59	0.001974	2.22	22.21	25.72	0.46
M001	110	PetriesB-M001-110	AMEC-100yr-2020-Max	Culvert									
M001	108.55	PetriesB-M001-108.55	AMEC-100yr-2020-Max	25.4	0.48	2.83	2.75	2.94	0.0018	1.84	23.83	26.33	0.4
M001	100	PetriesB-M001-100	AMEC-100yr-2020-Max	25.4	0.79	2.85		2.87	0.000615	1.09	44.55	41.03	0.25
M001	50	PetriesB-M001-50	AMEC-100yr-2020-Max	25.4	0.56	2.85		2.86	0.000129	0.54	82.1	64.04	0.12
M001	-33.87	PetriesB-M001--33.87	AMEC-100yr-2020-Max	25.4	0.46	2.85		2.85	0.000045	0.32	103.11	80.15	0.07
M001	-115.21	PetriesB-M001--115.21	AMEC-100yr-2020-Max	25.4	-0.85	2.85	0.16	2.85	0.000003	0.12	345.68	155.32	0.02

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Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	FINIIS-20yr-2050-Max	7.4	138.52	139.12	139.13	139.31	0.028001	2.62	4.81	13.1	1.18
TR002	26.4	PetriesB-TR002-26.4	FINIIS-20yr-2050-Max	7.4	136.29	136.61	136.73	136.98	0.189194	4.11	3.3	18.31	2.71
TR003	75.44	PetriesB-TR003-75.44	FINIIS-20yr-2050-Max	4.7	138.22	139	139.02	139.22	0.018002	2.43	3.12	8.49	0.97
TR003	31.52	PetriesB-TR003-31.52	FINIIS-20yr-2050-Max	4.7	135.25	135.7	136.02	137.12	0.240568	5.77	1.11	5.11	3.2
M002	2878.54	PetriesB-M002-2878.54	FINIIS-20yr-2050-Max	15.3	133.44	134.14	134.26	134.57	0.054968	4.2	6.66	15.17	1.71
M002	2830.24	PetriesB-M002-2830.24	FINIIS-20yr-2050-Max	15.3	129.86	131.1	131.49	132.28	0.043755	5.4	4.19	6.02	1.65
M002	2781.96	PetriesB-M002-2781.96	FINIIS-20yr-2050-Max	15.3	126.6	127.55	128.02	129.19	0.102648	6.62	3.57	7.03	2.36
M002	2733.55	PetriesB-M002-2733.55	FINIIS-20yr-2050-Max	15.3	123.62	124.59	124.87	125.49	0.054988	5.22	5.06	9.67	1.79
M002	2711.98	PetriesB-M002-2711.98	FINIIS-20yr-2050-Max	15.3	121.55	123.64	123.3	123.7	0.002027	1.78	22.29	37.77	0.4
M002	2710	PetriesB-M002-2710	FINIIS-20yr-2050-Max	Bridge									
M002	2706.48	PetriesB-M002-2706.48	FINIIS-20yr-2050-Max	15.3	121.23	122.95	122.95	123.15	0.003718	2.1	9.58	10.55	0.52
M002	2686.04	PetriesB-M002-2686.04	FINIIS-20yr-2050-Max	15.3	120.42	121.47	121.88	122.64	0.062666	5.61	3.85	8.01	1.88
M002	2636.8	PetriesB-M002-2636.8	FINIIS-20yr-2050-Max	16.1	118.88	120.11	120.33	120.68	0.025653	4.15	6.58	20.15	1.26
M002	2586.04	PetriesB-M002-2586.04	FINIIS-20yr-2050-Max	16.1	117.62	117.98	118.1	118.38	0.147126	3.76	5.88	29.37	2.38
M002	2536.82	PetriesB-M002-2536.82	FINIIS-20yr-2050-Max	16.1	115.95	116.82	116.82	117.05	0.024691	3.04	8.42	17.5	1.14
M002	2487.14	PetriesB-M002-2487.14	FINIIS-20yr-2050-Max	16.1	114	115.21	115.37	115.73	0.026063	4.11	7.22	15.48	1.27
M002	2437.53	PetriesB-M002-2437.53	FINIIS-20yr-2050-Max	16.1	112.56	113.62	113.81	114.21	0.037565	4.46	6.51	14.77	1.49
M002	2387.76	PetriesB-M002-2387.76	FINIIS-20yr-2050-Max	16.1	110.97	112.17	112.3	112.68	0.025224	4.03	6.53	10.79	1.25
M002	2337.92	PetriesB-M002-2337.92	FINIIS-20yr-2050-Max	16.1	109.55	110.57	110.73	111.09	0.043696	4.4	7.32	22.13	1.54
M002	2288.19	PetriesB-M002-2288.19	FINIIS-20yr-2050-Max	16.1	107.88	109.04	109.2	109.55	0.025506	3.94	6.87	15.14	1.25
M002	2243.62	PetriesB-M002-2243.62	FINIIS-20yr-2050-Max	16.1	106.54	108.17	108.17	108.78	0.023293	4.02	5.42	6.87	1.12
M002	2206.69	PetriesB-M002-2206.69	FINIIS-20yr-2050-Max	16.1	105.39	106.47	106.72	107.39	0.065889	5.24	5.01	16.1	1.83
M002	2172.99	PetriesB-M002-2172.99	FINIIS-20yr-2050-Max	16.1	104.44	105.4	105.54	105.8	0.030382	3.7	6.55	13.72	1.29
M002	2132.37	PetriesB-M002-2132.37	FINIIS-20yr-2050-Max	16.1	102.85	103.88	104.05	104.41	0.038384	4.17	6.52	18.27	1.47
M002	2076.75	PetriesB-M002-2076.75	FINIIS-20yr-2050-Max	16.1	100.37	101.95	102.13	102.7	0.025466	4.36	4.89	5.74	1.22
TR001	194.22	PetriesB-TR001-194.22	FINIIS-20yr-2050-Max	11.4	116.47	117.77	117.77	118.14	0.016095	3.39	5.43	7.63	1
TR001	173.31	PetriesB-TR001-173.31	FINIIS-20yr-2050-Max	11.4	113.43	114.08	114.64	116.98	0.295392	8.45	1.84	5.52	3.77
TR001	155.88	PetriesB-TR001-155.88	FINIIS-20yr-2050-Max	11.4	111.89	112.42	112.53	112.87	0.103736	4.45	4.97	22.35	2.15
TR001	147.33	PetriesB-TR001-147.33	FINIIS-20yr-2050-Max	11.4	111.21	111.66	111.82	112.26	0.170385	5.07	4.28	22.72	2.74
TR001	100.01	PetriesB-TR001-100.01	FINIIS-20yr-2050-Max	11.4	106.9	107.77	107.97	108.43	0.046626	4.41	3.99	8.34	1.61
TR001	84.71	PetriesB-TR001-84.71	FINIIS-20yr-2050-Max	11.4	105.53	106.51	106.81	107.46	0.098945	4.99	3.01	6.7	1.81
TR001	80	PetriesB-TR001-80	FINIIS-20yr-2050-Max	Culvert									
TR001	76.27	PetriesB-TR001-76.27	FINIIS-20yr-2050-Max	11.4	105.28	106.42	106.42	106.61	0.01265	2.71	8.18	19.68	0.84
TR001	50.01	PetriesB-TR001-50.01	FINIIS-20yr-2050-Max	11.4	102.82	103.54	103.98	105.36	0.151672	6.81	2.3	6.07	2.8
TR001	10.31	PetriesB-TR001-10.31	FINIIS-20yr-2050-Max	11.4	100.43	101.35	101.53	101.95	0.035244	3.97	3.91	7.52	1.43
M001	2036.68	PetriesB-M001-2036.68	FINIIS-20yr-2050-Max	27.2	99.58	101.18	101.05	101.36	0.008378	2.78	17.55	22.74	0.74
M001	2006.33	PetriesB-M001-2006.33	FINIIS-20yr-2050-Max	27.2	98.58	101.21		101.26	0.00122	1.52	31.76	27.93	0.31
M001	1984.7	PetriesB-M001-1984.7	FINIIS-20yr-2050-Max	27.2	98.16	101.16	100.58	101.24	0.00124	1.62	29.75	31.12	0.31
M001	1975	PetriesB-M001-1975	FINIIS-20yr-2050-Max	Culvert									
M001	1967.48	PetriesB-M001-1967.48	FINIIS-20yr-2050-Max	27.2	97.22	99.75	99.75	99.95	0.003273	2.27	15.91	12.69	0.49
M001	1947.41	PetriesB-M001-1947.41	FINIIS-20yr-2050-Max	27.2	96.71	98.28	98.65	99.45	0.037901	5.7	6.75	7.64	1.56
M001	1897.27	PetriesB-M001-1897.27	FINIIS-20yr-2050-Max	27.2	94.94	96.34	96.7	97.5	0.040898	5.78	6.64	8.01	1.64
M001	1847.5	PetriesB-M001-1847.5	FINIIS-20yr-2050-Max	27.2	93.5	95.15	95.25	95.83	0.023704	4.64	8.83	8.66	1.23
M001	1790.83	PetriesB-M001-1790.83	FINIIS-20yr-2050-Max	31.3	91.16	92.72	93.1	93.94	0.044791	6.18	9.13	13.44	1.69
M001	1750	PetriesB-M001-1750	FINIIS-20yr-2050-Max	31.3	90.25	92.11	92.16	92.7	0.017845	4.52	12.14	11.79	1.11
M001	1700	PetriesB-M001-1700	FINIIS-20yr-2050-Max	31.3	88.86	90.48	90.77	91.49	0.033731	5.71	9.16	9.74	1.51
M001	1650	PetriesB-M001-1650	FINIIS-20yr-2050-Max	31.3	86.29	87.74	88.04	89.27	0.058941	6.82	7.35	8.6	1.9
M001	1600	PetriesB-M001-1600	FINIIS-20yr-2050-Max	31.3	84.49	87.58	85.83	87.59	0.000234	0.77	83.87	47.49	0.14
M001	1581.62	PetriesB-M001-1581.62	FINIIS-20yr-2050-Max	31.3	83.85	87.57	87	87.58	0.000262	0.87	85.37	71.76	0.15
M001	1560	PetriesB-M001-1560	FINIIS-20yr-2050-Max	Culvert									

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Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	FINIIS-20yr-2050-Max	31.3	82.32	85.53	85.53	87.11	0.010875	5.57	5.62	78.22	1
M001	1477.89	PetriesB-M001-1477.89	FINIIS-20yr-2050-Max	31.3	79.96	80.69	81.46	85.06	0.487042	11.34	4.19	11.56	4.92
M001	1418.45	PetriesB-M001-1418.45	FINIIS-20yr-2050-Max	32.8	78.38	80.27	80.39	80.8	0.019396	4.48	14.46	19.15	1.11
M001	1359	PetriesB-M001-1359	FINIIS-20yr-2050-Max	32.8	74.82	78.61	77.19	78.71	0.001222	2.04	33.68	18.73	0.34
M001	1338.71	PetriesB-M001-1338.71	FINIIS-20yr-2050-Max	32.8	72.61	78.62	75.45	78.69	0.000333	1.44	54.51	47.24	0.19
M001	1295	PetriesB-M001-1295	FINIIS-20yr-2050-Max	Culvert									
M001	1292.63	PetriesB-M001-1292.63	FINIIS-20yr-2050-Max	32.8	70.47	73.33	73.33	74.72	0.012561	5.58	6.68	20.65	1.06
M001	1280.53	PetriesB-M001-1280.53	FINIIS-20yr-2050-Max	32.8	65.5	66.05	66.81	72.66	0.997788	11.39	2.88	9.47	6.53
M001	1254.7	PetriesB-M001-1254.7	FINIIS-20yr-2050-Max	32.8	61.55	62.82	63.51	65.57	0.099911	9.11	6.18	9.05	2.8
M001	1214.6	PetriesB-M001-1214.6	FINIIS-20yr-2050-Max	32.8	54.66	55.7	56.49	59.51	0.246796	10.96	4.83	8.5	3.91
M001	1186.8	PetriesB-M001-1186.8	FINIIS-20yr-2050-Max	32.8	51	52.01	52.59	54.2	0.129075	8.82	6.56	10.99	3.06
M001	1151.89	PetriesB-M001-1151.89	FINIIS-20yr-2050-Max	32.8	46.66	48.02	48.65	50.56	0.095273	8.82	6.56	10.05	2.69
M001	1131.36	PetriesB-M001-1131.36	FINIIS-20yr-2050-Max	32.8	45.4	46.95	47.5	48.8	0.0618	7.51	7.39	9.29	2.12
M001	1094.32	PetriesB-M001-1094.32	FINIIS-20yr-2050-Max	32.8	43.36	45	45.56	46.8	0.051078	7.26	7.35	7.83	1.97
M001	1036.63	PetriesB-M001-1036.63	FINIIS-20yr-2050-Max	34.4	40.61	42.28	42.75	43.87	0.048702	7.08	9.03	12.71	1.92
M001	991.55	PetriesB-M001-991.55	FINIIS-20yr-2050-Max	34.4	36.47	37.9	38.6	40.58	0.116075	8.99	6.09	8.09	2.74
M001	950.72	PetriesB-M001-950.72	FINIIS-20yr-2050-Max	34.4	32.56	33.87	34.44	35.95	0.102506	8.33	7.03	10.21	2.62
M001	894.7	PetriesB-M001-894.7	FINIIS-20yr-2050-Max	34.4	29.5	31.14	31.46	32.25	0.040566	6.26	9.36	9.52	1.71
M001	850	PetriesB-M001-850	FINIIS-20yr-2050-Max	34.4	28.24	30.11	30.34	30.83	0.022284	4.98	11.09	14.85	1.28
M001	811.85	PetriesB-M001-811.85	FINIIS-20yr-2050-Max	34.4	26.37	28.37	28.78	29.67	0.040224	5.37	7.4	7.09	1.39
M001	754.3	PetriesB-M001-754.3	FINIIS-20yr-2050-Max	34.4	22.84	24.43	24.97	26.59	0.068499	7.72	6.82	14.46	2.25
M001	684.68	PetriesB-M001-684.68	FINIIS-20yr-2050-Max	34.4	20.6	22.77	22.99	23.7	0.023625	5.43	11.91	25.43	1.31
M001	632.62	PetriesB-M001-632.62	FINIIS-20yr-2050-Max	34.4	20.87	22.89	22.7	23.07	0.003106	2.53	27.06	41.58	0.57
M001	625	PetriesB-M001-625	FINIIS-20yr-2050-Max	Bridge									
M001	621.03	PetriesB-M001-621.03	FINIIS-20yr-2050-Max	34.4	19.91	21.66	21.88	22.47	0.014927	4.7	12.49	24.79	1.19
M001	599.17	PetriesB-M001-599.17	FINIIS-20yr-2050-Max	34.2	15.17	15.82	16.48	19.54	0.309403	10.43	4.49	10.69	4.54
M001	547.98	PetriesB-M001-547.98	FINIIS-20yr-2050-Max	34.2	9.22	10.19	10.65	11.85	0.086969	6.7	6.76	12.85	2.51
M001	500	PetriesB-M001-500	FINIIS-20yr-2050-Max	34.2	7.42	9.2	9.33	9.92	0.018595	4.78	11.65	11.62	1.25
M001	446.65	PetriesB-M001-446.65	FINIIS-20yr-2050-Max	34.2	6.07	7.38	7.77	8.43	0.045329	5.85	11.08	23.5	1.84
M001	399.97	PetriesB-M001-399.97	FINIIS-20yr-2050-Max	37.4	4.59	6.11	6.31	6.76	0.026526	4.55	14.31	29.62	1.42
M001	349.97	PetriesB-M001-349.97	FINIIS-20yr-2050-Max	37.4	3.89	5.47	5.47	5.77	0.0154	3.65	17.91	26.57	1.05
M001	300.08	PetriesB-M001-300.08	FINIIS-20yr-2050-Max	37.4	3.07	4.89	4.38	4.94	0.002174	1.49	40.35	42.87	0.39
M001	250	PetriesB-M001-250	FINIIS-20yr-2050-Max	37.4	2.39	4.28	4.28	4.7	0.010987	4.02	15.8	21.87	0.99
M001	200	PetriesB-M001-200	FINIIS-20yr-2050-Max	38.2	1.6	4.14	3.31	4.17	0.000813	1.27	53.59	47.48	0.27
M001	164.9	PetriesB-M001-164.9	FINIIS-20yr-2050-Max	38.2	1.25	4.05	3.15	4.14	0.001195	1.84	41.38	42.41	0.36
M001	130	PetriesB-M001-130	FINIIS-20yr-2050-Max	Culvert									
M001	122.87	PetriesB-M001-122.87	FINIIS-20yr-2050-Max	38.2	1	3.46	2.99	3.99	0.00486	3.35	12.27	24.04	0.71
M001	121.82	PetriesB-M001-121.82	FINIIS-20yr-2050-Max	38.2	0.97	3.6	3.35	3.83	0.003006	2.86	26.53	28.56	0.57
M001	110	PetriesB-M001-110	FINIIS-20yr-2050-Max	Culvert									
M001	108.55	PetriesB-M001-108.55	FINIIS-20yr-2050-Max	38.2	0.48	3	2.75	3.17	0.002758	2.39	28.4	29.56	0.5
M001	100	PetriesB-M001-100	FINIIS-20yr-2050-Max	38.2	0.79	3.03		3.07	0.000895	1.4	51.98	42.46	0.31
M001	50	PetriesB-M001-50	FINIIS-20yr-2050-Max	38.2	0.56	3.03		3.04	0.000195	0.7	93.68	64.84	0.15
M001	-33.87	PetriesB-M001--33.87	FINIIS-20yr-2050-Max	38.2	0.46	3.03		3.03	0.000073	0.44	117.57	81.85	0.09
M001	-115.21	PetriesB-M001--115.21	FINIIS-20yr-2050-Max	38.2	-0.85	3.03	0.31	3.03	0.000006	0.17	374.04	159.22	0.03

Petrie's Brook - 2050 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	FINIIS-100yr-2050-Max	11.1	138.52	139.24	139.25	139.48	0.028003	3.01	6.39	14.21	1.22
TR002	26.4	PetriesB-TR002-26.4	FINIIS-100yr-2050-Max	11.1	136.29	136.67	136.81	137.14	0.189581	4.75	4.37	19.98	2.81
TR003	75.44	PetriesB-TR003-75.44	FINIIS-100yr-2050-Max	7.1	138.22	139.14	139.16	139.4	0.018006	2.76	4.37	9.82	1
TR003	31.52	PetriesB-TR003-31.52	FINIIS-100yr-2050-Max	7.1	135.25	135.8	136.14	137.37	0.19883	6.25	1.68	6.53	3.04
M002	2878.54	PetriesB-M002-2878.54	FINIIS-100yr-2050-Max	23.1	133.44	134.28	134.43	134.82	0.05597	4.84	8.85	16.55	1.78
M002	2830.24	PetriesB-M002-2830.24	FINIIS-100yr-2050-Max	23.1	129.86	131.42	131.83	132.72	0.036923	5.86	6.29	7.42	1.58
M002	2781.96	PetriesB-M002-2781.96	FINIIS-100yr-2050-Max	23.1	126.6	127.72	128.31	129.84	0.108616	7.74	4.85	8.15	2.51
M002	2733.55	PetriesB-M002-2733.55	FINIIS-100yr-2050-Max	23.1	123.62	124.76	125.11	125.88	0.057829	6.03	6.76	10.51	1.9
M002	2711.98	PetriesB-M002-2711.98	FINIIS-100yr-2050-Max	23.1	121.55	123.72	123.52	123.82	0.003364	2.35	25.76	41.15	0.52
M002	2710	PetriesB-M002-2710	FINIIS-100yr-2050-Max	Bridge									
M002	2706.48	PetriesB-M002-2706.48	FINIIS-100yr-2050-Max	23.1	121.23	122.95	122.95	123.39	0.008475	3.17	9.58	10.55	0.79
M002	2686.04	PetriesB-M002-2686.04	FINIIS-100yr-2050-Max	23.1	120.42	121.74	122.02	122.83	0.047388	5.8	7.77	22.55	1.71
M002	2636.8	PetriesB-M002-2636.8	FINIIS-100yr-2050-Max	23.9	118.88	120.24	120.47	120.95	0.030318	4.87	10.02	33.46	1.39
M002	2586.04	PetriesB-M002-2586.04	FINIIS-100yr-2050-Max	23.9	117.62	118.05	118.19	118.53	0.122725	4.06	8.03	30.23	2.27
M002	2536.82	PetriesB-M002-2536.82	FINIIS-100yr-2050-Max	23.9	115.95	116.96	116.96	117.25	0.024357	3.41	11	18.34	1.17
M002	2487.14	PetriesB-M002-2487.14	FINIIS-100yr-2050-Max	23.9	114	115.37	115.53	115.94	0.02603	4.51	9.82	16.71	1.3
M002	2437.53	PetriesB-M002-2437.53	FINIIS-100yr-2050-Max	23.9	112.56	113.77	113.97	114.43	0.037245	4.92	8.9	16.4	1.52
M002	2387.76	PetriesB-M002-2387.76	FINIIS-100yr-2050-Max	23.9	110.97	112.4	112.52	112.97	0.023206	4.4	9.2	12.71	1.24
M002	2337.92	PetriesB-M002-2337.92	FINIIS-100yr-2050-Max	23.9	109.55	110.65	110.85	111.31	0.05315	5.16	9.12	22.76	1.73
M002	2288.19	PetriesB-M002-2288.19	FINIIS-100yr-2050-Max	23.9	107.88	109.23	109.36	109.75	0.022913	4.18	9.78	16.15	1.22
M002	2243.62	PetriesB-M002-2243.62	FINIIS-100yr-2050-Max	23.9	106.54	108.57	108.64	108.98	0.013344	3.63	10.58	14.83	0.89
M002	2206.69	PetriesB-M002-2206.69	FINIIS-100yr-2050-Max	23.9	105.39	106.54	106.84	107.85	0.091916	6.48	6	16.54	2.18
M002	2172.99	PetriesB-M002-2172.99	FINIIS-100yr-2050-Max	23.9	104.44	105.57	105.68	106.01	0.028992	4.07	9.26	17.4	1.3
M002	2132.37	PetriesB-M002-2132.37	FINIIS-100yr-2050-Max	23.9	102.85	103.99	104.17	104.61	0.041043	4.68	8.55	19.48	1.55
M002	2076.75	PetriesB-M002-2076.75	FINIIS-100yr-2050-Max	23.9	100.37	102.33	102.47	103.1	0.019671	4.55	7.31	6.86	1.12
TR001	194.22	PetriesB-TR001-194.22	FINIIS-100yr-2050-Max	16.7	116.47	118	118	118.44	0.015632	3.77	7.36	8.65	1.01
TR001	173.31	PetriesB-TR001-173.31	FINIIS-100yr-2050-Max	16.7	113.43	114.23	114.84	117.32	0.242986	9.01	2.73	7.08	3.56
TR001	155.88	PetriesB-TR001-155.88	FINIIS-100yr-2050-Max	16.7	111.89	112.47	112.66	113.07	0.123075	5.21	6.11	23.23	2.39
TR001	147.33	PetriesB-TR001-147.33	FINIIS-100yr-2050-Max	16.7	111.21	111.72	111.91	112.43	0.174918	5.65	5.56	24.21	2.84
TR001	100.01	PetriesB-TR001-100.01	FINIIS-100yr-2050-Max	16.7	106.9	107.94	108.16	108.7	0.044056	4.89	5.49	9.67	1.62
TR001	84.71	PetriesB-TR001-84.71	FINIIS-100yr-2050-Max	16.7	105.53	106.66	107.12	107.77	0.097094	5.54	4.04	7.52	1.84
TR001	80	PetriesB-TR001-80	FINIIS-100yr-2050-Max	Culvert									
TR001	76.27	PetriesB-TR001-76.27	FINIIS-100yr-2050-Max	16.7	105.28	106.55	106.55	106.77	0.013694	3.03	10.84	22.56	0.89
TR001	50.01	PetriesB-TR001-50.01	FINIIS-100yr-2050-Max	16.7	102.82	103.71	104.17	105.54	0.117058	7.06	3.45	7.4	2.57
TR001	10.31	PetriesB-TR001-10.31	FINIIS-100yr-2050-Max	16.7	100.43	101.49	101.73	102.29	0.039087	4.67	5.04	8.43	1.54
M001	2036.68	PetriesB-M001-2036.68	FINIIS-100yr-2050-Max	40.5	99.58	101.38	101.21	101.61	0.009326	3.2	22.16	23.53	0.8
M001	2006.33	PetriesB-M001-2006.33	FINIIS-100yr-2050-Max	40.5	98.58	101.42		101.49	0.001679	1.88	37.55	28.96	0.37
M001	1984.7	PetriesB-M001-1984.7	FINIIS-100yr-2050-Max	40.5	98.16	101.34	100.83	101.46	0.001742	2.01	35.65	32.45	0.37
M001	1975	PetriesB-M001-1975	FINIIS-100yr-2050-Max	Culvert									
M001	1967.48	PetriesB-M001-1967.48	FINIIS-100yr-2050-Max	40.5	97.22	99.75	99.75	100.2	0.007256	3.37	15.91	12.69	0.74
M001	1947.41	PetriesB-M001-1947.41	FINIIS-100yr-2050-Max	40.5	96.71	98.83	99.04	99.76	0.021003	5.31	11.57	10.02	1.23
M001	1897.27	PetriesB-M001-1897.27	FINIIS-100yr-2050-Max	40.5	94.94	96.55	97.04	98.17	0.048382	6.96	8.39	8.82	1.83
M001	1847.5	PetriesB-M001-1847.5	FINIIS-100yr-2050-Max	40.5	93.5	95.48	95.61	96.33	0.023229	5.26	11.85	9.58	1.26
M001	1790.83	PetriesB-M001-1790.83	FINIIS-100yr-2050-Max	46.5	91.16	92.93	93.37	94.39	0.047871	7.04	12.09	14.32	1.79
M001	1750	PetriesB-M001-1750	FINIIS-100yr-2050-Max	46.5	90.25	92.5	92.51	93.16	0.016087	4.93	17.06	13.45	1.09
M001	1700	PetriesB-M001-1700	FINIIS-100yr-2050-Max	46.5	88.86	90.8	91.15	92.02	0.032789	6.43	12.52	11.1	1.54
M001	1650	PetriesB-M001-1650	FINIIS-100yr-2050-Max	46.5	86.29	88.11	88.75	89.92	0.052927	7.64	10.95	12.56	1.88
M001	1600	PetriesB-M001-1600	FINIIS-100yr-2050-Max	46.5	84.49	87.73	86	87.75	0.000481	1.14	91.35	54.2	0.2
M001	1581.62	PetriesB-M001-1581.62	FINIIS-100yr-2050-Max	46.5	83.85	87.71	87	87.74	0.000441	1.16	95.5	73.69	0.19
M001	1560	PetriesB-M001-1560	FINIIS-100yr-2050-Max	Culvert									

Petrie's Brook - 2050 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	FINIIS-100yr-2050-Max	46.5	82.32	86	86	86.01	0.000065	0.47	169.06	90.87	0.08
M001	1477.89	PetriesB-M001-1477.89	FINIIS-100yr-2050-Max	46.5	79.96	80.88	81.63	84.82	0.317547	11.12	6.41	12.7	4.17
M001	1418.45	PetriesB-M001-1418.45	FINIIS-100yr-2050-Max	49.2	78.38	80.55	80.64	81.11	0.018038	4.81	20.2	20.84	1.1
M001	1359	PetriesB-M001-1359	FINIIS-100yr-2050-Max	49.2	74.82	79.04	78	79.19	0.001526	2.46	42.03	19.54	0.39
M001	1338.71	PetriesB-M001-1338.71	FINIIS-100yr-2050-Max	49.2	72.61	79.07	76.28	79.16	0.000433	1.73	73.4	55.42	0.22
M001	1295	PetriesB-M001-1295	FINIIS-100yr-2050-Max	Culvert									
M001	1292.63	PetriesB-M001-1292.63	FINIIS-100yr-2050-Max	49.2	70.47	74.19	74.19	76.01	0.011603	6.39	8.74	22.84	1.06
M001	1280.53	PetriesB-M001-1280.53	FINIIS-100yr-2050-Max	49.2	65.5	66.17	67.14	73.82	0.746493	12.26	4.05	9.85	5.97
M001	1254.7	PetriesB-M001-1254.7	FINIIS-100yr-2050-Max	49.2	61.55	63.02	63.9	66.67	0.1114	10.75	8.03	9.72	3.04
M001	1214.6	PetriesB-M001-1214.6	FINIIS-100yr-2050-Max	49.2	54.66	55.91	56.86	60.44	0.226391	12.23	6.69	9.43	3.89
M001	1186.8	PetriesB-M001-1186.8	FINIIS-100yr-2050-Max	49.2	51	52.19	52.93	55.1	0.139066	10.36	8.56	11.99	3.27
M001	1151.89	PetriesB-M001-1151.89	FINIIS-100yr-2050-Max	49.2	46.66	48.25	49.1	51.34	0.096962	10.06	8.95	11.33	2.79
M001	1131.36	PetriesB-M001-1131.36	FINIIS-100yr-2050-Max	49.2	45.4	47.22	47.84	49.51	0.063117	8.61	9.97	10.26	2.22
M001	1094.32	PetriesB-M001-1094.32	FINIIS-100yr-2050-Max	49.2	43.36	45.34	46.02	47.52	0.048506	8.2	10.21	8.94	1.99
M001	1036.63	PetriesB-M001-1036.63	FINIIS-100yr-2050-Max	51.9	40.61	42.5	43.09	44.51	0.054566	8.28	11.96	13.83	2.09
M001	991.55	PetriesB-M001-991.55	FINIIS-100yr-2050-Max	51.9	36.47	38.2	39.04	41.21	0.099086	9.79	8.7	8.98	2.64
M001	950.72	PetriesB-M001-950.72	FINIIS-100yr-2050-Max	51.9	32.56	34.07	34.8	36.83	0.112577	9.82	9.17	11.03	2.82
M001	894.7	PetriesB-M001-894.7	FINIIS-100yr-2050-Max	51.9	29.5	31.46	31.87	32.88	0.040957	7.23	12.51	10.31	1.78
M001	850	PetriesB-M001-850	FINIIS-100yr-2050-Max	51.9	28.24	30.32	30.61	31.29	0.026955	5.97	14.58	18.13	1.44
M001	811.85	PetriesB-M001-811.85	FINIIS-100yr-2050-Max	51.9	26.37	28.86	29.25	30.18	0.029866	5.57	11.24	8.68	1.26
M001	754.3	PetriesB-M001-754.3	FINIIS-100yr-2050-Max	51.9	22.84	24.61	25.13	27.35	0.079115	9.14	10.41	27.29	2.47
M001	684.68	PetriesB-M001-684.68	FINIIS-100yr-2050-Max	51.9	20.6	22.93	23.32	23.99	0.027493	6.21	16.08	27.37	1.43
M001	632.62	PetriesB-M001-632.62	FINIIS-100yr-2050-Max	51.9	20.87	22.59	22.95	23.62	0.018244	5.52	16.62	28.92	1.35
M001	625	PetriesB-M001-625	FINIIS-100yr-2050-Max	Bridge									
M001	621.03	PetriesB-M001-621.03	FINIIS-100yr-2050-Max	51.9	19.91	21.84	22.13	22.67	0.016589	5.17	18.89	31.06	1.24
M001	599.17	PetriesB-M001-599.17	FINIIS-100yr-2050-Max	51.5	15.17	16.03	16.81	19.73	0.207895	10.63	6.85	11.98	3.93
M001	547.98	PetriesB-M001-547.98	FINIIS-100yr-2050-Max	51.5	9.22	10.33	10.94	12.68	0.10051	8.07	8.56	13.66	2.77
M001	500	PetriesB-M001-500	FINIIS-100yr-2050-Max	51.5	7.42	9.51	9.72	10.46	0.019983	5.61	15.38	12.92	1.34
M001	446.65	PetriesB-M001-446.65	FINIIS-100yr-2050-Max	51.5	6.07	7.55	7.93	8.84	0.049587	6.78	15.88	32.41	1.97
M001	399.97	PetriesB-M001-399.97	FINIIS-100yr-2050-Max	56.5	4.59	6.27	6.5	7.02	0.027812	5.11	19.01	30.48	1.48
M001	349.97	PetriesB-M001-349.97	FINIIS-100yr-2050-Max	56.5	3.89	5.67	5.67	6.05	0.015896	4.1	23.27	27.4	1.09
M001	300.08	PetriesB-M001-300.08	FINIIS-100yr-2050-Max	56.5	3.07	5.24	4.54	5.3	0.001816	1.56	55.63	44.79	0.37
M001	250	PetriesB-M001-250	FINIIS-100yr-2050-Max	56.5	2.39	4.53	4.53	5.06	0.012845	4.76	22.31	30.76	1.09
M001	200	PetriesB-M001-200	FINIIS-100yr-2050-Max	56.7	1.6	4.61	3.46	4.64	0.000591	1.23	76.73	49.56	0.24
M001	164.9	PetriesB-M001-164.9	FINIIS-100yr-2050-Max	56.7	1.25	4.56	3.79	4.63	0.000808	1.7	65.38	49.15	0.31
M001	130	PetriesB-M001-130	FINIIS-100yr-2050-Max	Culvert									
M001	122.87	PetriesB-M001-122.87	FINIIS-100yr-2050-Max	56.7	1	3.5	3.5	4.61	0.010081	4.89	12.49	24.91	1.03
M001	121.82	PetriesB-M001-121.82	FINIIS-100yr-2050-Max	56.7	0.97	3.23	3.65	4.44	0.017295	6.16	17.06	21.86	1.34
M001	110	PetriesB-M001-110	FINIIS-100yr-2050-Max	Culvert									
M001	108.55	PetriesB-M001-108.55	FINIIS-100yr-2050-Max	56.7	0.48	2.94	2.84	3.37	0.006878	3.71	26.87	28.52	0.79
M001	100	PetriesB-M001-100	FINIIS-100yr-2050-Max	56.7	0.79	3.02	2.34	3.11	0.001992	2.08	51.81	42.42	0.46
M001	50	PetriesB-M001-50	FINIIS-100yr-2050-Max	56.7	0.56	3.03		3.05	0.00043	1.03	93.62	64.83	0.22
M001	-33.87	PetriesB-M001--33.87	FINIIS-100yr-2050-Max	56.7	0.46	3.02		3.04	0.000163	0.65	117.16	81.82	0.13
M001	-115.21	PetriesB-M001--115.21	FINIIS-100yr-2050-Max	56.7	-0.85	3.03	0.47	3.03	0.000014	0.25	374.04	159.22	0.04

Petrie's Brook - 2080 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	AMEC-20yr-2080-Max	4	138.52	138.98	138.98	139.12	0.028071	2.12	3.11	11.64	1.12
TR002	26.4	PetriesB-TR002-26.4	AMEC-20yr-2080-Max	4	136.29	136.55	136.62	136.79	0.179619	3.29	2.23	17.06	2.51
TR003	75.44	PetriesB-TR003-75.44	AMEC-20yr-2080-Max	2.5	138.22	138.83	138.83	139	0.018011	1.99	1.84	6.59	0.92
TR003	31.52	PetriesB-TR003-31.52	AMEC-20yr-2080-Max	2.5	135.25	135.58	135.85	136.78	0.329895	5.1	0.6	3.81	3.5
M002	2878.54	PetriesB-M002-2878.54	AMEC-20yr-2080-Max	8	133.44	133.97	134.04	134.25	0.052394	3.31	4.29	13.23	1.58
M002	2830.24	PetriesB-M002-2830.24	AMEC-20yr-2080-Max	8	129.86	130.74	131.04	131.71	0.056988	4.69	2.25	4.57	1.76
M002	2781.96	PetriesB-M002-2781.96	AMEC-20yr-2080-Max	8	126.6	127.35	127.65	128.37	0.087866	5.05	2.28	5.76	2.08
M002	2733.55	PetriesB-M002-2733.55	AMEC-20yr-2080-Max	8	123.62	124.38	124.58	125.04	0.053797	4.26	3.08	8.47	1.69
M002	2711.98	PetriesB-M002-2711.98	AMEC-20yr-2080-Max	8	121.55	123.38	122.74	123.43	0.00157	1.43	13.73	28.81	0.34
M002	2710	PetriesB-M002-2710	AMEC-20yr-2080-Max	Bridge									
M002	2706.48	PetriesB-M002-2706.48	AMEC-20yr-2080-Max	8	121.23	122.31	122.31	122.83	0.015696	3.2	2.5	6.21	1
M002	2686.04	PetriesB-M002-2686.04	AMEC-20yr-2080-Max	8	120.42	121.2	121.52	122.11	0.071524	4.73	2.21	5.24	1.89
M002	2636.8	PetriesB-M002-2636.8	AMEC-20yr-2080-Max	8.6	118.88	119.81	119.88	120.19	0.023163	3.22	3.76	7.09	1.13
M002	2586.04	PetriesB-M002-2586.04	AMEC-20yr-2080-Max	8.6	117.62	117.91	117.99	118.15	0.126038	2.83	4.02	25.72	2.09
M002	2536.82	PetriesB-M002-2536.82	AMEC-20yr-2080-Max	8.6	115.95	116.64	116.64	116.81	0.024632	2.53	5.5	16	1.09
M002	2487.14	PetriesB-M002-2487.14	AMEC-20yr-2080-Max	8.6	114	114.99	115.15	115.47	0.027274	3.59	3.96	12.96	1.25
M002	2437.53	PetriesB-M002-2437.53	AMEC-20yr-2080-Max	8.6	112.56	113.38	113.53	113.86	0.039954	3.75	3.58	9.51	1.46
M002	2387.76	PetriesB-M002-2387.76	AMEC-20yr-2080-Max	8.6	110.97	111.91	111.99	112.29	0.024718	3.3	4.01	8.62	1.18
M002	2337.92	PetriesB-M002-2337.92	AMEC-20yr-2080-Max	8.6	109.55	110.46	110.58	110.86	0.034922	3.56	4.83	21.18	1.34
M002	2288.19	PetriesB-M002-2288.19	AMEC-20yr-2080-Max	8.6	107.88	108.77	108.97	109.26	0.031182	3.54	3.35	7.33	1.31
M002	2243.62	PetriesB-M002-2243.62	AMEC-20yr-2080-Max	8.6	106.54	107.9	107.9	108.25	0.017077	2.95	3.76	5.61	0.92
M002	2206.69	PetriesB-M002-2206.69	AMEC-20yr-2080-Max	8.6	105.39	106.32	106.55	107.12	0.062183	4.43	2.63	11.32	1.72
M002	2172.99	PetriesB-M002-2172.99	AMEC-20yr-2080-Max	8.6	104.44	105.2	105.28	105.51	0.032393	3.17	4.02	11.4	1.27
M002	2132.37	PetriesB-M002-2132.37	AMEC-20yr-2080-Max	8.6	102.85	103.75	103.87	104.17	0.033657	3.45	4.12	16.19	1.33
M002	2076.75	PetriesB-M002-2076.75	AMEC-20yr-2080-Max	8.6	100.37	101.5	101.71	102.2	0.037177	4	2.64	4.46	1.37
TR001	194.22	PetriesB-TR001-194.22	AMEC-20yr-2080-Max	6.3	116.47	117.47	117.47	117.76	0.016741	2.85	3.37	6.26	0.97
TR001	173.31	PetriesB-TR001-173.31	AMEC-20yr-2080-Max	6.3	113.43	113.91	114.36	116.53	0.437586	7.76	1	4.05	4.28
TR001	155.88	PetriesB-TR001-155.88	AMEC-20yr-2080-Max	6.3	111.89	112.35	112.44	112.65	0.080948	3.48	3.43	18.97	1.85
TR001	147.33	PetriesB-TR001-147.33	AMEC-20yr-2080-Max	6.3	111.21	111.6	111.71	112.08	0.163797	4.32	2.84	20.96	2.59
TR001	100.01	PetriesB-TR001-100.01	AMEC-20yr-2080-Max	6.3	106.9	107.57	107.73	108.09	0.05091	3.75	2.46	6.86	1.6
TR001	84.71	PetriesB-TR001-84.71	AMEC-20yr-2080-Max	6.3	105.53	106.89	106.56	106.97	0.005506	1.53	5.97	10.73	0.46
TR001	80	PetriesB-TR001-80	AMEC-20yr-2080-Max	Culvert									
TR001	76.27	PetriesB-TR001-76.27	AMEC-20yr-2080-Max	6.3	105.28	106.26	106.26	106.41	0.010831	2.24	5.28	15.95	0.76
TR001	50.01	PetriesB-TR001-50.01	AMEC-20yr-2080-Max	6.3	102.82	103.34	103.72	105.17	0.239982	6.5	1.22	4.6	3.29
TR001	10.31	PetriesB-TR001-10.31	AMEC-20yr-2080-Max	6.3	100.43	101.36	101.27	101.54	0.010034	2.15	4.02	7.6	0.76
M001	2036.68	PetriesB-M001-2036.68	AMEC-20yr-2080-Max	14.6	99.58	100.87	100.71	101.04	0.009951	2.58	10.67	21.36	0.77
M001	2006.33	PetriesB-M001-2006.33	AMEC-20yr-2080-Max	14.6	98.58	100.93		100.95	0.000776	1.12	23.94	26.67	0.24
M001	1984.7	PetriesB-M001-1984.7	AMEC-20yr-2080-Max	14.6	98.16	100.67	99.8	100.91	0.002884	2.26	7.62	22.02	0.47
M001	1975	PetriesB-M001-1975	AMEC-20yr-2080-Max	Culvert									
M001	1967.48	PetriesB-M001-1967.48	AMEC-20yr-2080-Max	14.6	97.22	98.98	98.98	99.74	0.015012	3.86	3.79	8.61	1
M001	1947.41	PetriesB-M001-1947.41	AMEC-20yr-2080-Max	14.6	96.71	97.81	98.17	98.95	0.058262	5.34	3.59	5.84	1.8
M001	1897.27	PetriesB-M001-1897.27	AMEC-20yr-2080-Max	14.6	94.94	96.07	96.26	96.75	0.031017	4.3	4.64	6.96	1.37
M001	1847.5	PetriesB-M001-1847.5	AMEC-20yr-2080-Max	14.6	93.5	94.72	94.82	95.25	0.027184	3.94	5.39	7.39	1.24
M001	1790.83	PetriesB-M001-1790.83	AMEC-20yr-2080-Max	16.8	91.16	92.45	92.76	93.37	0.038481	4.97	5.76	11.91	1.51
M001	1750	PetriesB-M001-1750	AMEC-20yr-2080-Max	16.8	90.25	91.65	91.74	92.16	0.02082	3.95	7.14	9.9	1.14
M001	1700	PetriesB-M001-1700	AMEC-20yr-2080-Max	16.8	88.86	90.09	90.3	90.84	0.035061	4.71	5.65	8.1	1.46
M001	1650	PetriesB-M001-1650	AMEC-20yr-2080-Max	16.8	86.29	87.37	87.73	88.51	0.063116	5.66	4.47	7.01	1.86
M001	1600	PetriesB-M001-1600	AMEC-20yr-2080-Max	16.8	84.49	87.31	85.62	87.32	0.000102	0.47	72.2	42.74	0.09
M001	1581.62	PetriesB-M001-1581.62	AMEC-20yr-2080-Max	16.8	83.85	87.28	86	87.31	0.00038	0.99	33.79	62.26	0.18
M001	1560	PetriesB-M001-1560	AMEC-20yr-2080-Max	Culvert									

Petrie's Brook - 2080 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	AMEC-20yr-2080-Max	16.8	82.32	84.46	84.46	85.5	0.012477	4.53	3.71	50.27	1
M001	1477.89	PetriesB-M001-1477.89	AMEC-20yr-2080-Max	16.8	79.96	80.57	81.02	83.56	0.442192	9.05	2.78	10.68	4.49
M001	1418.45	PetriesB-M001-1418.45	AMEC-20yr-2080-Max	17.4	78.38	80	80.06	80.37	0.014467	3.45	9.72	17.01	0.93
M001	1359	PetriesB-M001-1359	AMEC-20yr-2080-Max	17.4	74.82	75.87	76.53	78.33	0.107214	7.62	3.06	4.71	2.53
M001	1338.71	PetriesB-M001-1338.71	AMEC-20yr-2080-Max	17.4	72.61	76.42	74.53	76.62	0.001202	1.99	8.72	12.58	0.33
M001	1295	PetriesB-M001-1295	AMEC-20yr-2080-Max	Culvert									
M001	1292.63	PetriesB-M001-1292.63	AMEC-20yr-2080-Max	17.4	70.47	72.13	72.37	73.35	0.022915	5.21	3.8	16.58	1.3
M001	1280.53	PetriesB-M001-1280.53	AMEC-20yr-2080-Max	17.4	65.5	65.92	66.45	71.25	1.293063	10.23	1.7	7.84	7.01
M001	1254.7	PetriesB-M001-1254.7	AMEC-20yr-2080-Max	17.4	61.55	62.56	63.04	64.44	0.08959	7.18	3.96	7.94	2.53
M001	1214.6	PetriesB-M001-1214.6	AMEC-20yr-2080-Max	17.4	54.66	55.46	56.03	58.41	0.29191	9.32	2.88	7.27	4
M001	1186.8	PetriesB-M001-1186.8	AMEC-20yr-2080-Max	17.4	51	51.8	52.19	53.19	0.112502	6.81	4.38	9.76	2.72
M001	1151.89	PetriesB-M001-1151.89	AMEC-20yr-2080-Max	17.4	46.66	47.73	48.23	49.66	0.097872	7.28	3.91	8.13	2.59
M001	1131.36	PetriesB-M001-1131.36	AMEC-20yr-2080-Max	17.5	45.4	46.63	47.03	47.94	0.058957	6.05	4.64	7.87	1.98
M001	1094.32	PetriesB-M001-1094.32	AMEC-20yr-2080-Max	17.5	43.36	44.6	45	45.91	0.054579	5.98	4.47	6.57	1.92
M001	1036.63	PetriesB-M001-1036.63	AMEC-20yr-2080-Max	18.5	40.61	41.97	42.34	43.09	0.042986	5.62	5.45	8.81	1.73
M001	991.55	PetriesB-M001-991.55	AMEC-20yr-2080-Max	18.5	36.47	37.56	38.1	39.78	0.144244	7.85	3.56	6.89	2.88
M001	950.72	PetriesB-M001-950.72	AMEC-20yr-2080-Max	18.5	32.56	33.63	34.02	34.97	0.088418	6.47	4.7	8.97	2.32
M001	894.7	PetriesB-M001-894.7	AMEC-20yr-2080-Max	18.5	29.5	30.76	30.99	31.56	0.041287	5.11	5.98	8.49	1.63
M001	850	PetriesB-M001-850	AMEC-20yr-2080-Max	18.5	28.24	29.83	29.95	30.32	0.01753	3.88	7.39	12.32	1.1
M001	811.85	PetriesB-M001-811.85	AMEC-20yr-2080-Max	18.5	26.37	27.82	28.21	29.07	0.067181	5.1	3.92	5.39	1.67
M001	754.3	PetriesB-M001-754.3	AMEC-20yr-2080-Max	18.5	22.84	24.15	24.59	25.52	0.056053	5.89	4.33	7.19	1.95
M001	684.68	PetriesB-M001-684.68	AMEC-20yr-2080-Max	18.5	20.6	22.43	22.58	23.15	0.020648	4.4	6.24	10.25	1.18
M001	632.62	PetriesB-M001-632.62	AMEC-20yr-2080-Max	18.5	20.87	22.51	21.9	22.68	0.002983	2.16	14.49	25.57	0.54
M001	625	PetriesB-M001-625	AMEC-20yr-2080-Max	Bridge									
M001	621.03	PetriesB-M001-621.03	AMEC-20yr-2080-Max	18.5	19.91	21.29	21.29	21.79	0.01138	3.44	6.3	11.23	0.99
M001	599.17	PetriesB-M001-599.17	AMEC-20yr-2080-Max	18.4	15.17	15.61	16.13	19.12	0.523975	9.85	2.45	9.19	5.45
M001	547.98	PetriesB-M001-547.98	AMEC-20yr-2080-Max	18.4	9.22	10.02	10.31	11.02	0.072421	5.1	4.66	11.51	2.19
M001	500	PetriesB-M001-500	AMEC-20yr-2080-Max	18.4	7.42	8.8	8.88	9.31	0.018748	3.9	7.35	9.79	1.19
M001	446.65	PetriesB-M001-446.65	AMEC-20yr-2080-Max	18.4	6.07	7.17	7.38	7.91	0.038708	4.63	6.85	16.13	1.63
M001	399.97	PetriesB-M001-399.97	AMEC-20yr-2080-Max	20	4.59	5.9	6.1	6.43	0.025391	3.82	8.51	23.42	1.33
M001	349.97	PetriesB-M001-349.97	AMEC-20yr-2080-Max	20	3.89	5.16	5.16	5.42	0.017056	3.17	10.57	20.37	1.05
M001	300.08	PetriesB-M001-300.08	AMEC-20yr-2080-Max	20	3.07	4.48	4.22	4.52	0.003484	1.52	23.05	39.68	0.47
M001	250	PetriesB-M001-250	AMEC-20yr-2080-Max	20	2.39	3.79	3.79	4.18	0.014176	3.62	8.46	11.05	1.06
M001	200	PetriesB-M001-200	AMEC-20yr-2080-Max	20.2	1.6	3.92	3.04	3.94	0.00043	0.86	43.51	46.37	0.19
M001	164.9	PetriesB-M001-164.9	AMEC-20yr-2080-Max	20.2	1.25	3.88	2.58	3.92	0.000513	1.16	34.6	39.68	0.23
M001	130	PetriesB-M001-130	AMEC-20yr-2080-Max	Culvert									
M001	122.87	PetriesB-M001-122.87	AMEC-20yr-2080-Max	20.2	1	3.48	2.4	3.62	0.001324	1.76	12.36	24.41	0.37
M001	121.82	PetriesB-M001-121.82	AMEC-20yr-2080-Max	20.2	0.97	3.51	3.14	3.59	0.001057	1.65	23.96	26.9	0.34
M001	110	PetriesB-M001-110	AMEC-20yr-2080-Max	Culvert									
M001	108.55	PetriesB-M001-108.55	AMEC-20yr-2080-Max	20.2	0.48	3.36	2.47	3.38	0.000338	0.92	41.88	39.4	0.18
M001	100	PetriesB-M001-100	AMEC-20yr-2080-Max	20.2	0.79	3.36		3.37	0.000123	0.57	66.53	44.98	0.12
M001	50	PetriesB-M001-50	AMEC-20yr-2080-Max	20.2	0.56	3.36		3.36	0.000029	0.29	115.35	66.25	0.06
M001	-33.87	PetriesB-M001--33.87	AMEC-20yr-2080-Max	20.2	0.46	3.36		3.36	0.000012	0.19	145.22	84.12	0.04
M001	-115.21	PetriesB-M001--115.21	AMEC-20yr-2080-Max	20.2	-0.85	3.36	0.09	3.36	0.000001	0.08	427.27	163.29	0.01

Petrie's Brook - 2080 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
TR002	65.82	PetriesB-TR002-65.82	AMEC-100yr-2080-Max	5.4	138.52	139.04	139.05	139.2	0.028004	2.35	3.85	12.33	1.15
TR002	26.4	PetriesB-TR002-26.4	AMEC-100yr-2080-Max	5.4	136.29	136.57	136.66	136.88	0.188702	3.7	2.67	17.6	2.63
TR003	75.44	PetriesB-TR003-75.44	AMEC-100yr-2080-Max	3.4	138.22	138.91	138.92	139.1	0.018	2.19	2.39	7.52	0.94
TR003	31.52	PetriesB-TR003-31.52	AMEC-100yr-2080-Max	3.4	135.25	135.63	135.92	136.94	0.281489	5.42	0.81	4.39	3.35
M002	2878.54	PetriesB-M002-2878.54	AMEC-100yr-2080-Max	11	133.44	134.05	134.14	134.39	0.053793	3.72	5.31	14.11	1.64
M002	2830.24	PetriesB-M002-2830.24	AMEC-100yr-2080-Max	11	129.86	130.9	131.24	131.97	0.049994	5.03	3.05	5.18	1.7
M002	2781.96	PetriesB-M002-2781.96	AMEC-100yr-2080-Max	11	126.6	127.44	127.82	128.74	0.096145	5.8	2.82	6.31	2.23
M002	2733.55	PetriesB-M002-2733.55	AMEC-100yr-2080-Max	11	123.62	124.48	124.71	125.24	0.053727	4.68	3.97	9.08	1.73
M002	2711.98	PetriesB-M002-2711.98	AMEC-100yr-2080-Max	11	121.55	123.84	123.2	123.86	0.000518	0.96	30.81	46.7	0.2
M002	2710	PetriesB-M002-2710	AMEC-100yr-2080-Max	Bridge									
M002	2706.48	PetriesB-M002-2706.48	AMEC-100yr-2080-Max	11	121.23	122.23	122.56	123.39	0.038961	4.77	2.31	5.97	1.56
M002	2686.04	PetriesB-M002-2686.04	AMEC-100yr-2080-Max	11	120.42	121.35	121.79	122.27	0.057693	4.89	3.06	6.1	1.76
M002	2636.8	PetriesB-M002-2636.8	AMEC-100yr-2080-Max	11.7	118.88	119.92	120.01	120.4	0.026056	3.7	4.54	7.73	1.23
M002	2586.04	PetriesB-M002-2586.04	AMEC-100yr-2080-Max	11.7	117.62	117.95	118.04	118.23	0.116684	3.09	5.07	27.44	2.08
M002	2536.82	PetriesB-M002-2536.82	AMEC-100yr-2080-Max	11.7	115.95	116.73	116.73	116.92	0.023367	2.72	6.92	16.85	1.08
M002	2487.14	PetriesB-M002-2487.14	AMEC-100yr-2080-Max	11.7	114	115.1	115.25	115.6	0.026979	3.87	5.46	14.43	1.27
M002	2437.53	PetriesB-M002-2437.53	AMEC-100yr-2080-Max	11.7	112.56	113.49	113.68	114.03	0.038921	4.1	4.77	11.84	1.47
M002	2387.76	PetriesB-M002-2387.76	AMEC-100yr-2080-Max	11.7	110.97	112.03	112.14	112.47	0.025046	3.64	5.08	9.53	1.22
M002	2337.92	PetriesB-M002-2337.92	AMEC-100yr-2080-Max	11.7	109.55	110.51	110.65	110.96	0.038571	3.93	5.99	21.63	1.43
M002	2288.19	PetriesB-M002-2288.19	AMEC-100yr-2080-Max	11.7	107.88	108.92	109.07	109.42	0.02669	3.7	5.09	14.44	1.25
M002	2243.62	PetriesB-M002-2243.62	AMEC-100yr-2080-Max	11.7	106.54	108.06	108.08	108.48	0.017312	3.28	4.74	6.36	0.95
M002	2206.69	PetriesB-M002-2206.69	AMEC-100yr-2080-Max	11.7	105.39	106.4	106.62	107.3	0.066146	4.92	3.8	15.52	1.8
M002	2172.99	PetriesB-M002-2172.99	AMEC-100yr-2080-Max	11.7	104.44	105.28	105.36	105.65	0.032427	3.45	5.04	12.27	1.3
M002	2132.37	PetriesB-M002-2132.37	AMEC-100yr-2080-Max	11.7	102.85	103.81	103.96	104.27	0.034766	3.74	5.27	17.34	1.38
M002	2076.75	PetriesB-M002-2076.75	AMEC-100yr-2080-Max	11.7	100.37	101.7	101.9	102.43	0.031465	4.21	3.55	5.02	1.31
TR001	194.22	PetriesB-TR001-194.22	AMEC-100yr-2080-Max	8.4	116.47	117.61	117.61	117.93	0.015985	3.07	4.3	6.93	0.97
TR001	173.31	PetriesB-TR001-173.31	AMEC-100yr-2080-Max	8.4	113.43	113.99	114.46	116.75	0.360685	8.09	1.34	4.63	4.02
TR001	155.88	PetriesB-TR001-155.88	AMEC-100yr-2080-Max	8.4	111.89	112.38	112.49	112.75	0.090939	3.94	4.19	21.75	1.99
TR001	147.33	PetriesB-TR001-147.33	AMEC-100yr-2080-Max	8.4	111.21	111.63	111.77	112.17	0.169864	4.69	3.45	21.7	2.68
TR001	100.01	PetriesB-TR001-100.01	AMEC-100yr-2080-Max	8.4	106.9	107.66	107.84	108.24	0.048505	4.05	3.12	7.56	1.6
TR001	84.71	PetriesB-TR001-84.71	AMEC-100yr-2080-Max	8.4	105.53	106.94	106.67	107.07	0.008171	1.92	6.62	13.17	0.56
TR001	80	PetriesB-TR001-80	AMEC-100yr-2080-Max	Culvert									
TR001	76.27	PetriesB-TR001-76.27	AMEC-100yr-2080-Max	8.4	105.28	106.33	106.33	106.5	0.01175	2.46	6.53	17.65	0.8
TR001	50.01	PetriesB-TR001-50.01	AMEC-100yr-2080-Max	8.4	102.82	103.43	103.84	105.25	0.190688	6.64	1.66	5.24	3.04
TR001	10.31	PetriesB-TR001-10.31	AMEC-100yr-2080-Max	8.4	100.43	101.47	101.38	101.68	0.010894	2.43	4.85	8.28	0.81
M001	2036.68	PetriesB-M001-2036.68	AMEC-100yr-2080-Max	19.8	99.58	100.99	100.71	101.17	0.009638	2.73	13.43	22.02	0.78
M001	2006.33	PetriesB-M001-2006.33	AMEC-100yr-2080-Max	19.8	98.58	101.04		101.08	0.001008	1.32	27.13	27.17	0.28
M001	1984.7	PetriesB-M001-1984.7	AMEC-100yr-2080-Max	19.8	98.16	101	100.14	101.06	0.00101	1.41	24.84	29.91	0.28
M001	1975	PetriesB-M001-1975	AMEC-100yr-2080-Max	Culvert									
M001	1967.48	PetriesB-M001-1967.48	AMEC-100yr-2080-Max	19.8	97.22	99.32	99.32	100.25	0.014069	4.27	4.63	10.41	1
M001	1947.41	PetriesB-M001-1947.41	AMEC-100yr-2080-Max	19.8	96.71	97.93	98.38	99.4	0.065973	6.17	4.3	6.29	1.95
M001	1897.27	PetriesB-M001-1897.27	AMEC-100yr-2080-Max	19.8	94.94	96.23	96.46	97.03	0.03101	4.75	5.81	7.58	1.4
M001	1847.5	PetriesB-M001-1847.5	AMEC-100yr-2080-Max	19.8	93.5	94.89	95.02	95.52	0.027592	4.39	6.67	7.93	1.28
M001	1790.83	PetriesB-M001-1790.83	AMEC-100yr-2080-Max	22.8	91.16	92.59	92.9	93.6	0.039756	5.45	7.41	12.86	1.56
M001	1750	PetriesB-M001-1750	AMEC-100yr-2080-Max	22.8	90.25	91.85	91.93	92.4	0.019347	4.22	9.27	10.78	1.13
M001	1700	PetriesB-M001-1700	AMEC-100yr-2080-Max	22.8	88.86	90.27	90.52	91.13	0.034415	5.18	7.16	8.85	1.49
M001	1650	PetriesB-M001-1650	AMEC-100yr-2080-Max	22.8	86.29	87.53	87.95	88.86	0.061215	6.21	5.69	7.71	1.89
M001	1600	PetriesB-M001-1600	AMEC-100yr-2080-Max	22.8	84.49	87.44	85.72	87.45	0.000151	0.6	77.75	43.73	0.11
M001	1581.62	PetriesB-M001-1581.62	AMEC-100yr-2080-Max	22.8	83.85	87.38	86.47	87.44	0.00057	1.24	38.26	68.02	0.22
M001	1560	PetriesB-M001-1560	AMEC-100yr-2080-Max	Culvert									

Petrie's Brook - 2080 Conditions

Reach	River Sta	HEC ref.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
M001	1559.09	PetriesB-M001-1559.09	AMEC-100yr-2080-Max	22.8	82.32	84.93	84.93	86.21	0.011623	5.01	4.55	69.32	1
M001	1477.89	PetriesB-M001-1477.89	AMEC-100yr-2080-Max	22.8	79.96	80.62	81.15	84.22	0.464768	10.11	3.41	11.12	4.7
M001	1418.45	PetriesB-M001-1418.45	AMEC-100yr-2080-Max	23.6	78.38	80.13	80.21	80.56	0.016507	3.9	11.87	18.14	1.01
M001	1359	PetriesB-M001-1359	AMEC-100yr-2080-Max	23.6	74.82	78	76.82	78.14	0.0017	2.13	22.7	17.43	0.39
M001	1338.71	PetriesB-M001-1338.71	AMEC-100yr-2080-Max	23.6	72.61	78.03	74.92	78.1	0.000367	1.41	34.62	36.65	0.2
M001	1295	PetriesB-M001-1295	AMEC-100yr-2080-Max	Culvert									
M001	1292.63	PetriesB-M001-1292.63	AMEC-100yr-2080-Max	23.6	70.47	72.79	72.79	73.9	0.013423	4.99	5.37	18.98	1.06
M001	1280.53	PetriesB-M001-1280.53	AMEC-100yr-2080-Max	23.6	65.5	65.98	66.61	71.92	1.220932	10.8	2.18	8.88	6.95
M001	1254.7	PetriesB-M001-1254.7	AMEC-100yr-2080-Max	23.6	61.55	62.68	63.25	64.92	0.093575	8.02	4.93	8.52	2.65
M001	1214.6	PetriesB-M001-1214.6	AMEC-100yr-2080-Max	23.6	54.66	55.56	56.23	58.9	0.268765	10.06	3.69	7.81	3.95
M001	1186.8	PetriesB-M001-1186.8	AMEC-100yr-2080-Max	23.6	51	51.9	52.36	53.63	0.120605	7.72	5.31	10.31	2.88
M001	1151.89	PetriesB-M001-1151.89	AMEC-100yr-2080-Max	23.6	46.66	47.86	48.42	50.05	0.0957	7.96	5.04	9.04	2.62
M001	1131.36	PetriesB-M001-1131.36	AMEC-100yr-2080-Max	23.6	45.4	46.77	47.24	48.32	0.060521	6.72	5.79	8.51	2.05
M001	1094.32	PetriesB-M001-1094.32	AMEC-100yr-2080-Max	23.6	43.36	44.77	45.26	46.3	0.052826	6.55	5.66	7.1	1.95
M001	1036.63	PetriesB-M001-1036.63	AMEC-100yr-2080-Max	24.9	40.61	42.12	42.52	43.47	0.044834	6.28	7.14	11.73	1.81
M001	991.55	PetriesB-M001-991.55	AMEC-100yr-2080-Max	24.9	36.47	37.7	38.32	40.17	0.132605	8.44	4.57	7.43	2.84
M001	950.72	PetriesB-M001-950.72	AMEC-100yr-2080-Max	24.9	32.56	33.74	34.21	35.38	0.094392	7.29	5.72	9.57	2.45
M001	894.7	PetriesB-M001-894.7	AMEC-100yr-2080-Max	24.9	29.5	30.93	31.19	31.86	0.040901	5.63	7.42	8.96	1.67
M001	850	PetriesB-M001-850	AMEC-100yr-2080-Max	24.9	28.24	29.95	30.11	30.54	0.019732	4.37	8.94	13.25	1.18
M001	811.85	PetriesB-M001-811.85	AMEC-100yr-2080-Max	24.9	26.37	28.06	28.46	29.33	0.051673	5.21	5.33	6.13	1.52
M001	754.3	PetriesB-M001-754.3	AMEC-100yr-2080-Max	24.9	22.84	24.27	24.88	26	0.062237	6.73	5.24	7.88	2.09
M001	684.68	PetriesB-M001-684.68	AMEC-100yr-2080-Max	24.9	20.6	22.58	22.9	23.4	0.021873	4.85	7.96	13.59	1.24
M001	632.62	PetriesB-M001-632.62	AMEC-100yr-2080-Max	24.9	20.87	22.81	22.12	22.93	0.002105	2.03	23.82	38.1	0.47
M001	625	PetriesB-M001-625	AMEC-100yr-2080-Max	Bridge									
M001	621.03	PetriesB-M001-621.03	AMEC-100yr-2080-Max	24.9	19.91	21.7	21.7	22	0.006023	2.96	15.07	26.21	0.74
M001	599.17	PetriesB-M001-599.17	AMEC-100yr-2080-Max	24.9	15.17	15.68	16.29	19.83	0.498672	10.83	3.06	9.67	5.48
M001	547.98	PetriesB-M001-547.98	AMEC-100yr-2080-Max	24.9	9.22	10.1	10.46	11.36	0.077457	5.79	5.63	12.18	2.31
M001	500	PetriesB-M001-500	AMEC-100yr-2080-Max	24.9	7.42	8.99	9.08	9.59	0.018473	4.29	9.23	10.62	1.21
M001	446.65	PetriesB-M001-446.65	AMEC-100yr-2080-Max	24.9	6.07	7.26	7.56	8.15	0.041935	5.19	8.58	19.47	1.73
M001	399.97	PetriesB-M001-399.97	AMEC-100yr-2080-Max	27.1	4.59	6	6.19	6.58	0.02593	4.16	10.93	25.75	1.37
M001	349.97	PetriesB-M001-349.97	AMEC-100yr-2080-Max	27.1	3.89	5.25	5.25	5.58	0.020213	3.68	12.47	22.01	1.17
M001	300.08	PetriesB-M001-300.08	AMEC-100yr-2080-Max	27.1	3.07	4.67	4.28	4.72	0.002599	1.46	31.02	41.54	0.41
M001	250	PetriesB-M001-250	AMEC-100yr-2080-Max	27.1	2.39	3.98	3.98	4.43	0.013995	3.96	10.62	12.04	1.08
M001	200	PetriesB-M001-200	AMEC-100yr-2080-Max	27.6	1.6	3.95	3.19	3.97	0.000745	1.14	44.6	46.49	0.25
M001	164.9	PetriesB-M001-164.9	AMEC-100yr-2080-Max	27.6	1.25	3.87	2.82	3.94	0.000992	1.6	34.09	39.48	0.32
M001	130	PetriesB-M001-130	AMEC-100yr-2080-Max	Culvert									
M001	122.87	PetriesB-M001-122.87	AMEC-100yr-2080-Max	27.6	1	3.52	2.66	3.78	0.002324	2.36	12.6	25.32	0.5
M001	121.82	PetriesB-M001-121.82	AMEC-100yr-2080-Max	27.6	0.97	3.59	3.2	3.71	0.001637	2.1	26.04	28.25	0.42
M001	110	PetriesB-M001-110	AMEC-100yr-2080-Max	Culvert									
M001	108.55	PetriesB-M001-108.55	AMEC-100yr-2080-Max	27.6	0.48	3.35	2.75	3.4	0.000636	1.26	41.74	39.36	0.25
M001	100	PetriesB-M001-100	AMEC-100yr-2080-Max	27.6	0.79	3.36		3.37	0.00023	0.78	66.49	44.97	0.16
M001	50	PetriesB-M001-50	AMEC-100yr-2080-Max	27.6	0.56	3.36		3.36	0.000054	0.4	115.34	66.25	0.08
M001	-33.87	PetriesB-M001--33.87	AMEC-100yr-2080-Max	27.6	0.46	3.36		3.36	0.000022	0.26	145.16	84.11	0.05
M001	-115.21	PetriesB-M001--115.21	AMEC-100yr-2080-Max	27.6	-0.85	3.36	0.2	3.36	0.000002	0.1	427.27	163.29	0.02

PETRIE'S BROOK

CLIMATE CHANGE PROFILE COMPARISON TABLES

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Petrie's Brook
Mixed Flow - 1:100 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	TR002	65.82	TR002-65.82	138.98	139.03	139.03	139.24	139.04
Petrie's	TR002	26.4	TR002-26.4	136.55	136.57	136.57	136.67	136.57
Petrie's	TR003	75.44	TR003-75.44	138.86	138.89	138.89	139.14	138.91
Petrie's	TR003	31.52	TR003-31.52	135.6	135.62	135.62	135.8	135.63
Petrie's	M002	2878.54	M002-2878.54	134	134.03	134.03	134.28	134.05
Petrie's	M002	2830.24	M002-2830.24	130.79	130.86	130.87	131.42	130.9
Petrie's	M002	2781.96	M002-2781.96	127.38	127.41	127.42	127.72	127.44
Petrie's	M002	2733.55	M002-2733.55	124.41	124.45	124.46	124.76	124.48
Petrie's	M002	2711.98	M002-2711.98	123.55	123.73	123.76	123.72	123.84
Petrie's	M002	2710	M002-2710	Bridge	Bridge	Bridge	Bridge	Bridge
Petrie's	M002	2706.48	M002-2706.48	122.4	122.17	122.19	122.95	122.23
Petrie's	M002	2686.04	M002-2686.04	121.23	121.34	121.34	121.74	121.35
Petrie's	M002	2636.8	M002-2636.8	119.86	119.88	119.88	120.24	119.92
Petrie's	M002	2586.04	M002-2586.04	117.92	117.95	117.95	118.05	117.95
Petrie's	M002	2536.82	M002-2536.82	116.67	116.71	116.71	116.96	116.73
Petrie's	M002	2487.14	M002-2487.14	115.04	115.07	115.07	115.37	115.1
Petrie's	M002	2437.53	M002-2437.53	113.41	113.46	113.46	113.77	113.49
Petrie's	M002	2387.76	M002-2387.76	111.96	112	112	112.4	112.03
Petrie's	M002	2337.92	M002-2337.92	110.47	110.5	110.5	110.65	110.51
Petrie's	M002	2288.19	M002-2288.19	108.85	108.89	108.89	109.23	108.92
Petrie's	M002	2243.62	M002-2243.62	107.93	108.01	108.01	108.57	108.06
Petrie's	M002	2206.69	M002-2206.69	106.37	106.39	106.39	106.54	106.4
Petrie's	M002	2172.99	M002-2172.99	105.22	105.26	105.26	105.57	105.28
Petrie's	M002	2132.37	M002-2132.37	103.77	103.8	103.8	103.99	103.81
Petrie's	M002	2076.75	M002-2076.75	101.57	101.64	101.65	102.33	101.7
Petrie's	TR001	194.22	TR001-194.22	117.52	117.58	117.58	118	117.61
Petrie's	TR001	173.31	TR001-173.31	113.93	113.96	113.97	114.23	113.99

Petrie's Brook
Mixed Flow - 1:100 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	TR001	155.88	TR001-155.88	112.36	112.38	112.38	112.47	112.38
Petrie's	TR001	147.33	TR001-147.33	111.61	111.62	111.62	111.72	111.63
Petrie's	TR001	100	TR001-100	107.6	107.64	107.64	107.94	107.66
Petrie's	TR001	84.71	TR001-84.71	106.91	106.93	106.93	106.66	106.94
Petrie's	TR001	80	TR001-80	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	TR001	76.27	TR001-76.27	106.29	106.31	106.31	106.55	106.33
Petrie's	TR001	50.01	TR001-50.01	103.37	103.41	103.41	103.71	103.43
Petrie's	TR001	10.31	TR001-10.31	101.2	101.44	101.44	101.49	101.47
Petrie's	M001	2036.68	M001-2036.68	100.98	100.96	100.97	101.38	100.99
Petrie's	M001	2006.33	M001-2006.33	101.01	101.01	101.02	101.42	101.04
Petrie's	M001	1984.7	M001-1984.7	100.7	100.97	100.98	101.34	101
Petrie's	M001	1975	M001-1975	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	1967.48	M001-1967.48	99.1	99.23	99.25	99.75	99.32
Petrie's	M001	1947.41	M001-1947.41	97.85	97.9	97.91	98.83	97.93
Petrie's	M001	1897.27	M001-1897.27	96.13	96.19	96.2	96.55	96.23
Petrie's	M001	1847.5	M001-1847.5	94.78	94.84	94.85	95.48	94.89
Petrie's	M001	1790.83	M001-1790.83	92.5	92.55	92.56	92.93	92.59
Petrie's	M001	1750	M001-1750	91.72	91.8	91.81	92.5	91.85
Petrie's	M001	1700	M001-1700	90.15	90.22	90.23	90.8	90.27
Petrie's	M001	1650	M001-1650	87.42	87.49	87.5	88.11	87.53
Petrie's	M001	1600	M001-1600	87.35	87.41	87.42	87.73	87.44
Petrie's	M001	1581.62	M001-1581.62	87.3	87.35	87.36	87.71	87.38
Petrie's	M001	1560	M001-1560	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	1559.09	M001-1559.09	84.61	84.79	84.82	86	84.93
Petrie's	M001	1477.89	M001-1477.89	80.59	80.61	80.61	80.88	80.62
Petrie's	M001	1418.45	M001-1418.45	80.05	80.09	80.1	80.55	80.13
Petrie's	M001	1359	M001-1359	75.95	78	78.07	79.1	78.01
Petrie's	M001	1338.71	M001-1338.71	77.06	78.02	78.08	79.12	78.03

Petrie's Brook
Mixed Flow - 1:100 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	M001	1295	M001-1295	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	1292.63	M001-1292.63	72.27	72.67	72.7	74.19	72.79
Petrie's	M001	1280.53	M001-1280.53	65.94	65.96	65.96	66.17	65.98
Petrie's	M001	1254.7	M001-1254.7	62.6	62.65	62.66	63.02	62.68
Petrie's	M001	1214.6	M001-1214.6	55.49	55.53	55.54	55.91	55.56
Petrie's	M001	1186.8	M001-1186.8	51.83	51.87	51.88	52.19	51.9
Petrie's	M001	1151.89	M001-1151.89	47.78	47.83	47.84	48.25	47.86
Petrie's	M001	1131.36	M001-1131.36	46.67	46.73	46.74	47.22	46.77
Petrie's	M001	1094.32	M001-1094.32	44.65	44.72	44.73	45.34	44.77
Petrie's	M001	1036.63	M001-1036.63	42.04	42.09	42.09	42.5	42.12
Petrie's	M001	991.55	M001-991.55	37.6	37.66	37.67	38.2	37.7
Petrie's	M001	950.72	M001-950.72	33.66	33.71	33.71	34.07	33.74
Petrie's	M001	894.7	M001-894.7	30.81	30.88	30.89	31.46	30.93
Petrie's	M001	850	M001-850	29.87	29.92	29.93	30.32	29.95
Petrie's	M001	811.85	M001-811.85	27.89	27.99	28	28.86	28.06
Petrie's	M001	754.3	M001-754.3	24.19	24.24	24.25	24.61	24.27
Petrie's	M001	684.68	M001-684.68	22.48	23.03	23.08	22.93	22.58
Petrie's	M001	632.62	M001-632.62	22.73	23.07	23.12	22.59	22.81
Petrie's	M001	625	M001-625	Bridge	Bridge	Bridge	Bridge	Bridge
Petrie's	M001	621.03	M001-621.03	21.35	21.44	21.46	21.84	21.7
Petrie's	M001	599.17	M001-599.17	15.64	15.67	15.67	16.03	15.68
Petrie's	M001	547.98	M001-547.98	10.05	10.08	10.08	10.33	10.1
Petrie's	M001	500	M001-500	8.86	8.93	8.94	9.51	8.99
Petrie's	M001	446.65	M001-446.65	7.2	7.24	7.24	7.55	7.26
Petrie's	M001	399.97	M001-399.97	5.93	5.97	5.97	6.27	6
Petrie's	M001	349.97	M001-349.97	5.21	5.25	5.24	5.67	5.25
Petrie's	M001	300.08	M001-300.08	4.54	4.61	4.63	5.24	4.67
Petrie's	M001	250	M001-250	3.85	3.93	3.94	4.53	3.98

Petrie's Brook
Mixed Flow - 1:100 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	M001	200	M001-200	3.9	3.91	3.9	4.61	3.95
Petrie's	M001	164.9	M001-164.9	3.85	3.84	3.83	4.56	3.87
Petrie's	M001	130	M001-130	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	122.87	M001-122.87	3.39	3.4	3.44	3.5	3.52
Petrie's	M001	121.82	M001-121.82	3.43	3.44	3.49	3.23	3.59
Petrie's	M001	110	M001-110	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	108.55	M001-108.55	2.79	2.83	3.01	2.94	3.35
Petrie's	M001	100	M001-100	2.8	2.85	3.03	3.02	3.36
Petrie's	M001	50	M001-50	2.8	2.85	3.03	3.03	3.36
Petrie's	M001	-33.87	M001--33.87	2.8	2.85	3.03	3.02	3.36
Petrie's	M001	-115.21	M001--115.21	2.8	2.85	3.03	3.03	3.36

Petrie's Brook
Mixed Flow - 1:20 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	TR002	65.82	Petrie's-TR002-65.82	138.93	138.97	138.97	139.12	138.98
Petrie's	TR002	26.4	Petrie's-TR002-26.4	136.53	136.54	136.54	136.61	136.55
Petrie's	TR003	75.44	Petrie's-TR003-75.44	138.77	138.81	138.81	139	138.83
Petrie's	TR003	31.52	Petrie's-TR003-31.52	135.54	135.58	135.58	135.7	135.58
Petrie's	M002	2878.54	Petrie's-M002-2878.54	133.92	133.96	133.96	134.14	133.97
Petrie's	M002	2830.24	Petrie's-M002-2830.24	130.63	130.7	130.71	131.1	130.74
Petrie's	M002	2781.96	Petrie's-M002-2781.96	127.28	127.33	127.33	127.55	127.35
Petrie's	M002	2733.55	Petrie's-M002-2733.55	124.3	124.35	124.36	124.59	124.38
Petrie's	M002	2711.98	Petrie's-M002-2711.98	122.23	122.32	122.33	123.64	123.38
Petrie's	M002	2710	Petrie's-M002-2710	Bridge	Bridge	Bridge	Bridge	Bridge
Petrie's	M002	2706.48	Petrie's-M002-2706.48	121.99	122.07	122.08	122.95	122.31
Petrie's	M002	2686.04	Petrie's-M002-2686.04	121.17	121.22	121.22	121.47	121.2
Petrie's	M002	2636.8	Petrie's-M002-2636.8	119.69	119.77	119.77	120.11	119.81
Petrie's	M002	2586.04	Petrie's-M002-2586.04	117.9	117.91	117.91	117.98	117.91
Petrie's	M002	2536.82	Petrie's-M002-2536.82	116.59	116.63	116.63	116.82	116.64
Petrie's	M002	2487.14	Petrie's-M002-2487.14	114.87	114.96	114.96	115.21	114.99
Petrie's	M002	2437.53	Petrie's-M002-2437.53	113.31	113.36	113.36	113.62	113.38
Petrie's	M002	2387.76	Petrie's-M002-2387.76	111.81	111.88	111.88	112.17	111.91
Petrie's	M002	2337.92	Petrie's-M002-2337.92	110.42	110.45	110.45	110.57	110.46
Petrie's	M002	2288.19	Petrie's-M002-2288.19	108.65	108.74	108.74	109.04	108.77
Petrie's	M002	2243.62	Petrie's-M002-2243.62	107.7	107.83	107.83	108.17	107.9
Petrie's	M002	2206.69	Petrie's-M002-2206.69	106.28	106.31	106.31	106.47	106.32
Petrie's	M002	2172.99	Petrie's-M002-2172.99	105.12	105.18	105.18	105.4	105.2
Petrie's	M002	2132.37	Petrie's-M002-2132.37	103.66	103.73	103.73	103.88	103.75
Petrie's	M002	2076.75	Petrie's-M002-2076.75	101.38	101.46	101.46	101.95	101.5
Petrie's	TR001	194.22	Petrie's-TR001-194.22	117.37	117.44	117.45	117.77	117.47
Petrie's	TR001	173.31	Petrie's-TR001-173.31	113.85	113.89	113.89	114.08	113.91

Petrie's Brook
Mixed Flow - 1:20 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	TR001	155.88	Petrie's-TR001-155.88	112.31	112.33	112.33	112.42	112.35
Petrie's	TR001	147.33	Petrie's-TR001-147.33	111.58	111.59	111.59	111.66	111.6
Petrie's	TR001	100	Petrie's-TR001-100	107.5	107.55	107.55	107.77	107.57
Petrie's	TR001	84.71	Petrie's-TR001-84.71	106.82	106.86	106.88	106.51	106.89
Petrie's	TR001	80	Petrie's-TR001-80	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	TR001	76.27	Petrie's-TR001-76.27	106.2	106.23	106.24	106.42	106.26
Petrie's	TR001	50.01	Petrie's-TR001-50.01	103.27	103.32	103.32	103.54	103.34
Petrie's	TR001	10.31	Petrie's-TR001-10.31	101.1	101.41	101.38	101.35	101.36
Petrie's	M001	2036.68	Petrie's-M001-2036.68	100.56	100.79	100.81	101.18	100.87
Petrie's	M001	2006.33	Petrie's-M001-2006.33	100.64	100.88	100.89	101.21	100.93
Petrie's	M001	1984.7	Petrie's-M001-1984.7	100.39	100.65	100.66	101.16	100.67
Petrie's	M001	1975	Petrie's-M001-1975	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	1967.48	Petrie's-M001-1967.48	98.36	98.9	98.91	99.75	98.98
Petrie's	M001	1947.41	Petrie's-M001-1947.41	97.93	97.79	97.79	98.28	97.81
Petrie's	M001	1897.27	Petrie's-M001-1897.27	95.84	96.03	96.04	96.34	96.07
Petrie's	M001	1847.5	Petrie's-M001-1847.5	94.67	94.68	94.69	95.15	94.72
Petrie's	M001	1790.83	Petrie's-M001-1790.83	92.22	92.37	92.38	92.72	92.45
Petrie's	M001	1750	Petrie's-M001-1750	91.57	91.64	91.65	92.11	91.65
Petrie's	M001	1700	Petrie's-M001-1700	89.91	90.02	90.03	90.48	90.09
Petrie's	M001	1650	Petrie's-M001-1650	87.27	87.34	87.35	87.74	87.37
Petrie's	M001	1600	Petrie's-M001-1600	87.22	87.29	87.29	87.58	87.31
Petrie's	M001	1581.62	Petrie's-M001-1581.62	87.2	87.25	87.26	87.57	87.28
Petrie's	M001	1560	Petrie's-M001-1560	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	1559.09	Petrie's-M001-1559.09	84.12	84.35	84.37	85.53	84.46
Petrie's	M001	1477.89	Petrie's-M001-1477.89	80.52	80.55	80.56	80.69	80.57
Petrie's	M001	1418.45	Petrie's-M001-1418.45	79.91	79.98	79.98	80.27	80
Petrie's	M001	1359	Petrie's-M001-1359	75.7	75.81	75.82	78.66	75.87
Petrie's	M001	1338.71	Petrie's-M001-1338.71	75.7	76.13	76.16	78.67	76.42

Petrie's Brook
Mixed Flow - 1:20 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	M001	1295	Petrie's-M001-1295	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	1292.63	Petrie's-M001-1292.63	71.87	72.05	72.06	73.33	72.13
Petrie's	M001	1280.53	Petrie's-M001-1280.53	65.87	65.9	65.91	66.05	65.92
Petrie's	M001	1254.7	Petrie's-M001-1254.7	62.47	62.53	62.54	62.82	62.56
Petrie's	M001	1214.6	Petrie's-M001-1214.6	55.38	55.43	55.44	55.7	55.46
Petrie's	M001	1186.8	Petrie's-M001-1186.8	51.73	51.78	51.79	52.01	51.8
Petrie's	M001	1151.89	Petrie's-M001-1151.89	47.63	47.7	47.71	48.02	47.73
Petrie's	M001	1131.36	Petrie's-M001-1131.36	46.52	46.6	46.6	46.95	46.63
Petrie's	M001	1094.32	Petrie's-M001-1094.32	44.47	44.56	44.56	45	44.6
Petrie's	M001	1036.63	Petrie's-M001-1036.63	41.84	41.93	41.93	42.28	41.97
Petrie's	M001	991.55	Petrie's-M001-991.55	37.45	37.52	37.53	37.9	37.56
Petrie's	M001	950.72	Petrie's-M001-950.72	33.54	33.6	33.6	33.87	33.63
Petrie's	M001	894.7	Petrie's-M001-894.7	30.63	30.72	30.73	31.14	30.76
Petrie's	M001	850	Petrie's-M001-850	29.72	29.8	29.8	30.11	29.83
Petrie's	M001	811.85	Petrie's-M001-811.85	27.63	27.76	27.76	28.37	27.82
Petrie's	M001	754.3	Petrie's-M001-754.3	24.06	24.12	24.13	24.43	24.15
Petrie's	M001	684.68	Petrie's-M001-684.68	22.21	22.34	22.35	22.77	22.43
Petrie's	M001	632.62	Petrie's-M001-632.62	22.05	22.25	22.27	22.89	22.51
Petrie's	M001	625	Petrie's-M001-625	Bridge	Bridge	Bridge	Bridge	Bridge
Petrie's	M001	621.03	Petrie's-M001-621.03	21.13	21.24	21.24	21.66	21.29
Petrie's	M001	599.17	Petrie's-M001-599.17	15.55	15.59	15.6	15.82	15.61
Petrie's	M001	547.98	Petrie's-M001-547.98	9.96	10	10	10.19	10.02
Petrie's	M001	500	Petrie's-M001-500	8.66	8.76	8.76	9.2	8.8
Petrie's	M001	446.65	Petrie's-M001-446.65	7.09	7.14	7.14	7.38	7.17
Petrie's	M001	399.97	Petrie's-M001-399.97	5.82	5.87	5.88	6.11	5.9
Petrie's	M001	349.97	Petrie's-M001-349.97	5.06	5.14	5.14	5.47	5.16
Petrie's	M001	300.08	Petrie's-M001-300.08	4.33	4.43	4.44	4.89	4.48
Petrie's	M001	250	Petrie's-M001-250	3.65	3.75	3.75	4.28	3.79

Petrie's Brook
Mixed Flow - 1:20 year AEP Flood

Reach	Reach Name	Section No.	HEC-RAS Reference	Existing	AMEC 2020 Maximum	AMEC 2050 Maximum	FINIIS 2050 Maximum	AMEC 2080 Maximum
Petrie's	M001	200	Petrie's-M001-200	3.61	3.76	3.81	4.14	3.92
Petrie's	M001	164.9	Petrie's-M001-164.9	3.51	3.7	3.76	4.05	3.88
Petrie's	M001	130	Petrie's-M001-130	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	122.87	Petrie's-M001-122.87	3.31	3.33	3.4	3.46	3.48
Petrie's	M001	121.82	Petrie's-M001-121.82	3.17	3.35	3.19	3.6	3.51
Petrie's	M001	110	Petrie's-M001-110	Culvert	Culvert	Culvert	Culvert	Culvert
Petrie's	M001	108.55	Petrie's-M001-108.55	2.79	2.84	3.02	3	3.36
Petrie's	M001	100	Petrie's-M001-100	2.8	2.85	3.03	3.03	3.36
Petrie's	M001	50	Petrie's-M001-50	2.8	2.85	3.03	3.03	3.36
Petrie's	M001	-33.87	Petrie's-M001--33.87	2.8	2.85	3.03	3.03	3.36
Petrie's	M001	-115.21	Petrie's-M001--115.21	2.8	2.85	3.03	3.03	3.36

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APPENDIX K

HEC-HMS REPORTS

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CORNER BROOK STREAM

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```
Basin: CBoutlet
     Last Modified Date: 22 June 2012
     Last Modified Time: 23:17:04
     Version: 3.5
     Filepath Separator: \
     Unit System: Metric
     Grid Cell File: CBoutlet.mod
     Missing Flow To Zero: No
     Enable Flow Ratio: No
     Allow Blending: No
     Compute Local Flow At Junctions: No

     Enable Sediment Routing: No

     Enable Quality Routing: No
End:

Subbasin: W7860
     Canvas X: 355064.8805
     Canvas Y: 5408858.487
     Label X: 16.0
     Label Y: 16.0
     Area: 65.117
     Downstream: J2766

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.886
     Initial Abstraction: 4.0059

     Transform: SCS
     Lag: 93.954
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W8550
     Canvas X: 352421.5875
     Canvas Y: 5412438.492
     Label X: 16.0
     Label Y: 16.0
     Area: 0.241064
     Downstream: J2766

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 83.74
     Initial Abstraction: 3.7027

     Transform: SCS
     Lag: 16.1
     Unitgraph Type: STANDARD

     Baseflow: None
```

```
End:

Subbasin: W8580
     Canvas X: 352713.3543
     Canvas Y: 5412291.243
     Label X: 16.0
     Label Y: 16.0
     Area: 0.000192
     Downstream: J2766

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 96.375
     Initial Abstraction: 0.0

     Transform: SCS
     Lag: 5.0
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2766
     Description: Generic junction
     Canvas X: 352477.7014
     Canvas Y: 5412513.168
     Label X: 16.0
     Label Y: 16.0
     Downstream: 12 Mile Dam
End:

Reservoir: 12 Mile Dam
     Description: 12 Mile Dam - Corner Brook Lake
     Canvas X: 352408.786
     Canvas Y: 5412577.887
     Downstream: R3360

     Route: Modified Puls
     Routing Curve: Storage-Elevation-Outflow
     Initial Elevation: 327.06
     Storage-Outflow Table: 12MileDam
     Elevation-Storage Table: 12 Mile Dam
     Primary Table: Elevation-Storage
End:

Reach: R3360
     Canvas X: 352365.021
     Canvas Y: 5412968.993
     From Canvas X: 352408.786
     From Canvas Y: 5412577.887
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2617

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 375.0
     Energy Slope: 0.008
     Left Overbank Mannings n: 0.1
```

```
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R3360
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W12860
     Canvas X: 351899.6362
     Canvas Y: 5412561.753
     Label X: 16.0
     Label Y: 16.0
     Area: 0.75979
     Downstream: J2617

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.93
     Initial Abstraction: 4.8559

     Transform: SCS
     Lag: 25.513
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2617
     Description: Generic junction
     Canvas X: 352365.021
     Canvas Y: 5412968.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R3310
End:

Reach: R3310
     Canvas X: 351155.021
     Canvas Y: 5418008.993
     From Canvas X: 352365.021
     From Canvas Y: 5412968.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2635

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 6101.0
     Energy Slope: 0.0092
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R3310
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W12770
     Canvas X: 352094.2531
```

```
     Canvas Y: 5415715.763
     Label X: 16.0
     Label Y: 16.0
     Area: 9.1118
     Downstream: J2635

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 79.701
     Initial Abstraction: 4.9194

     Transform: SCS
     Lag: 58.148
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2635
     Description: Generic junction
     Canvas X: 351155.021
     Canvas Y: 5418008.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1940
End:

Reach: R1940
     Canvas X: 351135.021
     Canvas Y: 5418230.993
     From Canvas X: 351155.021
     From Canvas Y: 5418008.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2607

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 242.0
     Energy Slope: 0.0216
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R1940
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W7640
     Canvas X: 355440.5474
     Canvas Y: 5417479.803
     Label X: 16.0
     Label Y: 16.0
     Area: 26.293
     Downstream: J2607

     Canopy: None

     Surface: None
```

```
     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.23
     Initial Abstraction: 4.4553

     Transform: SCS
     Lag: 66.993
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W12940
     Canvas X: 351038.4565
     Canvas Y: 5418135.697
     Label X: 16.0
     Label Y: 16.0
     Area: 0.067816
     Downstream: J2607

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 79.204
     Initial Abstraction: 4.5

     Transform: SCS
     Lag: 6.6415
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2607
     Description: Generic junction
     Canvas X: 351135.021
     Canvas Y: 5418230.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1810
End:

Reach: R1810
     Canvas X: 350877.021
     Canvas Y: 5419434.993
     From Canvas X: 351135.021
     From Canvas Y: 5418230.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2629

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1422.0
     Energy Slope: 0.0028
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R1810
```

```
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W6510
     Canvas X: 351651.1795
     Canvas Y: 5419042.235
     Label X: 16.0
     Label Y: 16.0
     Area: 2.258124
     Downstream: J2629

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 79.74
     Initial Abstraction: 4.9849

     Transform: SCS
     Lag: 22.62
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W6190
     Canvas X: 352785.4118
     Canvas Y: 5420184.088
     Label X: 16.0
     Label Y: 16.0
     Area: 1.945
     Downstream: J2629

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 83.422
     Initial Abstraction: 4.0071

     Transform: SCS
     Lag: 28.05
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2629
     Description: Generic junction
     Canvas X: 350877.021
     Canvas Y: 5419434.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1320
End:

Reach: R1320
     Canvas X: 349349.021
```

```
     Canvas Y: 5419518.993
     From Canvas X: 350877.021
     From Canvas Y: 5419434.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2576

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 2710.0
     Energy Slope: 0.0022
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R1320
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W11710
     Canvas X: 349971.0479
     Canvas Y: 5416239.875
     Label X: 16.0
     Label Y: 16.0
     Area: 12.306
     Downstream: J2576

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.067
     Initial Abstraction: 4.6974

     Transform: SCS
     Lag: 78.134
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W6430
     Canvas X: 350315.7338
     Canvas Y: 5419336.305
     Label X: 16.0
     Label Y: 16.0
     Area: 2.4161
     Downstream: J2576

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.18
     Initial Abstraction: 4.8254

     Transform: SCS
     Lag: 37.509
     Unitgraph Type: STANDARD
```

```
     Baseflow: None
End:

Junction: J2576
     Description: Generic junction
     Canvas X: 349349.021
     Canvas Y: 5419518.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1210
End:

Reach: R1210
     Canvas X: 349139.021
     Canvas Y: 5419574.993
     From Canvas X: 349349.021
     From Canvas Y: 5419518.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2644

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 245.0
     Energy Slope: 0.0041
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R1210
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W6490
     Canvas X: 348023.9047
     Canvas Y: 5419083.16
     Label X: 16.0
     Label Y: 16.0
     Area: 1.9328
     Downstream: J2644

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.832
     Initial Abstraction: 3.8953

     Transform: SCS
     Lag: 31.026
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W12150
     Canvas X: 349196.8643
     Canvas Y: 5419396.379
     Label X: 16.0
     Label Y: 16.0
```

```
     Area: 0.094116
     Downstream: J2644

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 88.121
     Initial Abstraction: 3.4615

     Transform: SCS
     Lag: 8.6627
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2644
     Description: Generic junction
     Canvas X: 349139.021
     Canvas Y: 5419574.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1200
End:

Reach: R1200
     Canvas X: 349013.021
     Canvas Y: 5420784.993
     From Canvas X: 349139.021
     From Canvas Y: 5419574.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2570

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1589.0
     Energy Slope: 0.101
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R1200
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5860
     Canvas X: 350340.0818
     Canvas Y: 5420670.503
     Label X: 16.0
     Label Y: 16.0
     Area: 2.94
     Downstream: J2570

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
```

```
     Curve Number: 81.875
     Initial Abstraction: 4.623

     Transform: SCS
     Lag: 37.298
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W6070
     Canvas X: 349109.7652
     Canvas Y: 5420168.639
     Label X: 16.0
     Label Y: 16.0
     Area: 0.71521
     Downstream: J2570

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 79.75
     Initial Abstraction: 4.8

     Transform: SCS
     Lag: 19.655
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2570
     Description: Generic junction
     Canvas X: 349013.021
     Canvas Y: 5420784.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R860
End:

Reach: R860
     Canvas X: 348565.6426
     Canvas Y: 5420839.566
     From Canvas X: 349013.021
     From Canvas Y: 5420784.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 3 Mile Dam

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 482.0
     Energy Slope: 0.0021
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R860
     Use Variable Time Step: No
     Channel Loss: None
End:
```

```
Subbasin: W6050
     Description: Subbasin US of 3 Mile dam
     Canvas X: 348776.636
     Canvas Y: 5420872.665
     Label X: 16.0
     Label Y: 16.0
     Area: 0.239129
     Downstream: 3 Mile Dam

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.0
     Initial Abstraction: 4.24242

     Transform: SCS
     Lag: 15.894
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Reservoir: 3 Mile Dam
     Description: Three Mile Dam
     Canvas X: 348565.6426
     Canvas Y: 5420839.566
     Downstream: R1

     Route: Modified Puls
     Routing Curve: Storage-Elevation-Outflow
     Initial Elevation: 210.85
     Storage-Outflow Table: 3MileDam
     Elevation-Storage Table: 3 MileDam
     Primary Table: Storage-Outflow
End:

Reach: R1
     Description: from 3 Mile to Junction
     Canvas X: 348257.4545
     Canvas Y: 5421338.356
     From Canvas X: 348565.6426
     From Canvas Y: 5420839.566
     Downstream: J2573

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 812.0
     Energy Slope: 0.0604
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R1
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W1
     Description: Subbasin DS of 3 mile Dam
     Canvas X: 348412.3484
```

```
     Canvas Y: 5421317.059
     Area: 0.244703
     Downstream: J2573

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.0
     Initial Abstraction: 4.89474

     Transform: SCS
     Lag: 18.18
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W5730
     Canvas X: 348407.1897
     Canvas Y: 5420855.743
     Label X: 16.0
     Label Y: 16.0
     Area: 0.158664
     Downstream: J2573

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 79.049
     Initial Abstraction: 5.0

     Transform: SCS
     Lag: 12.353
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2573
     Description: Generic junction
     Canvas X: 348257.4545
     Canvas Y: 5421338.356
     Label X: 16.0
     Label Y: 16.0
     Downstream: R550
End:

Reach: R550
     Canvas X: 348073.021
     Canvas Y: 5421534.993
     From Canvas X: 348257.4545
     From Canvas Y: 5421338.356
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2595

     Route: Muskingum Cunge
```

```
     Channel: 8-point
     Length: 371.0
     Energy Slope: 0.0701
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R550
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5680
     Canvas X: 348381.1354
     Canvas Y: 5420315.192
     Label X: 16.0
     Label Y: 16.0
     Area: 0.57747
     Downstream: J2595

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 83.792
     Initial Abstraction: 4.2

     Transform: SCS
     Lag: 22.612
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W5720
     Canvas X: 348220.6045
     Canvas Y: 5421411.352
     Label X: 16.0
     Label Y: 16.0
     Area: 0.074788
     Downstream: J2595

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 78.625
     Initial Abstraction: 5.0

     Transform: SCS
     Lag: 6.6334
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2595
     Description: Generic junction
     Canvas X: 348073.021
     Canvas Y: 5421534.993
```

```
     Label X: 16.0
     Label Y: 16.0
     Downstream: R520
End:

Reach: R520
     Canvas X: 347627.021
     Canvas Y: 5422098.993
     From Canvas X: 348073.021
     From Canvas Y: 5421534.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2610

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 840.0
     Energy Slope: 0.0917
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R520
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5630
     Canvas X: 348406.9397
     Canvas Y: 5422308.48
     Label X: 16.0
     Label Y: 16.0
     Area: 1.912396
     Downstream: J2610

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.326
     Initial Abstraction: 4.5265

     Transform: SCS
     Lag: 20.324
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W5640
     Canvas X: 347788.5729
     Canvas Y: 5421528.083
     Label X: 16.0
     Label Y: 16.0
     Area: 0.65481
     Downstream: J2610

     Canopy: None

     Surface: None

     LossRate: SCS
```

```
     Percent Impervious Area: 0.0
     Curve Number: 74.558
     Initial Abstraction: 4.9082

     Transform: SCS
     Lag: 17.619
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2610
     Description: Generic junction
     Canvas X: 347627.021
     Canvas Y: 5422098.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R430
End:

Reach: R430
     Canvas X: 346613.228290089
     Canvas Y: 5422796.847084891
     From Canvas X: 347627.021
     From Canvas Y: 5422098.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2888.71

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1475.0
     Energy Slope: 0.0163
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R430
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5550
     Canvas X: 347168.7964
     Canvas Y: 5422342.638
     Label X: 16.0
     Label Y: 16.0
     Area: 0.93377
     Downstream: 2888.71

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 76.679
     Initial Abstraction: 4.9098

     Transform: SCS
     Lag: 18.205
     Unitgraph Type: STANDARD

     Baseflow: None
```

```
End:

Junction: 2888.71
     Canvas X: 346613.228290089
     Canvas Y: 5422796.847084891
     Downstream: Reach-8
End:

Reach: Reach-8
     Canvas X: 346613.021
     Canvas Y: 5422796.993
     From Canvas X: 346613.228290089
     From Canvas Y: 5422796.847084891
     Downstream: J2620

     Route: None
     Channel Loss: None
End:

Subbasin: W5790
     Canvas X: 346476.5406
     Canvas Y: 5419646.44
     Label X: 16.0
     Label Y: 16.0
     Area: 8.6451
     Downstream: J2584

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.112
     Initial Abstraction: 4.8841

     Transform: SCS
     Lag: 56.917
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2584
     Description: Generic junction
     Canvas X: 346785.021
     Canvas Y: 5421566.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R510
End:

Reach: R510
     Canvas X: 346612.98832783184
     Canvas Y: 5422796.74071556
     From Canvas X: 346785.021
     From Canvas Y: 5421566.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 206.04

     Route: Muskingum Cunge
     Channel: 8-point
```

```
     Length: 1511.0
     Energy Slope: 0.0715
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R510
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5410
     Canvas X: 346721.0742
     Canvas Y: 5421979.636
     Label X: 16.0
     Label Y: 16.0
     Area: 0.45896
     Downstream: 206.04

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 71.576
     Initial Abstraction: 5.0

     Transform: SCS
     Lag: 19.433
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 206.04
     Canvas X: 346612.98832783184
     Canvas Y: 5422796.74071556
     Downstream: Reach-7
End:

Reach: Reach-7
     Canvas X: 346613.021
     Canvas Y: 5422796.993
     From Canvas X: 346612.98832783184
     From Canvas Y: 5422796.74071556
     Downstream: J2620

     Route: None
     Channel Loss: None
End:

Junction: J2620
     Description: Generic junction
     Canvas X: 346613.021
     Canvas Y: 5422796.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R220
End:

Reach: R220
     Canvas X: 346179.7808081531
     Canvas Y: 5422986.770036953
```

```
     From Canvas X: 346613.021
     From Canvas Y: 5422796.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2734.85

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 499.0
     Energy Slope: 0.016
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R220
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5330
     Canvas X: 346455.0888
     Canvas Y: 5422932.833
     Label X: 16.0
     Label Y: 16.0
     Area: 0.16109
     Downstream: 2734.85

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 75.877
     Initial Abstraction: 4.8

     Transform: SCS
     Lag: 9.1064
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 2734.85
     Canvas X: 346179.7808081531
     Canvas Y: 5422986.770036953
     Downstream: Reach-9
End:

Reach: Reach-9
     Canvas X: 346177.4418
     Canvas Y: 5422987.51
     From Canvas X: 346179.7808081531
     From Canvas Y: 5422986.770036953
     Downstream: Margaret Bowater Dam

     Route: None
     Channel Loss: None
End:

Subbasin: W5340
     Canvas X: 346259.6337
     Canvas Y: 5422361.534
     Label X: 16.0
```

```
     Label Y: 16.0
     Area: 0.33871
     Downstream: Margaret Bowater Dam

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 77.163
     Initial Abstraction: 4.234

     Transform: SCS
     Lag: 20.076
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Reservoir: Margaret Bowater Dam
     Description: Margaret Bowater Dam
     Canvas X: 346177.4418
     Canvas Y: 5422987.51
     Downstream: R190

     Route: Modified Puls
     Routing Curve: Storage-Elevation-Outflow
     Initial Elevation: 27
     Storage-Outflow Table: Bowater Dam
     Elevation-Storage Table: Bowater Dam
     Primary Table: Storage-Outflow
End:

Reach: R190
     Canvas X: 345797.8754180269
     Canvas Y: 5423095.572255938
     From Canvas X: 346177.4418
     From Canvas Y: 5422987.51
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2267.71

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 464.0
     Energy Slope: 0.0216
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R190
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5320
     Canvas X: 346026.7267
     Canvas Y: 5422931.795
     Label X: 16.0
     Label Y: 16.0
     Area: 0.19487
     Downstream: 2267.71
```

```
     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.08
     Initial Abstraction: 3.2333

     Transform: SCS
     Lag: 10.036
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 2267.71
     Canvas X: 345797.8754180269
     Canvas Y: 5423095.572255938
     Downstream: Reach-10
End:

Reach: Reach-10
     Canvas X: 345795.021
     Canvas Y: 5423096.993
     From Canvas X: 345797.8754180269
     From Canvas Y: 5423095.572255938
     Downstream: J2663

     Route: None
     Channel Loss: None
End:

Subbasin: W5520
     Canvas X: 345645.2569
     Canvas Y: 5421660.577
     Label X: 16.0
     Label Y: 16.0
     Area: 1.740192
     Downstream: J2626

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.896
     Initial Abstraction: 4.4008

     Transform: SCS
     Lag: 24.361
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2626
     Description: Generic junction
     Canvas X: 345649.021
     Canvas Y: 5422662.993
     Label X: 16.0
     Label Y: 16.0
```

```
     Downstream: R290
End:

Reach: R290
     Canvas X: 345793.9604101265
     Canvas Y: 5423093.583443428
     From Canvas X: 345649.021
     From Canvas Y: 5422662.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 21.04

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 508.0
     Energy Slope: 0.0806
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R290
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5300
     Canvas X: 345733.7653
     Canvas Y: 5422752.308
     Label X: 16.0
     Label Y: 16.0
     Area: 0.16234
     Downstream: 21.04

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.305
     Initial Abstraction: 3.5455

     Transform: SCS
     Lag: 10.407
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 21.04
     Canvas X: 345793.9604101265
     Canvas Y: 5423093.583443428
     Downstream: Reach-11
End:

Reach: Reach-11
     Canvas X: 345795.021
     Canvas Y: 5423096.993
     From Canvas X: 345793.9604101265
     From Canvas Y: 5423093.583443428
     Downstream: J2663

     Route: None
     Channel Loss: None
```

```
End:

Junction: J2663
     Description: Generic junction
     Canvas X: 345795.021
     Canvas Y: 5423096.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R160
End:

Reach: R160
     Canvas X: 345753.5523064747
     Canvas Y: 5423360.649115569
     From Canvas X: 345795.021
     From Canvas Y: 5423096.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1826.39

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 290.0
     Energy Slope: 0.0069
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R160
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5280
     Canvas X: 345897.6705
     Canvas Y: 5423243.049
     Label X: 16.0
     Label Y: 16.0
     Area: 0.10196
     Downstream: 1826.39

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 78.412
     Initial Abstraction: 2.7143

     Transform: SCS
     Lag: 8.0756
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1826.39
     Canvas X: 345753.5523064747
     Canvas Y: 5423360.649115569
     Downstream: Reach-12
End:

Reach: Reach-12
```

```
     Canvas X: 345748.7057
     Canvas Y: 5423371.689
     From Canvas X: 345753.5523064747
     From Canvas Y: 5423360.649115569
     Downstream: Glynmill Dam

     Route: None
     Channel Loss: None
End:

Subbasin: W5250
     Canvas X: 346134.7713
     Canvas Y: 5423420.455
     Label X: 16.0
     Label Y: 16.0
     Area: 0.97772
     Downstream: Glynmill Dam

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 83.588
     Initial Abstraction: 3.979

     Transform: SCS
     Lag: 25.022
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Reservoir: Glynmill Dam
     Description: Glynmill Dam
     Canvas X: 345748.7057
     Canvas Y: 5423371.689
     Downstream: R140

     Route: Modified Puls
     Routing Curve: Storage-Elevation-Outflow
     Initial Elevation: 15.35
     Storage-Outflow Table: Glynmill Dam
     Elevation-Storage Table: Glynmill Dam
     Primary Table: Storage-Outflow
End:

Reach: R140
     Canvas X: 345309.021
     Canvas Y: 5423632.993
     From Canvas X: 345748.7057
     From Canvas Y: 5423371.689
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1539.91

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 594.0
     Energy Slope: 0.0219
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
```

```
     Right Overbank Mannings n: 0.1
     Cross Section Name: R140
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5230
     Canvas X: 345478.4597
     Canvas Y: 5423419.294
     Label X: 16.0
     Label Y: 16.0
     Area: 0.15529
     Downstream: 1539.91

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.656
     Initial Abstraction: 4.0

     Transform: SCS
     Lag: 10.194
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1539.91
     Description: Generic junction
     Canvas X: 345309.021
     Canvas Y: 5423632.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R90
End:

Reach: R90
     Canvas X: 345233.44084723346
     Canvas Y: 5423704.172904113
     From Canvas X: 345309.021
     From Canvas Y: 5423632.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 915.75

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 110.0
     Energy Slope: 0.0001
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R90
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5220
     Canvas X: 345063.7052
     Canvas Y: 5422615.719
```

```
     Label X: 16.0
     Label Y: 16.0
     Area: 1.3947
     Downstream: 915.75

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.496
     Initial Abstraction: 4.0773

     Transform: SCS
     Lag: 24.05
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 915.75
     Canvas X: 345233.44084723346
     Canvas Y: 5423704.172904113
     Downstream: Reach-13
End:

Reach: Reach-13
     Canvas X: 345231.021
     Canvas Y: 5423710.993
     From Canvas X: 345233.44084723346
     From Canvas Y: 5423704.172904113
     Downstream: J2682

     Route: None
     Channel Loss: None
End:

Subbasin: W5240
     Canvas X: 347589.8056
     Canvas Y: 5423744.658
     Label X: 16.0
     Label Y: 16.0
     Area: 0.70309
     Downstream: J2676

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 88.41
     Initial Abstraction: 3.3429

     Transform: SCS
     Lag: 16.944
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W5140
```

```
     Canvas X: 347164.7999
     Canvas Y: 5424376.445
     Label X: 16.0
     Label Y: 16.0
     Area: 0.19218
     Downstream: J2676

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 91.35
     Initial Abstraction: 2.6552

     Transform: SCS
     Lag: 10.694
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2676
     Description: Generic junction
     Canvas X: 346849.021
     Canvas Y: 5424116.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R50
End:

Reach: R50
     Canvas X: 346341.021
     Canvas Y: 5423874.993
     From Canvas X: 346849.021
     From Canvas Y: 5424116.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2685

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 697.0
     Energy Slope: 0.0488
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R50
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5190
     Canvas X: 346881.7352
     Canvas Y: 5423777.026
     Label X: 16.0
     Label Y: 16.0
     Area: 0.24266
     Downstream: J2685

     Canopy: None
```

```
     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 83.446
     Initial Abstraction: 3.8571

     Transform: SCS
     Lag: 16.424
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W5150
     Canvas X: 346680.1949
     Canvas Y: 5424090.718
     Label X: 16.0
     Label Y: 16.0
     Area: 0.177952
     Downstream: J2685

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.959
     Initial Abstraction: 4.36

     Transform: SCS
     Lag: 10.968
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2685
     Description: Generic junction
     Canvas X: 346341.021
     Canvas Y: 5423874.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R80
End:

Reach: R80
     Canvas X: 345231.021
     Canvas Y: 5423710.993
     From Canvas X: 346341.021
     From Canvas Y: 5423874.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: J2682

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1294.0
     Energy Slope: 0.024
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
```

```
     Cross Section Name: R80
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5180
     Canvas X: 346064.1479
     Canvas Y: 5423873.035
     Label X: 16.0
     Label Y: 16.0
     Area: 0.648424
     Downstream: J2682

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.396
     Initial Abstraction: 3.3913

     Transform: SCS
     Lag: 21.909
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2682
     Description: Generic junction
     Canvas X: 345231.021
     Canvas Y: 5423710.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R70
End:

Reach: R70
     Canvas X: 345148.92499899457
     Canvas Y: 5423875.268187417
     From Canvas X: 345231.021
     From Canvas Y: 5423710.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 828.33

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 377.0
     Energy Slope: 0.0001
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R70
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5170
     Canvas X: 345168.5776
     Canvas Y: 5423791.489
     Label X: 16.0
```

```
     Label Y: 16.0
     Area: 0.16408
     Downstream: 828.33

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 92.532
     Initial Abstraction: 2.3077

     Transform: SCS
     Lag: 9.7071
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 828.33
     Canvas X: 345148.92499899457
     Canvas Y: 5423875.268187417
     Downstream: Reach-6
End:

Reach: Reach-6
     Canvas X: 345148.2313
     Canvas Y: 5423877.051
     From Canvas X: 345148.92499899457
     From Canvas Y: 5423875.268187417
     Downstream: J2690

     Route: None
     Channel Loss: None
End:

Subbasin: W5770
     Canvas X: 342353.4565
     Canvas Y: 5420698.254
     Label X: 16.0
     Label Y: 16.0
     Area: 2.5531
     Downstream: 5166.11

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.422
     Initial Abstraction: 4.7297

     Transform: SCS
     Lag: 29.658
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 5166.11
     Description: 5166.11
```

```
     Canvas X: 342546.9416400976
     Canvas Y: 5421610.844799181
     Downstream: Reach-1
End:

Reach: Reach-1
     Canvas X: 342547.021
     Canvas Y: 5421610.993
     From Canvas X: 342546.9416400976
     From Canvas Y: 5421610.844799181
     Downstream: J2587

     Route: None
     Channel Loss: None
End:

Subbasin: W5760
     Canvas X: 343481.7932
     Canvas Y: 5420821.641
     Label X: 16.0
     Label Y: 16.0
     Area: 0.55404
     Downstream: J2590

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.607
     Initial Abstraction: 4.7875

     Transform: SCS
     Lag: 15.086
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2590
     Description: Generic junction
     Canvas X: 343261.021
     Canvas Y: 5421264.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R580
End:

Reach: R580
     Canvas X: 342547.05021801265
     Canvas Y: 5421610.973324475
     From Canvas X: 343261.021
     From Canvas Y: 5421264.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: Junction-1

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1056.0
     Energy Slope: 0.0483
     Left Overbank Mannings n: 0.1
```

```
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R580
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5710
     Canvas X: 342849.5635
     Canvas Y: 5421329.744
     Label X: 16.0
     Label Y: 16.0
     Area: 0.062128
     Downstream: Junction-1

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.055
     Initial Abstraction: 4.5556

     Transform: SCS
     Lag: 12.541
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: Junction-1
     Canvas X: 342547.05021801265
     Canvas Y: 5421610.973324475
     Downstream: Reach-2
End:

Reach: Reach-2
     Canvas X: 342547.021
     Canvas Y: 5421610.993
     From Canvas X: 342547.05021801265
     From Canvas Y: 5421610.973324475
     Downstream: J2587

     Route: None
     Channel Loss: None
End:

Junction: J2587
     Description: Generic junction
     Canvas X: 342547.021
     Canvas Y: 5421610.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R500
End:

Reach: R500
     Canvas X: 342873.021
     Canvas Y: 5422368.993
     From Canvas X: 342547.021
     From Canvas Y: 5421610.993
     Label X: 16.0
```

```
     Label Y: 16.0
     Downstream: 4436.28

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1151.0
     Energy Slope: 0.0278
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R500
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5540
     Canvas X: 342788.5364
     Canvas Y: 5421927.929
     Label X: 16.0
     Label Y: 16.0
     Area: 1.2275
     Downstream: 4436.28

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.031
     Initial Abstraction: 4.2

     Transform: SCS
     Lag: 21.336
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 4436.28
     Description: Generic junction
     Canvas X: 342873.021
     Canvas Y: 5422368.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R340
End:

Reach: R340
     Canvas X: 343522.2526
     Canvas Y: 5422778.228
     From Canvas X: 342873.021
     From Canvas Y: 5422368.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 3329.08

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1169.0
     Energy Slope: 0.0197
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
```

```
     Right Overbank Mannings n: 0.1
     Cross Section Name: R340
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5440
     Canvas X: 343149.1519
     Canvas Y: 5422648.144
     Label X: 16.0
     Label Y: 16.0
     Area: 1.2635
     Downstream: 3329.08

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.142
     Initial Abstraction: 4.4652

     Transform: SCS
     Lag: 19.188
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 3329.08
     Description: Generic junction
     Canvas X: 343522.2526
     Canvas Y: 5422778.228
     Label X: 16.0
     Label Y: 16.0
     Downstream: R240
End:

Reach: R240
     Canvas X: 344142.9553507512
     Canvas Y: 5422896.402863505
     From Canvas X: 343522.2526
     From Canvas Y: 5422778.228
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2295.83

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 724.0
     Energy Slope: 0.0428
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R240
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5390
     Canvas X: 343784.0925
     Canvas Y: 5422676.406
```

```
     Label X: 16.0
     Label Y: 16.0
     Area: 0.61059
     Downstream: 2295.83

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.147
     Initial Abstraction: 4.3103

     Transform: SCS
     Lag: 13.157
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 2295.83
     Canvas X: 344142.9553507512
     Canvas Y: 5422896.402863505
     Downstream: Reach-3
End:

Reach: Reach-3
     Canvas X: 344145.021
     Canvas Y: 5422896.993
     From Canvas X: 344142.9553507512
     From Canvas Y: 5422896.402863505
     Downstream: J2649

     Route: None
     Channel Loss: None
End:

Subbasin: W5700
     Canvas X: 344417.9453
     Canvas Y: 5420410.299
     Label X: 16.0
     Label Y: 16.0
     Area: 2.3053
     Downstream: J2600

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.83
     Initial Abstraction: 4.905

     Transform: SCS
     Lag: 32.385
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W5690
```

```
     Canvas X: 343698.6833
     Canvas Y: 5421404.17
     Label X: 16.0
     Label Y: 16.0
     Area: 0.32439
     Downstream: J2600

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.373
     Initial Abstraction: 4.7347

     Transform: SCS
     Lag: 15.104
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J2600
     Description: Generic junction
     Canvas X: 344109.021
     Canvas Y: 5421408.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R530
End:

Reach: R530
     Canvas X: 344145.098917822
     Canvas Y: 5422896.15474211
     From Canvas X: 344109.021
     From Canvas Y: 5421408.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 178.13

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1970.0
     Energy Slope: 0.0614
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R530
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5370
     Canvas X: 344343.3965
     Canvas Y: 5422023.173
     Label X: 16.0
     Label Y: 16.0
     Area: 0.87352
     Downstream: 178.13

     Canopy: None
```

```
     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.248
     Initial Abstraction: 4.8413

     Transform: SCS
     Lag: 16.987
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 178.13
     Canvas X: 344145.098917822
     Canvas Y: 5422896.15474211
     Downstream: Reach-4
End:

Reach: Reach-4
     Canvas X: 344145.021
     Canvas Y: 5422896.993
     From Canvas X: 344145.098917822
     From Canvas Y: 5422896.15474211
     Downstream: J2649

     Route: None
     Channel Loss: None
End:

Junction: J2649
     Description: Generic junction
     Canvas X: 344145.021
     Canvas Y: 5422896.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R200
End:

Reach: R200
     Canvas X: 344599.021
     Canvas Y: 5423364.993
     From Canvas X: 344145.021
     From Canvas Y: 5422896.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1582.05

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 750.0
     Energy Slope: 0.052
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R200
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5310
     Canvas X: 344189.7563
```

```
     Canvas Y: 5423181.727
     Label X: 16.0
     Label Y: 16.0
     Area: 0.72817
     Downstream: 1582.05

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.192
     Initial Abstraction: 4.0566

     Transform: SCS
     Lag: 14.593
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1582.05
     Description: Generic junction
     Canvas X: 344599.021
     Canvas Y: 5423364.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: R120
End:

Reach: R120
     Canvas X: 345144.6857800759
     Canvas Y: 5423874.726123358
     From Canvas X: 344599.021
     From Canvas Y: 5423364.993
     Label X: 16.0
     Label Y: 16.0
     Downstream: 816.09

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 1074.0
     Energy Slope: 0.0372
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R120
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5160
     Canvas X: 344651.0081
     Canvas Y: 5423596.575
     Label X: 16.0
     Label Y: 16.0
     Area: 0.28986
     Downstream: 816.09

     Canopy: None

     Surface: None
```

```
     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 89.366
     Initial Abstraction: 3.439

     Transform: SCS
     Lag: 13.374
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 816.09
     Canvas X: 345144.6857800759
     Canvas Y: 5423874.726123358
     Downstream: Reach-5
End:

Reach: Reach-5
     Canvas X: 345148.2313
     Canvas Y: 5423877.051
     From Canvas X: 345144.6857800759
     From Canvas Y: 5423874.726123358
     Downstream: J2690

     Route: None
     Channel Loss: None
End:

Junction: J2690
     Description: Generic junction
     Canvas X: 345148.2313
     Canvas Y: 5423877.051
     Label X: 16.0
     Label Y: 16.0
     Downstream: R40
End:

Reach: R40
     Canvas X: 344822.021
     Canvas Y: 5424639.993
     From Canvas X: 345148.2313
     From Canvas Y: 5423877.051
     Label X: 16.0
     Label Y: 16.0
     Downstream: CBoutlet-659.37

     Route: Muskingum Cunge
     Channel: 8-point
     Length: 721.0
     Energy Slope: 0.0028
     Left Overbank Mannings n: 0.1
     Main Channel Mannings n: 0.035
     Right Overbank Mannings n: 0.1
     Cross Section Name: R40
     Use Variable Time Step: No
     Channel Loss: None
End:

Subbasin: W5130
     Canvas X: 344999.904
     Canvas Y: 5424136.68
```

```
     Label X: 16.0
     Label Y: 16.0
     Area: 0.19812
     Downstream: CBoutlet-659.37

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 93.635
     Initial Abstraction: 2.5385

     Transform: SCS
     Lag: 10.0
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Sink: CBoutlet-659.37
     Description: CBoutlet
     Canvas X: 344822.021
     Canvas Y: 5424639.993
     Label X: 16.0
     Label Y: 16.0
End:

Basin Schematic Properties:
     Last View N: 5425113.224208499
     Last View S: 5423913.871997146
     Last View W: 343626.1646001042
     Last View E: 346487.77689385996
     Maximum View N: 5425429.068299999
     Maximum View S: 5408069.4117
     Maximum View W: 341699.10195499996
     Maximum View E: 356094.901945
     Extent Method: Elements
     Buffer: 10
     Draw Icons: Yes
     Draw Icon Labels: Yes
     Draw Map Objects: No
     Draw Gridlines: Yes
     Draw Flow Direction: No
     Fix Element Locations: No
     Fix Hydrologic Order: No
     Map: hec.map.aishape.AiShapeMap
     Map File Name: Subbasin_CB.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: Yes
     Map: hec.map.aishape.AiShapeMap
     Map File Name: River5.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: Yes
     Map: hec.map.aishape.AiShapeMap
     Map File Name: DamLocations.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: Yes
     Map: hec.map.aishape.AiShapeMap
```

```
     Map File Name: C:\newfoundland\CornerBrook\shape
files\HecRas-CornerBrook-XSections.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: Yes
End:
```

PETRIE'S BROOK

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```
Basin: Petries Brook
     Description: Petries HMS
     Last Modified Date: 13 April 2012
     Last Modified Time: 20:11:31
     Version: 3.5
     Filepath Separator: \
     Unit System: Metric
     Grid Cell File: PetriesBrook.mod
     Missing Flow To Zero: No
     Enable Flow Ratio: No
     Allow Blending: No
     Compute Local Flow At Junctions: No

     Enable Sediment Routing: No

     Enable Quality Routing: No
End:

Subbasin: W1210
     Canvas X: 339689.2824211806
     Canvas Y: 5422087.632316229
     Label X: 16.0
     Label Y: 16.0
     Area: 1.062639
     Downstream: J445

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 73.154
     Initial Abstraction: 4.7503

     Transform: SCS
     Lag: 27.859
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Subbasin: W1320
     Canvas X: 340300.5357999997
     Canvas Y: 5421953.251499999
     Label X: 16.0
     Label Y: 16.0
     Area: 0.638937
     Downstream: J445

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 71.871
     Initial Abstraction: 4.9840

     Transform: SCS
     Lag: 23.693
     Unitgraph Type: STANDARD
```

```
     Baseflow: None
End:

Junction: J445
     Description: Generic junction
     Canvas X: 340155.2889999999
     Canvas Y: 5422767.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R410
End:

Reach: R410
     Canvas X: 340220.2889999999
     Canvas Y: 5422891.226
     From Canvas X: 340155.2889999999
     From Canvas Y: 5422767.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: J488

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 495
     Energy Slope: 0.0709
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 402.57
     Channel Loss: None
End:

Junction: J488
     Description: Generic junction
     Canvas X: 340220.2889999999
     Canvas Y: 5422891.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R390
End:

Reach: R390
     Canvas X: 340277.86821928254
     Canvas Y: 5422928.5026134895
     From Canvas X: 340220.2889999999
     From Canvas Y: 5422891.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2878.538

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 190
     Energy Slope: 0.0382
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 395.33
     Channel Loss: None
End:
```

```
Subbasin: W1100
     Canvas X: 340108.23230000027
     Canvas Y: 5422808.7739
     Label X: 16.0
     Label Y: 16.0
     Area: 0.460629
     Downstream: 2878.538

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 72.979
     Initial Abstraction: 4.9390

     Transform: SCS
     Lag: 16.436
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 2878.538
     Description: Generic junction
     Canvas X: 340277.86821928254
     Canvas Y: 5422928.5026134895
     Label X: 16.0
     Label Y: 16.0
     Downstream: R380
End:

Reach: R380
     Canvas X: 340315.5954077605
     Canvas Y: 5423465.063114745
     From Canvas X: 340277.86821928254
     From Canvas Y: 5422928.5026134895
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2636.808

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 1980
     Energy Slope: 0.0331
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 329.9
     Channel Loss: None
End:

Subbasin: W930
     Canvas X: 340451.97229999956
     Canvas Y: 5422996.5725
     Label X: 16.0
     Label Y: 16.0
     Area: 0.159829
     Downstream: 2636.808

     Canopy: None
```

```
     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 74.304
     Initial Abstraction: 4.9440

     Transform: SCS
     Lag: 14.804
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 2636.808
     Canvas X: 340315.5954077605
     Canvas Y: 5423465.063114745
     Downstream: Reach-1
End:

Reach: Reach-1
     Canvas X: 340320.2889999999
     Canvas Y: 5423472.226
     From Canvas X: 340315.5954077605
     From Canvas Y: 5423465.063114745
     Downstream: J425

     Route: None
     Channel Loss: None
End:

Subbasin: W990
     Canvas X: 341001.08499999996
     Canvas Y: 5422727.468
     Label X: 16.0
     Label Y: 16.0
     Area: 1.513126
     Downstream: J425

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 77.282
     Initial Abstraction: 4.0996

     Transform: SCS
     Lag: 30.641
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J425
     Description: Generic junction
     Canvas X: 340320.2889999999
     Canvas Y: 5423472.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R240
```

```
End:

Reach: R240
     Canvas X: 340216.2344302762
     Canvas Y: 5423673.6349640405
     From Canvas X: 340320.2889999999
     From Canvas Y: 5423472.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 2036.68

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 816
     Energy Slope: 0.036
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 300.5
     Channel Loss: None
End:

Subbasin: W920
     Canvas X: 340240.84889999963
     Canvas Y: 5423440.133400001
     Label X: 16.0
     Label Y: 16.0
     Area: 0.050395
     Downstream: 2036.68

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 81.014
     Initial Abstraction: 4.3120

     Transform: SCS
     Lag: 7.2156
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 2036.68
     Canvas X: 340216.2344302762
     Canvas Y: 5423673.6349640405
     Downstream: Reach-2
End:

Reach: Reach-2
     Canvas X: 340216.2889999999
     Canvas Y: 5423674.226
     From Canvas X: 340216.2344302762
     From Canvas Y: 5423673.6349640405
     Downstream: J428

     Route: None
     Channel Loss: None
End:
```

```
Subbasin: W970
     Canvas X: 339668.6158999996
     Canvas Y: 5423370.2404
     Label X: 16.0
     Label Y: 16.0
     Area: 0.505529
     Downstream: J428

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 73.551
     Initial Abstraction: 4.9911

     Transform: SCS
     Lag: 24.806
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J428
     Description: Generic junction
     Canvas X: 340216.2889999999
     Canvas Y: 5423674.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R230
End:

Reach: R230
     Canvas X: 340214.2166734069
     Canvas Y: 5423724.100789828
     From Canvas X: 340216.2889999999
     From Canvas Y: 5423674.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1790.83

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 172.2
     Energy Slope: 0.062
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 299.44
     Channel Loss: None
End:

Subbasin: W890
     Canvas X: 339832.8119999999
     Canvas Y: 5423680.671
     Label X: 16.0
     Label Y: 16.0
     Area: 0.105737
     Downstream: 1790.83
```

```
     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 75.374
     Initial Abstraction: 4.9618

     Transform: SCS
     Lag: 10.377
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1790.83
     Canvas X: 340214.2166734069
     Canvas Y: 5423724.100789828
     Downstream: Reach-3
End:

Reach: Reach-3
     Canvas X: 340214.2889999999
     Canvas Y: 5423724.226
     From Canvas X: 340214.2166734069
     From Canvas Y: 5423724.100789828
     Downstream: J435

     Route: None
     Channel Loss: None
End:

Subbasin: W900
     Canvas X: 340217.2270999998
     Canvas Y: 5423691.7579
     Label X: 16.0
     Label Y: 16.0
     Area: 0.001551
     Downstream: J435

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 70.162
     Initial Abstraction: 5.0

     Transform: SCS
     Lag: 1.7128
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J435
     Description: Generic junction
     Canvas X: 340214.2889999999
     Canvas Y: 5423724.226
     Label X: 16.0
     Label Y: 16.0
```

```
     Downstream: R1440
End:

Reach: R1440
     Canvas X: 340265.2889999999
     Canvas Y: 5423776.226
     From Canvas X: 340214.2889999999
     From Canvas Y: 5423724.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: J493

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 252
     Energy Slope: 0.0504
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 286.73
     Channel Loss: None
End:

Junction: J493
     Description: Generic junction
     Canvas X: 340265.2889999999
     Canvas Y: 5423776.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1490
End:

Reach: R1490
     Canvas X: 340284.2889999999
     Canvas Y: 5423875.226
     From Canvas X: 340265.2889999999
     From Canvas Y: 5423776.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: UserPoint4

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 396
     Energy Slope: 0.0317
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 273.06
     Channel Loss: None
End:

Subbasin: W880
     Canvas X: 340421.42349999957
     Canvas Y: 5423643.171
     Label X: 16.0
     Label Y: 16.0
     Area: 0.094139
     Downstream: UserPoint4

     Canopy: None
```

```
     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 78.305
     Initial Abstraction: 4.5237

     Transform: SCS
     Lag: 10.136
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: UserPoint4
     Description: UserPoint4
     Canvas X: 340284.2889999999
     Canvas Y: 5423875.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R190
End:

Reach: R190
     Canvas X: 340258.71416085714
     Canvas Y: 5423969.640532755
     From Canvas X: 340284.2889999999
     From Canvas Y: 5423875.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1700

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 365
     Energy Slope: 0.0309
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 261.8
     Channel Loss: None
End:

Subbasin: W1460
     Canvas X: 340126.96719999984
     Canvas Y: 5423828.2019
     Label X: 16.0
     Label Y: 16.0
     Area: 0.038274
     Downstream: 1700

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 84.794
     Initial Abstraction: 3.8280

     Transform: SCS
```

```
     Lag: 7.0362
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1700
     Canvas X: 340258.71416085714
     Canvas Y: 5423969.640532755
     Downstream: Reach-4
End:

Reach: Reach-4
     Canvas X: 340259.2889999999
     Canvas Y: 5423970.226
     From Canvas X: 340258.71416085714
     From Canvas Y: 5423969.640532755
     Downstream: J442

     Route: None
     Channel Loss: None
End:

Subbasin: W860
     Canvas X: 340642.9891999997
     Canvas Y: 5423821.543099999
     Label X: 16.0
     Label Y: 16.0
     Area: 0.257823
     Downstream: J442

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 75.625
     Initial Abstraction: 4.7260

     Transform: SCS
     Lag: 12.846
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J442
     Description: Generic junction
     Canvas X: 340259.2889999999
     Canvas Y: 5423970.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R140
End:

Reach: R140
     Canvas X: 340278.5345202765
     Canvas Y: 5424248.717086426
     From Canvas X: 340259.2889999999
     From Canvas Y: 5423970.226
     Label X: 16.0
     Label Y: 16.0
```

```
     Downstream: 1418.452

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 961.56
     Energy Slope: 0.1108
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 155.28
     Channel Loss: None
End:

Subbasin: W820
     Canvas X: 340864.8724999996
     Canvas Y: 5424070.592700001
     Label X: 16.0
     Label Y: 16.0
     Area: 0.121442
     Downstream: 1418.452

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 77.086
     Initial Abstraction: 4.6128

     Transform: SCS
     Lag: 13.657
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1418.452
     Canvas X: 340278.5345202765
     Canvas Y: 5424248.717086426
     Downstream: Reach-5
End:

Reach: Reach-5
     Canvas X: 340279.2889999999
     Canvas Y: 5424249.226
     From Canvas X: 340278.5345202765
     From Canvas Y: 5424248.717086426
     Downstream: J452

     Route: None
     Channel Loss: None
End:

Subbasin: W810
     Canvas X: 340282.89749999996
     Canvas Y: 5424080.088500001
     Label X: 16.0
     Label Y: 16.0
     Area: 0.038763
     Downstream: J452
```

```
     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.421
     Initial Abstraction: 4.2120

     Transform: SCS
     Lag: 4.1857
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J452
     Description: Generic junction
     Canvas X: 340279.2889999999
     Canvas Y: 5424249.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R100
End:

Reach: R100
     Canvas X: 340233.6118831404
     Canvas Y: 5424307.045448291
     From Canvas X: 340279.2889999999
     From Canvas Y: 5424249.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1131.369

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 260
     Energy Slope: 0.0613
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 139.32
     Channel Loss: None
End:

Subbasin: W780
     Canvas X: 340282.4979999997
     Canvas Y: 5424264.6183
     Label X: 16.0
     Label Y: 16.0
     Area: 0.005929
     Downstream: 1131.369

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 76.154
     Initial Abstraction: 4.8519
```

```
     Transform: SCS
     Lag: 2.3419
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1131.369
     Canvas X: 340233.6118831404
     Canvas Y: 5424307.045448291
     Downstream: Reach-6
End:

Reach: Reach-6
     Canvas X: 340233.2889999999
     Canvas Y: 5424307.226
     From Canvas X: 340233.6118831404
     From Canvas Y: 5424307.045448291
     Downstream: J460

     Route: None
     Channel Loss: None
End:

Subbasin: W800
     Canvas X: 339889.20129999984
     Canvas Y: 5423997.4651
     Label X: 16.0
     Label Y: 16.0
     Area: 0.257113
     Downstream: J457

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 76.251
     Initial Abstraction: 4.8273

     Transform: SCS
     Lag: 15.368
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J457
     Description: Generic junction
     Canvas X: 340222.2889999999
     Canvas Y: 5424297.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R90
End:

Reach: R90
     Canvas X: 340233.2889999999
     Canvas Y: 5424307.226
     From Canvas X: 340222.2889999999
     From Canvas Y: 5424297.226
     Label X: 16.0
```

```
     Label Y: 16.0
     Downstream: J460

     Route: None
     Channel Loss: None
End:

Subbasin: W770
     Canvas X: 340221.1933000004
     Canvas Y: 5424301.1219
     Label X: 16.0
     Label Y: 16.0
     Area: 0.000620
     Downstream: J460

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 76.489
     Initial Abstraction: 5.0

     Transform: SCS
     Lag: 1.5850
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J460
     Description: Generic junction
     Canvas X: 340233.2889999999
     Canvas Y: 5424307.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R80
End:

Reach: R80
     Canvas X: 340248.2889999999
     Canvas Y: 5424560.226
     From Canvas X: 340233.2889999999
     From Canvas Y: 5424307.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: J480

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 983
     Energy Slope: 0.0601
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 80.24
     Channel Loss: None
End:

Junction: J480
     Description: Generic junction
```

```
     Canvas X: 340248.2889999999
     Canvas Y: 5424560.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R1380
End:

Reach: R1380
     Canvas X: 340264.2889999999
     Canvas Y: 5424684.226
     From Canvas X: 340248.2889999999
     From Canvas Y: 5424560.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 1036.637

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 429
     Energy Slope: 0.0312
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 66.84
     Channel Loss: None
End:

Subbasin: W760
     Canvas X: 340283.1163999997
     Canvas Y: 5424435.827099999
     Label X: 16.0
     Label Y: 16.0
     Area: 0.185837
     Downstream: 1036.637

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 79.174
     Initial Abstraction: 4.4565

     Transform: SCS
     Lag: 8.9878
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 1036.637
     Description: UserPoint2
     Canvas X: 340264.2889999999
     Canvas Y: 5424684.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R60
End:

Reach: R60
     Canvas X: 340253.26819137955
```

```
     Canvas Y: 5424869.176697553
     From Canvas X: 340264.2889999999
     From Canvas Y: 5424684.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 599.1731

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 714
     Energy Slope: 0.0672
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 18.81
     Channel Loss: None
End:

Subbasin: W1360
     Canvas X: 340263.32070000004
     Canvas Y: 5424748.792300001
     Label X: 16.0
     Label Y: 16.0
     Area: 0.026892
     Downstream: 599.1731

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 83.403
     Initial Abstraction: 4.1692

     Transform: SCS
     Lag: 3.9201
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 599.1731
     Canvas X: 340253.26819137955
     Canvas Y: 5424869.176697553
     Downstream: Reach-7
End:

Reach: Reach-7
     Canvas X: 340253.2889999999
     Canvas Y: 5424869.226
     From Canvas X: 340253.26819137955
     From Canvas Y: 5424869.176697553
     Downstream: J467

     Route: None
     Channel Loss: None
End:

Subbasin: W740
     Canvas X: 340769.18900000025
     Canvas Y: 5424445.880100001
```

```
     Label X: 16.0
     Label Y: 16.0
     Area: 0.475440
     Downstream: J467

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 80.213
     Initial Abstraction: 4.1393

     Transform: SCS
     Lag: 20.105
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J467
     Description: Generic junction
     Canvas X: 340253.2889999999
     Canvas Y: 5424869.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R20
End:

Reach: R20
     Canvas X: 340119.44663463224
     Canvas Y: 5424947.191550888
     From Canvas X: 340253.2889999999
     From Canvas Y: 5424869.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: 399.9764

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 586
     Energy Slope: 0.0159
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 9.5
     Channel Loss: None
End:

Subbasin: W690
     Canvas X: 340200.50107314147
     Canvas Y: 5424870.184781006
     Label X: 16.0
     Label Y: 16.0
     Area: 0.022901
     Downstream: 399.9764

     Canopy: None

     Surface: None
```

```
     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 82.731
     Initial Abstraction: 3.9910

     Transform: SCS
     Lag: 3.6989
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: 399.9764
     Canvas X: 340119.44663463224
     Canvas Y: 5424947.191550888
     Downstream: Reach-8
End:

Reach: Reach-8
     Canvas X: 340119.2889999999
     Canvas Y: 5424947.226
     From Canvas X: 340119.44663463224
     From Canvas Y: 5424947.191550888
     Downstream: J472

     Route: None
     Channel Loss: None
End:

Subbasin: W700
     Canvas X: 339938.8830000004
     Canvas Y: 5424565.604800001
     Label X: 16.0
     Label Y: 16.0
     Area: 0.138994
     Downstream: J472

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 78.195
     Initial Abstraction: 4.5228

     Transform: SCS
     Lag: 11.280
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Junction: J472
     Description: Generic junction
     Canvas X: 340119.2889999999
     Canvas Y: 5424947.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: R10
End:

Reach: R10
```

```
     Canvas X: 340143.7889999999
     Canvas Y: 5425187.726
     From Canvas X: 340119.2889999999
     From Canvas Y: 5424947.226
     Label X: 16.0
     Label Y: 16.0
     Downstream: Outlet1

     Route: Muskingum Cunge
     Channel: Rectangular
     Length: 942
     Energy Slope: 0.0081
     Width: 5
     Side Slope: 0.0
     Mannings n: 0.035
     Use Variable Time Step: No
     Invert Elevation: 1.86
     Channel Loss: None
End:

Subbasin: W680
     Canvas X: 340075.18769999966
     Canvas Y: 5424945.6438
     Label X: 16.0
     Label Y: 16.0
     Area: 0.071571
     Downstream: Outlet1

     Canopy: None

     Surface: None

     LossRate: SCS
     Percent Impervious Area: 0.0
     Curve Number: 85.829
     Initial Abstraction: 3.6057

     Transform: SCS
     Lag: 7.5651
     Unitgraph Type: STANDARD

     Baseflow: None
End:

Sink: Outlet1
     Description: Outlet1
     Canvas X: 340143.7889999999
     Canvas Y: 5425187.726
     Label X: 16.0
     Label Y: 16.0
End:

Basin Schematic Properties:
     Last View N: 5424309.744494076
     Last View S: 5424299.04550586
     Last View W: 340224.61483894836
     Last View E: 340246.45401077234
     Maximum View N: 5425349.449725
     Maximum View S: 5421791.527774999
     Maximum View W: 339601.99244499963
     Maximum View E: 341067.70845499996
     Extent Method: Elements
     Buffer: 10
```

```
     Draw Icons: Yes
     Draw Icon Labels: Yes
     Draw Map Objects: No
     Draw Gridlines: Yes
     Draw Flow Direction: No
     Fix Element Locations: No
     Fix Hydrologic Order: No
     Map: hec.map.aishape.AiShapeMap
     Map File Name: Subbasin479.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: Yes
     Map: hec.map.aishape.AiShapeMap
     Map File Name: River479.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: Yes
     Map: hec.map.aishape.AiShapeMap
     Map File Name: C:\newfoundland\PetriesBrook\Peter\Xsections_2.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: No
     Map: hec.map.aishape.AiShapeMap
     Map File Name: C:\newfoundland\PetriesBrook\Shapefiles\XSCutlines.shp
     Minimum Scale: -2147483648
     Maximum Scale: 2147483647
     Map Shown: No
End:
```

APPENDIX L

FIELD PROGRAM DATA

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FIELD PROGRAM REPORT

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TECHNICAL MEMORANDUM

To	Mr. Amir Ali Khan, Ph.D, P.Eng. Manager, Hydrologic Modelling Section Water Resources Management Division Dept of Environment and Conservation Government of Newfoundland and Labrador	File no	**TA1112735**
From	Ken DePodesta, B.Eng., P.Eng. Senior Technical Lead, Burlington, Ontario 905-335-2353 Peter Nimmrichter, M.Eng. P.Eng. Senior Water Resources Engineer, Mississauga, Ontario 905-568-2929 x4343	cc	J. Chris Innes, Project Manager, Ottawa 613- 727-0658 x247
Date	March 16, 2012		
Subject	**Flood Plain Mapping Project (Goulds/Petty Harbour/Corner Brook Area) Technical Memorandum #1 Field Program Brief**		

Dear Mr. Khan,

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), is pleased to provide the attached draft technical memo. This memorandum summarizes the proposed methodology we have developed for Task D and E and is submitted to you for your review and comment.

It is the intent that, once approved, the content of this technical memo will comprise one section of the final project report.

If you have any questions regarding this technical memo please contact the undersigned at your convenience.

Yours truly,
AMEC Environment & Infrastructure,
a division of AMEC Americas Limited

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1. Task 1: Background Review

A thorough review of existing information was completed to obtain an understanding of the flooding problem in the study area and the factors responsible for past floods. It was originally proposed to review a variety of information sources, however, those noted in our proposal were also reviewed for the update of the Flood Events Inventory, a component deliverable of the Flood Risk and Vulnerability Analysis Project (AMEC Project # TA1112733) completed for Water Resources management Division. This Flood Risk and Vulnerability Analysis Project will assist the Provincial Government identify communities at risk to flooding and the potential impacts of the changing climate, drive projects to update existing and create new flood risk mapping, to improve or establish flood forecasting / flood warning systems and to identify mitigation and/or adaptation opportunities. It was also understood that the inventory was shared with Environment Canada. The Flood Events Inventory was used as the primary basis for identifying historical flood events in the study watersheds. However, the list established via the Flood Events Inventory was provided to the City of Corner Brook and City of St. John's for review towards addition of flood events, based on local knowledge, not previously documented in the Flood Events Inventory.

The background review project component also included a review of available mapping which includes:

- 1:50,000 scale National Topographic Series (NTS) maps covering the three subject watersheds in their entirety.
- 1:2500 Provincial Series topographic mapping in a structured format for the Corner Brook Stream and Petrie's Brook Watersheds but only unstructured data for the Petty Harbour River Watershed.

In anticipation of the production of flood plain maps, a deliverable of this project, a street names layer was created specific to the study reaches designated for floodplain map development. Street names were defined from Google Maps.

Previous flood risk reporting and hydrotechnical studies for these and other local watercourses, including:

- *Flood Risk Mapping Study: Goulds, Petty Harbour and Ferryland*, BAE-Newplan Group, March 1996.
- *Corner Brook Stream Management Study*, The Corner Brook Stream Development Committee, prepared by John Chisholm, Mike Caroll, Nancy Griffiths, Joanne Morehouse with Peter Klynstra, Environmental Planning Department, Nova Scotia College, December 1992.
- *Corner Brook Pulp and Paper Limited, Dam Safety Inspection – Twelve Mile Dam, Three Mile Dam and Glynmill Pond Dam*, Hatch Mott MacDonald, June 29, 2009.
- *Dam Safety Study: Dams on Corner Brook Stream*, AMEC E&C Services Limited, July 10, 2001.

were reviewed.

The background data review task of this project also included a field reconnaissance visit to the subject watercourses to:

- assess existing watercourse and floodplain conditions
- assess deviations from available mapping
- identify potential flood damage zones
- facilitate initial data collection and photography of watercourse crossings
- create a photo database of the subject areas designated for flood plain preparation (where relevant photos were linked to specific locations in the HEC-RAS dataset)

Given the late start to the project an adjustment to project staffing for the field reconnaissance component was adopted requiring staff to work in pairs to mitigate increased safety risk in the field. Some locations to be visited relevant to the study are remote and, at times, access conditions can be considered dangerous. In sheltered locations, a danger due to slips and falls was possible due to frost and ice forming overnight. Safety for our field staff was our primary concern in the successful completion of this component of the project work. The late start required efficient use of personnel and could have been more significantly hampered by bad weather if it had occurred.

Hydro-meteorological data was obtained from Water survey of Canada for a number of stream gauges in the Corner Brook Area including those in the Corner Brook Stream Watershed. The gauges located in the Corner Brook Stream Watershed are located downstream of controlled locations (dams). As such nearby streamflow stations measuring flow in natural watersheds were also collected. Data from these stations was pro-rated by watershed area for use in the Petrie's Brook Watershed. Single site frequency analysis was completed for these gauges as a means of generating comparative data to support hydrologic modeling. Gauge data reviewed for this project included the following locations:

Station Name	Station ID	Latitude Longitude	Data Type	Available Data Record	Drainage Area (km^2)
Corner Brook Area					
Corner Brook at Watson's Brook Powerhouse	02YL002	48°55'26'' N 57°54'11'' W	Flow	1959 – 2010 (51 years)	127.0
South Brook at Pasadena	02YL004	49°0'44'' N 57°36'41'' W	Flow	1983 – 2010 (28 years)	58.5
Rattler Brook Near McIvers	02YL005	49°3'29'' N 58°6'18'' W	Flow	1985 – 2010 (26 years)	17.0
Corner Brook Lake at Lake Outlet	02YL009	48°50'55'' N 57°51'7'' W	Level	1990 – 2010 (20 years)	65.3[1]
Copper Pond Brook Near Corner Brook Lake	02YL011	48°48'23'' N 57°47'1'' W	Flow	1995 – 2010 (16 years)	12.9
Goulds / Petty Harbour Area					
Petty Harbour River at Second Pond	02ZM001	47°27'27" N 52°43'47" W	Flow	1962 – 2010 (49 years)	134.0
Raymond Brook at Outlet of Bay Bulls Big Pond	02ZM022	47°25'12" N 52°48'2" W	Flow	1988 – 2010 (23 years)	n/a

NOTES:

1. Drainage area not available from Water Survey of Canada, estimated from available mapping.

Starting water surface elevation data was obtained from tidal data compiled by the Canadian Hydrographic Service. Further, the climate change assessment (sea level rise) completed for the Flood Risk and Vulnerability Analysis Project was reviewed and integrated, as applicable, to increase starting water levels for future scenario hydraulic modeling.

The driving function for hydrological computations is precipitation. Conveniently, the Environment Canada weather station (#8403506) at St. John's International Airport lies a short distance to the north of the study area and provides estimates of return frequency rainfall for return periods from 2 year through 100 year (including 20 year). The current IDF data for this gauge is dated 2010/04/13 although the available time series reflects the period 1949 – 1996. This station data is being used to support hydrologic modeling for the Petty Harbour River.

A weather station with published IDF data is not available specifically for the Corner Brook study area. IDF data is available, however, for weather stations at Stephenville Airport (#8403800 with a period of record from 1966 - 2007) to the south west of this study area and Deer Lake (#8401501 with a period of record from 1966 - 2002) to the north east. The current data available at these stations is dated 2010/04/13.

Future projected IDF relationships were also developed these stations. Previous reports (such as that completed for Stephenville) used the current IDF relationship to develop design rainfall for future periods generally by applying the alternating block methodology using future estimated rainfall totals in conjunction with the current IDF relationship. The future IDF relationships developed for this project clearly indicate that the IDF relationship changes in future time periods. Use of the projected IDF relationships provides a means of capturing the changing nature of rainfall over the subject watersheds and its impact on flooding.

2. Task 2: Identification of Flood Event Initiators

Historical flood events occurring in the study watersheds, identified through the background data review, were evaluated to assess the critical flood generating influences. The Flood Events Inventory identified the following:

- Petrie's Brook/Petries/Pleasant Cove – 1 event (rainfall+snowmelt)
- Corner Brook – 41 events (31 rainfall / 1 ice jam / 8 rainfall+snowmelt / 1 unknown)
- Petty Harbour – 5 events but all associated with Maddox Cove not the Petty Harbour River
- Goulds – 6 events (3 ice jam / 3 rainfall)

3. Task 3: Methodology Development

Hydrologic modeling is being developed using HEC-HMS and Hec-GeoHMS. Hydraulic modeling is being developed using HEC-RAS and HEC-GeoRAS. Where relevant to project objectives the use of the tools is being maximized.

4. Task 4: Acquisition of LiDAR and Ortho-photography

The development of the LiDAR data products was completed by Leading Edge Geomatics (Lincoln, NB). Acquisition of the raw data in the three subject watersheds was completed in November 201. The data products prepared for this project include:

- LiDAR for the entire study area defined by subject watershed areas
- Ortho-photography for the developed urban areas where floodplain mapping was to be produced
- All data have been received and reviewed for completeness and accuracy

The figures below illustrate the extent of the LiDAR and orthophoto data coverage across the three subject watersheds.

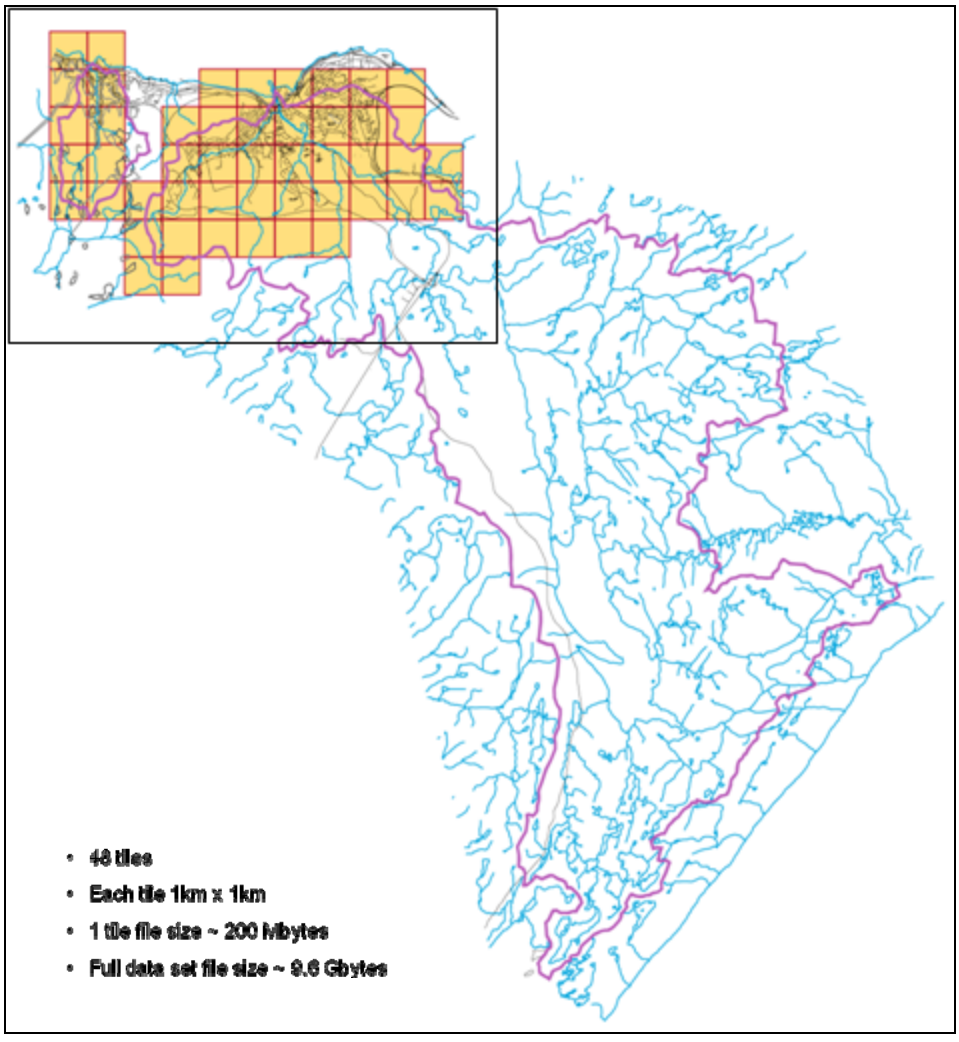

Figure 4-1 : LiDAR and Orthophoto Coverage in the Corner Brook Area

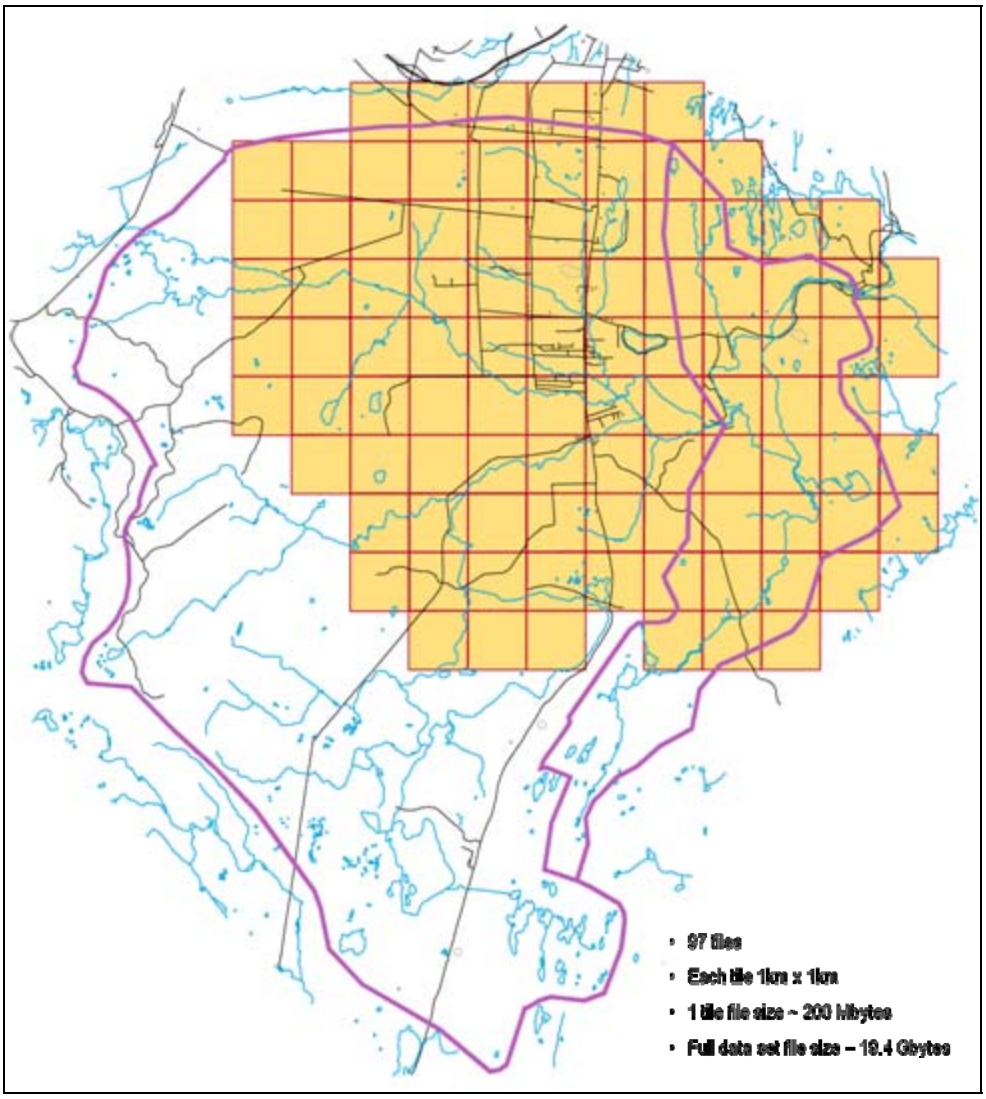

Figure 4-2 : LiDAR and Orthophoto Coverage in the Petty Harbour Watershed

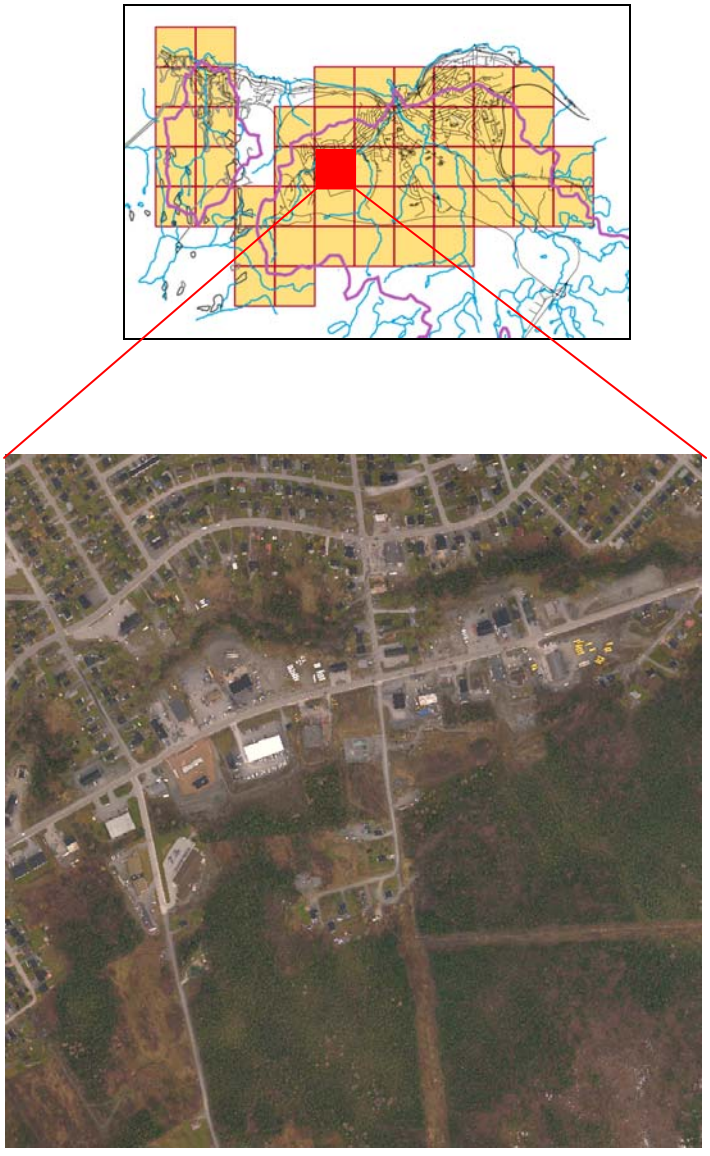

Figure 4-3 : Sample Orthophoto from the Corner Brook Area

5. Task 5: Select Computational Models

The use of non-proprietary hydrologic and hydraulic models such as HEC-HMS (v3.4, 2009) and HEC-RAS (v4.1, 2010) is required as the computational engines for this project. These programs, along with their predecessors (HEC-1 and HEC-2, respectively), have a long history of use in North America for flood plain assessments. In addition, the use of these programs for this assignment is compliant with the *'Hydrologic and Hydraulic Procedures for Flood Plain Delineation'* (Environment Canada, 1976) and the other WRMD project requirements.

6. Task 6: Field Data Collection Program

A field data collection program was developed focused on collection of the following information:

- Survey of hydraulic structures including upstream and downstream natural watercourses sections
- Photographic survey of hydraulic and other relevant watercourse features
- Water level and flow monitoring for all ponds, streams, and tributaries in the study areas
- Survey of natural watercourse sections associated with streamflow monitoring locations

Sections not associated with watercourse crossings or streamflow monitoring locations have been defined using the LiDAR data obtained for this project.

Given the late start to the project, scheduling issues with WSC staff, and winter freeze up the streamflow monitoring effort proposed for this study was not completed.

A bathymetry survey of Petty Harbour was completed using robotics technology (Clear Path Robotics) and the area downstream of the powerhouse dam. Freeze up precluded use in Corner Brook area or reservoirs on the Petty Harbour River.

The Kingfisher M100 unmanned surface vehicle (USV), see photo below, is designed for engineers, consultants and researchers who perform lengthy hydrological surveys in large, difficult to access or dangerous bodies of water. Developed in 2009 at the University of Waterloo, the first generation Kingfisher has been adopted for research at the University of Ottawa, University of Calgary, York University, MIT and Georgia Tech.

For the purposes of the this project, Clearpath mounted a Teledyne-RDI Riverray ADCP to the Kingfisher M100 USV. The ADCP is intended for collecting Depth/Bathymetric, Velocity Profile and Discharge measurements. It is rated for operability in streams, rivers, lakes, reservoirs, estuaries and irrigation canals and use cases including river hydrology, flood warning, irrigation monitoring, environmental impact studies, fishery studies and circulation studies. The Riverray ADCP is rated to deploy as float or boat mounted and specifications are as follows: 600 kHz, 1-2Hz data output rate, 10cm profile resolution, 200 cells, 0.4m minimum profiling range, 40m maximum profiling range, 16mb internal recording capability.

Kingfisher M100 Unmanned Surface Vehicle

Some specific information relevant to the three subject watersheds is provided below:

Figure 6-1 : Corner Brook Stream Field Program Schematic

Corner Brook Stream

- Identified 31 structures initially from 1:50000 NTS topographic maps
- 27 structures were confirmed in the field to exist
- 1 structure was field confirmed as non-existent
- 2 structures could not be accessed due to private property or safety concerns
- 5 additional structured were identified in the field and surveyed
- A total of 32 structures were surveyed along with 4 open water sections

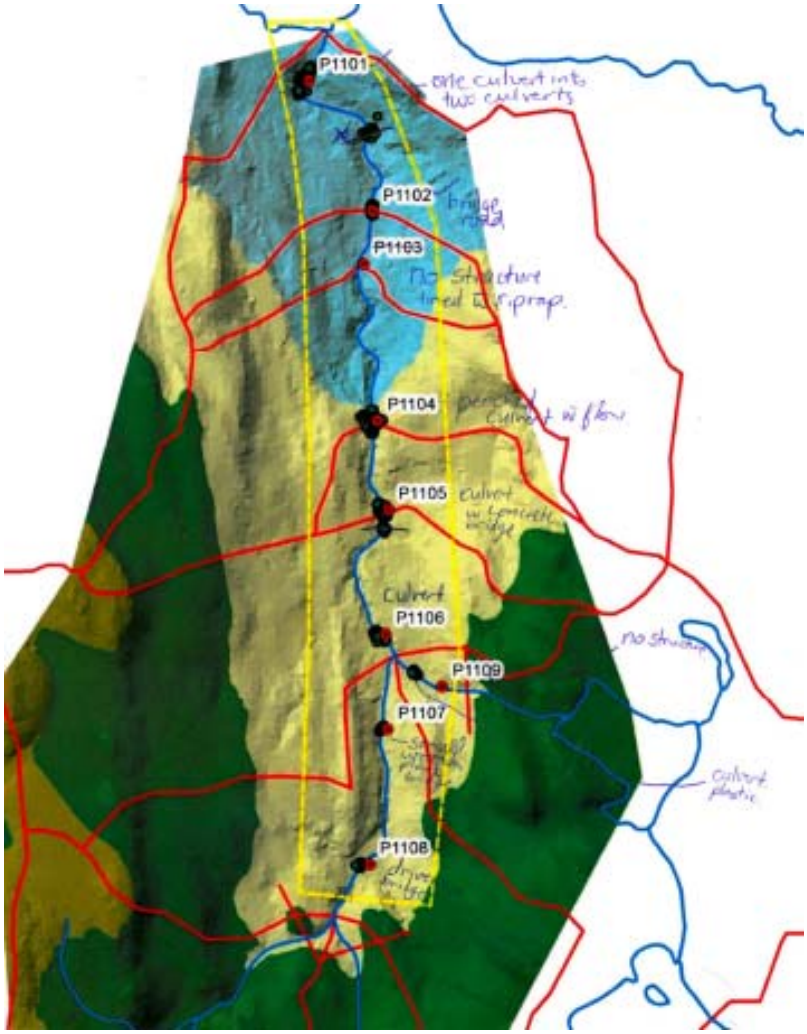

Figure 6-2 : Petrie's Brook Field Program Schematic

Petrie's Brook

- Identified 9 structures initially from 1:50000 NTS topographic maps
- 8 structures were confirmed in the field to exist
- 1 structure was field confirmed as non-existent
- All structures planned for survey were accessible
- No additional structures were identified in the field
- A total of 8 structures were surveyed along with 2 open water sections

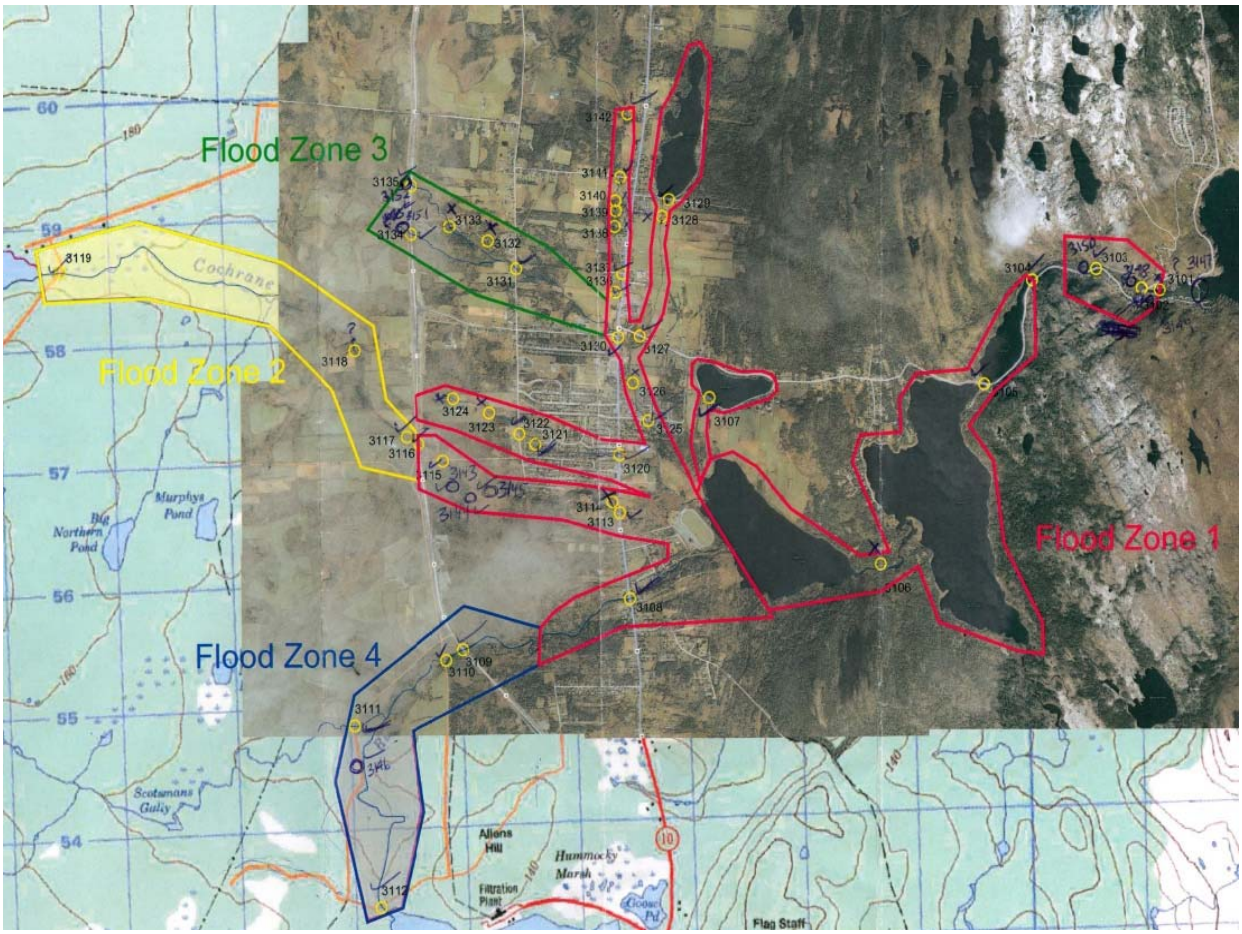

Figure 6-3 : Petty Harbour River Field Program Schematic

Petty Harbour River

- Identified 42 structures initially from 1:50000 NTS topographic maps
- 29 structures were confirmed in the field to exist
- 6 structure was field confirmed as non-existent
- 7 structures could not be accessed due to private property or safety concerns
- 10 additional structures were identified in the field
- A total of 39 structures were surveyed along with 14 open water sections

7. Task 7: Data Gap Filling

Data gaps were identified in the following areas:

- No as-built data available from municipalities for crossings. This gap was mitigated by in-field structure survey as required to support hydraulic modeling

- Minimal stage-storage-discharge data available from dam owners. This gap was mitigated by obtaining design or as-built drawings of the structures from the dam owners. These drawings, along with the available topographic map data, supported calculation of rating curve data.
- No large scale (e.g., 1:2500) topographic information was available for the hydraulic study area for the Petty Harbour River (i.e., areas designated for flood plain mapping). The City of St. John's has been contacted to obtain large scale municipal topographic (vector) information as a means of mitigating this gap.
- As noted in Section 6, a number of structures were located in the field within the area designated for flood plain map development that could not be accessed. It is planned to mitigate this gap by modeling an adjacent structure (mimicking one upstream or downstream of the location, that could not be accessed, adjusted for stream elevation.

8. References

Vasseur and Catto, 2008 — Vasseur, L. and Catto, N. (2008): Atlantic Canada; *in* From Impacts to Adaptation: Canada in a Changing Climate 2007, *edited by* D.S. Lemmen, F.J. Warren, J. Lacroix and E. Bush; Government of Canada, Ottawa, ON, p. 119-170.

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LiDAR PROGRAM ACCURACY REPORT

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LiDAR data was collected by Leading Edge Geomatics Limited (LEGEO - Lincoln, New Brunswick) providing full coverage for the two subject watersheds. LEGEO used a Riegl LMS-680ii Airborne Scanner. This system makes use of a powerful laser source with multiple-time-around (MTA) processing and digital full waveform analysis. This combination allows for the operation at varying flight altitudes and is ideally suited for aerial survey of complex terrain. The LIDAR system was stabilized with the Applanix Position and Orientation system model 410.

The data deliverables from this effort were:

- Bare Earth DEM in both DWG and ESRI Grid format
  - Absolute Elevation precision : +/-15cm RMSEz
  - Horizontal accuracy 50cm RMSExy
  - Data collection density - 1 point per square meter
- Accuracy Report (provided in Appendix I)
- Tile Index
- Orthophotography was collected at a resolution of 15cm for the developed urban areas where floodplain mapping was to be produced.

Data collection in the Corner Brook study area was completed during the week of November 7, 2011.

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Corner Brook Area LiDAR Data Quality Report

Date: 1/5/2012 10:06:47 AM
Mode: Nearest Neighbour
Control Listing: H:\CORNERBROOK_DSM\CONTROL\CornerBrook_ENH_CGVD28_HT2_NAD83(CSRS)_MTM3_FINAL.txt
Search Radius: 1
ZDiffCutOff: 1
Mean Value: .03917
Standard Deviation: .038275
RMS Value: .054765
NSSDA AccuracyZ :.10734

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L07_60m	0.394	35	0.100	5	351683.1	5413151	365.97	351683.3	5413152	366.0699	0	0.23	0.32
L07_90m	0.392	307	0.020	6	351712.7	5413156	364.75	351712.4	5413157	364.7699	0	0.31	0.24
L07_120m	0.134	257	-0.030	9	351742.4	5413160	364.84	351742.3	5413160	364.81	0	0.13	0.03
L07_150m	0.162	158	0.010	5	351770.6	5413150	363.26	351770.7	5413150	363.2699	0	0.06	0.15
L07_180m	0.432	95	0.010	3	351797.3	5413137	361.43	351797.8	5413137	361.44	0	0.43	0.04
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LAS File: ground_348000_5419000.LAS

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L11_60m	0.279	14	-0.050	6	348632.3	5419635	253.15	348632.4	5419636	253.1	0	0.07	0.27
L11_90m	0.255	205	0.020	7	348608.4	5419653	253.03	348608.3	5419653	253.05	0	0.11	0.23
L11_120m	0.255	48	-0.010	9	348584.5	5419671	252.88	348584.7	5419672	252.87	0	0.19	0.17
L11_150m	0.39	50	-0.030	6	348560.7	5419690	252.73	348561	5419690	252.7	0	0.3	0.25
L11_180m	0.143	347	0.030	5	348536.6	5419707	252.53	348536.6	5419707	252.56	0	0.03	0.14
L11_210m	0.41	46	-0.020	8	348512.6	5419725	252.42	348512.9	5419726	252.4	0	0.3	0.28

LAS File: ground_347000_5421000.LAS

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L06_60m	0.474	341	0.020	7	347122.5	5421135	181.94	347122.4	5421135	181.96	0	0.15	0.45
L06_90m	0.211	264	-0.040	8	347149.8	5421123	183.13	347149.6	5421122	183.09	0	0.21	0.02
L06_120m	0.32	359	-0.010	7	347177.1	5421110	184.42	347177.1	5421111	184.4099	0	0	0.32
L06_150m	0.33	345	-0.040	7	347204.4	5421098	185.67	347204.3	5421098	185.6299	0	0.08	0.32
L06_180m	0.477	99	0.010	7	347231.6	5421086	186.89	347232.1	5421086	186.9	0	0.47	0.08
L06_210m	0.37	91	0.000	9	347258.9	5421073	188.09	347259.3	5421073	188.09	0	0.37	0.01

LAS File: ground_346000_5422000.LAS

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2	0.478	109	-0.010	3	346060.8	5422750	71.98	346061.3	5422750	71.97	0	0.45	0.16
3	0.608	313	-0.080	4	346063.3	5422823	67.7	346062.8	5422824	67.62	0	0.44	0.42
4	0.163	317	0.050	11	346237	5422522	81.67	346236.9	5422522	81.72	0	0.11	0.12

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6	0.155	14	-0.030	6	345898.4	5422908	53.42	345898.5	5422908	53.39	0	0.04	0.15
7	0.661	356	-0.120	3	345907.1	5422412	90.05	345907.1	5422413	89.93	0	0.04	0.66
29	0.272	323	0.000	7	345857	5422579	78.97	345856.9	5422580	78.97	0	0.16	0.22
30	0.304	207	-0.010	3	345956	5422791	70.68	345955.9	5422791	70.67	0	0.14	0.27

LAS File: ground_343000_5421000.LAS

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L14_30m	0.356	231	-0.030	5	343292.7	5421268	219.7	343292.4	5421268	219.67	0	0.28	0.22
L14_60m	0.526	188	-0.030	6	343321.6	5421260	219.81	343321.5	5421260	219.78	0	0.08	0.52
L14_90m	0.12	311	0.000	7	343350.6	5421252	219.84	343350.5	5421252	219.84	0	0.09	0.08
L14_120m	0.431	315	0.010	8	343379.4	5421244	219.96	343379.1	5421244	219.97	0	0.3	0.31
L14_150m	0.408	107	0.010	6	343408.3	5421236	220.1	343408.7	5421236	220.11	0	0.39	0.12
L14_180m	0.228	336	0.000	6	343437.1	5421228	220.29	343437.1	5421228	220.29	0	0.09	0.21
L14_210m	0.478	37	-0.010	5	343466	5421220	220.56	343466.3	5421220	220.55	0	0.29	0.38
19	0.339	224	0.000	4	343104.1	5421473	223.34	343103.8	5421472	223.34	0	0.24	0.24
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LAS File: ground_342000_5422000.LAS

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9	0.324	261	-0.070	6	342492.7	5422210	161.38	342492.4	5422210	161.31	0	0.32	0.05
11	0.273	203	-0.030	6	342607	5422296	148.8	342606.9	5422296	148.77	0	0.11	0.25
12	0.394	207	0.020	7	342682.6	5422188	158.37	342682.4	5422188	158.39	0	0.18	0.35

LAS File: ground_342000_5421000.LAS

PntNo	Dist	Ang	DZ	#Hits	X-Value	Y-Value	Z-Value	LAS-X	LAS-Y	LAS-Z	File-ID	dX	dY
10	0.422	216	0.000	3	342314.1	5421805	196.34	342313.9	5421805	196.34	0	0.25	0.34
15	0.286	347	-0.120	5	342948.8	5421767	194.88	342948.7	5421767	194.7599	0	0.06	0.28
16	0.331	185	0.000	4	342644.9	5421583	174.67	342644.8	5421583	174.67	0	0.03	0.33
17	0.448	299	0.020	7	342723	5421467	189.83	342722.7	5421467	189.8499	0	0.39	0.22
21	0.041	13	0.050	3	342485.4	5421687	176.41	342485.4	5421687	176.46	0	0.01	0.04
28	0.3	216	0.050	5	342727.5	5421912	170.88	342727.3	5421911	170.93	0	0.18	0.24
18	0.23	325	0.000	5	342931.2	5421398	206.97	342931	5421398	206.97	0	0.13	0.19

LAS File: ground_340000_5424000.LAS

PntNo	Dist	Ang	DZ	#Hits	X-Value	Y-Value	Z-Value	LAS-X	LAS-Y	LAS-Z	File-ID	dX	dY
22	0.351	274	0.000	2	340424.6	5424039	90.59	340424.3	5424039	90.59	0	0.35	0.03
27	0.64	345	-0.100	3	340390.8	5424155	85.6	340390.7	5424156	85.5	0	0.16	0.62

LAS File: ground_340000_5423000.LAS

PntNo	Dist	Ang	DZ	#Hits	X-Value	Y-Value	Z-Value	LAS-X	LAS-Y	LAS-Z	File-ID	dX	dY
23	0.786	348	-0.080	2	340350.1	5423882	86.66	340350	5423883	86.5799	0	0.16	0.77
24	0.531	175	-0.080	4	340071.2	5423910	100.6	340071.2	5423909	100.5199	0	0.04	0.53
25	0.743	246	-0.150	3	340322.6	5423585	104.99	340321.9	5423585	104.84	0	0.68	0.3
26	0.153	168	-0.090	5	340218.9	5423560	103.56	340218.9	5423560	103.4699	0	0.03	0.15

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OPEN WATER SECTION PLOTS

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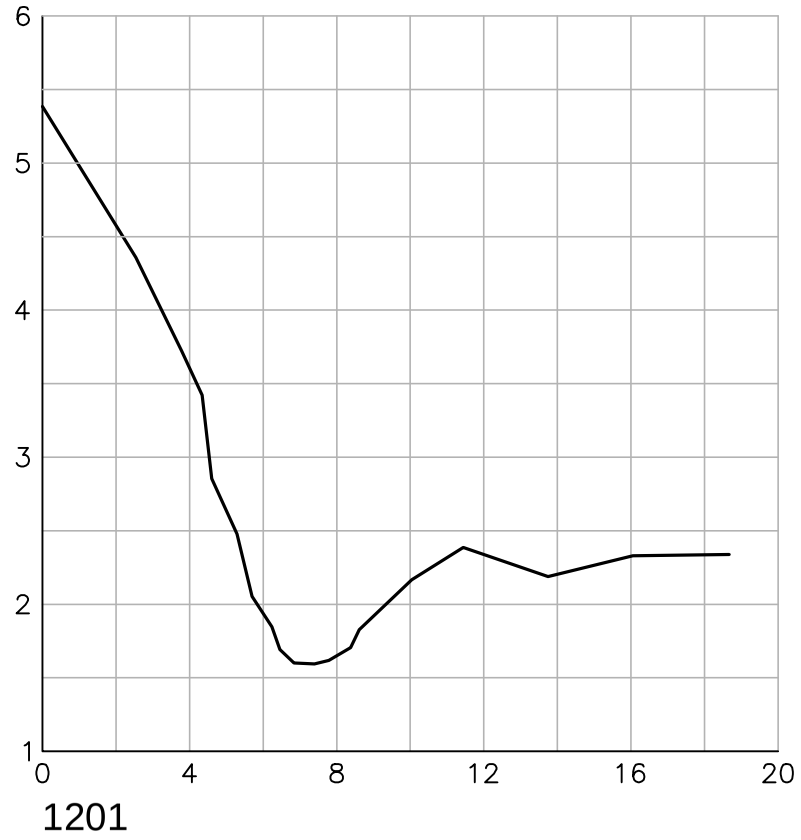

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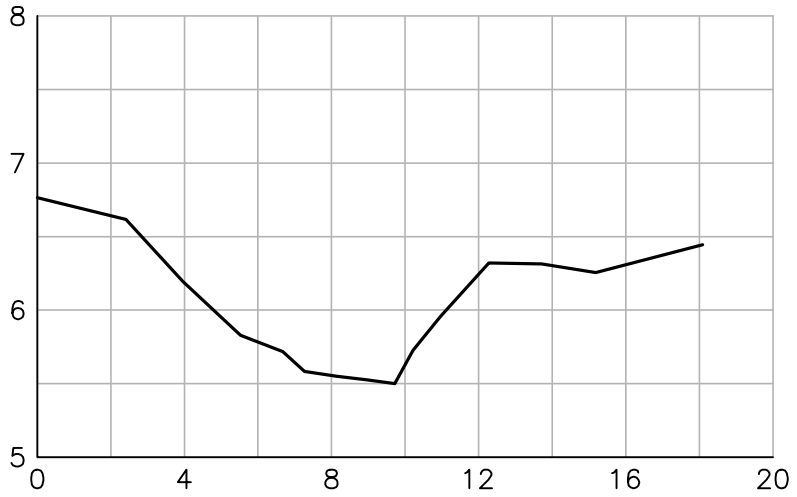

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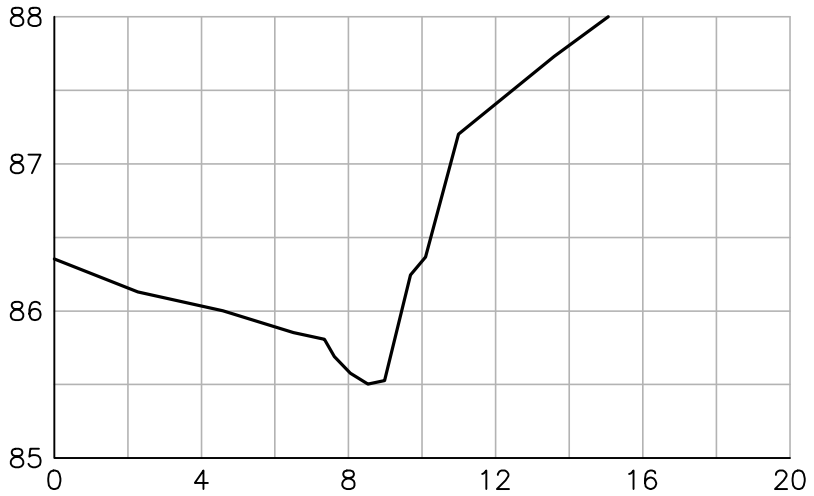

1203

Newfoundland Labrador
Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Natural River Sections
Corner Brook
Bell's Brook, Corner Brook Stream
and Petrie's Brook

amec

Scale
Vertical 1:50
Horizontal 1:200

Sheet 1 of 3

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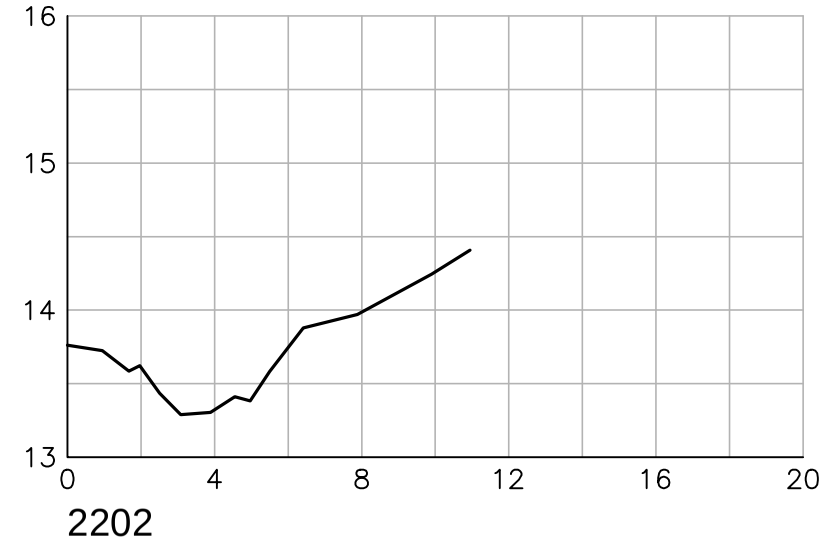

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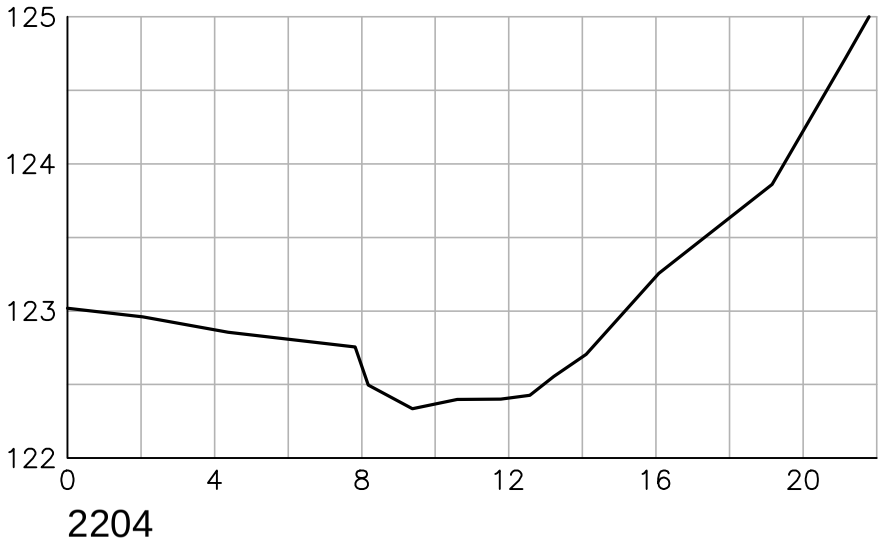

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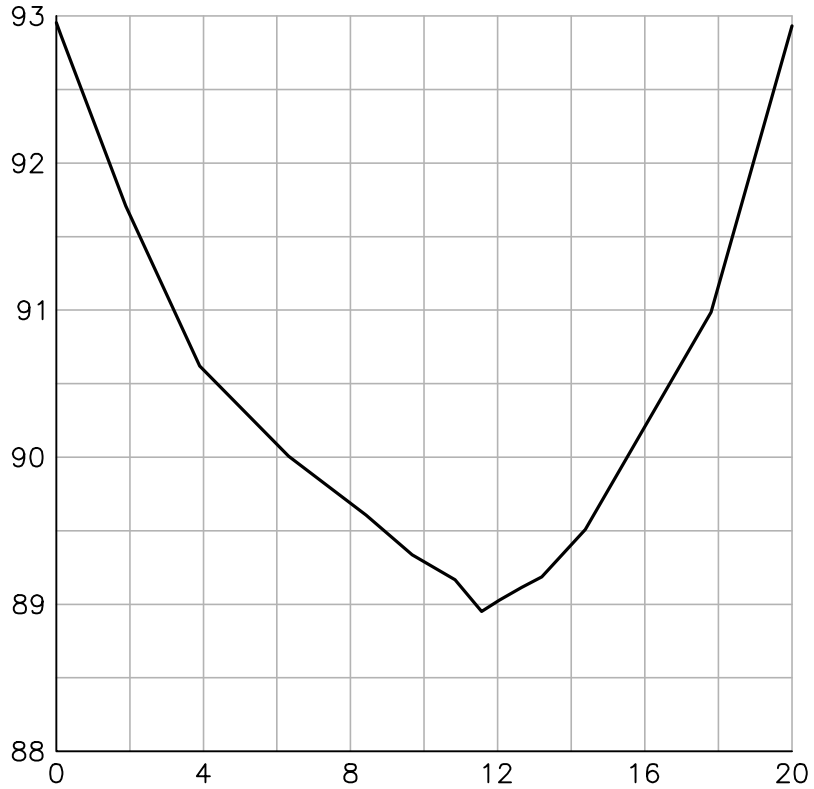

2203

Newfoundland Labrador
Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Natural River Sections
Corner Brook
Bell's Brook, Corner Brook Stream
and Petrie's Brook

amec

Scale
Vertical 1:50
Horizontal 1:200

Sheet 2 of 3

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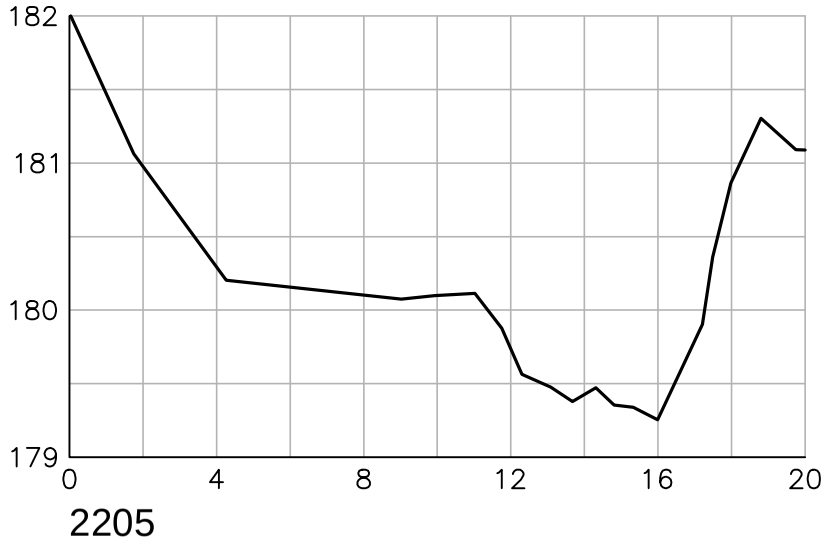

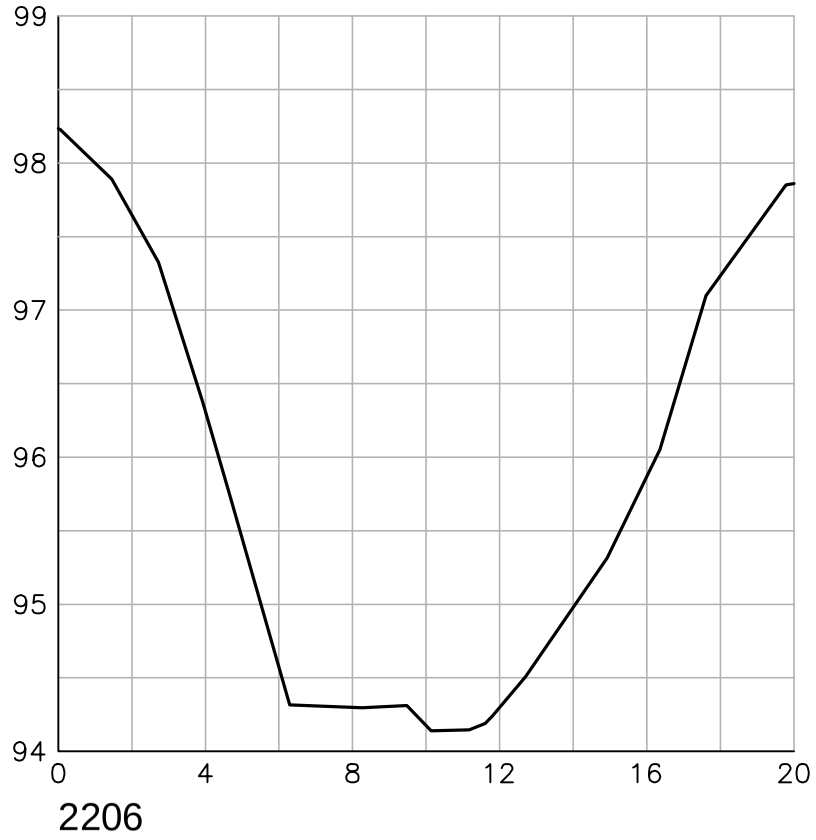

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Department of Environment and Conservation
Water Resource Management Division

Hydrotechnical Study of Corner Brook and Goulds\Petty Harbour

Natural River Sections
Corner Brook
Bell's Brook, Corner Brook Stream
and Petrie's Brook

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Scale
Vertical 1:50
Horizontal 1:200

Sheet 3 of 3

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APPENDIX M

DAM INFORMATION

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Corner Brook Lake Dam

(also known as Twelve Mile Dam)

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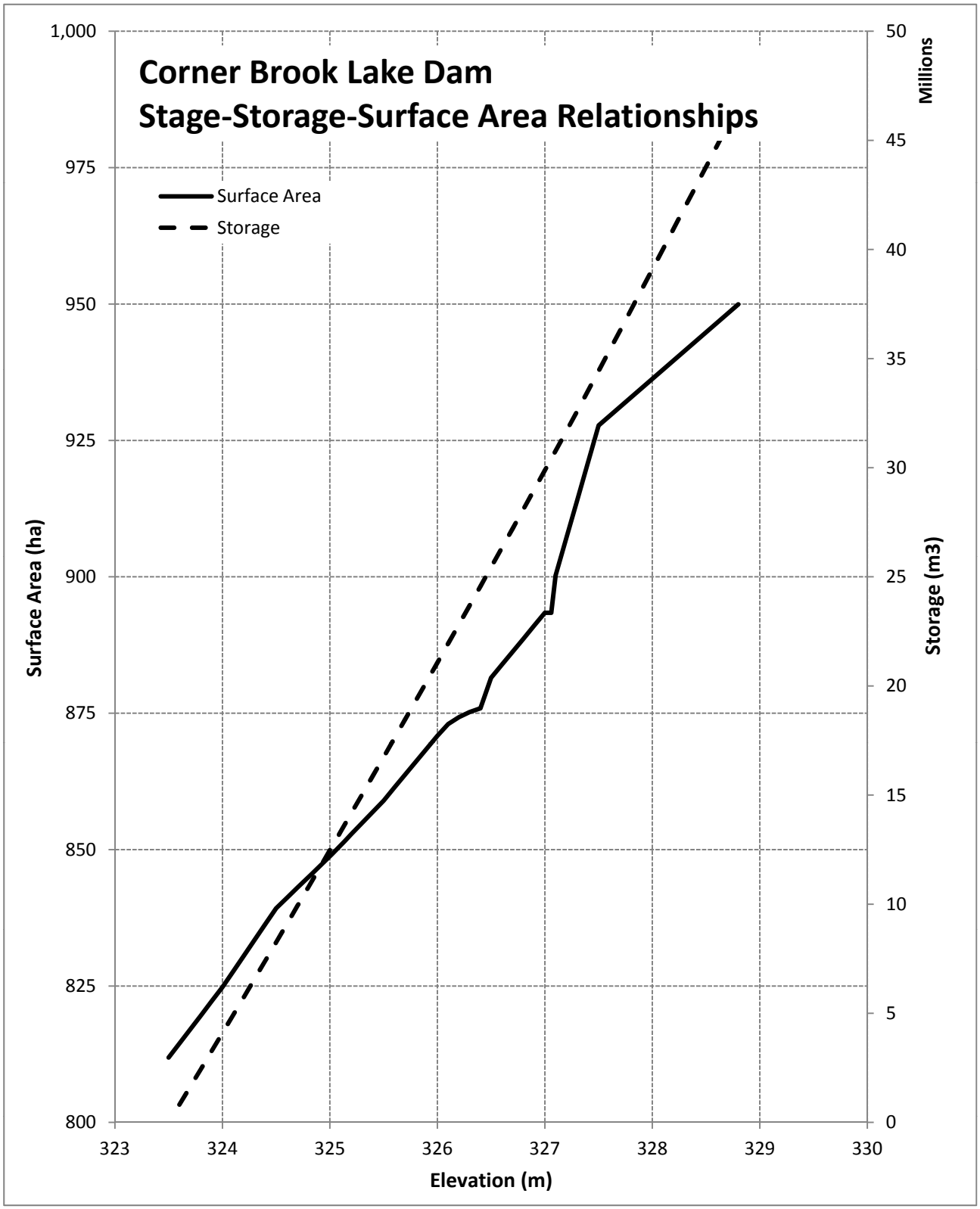
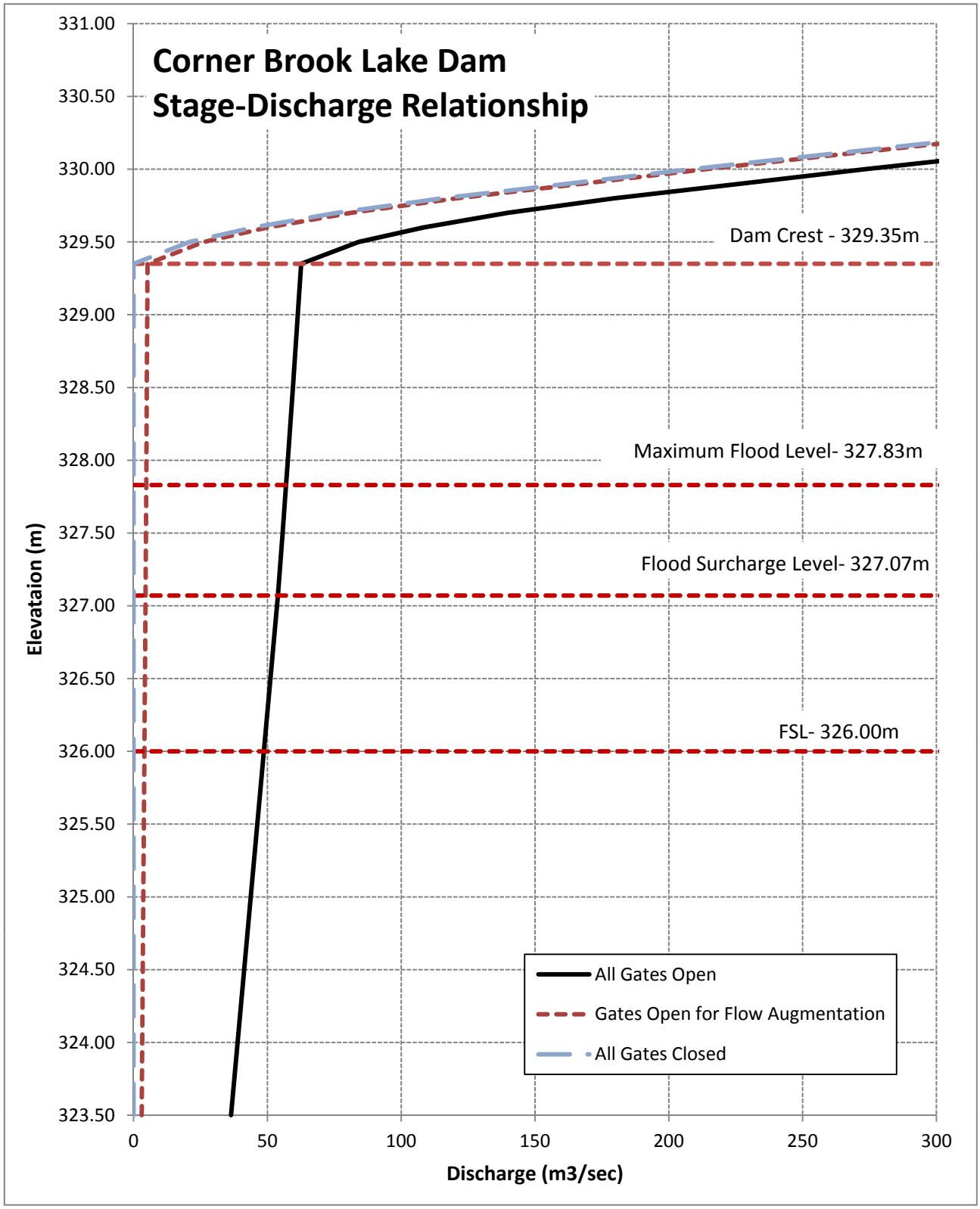

Corner Brook Lake Dam
Stage-Storage-Surface Area Relationships
Surface Area
Storage
Surface Area (ha)
Storage (m3)
Millions
Elevation (m)
1,000
975
950
925
900
875
850
825
800
50
45
40
35
30
25
20
15
10
5
0
323
324
325
326
327
328
329
330


Corner Brook Lake Dam
Stage-Discharge Relationship
Dam Crest - 329.35m
Maximum Flood Level- 327.83m
Flood Surcharge Level- 327.07m
FSL- 326.00m
All Gates Open
Gates Open for Flow Augmentation
All Gates Closed
Elevation (m)
Discharge (m3/sec)
331.00
330.50
330.00
329.50
329.00
328.50
328.00
327.50
327.00
326.50
326.00
325.50
325.00
324.50
324.00
323.50
0
50
100
150
200
250
300

Corner Brook Lake Dam

- no free overflow spillway component to dam
- two sluice gates (1.83m x 1.83m) with invert elevation 320.51m
- Dam - crest elevation = 329.35m / length = 250m

Operational Scenario #1

Corner Brook Lake Dam Stage Discharge Rating Curve – Operational Scenario #1 All Gates Closed			
Elevation (m)	**via sluice gate**	**Over Dam**	**Total Flow**
323.5	0	0	0
327.06	0	0	0
327.5	0	0	0
327.83	0	0	0
328	0	0	0
328.5	0	0	0
329	0	0	0
329.35	0	0	0
329.5	0	20.93	20.93
329.6	0	44.86	44.86
329.7	0	76.02	76.02
329.8	0	115.41	115.41
329.9	0	162.14	162.14
330	0	208.31	208.31
330.1	0	258.19	258.19
330.2	0	308.26	308.26

Operational Scenario #2

Corner Brook Lake Dam Stage Discharge Rating Curve – Operational Scenario #2 All Gates Open			
Elevation (m)	**via sluice gate**	**Over Dam**	**Total Flow**
323.5	36.42	0	36.42
327.06	53.90	0	53.90
327.5	55.68	0	55.68
327.83	56.98	0	56.98
328	57.64	0	57.64
328.5	59.53	0	59.53
329	61.36	0	61.36
329.35	62.62	0	62.62
329.5	63.14	20.93	84.07
329.6	63.49	44.86	108.35
329.7	63.84	76.02	139.86
329.8	64.19	115.41	179.60
329.9	64.53	162.14	226.67
330	64.88	208.31	273.19
330.1	65.22	258.19	323.41
330.2	65.56	308.26	373.82

Operational Scenarios #3

Corner Brook Lake Dam **Stage Discharge Rating Curve – Operational Scenario #3** Gates open to support downstream flow augmentation (opened 6” only)			
Elevation (m)	**via sluice gate**	**Over Dam**	**Total Flow**
323.5	3.03	0	3.03
327.06	4.49	0	4.49
327.5	4.64	0	4.64
327.83	4.75	0	4.75
328	4.80	0	4.80
328.5	4.96	0	4.96
329	5.11	0	5.11
329.35	5.21	0	5.21
329.5	5.26	20.93	26.19
329.6	5.29	44.86	50.15
329.7	5.32	76.02	81.34
329.8	5.35	115.41	120.76
329.9	5.37	162.14	167.51
330	5.40	208.31	213.71
330.1	5.43	258.19	263.62
330.2	5.46	308.26	313.72

Three Mile Lake Dam

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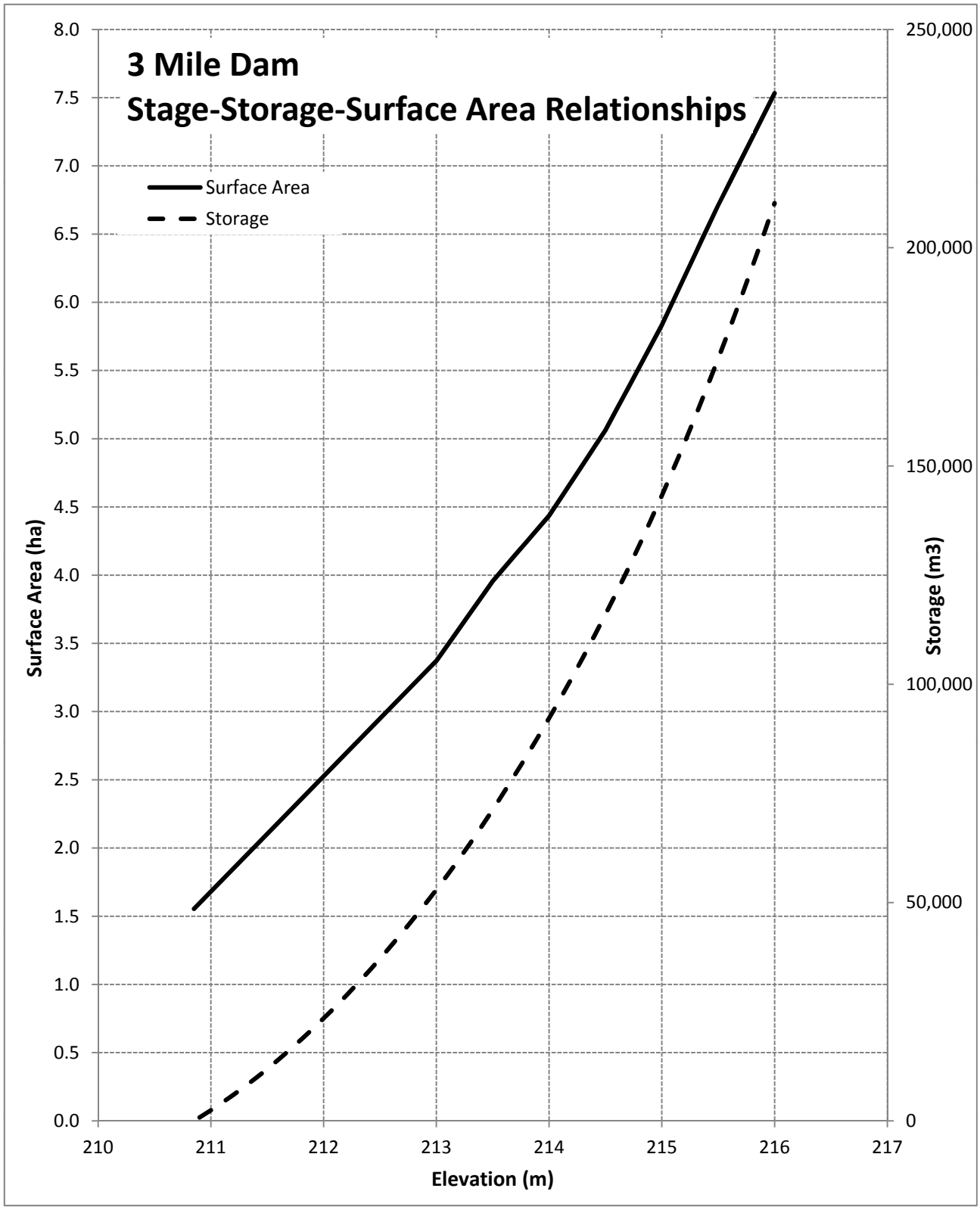
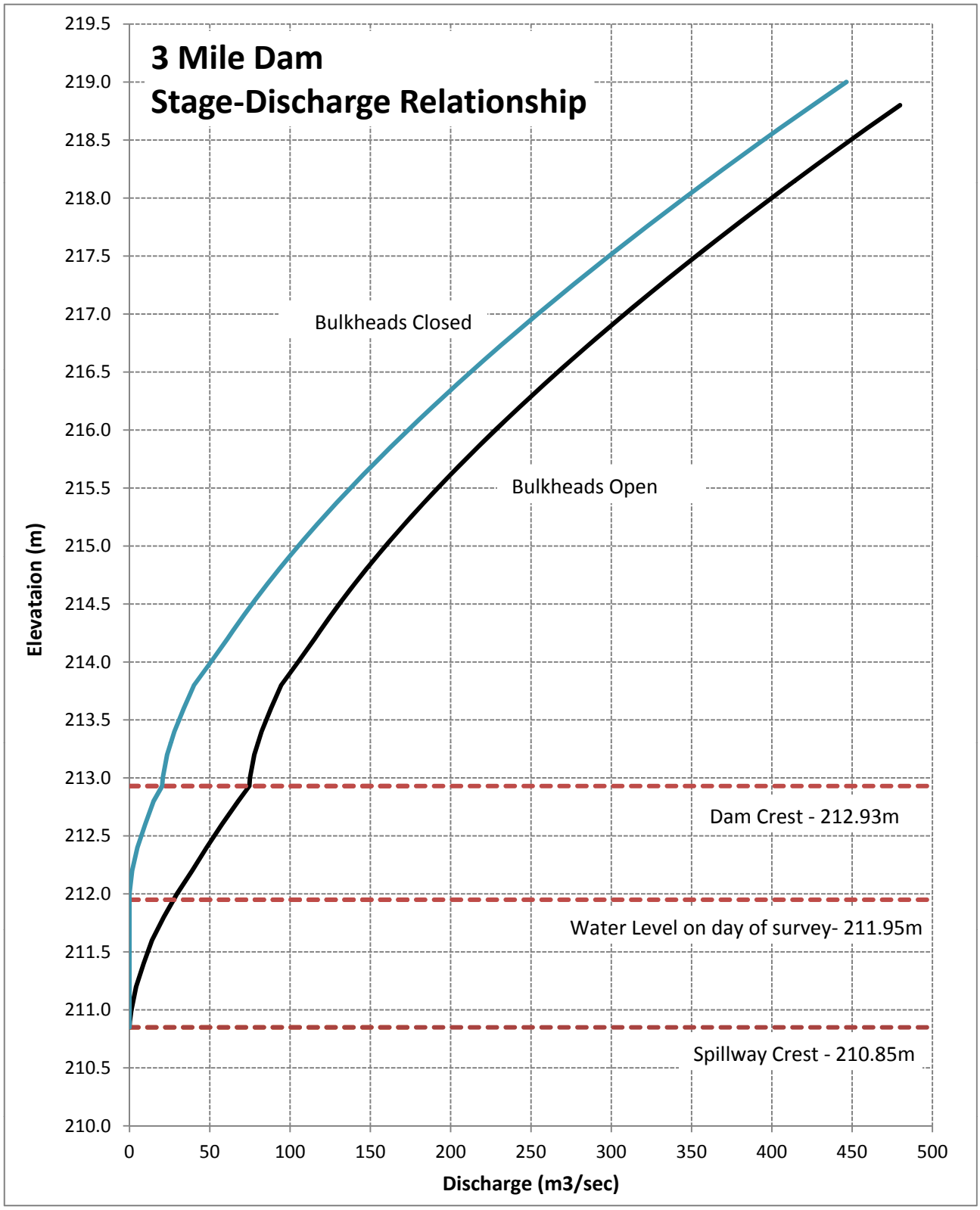

3 Mile Dam
Stage-Storage-Surface Area Relationships
Surface Area
Storage
Surface Area (ha)
Storage (m3)
Elevation (m)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
250,000
200,000
150,000
100,000
50,000
0
210
211
212
213
214
215
216
217


3 Mile Dam
Stage-Discharge Relationship
Bulkheads Closed
Bulkheads Open
Dam Crest - 212.93m
Water Level on day of survey- 211.95m
Spillway Crest - 210.85m
Elevataion (m)
Discharge (m3/sec)
219.5
219.0
218.5
218.0
217.5
217.0
216.5
216.0
215.5
215.0
214.5
214.0
213.5
213.0
212.5
212.0
211.5
211.0
210.5
210.0
0
50
100
150
200
250
300
350
400
450
500

Three Mile Dam

- Free overflow spillway based on a broad-crested weir configuration
- Spillway - crest elevation = 210.85 / length = 13.6m
- Top of Bulkhead / Full Supply Level = 212.01m
- Dam - crest elevation = 212.93 / length = 120m
- No downstream flow augmentation
- No turbine operation at Watson Brook Generating Station

Operational Scenario #1

Three Mile Dam
Stage Discharge Rating Curve – Operational Scenario #1

- Bulk heads opened during event
- Reservoir water level lowered to 210.85m (top of spillway crest)

Elevation (m)	Total Flow
210.85	0.00
210.9	0.21
211	1.14
211.2	4.12
211.4	8.80
211.6	14.01
211.8	21.29
212	29.55
212.2	39.00
212.4	47.98
212.6	57.56
212.8	67.70
212.93	74.58
213	74.98
213.2	77.71
213.4	82.24
213.6	88.14
213.8	94.43
214	104.98
214.2	115.36
214.4	125.36
214.6	136.07
214.8	147.44
215	159.44
215.2	172.03
215.4	185.19
215.6	198.89
215.8	213.12
216	227.85
216.2	243.06
216.4	258.76
216.6	274.91
216.8	291.50
217	308.53
217.2	325.99
217.4	343.86
217.6	362.13
217.8	380.80
218	399.86
218.2	419.29
218.4	439.10

218.6	459.27
218.8	479.80
219	500.69

Operational Scenario #2

Three Mile Dam
Stage Discharge Rating Curve – Operational Scenario #2

- Bulk heads closed during event – spill over top of bulkheads
- Reservoir water level at full supply level = 212.01m

Elevation (m)	Total Flow
210.85	0.00
211	0.00
211.2	0.00
211.4	0.00
211.6	0.00
211.8	0.00
212	0.00
212.2	1.62
212.4	4.92
212.6	9.77
212.8	14.99
212.93	20.29
213	20.69
213.2	23.42
213.4	27.95
213.6	33.84
213.8	40.14
214	50.68
214.2	61.07
214.4	71.07
214.6	81.78
214.8	93.15
215	105.14
215.2	117.74
215.4	130.89
215.6	144.60
215.8	158.82
216	173.55
216.2	188.77
216.4	204.46
216.6	220.61
216.8	237.21
217	254.24
217.2	271.70
217.4	289.56
217.6	307.84
217.8	326.51
218	345.56
218.2	365.00
218.4	384.81
218.6	404.98
218.8	425.51
219	446.40

Margaret Bowater Park Dam

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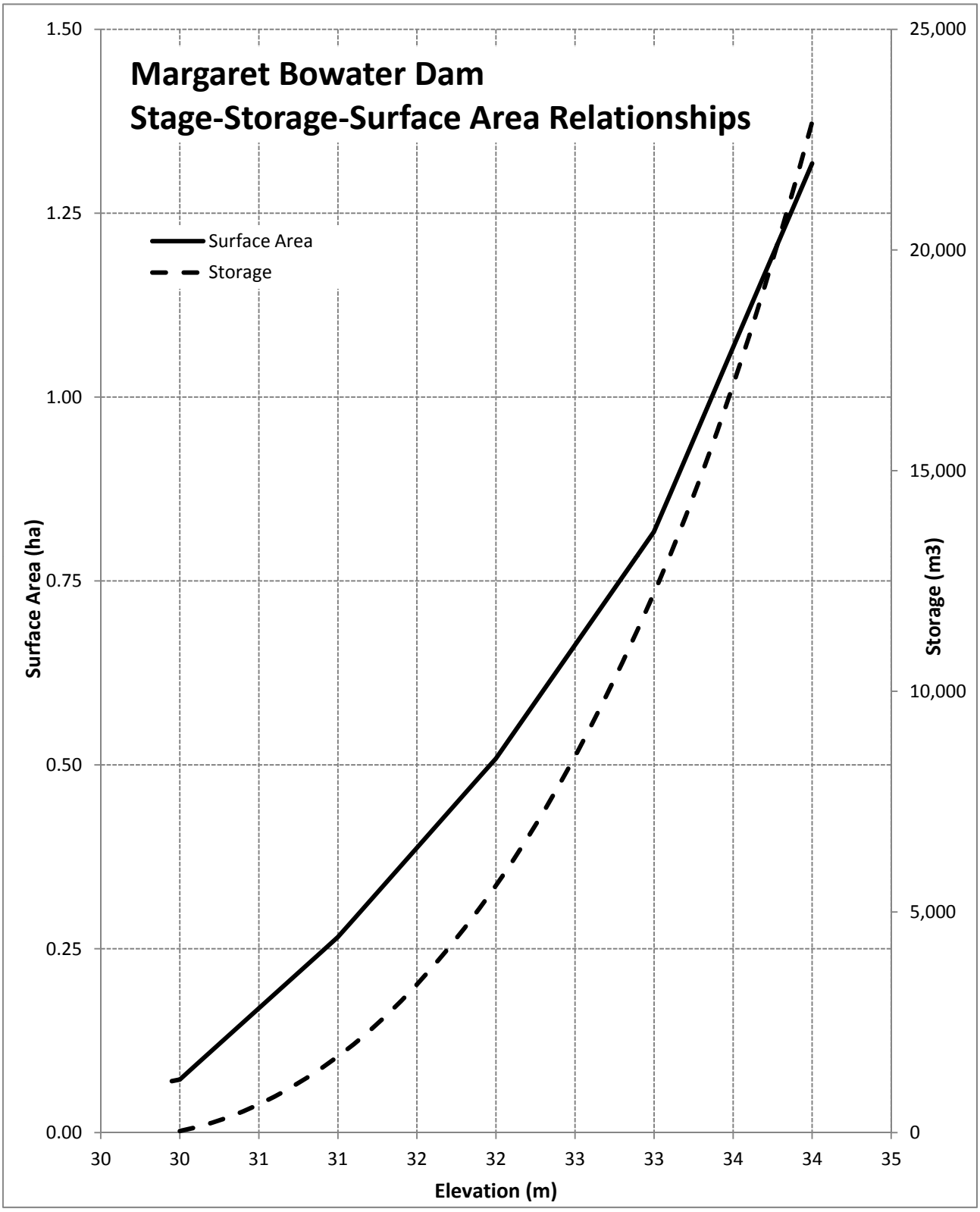
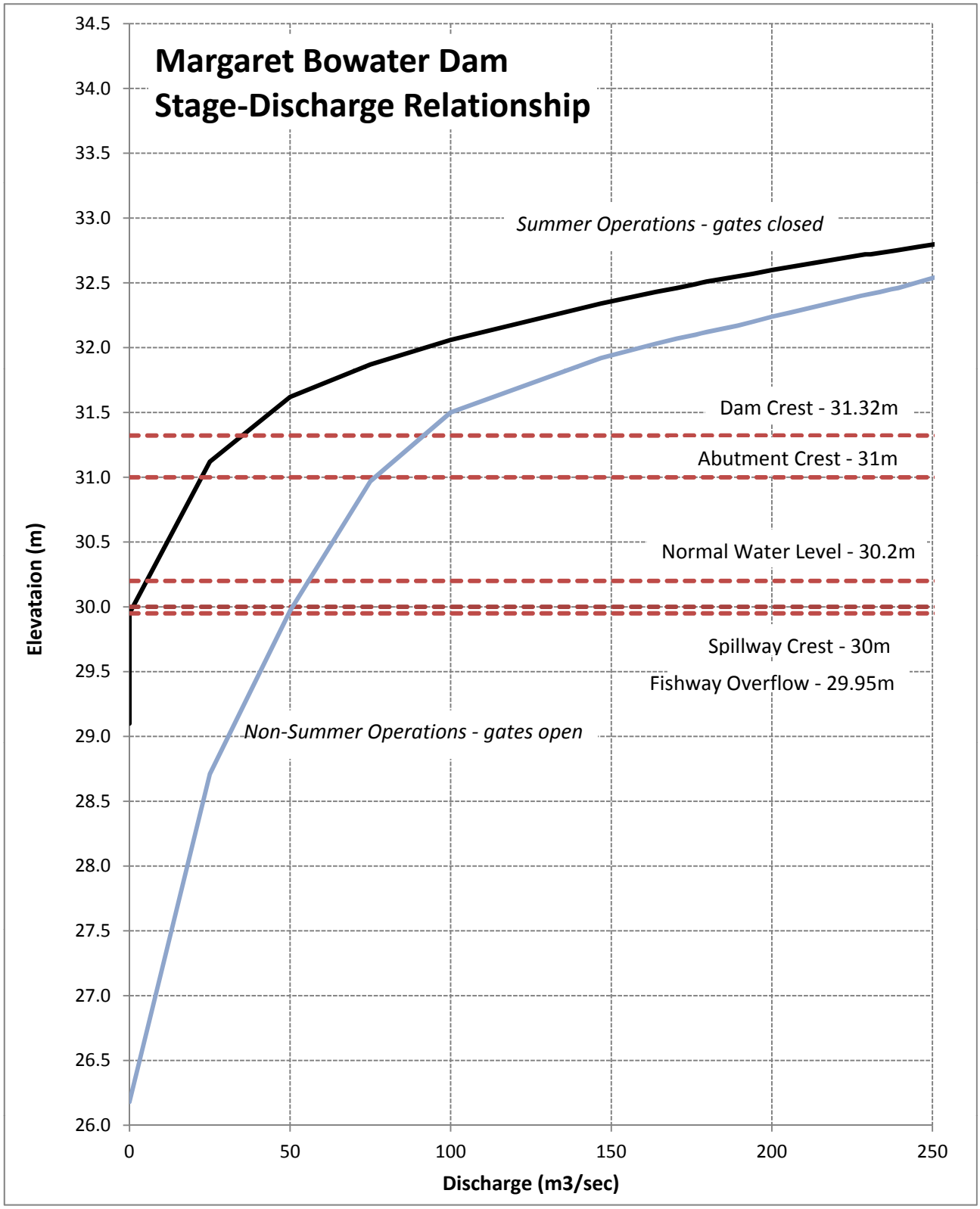

Margaret Bowater Dam
Stage-Storage-Surface Area Relationships
Surface Area
Storage
Surface Area (ha)
Storage (m3)
Elevation (m)
1.50
1.25
1.00
0.75
0.50
0.25
0.00
25,000
20,000
15,000
10,000
5,000
0
30
30
31
31
32
32
33
33
34
34
35


Margaret Bowater Dam
Stage-Discharge Relationship
Summer Operations - gates closed
Dam Crest - 31.32m
Abutment Crest - 31m
Normal Water Level - 30.2m
Spillway Crest - 30m
Fishway Overflow - 29.95m
Non-Summer Operations - gates open
Elevataion (m)
Discharge (m3/sec)
34.5
34.0
33.5
33.0
32.5
32.0
31.5
31.0
30.5
30.0
29.5
29.0
28.5
28.0
27.5
27.0
26.5
26.0
0
50
100
150
200
250

Margaret Bowater Park Dam

- Elevation correction incorporated into rating curves (+3m from as-built drawings to field survey)
- Free overflow spillway based on a broad-crested weir configuration
- Primary Spillway - crest elevation = 30.00m / length = 7.8m
- Secondary Spillway - crest elevation = 31.00m / length = 5.2m
- Fishway - crest elevation = 29.95m / length = 1.8m
- Dam - crest elevation = 31.32m

Operational Scenario #1 - Summer Operation

- All gates closed
- Normal water level = 30.2m
- No operation during extreme weather

Margaret Bowater Park Dam Stage Discharge Rating Curve – Operational Scenario #1 (Summer Operation)	
Elevation (m)	**Total Flow**
29.10	0
29.95	0
31.12	25.0
31.62	50.0
31.87	75.0
32.06	100.0
32.34	146.8
32.43	163.8
32.46	170.5
32.49	176.3
32.50	177.9
32.51	179.7
32.55	189.4
32.57	194.1
32.60	200.2
32.72	229.1
32.72	230.7
32.75	238.7
32.78	246.1
32.80	251.5
32.81	254.8
32.97	300.9
32.97	303.0
33.01	315.7
33.02	319.7
33.10	346.6
33.11	351.1
33.11	351.70
33.12	355.50
33.28	420.90
33.29	429.50
33.40	481.70
33.42	487.00
33.44	498.60
33.45	504.00

Operational Scenario #2 - Non-summer Operation

- All gates open
- Reservoir emptied to water level = 26.18m
- No operation during extreme weather

Margaret Bowater Park Dam Stage Discharge Rating Curve – Operational Scenario #1 (Non-Summer Operation)	
Elevation (m)	**Total Flow**
26.18	0.0
28.71	25.0
29.97	50.0
30.97	75.0
31.50	100.0
31.92	146.8
32.03	163.8
32.07	170.5
32.10	176.3
32.11	177.9
32.12	179.7
32.17	189.4
32.20	194.1
32.24	200.2
32.27	205.6
32.38	224.5
32.40	227.7
32.43	233.7
32.45	237.2
32.46	239.4
32.54	250.4
32.72	283.8
32.74	286.8
32.91	325.8
32.93	332.4
32.92	343.5
32.93	347.2
32.95	351.7
32.96	355.5
33.12	420.9
33.14	429.5
33.26	481.7
33.27	487.0
33.30	498.6
33.31	504.0

Glynmill Pond Dam

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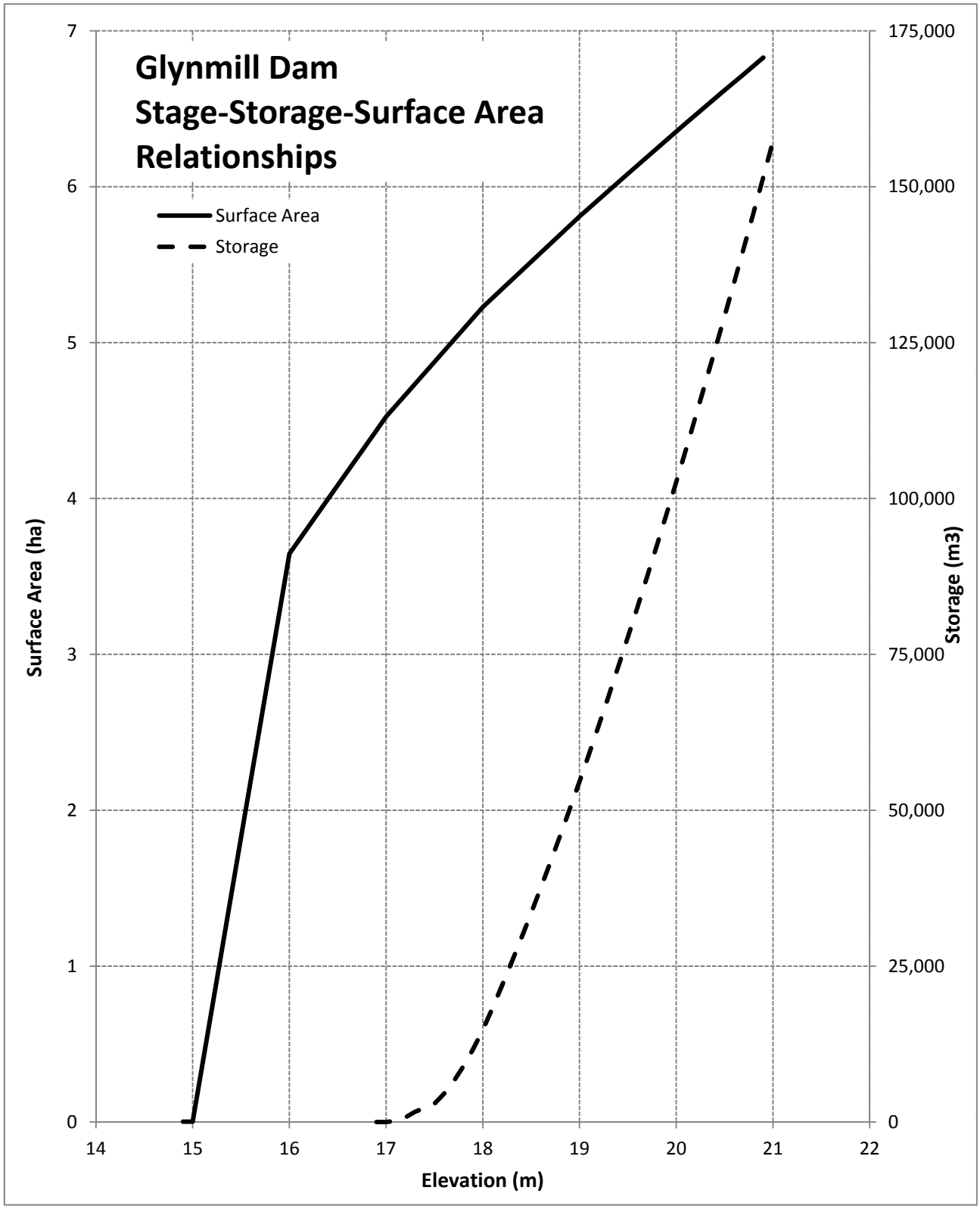
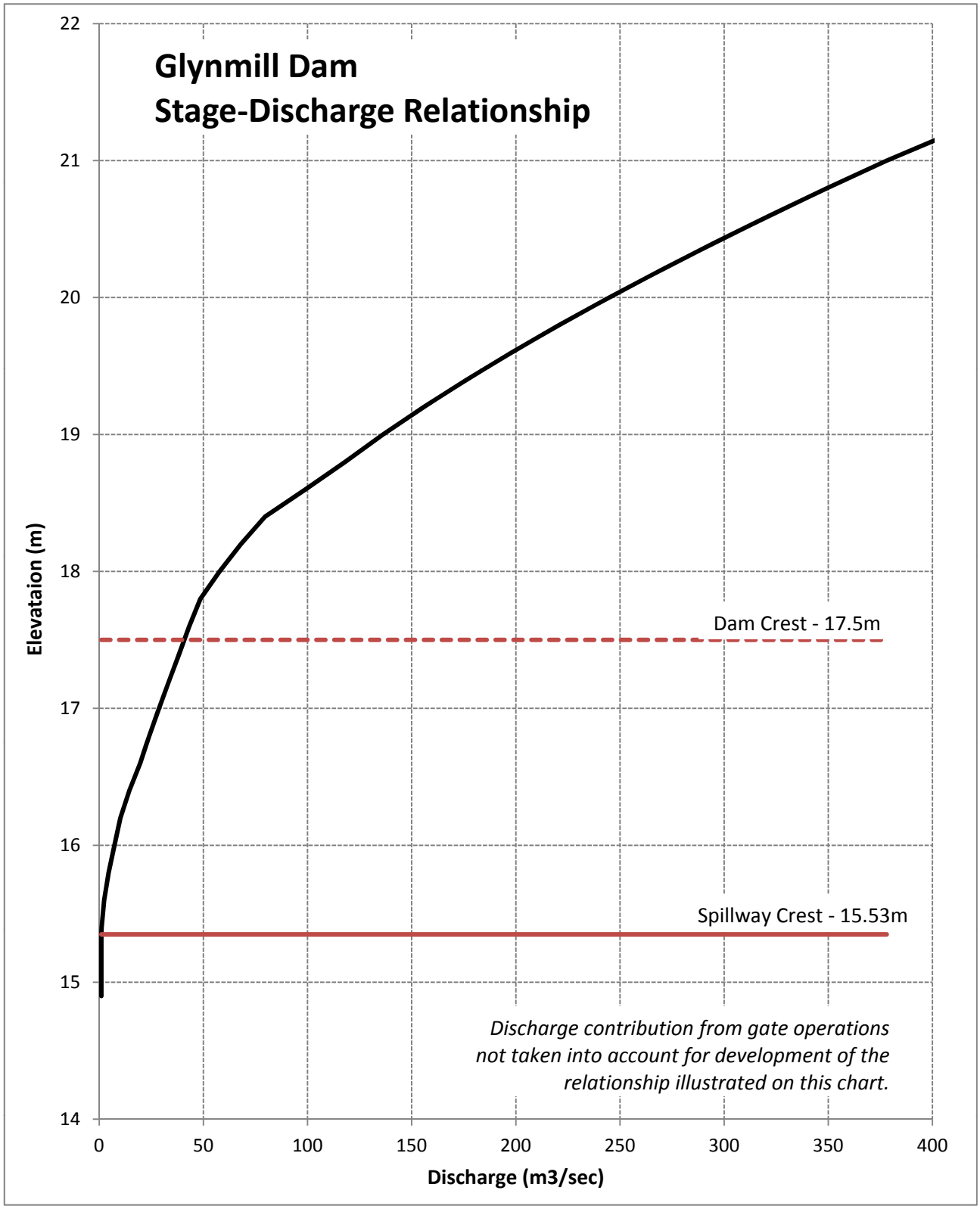

Glynmill Dam
Stage-Storage-Surface Area Relationships
Surface Area
Storage
Surface Area (ha)
Storage (m3)
Elevation (m)
0
1
2
3
4
5
6
7
0
25,000
50,000
75,000
100,000
125,000
150,000
175,000
14
15
16
17
18
19
20
21
22


Glynmill Dam
Stage-Discharge Relationship
Elevataion (m)
22
21
20
19
18
17
16
15
14
Dam Crest - 17.5m
Spillway Crest - 15.53m
Discharge contribution from gate operations not taken into account for development of the relationship illustrated on this chart.
0
50
100
150
200
250
300
350
400
Discharge (m3/sec)

Glynmill Pond Dam

- Free overflow spillway based on a broad-crested weir configuration
- Spillway - crest elevation = 15.35m / length = 8.0m
- Dam - crest elevation = 17.50m / length = 55.0m
- Normal Water Level = 15.20m
- Maximum flood level = 17.00m
- Fishway invert = 14.90m
- All gates closed

Glynmill Pond Dam Stage Discharge Rating Curve – Operational Scenario #1 (gates closed)	
Elevation (m)	**Total Flow**
14.9	1.00
15.35	1.00
15.4	1.12
15.6	2.38
15.8	4.51
16	7.27
16.2	10.17
16.4	14.42
16.6	19.65
16.8	24.04
17	28.66
17.2	33.47
17.4	38.44
17.6	43.23
17.8	48.59
18	57.78
18.2	68.06
18.4	79.60
18.6	99.06
18.8	118.06
19	136.27
19.2	155.74
19.4	176.40
19.6	198.17
19.8	221.00
20	244.86
20.2	269.68
20.4	295.44
20.6	322.11
20.8	349.65
21	378.04
21.2	409.25
21.4	441.26
21.6	474.06
21.8	507.61
22	541.91

APPENDIX N

HEC-RAS SENSITIVITY ANALYSIS TABLES

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PETRIE'S BROOK

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Petries 100yr n+20%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	4.00	138.52	138.98	138.98	139.12	0.040422	2.12	3.11	11.64	1.12
TR002	26.40	100Year-Existing	4.00	136.29	136.60	136.62	136.72	0.097156	2.38	3.08	18.07	1.60
TR003	75.44	100Year-Existing	2.80	138.22	138.86	138.86	139.03	0.025416	2.05	2.05	6.96	0.92
TR003	31.52	100Year-Existing	2.80	135.25	135.65	135.88	136.42	0.226403	4.19	0.87	4.55	2.52
M002	2878.54	100Year-Existing	9.00	133.44	134.06	134.07	134.28	0.047781	2.97	5.47	14.23	1.30
M002	2830.24	100Year-Existing	9.00	129.86	130.84	131.11	131.71	0.064096	4.51	2.72	4.94	1.58
M002	2781.96	100Year-Existing	9.00	126.60	127.46	127.71	128.25	0.081321	4.54	2.97	6.45	1.72
M002	2733.55	100Year-Existing	9.00	123.62	124.46	124.62	125.01	0.056000	3.94	3.85	9.00	1.47
M002	2711.98	100Year-Existing	9.00	121.55	123.55	122.83	123.58	0.001416	1.20	19.25	35.29	0.28
M002	2710		Bridge									
M002	2706.48	100Year-Existing	9.00	121.23	122.40	122.40	122.96	0.022104	3.33	2.70	6.45	1.00
M002	2686.04	100Year-Existing	9.00	120.42	121.28	121.52	122.09	0.079520	4.51	2.67	5.72	1.70
M002	2636.80	100Year-Existing	9.60	118.88	119.93	119.93	120.24	0.024216	2.99	4.62	7.78	0.99
M002	2586.04	100Year-Existing	9.60	117.62	117.94	118.01	118.15	0.126138	2.63	4.88	27.15	1.79
M002	2536.82	100Year-Existing	9.60	115.95	116.67	116.67	116.85	0.035294	2.61	5.95	16.31	1.09
M002	2487.14	100Year-Existing	9.60	114.00	115.12	115.18	115.42	0.022614	3.00	5.81	14.68	0.97
M002	2437.53	100Year-Existing	9.60	112.56	113.45	113.60	113.88	0.045961	3.60	4.37	11.20	1.33
M002	2387.76	100Year-Existing	9.60	110.97	111.98	112.04	112.33	0.030290	3.23	4.66	9.17	1.11
M002	2337.92	100Year-Existing	9.60	109.55	110.53	110.60	110.79	0.031798	3.02	6.39	21.78	1.09
M002	2288.19	100Year-Existing	9.60	107.88	108.89	109.01	109.28	0.030218	3.22	4.73	14.16	1.11
M002	2243.62	100Year-Existing	9.60	106.54	107.96	107.96	108.33	0.024654	3.06	4.08	5.82	0.93
M002	2206.69	100Year-Existing	9.60	105.39	106.41	106.58	106.96	0.058676	3.90	3.96	15.60	1.42
M002	2172.99	100Year-Existing	9.60	104.44	105.29	105.31	105.53	0.029509	2.77	5.16	12.37	1.03
M002	2132.37	100Year-Existing	9.60	102.85	103.80	103.90	104.14	0.039001	3.25	4.96	17.07	1.21
M002	2076.75	100Year-Existing	9.60	100.37	101.68	101.77	102.19	0.032242	3.52	3.47	4.98	1.10
TR001	194.22	100Year-Existing	7.00	116.47	117.52	117.52	117.82	0.023490	2.92	3.70	6.52	0.97
TR001	173.31	100Year-Existing	7.00	113.43	113.96	114.40	116.27	0.475273	7.36	1.21	4.37	3.80
TR001	155.88	100Year-Existing	7.00	111.89	112.40	112.46	112.61	0.071914	3.00	4.55	22.02	1.48
TR001	147.33	100Year-Existing	7.00	111.21	111.62	111.73	112.06	0.205580	4.20	3.22	21.43	2.44
TR001	100.00	100Year-Existing	7.00	106.90	107.67	107.77	108.06	0.045181	3.30	3.20	7.64	1.29
TR001	84.71	100Year-Existing	7.00	105.53	106.91	106.60	107.00	0.009229	1.67	6.18	11.60	0.49
TR001	80		Culvert									
TR001	76.27	100Year-Existing	7.00	105.28	106.29	106.29	106.44	0.015980	2.31	5.72	16.57	0.77
TR001	50.01	100Year-Existing	7.00	102.82	103.39	103.76	104.98	0.261326	6.14	1.47	4.98	2.92
TR001	10.31	100Year-Existing	7.00	100.43	101.45	101.31	101.61	0.011887	2.08	4.69	8.15	0.70
M001	2036.68	100Year-Existing	16.30	99.58	101.01	100.72	101.13	0.008514	2.16	13.91	22.10	0.61
M001	2006.33	100Year-Existing	16.30	98.58	101.03		101.05	0.001035	1.11	26.64	27.10	0.24
M001	1984.70	100Year-Existing	16.30	98.16	100.70	99.91	100.99	0.004932	2.48	7.76	22.79	0.51
M001	1975		Culvert									
M001	1967.48	100Year-Existing	16.30	97.22	99.10	99.10	99.91	0.021004	4.00	4.08	9.22	1.00
M001	1947.41	100Year-Existing	16.30	96.71	97.92	98.25	98.95	0.067176	5.15	4.23	6.25	1.64
M001	1897.27	100Year-Existing	16.30	94.94	96.26	96.33	96.77	0.027519	3.79	6.02	7.69	1.11
M001	1847.50	100Year-Existing	16.30	93.50	94.85	94.89	95.32	0.030174	3.75	6.40	7.82	1.11
M001	1790.83	100Year-Existing	18.70	91.16	92.57	92.79	93.29	0.040858	4.57	7.23	12.76	1.32
M001	1750	100Year-Existing	18.70	90.25	91.81	91.81	92.22	0.021727	3.65	8.77	10.59	0.99
M001	1700	100Year-Existing	18.70	88.86	90.24	90.37	90.86	0.036042	4.36	6.95	8.75	1.26
M001	1650	100Year-Existing	18.70	86.29	87.50	87.81	88.46	0.065713	5.27	5.47	7.60	1.62
M001	1600	100Year-Existing	18.70	84.49	87.35	85.66	87.35	0.000172	0.52	73.57	42.97	0.10
M001	1581.62	100Year-Existing	18.70	83.85	87.30	86.16	87.34	0.000652	1.09	34.67	63.60	0.19
M001	1560		Culvert									
M001	1559.09	100Year-Existing	18.70	82.32	84.61	84.61	85.73	0.017598	4.69	3.98	56.01	1.00
M001	1477.89	100Year-Existing	18.70	79.96	80.61	81.07	83.38	0.537284	8.82	3.20	11.00	4.18
M001	1418.45	100Year-Existing	19.30	78.38	80.13	80.13	80.42	0.015664	3.17	11.94	18.16	0.82
M001	1359.00	100Year-Existing	19.30	74.82	75.98	76.63	78.21	0.121780	7.32	3.62	4.98	2.29
M001	1338.71	100Year-Existing	19.30	72.61	77.06	74.65	77.24	0.001240	1.88	10.26	14.78	0.29
M001	1295		Culvert									
M001	1292.63	100Year-Existing	19.30	70.47	72.27	72.51	73.53	0.030972	5.32	4.12	17.08	1.28
M001	1280.53	100Year-Existing	19.30	65.50	65.94	66.50	71.18	1.697039	10.14	1.90	8.29	6.75
M001	1254.70	100Year-Existing	19.30	61.55	62.69	63.11	64.14	0.086256	6.46	5.02	8.56	2.12
M001	1214.60	100Year-Existing	19.30	54.66	55.53	56.09	58.09	0.314938	8.78	3.44	7.64	3.53
M001	1186.80	100Year-Existing	19.30	51.00	51.92	52.25	52.99	0.104331	6.09	5.52	10.42	2.24
M001	1151.89	100Year-Existing	19.30	46.66	47.83	48.29	49.46	0.105979	6.83	4.77	8.83	2.29
M001	1131.36	100Year-Existing	19.20	45.40	46.79	47.09	47.76	0.053817	5.34	5.94	8.59	1.62
M001	1094.32	100Year-Existing	19.20	43.36	44.75	45.07	45.82	0.054750	5.48	5.49	7.03	1.64
M001	1036.63	100Year-Existing	20.40	40.61	42.13	42.41	43.02	0.042701	5.12	7.18	11.76	1.47
M001	991.55	100Year-Existing	20.40	36.47	37.65	38.17	39.60	0.160874	7.45	4.21	7.24	2.58
M001	950.72	100Year-Existing	20.40	32.56	33.76	34.08	34.78	0.081453	5.75	5.96	9.70	1.91
M001	894.70	100Year-Existing	20.40	29.50	30.92	31.05	31.56	0.040584	4.65	7.35	8.94	1.38
M001	850.00	100Year-Existing	20.40	28.24	29.97	29.99	30.35	0.017668	3.48	9.22	13.41	0.93
M001	811.85	100Year-Existing	20.40	26.37	27.94	28.29	29.06	0.074325	4.86	4.62	5.76	1.49
M001	754.30	100Year-Existing	20.40	22.84	24.30	24.83	25.38	0.054573	5.34	5.45	8.04	1.64
M001	684.68	100Year-Existing	20.40	20.60	22.87	22.85	23.08	0.007721	2.69	14.55	26.67	0.63
M001	632.62	100Year-Existing	20.40	20.87	22.93	21.97	22.98	0.001406	1.44	28.59	43.12	0.32
M001	625		Bridge									
M001	621.03	100Year-Existing	20.40	19.91	21.35	21.35	21.89	0.016508	3.57	6.69	13.53	1.00
M001	599.17	100Year-Existing	20.40	15.17	15.66	16.18	18.69	0.543697	9.22	2.94	9.57	4.74
M001	547.98	100Year-Existing	20.40	9.22	10.12	10.36	10.91	0.068396	4.60	5.81	12.29	1.82
M001	500	100Year-Existing	20.40	7.42	8.94	8.94	9.39	0.020333	3.67	8.80	10.43	1.05
M001	446.65	100Year-Existing	20.40	6.07	7.25	7.48	7.87	0.042739	4.33	8.38	19.19	1.45
M001	399.97	100Year-Existing	22.10	4.59	6.15	6.13	6.34	0.010930	2.49	15.41	29.82	0.76
M001	349.97	100Year-Existing	22.10	3.89	5.21	5.21	5.47	0.024000	3.24	11.48	21.05	1.05
M001	300.08	100Year-Existing	22.10	3.07	4.59	4.25	4.63	0.003500	1.36	27.81	41.09	0.40

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	22.10	2.39	3.85	3.85	4.26	0.020040	3.71	9.17	11.38	1.06
M001	200	100Year-Existing	22.40	1.60	3.91	3.07	3.93	0.000797	0.97	42.86	46.29	0.22
M001	164.90	100Year-Existing	22.40	1.25	3.85	2.65	3.90	0.000999	1.33	33.23	39.15	0.27
M001	130		Culvert									
M001	122.87	100Year-Existing	22.40	1.00	3.39	2.48	3.58	0.002699	2.04	11.85	22.41	0.44
M001	121.82	100Year-Existing	22.40	0.97	3.42	3.20	3.54	0.002354	2.00	21.58	25.28	0.42
M001	110		Culvert									
M001	108.55	100Year-Existing	22.40	0.48	2.80	2.60	2.89	0.002172	1.67	23.03	25.73	0.37
M001	100.00	100Year-Existing	22.40	0.79	2.81		2.83	0.000773	1.00	42.78	40.68	0.23
M001	50.00	100Year-Existing	22.40	0.56	2.80		2.81	0.000163	0.49	79.01	63.81	0.11
M001	-33.87	100Year-Existing	22.40	0.46	2.80		2.80	0.000056	0.30	99.17	79.65	0.06
M001	-115.21	100Year-Existing	22.40	-0.85	2.80	0.13	2.80	0.000004	0.11	337.95	154.15	0.02

Petries 100yr n-20%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	4.00	138.52	138.94	138.98	139.13	0.028005	2.45	2.66	11.16	1.37
TR002	26.40	100Year-Existing	4.00	136.29	136.53	136.62	136.86	0.172198	3.77	1.95	16.67	3.02
TR003	75.44	100Year-Existing	2.80	138.22	138.81	138.86	139.05	0.018004	2.39	1.68	6.24	1.14
TR003	31.52	100Year-Existing	2.80	135.25	135.59	135.88	136.96	0.232550	5.48	0.63	3.90	3.69
M002	2878.54	100Year-Existing	9.00	133.44	133.94	134.07	134.38	0.056532	4.10	3.88	12.89	2.03
M002	2830.24	100Year-Existing	9.00	129.86	130.73	131.11	131.98	0.046529	5.29	2.25	4.57	1.98
M002	2781.96	100Year-Existing	9.00	126.60	127.30	127.71	128.88	0.093901	6.22	2.05	5.51	2.66
M002	2733.55	100Year-Existing	9.00	123.62	124.34	124.62	125.36	0.054853	5.19	2.81	8.27	2.12
M002	2711.98	100Year-Existing	9.00	121.55	123.55	122.83	123.58	0.000638	1.21	19.13	35.19	0.28
M002	2710		Bridge									
M002	2706.48	100Year-Existing	9.00	121.23	122.40	122.40	122.96	0.009824	3.33	2.70	6.45	1.00
M002	2686.04	100Year-Existing	9.00	120.42	121.19	121.52	122.36	0.059063	5.35	2.19	5.23	2.15
M002	2636.80	100Year-Existing	9.60	118.88	119.74	119.93	120.36	0.027674	4.11	3.23	6.62	1.52
M002	2586.04	100Year-Existing	9.60	117.62	117.91	118.01	118.21	0.095347	3.11	4.09	25.83	2.28
M002	2536.82	100Year-Existing	9.60	115.95	116.67	116.67	116.85	0.015855	2.62	5.92	16.29	1.10
M002	2487.14	100Year-Existing	9.60	114.00	114.93	115.18	115.71	0.029847	4.48	3.28	10.70	1.61
M002	2437.53	100Year-Existing	9.60	112.56	113.35	113.60	114.03	0.037756	4.44	3.33	9.00	1.76
M002	2387.76	100Year-Existing	9.60	110.97	111.86	112.04	112.45	0.026436	4.08	3.57	8.13	1.51
M002	2337.92	100Year-Existing	9.60	109.55	110.44	110.60	111.02	0.031920	4.20	4.55	21.07	1.60
M002	2288.19	100Year-Existing	9.60	107.88	108.72	109.01	109.46	0.031950	4.29	3.03	6.84	1.65
M002	2243.62	100Year-Existing	9.60	106.54	107.82	107.96	108.37	0.018505	3.66	3.35	5.33	1.19
M002	2206.69	100Year-Existing	9.60	105.39	106.32	106.58	107.29	0.047763	4.88	2.70	12.74	1.88
M002	2172.99	100Year-Existing	9.60	104.44	105.14	105.31	105.70	0.040435	4.17	3.40	10.69	1.75
M002	2132.37	100Year-Existing	9.60	102.85	103.74	103.90	104.31	0.029545	4.00	3.95	15.93	1.56
M002	2076.75	100Year-Existing	9.60	100.37	101.46	101.77	102.46	0.036720	4.79	2.44	4.33	1.69
TR001	194.22	100Year-Existing	7.00	116.47	117.45	117.52	117.84	0.015002	3.30	3.21	6.13	1.14
TR001	173.31	100Year-Existing	7.00	113.43	113.93	114.40	116.75	0.282517	8.08	1.08	4.18	4.33
TR001	155.88	100Year-Existing	7.00	111.89	112.30	112.46	112.84	0.103170	4.51	2.72	14.94	2.55
TR001	147.33	100Year-Existing	7.00	111.21	111.59	111.73	112.24	0.140774	4.96	2.75	20.84	2.99
TR001	100.00	100Year-Existing	7.00	106.90	107.53	107.77	108.32	0.053651	4.59	2.20	6.56	2.03
TR001	84.71	100Year-Existing	7.00	105.53	106.91	106.60	107.00	0.004102	1.67	6.18	11.60	0.49
TR001	80		Culvert									
TR001	76.27	100Year-Existing	7.00	105.28	106.29	106.29	106.44	0.007102	2.31	5.72	16.57	0.77
TR001	50.01	100Year-Existing	7.00	102.82	103.36	103.76	105.40	0.164190	6.89	1.29	4.71	3.42
TR001	10.31	100Year-Existing	7.00	100.43	101.10	101.31	101.75	0.036491	3.95	2.26	5.98	1.71
M001	2036.68	100Year-Existing	16.30	99.58	100.94	100.72	101.09	0.005349	2.47	12.31	21.80	0.72
M001	2006.33	100Year-Existing	16.30	98.58	101.00		101.03	0.000492	1.14	26.02	27.00	0.24
M001	1984.70	100Year-Existing	16.30	98.16	100.70	99.91	100.99	0.002192	2.48	7.76	22.79	0.51
M001	1975		Culvert									
M001	1967.48	100Year-Existing	16.30	97.22	99.10	99.10	99.91	0.009335	4.00	4.08	9.22	1.00
M001	1947.41	100Year-Existing	16.30	96.71	97.81	98.25	99.25	0.048170	6.03	3.54	5.81	2.04
M001	1897.27	100Year-Existing	16.30	94.94	95.98	96.33	97.09	0.036012	5.45	4.05	6.62	1.82
M001	1847.50	100Year-Existing	16.30	93.50	94.66	94.89	95.43	0.027237	4.74	4.96	7.21	1.54
M001	1790.83	100Year-Existing	18.70	91.16	92.39	92.79	93.61	0.035959	5.76	5.08	8.50	1.81
M001	1750	100Year-Existing	18.70	90.25	91.56	91.81	92.37	0.022482	4.90	6.34	9.52	1.46
M001	1700	100Year-Existing	18.70	88.86	90.06	90.37	91.06	0.030922	5.43	5.43	7.99	1.71
M001	1650	100Year-Existing	18.70	86.29	87.33	87.81	88.92	0.059321	6.66	4.19	6.84	2.24
M001	1600	100Year-Existing	18.70	84.49	87.34	85.66	87.35	0.000077	0.52	73.44	42.95	0.10
M001	1581.62	100Year-Existing	18.70	83.85	87.30	86.16	87.34	0.000290	1.09	34.67	63.60	0.19
M001	1560		Culvert									
M001	1559.09	100Year-Existing	18.70	82.32	84.61	84.61	85.73	0.007821	4.69	3.98	56.01	1.00
M001	1477.89	100Year-Existing	18.70	79.96	80.57	81.07	84.13	0.331883	9.88	2.84	10.73	4.87
M001	1418.45	100Year-Existing	19.30	78.38	79.90	80.13	80.57	0.017492	4.50	8.05	15.93	1.27
M001	1359.00	100Year-Existing	19.30	74.82	75.92	76.63	78.54	0.068719	7.91	3.31	4.84	2.56
M001	1338.71	100Year-Existing	19.30	72.61	77.06	74.65	77.24	0.000551	1.88	10.26	14.78	0.29
M001	1295		Culvert									
M001	1292.63	100Year-Existing	19.30	70.47	72.27	72.51	73.53	0.013765	5.32	4.12	17.08	1.28
M001	1280.53	100Year-Existing	19.30	65.50	65.93	66.50	71.67	0.851641	10.61	1.82	8.10	7.15
M001	1254.70	100Year-Existing	19.30	61.55	62.51	63.11	65.37	0.093774	8.78	3.55	7.67	3.20
M001	1214.60	100Year-Existing	19.30	54.66	55.44	56.09	59.41	0.260484	10.77	2.76	7.18	4.70
M001	1186.80	100Year-Existing	19.30	51.00	51.75	52.25	53.97	0.128260	8.54	3.84	9.40	3.57
M001	1151.89	100Year-Existing	19.30	46.66	47.70	48.29	50.37	0.090396	8.52	3.67	7.90	3.09
M001	1131.36	100Year-Existing	19.20	45.40	46.55	47.09	48.63	0.065336	7.51	4.02	7.47	2.56
M001	1094.32	100Year-Existing	19.20	43.36	44.53	45.07	46.44	0.054462	7.14	4.06	6.37	2.38
M001	1036.63	100Year-Existing	20.40	40.61	41.90	42.41	43.58	0.043921	6.79	4.87	8.24	2.16
M001	991.55	100Year-Existing	20.40	36.47	37.54	38.17	40.41	0.121572	8.89	3.46	6.83	3.29
M001	950.72	100Year-Existing	20.40	32.56	33.56	34.08	35.70	0.099592	8.08	4.10	8.56	3.04
M001	894.70	100Year-Existing	20.40	29.50	30.69	31.05	31.89	0.043601	6.24	5.37	8.27	2.07
M001	850.00	100Year-Existing	20.40	28.24	29.76	29.99	30.54	0.018869	4.82	6.47	11.61	1.41
M001	811.85	100Year-Existing	20.40	26.37	27.82	28.29	29.35	0.052446	5.63	3.92	5.39	1.84
M001	754.30	100Year-Existing	20.40	22.84	24.09	24.83	26.12	0.057367	7.11	3.90	6.86	2.43
M001	684.68	100Year-Existing	20.40	20.60	22.27	22.85	23.44	0.024180	5.51	4.96	6.56	1.57
M001	632.62	100Year-Existing	20.40	20.87	22.71	21.97	22.82	0.001245	1.88	20.22	33.83	0.44
M001	625		Bridge									
M001	621.03	100Year-Existing	20.40	19.91	21.15	21.35	21.96	0.013738	4.37	5.49	7.85	1.33
M001	599.17	100Year-Existing	20.40	15.17	15.64	16.18	19.22	0.311375	9.99	2.70	9.39	5.32
M001	547.98	100Year-Existing	20.40	9.22	9.96	10.36	11.59	0.085487	6.46	4.03	10.94	2.92
M001	500	100Year-Existing	20.40	7.42	8.70	8.94	9.53	0.021701	4.91	6.38	9.34	1.57
M001	446.65	100Year-Existing	20.40	6.07	7.15	7.48	8.13	0.032657	5.26	6.66	16.01	1.87
M001	399.97	100Year-Existing	22.10	4.59	5.85	6.13	6.72	0.027431	4.77	7.39	22.53	1.71
M001	349.97	100Year-Existing	22.10	3.89	5.14	5.21	5.48	0.014992	3.66	10.12	20.02	1.23
M001	300.08	100Year-Existing	22.10	3.07	4.46	4.25	4.52	0.002907	1.72	22.52	39.36	0.53

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	22.10	2.39	3.85	3.85	4.26	0.008938	3.71	9.15	11.37	1.06
M001	200	100Year-Existing	22.40	1.60	3.94	3.07	3.96	0.000314	0.93	44.58	46.49	0.21
M001	164.90	100Year-Existing	22.40	1.25	3.91	2.65	3.95	0.000380	1.25	35.48	40.01	0.25
M001	130		Culvert									
M001	122.87	100Year-Existing	22.40	1.00	3.36	2.48	3.56	0.001245	2.06	11.71	21.89	0.45
M001	121.82	100Year-Existing	22.40	0.97	3.40	3.20	3.52	0.001106	2.05	21.04	24.90	0.43
M001	110		Culvert									
M001	108.55	100Year-Existing	22.40	0.48	2.77	2.60	2.87	0.001042	1.71	22.24	25.11	0.38
M001	100.00	100Year-Existing	22.40	0.79	2.79		2.82	0.000355	1.02	42.31	40.58	0.24
M001	50.00	100Year-Existing	22.40	0.56	2.80		2.80	0.000073	0.50	78.83	63.79	0.11
M001	-33.87	100Year-Existing	22.40	0.46	2.80		2.80	0.000025	0.30	99.14	79.65	0.06
M001	-115.21	100Year-Existing	22.40	-0.85	2.80	0.13	2.80	0.000002	0.11	337.95	154.15	0.02

Petries 100yr Q+10%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	4.40	138.52	139.00	139.00	139.14	0.028009	2.19	3.33	11.85	1.13
TR002	26.40	100Year-Existing	4.40	136.29	136.55	136.63	136.82	0.187815	3.45	2.34	17.20	2.58
TR003	75.44	100Year-Existing	3.08	138.22	138.89	138.89	139.06	0.018001	2.12	2.20	7.21	0.93
TR003	31.52	100Year-Existing	3.08	135.25	135.62	135.90	136.88	0.295841	5.32	0.73	4.20	3.39
M002	2878.54	100Year-Existing	9.90	133.44	134.02	134.10	134.34	0.053351	3.58	4.95	13.80	1.62
M002	2830.24	100Year-Existing	9.90	129.86	130.84	131.17	131.88	0.052162	4.91	2.76	4.97	1.72
M002	2781.96	100Year-Existing	9.90	126.60	127.40	127.76	128.61	0.093489	5.54	2.63	6.12	2.18
M002	2733.55	100Year-Existing	9.90	123.62	124.44	124.66	125.17	0.053632	4.53	3.65	8.87	1.72
M002	2711.98	100Year-Existing	9.90	121.55	123.69	123.12	123.71	0.000707	1.07	24.17	39.39	0.24
M002	2710		Bridge									
M002	2706.48	100Year-Existing	9.90	121.23	122.15	122.47	123.27	0.042710	4.70	2.11	5.73	1.60
M002	2686.04	100Year-Existing	9.90	120.42	121.33	121.75	122.13	0.050729	4.53	2.97	6.01	1.65
M002	2636.80	100Year-Existing	10.56	118.88	119.87	119.98	120.33	0.026986	3.62	4.15	7.41	1.24
M002	2586.04	100Year-Existing	10.56	117.62	117.94	118.02	118.19	0.103783	2.87	4.92	27.20	1.95
M002	2536.82	100Year-Existing	10.56	115.95	116.70	116.70	116.88	0.023520	2.64	6.44	16.64	1.08
M002	2487.14	100Year-Existing	10.56	114.00	115.06	115.21	115.56	0.026889	3.78	4.99	14.08	1.26
M002	2437.53	100Year-Existing	10.56	112.56	113.45	113.65	113.98	0.039899	4.00	4.30	11.10	1.48
M002	2387.76	100Year-Existing	10.56	110.97	111.99	112.09	112.40	0.024732	3.52	4.71	9.22	1.20
M002	2337.92	100Year-Existing	10.56	109.55	110.49	110.63	110.92	0.037485	3.81	5.58	21.47	1.40
M002	2288.19	100Year-Existing	10.56	107.88	108.88	109.04	109.39	0.027377	3.64	4.55	13.98	1.26
M002	2243.62	100Year-Existing	10.56	106.54	107.99	108.01	108.40	0.018338	3.24	4.27	5.96	0.97
M002	2206.69	100Year-Existing	10.56	105.39	106.38	106.59	107.22	0.061333	4.68	3.57	15.41	1.73
M002	2172.99	100Year-Existing	10.56	104.44	105.25	105.35	105.60	0.033289	3.39	4.63	11.93	1.30
M002	2132.37	100Year-Existing	10.56	102.85	103.79	103.93	104.23	0.034113	3.63	4.88	17.00	1.36
M002	2076.75	100Year-Existing	10.56	100.37	101.63	101.83	102.35	0.033452	4.15	3.21	4.82	1.33
TR001	194.22	100Year-Existing	7.70	116.47	117.57	117.57	117.88	0.016056	2.99	4.01	6.74	0.97
TR001	173.31	100Year-Existing	7.70	113.43	113.96	114.42	116.69	0.383726	8.00	1.22	4.40	4.10
TR001	155.88	100Year-Existing	7.70	111.89	112.37	112.48	112.73	0.087593	3.80	3.99	21.61	1.94
TR001	147.33	100Year-Existing	7.70	111.21	111.62	111.75	112.14	0.168757	4.58	3.25	21.46	2.66
TR001	100.00	100Year-Existing	7.70	106.90	107.63	107.81	108.19	0.049250	3.96	2.90	7.35	1.60
TR001	84.71	100Year-Existing	7.70	105.53	106.92	106.64	107.03	0.007460	1.81	6.32	12.12	0.53
TR001	80		Culvert									
TR001	76.27	100Year-Existing	7.70	105.28	106.31	106.31	106.47	0.011473	2.39	6.12	17.12	0.79
TR001	50.01	100Year-Existing	7.70	102.82	103.40	103.81	105.23	0.203857	6.59	1.52	5.04	3.11
TR001	10.31	100Year-Existing	7.70	100.43	101.22	101.35	101.67	0.032025	3.38	3.02	6.74	1.32
M001	2036.68	100Year-Existing	17.93	99.58	101.03	100.72	101.16	0.006702	2.32	14.22	22.16	0.65
M001	2006.33	100Year-Existing	17.93	98.58	101.06		101.09	0.000792	1.17	27.55	27.24	0.25
M001	1984.70	100Year-Existing	17.93	98.16	100.66	100.02	101.03	0.004376	2.78	7.60	21.93	0.57
M001	1975		Culvert									
M001	1967.48	100Year-Existing	17.93	97.22	99.21	99.21	100.07	0.014348	4.13	4.34	9.78	1.00
M001	1947.41	100Year-Existing	17.93	96.71	97.89	98.30	99.24	0.063389	5.88	4.06	6.14	1.90
M001	1897.27	100Year-Existing	17.93	94.94	96.18	96.39	96.93	0.030924	4.60	5.41	7.36	1.39
M001	1847.50	100Year-Existing	17.93	93.50	94.83	94.95	95.43	0.027617	4.24	6.20	7.74	1.27
M001	1790.83	100Year-Existing	20.57	91.16	92.54	92.84	93.52	0.039471	5.29	6.81	12.52	1.55
M001	1750	100Year-Existing	20.57	90.25	91.78	91.87	92.32	0.019767	4.13	8.51	10.50	1.13
M001	1700	100Year-Existing	20.57	88.86	90.20	90.44	91.03	0.034685	5.02	6.61	8.58	1.48
M001	1650	100Year-Existing	20.57	86.29	87.47	87.86	88.73	0.061780	6.02	5.25	7.47	1.88
M001	1600	100Year-Existing	20.57	84.49	87.40	85.69	87.40	0.000132	0.55	75.84	43.34	0.11
M001	1581.62	100Year-Existing	20.57	83.85	87.35	86.31	87.40	0.000502	1.16	36.69	66.88	0.20
M001	1560		Culvert									
M001	1559.09	100Year-Existing	20.57	82.32	84.76	84.76	85.95	0.011893	4.84	4.25	65.95	1.00
M001	1477.89	100Year-Existing	20.57	79.96	80.60	81.11	83.99	0.457828	9.75	3.18	11.00	4.63
M001	1418.45	100Year-Existing	21.23	78.38	80.08	80.18	80.49	0.015728	3.73	11.10	17.79	0.98
M001	1359.00	100Year-Existing	21.23	74.82	77.82	76.72	77.97	0.001942	2.19	19.57	16.96	0.41
M001	1338.71	100Year-Existing	21.23	72.61	77.86	74.78	77.93	0.000363	1.37	30.00	33.39	0.19
M001	1295		Culvert									
M001	1292.63	100Year-Existing	21.23	70.47	72.42	72.64	73.71	0.019601	5.37	4.49	17.64	1.24
M001	1280.53	100Year-Existing	21.23	65.50	65.96	66.55	71.64	1.234756	10.57	2.01	8.52	6.94
M001	1254.70	100Year-Existing	21.23	61.55	62.64	63.17	64.74	0.091927	7.71	4.58	8.32	2.60
M001	1214.60	100Year-Existing	21.23	54.66	55.52	56.16	58.72	0.276407	9.80	3.39	7.61	3.97
M001	1186.80	100Year-Existing	21.23	51.00	51.86	52.30	53.46	0.117526	7.38	4.97	10.11	2.82
M001	1151.89	100Year-Existing	21.23	46.66	47.82	48.35	49.91	0.096302	7.71	4.62	8.71	2.61
M001	1131.36	100Year-Existing	21.12	45.40	46.72	47.15	48.18	0.060235	6.47	5.32	8.25	2.03
M001	1094.32	100Year-Existing	21.12	43.36	44.71	45.15	46.14	0.053159	6.32	5.20	6.90	1.93
M001	1036.63	100Year-Existing	22.44	40.61	42.08	42.46	43.35	0.043716	6.04	6.60	11.36	1.78
M001	991.55	100Year-Existing	22.44	36.47	37.65	38.24	40.05	0.138574	8.27	4.17	7.22	2.87
M001	950.72	100Year-Existing	22.44	32.56	33.70	34.14	35.23	0.091784	6.98	5.35	9.37	2.40
M001	894.70	100Year-Existing	22.44	29.50	30.87	31.12	31.75	0.041079	5.44	6.88	8.79	1.66
M001	850.00	100Year-Existing	22.44	28.24	29.91	30.05	30.46	0.018758	4.18	8.40	12.93	1.15
M001	811.85	100Year-Existing	22.44	26.37	27.97	28.37	29.24	0.056744	5.18	4.78	5.85	1.57
M001	754.30	100Year-Existing	22.44	22.84	24.23	24.58	25.82	0.059950	6.42	4.90	7.61	2.04
M001	684.68	100Year-Existing	22.44	20.60	22.53	22.89	23.31	0.021243	4.67	7.34	11.29	1.21
M001	632.62	100Year-Existing	22.44	20.87	22.95	22.04	23.02	0.001255	1.64	29.81	44.19	0.36
M001	625		Bridge									
M001	621.03	100Year-Existing	22.44	19.91	21.42	21.42	22.00	0.011355	3.68	7.12	16.13	1.01
M001	599.17	100Year-Existing	22.44	15.17	15.66	16.23	19.33	0.457674	10.14	2.94	9.57	5.22
M001	547.98	100Year-Existing	22.44	9.22	10.07	10.40	11.24	0.076211	5.55	5.26	11.94	2.28
M001	500	100Year-Existing	22.44	7.42	8.92	9.01	9.49	0.018525	4.15	8.54	10.32	1.20
M001	446.65	100Year-Existing	22.44	6.07	7.23	7.52	8.06	0.040723	4.98	7.93	18.52	1.70
M001	399.97	100Year-Existing	24.31	4.59	5.96	6.16	6.52	0.025602	4.02	10.00	24.62	1.35
M001	349.97	100Year-Existing	24.31	3.89	5.24	5.24	5.52	0.017449	3.38	12.13	21.64	1.08
M001	300.08	100Year-Existing	24.31	3.07	4.60	4.27	4.64	0.002910	1.49	27.91	41.11	0.43

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	24.31	2.39	3.90	3.90	4.34	0.014460	3.87	9.69	11.62	1.09
M001	200	100Year-Existing	24.64	1.60	3.90	3.17	3.93	0.000677	1.08	42.72	46.27	0.24
M001	164.90	100Year-Existing	24.64	1.25	3.84	2.73	3.90	0.000860	1.48	32.88	38.98	0.30
M001	130		Culvert									
M001	122.87	100Year-Existing	24.64	1.00	3.40	2.56	3.63	0.002215	2.22	11.93	22.74	0.48
M001	121.82	100Year-Existing	24.64	0.97	3.45	3.20	3.58	0.001848	2.15	22.27	25.76	0.44
M001	110		Culvert									
M001	108.55	100Year-Existing	24.64	0.48	2.78	2.75	2.90	0.001914	1.86	22.54	25.34	0.41
M001	100.00	100Year-Existing	24.64	0.79	2.80		2.83	0.000661	1.11	42.52	40.62	0.26
M001	50.00	100Year-Existing	24.64	0.56	2.80		2.81	0.000137	0.55	78.91	63.80	0.12
M001	-33.87	100Year-Existing	24.64	0.46	2.80		2.80	0.000047	0.33	99.12	79.64	0.07
M001	-115.21	100Year-Existing	24.64	-0.85	2.80	0.15	2.80	0.000003	0.12	337.95	154.15	0.02

Petries 100yr Q+20%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	4.80	138.52	139.02	139.02	139.17	0.028030	2.26	3.54	12.05	1.14
TR002	26.40	100Year-Existing	4.80	136.29	136.56	136.65	136.84	0.187769	3.55	2.48	17.36	2.60
TR003	75.44	100Year-Existing	3.36	138.22	138.91	138.91	139.10	0.018000	2.19	2.36	7.48	0.94
TR003	31.52	100Year-Existing	3.36	135.25	135.63	135.92	136.93	0.283125	5.41	0.80	4.37	3.35
M002	2878.54	100Year-Existing	10.80	133.44	134.04	134.13	134.38	0.053726	3.70	5.25	14.05	1.64
M002	2830.24	100Year-Existing	10.80	129.86	130.89	131.23	131.96	0.050364	5.01	3.00	5.15	1.70
M002	2781.96	100Year-Existing	10.80	126.60	127.43	127.81	128.72	0.095687	5.75	2.79	6.28	2.22
M002	2733.55	100Year-Existing	10.80	123.62	124.47	124.70	125.23	0.053702	4.66	3.91	9.04	1.73
M002	2711.98	100Year-Existing	10.80	121.55	123.81	123.19	123.83	0.000540	0.97	29.56	44.85	0.21
M002	2710		Bridge									
M002	2706.48	100Year-Existing	10.80	121.23	122.22	122.54	123.37	0.039841	4.76	2.27	5.92	1.57
M002	2686.04	100Year-Existing	10.80	120.42	121.34	121.78	122.25	0.056349	4.83	3.05	6.09	1.74
M002	2636.80	100Year-Existing	11.52	118.88	119.91	120.00	120.39	0.026190	3.69	4.48	7.68	1.23
M002	2586.04	100Year-Existing	11.52	117.62	117.95	118.04	118.23	0.113597	3.05	5.06	27.43	2.05
M002	2536.82	100Year-Existing	11.52	115.95	116.72	116.72	116.91	0.023384	2.71	6.84	16.82	1.08
M002	2487.14	100Year-Existing	11.52	114.00	115.09	115.24	115.60	0.027010	3.86	5.38	14.38	1.27
M002	2437.53	100Year-Existing	11.52	112.56	113.48	113.69	114.02	0.038779	4.07	4.72	11.75	1.47
M002	2387.76	100Year-Existing	11.52	110.97	112.02	112.13	112.46	0.025123	3.63	5.01	9.47	1.22
M002	2337.92	100Year-Existing	11.52	109.55	110.51	110.65	110.95	0.038286	3.90	5.94	21.61	1.42
M002	2288.19	100Year-Existing	11.52	107.88	108.91	109.07	109.42	0.027004	3.70	4.99	14.40	1.26
M002	2243.62	100Year-Existing	11.52	106.54	108.05	108.06	108.47	0.017388	3.27	4.68	6.30	0.95
M002	2206.69	100Year-Existing	11.52	105.39	106.40	106.61	107.29	0.065567	4.89	3.76	15.50	1.79
M002	2172.99	100Year-Existing	11.52	104.44	105.28	105.36	105.64	0.032591	3.45	4.97	12.22	1.30
M002	2132.37	100Year-Existing	11.52	102.85	103.81	103.96	104.26	0.034931	3.73	5.19	17.27	1.38
M002	2076.75	100Year-Existing	11.52	100.37	101.69	101.89	102.42	0.031653	4.19	3.50	4.99	1.31
TR001	194.22	100Year-Existing	8.40	116.47	117.61	117.61	117.93	0.015985	3.07	4.30	6.93	0.97
TR001	173.31	100Year-Existing	8.40	113.43	113.99	114.46	116.75	0.360685	8.09	1.34	4.63	4.02
TR001	155.88	100Year-Existing	8.40	111.89	112.38	112.49	112.75	0.090939	3.94	4.19	21.75	1.99
TR001	147.33	100Year-Existing	8.40	111.21	111.63	111.77	112.17	0.169864	4.69	3.45	21.70	2.68
TR001	100.00	100Year-Existing	8.40	106.90	107.66	107.84	108.24	0.048505	4.05	3.12	7.56	1.60
TR001	84.71	100Year-Existing	8.40	105.53	106.94	106.67	107.07	0.008171	1.92	6.62	13.17	0.56
TR001	80		Culvert									
TR001	76.27	100Year-Existing	8.40	105.28	106.33	106.33	106.50	0.011750	2.46	6.53	17.65	0.80
TR001	50.01	100Year-Existing	8.40	102.82	103.43	103.84	105.25	0.190688	6.64	1.66	5.24	3.04
TR001	10.31	100Year-Existing	8.40	100.43	101.25	101.38	101.73	0.032719	3.50	3.20	6.92	1.34
M001	2036.68	100Year-Existing	19.56	99.58	101.01	100.71	101.17	0.008728	2.62	13.79	22.08	0.74
M001	2006.33	100Year-Existing	19.56	98.58	101.05		101.09	0.000957	1.29	27.40	27.22	0.27
M001	1984.70	100Year-Existing	19.56	98.16	101.01	100.12	101.07	0.000951	1.37	25.24	30.07	0.27
M001	1975		Culvert									
M001	1967.48	100Year-Existing	19.56	97.22	99.31	99.31	100.23	0.014115	4.26	4.60	10.33	1.00
M001	1947.41	100Year-Existing	19.56	96.71	97.93	98.37	99.39	0.066074	6.14	4.26	6.26	1.95
M001	1897.27	100Year-Existing	19.56	94.94	96.23	96.46	97.02	0.030936	4.73	5.77	7.55	1.40
M001	1847.50	100Year-Existing	19.56	93.50	94.88	95.01	95.51	0.027641	4.37	6.60	7.91	1.28
M001	1790.83	100Year-Existing	22.44	91.16	92.58	92.89	93.59	0.039729	5.42	7.31	12.81	1.56
M001	1750	100Year-Existing	22.44	90.25	91.84	91.92	92.39	0.019413	4.21	9.15	10.74	1.13
M001	1700	100Year-Existing	22.44	88.86	90.26	90.50	91.12	0.034457	5.15	7.07	8.81	1.49
M001	1650	100Year-Existing	22.44	86.29	87.52	87.93	88.84	0.061277	6.18	5.62	7.67	1.88
M001	1600	100Year-Existing	22.44	84.49	87.43	85.71	87.43	0.000150	0.59	77.05	43.56	0.11
M001	1581.62	100Year-Existing	22.44	83.85	87.37	86.45	87.42	0.000572	1.24	37.56	67.52	0.22
M001	1560		Culvert									
M001	1559.09	100Year-Existing	22.44	82.32	84.90	84.90	86.17	0.011677	4.98	4.51	68.84	1.00
M001	1477.89	100Year-Existing	22.44	79.96	80.62	81.15	84.19	0.465169	10.07	3.37	11.10	4.70
M001	1418.45	100Year-Existing	23.16	78.38	80.12	80.21	80.55	0.016447	3.87	11.71	18.07	1.01
M001	1359.00	100Year-Existing	23.16	74.82	77.87	76.81	78.03	0.002095	2.30	20.43	17.09	0.43
M001	1338.71	100Year-Existing	23.16	72.61	77.91	74.89	77.99	0.000407	1.46	31.32	34.37	0.21
M001	1295		Culvert									
M001	1292.63	100Year-Existing	23.16	70.47	72.76	72.76	73.86	0.013515	4.97	5.30	18.87	1.06
M001	1280.53	100Year-Existing	23.16	65.50	65.97	66.60	71.88	1.224602	10.76	2.15	8.81	6.95
M001	1254.70	100Year-Existing	23.16	61.55	62.67	63.24	64.89	0.093301	7.97	4.87	8.49	2.64
M001	1214.60	100Year-Existing	23.16	54.66	55.56	56.22	58.87	0.270130	10.02	3.64	7.77	3.95
M001	1186.80	100Year-Existing	23.16	51.00	51.89	52.35	53.60	0.119862	7.65	5.25	10.27	2.87
M001	1151.89	100Year-Existing	23.16	46.66	47.86	48.42	50.02	0.095813	7.92	4.97	8.98	2.62
M001	1131.36	100Year-Existing	23.04	45.40	46.76	47.22	48.29	0.060616	6.67	5.68	8.45	2.05
M001	1094.32	100Year-Existing	23.04	43.36	44.76	45.23	46.26	0.052918	6.50	5.56	7.06	1.94
M001	1036.63	100Year-Existing	24.48	40.61	42.12	42.51	43.44	0.044484	6.23	7.06	11.67	1.80
M001	991.55	100Year-Existing	24.48	36.47	37.69	38.31	40.15	0.133736	8.41	4.50	7.40	2.84
M001	950.72	100Year-Existing	24.48	32.56	33.73	34.20	35.36	0.093918	7.24	5.66	9.54	2.44
M001	894.70	100Year-Existing	24.48	29.50	30.92	31.19	31.84	0.040932	5.60	7.33	8.94	1.66
M001	850.00	100Year-Existing	24.48	28.24	29.95	30.09	30.53	0.019618	4.34	8.84	13.19	1.18
M001	811.85	100Year-Existing	24.48	26.37	28.05	28.44	29.31	0.052405	5.20	5.24	6.08	1.53
M001	754.30	100Year-Existing	24.48	22.84	24.27	24.88	25.98	0.061929	6.68	5.18	7.84	2.09
M001	684.68	100Year-Existing	24.48	20.60	22.57	22.90	23.39	0.021783	4.82	7.84	12.77	1.23
M001	632.62	100Year-Existing	24.48	20.87	22.79	22.10	22.91	0.002190	2.05	22.95	37.11	0.47
M001	625		Bridge									
M001	621.03	100Year-Existing	24.48	19.91	21.49	21.49	22.10	0.011364	3.80	7.51	18.50	1.02
M001	599.17	100Year-Existing	24.48	15.17	15.69	16.28	19.43	0.432831	10.28	3.18	9.75	5.13
M001	547.98	100Year-Existing	24.48	9.22	10.10	10.45	11.35	0.078008	5.77	5.55	12.12	2.32
M001	500	100Year-Existing	24.48	7.42	8.97	9.07	9.57	0.018465	4.27	9.12	10.57	1.21
M001	446.65	100Year-Existing	24.48	6.07	7.26	7.55	8.13	0.041741	5.15	8.47	19.31	1.73
M001	399.97	100Year-Existing	26.52	4.59	5.99	6.19	6.57	0.025778	4.12	10.74	25.40	1.37
M001	349.97	100Year-Existing	26.52	3.89	5.25	5.25	5.57	0.019653	3.62	12.40	21.92	1.15
M001	300.08	100Year-Existing	26.52	3.07	4.66	4.29	4.70	0.002664	1.47	30.35	41.45	0.42

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	26.52	2.39	3.97	3.97	4.41	0.013838	3.92	10.50	11.99	1.07
M001	200	100Year-Existing	26.88	1.60	3.91	3.19	3.93	0.000804	1.17	42.75	46.28	0.26
M001	164.90	100Year-Existing	26.88	1.25	3.83	2.80	3.90	0.001066	1.64	32.28	38.69	0.34
M001	130		Culvert									
M001	122.87	100Year-Existing	26.88	1.00	3.41	2.63	3.68	0.002592	2.41	11.99	22.98	0.52
M001	121.82	100Year-Existing	26.88	0.97	3.47	3.20	3.62	0.002079	2.29	22.84	26.15	0.47
M001	110		Culvert									
M001	108.55	100Year-Existing	26.88	0.48	2.78	2.75	2.92	0.002297	2.04	22.45	25.28	0.45
M001	100.00	100Year-Existing	26.88	0.79	2.80		2.83	0.000788	1.21	42.51	40.62	0.28
M001	50.00	100Year-Existing	26.88	0.56	2.80		2.81	0.000163	0.59	78.90	63.80	0.13
M001	-33.87	100Year-Existing	26.88	0.46	2.80		2.80	0.000056	0.36	99.08	79.64	0.08
M001	-115.21	100Year-Existing	26.88	-0.85	2.80	0.19	2.80	0.000004	0.13	337.95	154.15	0.02

Petries 100yr Q+30%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	5.20	138.52	139.04	139.04	139.19	0.028273	2.33	3.74	12.23	1.15
TR002	26.40	100Year-Existing	5.20	136.29	136.57	136.64	136.86	0.184274	3.62	2.63	17.54	2.59
TR003	75.44	100Year-Existing	3.64	138.22	138.93	138.94	139.12	0.018001	2.24	2.53	7.72	0.95
TR003	31.52	100Year-Existing	3.64	135.25	135.65	135.94	136.97	0.272201	5.49	0.86	4.53	3.32
M002	2878.54	100Year-Existing	11.70	133.44	134.06	134.16	134.42	0.054048	3.81	5.54	14.29	1.66
M002	2830.24	100Year-Existing	11.70	129.86	130.93	131.28	132.03	0.048772	5.10	3.23	5.32	1.69
M002	2781.96	100Year-Existing	11.70	126.60	127.46	127.85	128.81	0.097179	5.94	2.95	6.43	2.25
M002	2733.55	100Year-Existing	11.70	123.62	124.50	124.74	125.28	0.053954	4.78	4.15	9.20	1.74
M002	2711.98	100Year-Existing	11.70	121.55	123.87	123.21	123.89	0.000539	0.98	32.27	49.18	0.21
M002	2710		Bridge									
M002	2706.48	100Year-Existing	11.70	121.23	122.31	122.61	123.43	0.034116	4.70	2.49	6.19	1.47
M002	2686.04	100Year-Existing	11.70	120.42	121.34	121.80	122.42	0.068184	5.28	3.01	6.05	1.91
M002	2636.80	100Year-Existing	12.48	118.88	119.96	120.04	120.43	0.024753	3.71	4.87	7.97	1.20
M002	2586.04	100Year-Existing	12.48	117.62	117.95	118.05	118.27	0.133338	3.31	5.06	27.43	2.22
M002	2536.82	100Year-Existing	12.48	115.95	116.74	116.74	116.94	0.024552	2.82	7.10	16.93	1.12
M002	2487.14	100Year-Existing	12.48	114.00	115.12	115.27	115.62	0.026226	3.89	5.84	14.70	1.25
M002	2437.53	100Year-Existing	12.48	112.56	113.51	113.71	114.07	0.038996	4.18	5.05	12.26	1.48
M002	2387.76	100Year-Existing	12.48	110.97	112.06	112.17	112.51	0.024894	3.71	5.36	9.79	1.22
M002	2337.92	100Year-Existing	12.48	109.55	110.52	110.67	110.98	0.039850	4.03	6.23	21.72	1.46
M002	2288.19	100Year-Existing	12.48	107.88	108.94	109.09	109.45	0.026454	3.75	5.43	14.57	1.25
M002	2243.62	100Year-Existing	12.48	106.54	108.12	108.14	108.53	0.016574	3.30	5.07	6.61	0.94
M002	2206.69	100Year-Existing	12.48	105.39	106.41	106.63	107.36	0.070098	5.10	3.92	15.58	1.86
M002	2172.99	100Year-Existing	12.48	104.44	105.31	105.38	105.67	0.031906	3.50	5.31	12.50	1.29
M002	2132.37	100Year-Existing	12.48	102.85	103.83	103.98	104.29	0.035661	3.83	5.49	17.54	1.40
M002	2076.75	100Year-Existing	12.48	100.37	101.74	101.95	102.48	0.030089	4.24	3.79	5.16	1.29
TR001	194.22	100Year-Existing	9.10	116.47	117.65	117.65	117.98	0.015828	3.14	4.59	7.12	0.97
TR001	173.31	100Year-Existing	9.10	113.43	114.01	114.48	116.82	0.342446	8.19	1.45	4.85	3.95
TR001	155.88	100Year-Existing	9.10	111.89	112.39	112.51	112.78	0.094073	4.06	4.38	21.88	2.03
TR001	147.33	100Year-Existing	9.10	111.21	111.64	111.77	112.19	0.170248	4.79	3.65	21.94	2.70
TR001	100.00	100Year-Existing	9.10	106.90	107.69	107.88	108.29	0.048016	4.14	3.33	7.75	1.61
TR001	84.71	100Year-Existing	9.10	105.53	106.44	106.70	107.30	0.099627	4.68	2.53	6.28	1.79
TR001	80		Culvert									
TR001	76.27	100Year-Existing	9.10	105.28	106.36	106.36	106.53	0.011944	2.52	6.94	18.18	0.81
TR001	50.01	100Year-Existing	9.10	102.82	103.46	103.88	105.28	0.179752	6.69	1.81	5.44	2.97
TR001	10.31	100Year-Existing	9.10	100.43	101.27	101.42	101.78	0.033363	3.62	3.37	7.07	1.36
M001	2036.68	100Year-Existing	21.19	99.58	101.05	100.72	101.22	0.008651	2.66	14.62	22.23	0.74
M001	2006.33	100Year-Existing	21.19	98.58	101.09		101.13	0.001017	1.34	28.38	27.37	0.28
M001	1984.70	100Year-Existing	21.19	98.16	101.04	100.23	101.11	0.001019	1.43	26.24	30.30	0.28
M001	1975		Culvert									
M001	1967.48	100Year-Existing	21.19	97.22	99.41	99.41	100.38	0.013851	4.37	4.85	10.87	1.00
M001	1947.41	100Year-Existing	21.19	96.71	97.96	98.44	99.52	0.067942	6.37	4.48	6.39	1.99
M001	1897.27	100Year-Existing	21.19	94.94	96.27	96.51	97.10	0.031108	4.86	6.11	7.73	1.41
M001	1847.50	100Year-Existing	21.19	93.50	94.93	95.06	95.59	0.027582	4.49	7.00	8.05	1.29
M001	1790.83	100Year-Existing	24.31	91.16	92.62	92.93	93.66	0.040141	5.56	7.79	13.02	1.58
M001	1750	100Year-Existing	24.31	90.25	91.90	91.98	92.46	0.019032	4.28	9.79	10.97	1.12
M001	1700	100Year-Existing	24.31	88.86	90.31	90.57	91.20	0.034397	5.29	7.51	9.01	1.49
M001	1650	100Year-Existing	24.31	86.29	87.57	87.98	88.93	0.060660	6.33	5.99	7.87	1.89
M001	1600	100Year-Existing	24.31	84.49	87.48	85.74	87.48	0.000163	0.63	79.23	44.07	0.12
M001	1581.62	100Year-Existing	24.31	83.85	87.41	86.59	87.47	0.000608	1.29	39.54	68.81	0.23
M001	1560		Culvert									
M001	1559.09	100Year-Existing	24.31	82.32	85.04	85.04	86.38	0.011475	5.12	4.75	74.17	1.00
M001	1477.89	100Year-Existing	24.31	79.96	80.64	81.23	84.38	0.470255	10.36	3.55	11.20	4.75
M001	1418.45	100Year-Existing	25.09	78.38	80.15	80.25	80.60	0.016944	3.99	12.34	18.32	1.03
M001	1359.00	100Year-Existing	25.09	74.82	78.19	76.87	78.31	0.001365	1.99	26.14	17.93	0.35
M001	1338.71	100Year-Existing	25.09	72.61	78.21	75.01	78.28	0.000327	1.36	40.22	39.97	0.19
M001	1295		Culvert									
M001	1292.63	100Year-Existing	25.09	70.47	72.88	72.88	74.04	0.013239	5.09	5.60	19.33	1.06
M001	1280.53	100Year-Existing	25.09	65.50	65.99	66.64	72.05	1.201187	10.90	2.30	9.11	6.93
M001	1254.70	100Year-Existing	25.09	61.55	62.71	63.29	65.02	0.094058	8.19	5.16	8.62	2.67
M001	1214.60	100Year-Existing	25.09	54.66	55.59	56.27	59.01	0.264972	10.23	3.88	7.92	3.95
M001	1186.80	100Year-Existing	25.09	51.00	51.92	52.40	53.72	0.121848	7.90	5.53	10.43	2.91
M001	1151.89	100Year-Existing	25.09	46.66	47.89	48.47	50.14	0.095484	8.11	5.30	9.23	2.63
M001	1131.36	100Year-Existing	24.96	45.40	46.80	47.28	48.40	0.060957	6.85	6.03	8.63	2.07
M001	1094.32	100Year-Existing	24.96	43.36	44.81	45.30	46.38	0.052469	6.67	5.92	7.22	1.95
M001	1036.63	100Year-Existing	26.52	40.61	42.15	42.57	43.54	0.045399	6.42	7.49	11.96	1.83
M001	991.55	100Year-Existing	26.52	36.47	37.74	38.37	40.25	0.129280	8.54	4.84	7.57	2.82
M001	950.72	100Year-Existing	26.52	32.56	33.76	34.24	35.49	0.095960	7.48	5.95	9.69	2.48
M001	894.70	100Year-Existing	26.52	29.50	30.97	31.24	31.93	0.040826	5.75	7.76	9.08	1.67
M001	850.00	100Year-Existing	26.52	28.24	29.98	30.13	30.60	0.020152	4.48	9.32	13.47	1.20
M001	811.85	100Year-Existing	26.52	26.37	28.11	28.52	29.40	0.049528	5.25	5.67	6.29	1.50
M001	754.30	100Year-Existing	26.52	22.84	24.30	24.90	26.11	0.063150	6.91	5.48	8.07	2.12
M001	684.68	100Year-Existing	26.52	20.60	22.65	22.91	23.50	0.021641	4.96	9.06	19.57	1.24
M001	632.62	100Year-Existing	26.52	20.87	22.92	22.17	23.02	0.001705	1.89	28.14	42.67	0.42
M001	625		Bridge									
M001	621.03	100Year-Existing	26.52	19.91	21.72	21.72	22.04	0.006445	3.08	15.52	26.83	0.76
M001	599.17	100Year-Existing	26.52	15.17	15.70	16.33	19.83	0.464319	10.83	3.28	9.83	5.33
M001	547.98	100Year-Existing	26.52	9.22	10.12	10.50	11.44	0.078799	5.94	5.85	12.32	2.34
M001	500	100Year-Existing	26.52	7.42	9.03	9.13	9.65	0.018450	4.38	9.68	10.81	1.22
M001	446.65	100Year-Existing	26.52	6.07	7.28	7.55	8.20	0.042767	5.32	8.99	20.02	1.76
M001	399.97	100Year-Existing	28.73	4.59	6.03	6.21	6.62	0.025540	4.22	11.81	28.73	1.37
M001	349.97	100Year-Existing	28.73	3.89	5.26	5.26	5.62	0.021558	3.83	12.75	22.39	1.21
M001	300.08	100Year-Existing	28.73	3.07	4.71	4.30	4.75	0.002510	1.47	32.56	41.76	0.41

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	28.73	2.39	4.05	4.05	4.48	0.012500	3.88	11.61	14.73	1.03
M001	200	100Year-Existing	29.12	1.60	3.95	3.22	3.97	0.000829	1.21	44.59	46.49	0.27
M001	164.90	100Year-Existing	29.12	1.25	3.86	2.87	3.94	0.001140	1.71	33.63	39.30	0.35
M001	130		Culvert									
M001	122.87	100Year-Existing	29.12	1.00	3.44	2.71	3.75	0.002926	2.58	12.14	23.53	0.55
M001	121.82	100Year-Existing	29.12	0.97	3.51	3.20	3.67	0.002211	2.39	23.88	26.85	0.49
M001	110		Culvert									
M001	108.55	100Year-Existing	29.12	0.48	2.77	2.75	2.94	0.002733	2.22	22.31	25.17	0.49
M001	100.00	100Year-Existing	29.12	0.79	2.80		2.84	0.000925	1.31	42.50	40.62	0.30
M001	50.00	100Year-Existing	29.12	0.56	2.80		2.81	0.000192	0.64	78.90	63.80	0.14
M001	-33.87	100Year-Existing	29.12	0.46	2.80		2.80	0.000066	0.39	99.04	79.63	0.08
M001	-115.21	100Year-Existing	29.12	-0.85	2.80	0.21	2.80	0.000005	0.14	337.95	154.15	0.02

Petries 100yr Q-10%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	3.60	138.52	138.96	138.96	139.09	0.028477	2.06	2.88	11.41	1.12
TR002	26.40	100Year-Existing	3.60	136.29	136.54	136.61	136.76	0.172854	3.14	2.10	16.89	2.44
TR003	75.44	100Year-Existing	2.52	138.22	138.84	138.84	139.00	0.018021	1.99	1.86	6.62	0.92
TR003	31.52	100Year-Existing	2.52	135.25	135.58	135.85	136.78	0.328227	5.11	0.60	3.83	3.49
M002	2878.54	100Year-Existing	8.10	133.44	133.98	134.04	134.26	0.052435	3.33	4.32	13.27	1.58
M002	2830.24	100Year-Existing	8.10	129.86	130.74	131.05	131.72	0.056710	4.71	2.28	4.59	1.75
M002	2781.96	100Year-Existing	8.10	126.60	127.35	127.66	128.38	0.088181	5.08	2.30	5.78	2.09
M002	2733.55	100Year-Existing	8.10	123.62	124.38	124.58	125.05	0.053793	4.27	3.11	8.49	1.69
M002	2711.98	100Year-Existing	8.10	121.55	123.40	122.75	123.45	0.001502	1.41	14.28	29.74	0.34
M002	2710		Bridge									
M002	2706.48	100Year-Existing	8.10	121.23	122.32	122.32	122.85	0.015665	3.21	2.52	6.23	1.00
M002	2686.04	100Year-Existing	8.10	120.42	121.20	121.51	122.12	0.071458	4.74	2.23	5.27	1.90
M002	2636.80	100Year-Existing	8.64	118.88	119.81	119.88	120.19	0.023222	3.23	3.77	7.10	1.14
M002	2586.04	100Year-Existing	8.64	117.62	117.91	117.99	118.15	0.125682	2.83	4.04	25.74	2.09
M002	2536.82	100Year-Existing	8.64	115.95	116.64	116.64	116.81	0.024622	2.54	5.52	16.02	1.09
M002	2487.14	100Year-Existing	8.64	114.00	114.99	115.15	115.47	0.027267	3.60	3.98	13.02	1.25
M002	2437.53	100Year-Existing	8.64	112.56	113.38	113.53	113.86	0.039932	3.76	3.60	9.54	1.46
M002	2387.76	100Year-Existing	8.64	110.97	111.91	111.99	112.29	0.024727	3.31	4.03	8.63	1.18
M002	2337.92	100Year-Existing	8.64	109.55	110.46	110.57	110.86	0.034935	3.56	4.85	21.19	1.35
M002	2288.19	100Year-Existing	8.64	107.88	108.77	108.98	109.27	0.031071	3.54	3.37	7.39	1.31
M002	2243.62	100Year-Existing	8.64	106.54	107.90	107.90	108.25	0.017060	2.96	3.77	5.62	0.92
M002	2206.69	100Year-Existing	8.64	105.39	106.32	106.55	107.12	0.062276	4.44	2.65	11.46	1.72
M002	2172.99	100Year-Existing	8.64	104.44	105.20	105.28	105.52	0.032399	3.18	4.04	11.41	1.27
M002	2132.37	100Year-Existing	8.64	102.85	103.75	103.87	104.17	0.033630	3.45	4.14	16.22	1.33
M002	2076.75	100Year-Existing	8.64	100.37	101.51	101.71	102.20	0.037113	4.01	2.65	4.47	1.37
TR001	194.22	100Year-Existing	6.30	116.47	117.47	117.47	117.76	0.016741	2.85	3.37	6.26	0.97
TR001	173.31	100Year-Existing	6.30	113.43	113.91	114.36	116.53	0.437586	7.76	1.00	4.05	4.28
TR001	155.88	100Year-Existing	6.30	111.89	112.35	112.44	112.65	0.080948	3.48	3.43	18.97	1.85
TR001	147.33	100Year-Existing	6.30	111.21	111.60	111.71	112.08	0.163797	4.32	2.84	20.96	2.59
TR001	100.00	100Year-Existing	6.30	106.90	107.57	107.73	108.09	0.050910	3.75	2.46	6.86	1.60
TR001	84.71	100Year-Existing	6.30	105.53	106.89	106.56	106.97	0.005506	1.53	5.97	10.73	0.46
TR001	80		Culvert									
TR001	76.27	100Year-Existing	6.30	105.28	106.26	106.26	106.41	0.010831	2.24	5.28	15.95	0.76
TR001	50.01	100Year-Existing	6.30	102.82	103.34	103.72	105.17	0.239982	6.50	1.22	4.60	3.29
TR001	10.31	100Year-Existing	6.30	100.43	101.34	101.27	101.53	0.011222	2.23	3.85	7.47	0.80
M001	2036.68	100Year-Existing	14.67	99.58	100.89	100.71	101.04	0.008884	2.47	11.16	21.49	0.73
M001	2006.33	100Year-Existing	14.67	98.58	100.94		100.97	0.000749	1.10	24.33	26.74	0.24
M001	1984.70	100Year-Existing	14.67	98.16	100.68	99.80	100.92	0.002842	2.25	7.69	22.41	0.46
M001	1975		Culvert									
M001	1967.48	100Year-Existing	14.67	97.22	98.98	98.98	99.75	0.015171	3.88	3.78	8.60	1.00
M001	1947.41	100Year-Existing	14.67	96.71	97.82	98.17	98.95	0.058190	5.34	3.60	5.85	1.80
M001	1897.27	100Year-Existing	14.67	94.94	96.07	96.26	96.75	0.031052	4.31	4.66	6.97	1.37
M001	1847.50	100Year-Existing	14.67	93.50	94.72	94.82	95.25	0.027179	3.94	5.40	7.40	1.24
M001	1790.83	100Year-Existing	16.83	91.16	92.46	92.76	93.37	0.038565	4.97	5.76	11.91	1.51
M001	1750	100Year-Existing	16.83	90.25	91.65	91.75	92.16	0.020823	3.95	7.15	9.90	1.14
M001	1700	100Year-Existing	16.83	88.86	90.09	90.30	90.84	0.035043	4.71	5.66	8.11	1.46
M001	1650	100Year-Existing	16.83	86.29	87.37	87.73	88.51	0.063121	5.66	4.47	7.01	1.86
M001	1600	100Year-Existing	16.83	84.49	87.32	85.62	87.32	0.000102	0.48	72.23	42.75	0.09
M001	1581.62	100Year-Existing	16.83	83.85	87.28	86.01	87.31	0.000381	0.99	33.81	62.28	0.18
M001	1560		Culvert									
M001	1559.09	100Year-Existing	16.83	82.32	84.46	84.46	85.51	0.012502	4.53	3.71	50.29	1.00
M001	1477.89	100Year-Existing	16.83	79.96	80.57	81.02	83.57	0.442014	9.05	2.78	10.68	4.49
M001	1418.45	100Year-Existing	17.37	78.38	80.01	80.06	80.37	0.014380	3.44	9.73	17.02	0.93
M001	1359.00	100Year-Existing	17.37	74.82	75.87	76.53	78.33	0.107724	7.63	3.05	4.71	2.54
M001	1338.71	100Year-Existing	17.37	72.61	76.41	74.53	76.61	0.001209	2.00	8.70	12.56	0.33
M001	1295		Culvert									
M001	1292.63	100Year-Existing	17.37	70.47	72.14	72.37	73.34	0.022524	5.17	3.82	16.61	1.29
M001	1280.53	100Year-Existing	17.37	65.50	65.92	66.45	71.25	1.294884	10.23	1.70	7.83	7.01
M001	1254.70	100Year-Existing	17.37	61.55	62.56	63.04	64.43	0.089594	7.17	3.96	7.94	2.53
M001	1214.60	100Year-Existing	17.37	54.66	55.46	56.03	58.41	0.291995	9.31	2.88	7.27	4.00
M001	1186.80	100Year-Existing	17.37	51.00	51.80	52.19	53.19	0.112464	6.80	4.37	9.75	2.72
M001	1151.89	100Year-Existing	17.37	46.66	47.73	48.23	49.65	0.097885	7.28	3.91	8.13	2.59
M001	1131.36	100Year-Existing	17.28	45.40	46.62	47.02	47.93	0.059253	6.04	4.58	7.83	1.98
M001	1094.32	100Year-Existing	17.28	43.36	44.59	44.99	45.90	0.054555	5.95	4.43	6.55	1.92
M001	1036.63	100Year-Existing	18.36	40.61	41.96	42.34	43.08	0.042868	5.60	5.42	8.78	1.73
M001	991.55	100Year-Existing	18.36	36.47	37.56	38.10	39.77	0.144694	7.84	3.54	6.87	2.88
M001	950.72	100Year-Existing	18.36	32.56	33.63	34.02	34.96	0.088243	6.45	4.68	8.96	2.32
M001	894.70	100Year-Existing	18.36	29.50	30.76	30.98	31.55	0.041305	5.10	5.95	8.48	1.63
M001	850.00	100Year-Existing	18.36	28.24	29.83	29.95	30.32	0.017484	3.87	7.36	12.29	1.10
M001	811.85	100Year-Existing	18.36	26.37	27.81	28.21	29.07	0.067638	5.10	3.89	5.37	1.67
M001	754.30	100Year-Existing	18.36	22.84	24.15	24.59	25.51	0.055892	5.87	4.31	7.17	1.94
M001	684.68	100Year-Existing	18.36	20.60	22.42	22.59	23.15	0.020637	4.39	6.20	10.20	1.18
M001	632.62	100Year-Existing	18.36	20.87	22.51	21.90	22.67	0.003023	2.17	14.26	25.19	0.54
M001	625		Bridge									
M001	621.03	100Year-Existing	18.36	19.91	21.28	21.28	21.78	0.011482	3.44	6.26	10.94	0.99
M001	599.17	100Year-Existing	18.36	15.17	15.61	16.13	19.10	0.520480	9.83	2.46	9.20	5.43
M001	547.98	100Year-Existing	18.36	9.22	10.02	10.31	11.02	0.072418	5.10	4.65	11.51	2.19
M001	500	100Year-Existing	18.36	7.42	8.80	8.88	9.31	0.018749	3.89	7.34	9.79	1.19
M001	446.65	100Year-Existing	18.36	6.07	7.17	7.38	7.91	0.038689	4.63	6.84	16.12	1.63
M001	399.97	100Year-Existing	19.89	4.59	5.90	6.09	6.43	0.025411	3.81	8.47	23.38	1.33
M001	349.97	100Year-Existing	19.89	3.89	5.16	5.16	5.41	0.017017	3.17	10.54	20.34	1.05
M001	300.08	100Year-Existing	19.89	3.07	4.47	4.22	4.52	0.003500	1.52	22.92	39.60	0.47

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	19.89	2.39	3.79	3.79	4.18	0.014186	3.61	8.43	11.03	1.06
M001	200	100Year-Existing	20.16	1.60	3.85	3.04	3.86	0.000551	0.95	40.00	45.83	0.22
M001	164.90	100Year-Existing	20.16	1.25	3.80	2.57	3.84	0.000646	1.27	31.23	38.17	0.26
M001	130		Culvert									
M001	122.87	100Year-Existing	20.16	1.00	3.37	2.40	3.53	0.001564	1.85	11.74	22.00	0.40
M001	121.82	100Year-Existing	20.16	0.97	3.39	3.14	3.50	0.001413	1.85	20.95	24.83	0.39
M001	110		Culvert									
M001	108.55	100Year-Existing	20.16	0.48	2.79	2.46	2.86	0.001264	1.52	22.68	25.45	0.34
M001	100.00	100Year-Existing	20.16	0.79	2.80		2.82	0.000442	0.91	42.53	40.63	0.21
M001	50.00	100Year-Existing	20.16	0.56	2.80		2.80	0.000092	0.45	78.91	63.80	0.10
M001	-33.87	100Year-Existing	20.16	0.46	2.80		2.80	0.000031	0.27	99.18	79.65	0.06
M001	-115.21	100Year-Existing	20.16	-0.85	2.80	0.09	2.80	0.000002	0.10	337.95	154.15	0.02

Petries 100yr Q-20%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	3.20	138.52	138.94	138.94	139.06	0.029229	1.99	2.62	11.11	1.12
TR002	26.40	100Year-Existing	3.20	136.29	136.53	136.59	136.74	0.170402	3.00	1.95	16.68	2.40
TR003	75.44	100Year-Existing	2.24	138.22	138.80	138.80	138.96	0.019196	1.95	1.64	6.16	0.94
TR003	31.52	100Year-Existing	2.24	135.25	135.57	135.81	136.66	0.319114	4.85	0.56	3.68	3.41
M002	2878.54	100Year-Existing	7.20	133.44	133.95	134.02	134.21	0.051267	3.18	4.01	13.01	1.55
M002	2830.24	100Year-Existing	7.20	129.86	130.69	130.98	131.64	0.059989	4.60	2.03	4.39	1.78
M002	2781.96	100Year-Existing	7.20	126.60	127.32	127.60	128.26	0.084611	4.81	2.13	5.60	2.03
M002	2733.55	100Year-Existing	7.20	123.62	124.34	124.54	124.99	0.054214	4.13	2.82	8.28	1.68
M002	2711.98	100Year-Existing	7.20	121.55	122.31	122.67	123.54	0.079220	5.46	1.56	4.17	2.08
M002	2710		Bridge									
M002	2706.48	100Year-Existing	7.20	121.23	122.06	122.25	122.80	0.033036	3.83	1.88	5.46	1.38
M002	2686.04	100Year-Existing	7.20	120.42	121.21	121.43	121.90	0.052899	4.13	2.29	5.33	1.64
M002	2636.80	100Year-Existing	7.68	118.88	119.75	119.83	120.13	0.025760	3.21	3.32	6.70	1.18
M002	2586.04	100Year-Existing	7.68	117.62	117.91	117.97	118.10	0.096974	2.50	4.07	25.80	1.84
M002	2536.82	100Year-Existing	7.68	115.95	116.62	116.62	116.77	0.024532	2.45	5.09	15.72	1.08
M002	2487.14	100Year-Existing	7.68	114.00	114.94	115.12	115.41	0.027960	3.50	3.41	11.25	1.25
M002	2437.53	100Year-Existing	7.68	112.56	113.34	113.48	113.79	0.039331	3.60	3.27	8.88	1.43
M002	2387.76	100Year-Existing	7.68	110.97	111.87	111.95	112.23	0.024989	3.20	3.65	8.23	1.18
M002	2337.92	100Year-Existing	7.68	109.55	110.44	110.55	110.83	0.033147	3.41	4.48	21.04	1.31
M002	2288.19	100Year-Existing	7.68	107.88	108.72	108.80	109.20	0.033425	3.48	2.97	6.78	1.34
M002	2243.62	100Year-Existing	7.68	106.54	107.79	107.84	108.18	0.021333	3.07	3.17	5.20	1.01
M002	2206.69	100Year-Existing	7.68	105.39	106.31	106.53	106.97	0.052078	4.02	2.55	10.43	1.57
M002	2172.99	100Year-Existing	7.68	104.44	105.16	105.25	105.48	0.034147	3.13	3.62	10.96	1.29
M002	2132.37	100Year-Existing	7.68	102.85	103.71	103.85	104.10	0.033220	3.29	3.51	11.22	1.31
M002	2076.75	100Year-Existing	7.68	100.37	101.45	101.65	102.11	0.038374	3.89	2.40	4.30	1.38
TR001	194.22	100Year-Existing	5.60	116.47	117.42	117.42	117.70	0.016751	2.74	3.08	6.01	0.96
TR001	173.31	100Year-Existing	5.60	113.43	113.88	114.31	116.46	0.477124	7.64	0.89	3.86	4.40
TR001	155.88	100Year-Existing	5.60	111.89	112.32	112.42	112.60	0.077532	3.27	3.05	15.88	1.79
TR001	147.33	100Year-Existing	5.60	111.21	111.59	111.70	112.05	0.159410	4.16	2.63	20.68	2.54
TR001	100.00	100Year-Existing	5.60	106.90	107.54	107.69	108.03	0.052154	3.64	2.22	6.59	1.60
TR001	84.71	100Year-Existing	5.60	105.53	106.86	106.52	106.92	0.004685	1.39	5.66	9.36	0.42
TR001	80		Culvert									
TR001	76.27	100Year-Existing	5.60	105.28	106.23	106.23	106.37	0.010541	2.16	4.81	15.27	0.74
TR001	50.01	100Year-Existing	5.60	102.82	103.31	103.67	105.14	0.263317	6.44	1.08	4.37	3.40
TR001	10.31	100Year-Existing	5.60	100.43	101.39	101.22	101.51	0.006945	1.82	4.23	7.77	0.64
M001	2036.68	100Year-Existing	13.04	99.58	100.72	100.69	100.95	0.014262	2.82	7.73	16.45	0.91
M001	2006.33	100Year-Existing	13.04	98.58	100.81		100.85	0.000879	1.15	21.01	26.13	0.26
M001	1984.70	100Year-Existing	13.04	98.16	100.78	99.69	100.83	0.000754	1.15	18.95	24.77	0.24
M001	1975		Culvert									
M001	1967.48	100Year-Existing	13.04	97.22	98.87	98.87	99.58	0.015454	3.72	3.51	8.08	1.00
M001	1947.41	100Year-Existing	13.04	96.71	97.78	98.10	98.79	0.054930	5.04	3.37	5.70	1.73
M001	1897.27	100Year-Existing	13.04	94.94	96.02	96.19	96.66	0.031393	4.17	4.25	6.74	1.37
M001	1847.50	100Year-Existing	13.04	93.50	94.66	94.75	95.16	0.027038	3.78	4.98	7.21	1.22
M001	1790.83	100Year-Existing	14.96	91.16	92.35	92.68	93.22	0.041423	4.82	4.77	8.07	1.54
M001	1750	100Year-Existing	14.96	90.25	91.63	91.67	92.06	0.017869	3.62	6.93	9.80	1.05
M001	1700	100Year-Existing	14.96	88.86	90.00	90.23	90.76	0.039126	4.70	4.97	7.74	1.52
M001	1650	100Year-Existing	14.96	86.29	87.32	87.64	88.35	0.059956	5.35	4.18	6.82	1.80
M001	1600	100Year-Existing	14.96	84.49	87.28	85.59	87.28	0.000086	0.43	70.55	42.47	0.08
M001	1581.62	100Year-Existing	14.96	83.85	87.24	85.86	87.27	0.000321	0.90	32.55	60.83	0.16
M001	1560		Culvert									
M001	1559.09	100Year-Existing	14.96	82.32	84.31	84.31	85.27	0.012720	4.35	3.44	46.91	1.00
M001	1477.89	100Year-Existing	14.96	79.96	80.55	80.97	83.35	0.434266	8.67	2.57	10.49	4.41
M001	1418.45	100Year-Existing	15.44	78.38	79.96	80.00	80.30	0.013755	3.29	8.96	16.55	0.91
M001	1359.00	100Year-Existing	15.44	74.82	75.78	76.43	78.27	0.120991	7.60	2.68	4.52	2.65
M001	1338.71	100Year-Existing	15.44	72.61	76.02	74.40	76.22	0.001386	1.98	7.78	11.59	0.35
M001	1295		Culvert									
M001	1292.63	100Year-Existing	15.44	70.47	72.00	72.24	73.14	0.023928	5.03	3.49	16.11	1.31
M001	1280.53	100Year-Existing	15.44	65.50	65.90	66.40	71.04	1.336498	10.05	1.54	7.45	7.06
M001	1254.70	100Year-Existing	15.44	61.55	62.52	62.97	64.27	0.088463	6.88	3.63	7.73	2.49
M001	1214.60	100Year-Existing	15.44	54.66	55.42	55.96	58.24	0.300754	9.03	2.62	7.09	4.01
M001	1186.80	100Year-Existing	15.44	51.00	51.77	52.12	53.04	0.109683	6.49	4.06	9.56	2.66
M001	1151.89	100Year-Existing	15.44	46.66	47.68	48.16	49.52	0.099274	7.04	3.53	7.75	2.58
M001	1131.36	100Year-Existing	15.36	45.40	46.57	46.95	47.80	0.058543	5.79	4.20	7.60	1.95
M001	1094.32	100Year-Existing	15.36	43.36	44.53	44.90	45.76	0.055413	5.74	4.04	6.36	1.92
M001	1036.63	100Year-Existing	16.32	40.61	41.91	42.28	42.95	0.042211	5.36	4.95	8.32	1.70
M001	991.55	100Year-Existing	16.32	36.47	37.51	38.03	39.64	0.149660	7.62	3.20	6.68	2.89
M001	950.72	100Year-Existing	16.32	32.56	33.59	33.95	34.82	0.086262	6.16	4.32	8.72	2.27
M001	894.70	100Year-Existing	16.32	29.50	30.70	30.91	31.44	0.041472	4.91	5.47	8.31	1.62
M001	850.00	100Year-Existing	16.32	28.24	29.78	29.91	30.24	0.016774	3.69	6.79	11.87	1.07
M001	811.85	100Year-Existing	16.32	26.37	27.72	28.12	28.98	0.075569	5.06	3.44	5.11	1.74
M001	754.30	100Year-Existing	16.32	22.84	24.11	24.54	25.34	0.053222	5.55	4.01	6.95	1.88
M001	684.68	100Year-Existing	16.32	20.60	22.32	22.58	23.00	0.021346	4.23	5.25	6.97	1.18
M001	632.62	100Year-Existing	16.32	20.87	22.25	21.82	22.46	0.004203	2.28	8.17	14.19	0.62
M001	625		Bridge									
M001	621.03	100Year-Existing	16.32	19.91	21.21	21.21	21.67	0.011542	3.31	5.80	8.19	0.99
M001	599.17	100Year-Existing	16.32	15.17	15.59	16.08	18.98	0.562946	9.65	2.21	8.97	5.57
M001	547.98	100Year-Existing	16.32	9.22	9.99	10.26	10.90	0.070254	4.85	4.32	11.21	2.13
M001	500	100Year-Existing	16.32	7.42	8.73	8.81	9.22	0.018927	3.75	6.71	9.50	1.18
M001	446.65	100Year-Existing	16.32	6.07	7.13	7.34	7.83	0.037418	4.42	6.30	15.79	1.60
M001	399.97	100Year-Existing	17.68	4.59	5.86	6.05	6.38	0.025379	3.70	7.65	22.74	1.32
M001	349.97	100Year-Existing	17.68	3.89	5.12	5.12	5.36	0.016961	3.06	9.67	19.66	1.04
M001	300.08	100Year-Existing	17.68	3.07	4.41	4.19	4.46	0.003875	1.53	20.38	38.33	0.49

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	17.68	2.39	3.72	3.72	4.09	0.014323	3.49	7.71	10.68	1.06
M001	200	100Year-Existing	17.92	1.60	3.72	3.01	3.74	0.000540	0.90	34.49	39.29	0.21
M001	164.90	100Year-Existing	17.92	1.25	3.68	2.49	3.72	0.000531	1.11	24.44	35.31	0.23
M001	130		Culvert									
M001	122.87	100Year-Existing	17.92	1.00	3.32	2.31	3.45	0.001334	1.68	11.47	20.95	0.37
M001	121.82	100Year-Existing	17.92	0.97	3.34	2.85	3.43	0.001292	1.74	19.58	23.83	0.37
M001	110		Culvert									
M001	108.55	100Year-Existing	17.92	0.48	2.79	2.31	2.85	0.000993	1.35	22.74	25.50	0.30
M001	100.00	100Year-Existing	17.92	0.79	2.80		2.81	0.000349	0.81	42.54	40.63	0.19
M001	50.00	100Year-Existing	17.92	0.56	2.80		2.80	0.000073	0.40	78.91	63.80	0.09
M001	-33.87	100Year-Existing	17.92	0.46	2.80		2.80	0.000025	0.24	99.21	79.66	0.05
M001	-115.21	100Year-Existing	17.92	-0.85	2.80	0.04	2.80	0.000002	0.09	337.95	154.15	0.01

Petries 100yr Q-30%

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	2.80	138.52	138.92	138.92	139.03	0.030210	1.92	2.36	10.78	1.12
TR002	26.40	100Year-Existing	2.80	136.29	136.52	136.58	136.71	0.160267	2.82	1.82	16.50	2.31
TR003	75.44	100Year-Existing	1.96	138.22	138.77	138.77	138.92	0.019405	1.88	1.46	5.80	0.93
TR003	31.52	100Year-Existing	1.96	135.25	135.56	135.76	136.58	0.336733	4.69	0.49	3.47	3.45
M002	2878.54	100Year-Existing	6.30	133.44	133.93	133.98	134.16	0.050323	3.02	3.68	12.73	1.52
M002	2830.24	100Year-Existing	6.30	129.86	130.63	130.91	131.54	0.063459	4.46	1.79	4.17	1.80
M002	2781.96	100Year-Existing	6.30	126.60	127.29	127.54	128.12	0.079941	4.51	1.97	5.42	1.96
M002	2733.55	100Year-Existing	6.30	123.62	124.31	124.50	124.93	0.055279	4.00	2.51	8.04	1.68
M002	2711.98	100Year-Existing	6.30	121.55	122.24	122.59	123.42	0.085764	5.32	1.40	4.01	2.13
M002	2710		Bridge									
M002	2706.48	100Year-Existing	6.30	121.23	122.00	122.16	122.66	0.031763	3.59	1.76	5.31	1.34
M002	2686.04	100Year-Existing	6.30	120.42	121.17	121.38	121.80	0.051654	3.91	2.09	5.11	1.60
M002	2636.80	100Year-Existing	6.72	118.88	119.70	119.77	120.05	0.025740	3.07	3.00	6.41	1.17
M002	2586.04	100Year-Existing	6.72	117.62	117.90	117.96	118.07	0.091210	2.33	3.80	25.35	1.77
M002	2536.82	100Year-Existing	6.72	115.95	116.59	116.59	116.73	0.023215	2.31	4.73	15.47	1.04
M002	2487.14	100Year-Existing	6.72	114.00	114.88	115.08	115.35	0.029839	3.43	2.81	8.57	1.28
M002	2437.53	100Year-Existing	6.72	112.56	113.31	113.44	113.71	0.036677	3.36	3.01	8.29	1.37
M002	2387.76	100Year-Existing	6.72	110.97	111.81	111.90	112.16	0.026306	3.12	3.21	7.67	1.19
M002	2337.92	100Year-Existing	6.72	109.55	110.42	110.54	110.78	0.030431	3.21	4.11	20.54	1.25
M002	2288.19	100Year-Existing	6.72	107.88	108.66	108.78	109.14	0.036682	3.43	2.58	6.31	1.39
M002	2243.62	100Year-Existing	6.72	106.54	107.69	107.77	108.10	0.025779	3.13	2.67	4.83	1.09
M002	2206.69	100Year-Existing	6.72	105.39	106.29	106.50	106.85	0.044972	3.67	2.38	9.07	1.45
M002	2172.99	100Year-Existing	6.72	104.44	105.12	105.22	105.43	0.035909	3.08	3.21	10.46	1.31
M002	2132.37	100Year-Existing	6.72	102.85	103.67	103.82	104.04	0.032780	3.14	3.10	10.08	1.29
M002	2076.75	100Year-Existing	6.72	100.37	101.39	101.57	102.02	0.040122	3.77	2.14	4.12	1.39
TR001	194.22	100Year-Existing	4.90	116.47	117.37	117.37	117.63	0.016769	2.63	2.77	5.74	0.95
TR001	173.31	100Year-Existing	4.90	113.43	113.85	114.27	116.37	0.528232	7.51	0.78	3.66	4.55
TR001	155.88	100Year-Existing	4.90	111.89	112.31	112.41	112.56	0.073611	3.08	2.80	15.15	1.73
TR001	147.33	100Year-Existing	4.90	111.21	111.58	111.68	112.01	0.155841	4.00	2.40	20.37	2.49
TR001	100.00	100Year-Existing	4.90	106.90	107.50	107.65	107.97	0.053464	3.51	1.99	6.31	1.61
TR001	84.71	100Year-Existing	4.90	105.53	106.82	106.48	106.88	0.003917	1.24	5.37	8.46	0.38
TR001	80		Culvert									
TR001	76.27	100Year-Existing	4.90	105.28	106.20	106.20	106.34	0.010165	2.07	4.34	14.54	0.73
TR001	50.01	100Year-Existing	4.90	102.82	103.27	103.62	105.10	0.294345	6.37	0.93	4.10	3.54
TR001	10.31	100Year-Existing	4.90	100.43	101.10	101.17	101.42	0.028879	2.80	2.23	5.95	1.21
M001	2036.68	100Year-Existing	11.41	99.58	100.57	100.63	100.88	0.023720	3.24	5.68	12.22	1.14
M001	2006.33	100Year-Existing	11.41	98.58	100.66	99.87	100.69	0.001015	1.17	17.15	22.45	0.27
M001	1984.70	100Year-Existing	11.41	98.16	100.40	99.57	100.64	0.003082	2.16	5.29	15.74	0.47
M001	1975		Culvert									
M001	1967.48	100Year-Existing	11.41	97.22	98.37	98.75	99.68	0.051859	5.07	2.25	5.68	1.70
M001	1947.41	100Year-Existing	11.41	96.71	97.93	98.01	98.42	0.022125	3.56	4.29	6.28	1.13
M001	1897.27	100Year-Existing	11.41	94.94	95.84	96.12	96.73	0.054493	4.80	3.15	6.02	1.74
M001	1847.50	100Year-Existing	11.41	93.50	94.68	94.68	95.04	0.019647	3.25	5.07	7.25	1.05
M001	1790.83	100Year-Existing	13.09	91.16	92.23	92.39	93.20	0.053126	5.01	3.86	7.11	1.71
M001	1750	100Year-Existing	13.09	90.25	91.58	91.61	91.96	0.016320	3.37	6.47	9.59	1.00
M001	1700	100Year-Existing	13.09	88.86	89.92	90.15	90.68	0.043652	4.67	4.32	7.38	1.58
M001	1650	100Year-Existing	13.09	86.29	87.28	87.57	88.20	0.057027	5.03	3.85	6.62	1.74
M001	1600	100Year-Existing	13.09	84.49	87.23	85.56	87.23	0.000071	0.39	68.67	42.17	0.08
M001	1581.62	100Year-Existing	13.09	83.85	87.20	85.69	87.23	0.000265	0.82	31.13	59.27	0.15
M001	1560		Culvert									
M001	1559.09	100Year-Existing	13.09	82.32	84.14	84.14	85.02	0.013233	4.17	3.14	41.96	1.00
M001	1477.89	100Year-Existing	13.09	79.96	80.53	80.92	83.11	0.423146	8.25	2.35	10.28	4.31
M001	1418.45	100Year-Existing	13.51	78.38	79.91	79.97	80.23	0.013076	3.12	8.14	15.99	0.88
M001	1359.00	100Year-Existing	13.51	74.82	75.70	76.32	78.21	0.137593	7.55	2.31	4.30	2.78
M001	1338.71	100Year-Existing	13.51	72.61	75.71	74.26	75.90	0.001480	1.92	7.04	10.81	0.36
M001	1295		Culvert									
M001	1292.63	100Year-Existing	13.51	70.47	71.87	72.09	72.92	0.025071	4.84	3.17	15.49	1.33
M001	1280.53	100Year-Existing	13.51	65.50	65.87	66.34	70.81	1.383799	9.85	1.37	7.04	7.12
M001	1254.70	100Year-Existing	13.51	61.55	62.48	62.91	64.10	0.087002	6.56	3.29	7.50	2.45
M001	1214.60	100Year-Existing	13.51	54.66	55.38	55.90	58.05	0.311938	8.73	2.35	6.87	4.03
M001	1186.80	100Year-Existing	13.51	51.00	51.74	52.06	52.89	0.106535	6.14	3.72	9.31	2.60
M001	1151.89	100Year-Existing	13.51	46.66	47.63	48.09	49.37	0.101174	6.78	3.14	7.33	2.57
M001	1131.36	100Year-Existing	13.44	45.40	46.52	46.87	47.65	0.057663	5.52	3.80	7.30	1.92
M001	1094.32	100Year-Existing	13.44	43.36	44.47	44.82	45.62	0.055923	5.50	3.64	6.16	1.90
M001	1036.63	100Year-Existing	14.28	40.61	41.85	42.21	42.81	0.041737	5.11	4.45	7.80	1.67
M001	991.55	100Year-Existing	14.28	36.47	37.46	37.94	39.49	0.154738	7.37	2.87	6.48	2.91
M001	950.72	100Year-Existing	14.28	32.56	33.54	33.88	34.67	0.083912	5.84	3.95	8.46	2.22
M001	894.70	100Year-Existing	14.28	29.50	30.64	30.84	31.33	0.041791	4.70	4.95	8.08	1.61
M001	850.00	100Year-Existing	14.28	28.24	29.73	29.83	30.15	0.015998	3.51	6.19	11.39	1.03
M001	811.85	100Year-Existing	14.28	26.37	27.64	28.02	28.88	0.085817	5.01	3.00	4.84	1.82
M001	754.30	100Year-Existing	14.28	22.84	24.07	24.49	25.15	0.049406	5.18	3.72	6.72	1.80
M001	684.68	100Year-Existing	14.28	20.60	22.22	22.31	22.87	0.021901	4.07	4.63	6.21	1.18
M001	632.62	100Year-Existing	14.28	20.87	22.07	21.74	22.28	0.005190	2.30	7.08	7.05	0.68
M001	625		Bridge									
M001	621.03	100Year-Existing	14.28	19.91	21.13	21.13	21.55	0.011576	3.16	5.33	7.78	0.98
M001	599.17	100Year-Existing	14.28	15.17	15.56	16.02	18.86	0.617770	9.46	1.95	8.73	5.74
M001	547.98	100Year-Existing	14.28	9.22	9.96	10.21	10.78	0.068029	4.58	3.97	10.89	2.08
M001	500	100Year-Existing	14.28	7.42	8.66	8.73	9.12	0.019172	3.61	6.05	9.17	1.18
M001	446.65	100Year-Existing	14.28	6.07	7.10	7.30	7.74	0.035968	4.20	5.73	15.44	1.55
M001	399.97	100Year-Existing	15.47	4.59	5.82	5.94	6.33	0.025253	3.58	6.80	22.02	1.31
M001	349.97	100Year-Existing	15.47	3.89	5.07	5.07	5.30	0.017178	2.97	8.73	18.98	1.04
M001	300.08	100Year-Existing	15.47	3.07	4.33	4.17	4.39	0.004582	1.59	17.58	37.20	0.52

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	15.47	2.39	3.65	3.65	4.00	0.014384	3.35	6.98	10.30	1.05
M001	200	100Year-Existing	15.68	1.60	3.63	2.99	3.65	0.000541	0.87	31.35	35.67	0.21
M001	164.90	100Year-Existing	15.68	1.25	3.53	2.40	3.62	0.001001	1.46	11.99	23.89	0.32
M001	130		Culvert									
M001	122.87	100Year-Existing	15.68	1.00	3.32	2.23	3.42	0.001026	1.47	11.46	20.89	0.32
M001	121.82	100Year-Existing	15.68	0.97	3.18	2.70	3.38	0.002570	2.36	11.24	20.94	0.52
M001	110		Culvert									
M001	108.55	100Year-Existing	15.68	0.48	2.79	2.16	2.84	0.000755	1.18	22.81	25.55	0.26
M001	100.00	100Year-Existing	15.68	0.79	2.80		2.81	0.000267	0.71	42.54	40.63	0.16
M001	50.00	100Year-Existing	15.68	0.56	2.80		2.80	0.000056	0.35	78.92	63.80	0.08
M001	-33.87	100Year-Existing	15.68	0.46	2.80		2.80	0.000019	0.21	99.23	79.66	0.05
M001	-115.21	100Year-Existing	15.68	-0.85	2.80	-0.02	2.80	0.000001	0.07	337.95	154.15	0.01

Petries 100yr WSEL+1m

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	100Year-Existing	4.00	138.52	138.98	138.98	139.12	0.028071	2.12	3.11	11.64	1.12
TR002	26.40	100Year-Existing	4.00	136.29	136.55	136.62	136.79	0.179619	3.29	2.23	17.06	2.51
TR003	75.44	100Year-Existing	2.80	138.22	138.86	138.86	139.03	0.018000	2.06	2.03	6.93	0.93
TR003	31.52	100Year-Existing	2.80	135.25	135.60	135.88	136.83	0.310631	5.22	0.67	4.02	3.44
M002	2878.54	100Year-Existing	9.00	133.44	134.00	134.07	134.30	0.053023	3.46	4.64	13.54	1.61
M002	2830.24	100Year-Existing	9.00	129.86	130.79	131.11	131.81	0.054441	4.82	2.52	4.78	1.74
M002	2781.96	100Year-Existing	9.00	126.60	127.38	127.71	128.50	0.090814	5.31	2.47	5.96	2.14
M002	2733.55	100Year-Existing	9.00	123.62	124.41	124.62	125.11	0.053705	4.41	3.39	8.69	1.70
M002	2711.98	100Year-Existing	9.00	121.55	123.55	122.83	123.58	0.000991	1.21	19.18	35.23	0.28
M002	2710		Bridge									
M002	2706.48	100Year-Existing	9.00	121.23	122.40	122.40	122.96	0.015350	3.33	2.70	6.45	1.00
M002	2686.04	100Year-Existing	9.00	120.42	121.23	121.52	122.22	0.073271	4.96	2.40	5.44	1.93
M002	2636.80	100Year-Existing	9.60	118.88	119.86	119.93	120.25	0.023407	3.35	4.07	7.35	1.15
M002	2586.04	100Year-Existing	9.60	117.62	117.92	118.01	118.19	0.130421	2.98	4.28	26.14	2.15
M002	2536.82	100Year-Existing	9.60	115.95	116.67	116.67	116.85	0.024510	2.61	5.95	16.31	1.09
M002	2487.14	100Year-Existing	9.60	114.00	115.04	115.18	115.52	0.026317	3.66	4.62	13.71	1.24
M002	2437.53	100Year-Existing	9.60	112.56	113.41	113.60	113.93	0.041140	3.93	3.90	10.25	1.49
M002	2387.76	100Year-Existing	9.60	110.97	111.96	112.04	112.35	0.024285	3.39	4.41	8.96	1.18
M002	2337.92	100Year-Existing	9.60	109.55	110.47	110.60	110.90	0.036655	3.70	5.20	21.32	1.38
M002	2288.19	100Year-Existing	9.60	107.88	108.85	109.01	109.35	0.027864	3.58	4.09	13.50	1.26
M002	2243.62	100Year-Existing	9.60	106.54	107.93	107.96	108.33	0.019097	3.18	3.91	5.71	0.98
M002	2206.69	100Year-Existing	9.60	105.39	106.37	106.58	107.15	0.057486	4.47	3.36	15.31	1.67
M002	2172.99	100Year-Existing	9.60	104.44	105.22	105.31	105.57	0.034275	3.34	4.27	11.62	1.31
M002	2132.37	100Year-Existing	9.60	102.85	103.77	103.90	104.19	0.033273	3.52	4.55	16.71	1.34
M002	2076.75	100Year-Existing	9.60	100.37	101.57	101.77	102.28	0.035506	4.09	2.92	4.64	1.36
TR001	194.22	100Year-Existing	7.00	116.47	117.52	117.52	117.82	0.016313	2.92	3.70	6.52	0.97
TR001	173.31	100Year-Existing	7.00	113.43	113.93	114.40	116.61	0.407931	7.88	1.11	4.23	4.18
TR001	155.88	100Year-Existing	7.00	111.89	112.36	112.46	112.69	0.084647	3.64	3.68	19.83	1.90
TR001	147.33	100Year-Existing	7.00	111.21	111.61	111.73	112.11	0.165977	4.45	3.05	21.22	2.62
TR001	100.00	100Year-Existing	7.00	106.90	107.60	107.77	108.14	0.049989	3.86	2.68	7.11	1.60
TR001	84.71	100Year-Existing	7.00	105.53	106.91	106.60	107.00	0.006409	1.67	6.18	11.60	0.49
TR001	80		Culvert									
TR001	76.27	100Year-Existing	7.00	105.28	106.29	106.29	106.44	0.011097	2.31	5.72	16.57	0.77
TR001	50.01	100Year-Existing	7.00	102.82	103.37	103.76	105.20	0.220095	6.55	1.37	4.82	3.19
TR001	10.31	100Year-Existing	7.00	100.43	101.20	101.31	101.61	0.031307	3.24	2.83	6.56	1.30
M001	2036.68	100Year-Existing	16.30	99.58	100.98	100.72	101.11	0.006917	2.29	13.16	21.97	0.66
M001	2006.33	100Year-Existing	16.30	98.58	101.01		101.04	0.000745	1.12	26.31	27.05	0.24
M001	1984.70	100Year-Existing	16.30	98.16	100.70	99.91	100.99	0.003425	2.48	7.76	22.79	0.51
M001	1975		Culvert									
M001	1967.48	100Year-Existing	16.30	97.22	99.10	99.10	99.91	0.014586	4.00	4.08	9.22	1.00
M001	1947.41	100Year-Existing	16.30	96.71	97.85	98.25	99.10	0.061069	5.63	3.83	6.00	1.85
M001	1897.27	100Year-Existing	16.30	94.94	96.13	96.33	96.85	0.030905	4.46	5.04	7.17	1.38
M001	1847.50	100Year-Existing	16.30	93.50	94.78	94.89	95.34	0.027590	4.11	5.80	7.57	1.26
M001	1790.83	100Year-Existing	18.70	91.16	92.50	92.79	93.44	0.038768	5.12	6.31	12.23	1.53
M001	1750	100Year-Existing	18.70	90.25	91.72	91.81	92.24	0.020202	4.04	7.85	10.22	1.13
M001	1700	100Year-Existing	18.70	88.86	90.15	90.37	90.94	0.034846	4.87	6.14	8.35	1.47
M001	1650	100Year-Existing	18.70	86.29	87.42	87.81	88.62	0.062456	5.85	4.86	7.25	1.87
M001	1600	100Year-Existing	18.70	84.49	87.35	85.66	87.35	0.000120	0.52	73.50	42.96	0.10
M001	1581.62	100Year-Existing	18.70	83.85	87.30	86.16	87.34	0.000453	1.09	34.67	63.60	0.19
M001	1560		Culvert									
M001	1559.09	100Year-Existing	18.70	82.32	84.61	84.61	85.73	0.012221	4.69	3.98	56.01	1.00
M001	1477.89	100Year-Existing	18.70	79.96	80.59	81.07	83.78	0.448988	9.40	2.99	10.87	4.56
M001	1418.45	100Year-Existing	19.30	78.38	80.05	80.13	80.43	0.015079	3.59	10.43	17.41	0.96
M001	1359.00	100Year-Existing	19.30	74.82	75.95	76.63	78.39	0.096997	7.65	3.44	4.90	2.44
M001	1338.71	100Year-Existing	19.30	72.61	77.06	74.65	77.24	0.000861	1.88	10.26	14.78	0.29
M001	1295		Culvert									
M001	1292.63	100Year-Existing	19.30	70.47	72.27	72.51	73.53	0.021508	5.32	4.12	17.08	1.28
M001	1280.53	100Year-Existing	19.30	65.50	65.94	66.50	71.45	1.261021	10.40	1.86	8.19	6.97
M001	1254.70	100Year-Existing	19.30	61.55	62.60	63.11	64.59	0.090736	7.45	4.27	8.14	2.57
M001	1214.60	100Year-Existing	19.30	54.66	55.49	56.09	58.56	0.282988	9.55	3.14	7.44	3.98
M001	1186.80	100Year-Existing	19.30	51.00	51.83	52.25	53.33	0.115094	7.10	4.68	9.94	2.77
M001	1151.89	100Year-Existing	19.30	46.66	47.78	48.29	49.78	0.096962	7.50	4.27	8.43	2.60
M001	1131.36	100Year-Existing	19.20	45.40	46.67	47.09	48.06	0.059788	6.26	4.96	8.05	2.00
M001	1094.32	100Year-Existing	19.20	43.36	44.65	45.07	46.02	0.053804	6.14	4.82	6.73	1.93
M001	1036.63	100Year-Existing	20.40	40.61	42.04	42.41	43.24	0.042643	5.83	6.14	11.03	1.74
M001	991.55	100Year-Existing	20.40	36.47	37.60	38.17	39.95	0.144470	8.12	3.83	7.03	2.90
M001	950.72	100Year-Existing	20.40	32.56	33.66	34.08	35.09	0.089426	6.71	5.03	9.19	2.35
M001	894.70	100Year-Existing	20.40	29.50	30.81	31.05	31.65	0.041288	5.28	6.42	8.63	1.65
M001	850.00	100Year-Existing	20.40	28.24	29.87	29.99	30.39	0.018310	4.04	7.86	12.61	1.13
M001	811.85	100Year-Existing	20.40	26.37	27.89	28.29	29.15	0.061352	5.13	4.34	5.62	1.62
M001	754.30	100Year-Existing	20.40	22.84	24.19	24.83	25.67	0.058210	6.16	4.60	7.39	2.00
M001	684.68	100Year-Existing	20.40	20.60	22.48	22.85	23.23	0.020983	4.54	6.78	10.80	1.20
M001	632.62	100Year-Existing	20.40	20.87	22.73	21.97	22.83	0.001841	1.84	20.81	34.56	0.43
M001	625		Bridge									
M001	621.03	100Year-Existing	20.40	19.91	21.35	21.35	21.89	0.011464	3.57	6.69	13.53	1.00
M001	599.17	100Year-Existing	20.40	15.17	15.64	16.18	19.21	0.485269	9.98	2.70	9.39	5.31
M001	547.98	100Year-Existing	20.40	9.22	10.05	10.36	11.13	0.074360	5.33	4.96	11.74	2.23
M001	500	100Year-Existing	20.40	7.42	8.86	8.94	9.40	0.018619	4.02	7.95	10.06	1.20
M001	446.65	100Year-Existing	20.40	6.07	7.20	7.48	7.99	0.039717	4.81	7.38	17.64	1.67
M001	399.97	100Year-Existing	22.10	4.59	5.93	6.13	6.47	0.025323	3.91	9.27	24.00	1.34
M001	349.97	100Year-Existing	22.10	3.89	5.21	5.21	5.47	0.016667	3.24	11.48	21.05	1.05
M001	300.08	100Year-Existing	22.10	3.07	4.54	4.25	4.58	0.003212	1.51	25.44	40.76	0.45

HEC-RAS Plan: Plan 23 Profile: 100Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	250.00	100Year-Existing	22.10	2.39	3.85	3.85	4.26	0.013917	3.71	9.17	11.38	1.06
M001	200	100Year-Existing	22.40	1.60	3.94	3.07	3.96	0.000494	0.93	44.49	46.48	0.21
M001	164.90	100Year-Existing	22.40	1.25	3.90	2.65	3.94	0.000607	1.26	35.17	39.89	0.25
M001	130		Culvert									
M001	122.87	100Year-Existing	22.40	1.00	3.73	2.48	3.88	0.001135	1.75	13.78	29.95	0.35
M001	121.82	100Year-Existing	22.40	0.97	3.78	3.20	3.83	0.000685	1.43	31.76	31.65	0.28
M001	110		Culvert									
M001	108.55	100Year-Existing	22.40	0.48	3.80	2.60	3.81	0.000162	0.71	60.29	43.93	0.13
M001	100.00	100Year-Existing	22.40	0.79	3.80		3.80	0.000069	0.48	86.85	47.29	0.09
M001	50.00	100Year-Existing	22.40	0.56	3.80		3.80	0.000018	0.25	144.91	68.24	0.05
M001	-33.87	100Year-Existing	22.40	0.46	3.80		3.80	0.000008	0.17	183.18	88.29	0.03
M001	-115.21	100Year-Existing	22.40	-0.85	3.80	0.13	3.80	0.000001	0.07	500.29	168.80	0.01

Petries 20yr n+20%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	3.10	138.52	138.93	138.93	139.05	0.042747	1.98	2.55	11.02	1.12
TR002	26.40	20Year-Existing	3.10	136.29	136.57	136.60	136.67	0.089206	2.12	2.68	17.60	1.51
TR003	75.44	20Year-Existing	1.90	138.22	138.78	138.78	138.91	0.023203	1.74	1.53	5.95	0.85
TR003	31.52	20Year-Existing	1.90	135.25	135.58	135.75	136.31	0.301255	3.99	0.58	3.75	2.77
M002	2878.54	20Year-Existing	6.20	133.44	133.97	133.98	134.14	0.046849	2.60	4.24	13.19	1.24
M002	2830.24	20Year-Existing	6.20	129.86	130.66	130.91	131.44	0.074004	4.15	1.92	4.29	1.64
M002	2781.96	20Year-Existing	6.20	126.60	127.36	127.54	127.94	0.070112	3.81	2.35	5.84	1.56
M002	2733.55	20Year-Existing	6.20	123.62	124.34	124.50	124.83	0.060090	3.61	2.78	8.24	1.47
M002	2711.98	20Year-Existing	6.20	121.55	122.30	122.57	123.24	0.088049	4.76	1.54	4.15	1.83
M002	2710		Bridge									
M002	2706.48	20Year-Existing	6.20	121.23	122.01	122.15	122.63	0.042931	3.50	1.77	5.33	1.30
M002	2686.04	20Year-Existing	6.20	120.42	121.28	121.37	121.66	0.037216	3.09	2.68	5.74	1.16
M002	2636.80	20Year-Existing	6.60	118.88	119.73	119.77	120.03	0.031056	2.88	3.16	6.56	1.07
M002	2586.04	20Year-Existing	6.60	117.62	117.99	117.95	118.05	0.030178	1.47	6.26	29.68	0.91
M002	2536.82	20Year-Existing	6.60	115.95	116.59	116.59	116.73	0.033562	2.30	4.67	15.42	1.04
M002	2487.14	20Year-Existing	6.60	114.00	114.98	115.07	115.27	0.023812	2.78	3.90	12.76	0.97
M002	2437.53	20Year-Existing	6.60	112.56	113.33	113.43	113.69	0.045925	3.19	3.15	8.60	1.29
M002	2387.76	20Year-Existing	6.60	110.97	111.85	111.90	112.14	0.028801	2.83	3.54	8.09	1.05
M002	2337.92	20Year-Existing	6.60	109.55	110.46	110.54	110.70	0.029843	2.74	4.82	21.17	1.04
M002	2288.19	20Year-Existing	6.60	107.88	108.83	108.77	109.08	0.020561	2.52	3.82	10.06	0.90
M002	2243.62	20Year-Existing	6.60	106.54	107.77	107.77	108.08	0.025308	2.74	3.04	5.11	0.92
M002	2206.69	20Year-Existing	6.60	105.39	106.32	106.49	106.78	0.050529	3.35	2.71	12.78	1.29
M002	2172.99	20Year-Existing	6.60	104.44	105.18	105.21	105.39	0.031963	2.57	3.80	11.17	1.05
M002	2132.37	20Year-Existing	6.60	102.85	103.64	103.69	104.07	0.057883	3.36	2.79	9.69	1.42
M002	2076.75	20Year-Existing	6.60	100.37	101.65	101.56	101.91	0.017237	2.52	3.32	4.88	0.80
TR001	194.22	20Year-Existing	4.90	116.47	117.37	117.37	117.63	0.024147	2.63	2.77	5.74	0.95
TR001	173.31	20Year-Existing	4.90	113.43	113.87	114.27	116.01	0.594472	6.95	0.85	3.79	4.07
TR001	155.88	20Year-Existing	4.90	111.89	112.35	112.41	112.52	0.063605	2.61	3.58	19.50	1.37
TR001	147.33	20Year-Existing	4.90	111.21	111.58	111.68	111.97	0.198551	3.82	2.51	20.52	2.35
TR001	100.00	20Year-Existing	4.90	106.90	107.56	107.65	107.89	0.047388	2.98	2.40	6.79	1.29
TR001	84.71	20Year-Existing	4.90	105.53	106.82	106.48	106.88	0.005641	1.24	5.37	8.46	0.38
TR001	80		Culvert									
TR001	76.27	20Year-Existing	4.90	105.28	106.20	106.20	106.34	0.014638	2.07	4.34	14.54	0.73
TR001	50.01	20Year-Existing	4.90	102.82	103.29	103.62	104.89	0.349556	5.99	1.00	4.24	3.24
TR001	10.31	20Year-Existing	4.90	100.43	101.48	101.17	101.55	0.005120	1.40	4.93	8.34	0.46
M001	2036.68	20Year-Existing	11.30	99.58	100.62	100.62	100.87	0.024347	2.87	6.42	12.87	0.97
M001	2006.33	20Year-Existing	11.30	98.58	100.66	99.87	100.69	0.001444	1.16	17.09	22.38	0.27
M001	1984.70	20Year-Existing	11.30	98.16	100.39	99.56	100.62	0.004469	2.15	5.25	15.34	0.47
M001	1975		Culvert									
M001	1967.48	20Year-Existing	11.30	97.22	98.36	98.74	99.66	0.074928	5.05	2.24	5.65	1.70
M001	1947.41	20Year-Existing	11.30	96.71	98.01	98.01	98.40	0.023218	3.20	4.79	6.58	0.98
M001	1897.27	20Year-Existing	11.30	94.94	95.89	96.12	96.62	0.059527	4.36	3.46	6.24	1.53
M001	1847.50	20Year-Existing	11.30	93.50	94.67	94.67	95.03	0.028158	3.24	5.04	7.24	1.04
M001	1790.83	20Year-Existing	12.90	91.16	92.48	92.39	92.97	0.029113	3.65	6.06	12.09	1.10
M001	1750	20Year-Existing	12.90	90.25	91.60	91.60	91.94	0.021210	3.23	6.66	9.67	0.95
M001	1700	20Year-Existing	12.90	88.86	90.02	90.14	90.55	0.038548	3.94	5.13	7.83	1.26
M001	1650	20Year-Existing	12.90	86.29	87.32	87.56	88.09	0.064528	4.62	4.17	6.82	1.56
M001	1600	20Year-Existing	12.90	84.49	87.23	85.56	87.23	0.000101	0.39	68.39	42.13	0.08
M001	1581.62	20Year-Existing	12.90	83.85	87.20	85.67	87.22	0.000376	0.81	30.87	58.90	0.15
M001	1560		Culvert									
M001	1559.09	20Year-Existing	12.90	82.32	84.12	84.12	85.00	0.019061	4.14	3.11	41.56	1.00
M001	1477.89	20Year-Existing	12.90	79.96	80.54	80.91	82.67	0.477167	7.55	2.54	10.46	3.85
M001	1418.45	20Year-Existing	13.40	78.38	79.97	79.97	80.22	0.014260	2.80	9.14	16.68	0.77
M001	1359.00	20Year-Existing	13.40	74.82	75.73	76.32	77.99	0.172211	7.20	2.42	4.38	2.60
M001	1338.71	20Year-Existing	13.40	72.61	75.70	74.25	75.88	0.002139	1.91	7.00	10.77	0.36
M001	1295		Culvert									
M001	1292.63	20Year-Existing	13.40	70.47	71.87	72.09	72.91	0.035914	4.82	3.16	15.47	1.32
M001	1280.53	20Year-Existing	13.40	65.50	65.88	66.34	70.49	1.829542	9.52	1.41	7.13	6.84
M001	1254.70	20Year-Existing	13.40	61.55	62.55	62.90	63.72	0.082008	5.66	3.86	7.88	2.01
M001	1214.60	20Year-Existing	13.40	54.66	55.41	55.89	57.65	0.352700	8.04	2.55	7.03	3.61
M001	1186.80	20Year-Existing	13.40	51.00	51.80	52.05	52.63	0.096021	5.24	4.38	9.76	2.09
M001	1151.89	20Year-Existing	13.40	46.66	47.67	48.08	49.11	0.113179	6.21	3.46	7.68	2.29
M001	1131.36	20Year-Existing	13.50	45.40	46.63	46.87	47.42	0.050990	4.68	4.62	7.86	1.53
M001	1094.32	20Year-Existing	13.50	43.36	44.55	44.82	45.46	0.057829	4.94	4.13	6.41	1.64
M001	1036.63	20Year-Existing	14.10	40.61	41.94	42.21	42.65	0.040420	4.45	5.19	8.56	1.39
M001	991.55	20Year-Existing	14.10	36.47	37.49	37.94	39.23	0.182176	6.87	3.06	6.60	2.65
M001	950.72	20Year-Existing	14.10	32.56	33.63	33.87	34.41	0.074300	4.94	4.69	8.97	1.77
M001	894.70	20Year-Existing	14.10	29.50	30.71	30.83	31.25	0.042761	4.18	5.55	8.34	1.37
M001	850.00	20Year-Existing	14.10	28.24	29.82	29.83	30.12	0.015322	3.01	7.26	12.23	0.85
M001	811.85	20Year-Existing	14.10	26.37	27.66	28.01	28.79	0.109601	4.81	3.10	4.90	1.72
M001	754.30	20Year-Existing	14.10	22.84	24.17	24.48	24.92	0.043017	4.36	4.48	7.30	1.43
M001	684.68	20Year-Existing	14.10	20.60	22.21	22.30	22.86	0.032286	4.09	4.54	6.15	1.20
M001	632.62	20Year-Existing	14.10	20.87	22.09	21.74	22.29	0.006896	2.24	7.20	7.32	0.65
M001	625		Bridge									
M001	621.03	20Year-Existing	14.10	19.91	21.13	21.13	21.54	0.016329	3.12	5.32	7.77	0.97
M001	599.17	20Year-Existing	14.10	15.17	15.57	16.01	18.34	0.687755	8.68	2.11	8.88	5.10
M001	547.98	20Year-Existing	14.10	9.22	10.02	10.20	10.61	0.062681	3.94	4.62	11.48	1.69

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	14.10	7.42	8.73	8.73	9.10	0.020893	3.27	6.64	9.47	1.03
M001	446.65	20Year-Existing	14.10	6.07	7.14	7.28	7.63	0.037304	3.72	6.50	15.91	1.33
M001	399.97	20Year-Existing	15.30	4.59	6.01	5.94	6.19	0.011253	2.30	11.24	28.14	0.75
M001	349.97	20Year-Existing	15.30	3.89	5.06	5.06	5.29	0.024714	2.96	8.66	18.94	1.04
M001	300.08	20Year-Existing	15.30	3.07	4.39	4.17	4.43	0.004523	1.37	19.84	38.11	0.44
M001	250.00	20Year-Existing	15.30	2.39	3.65	3.65	3.99	0.020745	3.34	6.92	10.27	1.05
M001	200	20Year-Existing	15.30	1.60	3.62	2.97	3.64	0.000778	0.87	30.85	35.52	0.21
M001	164.90	20Year-Existing	15.30	1.25	3.51	2.39	3.60	0.001419	1.44	11.87	21.16	0.32
M001	130		Culvert									
M001	122.87	20Year-Existing	15.30	1.00	3.31	2.21	3.40	0.001435	1.45	11.39	20.63	0.32
M001	121.82	20Year-Existing	15.30	0.97	3.16	2.67	3.37	0.003699	2.34	10.98	20.63	0.51
M001	110		Culvert									
M001	108.55	20Year-Existing	15.30	0.48	2.80	2.14	2.84	0.001016	1.14	23.01	25.71	0.25
M001	100.00	20Year-Existing	15.30	0.79	2.80		2.81	0.000364	0.69	42.66	40.65	0.16
M001	50.00	20Year-Existing	15.30	0.56	2.80		2.80	0.000076	0.34	78.96	63.81	0.07
M001	-33.87	20Year-Existing	15.30	0.46	2.80		2.80	0.000026	0.20	99.24	79.66	0.04
M001	-115.21	20Year-Existing	15.30	-0.85	2.80	-0.04	2.80	0.000002	0.07	337.95	154.15	0.01

Petries 20yr n-20%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	3.10	138.52	138.90	138.93	139.06	0.028001	2.25	2.23	10.60	1.34
TR002	26.40	20Year-Existing	3.10	136.29	136.51	136.60	136.79	0.171197	3.46	1.64	16.25	2.95
TR003	75.44	20Year-Existing	1.90	138.22	138.73	138.78	138.92	0.018007	2.10	1.22	5.28	1.10
TR003	31.52	20Year-Existing	1.90	135.25	135.54	135.75	136.76	0.290026	5.09	0.43	3.26	3.94
M002	2878.54	20Year-Existing	6.20	133.44	133.88	133.98	134.22	0.054056	3.57	3.04	12.17	1.93
M002	2830.24	20Year-Existing	6.20	129.86	130.58	130.91	131.68	0.054542	4.88	1.58	3.95	2.06
M002	2781.96	20Year-Existing	6.20	126.60	127.22	127.54	128.41	0.086973	5.33	1.58	4.97	2.49
M002	2733.55	20Year-Existing	6.20	123.62	124.25	124.50	125.11	0.053509	4.60	2.08	7.69	2.03
M002	2711.98	20Year-Existing	6.20	121.55	122.17	122.57	123.66	0.081132	5.98	1.23	3.84	2.54
M002	2710		Bridge									
M002	2706.48	20Year-Existing	6.20	121.23	121.82	122.15	122.95	0.051477	4.71	1.32	4.78	2.04
M002	2686.04	20Year-Existing	6.20	120.42	121.15	121.37	121.82	0.036244	4.01	1.99	5.01	1.67
M002	2636.80	20Year-Existing	6.60	118.88	119.59	119.77	120.16	0.032360	3.83	2.30	5.80	1.59
M002	2586.04	20Year-Existing	6.60	117.62	117.89	117.95	118.07	0.065496	2.40	3.61	25.04	1.86
M002	2536.82	20Year-Existing	6.60	115.95	116.56	116.59	116.73	0.019003	2.51	4.28	15.06	1.16
M002	2487.14	20Year-Existing	6.60	114.00	114.79	115.07	115.46	0.031087	4.01	2.22	5.47	1.59
M002	2437.53	20Year-Existing	6.60	112.56	113.25	113.43	113.79	0.035845	3.86	2.50	7.47	1.66
M002	2387.76	20Year-Existing	6.60	110.97	111.73	111.90	112.23	0.027299	3.65	2.61	6.85	1.49
M002	2337.92	20Year-Existing	6.60	109.55	110.38	110.54	110.88	0.027352	3.66	3.35	17.45	1.46
M002	2288.19	20Year-Existing	6.60	107.88	108.57	108.77	109.26	0.039266	4.04	2.09	5.65	1.75
M002	2243.62	20Year-Existing	6.60	106.54	107.68	107.77	108.10	0.017126	3.15	2.60	4.78	1.11
M002	2206.69	20Year-Existing	6.60	105.39	106.20	106.49	107.04	0.050109	4.39	1.83	5.00	1.87
M002	2172.99	20Year-Existing	6.60	104.44	105.07	105.21	105.50	0.035910	3.58	2.65	9.27	1.61
M002	2132.37	20Year-Existing	6.60	102.85	103.61	103.69	104.13	0.031787	3.62	2.55	9.35	1.56
M002	2076.75	20Year-Existing	6.60	100.37	101.30	101.56	102.14	0.039361	4.31	1.80	3.85	1.69
TR001	194.22	20Year-Existing	4.90	116.47	117.31	117.37	117.64	0.015001	2.95	2.43	5.42	1.11
TR001	173.31	20Year-Existing	4.90	113.43	113.84	114.27	116.52	0.369578	7.73	0.76	3.61	4.74
TR001	155.88	20Year-Existing	4.90	111.89	112.27	112.41	112.68	0.088339	3.84	2.19	13.55	2.31
TR001	147.33	20Year-Existing	4.90	111.21	111.56	111.68	112.11	0.129204	4.41	2.15	19.21	2.81
TR001	100.00	20Year-Existing	4.90	106.90	107.44	107.65	108.14	0.058488	4.20	1.62	5.83	2.05
TR001	84.71	20Year-Existing	4.90	105.53	106.82	106.48	106.88	0.002507	1.24	5.37	8.46	0.38
TR001	80		Culvert									
TR001	76.27	20Year-Existing	4.90	105.28	106.20	106.20	106.34	0.006506	2.07	4.34	14.54	0.73
TR001	50.01	20Year-Existing	4.90	102.82	103.26	103.62	105.29	0.218884	6.69	0.88	4.00	3.79
TR001	10.31	20Year-Existing	4.90	100.43	101.02	101.17	101.51	0.032989	3.38	1.80	5.47	1.58
M001	2036.68	20Year-Existing	11.30	99.58	100.54	100.62	100.89	0.017410	3.40	5.35	11.94	1.21
M001	2006.33	20Year-Existing	11.30	98.58	100.63	99.87	100.66	0.000702	1.20	16.46	21.60	0.28
M001	1984.70	20Year-Existing	11.30	98.16	100.39	99.56	100.62	0.001986	2.15	5.25	15.34	0.47
M001	1975		Culvert									
M001	1967.48	20Year-Existing	11.30	97.22	98.36	98.74	99.66	0.033301	5.05	2.24	5.65	1.70
M001	1947.41	20Year-Existing	11.30	96.71	97.74	98.01	98.60	0.031524	4.63	3.16	5.56	1.63
M001	1897.27	20Year-Existing	11.30	94.94	95.81	96.12	96.81	0.041266	5.06	2.94	5.87	1.88
M001	1847.50	20Year-Existing	11.30	93.50	94.52	94.67	95.10	0.025008	4.07	3.94	6.73	1.43
M001	1790.83	20Year-Existing	12.90	91.16	92.19	92.39	93.26	0.039555	5.24	3.59	6.83	1.83
M001	1750	20Year-Existing	12.90	90.25	91.41	91.60	92.04	0.020052	4.21	4.95	8.73	1.35
M001	1700	20Year-Existing	12.90	88.86	89.87	90.14	90.75	0.034119	4.97	3.96	7.18	1.73
M001	1650	20Year-Existing	12.90	86.29	87.17	87.56	88.48	0.061111	5.93	3.14	6.16	2.20
M001	1600	20Year-Existing	12.90	84.49	87.22	85.56	87.23	0.000045	0.39	68.32	42.12	0.08
M001	1581.62	20Year-Existing	12.90	83.85	87.20	85.67	87.22	0.000167	0.81	30.87	58.90	0.15
M001	1560		Culvert									
M001	1559.09	20Year-Existing	12.90	82.32	84.12	84.12	85.00	0.008472	4.14	3.11	41.56	1.00
M001	1477.89	20Year-Existing	12.90	79.96	80.51	80.91	83.45	0.322911	8.73	2.17	10.11	4.67
M001	1418.45	20Year-Existing	13.40	78.38	79.77	79.97	80.33	0.015409	3.93	6.04	14.04	1.17
M001	1359.00	20Year-Existing	13.40	74.82	75.68	76.32	78.28	0.093477	7.68	2.24	4.26	2.85
M001	1338.71	20Year-Existing	13.40	72.61	75.70	74.25	75.88	0.000950	1.91	7.00	10.77	0.36
M001	1295		Culvert									
M001	1292.63	20Year-Existing	13.40	70.47	71.87	72.09	72.91	0.015962	4.82	3.16	15.47	1.32
M001	1280.53	20Year-Existing	13.40	65.50	65.87	66.34	71.06	0.951161	10.09	1.33	6.92	7.36
M001	1254.70	20Year-Existing	13.40	61.55	62.39	62.90	64.75	0.090898	7.74	2.69	7.01	3.07
M001	1214.60	20Year-Existing	13.40	54.66	55.34	55.89	58.74	0.282759	9.76	2.06	6.59	4.72
M001	1186.80	20Year-Existing	13.40	51.00	51.66	52.05	53.38	0.119042	7.37	3.03	8.78	3.35
M001	1151.89	20Year-Existing	13.40	46.66	47.57	48.08	49.82	0.092435	7.61	2.70	6.82	3.03
M001	1131.36	20Year-Existing	13.50	45.40	46.42	46.87	48.11	0.062744	6.61	3.10	6.74	2.45
M001	1094.32	20Year-Existing	13.50	43.36	44.38	44.82	45.95	0.055565	6.37	3.10	5.88	2.33
M001	1036.63	20Year-Existing	14.10	40.61	41.73	42.21	43.10	0.042999	5.96	3.62	7.02	2.08
M001	991.55	20Year-Existing	14.10	36.47	37.41	37.94	39.88	0.131287	8.07	2.56	6.30	3.30
M001	950.72	20Year-Existing	14.10	32.56	33.45	33.87	35.13	0.093918	7.02	3.18	7.90	2.87
M001	894.70	20Year-Existing	14.10	29.50	30.54	30.83	31.50	0.043039	5.49	4.14	7.70	2.00
M001	850.00	20Year-Existing	14.10	28.24	29.57	29.83	30.22	0.018230	4.25	4.62	7.86	1.35
M001	811.85	20Year-Existing	14.10	26.37	27.59	28.01	28.97	0.065008	5.26	2.80	4.72	1.96
M001	754.30	20Year-Existing	14.10	22.84	23.95	24.48	25.54	0.054062	6.16	3.00	6.14	2.30
M001	684.68	20Year-Existing	14.10	20.60	22.07	22.30	23.02	0.023497	4.83	3.75	5.58	1.50
M001	632.62	20Year-Existing	14.10	20.87	21.42	21.74	22.48	0.045453	5.07	3.20	6.09	2.19
M001	625		Bridge									
M001	621.03	20Year-Existing	14.10	19.91	20.93	21.13	21.63	0.015565	4.01	4.17	6.99	1.37
M001	599.17	20Year-Existing	14.10	15.17	15.56	16.01	18.71	0.373715	9.25	1.97	8.75	5.59
M001	547.98	20Year-Existing	14.10	9.22	9.89	10.20	11.09	0.077855	5.50	3.21	10.11	2.71

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	14.10	7.42	8.54	8.73	9.20	0.021048	4.29	4.92	8.51	1.51
M001	446.65	20Year-Existing	14.10	6.07	7.05	7.28	7.86	0.029943	4.60	5.07	15.01	1.75
M001	399.97	20Year-Existing	15.30	4.59	5.74	5.94	6.53	0.027246	4.31	5.18	18.52	1.67
M001	349.97	20Year-Existing	15.30	3.89	5.01	5.06	5.31	0.015156	3.33	7.70	18.23	1.21
M001	300.08	20Year-Existing	15.30	3.07	4.26	4.17	4.33	0.004801	1.92	14.75	36.05	0.66
M001	250.00	20Year-Existing	15.30	2.39	3.65	3.65	3.99	0.009220	3.34	6.92	10.27	1.05
M001	200	20Year-Existing	15.30	1.60	3.61	2.97	3.62	0.000362	0.88	30.35	35.37	0.22
M001	164.90	20Year-Existing	15.30	1.25	3.51	2.39	3.60	0.000627	1.44	11.89	21.41	0.31
M001	130		Culvert									
M001	122.87	20Year-Existing	15.30	1.00	3.31	2.21	3.41	0.000634	1.44	11.41	20.71	0.32
M001	121.82	20Year-Existing	15.30	0.97	3.18	2.67	3.38	0.001555	2.29	11.28	20.99	0.50
M001	110		Culvert									
M001	108.55	20Year-Existing	15.30	0.48	2.79	2.14	2.83	0.000467	1.15	22.65	25.43	0.25
M001	100.00	20Year-Existing	15.30	0.79	2.80		2.81	0.000164	0.69	42.44	40.61	0.16
M001	50.00	20Year-Existing	15.30	0.56	2.80		2.80	0.000034	0.34	78.88	63.80	0.07
M001	-33.87	20Year-Existing	15.30	0.46	2.80		2.80	0.000012	0.20	99.23	79.66	0.04
M001	-115.21	20Year-Existing	15.30	-0.85	2.80	-0.04	2.80	0.000001	0.07	337.95	154.15	0.01

Petries 20yr Q+10%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	3.41	138.52	138.95	138.95	139.08	0.028452	2.02	2.77	11.29	1.11
TR002	26.40	20Year-Existing	3.41	136.29	136.53	136.60	136.76	0.180545	3.13	2.00	16.74	2.48
TR003	75.44	20Year-Existing	2.09	138.22	138.79	138.79	138.94	0.018616	1.89	1.56	6.01	0.92
TR003	31.52	20Year-Existing	2.09	135.25	135.56	135.79	136.65	0.346588	4.85	0.51	3.54	3.52
M002	2878.54	20Year-Existing	6.82	133.44	133.94	134.00	134.19	0.051372	3.12	3.86	12.88	1.55
M002	2830.24	20Year-Existing	6.82	129.86	130.66	130.95	131.59	0.061121	4.54	1.94	4.30	1.79
M002	2781.96	20Year-Existing	6.82	126.60	127.31	127.58	128.20	0.082974	4.69	2.06	5.52	2.00
M002	2733.55	20Year-Existing	6.82	123.62	124.33	124.52	124.96	0.054513	4.07	2.69	8.18	1.68
M002	2711.98	20Year-Existing	6.82	121.55	122.28	122.64	123.49	0.081993	5.40	1.49	4.10	2.10
M002	2710		Bridge									
M002	2706.48	20Year-Existing	6.82	121.23	122.03	122.21	122.75	0.033682	3.77	1.81	5.38	1.39
M002	2686.04	20Year-Existing	6.82	120.42	121.20	121.40	121.85	0.050699	4.00	2.23	5.27	1.60
M002	2636.80	20Year-Existing	7.26	118.88	119.73	119.80	120.10	0.026121	3.17	3.16	6.56	1.18
M002	2586.04	20Year-Existing	7.26	117.62	117.91	117.96	118.09	0.092117	2.41	3.99	25.66	1.79
M002	2536.82	20Year-Existing	7.26	115.95	116.60	116.60	116.76	0.024398	2.41	4.91	15.59	1.07
M002	2487.14	20Year-Existing	7.26	114.00	114.92	115.11	115.39	0.028601	3.47	3.14	10.08	1.26
M002	2437.53	20Year-Existing	7.26	112.56	113.33	113.48	113.76	0.038349	3.50	3.15	8.62	1.41
M002	2387.76	20Year-Existing	7.26	110.97	111.85	111.93	112.20	0.025443	3.16	3.46	8.00	1.18
M002	2337.92	20Year-Existing	7.26	109.55	110.43	110.55	110.80	0.031928	3.32	4.32	20.83	1.28
M002	2288.19	20Year-Existing	7.26	107.88	108.69	108.80	109.18	0.034883	3.47	2.80	6.58	1.36
M002	2243.62	20Year-Existing	7.26	106.54	107.75	107.81	108.15	0.023131	3.10	2.95	5.04	1.05
M002	2206.69	20Year-Existing	7.26	105.39	106.30	106.51	106.92	0.048745	3.87	2.48	9.88	1.51
M002	2172.99	20Year-Existing	7.26	104.44	105.14	105.24	105.46	0.035148	3.12	3.44	10.73	1.30
M002	2132.37	20Year-Existing	7.26	102.85	103.69	103.84	104.07	0.033146	3.23	3.31	10.57	1.30
M002	2076.75	20Year-Existing	7.26	100.37	101.42	101.62	102.07	0.038986	3.84	2.29	4.22	1.38
TR001	194.22	20Year-Existing	5.39	116.47	117.41	117.41	117.68	0.016470	2.70	3.01	5.95	0.95
TR001	173.31	20Year-Existing	5.39	113.43	113.87	114.30	116.44	0.494544	7.62	0.86	3.80	4.46
TR001	155.88	20Year-Existing	5.39	111.89	112.32	112.42	112.59	0.076555	3.21	2.97	15.62	1.77
TR001	147.33	20Year-Existing	5.39	111.21	111.59	111.69	112.04	0.158145	4.11	2.56	20.59	2.52
TR001	100.00	20Year-Existing	5.39	106.90	107.52	107.68	108.01	0.052553	3.60	2.15	6.51	1.61
TR001	84.71	20Year-Existing	5.39	105.53	106.85	106.51	106.91	0.004419	1.34	5.56	8.85	0.41
TR001	80		Culvert									
TR001	76.27	20Year-Existing	5.39	105.28	106.21	106.21	106.36	0.010719	2.15	4.62	14.97	0.75
TR001	50.01	20Year-Existing	5.39	102.82	103.30	103.66	105.12	0.269243	6.40	1.04	4.30	3.42
TR001	10.31	20Year-Existing	5.39	100.43	101.37	101.21	101.50	0.006941	1.80	4.11	7.67	0.64
M001	2036.68	20Year-Existing	12.43	99.58	100.69	100.68	100.92	0.014965	2.82	7.24	13.57	0.92
M001	2006.33	20Year-Existing	12.43	98.58	100.76		100.80	0.000944	1.17	19.72	25.85	0.26
M001	1984.70	20Year-Existing	12.43	98.16	100.73	99.64	100.78	0.000779	1.15	17.73	23.57	0.24
M001	1975		Culvert									
M001	1967.48	20Year-Existing	12.43	97.22	98.83	98.83	99.51	0.015589	3.66	3.40	7.87	1.00
M001	1947.41	20Year-Existing	12.43	96.71	97.76	98.07	98.73	0.053854	4.92	3.28	5.64	1.71
M001	1897.27	20Year-Existing	12.43	94.94	95.99	96.17	96.62	0.031514	4.11	4.10	6.66	1.36
M001	1847.50	20Year-Existing	12.43	93.50	94.64	94.73	95.12	0.027257	3.73	4.80	7.13	1.22
M001	1790.83	20Year-Existing	14.19	91.16	92.32	92.40	93.17	0.041869	4.75	4.54	7.76	1.54
M001	1750	20Year-Existing	14.19	90.25	91.60	91.65	92.02	0.017511	3.54	6.70	9.70	1.04
M001	1700	20Year-Existing	14.19	88.86	89.97	90.20	90.72	0.040134	4.66	4.73	7.61	1.53
M001	1650	20Year-Existing	14.19	86.29	87.30	87.61	88.29	0.059399	5.24	4.03	6.73	1.79
M001	1600	20Year-Existing	14.19	84.49	87.26	85.58	87.26	0.000080	0.42	69.82	42.34	0.08
M001	1581.62	20Year-Existing	14.19	83.85	87.23	85.79	87.26	0.000297	0.87	32.00	60.27	0.16
M001	1560		Culvert									
M001	1559.09	20Year-Existing	14.19	82.32	84.23	84.23	85.17	0.013058	4.29	3.31	44.66	1.00
M001	1477.89	20Year-Existing	14.19	79.96	80.54	80.96	83.24	0.427930	8.49	2.48	10.41	4.36
M001	1418.45	20Year-Existing	14.74	78.38	79.94	80.00	80.27	0.013503	3.23	8.67	16.36	0.90
M001	1359.00	20Year-Existing	14.74	74.82	75.75	76.39	78.25	0.126509	7.58	2.54	4.45	2.69
M001	1338.71	20Year-Existing	14.74	72.61	75.91	74.34	76.11	0.001422	1.96	7.51	11.30	0.35
M001	1295		Culvert									
M001	1292.63	20Year-Existing	14.74	70.47	71.96	72.19	73.06	0.024259	4.96	3.38	15.89	1.32
M001	1280.53	20Year-Existing	14.74	65.50	65.89	66.37	70.96	1.351114	9.98	1.48	7.30	7.08
M001	1254.70	20Year-Existing	14.74	61.55	62.50	62.95	64.21	0.087950	6.77	3.51	7.65	2.48
M001	1214.60	20Year-Existing	14.74	54.66	55.41	55.94	58.17	0.304559	8.93	2.52	7.01	4.02
M001	1186.80	20Year-Existing	14.74	51.00	51.76	52.10	52.99	0.108571	6.37	3.94	9.47	2.64
M001	1151.89	20Year-Existing	14.74	46.66	47.67	48.13	49.46	0.099893	6.94	3.39	7.60	2.58
M001	1131.36	20Year-Existing	14.85	45.40	46.56	46.93	47.76	0.057926	5.71	4.11	7.53	1.94
M001	1094.32	20Year-Existing	14.85	43.36	44.51	44.89	45.72	0.055558	5.68	3.93	6.31	1.91
M001	1036.63	20Year-Existing	15.51	40.61	41.88	42.25	42.90	0.042335	5.27	4.73	8.10	1.70
M001	991.55	20Year-Existing	15.51	36.47	37.49	38.00	39.57	0.150975	7.52	3.08	6.61	2.89
M001	950.72	20Year-Existing	15.51	32.56	33.57	33.91	34.76	0.085429	6.03	4.18	8.62	2.25
M001	894.70	20Year-Existing	15.51	29.50	30.68	30.88	31.40	0.041575	4.83	5.27	8.22	1.61
M001	850.00	20Year-Existing	15.51	28.24	29.76	29.87	30.20	0.016589	3.63	6.54	11.67	1.06
M001	811.85	20Year-Existing	15.51	26.37	27.69	28.08	28.94	0.078952	5.04	3.27	5.01	1.77
M001	754.30	20Year-Existing	15.51	22.84	24.09	24.54	25.26	0.051687	5.40	3.90	6.86	1.85
M001	684.68	20Year-Existing	15.51	20.60	22.28	22.35	22.95	0.021533	4.17	4.99	6.61	1.18
M001	632.62	20Year-Existing	15.51	20.87	22.17	21.79	22.39	0.004659	2.30	7.69	10.76	0.65
M001	625		Bridge									
M001	621.03	20Year-Existing	15.51	19.91	21.18	21.18	21.62	0.011440	3.24	5.63	7.91	0.98
M001	599.17	20Year-Existing	15.51	15.17	15.57	16.05	18.94	0.585904	9.59	2.10	8.87	5.65
M001	547.98	20Year-Existing	15.51	9.22	9.98	10.24	10.85	0.069370	4.74	4.19	11.09	2.11

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	15.51	7.42	8.71	8.78	9.18	0.019014	3.70	6.45	9.38	1.18
M001	446.65	20Year-Existing	15.51	6.07	7.12	7.32	7.80	0.036872	4.34	6.08	15.66	1.58
M001	399.97	20Year-Existing	16.83	4.59	5.85	5.96	6.36	0.025148	3.65	7.35	22.50	1.31
M001	349.97	20Year-Existing	16.83	3.89	5.10	5.10	5.33	0.017149	3.03	9.29	19.38	1.04
M001	300.08	20Year-Existing	16.83	3.07	4.38	4.18	4.43	0.004063	1.54	19.39	37.94	0.49
M001	250.00	20Year-Existing	16.83	2.39	3.70	3.70	4.05	0.014325	3.44	7.43	10.54	1.05
M001	200	20Year-Existing	16.83	1.60	3.69	3.00	3.71	0.000519	0.87	33.42	37.95	0.21
M001	164.90	20Year-Existing	16.83	1.25	3.65	2.44	3.69	0.000493	1.06	23.74	34.27	0.23
M001	130		Culvert									
M001	122.87	20Year-Existing	16.83	1.00	3.35	2.27	3.46	0.001131	1.56	11.61	21.49	0.34
M001	121.82	20Year-Existing	16.83	0.97	3.18	2.78	3.42	0.002894	2.51	11.36	21.09	0.55
M001	110		Culvert									
M001	108.55	20Year-Existing	16.83	0.48	2.79	2.24	2.84	0.000872	1.26	22.78	25.53	0.28
M001	100.00	20Year-Existing	16.83	0.79	2.80		2.81	0.000308	0.76	42.54	40.63	0.18
M001	50.00	20Year-Existing	16.83	0.56	2.80		2.80	0.000064	0.37	78.92	63.80	0.08
M001	-33.87	20Year-Existing	16.83	0.46	2.80		2.80	0.000022	0.22	99.22	79.66	0.05
M001	-115.21	20Year-Existing	16.83	-0.85	2.80	0.00	2.80	0.000002	0.08	337.95	154.15	0.01

Petries 20yr Q+20%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	3.72	138.52	138.97	138.97	139.10	0.028249	2.07	2.95	11.48	1.12
TR002	26.40	20Year-Existing	3.72	136.29	136.54	136.61	136.77	0.174412	3.18	2.14	16.94	2.46
TR003	75.44	20Year-Existing	2.28	138.22	138.80	138.80	138.97	0.019306	1.97	1.66	6.20	0.94
TR003	31.52	20Year-Existing	2.28	135.25	135.58	135.80	136.66	0.313884	4.85	0.57	3.72	3.39
M002	2878.54	20Year-Existing	7.44	133.44	133.96	134.03	134.23	0.051438	3.21	4.10	13.08	1.56
M002	2830.24	20Year-Existing	7.44	129.86	130.70	131.00	131.66	0.059168	4.63	2.10	4.44	1.77
M002	2781.96	20Year-Existing	7.44	126.60	127.33	127.62	128.29	0.085547	4.88	2.18	5.65	2.05
M002	2733.55	20Year-Existing	7.44	123.62	124.35	124.55	125.00	0.054067	4.17	2.90	8.33	1.69
M002	2711.98	20Year-Existing	7.44	121.55	122.32	122.69	123.58	0.077692	5.49	1.60	4.21	2.07
M002	2710		Bridge									
M002	2706.48	20Year-Existing	7.44	121.23	122.07	122.27	122.83	0.032529	3.86	1.93	5.52	1.38
M002	2686.04	20Year-Existing	7.44	120.42	121.22	121.44	121.94	0.055212	4.23	2.31	5.35	1.67
M002	2636.80	20Year-Existing	7.92	118.88	119.76	119.84	120.14	0.025392	3.23	3.41	6.79	1.17
M002	2586.04	20Year-Existing	7.92	117.62	117.91	117.97	118.11	0.101079	2.56	4.09	25.84	1.88
M002	2536.82	20Year-Existing	7.92	115.95	116.62	116.62	116.78	0.024597	2.47	5.20	15.79	1.08
M002	2487.14	20Year-Existing	7.92	114.00	114.95	115.14	115.43	0.027951	3.54	3.54	11.68	1.26
M002	2437.53	20Year-Existing	7.92	112.56	113.35	113.50	113.81	0.039322	3.63	3.36	9.06	1.44
M002	2387.76	20Year-Existing	7.92	110.97	111.88	111.97	112.25	0.024987	3.23	3.74	8.35	1.18
M002	2337.92	20Year-Existing	7.92	109.55	110.44	110.56	110.83	0.033557	3.45	4.58	21.08	1.31
M002	2288.19	20Year-Existing	7.92	107.88	108.73	108.80	109.22	0.032804	3.50	3.07	6.89	1.34
M002	2243.62	20Year-Existing	7.92	106.54	107.82	107.85	108.20	0.020221	3.05	3.31	5.30	0.99
M002	2206.69	20Year-Existing	7.92	105.39	106.31	106.53	107.01	0.054723	4.13	2.57	10.65	1.61
M002	2172.99	20Year-Existing	7.92	104.44	105.17	105.26	105.49	0.033567	3.14	3.73	11.09	1.28
M002	2132.37	20Year-Existing	7.92	102.85	103.73	103.85	104.13	0.032303	3.34	3.90	15.86	1.30
M002	2076.75	20Year-Existing	7.92	100.37	101.46	101.67	102.14	0.039421	3.97	2.43	4.32	1.40
TR001	194.22	20Year-Existing	5.88	116.47	117.44	117.44	117.72	0.016697	2.78	3.20	6.12	0.96
TR001	173.31	20Year-Existing	5.88	113.43	113.89	114.33	116.49	0.460685	7.69	0.94	3.94	4.35
TR001	155.88	20Year-Existing	5.88	111.89	112.33	112.43	112.62	0.078974	3.34	3.15	16.26	1.81
TR001	147.33	20Year-Existing	5.88	111.21	111.59	111.70	112.06	0.160836	4.22	2.72	20.80	2.56
TR001	100.00	20Year-Existing	5.88	106.90	107.55	107.71	108.06	0.051676	3.69	2.32	6.70	1.60
TR001	84.71	20Year-Existing	5.88	105.53	106.87	106.54	106.94	0.005062	1.45	5.76	9.80	0.44
TR001	80		Culvert									
TR001	76.27	20Year-Existing	5.88	105.28	106.24	106.24	106.39	0.010958	2.21	4.94	15.46	0.76
TR001	50.01	20Year-Existing	5.88	102.82	103.32	103.69	105.14	0.250943	6.44	1.14	4.47	3.34
TR001	10.31	20Year-Existing	5.88	100.43	101.40	101.24	101.53	0.007299	1.89	4.30	7.83	0.66
M001	2036.68	20Year-Existing	13.56	99.58	100.80	100.70	101.01	0.012293	2.76	9.33	20.98	0.85
M001	2006.33	20Year-Existing	13.56	98.58	100.88		100.91	0.000766	1.09	22.78	26.49	0.24
M001	1984.70	20Year-Existing	13.56	98.16	100.66	99.72	100.87	0.002521	2.10	7.58	21.81	0.44
M001	1975		Culvert									
M001	1967.48	20Year-Existing	13.56	97.22	98.91	98.91	99.63	0.015317	3.77	3.60	8.25	1.00
M001	1947.41	20Year-Existing	13.56	96.71	97.79	98.12	98.84	0.056144	5.14	3.45	5.75	1.76
M001	1897.27	20Year-Existing	13.56	94.94	96.04	96.21	96.69	0.031228	4.21	4.39	6.82	1.37
M001	1847.50	20Year-Existing	13.56	93.50	94.68	94.78	95.19	0.027066	3.84	5.12	7.27	1.23
M001	1790.83	20Year-Existing	15.48	91.16	92.37	92.70	93.25	0.041299	4.88	4.93	8.28	1.54
M001	1750	20Year-Existing	15.48	90.25	91.64	91.69	92.08	0.018085	3.67	7.08	9.87	1.06
M001	1700	20Year-Existing	15.48	88.86	90.02	90.25	90.79	0.038621	4.73	5.12	7.83	1.52
M001	1650	20Year-Existing	15.48	86.29	87.34	87.66	88.39	0.060183	5.42	4.28	6.89	1.81
M001	1600	20Year-Existing	15.48	84.49	87.28	85.60	87.29	0.000091	0.45	70.84	42.51	0.09
M001	1581.62	20Year-Existing	15.48	83.85	87.25	85.89	87.28	0.000340	0.93	32.73	61.01	0.17
M001	1560		Culvert									
M001	1559.09	20Year-Existing	15.48	82.32	84.35	84.35	85.34	0.012656	4.40	3.52	47.99	1.00
M001	1477.89	20Year-Existing	15.48	79.96	80.55	80.99	83.41	0.436528	8.78	2.63	10.54	4.43
M001	1418.45	20Year-Existing	16.08	78.38	79.98	80.03	80.32	0.013961	3.34	9.22	16.72	0.91
M001	1359.00	20Year-Existing	16.08	74.82	75.81	76.46	78.30	0.116480	7.61	2.80	4.58	2.61
M001	1338.71	20Year-Existing	16.08	72.61	76.13	74.45	76.33	0.001351	2.00	8.03	11.85	0.35
M001	1295		Culvert									
M001	1292.63	20Year-Existing	16.08	70.47	72.05	72.28	73.21	0.023631	5.09	3.59	16.26	1.31
M001	1280.53	20Year-Existing	16.08	65.50	65.90	66.41	71.11	1.320851	10.11	1.59	7.58	7.04
M001	1254.70	20Year-Existing	16.08	61.55	62.53	63.00	64.33	0.088856	6.98	3.74	7.80	2.51
M001	1214.60	20Year-Existing	16.08	54.66	55.43	55.98	58.30	0.297687	9.13	2.70	7.15	4.01
M001	1186.80	20Year-Existing	16.08	51.00	51.78	52.14	53.09	0.110640	6.59	4.16	9.62	2.68
M001	1151.89	20Year-Existing	16.08	46.66	47.70	48.19	49.56	0.098758	7.12	3.66	7.89	2.58
M001	1131.36	20Year-Existing	16.20	45.40	46.60	46.98	47.85	0.058430	5.88	4.38	7.72	1.96
M001	1094.32	20Year-Existing	16.20	43.36	44.56	44.94	45.82	0.054798	5.83	4.22	6.45	1.92
M001	1036.63	20Year-Existing	16.92	40.61	41.92	42.30	43.00	0.042856	5.45	5.07	8.44	1.72
M001	991.55	20Year-Existing	16.92	36.47	37.52	38.05	39.67	0.147304	7.68	3.31	6.74	2.88
M001	950.72	20Year-Existing	16.92	32.56	33.60	33.97	34.86	0.086857	6.24	4.43	8.79	2.29
M001	894.70	20Year-Existing	16.92	29.50	30.72	30.93	31.47	0.041414	4.96	5.61	8.36	1.62
M001	850.00	20Year-Existing	16.92	28.24	29.79	29.92	30.26	0.017181	3.76	6.93	11.98	1.08
M001	811.85	20Year-Existing	16.92	26.37	27.75	28.14	29.00	0.072622	5.06	3.58	5.19	1.72
M001	754.30	20Year-Existing	16.92	22.84	24.12	24.54	25.39	0.054190	5.65	4.09	7.01	1.90
M001	684.68	20Year-Existing	16.92	20.60	22.34	22.58	23.04	0.021244	4.28	5.43	7.22	1.19
M001	632.62	20Year-Existing	16.92	20.87	22.26	21.84	22.52	0.005484	2.62	9.34	14.61	0.71
M001	625		Bridge									
M001	621.03	20Year-Existing	16.92	19.91	21.23	21.23	21.70	0.011428	3.34	5.95	9.11	0.98
M001	599.17	20Year-Existing	16.92	15.17	15.59	16.09	19.03	0.551600	9.71	2.28	9.03	5.54
M001	547.98	20Year-Existing	16.92	9.22	10.00	10.27	10.93	0.070889	4.92	4.42	11.30	2.15

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	16.92	7.42	8.75	8.83	9.25	0.018870	3.80	6.90	9.58	1.19
M001	446.65	20Year-Existing	16.92	6.07	7.14	7.35	7.86	0.038173	4.50	6.44	15.88	1.61
M001	399.97	20Year-Existing	18.36	4.59	5.87	6.07	6.39	0.025257	3.73	7.92	22.96	1.32
M001	349.97	20Year-Existing	18.36	3.89	5.13	5.13	5.37	0.016811	3.08	9.97	19.91	1.04
M001	300.08	20Year-Existing	18.36	3.07	4.40	4.20	4.46	0.004314	1.61	20.16	38.24	0.51
M001	250.00	20Year-Existing	18.36	2.39	3.96		4.17	0.006892	2.75	10.35	11.92	0.76
M001	200	20Year-Existing	18.36	1.60	4.07		4.08	0.000227	0.66	50.37	47.14	0.14
M001	164.90	20Year-Existing	18.36	1.25	4.05	2.50	4.07	0.000276	0.89	41.37	42.41	0.17
M001	130		Culvert									
M001	122.87	20Year-Existing	18.36	1.00	4.03	2.33	4.06	0.000234	0.85	39.14	36.16	0.16
M001	121.82	20Year-Existing	18.36	0.97	2.88	2.88	3.79	0.010271	4.27	4.38	13.81	1.01
M001	110		Culvert									
M001	108.55	20Year-Existing	18.36	0.48	2.79	2.34	2.85	0.001043	1.38	22.73	25.49	0.30
M001	100.00	20Year-Existing	18.36	0.79	2.80		2.81	0.000367	0.83	42.53	40.63	0.19
M001	50.00	20Year-Existing	18.36	0.56	2.80		2.80	0.000076	0.41	78.91	63.80	0.09
M001	-33.87	20Year-Existing	18.36	0.46	2.80		2.80	0.000026	0.24	99.20	79.66	0.05
M001	-115.21	20Year-Existing	18.36	-0.85	2.80	0.05	2.80	0.000002	0.09	337.95	154.15	0.02

Petries 20yr Q+30%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	4.03	138.52	138.98	138.98	139.12	0.028064	2.13	3.13	11.66	1.12
TR002	26.40	20Year-Existing	4.03	136.29	136.55	136.62	136.79	0.180201	3.30	2.24	17.07	2.51
TR003	75.44	20Year-Existing	2.47	138.22	138.83	138.83	138.99	0.018061	1.98	1.82	6.54	0.92
TR003	31.52	20Year-Existing	2.47	135.25	135.58	135.84	136.77	0.330760	5.08	0.59	3.79	3.50
M002	2878.54	20Year-Existing	8.06	133.44	133.97	134.04	134.26	0.052419	3.32	4.31	13.25	1.58
M002	2830.24	20Year-Existing	8.06	129.86	130.74	131.05	131.72	0.056776	4.70	2.27	4.59	1.75
M002	2781.96	20Year-Existing	8.06	126.60	127.35	127.66	128.38	0.088099	5.07	2.29	5.77	2.09
M002	2733.55	20Year-Existing	8.06	123.62	124.38	124.58	125.05	0.053786	4.26	3.10	8.48	1.69
M002	2711.98	20Year-Existing	8.06	121.55	123.39	122.76	123.44	0.001545	1.42	13.98	29.23	0.34
M002	2710		Bridge									
M002	2706.48	20Year-Existing	8.06	121.23	122.32	122.32	122.84	0.015618	3.20	2.52	6.23	1.00
M002	2686.04	20Year-Existing	8.06	120.42	121.20	121.50	122.11	0.071495	4.74	2.22	5.26	1.90
M002	2636.80	20Year-Existing	8.58	118.88	119.81	119.88	120.18	0.023207	3.22	3.75	7.08	1.13
M002	2586.04	20Year-Existing	8.58	117.62	117.91	117.99	118.15	0.125385	2.82	4.02	25.72	2.09
M002	2536.82	20Year-Existing	8.58	115.95	116.64	116.64	116.81	0.024612	2.53	5.49	16.00	1.09
M002	2487.14	20Year-Existing	8.58	114.00	114.99	115.15	115.47	0.027296	3.59	3.95	12.92	1.25
M002	2437.53	20Year-Existing	8.58	112.56	113.38	113.53	113.86	0.039945	3.75	3.58	9.50	1.46
M002	2387.76	20Year-Existing	8.58	110.97	111.91	111.99	112.29	0.024721	3.30	4.01	8.61	1.18
M002	2337.92	20Year-Existing	8.58	109.55	110.46	110.58	110.86	0.034883	3.56	4.83	21.18	1.34
M002	2288.19	20Year-Existing	8.58	107.88	108.77	108.97	109.26	0.031247	3.54	3.34	7.30	1.32
M002	2243.62	20Year-Existing	8.58	106.54	107.90	107.90	108.25	0.017085	2.95	3.75	5.60	0.92
M002	2206.69	20Year-Existing	8.58	105.39	106.32	106.55	107.11	0.062136	4.43	2.63	11.25	1.71
M002	2172.99	20Year-Existing	8.58	104.44	105.20	105.28	105.51	0.032391	3.17	4.02	11.39	1.27
M002	2132.37	20Year-Existing	8.58	102.85	103.75	103.87	104.17	0.033688	3.45	4.11	16.17	1.33
M002	2076.75	20Year-Existing	8.58	100.37	101.50	101.71	102.20	0.037197	4.00	2.64	4.46	1.38
TR001	194.22	20Year-Existing	6.37	116.47	117.48	117.48	117.77	0.016739	2.86	3.40	6.28	0.97
TR001	173.31	20Year-Existing	6.37	113.43	113.91	114.36	116.54	0.434140	7.77	1.02	4.07	4.26
TR001	155.88	20Year-Existing	6.37	111.89	112.35	112.44	112.66	0.081302	3.50	3.46	19.06	1.85
TR001	147.33	20Year-Existing	6.37	111.21	111.60	111.72	112.08	0.164042	4.33	2.86	20.99	2.59
TR001	100.00	20Year-Existing	6.37	106.90	107.57	107.73	108.09	0.050816	3.76	2.48	6.88	1.60
TR001	84.71	20Year-Existing	6.37	105.53	106.89	106.56	106.97	0.005652	1.55	5.95	10.67	0.46
TR001	80		Culvert									
TR001	76.27	20Year-Existing	6.37	105.28	106.26	106.26	106.41	0.011134	2.27	5.26	15.93	0.77
TR001	50.01	20Year-Existing	6.37	102.82	103.34	103.73	105.17	0.235994	6.49	1.24	4.63	3.27
TR001	10.31	20Year-Existing	6.37	100.43	101.33	101.27	101.53	0.011972	2.28	3.79	7.42	0.83
M001	2036.68	20Year-Existing	14.69	99.58	100.90	100.71	101.05	0.008530	2.43	11.34	21.54	0.72
M001	2006.33	20Year-Existing	14.69	98.58	100.95		100.97	0.000738	1.10	24.48	26.76	0.24
M001	1984.70	20Year-Existing	14.69	98.16	100.69	99.80	100.93	0.002822	2.25	7.72	22.56	0.46
M001	1975		Culvert									
M001	1967.48	20Year-Existing	14.69	97.22	98.99	98.99	99.75	0.015053	3.87	3.80	8.63	1.00
M001	1947.41	20Year-Existing	14.69	96.71	97.82	98.17	98.95	0.058329	5.35	3.61	5.85	1.80
M001	1897.27	20Year-Existing	14.69	94.94	96.08	96.26	96.75	0.031027	4.31	4.66	6.97	1.37
M001	1847.50	20Year-Existing	14.69	93.50	94.72	94.82	95.25	0.027180	3.95	5.41	7.40	1.24
M001	1790.83	20Year-Existing	16.77	91.16	92.45	92.76	93.37	0.038675	4.97	5.74	11.89	1.51
M001	1750	20Year-Existing	16.77	90.25	91.65	91.74	92.16	0.020832	3.95	7.13	9.89	1.14
M001	1700	20Year-Existing	16.77	88.86	90.09	90.30	90.83	0.035048	4.71	5.64	8.10	1.46
M001	1650	20Year-Existing	16.77	86.29	87.37	87.72	88.51	0.063145	5.66	4.46	7.00	1.86
M001	1600	20Year-Existing	16.77	84.49	87.32	85.62	87.33	0.000100	0.47	72.60	42.81	0.09
M001	1581.62	20Year-Existing	16.77	83.85	87.29	86.00	87.32	0.000372	0.98	34.18	62.80	0.18
M001	1560		Culvert									
M001	1559.09	20Year-Existing	16.77	82.32	84.46	84.46	85.50	0.012470	4.52	3.71	50.22	1.00
M001	1477.89	20Year-Existing	16.77	79.96	80.57	81.02	83.56	0.442199	9.04	2.78	10.68	4.49
M001	1418.45	20Year-Existing	17.42	78.38	80.00	80.07	80.37	0.014483	3.45	9.72	17.01	0.94
M001	1359.00	20Year-Existing	17.42	74.82	75.87	76.53	78.33	0.107058	7.62	3.07	4.72	2.53
M001	1338.71	20Year-Existing	17.42	72.61	76.42	74.53	76.62	0.001198	1.99	8.74	12.60	0.33
M001	1295		Culvert									
M001	1292.63	20Year-Existing	17.42	70.47	72.14	72.38	73.35	0.022893	5.21	3.80	16.59	1.30
M001	1280.53	20Year-Existing	17.42	65.50	65.92	66.45	71.25	1.292709	10.23	1.70	7.84	7.01
M001	1254.70	20Year-Existing	17.42	61.55	62.56	63.04	64.44	0.089603	7.18	3.97	7.94	2.53
M001	1214.60	20Year-Existing	17.42	54.66	55.46	56.03	58.41	0.291824	9.32	2.88	7.27	4.00
M001	1186.80	20Year-Existing	17.42	51.00	51.80	52.19	53.19	0.112528	6.81	4.38	9.76	2.72
M001	1151.89	20Year-Existing	17.42	46.66	47.73	48.23	49.66	0.097862	7.28	3.92	8.14	2.59
M001	1131.36	20Year-Existing	17.55	45.40	46.63	47.03	47.95	0.058917	6.05	4.65	7.87	1.98
M001	1094.32	20Year-Existing	17.55	43.36	44.60	45.00	45.92	0.054575	5.98	4.48	6.57	1.92
M001	1036.63	20Year-Existing	18.33	40.61	41.96	42.34	43.08	0.043200	5.61	5.40	8.76	1.74
M001	991.55	20Year-Existing	18.33	36.47	37.56	38.10	39.77	0.144174	7.83	3.54	6.87	2.87
M001	950.72	20Year-Existing	18.33	32.56	33.62	34.01	34.96	0.088337	6.45	4.67	8.95	2.32
M001	894.70	20Year-Existing	18.33	29.50	30.76	30.98	31.55	0.041285	5.09	5.95	8.48	1.63
M001	850.00	20Year-Existing	18.33	28.24	29.83	29.95	30.32	0.017478	3.87	7.35	12.29	1.10
M001	811.85	20Year-Existing	18.33	26.37	27.81	28.21	29.06	0.067730	5.10	3.88	5.37	1.67
M001	754.30	20Year-Existing	18.33	22.84	24.15	24.59	25.51	0.055859	5.86	4.30	7.17	1.94
M001	684.68	20Year-Existing	18.33	20.60	22.42	22.59	23.14	0.020636	4.39	6.19	10.19	1.18
M001	632.62	20Year-Existing	18.33	20.87	22.50	21.90	22.67	0.003085	2.18	14.08	24.88	0.55
M001	625		Bridge									
M001	621.03	20Year-Existing	18.33	19.91	21.28	21.28	21.78	0.011404	3.43	6.26	10.98	0.99
M001	599.17	20Year-Existing	18.33	15.17	15.61	16.13	19.11	0.522679	9.83	2.45	9.19	5.44
M001	547.98	20Year-Existing	18.33	9.22	10.02	10.31	11.01	0.072354	5.10	4.65	11.50	2.18

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	18.33	7.42	8.80	8.88	9.31	0.018753	3.89	7.33	9.78	1.19
M001	446.65	20Year-Existing	18.33	6.07	7.16	7.38	7.91	0.038670	4.62	6.83	16.12	1.63
M001	399.97	20Year-Existing	19.89	4.59	5.90	6.09	6.43	0.025399	3.81	8.47	23.39	1.33
M001	349.97	20Year-Existing	19.89	3.89	5.16	5.16	5.41	0.017017	3.17	10.54	20.34	1.05
M001	300.08	20Year-Existing	19.89	3.07	4.47	4.22	4.52	0.003500	1.52	22.92	39.60	0.47
M001	250.00	20Year-Existing	19.89	2.39	3.79	3.79	4.18	0.014186	3.61	8.43	11.03	1.06
M001	200	20Year-Existing	19.89	1.60	3.82	3.03	3.84	0.000579	0.97	39.00	45.67	0.22
M001	164.90	20Year-Existing	19.89	1.25	3.77	2.56	3.82	0.000672	1.29	30.31	37.74	0.27
M001	130		Culvert									
M001	122.87	20Year-Existing	19.89	1.00	3.35	2.39	3.51	0.001563	1.84	11.65	21.64	0.40
M001	121.82	20Year-Existing	19.89	0.97	3.38	3.13	3.48	0.001442	1.86	20.50	24.51	0.39
M001	110		Culvert									
M001	108.55	20Year-Existing	19.89	0.48	2.79	2.44	2.86	0.001229	1.50	22.69	25.46	0.33
M001	100.00	20Year-Existing	19.89	0.79	2.80		2.82	0.000431	0.90	42.53	40.63	0.21
M001	50.00	20Year-Existing	19.89	0.56	2.80		2.80	0.000089	0.44	78.91	63.80	0.10
M001	-33.87	20Year-Existing	19.89	0.46	2.80		2.80	0.000031	0.26	99.19	79.65	0.06
M001	-115.21	20Year-Existing	19.89	-0.85	2.80	0.09	2.80	0.000002	0.09	337.95	154.15	0.02

Petries 20yr Q-10%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	2.79	138.52	138.92	138.92	139.03	0.030179	1.92	2.36	10.77	1.12
TR002	26.40	20Year-Existing	2.79	136.29	136.52	136.58	136.71	0.160536	2.81	1.82	16.49	2.31
TR003	75.44	20Year-Existing	1.71	138.22	138.75	138.75	138.88	0.018791	1.77	1.32	5.50	0.91
TR003	31.52	20Year-Existing	1.71	135.25	135.54	135.75	136.55	0.380237	4.63	0.43	3.24	3.60
M002	2878.54	20Year-Existing	5.58	133.44	133.90	133.95	134.12	0.050152	2.90	3.39	12.48	1.50
M002	2830.24	20Year-Existing	5.58	129.86	130.58	130.85	131.45	0.066661	4.34	1.60	3.97	1.83
M002	2781.96	20Year-Existing	5.58	126.60	127.26	127.50	128.01	0.076154	4.25	1.82	5.26	1.89
M002	2733.55	20Year-Existing	5.58	123.62	124.27	124.46	124.87	0.056276	3.88	2.25	7.83	1.68
M002	2711.98	20Year-Existing	5.58	121.55	122.19	122.51	123.31	0.091539	5.19	1.27	3.88	2.17
M002	2710		Bridge									
M002	2706.48	20Year-Existing	5.58	121.23	121.94	122.09	122.56	0.033872	3.48	1.60	5.13	1.36
M002	2686.04	20Year-Existing	5.58	120.42	121.15	121.33	121.69	0.045642	3.61	1.99	5.01	1.50
M002	2636.80	20Year-Existing	5.94	118.88	119.65	119.72	119.99	0.027186	3.01	2.68	6.14	1.18
M002	2586.04	20Year-Existing	5.94	117.62	117.90	117.93	118.04	0.078786	2.13	3.67	25.15	1.63
M002	2536.82	20Year-Existing	5.94	115.95	116.56	116.56	116.70	0.023951	2.26	4.29	15.06	1.05
M002	2487.14	20Year-Existing	5.94	114.00	114.83	115.04	115.29	0.031450	3.35	2.43	5.77	1.29
M002	2437.53	20Year-Existing	5.94	112.56	113.29	113.38	113.64	0.034559	3.16	2.79	7.87	1.32
M002	2387.76	20Year-Existing	5.94	110.97	111.76	111.85	112.11	0.027905	3.06	2.84	7.16	1.21
M002	2337.92	20Year-Existing	5.94	109.55	110.41	110.51	110.73	0.027880	3.03	3.80	20.11	1.19
M002	2288.19	20Year-Existing	5.94	107.88	108.61	108.76	109.09	0.040333	3.40	2.26	5.89	1.43
M002	2243.62	20Year-Existing	5.94	106.54	107.71	107.71	108.01	0.018117	2.67	2.78	4.91	0.92
M002	2206.69	20Year-Existing	5.94	105.39	106.21	106.46	106.86	0.059723	3.87	1.88	5.05	1.63
M002	2172.99	20Year-Existing	5.94	104.44	105.12	105.18	105.37	0.029987	2.79	3.13	10.37	1.19
M002	2132.37	20Year-Existing	5.94	102.85	103.62	103.67	104.01	0.037184	3.17	2.64	9.47	1.36
M002	2076.75	20Year-Existing	5.94	100.37	101.35	101.51	101.92	0.038259	3.56	1.99	4.01	1.35
TR001	194.22	20Year-Existing	4.41	116.47	117.33	117.33	117.57	0.017085	2.56	2.53	5.52	0.95
TR001	173.31	20Year-Existing	4.41	113.43	113.83	114.23	116.30	0.569254	7.40	0.71	3.52	4.66
TR001	155.88	20Year-Existing	4.41	111.89	112.30	112.39	112.53	0.070900	2.95	2.61	14.64	1.68
TR001	147.33	20Year-Existing	4.41	111.21	111.57	111.67	111.99	0.153240	3.88	2.22	19.87	2.46
TR001	100.00	20Year-Existing	4.41	106.90	107.47	107.62	107.92	0.054475	3.41	1.82	6.10	1.61
TR001	84.71	20Year-Existing	4.41	105.53	106.79	106.44	106.84	0.003623	1.17	5.11	8.28	0.36
TR001	80		Culvert									
TR001	76.27	20Year-Existing	4.41	105.28	106.17	106.17	106.31	0.010140	2.02	3.94	13.90	0.72
TR001	50.01	20Year-Existing	4.41	102.82	103.25	103.59	105.07	0.319426	6.31	0.83	3.90	3.64
TR001	10.31	20Year-Existing	4.41	100.43	101.07	101.14	101.37	0.028150	2.67	2.09	5.79	1.19
M001	2036.68	20Year-Existing	10.17	99.58	100.49	100.58	100.85	0.030043	3.42	4.75	11.40	1.26
M001	2006.33	20Year-Existing	10.17	98.58	100.42	99.82	100.48	0.001766	1.41	12.52	18.39	0.35
M001	1984.70	20Year-Existing	10.17	98.16	100.18	99.47	100.41	0.003566	2.15	4.72	10.34	0.50
M001	1975		Culvert									
M001	1967.48	20Year-Existing	10.17	97.22	98.30	98.65	99.52	0.054145	4.90	2.07	5.34	1.72
M001	1947.41	20Year-Existing	10.17	96.71	97.90	97.95	98.32	0.019623	3.30	4.11	6.17	1.06
M001	1897.27	20Year-Existing	10.17	94.94	95.78	96.06	96.69	0.061224	4.80	2.77	5.75	1.82
M001	1847.50	20Year-Existing	10.17	93.50	94.57	94.62	94.97	0.024895	3.39	4.29	6.90	1.15
M001	1790.83	20Year-Existing	11.61	91.16	92.21	92.42	93.02	0.045466	4.57	3.73	6.97	1.57
M001	1750	20Year-Existing	11.61	90.25	91.52	91.54	91.88	0.016274	3.25	5.90	9.31	0.99
M001	1700	20Year-Existing	11.61	88.86	89.86	90.08	90.59	0.044830	4.53	3.91	7.14	1.59
M001	1650	20Year-Existing	11.61	86.29	87.23	87.49	88.08	0.056384	4.81	3.54	6.42	1.72
M001	1600	20Year-Existing	11.61	84.49	87.20	85.54	87.20	0.000060	0.35	67.14	41.94	0.07
M001	1581.62	20Year-Existing	11.61	83.85	87.17	85.55	87.19	0.000222	0.74	29.98	57.74	0.13
M001	1560		Culvert									
M001	1559.09	20Year-Existing	11.61	82.32	84.00	84.00	84.82	0.013559	4.00	2.90	37.49	1.00
M001	1477.89	20Year-Existing	11.61	79.96	80.51	80.87	82.90	0.411692	7.88	2.17	10.11	4.22
M001	1418.45	20Year-Existing	12.06	78.38	79.87	79.92	80.17	0.012550	2.99	7.48	15.53	0.86
M001	1359.00	20Year-Existing	12.06	74.82	75.63	76.24	78.15	0.153792	7.51	2.03	4.10	2.89
M001	1338.71	20Year-Existing	12.06	72.61	75.49	74.15	75.66	0.001539	1.85	6.50	10.24	0.36
M001	1295		Culvert									
M001	1292.63	20Year-Existing	12.06	70.47	71.78	71.99	72.75	0.025369	4.65	2.95	15.06	1.32
M001	1280.53	20Year-Existing	12.06	65.50	65.86	66.30	70.65	1.433048	9.70	1.24	6.70	7.19
M001	1254.70	20Year-Existing	12.06	61.55	62.44	62.84	63.97	0.085794	6.30	3.02	7.32	2.41
M001	1214.60	20Year-Existing	12.06	54.66	55.35	55.84	57.91	0.322113	8.49	2.14	6.68	4.05
M001	1186.80	20Year-Existing	12.06	51.00	51.71	52.01	52.77	0.103886	5.86	3.46	9.12	2.54
M001	1151.89	20Year-Existing	12.06	46.66	47.59	48.02	49.25	0.103113	6.57	2.84	6.99	2.57
M001	1131.36	20Year-Existing	12.15	45.40	46.48	46.81	47.55	0.056583	5.30	3.54	7.10	1.88
M001	1094.32	20Year-Existing	12.15	43.36	44.42	44.75	45.51	0.056657	5.34	3.36	6.02	1.90
M001	1036.63	20Year-Existing	12.69	40.61	41.79	42.15	42.70	0.041524	4.90	4.04	7.36	1.65
M001	991.55	20Year-Existing	12.69	36.47	37.41	37.88	39.35	0.158674	7.15	2.61	6.32	2.91
M001	950.72	20Year-Existing	12.69	32.56	33.51	33.82	34.55	0.082034	5.57	3.65	8.25	2.18
M001	894.70	20Year-Existing	12.69	29.50	30.59	30.77	31.24	0.042085	4.53	4.54	7.89	1.60
M001	850.00	20Year-Existing	12.69	28.24	29.68	29.77	30.08	0.015634	3.37	5.66	10.94	1.02
M001	811.85	20Year-Existing	12.69	26.37	27.57	27.95	28.79	0.095168	4.95	2.67	4.63	1.89
M001	754.30	20Year-Existing	12.69	22.84	24.03	24.35	25.00	0.046388	4.87	3.48	6.53	1.73
M001	684.68	20Year-Existing	12.69	20.60	22.15	22.29	22.77	0.022434	3.95	4.19	5.90	1.19
M001	632.62	20Year-Existing	12.69	20.87	21.97	21.68	22.18	0.005452	2.23	6.50	6.88	0.68
M001	625		Bridge									
M001	621.03	20Year-Existing	12.69	19.91	21.06	21.06	21.45	0.011599	3.03	4.94	7.61	0.97
M001	599.17	20Year-Existing	12.69	15.17	15.53	15.97	18.76	0.672099	9.30	1.75	8.53	5.90
M001	547.98	20Year-Existing	12.69	9.22	9.93	10.15	10.68	0.066098	4.35	3.69	10.62	2.03

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	12.69	7.42	8.60	8.67	9.03	0.019605	3.49	5.51	8.86	1.18
M001	446.65	20Year-Existing	12.69	6.07	7.07	7.25	7.67	0.034455	4.00	5.29	15.15	1.51
M001	399.97	20Year-Existing	13.77	4.59	5.78	5.94	6.28	0.025561	3.48	6.01	20.16	1.31
M001	349.97	20Year-Existing	13.77	3.89	5.03	5.03	5.25	0.016877	2.86	8.07	18.50	1.02
M001	300.08	20Year-Existing	13.77	3.07	4.28	4.14	4.33	0.005198	1.62	15.56	36.38	0.55
M001	250.00	20Year-Existing	13.77	2.39	3.60	3.60	3.92	0.014229	3.22	6.44	10.00	1.03
M001	200	20Year-Existing	13.77	1.60	3.53	2.96	3.55	0.000592	0.88	27.81	34.70	0.22
M001	164.90	20Year-Existing	13.77	1.25	3.44	2.33	3.52	0.000886	1.34	11.50	18.49	0.30
M001	130		Culvert									
M001	122.87	20Year-Existing	13.77	1.00	3.28	2.15	3.36	0.000844	1.32	11.24	20.03	0.29
M001	121.82	20Year-Existing	13.77	0.97	3.17	2.56	3.33	0.002019	2.08	11.14	20.82	0.46
M001	110		Culvert									
M001	108.55	20Year-Existing	13.77	0.48	2.79	2.02	2.83	0.000580	1.03	22.84	25.58	0.23
M001	100.00	20Year-Existing	13.77	0.79	2.80		2.81	0.000206	0.62	42.54	40.63	0.14
M001	50.00	20Year-Existing	13.77	0.56	2.80		2.80	0.000043	0.30	78.92	63.80	0.07
M001	-33.87	20Year-Existing	13.77	0.46	2.80		2.80	0.000015	0.18	99.25	79.66	0.04
M001	-115.21	20Year-Existing	13.77	-0.85	2.80	-0.09	2.80	0.000001	0.07	337.95	154.15	0.01

Petries 20yr Q-20%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	2.48	138.52	138.90	138.90	139.00	0.029225	1.82	2.19	10.56	1.09
TR002	26.40	20Year-Existing	2.48	136.29	136.51	136.58	136.69	0.168680	2.75	1.65	16.26	2.34
TR003	75.44	20Year-Existing	1.52	138.22	138.72	138.72	138.85	0.019799	1.73	1.17	5.18	0.92
TR003	31.52	20Year-Existing	1.52	135.25	135.53	135.73	136.44	0.369319	4.39	0.40	3.13	3.51
M002	2878.54	20Year-Existing	4.96	133.44	133.88	133.93	134.09	0.049111	2.77	3.14	12.26	1.47
M002	2830.24	20Year-Existing	4.96	129.86	130.54	130.80	131.37	0.069947	4.22	1.44	3.80	1.85
M002	2781.96	20Year-Existing	4.96	126.60	127.24	127.45	127.91	0.072342	4.01	1.70	5.11	1.83
M002	2733.55	20Year-Existing	4.96	123.62	124.24	124.42	124.83	0.057584	3.78	2.01	7.64	1.68
M002	2711.98	20Year-Existing	4.96	121.55	122.14	122.45	123.21	0.096752	5.05	1.16	3.77	2.20
M002	2710		Bridge									
M002	2706.48	20Year-Existing	4.96	121.23	121.88	122.03	122.47	0.036077	3.39	1.46	4.96	1.39
M002	2686.04	20Year-Existing	4.96	120.42	121.13	121.28	121.60	0.041215	3.35	1.90	4.91	1.41
M002	2636.80	20Year-Existing	5.28	118.88	119.60	119.68	119.94	0.028797	2.95	2.41	5.89	1.20
M002	2586.04	20Year-Existing	5.28	117.62	117.89	117.92	118.01	0.068838	1.95	3.55	24.95	1.52
M002	2536.82	20Year-Existing	5.28	115.95	116.54	116.54	116.67	0.023702	2.18	3.96	14.75	1.03
M002	2487.14	20Year-Existing	5.28	114.00	114.78	114.94	115.23	0.033310	3.28	2.16	5.40	1.32
M002	2437.53	20Year-Existing	5.28	112.56	113.26	113.34	113.58	0.032303	2.98	2.61	7.62	1.27
M002	2387.76	20Year-Existing	5.28	110.97	111.72	111.80	112.06	0.029214	2.99	2.54	6.76	1.23
M002	2337.92	20Year-Existing	5.28	109.55	110.39	110.49	110.69	0.026119	2.87	3.43	17.58	1.14
M002	2288.19	20Year-Existing	5.28	107.88	108.56	108.72	109.04	0.044364	3.36	2.00	5.54	1.48
M002	2243.62	20Year-Existing	5.28	106.54	107.66	107.66	107.95	0.018616	2.59	2.52	4.72	0.92
M002	2206.69	20Year-Existing	5.28	105.39	106.18	106.43	106.78	0.058210	3.69	1.73	4.87	1.60
M002	2172.99	20Year-Existing	5.28	104.44	105.09	105.16	105.33	0.029313	2.67	2.88	9.93	1.17
M002	2132.37	20Year-Existing	5.28	102.85	103.59	103.68	103.97	0.038235	3.09	2.34	8.98	1.36
M002	2076.75	20Year-Existing	5.28	100.37	101.31	101.46	101.84	0.038634	3.43	1.81	3.86	1.34
TR001	194.22	20Year-Existing	3.92	116.47	117.29	117.29	117.52	0.017368	2.48	2.29	5.29	0.95
TR001	173.31	20Year-Existing	3.92	113.43	113.81	114.19	116.22	0.621361	7.28	0.63	3.38	4.80
TR001	155.88	20Year-Existing	3.92	111.89	112.28	112.32	112.50	0.068228	2.81	2.42	14.10	1.64
TR001	147.33	20Year-Existing	3.92	111.21	111.55	111.65	111.96	0.156386	3.76	1.94	17.17	2.46
TR001	100.00	20Year-Existing	3.92	106.90	107.45	107.58	107.87	0.054462	3.28	1.67	5.89	1.59
TR001	84.71	20Year-Existing	3.92	105.53	106.74	106.41	106.79	0.003612	1.13	4.68	7.98	0.36
TR001	80		Culvert									
TR001	76.27	20Year-Existing	3.92	105.28	106.14	106.14	106.27	0.009836	1.94	3.58	13.29	0.71
TR001	50.01	20Year-Existing	3.92	102.82	103.22	103.55	105.04	0.354456	6.26	0.73	3.69	3.77
TR001	10.31	20Year-Existing	3.92	100.43	101.27	101.10	101.37	0.006181	1.56	3.37	7.07	0.59
M001	2036.68	20Year-Existing	9.04	99.58	100.54	100.54	100.77	0.017049	2.70	5.39	11.98	0.96
M001	2006.33	20Year-Existing	9.04	98.58	100.24	99.76	100.31	0.002361	1.51	9.35	13.79	0.40
M001	1984.70	20Year-Existing	9.04	98.16	100.00	99.38	100.23	0.003863	2.10	4.30	6.25	0.51
M001	1975		Culvert									
M001	1967.48	20Year-Existing	9.04	97.22	98.23	98.57	99.38	0.056971	4.75	1.90	5.02	1.73
M001	1947.41	20Year-Existing	9.04	96.71	97.88	97.89	98.24	0.017098	3.03	3.97	6.08	0.99
M001	1897.27	20Year-Existing	9.04	94.94	95.72	96.00	96.65	0.070225	4.83	2.42	5.48	1.92
M001	1847.50	20Year-Existing	9.04	93.50	94.57	94.57	94.88	0.019881	3.02	4.28	6.89	1.03
M001	1790.83	20Year-Existing	10.32	91.16	92.12	92.36	93.00	0.055845	4.70	3.13	6.36	1.71
M001	1750	20Year-Existing	10.32	90.25	91.48	91.49	91.80	0.014923	3.04	5.57	9.15	0.94
M001	1700	20Year-Existing	10.32	88.86	89.79	90.02	90.53	0.049577	4.50	3.44	6.85	1.65
M001	1650	20Year-Existing	10.32	86.29	87.19	87.43	87.96	0.053863	4.55	3.30	6.26	1.66
M001	1600	20Year-Existing	10.32	84.49	87.15	85.51	87.15	0.000051	0.32	65.38	41.69	0.06
M001	1581.62	20Year-Existing	10.32	83.85	87.13	85.43	87.15	0.000189	0.68	28.63	56.15	0.12
M001	1560		Culvert									
M001	1559.09	20Year-Existing	10.32	82.32	83.88	83.88	84.63	0.013836	3.84	2.69	35.09	1.00
M001	1477.89	20Year-Existing	10.32	79.96	80.49	80.83	82.74	0.405168	7.56	1.99	9.94	4.15
M001	1418.45	20Year-Existing	10.72	78.38	79.82	79.86	80.11	0.012095	2.87	6.81	14.92	0.83
M001	1359.00	20Year-Existing	10.72	74.82	75.57	76.16	78.10	0.172311	7.47	1.78	3.91	3.01
M001	1338.71	20Year-Existing	10.72	72.61	75.28	74.05	75.45	0.001583	1.78	6.01	9.72	0.36
M001	1295		Culvert									
M001	1292.63	20Year-Existing	10.72	70.47	71.69	71.88	72.58	0.025757	4.46	2.73	14.64	1.31
M001	1280.53	20Year-Existing	10.72	65.50	65.84	66.26	70.48	1.487940	9.55	1.12	6.37	7.26
M001	1254.70	20Year-Existing	10.72	61.55	62.40	62.78	63.83	0.084689	6.04	2.76	7.09	2.37
M001	1214.60	20Year-Existing	10.72	54.66	55.32	55.78	57.76	0.333358	8.24	1.94	6.46	4.07
M001	1186.80	20Year-Existing	10.72	51.00	51.68	51.96	52.66	0.100856	5.58	3.22	8.93	2.48
M001	1151.89	20Year-Existing	10.72	46.66	47.55	47.96	49.14	0.105520	6.36	2.55	6.65	2.57
M001	1131.36	20Year-Existing	10.80	45.40	46.44	46.75	47.43	0.055725	5.08	3.24	6.86	1.85
M001	1094.32	20Year-Existing	10.80	43.36	44.37	44.68	45.40	0.056985	5.14	3.07	5.87	1.88
M001	1036.63	20Year-Existing	11.28	40.61	41.74	41.96	42.59	0.041146	4.70	3.69	7.07	1.63
M001	991.55	20Year-Existing	11.28	36.47	37.38	37.82	39.24	0.163323	6.95	2.36	6.17	2.92
M001	950.72	20Year-Existing	11.28	32.56	33.47	33.76	34.43	0.080134	5.32	3.38	8.05	2.13
M001	894.70	20Year-Existing	11.28	29.50	30.54	30.72	31.15	0.042439	4.37	4.16	7.71	1.59
M001	850.00	20Year-Existing	11.28	28.24	29.47	29.57	30.05	0.028219	3.94	3.87	7.03	1.32
M001	811.85	20Year-Existing	11.28	26.37	27.60	27.87	28.47	0.064544	4.20	2.81	4.72	1.57
M001	754.30	20Year-Existing	11.28	22.84	23.95	24.26	24.99	0.056147	4.99	2.96	6.11	1.87
M001	684.68	20Year-Existing	11.28	20.60	22.11	22.23	22.66	0.020694	3.70	3.94	5.72	1.13
M001	632.62	20Year-Existing	11.28	20.87	21.90	21.62	22.09	0.005397	2.12	6.07	6.76	0.67
M001	625		Bridge									
M001	621.03	20Year-Existing	11.28	19.91	21.00	21.00	21.37	0.011605	2.91	4.58	7.21	0.96
M001	599.17	20Year-Existing	11.28	15.17	15.51	15.93	18.67	0.734892	9.17	1.57	8.35	6.08
M001	547.98	20Year-Existing	11.28	9.22	9.91	10.11	10.59	0.064325	4.14	3.43	10.37	1.98

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	11.28	7.42	8.55	8.61	8.95	0.019877	3.37	5.03	8.58	1.17
M001	446.65	20Year-Existing	11.28	6.07	7.04	7.21	7.60	0.033024	3.82	4.86	14.86	1.47
M001	399.97	20Year-Existing	12.24	4.59	5.75	5.91	6.23	0.025928	3.39	5.31	18.76	1.30
M001	349.97	20Year-Existing	12.24	3.89	5.00	5.00	5.20	0.016674	2.75	7.44	18.03	1.01
M001	300.08	20Year-Existing	12.24	3.07	4.24	4.12	4.29	0.005622	1.63	13.97	35.74	0.57
M001	250.00	20Year-Existing	12.24	2.39	3.54	3.54	3.85	0.014499	3.12	5.87	9.67	1.03
M001	200	20Year-Existing	12.24	1.60	3.45	2.91	3.47	0.000642	0.88	24.96	33.93	0.23
M001	164.90	20Year-Existing	12.24	1.25	3.37	2.26	3.44	0.000789	1.23	11.09	16.12	0.28
M001	130		Culvert									
M001	122.87	20Year-Existing	12.24	1.00	3.24	2.08	3.31	0.000712	1.20	11.02	19.18	0.27
M001	121.82	20Year-Existing	12.24	0.97	3.15	2.44	3.28	0.001701	1.90	10.80	20.40	0.42
M001	110		Culvert									
M001	108.55	20Year-Existing	12.24	0.48	2.80	1.91	2.82	0.000457	0.92	22.87	25.60	0.20
M001	100.00	20Year-Existing	12.24	0.79	2.80		2.81	0.000163	0.55	42.55	40.63	0.13
M001	50.00	20Year-Existing	12.24	0.56	2.80		2.80	0.000034	0.27	78.92	63.80	0.06
M001	-33.87	20Year-Existing	12.24	0.46	2.80		2.80	0.000012	0.16	99.26	79.66	0.04
M001	-115.21	20Year-Existing	12.24	-0.85	2.80	-0.13	2.80	0.000001	0.06	337.95	154.15	0.01

Petries 20yr Q-30%

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	2.17	138.52	138.88	138.88	138.98	0.029437	1.75	1.99	10.29	1.09
TR002	26.40	20Year-Existing	2.17	136.29	136.51	136.56	136.67	0.167047	2.63	1.52	16.06	2.31
TR003	75.44	20Year-Existing	1.33	138.22	138.69	138.69	138.82	0.020333	1.67	1.04	4.89	0.92
TR003	31.52	20Year-Existing	1.33	135.25	135.51	135.69	136.35	0.376016	4.20	0.36	2.98	3.50
M002	2878.54	20Year-Existing	4.34	133.44	133.86	133.90	134.05	0.048282	2.63	2.88	12.02	1.45
M002	2830.24	20Year-Existing	4.34	129.86	130.50	130.74	131.29	0.074164	4.10	1.27	3.60	1.87
M002	2781.96	20Year-Existing	4.34	126.60	127.21	127.40	127.81	0.068585	3.77	1.56	4.95	1.76
M002	2733.55	20Year-Existing	4.34	123.62	124.21	124.38	124.78	0.059118	3.66	1.77	7.37	1.69
M002	2711.98	20Year-Existing	4.34	121.55	122.10	122.39	123.10	0.102452	4.90	1.05	3.66	2.23
M002	2710		Bridge									
M002	2706.48	20Year-Existing	4.34	121.23	121.82	121.96	122.37	0.039176	3.29	1.32	4.79	1.42
M002	2686.04	20Year-Existing	4.34	120.42	121.11	121.23	121.51	0.036460	3.07	1.80	4.80	1.32
M002	2636.80	20Year-Existing	4.62	118.88	119.55	119.63	119.88	0.030906	2.89	2.12	5.63	1.23
M002	2586.04	20Year-Existing	4.62	117.62	117.89	117.90	117.98	0.058731	1.77	3.43	24.73	1.40
M002	2536.82	20Year-Existing	4.62	115.95	116.52	116.52	116.64	0.023831	2.10	3.60	14.39	1.02
M002	2487.14	20Year-Existing	4.62	114.00	114.73	114.88	115.16	0.034975	3.19	1.90	5.06	1.33
M002	2437.53	20Year-Existing	4.62	112.56	113.24	113.28	113.52	0.030433	2.80	2.40	7.32	1.22
M002	2387.76	20Year-Existing	4.62	110.97	111.68	111.75	112.00	0.030702	2.91	2.25	6.38	1.24
M002	2337.92	20Year-Existing	4.62	109.55	110.36	110.46	110.64	0.024315	2.70	2.98	16.43	1.10
M002	2288.19	20Year-Existing	4.62	107.88	108.51	108.66	108.99	0.048893	3.32	1.74	5.24	1.53
M002	2243.62	20Year-Existing	4.62	106.54	107.60	107.60	107.87	0.018971	2.49	2.26	4.52	0.92
M002	2206.69	20Year-Existing	4.62	105.39	106.15	106.31	106.71	0.058532	3.54	1.56	4.65	1.59
M002	2172.99	20Year-Existing	4.62	104.44	105.06	105.12	105.28	0.028443	2.54	2.61	9.16	1.14
M002	2132.37	20Year-Existing	4.62	102.85	103.55	103.66	103.93	0.039214	2.99	2.05	8.36	1.36
M002	2076.75	20Year-Existing	4.62	100.37	101.26	101.40	101.75	0.039039	3.28	1.63	3.69	1.33
TR001	194.22	20Year-Existing	3.43	116.47	117.24	117.24	117.46	0.017596	2.38	2.06	5.05	0.94
TR001	173.31	20Year-Existing	3.43	113.43	113.78	114.13	116.14	0.690758	7.16	0.55	3.22	4.97
TR001	155.88	20Year-Existing	3.43	111.89	112.27	112.32	112.46	0.065287	2.66	2.22	13.62	1.59
TR001	147.33	20Year-Existing	3.43	111.21	111.54	111.64	111.93	0.157493	3.61	1.69	14.99	2.44
TR001	100.00	20Year-Existing	3.43	106.90	107.42	107.54	107.81	0.054938	3.15	1.50	5.66	1.58
TR001	84.71	20Year-Existing	3.43	105.53	106.73	106.38	106.76	0.002959	1.01	4.56	7.90	0.33
TR001	80		Culvert									
TR001	76.27	20Year-Existing	3.43	105.28	106.11	106.11	106.24	0.009973	1.90	3.13	12.48	0.70
TR001	50.01	20Year-Existing	3.43	102.82	103.20	103.51	104.99	0.393844	6.17	0.64	3.47	3.91
TR001	10.31	20Year-Existing	3.43	100.43	101.22	101.06	101.31	0.006426	1.51	3.00	6.73	0.59
M001	2036.68	20Year-Existing	7.91	99.58	100.50	100.50	100.71	0.016604	2.57	4.91	11.56	0.94
M001	2006.33	20Year-Existing	7.91	98.58	100.03	99.71	100.12	0.003584	1.68	7.09	9.82	0.48
M001	1984.70	20Year-Existing	7.91	98.16	99.80	99.29	100.02	0.004491	2.09	3.79	5.63	0.54
M001	1975		Culvert									
M001	1967.48	20Year-Existing	7.91	97.22	98.16	98.47	99.22	0.060114	4.58	1.73	4.68	1.75
M001	1947.41	20Year-Existing	7.91	96.71	97.78	97.82	98.15	0.019922	3.04	3.39	5.72	1.04
M001	1897.27	20Year-Existing	7.91	94.94	95.69	95.94	96.49	0.061836	4.43	2.30	5.38	1.79
M001	1847.50	20Year-Existing	7.91	93.50	94.43	94.51	94.82	0.029312	3.29	3.39	6.46	1.22
M001	1790.83	20Year-Existing	9.03	91.16	92.12	92.35	92.79	0.042341	4.10	3.14	6.37	1.49
M001	1750	20Year-Existing	9.03	90.25	91.41	91.42	91.72	0.015717	2.97	4.90	8.70	0.95
M001	1700	20Year-Existing	9.03	88.86	89.75	89.96	90.43	0.048554	4.27	3.14	6.61	1.61
M001	1650	20Year-Existing	9.03	86.29	87.14	87.36	87.86	0.055021	4.38	2.96	6.02	1.66
M001	1600	20Year-Existing	9.03	84.49	87.11	85.48	87.11	0.000043	0.29	63.40	41.43	0.06
M001	1581.62	20Year-Existing	9.03	83.85	87.09	85.30	87.10	0.000157	0.61	27.15	54.05	0.11
M001	1560		Culvert									
M001	1559.09	20Year-Existing	9.03	82.32	83.75	83.75	84.44	0.014385	3.68	2.45	33.13	1.00
M001	1477.89	20Year-Existing	9.03	79.96	80.47	80.80	82.54	0.390440	7.17	1.83	9.78	4.04
M001	1418.45	20Year-Existing	9.38	78.38	79.58	79.58	80.04	0.023668	3.46	4.07	7.45	1.13
M001	1359.00	20Year-Existing	9.38	74.82	75.60	76.07	77.31	0.109651	6.16	1.91	4.01	2.42
M001	1338.71	20Year-Existing	9.38	72.61	75.08	73.94	75.22	0.001615	1.70	5.51	9.20	0.36
M001	1295		Culvert									
M001	1292.63	20Year-Existing	9.38	70.47	71.60	71.77	72.41	0.026041	4.25	2.51	14.21	1.30
M001	1280.53	20Year-Existing	9.38	65.50	65.82	66.21	70.31	1.557490	9.40	1.00	6.01	7.36
M001	1254.70	20Year-Existing	9.38	61.55	62.36	62.72	63.69	0.083511	5.76	2.49	6.82	2.33
M001	1214.60	20Year-Existing	9.38	54.66	55.29	55.71	57.60	0.346432	7.96	1.73	6.23	4.10
M001	1186.80	20Year-Existing	9.38	51.00	51.65	51.90	52.54	0.098234	5.29	2.95	8.72	2.43
M001	1151.89	20Year-Existing	9.38	46.66	47.50	47.90	49.01	0.108397	6.14	2.27	6.26	2.57
M001	1131.36	20Year-Existing	9.45	45.40	46.40	46.68	47.30	0.054164	4.81	2.95	6.62	1.81
M001	1094.32	20Year-Existing	9.45	43.36	44.32	44.61	45.28	0.057757	4.93	2.77	5.69	1.87
M001	1036.63	20Year-Existing	9.87	40.61	41.69	41.91	42.47	0.040600	4.48	3.33	6.77	1.60
M001	991.55	20Year-Existing	9.87	36.47	37.33	37.75	39.11	0.169070	6.73	2.11	6.01	2.94
M001	950.72	20Year-Existing	9.87	32.56	33.44	33.70	34.31	0.078083	5.05	3.09	7.83	2.08
M001	894.70	20Year-Existing	9.87	29.50	30.49	30.65	31.06	0.042875	4.19	3.77	7.52	1.58
M001	850.00	20Year-Existing	9.87	28.24	29.54	29.55	29.89	0.016155	3.12	4.34	7.43	1.01
M001	811.85	20Year-Existing	9.87	26.37	27.45	27.79	28.55	0.105649	4.65	2.17	4.26	1.93
M001	754.30	20Year-Existing	9.87	22.84	23.95	24.19	24.75	0.043210	4.37	2.95	6.10	1.64
M001	684.68	20Year-Existing	9.87	20.60	22.01	22.16	22.56	0.023131	3.68	3.41	5.31	1.18
M001	632.62	20Year-Existing	9.87	20.87	21.83	21.56	21.99	0.005335	2.01	5.62	6.63	0.66
M001	625		Bridge									
M001	621.03	20Year-Existing	9.87	19.91	20.94	20.94	21.27	0.011567	2.78	4.21	7.01	0.94
M001	599.17	20Year-Existing	9.87	15.17	15.49	15.88	18.58	0.816578	9.02	1.38	8.11	6.30
M001	547.98	20Year-Existing	9.87	9.22	9.88	10.07	10.49	0.062391	3.91	3.16	10.05	1.93

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	9.87	7.42	8.49	8.55	8.87	0.020213	3.23	4.53	8.26	1.17
M001	446.65	20Year-Existing	9.87	6.07	7.01	7.17	7.53	0.031707	3.62	4.40	14.53	1.43
M001	399.97	20Year-Existing	10.71	4.59	5.71	5.87	6.18	0.026363	3.28	4.59	17.39	1.30
M001	349.97	20Year-Existing	10.71	3.89	4.97	4.97	5.15	0.015633	2.60	6.90	17.59	0.97
M001	300.08	20Year-Existing	10.71	3.07	4.19	4.10	4.24	0.006382	1.67	12.20	35.01	0.60
M001	250.00	20Year-Existing	10.71	2.39	3.48	3.48	3.77	0.014755	3.01	5.29	9.33	1.03
M001	200	20Year-Existing	10.71	1.60	3.40	2.87	3.42	0.000600	0.84	23.31	33.47	0.22
M001	164.90	20Year-Existing	10.71	1.25	3.34	2.20	3.39	0.000640	1.10	10.90	15.84	0.25
M001	130		Culvert									
M001	122.87	20Year-Existing	10.71	1.00	3.24	2.02	3.29	0.000546	1.05	11.01	19.16	0.24
M001	121.82	20Year-Existing	10.71	0.97	2.92	2.33	3.21	0.003297	2.45	4.46	14.78	0.57
M001	110		Culvert									
M001	108.55	20Year-Existing	10.71	0.48	2.80	1.80	2.82	0.000349	0.80	22.89	25.62	0.18
M001	100.00	20Year-Existing	10.71	0.79	2.80		2.80	0.000125	0.48	42.55	40.63	0.11
M001	50.00	20Year-Existing	10.71	0.56	2.80		2.80	0.000026	0.24	78.92	63.80	0.05
M001	-33.87	20Year-Existing	10.71	0.46	2.80		2.80	0.000009	0.14	99.28	79.67	0.03
M001	-115.21	20Year-Existing	10.71	-0.85	2.80	-0.16	2.80	0.000001	0.05	337.95	154.15	0.01

Petries 20yr WSEL+1m

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
TR002	65.82	20Year-Existing	3.10	138.52	138.93	138.93	139.05	0.029686	1.98	2.55	11.02	1.12
TR002	26.40	20Year-Existing	3.10	136.29	136.53	136.60	136.73	0.162301	2.92	1.94	16.67	2.35
TR003	75.44	20Year-Existing	1.90	138.22	138.77	138.78	138.91	0.018003	1.81	1.46	5.81	0.90
TR003	31.52	20Year-Existing	1.90	135.25	135.54	135.75	136.64	0.385899	4.84	0.46	3.35	3.66
M002	2878.54	20Year-Existing	6.20	133.44	133.92	133.98	134.16	0.051156	3.02	3.62	12.68	1.53
M002	2830.24	20Year-Existing	6.20	129.86	130.63	130.91	131.52	0.063039	4.43	1.78	4.15	1.80
M002	2781.96	20Year-Existing	6.20	126.60	127.28	127.54	128.11	0.080290	4.49	1.94	5.39	1.96
M002	2733.55	20Year-Existing	6.20	123.62	124.30	124.50	124.92	0.055089	3.97	2.48	8.01	1.68
M002	2711.98	20Year-Existing	6.20	121.55	122.23	122.57	123.40	0.086709	5.31	1.38	3.99	2.14
M002	2710		Bridge									
M002	2706.48	20Year-Existing	6.20	121.23	121.99	122.15	122.65	0.032905	3.60	1.72	5.27	1.36
M002	2686.04	20Year-Existing	6.20	120.42	121.17	121.37	121.78	0.049632	3.84	2.09	5.11	1.57
M002	2636.80	20Year-Existing	6.60	118.88	119.69	119.77	120.04	0.026183	3.07	2.94	6.36	1.17
M002	2586.04	20Year-Existing	6.60	117.62	117.90	117.95	118.06	0.087801	2.29	3.80	25.36	1.73
M002	2536.82	20Year-Existing	6.60	115.95	116.59	116.59	116.73	0.023307	2.30	4.67	15.42	1.04
M002	2487.14	20Year-Existing	6.60	114.00	114.87	115.07	115.34	0.030076	3.42	2.74	8.21	1.28
M002	2437.53	20Year-Existing	6.60	112.56	113.31	113.43	113.70	0.036378	3.33	2.97	8.21	1.37
M002	2387.76	20Year-Existing	6.60	110.97	111.81	111.90	112.16	0.026473	3.11	3.16	7.60	1.19
M002	2337.92	20Year-Existing	6.60	109.55	110.42	110.54	110.77	0.030122	3.19	4.05	20.47	1.24
M002	2288.19	20Year-Existing	6.60	107.88	108.65	108.77	109.13	0.037150	3.43	2.54	6.25	1.39
M002	2243.62	20Year-Existing	6.60	106.54	107.70	107.77	108.09	0.024339	3.05	2.69	4.85	1.06
M002	2206.69	20Year-Existing	6.60	105.39	106.28	106.49	106.86	0.046693	3.70	2.28	8.24	1.47
M002	2172.99	20Year-Existing	6.60	104.44	105.12	105.21	105.43	0.035217	3.04	3.19	10.44	1.30
M002	2132.37	20Year-Existing	6.60	102.85	103.66	103.69	104.03	0.033167	3.14	3.03	10.00	1.30
M002	2076.75	20Year-Existing	6.60	100.37	101.38	101.56	102.00	0.040026	3.75	2.11	4.10	1.39
TR001	194.22	20Year-Existing	4.90	116.47	117.37	117.37	117.63	0.016769	2.63	2.77	5.74	0.95
TR001	173.31	20Year-Existing	4.90	113.43	113.85	114.27	116.37	0.528232	7.51	0.78	3.66	4.55
TR001	155.88	20Year-Existing	4.90	111.89	112.31	112.41	112.56	0.073611	3.08	2.80	15.15	1.73
TR001	147.33	20Year-Existing	4.90	111.21	111.58	111.68	112.01	0.155841	4.00	2.40	20.37	2.49
TR001	100.00	20Year-Existing	4.90	106.90	107.50	107.65	107.97	0.053464	3.51	1.99	6.31	1.61
TR001	84.71	20Year-Existing	4.90	105.53	106.82	106.48	106.88	0.003917	1.24	5.37	8.46	0.38
TR001	80		Culvert									
TR001	76.27	20Year-Existing	4.90	105.28	106.20	106.20	106.34	0.010165	2.07	4.34	14.54	0.73
TR001	50.01	20Year-Existing	4.90	102.82	103.27	103.62	105.10	0.294345	6.37	0.93	4.10	3.54
TR001	10.31	20Year-Existing	4.90	100.43	101.10	101.17	101.42	0.028879	2.80	2.23	5.95	1.21
M001	2036.68	20Year-Existing	11.30	99.58	100.56	100.62	100.88	0.024574	3.28	5.56	12.12	1.15
M001	2006.33	20Year-Existing	11.30	98.58	100.64	99.87	100.68	0.001051	1.18	16.75	21.95	0.28
M001	1984.70	20Year-Existing	11.30	98.16	100.39	99.56	100.62	0.003104	2.15	5.25	15.34	0.47
M001	1975		Culvert									
M001	1967.48	20Year-Existing	11.30	97.22	98.36	98.74	99.66	0.052033	5.05	2.24	5.65	1.70
M001	1947.41	20Year-Existing	11.30	96.71	97.93	98.01	98.41	0.021893	3.54	4.27	6.27	1.12
M001	1897.27	20Year-Existing	11.30	94.94	95.84	96.12	96.73	0.055438	4.81	3.11	5.99	1.75
M001	1847.50	20Year-Existing	11.30	93.50	94.67	94.67	95.03	0.019554	3.24	5.04	7.24	1.04
M001	1790.83	20Year-Existing	12.90	91.16	92.22	92.39	93.19	0.053728	5.01	3.80	7.04	1.72
M001	1750	20Year-Existing	12.90	90.25	91.57	91.60	91.95	0.016231	3.35	6.41	9.56	1.00
M001	1700	20Year-Existing	12.90	88.86	89.91	90.14	90.67	0.043982	4.66	4.26	7.35	1.59
M001	1650	20Year-Existing	12.90	86.29	87.27	87.56	88.18	0.056848	5.00	3.81	6.60	1.74
M001	1600	20Year-Existing	12.90	84.49	87.22	85.56	87.23	0.000070	0.39	68.35	42.12	0.08
M001	1581.62	20Year-Existing	12.90	83.85	87.20	85.67	87.22	0.000261	0.81	30.87	58.90	0.15
M001	1560		Culvert									
M001	1559.09	20Year-Existing	12.90	82.32	84.12	84.12	85.00	0.013237	4.14	3.11	41.56	1.00
M001	1477.89	20Year-Existing	12.90	79.96	80.52	80.91	83.09	0.422271	8.21	2.32	10.26	4.31
M001	1418.45	20Year-Existing	13.40	78.38	79.91	79.97	80.22	0.013058	3.12	8.08	15.95	0.88
M001	1359.00	20Year-Existing	13.40	74.82	75.70	76.32	78.20	0.138563	7.55	2.29	4.29	2.78
M001	1338.71	20Year-Existing	13.40	72.61	75.70	74.25	75.88	0.001485	1.91	7.00	10.77	0.36
M001	1295		Culvert									
M001	1292.63	20Year-Existing	13.40	70.47	71.87	72.09	72.91	0.024941	4.82	3.16	15.47	1.32
M001	1280.53	20Year-Existing	13.40	65.50	65.87	66.34	70.80	1.387916	9.84	1.36	7.01	7.13
M001	1254.70	20Year-Existing	13.40	61.55	62.47	62.90	64.09	0.086939	6.54	3.27	7.49	2.45
M001	1214.60	20Year-Existing	13.40	54.66	55.38	55.89	58.04	0.312581	8.71	2.33	6.86	4.03
M001	1186.80	20Year-Existing	13.40	51.00	51.73	52.05	52.88	0.106349	6.12	3.71	9.30	2.59
M001	1151.89	20Year-Existing	13.40	46.66	47.63	48.08	49.36	0.101301	6.76	3.12	7.30	2.57
M001	1131.36	20Year-Existing	13.50	45.40	46.52	46.87	47.66	0.057312	5.51	3.83	7.32	1.91
M001	1094.32	20Year-Existing	13.50	43.36	44.47	44.82	45.62	0.056025	5.51	3.65	6.17	1.90
M001	1036.63	20Year-Existing	14.10	40.61	41.84	42.21	42.80	0.041953	5.09	4.39	7.73	1.68
M001	991.55	20Year-Existing	14.10	36.47	37.45	37.94	39.47	0.154620	7.34	2.84	6.47	2.90
M001	950.72	20Year-Existing	14.10	32.56	33.54	33.87	34.65	0.083810	5.81	3.92	8.44	2.22
M001	894.70	20Year-Existing	14.10	29.50	30.63	30.83	31.32	0.041798	4.68	4.91	8.06	1.60
M001	850.00	20Year-Existing	14.10	28.24	29.72	29.83	30.14	0.016192	3.51	6.10	11.31	1.04
M001	811.85	20Year-Existing	14.10	26.37	27.63	28.01	28.86	0.085976	4.99	2.97	4.82	1.82
M001	754.30	20Year-Existing	14.10	22.84	24.06	24.48	25.13	0.049308	5.15	3.69	6.70	1.80
M001	684.68	20Year-Existing	14.10	20.60	22.21	22.30	22.86	0.021898	4.06	4.58	6.18	1.18
M001	632.62	20Year-Existing	14.10	20.87	22.05	21.74	22.27	0.005287	2.30	6.99	7.02	0.68
M001	625		Bridge									
M001	621.03	20Year-Existing	14.10	19.91	21.13	21.13	21.54	0.011339	3.12	5.32	7.77	0.97
M001	599.17	20Year-Existing	14.10	15.17	15.55	16.01	18.87	0.629684	9.47	1.92	8.70	5.78
M001	547.98	20Year-Existing	14.10	9.22	9.96	10.20	10.76	0.067708	4.55	3.95	10.86	2.07

HEC-RAS Plan: Plan 23 Profile: 20Year-Existing (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
M001	500	20Year-Existing	14.10	7.42	8.66	8.73	9.11	0.019207	3.59	5.99	9.13	1.18
M001	446.65	20Year-Existing	14.10	6.07	7.09	7.28	7.74	0.036046	4.19	5.67	15.40	1.55
M001	399.97	20Year-Existing	15.30	4.59	5.82	5.94	6.32	0.025207	3.56	6.74	21.96	1.31
M001	349.97	20Year-Existing	15.30	3.89	5.06	5.06	5.29	0.017163	2.96	8.66	18.94	1.04
M001	300.08	20Year-Existing	15.30	3.07	4.33	4.17	4.38	0.004646	1.59	17.37	37.12	0.52
M001	250.00	20Year-Existing	15.30	2.39	3.65	3.65	3.99	0.014407	3.34	6.92	10.27	1.05
M001	200	20Year-Existing	15.30	1.60	3.61	2.97	3.63	0.000552	0.88	30.62	35.45	0.21
M001	164.90	20Year-Existing	15.30	1.25	3.51	2.39	3.60	0.000980	1.44	11.89	21.41	0.31
M001	130		Culvert									
M001	122.87	20Year-Existing	15.30	1.00	3.31	2.21	3.41	0.000990	1.44	11.41	20.71	0.32
M001	121.82	20Year-Existing	15.30	0.97	3.17	2.67	3.37	0.002455	2.30	11.22	20.92	0.50
M001	110		Culvert									
M001	108.55	20Year-Existing	15.30	0.48	2.79	2.14	2.84	0.000719	1.15	22.81	25.56	0.25
M001	100.00	20Year-Existing	15.30	0.79	2.80		2.81	0.000255	0.69	42.54	40.63	0.16
M001	50.00	20Year-Existing	15.30	0.56	2.80		2.80	0.000053	0.34	78.92	63.80	0.07
M001	-33.87	20Year-Existing	15.30	0.46	2.80		2.80	0.000018	0.20	99.24	79.66	0.04
M001	-115.21	20Year-Existing	15.30	-0.85	2.80	-0.03	2.80	0.000001	0.07	337.95	154.15	0.01

CORNER BROOK STREAM

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Corner Brook 100yr n+20%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	187.30	36.31	39.06	39.06	40.55	0.017809	5.98	41.60	21.83	1.18
CornerB	M004	2838.71	100Year-Existing	187.30	36.15	38.74	38.85	39.69	0.011130	4.64	55.97	43.22	0.93
CornerB	M004	2796.61	100Year-Existing	187.30	35.35	38.70	37.86	39.16	0.004537	3.42	79.76	44.00	0.62
CornerB	M004	2769.85	100Year-Existing	187.30	34.80	37.74	37.74	38.61	0.018510	6.45	56.87	33.41	1.22
CornerB	TR001	206.04	100Year-Existing	32.10	43.81	44.86	45.08	45.65	0.042014	4.73	10.03	14.69	1.54
CornerB	TR001	156.04	100Year-Existing	32.10	41.63	42.78	43.04	43.57	0.040368	4.20	9.79	19.23	1.47
CornerB	TR001	106.04	100Year-Existing	32.10	39.17	39.92	40.26	41.02	0.067492	4.97	7.79	13.40	1.87
CornerB	TR001	56.04	100Year-Existing	32.10	37.27	38.23	38.49	38.84	0.028899	3.68	10.33	14.06	1.26
CornerB	TR001	36.04	100Year-Existing	32.10	35.50	38.34	37.63	38.35	0.000125	0.49	127.68	82.58	0.10
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	32.10	35.18	37.37	37.37	38.33	0.014372	4.35	7.38	80.27	1.00
CornerB	M003	2689.92	100Year-Existing	205.20	33.55	36.46	36.26	36.95	0.008735	4.28	88.15	59.10	0.83
CornerB	M003	2645.73	100Year-Existing	205.20	32.87	36.59		36.73	0.001497	2.18	155.07	69.05	0.36
CornerB	M003	2602.09	100Year-Existing	205.20	32.20	36.58		36.67	0.000747	1.68	192.80	68.06	0.26
CornerB	M003	2557.73	100Year-Existing	205.20	31.34	36.49		36.63	0.000785	1.92	159.39	48.53	0.28
CornerB	M003	2537.73	100Year-Existing	205.20	30.77	36.40	34.88	36.60	0.001252	2.64	157.28	64.40	0.36
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	205.20	30.35	34.35	34.35	35.21	0.005568	4.23	59.02	27.52	0.68
CornerB	M003	2507.21	100Year-Existing	205.20	30.75	33.03	33.46	34.73	0.028480	6.57	41.34	23.44	1.45
CornerB	M003	2459.31	100Year-Existing	205.20	30.13	32.04	32.34	33.31	0.025398	5.63	47.75	32.59	1.34
CornerB	M003	2411.41	100Year-Existing	205.20	29.27	31.76	31.76	32.45	0.013393	4.71	71.34	49.11	1.00
CornerB	M003	2363.51	100Year-Existing	205.20	28.77	30.82	30.93	31.70	0.018021	4.76	58.62	42.28	1.13
CornerB	M003	2315.61	100Year-Existing	205.20	27.93	30.50	30.14	31.14	0.007397	3.69	63.59	31.17	0.76
CornerB	M003	2267.71	100Year-Existing	205.60	26.30	30.49		30.87	0.002360	2.91	87.77	29.31	0.46
CornerB	M003	2264.01	100Year-Existing	205.60	26.10	30.49	29.54	30.86	0.005796	2.72	78.08	30.47	0.52
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	205.60	26.10	30.39		30.79	0.006530	2.82	75.18	30.31	0.55
CornerB	M003	2260.98	100Year-Existing	205.60	25.80	30.43		30.74	0.001770	2.66	97.10	32.73	0.41
CornerB	M003	2240.88	100Year-Existing	205.60	27.01	30.37		30.69	0.002948	2.69	94.42	41.90	0.50
CornerB	M003	2212.25	100Year-Existing	205.60	26.87	30.25		30.60	0.003146	2.88	92.36	38.28	0.52
CornerB	M003	2183.63	100Year-Existing	205.60	25.56	29.61	29.27	30.42	0.006994	4.63	68.29	33.98	0.78
CornerB	M003	2163.63	100Year-Existing	205.60	25.35	29.65	28.43	30.26	0.003677	3.60	61.78	39.34	0.58
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	205.60	24.87	28.02	28.31	29.71	0.018220	6.30	39.54	22.97	1.20
CornerB	M003	2131.66	100Year-Existing	205.60	24.57	27.19	27.84	29.34	0.031698	6.75	35.25	21.69	1.50
CornerB	M003	2119.46	100Year-Existing	205.60	24.12	26.31	27.10	28.84	0.045986	7.42	32.71	22.83	1.78
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	205.60	24.04	27.18	27.18	28.25	0.011336	4.81	50.73	25.38	0.94
CornerB	M003	2080.62	100Year-Existing	205.60	23.73	25.83	26.45	27.54	0.028636	6.06	39.45	26.49	1.42
CornerB	M003	2068.44	100Year-Existing	205.60	23.76	25.86	26.21	27.11	0.021010	5.29	47.25	38.39	1.22
CornerB	M003	2022.25	100Year-Existing	205.60	22.74	25.38	25.33	26.24	0.010757	4.47	59.37	37.82	0.91
CornerB	M003	1991.14	100Year-Existing	205.60	22.18	24.91	24.91	25.88	0.011378	4.76	55.98	30.79	0.95
CornerB	M003	1985.82	100Year-Existing	205.60	21.97	24.40	24.67	25.77	0.018991	5.63	46.42	27.49	1.20
CornerB	M003	1975.95	100Year-Existing	205.60	21.78	24.04	24.42	25.54	0.023810	6.04	44.92	28.64	1.33
CornerB	M003	1929.72	100Year-Existing	205.60	20.08	22.65	23.09	24.41	0.024283	6.22	39.22	21.66	1.34
CornerB	M003	1883.49	100Year-Existing	205.60	19.23	22.37	22.37	23.62	0.012073	5.35	48.51	21.08	1.00
CornerB	TR002	21.04	100Year-Existing	12.20	22.27	23.03	23.56	25.12	0.150175	7.05	2.33	4.98	2.71
CornerB	TR002	18.08	100Year-Existing	12.20	21.40	21.88	22.36	24.39	0.390045	8.03	2.04	6.38	4.06
CornerB	M002	1826.39	100Year-Existing	207.60	16.92	18.61	19.50	22.02	0.159791	8.91	28.97	30.62	2.47
CornerB	M002	1790.92	100Year-Existing	207.60	15.49	19.03	19.03	20.41	0.019559	5.73	46.06	17.96	1.00
CornerB	M002	1773.95	100Year-Existing	207.60	14.72	19.51	17.92	19.85	0.003545	2.91	93.24	29.72	0.44
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	207.60	14.87	19.51	17.63	19.74	0.001970	2.49	116.10	37.80	0.38
CornerB	M002	1733.13	100Year-Existing	207.60	15.23	19.56		19.63	0.000569	1.30	204.00	78.17	0.20
CornerB	M002	1717.41	100Year-Existing	207.60	15.12	19.56		19.62	0.000476	1.21	228.35	86.81	0.19
CornerB	M002	1691.96	100Year-Existing	207.60	14.62	19.55		19.60	0.000394	1.13	258.28	106.65	0.17
CornerB	M002	1654.15	100Year-Existing	207.60	13.87	19.56		19.59	0.000192	0.83	336.70	137.19	0.12
CornerB	M002	1613.91	100Year-Existing	207.60	13.08	19.56		19.58	0.000094	0.70	391.22	152.67	0.10
CornerB	M002	1567.16	100Year-Existing	207.60	12.15	19.57		19.57	0.000016	0.31	775.86	210.50	0.04
CornerB	M002	1551.89	100Year-Existing	207.60	11.85	19.57		19.57	0.000006	0.19	1172.56	273.20	0.03
CornerB	M002	1539.91	100Year-Existing	206.40	11.62	19.57		19.57	0.000003	0.14	1579.86	306.40	0.02
CornerB	M002	1526.59	100Year-Existing	206.40	11.36	19.57		19.57	0.000003	0.14	1608.66	311.57	0.02
CornerB	M002	1517.99	100Year-Existing	206.40	11.18	19.57		19.57	0.000004	0.17	1360.64	267.80	0.02
CornerB	M002	1505.64	100Year-Existing	206.40	10.94	19.57		19.57	0.000007	0.22	1013.08	197.92	0.03
CornerB	M002	1490.63	100Year-Existing	206.40	10.64	19.57		19.57	0.000015	0.32	699.88	140.04	0.04
CornerB	M002	1463.65	100Year-Existing	206.40	10.11	19.55		19.57	0.000065	0.67	384.65	88.85	0.08
CornerB	M002	1415.93	100Year-Existing	206.40	9.17	19.54		19.57	0.000057	0.65	361.41	74.73	0.08
CornerB	M002	1386.11	100Year-Existing	206.40	8.58	19.53		19.56	0.000084	0.77	331.18	77.91	0.09
CornerB	M002	1363.91	100Year-Existing	206.40	8.14	19.51		19.56	0.000139	0.98	265.18	57.35	0.11
CornerB	M002	1356.61	100Year-Existing	206.40	8.00	19.51		19.56	0.000375	1.23	276.78	72.70	0.13
CornerB	M002	1354.61	100Year-Existing	206.40	15.35	18.96	18.84	19.50	0.006956	4.09	82.59	55.37	0.69
CornerB	M002	1354.11	100Year-Existing	206.40	15.35	18.84	18.84	19.50	0.008511	4.43	75.94	53.89	0.76
CornerB	M002	1352.01	100Year-Existing	206.40	8.00	9.64	11.43	18.61	0.585053	0.36	15.56	9.51	0.13
CornerB	M002	1347.51	100Year-Existing	206.40	7.72	9.73	10.99	14.95	0.247531	10.12	20.44	17.41	2.95
CornerB	M002	1336.58	100Year-Existing	206.40	7.69	9.53	10.44	12.57	0.109496	7.79	27.54	21.91	2.06
CornerB	M002	1326.83	100Year-Existing	206.40	7.68	10.98	10.08	11.39	0.006344	3.01	78.89	31.53	0.56
CornerB	M002	1317.22	100Year-Existing	206.40	7.66	10.82		11.31	0.008647	3.26	71.24	32.27	0.64
CornerB	M002	1315.18	100Year-Existing	206.40	7.28	10.29	10.29	11.24	0.023053	4.68	52.45	29.43	1.01
CornerB	M002	1313.58	100Year-Existing	206.40	6.48	9.48	9.93	11.12	0.044547	6.02	39.80	25.57	1.37
CornerB	M002	1312.39	100Year-Existing	206.40	6.23	9.02	9.63	11.02	0.056024	6.54	35.73	24.03	1.52
CornerB	M002	1311.16	100Year-Existing	206.40	5.92	8.58	9.30	10.92	0.074835	6.92	31.96	22.94	1.72
CornerB	M002	1309.11	100Year-Existing	206.40	5.91	8.19	8.96	10.74	0.081562	7.19	30.52	22.14	1.80
CornerB	M002	1305.35	100Year-Existing	206.40	5.37	7.52	8.36	10.36	0.096432	7.86	30.53	24.83	1.97
CornerB	M002	1300.06	100Year-Existing	206.40	5.06	7.06	7.87	9.82	0.104851	7.48	29.19	23.74	2.01
CornerB	M002	1296.49	100Year-Existing	206.40	4.91	7.40	7.96	9.34	0.046483	6.36	36.12	21.87	1.42
CornerB	M002	1289.64	100Year-Existing	206.40	4.71	8.18	7.78	8.99	0.012403	4.20	56.89	23.63	0.78
CornerB	M002	1284.12	100Year-Existing	206.40	4.41	7.71	7.71	8.87	0.019249	5.06	48.26	22.50	0.96

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	206.40	4.23	7.06	7.45	8.72	0.032058	5.93	39.86	21.69	1.22
CornerB	M002	1258.94	100Year-Existing	206.40	3.53	5.54	6.21	7.71	0.074581	6.92	35.34	29.99	1.74
CornerB	M002	1246.98	100Year-Existing	206.40	3.37	5.21	5.67	6.92	0.041145	5.90	37.95	27.37	1.45
CornerB	M002	1233.83	100Year-Existing	206.40	3.10	4.87	5.15	6.25	0.044756	5.47	43.95	39.87	1.48
CornerB	M002	1215.66	100Year-Existing	206.40	2.70	5.13	4.74	5.48	0.006424	2.86	96.43	68.35	0.61
CornerB	M002	1206.83	100Year-Existing	206.40	2.54	5.12		5.41	0.005664	2.67	105.27	69.13	0.57
CornerB	M002	1194.69	100Year-Existing	206.40	2.39	5.08		5.35	0.005104	2.61	109.46	66.54	0.55
CornerB	M002	1185.06	100Year-Existing	206.40	2.26	5.05		5.29	0.004142	2.48	116.95	68.33	0.50
CornerB	M002	1142.41	100Year-Existing	206.40	1.70	4.93		5.13	0.003548	2.35	131.76	84.37	0.46
CornerB	M002	1137.55	100Year-Existing	206.40	1.60	4.65	4.41	5.05	0.008350	3.09	98.15	103.98	0.68
CornerB	M002	1110.53	100Year-Existing	206.40	1.39	4.33	4.05	4.82	0.007586	3.42	88.62	97.53	0.68
CornerB	M002	1090.67	100Year-Existing	206.40	1.10	4.50		4.64	0.002165	1.98	170.62	146.18	0.37
CornerB	M002	1070.69	100Year-Existing	206.40	0.80	4.51	3.09	4.59	0.001116	1.61	208.67	123.14	0.27
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	206.40	0.76	4.49	3.01	4.57	0.001011	1.55	207.07	116.46	0.26
CornerB	M002	1047.01	100Year-Existing	206.40	0.75	4.47		4.55	0.000938	1.68	198.85	90.84	0.29
CornerB	M002	1004.03	100Year-Existing	206.40	0.77	4.42		4.51	0.000881	1.62	232.25	140.89	0.28
CornerB	M002	959.21	100Year-Existing	206.40	0.70	4.43		4.46	0.000574	1.30	361.97	287.58	0.22
CornerB	M002	915.75	100Year-Existing	205.50	0.68	4.42		4.44	0.000418	1.08	436.09	297.13	0.19
CornerB	M002	869.66	100Year-Existing	205.50	0.69	4.40		4.42	0.000267	0.89	459.09	225.85	0.15
CornerB	M002	828.33	100Year-Existing	199.70	0.77	4.39		4.41	0.000280	0.88	446.16	226.48	0.15
CornerB	M002	784.55	100Year-Existing	199.70	0.82	4.39		4.40	0.000188	0.72	467.52	234.44	0.13
CornerB	M002	739.85	100Year-Existing	199.70	0.82	4.38		4.39	0.000185	0.69	484.60	276.23	0.12
CornerB	M002	696.36	100Year-Existing	199.70	0.64	4.36		4.38	0.000255	0.87	426.06	267.92	0.15
CornerB	M001	659.37	100Year-Existing	209.90	0.75	4.35		4.37	0.000284	0.87	398.64	237.63	0.15
CornerB	M001	643.93	100Year-Existing	209.90	0.74	4.33	3.16	4.37	0.000424	1.07	338.68	222.31	0.19
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	209.90	0.83	4.06	3.24	4.13	0.000958	1.53	242.09	185.39	0.28
CornerB	M001	608.52	100Year-Existing	209.90	0.76	4.04		4.11	0.001193	1.63	229.69	166.05	0.31
CornerB	M001	570.12	100Year-Existing	209.90	0.61	4.03		4.07	0.000639	1.26	301.10	187.34	0.23
CornerB	M001	535.83	100Year-Existing	209.90	0.56	4.01	2.10	4.05	0.000397	1.08	307.28	222.43	0.19
CornerB	M001	520.22	100Year-Existing	209.90	0.55	4.01	2.24	4.04	0.000304	0.94	356.54	293.51	0.16
CornerB	M001	472.07	100Year-Existing	209.90	0.58	3.95	3.04	4.01	0.000741	1.42	261.62	208.39	0.25
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	209.90	0.44	3.57	2.43	3.76	0.001838	2.17	187.38	244.26	0.39
CornerB	M001	425.41	100Year-Existing	209.90	0.48	3.59		3.68	0.001166	1.68	283.35	311.87	0.31
CornerB	M001	401.99	100Year-Existing	209.90	0.74	3.60		3.64	0.000683	1.24	378.67	346.92	0.24
CornerB	M001	381.26	100Year-Existing	209.90	0.79	3.54	3.19	3.61	0.001424	1.71	294.19	352.53	0.34
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	209.90	0.79	3.45	3.20	3.55	0.001874	1.94	273.61	369.79	0.39
CornerB	M001	352.89	100Year-Existing	209.90	0.68	3.29		3.48	0.002297	2.12	206.27	418.78	0.42
CornerB	M001	324.13	100Year-Existing	209.90	0.67	3.25		3.40	0.002144	2.04	194.70	280.49	0.41
CornerB	M001	292.92	100Year-Existing	209.90	0.65	3.23		3.33	0.001525	1.69	255.54	359.36	0.34
CornerB	M001	274.62	100Year-Existing	209.90	0.96	3.22	2.81	3.28	0.002540	1.94	276.56	370.97	0.43
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	209.90	1.01	3.18	2.73	3.23	0.002324	1.84	301.41	382.19	0.41
CornerB	M001	245.99	100Year-Existing	209.90	0.64	3.14		3.19	0.001608	1.62	336.39	442.94	0.35
CornerB	M001	210.89	100Year-Existing	209.90	0.68	3.08		3.13	0.001755	1.58	321.00	411.61	0.35
CornerB	M001	174.77	100Year-Existing	209.90	0.69	3.03		3.07	0.001491	1.32	341.76	460.79	0.32
CornerB	M001	155.66	100Year-Existing	209.90	0.64	3.01	2.58	3.04	0.001709	1.28	386.07	583.07	0.33
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	209.90	0.55	3.00	2.52	3.02	0.001372	1.14	393.28	529.80	0.30
CornerB	M001	129.05	100Year-Existing	209.90	0.40	2.96		2.98	0.001086	1.22	405.55	536.67	0.28
CornerB	M001	80.73	100Year-Existing	209.90	0.20	2.88		2.93	0.001154	1.39	341.71	395.30	0.30
CornerB	M001	23.81	100Year-Existing	209.90	0.32	2.80	2.18	2.86	0.001398	1.41	308.45	431.13	0.32
BellsB	TR001	178.13	100Year-Existing	17.70	92.91	95.23	94.64	95.42	0.003734	2.09	11.86	10.66	0.48
BellsB	TR001	159.86	100Year-Existing	17.70	92.15	95.31		95.35	0.000600	1.12	26.65	15.32	0.21
BellsB	TR001	139.54	100Year-Existing	17.70	91.13	95.14	92.91	95.32	0.001484	1.84	9.61	13.67	0.29
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	17.70	89.49	91.15	91.42	92.40	0.028708	5.00	3.67	5.33	1.28
BellsB	TR001	88.17	100Year-Existing	17.70	88.47	89.44	90.06	91.87	0.158989	7.38	2.97	5.43	2.74
BellsB	TR001	84.12	100Year-Existing	17.70	87.66	88.47	89.04	91.01	0.241917	7.21	2.72	6.81	3.23
BellsB	TR001	79.14	100Year-Existing	17.70	86.53	87.40	88.00	89.97	0.173666	7.43	2.90	6.49	2.89
BellsB	TR001	72.74	100Year-Existing	17.70	85.76	86.51	87.01	88.66	0.188406	6.66	2.99	7.50	2.88
BellsB	TR001	67.75	100Year-Existing	17.70	85.04	85.69	86.12	87.49	0.202964	6.31	3.29	8.19	2.92
BellsB	TR001	64.04	100Year-Existing	17.70	84.47	85.32	85.75	86.82	0.119140	5.45	3.30	6.54	2.32
BellsB	TR001	60.69	100Year-Existing	17.70	84.14	85.27	85.61	86.40	0.072662	4.89	4.17	7.91	1.86
BellsB	TR001	56.76	100Year-Existing	17.70	83.97	85.07	85.39	86.10	0.061644	4.57	4.25	8.30	1.73
BellsB	TR001	50.93	100Year-Existing	17.70	83.68	84.84	85.10	85.69	0.059932	4.26	4.80	10.06	1.68
BellsB	TR001	43.86	100Year-Existing	17.70	83.34	84.34	84.60	85.23	0.072176	4.31	4.67	10.27	1.81
BellsB	TR001	37.01	100Year-Existing	17.70	82.98	84.04	84.26	84.78	0.046959	4.08	5.33	9.55	1.53
BellsB	TR001	12.14	100Year-Existing	17.70	82.15	83.16	83.29	83.70	0.036229	3.49	6.09	10.46	1.33
BellsB	M002	5166.11	100Year-Existing	14.60	190.79	192.01	191.83	192.14	0.009923	2.19	12.42	18.90	0.67
BellsB	M002	5149.23	100Year-Existing	14.60	190.57	191.60	191.60	191.89	0.021704	2.80	8.10	14.85	0.95
BellsB	M002	5117.45	100Year-Existing	14.60	189.91	191.53	190.79	191.56	0.001822	1.16	24.12	24.37	0.30
BellsB	M002	5090.85	100Year-Existing	14.60	189.62	191.07	191.07	191.41	0.019508	3.27	7.84	11.85	0.93
BellsB	M002	5067.47	100Year-Existing	14.60	189.18	190.28	190.04	190.46	0.014750	2.59	9.35	11.43	0.81
BellsB	M002	5017.78	100Year-Existing	14.60	188.12	189.30	189.29	189.59	0.022337	3.17	8.10	12.44	0.98
BellsB	M002	4967.57	100Year-Existing	14.60	186.55	187.97	187.97	188.38	0.025792	3.51	6.40	8.10	1.03
BellsB	M002	4917.46	100Year-Existing	14.60	185.69	187.13	186.53	187.18	0.002767	1.35	19.25	24.64	0.37
BellsB	M002	4873.31	100Year-Existing	14.60	184.61	186.98		187.06	0.002824	1.73	18.35	23.41	0.38
BellsB	M002	4853.42	100Year-Existing	14.60	183.55	186.80	185.27	187.00	0.002188	1.97	7.40	29.49	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	14.60	181.53	182.85	183.23	184.22	0.052630	5.19	2.81	5.75	1.53
BellsB	M002	4785.76	100Year-Existing	14.60	181.35	182.52	182.60	183.00	0.030474	3.54	5.73	8.56	1.14
BellsB	M002	4756.65	100Year-Existing	14.60	180.12	181.05	181.25	181.71	0.068231	4.56	5.33	12.89	1.64
BellsB	M002	4727.54	100Year-Existing	14.60	179.02	179.90	180.00	180.28	0.032640	3.39	7.24	16.74	1.23

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	14.60	177.96	178.37	178.57	179.04	0.153652	4.44	4.71	16.81	2.37
BellsB	M002	4702.24	100Year-Existing	14.60	177.65	178.44	178.54	178.82	0.042346	3.37	6.83	17.32	1.35
BellsB	M002	4682.48	100Year-Existing	14.60	176.63	177.45	177.60	177.93	0.042630	3.58	6.21	15.35	1.38
BellsB	M002	4658.79	100Year-Existing	14.60	175.50	176.85	176.90	177.33	0.017812	3.43	6.08	8.15	0.97
BellsB	M002	4633.41	100Year-Existing	14.60	174.51	175.24	175.53	176.35	0.132478	5.98	4.29	12.85	2.39
BellsB	M002	4609.61	100Year-Existing	14.60	173.50	174.87	174.51	175.01	0.006070	2.07	11.24	12.70	0.58
BellsB	M002	4583.99	100Year-Existing	14.60	172.77	174.27	174.27	174.73	0.016767	3.26	5.91	7.53	0.92
BellsB	M002	4534.72	100Year-Existing	14.60	170.00	171.01	171.50	172.75	0.126048	7.33	3.38	6.69	2.44
BellsB	M002	4485.52	100Year-Existing	14.60	168.20	168.92	169.01	169.26	0.046308	3.54	7.32	19.29	1.41
BellsB	M002	4436.28	100Year-Existing	26.50	165.85	167.21	167.35	167.70	0.025821	4.20	12.96	28.61	1.19
BellsB	M002	4387.04	100Year-Existing	26.50	164.06	165.41	165.62	166.14	0.037947	5.05	9.48	13.78	1.44
BellsB	M002	4337.81	100Year-Existing	26.50	162.60	163.88	164.01	164.33	0.032352	4.38	12.99	26.12	1.29
BellsB	M002	4288.56	100Year-Existing	26.50	161.30	162.58	162.63	162.95	0.027880	3.96	12.83	20.63	1.18
BellsB	M002	4239.33	100Year-Existing	26.50	159.65	160.78	160.97	161.44	0.040215	4.50	9.64	16.00	1.43
BellsB	M002	4190.09	100Year-Existing	26.50	158.43	159.72	159.74	160.10	0.020540	3.55	13.04	19.74	1.05
BellsB	M002	4140.85	100Year-Existing	26.50	157.30	158.02	158.11	158.39	0.059199	4.18	11.19	23.11	1.63
BellsB	M002	4091.61	100Year-Existing	26.50	155.30	156.22	156.21	156.51	0.031521	3.66	12.96	21.38	1.25
BellsB	M002	4042.37	100Year-Existing	26.50	153.74	154.80	154.80	155.17	0.023213	3.37	11.68	15.76	1.09
BellsB	M002	3993.13	100Year-Existing	26.50	152.65	153.61	153.59	153.86	0.026004	3.19	14.30	24.93	1.09
BellsB	M002	3943.89	100Year-Existing	26.50	151.36	152.37	152.37	152.68	0.027212	3.49	12.94	20.72	1.16
BellsB	M002	3894.65	100Year-Existing	26.50	149.52	151.20	151.29	151.66	0.020620	3.78	12.40	19.15	1.03
BellsB	M002	3869.08	100Year-Existing	26.50	148.87	150.27	150.47	150.98	0.032476	4.45	9.10	12.69	1.30
BellsB	M002	3845.41	100Year-Existing	26.50	148.37	149.79	149.88	150.24	0.025016	3.79	11.96	18.74	1.08
BellsB	M002	3822.22	100Year-Existing	26.50	147.71	149.90	148.76	149.94	0.001302	1.24	33.93	21.25	0.27
BellsB	M002	3796.17	100Year-Existing	26.50	146.89	149.83		149.90	0.001473	1.53	28.79	17.28	0.29
BellsB	M002	3765.39	100Year-Existing	26.50	146.40	149.80		149.86	0.001054	1.37	29.38	15.13	0.25
BellsB	M002	3746.94	100Year-Existing	26.50	145.76	149.83		149.84	0.000130	0.59	72.57	27.75	0.09
BellsB	M002	3724.94	100Year-Existing	26.50	145.32	149.80		149.83	0.000341	0.95	43.37	17.14	0.15
BellsB	M002	3697.71	100Year-Existing	26.50	145.05	149.81		149.82	0.000183	0.74	52.33	18.39	0.11
BellsB	M002	3677.71	100Year-Existing	26.50	143.44	149.81	145.92	149.82	0.000049	0.47	82.49	22.92	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	26.50	142.47	144.87	144.87	146.03	0.014948	4.76	5.57	9.99	1.00
BellsB	M002	3623.19	100Year-Existing	26.50	142.10	143.68	144.20	145.33	0.071261	6.39	5.49	7.64	1.84
BellsB	M002	3573.45	100Year-Existing	26.50	140.89	142.56	142.77	143.21	0.022697	4.04	10.62	25.90	1.10
BellsB	M002	3520.99	100Year-Existing	26.50	139.30	140.92	140.92	141.93	0.037438	4.96	6.99	8.80	1.37
BellsB	M002	3473.83	100Year-Existing	26.50	137.98	140.26	139.83	140.54	0.009944	3.20	16.76	30.31	0.72
BellsB	M002	3424.29	100Year-Existing	26.50	136.49	138.64	138.25	138.95	0.006126	2.68	12.93	11.31	0.61
BellsB	M002	3400.36	100Year-Existing	26.50	135.96	138.79		138.84	0.000640	1.07	37.02	53.66	0.21
BellsB	M002	3386.31	100Year-Existing	26.50	135.48	138.77	137.76	138.82	0.000661	1.28	50.75	79.50	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	26.50	135.22	138.81	137.48	138.81	0.000063	0.42	123.32	71.96	0.07
BellsB	M002	3329.08	100Year-Existing	33.40	134.96	138.80		138.81	0.000085	0.50	128.74	58.38	0.08
BellsB	M002	3303.55	100Year-Existing	33.40	133.82	138.76	136.61	138.80	0.000399	1.23	59.61	51.29	0.18
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	33.40	131.39	134.59	134.59	135.94	0.014996	5.14	6.49	20.66	1.00
BellsB	M002	3203.83	100Year-Existing	33.40	131.13	132.43	133.03	134.94	0.154088	7.85	6.13	13.06	2.63
BellsB	M002	3176.31	100Year-Existing	33.40	130.02	131.62	131.92	132.58	0.042875	5.29	10.21	14.76	1.48
BellsB	M002	3157.63	100Year-Existing	33.40	129.89	131.66	131.46	131.87	0.011986	2.92	18.98	20.08	0.76
BellsB	M002	3130.11	100Year-Existing	33.40	128.68	130.54	130.54	131.36	0.024051	4.52	9.96	8.93	1.15
BellsB	M002	3083.82	100Year-Existing	33.40	127.94	129.68	129.85	130.23	0.021584	4.13	15.07	25.03	1.09
BellsB	M002	3037.68	100Year-Existing	33.40	127.11	128.14	128.32	128.74	0.052476	4.85	12.84	26.24	1.61
BellsB	M002	2991.47	100Year-Existing	33.40	126.28	128.28	127.35	128.30	0.000836	1.00	54.10	46.55	0.23
BellsB	M002	2945.26	100Year-Existing	33.40	125.32	127.99	127.42	128.20	0.005287	2.27	24.50	55.93	0.47
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	33.40	125.12	127.42	127.42	128.19	0.014855	3.93	9.45	10.01	0.83
BellsB	M002	2918.61	100Year-Existing	33.40	124.99	126.75	127.05	127.75	0.032453	5.14	10.85	26.35	1.34
BellsB	M002	2899.46	100Year-Existing	33.40	125.25	126.60	126.79	127.13	0.017067	3.55	15.61	62.59	0.99
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	33.40	124.44	125.95	125.95	126.18	0.006743	2.39	18.45	21.12	0.65
BellsB	M002	2861.32	100Year-Existing	33.40	123.64	124.83	125.10	125.69	0.047128	5.10	10.12	18.61	1.63
BellsB	M002	2823.69	100Year-Existing	33.40	123.23	124.41	124.41	124.68	0.025027	3.33	18.30	33.65	1.05
BellsB	M002	2777.91	100Year-Existing	33.40	122.77	124.11	123.74	124.15	0.003508	1.40	45.55	62.08	0.40
BellsB	M002	2727.91	100Year-Existing	33.40	122.21	123.74	123.63	123.94	0.012122	2.76	28.41	67.23	0.75
BellsB	M002	2677.99	100Year-Existing	33.40	121.13	122.94	122.73	123.30	0.013416	3.12	17.10	42.18	0.81
BellsB	M002	2628.09	100Year-Existing	33.40	120.69	122.31	122.31	122.59	0.016549	3.37	21.12	35.93	0.89
BellsB	M002	2578.18	100Year-Existing	33.40	119.94	121.80	121.59	121.94	0.007502	2.43	27.06	35.45	0.60
BellsB	M002	2528.27	100Year-Existing	33.40	119.10	120.94	120.94	121.38	0.019036	3.76	14.80	16.55	0.95
BellsB	M002	2518.19	100Year-Existing	33.40	118.62	120.75	120.49	121.00	0.009319	2.92	20.33	21.04	0.68
BellsB	M002	2496.15	100Year-Existing	33.40	118.53	120.73		120.83	0.004318	2.08	30.68	30.41	0.47
BellsB	M002	2478.37	100Year-Existing	33.40	117.97	120.44		120.73	0.007559	2.94	18.94	15.77	0.63
BellsB	M002	2450.61	100Year-Existing	33.40	117.55	119.80	119.80	120.38	0.017023	4.18	13.28	12.09	0.94
BellsB	M002	2428.46	100Year-Existing	33.40	117.19	118.56	118.92	119.64	0.067592	5.41	9.53	16.54	1.67
BellsB	M002	2408.52	100Year-Existing	33.40	116.63	118.30	118.23	118.58	0.018042	3.29	18.60	26.00	0.90
BellsB	M002	2378.55	100Year-Existing	33.40	116.15	117.81	117.81	118.15	0.021517	3.81	18.13	27.79	0.99
BellsB	M002	2367.92	100Year-Existing	33.40	115.61	116.82	117.08	117.70	0.065763	5.42	10.64	18.47	1.69
BellsB	M002	2352.81	100Year-Existing	33.40	115.07	116.48	116.57	116.99	0.031297	4.17	13.37	17.57	1.19
BellsB	M002	2328.64	100Year-Existing	33.40	113.99	115.97	116.00	116.45	0.018577	3.94	15.51	19.89	0.95
BellsB	M002	2307.61	100Year-Existing	33.40	112.94	116.18	115.48	116.22	0.000925	1.14	54.05	48.29	0.22
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	33.40	111.75	113.45	113.93	115.15	0.069959	5.79	5.79	5.85	1.55
BellsB	M002	2275.77	100Year-Existing	35.90	112.06	114.02	114.02	114.38	0.016539	3.76	18.10	25.29	0.90
BellsB	M002	2232.72	100Year-Existing	35.90	110.58	112.54	112.77	113.37	0.028347	4.78	11.93	14.23	1.17
BellsB	M002	2200.99	100Year-Existing	35.90	109.61	112.10	111.69	112.37	0.007347	2.89	19.81	15.48	0.62
BellsB	M002	2173.21	100Year-Existing	35.90	108.98	111.37	111.37	112.04	0.016565	4.11	12.50	10.29	0.89
BellsB	M002	2133.27	100Year-Existing	35.90	107.79	109.29	109.76	110.77	0.069357	6.31	8.48	11.75	1.77
BellsB	M002	2117.78	100Year-Existing	35.90	107.46	109.35	109.50	109.99	0.020612	4.20	13.70	17.42	1.02
BellsB	M002	2103.01	100Year-Existing	35.90	106.45	108.01	108.42	109.37	0.071081	6.20	8.39	10.30	1.75

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	35.90	105.17	106.90	107.30	108.21	0.057062	6.21	8.59	8.87	1.62
BellsB	M002	2068.57	100Year-Existing	35.90	104.36	105.52	105.96	107.03	0.099794	6.66	8.18	12.55	2.09
BellsB	M002	2059.88	100Year-Existing	35.90	103.56	105.16	105.53	106.39	0.048181	5.50	9.14	11.15	1.51
BellsB	M002	2054.52	100Year-Existing	35.90	103.13	104.68	105.09	106.07	0.067490	6.21	8.26	8.86	1.74
BellsB	M002	2040.56	100Year-Existing	35.90	102.39	104.85	104.47	105.36	0.009659	3.62	14.37	8.73	0.75
BellsB	M002	2033.27	100Year-Existing	35.90	102.08	104.52	104.52	105.25	0.019281	4.28	11.65	8.79	0.96
BellsB	M002	2025.44	100Year-Existing	35.90	101.58	104.17	103.70	104.49	0.006585	2.92	17.83	11.89	0.60
BellsB	M002	2021.67	100Year-Existing	35.90	101.43	103.79	103.79	104.43	0.016906	3.94	12.46	10.69	0.90
BellsB	M002	2014.53	100Year-Existing	35.90	99.96	101.61	102.29	103.98	0.127033	6.88	5.48	6.83	2.20
BellsB	M002	2010.46	100Year-Existing	35.90	99.08	100.32	101.09	103.33	0.172452	8.59	5.45	7.06	2.71
BellsB	M002	2007.37	100Year-Existing	35.90	98.52	100.10	100.87	102.78	0.128955	7.39	5.30	5.78	2.24
BellsB	M002	1996.87	100Year-Existing	35.90	97.97	99.26	99.92	101.45	0.099473	7.29	6.44	7.06	2.14
BellsB	M002	1982.97	100Year-Existing	35.90	97.73	99.21	99.48	100.25	0.042369	5.33	9.44	8.72	1.44
BellsB	M002	1966.25	100Year-Existing	35.90	96.75	99.04	99.10	99.75	0.021142	4.32	11.71	9.59	1.00
BellsB	M002	1951.81	100Year-Existing	35.90	96.56	98.99	98.29	99.16	0.004856	2.30	22.73	14.58	0.50
BellsB	M002	1939.94	100Year-Existing	35.90	96.29	98.45	98.45	99.01	0.017625	3.75	13.22	12.42	0.92
BellsB	M002	1918.81	100Year-Existing	35.90	95.86	98.23	97.84	98.56	0.009085	3.16	17.34	12.28	0.69
BellsB	M002	1910.32	100Year-Existing	35.90	95.58	97.74	97.74	98.43	0.017370	3.98	11.75	9.61	0.94
BellsB	M002	1896.87	100Year-Existing	35.90	94.38	96.02	96.57	97.87	0.085198	6.77	7.19	8.47	1.88
BellsB	M002	1887.59	100Year-Existing	35.90	93.87	96.20	95.68	96.45	0.006631	2.66	19.73	13.39	0.59
BellsB	M002	1880.79	100Year-Existing	35.90	93.33	96.20		96.40	0.003747	2.34	22.51	12.45	0.46
BellsB	M002	1870.34	100Year-Existing	35.90	92.77	96.20		96.35	0.002183	2.11	26.22	10.56	0.37
BellsB	M002	1857.16	100Year-Existing	35.90	91.88	96.23		96.31	0.001109	1.58	34.99	14.61	0.25
BellsB	M002	1848.27	100Year-Existing	35.90	91.91	96.25		96.30	0.000539	1.20	46.02	16.91	0.19
BellsB	M002	1834.27	100Year-Existing	35.90	90.88	96.25		96.29	0.000339	1.06	52.91	17.52	0.15
BellsB	M002	1821.35	100Year-Existing	35.90	90.90	96.26		96.28	0.000197	0.87	70.61	20.79	0.12
BellsB	M002	1807.43	100Year-Existing	35.90	89.83	96.26		96.28	0.000120	0.72	83.29	21.67	0.09
BellsB	M002	1800.77	100Year-Existing	35.90	89.59	96.26		96.27	0.000116	0.72	88.45	22.80	0.09
BellsB	M002	1777.98	100Year-Existing	35.90	88.77	96.26		96.27	0.000039	0.47	135.68	30.20	0.06
BellsB	M002	1753.27	100Year-Existing	35.90	88.22	96.26		96.27	0.000045	0.51	129.42	30.18	0.06
BellsB	M002	1729.73	100Year-Existing	35.90	88.17	96.26		96.27	0.000026	0.41	159.47	32.58	0.05
BellsB	M002	1705.77	100Year-Existing	35.90	87.60	96.26		96.27	0.000011	0.32	251.73	64.61	0.04
BellsB	M002	1688.91	100Year-Existing	35.90	86.72	96.26	90.17	96.27	0.000015	0.36	209.63	66.63	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	35.90	83.97	87.41	87.41	89.13	0.011472	5.81	6.18	20.29	1.00
BellsB	M002	1605.59	100Year-Existing	35.90	81.49	82.29	82.98	87.42	0.692023	10.65	3.91	12.04	5.37
BellsB	M001	1582.05	100Year-Existing	57.20	80.41	81.67	82.61	85.51	0.148163	8.98	7.25	9.24	2.88
BellsB	M001	1563.67	100Year-Existing	57.20	79.96	81.48	82.05	83.36	0.055212	6.63	11.11	11.49	1.85
BellsB	M001	1544.26	100Year-Existing	57.20	79.04	81.27	81.58	82.51	0.023151	5.52	14.56	10.85	1.26
BellsB	M001	1529.04	100Year-Existing	57.20	78.24	79.69	80.36	81.89	0.057312	6.86	9.69	8.88	1.90
BellsB	M001	1515.66	100Year-Existing	57.20	77.30	79.48	79.95	81.10	0.040318	5.89	11.32	8.42	1.41
BellsB	M001	1502.43	100Year-Existing	57.20	69.64	70.32	71.30	78.87	1.223206	12.98	4.45	11.09	6.35
BellsB	M001	1483.47	100Year-Existing	57.20	68.89	70.05	70.50	71.63	0.114312	6.26	11.43	16.73	2.17
BellsB	M001	1454.75	100Year-Existing	57.20	68.03	69.96	69.74	70.37	0.013881	3.60	23.10	17.36	0.86
BellsB	M001	1406.62	100Year-Existing	57.20	66.49	68.81	68.81	69.56	0.019028	4.53	17.65	12.37	1.01
BellsB	M001	1358.51	100Year-Existing	57.20	65.17	66.88	67.25	68.16	0.045239	5.51	13.15	12.50	1.47
BellsB	M001	1310.38	100Year-Existing	57.20	63.80	65.59	65.77	66.38	0.026789	4.48	17.97	19.30	1.16
BellsB	M001	1286.33	100Year-Existing	57.20	62.81	64.33	64.66	65.43	0.060324	5.61	14.80	20.99	1.65
BellsB	M001	1262.25	100Year-Existing	57.20	62.09	64.50	64.50	64.88	0.013862	3.72	27.21	29.53	0.83
BellsB	M001	1251.58	100Year-Existing	57.20	61.46	63.48	63.88	64.58	0.039448	6.11	16.69	21.75	1.43
BellsB	M001	1234.76	100Year-Existing	57.20	60.57	62.21	62.66	63.66	0.077947	6.96	14.15	21.98	1.89
BellsB	M001	1214.13	100Year-Existing	57.20	59.55	61.86	61.13	62.04	0.004348	2.21	36.79	24.88	0.49
BellsB	M001	1200.58	100Year-Existing	57.20	58.90	61.37	61.23	61.90	0.012547	3.80	22.09	16.69	0.82
BellsB	M001	1182.98	100Year-Existing	57.20	58.59	60.99	60.99	61.64	0.016579	4.28	20.22	16.60	0.94
BellsB	M001	1166.01	100Year-Existing	57.20	58.39	59.90	60.29	61.11	0.055029	5.68	14.58	18.56	1.60
BellsB	M001	1153.18	100Year-Existing	57.20	57.70	59.66	59.86	60.43	0.036419	5.47	18.66	20.46	1.32
BellsB	M001	1141.88	100Year-Existing	57.20	56.72	58.23	58.72	59.80	0.066593	6.13	12.00	14.43	1.75
BellsB	M001	1128.34	100Year-Existing	57.20	56.53	57.99	58.19	58.83	0.045344	5.07	15.37	16.14	1.43
BellsB	M001	1117.89	100Year-Existing	57.20	55.58	57.07	57.42	58.24	0.065270	6.33	13.89	14.64	1.73
BellsB	M001	1096.03	100Year-Existing	57.20	54.61	56.55	56.67	57.28	0.025187	4.42	18.12	17.09	1.12
BellsB	M001	1077.81	100Year-Existing	57.20	54.24	55.52	55.90	56.63	0.055694	5.42	15.16	20.87	1.60
BellsB	M001	1069.76	100Year-Existing	57.20	53.70	54.59	54.96	55.86	0.122588	6.12	12.82	19.81	2.23
BellsB	M001	1064.67	100Year-Existing	57.20	53.19	54.11	54.45	55.24	0.111564	5.83	13.59	20.96	2.12
BellsB	M001	1051.64	100Year-Existing	57.20	51.97	53.20	53.54	54.31	0.064494	5.49	14.59	18.93	1.69
BellsB	M001	1032.36	100Year-Existing	57.20	50.97	52.77	52.83	53.40	0.028213	4.65	19.54	18.08	1.18
BellsB	M001	1021.64	100Year-Existing	57.20	50.03	51.58	51.98	52.91	0.057784	5.67	13.49	17.35	1.63
BellsB	M001	1014.11	100Year-Existing	57.20	49.46	51.26	51.62	52.51	0.046193	5.53	13.68	15.58	1.47
BellsB	M001	1006.24	100Year-Existing	57.20	49.15	50.59	51.04	52.07	0.062277	6.00	12.45	15.15	1.71
BellsB	M001	996.42	100Year-Existing	57.20	48.11	49.60	50.15	51.37	0.091246	7.03	11.49	14.69	2.01
BellsB	M001	987.27	100Year-Existing	57.20	47.17	48.92	49.47	50.69	0.062597	6.62	11.62	12.36	1.74
BellsB	M001	973.52	100Year-Existing	57.20	46.79	48.42	48.90	49.87	0.043267	5.72	12.59	15.22	1.56
BellsB	M001	951.43	100Year-Existing	57.20	45.77	47.46	47.93	48.90	0.052874	6.06	13.25	18.58	1.68
BellsB	M001	931.51	100Year-Existing	57.20	44.86	46.36	46.77	47.67	0.069945	6.90	12.70	15.33	1.92
BellsB	M001	925.41	100Year-Existing	57.20	44.69	46.74	46.76	47.25	0.017299	4.27	21.47	21.45	0.99
BellsB	M001	901.68	100Year-Existing	57.20	43.69	45.45	45.77	46.62	0.034330	5.55	13.60	12.07	1.42
BellsB	M001	877.27	100Year-Existing	57.20	43.18	45.54	45.25	46.01	0.009738	3.58	21.37	14.02	0.79
BellsB	M001	857.41	100Year-Existing	57.20	42.16	45.74	45.24	45.84	0.001377	1.79	55.41	42.32	0.32
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	58.50	38.54	42.13	41.39	42.92	0.007437	4.00	15.22	11.96	0.69
BellsB	M001	810.13	100Year-Existing	58.50	37.80	42.46	40.14	42.57	0.001012	1.60	51.83	33.63	0.25
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	58.50	34.33	36.94	37.67	39.24	0.054443	6.86	9.29	9.40	1.62
BellsB	M001	782.27	100Year-Existing	58.50	33.92	34.99	35.70	37.79	0.185090	7.99	8.41	11.41	2.74
BellsB	M001	772.73	100Year-Existing	58.50	30.94	32.75	33.51	35.99	0.190749	10.54	9.29	11.44	2.72
BellsB	M001	766.74	100Year-Existing	58.50	30.65	32.78	33.38	34.86	0.098931	8.78	11.54	11.91	2.05
BellsB	M001	760.32	100Year-Existing	58.50	30.34	32.24	32.86	34.31	0.075834	7.67	11.67	12.02	1.90
BellsB	M001	755.97	100Year-Existing	58.50	30.05	31.89	32.50	33.96	0.084166	7.28	11.08	11.80	1.94

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	58.50	29.30	31.23	31.88	33.41	0.085508	7.80	11.00	10.91	1.98
BellsB	M001	742.14	100Year-Existing	58.50	28.38	29.91	30.70	32.67	0.099699	8.02	9.39	9.77	2.19
BellsB	M001	736.73	100Year-Existing	58.50	28.24	29.26	29.98	31.97	0.161656	7.95	8.62	11.23	2.63
BellsB	M001	722.61	100Year-Existing	58.50	27.35	28.67	29.11	30.14	0.069810	6.02	12.16	15.12	1.78
BellsB	M001	712.04	100Year-Existing	58.50	26.27	28.15	28.58	29.52	0.046276	5.76	13.05	12.15	1.48
BellsB	M001	702.42	100Year-Existing	58.50	26.04	27.65	28.07	29.04	0.055499	5.89	12.87	13.12	1.62
BellsB	M001	691.68	100Year-Existing	58.50	25.03	26.89	27.37	28.43	0.055895	5.86	11.74	11.94	1.60
BellsB	M001	686.22	100Year-Existing	58.50	24.46	25.95	26.57	28.00	0.084961	6.49	9.85	11.03	1.94
BellsB	M001	675.26	100Year-Existing	58.50	24.08	25.57	26.04	27.08	0.056626	5.86	11.76	11.57	1.64
BellsB	M001	668.37	100Year-Existing	58.50	23.58	25.17	25.64	26.68	0.057918	5.92	12.01	12.80	1.64
BellsB	M001	655.45	100Year-Existing	58.50	23.02	24.46	24.90	25.90	0.059116	5.74	12.12	13.54	1.64
BellsB	M001	636.88	100Year-Existing	58.50	21.46	23.11	23.62	24.77	0.058691	5.96	11.24	11.22	1.66
BellsB	M001	619.06	100Year-Existing	58.50	20.82	22.73	23.02	23.83	0.034145	5.19	14.71	12.88	1.30
BellsB	M001	608.48	100Year-Existing	58.50	20.13	21.80	22.27	23.33	0.053113	5.84	12.24	14.10	1.59
BellsB	M001	592.31	100Year-Existing	58.50	18.95	20.65	21.18	22.36	0.073389	6.81	11.85	12.40	1.84
BellsB	M001	582.72	100Year-Existing	58.50	18.14	19.53	20.14	21.56	0.087057	6.98	10.65	10.77	2.01
BellsB	M001	577.91	100Year-Existing	58.50	17.66	19.74	20.16	21.12	0.033966	5.82	14.02	11.36	1.35
BellsB	M001	561.51	100Year-Existing	58.50	17.02	18.65	19.15	20.29	0.076522	6.55	12.44	14.27	1.86
BellsB	M001	553.07	100Year-Existing	58.50	16.35	17.78	18.35	19.66	0.070822	6.31	11.06	13.58	1.81
BellsB	M001	541.54	100Year-Existing	58.50	15.41	16.84	17.39	18.75	0.086886	6.28	10.59	14.15	1.95
BellsB	M001	529.17	100Year-Existing	58.50	14.85	16.38	16.76	17.76	0.053846	5.28	11.86	9.86	1.42
BellsB	M001	514.53	100Year-Existing	58.50	14.21	15.59	15.97	16.87	0.064961	5.51	12.98	12.85	1.56
BellsB	M001	467.56	100Year-Existing	58.50	11.61	13.18	13.46	14.31	0.043679	4.82	13.26	11.12	1.30
BellsB	M001	420.59	100Year-Existing	58.50	8.75	13.44	11.35	13.59	0.001675	1.89	42.12	15.71	0.29
BellsB	M001	400.25	100Year-Existing	58.50	8.57	13.21	10.98	13.53	0.002396	2.52	23.20	7.03	0.37
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	58.50	0.83	1.98	3.23	7.28	0.153242	10.21	5.73	5.59	3.04
BellsB	M001	47.74	100Year-Existing	58.50	0.56	4.37	3.32	4.39	0.000247	0.87	158.68	135.23	0.15
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	58.50	0.70	4.37	3.34	4.38	0.000206	0.78	168.87	135.03	0.13
BellsB	M001	20.51	100Year-Existing	58.50	0.57	4.37		4.38	0.000245	0.83	164.86	144.77	0.14

Corner Brook 100yr n-20%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	187.30	36.31	39.06	39.06	40.55	0.007915	5.98	41.60	21.83	1.18
CornerB	M004	2838.71	100Year-Existing	187.30	36.15	38.24	38.85	40.04	0.011850	6.20	37.34	30.80	1.39
CornerB	M004	2796.61	100Year-Existing	187.30	35.35	37.25	37.86	39.38	0.019424	7.00	32.73	23.22	1.73
CornerB	M004	2769.85	100Year-Existing	187.30	34.80	37.74	37.74	38.61	0.008226	6.45	56.87	33.41	1.22
CornerB	TR001	206.04	100Year-Existing	32.10	43.81	44.69	45.08	46.09	0.042005	6.19	7.53	13.69	2.24
CornerB	TR001	156.04	100Year-Existing	32.10	41.63	42.62	43.04	44.04	0.040021	5.46	7.00	16.10	2.11
CornerB	TR001	106.04	100Year-Existing	32.10	39.17	39.79	40.26	41.56	0.062150	6.24	6.07	12.54	2.60
CornerB	TR001	56.04	100Year-Existing	32.10	37.27	38.01	38.49	39.17	0.034742	5.01	7.41	13.14	1.98
CornerB	TR001	36.04	100Year-Existing	32.10	35.50	38.34	37.63	38.35	0.000056	0.49	127.68	82.58	0.10
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	32.10	35.18	37.37	37.37	38.33	0.006388	4.35	7.38	80.27	1.00
CornerB	M003	2689.92	100Year-Existing	205.20	33.55	35.60	36.26	37.69	0.023419	8.13	43.93	44.02	1.92
CornerB	M003	2645.73	100Year-Existing	205.20	32.87	36.52	34.94	36.67	0.000714	2.23	150.72	67.51	0.38
CornerB	M003	2602.09	100Year-Existing	205.20	32.20	36.54		36.63	0.000345	1.70	190.26	67.95	0.27
CornerB	M003	2557.73	100Year-Existing	205.20	31.34	36.47		36.61	0.000354	1.93	158.52	48.50	0.28
CornerB	M003	2537.73	100Year-Existing	205.20	30.77	36.39	34.88	36.60	0.000560	2.65	156.85	64.39	0.36
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	205.20	30.35	34.35	34.35	35.21	0.002474	4.23	59.02	27.52	0.68
CornerB	M003	2507.21	100Year-Existing	205.20	30.75	32.95	33.46	34.81	0.014596	6.87	39.40	23.17	1.54
CornerB	M003	2459.31	100Year-Existing	205.20	30.13	31.68	32.34	33.87	0.025579	7.31	36.24	31.16	1.94
CornerB	M003	2411.41	100Year-Existing	205.20	29.27	31.35	31.76	32.73	0.014789	6.47	51.52	46.09	1.53
CornerB	M003	2363.51	100Year-Existing	205.20	28.77	30.50	30.93	31.96	0.016937	6.07	45.22	39.95	1.58
CornerB	M003	2315.61	100Year-Existing	205.20	27.93	29.73	30.14	31.25	0.012741	5.62	40.33	28.93	1.40
CornerB	M003	2267.71	100Year-Existing	205.60	26.30	30.34	29.03	30.76	0.001205	3.04	83.42	28.76	0.49
CornerB	M003	2264.01	100Year-Existing	205.60	26.10	30.34	29.54	30.75	0.003110	2.88	73.56	30.22	0.57
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	205.60	26.10	30.20		30.66	0.003745	3.04	69.37	29.99	0.62
CornerB	M003	2260.98	100Year-Existing	205.60	25.80	30.25		30.60	0.000917	2.79	91.70	29.67	0.44
CornerB	M003	2240.88	100Year-Existing	205.60	27.01	30.19		30.57	0.001647	2.90	87.00	41.29	0.55
CornerB	M003	2212.25	100Year-Existing	205.60	26.87	30.14		30.52	0.001591	3.00	88.19	37.70	0.55
CornerB	M003	2183.63	100Year-Existing	205.60	25.56	29.27	29.27	30.37	0.004675	5.31	57.26	30.23	0.94
CornerB	M003	2163.63	100Year-Existing	205.60	25.35	29.50	28.43	30.17	0.001850	3.74	59.48	37.85	0.61
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	205.60	24.87	27.97	28.32	29.74	0.008666	6.43	38.71	22.78	1.24
CornerB	M003	2131.66	100Year-Existing	205.60	24.57	27.12	27.84	29.45	0.016046	7.03	33.66	21.37	1.59
CornerB	M003	2119.46	100Year-Existing	205.60	24.12	26.20	27.09	29.15	0.025876	7.99	30.14	22.35	1.98
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	205.60	24.04	26.39	27.18	28.86	0.017782	7.14	32.19	21.73	1.67
CornerB	M003	2080.62	100Year-Existing	205.60	23.73	25.52	26.45	28.13	0.024339	7.42	31.50	24.93	1.91
CornerB	M003	2068.44	100Year-Existing	205.60	23.76	25.41	26.21	27.77	0.024414	7.14	33.29	27.83	1.89
CornerB	M003	2022.25	100Year-Existing	205.60	22.74	24.65	25.33	26.75	0.017887	6.81	36.45	27.71	1.67
CornerB	M003	1991.14	100Year-Existing	205.60	22.18	24.30	24.91	26.21	0.013525	6.52	38.63	25.90	1.48
CornerB	M003	1985.82	100Year-Existing	205.60	21.97	24.05	24.67	26.12	0.015647	6.85	37.15	25.33	1.59
CornerB	M003	1975.95	100Year-Existing	205.60	21.78	23.74	24.42	25.93	0.018413	7.20	36.76	26.65	1.71
CornerB	M003	1929.72	100Year-Existing	205.60	20.08	22.27	23.09	24.97	0.021048	7.65	31.22	20.43	1.81
CornerB	M003	1883.49	100Year-Existing	205.60	19.23	21.65	22.37	24.09	0.014737	7.36	34.01	19.18	1.57
CornerB	TR002	21.04	100Year-Existing	12.20	22.27	22.89	23.56	26.58	0.150007	9.17	1.71	4.39	3.92
CornerB	TR002	18.08	100Year-Existing	12.20	21.40	21.81	22.36	25.89	0.355562	10.11	1.60	6.17	5.62
CornerB	M002	1826.39	100Year-Existing	207.60	16.92	18.54	19.50	22.55	0.088873	9.60	26.76	30.26	2.74
CornerB	M002	1790.92	100Year-Existing	207.60	15.49	18.35	19.03	20.75	0.020028	7.47	34.28	16.50	1.46
CornerB	M002	1773.95	100Year-Existing	207.60	14.72	19.43	17.92	19.79	0.001695	2.98	90.73	29.34	0.46
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	207.60	14.87	19.46	17.63	19.70	0.000919	2.53	114.12	37.66	0.38
CornerB	M002	1733.13	100Year-Existing	207.60	15.23	19.53		19.60	0.000260	1.31	201.71	77.60	0.20
CornerB	M002	1717.41	100Year-Existing	207.60	15.12	19.53		19.59	0.000216	1.22	226.22	86.40	0.19
CornerB	M002	1691.96	100Year-Existing	207.60	14.62	19.53		19.59	0.000178	1.14	256.32	106.31	0.17
CornerB	M002	1654.15	100Year-Existing	207.60	13.87	19.54		19.57	0.000086	0.84	334.97	137.11	0.12
CornerB	M002	1613.91	100Year-Existing	207.60	13.08	19.55		19.57	0.000042	0.70	389.73	152.59	0.10
CornerB	M002	1567.16	100Year-Existing	207.60	12.15	19.56		19.56	0.000007	0.31	773.99	210.45	0.04
CornerB	M002	1551.89	100Year-Existing	207.60	11.85	19.56		19.56	0.000003	0.20	1170.16	273.15	0.03
CornerB	M002	1539.91	100Year-Existing	206.40	11.62	19.56		19.56	0.000001	0.14	1577.18	306.35	0.02
CornerB	M002	1526.59	100Year-Existing	206.40	11.36	19.56		19.56	0.000001	0.14	1605.94	311.52	0.02
CornerB	M002	1517.99	100Year-Existing	206.40	11.18	19.56		19.56	0.000002	0.17	1358.31	267.75	0.02
CornerB	M002	1505.64	100Year-Existing	206.40	10.94	19.56		19.56	0.000003	0.22	1011.36	197.87	0.03
CornerB	M002	1490.63	100Year-Existing	206.40	10.64	19.56		19.56	0.000007	0.32	698.67	139.96	0.04
CornerB	M002	1463.65	100Year-Existing	206.40	10.11	19.54		19.56	0.000029	0.67	383.92	88.73	0.08
CornerB	M002	1415.93	100Year-Existing	206.40	9.17	19.54		19.56	0.000025	0.65	360.91	74.70	0.08
CornerB	M002	1386.11	100Year-Existing	206.40	8.58	19.53		19.56	0.000037	0.77	330.75	77.88	0.09
CornerB	M002	1363.91	100Year-Existing	206.40	8.14	19.51		19.55	0.000062	0.98	264.94	57.33	0.11
CornerB	M002	1356.61	100Year-Existing	206.40	8.00	19.51		19.55	0.000167	1.23	276.55	72.69	0.13
CornerB	M002	1354.61	100Year-Existing	206.40	15.35	18.93	18.84	19.50	0.003253	4.18	80.90	55.06	0.71
CornerB	M002	1354.11	100Year-Existing	206.40	15.35	18.84	18.84	19.50	0.003783	4.43	75.94	53.89	0.76
CornerB	M002	1352.01	100Year-Existing	206.40	8.00	9.63	11.43	18.64	0.261465	0.36	15.53	9.51	0.13
CornerB	M002	1347.51	100Year-Existing	206.40	7.72	9.57	10.99	16.56	0.174588	11.71	17.63	16.86	3.64
CornerB	M002	1336.58	100Year-Existing	206.40	7.69	9.20	10.44	14.49	0.118797	10.22	20.54	20.06	3.09
CornerB	M002	1326.83	100Year-Existing	206.40	7.68	9.12	10.08	13.02	0.097160	9.02	24.79	26.41	2.79
CornerB	M002	1317.22	100Year-Existing	206.40	7.66	9.46	10.20	11.97	0.048723	7.16	30.71	27.21	2.03
CornerB	M002	1315.18	100Year-Existing	206.40	7.28	9.64	10.29	11.77	0.035739	6.92	34.31	26.20	1.77
CornerB	M002	1313.58	100Year-Existing	206.40	6.48	9.15	9.93	11.68	0.037863	7.39	31.79	23.98	1.84
CornerB	M002	1312.39	100Year-Existing	206.40	6.23	8.77	9.63	11.60	0.042108	7.72	29.78	22.83	1.93
CornerB	M002	1311.16	100Year-Existing	206.40	5.92	8.38	9.30	11.51	0.052545	7.97	27.43	22.16	2.12
CornerB	M002	1309.11	100Year-Existing	206.40	5.91	8.00	8.96	11.38	0.056465	8.25	26.31	21.37	2.21
CornerB	M002	1305.35	100Year-Existing	206.40	5.37	7.36	8.36	11.10	0.064025	8.94	26.51	24.27	2.36
CornerB	M002	1300.06	100Year-Existing	206.40	5.06	6.86	7.87	10.72	0.079248	8.80	24.52	23.04	2.56
CornerB	M002	1296.49	100Year-Existing	206.40	4.91	6.96	7.96	10.36	0.049721	8.36	26.73	20.01	2.12
CornerB	M002	1289.64	100Year-Existing	206.40	4.71	6.88	7.78	9.95	0.043548	8.00	28.30	20.29	1.99
CornerB	M002	1284.12	100Year-Existing	206.40	4.41	6.84	7.71	9.67	0.033047	7.75	29.98	19.32	1.78

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	206.40	4.23	6.54	7.45	9.50	0.034441	7.83	29.08	19.35	1.81
CornerB	M002	1258.94	100Year-Existing	206.40	3.53	5.30	6.21	8.55	0.060279	8.38	28.45	27.65	2.29
CornerB	M002	1246.98	100Year-Existing	206.40	3.37	4.82	5.67	7.86	0.045281	7.81	27.86	25.09	2.19
CornerB	M002	1233.83	100Year-Existing	206.40	3.10	4.56	5.15	7.09	0.049973	7.32	31.96	36.99	2.25
CornerB	M002	1215.66	100Year-Existing	206.40	2.70	4.08	4.74	6.17	0.034063	6.50	34.96	43.97	1.89
CornerB	M002	1206.83	100Year-Existing	206.40	2.54	4.09	4.62	5.76	0.029342	6.01	41.29	50.32	1.76
CornerB	M002	1194.69	100Year-Existing	206.40	2.39	4.89	4.50	5.23	0.003223	2.94	96.79	65.46	0.64
CornerB	M002	1185.06	100Year-Existing	206.40	2.26	4.90		5.18	0.002394	2.71	106.48	67.30	0.56
CornerB	M002	1142.41	100Year-Existing	206.40	1.70	4.87		5.08	0.001747	2.43	126.76	84.00	0.49
CornerB	M002	1137.55	100Year-Existing	206.40	1.60	4.41	4.41	5.02	0.006235	3.70	76.02	80.26	0.86
CornerB	M002	1110.53	100Year-Existing	206.40	1.39	3.85	4.05	4.80	0.007788	4.54	57.32	50.81	0.99
CornerB	M002	1090.67	100Year-Existing	206.40	1.10	4.32	3.37	4.49	0.001268	2.18	147.15	98.81	0.42
CornerB	M002	1070.69	100Year-Existing	206.40	0.80	4.36	3.09	4.45	0.000578	1.68	193.08	89.32	0.29
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	206.40	0.76	4.34	3.01	4.43	0.000518	1.62	193.40	86.67	0.28
CornerB	M002	1047.01	100Year-Existing	206.40	0.75	4.32		4.42	0.000498	1.78	187.14	78.61	0.31
CornerB	M002	1004.03	100Year-Existing	206.40	0.77	4.30		4.39	0.000468	1.73	214.89	132.75	0.30
CornerB	M002	959.21	100Year-Existing	206.40	0.70	4.32		4.36	0.000317	1.42	330.48	282.30	0.25
CornerB	M002	915.75	100Year-Existing	205.50	0.68	4.32		4.34	0.000225	1.16	407.42	296.06	0.21
CornerB	M002	869.66	100Year-Existing	205.50	0.69	4.32		4.33	0.000135	0.93	439.27	224.14	0.16
CornerB	M002	828.33	100Year-Existing	199.70	0.77	4.31		4.33	0.000139	0.91	427.54	221.75	0.16
CornerB	M002	784.55	100Year-Existing	199.70	0.82	4.31		4.32	0.000094	0.76	449.08	232.90	0.13
CornerB	M002	739.85	100Year-Existing	199.70	0.82	4.30		4.32	0.000093	0.72	464.00	273.16	0.13
CornerB	M002	696.36	100Year-Existing	199.70	0.64	4.29		4.31	0.000129	0.91	407.06	267.35	0.16
CornerB	M001	659.37	100Year-Existing	209.90	0.75	4.28		4.31	0.000141	0.90	382.87	235.08	0.16
CornerB	M001	643.93	100Year-Existing	209.90	0.74	4.27	3.16	4.30	0.000212	1.12	324.19	219.63	0.20
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	209.90	0.83	3.93	3.24	4.01	0.000561	1.70	217.41	179.77	0.32
CornerB	M001	608.52	100Year-Existing	209.90	0.76	3.92		4.00	0.000693	1.81	209.03	163.29	0.35
CornerB	M001	570.12	100Year-Existing	209.90	0.61	3.93		3.97	0.000348	1.37	281.64	186.49	0.25
CornerB	M001	535.83	100Year-Existing	209.90	0.56	3.91	2.10	3.96	0.000206	1.14	290.02	220.74	0.20
CornerB	M001	520.22	100Year-Existing	209.90	0.55	3.92	2.24	3.95	0.000156	0.99	339.11	292.19	0.17
CornerB	M001	472.07	100Year-Existing	209.90	0.58	3.86	3.04	3.94	0.000392	1.52	243.32	203.11	0.27
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	209.90	0.44	3.46	2.43	3.70	0.001037	2.38	161.15	224.50	0.44
CornerB	M001	425.41	100Year-Existing	209.90	0.48	3.51		3.61	0.000635	1.82	257.84	303.85	0.34
CornerB	M001	401.99	100Year-Existing	209.90	0.74	3.54		3.58	0.000352	1.32	357.00	343.33	0.25
CornerB	M001	381.26	100Year-Existing	209.90	0.79	3.47	3.19	3.57	0.000771	1.86	271.05	350.15	0.37
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	209.90	0.79	3.20	3.20	3.46	0.001949	2.78	184.44	355.06	0.58
CornerB	M001	352.89	100Year-Existing	209.90	0.68	3.02	2.44	3.35	0.001888	2.68	120.98	234.97	0.57
CornerB	M001	324.13	100Year-Existing	209.90	0.67	3.06		3.27	0.001372	2.32	148.09	186.57	0.49
CornerB	M001	292.92	100Year-Existing	209.90	0.65	3.07		3.21	0.001011	1.97	201.98	297.62	0.42
CornerB	M001	274.62	100Year-Existing	209.90	0.96	3.06	2.81	3.18	0.002004	2.46	220.27	340.85	0.57
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	209.90	1.01	3.01	2.73	3.10	0.001924	2.38	239.52	358.88	0.55
CornerB	M001	245.99	100Year-Existing	209.90	0.64	2.98		3.07	0.001219	2.02	269.59	412.87	0.45
CornerB	M001	210.89	100Year-Existing	209.90	0.68	2.95		3.02	0.001065	1.77	272.03	371.46	0.41
CornerB	M001	174.77	100Year-Existing	209.90	0.69	2.93		2.98	0.000934	1.50	297.33	426.49	0.38
CornerB	M001	155.66	100Year-Existing	209.90	0.64	2.93	2.58	2.96	0.001084	1.47	337.15	546.35	0.39
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	209.90	0.55	2.92	2.52	2.95	0.000831	1.28	350.60	500.91	0.35
CornerB	M001	129.05	100Year-Existing	209.90	0.40	2.89		2.92	0.000615	1.34	370.62	479.98	0.31
CornerB	M001	80.73	100Year-Existing	209.90	0.20	2.84		2.89	0.000577	1.46	325.08	387.65	0.31
CornerB	M001	23.81	100Year-Existing	209.90	0.32	2.80	2.18	2.86	0.000621	1.41	308.45	431.13	0.32
BellsB	TR001	178.13	100Year-Existing	17.70	92.91	95.20	94.64	95.40	0.001760	2.14	11.56	10.48	0.49
BellsB	TR001	159.86	100Year-Existing	17.70	92.15	95.30		95.34	0.000271	1.12	26.49	15.28	0.21
BellsB	TR001	139.54	100Year-Existing	17.70	91.13	95.14	92.91	95.32	0.000659	1.84	9.61	13.67	0.29
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	17.70	89.49	91.15	91.42	92.40	0.012759	5.00	3.67	5.33	1.28
BellsB	TR001	88.17	100Year-Existing	17.70	88.47	89.43	90.06	91.94	0.074184	7.50	2.92	5.39	2.80
BellsB	TR001	84.12	100Year-Existing	17.70	87.66	88.44	89.04	91.45	0.140357	7.84	2.47	6.57	3.64
BellsB	TR001	79.14	100Year-Existing	17.70	86.53	87.33	88.00	90.76	0.117165	8.50	2.46	6.02	3.50
BellsB	TR001	72.74	100Year-Existing	17.70	85.76	86.41	87.01	89.85	0.170786	8.32	2.30	6.65	3.98
BellsB	TR001	67.75	100Year-Existing	17.70	85.04	85.59	86.12	88.77	0.206053	8.29	2.48	8.01	4.27
BellsB	TR001	64.04	100Year-Existing	17.70	84.47	85.17	85.75	88.00	0.149943	7.46	2.37	5.86	3.71
BellsB	TR001	60.69	100Year-Existing	17.70	84.14	85.07	85.61	87.47	0.096769	7.02	2.77	6.36	3.08
BellsB	TR001	56.76	100Year-Existing	17.70	83.97	84.87	85.39	87.03	0.087146	6.54	2.78	6.41	2.92
BellsB	TR001	50.93	100Year-Existing	17.70	83.68	84.66	85.10	86.43	0.081766	6.04	3.19	8.11	2.79
BellsB	TR001	43.86	100Year-Existing	17.70	83.34	84.21	84.60	85.81	0.078608	5.71	3.40	9.83	2.73
BellsB	TR001	37.01	100Year-Existing	17.70	82.98	83.87	84.26	85.32	0.056394	5.61	3.74	8.96	2.40
BellsB	TR001	12.14	100Year-Existing	17.70	82.15	83.00	83.29	84.00	0.040915	4.69	4.45	9.96	2.03
BellsB	M002	5166.11	100Year-Existing	14.60	190.79	191.79	191.83	192.08	0.013021	3.24	8.38	17.20	1.10
BellsB	M002	5149.23	100Year-Existing	14.60	190.57	191.59	191.60	191.89	0.010614	2.89	7.81	14.67	0.99
BellsB	M002	5117.45	100Year-Existing	14.60	189.91	191.47	190.79	191.50	0.000972	1.24	22.64	23.95	0.32
BellsB	M002	5090.85	100Year-Existing	14.60	189.62	191.07	191.07	191.41	0.008670	3.27	7.84	11.85	0.93
BellsB	M002	5067.47	100Year-Existing	14.60	189.18	189.72	190.04	190.88	0.111011	6.34	3.60	9.18	2.93
BellsB	M002	5017.78	100Year-Existing	14.60	188.12	189.29	189.29	189.59	0.010433	3.23	7.95	12.40	1.01
BellsB	M002	4967.57	100Year-Existing	14.60	186.55	187.67	187.97	188.63	0.036256	5.17	4.18	7.07	1.74
BellsB	M002	4917.46	100Year-Existing	14.60	185.69	187.04	186.53	187.10	0.001656	1.49	17.04	23.05	0.42
BellsB	M002	4873.31	100Year-Existing	14.60	184.61	186.94		187.04	0.001381	1.79	17.57	22.93	0.40
BellsB	M002	4853.42	100Year-Existing	14.60	183.55	186.80	185.27	187.00	0.000972	1.97	7.40	29.49	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	14.60	181.53	182.85	183.23	184.22	0.023391	5.19	2.81	5.75	1.53
BellsB	M002	4785.76	100Year-Existing	14.60	181.35	182.22	182.60	183.50	0.053809	5.57	3.42	6.96	2.13
BellsB	M002	4756.65	100Year-Existing	14.60	180.12	180.97	181.25	181.93	0.047507	5.35	4.43	11.72	2.02
BellsB	M002	4727.54	100Year-Existing	14.60	179.02	179.76	180.00	180.63	0.039284	4.89	4.95	16.12	1.95

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	14.60	177.96	178.32	178.57	179.34	0.125556	5.42	3.85	16.50	3.13
BellsB	M002	4702.24	100Year-Existing	14.60	177.65	178.38	178.54	178.92	0.029091	3.93	5.85	17.07	1.65
BellsB	M002	4682.48	100Year-Existing	14.60	176.63	177.35	177.60	178.19	0.039469	4.63	4.66	14.14	1.94
BellsB	M002	4658.79	100Year-Existing	14.60	175.50	176.58	176.90	177.55	0.020494	4.70	4.10	6.49	1.50
BellsB	M002	4633.41	100Year-Existing	14.60	174.51	175.20	175.53	176.62	0.079816	6.66	3.78	12.06	2.76
BellsB	M002	4609.61	100Year-Existing	14.60	173.50	174.24	174.51	175.15	0.039078	5.03	4.25	9.32	1.98
BellsB	M002	4583.99	100Year-Existing	14.60	172.77	174.18	174.27	174.74	0.009751	3.55	5.28	6.99	1.04
BellsB	M002	4534.72	100Year-Existing	14.60	170.00	170.92	171.50	173.42	0.088797	8.61	2.80	6.09	3.02
BellsB	M002	4485.52	100Year-Existing	14.60	168.20	168.78	169.01	169.62	0.066268	5.36	4.72	16.51	2.43
BellsB	M002	4436.28	100Year-Existing	26.50	165.85	166.99	167.35	167.91	0.025902	5.55	8.34	14.04	1.73
BellsB	M002	4387.04	100Year-Existing	26.50	164.06	165.24	165.62	166.45	0.031938	6.31	7.32	12.08	1.93
BellsB	M002	4337.81	100Year-Existing	26.50	162.60	163.71	164.01	164.73	0.035438	6.19	8.87	21.75	1.98
BellsB	M002	4288.56	100Year-Existing	26.50	161.30	162.42	162.63	163.17	0.029279	5.49	9.50	19.94	1.77
BellsB	M002	4239.33	100Year-Existing	26.50	159.65	160.65	160.97	161.73	0.033906	5.64	7.56	14.75	1.93
BellsB	M002	4190.09	100Year-Existing	26.50	158.43	159.51	159.74	160.31	0.023606	4.98	9.02	17.23	1.63
BellsB	M002	4140.85	100Year-Existing	26.50	157.30	157.93	158.11	158.51	0.050201	5.23	9.08	22.63	2.20
BellsB	M002	4091.61	100Year-Existing	26.50	155.30	156.06	156.21	156.60	0.033054	4.91	9.65	19.88	1.85
BellsB	M002	4042.37	100Year-Existing	26.50	153.74	154.62	154.80	155.25	0.022202	4.33	9.00	14.99	1.54
BellsB	M002	3993.13	100Year-Existing	26.50	152.65	153.42	153.59	153.99	0.035409	4.72	9.66	22.48	1.83
BellsB	M002	3943.89	100Year-Existing	26.50	151.36	152.24	152.37	152.73	0.022318	4.29	10.38	19.26	1.54
BellsB	M002	3894.65	100Year-Existing	26.50	149.52	151.04	151.29	151.85	0.017309	4.79	9.55	17.83	1.39
BellsB	M002	3869.08	100Year-Existing	26.50	148.87	150.09	150.47	151.26	0.028364	5.59	6.94	11.09	1.78
BellsB	M002	3845.41	100Year-Existing	26.50	148.37	149.55	149.88	150.53	0.028567	5.30	7.80	15.59	1.67
BellsB	M002	3822.22	100Year-Existing	26.50	147.71	149.85	148.76	149.89	0.000636	1.28	32.87	21.14	0.28
BellsB	M002	3796.17	100Year-Existing	26.50	146.89	149.80		149.87	0.000690	1.56	28.25	17.19	0.30
BellsB	M002	3765.39	100Year-Existing	26.50	146.40	149.79		149.85	0.000475	1.38	29.23	15.10	0.25
BellsB	M002	3746.94	100Year-Existing	26.50	145.76	149.82		149.83	0.000058	0.59	72.38	27.73	0.09
BellsB	M002	3724.94	100Year-Existing	26.50	145.32	149.80		149.83	0.000152	0.95	43.29	17.13	0.15
BellsB	M002	3697.71	100Year-Existing	26.50	145.05	149.81		149.82	0.000082	0.74	52.32	18.39	0.11
BellsB	M002	3677.71	100Year-Existing	26.50	143.44	149.81	145.92	149.82	0.000022	0.47	82.49	22.92	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	26.50	142.47	144.87	144.87	146.03	0.006643	4.76	5.57	9.99	1.00
BellsB	M002	3623.19	100Year-Existing	26.50	142.10	143.63	144.20	145.54	0.038598	6.84	5.07	7.30	2.01
BellsB	M002	3573.45	100Year-Existing	26.50	140.89	142.21	142.77	143.70	0.031901	5.88	5.66	8.97	1.85
BellsB	M002	3520.99	100Year-Existing	26.50	139.30	140.78	140.92	142.17	0.025514	5.73	5.88	7.87	1.66
BellsB	M002	3473.83	100Year-Existing	26.50	137.98	139.63	139.83	140.88	0.025319	5.94	6.39	8.71	1.62
BellsB	M002	3424.29	100Year-Existing	26.50	136.49	137.71	138.25	139.38	0.030539	5.89	5.03	6.38	1.84
BellsB	M002	3400.36	100Year-Existing	26.50	135.96	138.79	137.25	138.83	0.000286	1.08	36.85	53.10	0.21
BellsB	M002	3386.31	100Year-Existing	26.50	135.48	138.78	137.76	138.83	0.000291	1.27	51.08	79.89	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	26.50	135.22	138.80	137.48	138.81	0.000028	0.42	123.10	71.84	0.07
BellsB	M002	3329.08	100Year-Existing	33.40	134.96	138.80		138.81	0.000038	0.50	128.64	58.37	0.08
BellsB	M002	3303.55	100Year-Existing	33.40	133.82	138.76	136.61	138.80	0.000177	1.23	59.61	51.29	0.18
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	33.40	131.39	134.59	134.59	135.94	0.006665	5.14	6.49	20.66	1.00
BellsB	M002	3203.83	100Year-Existing	33.40	131.13	132.40	133.03	135.20	0.078577	8.24	5.77	12.61	2.81
BellsB	M002	3176.31	100Year-Existing	33.40	130.02	131.38	131.92	133.38	0.047954	7.31	6.94	12.09	2.27
BellsB	M002	3157.63	100Year-Existing	33.40	129.89	131.16	131.46	132.29	0.044077	6.38	9.28	18.81	2.05
BellsB	M002	3130.11	100Year-Existing	33.40	128.68	130.32	130.54	131.53	0.018752	5.41	8.09	8.20	1.49
BellsB	M002	3083.82	100Year-Existing	33.40	127.94	129.52	129.85	130.62	0.019935	5.48	10.94	23.95	1.54
BellsB	M002	3037.68	100Year-Existing	33.40	127.11	128.00	128.32	129.19	0.052752	6.55	9.42	23.74	2.36
BellsB	M002	2991.47	100Year-Existing	33.40	126.28	128.23	127.35	128.26	0.000415	1.04	52.08	46.04	0.24
BellsB	M002	2945.26	100Year-Existing	33.40	125.32	127.99	127.42	128.20	0.002350	2.27	24.50	55.93	0.47
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	33.40	125.12	127.42	127.42	128.19	0.006602	3.93	9.45	10.01	0.83
BellsB	M002	2918.61	100Year-Existing	33.40	124.99	126.71	127.05	127.89	0.017165	5.50	9.74	23.97	1.45
BellsB	M002	2899.46	100Year-Existing	33.40	125.25	126.43	126.79	127.51	0.016004	4.71	8.88	31.99	1.41
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	33.40	124.44	125.95	125.95	126.18	0.002997	2.39	18.45	21.12	0.65
BellsB	M002	2861.32	100Year-Existing	33.40	123.64	124.78	125.10	125.81	0.026323	5.53	9.23	17.76	1.81
BellsB	M002	2823.69	100Year-Existing	33.40	123.23	124.22	124.41	124.80	0.028707	4.69	12.59	27.95	1.63
BellsB	M002	2777.91	100Year-Existing	33.40	122.77	123.98	123.74	124.04	0.002738	1.72	37.75	60.25	0.52
BellsB	M002	2727.91	100Year-Existing	33.40	122.21	123.63	123.63	123.89	0.007350	3.04	21.21	55.22	0.87
BellsB	M002	2677.99	100Year-Existing	33.40	121.13	122.59	122.73	123.32	0.016172	4.33	10.30	12.71	1.27
BellsB	M002	2628.09	100Year-Existing	33.40	120.69	122.21	122.31	122.62	0.010977	3.93	17.70	32.39	1.07
BellsB	M002	2578.18	100Year-Existing	33.40	119.94	121.43	121.59	121.97	0.014839	4.33	15.13	29.19	1.22
BellsB	M002	2528.27	100Year-Existing	33.40	119.10	120.87	120.94	121.39	0.010214	4.02	13.75	16.06	1.04
BellsB	M002	2518.19	100Year-Existing	33.40	118.62	120.16	120.49	121.19	0.023898	5.45	9.90	14.58	1.54
BellsB	M002	2496.15	100Year-Existing	33.40	118.53	120.51	120.14	120.70	0.003639	2.65	24.27	29.45	0.64
BellsB	M002	2478.37	100Year-Existing	33.40	117.97	120.15	120.02	120.59	0.006063	3.59	14.76	13.34	0.83
BellsB	M002	2450.61	100Year-Existing	33.40	117.55	119.80	119.80	120.38	0.007566	4.18	13.28	12.09	0.94
BellsB	M002	2428.46	100Year-Existing	33.40	117.19	118.47	118.92	119.95	0.044782	6.22	8.06	15.14	2.01
BellsB	M002	2408.52	100Year-Existing	33.40	116.63	117.86	118.23	119.07	0.048584	6.26	8.97	17.88	2.07
BellsB	M002	2378.55	100Year-Existing	33.40	116.15	117.59	117.81	118.23	0.019895	4.95	12.90	21.00	1.39
BellsB	M002	2367.92	100Year-Existing	33.40	115.61	116.76	117.08	117.88	0.039128	6.02	9.53	18.01	1.93
BellsB	M002	2352.81	100Year-Existing	33.40	115.07	116.25	116.57	117.34	0.036639	5.89	9.43	16.42	1.87
BellsB	M002	2328.64	100Year-Existing	33.40	113.99	115.63	116.00	116.65	0.021609	5.49	9.96	13.47	1.49
BellsB	M002	2307.61	100Year-Existing	33.40	112.94	116.17	115.48	116.21	0.000417	1.15	53.75	48.20	0.22
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	33.40	111.75	113.44	113.92	115.16	0.031743	5.83	5.75	5.82	1.56
BellsB	M002	2275.77	100Year-Existing	35.90	112.06	113.97	114.02	114.39	0.008444	3.96	16.98	24.13	0.96
BellsB	M002	2232.72	100Year-Existing	35.90	110.58	112.35	112.77	113.71	0.022421	5.89	9.31	13.22	1.53
BellsB	M002	2200.99	100Year-Existing	35.90	109.61	111.18	111.69	112.83	0.034502	6.52	7.82	10.34	1.85
BellsB	M002	2173.21	100Year-Existing	35.90	108.98	111.13	111.37	112.10	0.011884	4.84	10.22	9.22	1.11
BellsB	M002	2133.27	100Year-Existing	35.90	107.79	109.18	109.76	111.18	0.045136	7.21	7.25	10.84	2.11
BellsB	M002	2117.78	100Year-Existing	35.90	107.46	108.89	109.50	110.49	0.031454	6.32	7.88	10.06	1.80
BellsB	M002	2103.01	100Year-Existing	35.90	106.45	107.88	108.42	109.82	0.050739	7.31	7.04	9.80	2.18

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	35.90	105.17	106.65	107.30	108.87	0.052107	7.91	6.54	7.90	2.26
BellsB	M002	2068.57	100Year-Existing	35.90	104.36	105.38	105.96	107.82	0.083172	8.29	6.47	11.84	2.79
BellsB	M002	2059.88	100Year-Existing	35.90	103.56	104.89	105.53	107.25	0.051646	7.39	6.39	9.28	2.26
BellsB	M002	2054.52	100Year-Existing	35.90	103.13	104.44	105.09	106.92	0.067464	8.14	6.21	8.44	2.52
BellsB	M002	2040.56	100Year-Existing	35.90	102.39	103.75	104.47	106.17	0.043308	7.56	6.13	6.26	2.15
BellsB	M002	2033.27	100Year-Existing	35.90	102.08	103.98	104.52	105.72	0.029166	6.41	7.30	7.28	1.69
BellsB	M002	2025.44	100Year-Existing	35.90	101.58	102.99	103.70	105.37	0.045074	7.29	6.12	7.55	2.11
BellsB	M002	2021.67	100Year-Existing	35.90	101.43	103.18	103.79	105.09	0.033740	6.49	6.80	7.89	1.79
BellsB	M002	2014.53	100Year-Existing	35.90	99.96	101.50	102.29	104.60	0.086522	7.84	4.72	6.35	2.67
BellsB	M002	2010.46	100Year-Existing	35.90	99.08	100.23	101.09	104.12	0.112120	9.72	4.77	6.85	3.22
BellsB	M002	2007.37	100Year-Existing	35.90	98.52	99.94	100.87	103.78	0.101362	8.81	4.36	5.47	2.90
BellsB	M002	1996.87	100Year-Existing	35.90	97.97	99.04	99.92	102.69	0.095396	9.30	4.91	6.52	3.03
BellsB	M002	1982.97	100Year-Existing	35.90	97.73	98.80	99.48	101.22	0.067470	7.96	6.04	7.62	2.57
BellsB	M002	1966.25	100Year-Existing	35.90	96.75	98.57	99.10	100.28	0.029986	6.41	7.51	8.43	1.70
BellsB	M002	1951.81	100Year-Existing	35.90	96.56	98.92	98.29	99.10	0.002474	2.40	21.66	14.44	0.53
BellsB	M002	1939.94	100Year-Existing	35.90	96.29	98.45	98.45	99.01	0.007833	3.75	13.22	12.42	0.92
BellsB	M002	1918.81	100Year-Existing	35.90	95.86	98.13	97.84	98.51	0.004983	3.39	16.04	11.95	0.76
BellsB	M002	1910.32	100Year-Existing	35.90	95.58	97.74	97.74	98.43	0.007720	3.98	11.75	9.61	0.94
BellsB	M002	1896.87	100Year-Existing	35.90	94.38	95.96	96.57	98.07	0.045416	7.19	6.71	8.28	2.05
BellsB	M002	1887.59	100Year-Existing	35.90	93.87	95.06	95.68	97.51	0.074494	7.77	6.20	10.05	2.61
BellsB	M002	1880.79	100Year-Existing	35.90	93.33	96.15	95.35	96.36	0.001785	2.40	21.94	12.36	0.48
BellsB	M002	1870.34	100Year-Existing	35.90	92.77	96.18		96.33	0.000997	2.13	25.95	10.52	0.38
BellsB	M002	1857.16	100Year-Existing	35.90	91.88	96.22		96.30	0.000500	1.59	34.80	14.57	0.26
BellsB	M002	1848.27	100Year-Existing	35.90	91.91	96.24		96.29	0.000241	1.20	45.87	16.88	0.19
BellsB	M002	1834.27	100Year-Existing	35.90	90.88	96.24		96.28	0.000152	1.06	52.81	17.51	0.15
BellsB	M002	1821.35	100Year-Existing	35.90	90.90	96.25		96.28	0.000088	0.87	70.53	20.78	0.12
BellsB	M002	1807.43	100Year-Existing	35.90	89.83	96.26		96.27	0.000053	0.72	83.23	21.67	0.09
BellsB	M002	1800.77	100Year-Existing	35.90	89.59	96.26		96.27	0.000052	0.72	88.40	22.79	0.09
BellsB	M002	1777.98	100Year-Existing	35.90	88.77	96.26		96.27	0.000017	0.47	135.64	30.20	0.06
BellsB	M002	1753.27	100Year-Existing	35.90	88.22	96.26		96.27	0.000020	0.51	129.40	30.17	0.06
BellsB	M002	1729.73	100Year-Existing	35.90	88.17	96.26		96.27	0.000011	0.41	159.45	32.58	0.05
BellsB	M002	1705.77	100Year-Existing	35.90	87.60	96.26		96.27	0.000005	0.32	251.72	64.61	0.04
BellsB	M002	1688.91	100Year-Existing	35.90	86.72	96.26	90.17	96.27	0.000007	0.36	209.63	66.63	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	35.90	83.97	87.41	87.41	89.13	0.005099	5.81	6.18	20.29	1.00
BellsB	M002	1605.59	100Year-Existing	35.90	81.49	82.28	82.98	87.71	0.335605	10.95	3.79	11.88	5.59
BellsB	M001	1582.05	100Year-Existing	57.20	80.41	81.56	82.61	86.64	0.101610	10.28	6.23	8.82	3.51
BellsB	M001	1563.67	100Year-Existing	57.20	79.96	81.18	82.05	84.73	0.062603	8.94	7.91	10.31	2.84
BellsB	M001	1544.26	100Year-Existing	57.20	79.04	80.72	81.58	83.65	0.035630	8.23	9.11	9.03	2.22
BellsB	M001	1529.04	100Year-Existing	57.20	78.24	79.44	80.36	82.95	0.052384	8.59	7.56	8.33	2.63
BellsB	M001	1515.66	100Year-Existing	57.20	77.30	79.05	79.95	82.18	0.048497	8.05	7.91	7.42	2.21
BellsB	M001	1502.43	100Year-Existing	57.20	69.64	70.29	71.30	79.93	0.649182	13.78	4.19	10.83	6.88
BellsB	M001	1483.47	100Year-Existing	57.20	68.89	69.85	70.50	72.98	0.139641	8.67	8.12	16.21	3.44
BellsB	M001	1454.75	100Year-Existing	57.20	68.03	69.34	69.74	70.68	0.034861	6.41	12.79	15.39	1.90
BellsB	M001	1406.62	100Year-Existing	57.20	66.49	68.59	68.81	69.61	0.013234	5.25	14.97	11.64	1.24
BellsB	M001	1358.51	100Year-Existing	57.20	65.17	66.69	67.25	68.55	0.034673	6.57	10.82	11.95	1.89
BellsB	M001	1310.38	100Year-Existing	57.20	63.80	65.26	65.77	66.90	0.031950	6.24	12.11	16.01	1.82
BellsB	M001	1286.33	100Year-Existing	57.20	62.81	64.17	64.66	65.94	0.050189	6.96	11.61	18.88	2.20
BellsB	M001	1262.25	100Year-Existing	57.20	62.09	64.22	64.50	65.15	0.016603	5.53	18.86	28.94	1.33
BellsB	M001	1251.58	100Year-Existing	57.20	61.46	63.19	63.88	64.85	0.031927	7.36	12.26	12.44	1.88
BellsB	M001	1234.76	100Year-Existing	57.20	60.57	62.10	62.66	64.15	0.051780	8.07	11.95	20.00	2.28
BellsB	M001	1214.13	100Year-Existing	57.20	59.55	60.54	61.13	62.93	0.086291	7.53	9.58	16.74	2.77
BellsB	M001	1200.58	100Year-Existing	57.20	58.90	60.83	61.23	62.13	0.018212	5.68	13.89	13.67	1.42
BellsB	M001	1182.98	100Year-Existing	57.20	58.59	60.66	60.99	61.79	0.015247	5.49	15.10	14.43	1.32
BellsB	M001	1166.01	100Year-Existing	57.20	58.39	59.80	60.29	61.37	0.034244	6.38	12.81	17.88	1.87
BellsB	M001	1153.18	100Year-Existing	57.20	57.70	59.43	59.86	60.90	0.034844	7.30	14.04	19.68	1.90
BellsB	M001	1141.88	100Year-Existing	57.20	56.72	58.08	58.72	60.36	0.049873	7.29	9.87	13.47	2.23
BellsB	M001	1128.34	100Year-Existing	57.20	56.53	57.67	58.19	59.46	0.060558	7.28	10.55	14.63	2.37
BellsB	M001	1117.89	100Year-Existing	57.20	55.58	56.84	57.42	58.80	0.059939	8.06	10.73	13.38	2.42
BellsB	M001	1096.03	100Year-Existing	57.20	54.61	56.20	56.67	57.77	0.031470	6.27	12.35	15.55	1.80
BellsB	M001	1077.81	100Year-Existing	57.20	54.24	55.33	55.90	57.09	0.047636	6.70	11.64	17.42	2.16
BellsB	M001	1069.76	100Year-Existing	57.20	53.70	54.46	54.96	56.43	0.106015	7.57	10.33	19.15	3.01
BellsB	M001	1064.67	100Year-Existing	57.20	53.19	53.96	54.45	55.87	0.110204	7.53	10.51	20.36	3.05
BellsB	M001	1051.64	100Year-Existing	57.20	51.97	53.01	53.54	54.96	0.062849	7.14	11.08	17.95	2.43
BellsB	M001	1032.36	100Year-Existing	57.20	50.97	52.38	52.83	53.87	0.041187	6.97	12.84	16.10	2.04
BellsB	M001	1021.64	100Year-Existing	57.20	50.03	51.45	51.98	53.36	0.042058	6.70	11.16	16.48	2.05
BellsB	M001	1014.11	100Year-Existing	57.20	49.46	51.06	51.62	53.06	0.038212	6.83	10.73	14.17	1.96
BellsB	M001	1006.24	100Year-Existing	57.20	49.15	50.43	51.04	52.70	0.049256	7.29	10.03	14.25	2.22
BellsB	M001	996.42	100Year-Existing	57.20	48.11	49.45	50.15	52.13	0.070422	8.51	9.34	13.72	2.59
BellsB	M001	987.27	100Year-Existing	57.20	47.17	48.71	49.47	51.56	0.052910	8.23	9.09	11.39	2.34
BellsB	M001	973.52	100Year-Existing	57.20	46.79	48.15	48.90	50.83	0.044749	7.56	8.92	12.42	2.29
BellsB	M001	951.43	100Year-Existing	57.20	45.77	47.25	47.93	49.82	0.049327	7.84	9.69	15.42	2.36
BellsB	M001	931.51	100Year-Existing	57.20	44.86	46.11	46.77	48.60	0.073857	9.29	9.22	13.40	2.85
BellsB	M001	925.41	100Year-Existing	57.20	44.69	46.23	46.76	48.10	0.036339	7.57	11.67	17.56	2.04
BellsB	M001	901.68	100Year-Existing	57.20	43.69	45.15	45.77	47.23	0.034503	7.26	10.17	11.08	2.06
BellsB	M001	877.27	100Year-Existing	57.20	43.18	44.75	45.25	46.37	0.025355	6.36	11.38	11.43	1.76
BellsB	M001	857.41	100Year-Existing	57.20	42.16	45.74	45.24	45.84	0.000612	1.79	55.41	42.32	0.32
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	58.50	38.54	42.12	41.39	42.91	0.003346	4.01	15.16	11.92	0.70
BellsB	M001	810.13	100Year-Existing	58.50	37.80	42.45	40.14	42.56	0.000451	1.60	51.75	33.56	0.25
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	58.50	34.33	36.66	37.67	40.07	0.043784	8.27	7.47	8.55	2.12
BellsB	M001	782.27	100Year-Existing	58.50	33.92	34.87	35.70	38.86	0.142316	9.50	7.04	11.16	3.52
BellsB	M001	772.73	100Year-Existing	58.50	30.94	32.60	33.51	37.44	0.139847	12.61	7.61	10.34	3.43
BellsB	M001	766.74	100Year-Existing	58.50	30.65	32.49	33.38	36.51	0.098579	11.75	8.36	10.11	2.98
BellsB	M001	760.32	100Year-Existing	58.50	30.34	31.94	32.86	35.94	0.080106	10.32	8.28	10.24	2.83
BellsB	M001	755.97	100Year-Existing	58.50	30.05	31.63	32.50	35.55	0.086656	9.71	8.10	11.22	2.85

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	58.50	29.30	30.96	31.88	34.99	0.085145	10.31	8.15	10.14	2.87
BellsB	M001	742.14	100Year-Existing	58.50	28.38	29.67	30.70	34.29	0.091943	10.17	7.15	8.95	3.05
BellsB	M001	736.73	100Year-Existing	58.50	28.24	29.07	29.98	33.63	0.158897	10.22	6.62	10.70	3.78
BellsB	M001	722.61	100Year-Existing	58.50	27.35	28.41	29.11	31.56	0.087203	8.59	8.44	14.31	2.86
BellsB	M001	712.04	100Year-Existing	58.50	26.27	27.78	28.58	30.75	0.061578	8.26	8.74	10.63	2.45
BellsB	M001	702.42	100Year-Existing	58.50	26.04	27.35	28.07	30.05	0.064029	8.05	9.17	11.93	2.50
BellsB	M001	691.68	100Year-Existing	58.50	25.03	26.61	27.37	29.38	0.059086	7.74	8.57	10.58	2.37
BellsB	M001	686.22	100Year-Existing	58.50	24.46	25.75	26.57	28.97	0.074583	8.05	7.74	10.36	2.64
BellsB	M001	675.26	100Year-Existing	58.50	24.08	25.27	26.04	28.09	0.064587	7.91	8.49	10.54	2.51
BellsB	M001	668.37	100Year-Existing	58.50	23.58	24.92	25.64	27.64	0.059370	7.80	8.91	11.84	2.41
BellsB	M001	655.45	100Year-Existing	58.50	23.02	24.23	24.90	26.83	0.060517	7.58	9.03	12.83	2.41
BellsB	M001	636.88	100Year-Existing	58.50	21.46	22.86	23.62	25.69	0.057896	7.70	8.48	10.41	2.38
BellsB	M001	619.06	100Year-Existing	58.50	20.82	22.35	23.02	24.64	0.043188	7.32	10.06	11.44	2.10
BellsB	M001	608.48	100Year-Existing	58.50	20.13	21.59	22.27	24.13	0.046515	7.34	9.35	13.28	2.16
BellsB	M001	592.31	100Year-Existing	58.50	18.95	20.43	21.18	23.24	0.065090	8.58	9.23	11.41	2.53
BellsB	M001	582.72	100Year-Existing	58.50	18.14	19.32	20.14	22.51	0.077159	8.69	8.42	10.28	2.76
BellsB	M001	577.91	100Year-Existing	58.50	17.66	19.28	20.16	22.15	0.043083	8.17	9.30	9.15	2.17
BellsB	M001	561.51	100Year-Existing	58.50	17.02	18.44	19.15	21.23	0.071031	8.38	9.52	13.33	2.61
BellsB	M001	553.07	100Year-Existing	58.50	16.35	17.55	18.35	20.64	0.066517	7.98	8.23	10.83	2.54
BellsB	M001	541.54	100Year-Existing	58.50	15.41	16.65	17.39	19.79	0.081375	7.95	7.94	12.31	2.73
BellsB	M001	529.17	100Year-Existing	58.50	14.85	16.00	16.76	18.71	0.070877	7.36	8.27	9.04	2.32
BellsB	M001	514.53	100Year-Existing	58.50	14.21	15.33	15.97	17.56	0.066570	7.18	9.75	11.97	2.28
BellsB	M001	467.56	100Year-Existing	58.50	11.61	12.87	13.46	14.84	0.046924	6.32	9.86	10.39	1.93
BellsB	M001	420.59	100Year-Existing	58.50	8.75	13.42	11.35	13.57	0.000763	1.91	41.71	15.62	0.30
BellsB	M001	400.25	100Year-Existing	58.50	8.57	13.21	10.98	13.53	0.001065	2.52	23.20	7.03	0.37
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	58.50	0.83	1.98	3.23	7.28	0.068108	10.21	5.73	5.59	3.04
BellsB	M001	47.74	100Year-Existing	58.50	0.56	4.30	3.32	4.32	0.000129	0.93	149.22	131.99	0.16
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	58.50	0.70	4.30	3.34	4.31	0.000107	0.84	159.45	133.05	0.14
BellsB	M001	20.51	100Year-Existing	58.50	0.57	4.30		4.31	0.000130	0.90	154.81	143.11	0.16

Corner Brook 100yr Q+10%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	206.03	36.31	39.14	39.14	40.82	0.013437	6.36	43.40	22.53	1.24
CornerB	M004	2838.71	100Year-Existing	206.03	36.15	38.47	39.00	40.09	0.014684	5.94	45.28	36.61	1.26
CornerB	M004	2796.61	100Year-Existing	206.03	35.35	38.64	37.85	39.24	0.004123	3.86	77.26	43.79	0.70
CornerB	M004	2769.85	100Year-Existing	206.03	34.80	37.87	37.87	38.78	0.012914	6.66	61.20	34.80	1.23
CornerB	TR001	206.04	100Year-Existing	35.31	43.81	44.82	45.15	45.90	0.042019	5.51	9.43	14.45	1.84
CornerB	TR001	156.04	100Year-Existing	35.31	41.63	42.74	43.09	43.84	0.040223	4.89	9.12	18.79	1.74
CornerB	TR001	106.04	100Year-Existing	35.31	39.17	39.90	40.32	41.34	0.063945	5.67	7.48	13.25	2.17
CornerB	TR001	56.04	100Year-Existing	35.31	37.27	38.16	38.57	39.05	0.032130	4.42	9.40	13.78	1.57
CornerB	TR001	36.04	100Year-Existing	35.31	35.50	38.29	37.77	38.30	0.000116	0.56	123.17	81.79	0.11
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	35.31	35.18	37.50	37.50	37.57	0.001203	1.50	51.90	81.46	0.34
CornerB	M003	2689.92	100Year-Existing	225.72	33.55	35.73	36.35	37.66	0.031768	7.93	49.73	45.16	1.81
CornerB	M003	2645.73	100Year-Existing	225.72	32.87	36.64	35.05	36.80	0.001184	2.35	158.90	70.37	0.39
CornerB	M003	2602.09	100Year-Existing	225.72	32.20	36.64		36.75	0.000585	1.80	197.55	68.27	0.28
CornerB	M003	2557.73	100Year-Existing	225.72	31.34	36.56		36.72	0.000623	2.08	162.68	48.66	0.30
CornerB	M003	2537.73	100Year-Existing	225.72	30.77	36.47	34.88	36.70	0.000981	2.83	161.54	64.52	0.38
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	225.72	30.35	34.35	34.35	35.38	0.004678	4.65	59.02	27.52	0.75
CornerB	M003	2507.21	100Year-Existing	225.72	30.75	33.15	33.61	34.97	0.019813	6.82	44.08	23.82	1.46
CornerB	M003	2459.31	100Year-Existing	225.72	30.13	31.88	32.46	33.81	0.029947	6.90	42.60	31.96	1.71
CornerB	M003	2411.41	100Year-Existing	225.72	29.27	31.68	31.87	32.61	0.013104	5.46	67.59	48.55	1.18
CornerB	M003	2363.51	100Year-Existing	225.72	28.77	30.78	31.04	31.90	0.016332	5.36	57.10	42.02	1.28
CornerB	M003	2315.61	100Year-Existing	225.72	27.93	30.50	30.26	31.27	0.006215	4.06	63.60	31.17	0.83
CornerB	M003	2267.71	100Year-Existing	226.16	26.30	30.59		31.02	0.001819	3.11	90.60	29.67	0.49
CornerB	M003	2264.01	100Year-Existing	226.16	26.10	30.59	29.64	31.00	0.004300	2.88	81.22	30.66	0.54
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	226.16	26.10	30.49		30.94	0.004851	2.99	78.17	30.47	0.57
CornerB	M003	2260.98	100Year-Existing	226.16	25.80	30.53		30.89	0.001362	2.84	100.58	35.02	0.43
CornerB	M003	2240.88	100Year-Existing	226.16	27.01	30.50		30.85	0.002117	2.82	99.86	42.33	0.51
CornerB	M003	2212.25	100Year-Existing	226.16	26.87	30.41		30.79	0.002205	2.99	98.56	39.10	0.52
CornerB	M003	2183.63	100Year-Existing	226.16	25.56	29.87		30.66	0.004403	4.62	77.40	36.79	0.75
CornerB	M003	2163.63	100Year-Existing	226.16	25.35	29.89	28.61	30.55	0.002516	3.72	65.76	41.94	0.58
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	226.16	24.87	28.13	28.49	30.01	0.013354	6.63	41.27	23.37	1.24
CornerB	M003	2131.66	100Year-Existing	226.16	24.57	27.26	28.01	29.67	0.023791	7.17	36.70	21.97	1.57
CornerB	M003	2119.46	100Year-Existing	226.16	24.12	26.35	27.24	29.27	0.035956	7.99	33.54	22.99	1.90
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	226.16	24.04	26.66	27.33	28.85	0.020957	6.78	38.12	23.05	1.48
CornerB	M003	2080.62	100Year-Existing	226.16	23.73	25.76	26.58	28.02	0.027504	6.95	37.65	26.15	1.66
CornerB	M003	2068.44	100Year-Existing	226.16	23.76	25.68	26.27	27.61	0.025162	6.50	41.11	29.64	1.58
CornerB	M003	2022.25	100Year-Existing	226.16	22.74	25.02	25.48	26.59	0.016493	5.97	47.27	30.48	1.32
CornerB	M003	1991.14	100Year-Existing	226.16	22.18	24.88	25.05	26.10	0.009922	5.30	55.21	30.68	1.06
CornerB	M003	1985.82	100Year-Existing	226.16	21.97	24.50	24.84	26.00	0.013697	5.91	49.19	28.48	1.23
CornerB	M003	1975.95	100Year-Existing	226.16	21.78	24.07	24.57	25.81	0.018705	6.50	46.04	28.90	1.42
CornerB	M003	1929.72	100Year-Existing	226.16	20.08	22.60	23.24	24.83	0.021962	7.00	38.24	21.51	1.52
CornerB	M003	1883.49	100Year-Existing	226.16	19.23	22.20	22.54	23.94	0.012611	6.31	44.91	20.62	1.21
CornerB	TR002	21.04	100Year-Existing	13.42	22.27	23.00	23.62	25.85	0.150163	8.21	2.18	4.84	3.23
CornerB	TR002	18.08	100Year-Existing	13.42	21.40	21.86	22.41	25.15	0.367062	9.15	1.96	6.35	4.70
CornerB	M002	1826.39	100Year-Existing	228.36	16.92	18.66	19.60	22.42	0.117654	9.38	30.35	30.84	2.56
CornerB	M002	1790.92	100Year-Existing	228.36	15.49	19.21	19.23	20.67	0.013590	5.93	49.29	18.34	1.01
CornerB	M002	1773.95	100Year-Existing	228.36	14.72	19.57	18.00	19.97	0.002826	3.15	95.10	30.00	0.47
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	228.36	14.87	19.60	17.77	19.86	0.001532	2.67	119.37	38.03	0.40
CornerB	M002	1733.13	100Year-Existing	228.36	15.23	19.66		19.75	0.000434	1.38	212.45	80.26	0.21
CornerB	M002	1717.41	100Year-Existing	228.36	15.12	19.67		19.73	0.000361	1.28	238.00	88.66	0.19
CornerB	M002	1691.96	100Year-Existing	228.36	14.62	19.66		19.72	0.000297	1.20	270.55	108.82	0.18
CornerB	M002	1654.15	100Year-Existing	228.36	13.87	19.68		19.71	0.000144	0.88	352.97	137.86	0.13
CornerB	M002	1613.91	100Year-Existing	228.36	13.08	19.68		19.70	0.000071	0.74	409.57	153.56	0.10
CornerB	M002	1567.16	100Year-Existing	228.36	12.15	19.69		19.69	0.000012	0.33	801.47	211.20	0.04
CornerB	M002	1551.89	100Year-Existing	228.36	11.85	19.69		19.69	0.000005	0.21	1205.88	273.96	0.03
CornerB	M002	1539.91	100Year-Existing	227.04	11.62	19.69		19.69	0.000002	0.15	1617.25	307.13	0.02
CornerB	M002	1526.59	100Year-Existing	227.04	11.36	19.69		19.69	0.000002	0.15	1646.68	312.26	0.02
CornerB	M002	1517.99	100Year-Existing	227.04	11.18	19.69		19.69	0.000003	0.18	1393.32	268.62	0.02
CornerB	M002	1505.64	100Year-Existing	227.04	10.94	19.69		19.69	0.000005	0.23	1037.20	198.69	0.03
CornerB	M002	1490.63	100Year-Existing	227.04	10.64	19.69		19.69	0.000012	0.35	716.92	141.15	0.04
CornerB	M002	1463.65	100Year-Existing	227.04	10.11	19.67		19.69	0.000051	0.72	395.30	90.60	0.09
CornerB	M002	1415.93	100Year-Existing	227.04	9.17	19.66		19.69	0.000045	0.70	370.35	75.37	0.08
CornerB	M002	1386.11	100Year-Existing	227.04	8.58	19.65		19.69	0.000066	0.83	340.45	78.42	0.10
CornerB	M002	1363.91	100Year-Existing	227.04	8.14	19.63		19.68	0.000110	1.06	271.86	57.75	0.12
CornerB	M002	1356.61	100Year-Existing	227.04	8.00	19.63		19.68	0.000293	1.32	285.35	73.16	0.14
CornerB	M002	1354.61	100Year-Existing	227.04	15.35	19.00	18.95	19.62	0.005484	4.39	84.75	55.75	0.73
CornerB	M002	1354.11	100Year-Existing	227.04	15.35	18.95	18.95	19.62	0.005940	4.53	81.92	54.95	0.76
CornerB	M002	1352.01	100Year-Existing	227.04	8.00	9.80	11.57	18.76	0.363677	0.37	17.13	9.51	0.12
CornerB	M002	1347.51	100Year-Existing	227.04	7.72	9.73	11.16	16.07	0.209942	11.16	20.38	17.40	3.26
CornerB	M002	1336.58	100Year-Existing	227.04	7.69	9.42	10.59	13.78	0.120680	9.31	25.16	21.30	2.56
CornerB	M002	1326.83	100Year-Existing	227.04	7.68	9.36	10.21	12.36	0.090285	7.96	31.21	27.13	2.22
CornerB	M002	1317.22	100Year-Existing	227.04	7.66	10.96	10.33	11.49	0.006031	3.39	75.84	32.67	0.65
CornerB	M002	1315.18	100Year-Existing	227.04	7.28	10.42	10.42	11.42	0.015774	4.83	56.31	30.09	1.01
CornerB	M002	1313.58	100Year-Existing	227.04	6.48	9.60	10.06	11.32	0.030089	6.18	42.94	26.12	1.36
CornerB	M002	1312.39	100Year-Existing	227.04	6.23	9.14	9.78	11.24	0.037905	6.72	38.53	24.55	1.52
CornerB	M002	1311.16	100Year-Existing	227.04	5.92	8.68	9.44	11.15	0.050774	7.12	34.34	23.34	1.72
CornerB	M002	1309.11	100Year-Existing	227.04	5.91	8.28	9.11	11.02	0.056858	7.47	32.50	22.50	1.82
CornerB	M002	1305.35	100Year-Existing	227.04	5.37	7.58	8.49	10.72	0.071308	8.29	31.93	25.02	2.04
CornerB	M002	1300.06	100Year-Existing	227.04	5.06	7.08	8.00	10.32	0.083928	8.10	29.66	23.80	2.17
CornerB	M002	1296.49	100Year-Existing	227.04	4.91	7.31	8.10	9.91	0.045821	7.36	34.18	21.50	1.68
CornerB	M002	1289.64	100Year-Existing	227.04	4.71	7.28	7.95	9.53	0.037824	6.90	36.72	21.31	1.54
CornerB	M002	1284.12	100Year-Existing	227.04	4.41	7.44	7.89	9.24	0.023551	6.27	42.22	21.51	1.26

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	227.04	4.23	7.04	7.63	9.09	0.028025	6.60	39.30	21.58	1.36
CornerB	M002	1258.94	100Year-Existing	227.04	3.53	5.53	6.33	8.19	0.063895	7.66	35.10	29.90	1.93
CornerB	M002	1246.98	100Year-Existing	227.04	3.37	5.11	5.78	7.48	0.043016	6.95	35.20	26.75	1.77
CornerB	M002	1233.83	100Year-Existing	227.04	3.10	4.77	5.50	6.77	0.049483	6.57	39.96	38.94	1.85
CornerB	M002	1215.66	100Year-Existing	227.04	2.70	4.33	4.87	5.87	0.031428	5.67	47.08	51.21	1.50
CornerB	M002	1206.83	100Year-Existing	227.04	2.54	5.10	4.75	5.45	0.004997	2.98	103.45	68.97	0.64
CornerB	M002	1194.69	100Year-Existing	227.04	2.39	5.08		5.40	0.004348	2.88	108.93	66.50	0.60
CornerB	M002	1185.06	100Year-Existing	227.04	2.26	5.06		5.34	0.003434	2.71	117.50	68.39	0.54
CornerB	M002	1142.41	100Year-Existing	227.04	1.70	4.98		5.21	0.002720	2.50	136.38	84.71	0.49
CornerB	M002	1137.55	100Year-Existing	227.04	1.60	4.69	4.61	5.14	0.006533	3.31	101.44	104.62	0.72
CornerB	M002	1110.53	100Year-Existing	227.04	1.39	4.20	4.20	4.92	0.007964	4.06	78.63	71.00	0.82
CornerB	M002	1090.67	100Year-Existing	227.04	1.10	4.47	3.47	4.64	0.001941	2.23	165.03	140.52	0.41
CornerB	M002	1070.69	100Year-Existing	227.04	0.80	4.49	3.17	4.59	0.000968	1.79	205.73	122.02	0.30
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	227.04	0.76	4.48	3.08	4.56	0.000829	1.68	205.13	111.25	0.28
CornerB	M002	1047.01	100Year-Existing	227.04	0.75	4.44		4.55	0.000810	1.86	196.80	84.31	0.32
CornerB	M002	1004.03	100Year-Existing	227.04	0.77	4.41		4.51	0.000759	1.80	229.77	139.75	0.31
CornerB	M002	959.21	100Year-Existing	227.04	0.70	4.42		4.47	0.000487	1.44	360.43	287.32	0.25
CornerB	M002	915.75	100Year-Existing	226.05	0.68	4.42		4.44	0.000350	1.18	436.35	297.14	0.21
CornerB	M002	869.66	100Year-Existing	226.05	0.69	4.41		4.43	0.000223	0.98	459.98	225.92	0.17
CornerB	M002	828.33	100Year-Existing	219.67	0.77	4.40		4.42	0.000234	0.96	447.45	226.81	0.17
CornerB	M002	784.55	100Year-Existing	219.67	0.82	4.40		4.41	0.000156	0.79	469.29	234.59	0.14
CornerB	M002	739.85	100Year-Existing	219.67	0.82	4.39		4.40	0.000154	0.76	487.04	276.59	0.14
CornerB	M002	696.36	100Year-Existing	219.67	0.64	4.37		4.39	0.000211	0.95	428.57	268.00	0.16
CornerB	M001	659.37	100Year-Existing	230.89	0.75	4.36		4.39	0.000234	0.95	401.05	238.02	0.17
CornerB	M001	643.93	100Year-Existing	230.89	0.74	4.34	3.22	4.38	0.000350	1.17	340.65	222.68	0.21
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	230.89	0.83	4.05	3.30	4.13	0.000826	1.70	239.63	184.84	0.31
CornerB	M001	608.52	100Year-Existing	230.89	0.76	4.03		4.11	0.001022	1.81	228.04	165.74	0.34
CornerB	M001	570.12	100Year-Existing	230.89	0.61	4.04		4.08	0.000536	1.39	301.22	187.34	0.25
CornerB	M001	535.83	100Year-Existing	230.89	0.56	4.01	2.20	4.06	0.000333	1.18	307.66	222.47	0.20
CornerB	M001	520.22	100Year-Existing	230.89	0.55	4.02	2.54	4.05	0.000254	1.03	357.46	293.57	0.18
CornerB	M001	472.07	100Year-Existing	230.89	0.58	3.95	3.12	4.03	0.000623	1.56	261.64	208.40	0.28
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	230.89	0.44	3.54	2.54	3.78	0.001644	2.45	180.41	240.36	0.44
CornerB	M001	425.41	100Year-Existing	230.89	0.48	3.58		3.69	0.000999	1.86	280.84	311.18	0.34
CornerB	M001	401.99	100Year-Existing	230.89	0.74	3.61		3.65	0.000569	1.36	379.98	347.14	0.26
CornerB	M001	381.26	100Year-Existing	230.89	0.79	3.53	3.25	3.63	0.001207	1.89	293.19	352.43	0.37
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	230.89	0.79	3.42	3.26	3.55	0.001734	2.23	262.65	368.23	0.44
CornerB	M001	352.89	100Year-Existing	230.89	0.68	3.22	2.57	3.48	0.002231	2.46	180.21	343.76	0.50
CornerB	M001	324.13	100Year-Existing	230.89	0.67	3.18		3.40	0.002093	2.37	177.10	264.69	0.48
CornerB	M001	292.92	100Year-Existing	230.89	0.65	3.19		3.32	0.001414	1.93	241.56	345.06	0.40
CornerB	M001	274.62	100Year-Existing	230.89	0.96	3.18	2.85	3.28	0.002395	2.24	264.76	366.10	0.50
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	230.89	1.01	3.15	2.81	3.21	0.002211	2.13	287.80	377.06	0.48
CornerB	M001	245.99	100Year-Existing	230.89	0.64	3.10		3.17	0.001491	1.85	321.35	432.00	0.40
CornerB	M001	210.89	100Year-Existing	230.89	0.68	3.05		3.12	0.001621	1.81	308.91	404.83	0.41
CornerB	M001	174.77	100Year-Existing	230.89	0.69	3.01		3.06	0.001341	1.49	332.44	453.89	0.36
CornerB	M001	155.66	100Year-Existing	230.89	0.64	3.00	2.60	3.03	0.001527	1.44	377.55	578.25	0.37
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	230.89	0.55	2.99	2.54	3.01	0.001213	1.28	385.92	525.22	0.34
CornerB	M001	129.05	100Year-Existing	230.89	0.40	2.94		2.98	0.000949	1.36	399.40	525.97	0.31
CornerB	M001	80.73	100Year-Existing	230.89	0.20	2.87		2.93	0.000993	1.55	338.22	393.71	0.33
CornerB	M001	23.81	100Year-Existing	230.89	0.32	2.80	2.23	2.87	0.001174	1.55	308.45	431.13	0.35
BellsB	TR001	178.13	100Year-Existing	19.47	92.91	95.76	94.72	95.86	0.001134	1.63	18.14	13.11	0.33
BellsB	TR001	159.86	100Year-Existing	19.47	92.15	95.80		95.83	0.000257	0.98	34.63	17.19	0.17
BellsB	TR001	139.54	100Year-Existing	19.47	91.13	95.64	93.03	95.81	0.000845	1.80	10.80	19.40	0.27
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	19.47	89.49	91.26	91.54	92.58	0.019251	5.14	3.93	5.66	1.27
BellsB	TR001	88.17	100Year-Existing	19.47	88.47	89.48	90.13	92.08	0.111363	7.66	3.17	5.55	2.77
BellsB	TR001	84.12	100Year-Existing	19.47	87.66	88.49	89.10	91.41	0.188688	7.75	2.79	6.88	3.44
BellsB	TR001	79.14	100Year-Existing	19.47	86.53	87.40	88.06	90.53	0.147830	8.20	2.89	6.48	3.20
BellsB	TR001	72.74	100Year-Existing	19.47	85.76	86.49	87.06	89.39	0.186685	7.71	2.81	7.29	3.42
BellsB	TR001	67.75	100Year-Existing	19.47	85.04	85.66	86.18	88.20	0.214921	7.48	3.05	8.13	3.57
BellsB	TR001	64.04	100Year-Existing	19.47	84.47	85.27	85.81	87.46	0.135035	6.56	3.00	6.32	2.92
BellsB	TR001	60.69	100Year-Existing	19.47	84.14	85.20	85.67	86.96	0.089807	6.08	3.62	7.34	2.44
BellsB	TR001	56.76	100Year-Existing	19.47	83.97	85.00	85.44	86.57	0.073555	5.61	3.72	7.66	2.23
BellsB	TR001	50.93	100Year-Existing	19.47	83.68	84.78	85.15	86.07	0.070392	5.20	4.23	9.42	2.15
BellsB	TR001	43.86	100Year-Existing	19.47	83.34	84.31	84.65	85.54	0.075572	5.08	4.32	10.15	2.21
BellsB	TR001	37.01	100Year-Existing	19.47	82.98	83.99	84.31	85.07	0.052398	4.92	4.82	9.37	1.91
BellsB	TR001	12.14	100Year-Existing	19.47	82.15	83.12	83.35	83.88	0.037908	4.12	5.66	10.33	1.62
BellsB	M002	5166.11	100Year-Existing	16.06	190.79	191.99	191.87	192.15	0.009418	2.52	11.89	18.69	0.77
BellsB	M002	5149.23	100Year-Existing	16.06	190.57	191.65	191.65	191.94	0.015013	2.88	8.72	15.22	0.96
BellsB	M002	5117.45	100Year-Existing	16.06	189.91	191.57	190.83	191.60	0.001393	1.24	24.93	24.60	0.31
BellsB	M002	5090.85	100Year-Existing	16.06	189.62	191.13	191.13	191.48	0.013268	3.33	8.57	12.40	0.92
BellsB	M002	5067.47	100Year-Existing	16.06	189.18	189.79	190.09	190.78	0.123194	5.88	4.29	9.45	2.53
BellsB	M002	5017.78	100Year-Existing	16.06	188.12	189.33	189.33	189.64	0.016622	3.34	8.46	12.55	1.02
BellsB	M002	4967.57	100Year-Existing	16.06	186.55	187.87	188.02	188.51	0.030669	4.34	5.62	7.76	1.33
BellsB	M002	4917.46	100Year-Existing	16.06	185.69	187.31	186.58	187.35	0.001382	1.24	23.84	27.65	0.32
BellsB	M002	4873.31	100Year-Existing	16.06	184.61	187.23		187.29	0.001373	1.56	25.27	36.34	0.32
BellsB	M002	4853.42	100Year-Existing	16.06	183.55	187.04	185.38	187.25	0.001435	2.01	7.97	31.61	0.35
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	16.06	181.53	182.84	183.34	184.53	0.045214	5.75	2.79	5.72	1.70
BellsB	M002	4785.76	100Year-Existing	16.06	181.35	182.39	182.66	183.24	0.042925	4.62	4.71	7.90	1.58
BellsB	M002	4756.65	100Year-Existing	16.06	180.12	181.06	181.29	181.82	0.054016	4.91	5.46	13.05	1.75
BellsB	M002	4727.54	100Year-Existing	16.06	179.02	179.85	180.03	180.44	0.037934	4.20	6.42	16.52	1.57

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	16.06	177.96	178.37	178.59	179.17	0.126445	4.85	4.74	16.82	2.58
BellsB	M002	4702.24	100Year-Existing	16.06	177.65	178.54	178.57	178.82	0.018576	2.95	8.56	17.74	1.10
BellsB	M002	4682.48	100Year-Existing	16.06	176.63	177.40	177.63	178.16	0.051555	4.47	5.39	14.72	1.80
BellsB	M002	4658.79	100Year-Existing	16.06	175.50	176.78	176.96	177.47	0.018948	4.08	5.51	7.70	1.19
BellsB	M002	4633.41	100Year-Existing	16.06	174.51	175.25	175.56	176.52	0.103786	6.42	4.42	13.04	2.55
BellsB	M002	4609.61	100Year-Existing	16.06	173.50	174.88	174.56	175.04	0.005043	2.27	11.29	12.72	0.64
BellsB	M002	4583.99	100Year-Existing	16.06	172.77	174.34	174.34	174.82	0.011242	3.32	6.50	7.99	0.91
BellsB	M002	4534.72	100Year-Existing	16.06	170.00	170.99	171.51	173.28	0.118366	8.38	3.23	6.54	2.83
BellsB	M002	4485.52	100Year-Existing	16.06	168.20	168.87	169.04	169.41	0.055084	4.40	6.43	18.42	1.83
BellsB	M002	4436.28	100Year-Existing	29.15	165.85	167.19	167.40	167.84	0.024477	4.84	12.21	27.48	1.38
BellsB	M002	4387.04	100Year-Existing	29.15	164.06	165.37	165.69	166.35	0.036126	5.80	9.01	13.43	1.68
BellsB	M002	4337.81	100Year-Existing	29.15	162.60	163.83	164.05	164.51	0.034910	5.30	11.70	24.84	1.60
BellsB	M002	4288.56	100Year-Existing	29.15	161.30	162.54	162.67	163.05	0.027744	4.64	12.10	20.47	1.41
BellsB	M002	4239.33	100Year-Existing	29.15	159.65	160.77	161.00	161.61	0.036617	5.10	9.35	15.83	1.63
BellsB	M002	4190.09	100Year-Existing	29.15	158.43	159.67	159.77	160.21	0.021633	4.23	11.95	19.09	1.28
BellsB	M002	4140.85	100Year-Existing	29.15	157.30	158.01	158.14	158.49	0.054695	4.75	10.85	23.03	1.87
BellsB	M002	4091.61	100Year-Existing	29.15	155.30	156.19	156.26	156.58	0.030713	4.23	12.32	21.10	1.47
BellsB	M002	4042.37	100Year-Existing	29.15	153.74	154.76	154.85	155.26	0.023036	3.91	11.04	15.58	1.29
BellsB	M002	3993.13	100Year-Existing	29.15	152.65	153.52	153.63	153.96	0.036406	4.19	11.97	23.82	1.52
BellsB	M002	3943.89	100Year-Existing	29.15	151.36	152.39	152.41	152.74	0.020538	3.70	13.45	21.00	1.22
BellsB	M002	3894.65	100Year-Existing	29.15	149.52	151.15	151.34	151.81	0.021129	4.47	11.45	18.72	1.25
BellsB	M002	3869.08	100Year-Existing	29.15	148.87	150.25	150.52	151.16	0.029272	5.01	8.85	12.51	1.48
BellsB	M002	3845.41	100Year-Existing	29.15	148.37	149.72	149.92	150.41	0.027956	4.64	10.71	18.34	1.36
BellsB	M002	3822.22	100Year-Existing	29.15	147.71	150.05	148.80	150.09	0.000838	1.25	37.10	21.58	0.26
BellsB	M002	3796.17	100Year-Existing	29.15	146.89	149.99		150.06	0.000958	1.53	31.62	17.75	0.29
BellsB	M002	3765.39	100Year-Existing	29.15	146.40	149.97		150.04	0.000704	1.40	32.05	15.70	0.25
BellsB	M002	3746.94	100Year-Existing	29.15	145.76	150.01		150.02	0.000091	0.61	77.49	28.42	0.10
BellsB	M002	3724.94	100Year-Existing	29.15	145.32	149.98		150.01	0.000240	0.98	46.42	17.68	0.15
BellsB	M002	3697.71	100Year-Existing	29.15	145.05	149.98		150.00	0.000131	0.78	55.64	18.94	0.11
BellsB	M002	3677.71	100Year-Existing	29.15	143.44	149.99	146.07	150.00	0.000036	0.49	86.63	23.58	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	29.15	142.47	145.02	145.02	146.25	0.010199	4.92	5.93	10.31	1.00
BellsB	M002	3623.19	100Year-Existing	29.15	142.10	143.69	144.28	145.63	0.057952	6.95	5.57	7.70	1.99
BellsB	M002	3573.45	100Year-Existing	29.15	140.89	142.44	142.82	143.39	0.025310	4.82	8.01	12.34	1.37
BellsB	M002	3520.99	100Year-Existing	29.15	139.30	141.04	141.35	142.07	0.024041	5.06	9.76	27.67	1.33
BellsB	M002	3473.83	100Year-Existing	29.15	137.98	139.80	140.32	140.78	0.027806	5.38	7.94	9.73	1.39
BellsB	M002	3424.29	100Year-Existing	29.15	136.49	137.92	138.34	139.21	0.030137	5.27	6.39	7.06	1.50
BellsB	M002	3400.36	100Year-Existing	29.15	135.96	138.85	137.32	138.90	0.000472	1.12	40.57	62.96	0.22
BellsB	M002	3386.31	100Year-Existing	29.15	135.48	138.84	137.91	138.89	0.000467	1.31	56.28	85.83	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	29.15	135.22	138.87	137.65	138.87	0.000049	0.45	127.85	74.20	0.07
BellsB	M002	3329.08	100Year-Existing	36.74	134.96	138.86		138.87	0.000066	0.53	132.39	58.87	0.09
BellsB	M002	3303.55	100Year-Existing	36.74	133.82	138.82	136.79	138.86	0.000307	1.31	61.77	51.73	0.19
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	36.74	131.39	134.77	134.77	136.21	0.010214	5.31	6.91	21.52	1.00
BellsB	M002	3203.83	100Year-Existing	36.74	131.13	132.44	133.08	135.31	0.120307	8.42	6.33	13.31	2.80
BellsB	M002	3176.31	100Year-Existing	36.74	130.02	131.53	131.99	133.02	0.048847	6.47	8.99	13.83	1.87
BellsB	M002	3157.63	100Year-Existing	36.74	129.89	131.32	131.51	132.03	0.037663	5.20	12.21	19.20	1.56
BellsB	M002	3130.11	100Year-Existing	36.74	128.68	130.79	130.98	131.50	0.011877	4.22	13.60	19.63	1.00
BellsB	M002	3083.82	100Year-Existing	36.74	127.94	129.56	129.89	130.64	0.030253	5.54	12.10	24.30	1.53
BellsB	M002	3037.68	100Year-Existing	36.74	127.11	128.14	128.36	128.86	0.043704	5.32	12.88	26.26	1.77
BellsB	M002	2991.47	100Year-Existing	36.74	126.28	128.50	127.39	128.51	0.000423	0.91	64.53	49.13	0.20
BellsB	M002	2945.26	100Year-Existing	36.74	125.32	128.44	127.95	128.48	0.000945	1.29	54.78	79.06	0.24
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	36.74	125.12	127.36	127.36	128.48	0.010292	4.69	7.83	9.00	1.00
BellsB	M002	2918.61	100Year-Existing	36.74	124.99	126.72	127.20	128.10	0.031346	5.98	9.97	24.79	1.57
BellsB	M002	2899.46	100Year-Existing	36.74	125.25	126.52	126.82	127.43	0.020543	4.48	11.79	35.69	1.29
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	36.74	124.44	125.95	125.95	126.23	0.005666	2.63	18.45	21.12	0.72
BellsB	M002	2861.32	100Year-Existing	36.74	123.64	124.86	125.15	125.79	0.034554	5.35	10.69	19.13	1.68
BellsB	M002	2823.69	100Year-Existing	36.74	123.23	124.38	124.44	124.74	0.023632	3.82	17.48	32.89	1.22
BellsB	M002	2777.91	100Year-Existing	36.74	122.77	124.09	123.77	124.14	0.003249	1.60	44.10	61.74	0.46
BellsB	M002	2727.91	100Year-Existing	36.74	122.21	123.79	123.79	123.97	0.007795	2.71	31.60	67.83	0.73
BellsB	M002	2677.99	100Year-Existing	36.74	121.13	122.80	122.78	123.38	0.016613	3.91	13.08	16.07	1.06
BellsB	M002	2628.09	100Year-Existing	36.74	120.69	122.34	122.34	122.64	0.012195	3.52	22.23	36.48	0.92
BellsB	M002	2578.18	100Year-Existing	36.74	119.94	121.75	121.62	121.95	0.007314	2.83	25.57	34.73	0.71
BellsB	M002	2528.27	100Year-Existing	36.74	119.10	121.00	121.00	121.47	0.013528	3.90	15.79	17.00	0.97
BellsB	M002	2518.19	100Year-Existing	36.74	118.62	120.71	120.56	121.03	0.008770	3.35	19.41	20.56	0.79
BellsB	M002	2496.15	100Year-Existing	36.74	118.53	120.74		120.87	0.003462	2.25	31.20	30.48	0.51
BellsB	M002	2478.37	100Year-Existing	36.74	117.97	120.42		120.77	0.006567	3.26	18.58	15.32	0.71
BellsB	M002	2450.61	100Year-Existing	36.74	117.55	119.88	119.88	120.50	0.011995	4.32	14.28	12.56	0.95
BellsB	M002	2428.46	100Year-Existing	36.74	117.19	118.55	118.96	119.90	0.059198	6.04	9.36	16.39	1.88
BellsB	M002	2408.52	100Year-Existing	36.74	116.63	118.00	118.28	118.86	0.047287	5.44	11.75	20.56	1.67
BellsB	M002	2378.55	100Year-Existing	36.74	116.15	117.84	117.87	118.22	0.015988	4.00	19.16	28.94	1.03
BellsB	M002	2367.92	100Year-Existing	36.74	115.61	116.83	117.14	117.85	0.051961	5.83	10.88	18.58	1.81
BellsB	M002	2352.81	100Year-Existing	36.74	115.07	116.40	116.63	117.18	0.035707	5.11	11.99	17.17	1.51
BellsB	M002	2328.64	100Year-Existing	36.74	113.99	115.94	116.09	116.56	0.016924	4.46	14.92	19.16	1.09
BellsB	M002	2307.61	100Year-Existing	36.74	112.94	116.21	115.53	116.25	0.000726	1.23	55.57	48.73	0.23
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	36.74	111.75	113.65	114.05	115.23	0.037927	5.58	6.61	6.63	1.40
BellsB	M002	2275.77	100Year-Existing	39.49	112.06	114.08	114.08	114.45	0.011525	3.85	19.68	26.69	0.91
BellsB	M002	2232.72	100Year-Existing	39.49	110.58	112.49	112.85	113.62	0.027222	5.52	11.28	13.98	1.37
BellsB	M002	2200.99	100Year-Existing	39.49	109.61	112.10	111.77	112.43	0.006217	3.19	19.76	15.47	0.69
BellsB	M002	2173.21	100Year-Existing	39.49	108.98	111.49	111.49	112.16	0.010975	4.16	13.80	10.85	0.88
BellsB	M002	2133.27	100Year-Existing	39.49	107.79	109.27	109.83	111.17	0.062902	7.13	8.22	11.56	2.02
BellsB	M002	2117.78	100Year-Existing	39.49	107.46	109.12	109.58	110.30	0.030580	5.58	10.38	12.22	1.46
BellsB	M002	2103.01	100Year-Existing	39.49	106.45	108.02	108.50	109.62	0.056971	6.71	8.53	10.34	1.88

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	39.49	105.17	106.85	107.39	108.60	0.054575	7.14	8.17	8.66	1.89
BellsB	M002	2068.57	100Year-Existing	39.49	104.36	105.50	106.03	107.47	0.093120	7.60	7.87	12.42	2.41
BellsB	M002	2059.88	100Year-Existing	39.49	103.56	105.09	105.61	106.85	0.050599	6.53	8.36	10.81	1.84
BellsB	M002	2054.52	100Year-Existing	39.49	103.13	104.62	105.18	106.52	0.067228	7.23	7.78	8.76	2.07
BellsB	M002	2040.56	100Year-Existing	39.49	102.39	104.05	104.59	105.80	0.037541	6.50	8.12	6.89	1.66
BellsB	M002	2033.27	100Year-Existing	39.49	102.08	104.47	104.63	105.41	0.017846	4.86	11.23	8.65	1.11
BellsB	M002	2025.44	100Year-Existing	39.49	101.58	103.19	103.79	105.10	0.047794	6.63	7.67	8.38	1.79
BellsB	M002	2021.67	100Year-Existing	39.49	101.43	103.48	103.88	104.78	0.029137	5.51	9.32	9.25	1.38
BellsB	M002	2014.53	100Year-Existing	39.49	99.96	101.65	102.43	104.30	0.094486	7.29	5.73	6.98	2.29
BellsB	M002	2010.46	100Year-Existing	39.49	99.08	100.35	101.21	103.77	0.132646	9.19	5.63	7.12	2.86
BellsB	M002	2007.37	100Year-Existing	39.49	98.52	100.10	100.99	103.35	0.109134	8.15	5.28	5.78	2.47
BellsB	M002	1996.87	100Year-Existing	39.49	97.97	99.21	100.02	102.18	0.099119	8.46	6.06	6.93	2.54
BellsB	M002	1982.97	100Year-Existing	39.49	97.73	99.04	99.58	100.77	0.057634	6.82	7.97	8.26	1.97
BellsB	M002	1966.25	100Year-Existing	39.49	96.75	98.90	99.19	99.99	0.024100	5.27	10.43	9.25	1.26
BellsB	M002	1951.81	100Year-Existing	39.49	96.56	99.05	98.35	99.24	0.003671	2.44	23.59	14.70	0.52
BellsB	M002	1939.94	100Year-Existing	39.49	96.29	98.53	98.53	99.12	0.012152	3.86	14.26	12.72	0.92
BellsB	M002	1918.81	100Year-Existing	39.49	95.86	98.30	97.93	98.67	0.006737	3.33	18.17	12.49	0.72
BellsB	M002	1910.32	100Year-Existing	39.49	95.58	97.84	97.84	98.56	0.011831	4.08	12.75	9.97	0.93
BellsB	M002	1896.87	100Year-Existing	39.49	94.38	96.06	96.68	98.11	0.063864	7.16	7.51	8.59	1.96
BellsB	M002	1887.59	100Year-Existing	39.49	93.87	95.15	95.75	97.38	0.094681	7.49	7.15	10.35	2.39
BellsB	M002	1880.79	100Year-Existing	39.49	93.33	96.21	95.43	96.45	0.003098	2.56	22.64	12.48	0.51
BellsB	M002	1870.34	100Year-Existing	39.49	92.77	96.23		96.41	0.001788	2.30	26.46	10.60	0.40
BellsB	M002	1857.16	100Year-Existing	39.49	91.88	96.27		96.36	0.000895	1.72	35.53	14.72	0.28
BellsB	M002	1848.27	100Year-Existing	39.49	91.91	96.29		96.35	0.000435	1.30	46.73	17.04	0.20
BellsB	M002	1834.27	100Year-Existing	39.49	90.88	96.29		96.34	0.000275	1.15	53.69	17.64	0.16
BellsB	M002	1821.35	100Year-Existing	39.49	90.90	96.31		96.33	0.000159	0.95	71.59	20.94	0.13
BellsB	M002	1807.43	100Year-Existing	39.49	89.83	96.31		96.33	0.000097	0.79	84.34	21.82	0.10
BellsB	M002	1800.77	100Year-Existing	39.49	89.59	96.31		96.32	0.000095	0.78	89.56	22.94	0.10
BellsB	M002	1777.98	100Year-Existing	39.49	88.77	96.31		96.32	0.000032	0.51	137.18	30.35	0.06
BellsB	M002	1753.27	100Year-Existing	39.49	88.22	96.31		96.32	0.000037	0.56	130.93	30.52	0.06
BellsB	M002	1729.73	100Year-Existing	39.49	88.17	96.31		96.32	0.000021	0.45	161.10	32.73	0.05
BellsB	M002	1705.77	100Year-Existing	39.49	87.60	96.31		96.32	0.000009	0.35	255.00	65.07	0.04
BellsB	M002	1688.91	100Year-Existing	39.49	86.72	96.31	90.40	96.32	0.000012	0.39	213.02	68.23	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	39.49	83.97	87.64	87.64	89.46	0.007775	5.99	6.60	20.98	1.00
BellsB	M002	1605.59	100Year-Existing	39.49	81.49	82.31	83.05	87.88	0.491218	11.12	4.15	12.36	5.48
BellsB	M001	1582.05	100Year-Existing	62.92	80.41	81.67	82.72	86.37	0.126968	9.94	7.20	9.21	3.20
BellsB	M001	1563.67	100Year-Existing	62.92	79.96	81.37	82.15	84.20	0.063773	8.07	9.89	11.06	2.36
BellsB	M001	1544.26	100Year-Existing	62.92	79.04	81.04	81.70	83.14	0.031562	7.10	12.12	10.08	1.73
BellsB	M001	1529.04	100Year-Existing	62.92	78.24	79.66	80.48	82.46	0.051874	7.73	9.45	8.82	2.16
BellsB	M001	1515.66	100Year-Existing	62.92	77.30	79.35	80.08	81.71	0.044582	7.06	10.24	8.12	1.76
BellsB	M001	1502.43	100Year-Existing	62.92	69.64	70.34	71.37	79.46	0.844777	13.41	4.76	11.36	6.38
BellsB	M001	1483.47	100Year-Existing	62.92	68.89	69.98	70.58	72.31	0.128390	7.56	10.37	16.57	2.73
BellsB	M001	1454.75	100Year-Existing	62.92	68.03	69.65	69.82	70.48	0.025307	5.12	17.73	16.39	1.34
BellsB	M001	1406.62	100Year-Existing	62.92	66.49	68.82	68.91	69.71	0.015592	4.94	17.81	12.42	1.10
BellsB	M001	1358.51	100Year-Existing	62.92	65.17	66.85	67.34	68.48	0.041193	6.22	12.78	12.42	1.68
BellsB	M001	1310.38	100Year-Existing	62.92	63.80	65.48	65.86	66.68	0.030300	5.45	15.96	18.31	1.46
BellsB	M001	1286.33	100Year-Existing	62.92	62.81	64.32	64.72	65.71	0.054094	6.31	14.45	20.87	1.87
BellsB	M001	1262.25	100Year-Existing	62.92	62.09	64.44	64.55	64.97	0.013952	4.40	25.52	29.41	0.99
BellsB	M001	1251.58	100Year-Existing	62.92	61.46	63.54	63.95	64.71	0.028504	6.37	18.07	24.36	1.47
BellsB	M001	1234.76	100Year-Existing	62.92	60.57	62.20	62.72	63.98	0.066128	7.68	14.10	21.94	2.09
BellsB	M001	1214.13	100Year-Existing	62.92	59.55	61.95	61.21	62.14	0.003109	2.31	39.02	25.45	0.50
BellsB	M001	1200.58	100Year-Existing	62.92	58.90	61.33	61.33	62.01	0.011405	4.30	21.42	16.46	0.94
BellsB	M001	1182.98	100Year-Existing	62.92	58.59	60.96	61.09	61.78	0.014630	4.79	19.83	16.44	1.06
BellsB	M001	1166.01	100Year-Existing	62.92	58.39	59.92	60.36	61.31	0.043273	6.11	14.95	18.70	1.71
BellsB	M001	1153.18	100Year-Existing	62.92	57.70	59.58	59.93	60.71	0.038742	6.57	17.12	20.20	1.63
BellsB	M001	1141.88	100Year-Existing	62.92	56.72	58.24	58.82	60.11	0.054925	6.70	12.09	14.46	1.91
BellsB	M001	1128.34	100Year-Existing	62.92	56.53	57.87	58.28	59.19	0.055249	6.30	13.52	15.58	1.87
BellsB	M001	1117.89	100Year-Existing	62.92	55.58	57.03	57.51	58.57	0.061343	7.23	13.35	14.43	2.01
BellsB	M001	1096.03	100Year-Existing	62.92	54.61	56.43	56.76	57.56	0.029356	5.43	16.07	16.56	1.43
BellsB	M001	1077.81	100Year-Existing	62.92	54.24	55.51	55.96	56.89	0.048699	6.04	14.93	20.73	1.80
BellsB	M001	1069.76	100Year-Existing	62.92	53.70	54.57	55.03	56.20	0.112472	6.92	12.46	19.70	2.55
BellsB	M001	1064.67	100Year-Existing	62.92	53.19	54.07	54.51	55.62	0.112685	6.80	12.81	20.81	2.54
BellsB	M001	1051.64	100Year-Existing	62.92	51.97	53.16	53.61	54.68	0.064882	6.42	13.70	18.69	2.02
BellsB	M001	1032.36	100Year-Existing	62.92	50.97	52.62	52.91	53.64	0.035588	5.87	16.92	17.33	1.56
BellsB	M001	1021.64	100Year-Existing	62.92	50.03	51.60	52.05	53.14	0.046455	6.14	13.72	17.39	1.76
BellsB	M001	1014.11	100Year-Existing	62.92	49.46	51.24	51.77	52.82	0.041199	6.21	13.37	15.46	1.67
BellsB	M001	1006.24	100Year-Existing	62.92	49.15	50.58	51.12	52.43	0.054881	6.71	12.24	15.11	1.92
BellsB	M001	996.42	100Year-Existing	62.92	48.11	49.59	50.24	51.81	0.080514	7.87	11.28	14.60	2.26
BellsB	M001	987.27	100Year-Existing	62.92	47.17	48.89	49.57	51.18	0.057817	7.51	11.21	12.22	2.00
BellsB	M001	973.52	100Year-Existing	62.92	46.79	48.35	49.00	50.39	0.044631	6.74	11.57	14.50	1.88
BellsB	M001	951.43	100Year-Existing	62.92	45.77	47.41	47.99	49.39	0.052403	7.06	12.36	17.84	1.99
BellsB	M001	931.51	100Year-Existing	62.92	44.86	46.29	46.85	48.15	0.072424	8.15	11.75	14.83	2.32
BellsB	M001	925.41	100Year-Existing	62.92	44.69	46.46	46.83	47.65	0.032099	6.28	15.81	19.28	1.57
BellsB	M001	901.68	100Year-Existing	62.92	43.69	45.43	45.87	46.90	0.030136	6.20	13.39	12.02	1.59
BellsB	M001	877.27	100Year-Existing	62.92	43.18	45.07	45.35	46.19	0.021116	5.36	15.21	12.49	1.33
BellsB	M001	857.41	100Year-Existing	62.92	42.16	45.78	45.32	45.90	0.001068	1.91	57.47	43.09	0.33
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	64.35	38.54	42.12	41.56	43.08	0.006290	4.41	15.19	11.94	0.77
BellsB	M001	810.13	100Year-Existing	64.35	37.80	42.53	40.27	42.65	0.000780	1.70	54.37	35.48	0.26
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	64.35	34.33	36.91	37.80	39.80	0.048301	7.68	9.11	9.32	1.82
BellsB	M001	782.27	100Year-Existing	64.35	33.92	34.98	35.80	38.46	0.162718	8.91	8.29	11.39	3.08
BellsB	M001	772.73	100Year-Existing	64.35	30.94	32.73	33.61	36.84	0.170182	11.85	9.07	11.30	3.08
BellsB	M001	766.74	100Year-Existing	64.35	30.65	32.69	33.47	35.75	0.105840	10.54	10.48	11.34	2.52
BellsB	M001	760.32	100Year-Existing	64.35	30.34	32.16	32.96	35.14	0.080346	9.13	10.64	11.48	2.33
BellsB	M001	755.97	100Year-Existing	64.35	30.05	31.82	32.60	34.76	0.087433	8.61	10.25	11.65	2.35

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	64.35	29.30	31.16	31.99	34.19	0.086227	9.14	10.28	10.72	2.36
BellsB	M001	742.14	100Year-Existing	64.35	28.38	29.87	30.81	33.48	0.093017	9.13	9.03	9.68	2.52
BellsB	M001	736.73	100Year-Existing	64.35	28.24	29.22	30.07	32.84	0.157292	9.16	8.20	11.12	3.10
BellsB	M001	722.61	100Year-Existing	64.35	27.35	28.58	29.19	30.85	0.081882	7.43	10.82	14.83	2.28
BellsB	M001	712.04	100Year-Existing	64.35	26.27	28.04	28.68	30.09	0.052487	6.99	11.69	11.70	1.87
BellsB	M001	702.42	100Year-Existing	64.35	26.04	27.58	28.16	29.52	0.057513	6.94	11.95	12.83	1.96
BellsB	M001	691.68	100Year-Existing	64.35	25.03	26.84	27.47	28.90	0.054746	6.77	11.10	11.67	1.88
BellsB	M001	686.22	100Year-Existing	64.35	24.46	25.93	26.67	28.50	0.075093	7.26	9.67	10.98	2.18
BellsB	M001	675.26	100Year-Existing	64.35	24.08	25.48	26.13	27.63	0.060880	6.98	10.79	11.26	2.01
BellsB	M001	668.37	100Year-Existing	64.35	23.58	25.11	25.72	27.21	0.059562	6.96	11.17	12.55	1.98
BellsB	M001	655.45	100Year-Existing	64.35	23.02	24.40	24.99	26.39	0.060044	6.73	11.34	13.37	1.97
BellsB	M001	636.88	100Year-Existing	64.35	21.46	23.06	23.72	25.27	0.056995	6.87	10.68	11.06	1.95
BellsB	M001	619.06	100Year-Existing	64.35	20.82	22.60	23.12	24.27	0.039737	6.36	13.07	12.40	1.66
BellsB	M001	608.48	100Year-Existing	64.35	20.13	21.76	22.36	23.77	0.049374	6.65	11.77	13.97	1.83
BellsB	M001	592.31	100Year-Existing	64.35	18.95	20.61	21.27	22.84	0.068445	7.76	11.41	12.24	2.12
BellsB	M001	582.72	100Year-Existing	64.35	18.14	19.50	20.25	22.09	0.079403	7.88	10.36	10.71	2.30
BellsB	M001	577.91	100Year-Existing	64.35	17.66	19.59	20.27	21.69	0.039750	7.13	12.29	10.61	1.72
BellsB	M001	561.51	100Year-Existing	64.35	17.02	18.61	19.23	20.81	0.074177	7.56	11.81	14.07	2.19
BellsB	M001	553.07	100Year-Existing	64.35	16.35	17.75	18.45	20.19	0.066433	7.19	10.58	13.15	2.09
BellsB	M001	541.54	100Year-Existing	64.35	15.41	16.80	17.48	19.33	0.083393	7.21	10.07	14.04	2.28
BellsB	M001	529.17	100Year-Existing	64.35	14.85	16.25	16.87	18.30	0.062723	6.42	10.63	9.59	1.81
BellsB	M001	514.53	100Year-Existing	64.35	14.21	15.53	16.06	17.27	0.064991	6.40	12.22	12.65	1.86
BellsB	M001	467.56	100Year-Existing	64.35	11.61	13.10	13.56	14.66	0.045074	5.65	12.37	10.93	1.56
BellsB	M001	420.59	100Year-Existing	64.35	8.75	14.08	11.48	14.20	0.000807	1.73	52.74	17.85	0.25
BellsB	M001	400.25	100Year-Existing	64.35	8.57	13.85	11.13	14.16	0.001305	2.44	26.42	7.39	0.34
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	64.35	0.83	2.06	3.39	7.67	0.103041	10.50	6.13	5.91	3.03
BellsB	M001	47.74	100Year-Existing	64.35	0.56	4.39	3.37	4.40	0.000203	0.95	160.16	135.57	0.16
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	64.35	0.70	4.38	3.38	4.40	0.000169	0.85	170.36	135.34	0.15
BellsB	M001	20.51	100Year-Existing	64.35	0.57	4.38		4.39	0.000200	0.91	166.49	145.04	0.16

Corner Brook 100yr Q+20%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	224.76	36.31	39.14	39.14	41.14	0.015866	6.92	43.54	22.58	1.35
CornerB	M004	2838.71	100Year-Existing	224.76	36.15	38.57	39.14	40.28	0.014939	6.15	48.72	38.86	1.28
CornerB	M004	2796.61	100Year-Existing	224.76	35.35	38.80	37.87	39.40	0.003952	3.91	84.32	44.37	0.70
CornerB	M004	2769.85	100Year-Existing	224.76	34.80	37.96	37.96	38.95	0.013474	6.94	64.45	35.80	1.27
CornerB	TR001	206.04	100Year-Existing	38.52	43.81	44.86	45.21	46.00	0.042044	5.68	10.03	14.69	1.85
CornerB	TR001	156.04	100Year-Existing	38.52	41.63	42.77	43.14	43.93	0.040472	5.04	9.78	19.23	1.76
CornerB	TR001	106.04	100Year-Existing	38.52	39.17	39.94	40.38	41.45	0.062688	5.82	8.00	13.50	2.17
CornerB	TR001	56.04	100Year-Existing	38.52	37.27	38.20	38.61	39.15	0.032729	4.59	9.91	13.93	1.60
CornerB	TR001	36.04	100Year-Existing	38.52	35.50	38.32	37.89	38.33	0.000131	0.59	125.75	82.24	0.12
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	38.52	35.18	37.50	37.50	37.58	0.001431	1.63	51.90	81.46	0.37
CornerB	M003	2689.92	100Year-Existing	246.24	33.55	35.80	36.46	37.79	0.031810	8.13	53.01	45.78	1.82
CornerB	M003	2645.73	100Year-Existing	246.24	32.87	36.73	35.19	36.91	0.001274	2.47	165.36	72.32	0.41
CornerB	M003	2602.09	100Year-Existing	246.24	32.20	36.74		36.85	0.000636	1.91	203.76	68.54	0.29
CornerB	M003	2557.73	100Year-Existing	246.24	31.34	36.64		36.82	0.000695	2.21	166.48	48.80	0.31
CornerB	M003	2537.73	100Year-Existing	246.24	30.77	36.54	34.88	36.79	0.001085	3.00	166.13	64.66	0.40
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	246.24	30.35	34.35	34.35	35.58	0.005568	5.07	59.02	27.52	0.82
CornerB	M003	2507.21	100Year-Existing	246.24	30.75	33.28	33.77	35.18	0.019249	6.98	47.23	24.25	1.46
CornerB	M003	2459.31	100Year-Existing	246.24	30.13	31.95	32.59	34.02	0.030559	7.16	44.86	32.24	1.74
CornerB	M003	2411.41	100Year-Existing	246.24	29.27	31.73	31.96	32.76	0.014213	5.77	69.86	48.89	1.24
CornerB	M003	2363.51	100Year-Existing	246.24	28.77	30.89	31.14	32.04	0.015736	5.46	61.44	42.75	1.27
CornerB	M003	2315.61	100Year-Existing	246.24	27.93	30.76	30.40	31.50	0.005188	3.97	72.08	33.57	0.77
CornerB	M003	2267.71	100Year-Existing	246.72	26.30	30.82		31.28	0.001772	3.19	97.65	30.79	0.49
CornerB	M003	2264.01	100Year-Existing	246.72	26.10	30.83	29.75	31.25	0.003885	2.89	88.77	31.52	0.52
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	246.72	26.10	30.75		31.19	0.004237	2.97	86.31	31.24	0.54
CornerB	M003	2260.98	100Year-Existing	246.72	25.80	30.79		31.15	0.001308	2.89	110.34	40.84	0.43
CornerB	M003	2240.88	100Year-Existing	246.72	27.01	30.77		31.11	0.001851	2.78	111.43	43.25	0.48
CornerB	M003	2212.25	100Year-Existing	246.72	26.87	30.68		31.05	0.001965	2.97	109.40	40.49	0.50
CornerB	M003	2183.63	100Year-Existing	246.72	25.56	30.27		30.95	0.003441	4.36	93.09	41.46	0.67
CornerB	M003	2163.63	100Year-Existing	246.72	25.35	30.21	28.78	30.89	0.002343	3.77	70.85	89.51	0.56
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	246.72	24.87	28.27	28.67	30.27	0.013411	6.86	43.52	23.91	1.26
CornerB	M003	2131.66	100Year-Existing	246.72	24.57	27.37	28.17	29.92	0.023641	7.40	39.24	23.09	1.58
CornerB	M003	2119.46	100Year-Existing	246.72	24.12	26.44	27.39	29.52	0.035615	8.22	35.75	23.38	1.90
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	246.72	24.04	26.75	27.47	29.11	0.021292	7.04	40.35	23.52	1.51
CornerB	M003	2080.62	100Year-Existing	246.72	23.73	25.84	26.69	28.27	0.027849	7.21	39.84	27.83	1.68
CornerB	M003	2068.44	100Year-Existing	246.72	23.76	25.75	26.36	27.84	0.026129	6.80	43.13	32.23	1.62
CornerB	M003	2022.25	100Year-Existing	246.72	22.74	25.11	25.57	26.79	0.016676	6.18	50.16	31.06	1.34
CornerB	M003	1991.14	100Year-Existing	246.72	22.18	25.00	25.18	26.28	0.009931	5.47	58.87	31.20	1.07
CornerB	M003	1985.82	100Year-Existing	246.72	21.97	24.66	24.99	26.19	0.012911	5.99	53.85	30.30	1.21
CornerB	M003	1975.95	100Year-Existing	246.72	21.78	24.19	24.66	26.00	0.018301	6.66	49.46	29.69	1.41
CornerB	M003	1929.72	100Year-Existing	246.72	20.08	22.73	23.40	25.05	0.021133	7.15	41.14	21.94	1.51
CornerB	M003	1883.49	100Year-Existing	246.72	19.23	22.36	22.71	24.17	0.012217	6.45	48.30	21.05	1.20
CornerB	TR002	21.04	100Year-Existing	14.64	22.27	23.03	23.67	26.04	0.150164	8.46	2.33	4.98	3.25
CornerB	TR002	18.08	100Year-Existing	14.64	21.40	21.88	22.46	25.33	0.362538	9.41	2.09	6.41	4.71
CornerB	M002	1826.39	100Year-Existing	249.12	16.92	18.72	19.70	22.67	0.117375	9.65	32.29	31.14	2.57
CornerB	M002	1790.92	100Year-Existing	249.12	15.49	19.34	19.39	20.93	0.014216	6.21	51.62	18.61	1.04
CornerB	M002	1773.95	100Year-Existing	249.12	14.72	19.68	18.23	20.13	0.003084	3.34	98.24	30.46	0.50
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	249.12	14.87	19.71	17.91	20.00	0.001662	2.82	123.39	38.31	0.42
CornerB	M002	1733.13	100Year-Existing	249.12	15.23	19.78		19.87	0.000465	1.46	221.71	82.48	0.22
CornerB	M002	1717.41	100Year-Existing	249.12	15.12	19.78		19.86	0.000387	1.35	248.27	90.58	0.20
CornerB	M002	1691.96	100Year-Existing	249.12	14.62	19.78		19.84	0.000316	1.26	283.17	110.11	0.18
CornerB	M002	1654.15	100Year-Existing	249.12	13.87	19.79		19.83	0.000154	0.92	369.05	138.52	0.13
CornerB	M002	1613.91	100Year-Existing	249.12	13.08	19.79		19.82	0.000077	0.78	427.48	154.44	0.11
CornerB	M002	1567.16	100Year-Existing	249.12	12.15	19.81		19.81	0.000014	0.35	826.33	211.88	0.05
CornerB	M002	1551.89	100Year-Existing	249.12	11.85	19.81		19.81	0.000005	0.22	1238.18	274.70	0.03
CornerB	M002	1539.91	100Year-Existing	247.68	11.62	19.81		19.81	0.000003	0.16	1653.48	307.83	0.02
CornerB	M002	1526.59	100Year-Existing	247.68	11.36	19.81		19.81	0.000003	0.16	1683.51	312.93	0.02
CornerB	M002	1517.99	100Year-Existing	247.68	11.18	19.81		19.81	0.000004	0.19	1425.00	269.40	0.02
CornerB	M002	1505.64	100Year-Existing	247.68	10.94	19.81		19.81	0.000006	0.25	1060.61	199.42	0.03
CornerB	M002	1490.63	100Year-Existing	247.68	10.64	19.80		19.81	0.000013	0.37	733.50	142.22	0.05
CornerB	M002	1463.65	100Year-Existing	247.68	10.11	19.78		19.81	0.000057	0.77	405.74	92.29	0.09
CornerB	M002	1415.93	100Year-Existing	247.68	9.17	19.78		19.81	0.000051	0.75	379.00	76.77	0.09
CornerB	M002	1386.11	100Year-Existing	247.68	8.58	19.77		19.80	0.000074	0.89	349.30	78.91	0.10
CornerB	M002	1363.91	100Year-Existing	247.68	8.14	19.74		19.80	0.000124	1.14	278.18	58.13	0.13
CornerB	M002	1356.61	100Year-Existing	247.68	8.00	19.74		19.80	0.000326	1.40	293.41	73.58	0.14
CornerB	M002	1354.61	100Year-Existing	247.68	15.35	19.11		19.74	0.005384	4.45	91.28	56.32	0.73
CornerB	M002	1354.11	100Year-Existing	247.68	15.35	19.05	19.05	19.74	0.005921	4.61	87.85	55.71	0.77
CornerB	M002	1352.01	100Year-Existing	247.68	8.00	9.97	11.72	18.88	0.327254	0.37	18.74	9.51	0.12
CornerB	M002	1347.51	100Year-Existing	247.68	7.72	9.81	11.32	16.43	0.200804	11.40	21.79	17.61	3.23
CornerB	M002	1336.58	100Year-Existing	247.68	7.69	9.49	10.72	14.18	0.122069	9.66	26.56	21.66	2.60
CornerB	M002	1326.83	100Year-Existing	247.68	7.68	9.40	10.33	12.71	0.095056	8.36	32.47	27.26	2.30
CornerB	M002	1317.22	100Year-Existing	247.68	7.66	11.11	10.45	11.67	0.005966	3.49	80.70	33.09	0.65
CornerB	M002	1315.18	100Year-Existing	247.68	7.28	10.55	10.55	11.60	0.015373	4.95	60.35	30.77	1.01
CornerB	M002	1313.58	100Year-Existing	247.68	6.48	9.73	10.20	11.49	0.028399	6.26	46.56	26.74	1.34
CornerB	M002	1312.39	100Year-Existing	247.68	6.23	9.27	9.92	11.41	0.035762	6.81	41.79	25.13	1.49
CornerB	M002	1311.16	100Year-Existing	247.68	5.92	8.81	9.57	11.32	0.047321	7.20	37.30	23.83	1.68
CornerB	M002	1309.11	100Year-Existing	247.68	5.91	8.40	9.25	11.19	0.053036	7.55	35.29	22.99	1.78
CornerB	M002	1305.35	100Year-Existing	247.68	5.37	7.68	8.62	10.91	0.068292	8.43	34.45	25.36	2.02
CornerB	M002	1300.06	100Year-Existing	247.68	5.06	7.17	8.15	10.52	0.079731	8.24	31.94	24.07	2.13
CornerB	M002	1296.49	100Year-Existing	247.68	4.91	7.44	8.25	10.11	0.043550	7.48	36.94	22.02	1.66
CornerB	M002	1289.64	100Year-Existing	247.68	4.71	7.40	8.10	9.75	0.036597	7.06	39.37	21.62	1.53
CornerB	M002	1284.12	100Year-Existing	247.68	4.41	7.59	8.05	9.45	0.022797	6.40	45.44	22.04	1.25

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	247.68	4.23	7.17	7.79	9.31	0.027266	6.76	42.27	22.15	1.36
CornerB	M002	1258.94	100Year-Existing	247.68	3.53	5.60	6.47	8.42	0.064015	7.90	37.38	30.64	1.95
CornerB	M002	1246.98	100Year-Existing	247.68	3.37	5.19	6.12	7.70	0.042449	7.15	37.54	27.28	1.77
CornerB	M002	1233.83	100Year-Existing	247.68	3.10	4.82	5.58	6.98	0.051103	6.85	41.97	39.41	1.89
CornerB	M002	1215.66	100Year-Existing	247.68	2.70	4.38	4.96	6.05	0.032632	5.92	49.84	52.72	1.54
CornerB	M002	1206.83	100Year-Existing	247.68	2.54	5.20	4.83	5.57	0.004976	3.06	110.24	69.56	0.65
CornerB	M002	1194.69	100Year-Existing	247.68	2.39	5.17		5.51	0.004381	2.97	115.43	67.04	0.61
CornerB	M002	1185.06	100Year-Existing	247.68	2.26	5.16		5.46	0.003499	2.81	124.15	69.03	0.55
CornerB	M002	1142.41	100Year-Existing	247.68	1.70	5.08		5.32	0.002756	2.58	144.83	85.37	0.49
CornerB	M002	1137.55	100Year-Existing	247.68	1.60	4.84	4.65	5.26	0.005639	3.23	118.43	113.03	0.68
CornerB	M002	1110.53	100Year-Existing	247.68	1.39	4.31	4.31	5.05	0.007805	4.14	87.09	89.61	0.82
CornerB	M002	1090.67	100Year-Existing	247.68	1.10	4.53	3.54	4.71	0.002090	2.34	173.79	148.77	0.43
CornerB	M002	1070.69	100Year-Existing	247.68	0.80	4.55	3.22	4.67	0.001058	1.89	213.56	124.98	0.32
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	247.68	0.76	4.53	3.14	4.63	0.000966	1.83	211.17	118.11	0.31
CornerB	M002	1047.01	100Year-Existing	247.68	0.75	4.50		4.61	0.000904	1.98	201.78	94.02	0.34
CornerB	M002	1004.03	100Year-Existing	247.68	0.77	4.46		4.57	0.000840	1.91	237.16	143.10	0.33
CornerB	M002	959.21	100Year-Existing	247.68	0.70	4.48		4.53	0.000520	1.50	376.78	289.41	0.26
CornerB	M002	915.75	100Year-Existing	246.60	0.68	4.47		4.50	0.000375	1.24	453.01	297.76	0.21
CornerB	M002	869.66	100Year-Existing	246.60	0.69	4.46		4.48	0.000245	1.03	472.37	226.98	0.18
CornerB	M002	828.33	100Year-Existing	239.64	0.77	4.45		4.47	0.000259	1.03	459.75	229.88	0.18
CornerB	M002	784.55	100Year-Existing	239.64	0.82	4.45		4.47	0.000172	0.84	481.90	235.64	0.15
CornerB	M002	739.85	100Year-Existing	239.64	0.82	4.44		4.46	0.000168	0.80	501.75	278.76	0.14
CornerB	M002	696.36	100Year-Existing	239.64	0.64	4.42		4.45	0.000228	0.99	442.42	268.42	0.17
CornerB	M001	659.37	100Year-Existing	251.88	0.75	4.41		4.44	0.000257	1.00	413.07	239.44	0.18
CornerB	M001	643.93	100Year-Existing	251.88	0.74	4.39	3.28	4.43	0.000383	1.23	351.51	224.66	0.22
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	251.88	0.83	4.10	3.36	4.19	0.000889	1.78	249.17	186.98	0.33
CornerB	M001	608.52	100Year-Existing	251.88	0.76	4.08		4.17	0.001101	1.90	236.36	167.29	0.36
CornerB	M001	570.12	100Year-Existing	251.88	0.61	4.09		4.13	0.000581	1.46	310.63	187.75	0.26
CornerB	M001	535.83	100Year-Existing	251.88	0.56	4.06	2.28	4.11	0.000368	1.26	316.28	223.40	0.22
CornerB	M001	520.22	100Year-Existing	251.88	0.55	4.07	2.68	4.10	0.000281	1.10	366.68	294.15	0.19
CornerB	M001	472.07	100Year-Existing	251.88	0.58	3.99	3.23	4.08	0.000684	1.65	270.43	210.89	0.29
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	251.88	0.44	3.61	2.67	3.85	0.001702	2.52	196.24	249.12	0.45
CornerB	M001	425.41	100Year-Existing	251.88	0.48	3.65		3.76	0.001013	1.90	301.97	316.98	0.35
CornerB	M001	401.99	100Year-Existing	251.88	0.74	3.67		3.72	0.000581	1.40	403.23	350.93	0.26
CornerB	M001	381.26	100Year-Existing	251.88	0.79	3.61	3.28	3.70	0.001168	1.89	318.81	355.04	0.37
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	251.88	0.79	3.51	3.29	3.63	0.001527	2.14	297.97	373.22	0.42
CornerB	M001	352.89	100Year-Existing	251.88	0.68	3.27	2.71	3.54	0.002412	2.59	195.43	380.20	0.52
CornerB	M001	324.13	100Year-Existing	251.88	0.67	3.22		3.46	0.002279	2.50	187.44	274.13	0.51
CornerB	M001	292.92	100Year-Existing	251.88	0.65	3.23		3.37	0.001529	2.03	255.26	359.22	0.41
CornerB	M001	274.62	100Year-Existing	251.88	0.96	3.23	2.90	3.32	0.002448	2.30	280.43	372.55	0.51
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	251.88	1.01	3.19	2.84	3.25	0.002278	2.19	303.66	382.96	0.49
CornerB	M001	245.99	100Year-Existing	251.88	0.64	3.14		3.21	0.001593	1.94	337.88	444.16	0.41
CornerB	M001	210.89	100Year-Existing	251.88	0.68	3.08		3.16	0.001730	1.89	322.74	412.38	0.42
CornerB	M001	174.77	100Year-Existing	251.88	0.69	3.04		3.09	0.001440	1.56	346.60	464.22	0.38
CornerB	M001	155.66	100Year-Existing	251.88	0.64	3.03	2.62	3.06	0.001598	1.49	395.45	588.06	0.38
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	251.88	0.55	3.02	2.56	3.05	0.001293	1.34	401.68	533.86	0.35
CornerB	M001	129.05	100Year-Existing	251.88	0.40	2.97		3.01	0.001033	1.43	413.51	550.25	0.33
CornerB	M001	80.73	100Year-Existing	251.88	0.20	2.89		2.96	0.001133	1.66	344.35	396.50	0.35
CornerB	M001	23.81	100Year-Existing	251.88	0.32	2.80	2.29	2.89	0.001398	1.69	308.45	431.13	0.38
BellsB	TR001	178.13	100Year-Existing	21.24	92.91	96.26	94.77	96.32	0.000607	1.35	25.22	15.31	0.25
BellsB	TR001	159.86	100Year-Existing	21.24	92.15	96.28		96.30	0.000186	0.91	43.45	21.78	0.15
BellsB	TR001	139.54	100Year-Existing	21.24	91.13	96.12	93.14	96.28	0.000717	1.78	11.95	35.29	0.25
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	21.24	89.49	91.65	91.65	92.67	0.011265	4.53	4.87	7.27	1.00
BellsB	TR001	88.17	100Year-Existing	21.24	88.47	89.54	90.20	92.13	0.102238	7.69	3.49	5.73	2.69
BellsB	TR001	84.12	100Year-Existing	21.24	87.66	88.52	89.15	91.49	0.176578	7.84	3.05	7.11	3.36
BellsB	TR001	79.14	100Year-Existing	21.24	86.53	87.44	88.12	90.65	0.142543	8.36	3.14	6.69	3.17
BellsB	TR001	72.74	100Year-Existing	21.24	85.76	86.52	87.11	89.55	0.182595	7.91	3.03	7.54	3.41
BellsB	TR001	67.75	100Year-Existing	21.24	85.04	85.68	86.23	88.37	0.214823	7.71	3.23	8.18	3.60
BellsB	TR001	64.04	100Year-Existing	21.24	84.47	85.30	85.87	87.63	0.134030	6.77	3.18	6.45	2.94
BellsB	TR001	60.69	100Year-Existing	21.24	84.14	85.23	85.73	87.13	0.092014	6.33	3.82	7.56	2.49
BellsB	TR001	56.76	100Year-Existing	21.24	83.97	85.03	85.50	86.73	0.075483	5.84	3.93	7.92	2.27
BellsB	TR001	50.93	100Year-Existing	21.24	83.68	84.80	85.20	86.21	0.073194	5.44	4.45	9.67	2.21
BellsB	TR001	43.86	100Year-Existing	21.24	83.34	84.33	84.70	85.66	0.076729	5.27	4.57	10.24	2.24
BellsB	TR001	37.01	100Year-Existing	21.24	82.98	84.02	84.36	85.18	0.053045	5.09	5.11	9.47	1.93
BellsB	TR001	12.14	100Year-Existing	21.24	82.15	83.15	83.39	83.96	0.038362	4.27	5.98	10.43	1.64
BellsB	M002	5166.11	100Year-Existing	17.52	190.79	192.03	191.90	192.20	0.009201	2.56	12.77	19.04	0.77
BellsB	M002	5149.23	100Year-Existing	17.52	190.57	191.69	191.69	191.99	0.014974	2.95	9.33	15.56	0.96
BellsB	M002	5117.45	100Year-Existing	17.52	189.91	191.63	190.86	191.66	0.001393	1.27	26.49	25.03	0.32
BellsB	M002	5090.85	100Year-Existing	17.52	189.62	191.17	191.17	191.54	0.013453	3.44	9.16	12.83	0.94
BellsB	M002	5067.47	100Year-Existing	17.52	189.18	189.83	190.14	190.84	0.118475	5.99	4.61	9.56	2.50
BellsB	M002	5017.78	100Year-Existing	17.52	188.12	189.38	189.38	189.70	0.016558	3.43	9.02	12.71	1.03
BellsB	M002	4967.57	100Year-Existing	17.52	186.55	187.92	188.08	188.59	0.029761	4.42	6.06	7.95	1.32
BellsB	M002	4917.46	100Year-Existing	17.52	185.69	187.54	186.62	187.57	0.000879	1.08	30.83	31.69	0.26
BellsB	M002	4873.31	100Year-Existing	17.52	184.61	187.51		187.54	0.000768	1.25	37.65	47.54	0.25
BellsB	M002	4853.42	100Year-Existing	17.52	183.55	187.29	185.48	187.50	0.001344	2.05	8.57	33.78	0.35
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	17.52	181.53	183.00	183.43	184.55	0.034986	5.51	3.18	6.36	1.53
BellsB	M002	4785.76	100Year-Existing	17.52	181.35	182.37	182.71	183.45	0.056054	5.19	4.55	7.79	1.80
BellsB	M002	4756.65	100Year-Existing	17.52	180.12	181.11	181.32	181.83	0.048217	4.83	6.13	13.72	1.67
BellsB	M002	4727.54	100Year-Existing	17.52	179.02	179.87	180.06	180.50	0.039616	4.37	6.74	16.61	1.61

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	17.52	177.96	178.39	178.62	179.22	0.121817	4.94	5.09	16.94	2.56
BellsB	M002	4702.24	100Year-Existing	17.52	177.65	178.57	178.60	178.86	0.018566	3.03	9.09	17.87	1.11
BellsB	M002	4682.48	100Year-Existing	17.52	176.63	177.43	177.66	178.21	0.050491	4.56	5.82	15.05	1.79
BellsB	M002	4658.79	100Year-Existing	17.52	175.50	176.85	177.03	177.55	0.017912	4.12	6.07	8.13	1.17
BellsB	M002	4633.41	100Year-Existing	17.52	174.51	175.27	175.60	176.62	0.106908	6.65	4.69	13.44	2.60
BellsB	M002	4609.61	100Year-Existing	17.52	173.50	174.95	174.61	175.11	0.004804	2.30	12.25	13.09	0.63
BellsB	M002	4583.99	100Year-Existing	17.52	172.77	174.41	174.41	174.90	0.010897	3.39	7.09	8.44	0.91
BellsB	M002	4534.72	100Year-Existing	17.52	170.00	171.02	171.54	173.39	0.117449	8.58	3.48	6.79	2.84
BellsB	M002	4485.52	100Year-Existing	17.52	168.20	168.89	169.07	169.46	0.056834	4.57	6.78	18.77	1.87
BellsB	M002	4436.28	100Year-Existing	31.80	165.85	167.22	167.43	167.89	0.024445	4.94	13.31	29.00	1.39
BellsB	M002	4387.04	100Year-Existing	31.80	164.06	165.43	165.75	166.41	0.035036	5.89	9.79	14.01	1.66
BellsB	M002	4337.81	100Year-Existing	31.80	162.60	163.85	164.09	164.58	0.036571	5.51	12.34	25.49	1.64
BellsB	M002	4288.56	100Year-Existing	31.80	161.30	162.58	162.71	163.10	0.027163	4.71	12.94	20.65	1.40
BellsB	M002	4239.33	100Year-Existing	31.80	159.65	160.81	161.01	161.68	0.036132	5.21	10.04	16.23	1.64
BellsB	M002	4190.09	100Year-Existing	31.80	158.43	159.71	159.87	160.27	0.021977	4.36	12.71	19.54	1.30
BellsB	M002	4140.85	100Year-Existing	31.80	157.30	158.04	158.17	158.54	0.054271	4.87	11.51	23.18	1.88
BellsB	M002	4091.61	100Year-Existing	31.80	155.30	156.23	156.30	156.64	0.030779	4.35	13.07	21.43	1.48
BellsB	M002	4042.37	100Year-Existing	31.80	153.74	154.80	154.90	155.33	0.022609	4.01	11.79	15.79	1.29
BellsB	M002	3993.13	100Year-Existing	31.80	152.65	153.54	153.67	154.01	0.037825	4.36	12.55	24.10	1.56
BellsB	M002	3943.89	100Year-Existing	31.80	151.36	152.44	152.45	152.80	0.019806	3.76	14.51	21.57	1.21
BellsB	M002	3894.65	100Year-Existing	31.80	149.52	151.18	151.39	151.87	0.021546	4.61	12.18	19.05	1.27
BellsB	M002	3869.08	100Year-Existing	31.80	148.87	150.31	150.50	151.23	0.028099	5.08	9.64	13.06	1.46
BellsB	M002	3845.41	100Year-Existing	31.80	148.37	150.05	149.97	150.34	0.009576	3.20	17.13	20.29	0.83
BellsB	M002	3822.22	100Year-Existing	31.80	147.71	150.19		150.23	0.000790	1.26	40.14	21.90	0.26
BellsB	M002	3796.17	100Year-Existing	31.80	146.89	150.13		150.20	0.000924	1.56	34.14	18.16	0.28
BellsB	M002	3765.39	100Year-Existing	31.80	146.40	150.11		150.18	0.000702	1.43	34.27	16.15	0.25
BellsB	M002	3746.94	100Year-Existing	31.80	145.76	150.15		150.16	0.000095	0.63	81.53	28.96	0.10
BellsB	M002	3724.94	100Year-Existing	31.80	145.32	150.12		150.15	0.000250	1.03	48.91	18.10	0.16
BellsB	M002	3697.71	100Year-Existing	31.80	145.05	150.12		150.14	0.000138	0.81	58.31	19.37	0.12
BellsB	M002	3677.71	100Year-Existing	31.80	143.44	150.13	146.22	150.14	0.000040	0.52	90.00	24.77	0.07
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	31.80	142.47	145.17	145.17	146.48	0.010046	5.07	6.27	10.76	1.00
BellsB	M002	3623.19	100Year-Existing	31.80	142.10	143.73	144.35	145.83	0.060929	7.27	5.85	7.93	2.05
BellsB	M002	3573.45	100Year-Existing	31.80	140.89	142.53	142.86	143.63	0.026895	5.18	9.66	24.91	1.43
BellsB	M002	3520.99	100Year-Existing	31.80	139.30	141.06	141.38	142.19	0.026744	5.38	10.16	28.24	1.41
BellsB	M002	3473.83	100Year-Existing	31.80	137.98	140.01	140.37	140.91	0.022531	5.29	10.67	18.69	1.28
BellsB	M002	3424.29	100Year-Existing	31.80	136.49	137.94	138.42	139.41	0.033612	5.63	6.54	7.13	1.59
BellsB	M002	3400.36	100Year-Existing	31.80	135.96	138.92	137.38	138.98	0.000576	1.26	44.83	67.58	0.24
BellsB	M002	3386.31	100Year-Existing	31.80	135.48	138.91	138.10	138.96	0.000456	1.31	63.11	93.06	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	31.80	135.22	138.94	137.65	138.95	0.000053	0.47	133.50	76.91	0.08
BellsB	M002	3329.08	100Year-Existing	40.08	134.96	138.94		138.95	0.000071	0.56	136.80	59.46	0.09
BellsB	M002	3303.55	100Year-Existing	40.08	133.82	138.89	136.97	138.94	0.000330	1.37	64.41	52.26	0.20
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	40.08	131.39	134.94	134.94	136.46	0.009970	5.46	7.34	22.38	1.00
BellsB	M002	3203.83	100Year-Existing	40.08	131.13	132.47	133.10	135.55	0.124677	8.77	6.76	14.21	2.87
BellsB	M002	3176.31	100Year-Existing	40.08	130.02	131.57	132.06	133.15	0.050569	6.72	9.53	14.25	1.91
BellsB	M002	3157.63	100Year-Existing	40.08	129.89	131.34	131.56	132.11	0.040192	5.45	12.67	19.26	1.61
BellsB	M002	3130.11	100Year-Existing	40.08	128.68	130.89	131.04	131.56	0.010925	4.18	15.52	20.34	0.96
BellsB	M002	3083.82	100Year-Existing	40.08	127.94	129.59	129.93	130.72	0.031436	5.73	12.85	24.53	1.56
BellsB	M002	3037.68	100Year-Existing	40.08	127.11	128.17	128.41	128.91	0.042892	5.41	13.84	26.88	1.76
BellsB	M002	2991.47	100Year-Existing	40.08	126.28	128.35	127.42	128.38	0.000699	1.12	57.56	47.42	0.25
BellsB	M002	2945.26	100Year-Existing	40.08	125.32	128.04	128.04	128.29	0.004437	2.53	27.37	59.00	0.51
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	40.08	125.12	127.98	127.98	128.25	0.004247	2.63	27.54	67.35	0.50
BellsB	M002	2918.61	100Year-Existing	40.08	124.99	126.83	127.24	127.87	0.023691	5.45	12.88	28.31	1.38
BellsB	M002	2899.46	100Year-Existing	40.08	125.25	126.60	126.85	127.37	0.017108	4.27	15.58	62.42	1.19
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	40.08	124.44	125.95	125.95	126.28	0.006743	2.87	18.45	21.12	0.79
BellsB	M002	2861.32	100Year-Existing	40.08	123.64	124.91	125.20	125.84	0.032830	5.38	11.68	19.91	1.65
BellsB	M002	2823.69	100Year-Existing	40.08	123.23	124.41	124.48	124.80	0.024861	3.99	18.35	33.69	1.25
BellsB	M002	2777.91	100Year-Existing	40.08	122.77	124.12	123.78	124.17	0.003383	1.66	46.11	62.21	0.47
BellsB	M002	2727.91	100Year-Existing	40.08	122.21	123.82	123.82	124.01	0.008095	2.80	33.31	68.16	0.75
BellsB	M002	2677.99	100Year-Existing	40.08	121.13	122.93	123.13	123.46	0.013823	3.79	16.71	40.00	0.98
BellsB	M002	2628.09	100Year-Existing	40.08	120.69	122.30	122.38	122.73	0.017308	4.12	20.75	35.74	1.09
BellsB	M002	2578.18	100Year-Existing	40.08	119.94	121.83	121.66	122.01	0.006735	2.80	28.20	35.99	0.69
BellsB	M002	2528.27	100Year-Existing	40.08	119.10	121.05	121.05	121.55	0.013831	4.03	16.76	17.43	0.99
BellsB	M002	2518.19	100Year-Existing	40.08	118.62	120.82	120.62	121.13	0.007856	3.30	21.79	21.79	0.76
BellsB	M002	2496.15	100Year-Existing	40.08	118.53	120.86		120.98	0.003014	2.18	34.89	31.02	0.48
BellsB	M002	2478.37	100Year-Existing	40.08	117.97	120.49		120.88	0.006993	3.44	19.76	16.77	0.73
BellsB	M002	2450.61	100Year-Existing	40.08	117.55	119.97	119.97	120.60	0.011733	4.40	15.50	13.15	0.95
BellsB	M002	2428.46	100Year-Existing	40.08	117.19	118.59	119.03	120.01	0.060181	6.24	10.00	16.97	1.90
BellsB	M002	2408.52	100Year-Existing	40.08	116.63	118.04	118.32	118.95	0.048836	5.64	12.45	21.17	1.71
BellsB	M002	2378.55	100Year-Existing	40.08	116.15	117.90	117.92	118.27	0.015591	4.05	20.93	30.83	1.02
BellsB	M002	2367.92	100Year-Existing	40.08	115.61	116.87	117.19	117.91	0.051139	5.94	11.68	18.90	1.80
BellsB	M002	2352.81	100Year-Existing	40.08	115.07	116.45	116.68	117.25	0.035427	5.23	12.79	17.40	1.52
BellsB	M002	2328.64	100Year-Existing	40.08	113.99	116.02	116.17	116.64	0.016366	4.51	16.47	21.04	1.08
BellsB	M002	2307.61	100Year-Existing	40.08	112.94	116.24	115.58	116.29	0.000806	1.30	57.14	49.18	0.25
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	40.08	111.75	113.71	114.18	115.45	0.039466	5.85	6.88	6.89	1.44
BellsB	M002	2275.77	100Year-Existing	43.08	112.06	114.11	114.13	114.52	0.012416	4.05	20.55	27.39	0.95
BellsB	M002	2232.72	100Year-Existing	43.08	110.58	112.58	112.92	113.68	0.025567	5.52	12.45	14.42	1.33
BellsB	M002	2200.99	100Year-Existing	43.08	109.61	112.21	111.85	112.54	0.006072	3.25	21.47	16.38	0.68
BellsB	M002	2173.21	100Year-Existing	43.08	108.98	111.58	111.58	112.28	0.011089	4.29	14.76	11.15	0.89
BellsB	M002	2133.27	100Year-Existing	43.08	107.79	109.32	109.90	111.29	0.062286	7.30	8.86	12.02	2.03
BellsB	M002	2117.78	100Year-Existing	43.08	107.46	109.18	109.64	110.42	0.030484	5.73	11.23	13.06	1.47
BellsB	M002	2103.01	100Year-Existing	43.08	106.45	108.08	108.58	109.74	0.056746	6.89	9.10	10.52	1.89

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	43.08	105.17	106.92	107.48	108.73	0.053633	7.30	8.79	8.97	1.89
BellsB	M002	2068.57	100Year-Existing	43.08	104.36	105.53	106.10	107.61	0.094098	7.83	8.36	12.62	2.44
BellsB	M002	2059.88	100Year-Existing	43.08	103.56	105.15	105.68	106.98	0.050408	6.71	8.98	11.11	1.85
BellsB	M002	2054.52	100Year-Existing	43.08	103.13	104.68	105.26	106.65	0.066104	7.40	8.32	8.87	2.07
BellsB	M002	2040.56	100Year-Existing	43.08	102.39	104.14	104.70	105.95	0.036195	6.63	8.77	7.09	1.64
BellsB	M002	2033.27	100Year-Existing	43.08	102.08	104.68	104.73	105.52	0.014391	4.66	13.04	9.23	1.01
BellsB	M002	2025.44	100Year-Existing	43.08	101.58	103.26	103.88	105.22	0.046194	6.75	8.33	8.71	1.77
BellsB	M002	2021.67	100Year-Existing	43.08	101.43	103.56	103.97	104.91	0.028659	5.64	10.07	9.62	1.38
BellsB	M002	2014.53	100Year-Existing	43.08	99.96	101.72	102.51	104.44	0.089131	7.39	6.23	7.27	2.25
BellsB	M002	2010.46	100Year-Existing	43.08	99.08	100.41	101.31	103.93	0.127504	9.36	6.07	7.25	2.83
BellsB	M002	2007.37	100Year-Existing	43.08	98.52	100.18	101.09	103.53	0.103955	8.30	5.71	5.92	2.44
BellsB	M002	1996.87	100Year-Existing	43.08	97.97	99.26	100.12	102.40	0.098659	8.72	6.46	7.06	2.56
BellsB	M002	1982.97	100Year-Existing	43.08	97.73	99.09	99.67	100.97	0.059872	7.13	8.36	8.38	2.02
BellsB	M002	1966.25	100Year-Existing	43.08	96.75	98.95	99.29	100.14	0.025671	5.53	10.87	9.37	1.31
BellsB	M002	1951.81	100Year-Existing	43.08	96.56	99.14	98.42	99.34	0.003722	2.52	24.95	14.87	0.53
BellsB	M002	1939.94	100Year-Existing	43.08	96.29	98.61	98.61	99.22	0.012033	3.95	15.30	13.01	0.92
BellsB	M002	1918.81	100Year-Existing	43.08	95.86	98.42	98.01	98.79	0.006496	3.39	19.65	12.86	0.71
BellsB	M002	1910.32	100Year-Existing	43.08	95.58	97.94	97.94	98.68	0.011597	4.18	13.76	10.32	0.93
BellsB	M002	1896.87	100Year-Existing	43.08	94.38	96.13	96.76	98.24	0.062462	7.31	8.09	8.81	1.96
BellsB	M002	1887.59	100Year-Existing	43.08	93.87	95.20	95.83	97.51	0.093453	7.67	7.65	10.51	2.39
BellsB	M002	1880.79	100Year-Existing	43.08	93.33	96.24	95.51	96.51	0.003546	2.76	22.97	12.53	0.54
BellsB	M002	1870.34	100Year-Existing	43.08	92.77	96.25		96.46	0.002065	2.49	26.76	10.66	0.44
BellsB	M002	1857.16	100Year-Existing	43.08	91.88	96.30		96.41	0.001026	1.85	36.06	14.83	0.30
BellsB	M002	1848.27	100Year-Existing	43.08	91.91	96.33		96.39	0.000499	1.40	47.39	17.15	0.22
BellsB	M002	1834.27	100Year-Existing	43.08	90.88	96.33		96.39	0.000317	1.24	54.38	17.75	0.17
BellsB	M002	1821.35	100Year-Existing	43.08	90.90	96.35		96.37	0.000184	1.02	72.46	21.07	0.14
BellsB	M002	1807.43	100Year-Existing	43.08	89.83	96.35		96.37	0.000113	0.85	85.25	21.94	0.11
BellsB	M002	1800.77	100Year-Existing	43.08	89.59	96.35		96.37	0.000109	0.85	90.52	23.05	0.11
BellsB	M002	1777.98	100Year-Existing	43.08	88.77	96.36		96.36	0.000037	0.55	138.48	30.47	0.06
BellsB	M002	1753.27	100Year-Existing	43.08	88.22	96.35		96.36	0.000043	0.60	132.23	30.80	0.07
BellsB	M002	1729.73	100Year-Existing	43.08	88.17	96.36		96.36	0.000024	0.48	162.50	32.86	0.05
BellsB	M002	1705.77	100Year-Existing	43.08	87.60	96.36		96.36	0.000010	0.38	257.80	65.46	0.04
BellsB	M002	1688.91	100Year-Existing	43.08	86.72	96.35	90.62	96.36	0.000014	0.42	215.94	69.59	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	43.08	83.97	87.85	87.85	89.79	0.007637	6.17	6.99	21.64	1.00
BellsB	M002	1605.59	100Year-Existing	43.08	81.49	82.33	83.11	88.17	0.479318	11.40	4.45	12.75	5.46
BellsB	M001	1582.05	100Year-Existing	68.64	80.41	81.72	82.82	86.67	0.125387	10.23	7.70	9.43	3.20
BellsB	M001	1563.67	100Year-Existing	68.64	79.96	81.42	82.25	84.48	0.065822	8.42	10.42	11.25	2.41
BellsB	M001	1544.26	100Year-Existing	68.64	79.04	81.10	81.81	83.37	0.032562	7.39	12.79	10.30	1.77
BellsB	M001	1529.04	100Year-Existing	68.64	78.24	79.73	80.59	82.69	0.051313	7.96	10.07	8.97	2.17
BellsB	M001	1515.66	100Year-Existing	68.64	77.30	79.43	80.21	81.94	0.044781	7.30	10.89	8.30	1.77
BellsB	M001	1502.43	100Year-Existing	68.64	69.64	70.38	71.45	79.70	0.784948	13.57	5.15	11.67	6.23
BellsB	M001	1483.47	100Year-Existing	68.64	68.89	70.01	70.65	72.53	0.132946	7.89	10.87	16.65	2.79
BellsB	M001	1454.75	100Year-Existing	68.64	68.03	69.69	69.91	70.60	0.026656	5.36	18.48	16.54	1.39
BellsB	M001	1406.62	100Year-Existing	68.64	66.49	69.01	69.01	69.84	0.013082	4.81	20.28	13.06	1.02
BellsB	M001	1358.51	100Year-Existing	68.64	65.17	66.89	67.44	68.69	0.043692	6.54	13.31	12.54	1.74
BellsB	M001	1310.38	100Year-Existing	68.64	63.80	65.54	65.94	66.79	0.030389	5.61	17.10	18.93	1.47
BellsB	M001	1286.33	100Year-Existing	68.64	62.81	64.36	64.78	65.82	0.054486	6.49	15.35	21.15	1.88
BellsB	M001	1262.25	100Year-Existing	68.64	62.09	64.48	64.60	65.05	0.014979	4.61	26.48	29.48	1.03
BellsB	M001	1251.58	100Year-Existing	68.64	61.46	63.61	64.00	64.79	0.027902	6.46	20.01	27.62	1.46
BellsB	M001	1234.76	100Year-Existing	68.64	60.57	62.25	62.75	64.06	0.065485	7.83	15.22	22.88	2.09
BellsB	M001	1214.13	100Year-Existing	68.64	59.55	62.06	61.29	62.26	0.003026	2.36	42.03	26.22	0.50
BellsB	M001	1200.58	100Year-Existing	68.64	58.90	61.41	61.41	62.14	0.011540	4.44	22.83	16.93	0.95
BellsB	M001	1182.98	100Year-Existing	68.64	58.59	61.05	61.18	61.90	0.014602	4.92	21.28	17.02	1.07
BellsB	M001	1166.01	100Year-Existing	68.64	58.39	59.97	60.43	61.43	0.043551	6.29	15.93	19.07	1.72
BellsB	M001	1153.18	100Year-Existing	68.64	57.70	59.63	59.98	60.82	0.039844	6.79	18.06	20.36	1.66
BellsB	M001	1141.88	100Year-Existing	68.64	56.72	58.31	58.90	60.23	0.053134	6.82	13.06	14.88	1.90
BellsB	M001	1128.34	100Year-Existing	68.64	56.53	57.92	58.36	59.33	0.056271	6.53	14.27	15.80	1.90
BellsB	M001	1117.89	100Year-Existing	68.64	55.58	57.09	57.59	58.69	0.060733	7.42	14.26	14.78	2.01
BellsB	M001	1096.03	100Year-Existing	68.64	54.61	56.49	56.83	57.68	0.029796	5.62	17.04	16.81	1.45
BellsB	M001	1077.81	100Year-Existing	68.64	54.24	55.56	56.02	57.02	0.049151	6.24	15.92	21.32	1.82
BellsB	M001	1069.76	100Year-Existing	68.64	53.70	54.61	55.09	56.33	0.110916	7.12	13.25	19.93	2.55
BellsB	M001	1064.67	100Year-Existing	68.64	53.19	54.10	54.57	55.75	0.112883	7.02	13.54	20.95	2.56
BellsB	M001	1051.64	100Year-Existing	68.64	51.97	53.20	53.68	54.81	0.065159	6.61	14.54	18.92	2.04
BellsB	M001	1032.36	100Year-Existing	68.64	50.97	52.68	52.98	53.75	0.035850	6.05	17.94	17.63	1.58
BellsB	M001	1021.64	100Year-Existing	68.64	50.03	51.65	52.13	53.26	0.046183	6.30	14.66	17.56	1.76
BellsB	M001	1014.11	100Year-Existing	68.64	49.46	51.30	51.84	52.93	0.040254	6.33	14.43	15.86	1.66
BellsB	M001	1006.24	100Year-Existing	68.64	49.15	50.64	51.19	52.55	0.053869	6.85	13.12	15.28	1.91
BellsB	M001	996.42	100Year-Existing	68.64	48.11	49.65	50.33	51.93	0.079287	8.04	12.11	14.96	2.26
BellsB	M001	987.27	100Year-Existing	68.64	47.17	48.96	49.66	51.32	0.056481	7.67	12.08	12.51	1.99
BellsB	M001	973.52	100Year-Existing	68.64	46.79	48.41	49.08	50.54	0.044341	6.92	12.46	15.14	1.89
BellsB	M001	951.43	100Year-Existing	68.64	45.77	47.46	48.02	49.54	0.053192	7.29	13.22	18.55	2.02
BellsB	M001	931.51	100Year-Existing	68.64	44.86	46.35	46.93	48.28	0.072295	8.37	12.54	15.25	2.33
BellsB	M001	925.41	100Year-Existing	68.64	44.69	46.50	46.90	47.78	0.033634	6.54	16.61	19.59	1.62
BellsB	M001	901.68	100Year-Existing	68.64	43.69	45.52	45.97	47.02	0.029035	6.31	14.44	12.31	1.58
BellsB	M001	877.27	100Year-Existing	68.64	43.18	45.15	45.45	46.33	0.021182	5.53	16.17	12.74	1.34
BellsB	M001	857.41	100Year-Existing	68.64	42.16	45.90	45.40	46.02	0.001051	1.93	62.56	44.93	0.33
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	70.20	38.54	42.09	41.72	43.25	0.007724	4.85	15.05	11.83	0.85
BellsB	M001	810.13	100Year-Existing	70.20	37.80	42.59	40.39	42.73	0.000865	1.81	56.57	37.00	0.27
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	70.20	34.33	37.03	37.93	39.96	0.045166	7.76	9.96	9.65	1.78
BellsB	M001	782.27	100Year-Existing	70.20	33.92	35.03	35.89	38.65	0.156914	9.10	8.88	11.49	3.06
BellsB	M001	772.73	100Year-Existing	70.20	30.94	32.79	33.70	37.05	0.170997	12.16	9.71	11.69	3.10
BellsB	M001	766.74	100Year-Existing	70.20	30.65	32.75	33.57	35.95	0.107252	10.84	11.17	11.71	2.55
BellsB	M001	760.32	100Year-Existing	70.20	30.34	32.22	33.04	35.33	0.080269	9.38	11.41	11.88	2.34
BellsB	M001	755.97	100Year-Existing	70.20	30.05	31.88	32.69	34.95	0.087586	8.86	10.92	11.77	2.37

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	70.20	29.30	31.23	32.09	34.39	0.086133	9.39	10.97	10.90	2.38
BellsB	M001	742.14	100Year-Existing	70.20	28.38	29.94	30.93	33.67	0.090847	9.34	9.71	9.86	2.52
BellsB	M001	736.73	100Year-Existing	70.20	28.24	29.27	30.17	33.05	0.153033	9.38	8.78	11.27	3.08
BellsB	M001	722.61	100Year-Existing	70.20	27.35	28.61	29.26	31.06	0.084768	7.72	11.36	14.95	2.33
BellsB	M001	712.04	100Year-Existing	70.20	26.27	28.10	28.77	30.29	0.053551	7.25	12.37	11.93	1.90
BellsB	M001	702.42	100Year-Existing	70.20	26.04	27.63	28.26	29.70	0.058544	7.19	12.63	13.05	1.99
BellsB	M001	691.68	100Year-Existing	70.20	25.03	26.90	27.57	29.08	0.054888	6.98	11.82	11.97	1.90
BellsB	M001	686.22	100Year-Existing	70.20	24.46	25.99	26.78	28.68	0.073723	7.45	10.36	11.19	2.18
BellsB	M001	675.26	100Year-Existing	70.20	24.08	25.54	26.23	27.82	0.061066	7.21	11.46	11.47	2.03
BellsB	M001	668.37	100Year-Existing	70.20	23.58	25.16	25.81	27.39	0.060587	7.21	11.82	12.74	2.01
BellsB	M001	655.45	100Year-Existing	70.20	23.02	24.45	25.07	26.57	0.060896	6.96	12.00	13.51	2.00
BellsB	M001	636.88	100Year-Existing	70.20	21.46	23.13	23.82	25.44	0.056122	7.05	11.42	11.27	1.95
BellsB	M001	619.06	100Year-Existing	70.20	20.82	22.66	23.21	24.44	0.040408	6.59	13.84	12.63	1.69
BellsB	M001	608.48	100Year-Existing	70.20	20.13	21.82	22.44	23.93	0.049850	6.86	12.55	14.19	1.85
BellsB	M001	592.31	100Year-Existing	70.20	18.95	20.68	21.36	23.00	0.067958	7.96	12.18	12.52	2.13
BellsB	M001	582.72	100Year-Existing	70.20	18.14	19.57	20.35	22.27	0.077453	8.08	11.09	10.86	2.29
BellsB	M001	577.91	100Year-Existing	70.20	17.66	19.67	20.38	21.87	0.039327	7.32	13.22	11.02	1.73
BellsB	M001	561.51	100Year-Existing	70.20	17.02	18.66	19.32	20.98	0.074728	7.80	12.55	14.30	2.21
BellsB	M001	553.07	100Year-Existing	70.20	16.35	17.81	18.53	20.37	0.065837	7.39	11.39	13.80	2.10
BellsB	M001	541.54	100Year-Existing	70.20	15.41	16.86	17.56	19.51	0.082810	7.42	10.78	14.19	2.29
BellsB	M001	529.17	100Year-Existing	70.20	14.85	16.32	16.98	18.49	0.062095	6.61	11.31	9.74	1.82
BellsB	M001	514.53	100Year-Existing	70.20	14.21	15.58	16.15	17.46	0.066606	6.66	12.87	12.82	1.89
BellsB	M001	467.56	100Year-Existing	70.20	11.61	14.68	13.67	14.99	0.003340	2.59	32.51	14.60	0.48
BellsB	M001	420.59	100Year-Existing	70.20	8.75	14.78		14.87	0.000551	1.56	66.10	20.23	0.21
BellsB	M001	400.25	100Year-Existing	70.20	8.57	14.56	11.29	14.84	0.001024	2.34	29.94	8.58	0.31
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	70.20	0.83	2.14	3.99	8.01	0.098740	10.74	6.54	6.34	3.00
BellsB	M001	47.74	100Year-Existing	70.20	0.56	4.44	3.42	4.46	0.000215	0.99	167.39	137.24	0.16
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	70.20	0.70	4.44	3.42	4.45	0.000179	0.89	177.56	136.84	0.15
BellsB	M001	20.51	100Year-Existing	70.20	0.57	4.43		4.45	0.000210	0.94	174.20	146.43	0.16

Corner Brook 100yr Q+30%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	243.49	36.31	39.16	39.16	41.49	0.018404	7.48	43.83	22.97	1.45
CornerB	M004	2838.71	100Year-Existing	243.49	36.15	38.63	39.24	40.48	0.015822	6.44	51.13	40.36	1.32
CornerB	M004	2796.61	100Year-Existing	243.49	35.35	38.98	38.56	39.57	0.003678	3.91	92.39	44.97	0.68
CornerB	M004	2769.85	100Year-Existing	243.49	34.80	38.00	38.00	39.11	0.015030	7.39	65.75	36.20	1.34
CornerB	TR001	206.04	100Year-Existing	41.73	43.81	44.90	45.27	46.09	0.042001	5.83	10.62	14.92	1.86
CornerB	TR001	156.04	100Year-Existing	41.73	41.63	42.81	43.18	44.02	0.040856	5.19	10.40	19.65	1.78
CornerB	TR001	106.04	100Year-Existing	41.73	39.17	39.97	40.44	41.55	0.061466	5.96	8.51	13.75	2.17
CornerB	TR001	56.04	100Year-Existing	41.73	37.27	38.23	38.65	39.26	0.033288	4.76	10.39	14.08	1.63
CornerB	TR001	36.04	100Year-Existing	41.73	35.50	38.34	38.00	38.34	0.000149	0.64	127.06	82.47	0.13
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	41.73	35.18	37.51	37.50	37.60	0.001622	1.74	52.67	81.54	0.39
CornerB	M003	2689.92	100Year-Existing	266.76	33.55	35.87	36.56	37.92	0.031778	8.31	56.31	48.67	1.83
CornerB	M003	2645.73	100Year-Existing	266.76	32.87	36.82	35.29	37.01	0.001353	2.59	171.86	74.06	0.42
CornerB	M003	2602.09	100Year-Existing	266.76	32.20	36.83		36.96	0.000685	2.01	209.91	68.79	0.31
CornerB	M003	2557.73	100Year-Existing	266.76	31.34	36.71		36.92	0.000767	2.35	170.20	48.95	0.33
CornerB	M003	2537.73	100Year-Existing	266.76	30.77	36.61	35.05	36.89	0.001185	3.16	170.68	64.80	0.42
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	266.76	30.35	34.35	34.35	35.79	0.006534	5.49	59.02	27.52	0.89
CornerB	M003	2507.21	100Year-Existing	266.76	30.75	33.38	33.91	35.41	0.019534	7.23	49.64	24.58	1.48
CornerB	M003	2459.31	100Year-Existing	266.76	30.13	32.02	32.66	34.22	0.030957	7.41	47.14	32.51	1.77
CornerB	M003	2411.41	100Year-Existing	266.76	29.27	31.78	32.03	32.91	0.015280	6.06	72.06	49.22	1.29
CornerB	M003	2363.51	100Year-Existing	266.76	28.77	31.38	31.23	32.12	0.007671	4.45	83.05	44.98	0.92
CornerB	M003	2315.61	100Year-Existing	266.76	27.93	31.25		31.84	0.003365	3.58	89.68	38.43	0.64
CornerB	M003	2267.71	100Year-Existing	267.28	26.30	31.27		31.69	0.001453	3.08	111.91	34.09	0.45
CornerB	M003	2264.01	100Year-Existing	267.28	26.10	31.29	29.88	31.65	0.002857	2.71	103.55	34.57	0.46
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	267.28	26.10	31.25		31.62	0.002974	2.75	102.14	33.91	0.47
CornerB	M003	2260.98	100Year-Existing	267.28	25.80	31.25		31.61	0.001134	2.86	131.33	48.23	0.40
CornerB	M003	2240.88	100Year-Existing	267.28	27.01	31.26		31.55	0.001311	2.56	133.28	45.01	0.41
CornerB	M003	2212.25	100Year-Existing	267.28	26.87	31.20		31.50	0.001411	2.75	130.86	43.25	0.43
CornerB	M003	2183.63	100Year-Existing	267.28	25.56	30.98		31.44	0.002040	3.72	125.68	50.01	0.53
CornerB	M003	2163.63	100Year-Existing	267.28	25.35	31.13	28.93	31.34	0.000784	2.46	229.86	145.68	0.34
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	267.28	24.87	28.38	28.83	30.54	0.013812	7.13	45.33	24.33	1.28
CornerB	M003	2131.66	100Year-Existing	267.28	24.57	27.46	28.32	30.19	0.024034	7.66	41.36	23.60	1.60
CornerB	M003	2119.46	100Year-Existing	267.28	24.12	26.53	27.57	29.78	0.035539	8.47	37.82	23.71	1.91
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	267.28	24.04	26.84	27.61	29.36	0.021776	7.30	42.42	23.95	1.53
CornerB	M003	2080.62	100Year-Existing	267.28	23.73	25.92	26.79	28.51	0.028393	7.48	42.22	35.88	1.71
CornerB	M003	2068.44	100Year-Existing	267.28	23.76	25.81	26.31	28.08	0.027145	7.09	45.37	37.45	1.66
CornerB	M003	2022.25	100Year-Existing	267.28	22.74	25.21	25.85	26.97	0.016690	6.36	53.18	33.07	1.35
CornerB	M003	1991.14	100Year-Existing	267.28	22.18	25.12	25.30	26.46	0.009860	5.61	62.63	31.73	1.07
CornerB	M003	1985.82	100Year-Existing	267.28	21.97	24.80	25.24	26.37	0.012302	6.07	58.47	32.07	1.19
CornerB	M003	1975.95	100Year-Existing	267.28	21.78	24.30	24.75	26.18	0.017910	6.81	52.88	30.47	1.41
CornerB	M003	1929.72	100Year-Existing	267.28	20.08	22.87	23.56	25.26	0.020331	7.28	44.07	22.37	1.49
CornerB	M003	1883.49	100Year-Existing	267.28	19.23	22.51	22.88	24.40	0.012032	6.61	51.40	21.43	1.20
CornerB	TR002	21.04	100Year-Existing	15.86	22.27	23.06	23.73	26.21	0.150148	8.70	2.48	5.08	3.28
CornerB	TR002	18.08	100Year-Existing	15.86	21.40	21.90	22.50	25.51	0.357639	9.64	2.21	6.47	4.71
CornerB	M002	1826.39	100Year-Existing	269.88	16.92	21.17	19.81	21.50	0.002962	2.98	119.02	39.03	0.48
CornerB	M002	1790.92	100Year-Existing	269.88	15.49	19.57	19.57	21.18	0.013338	6.27	56.00	19.28	1.02
CornerB	M002	1773.95	100Year-Existing	269.88	14.72	19.78	18.37	20.27	0.003338	3.52	101.27	30.90	0.52
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	269.88	14.87	19.81	18.12	20.13	0.001788	2.97	127.29	38.58	0.43
CornerB	M002	1733.13	100Year-Existing	269.88	15.23	19.89		19.99	0.000495	1.53	230.91	84.62	0.23
CornerB	M002	1717.41	100Year-Existing	269.88	15.12	19.89		19.97	0.000412	1.41	258.42	92.45	0.21
CornerB	M002	1691.96	100Year-Existing	269.88	14.62	19.89		19.96	0.000333	1.31	295.53	111.11	0.19
CornerB	M002	1654.15	100Year-Existing	269.88	13.87	19.90		19.94	0.000163	0.96	384.70	139.17	0.13
CornerB	M002	1613.91	100Year-Existing	269.88	13.08	19.91		19.94	0.000082	0.82	444.93	155.29	0.11
CornerB	M002	1567.16	100Year-Existing	269.88	12.15	19.92		19.93	0.000015	0.37	850.49	212.53	0.05
CornerB	M002	1551.89	100Year-Existing	269.88	11.85	19.92		19.93	0.000006	0.24	1269.57	275.41	0.03
CornerB	M002	1539.91	100Year-Existing	268.32	11.62	19.92		19.93	0.000003	0.17	1688.67	308.51	0.02
CornerB	M002	1526.59	100Year-Existing	268.32	11.36	19.92		19.93	0.000003	0.17	1719.28	313.58	0.02
CornerB	M002	1517.99	100Year-Existing	268.32	11.18	19.92		19.93	0.000004	0.20	1455.78	270.16	0.03
CornerB	M002	1505.64	100Year-Existing	268.32	10.94	19.92		19.93	0.000007	0.27	1083.36	200.14	0.03
CornerB	M002	1490.63	100Year-Existing	268.32	10.64	19.92		19.93	0.000015	0.40	749.68	143.27	0.05
CornerB	M002	1463.65	100Year-Existing	268.32	10.11	19.89		19.92	0.000063	0.82	416.03	93.93	0.10
CornerB	M002	1415.93	100Year-Existing	268.32	9.17	19.89		19.92	0.000056	0.80	387.50	77.62	0.09
CornerB	M002	1386.11	100Year-Existing	268.32	8.58	19.87		19.92	0.000082	0.94	357.90	79.38	0.11
CornerB	M002	1363.91	100Year-Existing	268.32	8.14	19.84		19.91	0.000138	1.21	284.32	58.49	0.14
CornerB	M002	1356.61	100Year-Existing	268.32	8.00	19.85		19.91	0.000359	1.48	301.23	73.99	0.15
CornerB	M002	1354.61	100Year-Existing	268.32	15.35	19.19		19.85	0.005539	4.58	95.97	56.71	0.75
CornerB	M002	1354.11	100Year-Existing	268.32	15.35	19.14	19.14	19.85	0.006042	4.73	92.68	56.11	0.78
CornerB	M002	1352.01	100Year-Existing	268.32	8.00	10.11	11.86	18.99	0.304921	2.47	20.98	17.51	2.33
CornerB	M002	1347.51	100Year-Existing	268.32	7.72	9.89	11.47	16.72	0.190137	11.58	23.28	17.83	3.17
CornerB	M002	1336.58	100Year-Existing	268.32	7.69	9.56	10.85	14.53	0.121980	9.96	28.03	22.03	2.62
CornerB	M002	1326.83	100Year-Existing	268.32	7.68	9.45	10.45	13.04	0.098423	8.71	33.82	27.39	2.35
CornerB	M002	1317.22	100Year-Existing	268.32	7.66	11.24	10.57	11.84	0.005954	3.59	85.23	33.47	0.66
CornerB	M002	1315.18	100Year-Existing	268.32	7.28	10.69	10.69	11.77	0.014817	5.04	64.62	31.43	1.00
CornerB	M002	1313.58	100Year-Existing	268.32	6.48	9.86	10.34	11.66	0.027216	6.36	49.99	27.32	1.32
CornerB	M002	1312.39	100Year-Existing	268.32	6.23	9.39	10.03	11.58	0.034177	6.91	44.91	25.68	1.47
CornerB	M002	1311.16	100Year-Existing	268.32	5.92	8.92	9.70	11.49	0.044890	7.30	40.09	24.28	1.65
CornerB	M002	1309.11	100Year-Existing	268.32	5.91	8.51	9.40	11.37	0.050434	7.67	37.91	23.44	1.76
CornerB	M002	1305.35	100Year-Existing	268.32	5.37	7.77	8.74	11.09	0.066132	8.59	36.83	25.68	2.00
CornerB	M002	1300.06	100Year-Existing	268.32	5.06	7.26	8.26	10.72	0.076520	8.39	34.13	24.34	2.11
CornerB	M002	1296.49	100Year-Existing	268.32	4.91	7.56	8.39	10.31	0.041960	7.62	39.55	22.38	1.64
CornerB	M002	1289.64	100Year-Existing	268.32	4.71	7.52	8.23	9.96	0.035618	7.22	41.94	21.91	1.52
CornerB	M002	1284.12	100Year-Existing	268.32	4.41	7.72	8.19	9.66	0.022277	6.54	48.50	22.54	1.24

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	268.32	4.23	7.30	7.93	9.52	0.026750	6.91	45.12	22.74	1.35
CornerB	M002	1258.94	100Year-Existing	268.32	3.53	5.68	6.55	8.63	0.063806	8.12	39.69	31.37	1.96
CornerB	M002	1246.98	100Year-Existing	268.32	3.37	5.28	6.23	7.91	0.041774	7.34	39.90	27.80	1.77
CornerB	M002	1233.83	100Year-Existing	268.32	3.10	4.87	5.67	7.21	0.052965	7.13	43.82	39.84	1.94
CornerB	M002	1215.66	100Year-Existing	268.32	2.70	4.43	5.05	6.22	0.033946	6.17	52.40	54.09	1.58
CornerB	M002	1206.83	100Year-Existing	268.32	2.54	5.27	4.89	5.67	0.005157	3.18	115.21	69.99	0.66
CornerB	M002	1194.69	100Year-Existing	268.32	2.39	5.24		5.61	0.004583	3.10	120.13	67.44	0.63
CornerB	M002	1185.06	100Year-Existing	268.32	2.26	5.23		5.55	0.003692	2.93	128.91	69.49	0.57
CornerB	M002	1142.41	100Year-Existing	268.32	1.70	5.15		5.40	0.002919	2.70	150.47	85.89	0.51
CornerB	M002	1137.55	100Year-Existing	268.32	1.60	4.87	4.71	5.34	0.006331	3.44	121.03	114.66	0.72
CornerB	M002	1110.53	100Year-Existing	268.32	1.39	4.53	4.53	5.15	0.006241	3.91	111.76	128.15	0.75
CornerB	M002	1090.67	100Year-Existing	268.32	1.10	4.60	3.62	4.80	0.002182	2.43	185.18	151.03	0.44
CornerB	M002	1070.69	100Year-Existing	268.32	0.80	4.62	3.30	4.75	0.001127	1.98	222.88	128.41	0.33
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	268.32	0.76	4.60	3.21	4.71	0.001034	1.92	219.65	121.43	0.32
CornerB	M002	1047.01	100Year-Existing	268.32	0.75	4.55		4.69	0.001058	2.17	206.60	100.70	0.37
CornerB	M002	1004.03	100Year-Existing	268.32	0.77	4.51		4.64	0.000916	2.02	244.75	146.47	0.34
CornerB	M002	959.21	100Year-Existing	268.32	0.70	4.54		4.59	0.000548	1.56	393.34	291.24	0.26
CornerB	M002	915.75	100Year-Existing	267.15	0.68	4.53		4.56	0.000397	1.29	469.81	298.38	0.22
CornerB	M002	869.66	100Year-Existing	267.15	0.69	4.52		4.54	0.000266	1.09	484.91	228.05	0.18
CornerB	M002	828.33	100Year-Existing	259.61	0.77	4.51		4.53	0.000283	1.09	472.31	232.97	0.19
CornerB	M002	784.55	100Year-Existing	259.61	0.82	4.50		4.52	0.000187	0.89	494.68	237.45	0.15
CornerB	M002	739.85	100Year-Existing	259.61	0.82	4.50		4.51	0.000182	0.85	516.70	280.94	0.15
CornerB	M002	696.36	100Year-Existing	259.61	0.64	4.48		4.50	0.000245	1.04	456.46	268.97	0.18
CornerB	M001	659.37	100Year-Existing	272.87	0.75	4.46		4.49	0.000277	1.05	425.30	240.65	0.18
CornerB	M001	643.93	100Year-Existing	272.87	0.74	4.44	3.33	4.49	0.000414	1.29	362.64	226.67	0.23
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	272.87	0.83	4.17	3.42	4.26	0.000917	1.83	261.90	189.79	0.33
CornerB	M001	608.52	100Year-Existing	272.87	0.76	4.15		4.24	0.001136	1.96	247.60	169.36	0.37
CornerB	M001	570.12	100Year-Existing	272.87	0.61	4.15		4.20	0.000603	1.51	323.22	188.29	0.27
CornerB	M001	535.83	100Year-Existing	272.87	0.56	4.12	2.32	4.18	0.000391	1.31	328.12	224.66	0.22
CornerB	M001	520.22	100Year-Existing	272.87	0.55	4.13	2.75	4.17	0.000299	1.15	379.27	294.93	0.19
CornerB	M001	472.07	100Year-Existing	272.87	0.58	4.05	3.29	4.14	0.000728	1.72	283.79	232.96	0.30
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	272.87	0.44	3.67	3.35	3.92	0.001747	2.59	212.14	257.62	0.46
CornerB	M001	425.41	100Year-Existing	272.87	0.48	3.72		3.82	0.001023	1.94	322.63	322.51	0.35
CornerB	M001	401.99	100Year-Existing	272.87	0.74	3.74		3.79	0.000592	1.43	425.78	354.56	0.27
CornerB	M001	381.26	100Year-Existing	272.87	0.79	3.67	3.32	3.76	0.001139	1.90	343.14	358.15	0.36
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	272.87	0.79	3.59	3.33	3.70	0.001403	2.09	328.87	377.54	0.40
CornerB	M001	352.89	100Year-Existing	272.87	0.68	3.30	3.11	3.60	0.002634	2.73	209.37	419.14	0.55
CornerB	M001	324.13	100Year-Existing	272.87	0.67	3.25	2.75	3.51	0.002494	2.64	195.75	281.40	0.53
CornerB	M001	292.92	100Year-Existing	272.87	0.65	3.27		3.42	0.001613	2.10	269.75	366.65	0.43
CornerB	M001	274.62	100Year-Existing	272.87	0.96	3.27	2.90	3.36	0.002518	2.36	295.88	380.45	0.52
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	272.87	1.01	3.23	2.87	3.30	0.002316	2.24	319.58	384.94	0.50
CornerB	M001	245.99	100Year-Existing	272.87	0.64	3.18		3.26	0.001686	2.02	354.45	457.56	0.43
CornerB	M001	210.89	100Year-Existing	272.87	0.68	3.12		3.19	0.001815	1.96	336.89	417.81	0.43
CornerB	M001	174.77	100Year-Existing	272.87	0.69	3.07		3.13	0.001525	1.62	361.34	477.62	0.39
CornerB	M001	155.66	100Year-Existing	272.87	0.64	3.06	2.64	3.09	0.001648	1.54	414.10	597.85	0.39
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	272.87	0.55	3.05	2.59	3.08	0.001354	1.39	418.21	541.67	0.36
CornerB	M001	129.05	100Year-Existing	272.87	0.40	3.00		3.04	0.001104	1.50	429.19	576.03	0.34
CornerB	M001	80.73	100Year-Existing	272.87	0.20	2.91		2.98	0.001268	1.77	351.24	399.62	0.37
CornerB	M001	23.81	100Year-Existing	272.87	0.32	2.80	2.34	2.90	0.001640	1.83	308.45	431.13	0.41
BellsB	TR001	178.13	100Year-Existing	23.01	92.91	96.36	94.85	96.42	0.000617	1.39	26.76	15.75	0.25
BellsB	TR001	159.86	100Year-Existing	23.01	92.15	96.38		96.40	0.000212	0.99	45.73	25.71	0.16
BellsB	TR001	139.54	100Year-Existing	23.01	91.13	96.32	93.25	96.39	0.000535	1.35	32.57	43.86	0.19
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	23.01	89.49	91.76	91.76	92.84	0.011080	4.65	5.14	8.08	1.01
BellsB	TR001	88.17	100Year-Existing	23.01	88.47	89.58	90.27	92.28	0.101042	7.88	3.72	5.86	2.69
BellsB	TR001	84.12	100Year-Existing	23.01	87.66	88.55	89.20	91.65	0.173229	8.03	3.25	7.29	3.36
BellsB	TR001	79.14	100Year-Existing	23.01	86.53	87.47	88.18	90.81	0.140848	8.56	3.35	6.86	3.18
BellsB	TR001	72.74	100Year-Existing	23.01	85.76	86.54	87.16	89.71	0.179957	8.11	3.23	7.77	3.41
BellsB	TR001	67.75	100Year-Existing	23.01	85.04	85.71	86.28	88.54	0.214402	7.94	3.40	8.23	3.62
BellsB	TR001	64.04	100Year-Existing	23.01	84.47	85.32	85.93	87.80	0.133453	6.98	3.36	6.57	2.95
BellsB	TR001	60.69	100Year-Existing	23.01	84.14	85.25	85.78	87.29	0.094209	6.57	4.01	7.76	2.53
BellsB	TR001	56.76	100Year-Existing	23.01	83.97	85.06	85.55	86.88	0.077472	6.07	4.14	8.17	2.32
BellsB	TR001	50.93	100Year-Existing	23.01	83.68	84.82	85.24	86.34	0.075947	5.67	4.66	9.90	2.26
BellsB	TR001	43.86	100Year-Existing	23.01	83.34	84.36	84.74	85.77	0.077800	5.45	4.81	10.32	2.27
BellsB	TR001	37.01	100Year-Existing	23.01	82.98	84.05	84.41	85.27	0.053665	5.26	5.38	9.57	1.96
BellsB	TR001	12.14	100Year-Existing	23.01	82.15	83.18	83.43	84.04	0.038805	4.41	6.28	10.52	1.66
BellsB	M002	5166.11	100Year-Existing	18.98	190.79	192.08	191.93	192.25	0.009037	2.60	13.61	19.38	0.77
BellsB	M002	5149.23	100Year-Existing	18.98	190.57	191.72	191.72	192.04	0.014872	3.02	9.94	15.89	0.96
BellsB	M002	5117.45	100Year-Existing	18.98	189.91	191.69	190.90	191.72	0.001403	1.30	27.94	25.43	0.32
BellsB	M002	5090.85	100Year-Existing	18.98	189.62	191.23	191.23	191.60	0.013091	3.48	9.90	13.36	0.93
BellsB	M002	5067.47	100Year-Existing	18.98	189.18	189.85	190.16	190.92	0.116225	6.13	4.89	9.67	2.50
BellsB	M002	5017.78	100Year-Existing	18.98	188.12	189.41	189.41	189.75	0.016853	3.53	9.49	12.85	1.04
BellsB	M002	4967.57	100Year-Existing	18.98	186.55	187.98	188.14	188.65	0.028480	4.47	6.54	8.16	1.30
BellsB	M002	4917.46	100Year-Existing	18.98	185.69	187.80	186.66	187.82	0.000563	0.95	39.45	35.84	0.21
BellsB	M002	4873.31	100Year-Existing	18.98	184.61	187.78		187.80	0.000399	0.97	51.02	49.06	0.18
BellsB	M002	4853.42	100Year-Existing	18.98	183.55	187.55	185.58	187.77	0.001247	2.06	9.19	36.06	0.34
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	18.98	181.53	182.80	183.53	185.34	0.071617	7.06	2.69	5.55	2.13
BellsB	M002	4785.76	100Year-Existing	18.98	181.35	182.46	182.77	183.43	0.045756	4.99	5.22	8.24	1.65
BellsB	M002	4756.65	100Year-Existing	18.98	180.12	181.11	181.36	181.93	0.054446	5.16	6.22	13.78	1.78
BellsB	M002	4727.54	100Year-Existing	18.98	179.02	179.90	180.09	180.53	0.038433	4.41	7.23	16.74	1.60

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	18.98	177.96	178.41	178.65	179.27	0.120469	5.06	5.38	17.04	2.57
BellsB	M002	4702.24	100Year-Existing	18.98	177.65	178.60	178.63	178.90	0.018671	3.11	9.58	17.99	1.12
BellsB	M002	4682.48	100Year-Existing	18.98	176.63	177.45	177.70	178.25	0.049431	4.64	6.24	15.37	1.79
BellsB	M002	4658.79	100Year-Existing	18.98	175.50	176.92	177.09	177.62	0.017046	4.16	6.62	8.54	1.15
BellsB	M002	4633.41	100Year-Existing	18.98	174.51	175.29	175.63	176.70	0.109588	6.86	4.95	13.82	2.65
BellsB	M002	4609.61	100Year-Existing	18.98	173.50	175.02	174.66	175.19	0.004619	2.33	13.18	13.44	0.62
BellsB	M002	4583.99	100Year-Existing	18.98	172.77	174.48	174.48	174.98	0.010576	3.44	7.68	8.86	0.90
BellsB	M002	4534.72	100Year-Existing	18.98	170.00	171.06	171.54	173.49	0.116560	8.76	3.73	7.03	2.85
BellsB	M002	4485.52	100Year-Existing	18.98	168.20	168.91	169.10	169.51	0.058528	4.73	7.12	19.10	1.90
BellsB	M002	4436.28	100Year-Existing	34.45	165.85	167.26	167.48	167.93	0.024441	5.02	14.31	29.43	1.39
BellsB	M002	4387.04	100Year-Existing	34.45	164.06	165.49	165.80	166.47	0.033897	5.96	10.59	14.57	1.65
BellsB	M002	4337.81	100Year-Existing	34.45	162.60	163.88	164.15	164.64	0.037683	5.68	13.03	26.16	1.68
BellsB	M002	4288.56	100Year-Existing	34.45	161.30	162.62	162.75	163.15	0.026660	4.77	13.76	20.84	1.39
BellsB	M002	4239.33	100Year-Existing	34.45	159.65	160.85	161.02	161.74	0.036010	5.33	10.68	16.59	1.64
BellsB	M002	4190.09	100Year-Existing	34.45	158.43	159.74	159.91	160.34	0.022269	4.49	13.44	19.97	1.31
BellsB	M002	4140.85	100Year-Existing	34.45	157.30	158.07	158.21	158.59	0.053970	4.98	12.14	23.32	1.89
BellsB	M002	4091.61	100Year-Existing	34.45	155.30	156.26	156.33	156.69	0.030822	4.47	13.80	21.75	1.49
BellsB	M002	4042.37	100Year-Existing	34.45	153.74	154.85	154.95	155.40	0.022211	4.09	12.52	16.00	1.29
BellsB	M002	3993.13	100Year-Existing	34.45	152.65	153.56	153.70	154.07	0.039515	4.54	13.07	24.35	1.60
BellsB	M002	3943.89	100Year-Existing	34.45	151.36	152.49	152.50	152.86	0.019085	3.82	15.58	22.14	1.19
BellsB	M002	3894.65	100Year-Existing	34.45	149.52	151.22	151.44	151.94	0.022010	4.74	12.88	19.36	1.29
BellsB	M002	3869.08	100Year-Existing	34.45	148.87	150.37	150.53	151.30	0.027151	5.16	10.43	13.58	1.45
BellsB	M002	3845.41	100Year-Existing	34.45	148.37	150.20	150.01	150.44	0.007103	2.93	20.23	21.06	0.72
BellsB	M002	3822.22	100Year-Existing	34.45	147.71	150.30		150.34	0.000777	1.29	42.60	22.15	0.26
BellsB	M002	3796.17	100Year-Existing	34.45	146.89	150.24		150.32	0.000926	1.59	36.17	18.48	0.29
BellsB	M002	3765.39	100Year-Existing	34.45	146.40	150.22		150.29	0.000720	1.48	36.06	16.51	0.25
BellsB	M002	3746.94	100Year-Existing	34.45	145.76	150.26		150.27	0.000100	0.66	84.78	29.38	0.10
BellsB	M002	3724.94	100Year-Existing	34.45	145.32	150.23		150.26	0.000264	1.07	50.90	18.44	0.16
BellsB	M002	3697.71	100Year-Existing	34.45	145.05	150.23		150.25	0.000147	0.85	60.45	19.71	0.12
BellsB	M002	3677.71	100Year-Existing	34.45	143.44	150.24	146.37	150.25	0.000043	0.55	92.78	25.74	0.07
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	34.45	142.47	145.31	145.31	146.69	0.009893	5.21	6.61	11.20	1.00
BellsB	M002	3623.19	100Year-Existing	34.45	142.10	143.76	144.42	146.02	0.063792	7.57	6.13	8.14	2.11
BellsB	M002	3573.45	100Year-Existing	34.45	140.89	142.55	142.90	143.70	0.028066	5.36	10.32	25.60	1.46
BellsB	M002	3520.99	100Year-Existing	34.45	139.30	141.09	141.41	142.24	0.027212	5.50	11.04	29.43	1.43
BellsB	M002	3473.83	100Year-Existing	34.45	137.98	140.08	140.41	140.95	0.021648	5.31	12.00	21.76	1.26
BellsB	M002	3424.29	100Year-Existing	34.45	136.49	138.01	138.51	139.51	0.031968	5.70	7.08	7.44	1.57
BellsB	M002	3400.36	100Year-Existing	34.45	135.96	138.96	137.44	139.03	0.000599	1.30	48.00	69.49	0.25
BellsB	M002	3386.31	100Year-Existing	34.45	135.48	138.96	138.10	139.01	0.000474	1.35	67.54	97.46	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	34.45	135.22	139.00	137.65	139.01	0.000058	0.50	138.01	79.00	0.08
BellsB	M002	3329.08	100Year-Existing	43.42	134.96	139.00		139.00	0.000078	0.60	140.23	59.91	0.10
BellsB	M002	3303.55	100Year-Existing	43.42	133.82	138.94	137.13	139.00	0.000359	1.44	66.39	52.65	0.21
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	43.42	131.39	135.10	135.10	136.71	0.009863	5.62	7.72	23.02	1.00
BellsB	M002	3203.83	100Year-Existing	43.42	131.13	132.51	133.14	135.77	0.127268	9.07	7.28	15.80	2.92
BellsB	M002	3176.31	100Year-Existing	43.42	130.02	131.61	132.12	133.29	0.052504	6.98	10.03	14.63	1.96
BellsB	M002	3157.63	100Year-Existing	43.42	129.89	131.36	131.60	132.20	0.042642	5.69	13.10	19.32	1.67
BellsB	M002	3130.11	100Year-Existing	43.42	128.68	130.94	131.10	131.63	0.011071	4.29	16.64	20.51	0.97
BellsB	M002	3083.82	100Year-Existing	43.42	127.94	129.63	129.97	130.79	0.032017	5.88	13.67	24.77	1.58
BellsB	M002	3037.68	100Year-Existing	43.42	127.11	128.21	128.45	128.96	0.042436	5.50	14.76	27.49	1.76
BellsB	M002	2991.47	100Year-Existing	43.42	126.28	128.39	127.45	128.42	0.000748	1.17	59.46	47.90	0.26
BellsB	M002	2945.26	100Year-Existing	43.42	125.32	128.08	128.08	128.33	0.004464	2.57	29.93	61.16	0.52
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	43.42	125.12	128.05	128.05	128.29	0.003913	2.57	32.53	72.98	0.49
BellsB	M002	2918.61	100Year-Existing	43.42	124.99	126.87	127.26	127.91	0.023775	5.54	13.96	29.30	1.39
BellsB	M002	2899.46	100Year-Existing	43.42	125.25	126.63	126.87	127.41	0.017415	4.36	17.41	72.20	1.21
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	43.42	124.44	125.95	125.95	126.34	0.007913	3.11	18.45	21.12	0.85
BellsB	M002	2861.32	100Year-Existing	43.42	123.64	124.96	125.25	125.88	0.031377	5.42	12.66	20.64	1.62
BellsB	M002	2823.69	100Year-Existing	43.42	123.23	124.43	124.53	124.85	0.026191	4.16	19.15	34.41	1.29
BellsB	M002	2777.91	100Year-Existing	43.42	122.77	124.15	123.81	124.21	0.003495	1.71	48.11	62.66	0.48
BellsB	M002	2727.91	100Year-Existing	43.42	122.21	123.84	123.84	124.04	0.008495	2.89	34.77	68.43	0.77
BellsB	M002	2677.99	100Year-Existing	43.42	121.13	123.01	123.15	123.50	0.012591	3.73	20.31	52.49	0.94
BellsB	M002	2628.09	100Year-Existing	43.42	120.69	122.31	122.42	122.79	0.019360	4.37	21.14	35.94	1.15
BellsB	M002	2578.18	100Year-Existing	43.42	119.94	121.90	121.70	122.08	0.006418	2.80	30.76	38.61	0.68
BellsB	M002	2528.27	100Year-Existing	43.42	119.10	121.12	121.12	121.63	0.013577	4.10	17.97	17.99	0.98
BellsB	M002	2518.19	100Year-Existing	43.42	118.62	120.92	120.69	121.22	0.007222	3.27	24.05	22.91	0.73
BellsB	M002	2496.15	100Year-Existing	43.42	118.53	120.97		121.08	0.002741	2.15	38.18	31.49	0.46
BellsB	M002	2478.37	100Year-Existing	43.42	117.97	120.57		120.98	0.007137	3.56	21.16	18.03	0.74
BellsB	M002	2450.61	100Year-Existing	43.42	117.55	120.06	120.06	120.70	0.011678	4.50	16.61	13.68	0.95
BellsB	M002	2428.46	100Year-Existing	43.42	117.19	118.63	119.10	120.10	0.060402	6.40	10.68	17.56	1.92
BellsB	M002	2408.52	100Year-Existing	43.42	116.63	118.07	118.38	119.03	0.050270	5.83	13.13	21.76	1.74
BellsB	M002	2378.55	100Year-Existing	43.42	116.15	117.97	117.97	118.33	0.014517	4.02	23.18	33.06	0.99
BellsB	M002	2367.92	100Year-Existing	43.42	115.61	116.91	117.24	117.97	0.050609	6.05	12.45	19.21	1.80
BellsB	M002	2352.81	100Year-Existing	43.42	115.07	116.50	116.73	117.32	0.034872	5.32	13.62	17.64	1.52
BellsB	M002	2328.64	100Year-Existing	43.42	113.99	116.09	116.24	116.71	0.016066	4.58	17.92	22.65	1.07
BellsB	M002	2307.61	100Year-Existing	43.42	112.94	116.27	115.63	116.33	0.000882	1.37	58.75	49.64	0.26
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	43.42	111.75	113.82	114.29	115.62	0.037313	5.94	7.34	7.33	1.41
BellsB	M002	2275.77	100Year-Existing	46.67	112.06	114.05	114.18	114.62	0.017585	4.71	18.94	26.08	1.12
BellsB	M002	2232.72	100Year-Existing	46.67	110.58	112.69	112.98	113.69	0.022172	5.36	14.10	15.00	1.26
BellsB	M002	2200.99	100Year-Existing	46.67	109.61	112.31	111.93	112.65	0.005946	3.31	23.16	17.25	0.68
BellsB	M002	2173.21	100Year-Existing	46.67	108.98	111.67	111.67	112.40	0.010973	4.38	15.82	11.47	0.89
BellsB	M002	2133.27	100Year-Existing	46.67	107.79	109.37	109.97	111.40	0.062151	7.47	9.47	12.43	2.04
BellsB	M002	2117.78	100Year-Existing	46.67	107.46	109.27	109.69	110.53	0.029225	5.82	12.45	15.39	1.45
BellsB	M002	2103.01	100Year-Existing	46.67	106.45	108.13	108.65	109.86	0.056596	7.06	9.66	10.68	1.90

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	46.67	105.17	106.99	107.57	108.85	0.052890	7.46	9.40	9.27	1.89
BellsB	M002	2068.57	100Year-Existing	46.67	104.36	105.57	106.17	107.74	0.094762	8.05	8.84	12.82	2.46
BellsB	M002	2059.88	100Year-Existing	46.67	103.56	105.20	105.74	107.10	0.050334	6.87	9.56	11.25	1.86
BellsB	M002	2054.52	100Year-Existing	46.67	103.13	104.75	105.35	106.77	0.064404	7.54	8.89	8.98	2.06
BellsB	M002	2040.56	100Year-Existing	46.67	102.39	104.23	104.81	106.09	0.034827	6.74	9.43	7.28	1.63
BellsB	M002	2033.27	100Year-Existing	46.67	102.08	104.76	104.83	105.65	0.014613	4.81	13.80	9.47	1.02
BellsB	M002	2025.44	100Year-Existing	46.67	101.58	103.33	103.97	105.35	0.045475	6.90	8.92	9.00	1.77
BellsB	M002	2021.67	100Year-Existing	46.67	101.43	103.62	104.07	105.04	0.029004	5.82	10.69	9.92	1.39
BellsB	M002	2014.53	100Year-Existing	46.67	99.96	101.78	102.60	104.58	0.085062	7.51	6.72	7.55	2.22
BellsB	M002	2010.46	100Year-Existing	46.67	99.08	100.47	101.40	104.07	0.122637	9.51	6.51	7.38	2.80
BellsB	M002	2007.37	100Year-Existing	46.67	98.52	100.25	101.20	103.69	0.099173	8.43	6.14	6.05	2.40
BellsB	M002	1996.87	100Year-Existing	46.67	97.97	99.32	100.22	102.61	0.097852	8.96	6.86	7.19	2.57
BellsB	M002	1982.97	100Year-Existing	46.67	97.73	99.13	99.76	101.16	0.061801	7.42	8.74	8.50	2.07
BellsB	M002	1966.25	100Year-Existing	46.67	96.75	99.00	99.37	100.29	0.027174	5.79	11.31	9.48	1.35
BellsB	M002	1951.81	100Year-Existing	46.67	96.56	99.23	98.49	99.44	0.003758	2.60	26.31	15.05	0.53
BellsB	M002	1939.94	100Year-Existing	46.67	96.29	98.68	98.68	99.32	0.012197	4.07	16.18	13.25	0.93
BellsB	M002	1918.81	100Year-Existing	46.67	95.86	98.53	98.09	98.91	0.006306	3.44	21.09	13.20	0.71
BellsB	M002	1910.32	100Year-Existing	46.67	95.58	98.04	98.04	98.80	0.011365	4.27	14.77	10.66	0.93
BellsB	M002	1896.87	100Year-Existing	46.67	94.38	96.19	96.84	98.36	0.061186	7.46	8.66	9.01	1.95
BellsB	M002	1887.59	100Year-Existing	46.67	93.87	95.25	95.91	97.64	0.092387	7.85	8.14	10.66	2.40
BellsB	M002	1880.79	100Year-Existing	46.67	93.33	96.25	95.59	96.57	0.004053	2.97	23.19	12.57	0.58
BellsB	M002	1870.34	100Year-Existing	46.67	92.77	96.27		96.52	0.002371	2.68	26.97	10.69	0.47
BellsB	M002	1857.16	100Year-Existing	46.67	91.88	96.34		96.46	0.001166	1.98	36.51	14.93	0.32
BellsB	M002	1848.27	100Year-Existing	46.67	91.91	96.36		96.44	0.000566	1.50	47.99	17.26	0.23
BellsB	M002	1834.27	100Year-Existing	46.67	90.88	96.37		96.43	0.000361	1.33	55.01	17.84	0.19
BellsB	M002	1821.35	100Year-Existing	46.67	90.90	96.38		96.42	0.000210	1.10	73.24	21.20	0.15
BellsB	M002	1807.43	100Year-Existing	46.67	89.83	96.39		96.41	0.000129	0.91	86.08	22.06	0.12
BellsB	M002	1800.77	100Year-Existing	46.67	89.59	96.39		96.41	0.000125	0.91	91.39	23.16	0.11
BellsB	M002	1777.98	100Year-Existing	46.67	88.77	96.40		96.40	0.000043	0.59	139.67	30.58	0.07
BellsB	M002	1753.27	100Year-Existing	46.67	88.22	96.39		96.40	0.000049	0.65	133.42	31.06	0.07
BellsB	M002	1729.73	100Year-Existing	46.67	88.17	96.40		96.40	0.000028	0.52	163.77	32.98	0.06
BellsB	M002	1705.77	100Year-Existing	46.67	87.60	96.40		96.40	0.000012	0.41	260.34	65.81	0.04
BellsB	M002	1688.91	100Year-Existing	46.67	86.72	96.39	90.84	96.40	0.000017	0.45	218.63	70.81	0.05
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	46.67	83.97	88.06	88.06	90.11	0.007549	6.35	7.36	22.29	1.00
BellsB	M002	1605.59	100Year-Existing	46.67	81.49	82.36	83.17	88.45	0.469920	11.68	4.75	13.13	5.45
BellsB	M001	1582.05	100Year-Existing	74.36	80.41	81.77	82.93	86.96	0.123828	10.49	8.19	9.64	3.21
BellsB	M001	1563.67	100Year-Existing	74.36	79.96	81.46	82.35	84.74	0.067618	8.74	10.94	11.43	2.46
BellsB	M001	1544.26	100Year-Existing	74.36	79.04	81.17	81.93	83.59	0.033526	7.68	13.44	10.50	1.81
BellsB	M001	1529.04	100Year-Existing	74.36	78.24	79.80	80.71	82.90	0.050702	8.17	10.69	9.11	2.17
BellsB	M001	1515.66	100Year-Existing	74.36	77.30	79.51	80.33	82.16	0.044900	7.53	11.54	8.48	1.79
BellsB	M001	1502.43	100Year-Existing	74.36	69.64	70.41	71.52	79.92	0.735142	13.73	5.54	11.97	6.10
BellsB	M001	1483.47	100Year-Existing	74.36	68.89	70.04	70.70	72.75	0.137009	8.20	11.35	16.72	2.85
BellsB	M001	1454.75	100Year-Existing	74.36	68.03	69.74	69.98	70.72	0.027996	5.60	19.20	16.68	1.43
BellsB	M001	1406.62	100Year-Existing	74.36	66.49	69.12	69.12	69.97	0.012952	4.92	21.60	13.39	1.02
BellsB	M001	1358.51	100Year-Existing	74.36	65.17	66.96	67.53	68.83	0.043092	6.69	14.17	12.74	1.74
BellsB	M001	1310.38	100Year-Existing	74.36	63.80	65.59	66.01	66.92	0.031076	5.80	18.05	19.34	1.50
BellsB	M001	1286.33	100Year-Existing	74.36	62.81	64.40	64.85	65.93	0.055652	6.69	16.13	21.38	1.91
BellsB	M001	1262.25	100Year-Existing	74.36	62.09	64.49	64.63	65.14	0.016783	4.90	26.91	29.51	1.09
BellsB	M001	1251.58	100Year-Existing	74.36	61.46	63.67	64.05	64.86	0.027994	6.60	21.61	29.29	1.47
BellsB	M001	1234.76	100Year-Existing	74.36	60.57	62.30	62.81	64.14	0.064887	7.96	16.34	23.78	2.09
BellsB	M001	1214.13	100Year-Existing	74.36	59.55	62.17	61.36	62.38	0.002967	2.41	44.91	26.94	0.50
BellsB	M001	1200.58	100Year-Existing	74.36	58.90	61.50	61.50	62.25	0.011514	4.55	24.34	17.45	0.96
BellsB	M001	1182.98	100Year-Existing	74.36	58.59	61.13	61.28	62.02	0.014775	5.06	22.59	17.52	1.08
BellsB	M001	1166.01	100Year-Existing	74.36	58.39	60.02	60.49	61.54	0.043583	6.45	16.92	19.43	1.73
BellsB	M001	1153.18	100Year-Existing	74.36	57.70	59.67	60.05	60.92	0.040795	6.99	18.97	20.51	1.68
BellsB	M001	1141.88	100Year-Existing	74.36	56.72	58.37	58.97	60.34	0.051700	6.94	14.02	15.28	1.89
BellsB	M001	1128.34	100Year-Existing	74.36	56.53	57.97	58.43	59.46	0.056929	6.74	15.01	16.03	1.92
BellsB	M001	1117.89	100Year-Existing	74.36	55.58	57.15	57.66	58.82	0.060567	7.61	15.11	15.07	2.02
BellsB	M001	1096.03	100Year-Existing	74.36	54.61	56.54	56.91	57.80	0.030190	5.79	17.98	17.05	1.47
BellsB	M001	1077.81	100Year-Existing	74.36	54.24	55.60	56.08	57.13	0.049610	6.42	16.88	21.88	1.84
BellsB	M001	1069.76	100Year-Existing	74.36	53.70	54.65	55.16	56.44	0.108733	7.28	14.05	20.15	2.55
BellsB	M001	1064.67	100Year-Existing	74.36	53.19	54.14	54.63	55.88	0.112651	7.22	14.27	21.09	2.57
BellsB	M001	1051.64	100Year-Existing	74.36	51.97	53.24	53.75	54.93	0.065345	6.80	15.36	19.14	2.06
BellsB	M001	1032.36	100Year-Existing	74.36	50.97	52.74	53.06	53.86	0.036111	6.22	18.94	17.91	1.59
BellsB	M001	1021.64	100Year-Existing	74.36	50.03	51.70	52.20	53.37	0.045944	6.45	15.58	17.73	1.77
BellsB	M001	1014.11	100Year-Existing	74.36	49.46	51.36	51.91	53.05	0.039992	6.48	15.38	16.21	1.67
BellsB	M001	1006.24	100Year-Existing	74.36	49.15	50.69	51.27	52.67	0.053318	7.00	13.95	15.43	1.92
BellsB	M001	996.42	100Year-Existing	74.36	48.11	49.70	50.41	52.06	0.078429	8.21	12.90	15.30	2.26
BellsB	M001	987.27	100Year-Existing	74.36	47.17	49.03	49.75	51.46	0.055723	7.83	12.90	12.79	1.99
BellsB	M001	973.52	100Year-Existing	74.36	46.79	48.46	49.12	50.70	0.044731	7.12	13.26	15.68	1.91
BellsB	M001	951.43	100Year-Existing	74.36	45.77	47.50	48.08	49.69	0.054254	7.52	14.02	19.20	2.05
BellsB	M001	931.51	100Year-Existing	74.36	44.86	46.40	47.01	48.40	0.071748	8.56	13.35	15.67	2.34
BellsB	M001	925.41	100Year-Existing	74.36	44.69	46.54	46.96	47.90	0.034824	6.77	17.44	19.92	1.65
BellsB	M001	901.68	100Year-Existing	74.36	43.69	45.60	46.07	47.14	0.028204	6.42	15.45	12.58	1.57
BellsB	M001	877.27	100Year-Existing	74.36	43.18	45.22	45.54	46.46	0.021263	5.70	17.10	12.98	1.36
BellsB	M001	857.41	100Year-Existing	74.36	42.16	45.87	45.40	46.01	0.001297	2.14	61.17	44.43	0.37
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	76.05	38.54	42.04	41.89	43.44	0.009604	5.35	14.79	11.64	0.94
BellsB	M001	810.13	100Year-Existing	76.05	37.80	42.65	40.51	42.80	0.000950	1.91	58.69	38.42	0.29
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	76.05	34.33	37.15	38.05	40.10	0.042379	7.82	10.82	9.87	1.74
BellsB	M001	782.27	100Year-Existing	76.05	33.92	35.08	35.98	38.82	0.150927	9.26	9.47	11.59	3.02
BellsB	M001	772.73	100Year-Existing	76.05	30.94	32.84	33.79	37.26	0.171781	12.46	10.34	12.09	3.13
BellsB	M001	766.74	100Year-Existing	76.05	30.65	32.80	33.66	36.14	0.108836	11.14	11.84	12.07	2.58
BellsB	M001	760.32	100Year-Existing	76.05	30.34	32.29	33.13	35.51	0.080331	9.62	12.16	12.30	2.36
BellsB	M001	755.97	100Year-Existing	76.05	30.05	31.93	32.78	35.14	0.087738	9.09	11.57	11.90	2.38

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	76.05	29.30	31.29	32.18	34.57	0.086075	9.62	11.64	11.07	2.39
BellsB	M001	742.14	100Year-Existing	76.05	28.38	30.01	31.04	33.87	0.089372	9.55	10.36	10.04	2.51
BellsB	M001	736.73	100Year-Existing	76.05	28.24	29.32	30.26	33.25	0.149728	9.59	9.33	11.41	3.08
BellsB	M001	722.61	100Year-Existing	76.05	27.35	28.65	29.34	31.25	0.086672	7.98	11.92	15.07	2.37
BellsB	M001	712.04	100Year-Existing	76.05	26.27	28.16	28.86	30.45	0.053614	7.46	13.11	12.17	1.92
BellsB	M001	702.42	100Year-Existing	76.05	26.04	27.68	28.35	29.87	0.058972	7.41	13.34	13.26	2.01
BellsB	M001	691.68	100Year-Existing	76.05	25.03	26.96	27.66	29.25	0.054738	7.18	12.55	12.26	1.91
BellsB	M001	686.22	100Year-Existing	76.05	24.46	26.06	26.87	28.86	0.072310	7.63	11.04	11.39	2.18
BellsB	M001	675.26	100Year-Existing	76.05	24.08	25.60	26.32	28.01	0.061091	7.42	12.12	11.68	2.05
BellsB	M001	668.37	100Year-Existing	76.05	23.58	25.21	25.90	27.57	0.061325	7.44	12.46	12.93	2.04
BellsB	M001	655.45	100Year-Existing	76.05	23.02	24.50	25.15	26.74	0.061590	7.18	12.64	13.66	2.02
BellsB	M001	636.88	100Year-Existing	76.05	21.46	23.19	23.92	25.61	0.055472	7.23	12.14	11.47	1.95
BellsB	M001	619.06	100Year-Existing	76.05	20.82	22.72	23.31	24.60	0.041045	6.80	14.58	12.85	1.71
BellsB	M001	608.48	100Year-Existing	76.05	20.13	21.87	22.53	24.09	0.050487	7.07	13.27	14.39	1.87
BellsB	M001	592.31	100Year-Existing	76.05	18.95	20.73	21.45	23.16	0.067821	8.17	12.92	12.78	2.15
BellsB	M001	582.72	100Year-Existing	76.05	18.14	19.64	20.45	22.44	0.075252	8.24	11.83	11.02	2.28
BellsB	M001	577.91	100Year-Existing	76.05	17.66	19.76	20.49	22.04	0.038803	7.50	14.17	11.43	1.73
BellsB	M001	561.51	100Year-Existing	76.05	17.02	18.71	19.40	21.15	0.075469	8.04	13.26	14.52	2.23
BellsB	M001	553.07	100Year-Existing	76.05	16.35	17.86	18.61	20.54	0.065711	7.59	12.14	14.04	2.11
BellsB	M001	541.54	100Year-Existing	76.05	15.41	16.90	17.64	19.69	0.082697	7.63	11.46	14.32	2.30
BellsB	M001	529.17	100Year-Existing	76.05	14.85	16.40	17.09	18.66	0.060651	6.77	12.03	9.90	1.81
BellsB	M001	514.53	100Year-Existing	76.05	14.21	15.63	16.24	17.65	0.068865	6.93	13.44	12.97	1.94
BellsB	M001	467.56	100Year-Existing	76.05	11.61	15.48	13.77	15.68	0.001614	2.12	44.97	16.63	0.35
BellsB	M001	420.59	100Year-Existing	76.05	8.75	15.54		15.61	0.000378	1.41	82.40	22.85	0.18
BellsB	M001	400.25	100Year-Existing	76.05	8.57	15.32	11.44	15.58	0.000806	2.25	33.75	11.16	0.28
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	76.05	0.83	2.21	3.77	8.36	0.095807	10.99	6.92	6.75	2.98
BellsB	M001	47.74	100Year-Existing	76.05	0.56	4.49	3.46	4.51	0.000225	1.02	174.78	138.93	0.17
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	76.05	0.70	4.49	3.45	4.50	0.000188	0.92	184.91	138.35	0.15
BellsB	M001	20.51	100Year-Existing	76.05	0.57	4.48		4.50	0.000219	0.97	182.08	148.32	0.16

Corner Brook 100yr Q-10%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	168.57	36.31	39.04	39.04	40.27	0.010197	5.41	41.31	21.72	1.08
CornerB	M004	2838.71	100Year-Existing	168.57	36.15	38.29	38.70	39.66	0.013704	5.42	38.88	32.01	1.20
CornerB	M004	2796.61	100Year-Existing	168.57	35.35	38.34	37.77	38.90	0.004288	3.67	64.09	42.02	0.71
CornerB	M004	2769.85	100Year-Existing	168.57	34.80	37.58	37.58	38.43	0.013276	6.31	51.66	31.66	1.23
CornerB	TR001	206.04	100Year-Existing	28.89	43.81	44.73	45.01	45.70	0.042068	5.15	8.18	13.95	1.81
CornerB	TR001	156.04	100Year-Existing	28.89	41.63	42.66	42.96	43.64	0.040258	4.56	7.70	17.02	1.71
CornerB	TR001	106.04	100Year-Existing	28.89	39.17	39.82	40.19	41.10	0.066043	5.31	6.44	12.73	2.16
CornerB	TR001	56.04	100Year-Existing	28.89	37.27	38.08	38.34	38.83	0.030885	4.04	8.33	13.44	1.52
CornerB	TR001	36.04	100Year-Existing	28.89	35.50	38.27	37.51	38.28	0.000081	0.46	121.69	81.53	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	28.89	35.18	37.24	37.24	38.14	0.010179	4.20	6.88	79.14	1.00
CornerB	M003	2689.92	100Year-Existing	184.68	33.55	36.50	36.17	36.88	0.004580	3.75	90.55	60.37	0.72
CornerB	M003	2645.73	100Year-Existing	184.68	32.87	36.62		36.73	0.000809	1.93	157.60	69.92	0.32
CornerB	M003	2602.09	100Year-Existing	184.68	32.20	36.62		36.70	0.000399	1.49	196.19	68.21	0.23
CornerB	M003	2557.73	100Year-Existing	184.68	31.34	36.57		36.68	0.000414	1.69	163.17	48.68	0.24
CornerB	M003	2537.73	100Year-Existing	184.68	30.77	36.51	34.88	36.66	0.000625	2.27	164.65	64.61	0.30
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	184.68	30.35	34.17	34.17	36.06	0.007861	6.09	30.31	25.12	1.00
CornerB	M003	2507.21	100Year-Existing	184.68	30.75	32.43	33.30	35.41	0.053186	8.58	27.70	21.74	2.24
CornerB	M003	2459.31	100Year-Existing	184.68	30.13	31.79	32.21	33.28	0.024990	6.05	39.55	31.58	1.55
CornerB	M003	2411.41	100Year-Existing	184.68	29.27	31.59	31.65	32.31	0.010736	4.79	62.90	47.85	1.06
CornerB	M003	2363.51	100Year-Existing	184.68	28.77	30.56	30.81	31.62	0.018216	5.18	47.85	40.42	1.32
CornerB	M003	2315.61	100Year-Existing	184.68	27.93	30.11	30.01	30.88	0.007708	4.02	51.69	30.12	0.90
CornerB	M003	2267.71	100Year-Existing	185.04	26.30	30.25		30.61	0.001672	2.82	80.67	28.41	0.46
CornerB	M003	2264.01	100Year-Existing	185.04	26.10	30.23	29.42	30.59	0.004569	2.71	70.18	30.04	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	185.04	26.10	30.10		30.51	0.005419	2.85	66.51	29.83	0.59
CornerB	M003	2260.98	100Year-Existing	185.04	25.80	30.15		30.45	0.001271	2.59	88.75	29.14	0.41
CornerB	M003	2240.88	100Year-Existing	185.04	27.01	30.06		30.40	0.002498	2.76	81.51	40.84	0.54
CornerB	M003	2212.25	100Year-Existing	185.04	26.87	29.98		30.33	0.002453	2.87	82.18	36.86	0.54
CornerB	M003	2183.63	100Year-Existing	185.04	25.56	29.08	29.08	30.15	0.007478	5.17	51.80	28.19	0.94
CornerB	M003	2163.63	100Year-Existing	185.04	25.35	29.05	28.25	29.75	0.003570	3.83	52.30	33.17	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	185.04	24.87	27.70	28.13	29.53	0.015952	6.51	34.39	21.82	1.32
CornerB	M003	2131.66	100Year-Existing	185.04	24.57	26.99	27.68	29.20	0.025950	6.83	30.88	20.79	1.60
CornerB	M003	2119.46	100Year-Existing	185.04	24.12	26.12	26.93	28.78	0.038615	7.57	28.48	22.02	1.92
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	185.04	24.04	26.41	27.01	28.37	0.021848	6.37	32.53	21.81	1.48
CornerB	M003	2080.62	100Year-Existing	185.04	23.73	25.57	26.13	27.54	0.027674	6.46	32.69	25.17	1.64
CornerB	M003	2068.44	100Year-Existing	185.04	23.76	25.53	26.05	27.12	0.023136	5.87	36.80	28.66	1.49
CornerB	M003	2022.25	100Year-Existing	185.04	22.74	24.81	25.17	26.18	0.016386	5.54	40.95	28.89	1.29
CornerB	M003	1991.14	100Year-Existing	185.04	22.18	24.63	24.76	25.70	0.009883	4.94	47.59	29.48	1.04
CornerB	M003	1985.82	100Year-Existing	185.04	21.97	24.18	24.50	25.60	0.015390	5.69	40.66	26.10	1.27
CornerB	M003	1975.95	100Year-Existing	185.04	21.78	23.82	24.27	25.41	0.019885	6.16	38.92	27.19	1.43
CornerB	M003	1929.72	100Year-Existing	185.04	20.08	22.32	22.92	24.37	0.024050	6.67	32.32	20.60	1.56
CornerB	M003	1883.49	100Year-Existing	185.04	19.23	21.90	22.19	23.43	0.012631	5.86	38.98	19.85	1.19
CornerB	TR002	21.04	100Year-Existing	10.98	22.27	22.93	23.48	25.46	0.150170	7.65	1.87	4.55	3.17
CornerB	TR002	18.08	100Year-Existing	10.98	21.40	21.82	22.31	24.75	0.375559	8.58	1.70	6.22	4.66
CornerB	M002	1826.39	100Year-Existing	186.84	16.92	18.52	19.38	21.91	0.119389	8.81	26.19	30.17	2.53
CornerB	M002	1790.92	100Year-Existing	186.84	15.49	18.76	18.83	20.13	0.015091	5.70	41.17	17.37	1.04
CornerB	M002	1773.95	100Year-Existing	186.84	14.72	19.35	17.77	19.66	0.002292	2.74	88.51	29.00	0.42
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	186.84	14.87	19.36	17.49	19.57	0.001276	2.35	110.36	37.40	0.36
CornerB	M002	1733.13	100Year-Existing	186.84	15.23	19.41		19.47	0.000368	1.22	192.67	75.29	0.19
CornerB	M002	1717.41	100Year-Existing	186.84	15.12	19.41		19.47	0.000308	1.14	215.88	84.33	0.18
CornerB	M002	1691.96	100Year-Existing	186.84	14.62	19.41		19.46	0.000255	1.07	243.27	103.60	0.16
CornerB	M002	1654.15	100Year-Existing	186.84	13.87	19.42		19.44	0.000123	0.78	317.62	133.79	0.11
CornerB	M002	1613.91	100Year-Existing	186.84	13.08	19.42		19.44	0.000059	0.65	370.04	151.62	0.09
CornerB	M002	1567.16	100Year-Existing	186.84	12.15	19.43		19.43	0.000010	0.29	746.46	209.69	0.04
CornerB	M002	1551.89	100Year-Existing	186.84	11.85	19.43		19.43	0.000004	0.18	1134.34	272.33	0.02
CornerB	M002	1539.91	100Year-Existing	185.76	11.62	19.43		19.43	0.000002	0.13	1536.97	305.56	0.02
CornerB	M002	1526.59	100Year-Existing	185.76	11.36	19.43		19.43	0.000002	0.13	1565.04	310.77	0.02
CornerB	M002	1517.99	100Year-Existing	185.76	11.18	19.43		19.43	0.000003	0.15	1323.19	266.92	0.02
CornerB	M002	1505.64	100Year-Existing	185.76	10.94	19.43		19.43	0.000004	0.20	985.46	196.82	0.03
CornerB	M002	1490.63	100Year-Existing	185.76	10.64	19.43		19.43	0.000009	0.30	680.45	138.76	0.04
CornerB	M002	1463.65	100Year-Existing	185.76	10.11	19.41		19.43	0.000039	0.62	372.66	86.83	0.08
CornerB	M002	1415.93	100Year-Existing	185.76	9.17	19.41		19.43	0.000034	0.60	351.34	74.01	0.07
CornerB	M002	1386.11	100Year-Existing	185.76	8.58	19.40		19.43	0.000051	0.71	320.82	77.33	0.08
CornerB	M002	1363.91	100Year-Existing	185.76	8.14	19.38		19.42	0.000084	0.91	257.76	56.90	0.11
CornerB	M002	1356.61	100Year-Existing	185.76	8.00	19.38		19.42	0.000229	1.14	267.37	72.20	0.12
CornerB	M002	1354.61	100Year-Existing	185.76	15.35	18.78	18.75	19.37	0.005243	4.13	73.25	53.66	0.71
CornerB	M002	1354.11	100Year-Existing	185.76	15.35	18.75	18.75	19.37	0.005558	4.22	71.40	53.07	0.73
CornerB	M002	1352.01	100Year-Existing	185.76	8.00	9.47	11.25	18.49	0.462199	0.36	13.96	9.51	0.13
CornerB	M002	1347.51	100Year-Existing	185.76	7.72	9.56	10.83	15.32	0.226956	10.64	17.47	16.81	3.32
CornerB	M002	1336.58	100Year-Existing	185.76	7.69	9.28	10.29	12.97	0.117807	8.54	22.23	20.52	2.49
CornerB	M002	1326.83	100Year-Existing	185.76	7.68	9.26	9.96	11.65	0.079268	7.09	28.58	26.86	2.06
CornerB	M002	1317.22	100Year-Existing	185.76	7.66	10.64	10.07	11.11	0.006264	3.18	65.46	31.76	0.65
CornerB	M002	1315.18	100Year-Existing	185.76	7.28	10.14	10.14	11.05	0.016537	4.55	48.24	28.69	1.01
CornerB	M002	1313.58	100Year-Existing	185.76	6.48	9.33	9.79	10.94	0.033296	5.93	36.06	24.88	1.40
CornerB	M002	1312.39	100Year-Existing	185.76	6.23	8.87	9.47	10.86	0.042785	6.48	32.13	23.32	1.58
CornerB	M002	1311.16	100Year-Existing	185.76	5.92	8.44	9.15	10.76	0.058072	6.88	28.70	22.38	1.79
CornerB	M002	1309.11	100Year-Existing	185.76	5.91	8.03	8.81	10.62	0.065340	7.22	27.11	21.52	1.91
CornerB	M002	1305.35	100Year-Existing	185.76	5.37	7.38	8.21	10.31	0.077293	7.93	26.95	24.33	2.08
CornerB	M002	1300.06	100Year-Existing	185.76	5.06	6.88	7.73	9.87	0.092825	7.74	25.15	23.14	2.22
CornerB	M002	1296.49	100Year-Existing	185.76	4.91	7.06	7.79	9.45	0.050252	7.02	28.85	20.45	1.72
CornerB	M002	1289.64	100Year-Existing	185.76	4.71	7.05	7.62	9.02	0.038256	6.42	31.97	20.74	1.52
CornerB	M002	1284.12	100Year-Existing	185.76	4.41	7.18	7.54	8.74	0.023424	5.81	36.71	20.55	1.23

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	185.76	4.23	6.78	7.28	8.59	0.028457	6.16	33.84	20.43	1.35
CornerB	M002	1258.94	100Year-Existing	185.76	3.53	5.37	6.08	7.70	0.063613	7.11	30.38	28.32	1.89
CornerB	M002	1246.98	100Year-Existing	185.76	3.37	4.93	5.55	6.99	0.043322	6.45	30.62	25.71	1.74
CornerB	M002	1233.83	100Year-Existing	185.76	3.10	4.67	5.11	6.29	0.044295	5.89	36.14	38.02	1.73
CornerB	M002	1215.66	100Year-Existing	185.76	2.70	4.21	4.63	5.50	0.028862	5.14	41.28	47.89	1.42
CornerB	M002	1206.83	100Year-Existing	185.76	2.54	4.89	4.52	5.21	0.005009	2.80	89.40	67.74	0.63
CornerB	M002	1194.69	100Year-Existing	185.76	2.39	4.87		5.15	0.004239	2.68	95.49	65.35	0.59
CornerB	M002	1185.06	100Year-Existing	185.76	2.26	4.86		5.10	0.003254	2.50	103.80	67.04	0.52
CornerB	M002	1142.41	100Year-Existing	185.76	1.70	4.78		4.97	0.002605	2.32	119.04	83.44	0.47
CornerB	M002	1137.55	100Year-Existing	185.76	1.60	4.32	4.32	4.89	0.009816	3.58	68.62	73.73	0.86
CornerB	M002	1110.53	100Year-Existing	185.76	1.39	4.11	3.84	4.66	0.006254	3.51	72.43	66.17	0.73
CornerB	M002	1090.67	100Year-Existing	185.76	1.10	4.34		4.47	0.001560	1.94	149.01	107.28	0.37
CornerB	M002	1070.69	100Year-Existing	185.76	0.80	4.36	2.98	4.43	0.000729	1.51	193.30	89.33	0.26
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	185.76	0.76	4.35	2.88	4.41	0.000653	1.46	193.68	86.68	0.25
CornerB	M002	1047.01	100Year-Existing	185.76	0.75	4.33		4.40	0.000627	1.60	187.38	78.63	0.28
CornerB	M002	1004.03	100Year-Existing	185.76	0.77	4.29		4.37	0.000596	1.56	214.44	132.53	0.27
CornerB	M002	959.21	100Year-Existing	185.76	0.70	4.30		4.34	0.000414	1.30	326.13	281.56	0.23
CornerB	M002	915.75	100Year-Existing	184.95	0.68	4.30		4.32	0.000297	1.06	401.01	295.82	0.19
CornerB	M002	869.66	100Year-Existing	184.95	0.69	4.29		4.31	0.000177	0.85	433.75	223.66	0.15
CornerB	M002	828.33	100Year-Existing	179.73	0.77	4.28		4.30	0.000183	0.83	421.71	221.14	0.15
CornerB	M002	784.55	100Year-Existing	179.73	0.82	4.28		4.29	0.000125	0.69	442.55	232.35	0.12
CornerB	M002	739.85	100Year-Existing	179.73	0.82	4.28		4.29	0.000123	0.66	456.01	271.96	0.12
CornerB	M002	696.36	100Year-Existing	179.73	0.64	4.26		4.28	0.000173	0.84	399.03	267.10	0.15
CornerB	M001	659.37	100Year-Existing	188.91	0.75	4.25		4.27	0.000188	0.83	375.64	233.90	0.15
CornerB	M001	643.93	100Year-Existing	188.91	0.74	4.24	3.07	4.27	0.000283	1.03	317.70	218.42	0.18
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	188.91	0.83	3.95	3.06	4.02	0.000680	1.50	221.04	180.60	0.28
CornerB	M001	608.52	100Year-Existing	188.91	0.76	3.93		4.00	0.000845	1.60	211.78	163.58	0.31
CornerB	M001	570.12	100Year-Existing	188.91	0.61	3.94		3.97	0.000436	1.22	282.69	186.54	0.23
CornerB	M001	535.83	100Year-Existing	188.91	0.56	3.92	2.01	3.96	0.000259	1.02	290.82	220.82	0.18
CornerB	M001	520.22	100Year-Existing	188.91	0.55	3.92	2.11	3.95	0.000197	0.89	339.43	292.22	0.16
CornerB	M001	472.07	100Year-Existing	188.91	0.58	3.87	2.87	3.93	0.000488	1.36	245.09	203.63	0.24
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	188.91	0.44	3.45	2.40	3.64	0.001347	2.17	158.40	222.02	0.40
CornerB	M001	425.41	100Year-Existing	188.91	0.48	3.48		3.57	0.000866	1.69	248.45	298.54	0.32
CornerB	M001	401.99	100Year-Existing	188.91	0.74	3.50		3.54	0.000493	1.23	342.85	340.96	0.24
CornerB	M001	381.26	100Year-Existing	188.91	0.79	3.43	3.13	3.52	0.001120	1.77	255.50	348.55	0.35
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	188.91	0.79	3.16	3.15	3.40	0.002824	2.65	170.97	346.12	0.56
CornerB	M001	352.89	100Year-Existing	188.91	0.68	3.13	2.30	3.34	0.001860	2.19	150.10	303.45	0.45
CornerB	M001	324.13	100Year-Existing	188.91	0.67	3.11		3.27	0.001570	2.02	159.95	219.64	0.42
CornerB	M001	292.92	100Year-Existing	188.91	0.65	3.11		3.22	0.001153	1.70	215.07	314.62	0.36
CornerB	M001	274.62	100Year-Existing	188.91	0.96	3.10	2.72	3.18	0.002218	2.09	233.39	352.05	0.48
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	188.91	1.01	3.06	2.69	3.12	0.002069	2.00	255.41	368.88	0.46
CornerB	M001	245.99	100Year-Existing	188.91	0.64	3.02		3.08	0.001352	1.72	286.41	425.22	0.38
CornerB	M001	210.89	100Year-Existing	188.91	0.68	2.98		3.04	0.001239	1.55	283.24	384.43	0.36
CornerB	M001	174.77	100Year-Existing	188.91	0.69	2.95		2.99	0.001101	1.32	306.00	433.43	0.33
CornerB	M001	155.66	100Year-Existing	188.91	0.64	2.94	2.55	2.97	0.001294	1.29	344.79	552.53	0.34
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	188.91	0.55	2.93	2.49	2.95	0.001000	1.13	357.29	506.99	0.30
CornerB	M001	129.05	100Year-Existing	188.91	0.40	2.90		2.93	0.000749	1.19	375.81	480.91	0.27
CornerB	M001	80.73	100Year-Existing	188.91	0.20	2.85		2.89	0.000715	1.30	328.08	389.04	0.28
CornerB	M001	23.81	100Year-Existing	188.91	0.32	2.80	2.11	2.85	0.000786	1.27	308.45	431.13	0.29
BellsB	TR001	178.13	100Year-Existing	15.93	92.91	94.17	94.56	95.40	0.043020	5.01	3.53	5.50	1.71
BellsB	TR001	159.86	100Year-Existing	15.93	92.15	94.85	93.63	94.91	0.000697	1.29	20.06	13.43	0.27
BellsB	TR001	139.54	100Year-Existing	15.93	91.13	94.70	92.79	94.88	0.001237	1.87	8.54	11.13	0.32
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	15.93	89.49	91.04	91.30	92.21	0.020564	4.84	3.41	4.98	1.28
BellsB	TR001	88.17	100Year-Existing	15.93	88.47	89.39	89.98	91.74	0.115722	7.21	2.70	5.27	2.77
BellsB	TR001	84.12	100Year-Existing	15.93	87.66	88.42	88.96	91.06	0.199757	7.32	2.37	6.47	3.46
BellsB	TR001	79.14	100Year-Existing	15.93	86.53	87.33	87.93	90.15	0.152015	7.71	2.43	5.99	3.18
BellsB	TR001	72.74	100Year-Existing	15.93	85.76	86.43	86.96	88.98	0.188504	7.18	2.42	6.80	3.37
BellsB	TR001	67.75	100Year-Existing	15.93	85.04	85.62	86.07	87.82	0.208427	6.92	2.68	8.06	3.47
BellsB	TR001	64.04	100Year-Existing	15.93	84.47	85.21	85.68	87.09	0.136510	6.08	2.63	6.05	2.88
BellsB	TR001	60.69	100Year-Existing	15.93	84.14	85.14	85.55	86.61	0.084197	5.52	3.21	6.89	2.33
BellsB	TR001	56.76	100Year-Existing	15.93	83.97	84.94	85.33	86.25	0.068986	5.09	3.28	7.09	2.12
BellsB	TR001	50.93	100Year-Existing	15.93	83.68	84.73	85.05	85.78	0.063472	4.67	3.80	8.89	2.02
BellsB	TR001	43.86	100Year-Existing	15.93	83.34	84.26	84.55	85.29	0.070504	4.61	3.85	9.99	2.10
BellsB	TR001	37.01	100Year-Existing	15.93	82.98	83.93	84.20	84.85	0.050228	4.51	4.24	9.15	1.84
BellsB	TR001	12.14	100Year-Existing	15.93	82.15	83.06	83.24	83.70	0.037083	3.80	4.98	10.12	1.57
BellsB	M002	5166.11	100Year-Existing	13.14	190.79	191.89	191.80	192.04	0.009993	2.43	10.06	17.93	0.78
BellsB	M002	5149.23	100Year-Existing	13.14	190.57	191.56	191.56	191.83	0.015183	2.71	7.45	14.43	0.94
BellsB	M002	5117.45	100Year-Existing	13.14	189.91	191.43	190.75	191.46	0.001393	1.16	21.67	23.67	0.31
BellsB	M002	5090.85	100Year-Existing	13.14	189.62	191.01	191.01	191.34	0.013493	3.16	7.19	11.33	0.92
BellsB	M002	5067.47	100Year-Existing	13.14	189.18	189.73	190.00	190.63	0.131377	5.58	3.68	9.21	2.55
BellsB	M002	5017.78	100Year-Existing	13.14	188.12	189.24	189.24	189.53	0.016886	3.17	7.27	12.10	1.02
BellsB	M002	4967.57	100Year-Existing	13.14	186.55	187.75	187.91	188.36	0.032473	4.14	4.75	7.35	1.34
BellsB	M002	4917.46	100Year-Existing	13.14	185.69	186.88	186.48	186.96	0.003588	1.61	13.68	20.40	0.49
BellsB	M002	4873.31	100Year-Existing	13.14	184.61	186.69		186.81	0.003228	2.01	12.33	16.92	0.47
BellsB	M002	4853.42	100Year-Existing	13.14	183.55	186.57	185.17	186.76	0.001595	1.92	6.85	27.42	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	13.14	181.53	182.82	183.13	184.00	0.032719	4.82	2.73	5.61	1.44
BellsB	M002	4785.76	100Year-Existing	13.14	181.35	182.32	182.54	183.05	0.041110	4.25	4.12	7.49	1.52
BellsB	M002	4756.65	100Year-Existing	13.14	180.12	180.99	181.22	181.69	0.052369	4.58	4.69	12.07	1.70
BellsB	M002	4727.54	100Year-Existing	13.14	179.02	179.80	179.96	180.35	0.037047	3.95	5.56	16.29	1.53

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	13.14	177.96	178.33	178.53	179.07	0.135004	4.63	4.07	16.58	2.62
BellsB	M002	4702.24	100Year-Existing	13.14	177.65	178.48	178.51	178.73	0.018126	2.75	7.51	17.49	1.07
BellsB	M002	4682.48	100Year-Existing	13.14	176.63	177.33	177.56	178.07	0.054873	4.30	4.48	14.00	1.82
BellsB	M002	4658.79	100Year-Existing	13.14	175.50	176.63	176.83	177.31	0.021448	3.97	4.43	6.79	1.24
BellsB	M002	4633.41	100Year-Existing	13.14	174.51	175.20	175.50	176.31	0.095705	5.88	3.87	12.20	2.42
BellsB	M002	4609.61	100Year-Existing	13.14	173.50	174.71	174.46	174.87	0.005751	2.22	9.28	11.89	0.66
BellsB	M002	4583.99	100Year-Existing	13.14	172.77	174.19	174.19	174.64	0.012117	3.18	5.33	7.03	0.93
BellsB	M002	4534.72	100Year-Existing	13.14	170.00	170.91	171.42	173.03	0.119611	7.91	2.73	6.01	2.80
BellsB	M002	4485.52	100Year-Existing	13.14	168.20	168.83	168.98	169.29	0.051256	4.05	5.68	17.65	1.74
BellsB	M002	4436.28	100Year-Existing	23.85	165.85	167.04	167.33	167.67	0.026585	4.64	9.04	14.47	1.41
BellsB	M002	4387.04	100Year-Existing	23.85	164.06	165.28	165.56	166.15	0.034697	5.39	7.79	12.47	1.62
BellsB	M002	4337.81	100Year-Existing	23.85	162.60	163.76	163.96	164.39	0.033486	4.98	10.05	23.11	1.55
BellsB	M002	4288.56	100Year-Existing	23.85	161.30	162.46	162.60	162.95	0.028211	4.45	10.46	20.14	1.40
BellsB	M002	4239.33	100Year-Existing	23.85	159.65	160.68	160.94	161.46	0.037433	4.83	7.96	15.00	1.63
BellsB	M002	4190.09	100Year-Existing	23.85	158.43	159.58	159.71	160.07	0.020980	3.95	10.36	18.10	1.25
BellsB	M002	4140.85	100Year-Existing	23.85	157.30	157.95	158.07	158.38	0.055232	4.48	9.50	22.72	1.85
BellsB	M002	4091.61	100Year-Existing	23.85	155.30	156.11	156.18	156.46	0.030712	3.97	10.73	20.38	1.44
BellsB	M002	4042.37	100Year-Existing	23.85	153.74	154.66	154.74	155.11	0.023915	3.70	9.51	15.14	1.29
BellsB	M002	3993.13	100Year-Existing	23.85	152.65	153.47	153.55	153.83	0.032660	3.80	10.80	23.19	1.42
BellsB	M002	3943.89	100Year-Existing	23.85	151.36	152.28	152.32	152.62	0.022820	3.59	11.21	19.75	1.26
BellsB	M002	3894.65	100Year-Existing	23.85	149.52	151.06	151.23	151.67	0.020010	4.17	9.92	18.01	1.20
BellsB	M002	3869.08	100Year-Existing	23.85	148.87	150.11	150.39	151.00	0.032396	4.86	7.24	11.32	1.53
BellsB	M002	3845.41	100Year-Existing	23.85	148.37	149.66	149.83	150.25	0.024803	4.22	9.58	17.97	1.27
BellsB	M002	3822.22	100Year-Existing	23.85	147.71	149.34	148.71	149.41	0.002427	1.66	22.55	19.33	0.42
BellsB	M002	3796.17	100Year-Existing	23.85	146.89	149.19		149.34	0.002815	2.12	18.35	15.42	0.47
BellsB	M002	3765.39	100Year-Existing	23.85	146.40	149.16		149.26	0.001566	1.72	20.38	13.06	0.35
BellsB	M002	3746.94	100Year-Existing	23.85	145.76	149.22		149.23	0.000149	0.67	56.26	25.41	0.12
BellsB	M002	3724.94	100Year-Existing	23.85	145.32	149.18		149.22	0.000381	1.08	33.30	15.24	0.18
BellsB	M002	3697.71	100Year-Existing	23.85	145.05	149.19		149.21	0.000189	0.82	41.55	16.48	0.13
BellsB	M002	3677.71	100Year-Existing	23.85	143.44	149.02	145.76	149.19	0.000635	1.84	12.99	19.93	0.25
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	23.85	142.47	144.71	144.71	145.79	0.010718	4.61	5.18	9.68	1.00
BellsB	M002	3623.19	100Year-Existing	23.85	142.10	143.61	144.12	145.23	0.051694	6.28	4.96	7.20	1.86
BellsB	M002	3573.45	100Year-Existing	23.85	140.89	142.31	142.72	143.21	0.027308	4.64	6.62	9.72	1.39
BellsB	M002	3520.99	100Year-Existing	23.85	139.30	140.85	140.89	141.80	0.026006	4.79	6.40	8.22	1.36
BellsB	M002	3473.83	100Year-Existing	23.85	137.98	139.72	139.86	140.52	0.023953	4.82	7.18	9.24	1.28
BellsB	M002	3424.29	100Year-Existing	23.85	136.49	138.57	138.14	138.85	0.004005	2.54	12.14	10.81	0.59
BellsB	M002	3400.36	100Year-Existing	23.85	135.96	138.71		138.76	0.000422	1.02	33.40	39.83	0.21
BellsB	M002	3386.31	100Year-Existing	23.85	135.48	138.69	137.61	138.75	0.000453	1.25	44.85	72.13	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	23.85	135.22	138.72	137.33	138.73	0.000039	0.39	117.43	68.93	0.07
BellsB	M002	3329.08	100Year-Existing	30.06	134.96	138.72		138.72	0.000053	0.47	123.94	57.73	0.08
BellsB	M002	3303.55	100Year-Existing	30.06	133.82	138.68	136.43	138.72	0.000252	1.16	56.77	50.71	0.17
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	30.06	131.39	134.41	134.41	135.67	0.010707	4.97	6.04	19.75	1.00
BellsB	M002	3203.83	100Year-Existing	30.06	131.13	132.38	132.99	134.84	0.109946	7.68	5.52	12.28	2.65
BellsB	M002	3176.31	100Year-Existing	30.06	130.02	131.45	131.85	132.74	0.045276	5.94	7.85	12.89	1.78
BellsB	M002	3157.63	100Year-Existing	30.06	129.89	131.26	131.42	131.84	0.032148	4.66	11.23	19.07	1.43
BellsB	M002	3130.11	100Year-Existing	30.06	128.68	130.46	130.55	131.22	0.016185	4.31	9.32	8.69	1.12
BellsB	M002	3083.82	100Year-Existing	30.06	127.94	129.54	129.80	130.34	0.022643	4.73	11.50	24.12	1.32
BellsB	M002	3037.68	100Year-Existing	30.06	127.11	128.04	128.28	128.81	0.051315	5.35	10.42	24.54	1.88
BellsB	M002	2991.47	100Year-Existing	30.06	126.28	128.19	127.31	128.21	0.000593	0.97	49.91	45.48	0.23
BellsB	M002	2945.26	100Year-Existing	30.06	125.32	127.86	127.28	128.12	0.004430	2.41	18.19	43.13	0.51
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	30.06	125.12	127.08	127.08	128.06	0.010754	4.39	6.85	5.25	1.00
BellsB	M002	2918.61	100Year-Existing	30.06	124.99	126.64	126.98	127.74	0.026300	5.28	8.43	15.20	1.43
BellsB	M002	2899.46	100Year-Existing	30.06	125.25	126.48	126.76	127.20	0.016509	3.93	10.40	33.97	1.15
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	30.06	124.44	125.95	125.95	126.14	0.003793	2.15	18.45	21.12	0.59
BellsB	M002	2861.32	100Year-Existing	30.06	123.64	124.74	125.05	125.72	0.040842	5.35	8.51	17.03	1.79
BellsB	M002	2823.69	100Year-Existing	30.06	123.23	124.33	124.37	124.63	0.020918	3.46	15.66	31.14	1.13
BellsB	M002	2777.91	100Year-Existing	30.06	122.77	123.99	123.72	124.03	0.003352	1.53	38.17	60.35	0.46
BellsB	M002	2727.91	100Year-Existing	30.06	122.21	123.59	123.59	123.84	0.011150	2.93	19.09	48.30	0.85
BellsB	M002	2677.99	100Year-Existing	30.06	121.13	122.68	122.72	123.16	0.015677	3.57	11.38	13.28	1.01
BellsB	M002	2628.09	100Year-Existing	30.06	120.69	122.24	122.27	122.54	0.012507	3.39	18.54	33.28	0.92
BellsB	M002	2578.18	100Year-Existing	30.06	119.94	121.60	121.54	121.82	0.008892	2.91	20.33	32.06	0.77
BellsB	M002	2528.27	100Year-Existing	30.06	119.10	120.86	120.86	121.29	0.013374	3.66	13.56	15.98	0.95
BellsB	M002	2518.19	100Year-Existing	30.06	118.62	120.13	120.42	121.05	0.034399	5.13	9.38	14.19	1.48
BellsB	M002	2496.15	100Year-Existing	30.06	118.53	120.48	120.06	120.65	0.005067	2.48	23.41	29.32	0.60
BellsB	M002	2478.37	100Year-Existing	30.06	117.97	120.22		120.54	0.006576	3.06	15.70	13.74	0.69
BellsB	M002	2450.61	100Year-Existing	30.06	117.55	119.70	119.70	120.27	0.011862	4.05	12.15	11.54	0.93
BellsB	M002	2428.46	100Year-Existing	30.06	117.19	118.46	118.86	119.69	0.058410	5.66	7.95	15.04	1.84
BellsB	M002	2408.52	100Year-Existing	30.06	116.63	117.93	118.17	118.68	0.044174	5.01	10.26	19.17	1.60
BellsB	M002	2378.55	100Year-Existing	30.06	116.15	117.67	117.73	118.09	0.019211	4.05	14.66	23.51	1.11
BellsB	M002	2367.92	100Year-Existing	30.06	115.61	116.74	117.03	117.70	0.052748	5.55	9.30	17.91	1.79
BellsB	M002	2352.81	100Year-Existing	30.06	115.07	116.30	116.51	117.03	0.036306	4.86	10.31	16.68	1.50
BellsB	M002	2328.64	100Year-Existing	30.06	113.99	115.73	115.88	116.37	0.019635	4.40	11.42	14.45	1.15
BellsB	M002	2307.61	100Year-Existing	30.06	112.94	116.14	115.43	116.18	0.000566	1.06	52.25	47.76	0.21
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	30.06	111.75	113.39	113.81	114.89	0.045508	5.44	5.54	5.61	1.49
BellsB	M002	2275.77	100Year-Existing	32.31	112.06	113.92	113.92	114.31	0.012425	3.77	15.83	22.90	0.93
BellsB	M002	2232.72	100Year-Existing	32.31	110.58	112.35	112.70	113.44	0.027934	5.27	9.37	13.25	1.36
BellsB	M002	2200.99	100Year-Existing	32.31	109.61	111.85	111.61	112.18	0.007062	3.13	16.07	14.14	0.72
BellsB	M002	2173.21	100Year-Existing	32.31	108.98	111.25	111.25	111.90	0.011655	3.99	11.38	9.78	0.89
BellsB	M002	2133.27	100Year-Existing	32.31	107.79	109.16	109.68	110.89	0.062350	6.68	6.99	10.64	1.98
BellsB	M002	2117.78	100Year-Existing	32.31	107.46	108.98	109.43	110.04	0.030420	5.20	8.77	10.67	1.43
BellsB	M002	2103.01	100Year-Existing	32.31	106.45	107.91	108.34	109.36	0.057684	6.34	7.33	9.92	1.86

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	32.31	105.17	106.70	107.21	108.31	0.056912	6.77	6.92	8.08	1.90
BellsB	M002	2068.57	100Year-Existing	32.31	104.36	105.41	105.89	107.17	0.090674	7.08	6.84	12.00	2.34
BellsB	M002	2059.88	100Year-Existing	32.31	103.56	104.96	105.45	106.56	0.051339	6.14	7.05	9.82	1.82
BellsB	M002	2054.52	100Year-Existing	32.31	103.13	104.49	105.00	106.23	0.070051	6.85	6.66	8.53	2.07
BellsB	M002	2040.56	100Year-Existing	32.31	102.39	104.71	104.35	105.19	0.006860	3.51	13.15	8.39	0.75
BellsB	M002	2033.27	100Year-Existing	32.31	102.08	104.42	104.42	105.10	0.013352	4.13	10.76	8.50	0.95
BellsB	M002	2025.44	100Year-Existing	32.31	101.58	103.03	103.60	104.81	0.050806	6.31	6.40	7.71	1.81
BellsB	M002	2021.67	100Year-Existing	32.31	101.43	103.34	103.68	104.48	0.027986	5.08	8.06	8.60	1.33
BellsB	M002	2014.53	100Year-Existing	32.31	99.96	101.50	102.20	103.99	0.107332	7.01	4.75	6.37	2.38
BellsB	M002	2010.46	100Year-Existing	32.31	99.08	100.22	100.99	103.41	0.144024	8.79	4.74	6.84	2.92
BellsB	M002	2007.37	100Year-Existing	32.31	98.52	99.95	100.75	102.96	0.121423	7.80	4.44	5.50	2.54
BellsB	M002	1996.87	100Year-Existing	32.31	97.97	99.09	99.81	101.69	0.099126	7.86	5.26	6.65	2.50
BellsB	M002	1982.97	100Year-Existing	32.31	97.73	98.94	99.38	100.36	0.052244	6.14	7.17	8.00	1.85
BellsB	M002	1966.25	100Year-Existing	32.31	96.75	98.81	98.99	99.67	0.020372	4.67	9.54	9.02	1.15
BellsB	M002	1951.81	100Year-Existing	32.31	96.56	98.85	98.21	99.01	0.003572	2.26	20.68	14.31	0.51
BellsB	M002	1939.94	100Year-Existing	32.31	96.29	98.36	98.36	98.90	0.012275	3.63	12.17	12.11	0.91
BellsB	M002	1918.81	100Year-Existing	32.31	95.86	98.04	97.76	98.40	0.007479	3.23	15.05	11.69	0.74
BellsB	M002	1910.32	100Year-Existing	32.31	95.58	97.63	97.63	98.29	0.012295	3.86	10.74	9.23	0.93
BellsB	M002	1896.87	100Year-Existing	32.31	94.38	95.92	96.48	97.83	0.067182	6.82	6.32	8.12	1.98
BellsB	M002	1887.59	100Year-Existing	32.31	93.87	95.05	95.60	97.08	0.096744	7.06	6.14	10.03	2.37
BellsB	M002	1880.79	100Year-Existing	32.31	93.33	96.13	95.26	96.30	0.002355	2.19	21.61	12.31	0.44
BellsB	M002	1870.34	100Year-Existing	32.31	92.77	96.14		96.27	0.001315	1.94	25.56	10.45	0.35
BellsB	M002	1857.16	100Year-Existing	32.31	91.88	96.17		96.24	0.000668	1.46	34.09	14.42	0.24
BellsB	M002	1848.27	100Year-Existing	32.31	91.91	96.19		96.23	0.000322	1.10	44.96	16.72	0.17
BellsB	M002	1834.27	100Year-Existing	32.31	90.88	96.19		96.22	0.000201	0.97	51.84	17.36	0.14
BellsB	M002	1821.35	100Year-Existing	32.31	90.90	96.20		96.21	0.000116	0.80	69.33	20.60	0.11
BellsB	M002	1807.43	100Year-Existing	32.31	89.83	96.20		96.21	0.000070	0.66	81.96	21.51	0.09
BellsB	M002	1800.77	100Year-Existing	32.31	89.59	96.20		96.21	0.000068	0.66	87.05	22.63	0.08
BellsB	M002	1777.98	100Year-Existing	32.31	88.77	96.20		96.21	0.000023	0.43	133.82	30.02	0.05
BellsB	M002	1753.27	100Year-Existing	32.31	88.22	96.20		96.21	0.000026	0.46	127.59	29.76	0.05
BellsB	M002	1729.73	100Year-Existing	32.31	88.17	96.20		96.21	0.000015	0.37	157.48	32.40	0.04
BellsB	M002	1705.77	100Year-Existing	32.31	87.60	96.20		96.21	0.000006	0.30	247.80	63.76	0.03
BellsB	M002	1688.91	100Year-Existing	32.31	86.72	96.20	89.95	96.20	0.000009	0.33	205.64	64.70	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	32.31	83.97	87.17	87.17	88.78	0.008168	5.61	5.76	19.57	1.00
BellsB	M002	1605.59	100Year-Existing	32.31	81.49	82.26	82.91	87.27	0.521375	10.50	3.53	11.51	5.52
BellsB	M001	1582.05	100Year-Existing	51.48	80.41	81.56	82.49	85.71	0.130535	9.30	6.20	8.81	3.18
BellsB	M001	1563.67	100Year-Existing	51.48	79.96	81.27	81.94	83.63	0.058947	7.32	8.80	10.65	2.23
BellsB	M001	1544.26	100Year-Existing	51.48	79.04	80.89	81.45	82.66	0.029489	6.47	10.68	9.59	1.65
BellsB	M001	1529.04	100Year-Existing	51.48	78.24	79.51	80.23	82.00	0.054246	7.26	8.10	8.49	2.16
BellsB	M001	1515.66	100Year-Existing	51.48	77.30	79.18	79.81	81.23	0.044592	6.56	8.87	7.71	1.72
BellsB	M001	1502.43	100Year-Existing	51.48	69.64	70.27	71.22	78.96	0.963284	13.07	3.96	10.60	6.66
BellsB	M001	1483.47	100Year-Existing	51.48	68.89	69.92	70.42	71.88	0.121084	6.91	9.24	16.39	2.61
BellsB	M001	1454.75	100Year-Existing	51.48	68.03	69.54	69.66	70.23	0.022936	4.63	15.99	16.05	1.26
BellsB	M001	1406.62	100Year-Existing	51.48	66.49	68.69	68.69	69.40	0.013506	4.40	16.20	11.98	1.01
BellsB	M001	1358.51	100Year-Existing	51.48	65.17	66.67	67.14	68.23	0.045617	5.99	10.68	11.91	1.73
BellsB	M001	1310.38	100Year-Existing	51.48	63.80	65.37	65.69	66.39	0.027898	4.96	14.05	17.20	1.38
BellsB	M001	1286.33	100Year-Existing	51.48	62.81	64.22	64.59	65.46	0.052736	5.88	12.49	19.53	1.82
BellsB	M001	1262.25	100Year-Existing	51.48	62.09	64.39	64.45	64.81	0.011028	3.84	24.04	29.31	0.88
BellsB	M001	1251.58	100Year-Existing	51.48	61.46	63.19	63.82	64.52	0.039832	6.59	12.33	12.47	1.68
BellsB	M001	1234.76	100Year-Existing	51.48	60.57	62.12	62.61	63.69	0.061684	7.10	12.26	20.29	2.00
BellsB	M001	1214.13	100Year-Existing	51.48	59.55	61.70	61.05	61.88	0.003304	2.19	32.96	23.86	0.51
BellsB	M001	1200.58	100Year-Existing	51.48	58.90	61.12	61.12	61.75	0.011753	4.07	18.08	15.29	0.94
BellsB	M001	1182.98	100Year-Existing	51.48	58.59	60.79	60.89	61.52	0.014289	4.46	17.04	15.29	1.03
BellsB	M001	1166.01	100Year-Existing	51.48	58.39	59.80	60.22	61.07	0.043085	5.73	12.84	17.89	1.68
BellsB	M001	1153.18	100Year-Existing	51.48	57.70	59.48	59.78	60.50	0.036762	6.13	15.04	19.85	1.57
BellsB	M001	1141.88	100Year-Existing	51.48	56.72	58.09	58.63	59.89	0.060954	6.48	10.00	13.53	1.97
BellsB	M001	1128.34	100Year-Existing	51.48	56.53	57.76	58.11	58.91	0.054244	5.84	11.86	15.06	1.82
BellsB	M001	1117.89	100Year-Existing	51.48	55.58	56.90	57.33	58.28	0.062056	6.78	11.52	13.70	1.99
BellsB	M001	1096.03	100Year-Existing	51.48	54.61	56.30	56.58	57.29	0.028285	5.03	14.04	16.01	1.39
BellsB	M001	1077.81	100Year-Existing	51.48	54.24	55.38	55.79	56.63	0.050190	5.68	12.48	17.98	1.79
BellsB	M001	1069.76	100Year-Existing	51.48	53.70	54.48	54.90	55.93	0.115465	6.49	10.84	19.28	2.53
BellsB	M001	1064.67	100Year-Existing	51.48	53.19	54.00	54.38	55.33	0.111022	6.30	11.31	20.52	2.47
BellsB	M001	1051.64	100Year-Existing	51.48	51.97	53.06	53.46	54.41	0.064208	5.98	11.95	18.20	1.98
BellsB	M001	1032.36	100Year-Existing	51.48	50.97	52.50	52.75	53.40	0.035137	5.48	14.75	16.69	1.53
BellsB	M001	1021.64	100Year-Existing	51.48	50.03	51.48	51.91	52.90	0.047514	5.81	11.67	16.74	1.75
BellsB	M001	1014.11	100Year-Existing	51.48	49.46	51.10	51.55	52.57	0.042327	5.88	11.32	14.58	1.66
BellsB	M001	1006.24	100Year-Existing	51.48	49.15	50.45	50.95	52.17	0.056607	6.36	10.41	14.42	1.91
BellsB	M001	996.42	100Year-Existing	51.48	48.11	49.47	50.05	51.52	0.082371	7.45	9.62	13.85	2.25
BellsB	M001	987.27	100Year-Existing	51.48	47.17	48.75	49.36	50.87	0.059926	7.13	9.50	11.61	2.00
BellsB	M001	973.52	100Year-Existing	51.48	46.79	48.22	48.80	50.06	0.045002	6.31	9.79	13.14	1.85
BellsB	M001	951.43	100Year-Existing	51.48	45.77	47.31	47.84	49.05	0.049631	6.52	10.68	16.35	1.91
BellsB	M001	931.51	100Year-Existing	51.48	44.86	46.18	46.69	47.85	0.072531	7.66	10.13	13.93	2.29
BellsB	M001	925.41	100Year-Existing	51.48	44.69	46.37	46.68	47.38	0.028298	5.69	14.19	18.62	1.46
BellsB	M001	901.68	100Year-Existing	51.48	43.69	45.25	45.67	46.62	0.032447	5.93	11.30	11.41	1.62
BellsB	M001	877.27	100Year-Existing	51.48	43.18	45.46	45.14	45.89	0.006324	3.38	20.29	13.77	0.76
BellsB	M001	857.41	100Year-Existing	51.48	42.16	45.65	45.14	45.75	0.000895	1.70	51.86	40.96	0.30
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	52.65	38.54	42.10	41.21	42.75	0.004306	3.63	15.09	11.86	0.63
BellsB	M001	810.13	100Year-Existing	52.65	37.80	42.37	40.01	42.47	0.000629	1.49	49.02	31.45	0.23
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	52.65	34.33	36.65	37.54	39.44	0.056155	7.47	7.44	8.53	1.92
BellsB	M001	782.27	100Year-Existing	52.65	33.92	34.87	35.60	38.02	0.172766	8.43	7.13	11.18	3.11
BellsB	M001	772.73	100Year-Existing	52.65	30.94	32.61	33.42	36.37	0.167332	11.12	7.78	10.46	3.01
BellsB	M001	766.74	100Year-Existing	52.65	30.65	32.56	33.28	35.31	0.101556	9.82	9.08	10.54	2.44
BellsB	M001	760.32	100Year-Existing	52.65	30.34	32.02	32.75	34.73	0.080129	8.57	9.09	10.68	2.29
BellsB	M001	755.97	100Year-Existing	52.65	30.05	31.70	32.40	34.33	0.085788	8.03	8.89	11.38	2.29

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	52.65	29.30	31.03	31.78	33.77	0.085789	8.57	8.87	10.34	2.32
BellsB	M001	742.14	100Year-Existing	52.65	28.38	29.72	30.57	33.04	0.097979	8.66	7.63	9.19	2.54
BellsB	M001	736.73	100Year-Existing	52.65	28.24	29.12	29.88	32.34	0.163260	8.61	7.09	10.83	3.09
BellsB	M001	722.61	100Year-Existing	52.65	27.35	28.50	29.03	30.42	0.075421	6.78	9.67	14.58	2.16
BellsB	M001	712.04	100Year-Existing	52.65	26.27	27.90	28.46	29.72	0.052589	6.53	10.09	11.14	1.84
BellsB	M001	702.42	100Year-Existing	52.65	26.04	27.45	27.97	29.16	0.056935	6.46	10.40	12.34	1.92
BellsB	M001	691.68	100Year-Existing	52.65	25.03	26.70	27.27	28.54	0.055972	6.35	9.51	11.00	1.87
BellsB	M001	686.22	100Year-Existing	52.65	24.46	25.80	26.46	28.14	0.080249	6.88	8.20	10.51	2.21
BellsB	M001	675.26	100Year-Existing	52.65	24.08	25.36	25.93	27.23	0.060782	6.48	9.40	10.81	1.98
BellsB	M001	668.37	100Year-Existing	52.65	23.58	24.99	25.55	26.82	0.057844	6.44	9.78	12.12	1.92
BellsB	M001	655.45	100Year-Existing	52.65	23.02	24.29	24.80	26.04	0.058830	6.25	9.92	13.04	1.92
BellsB	M001	636.88	100Year-Existing	52.65	21.46	22.92	23.51	24.90	0.058963	6.46	9.15	10.61	1.94
BellsB	M001	619.06	100Year-Existing	52.65	20.82	22.47	22.91	23.91	0.038303	5.86	11.45	11.89	1.61
BellsB	M001	608.48	100Year-Existing	52.65	20.13	21.65	22.18	23.43	0.048269	6.18	10.13	13.51	1.78
BellsB	M001	592.31	100Year-Existing	52.65	18.95	20.48	21.08	22.49	0.069318	7.29	9.82	11.64	2.10
BellsB	M001	582.72	100Year-Existing	52.65	18.14	19.36	20.03	21.72	0.084683	7.47	8.84	10.37	2.32
BellsB	M001	577.91	100Year-Existing	52.65	17.66	19.39	20.02	21.32	0.041563	6.74	10.33	9.68	1.73
BellsB	M001	561.51	100Year-Existing	52.65	17.02	18.50	19.06	20.43	0.072202	7.01	10.31	13.59	2.12
BellsB	M001	553.07	100Year-Existing	52.65	16.35	17.61	18.25	19.81	0.069473	6.77	8.86	11.50	2.09
BellsB	M001	541.54	100Year-Existing	52.65	15.41	16.70	17.31	18.93	0.084239	6.72	8.58	12.99	2.25
BellsB	M001	529.17	100Year-Existing	52.65	14.85	16.11	16.65	17.89	0.063940	5.97	9.25	9.27	1.79
BellsB	M001	514.53	100Year-Existing	52.65	14.21	15.43	15.87	16.87	0.060366	5.81	10.93	12.30	1.76
BellsB	M001	467.56	100Year-Existing	52.65	11.61	12.94	13.35	14.33	0.047115	5.30	10.65	10.56	1.56
BellsB	M001	420.59	100Year-Existing	52.65	8.75	12.84	11.21	13.03	0.001717	2.08	33.22	13.91	0.35
BellsB	M001	400.25	100Year-Existing	52.65	8.57	12.63	10.81	12.97	0.002107	2.60	20.29	6.76	0.41
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	52.65	0.83	1.89	3.07	6.92	0.111931	9.94	5.30	5.50	3.08
BellsB	M001	47.74	100Year-Existing	52.65	0.56	4.27	3.29	4.29	0.000175	0.86	145.11	130.14	0.15
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	52.65	0.70	4.27	3.29	4.28	0.000146	0.78	155.27	132.16	0.13
BellsB	M001	20.51	100Year-Existing	52.65	0.57	4.27		4.28	0.000178	0.84	150.27	142.10	0.15

Corner Brook 100yr Q-20%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	149.84	36.31	38.94	38.94	40.00	0.009214	5.01	39.20	20.87	1.02
CornerB	M004	2838.71	100Year-Existing	149.84	36.15	38.18	38.53	39.43	0.013256	5.14	35.53	29.32	1.17
CornerB	M004	2796.61	100Year-Existing	149.84	35.35	38.18	37.59	38.70	0.004201	3.50	58.08	37.60	0.69
CornerB	M004	2769.85	100Year-Existing	149.84	34.80	37.41	37.41	38.24	0.013751	6.15	46.41	29.79	1.24
CornerB	TR001	206.04	100Year-Existing	25.68	43.81	44.69	44.96	45.59	0.042036	4.95	7.52	13.69	1.79
CornerB	TR001	156.04	100Year-Existing	25.68	41.63	42.62	42.90	43.53	0.040290	4.38	6.98	16.08	1.70
CornerB	TR001	106.04	100Year-Existing	25.68	39.17	39.77	40.12	40.96	0.067098	5.11	5.91	12.45	2.15
CornerB	TR001	56.04	100Year-Existing	25.68	37.27	38.04	38.23	38.72	0.030202	3.84	7.76	13.26	1.49
CornerB	TR001	36.04	100Year-Existing	25.68	35.50	38.23	37.37	38.23	0.000070	0.42	118.00	80.87	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	25.68	35.18	37.10	37.10	37.93	0.010499	4.04	6.35	77.93	1.00
CornerB	M003	2689.92	100Year-Existing	164.16	33.55	35.51	35.89	37.15	0.029939	7.11	40.03	43.25	1.72
CornerB	M003	2645.73	100Year-Existing	164.16	32.87	36.34	34.70	36.45	0.000883	1.91	138.62	63.03	0.33
CornerB	M003	2602.09	100Year-Existing	164.16	32.20	36.34		36.41	0.000426	1.46	176.78	67.36	0.24
CornerB	M003	2557.73	100Year-Existing	164.16	31.34	36.29		36.39	0.000417	1.63	149.51	48.15	0.24
CornerB	M003	2537.73	100Year-Existing	164.16	30.77	36.22	34.47	36.37	0.000681	2.28	145.41	64.05	0.31
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	164.16	30.35	33.89	33.89	35.64	0.008043	5.85	28.05	20.13	1.00
CornerB	M003	2507.21	100Year-Existing	164.16	30.75	32.35	33.13	35.02	0.051173	8.11	25.96	21.54	2.18
CornerB	M003	2459.31	100Year-Existing	164.16	30.13	31.73	32.08	33.03	0.022815	5.63	37.67	31.34	1.47
CornerB	M003	2411.41	100Year-Existing	164.16	29.27	31.53	31.55	32.16	0.009682	4.46	60.00	47.40	1.00
CornerB	M003	2363.51	100Year-Existing	164.16	28.77	30.44	30.70	31.48	0.019801	5.11	42.84	39.52	1.36
CornerB	M003	2315.61	100Year-Existing	164.16	27.93	29.72	29.88	30.70	0.012797	4.50	40.27	28.92	1.12
CornerB	M003	2267.71	100Year-Existing	164.48	26.30	30.08	28.69	30.40	0.001555	2.64	76.02	27.80	0.44
CornerB	M003	2264.01	100Year-Existing	164.48	26.10	30.04	29.29	30.38	0.004696	2.61	64.60	29.72	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	164.48	26.10	29.90		30.29	0.005776	2.78	60.54	29.50	0.60
CornerB	M003	2260.98	100Year-Existing	164.48	25.80	29.95		30.23	0.001208	2.44	83.07	28.83	0.40
CornerB	M003	2240.88	100Year-Existing	164.48	27.01	29.82		30.17	0.002757	2.73	72.14	39.48	0.56
CornerB	M003	2212.25	100Year-Existing	164.48	26.87	29.75		30.09	0.002621	2.81	73.81	35.60	0.55
CornerB	M003	2183.63	100Year-Existing	164.48	25.56	28.89	28.89	29.90	0.007628	5.00	46.54	26.28	0.94
CornerB	M003	2163.63	100Year-Existing	164.48	25.35	28.81	28.07	29.46	0.003628	3.67	48.43	29.74	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	164.48	24.87	27.58	27.94	29.21	0.015161	6.14	32.44	21.39	1.28
CornerB	M003	2131.66	100Year-Existing	164.48	24.57	26.88	27.49	28.89	0.025332	6.49	28.67	20.33	1.57
CornerB	M003	2119.46	100Year-Existing	164.48	24.12	26.02	26.77	28.48	0.038802	7.26	26.22	21.58	1.90
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	164.48	24.04	26.31	26.83	28.07	0.020965	6.02	30.37	21.31	1.44
CornerB	M003	2080.62	100Year-Existing	164.48	23.73	25.47	26.10	27.26	0.026941	6.13	30.42	24.71	1.60
CornerB	M003	2068.44	100Year-Existing	164.48	23.76	25.45	25.89	26.86	0.022117	5.54	34.45	28.10	1.45
CornerB	M003	2022.25	100Year-Existing	164.48	22.74	24.69	25.01	25.96	0.016537	5.32	37.49	27.98	1.29
CornerB	M003	1991.14	100Year-Existing	164.48	22.18	24.41	24.55	25.49	0.011156	4.91	41.50	26.98	1.09
CornerB	M003	1985.82	100Year-Existing	164.48	21.97	24.02	24.34	25.39	0.016359	5.56	36.56	25.20	1.29
CornerB	M003	1975.95	100Year-Existing	164.48	21.78	23.69	24.11	25.19	0.020425	5.95	35.41	26.30	1.43
CornerB	M003	1929.72	100Year-Existing	164.48	20.08	22.18	22.74	24.11	0.024985	6.45	29.46	20.15	1.57
CornerB	M003	1883.49	100Year-Existing	164.48	19.23	21.75	22.01	23.16	0.012674	5.62	35.85	19.43	1.18
CornerB	TR002	21.04	100Year-Existing	9.76	22.27	22.89	23.41	25.25	0.150173	7.34	1.71	4.39	3.14
CornerB	TR002	18.08	100Year-Existing	9.76	21.40	21.80	22.25	24.55	0.382888	8.28	1.56	6.15	4.65
CornerB	M002	1826.39	100Year-Existing	166.08	16.92	18.45	19.25	21.64	0.120309	8.49	24.01	29.82	2.51
CornerB	M002	1790.92	100Year-Existing	166.08	15.49	18.65	18.62	19.84	0.013499	5.27	39.40	17.15	0.98
CornerB	M002	1773.95	100Year-Existing	166.08	14.72	19.23	17.59	19.49	0.002024	2.53	84.93	28.45	0.39
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	166.08	14.87	19.23	17.34	19.41	0.001144	2.18	105.47	37.05	0.34
CornerB	M002	1733.13	100Year-Existing	166.08	15.23	19.27		19.33	0.000333	1.14	182.42	72.59	0.18
CornerB	M002	1717.41	100Year-Existing	166.08	15.12	19.27		19.32	0.000278	1.06	204.30	81.85	0.17
CornerB	M002	1691.96	100Year-Existing	166.08	14.62	19.27		19.31	0.000231	1.00	229.03	100.43	0.15
CornerB	M002	1654.15	100Year-Existing	166.08	13.87	19.28		19.30	0.000111	0.73	299.11	128.14	0.11
CornerB	M002	1613.91	100Year-Existing	166.08	13.08	19.28		19.29	0.000053	0.61	348.90	148.17	0.09
CornerB	M002	1567.16	100Year-Existing	166.08	12.15	19.29		19.29	0.000009	0.26	716.77	207.80	0.04
CornerB	M002	1551.89	100Year-Existing	166.08	11.85	19.29		19.29	0.000003	0.17	1095.67	271.20	0.02
CornerB	M002	1539.91	100Year-Existing	165.12	11.62	19.29		19.29	0.000002	0.12	1493.54	304.72	0.02
CornerB	M002	1526.59	100Year-Existing	165.12	11.36	19.29		19.29	0.000002	0.12	1520.87	309.96	0.02
CornerB	M002	1517.99	100Year-Existing	165.12	11.18	19.29		19.29	0.000002	0.14	1285.28	266.05	0.02
CornerB	M002	1505.64	100Year-Existing	165.12	10.94	19.29		19.29	0.000004	0.18	957.58	195.58	0.02
CornerB	M002	1490.63	100Year-Existing	165.12	10.64	19.28		19.29	0.000008	0.27	660.89	137.46	0.03
CornerB	M002	1463.65	100Year-Existing	165.12	10.11	19.27		19.29	0.000034	0.56	360.72	84.77	0.07
CornerB	M002	1415.93	100Year-Existing	165.12	9.17	19.27		19.29	0.000029	0.55	341.12	73.26	0.07
CornerB	M002	1386.11	100Year-Existing	165.12	8.58	19.26		19.28	0.000043	0.65	310.22	76.73	0.08
CornerB	M002	1363.91	100Year-Existing	165.12	8.14	19.25		19.28	0.000071	0.82	250.13	56.43	0.10
CornerB	M002	1356.61	100Year-Existing	165.12	8.00	19.25		19.28	0.000197	1.05	257.63	71.67	0.11
CornerB	M002	1354.61	100Year-Existing	165.12	15.35	18.66	18.65	19.23	0.005158	4.00	66.80	52.45	0.70
CornerB	M002	1354.11	100Year-Existing	165.12	15.35	18.65	18.65	19.23	0.005311	4.04	65.90	52.07	0.71
CornerB	M002	1352.01	100Year-Existing	165.12	8.00	9.30	11.10	18.35	0.532083	0.36	12.40	9.51	0.14
CornerB	M002	1347.51	100Year-Existing	165.12	7.72	9.47	10.65	14.91	0.233326	10.33	15.98	16.33	3.33
CornerB	M002	1336.58	100Year-Existing	165.12	7.69	9.21	10.14	12.54	0.115582	8.11	20.72	20.11	2.44
CornerB	M002	1326.83	100Year-Existing	165.12	7.68	10.61	9.82	10.96	0.004570	2.80	67.20	30.54	0.56
CornerB	M002	1317.22	100Year-Existing	165.12	7.66	10.46		10.90	0.006481	3.07	59.82	31.25	0.65
CornerB	M002	1315.18	100Year-Existing	165.12	7.28	10.01	10.01	10.84	0.016580	4.36	44.47	28.01	1.00
CornerB	M002	1313.58	100Year-Existing	165.12	6.48	9.18	9.63	10.73	0.035340	5.79	32.56	24.14	1.42
CornerB	M002	1312.39	100Year-Existing	165.12	6.23	8.73	9.31	10.65	0.045831	6.34	28.92	22.65	1.61
CornerB	M002	1311.16	100Year-Existing	165.12	5.92	8.31	8.98	10.55	0.062768	6.74	25.86	21.88	1.84
CornerB	M002	1309.11	100Year-Existing	165.12	5.91	7.91	8.65	10.40	0.070694	7.07	24.42	21.01	1.95
CornerB	M002	1305.35	100Year-Existing	165.12	5.37	7.27	8.06	10.08	0.080609	7.71	24.42	23.97	2.10
CornerB	M002	1300.06	100Year-Existing	165.12	5.06	6.79	7.58	9.61	0.097887	7.51	22.88	22.78	2.25
CornerB	M002	1296.49	100Year-Existing	165.12	4.91	6.93	7.62	9.19	0.052560	6.81	26.23	19.91	1.74
CornerB	M002	1289.64	100Year-Existing	165.12	4.71	6.93	7.45	8.75	0.038464	6.16	29.50	20.44	1.50
CornerB	M002	1284.12	100Year-Existing	165.12	4.41	7.03	7.36	8.48	0.023543	5.57	33.74	20.01	1.22

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	165.12	4.23	6.63	7.10	8.33	0.029246	5.95	30.81	19.75	1.35
CornerB	M002	1258.94	100Year-Existing	165.12	3.53	5.28	5.95	7.43	0.063349	6.81	27.94	27.47	1.87
CornerB	M002	1246.98	100Year-Existing	165.12	3.37	4.84	5.41	6.73	0.043242	6.16	28.30	25.19	1.72
CornerB	M002	1233.83	100Year-Existing	165.12	3.10	4.62	5.06	6.04	0.041225	5.51	34.16	37.53	1.65
CornerB	M002	1215.66	100Year-Existing	165.12	2.70	4.14	4.51	5.32	0.028158	4.89	37.83	45.79	1.39
CornerB	M002	1206.83	100Year-Existing	165.12	2.54	4.77	4.42	5.08	0.005165	2.72	81.03	66.86	0.64
CornerB	M002	1194.69	100Year-Existing	165.12	2.39	4.75		5.02	0.004299	2.59	87.41	64.64	0.59
CornerB	M002	1185.06	100Year-Existing	165.12	2.26	4.74		4.96	0.003233	2.40	95.56	66.21	0.52
CornerB	M002	1142.41	100Year-Existing	165.12	1.70	4.65		4.84	0.002614	2.24	108.37	82.58	0.47
CornerB	M002	1137.55	100Year-Existing	165.12	1.60	4.21	4.17	4.76	0.010079	3.48	60.77	66.11	0.86
CornerB	M002	1110.53	100Year-Existing	165.12	1.39	4.09	3.74	4.54	0.005072	3.15	71.46	65.39	0.65
CornerB	M002	1090.67	100Year-Existing	165.12	1.10	4.27		4.39	0.001376	1.79	142.71	86.72	0.34
CornerB	M002	1070.69	100Year-Existing	165.12	0.80	4.29	2.89	4.35	0.000632	1.39	187.11	89.06	0.24
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	165.12	0.76	4.28	2.79	4.34	0.000565	1.34	187.83	86.41	0.23
CornerB	M002	1047.01	100Year-Existing	165.12	0.75	4.26		4.32	0.000537	1.46	182.42	78.33	0.26
CornerB	M002	1004.03	100Year-Existing	165.12	0.77	4.23		4.30	0.000512	1.43	206.74	128.75	0.25
CornerB	M002	959.21	100Year-Existing	165.12	0.70	4.24		4.27	0.000372	1.21	308.65	278.58	0.21
CornerB	M002	915.75	100Year-Existing	164.40	0.68	4.24		4.25	0.000267	1.00	382.77	295.14	0.18
CornerB	M002	869.66	100Year-Existing	164.40	0.69	4.23		4.24	0.000154	0.78	420.25	222.49	0.14
CornerB	M002	828.33	100Year-Existing	159.76	0.77	4.22		4.24	0.000159	0.77	408.53	219.86	0.14
CornerB	M002	784.55	100Year-Existing	159.76	0.82	4.22		4.23	0.000108	0.64	428.77	231.19	0.11
CornerB	M002	739.85	100Year-Existing	159.76	0.82	4.22		4.23	0.000107	0.61	440.13	269.56	0.11
CornerB	M002	696.36	100Year-Existing	159.76	0.64	4.20		4.22	0.000153	0.78	383.78	266.64	0.14
CornerB	M001	659.37	100Year-Existing	167.92	0.75	4.20		4.21	0.000164	0.76	362.64	231.77	0.14
CornerB	M001	643.93	100Year-Existing	167.92	0.74	4.19	2.93	4.21	0.000247	0.95	305.98	216.22	0.17
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	167.92	0.83	3.88	2.93	3.94	0.000619	1.41	209.15	177.84	0.27
CornerB	M001	608.52	100Year-Existing	167.92	0.76	3.87		3.93	0.000773	1.51	201.14	162.45	0.30
CornerB	M001	570.12	100Year-Existing	167.92	0.61	3.87		3.90	0.000394	1.15	270.53	186.01	0.22
CornerB	M001	535.83	100Year-Existing	167.92	0.56	3.86	1.90	3.89	0.000227	0.95	279.46	219.77	0.17
CornerB	M001	520.22	100Year-Existing	167.92	0.55	3.86	1.99	3.88	0.000172	0.82	327.36	291.27	0.15
CornerB	M001	472.07	100Year-Existing	167.92	0.58	3.81	2.42	3.87	0.000433	1.26	233.42	200.19	0.23
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	167.92	0.44	3.40	2.19	3.57	0.001181	2.01	147.60	212.00	0.37
CornerB	M001	425.41	100Year-Existing	167.92	0.48	3.42		3.51	0.000783	1.58	232.22	289.11	0.30
CornerB	M001	401.99	100Year-Existing	167.92	0.74	3.44		3.48	0.000449	1.16	323.47	337.69	0.23
CornerB	M001	381.26	100Year-Existing	167.92	0.79	3.37	3.07	3.46	0.001057	1.70	236.16	346.54	0.34
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	167.92	0.79	3.10	3.09	3.34	0.002782	2.58	150.11	331.78	0.55
CornerB	M001	352.89	100Year-Existing	167.92	0.68	3.08		3.27	0.001644	2.04	136.41	272.78	0.43
CornerB	M001	324.13	100Year-Existing	167.92	0.67	3.08		3.21	0.001325	1.83	151.90	195.04	0.38
CornerB	M001	292.92	100Year-Existing	167.92	0.65	3.07		3.16	0.001013	1.57	201.70	297.21	0.33
CornerB	M001	274.62	100Year-Existing	167.92	0.96	3.05	2.70	3.13	0.002058	1.99	217.77	338.67	0.46
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	167.92	1.01	3.02	2.63	3.07	0.001919	1.90	239.74	359.02	0.44
CornerB	M001	245.99	100Year-Existing	167.92	0.64	2.98		3.04	0.001210	1.61	270.48	413.67	0.36
CornerB	M001	210.89	100Year-Existing	167.92	0.68	2.95		3.00	0.001072	1.42	271.23	370.44	0.33
CornerB	M001	174.77	100Year-Existing	167.92	0.69	2.93		2.96	0.000960	1.22	294.04	423.82	0.30
CornerB	M001	155.66	100Year-Existing	167.92	0.64	2.91	2.52	2.94	0.001144	1.20	330.24	540.71	0.32
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	167.92	0.55	2.90	2.48	2.92	0.000871	1.05	344.67	490.50	0.28
CornerB	M001	129.05	100Year-Existing	167.92	0.40	2.88		2.90	0.000636	1.09	366.05	479.17	0.25
CornerB	M001	80.73	100Year-Existing	167.92	0.20	2.84		2.87	0.000582	1.17	323.98	387.14	0.25
CornerB	M001	23.81	100Year-Existing	167.92	0.32	2.80	2.04	2.84	0.000621	1.13	308.45	431.13	0.25
BellsB	TR001	178.13	100Year-Existing	14.16	92.91	94.11	94.47	95.25	0.043029	4.80	3.23	5.27	1.70
BellsB	TR001	159.86	100Year-Existing	14.16	92.15	94.21	93.55	94.32	0.001930	1.74	12.33	10.79	0.42
BellsB	TR001	139.54	100Year-Existing	14.16	91.13	94.07	92.67	94.27	0.001875	2.02	7.02	9.32	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	14.16	89.49	90.95	91.17	92.01	0.020125	4.59	3.19	3.64	1.25
BellsB	TR001	88.17	100Year-Existing	14.16	88.47	89.35	89.89	91.54	0.117297	6.94	2.47	5.12	2.76
BellsB	TR001	84.12	100Year-Existing	14.16	87.66	88.39	88.90	90.85	0.205461	7.06	2.16	6.26	3.46
BellsB	TR001	79.14	100Year-Existing	14.16	86.53	87.29	87.85	89.94	0.154274	7.42	2.20	5.69	3.17
BellsB	TR001	72.74	100Year-Existing	14.16	85.76	86.40	86.91	88.75	0.189036	6.87	2.21	6.54	3.34
BellsB	TR001	67.75	100Year-Existing	14.16	85.04	85.59	86.01	87.60	0.202547	6.59	2.50	8.02	3.39
BellsB	TR001	64.04	100Year-Existing	14.16	84.47	85.18	85.61	86.89	0.136215	5.79	2.45	5.93	2.84
BellsB	TR001	60.69	100Year-Existing	14.16	84.14	85.11	85.49	86.43	0.079308	5.22	3.00	6.65	2.24
BellsB	TR001	56.76	100Year-Existing	14.16	83.97	84.91	85.26	86.10	0.068368	4.85	3.02	6.75	2.09
BellsB	TR001	50.93	100Year-Existing	14.16	83.68	84.70	84.99	85.64	0.060973	4.41	3.54	8.56	1.96
BellsB	TR001	43.86	100Year-Existing	14.16	83.34	84.23	84.50	85.18	0.070182	4.41	3.54	9.88	2.07
BellsB	TR001	37.01	100Year-Existing	14.16	82.98	83.89	84.14	84.75	0.050294	4.33	3.90	9.02	1.82
BellsB	TR001	12.14	100Year-Existing	14.16	82.15	83.02	83.19	83.61	0.036420	3.62	4.63	10.02	1.54
BellsB	M002	5166.11	100Year-Existing	11.68	190.79	191.83	191.76	191.99	0.010514	2.40	9.07	17.50	0.80
BellsB	M002	5149.23	100Year-Existing	11.68	190.57	191.52	191.52	191.77	0.015050	2.60	6.82	14.03	0.93
BellsB	M002	5117.45	100Year-Existing	11.68	189.91	191.36	190.72	191.38	0.001413	1.13	19.88	23.14	0.31
BellsB	M002	5090.85	100Year-Existing	11.68	189.62	190.95	190.95	191.27	0.013219	3.03	6.57	10.81	0.90
BellsB	M002	5067.47	100Year-Existing	11.68	189.18	189.69	189.95	190.55	0.138945	5.45	3.34	9.08	2.59
BellsB	M002	5017.78	100Year-Existing	11.68	188.12	189.19	189.19	189.46	0.016394	3.02	6.73	11.80	0.99
BellsB	M002	4967.57	100Year-Existing	11.68	186.55	187.68	187.84	188.28	0.034794	4.08	4.24	7.10	1.37
BellsB	M002	4917.46	100Year-Existing	11.68	185.69	186.74	186.44	186.83	0.004927	1.72	10.95	17.99	0.56
BellsB	M002	4873.31	100Year-Existing	11.68	184.61	186.38		186.59	0.006014	2.43	8.07	11.11	0.63
BellsB	M002	4853.42	100Year-Existing	11.68	183.55	186.35	185.06	186.52	0.001659	1.85	6.31	25.40	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	11.68	181.53	182.79	183.02	183.77	0.027803	4.38	2.67	5.52	1.32
BellsB	M002	4785.76	100Year-Existing	11.68	181.35	182.27	182.48	182.95	0.041672	4.10	3.76	7.22	1.52
BellsB	M002	4756.65	100Year-Existing	11.68	180.12	180.96	181.17	181.61	0.050912	4.39	4.30	11.55	1.67
BellsB	M002	4727.54	100Year-Existing	11.68	179.02	179.77	179.93	180.30	0.037186	3.84	5.06	16.16	1.52

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	11.68	177.96	178.31	178.50	179.01	0.138051	4.48	3.73	16.46	2.62
BellsB	M002	4702.24	100Year-Existing	11.68	177.65	178.45	178.48	178.68	0.017426	2.62	7.01	17.36	1.04
BellsB	M002	4682.48	100Year-Existing	11.68	176.63	177.30	177.51	178.03	0.058040	4.23	3.97	13.22	1.85
BellsB	M002	4658.79	100Year-Existing	11.68	175.50	176.56	176.74	177.22	0.022633	3.88	3.94	6.33	1.26
BellsB	M002	4633.41	100Year-Existing	11.68	174.51	175.18	175.46	176.20	0.091334	5.59	3.58	11.72	2.35
BellsB	M002	4609.61	100Year-Existing	11.68	173.50	174.62	174.42	174.78	0.006345	2.20	8.22	11.39	0.69
BellsB	M002	4583.99	100Year-Existing	11.68	172.77	174.11	174.11	174.53	0.012276	3.06	4.81	6.61	0.93
BellsB	M002	4534.72	100Year-Existing	11.68	170.00	170.86	171.35	172.92	0.122503	7.70	2.46	5.70	2.81
BellsB	M002	4485.52	100Year-Existing	11.68	168.20	168.81	168.94	169.23	0.049035	3.85	5.29	17.23	1.69
BellsB	M002	4436.28	100Year-Existing	21.20	165.85	166.98	167.27	167.59	0.027322	4.53	8.17	13.94	1.42
BellsB	M002	4387.04	100Year-Existing	21.20	164.06	165.22	165.49	166.05	0.035072	5.22	7.05	11.85	1.61
BellsB	M002	4337.81	100Year-Existing	21.20	162.60	163.72	163.91	164.33	0.032317	4.78	9.23	22.19	1.52
BellsB	M002	4288.56	100Year-Existing	21.20	161.30	162.42	162.55	162.90	0.028839	4.37	9.55	19.95	1.41
BellsB	M002	4239.33	100Year-Existing	21.20	159.65	160.63	160.86	161.38	0.038025	4.69	7.24	14.54	1.62
BellsB	M002	4190.09	100Year-Existing	21.20	158.43	159.53	159.65	159.99	0.020616	3.79	9.51	17.56	1.22
BellsB	M002	4140.85	100Year-Existing	21.20	157.30	157.92	158.03	158.32	0.055501	4.33	8.79	22.56	1.84
BellsB	M002	4091.61	100Year-Existing	21.20	155.30	156.07	156.13	156.40	0.030723	3.83	9.90	20.00	1.43
BellsB	M002	4042.37	100Year-Existing	21.20	153.74	154.60	154.69	155.04	0.024388	3.57	8.72	14.91	1.29
BellsB	M002	3993.13	100Year-Existing	21.20	152.65	153.44	153.51	153.77	0.030888	3.60	10.14	22.78	1.37
BellsB	M002	3943.89	100Year-Existing	21.20	151.36	152.22	152.27	152.56	0.024237	3.53	10.08	19.08	1.28
BellsB	M002	3894.65	100Year-Existing	21.20	149.52	151.02	151.18	151.59	0.019379	4.00	9.10	17.62	1.17
BellsB	M002	3869.08	100Year-Existing	21.20	148.87	150.04	150.32	150.91	0.034562	4.77	6.42	10.66	1.56
BellsB	M002	3845.41	100Year-Existing	21.20	148.37	149.59	149.78	150.14	0.024311	4.01	8.42	17.00	1.24
BellsB	M002	3822.22	100Year-Existing	21.20	147.71	149.10	148.66	149.19	0.003762	1.85	17.96	18.46	0.51
BellsB	M002	3796.17	100Year-Existing	21.20	146.89	148.55	148.55	148.99	0.011893	3.42	9.32	11.75	0.90
BellsB	M002	3765.39	100Year-Existing	21.20	146.40	148.08	148.13	148.60	0.014087	3.54	8.07	9.51	0.95
BellsB	M002	3746.94	100Year-Existing	21.20	145.76	148.29	147.00	148.32	0.000472	0.96	34.37	21.89	0.20
BellsB	M002	3724.94	100Year-Existing	21.20	145.32	148.21		148.30	0.001148	1.52	19.95	12.27	0.30
BellsB	M002	3697.71	100Year-Existing	21.20	145.05	148.22		148.26	0.000467	1.08	27.10	13.56	0.20
BellsB	M002	3677.71	100Year-Existing	21.20	143.44	148.03	145.60	148.23	0.000981	2.00	10.62	17.47	0.30
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	21.20	142.47	144.55	144.55	145.55	0.010944	4.42	4.79	9.37	1.00
BellsB	M002	3623.19	100Year-Existing	21.20	142.10	143.57	144.02	145.01	0.048275	5.90	4.63	6.92	1.78
BellsB	M002	3573.45	100Year-Existing	21.20	140.89	142.25	142.70	143.09	0.027004	4.45	6.05	9.28	1.37
BellsB	M002	3520.99	100Year-Existing	21.20	139.30	140.77	140.93	141.68	0.026334	4.63	5.81	7.82	1.35
BellsB	M002	3473.83	100Year-Existing	21.20	137.98	139.65	139.83	140.41	0.023542	4.63	6.58	8.84	1.26
BellsB	M002	3424.29	100Year-Existing	21.20	136.49	138.50	138.03	138.74	0.003696	2.38	11.38	10.31	0.56
BellsB	M002	3400.36	100Year-Existing	21.20	135.96	138.62		138.66	0.000390	0.96	30.57	27.00	0.20
BellsB	M002	3386.31	100Year-Existing	21.20	135.48	138.60	137.44	138.65	0.000452	1.22	38.45	63.18	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	21.20	135.22	138.62	137.16	138.62	0.000035	0.36	110.53	65.20	0.06
BellsB	M002	3329.08	100Year-Existing	26.72	134.96	138.62		138.62	0.000048	0.44	118.05	56.92	0.07
BellsB	M002	3303.55	100Year-Existing	26.72	133.82	138.58	136.25	138.62	0.000233	1.10	53.17	49.96	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	26.72	131.39	134.21	134.21	135.38	0.011041	4.79	5.58	18.80	1.00
BellsB	M002	3203.83	100Year-Existing	26.72	131.13	132.34	132.93	134.58	0.104310	7.27	5.09	11.72	2.56
BellsB	M002	3176.31	100Year-Existing	26.72	130.02	131.40	131.77	132.59	0.043330	5.64	7.24	12.36	1.73
BellsB	M002	3157.63	100Year-Existing	26.72	129.89	131.24	131.37	131.75	0.028905	4.35	10.75	19.01	1.35
BellsB	M002	3130.11	100Year-Existing	26.72	128.68	130.32	130.49	131.09	0.018655	4.32	8.10	8.21	1.19
BellsB	M002	3083.82	100Year-Existing	26.72	127.94	129.53	129.75	130.20	0.019001	4.31	11.19	24.02	1.20
BellsB	M002	3037.68	100Year-Existing	26.72	127.11	127.99	128.23	128.78	0.055299	5.34	9.25	23.60	1.93
BellsB	M002	2991.47	100Year-Existing	26.72	126.28	128.08	127.26	128.10	0.000630	0.96	45.06	44.20	0.24
BellsB	M002	2945.26	100Year-Existing	26.72	125.32	127.69	127.13	128.00	0.005440	2.53	12.22	25.54	0.56
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	26.72	125.12	126.93	126.93	127.84	0.011036	4.22	6.34	4.93	1.00
BellsB	M002	2918.61	100Year-Existing	26.72	124.99	126.54	126.95	127.53	0.025870	4.98	7.22	9.57	1.40
BellsB	M002	2899.46	100Year-Existing	26.72	125.25	126.49	126.73	127.03	0.012257	3.41	10.87	34.56	1.00
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	26.72	124.44	125.95	125.95	126.10	0.002997	1.91	18.45	21.12	0.52
BellsB	M002	2861.32	100Year-Existing	26.72	123.64	124.68	125.00	125.69	0.045468	5.37	7.41	15.87	1.86
BellsB	M002	2823.69	100Year-Existing	26.72	123.23	124.29	124.31	124.57	0.019831	3.29	14.57	30.05	1.10
BellsB	M002	2777.91	100Year-Existing	26.72	122.77	123.95	123.69	123.99	0.003264	1.47	35.59	59.74	0.45
BellsB	M002	2727.91	100Year-Existing	26.72	122.21	123.49	123.49	123.77	0.013593	3.05	15.06	30.57	0.93
BellsB	M002	2677.99	100Year-Existing	26.72	121.13	122.68	122.61	123.06	0.012244	3.16	11.43	13.31	0.90
BellsB	M002	2628.09	100Year-Existing	26.72	120.69	122.19	122.19	122.47	0.011970	3.25	17.03	31.67	0.89
BellsB	M002	2578.18	100Year-Existing	26.72	119.94	121.41	121.51	121.78	0.015749	3.54	14.78	28.98	1.01
BellsB	M002	2528.27	100Year-Existing	26.72	119.10	120.69	120.79	121.22	0.018514	3.97	10.89	14.65	1.10
BellsB	M002	2518.19	100Year-Existing	26.72	118.62	120.07	120.34	120.94	0.033781	4.93	8.58	13.61	1.45
BellsB	M002	2496.15	100Year-Existing	26.72	118.53	120.33	119.99	120.54	0.006815	2.70	18.93	27.72	0.69
BellsB	M002	2478.37	100Year-Existing	26.72	117.97	120.11		120.41	0.006686	2.97	14.19	13.09	0.69
BellsB	M002	2450.61	100Year-Existing	26.72	117.55	119.60	119.60	120.14	0.012019	3.93	10.96	10.93	0.93
BellsB	M002	2428.46	100Year-Existing	26.72	117.19	118.41	118.77	119.56	0.057328	5.42	7.26	14.33	1.81
BellsB	M002	2408.52	100Year-Existing	26.72	116.63	117.89	118.11	118.58	0.042376	4.77	9.48	18.40	1.55
BellsB	M002	2378.55	100Year-Existing	26.72	116.15	117.57	117.65	118.01	0.021430	4.07	12.45	20.30	1.15
BellsB	M002	2367.92	100Year-Existing	26.72	115.61	116.70	116.97	117.60	0.051019	5.31	8.61	17.61	1.75
BellsB	M002	2352.81	100Year-Existing	26.72	115.07	116.25	116.45	116.94	0.036278	4.70	9.47	16.43	1.49
BellsB	M002	2328.64	100Year-Existing	26.72	113.99	115.90	115.75	116.26	0.010074	3.38	14.09	18.09	0.84
BellsB	M002	2307.61	100Year-Existing	26.72	112.94	116.10	115.18	116.13	0.000494	0.98	50.17	47.14	0.19
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	26.72	111.75	113.20	113.66	114.81	0.059157	5.62	4.76	4.88	1.66
BellsB	M002	2275.77	100Year-Existing	28.72	112.06	113.85	113.85	114.22	0.012143	3.63	14.35	21.18	0.91
BellsB	M002	2232.72	100Year-Existing	28.72	110.58	112.27	112.61	113.35	0.028764	5.16	8.32	12.83	1.37
BellsB	M002	2200.99	100Year-Existing	28.72	109.61	111.14	111.52	112.31	0.039321	5.46	7.44	10.16	1.57
BellsB	M002	2173.21	100Year-Existing	28.72	108.98	111.14	111.14	111.75	0.011751	3.86	10.27	9.25	0.88
BellsB	M002	2133.27	100Year-Existing	28.72	107.79	109.09	109.59	110.74	0.062558	6.45	6.34	10.12	1.97
BellsB	M002	2117.78	100Year-Existing	28.72	107.46	108.90	109.17	109.89	0.030241	4.99	8.00	10.14	1.42
BellsB	M002	2103.01	100Year-Existing	28.72	106.45	107.84	108.25	109.22	0.058093	6.12	6.70	9.65	1.85

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	28.72	105.17	106.62	107.11	108.16	0.058332	6.57	6.27	7.77	1.90
BellsB	M002	2068.57	100Year-Existing	28.72	104.36	105.37	105.82	107.01	0.089184	6.79	6.30	11.76	2.30
BellsB	M002	2059.88	100Year-Existing	28.72	103.56	104.89	105.36	106.41	0.052220	5.93	6.36	9.25	1.81
BellsB	M002	2054.52	100Year-Existing	28.72	103.13	104.43	104.90	106.08	0.071085	6.63	6.09	8.41	2.07
BellsB	M002	2040.56	100Year-Existing	28.72	102.39	104.60	104.22	105.04	0.006528	3.31	12.26	8.14	0.73
BellsB	M002	2033.27	100Year-Existing	28.72	102.08	104.30	104.30	104.94	0.013702	4.00	9.73	8.16	0.95
BellsB	M002	2025.44	100Year-Existing	28.72	101.58	103.92	103.47	104.21	0.004622	2.73	14.95	11.19	0.60
BellsB	M002	2021.67	100Year-Existing	28.72	101.43	103.57	103.57	104.16	0.012353	3.72	10.19	9.68	0.91
BellsB	M002	2014.53	100Year-Existing	28.72	99.96	101.43	102.09	103.78	0.113289	6.81	4.31	6.07	2.41
BellsB	M002	2010.46	100Year-Existing	28.72	99.08	100.16	100.89	103.18	0.148566	8.52	4.31	6.71	2.93
BellsB	M002	2007.37	100Year-Existing	28.72	98.52	99.88	100.63	102.72	0.127531	7.57	4.03	5.35	2.57
BellsB	M002	1996.87	100Year-Existing	28.72	97.97	99.03	99.69	101.41	0.098114	7.50	4.86	6.50	2.46
BellsB	M002	1982.97	100Year-Existing	28.72	97.73	98.89	99.27	100.14	0.048810	5.76	6.76	7.87	1.78
BellsB	M002	1966.25	100Year-Existing	28.72	96.75	98.74	98.89	99.51	0.018839	4.38	8.98	8.88	1.10
BellsB	M002	1951.81	100Year-Existing	28.72	96.56	98.74	98.13	98.89	0.003529	2.17	19.12	14.10	0.50
BellsB	M002	1939.94	100Year-Existing	28.72	96.29	98.27	98.27	98.78	0.012243	3.49	11.12	11.80	0.90
BellsB	M002	1918.81	100Year-Existing	28.72	95.86	97.91	97.67	98.25	0.007914	3.17	13.51	11.26	0.75
BellsB	M002	1910.32	100Year-Existing	28.72	95.58	97.52	97.52	98.14	0.012586	3.73	9.71	8.82	0.94
BellsB	M002	1896.87	100Year-Existing	28.72	94.38	95.84	96.38	97.68	0.069126	6.63	5.72	7.86	1.98
BellsB	M002	1887.59	100Year-Existing	28.72	93.87	96.07	95.51	96.26	0.003792	2.32	18.04	13.13	0.53
BellsB	M002	1880.79	100Year-Existing	28.72	93.33	96.09		96.23	0.001984	1.99	21.10	12.22	0.40
BellsB	M002	1870.34	100Year-Existing	28.72	92.77	96.10		96.20	0.001090	1.75	25.12	10.37	0.31
BellsB	M002	1857.16	100Year-Existing	28.72	91.88	96.12		96.18	0.000557	1.32	33.39	14.32	0.22
BellsB	M002	1848.27	100Year-Existing	28.72	91.91	96.13		96.17	0.000267	0.99	44.11	16.57	0.16
BellsB	M002	1834.27	100Year-Existing	28.72	90.88	96.14		96.16	0.000166	0.87	50.95	17.22	0.13
BellsB	M002	1821.35	100Year-Existing	28.72	90.90	96.14		96.16	0.000096	0.72	68.23	20.45	0.10
BellsB	M002	1807.43	100Year-Existing	28.72	89.83	96.15		96.16	0.000057	0.59	80.81	21.38	0.08
BellsB	M002	1800.77	100Year-Existing	28.72	89.59	96.15		96.15	0.000056	0.59	85.84	22.48	0.08
BellsB	M002	1777.98	100Year-Existing	28.72	88.77	96.15		96.15	0.000019	0.38	132.19	29.86	0.05
BellsB	M002	1753.27	100Year-Existing	28.72	88.22	96.15		96.15	0.000021	0.42	125.99	29.44	0.05
BellsB	M002	1729.73	100Year-Existing	28.72	88.17	96.15		96.15	0.000012	0.34	155.72	32.23	0.04
BellsB	M002	1705.77	100Year-Existing	28.72	87.60	96.15		96.15	0.000005	0.26	244.37	62.28	0.03
BellsB	M002	1688.91	100Year-Existing	28.72	86.72	96.15	89.70	96.15	0.000007	0.29	202.19	62.97	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	28.72	83.97	86.93	86.93	88.41	0.008367	5.39	5.33	18.91	1.00
BellsB	M002	1605.59	100Year-Existing	28.72	81.49	82.23	82.85	86.94	0.542732	10.16	3.21	11.06	5.56
BellsB	M001	1582.05	100Year-Existing	45.76	80.41	81.50	82.37	85.36	0.132498	8.93	5.68	8.60	3.16
BellsB	M001	1563.67	100Year-Existing	45.76	79.96	81.21	81.83	83.32	0.056077	6.90	8.23	10.43	2.16
BellsB	M001	1544.26	100Year-Existing	45.76	79.04	80.81	81.31	82.42	0.028626	6.14	9.89	9.31	1.61
BellsB	M001	1529.04	100Year-Existing	45.76	78.24	79.42	80.10	81.76	0.056027	7.01	7.39	8.28	2.17
BellsB	M001	1515.66	100Year-Existing	45.76	77.30	79.08	79.67	80.98	0.044656	6.28	8.15	7.49	1.71
BellsB	M001	1502.43	100Year-Existing	45.76	69.64	70.23	71.06	78.69	1.041077	12.89	3.56	10.18	6.84
BellsB	M001	1483.47	100Year-Existing	45.76	68.89	69.88	70.34	71.65	0.116957	6.55	8.63	16.29	2.54
BellsB	M001	1454.75	100Year-Existing	45.76	68.03	69.48	69.57	70.10	0.021796	4.38	15.01	15.85	1.22
BellsB	M001	1406.62	100Year-Existing	45.76	66.49	68.54	68.57	69.24	0.014695	4.35	14.41	11.48	1.04
BellsB	M001	1358.51	100Year-Existing	45.76	65.17	66.61	67.04	68.03	0.044524	5.71	9.90	11.72	1.69
BellsB	M001	1310.38	100Year-Existing	45.76	63.80	65.30	65.59	66.24	0.027291	4.74	12.90	16.50	1.35
BellsB	M001	1286.33	100Year-Existing	45.76	62.81	64.16	64.52	65.33	0.052652	5.66	11.40	18.72	1.80
BellsB	M001	1262.25	100Year-Existing	45.76	62.09	64.37	64.39	64.72	0.009589	3.55	23.21	29.25	0.82
BellsB	M001	1251.58	100Year-Existing	45.76	61.46	63.07	63.76	64.44	0.045040	6.63	10.80	11.85	1.76
BellsB	M001	1234.76	100Year-Existing	45.76	60.57	62.06	62.54	63.57	0.061130	6.86	11.14	19.29	1.97
BellsB	M001	1214.13	100Year-Existing	45.76	59.55	61.57	60.98	61.74	0.003449	2.13	29.79	22.98	0.51
BellsB	M001	1200.58	100Year-Existing	45.76	58.90	61.01	61.01	61.61	0.011853	3.93	16.43	14.67	0.93
BellsB	M001	1182.98	100Year-Existing	45.76	58.59	60.70	60.77	61.37	0.013795	4.25	15.72	14.71	1.01
BellsB	M001	1166.01	100Year-Existing	45.76	58.39	59.74	60.09	60.93	0.042510	5.50	11.79	17.48	1.65
BellsB	M001	1153.18	100Year-Existing	45.76	57.70	59.43	59.72	60.38	0.035262	5.87	13.97	19.67	1.53
BellsB	M001	1141.88	100Year-Existing	45.76	56.72	58.01	58.53	59.77	0.064512	6.35	8.96	13.05	2.00
BellsB	M001	1128.34	100Year-Existing	45.76	56.53	57.70	58.02	58.76	0.053815	5.60	10.98	14.77	1.80
BellsB	M001	1117.89	100Year-Existing	45.76	55.58	56.83	57.23	58.13	0.062967	6.55	10.54	13.30	1.98
BellsB	M001	1096.03	100Year-Existing	45.76	54.61	56.24	56.49	57.15	0.027630	4.80	12.97	15.72	1.36
BellsB	M001	1077.81	100Year-Existing	45.76	54.24	55.32	55.71	56.50	0.050682	5.47	11.37	17.23	1.78
BellsB	M001	1069.76	100Year-Existing	45.76	53.70	54.44	54.82	55.79	0.117881	6.26	9.98	19.06	2.53
BellsB	M001	1064.67	100Year-Existing	45.76	53.19	53.96	54.31	55.19	0.110784	6.03	10.50	20.36	2.45
BellsB	M001	1051.64	100Year-Existing	45.76	51.97	53.01	53.39	54.27	0.063706	5.74	11.03	17.93	1.95
BellsB	M001	1032.36	100Year-Existing	45.76	50.97	52.43	52.66	53.27	0.034960	5.27	13.60	16.34	1.51
BellsB	M001	1021.64	100Year-Existing	45.76	50.03	51.41	51.82	52.77	0.048471	5.63	10.55	16.09	1.75
BellsB	M001	1014.11	100Year-Existing	45.76	49.46	51.02	51.47	52.43	0.043479	5.71	10.19	13.79	1.67
BellsB	M001	1006.24	100Year-Existing	45.76	49.15	50.39	50.86	52.02	0.057491	6.15	9.46	13.99	1.91
BellsB	M001	996.42	100Year-Existing	45.76	48.11	49.41	49.95	51.36	0.083369	7.21	8.76	13.45	2.24
BellsB	M001	987.27	100Year-Existing	45.76	47.17	48.67	49.26	50.70	0.061466	6.92	8.57	11.08	2.00
BellsB	M001	973.52	100Year-Existing	45.76	46.79	48.15	48.70	49.87	0.045119	6.07	8.89	12.40	1.84
BellsB	M001	951.43	100Year-Existing	45.76	45.77	47.25	47.75	48.88	0.048594	6.24	9.76	15.48	1.88
BellsB	M001	931.51	100Year-Existing	45.76	44.86	46.12	46.60	47.70	0.073046	7.41	9.26	13.42	2.27
BellsB	M001	925.41	100Year-Existing	45.76	44.69	46.32	46.60	47.23	0.026281	5.37	13.31	18.25	1.40
BellsB	M001	901.68	100Year-Existing	45.76	43.69	45.15	45.56	46.48	0.034640	5.82	10.16	11.07	1.65
BellsB	M001	877.27	100Year-Existing	45.76	43.18	45.44	45.04	45.79	0.005135	3.03	20.09	13.72	0.68
BellsB	M001	857.41	100Year-Existing	45.76	42.16	45.59	44.50	45.67	0.000784	1.57	49.41	40.00	0.28
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	46.80	38.54	42.07	41.03	42.59	0.003507	3.26	14.95	11.76	0.57
BellsB	M001	810.13	100Year-Existing	46.80	37.80	42.28	39.87	42.37	0.000548	1.37	46.42	29.30	0.22
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	46.80	34.33	36.52	37.39	39.22	0.060939	7.33	6.64	8.12	1.97
BellsB	M001	782.27	100Year-Existing	46.80	33.92	34.82	35.50	37.76	0.176546	8.13	6.56	11.06	3.11
BellsB	M001	772.73	100Year-Existing	46.80	30.94	32.55	33.32	36.10	0.165633	10.71	7.11	10.00	2.97
BellsB	M001	766.74	100Year-Existing	46.80	30.65	32.49	33.19	35.07	0.099017	9.42	8.34	10.10	2.39
BellsB	M001	760.32	100Year-Existing	46.80	30.34	31.94	32.65	34.49	0.079676	8.24	8.29	10.25	2.26
BellsB	M001	755.97	100Year-Existing	46.80	30.05	31.63	32.28	34.12	0.085602	7.74	8.14	11.23	2.27

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	46.80	29.30	30.96	31.65	33.56	0.086119	8.28	8.11	10.13	2.31
BellsB	M001	742.14	100Year-Existing	46.80	28.38	29.64	30.45	32.81	0.101930	8.41	6.87	8.80	2.56
BellsB	M001	736.73	100Year-Existing	46.80	28.24	29.07	29.77	32.07	0.166172	8.29	6.52	10.67	3.08
BellsB	M001	722.61	100Year-Existing	46.80	27.35	28.46	28.94	30.20	0.071691	6.42	9.06	14.44	2.09
BellsB	M001	712.04	100Year-Existing	46.80	26.27	27.82	28.35	29.55	0.053835	6.32	9.18	10.80	1.84
BellsB	M001	702.42	100Year-Existing	46.80	26.04	27.39	27.87	28.97	0.056565	6.19	9.58	12.07	1.89
BellsB	M001	691.68	100Year-Existing	46.80	25.03	26.62	27.15	28.35	0.056925	6.12	8.69	10.63	1.87
BellsB	M001	686.22	100Year-Existing	46.80	24.46	25.72	26.35	27.94	0.083318	6.66	7.44	10.26	2.22
BellsB	M001	675.26	100Year-Existing	46.80	24.08	25.29	25.81	27.01	0.060295	6.19	8.69	10.60	1.95
BellsB	M001	668.37	100Year-Existing	46.80	23.58	24.94	25.43	26.60	0.055810	6.12	9.11	11.91	1.87
BellsB	M001	655.45	100Year-Existing	46.80	23.02	24.24	24.71	25.85	0.058027	5.98	9.16	12.86	1.89
BellsB	M001	636.88	100Year-Existing	46.80	21.46	22.85	23.40	24.71	0.060299	6.24	8.36	10.37	1.94
BellsB	M001	619.06	100Year-Existing	46.80	20.82	22.40	22.80	23.72	0.037383	5.59	10.61	11.62	1.57
BellsB	M001	608.48	100Year-Existing	46.80	20.13	21.58	22.08	23.23	0.047402	5.91	9.27	13.26	1.75
BellsB	M001	592.31	100Year-Existing	46.80	18.95	20.41	20.98	22.30	0.069661	7.02	9.01	11.32	2.09
BellsB	M001	582.72	100Year-Existing	46.80	18.14	19.29	19.91	21.50	0.087296	7.23	8.08	10.20	2.33
BellsB	M001	577.91	100Year-Existing	46.80	17.66	19.29	19.87	21.11	0.042678	6.52	9.34	9.17	1.73
BellsB	M001	561.51	100Year-Existing	46.80	17.02	18.44	18.96	20.21	0.070061	6.67	9.56	13.34	2.07
BellsB	M001	553.07	100Year-Existing	46.80	16.35	17.53	18.15	19.60	0.071378	6.53	8.02	10.70	2.10
BellsB	M001	541.54	100Year-Existing	46.80	15.41	16.63	17.21	18.71	0.085616	6.46	7.79	12.14	2.24
BellsB	M001	529.17	100Year-Existing	46.80	14.85	16.03	16.53	17.66	0.063835	5.70	8.56	9.11	1.77
BellsB	M001	514.53	100Year-Existing	46.80	14.21	15.37	15.77	16.68	0.058691	5.52	10.18	12.09	1.72
BellsB	M001	467.56	100Year-Existing	46.80	11.61	12.86	13.24	14.15	0.048464	5.11	9.76	10.37	1.57
BellsB	M001	420.59	100Year-Existing	46.80	8.75	12.30	11.07	12.53	0.002510	2.26	26.13	12.54	0.41
BellsB	M001	400.25	100Year-Existing	46.80	8.57	12.11	10.64	12.47	0.002622	2.64	17.70	6.52	0.45
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	46.80	0.83	4.17	2.90	4.29	0.000903	1.83	46.69	48.74	0.32
BellsB	M001	47.74	100Year-Existing	46.80	0.56	4.21	2.78	4.23	0.000158	0.81	137.60	126.69	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	46.80	0.70	4.21	2.86	4.22	0.000133	0.73	147.61	130.51	0.13
BellsB	M001	20.51	100Year-Existing	46.80	0.57	4.21		4.22	0.000163	0.79	142.05	140.12	0.14

Corner Brook 100yr Q-30%

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	131.11	36.31	38.82	38.82	39.74	0.008539	4.66	36.59	20.42	0.97
CornerB	M004	2838.71	100Year-Existing	131.11	36.15	38.04	38.33	39.18	0.013242	4.89	31.68	25.87	1.15
CornerB	M004	2796.61	100Year-Existing	131.11	35.35	38.02	37.43	38.49	0.004106	3.31	52.21	33.41	0.68
CornerB	M004	2769.85	100Year-Existing	131.11	34.80	37.22	37.22	38.02	0.014349	5.96	41.03	27.75	1.25
CornerB	TR001	206.04	100Year-Existing	22.47	43.81	44.63	44.89	45.47	0.042064	4.74	6.84	13.44	1.77
CornerB	TR001	156.04	100Year-Existing	22.47	41.63	42.57	42.84	43.41	0.040344	4.17	6.25	15.07	1.68
CornerB	TR001	106.04	100Year-Existing	22.47	39.17	39.73	40.05	40.82	0.068124	4.88	5.37	12.17	2.14
CornerB	TR001	56.04	100Year-Existing	22.47	37.27	38.00	38.16	38.60	0.029479	3.62	7.16	13.06	1.45
CornerB	TR001	36.04	100Year-Existing	22.47	35.50	38.19	37.23	38.19	0.000058	0.38	114.77	80.29	0.08
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	22.47	35.18	36.96	36.96	37.72	0.010808	3.86	5.81	10.85	1.00
CornerB	M003	2689.92	100Year-Existing	143.64	33.55	35.43	35.89	36.96	0.028903	6.78	36.63	42.56	1.68
CornerB	M003	2645.73	100Year-Existing	143.64	32.87	36.21	34.57	36.31	0.000782	1.76	131.09	59.56	0.31
CornerB	M003	2602.09	100Year-Existing	143.64	32.20	36.21		36.28	0.000374	1.34	168.46	66.99	0.22
CornerB	M003	2557.73	100Year-Existing	143.64	31.34	36.17		36.26	0.000354	1.48	144.04	47.94	0.22
CornerB	M003	2537.73	100Year-Existing	143.64	30.77	36.11	34.17	36.24	0.000588	2.10	138.57	63.80	0.29
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	143.64	30.35	33.04	33.60	35.38	0.015650	6.77	21.20	15.72	1.33
CornerB	M003	2507.21	100Year-Existing	143.64	30.75	32.22	32.95	34.78	0.055477	7.92	23.15	21.22	2.23
CornerB	M003	2459.31	100Year-Existing	143.64	30.13	31.64	31.94	32.79	0.021595	5.28	35.07	31.01	1.42
CornerB	M003	2411.41	100Year-Existing	143.64	29.27	31.41	31.43	32.01	0.009657	4.29	54.57	46.56	0.99
CornerB	M003	2363.51	100Year-Existing	143.64	28.77	30.32	30.59	31.31	0.020706	4.95	38.46	38.72	1.37
CornerB	M003	2315.61	100Year-Existing	143.64	27.93	29.59	29.73	30.50	0.013247	4.32	36.38	28.37	1.12
CornerB	M003	2267.71	100Year-Existing	143.92	26.30	29.91	28.52	30.18	0.001423	2.44	71.28	27.16	0.42
CornerB	M003	2264.01	100Year-Existing	143.92	26.10	29.85	29.14	30.16	0.004818	2.49	58.94	29.41	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	143.92	26.10	29.69		30.06	0.006240	2.70	54.36	29.15	0.61
CornerB	M003	2260.98	100Year-Existing	143.92	25.80	29.75		29.99	0.001135	2.28	77.18	28.50	0.38
CornerB	M003	2240.88	100Year-Existing	143.92	27.01	29.58		29.92	0.003102	2.71	62.66	38.01	0.58
CornerB	M003	2212.25	100Year-Existing	143.92	26.87	29.50		29.83	0.002844	2.75	65.24	34.22	0.56
CornerB	M003	2183.63	100Year-Existing	143.92	25.56	28.66	28.66	29.64	0.008057	4.86	40.77	24.19	0.95
CornerB	M003	2163.63	100Year-Existing	143.92	25.35	28.56	27.88	29.15	0.003688	3.50	44.40	25.89	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	143.92	24.87	27.45	27.74	28.88	0.014238	5.73	30.39	20.93	1.23
CornerB	M003	2131.66	100Year-Existing	143.92	24.57	26.76	27.30	28.57	0.024986	6.14	26.25	19.80	1.54
CornerB	M003	2119.46	100Year-Existing	143.92	24.12	25.91	26.60	28.15	0.038984	6.91	23.89	21.09	1.88
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	143.92	24.04	26.21	26.64	27.75	0.019747	5.61	28.23	20.80	1.38
CornerB	M003	2080.62	100Year-Existing	143.92	23.73	25.38	25.87	26.97	0.025963	5.76	28.10	24.23	1.55
CornerB	M003	2068.44	100Year-Existing	143.92	23.76	25.39	25.70	26.58	0.019639	5.08	32.73	27.69	1.35
CornerB	M003	2022.25	100Year-Existing	143.92	22.74	24.54	24.85	25.75	0.017393	5.14	33.46	26.89	1.30
CornerB	M003	1991.14	100Year-Existing	143.92	22.18	24.23	24.37	25.25	0.011833	4.76	36.77	25.18	1.10
CornerB	M003	1985.82	100Year-Existing	143.92	21.97	23.87	24.20	25.16	0.017132	5.37	32.70	24.31	1.31
CornerB	M003	1975.95	100Year-Existing	143.92	21.78	23.55	23.95	24.95	0.021024	5.72	31.85	25.37	1.43
CornerB	M003	1929.72	100Year-Existing	143.92	20.08	22.03	22.56	23.83	0.026132	6.22	26.52	19.67	1.58
CornerB	M003	1883.49	100Year-Existing	143.92	19.23	21.57	21.80	22.87	0.012920	5.38	32.44	18.97	1.17
CornerB	TR002	21.04	100Year-Existing	8.54	22.27	22.86	23.34	25.03	0.150173	7.00	1.54	4.23	3.10
CornerB	TR002	18.08	100Year-Existing	8.54	21.40	21.78	22.19	24.31	0.385622	7.92	1.42	6.08	4.61
CornerB	M002	1826.39	100Year-Existing	145.32	16.92	18.37	19.12	21.34	0.120608	8.13	21.76	29.45	2.49
CornerB	M002	1790.92	100Year-Existing	145.32	15.49	18.68	18.40	19.57	0.010003	4.57	39.86	17.20	0.84
CornerB	M002	1773.95	100Year-Existing	145.32	14.72	19.09	17.42	19.31	0.001756	2.30	81.09	27.84	0.37
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	145.32	14.87	19.09	17.18	19.24	0.001010	2.00	100.21	36.67	0.32
CornerB	M002	1733.13	100Year-Existing	145.32	15.23	19.12		19.17	0.000295	1.04	171.80	69.58	0.17
CornerB	M002	1717.41	100Year-Existing	145.32	15.12	19.12		19.16	0.000248	0.97	192.21	79.13	0.16
CornerB	M002	1691.96	100Year-Existing	145.32	14.62	19.12		19.15	0.000207	0.92	214.19	97.01	0.15
CornerB	M002	1654.15	100Year-Existing	145.32	13.87	19.13		19.14	0.000097	0.67	280.44	118.95	0.10
CornerB	M002	1613.91	100Year-Existing	145.32	13.08	19.13		19.14	0.000045	0.55	327.42	132.88	0.08
CornerB	M002	1567.16	100Year-Existing	145.32	12.15	19.13		19.14	0.000007	0.24	685.49	199.71	0.03
CornerB	M002	1551.89	100Year-Existing	145.32	11.85	19.13		19.14	0.000003	0.15	1054.50	266.96	0.02
CornerB	M002	1539.91	100Year-Existing	144.48	11.62	19.14		19.14	0.000001	0.11	1447.06	302.02	0.01
CornerB	M002	1526.59	100Year-Existing	144.48	11.36	19.14		19.14	0.000001	0.11	1473.51	308.60	0.01
CornerB	M002	1517.99	100Year-Existing	144.48	11.18	19.13		19.14	0.000002	0.13	1244.65	265.10	0.02
CornerB	M002	1505.64	100Year-Existing	144.48	10.94	19.13		19.14	0.000003	0.16	927.79	194.25	0.02
CornerB	M002	1490.63	100Year-Existing	144.48	10.64	19.13		19.14	0.000007	0.24	640.05	136.06	0.03
CornerB	M002	1463.65	100Year-Existing	144.48	10.11	19.12		19.13	0.000028	0.50	348.17	82.55	0.06
CornerB	M002	1415.93	100Year-Existing	144.48	9.17	19.12		19.13	0.000024	0.49	330.21	72.46	0.06
CornerB	M002	1386.11	100Year-Existing	144.48	8.58	19.12		19.13	0.000036	0.58	298.86	76.09	0.07
CornerB	M002	1363.91	100Year-Existing	144.48	8.14	19.10		19.13	0.000059	0.74	241.93	55.93	0.09
CornerB	M002	1356.61	100Year-Existing	144.48	8.00	19.10		19.13	0.000166	0.95	247.20	71.10	0.10
CornerB	M002	1354.61	100Year-Existing	144.48	15.35	18.54	18.51	19.08	0.004981	3.83	60.42	51.22	0.69
CornerB	M002	1354.11	100Year-Existing	144.48	15.35	18.52	18.52	19.08	0.005143	3.88	59.53	50.88	0.70
CornerB	M002	1352.01	100Year-Existing	144.48	8.00	9.14	10.92	18.19	0.624009	0.35	10.84	9.51	0.15
CornerB	M002	1347.51	100Year-Existing	144.48	7.72	9.38	10.48	14.45	0.239321	9.98	14.47	15.83	3.33
CornerB	M002	1336.58	100Year-Existing	144.48	7.69	9.13	9.96	12.09	0.112653	7.63	19.18	19.68	2.38
CornerB	M002	1326.83	100Year-Existing	144.48	7.68	10.43	9.68	10.75	0.004507	2.65	61.80	30.06	0.55
CornerB	M002	1317.22	100Year-Existing	144.48	7.66	10.28		10.69	0.006654	2.94	54.22	30.60	0.65
CornerB	M002	1315.18	100Year-Existing	144.48	7.28	9.84	9.84	10.63	0.017490	4.22	39.89	27.20	1.01
CornerB	M002	1313.58	100Year-Existing	144.48	6.48	9.03	9.46	10.51	0.037996	5.64	28.97	23.38	1.45
CornerB	M002	1312.39	100Year-Existing	144.48	6.23	8.59	9.15	10.43	0.049642	6.19	25.66	21.95	1.65
CornerB	M002	1311.16	100Year-Existing	144.48	5.92	8.17	8.82	10.33	0.068525	6.58	22.99	21.37	1.89
CornerB	M002	1309.11	100Year-Existing	144.48	5.91	7.78	8.48	10.15	0.076635	6.88	21.77	20.51	2.00
CornerB	M002	1305.35	100Year-Existing	144.48	5.37	7.16	7.91	9.82	0.084704	7.46	21.76	22.98	2.12
CornerB	M002	1300.06	100Year-Existing	144.48	5.06	6.68	7.42	9.33	0.103278	7.25	20.60	22.35	2.28
CornerB	M002	1296.49	100Year-Existing	144.48	4.91	6.80	7.45	8.90	0.054752	6.55	23.65	19.37	1.75
CornerB	M002	1289.64	100Year-Existing	144.48	4.71	6.82	7.28	8.45	0.037714	5.82	27.16	20.15	1.47
CornerB	M002	1284.12	100Year-Existing	144.48	4.41	6.89	7.16	8.20	0.023054	5.27	30.96	19.50	1.19

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	144.48	4.23	6.48	6.91	8.04	0.029444	5.67	27.97	19.09	1.34
CornerB	M002	1258.94	100Year-Existing	144.48	3.53	5.19	5.81	7.15	0.062634	6.46	25.49	26.58	1.84
CornerB	M002	1246.98	100Year-Existing	144.48	3.37	4.75	5.26	6.45	0.043006	5.84	25.92	24.63	1.69
CornerB	M002	1233.83	100Year-Existing	144.48	3.10	4.57	4.93	5.78	0.037037	5.07	32.32	37.08	1.55
CornerB	M002	1215.66	100Year-Existing	144.48	2.70	4.06	4.39	5.12	0.027538	4.63	34.19	43.47	1.36
CornerB	M002	1206.83	100Year-Existing	144.48	2.54	4.63	4.31	4.93	0.005366	2.63	71.99	64.01	0.64
CornerB	M002	1194.69	100Year-Existing	144.48	2.39	4.61		4.86	0.004484	2.52	78.23	63.81	0.59
CornerB	M002	1185.06	100Year-Existing	144.48	2.26	4.59		4.81	0.003281	2.31	86.22	65.26	0.51
CornerB	M002	1142.41	100Year-Existing	144.48	1.70	4.51		4.68	0.002548	2.13	97.80	72.42	0.46
CornerB	M002	1137.55	100Year-Existing	144.48	1.60	4.14	4.05	4.61	0.009000	3.20	56.61	61.69	0.81
CornerB	M002	1110.53	100Year-Existing	144.48	1.39	4.07		4.42	0.004074	2.80	69.72	63.96	0.58
CornerB	M002	1090.67	100Year-Existing	144.48	1.10	4.20		4.30	0.001189	1.64	136.64	86.43	0.32
CornerB	M002	1070.69	100Year-Existing	144.48	0.80	4.22	2.78	4.27	0.000535	1.26	180.65	88.78	0.22
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	144.48	0.76	4.21	2.70	4.26	0.000476	1.21	181.74	86.12	0.21
CornerB	M002	1047.01	100Year-Existing	144.48	0.75	4.19		4.25	0.000448	1.32	177.17	78.01	0.23
CornerB	M002	1004.03	100Year-Existing	144.48	0.77	4.17		4.23	0.000431	1.29	198.65	126.26	0.23
CornerB	M002	959.21	100Year-Existing	144.48	0.70	4.17		4.20	0.000328	1.12	290.27	275.40	0.20
CornerB	M002	915.75	100Year-Existing	143.85	0.68	4.17		4.19	0.000235	0.92	363.41	294.42	0.17
CornerB	M002	869.66	100Year-Existing	143.85	0.69	4.17		4.18	0.000130	0.71	405.93	221.24	0.13
CornerB	M002	828.33	100Year-Existing	139.79	0.77	4.16		4.17	0.000135	0.70	394.55	218.38	0.13
CornerB	M002	784.55	100Year-Existing	139.79	0.82	4.16		4.17	0.000092	0.58	414.14	229.95	0.11
CornerB	M002	739.85	100Year-Existing	139.79	0.82	4.15		4.16	0.000091	0.56	423.33	266.69	0.10
CornerB	M002	696.36	100Year-Existing	139.79	0.64	4.14		4.16	0.000132	0.72	367.50	266.15	0.13
CornerB	M001	659.37	100Year-Existing	146.93	0.75	4.14		4.15	0.000139	0.69	348.83	229.48	0.13
CornerB	M001	643.93	100Year-Existing	146.93	0.74	4.13	2.78	4.15	0.000211	0.87	293.51	213.85	0.16
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	146.93	0.83	3.80	2.66	3.86	0.000560	1.32	195.64	174.47	0.25
CornerB	M001	608.52	100Year-Existing	146.93	0.76	3.80		3.84	0.000670	1.38	189.13	160.81	0.27
CornerB	M001	570.12	100Year-Existing	146.93	0.61	3.80		3.82	0.000355	1.07	256.51	185.40	0.20
CornerB	M001	535.83	100Year-Existing	146.93	0.56	3.78	1.79	3.81	0.000197	0.87	266.27	218.54	0.16
CornerB	M001	520.22	100Year-Existing	146.93	0.55	3.79	1.88	3.80	0.000149	0.76	313.39	290.18	0.13
CornerB	M001	472.07	100Year-Existing	146.93	0.58	3.75	2.27	3.79	0.000381	1.17	219.85	195.68	0.21
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	146.93	0.44	3.34	2.04	3.49	0.000980	1.81	136.60	199.80	0.34
CornerB	M001	425.41	100Year-Existing	146.93	0.48	3.36		3.43	0.000702	1.48	214.25	278.31	0.28
CornerB	M001	401.99	100Year-Existing	146.93	0.74	3.38		3.41	0.000408	1.09	301.56	333.95	0.22
CornerB	M001	381.26	100Year-Existing	146.93	0.79	3.30	2.58	3.39	0.001005	1.63	213.71	344.20	0.33
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	146.93	0.79	3.04	2.52	3.28	0.002626	2.47	131.31	318.31	0.53
CornerB	M001	352.89	100Year-Existing	146.93	0.68	3.04		3.19	0.001395	1.85	124.82	244.31	0.39
CornerB	M001	324.13	100Year-Existing	146.93	0.67	3.04		3.14	0.001084	1.64	144.66	167.61	0.34
CornerB	M001	292.92	100Year-Existing	146.93	0.65	3.03		3.10	0.000861	1.43	189.58	278.35	0.31
CornerB	M001	274.62	100Year-Existing	146.93	0.96	3.01	2.62	3.08	0.001836	1.85	203.46	324.39	0.43
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	146.93	1.01	2.98	2.57	3.02	0.001713	1.77	225.56	350.09	0.42
CornerB	M001	245.99	100Year-Existing	146.93	0.64	2.95		3.00	0.001055	1.49	255.45	398.42	0.33
CornerB	M001	210.89	100Year-Existing	146.93	0.68	2.92		2.96	0.000891	1.28	260.13	356.72	0.30
CornerB	M001	174.77	100Year-Existing	146.93	0.69	2.90		2.93	0.000809	1.10	282.92	414.69	0.28
CornerB	M001	155.66	100Year-Existing	146.93	0.64	2.89	2.49	2.91	0.000975	1.09	316.98	520.07	0.30
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	146.93	0.55	2.88	2.42	2.90	0.000731	0.95	333.39	470.08	0.26
CornerB	M001	129.05	100Year-Existing	146.93	0.40	2.86		2.88	0.000521	0.98	357.21	477.58	0.23
CornerB	M001	80.73	100Year-Existing	146.93	0.20	2.83		2.85	0.000458	1.04	320.31	385.42	0.22
CornerB	M001	23.81	100Year-Existing	146.93	0.32	2.80	1.96	2.83	0.000476	0.99	308.45	431.13	0.22
BellsB	TR001	178.13	100Year-Existing	12.39	92.91	94.05	94.38	95.09	0.043036	4.56	2.93	5.02	1.67
BellsB	TR001	159.86	100Year-Existing	12.39	92.15	93.91	93.47	94.06	0.003094	1.95	9.28	9.56	0.51
BellsB	TR001	139.54	100Year-Existing	12.39	91.13	93.81	92.54	94.00	0.001946	1.94	6.41	8.28	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	12.39	89.49	90.83	91.04	91.81	0.020921	4.40	2.91	3.55	1.26
BellsB	TR001	88.17	100Year-Existing	12.39	88.47	89.30	89.81	91.35	0.120975	6.68	2.22	4.96	2.76
BellsB	TR001	84.12	100Year-Existing	12.39	87.66	88.35	88.83	90.65	0.213492	6.78	1.94	6.04	3.48
BellsB	TR001	79.14	100Year-Existing	12.39	86.53	87.24	87.77	89.71	0.157559	7.12	1.97	5.37	3.16
BellsB	TR001	72.74	100Year-Existing	12.39	85.76	86.37	86.85	88.51	0.189512	6.53	2.01	6.26	3.30
BellsB	TR001	67.75	100Year-Existing	12.39	85.04	85.57	85.95	87.39	0.196978	6.24	2.30	7.97	3.32
BellsB	TR001	64.04	100Year-Existing	12.39	84.47	85.14	85.54	86.70	0.134821	5.52	2.24	5.69	2.80
BellsB	TR001	60.69	100Year-Existing	12.39	84.14	85.07	85.42	86.26	0.074843	4.93	2.76	6.35	2.16
BellsB	TR001	56.76	100Year-Existing	12.39	83.97	84.87	85.20	85.94	0.068046	4.60	2.76	6.39	2.06
BellsB	TR001	50.93	100Year-Existing	12.39	83.68	84.67	84.93	85.50	0.058085	4.13	3.27	8.22	1.89
BellsB	TR001	43.86	100Year-Existing	12.39	83.34	84.20	84.45	85.05	0.068170	4.16	3.25	9.77	2.02
BellsB	TR001	37.01	100Year-Existing	12.39	82.98	83.85	84.09	84.63	0.049585	4.11	3.56	8.89	1.79
BellsB	TR001	12.14	100Year-Existing	12.39	82.15	82.98	83.13	83.52	0.035839	3.42	4.26	9.90	1.51
BellsB	M002	5166.11	100Year-Existing	10.22	190.79	191.77	191.70	191.93	0.011214	2.37	8.03	17.04	0.81
BellsB	M002	5149.23	100Year-Existing	10.22	190.57	191.47	191.47	191.71	0.014740	2.48	6.20	13.61	0.91
BellsB	M002	5117.45	100Year-Existing	10.22	189.91	191.27	190.67	191.30	0.001438	1.09	18.01	22.58	0.31
BellsB	M002	5090.85	100Year-Existing	10.22	189.62	190.88	190.88	191.18	0.013326	2.92	5.85	10.17	0.90
BellsB	M002	5067.47	100Year-Existing	10.22	189.18	189.66	189.89	190.46	0.143559	5.25	3.03	8.95	2.60
BellsB	M002	5017.78	100Year-Existing	10.22	188.12	189.13	189.13	189.39	0.016533	2.92	6.08	11.43	0.99
BellsB	M002	4967.57	100Year-Existing	10.22	186.55	187.62	187.77	188.19	0.035993	3.95	3.80	6.87	1.38
BellsB	M002	4917.46	100Year-Existing	10.22	185.69	186.67	186.39	186.76	0.005037	1.66	9.77	16.85	0.56
BellsB	M002	4873.31	100Year-Existing	10.22	184.61	186.07	186.03	186.41	0.012355	2.99	5.28	7.76	0.87
BellsB	M002	4853.42	100Year-Existing	10.22	183.55	186.12	184.94	186.28	0.001710	1.77	5.77	23.38	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	10.22	181.53	182.77	182.91	183.55	0.022624	3.90	2.62	5.44	1.19
BellsB	M002	4785.76	100Year-Existing	10.22	181.35	182.20	182.41	182.87	0.044844	4.01	3.31	6.88	1.55
BellsB	M002	4756.65	100Year-Existing	10.22	180.12	180.93	181.13	181.51	0.046948	4.10	3.98	11.09	1.59
BellsB	M002	4727.54	100Year-Existing	10.22	179.02	179.72	179.90	180.23	0.039198	3.72	4.29	13.15	1.54

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	10.22	177.96	178.30	178.46	178.92	0.131247	4.21	3.47	16.37	2.53
BellsB	M002	4702.24	100Year-Existing	10.22	177.65	178.44	178.44	178.63	0.014512	2.36	6.81	17.31	0.95
BellsB	M002	4682.48	100Year-Existing	10.22	176.63	177.25	177.47	178.01	0.067085	4.25	3.33	12.04	1.96
BellsB	M002	4658.79	100Year-Existing	10.22	175.50	176.48	176.66	177.11	0.023698	3.76	3.47	5.86	1.27
BellsB	M002	4633.41	100Year-Existing	10.22	174.51	175.15	175.42	176.08	0.086784	5.28	3.27	11.21	2.27
BellsB	M002	4609.61	100Year-Existing	10.22	173.50	174.53	174.36	174.69	0.007114	2.18	7.15	10.87	0.72
BellsB	M002	4583.99	100Year-Existing	10.22	172.77	174.03	174.03	174.43	0.012375	2.93	4.31	6.27	0.92
BellsB	M002	4534.72	100Year-Existing	10.22	170.00	170.81	171.28	172.80	0.126493	7.47	2.17	5.36	2.82
BellsB	M002	4485.52	100Year-Existing	10.22	168.20	168.79	168.91	169.17	0.046525	3.64	4.88	16.76	1.63
BellsB	M002	4436.28	100Year-Existing	18.55	165.85	166.91	167.05	167.51	0.028189	4.41	7.29	13.39	1.42
BellsB	M002	4387.04	100Year-Existing	18.55	164.06	165.16	165.41	165.94	0.035148	5.01	6.32	11.20	1.60
BellsB	M002	4337.81	100Year-Existing	18.55	162.60	163.68	163.86	164.25	0.031475	4.58	8.28	20.85	1.48
BellsB	M002	4288.56	100Year-Existing	18.55	161.30	162.37	162.50	162.84	0.028964	4.24	8.67	19.76	1.40
BellsB	M002	4239.33	100Year-Existing	18.55	159.65	160.57	160.80	161.30	0.038919	4.55	6.47	14.05	1.63
BellsB	M002	4190.09	100Year-Existing	18.55	158.43	159.48	159.59	159.91	0.020177	3.62	8.64	16.98	1.20
BellsB	M002	4140.85	100Year-Existing	18.55	157.30	157.89	157.99	158.26	0.055956	4.18	8.04	22.36	1.83
BellsB	M002	4091.61	100Year-Existing	18.55	155.30	156.03	156.08	156.33	0.030679	3.68	9.04	19.59	1.42
BellsB	M002	4042.37	100Year-Existing	18.55	153.74	154.55	154.63	154.95	0.024921	3.44	7.90	14.66	1.29
BellsB	M002	3993.13	100Year-Existing	18.55	152.65	153.41	153.47	153.70	0.028809	3.37	9.46	22.35	1.32
BellsB	M002	3943.89	100Year-Existing	18.55	151.36	152.17	152.22	152.49	0.025386	3.43	9.02	18.43	1.29
BellsB	M002	3894.65	100Year-Existing	18.55	149.52	150.96	151.12	151.51	0.018995	3.84	8.18	17.17	1.15
BellsB	M002	3869.08	100Year-Existing	18.55	148.87	149.96	150.23	150.82	0.037312	4.68	5.60	9.96	1.60
BellsB	M002	3845.41	100Year-Existing	18.55	148.37	149.55	149.60	150.04	0.022465	3.75	7.71	15.36	1.19
BellsB	M002	3822.22	100Year-Existing	18.55	147.71	148.99	148.61	149.08	0.004012	1.81	16.06	18.09	0.52
BellsB	M002	3796.17	100Year-Existing	18.55	146.89	148.45	148.45	148.88	0.012272	3.31	8.21	10.87	0.91
BellsB	M002	3765.39	100Year-Existing	18.55	146.40	148.01	148.04	148.48	0.013584	3.35	7.37	9.21	0.93
BellsB	M002	3746.94	100Year-Existing	18.55	145.76	147.59	146.94	147.65	0.001658	1.43	20.01	18.83	0.35
BellsB	M002	3724.94	100Year-Existing	18.55	145.32	147.35		147.58	0.004688	2.33	10.56	9.65	0.57
BellsB	M002	3697.71	100Year-Existing	18.55	145.05	147.40		147.47	0.001288	1.44	16.89	11.11	0.31
BellsB	M002	3677.71	100Year-Existing	18.55	143.44	147.19	145.43	147.43	0.001514	2.15	8.61	14.93	0.36
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	18.55	142.47	144.38	144.38	145.29	0.011353	4.24	4.38	9.03	1.00
BellsB	M002	3623.19	100Year-Existing	18.55	142.10	143.52	143.93	144.79	0.044328	5.49	4.31	6.63	1.70
BellsB	M002	3573.45	100Year-Existing	18.55	140.89	142.18	142.41	142.97	0.026872	4.25	5.45	8.80	1.36
BellsB	M002	3520.99	100Year-Existing	18.55	139.30	140.69	140.91	141.55	0.026694	4.45	5.20	7.40	1.34
BellsB	M002	3473.83	100Year-Existing	18.55	137.98	139.58	139.79	140.28	0.023077	4.42	5.96	8.40	1.23
BellsB	M002	3424.29	100Year-Existing	18.55	136.49	138.48	137.93	138.67	0.002953	2.11	11.18	10.18	0.50
BellsB	M002	3400.36	100Year-Existing	18.55	135.96	138.58		138.61	0.000298	0.83	29.55	19.66	0.17
BellsB	M002	3386.31	100Year-Existing	18.55	135.48	138.55	137.28	138.60	0.000386	1.12	35.69	58.88	0.20
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	18.55	135.22	138.52	137.00	138.52	0.000031	0.33	104.17	61.57	0.06
BellsB	M002	3329.08	100Year-Existing	23.38	134.96	138.52		138.52	0.000042	0.40	112.40	56.13	0.07
BellsB	M002	3303.55	100Year-Existing	23.38	133.82	138.48	136.04	138.52	0.000208	1.03	49.74	49.25	0.15
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	23.38	131.39	134.02	134.02	135.08	0.011324	4.57	5.11	17.85	1.00
BellsB	M002	3203.83	100Year-Existing	23.38	131.13	132.30	132.82	134.32	0.098498	6.83	4.64	11.11	2.47
BellsB	M002	3176.31	100Year-Existing	23.38	130.02	131.35	131.69	132.43	0.041699	5.35	6.58	11.76	1.68
BellsB	M002	3157.63	100Year-Existing	23.38	129.89	131.21	131.32	131.66	0.026344	4.07	10.12	18.92	1.28
BellsB	M002	3130.11	100Year-Existing	23.38	128.68	130.17	130.35	130.96	0.021762	4.32	6.94	7.72	1.26
BellsB	M002	3083.82	100Year-Existing	23.38	127.94	129.51	129.69	130.06	0.015378	3.85	10.90	23.94	1.08
BellsB	M002	3037.68	100Year-Existing	23.38	127.11	127.93	128.18	128.76	0.061645	5.34	7.89	21.47	2.01
BellsB	M002	2991.47	100Year-Existing	23.38	126.28	127.96	127.22	127.98	0.000679	0.96	40.04	42.83	0.24
BellsB	M002	2945.26	100Year-Existing	23.38	125.32	127.63	126.98	127.89	0.004668	2.30	11.03	16.16	0.51
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	23.38	125.12	126.78	126.78	127.61	0.011377	4.03	5.79	4.66	1.00
BellsB	M002	2918.61	100Year-Existing	23.38	124.99	126.51	126.91	127.32	0.021708	4.50	6.96	9.39	1.28
BellsB	M002	2899.46	100Year-Existing	23.38	125.25	126.71	126.69	126.85	0.003190	1.94	23.64	79.88	0.52
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	23.38	124.44	125.80	125.80	126.43	0.011166	3.52	6.65	19.54	1.00
BellsB	M002	2861.32	100Year-Existing	23.38	123.64	124.57	124.93	125.80	0.062434	5.76	5.85	14.06	2.14
BellsB	M002	2823.69	100Year-Existing	23.38	123.23	124.25	124.27	124.50	0.019268	3.13	13.26	28.68	1.07
BellsB	M002	2777.91	100Year-Existing	23.38	122.77	123.89	123.66	123.93	0.003452	1.46	31.94	58.86	0.46
BellsB	M002	2727.91	100Year-Existing	23.38	122.21	123.41	123.41	123.69	0.014806	3.02	12.97	23.17	0.95
BellsB	M002	2677.99	100Year-Existing	23.38	121.13	122.62	122.53	122.95	0.011481	2.96	10.59	12.87	0.86
BellsB	M002	2628.09	100Year-Existing	23.38	120.69	122.14	122.14	122.40	0.011295	3.08	15.52	29.95	0.86
BellsB	M002	2578.18	100Year-Existing	23.38	119.94	121.35	121.46	121.73	0.016174	3.48	13.10	27.98	1.01
BellsB	M002	2528.27	100Year-Existing	23.38	119.10	120.65	120.71	121.10	0.015975	3.62	10.39	14.39	1.01
BellsB	M002	2518.19	100Year-Existing	23.38	118.62	120.00	120.26	120.83	0.034558	4.77	7.61	12.88	1.45
BellsB	M002	2496.15	100Year-Existing	23.38	118.53	120.23	119.92	120.39	0.005648	2.35	16.58	18.26	0.62
BellsB	M002	2478.37	100Year-Existing	23.38	117.97	119.98		120.28	0.006855	2.87	12.62	12.39	0.69
BellsB	M002	2450.61	100Year-Existing	23.38	117.55	119.48	119.48	120.00	0.012142	3.78	9.77	10.29	0.92
BellsB	M002	2428.46	100Year-Existing	23.38	117.19	118.36	118.70	119.43	0.055912	5.15	6.55	13.57	1.77
BellsB	M002	2408.52	100Year-Existing	23.38	116.63	117.84	118.04	118.47	0.039883	4.49	8.72	17.62	1.49
BellsB	M002	2378.55	100Year-Existing	23.38	116.15	117.51	117.51	117.90	0.020244	3.82	11.23	18.29	1.11
BellsB	M002	2367.92	100Year-Existing	23.38	115.61	116.66	116.91	117.51	0.050537	5.11	7.79	17.25	1.73
BellsB	M002	2352.81	100Year-Existing	23.38	115.07	116.20	116.39	116.85	0.036012	4.52	8.60	16.17	1.47
BellsB	M002	2328.64	100Year-Existing	23.38	113.99	115.84	115.68	116.15	0.008992	3.12	13.07	16.66	0.78
BellsB	M002	2307.61	100Year-Existing	23.38	112.94	116.01	115.03	116.04	0.000465	0.93	46.10	45.91	0.18
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	23.38	111.75	113.06	113.53	114.65	0.069303	5.59	4.19	4.33	1.76
BellsB	M002	2275.77	100Year-Existing	25.13	112.06	113.76	113.76	114.12	0.012487	3.54	12.52	18.87	0.92
BellsB	M002	2232.72	100Year-Existing	25.13	110.58	112.19	112.52	113.23	0.029119	4.99	7.29	12.40	1.37
BellsB	M002	2200.99	100Year-Existing	25.13	109.61	111.06	111.42	112.18	0.039994	5.27	6.65	9.81	1.57
BellsB	M002	2173.21	100Year-Existing	25.13	108.98	111.00	111.00	111.59	0.012185	3.74	9.05	8.62	0.89
BellsB	M002	2133.27	100Year-Existing	25.13	107.79	109.03	109.50	110.57	0.062112	6.17	5.69	9.58	1.94
BellsB	M002	2117.78	100Year-Existing	25.13	107.46	108.83	109.11	109.74	0.029631	4.74	7.26	9.67	1.39
BellsB	M002	2103.01	100Year-Existing	25.13	106.45	107.77	108.16	109.07	0.058287	5.88	6.06	9.36	1.84

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	25.13	105.17	106.53	107.00	107.99	0.060005	6.34	5.62	7.44	1.90
BellsB	M002	2068.57	100Year-Existing	25.13	104.36	105.32	105.74	106.84	0.086824	6.46	5.75	11.52	2.25
BellsB	M002	2059.88	100Year-Existing	25.13	103.56	104.81	105.28	106.24	0.053440	5.71	5.65	8.64	1.81
BellsB	M002	2054.52	100Year-Existing	25.13	103.13	104.36	104.80	105.90	0.071784	6.36	5.52	8.29	2.05
BellsB	M002	2040.56	100Year-Existing	25.13	102.39	104.48	104.09	104.87	0.006223	3.11	11.29	7.85	0.70
BellsB	M002	2033.27	100Year-Existing	25.13	102.08	104.17	104.17	104.78	0.014041	3.85	8.71	7.81	0.95
BellsB	M002	2025.44	100Year-Existing	25.13	101.58	102.85	103.36	104.48	0.055755	5.96	5.08	6.93	1.84
BellsB	M002	2021.67	100Year-Existing	25.13	101.43	103.16	103.45	104.14	0.027840	4.66	6.60	7.77	1.30
BellsB	M002	2014.53	100Year-Existing	25.13	99.96	101.34	101.97	103.64	0.129441	6.73	3.77	5.69	2.52
BellsB	M002	2010.46	100Year-Existing	25.13	99.08	100.09	100.77	103.00	0.158273	8.29	3.84	6.55	2.98
BellsB	M002	2007.37	100Year-Existing	25.13	98.52	99.80	100.50	102.49	0.136501	7.34	3.60	5.20	2.62
BellsB	M002	1996.87	100Year-Existing	25.13	97.97	98.96	99.57	101.12	0.096896	7.12	4.45	6.35	2.41
BellsB	M002	1982.97	100Year-Existing	25.13	97.73	98.83	99.16	99.92	0.045064	5.34	6.34	7.72	1.69
BellsB	M002	1966.25	100Year-Existing	25.13	96.75	98.67	98.78	99.35	0.017407	4.08	8.36	8.71	1.05
BellsB	M002	1951.81	100Year-Existing	25.13	96.56	98.62	98.05	98.76	0.003488	2.06	17.48	13.87	0.49
BellsB	M002	1939.94	100Year-Existing	25.13	96.29	98.18	98.18	98.65	0.012217	3.34	10.02	11.46	0.89
BellsB	M002	1918.81	100Year-Existing	25.13	95.86	97.75	97.57	98.10	0.008888	3.15	11.72	10.76	0.79
BellsB	M002	1910.32	100Year-Existing	25.13	95.58	97.40	97.40	97.98	0.012976	3.59	8.66	8.37	0.94
BellsB	M002	1896.87	100Year-Existing	25.13	94.38	95.76	96.27	97.52	0.071370	6.42	5.10	7.57	1.99
BellsB	M002	1887.59	100Year-Existing	25.13	93.87	96.01	95.42	96.17	0.003331	2.12	17.18	12.99	0.50
BellsB	M002	1880.79	100Year-Existing	25.13	93.33	96.02		96.14	0.001688	1.80	20.30	12.09	0.37
BellsB	M002	1870.34	100Year-Existing	25.13	92.77	96.03		96.12	0.000900	1.57	24.43	10.25	0.28
BellsB	M002	1857.16	100Year-Existing	25.13	91.88	96.05		96.10	0.000464	1.19	32.37	14.17	0.20
BellsB	M002	1848.27	100Year-Existing	25.13	91.91	96.06		96.09	0.000220	0.89	42.89	16.34	0.14
BellsB	M002	1834.27	100Year-Existing	25.13	90.88	96.06		96.08	0.000136	0.78	49.67	17.02	0.11
BellsB	M002	1821.35	100Year-Existing	25.13	90.90	96.07		96.08	0.000078	0.64	66.69	20.24	0.09
BellsB	M002	1807.43	100Year-Existing	25.13	89.83	96.07		96.08	0.000046	0.53	79.19	21.19	0.07
BellsB	M002	1800.77	100Year-Existing	25.13	89.59	96.07		96.08	0.000045	0.53	84.13	22.27	0.07
BellsB	M002	1777.98	100Year-Existing	25.13	88.77	96.07		96.07	0.000015	0.34	129.90	29.64	0.04
BellsB	M002	1753.27	100Year-Existing	25.13	88.22	96.07		96.07	0.000017	0.37	123.74	29.18	0.04
BellsB	M002	1729.73	100Year-Existing	25.13	88.17	96.07		96.07	0.000010	0.30	153.26	32.00	0.03
BellsB	M002	1705.77	100Year-Existing	25.13	87.60	96.07		96.07	0.000004	0.23	239.66	60.19	0.03
BellsB	M002	1688.91	100Year-Existing	25.13	86.72	96.07	89.45	96.07	0.000006	0.26	197.45	60.53	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	25.13	83.97	86.68	86.68	88.03	0.008597	5.15	4.88	18.38	1.00
BellsB	M002	1605.59	100Year-Existing	25.13	81.49	82.20	82.77	86.61	0.570769	9.80	2.89	10.57	5.61
BellsB	M001	1582.05	100Year-Existing	40.04	80.41	81.43	82.24	84.99	0.135004	8.54	5.14	8.36	3.15
BellsB	M001	1563.67	100Year-Existing	40.04	79.96	81.16	81.71	83.01	0.052875	6.45	7.64	10.20	2.08
BellsB	M001	1544.26	100Year-Existing	40.04	79.04	80.72	81.16	82.17	0.027807	5.80	9.04	9.01	1.57
BellsB	M001	1529.04	100Year-Existing	40.04	78.24	79.33	79.96	81.51	0.058451	6.75	6.65	8.06	2.18
BellsB	M001	1515.66	100Year-Existing	40.04	77.30	78.98	79.51	80.71	0.044756	5.98	7.41	7.26	1.69
BellsB	M001	1502.43	100Year-Existing	40.04	69.64	70.19	71.02	78.40	1.143076	12.70	3.16	9.75	7.06
BellsB	M001	1483.47	100Year-Existing	40.04	68.89	69.84	70.26	71.42	0.111946	6.16	8.00	16.19	2.46
BellsB	M001	1454.75	100Year-Existing	40.04	68.03	69.41	69.49	69.96	0.020674	4.12	13.96	15.63	1.18
BellsB	M001	1406.62	100Year-Existing	40.04	66.49	68.38	68.44	69.08	0.016166	4.29	12.62	10.95	1.07
BellsB	M001	1358.51	100Year-Existing	40.04	65.17	66.54	66.93	67.82	0.043042	5.39	9.10	11.52	1.65
BellsB	M001	1310.38	100Year-Existing	40.04	63.80	65.23	65.49	66.09	0.026654	4.49	11.70	15.74	1.32
BellsB	M001	1286.33	100Year-Existing	40.04	62.81	64.10	64.46	65.19	0.051952	5.41	10.33	17.88	1.77
BellsB	M001	1262.25	100Year-Existing	40.04	62.09	64.31	64.33	64.64	0.008879	3.35	21.63	29.13	0.78
BellsB	M001	1251.58	100Year-Existing	40.04	61.46	62.95	63.33	64.34	0.050350	6.61	9.39	11.30	1.84
BellsB	M001	1234.76	100Year-Existing	40.04	60.57	62.00	62.42	63.44	0.060024	6.58	10.04	18.37	1.94
BellsB	M001	1214.13	100Year-Existing	40.04	59.55	61.42	60.89	61.58	0.003644	2.07	26.51	22.03	0.52
BellsB	M001	1200.58	100Year-Existing	40.04	58.90	60.89	60.89	61.46	0.011936	3.78	14.76	14.02	0.92
BellsB	M001	1182.98	100Year-Existing	40.04	58.59	60.58	60.65	61.22	0.013978	4.09	14.05	13.94	1.00
BellsB	M001	1166.01	100Year-Existing	40.04	58.39	59.67	60.03	60.79	0.042605	5.28	10.59	16.68	1.64
BellsB	M001	1153.18	100Year-Existing	40.04	57.70	59.37	59.63	60.24	0.032834	5.53	12.96	19.49	1.46
BellsB	M001	1141.88	100Year-Existing	40.04	56.72	57.93	58.42	59.63	0.068662	6.20	7.92	12.54	2.04
BellsB	M001	1128.34	100Year-Existing	40.04	56.53	57.65	57.93	58.59	0.052112	5.29	10.14	14.49	1.75
BellsB	M001	1117.89	100Year-Existing	40.04	55.58	56.75	57.14	57.97	0.064221	6.31	9.53	12.87	1.97
BellsB	M001	1096.03	100Year-Existing	40.04	54.61	56.16	56.40	57.00	0.027010	4.56	11.83	15.36	1.33
BellsB	M001	1077.81	100Year-Existing	40.04	54.24	55.25	55.63	56.35	0.051892	5.26	10.19	16.38	1.78
BellsB	M001	1069.76	100Year-Existing	40.04	53.70	54.39	54.75	55.63	0.118836	5.98	9.13	18.84	2.51
BellsB	M001	1064.67	100Year-Existing	40.04	53.19	53.92	54.24	55.03	0.109460	5.73	9.67	20.20	2.40
BellsB	M001	1051.64	100Year-Existing	40.04	51.97	52.96	53.30	54.12	0.063037	5.47	10.07	17.66	1.92
BellsB	M001	1032.36	100Year-Existing	40.04	50.97	52.35	52.57	53.14	0.034835	5.05	12.40	15.97	1.49
BellsB	M001	1021.64	100Year-Existing	40.04	50.03	51.33	51.73	52.63	0.050033	5.44	9.37	15.24	1.75
BellsB	M001	1014.11	100Year-Existing	40.04	49.46	50.93	51.36	52.27	0.044772	5.51	9.04	12.96	1.67
BellsB	M001	1006.24	100Year-Existing	40.04	49.15	50.32	50.77	51.85	0.058138	5.91	8.51	13.54	1.90
BellsB	M001	996.42	100Year-Existing	40.04	48.11	49.35	49.86	51.18	0.084151	6.94	7.89	13.02	2.22
BellsB	M001	987.27	100Year-Existing	40.04	47.17	48.58	49.14	50.51	0.063283	6.68	7.63	10.49	2.01
BellsB	M001	973.52	100Year-Existing	40.04	46.79	48.07	48.58	49.68	0.045582	5.81	7.95	11.57	1.83
BellsB	M001	951.43	100Year-Existing	40.04	45.77	47.20	47.66	48.67	0.046503	5.89	8.88	14.63	1.82
BellsB	M001	931.51	100Year-Existing	40.04	44.86	46.05	46.50	47.52	0.072976	7.10	8.40	12.90	2.25
BellsB	M001	925.41	100Year-Existing	40.04	44.69	46.28	46.51	47.08	0.023718	5.00	12.46	17.89	1.33
BellsB	M001	901.68	100Year-Existing	40.04	43.69	45.05	45.44	46.33	0.036691	5.66	9.06	10.73	1.68
BellsB	M001	877.27	100Year-Existing	40.04	43.18	45.37	44.92	45.66	0.004528	2.77	19.10	13.48	0.63
BellsB	M001	857.41	100Year-Existing	40.04	42.16	45.39	44.33	45.57	0.001596	2.14	29.78	36.93	0.40
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	40.95	38.54	42.03	40.84	42.44	0.002808	2.89	14.75	11.61	0.51
BellsB	M001	810.13	100Year-Existing	40.95	37.80	42.19	39.73	42.26	0.000465	1.25	43.85	27.00	0.20
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	40.95	34.33	36.38	37.19	38.95	0.065740	7.13	5.89	7.71	2.01
BellsB	M001	782.27	100Year-Existing	40.95	33.92	34.77	35.40	37.46	0.177977	7.76	6.00	10.94	3.08
BellsB	M001	772.73	100Year-Existing	40.95	30.94	32.48	33.23	35.80	0.162589	10.24	6.43	9.50	2.92
BellsB	M001	766.74	100Year-Existing	40.95	30.65	32.41	33.09	34.80	0.095553	8.96	7.60	9.64	2.33
BellsB	M001	760.32	100Year-Existing	40.95	30.34	31.86	32.54	34.23	0.078607	7.87	7.50	9.80	2.22
BellsB	M001	755.97	100Year-Existing	40.95	30.05	31.57	32.17	33.85	0.083471	7.35	7.40	10.85	2.22

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	40.95	29.30	30.88	31.54	33.30	0.084659	7.90	7.38	9.92	2.26
BellsB	M001	742.14	100Year-Existing	40.95	28.38	29.55	30.32	32.54	0.105737	8.12	6.13	8.40	2.57
BellsB	M001	736.73	100Year-Existing	40.95	28.24	29.01	29.66	31.76	0.167527	7.92	5.95	10.51	3.06
BellsB	M001	722.61	100Year-Existing	40.95	27.35	28.41	28.84	29.97	0.067358	6.03	8.41	14.30	2.01
BellsB	M001	712.04	100Year-Existing	40.95	26.27	27.74	28.22	29.33	0.053536	6.03	8.35	10.47	1.82
BellsB	M001	702.42	100Year-Existing	40.95	26.04	27.32	27.76	28.75	0.054955	5.85	8.81	11.81	1.84
BellsB	M001	691.68	100Year-Existing	40.95	25.03	26.54	27.03	28.14	0.057356	5.85	7.87	10.25	1.85
BellsB	M001	686.22	100Year-Existing	40.95	24.46	25.65	26.23	27.71	0.086335	6.41	6.68	10.00	2.23
BellsB	M001	675.26	100Year-Existing	40.95	24.08	25.22	25.69	26.78	0.059197	5.87	7.99	10.39	1.91
BellsB	M001	668.37	100Year-Existing	40.95	23.58	24.88	25.32	26.38	0.053956	5.78	8.38	11.67	1.83
BellsB	M001	655.45	100Year-Existing	40.95	23.02	24.17	24.61	25.66	0.057084	5.69	8.38	12.67	1.86
BellsB	M001	636.88	100Year-Existing	40.95	21.46	22.76	23.28	24.51	0.062456	6.01	7.51	10.10	1.95
BellsB	M001	619.06	100Year-Existing	40.95	20.82	22.32	22.69	23.52	0.036407	5.29	9.72	11.32	1.54
BellsB	M001	608.48	100Year-Existing	40.95	20.13	21.48	21.98	23.03	0.049355	5.69	8.11	10.30	1.76
BellsB	M001	592.31	100Year-Existing	40.95	18.95	20.34	20.85	22.08	0.069258	6.70	8.20	10.98	2.06
BellsB	M001	582.72	100Year-Existing	40.95	18.14	19.21	19.79	21.28	0.090084	6.95	7.30	10.02	2.34
BellsB	M001	577.91	100Year-Existing	40.95	17.66	19.17	19.73	20.88	0.044171	6.28	8.33	8.63	1.74
BellsB	M001	561.51	100Year-Existing	40.95	17.02	18.39	18.85	19.97	0.065922	6.26	8.87	13.11	1.99
BellsB	M001	553.07	100Year-Existing	40.95	16.35	17.46	18.05	19.36	0.072309	6.24	7.24	10.25	2.08
BellsB	M001	541.54	100Year-Existing	40.95	15.41	16.57	17.11	18.46	0.085567	6.14	7.06	11.48	2.21
BellsB	M001	529.17	100Year-Existing	40.95	14.85	15.95	16.40	17.42	0.064009	5.41	7.84	8.93	1.75
BellsB	M001	514.53	100Year-Existing	40.95	14.21	15.31	15.65	16.45	0.054770	5.14	9.52	11.90	1.65
BellsB	M001	467.56	100Year-Existing	40.95	11.61	12.77	13.12	13.96	0.050041	4.90	8.83	10.16	1.57
BellsB	M001	420.59	100Year-Existing	40.95	8.75	11.91	10.92	12.15	0.003214	2.34	21.38	11.15	0.45
BellsB	M001	400.25	100Year-Existing	40.95	8.57	11.74	10.46	12.08	0.002900	2.58	15.85	6.35	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	40.95	0.83	4.11	2.73	4.22	0.000782	1.69	43.96	48.42	0.30
BellsB	M001	47.74	100Year-Existing	40.95	0.56	4.15	2.65	4.16	0.000140	0.75	129.81	123.00	0.13
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	40.95	0.70	4.15	2.68	4.16	0.000119	0.68	139.54	128.75	0.12
BellsB	M001	20.51	100Year-Existing	40.95	0.57	4.15		4.16	0.000148	0.74	133.42	138.01	0.13

Corner Brook 100yr WSEL+1m

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	100Year-Existing	187.30	36.31	39.06	39.06	40.55	0.012367	5.98	41.60	21.83	1.18
CornerB	M004	2838.71	100Year-Existing	187.30	36.15	38.39	38.85	39.88	0.014127	5.68	42.21	34.48	1.23
CornerB	M004	2796.61	100Year-Existing	187.30	35.35	38.49	37.86	39.07	0.004246	3.79	70.52	43.21	0.71
CornerB	M004	2769.85	100Year-Existing	187.30	34.80	37.74	37.74	38.61	0.012854	6.45	56.87	33.41	1.22
CornerB	TR001	206.04	100Year-Existing	32.10	43.81	44.78	45.08	45.80	0.042045	5.34	8.81	14.21	1.82
CornerB	TR001	156.04	100Year-Existing	32.10	41.63	42.70	43.04	43.74	0.040155	4.73	8.42	17.91	1.73
CornerB	TR001	106.04	100Year-Existing	32.10	39.17	39.86	40.26	41.22	0.065039	5.50	6.96	12.99	2.17
CornerB	TR001	56.04	100Year-Existing	32.10	37.27	38.12	38.49	38.94	0.031520	4.24	8.88	13.61	1.55
CornerB	TR001	36.04	100Year-Existing	32.10	35.50	38.34	37.63	38.35	0.000087	0.49	127.68	82.58	0.10
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	100Year-Existing	32.10	35.18	37.37	37.37	38.33	0.009981	4.35	7.38	80.27	1.00
CornerB	M003	2689.92	100Year-Existing	205.20	33.55	35.66	36.26	37.50	0.031345	7.69	46.56	44.54	1.78
CornerB	M003	2645.73	100Year-Existing	205.20	32.87	36.55	34.94	36.70	0.001080	2.20	152.70	68.21	0.37
CornerB	M003	2602.09	100Year-Existing	205.20	32.20	36.55		36.65	0.000529	1.69	191.41	68.00	0.27
CornerB	M003	2557.73	100Year-Existing	205.20	31.34	36.48		36.62	0.000550	1.93	158.91	48.52	0.28
CornerB	M003	2537.73	100Year-Existing	205.20	30.77	36.40	34.88	36.60	0.000873	2.64	157.05	64.39	0.36
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	100Year-Existing	205.20	30.35	34.35	34.35	35.21	0.003866	4.23	59.02	27.52	0.68
CornerB	M003	2507.21	100Year-Existing	205.20	30.75	32.99	33.46	34.78	0.021395	6.73	40.26	23.29	1.50
CornerB	M003	2459.31	100Year-Existing	205.20	30.13	31.81	32.34	33.58	0.029101	6.60	40.33	31.68	1.68
CornerB	M003	2411.41	100Year-Existing	205.20	29.27	31.64	31.76	32.47	0.011978	5.14	65.21	48.20	1.13
CornerB	M003	2363.51	100Year-Existing	205.20	28.77	30.67	30.93	31.76	0.017306	5.28	52.39	41.21	1.31
CornerB	M003	2315.61	100Year-Existing	205.20	27.93	30.28	30.14	31.07	0.007178	4.09	56.82	30.58	0.88
CornerB	M003	2267.71	100Year-Existing	205.60	26.30	30.40		30.80	0.001787	2.99	85.03	28.97	0.48
CornerB	M003	2264.01	100Year-Existing	205.60	26.10	30.39	29.54	30.79	0.004529	2.82	75.22	30.31	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	100Year-Existing	205.60	26.10	30.27		30.71	0.005275	2.95	71.68	30.12	0.59
CornerB	M003	2260.98	100Year-Existing	205.60	25.80	30.32		30.66	0.001348	2.74	93.76	30.59	0.42
CornerB	M003	2240.88	100Year-Existing	205.60	27.01	30.26		30.62	0.002348	2.81	89.90	41.53	0.53
CornerB	M003	2212.25	100Year-Existing	205.60	26.87	30.18		30.55	0.002384	2.96	89.51	37.89	0.54
CornerB	M003	2183.63	100Year-Existing	205.60	25.56	29.43	29.27	30.38	0.006019	4.98	62.23	31.97	0.86
CornerB	M003	2163.63	100Year-Existing	205.60	25.35	29.57	28.43	30.21	0.002732	3.68	60.51	38.52	0.59
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	100Year-Existing	205.60	24.87	28.00	28.31	29.72	0.013044	6.36	39.17	22.88	1.22
CornerB	M003	2131.66	100Year-Existing	205.60	24.57	27.16	27.84	29.39	0.023500	6.89	34.45	21.52	1.55
CornerB	M003	2119.46	100Year-Existing	205.60	24.12	26.25	27.10	28.99	0.036098	7.71	31.35	22.58	1.88
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	100Year-Existing	205.60	24.04	26.56	27.18	28.58	0.020296	6.48	36.01	22.59	1.45
CornerB	M003	2080.62	100Year-Existing	205.60	23.73	25.68	26.45	27.77	0.026973	6.67	35.48	25.72	1.63
CornerB	M003	2068.44	100Year-Existing	205.60	23.76	25.62	26.21	27.34	0.023504	6.14	39.38	29.25	1.52
CornerB	M003	2022.25	100Year-Existing	205.60	22.74	24.92	25.33	26.39	0.016414	5.76	44.18	29.72	1.31
CornerB	M003	1991.14	100Year-Existing	205.60	22.18	24.74	24.91	25.91	0.010129	5.16	51.04	30.08	1.06
CornerB	M003	1985.82	100Year-Existing	205.60	21.97	24.33	24.67	25.81	0.014723	5.83	44.57	26.94	1.26
CornerB	M003	1975.95	100Year-Existing	205.60	21.78	23.95	24.42	25.61	0.019110	6.32	42.62	28.09	1.42
CornerB	M003	1929.72	100Year-Existing	205.60	20.08	22.47	23.09	24.60	0.022776	6.83	35.38	21.08	1.54
CornerB	M003	1883.49	100Year-Existing	205.60	19.23	22.05	22.37	23.70	0.012719	6.11	41.87	20.23	1.20
CornerB	TR002	21.04	100Year-Existing	12.20	22.27	22.96	23.56	25.66	0.150161	7.94	2.03	4.70	3.20
CornerB	TR002	18.08	100Year-Existing	12.20	21.40	21.84	22.36	24.95	0.371643	8.88	1.83	6.28	4.68
CornerB	M002	1826.39	100Year-Existing	207.60	16.92	18.59	19.50	22.17	0.118459	9.10	28.31	30.51	2.54
CornerB	M002	1790.92	100Year-Existing	207.60	15.49	18.99	19.03	20.41	0.014174	5.81	45.36	17.88	1.02
CornerB	M002	1773.95	100Year-Existing	207.60	14.72	19.46	17.92	19.82	0.002564	2.95	91.83	29.51	0.45
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	100Year-Existing	207.60	14.87	19.48	17.63	19.72	0.001406	2.51	114.97	37.72	0.38
CornerB	M002	1733.13	100Year-Existing	207.60	15.23	19.54		19.61	0.000402	1.30	202.65	77.84	0.20
CornerB	M002	1717.41	100Year-Existing	207.60	15.12	19.54		19.60	0.000335	1.21	227.08	86.57	0.19
CornerB	M002	1691.96	100Year-Existing	207.60	14.62	19.54		19.59	0.000277	1.14	257.08	106.44	0.17
CornerB	M002	1654.15	100Year-Existing	207.60	13.87	19.55		19.58	0.000134	0.83	335.59	137.14	0.12
CornerB	M002	1613.91	100Year-Existing	207.60	13.08	19.55		19.57	0.000065	0.70	390.22	152.62	0.10
CornerB	M002	1567.16	100Year-Existing	207.60	12.15	19.56		19.57	0.000011	0.31	774.58	210.46	0.04
CornerB	M002	1551.89	100Year-Existing	207.60	11.85	19.56		19.57	0.000004	0.20	1170.93	273.17	0.03
CornerB	M002	1539.91	100Year-Existing	206.40	11.62	19.56		19.57	0.000002	0.14	1578.03	306.36	0.02
CornerB	M002	1526.59	100Year-Existing	206.40	11.36	19.56		19.57	0.000002	0.14	1606.80	311.53	0.02
CornerB	M002	1517.99	100Year-Existing	206.40	11.18	19.56		19.57	0.000003	0.17	1359.05	267.76	0.02
CornerB	M002	1505.64	100Year-Existing	206.40	10.94	19.56		19.57	0.000005	0.22	1011.90	197.88	0.03
CornerB	M002	1490.63	100Year-Existing	206.40	10.64	19.56		19.56	0.000011	0.32	699.05	139.98	0.04
CornerB	M002	1463.65	100Year-Existing	206.40	10.11	19.54		19.56	0.000045	0.67	384.15	88.76	0.08
CornerB	M002	1415.93	100Year-Existing	206.40	9.17	19.54		19.56	0.000040	0.65	361.05	74.71	0.08
CornerB	M002	1386.11	100Year-Existing	206.40	8.58	19.53		19.56	0.000058	0.77	330.86	77.89	0.09
CornerB	M002	1363.91	100Year-Existing	206.40	8.14	19.51		19.56	0.000097	0.98	264.98	57.33	0.11
CornerB	M002	1356.61	100Year-Existing	206.40	8.00	19.51		19.55	0.000261	1.23	276.57	72.69	0.13
CornerB	M002	1354.61	100Year-Existing	206.40	15.35	18.90	18.84	19.50	0.005300	4.24	79.53	54.81	0.72
CornerB	M002	1354.11	100Year-Existing	206.40	15.35	18.84	18.84	19.50	0.005911	4.43	75.94	53.89	0.76
CornerB	M002	1352.01	100Year-Existing	206.40	8.00	9.64	11.43	18.63	0.407525	0.36	15.54	9.51	0.13
CornerB	M002	1347.51	100Year-Existing	206.40	7.72	9.65	10.99	15.70	0.219702	10.90	18.95	17.19	3.30
CornerB	M002	1336.58	100Year-Existing	206.40	7.69	9.36	10.44	13.38	0.118969	8.93	23.74	20.93	2.52
CornerB	M002	1326.83	100Year-Existing	206.40	7.68	9.31	10.08	12.00	0.084509	7.52	29.97	27.00	2.14
CornerB	M002	1317.22	100Year-Existing	206.40	7.66	10.80	10.20	11.30	0.006144	3.28	70.70	32.22	0.65
CornerB	M002	1315.18	100Year-Existing	206.40	7.28	10.29	10.29	11.24	0.016009	4.68	52.45	29.43	1.01
CornerB	M002	1313.58	100Year-Existing	206.40	6.48	9.47	9.93	11.13	0.031558	6.06	39.52	25.52	1.38
CornerB	M002	1312.39	100Year-Existing	206.40	6.23	9.01	9.63	11.05	0.040271	6.61	35.30	23.95	1.55
CornerB	M002	1311.16	100Year-Existing	206.40	5.92	8.56	9.30	10.97	0.054225	7.01	31.51	22.86	1.76
CornerB	M002	1309.11	100Year-Existing	206.40	5.91	8.16	8.96	10.83	0.060828	7.35	29.80	22.01	1.86
CornerB	M002	1305.35	100Year-Existing	206.40	5.37	7.48	8.36	10.52	0.074155	8.12	29.46	24.68	2.06
CornerB	M002	1300.06	100Year-Existing	206.40	5.06	6.98	7.87	10.10	0.088150	7.93	27.41	23.50	2.19
CornerB	M002	1296.49	100Year-Existing	206.40	4.91	7.19	7.96	9.69	0.047982	7.20	31.50	20.98	1.70
CornerB	M002	1289.64	100Year-Existing	206.40	4.71	7.17	7.78	9.28	0.038118	6.68	34.36	21.03	1.53
CornerB	M002	1284.12	100Year-Existing	206.40	4.41	7.31	7.71	9.00	0.023517	6.05	39.49	21.03	1.24

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1279.52	100Year-Existing	206.40	4.23	6.91	7.45	8.85	0.028460	6.41	36.49	21.02	1.36
CornerB	M002	1258.94	100Year-Existing	206.40	3.53	5.45	6.21	7.95	0.063922	7.40	32.73	29.12	1.92
CornerB	M002	1246.98	100Year-Existing	206.40	3.37	5.02	5.67	7.24	0.042915	6.69	33.00	26.25	1.75
CornerB	M002	1233.83	100Year-Existing	206.40	3.10	4.72	5.15	6.53	0.046858	6.23	38.12	38.50	1.79
CornerB	M002	1215.66	100Year-Existing	206.40	2.70	4.28	4.74	5.69	0.030088	5.41	44.29	49.64	1.46
CornerB	M002	1206.83	100Year-Existing	206.40	2.54	5.00	4.62	5.34	0.004951	2.88	96.92	68.40	0.63
CornerB	M002	1194.69	100Year-Existing	206.40	2.39	4.98		5.28	0.004254	2.77	102.70	65.97	0.59
CornerB	M002	1185.06	100Year-Existing	206.40	2.26	4.97		5.23	0.003317	2.60	111.15	67.77	0.53
CornerB	M002	1142.41	100Year-Existing	206.40	1.70	4.89		5.10	0.002636	2.40	128.45	84.13	0.48
CornerB	M002	1137.55	100Year-Existing	206.40	1.60	4.42	4.41	5.02	0.009576	3.68	76.64	80.78	0.86
CornerB	M002	1110.53	100Year-Existing	206.40	1.39	4.13	4.05	4.79	0.007426	3.85	73.89	67.34	0.79
CornerB	M002	1090.67	100Year-Existing	206.40	1.10	4.41		4.56	0.001744	2.09	158.06	132.99	0.39
CornerB	M002	1070.69	100Year-Existing	206.40	0.80	4.44	3.09	4.52	0.000812	1.62	200.36	97.43	0.28
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	100Year-Existing	206.40	0.76	4.42	3.01	4.50	0.000731	1.57	200.30	87.00	0.27
CornerB	M002	1047.01	100Year-Existing	206.40	0.75	4.40		4.48	0.000708	1.72	193.07	78.97	0.30
CornerB	M002	1004.03	100Year-Existing	206.40	0.77	4.36		4.45	0.000666	1.67	223.84	137.00	0.29
CornerB	M002	959.21	100Year-Existing	206.40	0.70	4.38		4.42	0.000441	1.36	347.04	285.09	0.23
CornerB	M002	915.75	100Year-Existing	205.50	0.68	4.37		4.39	0.000317	1.12	422.70	296.63	0.20
CornerB	M002	869.66	100Year-Existing	205.50	0.69	4.36		4.38	0.000196	0.91	449.92	225.06	0.16
CornerB	M002	828.33	100Year-Existing	199.70	0.77	4.36		4.37	0.000205	0.89	437.59	224.32	0.16
CornerB	M002	784.55	100Year-Existing	199.70	0.82	4.35		4.36	0.000138	0.74	459.13	233.74	0.13
CornerB	M002	739.85	100Year-Existing	199.70	0.82	4.35		4.36	0.000136	0.71	475.32	274.85	0.13
CornerB	M002	696.36	100Year-Existing	199.70	0.64	4.33		4.35	0.000187	0.89	417.65	267.67	0.15
CornerB	M001	659.37	100Year-Existing	209.90	0.75	4.32		4.34	0.000207	0.88	391.73	236.52	0.16
CornerB	M001	643.93	100Year-Existing	209.90	0.74	4.31	3.16	4.34	0.000309	1.09	332.43	221.16	0.19
CornerB	M001	635		Bridge									
CornerB	M001	629.03	100Year-Existing	209.90	0.83	4.10	3.24	4.16	0.000618	1.48	249.12	186.96	0.27
CornerB	M001	608.52	100Year-Existing	209.90	0.76	4.09		4.15	0.000757	1.58	237.20	167.45	0.30
CornerB	M001	570.12	100Year-Existing	209.90	0.61	4.09		4.12	0.000400	1.21	311.49	187.79	0.22
CornerB	M001	535.83	100Year-Existing	209.90	0.56	4.07	2.10	4.11	0.000250	1.04	318.73	223.66	0.18
CornerB	M001	520.22	100Year-Existing	209.90	0.55	4.08	2.24	4.10	0.000192	0.91	368.86	294.28	0.16
CornerB	M001	472.07	100Year-Existing	209.90	0.58	4.03	3.04	4.09	0.000445	1.34	278.42	223.72	0.23
CornerB	M001	460		Bridge									
CornerB	M001	445.11	100Year-Existing	209.90	0.44	3.87	2.43	3.97	0.000697	1.70	266.30	290.29	0.29
CornerB	M001	425.41	100Year-Existing	209.90	0.48	3.89		3.93	0.000416	1.28	378.68	336.42	0.23
CornerB	M001	401.99	100Year-Existing	209.90	0.74	3.89		3.91	0.000253	0.97	482.01	363.45	0.17
CornerB	M001	381.26	100Year-Existing	209.90	0.79	3.87	3.19	3.91	0.000410	1.20	415.86	368.36	0.22
CornerB	M001	380		Bridge									
CornerB	M001	375.14	100Year-Existing	209.90	0.79	3.86	3.20	3.89	0.000413	1.21	429.84	390.67	0.22
CornerB	M001	352.89	100Year-Existing	209.90	0.68	3.84		3.88	0.000340	1.12	442.56	440.56	0.20
CornerB	M001	324.13	100Year-Existing	209.90	0.67	3.83		3.87	0.000384	1.19	426.62	465.90	0.22
CornerB	M001	292.92	100Year-Existing	209.90	0.65	3.83		3.85	0.000259	0.96	529.38	530.74	0.18
CornerB	M001	274.62	100Year-Existing	209.90	0.96	3.83	2.81	3.84	0.000303	0.96	564.65	563.48	0.19
CornerB	M001	270		Bridge									
CornerB	M001	266.99	100Year-Existing	209.90	1.01	3.83	2.73	3.84	0.000262	0.89	597.65	546.11	0.17
CornerB	M001	245.99	100Year-Existing	209.90	0.64	3.82		3.83	0.000170	0.76	717.00	640.16	0.14
CornerB	M001	210.89	100Year-Existing	209.90	0.68	3.82		3.83	0.000179	0.75	705.59	630.11	0.14
CornerB	M001	174.77	100Year-Existing	209.90	0.69	3.81		3.82	0.000117	0.57	803.32	642.86	0.11
CornerB	M001	155.66	100Year-Existing	209.90	0.64	3.81	2.58	3.82	0.000094	0.48	964.46	786.20	0.10
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	100Year-Existing	209.90	0.55	3.81	2.52	3.82	0.000089	0.47	938.43	758.61	0.10
CornerB	M001	129.05	100Year-Existing	209.90	0.40	3.81		3.81	0.000067	0.46	1022.05	772.25	0.09
CornerB	M001	80.73	100Year-Existing	209.90	0.20	3.80		3.81	0.000081	0.56	878.40	638.63	0.10
CornerB	M001	23.81	100Year-Existing	209.90	0.32	3.80	2.18	3.81	0.000079	0.53	902.92	691.01	0.10
BellsB	TR001	178.13	100Year-Existing	17.70	92.91	95.22	94.64	95.40	0.002677	2.12	11.70	10.56	0.49
BellsB	TR001	159.86	100Year-Existing	17.70	92.15	95.30		95.34	0.000420	1.12	26.56	15.30	0.21
BellsB	TR001	139.54	100Year-Existing	17.70	91.13	95.14	92.91	95.32	0.001030	1.84	9.61	13.67	0.29
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	100Year-Existing	17.70	89.49	91.15	91.42	92.40	0.019936	5.00	3.67	5.33	1.28
BellsB	TR001	88.17	100Year-Existing	17.70	88.47	89.44	90.06	91.91	0.113408	7.45	2.94	5.41	2.77
BellsB	TR001	84.12	100Year-Existing	17.70	87.66	88.46	89.04	91.23	0.193539	7.54	2.58	6.68	3.44
BellsB	TR001	79.14	100Year-Existing	17.70	86.53	87.36	88.00	90.35	0.149751	7.97	2.66	6.27	3.19
BellsB	TR001	72.74	100Year-Existing	17.70	85.76	86.46	87.01	89.20	0.188549	7.47	2.61	7.04	3.40
BellsB	TR001	67.75	100Year-Existing	17.70	85.04	85.64	86.12	88.01	0.212453	7.22	2.86	8.10	3.53
BellsB	TR001	64.04	100Year-Existing	17.70	84.47	85.24	85.75	87.28	0.136098	6.33	2.81	6.19	2.90
BellsB	TR001	60.69	100Year-Existing	17.70	84.14	85.17	85.61	86.79	0.087334	5.81	3.41	7.12	2.39
BellsB	TR001	56.76	100Year-Existing	17.70	83.97	84.97	85.39	86.42	0.071478	5.36	3.50	7.37	2.18
BellsB	TR001	50.93	100Year-Existing	17.70	83.68	84.76	85.10	85.92	0.066243	4.92	4.04	9.18	2.08
BellsB	TR001	43.86	100Year-Existing	17.70	83.34	84.29	84.60	85.42	0.072726	4.84	4.10	10.07	2.15
BellsB	TR001	37.01	100Year-Existing	17.70	82.98	83.96	84.26	84.96	0.050444	4.69	4.57	9.27	1.86
BellsB	TR001	12.14	100Year-Existing	17.70	82.15	83.09	83.29	83.79	0.037642	3.97	5.32	10.23	1.60
BellsB	M002	5166.11	100Year-Existing	14.60	190.79	191.94	191.83	192.10	0.009682	2.48	10.99	18.31	0.78
BellsB	M002	5149.23	100Year-Existing	14.60	190.57	191.60	191.60	191.89	0.015072	2.80	8.10	14.85	0.95
BellsB	M002	5117.45	100Year-Existing	14.60	189.91	191.50	190.79	191.53	0.001386	1.20	23.36	24.16	0.31
BellsB	M002	5090.85	100Year-Existing	14.60	189.62	191.07	191.07	191.41	0.013547	3.27	7.84	11.85	0.93
BellsB	M002	5067.47	100Year-Existing	14.60	189.18	189.76	190.04	190.71	0.127797	5.75	3.98	9.33	2.55
BellsB	M002	5017.78	100Year-Existing	14.60	188.12	189.29	189.29	189.59	0.016302	3.23	7.95	12.40	1.01
BellsB	M002	4967.57	100Year-Existing	14.60	186.55	187.80	187.97	188.44	0.032276	4.28	5.14	7.53	1.35
BellsB	M002	4917.46	100Year-Existing	14.60	185.69	187.08	186.53	187.14	0.002231	1.42	18.10	23.83	0.39
BellsB	M002	4873.31	100Year-Existing	14.60	184.61	186.96		187.05	0.002064	1.76	17.93	23.15	0.39
BellsB	M002	4853.42	100Year-Existing	14.60	183.55	186.80	185.27	187.00	0.001519	1.97	7.40	29.49	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	100Year-Existing	14.60	181.53	182.85	183.23	184.22	0.036548	5.19	2.81	5.75	1.53
BellsB	M002	4785.76	100Year-Existing	14.60	181.35	182.35	182.60	183.16	0.043479	4.49	4.37	7.66	1.58
BellsB	M002	4756.65	100Year-Existing	14.60	180.12	181.03	181.25	181.74	0.051676	4.70	5.14	12.66	1.71
BellsB	M002	4727.54	100Year-Existing	14.60	179.02	179.82	180.00	180.41	0.038524	4.12	5.94	16.39	1.57

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4707.54	100Year-Existing	14.60	177.96	178.35	178.57	179.12	0.129276	4.73	4.42	16.71	2.59
BellsB	M002	4702.24	100Year-Existing	14.60	177.65	178.51	178.54	178.78	0.018359	2.85	8.05	17.62	1.09
BellsB	M002	4682.48	100Year-Existing	14.60	176.63	177.37	177.60	178.12	0.053017	4.39	4.95	14.37	1.81
BellsB	M002	4658.79	100Year-Existing	14.60	175.50	176.70	176.90	177.40	0.020330	4.04	4.94	7.24	1.22
BellsB	M002	4633.41	100Year-Existing	14.60	174.51	175.23	175.53	176.41	0.099299	6.15	4.16	12.65	2.48
BellsB	M002	4609.61	100Year-Existing	14.60	173.50	174.80	174.51	174.96	0.005354	2.24	10.30	12.33	0.65
BellsB	M002	4583.99	100Year-Existing	14.60	172.77	174.27	174.27	174.73	0.011635	3.25	5.91	7.53	0.92
BellsB	M002	4534.72	100Year-Existing	14.60	170.00	170.95	171.50	173.17	0.119146	8.16	2.98	6.29	2.82
BellsB	M002	4485.52	100Year-Existing	14.60	168.20	168.85	169.01	169.35	0.053224	4.23	6.06	18.04	1.79
BellsB	M002	4436.28	100Year-Existing	26.50	165.85	167.14	167.35	167.79	0.024683	4.75	11.05	25.65	1.38
BellsB	M002	4387.04	100Year-Existing	26.50	164.06	165.31	165.62	166.27	0.037351	5.70	8.23	12.82	1.69
BellsB	M002	4337.81	100Year-Existing	26.50	162.60	163.80	164.01	164.44	0.033220	5.09	11.03	24.15	1.56
BellsB	M002	4288.56	100Year-Existing	26.50	161.30	162.50	162.63	163.00	0.028435	4.58	11.23	20.30	1.41
BellsB	M002	4239.33	100Year-Existing	26.50	159.65	160.72	160.97	161.53	0.036823	4.96	8.68	15.44	1.63
BellsB	M002	4190.09	100Year-Existing	26.50	158.43	159.63	159.74	160.14	0.021355	4.10	11.16	18.61	1.27
BellsB	M002	4140.85	100Year-Existing	26.50	157.30	157.98	158.11	158.43	0.054821	4.62	10.20	22.88	1.86
BellsB	M002	4091.61	100Year-Existing	26.50	155.30	156.15	156.21	156.52	0.030750	4.11	11.53	20.75	1.46
BellsB	M002	4042.37	100Year-Existing	26.50	153.74	154.71	154.80	155.19	0.023446	3.81	10.28	15.37	1.29
BellsB	M002	3993.13	100Year-Existing	26.50	152.65	153.50	153.59	153.89	0.034068	3.98	11.46	23.57	1.46
BellsB	M002	3943.89	100Year-Existing	26.50	151.36	152.33	152.37	152.68	0.021813	3.66	12.29	20.36	1.24
BellsB	M002	3894.65	100Year-Existing	26.50	149.52	151.10	151.29	151.74	0.020696	4.33	10.68	18.36	1.23
BellsB	M002	3869.08	100Year-Existing	26.50	148.87	150.18	150.47	151.08	0.030653	4.94	8.05	11.93	1.50
BellsB	M002	3845.41	100Year-Existing	26.50	148.37	149.69	149.88	150.33	0.026401	4.43	10.16	18.16	1.31
BellsB	M002	3822.22	100Year-Existing	26.50	147.71	149.87	148.76	149.91	0.000951	1.26	33.36	21.19	0.28
BellsB	M002	3796.17	100Year-Existing	26.50	146.89	149.81		149.88	0.001053	1.54	28.49	17.23	0.30
BellsB	M002	3765.39	100Year-Existing	26.50	146.40	149.79		149.86	0.000738	1.38	29.30	15.11	0.25
BellsB	M002	3746.94	100Year-Existing	26.50	145.76	149.83		149.84	0.000091	0.59	72.47	27.74	0.09
BellsB	M002	3724.94	100Year-Existing	26.50	145.32	149.80		149.83	0.000237	0.95	43.33	17.14	0.15
BellsB	M002	3697.71	100Year-Existing	26.50	145.05	149.81		149.82	0.000127	0.74	52.32	18.39	0.11
BellsB	M002	3677.71	100Year-Existing	26.50	143.44	149.81	145.92	149.82	0.000034	0.47	82.49	22.92	0.06
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	100Year-Existing	26.50	142.47	144.87	144.87	146.03	0.010380	4.76	5.57	9.99	1.00
BellsB	M002	3623.19	100Year-Existing	26.50	142.10	143.65	144.20	145.43	0.054908	6.62	5.27	7.46	1.93
BellsB	M002	3573.45	100Year-Existing	26.50	140.89	142.36	142.77	143.33	0.027864	4.83	7.14	10.11	1.42
BellsB	M002	3520.99	100Year-Existing	26.50	139.30	140.89	140.92	141.96	0.028345	5.10	6.73	8.47	1.42
BellsB	M002	3473.83	100Year-Existing	26.50	137.98	139.79	139.83	140.61	0.023348	4.92	7.89	9.70	1.27
BellsB	M002	3424.29	100Year-Existing	26.50	136.49	138.63	138.25	138.94	0.004349	2.70	12.81	11.24	0.62
BellsB	M002	3400.36	100Year-Existing	26.50	135.96	138.79		138.84	0.000441	1.07	37.18	54.22	0.21
BellsB	M002	3386.31	100Year-Existing	26.50	135.48	138.78	137.76	138.83	0.000450	1.27	51.35	80.21	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	100Year-Existing	26.50	135.22	138.80	137.48	138.81	0.000044	0.42	123.20	71.90	0.07
BellsB	M002	3329.08	100Year-Existing	33.40	134.96	138.80		138.81	0.000059	0.50	128.68	58.37	0.08
BellsB	M002	3303.55	100Year-Existing	33.40	133.82	138.76	136.61	138.80	0.000277	1.23	59.61	51.29	0.18
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	100Year-Existing	33.40	131.39	134.59	134.59	135.94	0.010414	5.14	6.49	20.66	1.00
BellsB	M002	3203.83	100Year-Existing	33.40	131.13	132.41	133.03	135.08	0.115274	8.06	5.93	12.81	2.73
BellsB	M002	3176.31	100Year-Existing	33.40	130.02	131.49	131.92	132.88	0.047085	6.21	8.43	13.38	1.83
BellsB	M002	3157.63	100Year-Existing	33.40	129.89	131.29	131.46	131.93	0.034386	4.91	11.80	19.15	1.48
BellsB	M002	3130.11	100Year-Existing	33.40	128.68	130.45	130.54	131.41	0.020664	4.84	9.20	8.64	1.27
BellsB	M002	3083.82	100Year-Existing	33.40	127.94	129.59	129.85	130.38	0.021942	4.78	12.83	24.52	1.31
BellsB	M002	3037.68	100Year-Existing	33.40	127.11	128.07	128.32	128.88	0.051884	5.53	11.25	25.18	1.90
BellsB	M002	2991.47	100Year-Existing	33.40	126.28	128.25	127.35	128.28	0.000615	1.02	53.04	46.28	0.24
BellsB	M002	2945.26	100Year-Existing	33.40	125.32	127.99	127.42	128.20	0.003672	2.27	24.50	55.93	0.47
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	100Year-Existing	33.40	125.12	127.42	127.42	128.19	0.010316	3.93	9.45	10.01	0.83
BellsB	M002	2918.61	100Year-Existing	33.40	124.99	126.73	127.05	127.82	0.024786	5.34	10.26	25.77	1.40
BellsB	M002	2899.46	100Year-Existing	33.40	125.25	126.51	126.79	127.29	0.017690	4.14	11.47	35.30	1.20
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	100Year-Existing	33.40	124.44	125.95	125.95	126.18	0.004682	2.39	18.45	21.12	0.65
BellsB	M002	2861.32	100Year-Existing	33.40	123.64	124.81	125.10	125.75	0.037034	5.33	9.63	18.15	1.72
BellsB	M002	2823.69	100Year-Existing	33.40	123.23	124.36	124.41	124.69	0.022257	3.64	16.61	32.06	1.17
BellsB	M002	2777.91	100Year-Existing	33.40	122.77	124.02	123.74	124.07	0.003549	1.61	40.18	60.83	0.48
BellsB	M002	2727.91	100Year-Existing	33.40	122.21	123.67	123.63	123.88	0.009609	2.83	23.39	61.22	0.80
BellsB	M002	2677.99	100Year-Existing	33.40	121.13	122.76	122.73	123.26	0.015076	3.65	12.51	13.85	1.00
BellsB	M002	2628.09	100Year-Existing	33.40	120.69	122.31	122.31	122.59	0.011488	3.37	21.12	35.93	0.89
BellsB	M002	2578.18	100Year-Existing	33.40	119.94	121.67	121.59	121.88	0.008109	2.88	22.85	33.37	0.74
BellsB	M002	2528.27	100Year-Existing	33.40	119.10	120.94	120.94	121.38	0.013219	3.76	14.80	16.55	0.95
BellsB	M002	2518.19	100Year-Existing	33.40	118.62	120.60	120.49	120.94	0.009693	3.38	17.24	19.36	0.83
BellsB	M002	2496.15	100Year-Existing	33.40	118.53	120.62		120.76	0.004085	2.34	27.43	29.92	0.55
BellsB	M002	2478.37	100Year-Existing	33.40	117.97	120.33		120.65	0.006466	3.14	17.20	14.36	0.69
BellsB	M002	2450.61	100Year-Existing	33.40	117.55	119.80	119.80	120.38	0.011820	4.18	13.28	12.09	0.94
BellsB	M002	2428.46	100Year-Existing	33.40	117.19	118.51	118.92	119.80	0.058971	5.86	8.66	15.73	1.86
BellsB	M002	2408.52	100Year-Existing	33.40	116.63	117.97	118.23	118.77	0.045831	5.23	11.02	19.88	1.64
BellsB	M002	2378.55	100Year-Existing	33.40	116.15	117.76	117.81	118.15	0.017499	4.03	16.87	26.32	1.07
BellsB	M002	2367.92	100Year-Existing	33.40	115.61	116.79	117.08	117.77	0.052141	5.69	10.12	18.26	1.80
BellsB	M002	2352.81	100Year-Existing	33.40	115.07	116.35	116.57	117.11	0.036143	5.00	11.14	16.93	1.51
BellsB	M002	2328.64	100Year-Existing	33.40	113.99	115.85	116.00	116.47	0.018079	4.43	13.17	16.80	1.11
BellsB	M002	2307.61	100Year-Existing	33.40	112.94	116.18	115.48	116.21	0.000647	1.15	53.89	48.24	0.22
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	100Year-Existing	33.40	111.75	113.56	113.93	115.02	0.037743	5.37	6.25	6.28	1.38
BellsB	M002	2275.77	100Year-Existing	35.90	112.06	114.02	114.02	114.38	0.011486	3.76	18.10	25.29	0.90
BellsB	M002	2232.72	100Year-Existing	35.90	110.58	112.42	112.77	113.54	0.027914	5.43	10.28	13.60	1.37
BellsB	M002	2200.99	100Year-Existing	35.90	109.61	111.99	111.69	112.31	0.006494	3.14	18.03	14.86	0.70
BellsB	M002	2173.21	100Year-Existing	35.90	108.98	111.37	111.37	112.04	0.011503	4.11	12.50	10.29	0.89
BellsB	M002	2133.27	100Year-Existing	35.90	107.79	109.21	109.76	111.03	0.062241	6.90	7.63	11.13	2.00
BellsB	M002	2117.78	100Year-Existing	35.90	107.46	109.05	109.50	110.17	0.029996	5.37	9.65	11.51	1.44
BellsB	M002	2103.01	100Year-Existing	35.90	106.45	107.97	108.42	109.49	0.057180	6.53	7.95	10.16	1.87

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2085.77	100Year-Existing	35.90	105.17	106.77	107.30	108.46	0.055640	6.96	7.55	8.37	1.89
BellsB	M002	2068.57	100Year-Existing	35.90	104.36	105.45	105.96	107.33	0.092108	7.35	7.36	12.21	2.38
BellsB	M002	2059.88	100Year-Existing	35.90	103.56	105.03	105.53	106.71	0.050890	6.34	7.71	10.33	1.83
BellsB	M002	2054.52	100Year-Existing	35.90	103.13	104.56	105.09	106.38	0.068948	7.06	7.21	8.65	2.08
BellsB	M002	2040.56	100Year-Existing	35.90	102.39	103.95	104.47	105.64	0.039195	6.36	7.46	6.69	1.68
BellsB	M002	2033.27	100Year-Existing	35.90	102.08	104.40	104.52	105.26	0.017254	4.65	10.57	8.44	1.08
BellsB	M002	2025.44	100Year-Existing	35.90	101.58	104.15	103.70	104.48	0.004743	2.96	17.58	11.83	0.61
BellsB	M002	2021.67	100Year-Existing	35.90	101.43	103.79	103.79	104.43	0.011741	3.94	12.46	10.69	0.90
BellsB	M002	2014.53	100Year-Existing	35.90	99.96	101.60	102.29	104.06	0.093560	7.00	5.37	6.76	2.26
BellsB	M002	2010.46	100Year-Existing	35.90	99.08	100.29	101.09	103.53	0.133510	8.90	5.25	7.00	2.84
BellsB	M002	2007.37	100Year-Existing	35.90	98.52	100.04	100.87	103.11	0.111385	7.91	4.91	5.66	2.47
BellsB	M002	1996.87	100Year-Existing	35.90	97.97	99.15	99.92	101.92	0.098169	8.15	5.69	6.80	2.51
BellsB	M002	1982.97	100Year-Existing	35.90	97.73	98.99	99.48	100.56	0.054687	6.48	7.59	8.14	1.91
BellsB	M002	1966.25	100Year-Existing	35.90	96.75	98.85	99.10	99.83	0.022416	4.99	9.97	9.14	1.21
BellsB	M002	1951.81	100Year-Existing	35.90	96.56	98.95	98.29	99.13	0.003620	2.35	22.17	14.51	0.51
BellsB	M002	1939.94	100Year-Existing	35.90	96.29	98.45	98.45	99.01	0.012239	3.75	13.22	12.42	0.92
BellsB	M002	1918.81	100Year-Existing	35.90	95.86	98.17	97.84	98.53	0.007053	3.28	16.64	12.10	0.73
BellsB	M002	1910.32	100Year-Existing	35.90	95.58	97.74	97.74	98.43	0.012062	3.98	11.75	9.61	0.94
BellsB	M002	1896.87	100Year-Existing	35.90	94.38	95.99	96.57	97.98	0.065417	7.00	6.92	8.36	1.97
BellsB	M002	1887.59	100Year-Existing	35.90	93.87	95.10	95.68	97.23	0.095778	7.28	6.65	10.19	2.38
BellsB	M002	1880.79	100Year-Existing	35.90	93.33	96.18	95.35	96.38	0.002702	2.37	22.20	12.40	0.47
BellsB	M002	1870.34	100Year-Existing	35.90	92.77	96.19		96.34	0.001539	2.12	26.07	10.54	0.37
BellsB	M002	1857.16	100Year-Existing	35.90	91.88	96.23		96.31	0.000776	1.59	34.89	14.58	0.26
BellsB	M002	1848.27	100Year-Existing	35.90	91.91	96.24		96.29	0.000376	1.20	45.93	16.89	0.19
BellsB	M002	1834.27	100Year-Existing	35.90	90.88	96.25		96.28	0.000236	1.06	52.85	17.51	0.15
BellsB	M002	1821.35	100Year-Existing	35.90	90.90	96.26		96.28	0.000137	0.87	70.56	20.78	0.12
BellsB	M002	1807.43	100Year-Existing	35.90	89.83	96.26		96.27	0.000083	0.72	83.26	21.67	0.09
BellsB	M002	1800.77	100Year-Existing	35.90	89.59	96.26		96.27	0.000081	0.72	88.42	22.80	0.09
BellsB	M002	1777.98	100Year-Existing	35.90	88.77	96.26		96.27	0.000027	0.47	135.65	30.20	0.06
BellsB	M002	1753.27	100Year-Existing	35.90	88.22	96.26		96.27	0.000031	0.51	129.41	30.18	0.06
BellsB	M002	1729.73	100Year-Existing	35.90	88.17	96.26		96.27	0.000018	0.41	159.46	32.58	0.05
BellsB	M002	1705.77	100Year-Existing	35.90	87.60	96.26		96.27	0.000008	0.32	251.73	64.61	0.04
BellsB	M002	1688.91	100Year-Existing	35.90	86.72	96.26	90.17	96.27	0.000011	0.36	209.63	66.63	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	100Year-Existing	35.90	83.97	87.41	87.41	89.13	0.007967	5.81	6.18	20.29	1.00
BellsB	M002	1605.59	100Year-Existing	35.90	81.49	82.28	82.98	87.58	0.504471	10.82	3.84	11.95	5.49
BellsB	M001	1582.05	100Year-Existing	57.20	80.41	81.61	82.61	86.05	0.128892	9.63	6.70	8.99	3.19
BellsB	M001	1563.67	100Year-Existing	57.20	79.96	81.32	82.05	83.92	0.061529	7.71	9.35	10.86	2.30
BellsB	M001	1544.26	100Year-Existing	57.20	79.04	80.96	81.58	82.91	0.030809	6.81	11.38	9.83	1.70
BellsB	M001	1529.04	100Year-Existing	57.20	78.24	79.59	80.36	82.24	0.053030	7.50	8.78	8.67	2.16
BellsB	M001	1515.66	100Year-Existing	57.20	77.30	79.27	79.95	81.48	0.044646	6.82	9.56	7.92	1.74
BellsB	M001	1502.43	100Year-Existing	57.20	69.64	70.31	71.30	79.21	0.901956	13.25	4.36	11.00	6.52
BellsB	M001	1483.47	100Year-Existing	57.20	68.89	69.95	70.50	72.09	0.124812	7.24	9.82	16.48	2.67
BellsB	M001	1454.75	100Year-Existing	57.20	68.03	69.60	69.74	70.35	0.024103	4.88	16.89	16.23	1.30
BellsB	M001	1406.62	100Year-Existing	57.20	66.49	68.77	68.81	69.56	0.014341	4.66	17.13	12.23	1.05
BellsB	M001	1358.51	100Year-Existing	57.20	65.17	66.76	67.25	68.36	0.043448	6.12	11.71	12.16	1.71
BellsB	M001	1310.38	100Year-Existing	57.20	63.80	65.43	65.77	66.53	0.029059	5.21	15.04	17.78	1.42
BellsB	M001	1286.33	100Year-Existing	57.20	62.81	64.27	64.66	65.59	0.053591	6.11	13.46	20.16	1.84
BellsB	M001	1262.25	100Year-Existing	57.20	62.09	64.41	64.50	64.89	0.012758	4.16	24.61	29.35	0.95
BellsB	M001	1251.58	100Year-Existing	57.20	61.46	63.31	63.88	64.61	0.035847	6.57	13.87	13.05	1.61
BellsB	M001	1234.76	100Year-Existing	57.20	60.57	62.17	62.66	63.81	0.062316	7.33	13.34	21.27	2.02
BellsB	M001	1214.13	100Year-Existing	57.20	59.55	61.83	61.13	62.01	0.003194	2.25	36.04	24.68	0.50
BellsB	M001	1200.58	100Year-Existing	57.20	58.90	61.23	61.23	61.89	0.011611	4.20	19.74	15.88	0.94
BellsB	M001	1182.98	100Year-Existing	57.20	58.59	60.88	60.99	61.65	0.014405	4.62	18.48	15.90	1.05
BellsB	M001	1166.01	100Year-Existing	57.20	58.39	59.86	60.29	61.20	0.043397	5.94	13.89	18.30	1.70
BellsB	M001	1153.18	100Year-Existing	57.20	57.70	59.53	59.86	60.61	0.037625	6.35	16.13	20.03	1.59
BellsB	M001	1141.88	100Year-Existing	57.20	56.72	58.17	58.72	60.01	0.057807	6.60	11.04	14.00	1.94
BellsB	M001	1128.34	100Year-Existing	57.20	56.53	57.82	58.19	59.05	0.054498	6.07	12.73	15.33	1.84
BellsB	M001	1117.89	100Year-Existing	57.20	55.58	56.97	57.42	58.42	0.061350	7.00	12.47	14.09	1.99
BellsB	M001	1096.03	100Year-Existing	57.20	54.61	56.37	56.67	57.43	0.028841	5.23	15.07	16.29	1.41
BellsB	M001	1077.81	100Year-Existing	57.20	54.24	55.46	55.90	56.77	0.048451	5.84	13.85	19.82	1.78
BellsB	M001	1069.76	100Year-Existing	57.20	53.70	54.53	54.96	56.07	0.114530	6.73	11.64	19.48	2.55
BellsB	M001	1064.67	100Year-Existing	57.20	53.19	54.04	54.45	55.47	0.111279	6.55	12.10	20.67	2.50
BellsB	M001	1051.64	100Year-Existing	57.20	51.97	53.11	53.54	54.55	0.064706	6.21	12.83	18.45	2.01
BellsB	M001	1032.36	100Year-Existing	57.20	50.97	52.56	52.83	53.52	0.035361	5.68	15.85	17.02	1.55
BellsB	M001	1021.64	100Year-Existing	57.20	50.03	51.54	51.98	53.03	0.046746	5.97	12.74	17.22	1.75
BellsB	M001	1014.11	100Year-Existing	57.20	49.46	51.17	51.62	52.70	0.041539	6.04	12.39	15.08	1.66
BellsB	M001	1006.24	100Year-Existing	57.20	49.15	50.52	51.04	52.30	0.055560	6.53	11.35	14.83	1.91
BellsB	M001	996.42	100Year-Existing	57.20	48.11	49.53	50.15	51.67	0.081492	7.67	10.45	14.23	2.25
BellsB	M001	987.27	100Year-Existing	57.20	47.17	48.82	49.47	51.03	0.058862	7.33	10.36	11.92	2.00
BellsB	M001	973.52	100Year-Existing	57.20	46.79	48.29	48.90	50.23	0.044792	6.53	10.68	13.84	1.87
BellsB	M001	951.43	100Year-Existing	57.20	45.77	47.36	47.93	49.23	0.051041	6.80	11.53	17.12	1.95
BellsB	M001	931.51	100Year-Existing	57.20	44.86	46.24	46.77	48.01	0.072977	7.94	10.92	14.38	2.31
BellsB	M001	925.41	100Year-Existing	57.20	44.69	46.41	46.76	47.52	0.030492	6.01	14.97	18.94	1.53
BellsB	M001	901.68	100Year-Existing	57.20	43.69	45.34	45.77	46.76	0.031021	6.06	12.38	11.73	1.60
BellsB	M001	877.27	100Year-Existing	57.20	43.18	45.48	45.25	45.99	0.007559	3.71	20.53	13.82	0.83
BellsB	M001	857.41	100Year-Existing	57.20	42.16	45.72	45.24	45.82	0.000988	1.81	54.59	42.01	0.32
BellsB	M001	840		Culvert									
BellsB	M001	816.09	100Year-Existing	58.50	38.54	42.12	41.39	42.91	0.005199	4.01	15.19	11.94	0.70
BellsB	M001	810.13	100Year-Existing	58.50	37.80	42.45	40.14	42.56	0.000704	1.60	51.79	33.59	0.25
BellsB	M001	800		Bridge									
BellsB	M001	796.37	100Year-Existing	58.50	34.33	36.78	37.67	39.63	0.051942	7.59	8.26	8.93	1.87
BellsB	M001	782.27	100Year-Existing	58.50	33.92	34.93	35.70	38.25	0.167813	8.69	7.71	11.28	3.10
BellsB	M001	772.73	100Year-Existing	58.50	30.94	32.68	33.51	36.61	0.168872	11.50	8.43	10.89	3.05
BellsB	M001	766.74	100Year-Existing	58.50	30.65	32.63	33.38	35.54	0.103832	10.19	9.79	10.95	2.48
BellsB	M001	760.32	100Year-Existing	58.50	30.34	32.09	32.86	34.95	0.080684	8.88	9.85	11.08	2.31
BellsB	M001	755.97	100Year-Existing	58.50	30.05	31.76	32.50	34.56	0.087011	8.34	9.57	11.51	2.33

HEC-RAS Plan: Plan 13 Profile: 100Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	749.69	100Year-Existing	58.50	29.30	31.10	31.88	33.99	0.086142	8.87	9.59	10.53	2.35
BellsB	M001	742.14	100Year-Existing	58.50	28.38	29.80	30.70	33.26	0.095124	8.90	8.35	9.49	2.53
BellsB	M001	736.73	100Year-Existing	58.50	28.24	29.17	29.98	32.60	0.160563	8.90	7.65	10.98	3.10
BellsB	M001	722.61	100Year-Existing	58.50	27.35	28.54	29.11	30.64	0.078863	7.11	10.26	14.71	2.22
BellsB	M001	712.04	100Year-Existing	58.50	26.27	27.97	28.58	29.91	0.052394	6.77	10.91	11.43	1.86
BellsB	M001	702.42	100Year-Existing	58.50	26.04	27.52	28.07	29.34	0.056911	6.69	11.21	12.60	1.93
BellsB	M001	691.68	100Year-Existing	58.50	25.03	26.77	27.37	28.72	0.054889	6.55	10.34	11.36	1.87
BellsB	M001	686.22	100Year-Existing	58.50	24.46	25.87	26.57	28.31	0.076923	7.06	8.97	10.75	2.19
BellsB	M001	675.26	100Year-Existing	58.50	24.08	25.42	26.04	27.43	0.060702	6.73	10.11	11.04	1.99
BellsB	M001	668.37	100Year-Existing	58.50	23.58	25.05	25.64	27.02	0.058839	6.71	10.49	12.34	1.96
BellsB	M001	655.45	100Year-Existing	58.50	23.02	24.35	24.90	26.23	0.059754	6.51	10.63	13.20	1.95
BellsB	M001	636.88	100Year-Existing	58.50	21.46	22.99	23.62	25.09	0.058007	6.68	9.92	10.84	1.95
BellsB	M001	619.06	100Year-Existing	58.50	20.82	22.53	23.02	24.10	0.039161	6.12	12.26	12.15	1.64
BellsB	M001	608.48	100Year-Existing	58.50	20.13	21.71	22.27	23.60	0.048982	6.43	10.96	13.74	1.81
BellsB	M001	592.31	100Year-Existing	58.50	18.95	20.55	21.18	22.67	0.068954	7.53	10.62	11.94	2.12
BellsB	M001	582.72	100Year-Existing	58.50	18.14	19.43	20.14	21.91	0.082301	7.70	9.59	10.54	2.32
BellsB	M001	577.91	100Year-Existing	58.50	17.66	19.49	20.16	21.51	0.040737	6.95	11.30	10.15	1.73
BellsB	M001	561.51	100Year-Existing	58.50	17.02	18.55	19.15	20.63	0.073654	7.31	11.05	13.83	2.16
BellsB	M001	553.07	100Year-Existing	58.50	16.35	17.68	18.35	20.01	0.067948	6.99	9.71	12.35	2.09
BellsB	M001	541.54	100Year-Existing	58.50	15.41	16.75	17.39	19.14	0.083928	6.98	9.33	13.89	2.26
BellsB	M001	529.17	100Year-Existing	58.50	14.85	16.18	16.76	18.11	0.063983	6.22	9.91	9.42	1.81
BellsB	M001	514.53	100Year-Existing	58.50	14.21	15.48	15.97	17.08	0.063043	6.12	11.57	12.47	1.82
BellsB	M001	467.56	100Year-Existing	58.50	11.61	13.03	13.46	14.49	0.045875	5.47	11.53	10.76	1.56
BellsB	M001	420.59	100Year-Existing	58.50	8.75	13.43	11.35	13.58	0.001178	1.90	41.91	15.66	0.29
BellsB	M001	400.25	100Year-Existing	58.50	8.57	13.21	10.98	13.53	0.001664	2.52	23.20	7.03	0.37
BellsB	M001	100		Culvert									
BellsB	M001	68.07	100Year-Existing	58.50	0.83	1.98	3.23	7.28	0.106418	10.21	5.73	5.59	3.04
BellsB	M001	47.74	100Year-Existing	58.50	0.56	4.34	3.32	4.36	0.000184	0.90	154.45	134.24	0.15
BellsB	M001	43		Bridge									
BellsB	M001	41.05	100Year-Existing	58.50	0.70	4.34	3.34	4.35	0.000153	0.81	164.68	134.16	0.14
BellsB	M001	20.51	100Year-Existing	58.50	0.57	4.34		4.35	0.000184	0.86	160.42	144.04	0.15

Corner Brook 20yr n+20%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	134.20	36.31	38.85	38.82	39.78	0.012297	4.70	37.20	20.51	0.97
CornerB	M004	2838.71	20Year-Existing	134.20	36.15	38.37	38.37	39.15	0.010806	4.11	41.55	34.01	0.89
CornerB	M004	2796.61	20Year-Existing	134.20	35.35	38.23	37.46	38.62	0.004568	3.08	59.68	38.82	0.60
CornerB	M004	2769.85	20Year-Existing	134.20	34.80	37.25	37.25	38.06	0.020507	5.99	41.92	28.10	1.25
CornerB	TR001	206.04	20Year-Existing	22.90	43.81	44.71	44.90	45.36	0.042016	4.22	7.89	13.83	1.50
CornerB	TR001	156.04	20Year-Existing	22.90	41.63	42.64	42.85	43.30	0.040167	3.73	7.39	16.62	1.42
CornerB	TR001	106.04	20Year-Existing	22.90	39.17	39.79	40.06	40.69	0.070815	4.44	6.08	12.54	1.85
CornerB	TR001	56.04	20Year-Existing	22.90	37.27	38.09	38.17	38.55	0.027226	3.18	8.40	13.46	1.19
CornerB	TR001	36.04	20Year-Existing	22.90	35.50	38.20	37.24	38.20	0.000084	0.38	115.69	80.45	0.08
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	22.90	35.18	36.98	36.98	37.75	0.015444	3.88	5.89	10.95	1.00
CornerB	M003	2689.92	20Year-Existing	146.50	33.55	36.14	35.90	36.55	0.008137	3.80	70.45	53.74	0.79
CornerB	M003	2645.73	20Year-Existing	146.50	32.87	36.27		36.36	0.001099	1.75	134.31	61.08	0.31
CornerB	M003	2602.09	20Year-Existing	146.50	32.20	36.26		36.32	0.000533	1.35	171.38	67.12	0.22
CornerB	M003	2557.73	20Year-Existing	146.50	31.34	36.21		36.29	0.000513	1.49	145.73	48.01	0.22
CornerB	M003	2537.73	20Year-Existing	146.50	30.77	36.14	34.21	36.27	0.000850	2.11	140.60	63.91	0.29
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	146.50	30.35	33.13	33.63	35.40	0.020964	6.68	21.93	15.92	1.29
CornerB	M003	2507.21	20Year-Existing	146.50	30.75	32.28	32.98	34.67	0.070356	7.66	24.45	21.37	2.11
CornerB	M003	2459.31	20Year-Existing	146.50	30.13	32.02	31.96	32.69	0.013546	4.08	47.02	32.50	0.97
CornerB	M003	2411.41	20Year-Existing	146.50	29.27	31.45	31.45	32.03	0.013175	4.23	56.43	46.85	0.97
CornerB	M003	2363.51	20Year-Existing	146.50	28.77	30.48	30.60	31.24	0.019992	4.37	44.78	39.87	1.15
CornerB	M003	2315.61	20Year-Existing	146.50	27.93	29.94	29.75	30.53	0.009459	3.50	46.69	29.66	0.82
CornerB	M003	2267.71	20Year-Existing	146.80	26.30	29.99		30.26	0.001959	2.42	73.48	27.46	0.41
CornerB	M003	2264.01	20Year-Existing	146.80	26.10	29.94	29.16	30.24	0.006267	2.44	61.60	29.56	0.52
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	146.80	26.10	29.81		30.15	0.007608	2.59	57.98	29.35	0.57
CornerB	M003	2260.98	20Year-Existing	146.80	25.80	29.86		30.09	0.001519	2.24	80.38	28.68	0.37
CornerB	M003	2240.88	20Year-Existing	146.80	27.01	29.71		30.02	0.003735	2.57	67.88	38.83	0.54
CornerB	M003	2212.25	20Year-Existing	146.80	26.87	29.61		29.92	0.003674	2.67	68.75	34.80	0.54
CornerB	M003	2183.63	20Year-Existing	146.80	25.56	28.69	28.69	29.68	0.011513	4.89	41.56	24.49	0.95
CornerB	M003	2163.63	20Year-Existing	146.80	25.35	28.65	27.90	29.22	0.004983	3.46	45.83	27.26	0.64
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	146.80	24.87	27.58	27.77	28.87	0.017209	5.46	32.55	21.41	1.14
CornerB	M003	2131.66	20Year-Existing	146.80	24.57	26.84	27.34	28.52	0.031416	5.93	27.90	20.16	1.45
CornerB	M003	2119.46	20Year-Existing	146.80	24.12	27.21	26.62	27.70	0.005370	3.33	54.80	26.28	0.65
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	146.80	24.04	26.67	26.67	27.58	0.012454	4.37	38.40	23.11	0.95
CornerB	M003	2080.62	20Year-Existing	146.80	23.73	25.50	25.92	26.87	0.028980	5.36	31.10	24.85	1.39
CornerB	M003	2068.44	20Year-Existing	146.80	23.76	25.67	25.73	26.49	0.015439	4.24	40.94	29.61	1.03
CornerB	M003	2022.25	20Year-Existing	146.80	22.74	24.95	24.87	25.67	0.011421	4.04	45.05	29.93	0.91
CornerB	M003	1991.14	20Year-Existing	146.80	22.18	24.39	24.39	25.27	0.013359	4.44	40.84	26.73	0.99
CornerB	M003	1985.82	20Year-Existing	146.80	21.97	23.94	24.23	25.16	0.022243	5.23	34.41	24.71	1.25
CornerB	M003	1975.95	20Year-Existing	146.80	21.78	23.66	23.97	24.91	0.025030	5.43	34.58	26.09	1.32
CornerB	M003	1929.72	20Year-Existing	146.80	20.08	22.21	22.58	23.69	0.026977	5.65	30.07	20.25	1.36
CornerB	M003	1883.49	20Year-Existing	146.80	19.23	21.83	21.83	22.86	0.012715	4.80	37.57	19.67	0.99
CornerB	TR002	21.04	20Year-Existing	8.70	22.27	22.91	23.35	24.62	0.150171	6.26	1.80	4.48	2.63
CornerB	TR002	18.08	20Year-Existing	8.70	21.40	21.81	22.20	23.89	0.410192	7.23	1.59	6.16	4.03
CornerB	M002	1826.39	20Year-Existing	148.20	16.92	18.41	19.14	21.24	0.160617	7.97	22.72	29.61	2.41
CornerB	M002	1790.92	20Year-Existing	148.20	15.49	18.78	18.43	19.63	0.013221	4.48	41.66	17.43	0.81
CornerB	M002	1773.95	20Year-Existing	148.20	14.72	19.14	17.44	19.36	0.002512	2.31	82.48	28.06	0.37
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	148.20	14.87	19.12	17.20	19.28	0.001456	2.01	101.59	36.77	0.32
CornerB	M002	1733.13	20Year-Existing	148.20	15.23	19.15		19.20	0.000429	1.05	173.86	70.11	0.17
CornerB	M002	1717.41	20Year-Existing	148.20	15.12	19.15		19.19	0.000361	0.98	194.41	79.63	0.16
CornerB	M002	1691.96	20Year-Existing	148.20	14.62	19.14		19.18	0.000301	0.93	216.63	97.58	0.15
CornerB	M002	1654.15	20Year-Existing	148.20	13.87	19.15		19.17	0.000142	0.68	283.18	120.32	0.10
CornerB	M002	1613.91	20Year-Existing	148.20	13.08	19.15		19.16	0.000067	0.56	330.35	137.23	0.08
CornerB	M002	1567.16	20Year-Existing	148.20	12.15	19.16		19.16	0.000011	0.24	689.83	201.29	0.03
CornerB	M002	1551.89	20Year-Existing	148.20	11.85	19.16		19.16	0.000004	0.15	1060.28	267.57	0.02
CornerB	M002	1539.91	20Year-Existing	147.10	11.62	19.16		19.16	0.000002	0.11	1453.60	302.56	0.01
CornerB	M002	1526.59	20Year-Existing	147.10	11.36	19.16		19.16	0.000002	0.11	1480.18	309.14	0.01
CornerB	M002	1517.99	20Year-Existing	147.10	11.18	19.16		19.16	0.000003	0.13	1250.38	265.23	0.02
CornerB	M002	1505.64	20Year-Existing	147.10	10.94	19.16		19.16	0.000004	0.17	931.98	194.44	0.02
CornerB	M002	1490.63	20Year-Existing	147.10	10.64	19.15		19.16	0.000010	0.25	642.97	136.25	0.03
CornerB	M002	1463.65	20Year-Existing	147.10	10.11	19.14		19.16	0.000041	0.51	349.91	82.86	0.07
CornerB	M002	1415.93	20Year-Existing	147.10	9.17	19.14		19.15	0.000036	0.50	331.69	72.57	0.06
CornerB	M002	1386.11	20Year-Existing	147.10	8.58	19.14		19.15	0.000053	0.59	300.38	76.18	0.07
CornerB	M002	1363.91	20Year-Existing	147.10	8.14	19.12		19.15	0.000087	0.75	243.00	55.99	0.09
CornerB	M002	1356.61	20Year-Existing	147.10	8.00	19.12		19.15	0.000245	0.97	248.53	71.18	0.10
CornerB	M002	1354.61	20Year-Existing	147.10	15.35	18.57	18.53	19.10	0.007016	3.81	61.97	51.52	0.68
CornerB	M002	1354.11	20Year-Existing	147.10	15.35	18.53	18.53	19.10	0.007547	3.92	59.97	50.96	0.70
CornerB	M002	1352.01	20Year-Existing	147.10	8.00	9.16	10.95	18.20	0.877332	0.35	11.05	9.51	0.15
CornerB	M002	1347.51	20Year-Existing	147.10	7.72	9.48	10.51	13.73	0.260310	9.13	16.11	16.37	2.93
CornerB	M002	1336.58	20Year-Existing	147.10	7.69	9.32	9.98	11.49	0.095520	6.55	23.03	20.74	1.88
CornerB	M002	1326.83	20Year-Existing	147.10	7.68	10.49	9.70	10.81	0.006112	2.62	63.79	30.24	0.54
CornerB	M002	1317.22	20Year-Existing	147.10	7.66	10.32		10.73	0.009264	2.93	55.50	30.78	0.64
CornerB	M002	1315.18	20Year-Existing	147.10	7.28	9.86	9.86	10.66	0.025126	4.24	40.41	27.29	1.01
CornerB	M002	1313.58	20Year-Existing	147.10	6.48	9.06	9.48	10.53	0.053153	5.62	29.62	23.52	1.44
CornerB	M002	1312.39	20Year-Existing	147.10	6.23	8.62	9.18	10.43	0.068261	6.14	26.40	22.11	1.62
CornerB	M002	1311.16	20Year-Existing	147.10	5.92	8.21	8.84	10.30	0.092315	6.49	23.78	21.51	1.84
CornerB	M002	1309.11	20Year-Existing	147.10	5.91	7.83	8.50	10.09	0.100059	6.73	22.75	20.70	1.92
CornerB	M002	1305.35	20Year-Existing	147.10	5.37	7.22	7.93	9.67	0.106036	7.18	23.20	23.54	1.99

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	147.10	5.06	6.78	7.44	9.04	0.113455	6.72	22.77	22.76	2.02
CornerB	M002	1296.49	20Year-Existing	147.10	4.91	7.04	7.47	8.58	0.047368	5.63	28.44	20.36	1.39
CornerB	M002	1289.64	20Year-Existing	147.10	4.71	7.62	7.30	8.28	0.013307	3.78	44.08	22.15	0.78
CornerB	M002	1284.12	20Year-Existing	147.10	4.41	7.19	7.19	8.16	0.020840	4.58	36.91	20.58	0.97
CornerB	M002	1279.52	20Year-Existing	147.10	4.23	6.61	6.94	7.99	0.034777	5.37	30.38	19.65	1.22
CornerB	M002	1258.94	20Year-Existing	147.10	3.53	5.29	5.83	6.98	0.071061	6.03	28.13	27.54	1.65
CornerB	M002	1246.98	20Year-Existing	147.10	3.37	4.93	5.29	6.23	0.039507	5.12	30.52	25.69	1.38
CornerB	M002	1233.83	20Year-Existing	147.10	3.10	4.72	4.95	5.64	0.034161	4.44	38.17	38.51	1.27
CornerB	M002	1215.66	20Year-Existing	147.10	2.70	4.79	4.41	5.09	0.006471	2.58	73.83	64.38	0.59
CornerB	M002	1206.83	20Year-Existing	147.10	2.54	4.78		5.02	0.005779	2.41	81.67	66.94	0.56
CornerB	M002	1194.69	20Year-Existing	147.10	2.39	4.74		4.95	0.005011	2.32	86.80	64.59	0.53
CornerB	M002	1185.06	20Year-Existing	147.10	2.26	4.71		4.90	0.003873	2.17	93.94	66.05	0.47
CornerB	M002	1142.41	20Year-Existing	147.10	1.70	4.59		4.75	0.003300	2.06	103.59	76.04	0.44
CornerB	M002	1137.55	20Year-Existing	147.10	1.60	4.32	4.07	4.68	0.008743	2.82	69.07	74.14	0.68
CornerB	M002	1110.53	20Year-Existing	147.10	1.39	4.18		4.49	0.004961	2.66	77.41	70.06	0.54
CornerB	M002	1090.67	20Year-Existing	147.10	1.10	4.28		4.37	0.001554	1.59	143.34	86.83	0.31
CornerB	M002	1070.69	20Year-Existing	147.10	0.80	4.29	2.80	4.34	0.000726	1.24	186.83	89.05	0.22
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	147.10	0.76	4.28	2.71	4.32	0.000647	1.19	187.62	86.40	0.21
CornerB	M002	1047.01	20Year-Existing	147.10	0.75	4.26		4.31	0.000615	1.30	182.22	78.32	0.23
CornerB	M002	1004.03	20Year-Existing	147.10	0.77	4.23		4.28	0.000589	1.28	206.00	128.38	0.22
CornerB	M002	959.21	20Year-Existing	147.10	0.70	4.23		4.25	0.000438	1.09	304.80	277.91	0.19
CornerB	M002	915.75	20Year-Existing	146.20	0.68	4.22		4.23	0.000316	0.90	377.36	294.94	0.16
CornerB	M002	869.66	20Year-Existing	146.20	0.69	4.21		4.22	0.000181	0.70	415.68	222.09	0.12
CornerB	M002	828.33	20Year-Existing	141.50	0.77	4.20		4.21	0.000186	0.69	403.80	219.40	0.12
CornerB	M002	784.55	20Year-Existing	141.50	0.82	4.20		4.21	0.000127	0.57	423.51	230.74	0.10
CornerB	M002	739.85	20Year-Existing	141.50	0.82	4.19		4.20	0.000126	0.55	433.82	268.56	0.10
CornerB	M002	696.36	20Year-Existing	141.50	0.64	4.18		4.19	0.000181	0.70	377.52	266.45	0.12
CornerB	M001	659.37	20Year-Existing	148.40	0.75	4.17		4.19	0.000192	0.68	357.12	230.85	0.13
CornerB	M001	643.93	20Year-Existing	148.40	0.74	4.16	2.79	4.18	0.000290	0.85	301.11	215.29	0.16
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	148.40	0.83	3.88	2.67	3.93	0.000701	1.25	208.49	177.69	0.24
CornerB	M001	608.52	20Year-Existing	148.40	0.76	3.86		3.91	0.000882	1.34	200.17	162.35	0.26
CornerB	M001	570.12	20Year-Existing	148.40	0.61	3.86		3.88	0.000456	1.02	268.00	185.90	0.19
CornerB	M001	535.83	20Year-Existing	148.40	0.56	3.84	1.81	3.87	0.000262	0.85	276.88	219.53	0.15
CornerB	M001	520.22	20Year-Existing	148.40	0.55	3.84	1.89	3.86	0.000199	0.74	324.27	291.03	0.13
CornerB	M001	472.07	20Year-Existing	148.40	0.58	3.80	2.29	3.84	0.000498	1.13	231.13	199.51	0.20
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	148.40	0.44	3.38	2.05	3.52	0.001382	1.80	143.62	208.19	0.34
CornerB	M001	425.41	20Year-Existing	148.40	0.48	3.39		3.46	0.000958	1.45	222.51	283.32	0.28
CornerB	M001	401.99	20Year-Existing	148.40	0.74	3.40		3.43	0.000566	1.07	308.74	335.18	0.21
CornerB	M001	381.26	20Year-Existing	148.40	0.79	3.32	2.59	3.40	0.001385	1.60	220.21	344.88	0.33
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	148.40	0.79	3.17	2.53	3.31	0.002465	2.07	172.72	347.29	0.43
CornerB	M001	352.89	20Year-Existing	148.40	0.68	3.13		3.26	0.001659	1.73	149.61	302.41	0.36
CornerB	M001	324.13	20Year-Existing	148.40	0.67	3.11		3.21	0.001407	1.59	158.30	208.60	0.33
CornerB	M001	292.92	20Year-Existing	148.40	0.65	3.09		3.16	0.001081	1.36	208.26	305.90	0.29
CornerB	M001	274.62	20Year-Existing	148.40	0.96	3.07	2.62	3.13	0.002163	1.71	224.24	344.28	0.39
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	148.40	1.01	3.04	2.57	3.08	0.001981	1.62	248.01	364.26	0.38
CornerB	M001	245.99	20Year-Existing	148.40	0.64	3.00		3.04	0.001289	1.39	278.51	421.48	0.31
CornerB	M001	210.89	20Year-Existing	148.40	0.68	2.97		3.00	0.001159	1.24	276.47	376.79	0.29
CornerB	M001	174.77	20Year-Existing	148.40	0.69	2.93		2.96	0.001046	1.06	297.81	426.87	0.27
CornerB	M001	155.66	20Year-Existing	148.40	0.64	2.92	2.49	2.94	0.001258	1.05	333.12	543.07	0.28
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	148.40	0.55	2.91	2.42	2.92	0.000961	0.92	347.07	494.75	0.25
CornerB	M001	129.05	20Year-Existing	148.40	0.40	2.88		2.90	0.000706	0.96	367.94	479.50	0.22
CornerB	M001	80.73	20Year-Existing	148.40	0.20	2.84		2.87	0.000648	1.03	325.21	387.71	0.22
CornerB	M001	23.81	20Year-Existing	148.40	0.32	2.80	1.97	2.83	0.000699	1.00	308.45	431.13	0.22
BellsB	TR001	178.13	20Year-Existing	12.50	92.91	94.14	94.39	94.96	0.043040	4.09	3.38	5.38	1.42
BellsB	TR001	159.86	20Year-Existing	12.50	92.15	93.96	93.48	94.09	0.004021	1.89	9.72	9.74	0.49
BellsB	TR001	139.54	20Year-Existing	12.50	91.13	93.83	92.55	94.02	0.002797	1.94	6.45	8.35	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	12.50	89.49	90.84	91.04	91.82	0.030124	4.42	2.92	3.56	1.26
BellsB	TR001	88.17	20Year-Existing	12.50	88.47	89.31	89.82	91.32	0.168074	6.63	2.26	4.99	2.72
BellsB	TR001	84.12	20Year-Existing	12.50	87.66	88.38	88.83	90.43	0.255320	6.43	2.09	6.19	3.20
BellsB	TR001	79.14	20Year-Existing	12.50	86.53	87.29	87.78	89.36	0.174131	6.56	2.20	5.69	2.81
BellsB	TR001	72.74	20Year-Existing	12.50	85.76	86.42	86.85	88.08	0.182851	5.79	2.34	6.70	2.75
BellsB	TR001	67.75	20Year-Existing	12.50	85.04	85.61	85.95	87.00	0.190798	5.49	2.65	8.05	2.76
BellsB	TR001	64.04	20Year-Existing	12.50	84.47	85.21	85.54	86.36	0.120071	4.76	2.64	6.06	2.25
BellsB	TR001	60.69	20Year-Existing	12.50	84.14	85.17	85.43	85.98	0.062284	4.10	3.42	7.13	1.68
BellsB	TR001	56.76	20Year-Existing	12.50	83.97	84.96	85.20	85.72	0.056656	3.90	3.37	7.21	1.61
BellsB	TR001	50.93	20Year-Existing	12.50	83.68	84.74	84.94	85.36	0.051836	3.57	3.91	9.03	1.52
BellsB	TR001	43.86	20Year-Existing	12.50	83.34	84.25	84.45	84.93	0.069219	3.74	3.71	9.94	1.72
BellsB	TR001	37.01	20Year-Existing	12.50	82.98	83.92	84.09	84.51	0.047265	3.61	4.15	9.12	1.48
BellsB	TR001	12.14	20Year-Existing	12.50	82.15	83.05	83.14	83.46	0.033984	3.01	4.93	10.11	1.25
BellsB	M002	5166.11	20Year-Existing	10.40	190.79	191.85	191.71	191.97	0.010564	2.04	9.50	17.68	0.67
BellsB	M002	5149.23	20Year-Existing	10.40	190.57	191.48	191.48	191.71	0.021198	2.49	6.29	13.67	0.91
BellsB	M002	5117.45	20Year-Existing	10.40	189.91	191.31	190.68	191.34	0.001862	1.06	18.91	22.85	0.29
BellsB	M002	5090.85	20Year-Existing	10.40	189.62	190.89	190.89	191.19	0.019196	2.94	5.93	10.25	0.90
BellsB	M002	5067.47	20Year-Existing	10.40	189.18	190.12	189.89	190.25	0.013747	2.23	7.55	10.62	0.76
BellsB	M002	5017.78	20Year-Existing	10.40	188.12	189.14	189.14	189.40	0.023768	2.93	6.16	11.48	0.99
BellsB	M002	4967.57	20Year-Existing	10.40	186.55	187.77	187.78	188.13	0.026780	3.18	4.91	7.42	1.02

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	10.40	185.69	186.75	186.40	186.82	0.005529	1.52	11.03	18.07	0.49
BellsB	M002	4873.31	20Year-Existing	10.40	184.61	186.17	186.04	186.44	0.013331	2.72	6.05	8.36	0.76
BellsB	M002	4853.42	20Year-Existing	10.40	183.55	186.15	184.96	186.31	0.002454	1.78	5.83	23.63	0.37
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	10.40	181.53	182.76	182.92	183.58	0.035054	4.01	2.59	5.39	1.23
BellsB	M002	4785.76	20Year-Existing	10.40	181.35	182.38	182.42	182.75	0.027146	3.04	4.63	7.84	1.05
BellsB	M002	4756.65	20Year-Existing	10.40	180.12	180.93	181.13	181.53	0.070403	4.18	3.98	11.08	1.62
BellsB	M002	4727.54	20Year-Existing	10.40	179.02	179.81	179.89	180.13	0.030873	3.04	5.73	16.34	1.17
BellsB	M002	4707.54	20Year-Existing	10.40	177.96	178.31	178.47	178.89	0.170880	4.09	3.63	16.42	2.42
BellsB	M002	4702.24	20Year-Existing	10.40	177.65	178.35	178.45	178.69	0.043676	3.09	5.29	16.93	1.34
BellsB	M002	4682.48	20Year-Existing	10.40	176.63	177.35	177.47	177.77	0.044611	3.28	4.68	14.15	1.37
BellsB	M002	4658.79	20Year-Existing	10.40	175.50	176.59	176.67	177.07	0.022694	3.31	4.15	6.54	1.06
BellsB	M002	4633.41	20Year-Existing	10.40	174.51	175.18	175.43	176.00	0.107299	5.03	3.54	11.65	2.12
BellsB	M002	4609.61	20Year-Existing	10.40	173.50	174.62	174.37	174.75	0.007346	1.97	8.17	11.37	0.62
BellsB	M002	4583.99	20Year-Existing	10.40	172.77	174.05	174.05	174.44	0.017684	2.94	4.39	6.32	0.92
BellsB	M002	4534.72	20Year-Existing	10.40	170.00	170.87	171.29	172.41	0.128846	6.66	2.54	5.80	2.41
BellsB	M002	4485.52	20Year-Existing	10.40	168.20	168.85	168.91	169.11	0.041508	3.08	5.92	17.89	1.31
BellsB	M002	4436.28	20Year-Existing	18.80	165.85	166.99	167.05	167.45	0.029809	3.96	8.29	14.01	1.23
BellsB	M002	4387.04	20Year-Existing	18.80	164.06	165.25	165.42	165.84	0.034906	4.42	7.43	12.17	1.35
BellsB	M002	4337.81	20Year-Existing	18.80	162.60	163.75	163.87	164.16	0.031290	3.99	9.87	22.90	1.25
BellsB	M002	4288.56	20Year-Existing	18.80	161.30	162.44	162.51	162.78	0.028536	3.68	10.02	20.04	1.17
BellsB	M002	4239.33	20Year-Existing	18.80	159.65	160.63	160.81	161.21	0.041766	4.12	7.32	14.60	1.42
BellsB	M002	4190.09	20Year-Existing	18.80	158.43	159.59	159.60	159.88	0.017950	3.06	10.54	18.22	0.96
BellsB	M002	4140.85	20Year-Existing	18.80	157.30	157.91	157.99	158.24	0.068096	3.95	8.57	22.51	1.69
BellsB	M002	4091.61	20Year-Existing	18.80	155.30	156.08	156.08	156.33	0.032519	3.32	10.13	20.10	1.23
BellsB	M002	4042.37	20Year-Existing	18.80	153.74	154.63	154.64	154.94	0.024163	3.03	9.12	15.03	1.08
BellsB	M002	3993.13	20Year-Existing	18.80	152.65	153.48	153.47	153.70	0.027012	2.91	11.11	23.37	1.08
BellsB	M002	3943.89	20Year-Existing	18.80	151.36	152.22	152.22	152.48	0.027221	3.12	10.11	19.10	1.13
BellsB	M002	3894.65	20Year-Existing	18.80	149.52	151.04	151.13	151.45	0.020164	3.43	9.44	17.78	1.00
BellsB	M002	3869.08	20Year-Existing	18.80	148.87	150.04	150.24	150.73	0.039557	4.25	6.39	10.64	1.39
BellsB	M002	3845.41	20Year-Existing	18.80	148.37	149.60	149.60	150.02	0.026050	3.49	8.64	17.49	1.07
BellsB	M002	3822.22	20Year-Existing	18.80	147.71	149.04	148.61	149.13	0.005016	1.73	17.00	18.27	0.49
BellsB	M002	3796.17	20Year-Existing	18.80	146.89	148.62	148.46	148.92	0.011049	2.83	10.15	12.36	0.73
BellsB	M002	3765.39	20Year-Existing	18.80	146.40	148.05	148.05	148.49	0.017678	3.25	7.75	9.38	0.89
BellsB	M002	3746.94	20Year-Existing	18.80	145.76	147.67	146.95	147.72	0.002003	1.35	21.54	19.35	0.32
BellsB	M002	3724.94	20Year-Existing	18.80	145.32	147.45		147.64	0.005606	2.20	11.45	9.92	0.53
BellsB	M002	3697.71	20Year-Existing	18.80	145.05	147.45		147.53	0.001718	1.41	17.53	11.29	0.30
BellsB	M002	3677.71	20Year-Existing	18.80	143.44	147.23	145.45	147.47	0.002151	2.16	8.71	15.06	0.36
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	18.80	142.47	144.39	144.39	145.32	0.016211	4.25	4.42	9.07	1.00
BellsB	M002	3623.19	20Year-Existing	18.80	142.10	143.56	143.94	144.71	0.054984	5.25	4.62	6.91	1.58
BellsB	M002	3573.45	20Year-Existing	18.80	140.89	142.33	142.41	142.86	0.022944	3.58	6.79	9.84	1.07
BellsB	M002	3520.99	20Year-Existing	18.80	139.30	140.78	140.92	141.48	0.029261	4.08	5.85	7.85	1.19
BellsB	M002	3473.83	20Year-Existing	18.80	137.98	139.73	139.80	140.21	0.020515	3.74	7.31	9.33	0.99
BellsB	M002	3424.29	20Year-Existing	18.80	136.49	138.48	137.94	138.68	0.004344	2.14	11.20	10.19	0.51
BellsB	M002	3400.36	20Year-Existing	18.80	135.96	138.58		138.61	0.000438	0.84	29.51	19.29	0.17
BellsB	M002	3386.31	20Year-Existing	18.80	135.48	138.55	137.29	138.60	0.000579	1.14	35.30	58.26	0.21
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	18.80	135.22	138.52	137.02	138.52	0.000045	0.33	104.35	61.67	0.06
BellsB	M002	3329.08	20Year-Existing	23.80	134.96	138.52		138.52	0.000063	0.41	112.52	56.15	0.07
BellsB	M002	3303.55	20Year-Existing	23.80	133.82	138.48	136.07	138.52	0.000311	1.04	49.75	49.25	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	23.80	131.39	134.04	134.04	135.12	0.016235	4.60	5.17	17.97	1.00
BellsB	M002	3203.83	20Year-Existing	23.80	131.13	132.33	132.84	134.22	0.128916	6.65	4.92	11.49	2.36
BellsB	M002	3176.31	20Year-Existing	23.80	130.02	131.47	131.70	132.23	0.037801	4.57	8.11	13.11	1.36
BellsB	M002	3157.63	20Year-Existing	23.80	129.89	131.29	131.32	131.62	0.025846	3.53	11.69	19.13	1.07
BellsB	M002	3130.11	20Year-Existing	23.80	128.68	130.30	130.37	130.94	0.022113	3.89	7.99	8.16	1.08
BellsB	M002	3083.82	20Year-Existing	23.80	127.94	129.58	129.70	130.00	0.016784	3.47	12.57	24.45	0.95
BellsB	M002	3037.68	20Year-Existing	23.80	127.11	127.99	128.18	128.62	0.063449	4.76	9.23	23.59	1.73
BellsB	M002	2991.47	20Year-Existing	23.80	126.28	128.00	127.23	128.02	0.000891	0.93	41.84	43.33	0.23
BellsB	M002	2945.26	20Year-Existing	23.80	125.32	127.64	127.00	127.91	0.006825	2.33	11.22	17.76	0.52
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	23.80	125.12	126.83	126.80	127.64	0.015120	3.97	6.00	4.76	0.97
BellsB	M002	2918.61	20Year-Existing	23.80	124.99	126.91	126.91	127.17	0.008509	2.82	15.35	30.52	0.70
BellsB	M002	2899.46	20Year-Existing	23.80	125.25	126.74	126.69	126.86	0.003917	1.82	26.42	82.64	0.48
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	23.80	124.44	125.82	125.82	126.46	0.016023	3.54	6.72	19.70	1.00
BellsB	M002	2861.32	20Year-Existing	23.80	123.64	124.60	124.94	125.70	0.076747	5.48	6.33	14.64	1.99
BellsB	M002	2823.69	20Year-Existing	23.80	123.23	124.28	124.28	124.51	0.024605	3.02	14.11	29.57	1.01
BellsB	M002	2777.91	20Year-Existing	23.80	122.77	123.94	123.66	123.97	0.003880	1.33	35.12	59.63	0.41
BellsB	M002	2727.91	20Year-Existing	23.80	122.21	123.45	123.41	123.71	0.018406	2.88	13.97	24.04	0.89
BellsB	M002	2677.99	20Year-Existing	23.80	121.13	122.77		123.02	0.010751	2.58	12.63	13.91	0.71
BellsB	M002	2628.09	20Year-Existing	23.80	120.69	122.15	122.15	122.41	0.016244	3.09	15.77	30.25	0.86
BellsB	M002	2578.18	20Year-Existing	23.80	119.94	121.57	121.46	121.72	0.009080	2.42	19.37	31.56	0.65
BellsB	M002	2528.27	20Year-Existing	23.80	119.10	120.72	120.72	121.11	0.018959	3.40	11.37	14.90	0.93
BellsB	M002	2518.19	20Year-Existing	23.80	118.62	120.46	120.27	120.70	0.010527	2.77	14.66	17.83	0.71
BellsB	M002	2496.15	20Year-Existing	23.80	118.53	120.32		120.49	0.007950	2.42	18.77	27.66	0.62
BellsB	M002	2478.37	20Year-Existing	23.80	117.97	120.12		120.36	0.007432	2.62	14.35	13.16	0.61
BellsB	M002	2450.61	20Year-Existing	23.80	117.55	119.50	119.50	120.02	0.017457	3.80	9.92	10.37	0.92
BellsB	M002	2428.46	20Year-Existing	23.80	117.19	118.42	118.71	119.30	0.062581	4.75	7.40	14.48	1.57
BellsB	M002	2408.52	20Year-Existing	23.80	116.63	118.15	118.05	118.37	0.015418	2.82	15.08	23.36	0.81
BellsB	M002	2378.55	20Year-Existing	23.80	116.15	117.54	117.54	117.91	0.027400	3.76	11.78	19.23	1.08
BellsB	M002	2367.92	20Year-Existing	23.80	115.61	116.70	116.92	117.43	0.060565	4.80	8.48	17.56	1.59

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	23.80	115.07	116.31	116.40	116.75	0.031523	3.79	10.46	16.72	1.17
BellsB	M002	2328.64	20Year-Existing	23.80	113.99	115.93	115.70	116.20	0.010587	2.92	14.67	18.85	0.72
BellsB	M002	2307.61	20Year-Existing	23.80	112.94	116.06	115.05	116.09	0.000611	0.90	48.56	46.66	0.18
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	26.00	111.75	114.02	113.64	114.54	0.013687	3.21	8.14	8.08	0.73
BellsB	M002	2275.77	20Year-Existing	26.00	112.06	113.79	113.79	114.15	0.017811	3.56	12.98	19.47	0.92
BellsB	M002	2232.72	20Year-Existing	26.00	110.58	112.32	112.54	113.09	0.029250	4.43	8.90	13.06	1.16
BellsB	M002	2200.99	20Year-Existing	26.00	109.61	111.73	111.44	112.00	0.008619	2.77	14.47	13.52	0.65
BellsB	M002	2173.21	20Year-Existing	26.00	108.98	111.03	111.03	111.63	0.017400	3.77	9.34	8.77	0.89
BellsB	M002	2133.27	20Year-Existing	26.00	107.79	109.12	109.52	110.36	0.065908	5.62	6.64	10.36	1.69
BellsB	M002	2117.78	20Year-Existing	26.00	107.46	109.08	109.12	109.63	0.021018	3.79	9.96	11.79	1.01
BellsB	M002	2103.01	20Year-Existing	26.00	106.45	107.83	108.18	109.01	0.072575	5.65	6.56	9.59	1.72
BellsB	M002	2085.77	20Year-Existing	26.00	105.17	106.66	107.03	107.81	0.060528	5.70	6.58	7.92	1.62
BellsB	M002	2068.57	20Year-Existing	26.00	104.36	105.39	105.76	106.62	0.093509	5.90	6.59	11.89	1.97
BellsB	M002	2059.88	20Year-Existing	26.00	103.56	104.95	105.30	106.02	0.049615	5.00	6.95	9.73	1.49
BellsB	M002	2054.52	20Year-Existing	26.00	103.13	104.46	104.82	105.69	0.073382	5.73	6.39	8.48	1.76
BellsB	M002	2040.56	20Year-Existing	26.00	102.39	104.56	104.13	104.93	0.008260	3.07	11.94	8.04	0.68
BellsB	M002	2033.27	20Year-Existing	26.00	102.08	104.20	104.20	104.82	0.020097	3.89	8.96	7.90	0.95
BellsB	M002	2025.44	20Year-Existing	26.00	101.58	103.85	103.39	104.11	0.006351	2.60	14.10	10.94	0.58
BellsB	M002	2021.67	20Year-Existing	26.00	101.43	103.48	103.48	104.04	0.018241	3.63	9.31	9.25	0.91
BellsB	M002	2014.53	20Year-Existing	26.00	99.96	101.38	102.00	103.58	0.165639	6.58	4.01	5.87	2.40
BellsB	M002	2010.46	20Year-Existing	26.00	99.08	100.14	100.80	102.80	0.194410	7.97	4.16	6.66	2.78
BellsB	M002	2007.37	20Year-Existing	26.00	98.52	99.88	100.53	102.19	0.147984	6.81	4.05	5.36	2.31
BellsB	M002	1996.87	20Year-Existing	26.00	97.97	99.09	99.60	100.78	0.093943	6.36	5.23	6.64	2.02
BellsB	M002	1982.97	20Year-Existing	26.00	97.73	99.08	99.19	99.78	0.032051	4.33	8.30	8.36	1.23
BellsB	M002	1966.25	20Year-Existing	26.00	96.75	98.78	98.81	99.37	0.020204	3.83	9.32	8.97	0.95
BellsB	M002	1951.81	20Year-Existing	26.00	96.56	98.69	98.07	98.82	0.004654	2.03	18.39	14.00	0.47
BellsB	M002	1939.94	20Year-Existing	26.00	96.29	98.20	98.20	98.68	0.017554	3.38	10.30	11.55	0.89
BellsB	M002	1918.81	20Year-Existing	26.00	95.86	97.85	97.59	98.16	0.010578	2.99	12.90	11.09	0.72
BellsB	M002	1910.32	20Year-Existing	26.00	95.58	97.43	97.43	98.02	0.018521	3.63	8.92	8.49	0.94
BellsB	M002	1896.87	20Year-Existing	26.00	94.38	95.81	96.30	97.44	0.090635	6.22	5.49	7.76	1.89
BellsB	M002	1887.59	20Year-Existing	26.00	93.87	96.07	95.45	96.22	0.004554	2.11	17.93	13.11	0.49
BellsB	M002	1880.79	20Year-Existing	26.00	93.33	96.07		96.19	0.002409	1.82	20.88	12.19	0.37
BellsB	M002	1870.34	20Year-Existing	26.00	92.77	96.07		96.16	0.001324	1.60	24.85	10.32	0.29
BellsB	M002	1857.16	20Year-Existing	26.00	91.88	96.09		96.14	0.000683	1.21	32.91	14.25	0.20
BellsB	M002	1848.27	20Year-Existing	26.00	91.91	96.10		96.13	0.000327	0.91	43.51	16.46	0.15
BellsB	M002	1834.27	20Year-Existing	26.00	90.88	96.10		96.12	0.000202	0.80	50.29	17.12	0.12
BellsB	M002	1821.35	20Year-Existing	26.00	90.90	96.10		96.12	0.000116	0.66	67.42	20.34	0.09
BellsB	M002	1807.43	20Year-Existing	26.00	89.83	96.10		96.11	0.000070	0.54	79.95	21.28	0.07
BellsB	M002	1800.77	20Year-Existing	26.00	89.59	96.11		96.11	0.000068	0.54	84.93	22.36	0.07
BellsB	M002	1777.98	20Year-Existing	26.00	88.77	96.11		96.11	0.000023	0.35	130.95	29.74	0.04
BellsB	M002	1753.27	20Year-Existing	26.00	88.22	96.11		96.11	0.000026	0.38	124.77	29.29	0.04
BellsB	M002	1729.73	20Year-Existing	26.00	88.17	96.11		96.11	0.000015	0.31	154.39	32.11	0.04
BellsB	M002	1705.77	20Year-Existing	26.00	87.60	96.11		96.11	0.000006	0.24	241.79	61.14	0.03
BellsB	M002	1688.91	20Year-Existing	26.00	86.72	96.11	89.52	96.11	0.000009	0.27	199.60	61.65	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	26.00	83.97	86.75	86.75	88.13	0.012263	5.21	4.99	18.51	1.00
BellsB	M002	1605.59	20Year-Existing	26.00	81.49	82.21	82.79	86.52	0.762377	9.70	3.03	10.79	5.44
BellsB	M001	1582.05	20Year-Existing	41.30	80.41	81.50	82.27	84.58	0.150044	7.98	5.75	8.63	2.81
BellsB	M001	1563.67	20Year-Existing	41.30	79.96	81.32	81.73	82.67	0.045654	5.55	9.39	10.87	1.65
BellsB	M001	1544.26	20Year-Existing	41.30	79.04	80.99	81.19	81.97	0.021918	4.83	11.61	9.91	1.20
BellsB	M001	1529.04	20Year-Existing	41.30	78.24	79.42	79.99	81.34	0.066328	6.35	7.37	8.28	1.97
BellsB	M001	1515.66	20Year-Existing	41.30	77.30	79.19	79.55	80.49	0.040441	5.23	8.94	7.73	1.37
BellsB	M001	1502.43	20Year-Existing	41.30	69.64	70.20	71.03	78.22	1.536549	12.55	3.30	9.90	6.86
BellsB	M001	1483.47	20Year-Existing	41.30	68.89	69.93	70.28	71.13	0.104444	5.42	9.47	16.43	2.03
BellsB	M001	1454.75	20Year-Existing	41.30	68.03	69.64	69.50	70.00	0.016173	3.39	17.55	16.36	0.89
BellsB	M001	1406.62	20Year-Existing	41.30	66.49	68.47	68.47	69.11	0.020098	4.13	13.62	11.25	1.01
BellsB	M001	1358.51	20Year-Existing	41.30	65.17	66.66	66.95	67.69	0.044121	4.87	10.51	11.87	1.41
BellsB	M001	1310.38	20Year-Existing	41.30	63.80	65.39	65.51	66.02	0.024848	3.93	14.27	17.34	1.09
BellsB	M001	1286.33	20Year-Existing	41.30	62.81	64.17	64.47	65.11	0.060465	5.07	11.49	18.79	1.61
BellsB	M001	1262.25	20Year-Existing	41.30	62.09	64.34	64.34	64.65	0.012229	3.31	22.51	29.20	0.77
BellsB	M001	1251.58	20Year-Existing	41.30	61.46	63.00	63.35	64.30	0.064642	6.41	10.02	11.55	1.75
BellsB	M001	1234.76	20Year-Existing	41.30	60.57	62.09	62.45	63.20	0.063045	5.90	11.76	19.82	1.68
BellsB	M001	1214.13	20Year-Existing	41.30	59.55	61.49	60.91	61.64	0.004800	2.04	28.00	22.47	0.50
BellsB	M001	1200.58	20Year-Existing	41.30	58.90	61.07	60.92	61.51	0.012061	3.38	17.38	15.03	0.79
BellsB	M001	1182.98	20Year-Existing	41.30	58.59	60.68	60.68	61.25	0.017145	3.91	15.36	14.55	0.93
BellsB	M001	1166.01	20Year-Existing	41.30	58.39	59.73	60.04	60.73	0.051546	5.02	11.64	17.42	1.51
BellsB	M001	1153.18	20Year-Existing	41.30	57.70	59.50	59.65	60.11	0.031206	4.76	15.54	19.94	1.21
BellsB	M001	1141.88	20Year-Existing	41.30	56.72	58.00	58.45	59.49	0.080341	5.85	8.76	12.95	1.86
BellsB	M001	1128.34	20Year-Existing	41.30	56.53	57.81	57.95	58.46	0.041861	4.41	12.63	15.30	1.35
BellsB	M001	1117.89	20Year-Existing	41.30	55.58	56.84	57.16	57.86	0.070068	5.81	10.74	13.38	1.74
BellsB	M001	1096.03	20Year-Existing	41.30	54.61	56.35	56.42	56.93	0.023018	3.86	14.73	16.20	1.05
BellsB	M001	1077.81	20Year-Existing	41.30	54.24	55.32	55.65	56.28	0.060039	4.95	11.33	17.20	1.61
BellsB	M001	1069.76	20Year-Existing	41.30	53.70	54.46	54.76	55.49	0.125749	5.48	10.29	19.14	2.19
BellsB	M001	1064.67	20Year-Existing	41.30	53.19	53.99	54.25	54.87	0.106617	5.11	11.19	20.50	2.02
BellsB	M001	1051.64	20Year-Existing	41.30	51.97	53.04	53.32	53.96	0.064070	4.92	11.64	18.11	1.64
BellsB	M001	1032.36	20Year-Existing	41.30	50.97	52.54	52.59	53.07	0.028821	4.22	15.40	16.88	1.16
BellsB	M001	1021.64	20Year-Existing	41.30	50.03	51.39	51.75	52.56	0.060826	5.19	10.27	15.90	1.63
BellsB	M001	1014.11	20Year-Existing	41.30	49.46	51.04	51.38	52.13	0.047967	5.05	10.44	13.97	1.46
BellsB	M001	1006.24	20Year-Existing	41.30	49.15	50.40	50.79	51.69	0.065110	5.48	9.59	14.05	1.70
BellsB	M001	996.42	20Year-Existing	41.30	48.11	49.42	49.88	50.96	0.093605	6.41	8.91	13.52	1.98
BellsB	M001	987.27	20Year-Existing	41.30	47.17	48.69	49.17	50.24	0.065874	6.06	8.88	11.26	1.73
BellsB	M001	973.52	20Year-Existing	41.30	46.79	48.22	48.61	49.41	0.041734	5.06	9.78	13.14	1.49

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	41.30	45.77	47.30	47.68	48.46	0.048286	5.32	10.46	16.15	1.57
BellsB	M001	931.51	20Year-Existing	41.30	44.86	46.17	46.52	47.29	0.071108	6.27	9.92	13.81	1.88
BellsB	M001	925.41	20Year-Existing	41.30	44.69	46.46	46.53	46.97	0.019499	4.09	15.94	19.33	1.02
BellsB	M001	901.68	20Year-Existing	41.30	43.69	45.13	45.47	46.26	0.042625	5.33	9.99	11.02	1.52
BellsB	M001	877.27	20Year-Existing	41.30	43.18	45.42	44.95	45.71	0.006359	2.78	19.70	13.63	0.63
BellsB	M001	857.41	20Year-Existing	41.30	42.16	45.52	44.37	45.60	0.001037	1.48	46.68	38.90	0.27
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	42.50	38.54	42.05	40.89	42.48	0.004279	2.98	14.83	11.67	0.52
BellsB	M001	810.13	20Year-Existing	42.50	37.80	42.22	39.77	42.29	0.000701	1.28	44.56	27.66	0.20
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	42.50	34.33	36.56	37.24	38.64	0.064986	6.44	6.90	8.26	1.70
BellsB	M001	782.27	20Year-Existing	42.50	33.92	34.84	35.43	37.10	0.188397	7.14	6.79	11.11	2.69
BellsB	M001	772.73	20Year-Existing	42.50	30.94	32.57	33.26	35.32	0.181462	9.45	7.34	10.16	2.60
BellsB	M001	766.74	20Year-Existing	42.50	30.65	32.58	33.12	34.28	0.089157	7.74	9.32	10.69	1.91
BellsB	M001	760.32	20Year-Existing	42.50	30.34	32.02	32.57	33.76	0.073563	6.87	9.16	10.72	1.83
BellsB	M001	755.97	20Year-Existing	42.50	30.05	31.70	32.20	33.41	0.080418	6.48	8.89	11.38	1.85
BellsB	M001	749.69	20Year-Existing	42.50	29.30	31.01	31.56	32.87	0.084524	7.04	8.71	10.29	1.92
BellsB	M001	742.14	20Year-Existing	42.50	28.38	29.67	30.35	32.11	0.109301	7.39	7.14	8.95	2.22
BellsB	M001	736.73	20Year-Existing	42.50	28.24	29.10	29.69	31.33	0.168135	7.16	6.87	10.77	2.60
BellsB	M001	722.61	20Year-Existing	42.50	27.35	28.54	28.87	29.65	0.060126	5.17	10.24	14.70	1.62
BellsB	M001	712.04	20Year-Existing	42.50	26.27	27.91	28.26	29.08	0.048240	5.23	10.18	11.17	1.47
BellsB	M001	702.42	20Year-Existing	42.50	26.04	27.46	27.79	28.56	0.053214	5.20	10.41	12.34	1.54
BellsB	M001	691.68	20Year-Existing	42.50	25.03	26.67	27.06	27.95	0.057845	5.29	9.19	10.85	1.58
BellsB	M001	686.22	20Year-Existing	42.50	24.46	25.74	26.26	27.50	0.094245	5.96	7.57	10.30	1.97
BellsB	M001	675.26	20Year-Existing	42.50	24.08	25.37	25.73	26.56	0.054632	5.16	9.54	10.85	1.56
BellsB	M001	668.37	20Year-Existing	42.50	23.58	24.99	25.35	26.19	0.054714	5.21	9.76	12.11	1.56
BellsB	M001	655.45	20Year-Existing	42.50	23.02	24.28	24.64	25.46	0.057786	5.12	9.76	13.00	1.58
BellsB	M001	636.88	20Year-Existing	42.50	21.46	22.88	23.32	24.29	0.062949	5.44	8.75	10.49	1.66
BellsB	M001	619.06	20Year-Existing	42.50	20.82	22.52	22.72	23.37	0.031300	4.52	12.04	12.08	1.22
BellsB	M001	608.48	20Year-Existing	42.50	20.13	21.60	22.00	22.90	0.052434	5.24	9.55	13.34	1.54
BellsB	M001	592.31	20Year-Existing	42.50	18.95	20.44	20.89	21.89	0.075044	6.17	9.33	11.45	1.81
BellsB	M001	582.72	20Year-Existing	42.50	18.14	19.31	19.82	21.04	0.095315	6.39	8.31	10.25	2.04
BellsB	M001	577.91	20Year-Existing	42.50	17.66	19.42	19.77	20.61	0.036231	5.31	10.63	9.82	1.35
BellsB	M001	561.51	20Year-Existing	42.50	17.02	18.48	18.88	19.79	0.071386	5.76	10.11	13.52	1.76
BellsB	M001	553.07	20Year-Existing	42.50	16.35	17.56	18.08	19.16	0.076592	5.74	8.33	10.94	1.82
BellsB	M001	541.54	20Year-Existing	42.50	15.41	16.68	17.13	18.21	0.085258	5.55	8.33	12.73	1.88
BellsB	M001	529.17	20Year-Existing	42.50	14.85	16.13	16.43	17.24	0.055632	4.71	9.48	9.32	1.40
BellsB	M001	514.53	20Year-Existing	42.50	14.21	15.43	15.69	16.36	0.055524	4.66	11.00	12.32	1.41
BellsB	M001	467.56	20Year-Existing	42.50	11.61	12.91	13.15	13.87	0.049199	4.42	10.28	10.48	1.33
BellsB	M001	420.59	20Year-Existing	42.50	8.75	12.02	10.96	12.26	0.004261	2.31	22.73	11.61	0.44
BellsB	M001	400.25	20Year-Existing	42.50	8.57	11.82	10.52	12.17	0.004142	2.62	16.25	6.39	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	42.50	0.83	4.15	2.78	4.26	0.001107	1.69	45.99	48.66	0.30
BellsB	M001	47.74	20Year-Existing	42.50	0.56	4.19	2.69	4.20	0.000199	0.75	134.48	125.22	0.13
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	42.50	0.70	4.19	2.70	4.19	0.000167	0.68	144.36	129.81	0.12
BellsB	M001	20.51	20Year-Existing	42.50	0.57	4.18		4.19	0.000207	0.74	138.53	139.27	0.13

Corner Brook 20yr n-20%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	134.20	36.31	38.79	38.82	39.78	0.006000	4.84	35.99	20.34	1.01
CornerB	M004	2838.71	20Year-Existing	134.20	36.15	37.89	38.37	39.33	0.011959	5.49	28.03	22.10	1.35
CornerB	M004	2796.61	20Year-Existing	134.20	35.35	36.95	37.46	38.66	0.020087	6.24	25.88	22.11	1.70
CornerB	M004	2769.85	20Year-Existing	134.20	34.80	37.25	37.25	38.06	0.009114	5.99	41.92	28.10	1.25
CornerB	TR001	206.04	20Year-Existing	22.90	43.81	44.57	44.90	45.73	0.042005	5.54	5.92	13.08	2.17
CornerB	TR001	156.04	20Year-Existing	22.90	41.63	42.50	42.85	43.66	0.040759	4.86	5.27	13.60	2.07
CornerB	TR001	106.04	20Year-Existing	22.90	39.17	39.68	40.06	41.11	0.064631	5.56	4.76	11.84	2.56
CornerB	TR001	56.04	20Year-Existing	22.90	37.27	37.91	38.17	38.78	0.032570	4.32	6.05	12.69	1.86
CornerB	TR001	36.04	20Year-Existing	22.90	35.50	38.20	37.24	38.20	0.000037	0.38	115.69	80.45	0.08
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	22.90	35.18	36.98	36.98	37.75	0.006864	3.88	5.89	10.95	1.00
CornerB	M003	2689.92	20Year-Existing	146.50	33.55	35.38	35.90	37.18	0.022193	7.28	34.65	42.15	1.83
CornerB	M003	2645.73	20Year-Existing	146.50	32.87	36.21	34.59	36.31	0.000522	1.79	130.98	59.51	0.32
CornerB	M003	2602.09	20Year-Existing	146.50	32.20	36.22		36.28	0.000247	1.37	168.93	67.01	0.22
CornerB	M003	2557.73	20Year-Existing	146.50	31.34	36.19		36.27	0.000233	1.51	144.60	47.96	0.22
CornerB	M003	2537.73	20Year-Existing	146.50	30.77	36.12	34.21	36.26	0.000386	2.12	139.47	63.88	0.30
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	146.50	30.35	33.07	33.63	35.45	0.010077	6.84	21.42	15.78	1.34
CornerB	M003	2507.21	20Year-Existing	146.50	30.75	32.19	32.98	34.97	0.039456	8.24	22.65	21.16	2.35
CornerB	M003	2459.31	20Year-Existing	146.50	30.13	31.45	31.96	33.17	0.025064	6.42	29.00	29.83	1.86
CornerB	M003	2411.41	20Year-Existing	146.50	29.27	31.18	31.45	32.18	0.011742	5.41	43.83	44.86	1.34
CornerB	M003	2363.51	20Year-Existing	146.50	28.77	30.24	30.60	31.47	0.017900	5.49	35.12	38.10	1.58
CornerB	M003	2315.61	20Year-Existing	146.50	27.93	29.39	29.75	30.69	0.014616	5.16	30.70	27.56	1.44
CornerB	M003	2267.71	20Year-Existing	146.80	26.30	29.89	28.54	30.18	0.000966	2.50	70.77	27.09	0.43
CornerB	M003	2264.01	20Year-Existing	146.80	26.10	29.82	29.16	30.16	0.003330	2.57	58.26	29.37	0.57
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	146.80	26.10	29.63		30.04	0.004591	2.84	52.70	29.05	0.66
CornerB	M003	2260.98	20Year-Existing	146.80	25.80	29.70		29.96	0.000792	2.36	75.88	28.43	0.40
CornerB	M003	2240.88	20Year-Existing	146.80	27.01	29.51		29.90	0.002314	2.86	60.10	37.61	0.62
CornerB	M003	2212.25	20Year-Existing	146.80	26.87	29.47		29.83	0.001984	2.84	64.18	34.05	0.59
CornerB	M003	2183.63	20Year-Existing	146.80	25.56	28.69	28.69	29.68	0.005117	4.89	41.56	24.49	0.95
CornerB	M003	2163.63	20Year-Existing	146.80	25.35	27.29	27.90	29.39	0.017878	6.56	23.99	18.23	1.64
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	146.80	24.87	27.42	27.77	28.95	0.009884	5.92	29.99	20.84	1.28
CornerB	M003	2131.66	20Year-Existing	146.80	24.57	26.73	27.34	28.69	0.017633	6.38	25.73	19.69	1.61
CornerB	M003	2119.46	20Year-Existing	146.80	24.12	25.87	26.62	28.37	0.028809	7.28	23.05	20.92	2.01
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	146.80	24.04	26.03	26.67	28.08	0.019365	6.46	24.67	19.93	1.68
CornerB	M003	2080.62	20Year-Existing	146.80	23.73	25.24	25.92	27.33	0.024923	6.59	24.80	23.53	1.87
CornerB	M003	2068.44	20Year-Existing	146.80	23.76	25.18	25.73	26.95	0.022719	6.15	27.09	26.30	1.77
CornerB	M003	2022.25	20Year-Existing	146.80	22.74	24.37	24.87	26.01	0.017491	5.97	28.91	25.60	1.60
CornerB	M003	1991.14	20Year-Existing	146.80	22.18	23.95	24.39	25.49	0.014018	5.81	29.94	23.29	1.46
CornerB	M003	1985.82	20Year-Existing	146.80	21.97	23.70	24.23	25.40	0.016368	6.13	28.79	23.38	1.57
CornerB	M003	1975.95	20Year-Existing	146.80	21.78	23.42	23.97	25.21	0.019122	6.44	28.51	24.47	1.68
CornerB	M003	1929.72	20Year-Existing	146.80	20.08	21.89	22.58	24.19	0.023867	6.99	23.86	19.23	1.86
CornerB	M003	1883.49	20Year-Existing	146.80	19.23	21.26	21.83	23.23	0.015169	6.56	26.63	18.15	1.55
CornerB	TR002	21.04	20Year-Existing	8.70	22.27	22.80	23.35	25.79	0.150138	8.13	1.32	3.98	3.81
CornerB	TR002	18.08	20Year-Existing	8.70	21.40	21.75	22.20	25.09	0.362303	9.02	1.26	6.00	5.51
CornerB	M002	1826.39	20Year-Existing	148.20	16.92	18.35	19.14	21.68	0.089133	8.58	20.94	29.31	2.66
CornerB	M002	1790.92	20Year-Existing	148.20	15.49	17.84	18.43	19.89	0.022103	6.82	26.16	15.41	1.48
CornerB	M002	1773.95	20Year-Existing	148.20	14.72	19.08	17.44	19.31	0.001180	2.35	80.80	27.79	0.37
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	148.20	14.87	19.09	17.20	19.25	0.000671	2.04	100.26	36.67	0.32
CornerB	M002	1733.13	20Year-Existing	148.20	15.23	19.13		19.18	0.000195	1.06	172.50	69.76	0.17
CornerB	M002	1717.41	20Year-Existing	148.20	15.12	19.13		19.17	0.000163	0.99	193.15	79.34	0.16
CornerB	M002	1691.96	20Year-Existing	148.20	14.62	19.13		19.17	0.000136	0.93	215.55	97.32	0.15
CornerB	M002	1654.15	20Year-Existing	148.20	13.87	19.14		19.16	0.000064	0.68	282.35	119.91	0.10
CornerB	M002	1613.91	20Year-Existing	148.20	13.08	19.14		19.16	0.000030	0.56	329.70	136.76	0.08
CornerB	M002	1567.16	20Year-Existing	148.20	12.15	19.15		19.15	0.000005	0.24	688.99	200.99	0.03
CornerB	M002	1551.89	20Year-Existing	148.20	11.85	19.15		19.15	0.000002	0.15	1059.18	267.46	0.02
CornerB	M002	1539.91	20Year-Existing	147.10	11.62	19.15		19.15	0.000001	0.11	1452.35	302.45	0.01
CornerB	M002	1526.59	20Year-Existing	147.10	11.36	19.15		19.15	0.000001	0.11	1478.92	309.04	0.01
CornerB	M002	1517.99	20Year-Existing	147.10	11.18	19.15		19.15	0.000001	0.13	1249.30	265.21	0.02
CornerB	M002	1505.64	20Year-Existing	147.10	10.94	19.15		19.15	0.000002	0.17	931.19	194.41	0.02
CornerB	M002	1490.63	20Year-Existing	147.10	10.64	19.15		19.15	0.000004	0.25	642.43	136.22	0.03
CornerB	M002	1463.65	20Year-Existing	147.10	10.11	19.14		19.15	0.000018	0.51	349.60	82.81	0.07
CornerB	M002	1415.93	20Year-Existing	147.10	9.17	19.14		19.15	0.000016	0.50	331.49	72.55	0.06
CornerB	M002	1386.11	20Year-Existing	147.10	8.58	19.13		19.15	0.000024	0.59	300.23	76.17	0.07
CornerB	M002	1363.91	20Year-Existing	147.10	8.14	19.12		19.15	0.000039	0.75	242.93	55.99	0.09
CornerB	M002	1356.61	20Year-Existing	147.10	8.00	19.12		19.15	0.000109	0.97	248.49	71.17	0.10
CornerB	M002	1354.61	20Year-Existing	147.10	15.35	18.57	18.53	19.10	0.003148	3.83	61.71	51.47	0.68
CornerB	M002	1354.11	20Year-Existing	147.10	15.35	18.53	18.53	19.10	0.003354	3.92	59.97	50.96	0.70
CornerB	M002	1352.01	20Year-Existing	147.10	8.00	9.16	10.95	18.22	0.391654	0.36	11.03	9.51	0.15
CornerB	M002	1347.51	20Year-Existing	147.10	7.72	9.31	10.51	15.46	0.199108	10.99	13.39	15.46	3.77
CornerB	M002	1336.58	20Year-Existing	147.10	7.69	8.98	9.98	13.17	0.124676	9.07	16.33	18.86	3.05
CornerB	M002	1326.83	20Year-Existing	147.10	7.68	8.97	9.70	11.76	0.084672	7.60	20.80	25.81	2.54
CornerB	M002	1317.22	20Year-Existing	147.10	7.66	9.35	9.81	10.90	0.033686	5.61	27.79	26.76	1.66
CornerB	M002	1315.18	20Year-Existing	147.10	7.28	9.67	9.86	10.70	0.016691	4.81	35.29	26.38	1.22
CornerB	M002	1313.58	20Year-Existing	147.10	6.48	9.00	9.48	10.61	0.027045	5.87	28.28	23.23	1.53
CornerB	M002	1312.39	20Year-Existing	147.10	6.23	8.57	9.18	10.54	0.034611	6.40	25.23	21.86	1.71
CornerB	M002	1311.16	20Year-Existing	147.10	5.92	8.16	8.84	10.46	0.047626	6.79	22.64	21.30	1.96
CornerB	M002	1309.11	20Year-Existing	147.10	5.91	7.76	8.50	10.33	0.054388	7.16	21.29	20.41	2.10
CornerB	M002	1305.35	20Year-Existing	147.10	5.37	7.12	7.93	10.06	0.061748	7.83	21.03	22.72	2.26

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	147.10	5.06	6.63	7.44	9.69	0.081669	7.79	19.45	22.04	2.51
CornerB	M002	1296.49	20Year-Existing	147.10	4.91	6.67	7.47	9.36	0.050484	7.38	21.18	18.83	2.07
CornerB	M002	1289.64	20Year-Existing	147.10	4.71	6.61	7.30	8.94	0.041468	6.93	22.95	19.62	1.88
CornerB	M002	1284.12	20Year-Existing	147.10	4.41	6.52	7.19	8.70	0.031635	6.74	24.08	18.18	1.69
CornerB	M002	1279.52	20Year-Existing	147.10	4.23	6.21	6.94	8.53	0.034044	6.87	23.04	17.89	1.75
CornerB	M002	1258.94	20Year-Existing	147.10	3.53	5.08	5.83	7.62	0.058058	7.32	22.61	25.48	2.18
CornerB	M002	1246.98	20Year-Existing	147.10	3.37	4.59	5.29	6.95	0.045109	6.84	22.26	23.68	2.12
CornerB	M002	1233.83	20Year-Existing	147.10	3.10	4.42	4.95	6.21	0.042060	6.12	26.86	35.69	2.02
CornerB	M002	1215.66	20Year-Existing	147.10	2.70	3.89	4.41	5.46	0.031427	5.58	27.56	34.56	1.76
CornerB	M002	1206.83	20Year-Existing	147.10	2.54	3.97	4.32	5.09	0.022083	4.86	35.51	47.24	1.50
CornerB	M002	1194.69	20Year-Existing	147.10	2.39	4.54	4.19	4.84	0.003445	2.69	74.04	62.82	0.64
CornerB	M002	1185.06	20Year-Existing	147.10	2.26	4.55		4.79	0.002391	2.43	83.28	64.96	0.55
CornerB	M002	1142.41	20Year-Existing	147.10	1.70	4.51		4.69	0.001678	2.16	98.08	72.57	0.46
CornerB	M002	1137.55	20Year-Existing	147.10	1.60	4.07	4.07	4.63	0.007201	3.46	52.12	58.21	0.90
CornerB	M002	1110.53	20Year-Existing	147.10	1.39	3.94	3.56	4.37	0.003367	3.07	62.21	56.75	0.66
CornerB	M002	1090.67	20Year-Existing	147.10	1.10	4.13		4.24	0.000892	1.74	130.64	86.14	0.34
CornerB	M002	1070.69	20Year-Existing	147.10	0.80	4.16	2.80	4.22	0.000387	1.32	175.33	88.55	0.24
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	147.10	0.76	4.15	2.71	4.20	0.000343	1.27	176.63	85.88	0.22
CornerB	M002	1047.01	20Year-Existing	147.10	0.75	4.14		4.19	0.000321	1.38	172.72	77.73	0.25
CornerB	M002	1004.03	20Year-Existing	147.10	0.77	4.12		4.18	0.000311	1.36	192.02	124.98	0.24
CornerB	M002	959.21	20Year-Existing	147.10	0.70	4.13		4.16	0.000241	1.19	277.35	273.28	0.21
CornerB	M002	915.75	20Year-Existing	146.20	0.68	4.13		4.14	0.000171	0.97	351.01	293.95	0.18
CornerB	M002	869.66	20Year-Existing	146.20	0.69	4.13		4.14	0.000092	0.74	397.27	220.48	0.13
CornerB	M002	828.33	20Year-Existing	141.50	0.77	4.12		4.13	0.000094	0.72	386.34	217.34	0.13
CornerB	M002	784.55	20Year-Existing	141.50	0.82	4.12		4.13	0.000064	0.60	405.79	229.24	0.11
CornerB	M002	739.85	20Year-Existing	141.50	0.82	4.12		4.13	0.000063	0.57	413.96	265.02	0.11
CornerB	M002	696.36	20Year-Existing	141.50	0.64	4.11		4.12	0.000093	0.74	358.37	265.87	0.13
CornerB	M001	659.37	20Year-Existing	148.40	0.75	4.11		4.12	0.000097	0.72	341.31	228.22	0.13
CornerB	M001	643.93	20Year-Existing	148.40	0.74	4.09	2.79	4.12	0.000147	0.90	286.50	212.50	0.17
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	148.40	0.83	3.75	2.67	3.81	0.000416	1.40	185.69	171.78	0.27
CornerB	M001	608.52	20Year-Existing	148.40	0.76	3.74		3.80	0.000489	1.45	180.66	157.15	0.29
CornerB	M001	570.12	20Year-Existing	148.40	0.61	3.75		3.78	0.000257	1.12	247.95	185.02	0.22
CornerB	M001	535.83	20Year-Existing	148.40	0.56	3.74	1.81	3.77	0.000139	0.90	258.44	217.82	0.16
CornerB	M001	520.22	20Year-Existing	148.40	0.55	3.74	1.89	3.76	0.000104	0.78	305.45	289.55	0.14
CornerB	M001	472.07	20Year-Existing	148.40	0.58	3.70	2.29	3.75	0.000272	1.22	211.60	193.39	0.23
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	148.40	0.44	3.41	2.05	3.54	0.000576	1.76	150.08	214.34	0.33
CornerB	M001	425.41	20Year-Existing	148.40	0.48	3.43		3.50	0.000381	1.39	235.35	290.95	0.26
CornerB	M001	401.99	20Year-Existing	148.40	0.74	3.45		3.48	0.000219	1.02	326.75	338.24	0.20
CornerB	M001	381.26	20Year-Existing	148.40	0.79	3.41	2.59	3.47	0.000466	1.42	249.70	347.95	0.29
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	148.40	0.79	2.85	2.53	3.31	0.003179	3.19	74.37	261.39	0.72
CornerB	M001	352.89	20Year-Existing	148.40	0.68	2.95		3.14	0.001104	2.00	105.48	192.88	0.43
CornerB	M001	324.13	20Year-Existing	148.40	0.67	2.97		3.09	0.000810	1.74	133.86	155.60	0.37
CornerB	M001	292.92	20Year-Existing	148.40	0.65	2.97		3.06	0.000652	1.53	173.97	263.86	0.33
CornerB	M001	274.62	20Year-Existing	148.40	0.96	2.95	2.62	3.04	0.001483	2.03	185.53	310.83	0.48
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	148.40	1.01	2.92	2.57	2.98	0.001403	1.96	205.68	337.20	0.47
CornerB	M001	245.99	20Year-Existing	148.40	0.64	2.90		2.96	0.000816	1.61	236.23	380.37	0.36
CornerB	M001	210.89	20Year-Existing	148.40	0.68	2.88		2.93	0.000659	1.36	246.82	347.09	0.32
CornerB	M001	174.77	20Year-Existing	148.40	0.69	2.87		2.90	0.000587	1.16	271.08	404.59	0.30
CornerB	M001	155.66	20Year-Existing	148.40	0.64	2.86	2.49	2.89	0.000707	1.15	304.84	498.77	0.31
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	148.40	0.55	2.86	2.42	2.88	0.000523	0.99	323.18	452.25	0.27
CornerB	M001	129.05	20Year-Existing	148.40	0.40	2.84		2.86	0.000363	1.02	349.07	476.12	0.24
CornerB	M001	80.73	20Year-Existing	148.40	0.20	2.82		2.85	0.000307	1.06	316.74	383.75	0.23
CornerB	M001	23.81	20Year-Existing	148.40	0.32	2.80	1.97	2.83	0.000311	1.00	308.45	431.13	0.22
BellsB	TR001	178.13	20Year-Existing	12.50	92.91	93.97	94.39	95.35	0.043002	5.26	2.51	4.67	2.05
BellsB	TR001	159.86	20Year-Existing	12.50	92.15	93.91	93.48	94.06	0.002037	1.97	9.24	9.54	0.52
BellsB	TR001	139.54	20Year-Existing	12.50	91.13	93.83	92.55	94.02	0.001243	1.94	6.45	8.35	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	12.50	89.49	90.84	91.04	91.82	0.013388	4.42	2.92	3.56	1.26
BellsB	TR001	88.17	20Year-Existing	12.50	88.47	89.30	89.82	91.40	0.079479	6.76	2.21	4.96	2.80
BellsB	TR001	84.12	20Year-Existing	12.50	87.66	88.34	88.83	90.88	0.159038	7.13	1.86	5.94	3.73
BellsB	TR001	79.14	20Year-Existing	12.50	86.53	87.21	87.78	90.13	0.128646	7.71	1.81	5.14	3.53
BellsB	TR001	72.74	20Year-Existing	12.50	85.76	86.33	86.85	89.10	0.181668	7.43	1.75	5.90	3.96
BellsB	TR001	67.75	20Year-Existing	12.50	85.04	85.53	85.95	88.04	0.197918	7.28	1.97	7.90	4.09
BellsB	TR001	64.04	20Year-Existing	12.50	84.47	85.08	85.54	87.33	0.143675	6.65	1.88	5.25	3.55
BellsB	TR001	60.69	20Year-Existing	12.50	84.14	84.98	85.43	86.85	0.087021	6.15	2.18	5.58	2.86
BellsB	TR001	56.76	20Year-Existing	12.50	83.97	84.77	85.20	86.44	0.086355	5.72	2.20	5.56	2.81
BellsB	TR001	50.93	20Year-Existing	12.50	83.68	84.58	84.94	85.86	0.072886	5.09	2.62	7.29	2.57
BellsB	TR001	43.86	20Year-Existing	12.50	83.34	84.14	84.45	85.32	0.071456	4.86	2.73	8.94	2.53
BellsB	TR001	37.01	20Year-Existing	12.50	82.98	83.78	84.09	84.89	0.052051	4.82	2.99	8.66	2.24
BellsB	TR001	12.14	20Year-Existing	12.50	82.15	82.92	83.14	83.67	0.038461	4.05	3.60	9.69	1.91
BellsB	M002	5166.11	20Year-Existing	10.40	190.79	191.67	191.71	191.93	0.013022	2.95	6.45	15.70	1.08
BellsB	M002	5149.23	20Year-Existing	10.40	190.57	191.44	191.48	191.72	0.011694	2.68	5.79	13.32	1.01
BellsB	M002	5117.45	20Year-Existing	10.40	189.91	191.25	190.68	191.28	0.001021	1.14	17.59	22.45	0.32
BellsB	M002	5090.85	20Year-Existing	10.40	189.62	190.89	190.89	191.19	0.008531	2.94	5.93	10.25	0.90
BellsB	M002	5067.47	20Year-Existing	10.40	189.18	189.62	189.89	190.66	0.131211	5.93	2.73	8.83	3.06
BellsB	M002	5017.78	20Year-Existing	10.40	188.12	189.14	189.14	189.40	0.010564	2.93	6.16	11.48	0.99
BellsB	M002	4967.57	20Year-Existing	10.40	186.55	187.51	187.78	188.40	0.041152	4.84	3.10	6.51	1.80

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	10.40	185.69	186.60	186.40	186.72	0.004639	1.88	8.59	15.62	0.66
BellsB	M002	4873.31	20Year-Existing	10.40	184.61	186.06	186.04	186.42	0.008429	3.07	5.21	7.70	0.89
BellsB	M002	4853.42	20Year-Existing	10.40	183.55	186.15	184.96	186.31	0.001091	1.78	5.83	23.63	0.37
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	10.40	181.53	182.76	182.92	183.58	0.015580	4.01	2.59	5.39	1.23
BellsB	M002	4785.76	20Year-Existing	10.40	181.35	182.13	182.42	183.06	0.045449	4.68	2.83	6.49	1.92
BellsB	M002	4756.65	20Year-Existing	10.40	180.12	180.88	181.13	181.69	0.045764	4.78	3.40	10.21	1.93
BellsB	M002	4727.54	20Year-Existing	10.40	179.02	179.66	179.89	180.40	0.040276	4.40	3.57	11.97	1.92
BellsB	M002	4707.54	20Year-Existing	10.40	177.96	178.27	178.47	179.11	0.124377	4.82	3.08	16.22	3.03
BellsB	M002	4702.24	20Year-Existing	10.40	177.65	178.33	178.45	178.73	0.024202	3.34	4.87	16.83	1.48
BellsB	M002	4682.48	20Year-Existing	10.40	176.63	177.25	177.47	178.04	0.044517	4.33	3.33	12.03	1.99
BellsB	M002	4658.79	20Year-Existing	10.40	175.50	176.38	176.67	177.27	0.024868	4.43	2.89	5.28	1.59
BellsB	M002	4633.41	20Year-Existing	10.40	174.51	175.12	175.43	176.28	0.072260	5.82	2.97	10.68	2.57
BellsB	M002	4609.61	20Year-Existing	10.40	173.50	174.14	174.37	174.89	0.038932	4.48	3.33	8.75	1.92
BellsB	M002	4583.99	20Year-Existing	10.40	172.77	174.00	174.05	174.44	0.009166	3.09	4.13	6.14	0.98
BellsB	M002	4534.72	20Year-Existing	10.40	170.00	170.78	171.29	173.15	0.100338	8.09	2.02	5.17	3.12
BellsB	M002	4485.52	20Year-Existing	10.40	168.20	168.72	168.91	169.37	0.057251	4.60	3.84	15.09	2.21
BellsB	M002	4436.28	20Year-Existing	18.80	165.85	166.84	167.05	167.66	0.026806	5.09	6.31	12.71	1.71
BellsB	M002	4387.04	20Year-Existing	18.80	164.06	165.07	165.42	166.16	0.033756	5.79	5.42	10.35	1.93
BellsB	M002	4337.81	20Year-Existing	18.80	162.60	163.60	163.87	164.48	0.032482	5.48	6.70	18.18	1.86
BellsB	M002	4288.56	20Year-Existing	18.80	161.30	162.31	162.51	163.00	0.028572	5.04	7.47	19.51	1.72
BellsB	M002	4239.33	20Year-Existing	18.80	159.65	160.51	160.81	161.51	0.037054	5.25	5.60	13.39	1.96
BellsB	M002	4190.09	20Year-Existing	18.80	158.43	159.38	159.60	160.05	0.022609	4.43	6.95	15.29	1.56
BellsB	M002	4140.85	20Year-Existing	18.80	157.30	157.85	157.99	158.33	0.049299	4.70	7.30	22.12	2.12
BellsB	M002	4091.61	20Year-Existing	18.80	155.30	155.95	156.08	156.41	0.033971	4.47	7.56	18.87	1.83
BellsB	M002	4042.37	20Year-Existing	18.80	153.74	154.49	154.64	155.02	0.023133	3.91	7.03	14.39	1.53
BellsB	M002	3993.13	20Year-Existing	18.80	152.65	153.34	153.47	153.78	0.030932	4.06	7.96	21.39	1.68
BellsB	M002	3943.89	20Year-Existing	18.80	151.36	152.10	152.22	152.54	0.024839	3.98	7.83	17.68	1.58
BellsB	M002	3894.65	20Year-Existing	18.80	149.52	150.91	151.13	151.63	0.016457	4.32	7.23	16.69	1.33
BellsB	M002	3869.08	20Year-Existing	18.80	148.87	149.89	150.24	151.01	0.034262	5.30	4.91	9.33	1.88
BellsB	M002	3845.41	20Year-Existing	18.80	148.37	149.42	149.60	150.20	0.026293	4.63	6.03	11.40	1.57
BellsB	M002	3822.22	20Year-Existing	18.80	147.71	148.94	148.61	149.05	0.003140	1.94	15.15	17.91	0.57
BellsB	M002	3796.17	20Year-Existing	18.80	146.89	148.46	148.46	148.89	0.007832	3.32	8.31	10.95	0.91
BellsB	M002	3765.39	20Year-Existing	18.80	146.40	147.85	148.05	148.54	0.014660	4.00	6.01	8.06	1.18
BellsB	M002	3746.94	20Year-Existing	18.80	145.76	147.58	146.95	147.64	0.001117	1.46	19.83	18.77	0.36
BellsB	M002	3724.94	20Year-Existing	18.80	145.32	147.37		147.59	0.002999	2.34	10.67	9.68	0.57
BellsB	M002	3697.71	20Year-Existing	18.80	145.05	147.43		147.51	0.000795	1.43	17.28	11.22	0.31
BellsB	M002	3677.71	20Year-Existing	18.80	143.44	147.23	145.45	147.47	0.000956	2.16	8.71	15.06	0.36
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	18.80	142.47	144.39	144.39	145.32	0.007205	4.25	4.42	9.07	1.00
BellsB	M002	3623.19	20Year-Existing	18.80	142.10	143.49	143.94	144.91	0.032714	5.79	4.11	6.44	1.81
BellsB	M002	3573.45	20Year-Existing	18.80	140.89	142.05	142.41	143.28	0.031233	5.21	4.35	7.83	1.79
BellsB	M002	3520.99	20Year-Existing	18.80	139.30	140.59	140.92	141.76	0.026001	5.15	4.46	6.85	1.63
BellsB	M002	3473.83	20Year-Existing	18.80	137.98	139.45	139.80	140.49	0.024068	5.28	4.95	7.64	1.55
BellsB	M002	3424.29	20Year-Existing	18.80	136.49	138.47	137.94	138.67	0.001979	2.15	11.09	10.11	0.51
BellsB	M002	3400.36	20Year-Existing	18.80	135.96	138.58		138.61	0.000196	0.84	29.58	19.92	0.17
BellsB	M002	3386.31	20Year-Existing	18.80	135.48	138.56	137.29	138.60	0.000251	1.13	35.90	59.22	0.21
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	18.80	135.22	138.52	137.02	138.52	0.000020	0.34	104.21	61.59	0.06
BellsB	M002	3329.08	20Year-Existing	23.80	134.96	138.52		138.52	0.000028	0.41	112.45	56.14	0.07
BellsB	M002	3303.55	20Year-Existing	23.80	133.82	138.48	136.07	138.52	0.000138	1.04	49.75	49.25	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	23.80	131.39	134.04	134.04	135.12	0.007216	4.60	5.17	17.97	1.00
BellsB	M002	3203.83	20Year-Existing	23.80	131.13	132.29	132.84	134.48	0.069326	7.10	4.52	10.93	2.58
BellsB	M002	3176.31	20Year-Existing	23.80	130.02	131.24	131.70	132.87	0.044224	6.40	5.40	10.60	2.13
BellsB	M002	3157.63	20Year-Existing	23.80	129.89	131.08	131.32	131.91	0.034975	5.36	7.76	17.35	1.80
BellsB	M002	3130.11	20Year-Existing	23.80	128.68	130.04	130.37	131.13	0.022127	5.04	5.95	7.28	1.56
BellsB	M002	3083.82	20Year-Existing	23.80	127.94	129.44	129.70	130.23	0.014416	4.48	9.19	23.39	1.30
BellsB	M002	3037.68	20Year-Existing	23.80	127.11	127.88	128.18	129.01	0.056981	6.12	6.89	20.03	2.39
BellsB	M002	2991.47	20Year-Existing	23.80	126.28	127.96	127.23	127.98	0.000460	0.98	39.74	42.75	0.25
BellsB	M002	2945.26	20Year-Existing	23.80	125.32	127.64	127.00	127.91	0.003052	2.33	11.16	17.29	0.52
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	23.80	125.12	126.80	126.80	127.63	0.007240	4.06	5.87	4.69	1.00
BellsB	M002	2918.61	20Year-Existing	23.80	124.99	126.47	126.91	127.41	0.016848	4.84	6.54	9.08	1.40
BellsB	M002	2899.46	20Year-Existing	23.80	125.25	126.43	126.69	126.98	0.008236	3.37	8.78	31.85	1.01
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	23.80	124.44	125.82	125.82	126.46	0.007122	3.54	6.72	19.70	1.00
BellsB	M002	2861.32	20Year-Existing	23.80	123.64	124.56	124.94	125.93	0.045511	6.06	5.63	13.79	2.27
BellsB	M002	2823.69	20Year-Existing	23.80	123.23	124.13	124.28	124.59	0.025165	4.07	10.14	25.10	1.49
BellsB	M002	2777.91	20Year-Existing	23.80	122.77	123.84	123.66	123.89	0.002980	1.64	29.23	58.20	0.53
BellsB	M002	2727.91	20Year-Existing	23.80	122.21	123.41	123.41	123.70	0.009468	3.03	13.16	23.34	0.95
BellsB	M002	2677.99	20Year-Existing	23.80	121.13	122.37	122.54	123.03	0.018824	4.05	7.58	11.17	1.32
BellsB	M002	2628.09	20Year-Existing	23.80	120.69	122.13	122.15	122.41	0.007861	3.19	15.18	29.56	0.90
BellsB	M002	2578.18	20Year-Existing	23.80	119.94	121.28	121.46	121.84	0.015899	4.13	11.09	26.73	1.24
BellsB	M002	2528.27	20Year-Existing	23.80	119.10	120.58	120.72	121.15	0.013683	4.04	9.39	13.86	1.16
BellsB	M002	2518.19	20Year-Existing	23.80	118.62	119.97	120.27	120.92	0.025823	5.07	7.24	12.59	1.56
BellsB	M002	2496.15	20Year-Existing	23.80	118.53	120.16	119.93	120.35	0.004636	2.58	15.29	17.60	0.69
BellsB	M002	2478.37	20Year-Existing	23.80	117.97	119.82	119.76	120.24	0.006898	3.37	10.68	11.45	0.86
BellsB	M002	2450.61	20Year-Existing	23.80	117.55	119.50	119.50	120.02	0.007759	3.80	9.92	10.37	0.92
BellsB	M002	2428.46	20Year-Existing	23.80	117.19	118.33	118.71	119.59	0.044380	5.58	6.08	13.03	1.95
BellsB	M002	2408.52	20Year-Existing	23.80	116.63	117.75	118.05	118.72	0.044130	5.47	7.07	15.79	1.93
BellsB	M002	2378.55	20Year-Existing	23.80	116.15	117.41	117.54	117.95	0.019267	4.41	9.59	16.30	1.34
BellsB	M002	2367.92	20Year-Existing	23.80	115.61	116.64	116.92	117.61	0.037567	5.42	7.45	17.10	1.86

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	23.80	115.07	116.11	116.40	117.09	0.037214	5.40	7.26	15.44	1.84
BellsB	M002	2328.64	20Year-Existing	23.80	113.99	115.89	115.70	116.18	0.005238	3.03	13.93	17.87	0.75
BellsB	M002	2307.61	20Year-Existing	23.80	112.94	116.06	115.05	116.08	0.000274	0.91	48.36	46.60	0.18
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	23.80	111.75	112.97	113.55	114.93	0.060659	6.19	3.84	4.07	2.03
BellsB	M002	2275.77	20Year-Existing	26.00	112.06	113.79	113.79	114.15	0.007917	3.56	12.98	19.47	0.92
BellsB	M002	2232.72	20Year-Existing	26.00	110.58	112.09	112.54	113.45	0.026687	5.67	6.13	9.54	1.61
BellsB	M002	2200.99	20Year-Existing	26.00	109.61	110.99	111.44	112.48	0.036610	6.02	5.93	9.40	1.85
BellsB	M002	2173.21	20Year-Existing	26.00	108.98	110.78	111.03	111.72	0.014108	4.62	7.27	7.61	1.17
BellsB	M002	2133.27	20Year-Existing	26.00	107.79	109.02	109.52	110.73	0.044726	6.49	5.58	9.47	2.05
BellsB	M002	2117.78	20Year-Existing	26.00	107.46	108.70	109.12	110.05	0.031549	5.68	6.10	8.90	1.76
BellsB	M002	2103.01	20Year-Existing	26.00	106.45	107.71	108.18	109.39	0.051104	6.63	5.52	9.12	2.13
BellsB	M002	2085.77	20Year-Existing	26.00	105.17	106.45	107.03	108.40	0.055744	7.27	5.01	7.13	2.26
BellsB	M002	2068.57	20Year-Existing	26.00	104.36	105.27	105.76	107.32	0.079912	7.41	5.14	11.25	2.67
BellsB	M002	2059.88	20Year-Existing	26.00	103.56	104.71	105.30	106.76	0.055476	6.76	4.79	7.82	2.27
BellsB	M002	2054.52	20Year-Existing	26.00	103.13	104.28	104.82	106.41	0.069399	7.40	4.88	8.15	2.49
BellsB	M002	2040.56	20Year-Existing	26.00	102.39	103.50	104.13	105.61	0.048560	6.95	4.68	5.75	2.20
BellsB	M002	2033.27	20Year-Existing	26.00	102.08	103.78	104.20	105.13	0.026500	5.55	5.93	6.73	1.57
BellsB	M002	2025.44	20Year-Existing	26.00	101.58	102.79	103.39	104.79	0.046373	6.57	4.72	6.70	2.08
BellsB	M002	2021.67	20Year-Existing	26.00	101.43	103.00	103.48	104.50	0.031624	5.68	5.41	7.01	1.69
BellsB	M002	2014.53	20Year-Existing	26.00	99.96	101.31	102.00	104.01	0.103072	7.29	3.59	5.56	2.80
BellsB	M002	2010.46	20Year-Existing	26.00	99.08	100.06	100.80	103.47	0.123779	8.96	3.66	6.49	3.27
BellsB	M002	2007.37	20Year-Existing	26.00	98.52	99.74	100.53	103.07	0.117867	8.15	3.33	5.10	3.01
BellsB	M002	1996.87	20Year-Existing	26.00	97.97	98.88	99.60	101.84	0.096669	8.29	3.91	6.16	2.96
BellsB	M002	1982.97	20Year-Existing	26.00	97.73	98.66	99.19	100.45	0.059490	6.79	5.06	7.27	2.36
BellsB	M002	1966.25	20Year-Existing	26.00	96.75	98.43	98.81	99.67	0.024553	5.40	6.30	7.92	1.51
BellsB	M002	1951.81	20Year-Existing	26.00	96.56	98.62	98.07	98.77	0.002414	2.14	17.42	13.86	0.51
BellsB	M002	1939.94	20Year-Existing	26.00	96.29	98.20	98.20	98.68	0.007802	3.38	10.30	11.55	0.89
BellsB	M002	1918.81	20Year-Existing	26.00	95.86	97.26	97.59	98.35	0.025892	5.31	6.86	9.23	1.58
BellsB	M002	1910.32	20Year-Existing	26.00	95.58	97.15	97.43	98.14	0.017539	4.63	6.68	7.47	1.32
BellsB	M002	1896.87	20Year-Existing	26.00	94.38	95.75	96.30	97.68	0.050337	6.70	5.04	7.53	2.09
BellsB	M002	1887.59	20Year-Existing	26.00	93.87	94.92	95.45	97.07	0.079078	7.14	4.78	9.57	2.61
BellsB	M002	1880.79	20Year-Existing	26.00	93.33	96.04	95.09	96.17	0.001117	1.84	20.56	12.13	0.37
BellsB	M002	1870.34	20Year-Existing	26.00	92.77	96.06		96.15	0.000598	1.61	24.70	10.30	0.29
BellsB	M002	1857.16	20Year-Existing	26.00	91.88	96.08		96.13	0.000306	1.21	32.81	14.23	0.20
BellsB	M002	1848.27	20Year-Existing	26.00	91.91	96.09		96.12	0.000146	0.91	43.42	16.44	0.15
BellsB	M002	1834.27	20Year-Existing	26.00	90.88	96.09		96.12	0.000090	0.80	50.24	17.11	0.12
BellsB	M002	1821.35	20Year-Existing	26.00	90.90	96.10		96.11	0.000052	0.66	67.38	20.33	0.09
BellsB	M002	1807.43	20Year-Existing	26.00	89.83	96.10		96.11	0.000031	0.54	79.92	21.27	0.07
BellsB	M002	1800.77	20Year-Existing	26.00	89.59	96.10		96.11	0.000030	0.54	84.90	22.36	0.07
BellsB	M002	1777.98	20Year-Existing	26.00	88.77	96.11		96.11	0.000010	0.35	130.93	29.74	0.04
BellsB	M002	1753.27	20Year-Existing	26.00	88.22	96.11		96.11	0.000011	0.38	124.76	29.29	0.04
BellsB	M002	1729.73	20Year-Existing	26.00	88.17	96.11		96.11	0.000007	0.31	154.38	32.11	0.04
BellsB	M002	1705.77	20Year-Existing	26.00	87.60	96.11		96.11	0.000003	0.24	241.79	61.14	0.03
BellsB	M002	1688.91	20Year-Existing	26.00	86.72	96.11	89.52	96.11	0.000004	0.27	199.60	61.65	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	26.00	83.97	86.75	86.75	88.13	0.005450	5.21	4.99	18.51	1.00
BellsB	M002	1605.59	20Year-Existing	26.00	81.49	82.20	82.79	86.83	0.379093	10.05	2.92	10.62	5.73
BellsB	M001	1582.05	20Year-Existing	41.30	80.41	81.39	82.27	85.66	0.110715	9.34	4.82	8.21	3.53
BellsB	M001	1563.67	20Year-Existing	41.30	79.96	81.03	81.73	83.77	0.058290	7.76	6.43	9.71	2.67
BellsB	M001	1544.26	20Year-Existing	41.30	79.04	80.52	81.19	82.79	0.033345	7.17	7.33	8.35	2.09
BellsB	M001	1529.04	20Year-Existing	41.30	78.24	79.25	79.99	82.09	0.054924	7.69	5.97	7.85	2.60
BellsB	M001	1515.66	20Year-Existing	41.30	77.30	78.83	79.55	81.31	0.048418	7.12	6.30	6.90	2.15
BellsB	M001	1502.43	20Year-Existing	41.30	69.64	70.19	71.03	79.02	0.790795	13.17	3.14	9.73	7.33
BellsB	M001	1483.47	20Year-Existing	41.30	68.89	69.76	70.28	72.14	0.125902	7.48	6.72	15.99	3.19
BellsB	M001	1454.75	20Year-Existing	41.30	68.03	69.21	69.50	70.20	0.029499	5.46	10.85	14.98	1.71
BellsB	M001	1406.62	20Year-Existing	41.30	66.49	68.24	68.47	69.19	0.015645	4.96	11.11	10.49	1.30
BellsB	M001	1358.51	20Year-Existing	41.30	65.17	66.49	66.95	68.04	0.035373	5.91	8.50	11.37	1.85
BellsB	M001	1310.38	20Year-Existing	41.30	63.80	65.09	65.51	66.40	0.030244	5.48	9.56	14.31	1.73
BellsB	M001	1286.33	20Year-Existing	41.30	62.81	64.04	64.47	65.49	0.047898	6.19	9.18	16.94	2.10
BellsB	M001	1262.25	20Year-Existing	41.30	62.09	64.13	64.34	64.81	0.012144	4.58	16.46	28.77	1.13
BellsB	M001	1251.58	20Year-Existing	41.30	61.46	62.92	63.35	64.51	0.037583	7.04	9.08	11.17	1.98
BellsB	M001	1234.76	20Year-Existing	41.30	60.57	61.95	62.45	63.78	0.050388	7.33	9.20	17.62	2.21
BellsB	M001	1214.13	20Year-Existing	41.30	59.55	60.41	60.91	62.50	0.096747	6.97	7.33	15.77	2.84
BellsB	M001	1200.58	20Year-Existing	41.30	58.90	60.58	60.92	61.70	0.018893	5.17	10.60	12.25	1.41
BellsB	M001	1182.98	20Year-Existing	41.30	58.59	60.40	60.68	61.37	0.015137	4.94	11.67	12.77	1.28
BellsB	M001	1166.01	20Year-Existing	41.30	58.39	59.63	60.04	60.96	0.033612	5.72	9.98	16.23	1.81
BellsB	M001	1153.18	20Year-Existing	41.30	57.70	59.29	59.65	60.53	0.030935	6.46	11.39	19.22	1.76
BellsB	M001	1141.88	20Year-Existing	41.30	56.72	57.88	58.45	59.97	0.057152	6.83	7.34	12.15	2.31
BellsB	M001	1128.34	20Year-Existing	41.30	56.53	57.53	57.95	58.98	0.060676	6.52	8.46	13.93	2.31
BellsB	M001	1117.89	20Year-Existing	41.30	55.58	56.66	57.16	58.32	0.061545	7.29	8.45	12.39	2.38
BellsB	M001	1096.03	20Year-Existing	41.30	54.61	56.02	56.42	57.31	0.030424	5.56	9.72	14.07	1.73
BellsB	M001	1077.81	20Year-Existing	41.30	54.24	55.18	55.65	56.64	0.047807	5.99	9.11	15.72	2.11
BellsB	M001	1069.76	20Year-Existing	41.30	53.70	54.35	54.76	55.96	0.110030	6.81	8.27	18.62	2.97
BellsB	M001	1064.67	20Year-Existing	41.30	53.19	53.86	54.25	55.39	0.109645	6.70	8.53	19.89	2.96
BellsB	M001	1051.64	20Year-Existing	41.30	51.97	52.89	53.32	54.49	0.061157	6.36	8.88	17.31	2.33
BellsB	M001	1032.36	20Year-Existing	41.30	50.97	52.22	52.59	53.45	0.040090	6.24	10.31	15.30	1.96
BellsB	M001	1021.64	20Year-Existing	41.30	50.03	51.27	51.75	52.94	0.044143	6.12	8.45	14.55	2.04
BellsB	M001	1014.11	20Year-Existing	41.30	49.46	50.85	51.38	52.62	0.040963	6.27	8.04	12.18	1.97
BellsB	M001	1006.24	20Year-Existing	41.30	49.15	50.26	50.79	52.24	0.051291	6.65	7.70	13.15	2.21
BellsB	M001	996.42	20Year-Existing	41.30	48.11	49.29	49.88	51.64	0.073647	7.80	7.15	12.36	2.58
BellsB	M001	987.27	20Year-Existing	41.30	47.17	48.50	49.17	51.03	0.057335	7.57	6.83	9.95	2.36
BellsB	M001	973.52	20Year-Existing	41.30	46.79	47.97	48.61	50.23	0.046828	6.83	6.76	10.44	2.27

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	41.30	45.77	47.11	47.68	49.19	0.045932	6.90	7.61	13.47	2.23
BellsB	M001	931.51	20Year-Existing	41.30	44.86	45.96	46.52	48.04	0.072723	8.35	7.31	12.21	2.76
BellsB	M001	925.41	20Year-Existing	41.30	44.69	46.11	46.53	47.57	0.030534	6.53	9.56	16.61	1.84
BellsB	M001	901.68	20Year-Existing	41.30	43.69	44.94	45.47	46.73	0.036847	6.64	7.89	10.36	2.06
BellsB	M001	877.27	20Year-Existing	41.30	43.18	45.39	44.95	45.69	0.002988	2.83	19.31	13.53	0.64
BellsB	M001	857.41	20Year-Existing	41.30	42.16	45.53	44.37	45.60	0.000458	1.48	46.82	38.95	0.27
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	42.50	38.54	42.04	40.89	42.48	0.001916	2.99	14.80	11.65	0.53
BellsB	M001	810.13	20Year-Existing	42.50	37.80	42.22	39.77	42.29	0.000312	1.28	44.52	27.62	0.20
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	42.50	34.33	36.30	37.23	39.49	0.056874	7.93	5.45	7.46	2.31
BellsB	M001	782.27	20Year-Existing	42.50	33.92	34.73	35.43	38.15	0.158648	8.74	5.52	10.83	3.59
BellsB	M001	772.73	20Year-Existing	42.50	30.94	32.42	33.26	36.67	0.138942	11.47	5.90	9.10	3.35
BellsB	M001	766.74	20Year-Existing	42.50	30.65	32.30	33.12	35.76	0.095075	10.61	6.56	8.94	2.87
BellsB	M001	760.32	20Year-Existing	42.50	30.34	31.75	32.57	35.19	0.080506	9.34	6.41	9.14	2.77
BellsB	M001	755.97	20Year-Existing	42.50	30.05	31.46	32.20	34.79	0.086784	8.75	6.27	10.01	2.78
BellsB	M001	749.69	20Year-Existing	42.50	29.30	30.78	31.56	34.24	0.083795	9.30	6.42	9.64	2.78
BellsB	M001	742.14	20Year-Existing	42.50	28.38	29.47	30.35	33.50	0.101475	9.36	5.42	7.99	3.10
BellsB	M001	736.73	20Year-Existing	42.50	28.24	28.95	29.69	32.73	0.168193	9.26	5.26	10.31	3.76
BellsB	M001	722.61	20Year-Existing	42.50	27.35	28.31	28.87	30.77	0.077093	7.46	6.98	13.99	2.64
BellsB	M001	712.04	20Year-Existing	42.50	26.27	27.60	28.26	30.05	0.061391	7.38	6.93	9.88	2.38
BellsB	M001	702.42	20Year-Existing	42.50	26.04	27.20	27.79	29.36	0.061090	7.11	7.43	11.37	2.38
BellsB	M001	691.68	20Year-Existing	42.50	25.03	26.44	27.06	28.70	0.059719	6.93	6.81	9.71	2.32
BellsB	M001	686.22	20Year-Existing	42.50	24.46	25.58	26.26	28.28	0.080885	7.31	5.99	9.34	2.66
BellsB	M001	675.26	20Year-Existing	42.50	24.08	25.12	25.73	27.36	0.063312	7.00	6.88	10.05	2.42
BellsB	M001	668.37	20Year-Existing	42.50	23.58	24.78	25.35	26.92	0.055271	6.84	7.26	11.30	2.27
BellsB	M001	655.45	20Year-Existing	42.50	23.02	24.09	24.64	26.18	0.057310	6.69	7.30	12.35	2.29
BellsB	M001	636.88	20Year-Existing	42.50	21.46	22.67	23.32	25.05	0.061180	6.97	6.62	9.62	2.37
BellsB	M001	619.06	20Year-Existing	42.50	20.82	22.17	22.72	24.01	0.041128	6.45	8.12	10.76	2.00
BellsB	M001	608.48	20Year-Existing	42.50	20.13	21.37	22.00	23.49	0.049776	6.63	7.06	9.17	2.17
BellsB	M001	592.31	20Year-Existing	42.50	18.95	20.26	20.89	22.57	0.063775	7.66	7.38	10.62	2.44
BellsB	M001	582.72	20Year-Existing	42.50	18.14	19.14	19.82	21.84	0.082502	7.90	6.63	9.86	2.76
BellsB	M001	577.91	20Year-Existing	42.50	17.66	19.03	19.77	21.47	0.046256	7.44	7.13	8.04	2.18
BellsB	M001	561.51	20Year-Existing	42.50	17.02	18.31	18.88	20.50	0.064729	7.31	7.78	12.74	2.43
BellsB	M001	553.07	20Year-Existing	42.50	16.35	17.38	18.08	19.91	0.069136	7.17	6.43	9.77	2.51
BellsB	M001	541.54	20Year-Existing	42.50	15.41	16.50	17.13	19.04	0.083673	7.10	6.23	10.73	2.69
BellsB	M001	529.17	20Year-Existing	42.50	14.85	15.82	16.43	17.96	0.071783	6.52	6.70	8.65	2.26
BellsB	M001	514.53	20Year-Existing	42.50	14.21	15.19	15.69	16.86	0.059934	6.17	8.13	11.47	2.11
BellsB	M001	467.56	20Year-Existing	42.50	11.61	12.67	13.15	14.27	0.049000	5.67	7.87	9.94	1.91
BellsB	M001	420.59	20Year-Existing	42.50	8.75	11.96	10.96	12.22	0.002046	2.37	22.05	11.38	0.45
BellsB	M001	400.25	20Year-Existing	42.50	8.57	11.82	10.52	12.17	0.001841	2.62	16.25	6.39	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	42.50	0.83	4.07	2.78	4.19	0.000597	1.83	41.76	48.16	0.32
BellsB	M001	47.74	20Year-Existing	42.50	0.56	4.12	2.69	4.13	0.000105	0.81	125.61	120.96	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	42.50	0.70	4.11	2.70	4.12	0.000089	0.74	135.10	127.78	0.13
BellsB	M001	20.51	20Year-Existing	42.50	0.57	4.11		4.12	0.000112	0.80	128.64	136.83	0.14

Corner Brook 20yr Q+10%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	147.62	36.31	38.92	38.92	39.97	0.009283	4.99	38.65	20.71	1.02
CornerB	M004	2838.71	20Year-Existing	147.62	36.15	38.17	38.51	39.39	0.012971	5.08	35.40	29.21	1.16
CornerB	M004	2796.61	20Year-Existing	147.62	35.35	38.17	37.57	38.68	0.004190	3.48	57.38	37.13	0.69
CornerB	M004	2769.85	20Year-Existing	147.62	34.80	37.39	37.39	38.21	0.013814	6.13	45.78	29.56	1.24
CornerB	TR001	206.04	20Year-Existing	25.19	43.81	44.68	44.95	45.57	0.042041	4.92	7.42	13.65	1.79
CornerB	TR001	156.04	20Year-Existing	25.19	41.63	42.61	42.89	43.51	0.040315	4.35	6.87	15.93	1.69
CornerB	TR001	106.04	20Year-Existing	25.19	39.17	39.77	40.11	40.94	0.067241	5.08	5.83	12.41	2.15
CornerB	TR001	56.04	20Year-Existing	25.19	37.27	38.03	38.22	38.70	0.030096	3.81	7.67	13.23	1.48
CornerB	TR001	36.04	20Year-Existing	25.19	35.50	38.23	37.35	38.23	0.000066	0.41	118.45	80.95	0.08
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	25.19	35.18	37.08	37.08	37.90	0.010535	4.01	6.28	77.75	1.00
CornerB	M003	2689.92	20Year-Existing	161.15	33.55	35.50	35.88	37.13	0.029884	7.07	39.50	43.14	1.71
CornerB	M003	2645.73	20Year-Existing	161.15	32.87	36.32	34.68	36.43	0.000871	1.89	137.38	62.50	0.33
CornerB	M003	2602.09	20Year-Existing	161.15	32.20	36.32		36.39	0.000419	1.45	175.44	67.30	0.23
CornerB	M003	2557.73	20Year-Existing	161.15	31.34	36.27		36.37	0.000408	1.61	148.63	48.12	0.24
CornerB	M003	2537.73	20Year-Existing	161.15	30.77	36.20	34.43	36.35	0.000669	2.26	144.28	64.02	0.31
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	161.15	30.35	33.56	33.85	35.61	0.010808	6.35	25.39	16.90	1.14
CornerB	M003	2507.21	20Year-Existing	161.15	30.75	32.32	33.11	35.01	0.052602	8.13	25.41	21.48	2.20
CornerB	M003	2459.31	20Year-Existing	161.15	30.13	31.71	32.06	33.00	0.022873	5.60	37.17	31.28	1.47
CornerB	M003	2411.41	20Year-Existing	161.15	29.27	31.52	31.53	32.14	0.009513	4.41	59.58	47.34	0.99
CornerB	M003	2363.51	20Year-Existing	161.15	28.77	30.42	30.69	31.46	0.020075	5.10	42.10	39.39	1.37
CornerB	M003	2315.61	20Year-Existing	161.15	27.93	29.71	29.86	30.67	0.012820	4.47	39.74	28.84	1.12
CornerB	M003	2267.71	20Year-Existing	161.48	26.30	30.06	28.67	30.37	0.001536	2.61	75.35	27.71	0.44
CornerB	M003	2264.01	20Year-Existing	161.48	26.10	30.01	29.27	30.35	0.004711	2.59	63.80	29.68	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	161.48	26.10	29.87		30.26	0.005826	2.76	59.69	29.45	0.60
CornerB	M003	2260.98	20Year-Existing	161.48	25.80	29.93		30.19	0.001197	2.42	82.25	28.78	0.39
CornerB	M003	2240.88	20Year-Existing	161.48	27.01	29.79		30.13	0.002794	2.73	70.83	39.28	0.56
CornerB	M003	2212.25	20Year-Existing	161.48	26.87	29.72		30.05	0.002644	2.80	72.63	35.42	0.55
CornerB	M003	2183.63	20Year-Existing	161.48	25.56	28.85	28.85	29.86	0.007745	4.99	45.55	25.93	0.94
CornerB	M003	2163.63	20Year-Existing	161.48	25.35	28.78	28.04	29.41	0.003639	3.65	47.84	29.18	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	161.48	24.87	27.56	27.91	29.16	0.015004	6.08	32.17	21.33	1.27
CornerB	M003	2131.66	20Year-Existing	161.48	24.57	26.86	27.47	28.84	0.025295	6.44	28.32	20.25	1.56
CornerB	M003	2119.46	20Year-Existing	161.48	24.12	26.01	26.75	28.42	0.038627	7.20	25.93	21.52	1.90
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	161.48	24.04	26.30	26.80	28.02	0.020609	5.94	30.16	21.26	1.43
CornerB	M003	2080.62	20Year-Existing	161.48	23.73	25.46	26.07	27.22	0.026770	6.08	30.10	24.64	1.59
CornerB	M003	2068.44	20Year-Existing	161.48	23.76	25.44	25.87	26.82	0.021754	5.47	34.21	28.05	1.43
CornerB	M003	2022.25	20Year-Existing	161.48	22.74	24.67	24.98	25.93	0.016621	5.29	36.93	27.83	1.29
CornerB	M003	1991.14	20Year-Existing	161.48	22.18	24.39	24.51	25.45	0.011238	4.89	40.82	26.73	1.09
CornerB	M003	1985.82	20Year-Existing	161.48	21.97	24.00	24.33	25.36	0.016482	5.53	35.99	25.07	1.30
CornerB	M003	1975.95	20Year-Existing	161.48	21.78	23.67	24.09	25.16	0.020522	5.92	34.89	26.17	1.43
CornerB	M003	1929.72	20Year-Existing	161.48	20.08	22.16	22.72	24.07	0.025136	6.42	29.04	20.08	1.57
CornerB	M003	1883.49	20Year-Existing	161.48	19.23	21.72	21.98	23.12	0.012677	5.58	35.39	19.37	1.17
CornerB	TR002	21.04	20Year-Existing	9.57	22.27	22.89	23.40	25.22	0.150172	7.29	1.68	4.37	3.14
CornerB	TR002	18.08	20Year-Existing	9.57	21.40	21.80	22.24	24.51	0.381943	8.22	1.54	6.14	4.64
CornerB	M002	1826.39	20Year-Existing	163.02	16.92	18.44	19.23	21.60	0.120486	8.44	23.67	29.76	2.51
CornerB	M002	1790.92	20Year-Existing	163.02	15.49	18.66	18.58	19.79	0.012907	5.16	39.50	17.16	0.96
CornerB	M002	1773.95	20Year-Existing	163.02	14.72	19.21	17.57	19.46	0.001988	2.49	84.32	28.35	0.39
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	163.02	14.87	19.21	17.32	19.38	0.001127	2.15	104.64	36.99	0.34
CornerB	M002	1733.13	20Year-Existing	163.02	15.23	19.25		19.30	0.000328	1.12	180.74	72.13	0.18
CornerB	M002	1717.41	20Year-Existing	163.02	15.12	19.25		19.29	0.000275	1.05	202.39	81.43	0.17
CornerB	M002	1691.96	20Year-Existing	163.02	14.62	19.25		19.29	0.000228	0.99	226.69	99.89	0.15
CornerB	M002	1654.15	20Year-Existing	163.02	13.87	19.25		19.28	0.000109	0.72	296.12	126.60	0.11
CornerB	M002	1613.91	20Year-Existing	163.02	13.08	19.25		19.27	0.000052	0.60	345.44	146.53	0.09
CornerB	M002	1567.16	20Year-Existing	163.02	12.15	19.26		19.27	0.000008	0.26	711.84	207.19	0.04
CornerB	M002	1551.89	20Year-Existing	163.02	11.85	19.26		19.27	0.000003	0.16	1089.23	270.57	0.02
CornerB	M002	1539.91	20Year-Existing	161.81	11.62	19.26		19.27	0.000002	0.12	1486.30	304.57	0.02
CornerB	M002	1526.59	20Year-Existing	161.81	11.36	19.26		19.26	0.000002	0.12	1513.51	309.82	0.02
CornerB	M002	1517.99	20Year-Existing	161.81	11.18	19.26		19.26	0.000002	0.14	1278.96	265.90	0.02
CornerB	M002	1505.64	20Year-Existing	161.81	10.94	19.26		19.26	0.000004	0.18	952.94	195.38	0.02
CornerB	M002	1490.63	20Year-Existing	161.81	10.64	19.26		19.26	0.000008	0.27	657.64	137.24	0.03
CornerB	M002	1463.65	20Year-Existing	161.81	10.11	19.25		19.26	0.000033	0.55	358.75	84.43	0.07
CornerB	M002	1415.93	20Year-Existing	161.81	9.17	19.25		19.26	0.000028	0.54	339.42	73.14	0.07
CornerB	M002	1386.11	20Year-Existing	161.81	8.58	19.24		19.26	0.000042	0.64	308.45	76.63	0.08
CornerB	M002	1363.91	20Year-Existing	161.81	8.14	19.23		19.26	0.000069	0.81	248.85	56.35	0.10
CornerB	M002	1356.61	20Year-Existing	161.81	8.00	19.22		19.26	0.000192	1.04	256.01	71.58	0.11
CornerB	M002	1354.61	20Year-Existing	161.81	15.35	18.64	18.63	19.20	0.005133	3.97	65.79	52.25	0.70
CornerB	M002	1354.11	20Year-Existing	161.81	15.35	18.63	18.63	19.20	0.005285	4.02	64.90	51.88	0.71
CornerB	M002	1352.01	20Year-Existing	161.81	8.00	9.28	11.07	18.32	0.544930	0.36	12.15	9.51	0.14
CornerB	M002	1347.51	20Year-Existing	161.81	7.72	9.46	10.62	14.84	0.234362	10.28	15.74	16.25	3.33
CornerB	M002	1336.58	20Year-Existing	161.81	7.69	9.20	10.11	12.47	0.115186	8.04	20.48	20.04	2.43
CornerB	M002	1326.83	20Year-Existing	161.81	7.68	10.58	9.80	10.93	0.004564	2.78	66.33	30.46	0.56
CornerB	M002	1317.22	20Year-Existing	161.81	7.66	10.43		10.87	0.006517	3.05	58.90	31.17	0.65
CornerB	M002	1315.18	20Year-Existing	161.81	7.28	9.99	9.99	10.81	0.016650	4.33	43.80	27.89	1.00
CornerB	M002	1313.58	20Year-Existing	161.81	6.48	9.16	9.59	10.70	0.035858	5.77	31.94	24.01	1.43
CornerB	M002	1312.39	20Year-Existing	161.81	6.23	8.71	9.28	10.61	0.046500	6.32	28.37	22.53	1.62
CornerB	M002	1311.16	20Year-Existing	161.81	5.92	8.29	8.96	10.52	0.063711	6.72	25.39	21.80	1.85
CornerB	M002	1309.11	20Year-Existing	161.81	5.91	7.89	8.62	10.36	0.071163	7.03	24.04	20.94	1.95
CornerB	M002	1305.35	20Year-Existing	161.81	5.37	7.25	8.04	10.03	0.080979	7.66	24.02	23.87	2.10

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	161.81	5.06	6.77	7.55	9.56	0.098539	7.47	22.53	22.72	2.25
CornerB	M002	1296.49	20Year-Existing	161.81	4.91	6.91	7.60	9.14	0.052811	6.76	25.83	19.83	1.74
CornerB	M002	1289.64	20Year-Existing	161.81	4.71	6.92	7.43	8.70	0.038382	6.11	29.12	20.39	1.50
CornerB	M002	1284.12	20Year-Existing	161.81	4.41	7.01	7.33	8.44	0.023475	5.53	33.30	19.93	1.22
CornerB	M002	1279.52	20Year-Existing	161.81	4.23	6.60	7.07	8.29	0.029322	5.91	30.35	19.64	1.35
CornerB	M002	1258.94	20Year-Existing	161.81	3.53	5.27	5.93	7.38	0.062929	6.74	27.60	27.35	1.86
CornerB	M002	1246.98	20Year-Existing	161.81	3.37	4.83	5.39	6.69	0.043155	6.11	27.93	25.10	1.71
CornerB	M002	1233.83	20Year-Existing	161.81	3.10	4.61	5.03	6.00	0.040808	5.45	33.80	37.45	1.64
CornerB	M002	1215.66	20Year-Existing	161.81	2.70	4.13	4.49	5.29	0.028044	4.85	37.26	45.43	1.38
CornerB	M002	1206.83	20Year-Existing	161.81	2.54	4.75	4.40	5.05	0.005209	2.71	79.56	66.69	0.64
CornerB	M002	1194.69	20Year-Existing	161.81	2.39	4.73		4.99	0.004325	2.58	85.97	64.52	0.59
CornerB	M002	1185.06	20Year-Existing	161.81	2.26	4.71		4.94	0.003240	2.39	94.10	66.06	0.52
CornerB	M002	1142.41	20Year-Existing	161.81	1.70	4.63		4.81	0.002608	2.23	106.58	80.77	0.47
CornerB	M002	1137.55	20Year-Existing	161.81	1.60	4.19	4.14	4.74	0.010045	3.45	59.74	65.04	0.86
CornerB	M002	1110.53	20Year-Existing	161.81	1.39	4.08	3.70	4.51	0.004958	3.10	70.81	64.86	0.65
CornerB	M002	1090.67	20Year-Existing	161.81	1.10	4.26		4.37	0.001357	1.77	141.35	86.65	0.34
CornerB	M002	1070.69	20Year-Existing	161.81	0.80	4.28	2.87	4.34	0.000621	1.37	185.66	89.00	0.24
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	161.81	0.76	4.26	2.77	4.32	0.000554	1.32	186.45	86.34	0.23
CornerB	M002	1047.01	20Year-Existing	161.81	0.75	4.25		4.31	0.000526	1.44	181.21	78.26	0.25
CornerB	M002	1004.03	20Year-Existing	161.81	0.77	4.22		4.28	0.000502	1.41	204.80	127.78	0.25
CornerB	M002	959.21	20Year-Existing	161.81	0.70	4.22		4.26	0.000369	1.21	304.27	277.82	0.21
CornerB	M002	915.75	20Year-Existing	160.82	0.68	4.22		4.24	0.000264	0.99	378.16	294.97	0.18
CornerB	M002	869.66	20Year-Existing	160.82	0.69	4.21		4.23	0.000151	0.77	416.82	222.19	0.14
CornerB	M002	828.33	20Year-Existing	155.65	0.77	4.21		4.22	0.000155	0.76	405.18	219.54	0.14
CornerB	M002	784.55	20Year-Existing	155.65	0.82	4.21		4.22	0.000105	0.63	425.26	230.89	0.11
CornerB	M002	739.85	20Year-Existing	155.65	0.82	4.20		4.21	0.000104	0.60	436.07	268.94	0.11
CornerB	M002	696.36	20Year-Existing	155.65	0.64	4.19		4.20	0.000149	0.77	379.84	266.52	0.14
CornerB	M001	659.37	20Year-Existing	163.24	0.75	4.18		4.20	0.000159	0.75	359.29	231.21	0.14
CornerB	M001	643.93	20Year-Existing	163.24	0.74	4.17	2.90	4.20	0.000239	0.93	302.94	215.64	0.17
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	163.24	0.83	3.87	2.90	3.93	0.000593	1.38	207.99	177.57	0.26
CornerB	M001	608.52	20Year-Existing	163.24	0.76	3.86		3.92	0.000741	1.48	200.15	162.35	0.29
CornerB	M001	570.12	20Year-Existing	163.24	0.61	3.86		3.89	0.000377	1.12	269.39	185.96	0.21
CornerB	M001	535.83	20Year-Existing	163.24	0.56	3.85	1.88	3.88	0.000216	0.92	278.49	219.68	0.16
CornerB	M001	520.22	20Year-Existing	163.24	0.55	3.85	1.95	3.87	0.000164	0.80	326.30	291.19	0.14
CornerB	M001	472.07	20Year-Existing	163.24	0.58	3.81	2.39	3.86	0.000412	1.23	232.75	200.00	0.22
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	163.24	0.44	3.39	2.15	3.55	0.001141	1.97	145.43	209.93	0.37
CornerB	M001	425.41	20Year-Existing	163.24	0.48	3.41		3.49	0.000762	1.56	228.88	287.13	0.30
CornerB	M001	401.99	20Year-Existing	163.24	0.74	3.43		3.46	0.000438	1.14	319.39	337.00	0.22
CornerB	M001	381.26	20Year-Existing	163.24	0.79	3.36	3.06	3.44	0.001036	1.68	232.29	346.14	0.34
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	163.24	0.79	3.08	3.08	3.33	0.002831	2.59	143.34	327.00	0.55
CornerB	M001	352.89	20Year-Existing	163.24	0.68	3.07		3.25	0.001592	2.00	133.59	265.97	0.42
CornerB	M001	324.13	20Year-Existing	163.24	0.67	3.07		3.19	0.001272	1.79	150.13	191.16	0.37
CornerB	M001	292.92	20Year-Existing	163.24	0.65	3.06		3.15	0.000980	1.54	198.86	291.84	0.33
CornerB	M001	274.62	20Year-Existing	163.24	0.96	3.04	2.66	3.12	0.002015	1.96	214.45	335.76	0.45
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	163.24	1.01	3.01	2.60	3.06	0.001878	1.87	236.43	356.91	0.44
CornerB	M001	245.99	20Year-Existing	163.24	0.64	2.98		3.03	0.001177	1.58	267.10	410.50	0.35
CornerB	M001	210.89	20Year-Existing	163.24	0.68	2.95		2.99	0.001032	1.39	268.75	367.37	0.32
CornerB	M001	174.77	20Year-Existing	163.24	0.69	2.92		2.95	0.000927	1.19	291.50	421.75	0.30
CornerB	M001	155.66	20Year-Existing	163.24	0.64	2.91	2.52	2.93	0.001108	1.18	327.18	537.30	0.32
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	163.24	0.55	2.90	2.47	2.92	0.000840	1.02	342.06	485.85	0.28
CornerB	M001	129.05	20Year-Existing	163.24	0.40	2.87		2.90	0.000611	1.07	364.02	478.80	0.25
CornerB	M001	80.73	20Year-Existing	163.24	0.20	2.83		2.87	0.000553	1.14	323.15	386.75	0.24
CornerB	M001	23.81	20Year-Existing	163.24	0.32	2.80	2.02	2.84	0.000587	1.10	308.45	431.13	0.25
BellsB	TR001	178.13	20Year-Existing	13.75	92.91	94.10	94.45	95.21	0.043031	4.75	3.16	5.21	1.69
BellsB	TR001	159.86	20Year-Existing	13.75	92.15	94.15	93.53	94.26	0.002132	1.78	11.60	10.51	0.44
BellsB	TR001	139.54	20Year-Existing	13.75	91.13	94.01	92.64	94.21	0.001894	2.00	6.88	9.15	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	13.75	89.49	90.92	91.14	91.96	0.020376	4.55	3.12	3.62	1.26
BellsB	TR001	88.17	20Year-Existing	13.75	88.47	89.34	89.88	91.50	0.118154	6.89	2.41	5.08	2.76
BellsB	TR001	84.12	20Year-Existing	13.75	87.66	88.38	88.89	90.81	0.207120	6.99	2.11	6.21	3.47
BellsB	TR001	79.14	20Year-Existing	13.75	86.53	87.28	87.83	89.88	0.154950	7.35	2.15	5.62	3.17
BellsB	TR001	72.74	20Year-Existing	13.75	85.76	86.39	86.90	88.69	0.189172	6.80	2.17	6.48	3.33
BellsB	TR001	67.75	20Year-Existing	13.75	85.04	85.59	85.99	87.55	0.201357	6.51	2.45	8.01	3.38
BellsB	TR001	64.04	20Year-Existing	13.75	84.47	85.17	85.59	86.84	0.136638	5.73	2.40	5.90	2.84
BellsB	TR001	60.69	20Year-Existing	13.75	84.14	85.10	85.48	86.39	0.078140	5.15	2.95	6.58	2.22
BellsB	TR001	56.76	20Year-Existing	13.75	83.97	84.90	85.25	86.06	0.068179	4.80	2.96	6.67	2.08
BellsB	TR001	50.93	20Year-Existing	13.75	83.68	84.69	84.98	85.61	0.060313	4.35	3.48	8.49	1.94
BellsB	TR001	43.86	20Year-Existing	13.75	83.34	84.22	84.49	85.15	0.069685	4.35	3.48	9.86	2.06
BellsB	TR001	37.01	20Year-Existing	13.75	82.98	83.88	84.13	84.72	0.049408	4.26	3.84	9.00	1.80
BellsB	TR001	12.14	20Year-Existing	13.75	82.15	83.01	83.17	83.59	0.036426	3.58	4.54	9.99	1.54
BellsB	M002	5166.11	20Year-Existing	11.44	190.79	191.82	191.75	191.98	0.010726	2.40	8.87	17.41	0.80
BellsB	M002	5149.23	20Year-Existing	11.44	190.57	191.51	191.51	191.76	0.014624	2.56	6.79	14.00	0.92
BellsB	M002	5117.45	20Year-Existing	11.44	189.91	191.34	190.71	191.37	0.001413	1.12	19.59	23.06	0.31
BellsB	M002	5090.85	20Year-Existing	11.44	189.62	190.94	190.94	191.25	0.013401	3.03	6.42	10.68	0.91
BellsB	M002	5067.47	20Year-Existing	11.44	189.18	189.69	189.93	190.53	0.138443	5.40	3.30	9.06	2.58
BellsB	M002	5017.78	20Year-Existing	11.44	188.12	189.18	189.18	189.45	0.016693	3.03	6.58	11.72	1.00
BellsB	M002	4967.57	20Year-Existing	11.44	186.55	187.68	187.83	188.26	0.034398	4.04	4.20	7.08	1.36

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	11.44	185.69	186.73	186.43	186.82	0.005057	1.73	10.66	17.72	0.56
BellsB	M002	4873.31	20Year-Existing	11.44	184.61	186.34		186.56	0.006553	2.49	7.61	10.29	0.65
BellsB	M002	4853.42	20Year-Existing	11.44	183.55	186.31	185.04	186.48	0.001668	1.84	6.22	25.07	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	11.44	181.53	182.78	183.00	183.73	0.027283	4.31	2.65	5.49	1.31
BellsB	M002	4785.76	20Year-Existing	11.44	181.35	182.26	182.47	182.94	0.041392	4.06	3.71	7.18	1.51
BellsB	M002	4756.65	20Year-Existing	11.44	180.12	180.96	181.17	181.60	0.050927	4.36	4.23	11.44	1.66
BellsB	M002	4727.54	20Year-Existing	11.44	179.02	179.77	179.92	180.29	0.037067	3.81	4.99	16.13	1.52
BellsB	M002	4707.54	20Year-Existing	11.44	177.96	178.31	178.49	179.00	0.138987	4.46	3.67	16.44	2.62
BellsB	M002	4702.24	20Year-Existing	11.44	177.65	178.45	178.47	178.67	0.017419	2.60	6.91	17.34	1.04
BellsB	M002	4682.48	20Year-Existing	11.44	176.63	177.29	177.51	178.02	0.058496	4.21	3.89	13.07	1.86
BellsB	M002	4658.79	20Year-Existing	11.44	175.50	176.54	176.73	177.20	0.022825	3.86	3.86	6.26	1.26
BellsB	M002	4633.41	20Year-Existing	11.44	174.51	175.17	175.45	176.18	0.090589	5.54	3.53	11.64	2.34
BellsB	M002	4609.61	20Year-Existing	11.44	173.50	174.61	174.41	174.77	0.006478	2.20	8.03	11.30	0.69
BellsB	M002	4583.99	20Year-Existing	11.44	172.77	174.10	174.10	174.52	0.012203	3.04	4.74	6.57	0.92
BellsB	M002	4534.72	20Year-Existing	11.44	170.00	170.85	171.34	172.91	0.123582	7.67	2.41	5.64	2.81
BellsB	M002	4485.52	20Year-Existing	11.44	168.20	168.81	168.93	169.22	0.048611	3.82	5.23	17.16	1.68
BellsB	M002	4436.28	20Year-Existing	20.68	165.85	166.97	167.26	167.57	0.027506	4.51	8.00	13.83	1.42
BellsB	M002	4387.04	20Year-Existing	20.68	164.06	165.21	165.47	166.03	0.035056	5.18	6.91	11.72	1.61
BellsB	M002	4337.81	20Year-Existing	20.68	162.60	163.72	163.90	164.31	0.032129	4.74	9.06	21.99	1.51
BellsB	M002	4288.56	20Year-Existing	20.68	161.30	162.41	162.54	162.88	0.028871	4.34	9.38	19.91	1.40
BellsB	M002	4239.33	20Year-Existing	20.68	159.65	160.62	160.85	161.37	0.038158	4.66	7.09	14.45	1.62
BellsB	M002	4190.09	20Year-Existing	20.68	158.43	159.52	159.64	159.98	0.020540	3.76	9.35	17.44	1.22
BellsB	M002	4140.85	20Year-Existing	20.68	157.30	157.91	158.02	158.31	0.055558	4.30	8.65	22.53	1.84
BellsB	M002	4091.61	20Year-Existing	20.68	155.30	156.06	156.12	156.39	0.030724	3.80	9.73	19.92	1.43
BellsB	M002	4042.37	20Year-Existing	20.68	153.74	154.59	154.68	155.02	0.024485	3.55	8.56	14.86	1.29
BellsB	M002	3993.13	20Year-Existing	20.68	152.65	153.43	153.50	153.76	0.030558	3.56	10.00	22.69	1.36
BellsB	M002	3943.89	20Year-Existing	20.68	151.36	152.21	152.26	152.54	0.024450	3.51	9.88	18.96	1.28
BellsB	M002	3894.65	20Year-Existing	20.68	149.52	151.01	151.17	151.57	0.019281	3.97	8.93	17.54	1.17
BellsB	M002	3869.08	20Year-Existing	20.68	148.87	150.03	150.30	150.89	0.035053	4.76	6.26	10.53	1.57
BellsB	M002	3845.41	20Year-Existing	20.68	148.37	149.58	149.77	150.12	0.024174	3.97	8.24	16.62	1.24
BellsB	M002	3822.22	20Year-Existing	20.68	147.71	149.08	148.65	149.17	0.003802	1.84	17.60	18.39	0.51
BellsB	M002	3796.17	20Year-Existing	20.68	146.89	148.53	148.53	148.97	0.011964	3.40	9.11	11.58	0.91
BellsB	M002	3765.39	20Year-Existing	20.68	146.40	148.06	148.11	148.58	0.014104	3.51	7.91	9.45	0.95
BellsB	M002	3746.94	20Year-Existing	20.68	145.76	148.11	146.99	148.14	0.000628	1.05	30.54	21.21	0.23
BellsB	M002	3724.94	20Year-Existing	20.68	145.32	148.01		148.12	0.001520	1.65	17.59	11.67	0.34
BellsB	M002	3697.71	20Year-Existing	20.68	145.05	148.03		148.08	0.000581	1.15	24.53	12.99	0.22
BellsB	M002	3677.71	20Year-Existing	20.68	143.44	147.83	145.57	148.04	0.001088	2.04	10.15	16.88	0.32
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	20.68	142.47	144.51	144.51	145.50	0.011074	4.40	4.71	9.30	1.00
BellsB	M002	3623.19	20Year-Existing	20.68	142.10	143.56	144.01	144.97	0.047537	5.83	4.57	6.87	1.77
BellsB	M002	3573.45	20Year-Existing	20.68	140.89	142.24	142.68	143.07	0.027010	4.41	5.93	9.19	1.37
BellsB	M002	3520.99	20Year-Existing	20.68	139.30	140.76	140.91	141.66	0.026394	4.60	5.69	7.74	1.35
BellsB	M002	3473.83	20Year-Existing	20.68	137.98	139.64	139.81	140.38	0.023458	4.59	6.46	8.76	1.25
BellsB	M002	3424.29	20Year-Existing	20.68	136.49	138.51	138.00	138.74	0.003460	2.31	11.45	10.36	0.54
BellsB	M002	3400.36	20Year-Existing	20.68	135.96	138.62		138.66	0.000371	0.94	30.57	26.96	0.19
BellsB	M002	3386.31	20Year-Existing	20.68	135.48	138.60	137.41	138.65	0.000429	1.19	38.52	63.28	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	20.68	135.22	138.60	137.13	138.61	0.000034	0.36	109.54	64.65	0.06
BellsB	M002	3329.08	20Year-Existing	26.18	134.96	138.60		138.61	0.000047	0.43	117.19	56.80	0.07
BellsB	M002	3303.55	20Year-Existing	26.18	133.82	138.57	136.21	138.60	0.000229	1.09	52.65	49.85	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	26.18	131.39	134.18	134.18	135.33	0.011059	4.75	5.51	18.66	1.00
BellsB	M002	3203.83	20Year-Existing	26.18	131.13	132.34	132.90	134.55	0.103797	7.21	5.01	11.62	2.55
BellsB	M002	3176.31	20Year-Existing	26.18	130.02	131.39	131.76	132.56	0.043113	5.60	7.14	12.27	1.72
BellsB	M002	3157.63	20Year-Existing	26.18	129.89	131.23	131.36	131.73	0.028581	4.31	10.64	18.99	1.34
BellsB	M002	3130.11	20Year-Existing	26.18	128.68	130.29	130.47	131.07	0.019135	4.32	7.91	8.13	1.20
BellsB	M002	3083.82	20Year-Existing	26.18	127.94	129.53	129.74	130.17	0.018245	4.22	11.19	24.02	1.18
BellsB	M002	3037.68	20Year-Existing	26.18	127.11	127.98	128.22	128.78	0.055895	5.33	9.06	23.45	1.94
BellsB	M002	2991.47	20Year-Existing	26.18	126.28	128.06	127.26	128.08	0.000630	0.96	44.43	44.03	0.24
BellsB	M002	2945.26	20Year-Existing	26.18	125.32	127.69	127.10	127.99	0.005221	2.48	12.23	25.57	0.54
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	26.18	125.12	126.91	126.91	127.80	0.011092	4.19	6.25	4.88	1.00
BellsB	M002	2918.61	20Year-Existing	26.18	124.99	126.57	126.95	127.50	0.023639	4.84	7.54	11.03	1.34
BellsB	M002	2899.46	20Year-Existing	26.18	125.25	126.80	126.72	126.90	0.002328	1.73	31.70	87.64	0.45
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	26.18	124.44	125.90	125.90	126.58	0.010929	3.66	7.16	20.59	1.00
BellsB	M002	2861.32	20Year-Existing	26.18	123.64	124.60	124.99	125.93	0.064633	6.04	6.32	14.63	2.19
BellsB	M002	2823.69	20Year-Existing	26.18	123.23	124.28	124.31	124.56	0.020566	3.31	14.14	29.60	1.11
BellsB	M002	2777.91	20Year-Existing	26.18	122.77	123.94	123.68	123.98	0.003260	1.47	35.12	59.63	0.45
BellsB	M002	2727.91	20Year-Existing	26.18	122.21	123.47	123.47	123.76	0.014102	3.07	14.52	27.37	0.94
BellsB	M002	2677.99	20Year-Existing	26.18	121.13	122.67	122.60	123.05	0.012136	3.13	11.30	13.24	0.89
BellsB	M002	2628.09	20Year-Existing	26.18	120.69	122.18	122.18	122.46	0.011833	3.22	16.81	31.42	0.89
BellsB	M002	2578.18	20Year-Existing	26.18	119.94	121.40	121.51	121.77	0.015961	3.55	14.45	28.79	1.01
BellsB	M002	2528.27	20Year-Existing	26.18	119.10	120.69	120.78	121.19	0.017460	3.86	10.96	14.69	1.07
BellsB	M002	2518.19	20Year-Existing	26.18	118.62	120.06	120.33	120.92	0.033921	4.90	8.42	13.49	1.45
BellsB	M002	2496.15	20Year-Existing	26.18	118.53	120.30	119.98	120.52	0.007282	2.75	18.12	27.43	0.71
BellsB	M002	2478.37	20Year-Existing	26.18	117.97	120.09		120.39	0.006710	2.95	13.94	12.98	0.69
BellsB	M002	2450.61	20Year-Existing	26.18	117.55	119.58	119.58	120.12	0.012039	3.90	10.77	10.83	0.93
BellsB	M002	2428.46	20Year-Existing	26.18	117.19	118.41	118.75	119.54	0.056942	5.37	7.16	14.22	1.80
BellsB	M002	2408.52	20Year-Existing	26.18	116.63	117.88	118.10	118.56	0.042079	4.73	9.35	18.27	1.54
BellsB	M002	2378.55	20Year-Existing	26.18	116.15	117.55	117.63	117.99	0.021996	4.08	12.05	19.67	1.17
BellsB	M002	2367.92	20Year-Existing	26.18	115.61	116.70	116.97	117.59	0.050703	5.27	8.50	17.56	1.74

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	26.18	115.07	116.24	116.44	116.93	0.036601	4.69	9.29	16.38	1.50
BellsB	M002	2328.64	20Year-Existing	26.18	113.99	115.90	115.73	116.24	0.009668	3.31	14.10	18.09	0.82
BellsB	M002	2307.61	20Year-Existing	26.18	112.94	116.09	115.15	116.12	0.000484	0.97	49.78	47.02	0.19
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	26.18	111.75	113.17	113.65	114.79	0.061607	5.64	4.65	4.77	1.68
BellsB	M002	2275.77	20Year-Existing	28.60	112.06	113.85	113.85	114.22	0.012155	3.63	14.28	21.11	0.91
BellsB	M002	2232.72	20Year-Existing	28.60	110.58	112.27	112.61	113.34	0.028803	5.16	8.28	12.81	1.37
BellsB	M002	2200.99	20Year-Existing	28.60	109.61	111.14	111.51	112.31	0.039356	5.45	7.41	10.15	1.57
BellsB	M002	2173.21	20Year-Existing	28.60	108.98	111.13	111.13	111.75	0.011763	3.85	10.23	9.23	0.88
BellsB	M002	2133.27	20Year-Existing	28.60	107.79	109.09	109.59	110.73	0.062545	6.44	6.32	10.10	1.97
BellsB	M002	2117.78	20Year-Existing	28.60	107.46	108.90	109.17	109.89	0.030227	4.98	7.98	10.12	1.42
BellsB	M002	2103.01	20Year-Existing	28.60	106.45	107.84	108.25	109.22	0.058104	6.12	6.68	9.64	1.85
BellsB	M002	2085.77	20Year-Existing	28.60	105.17	106.61	107.10	108.15	0.058383	6.56	6.25	7.76	1.90
BellsB	M002	2068.57	20Year-Existing	28.60	104.36	105.37	105.82	107.01	0.089120	6.78	6.29	11.76	2.30
BellsB	M002	2059.88	20Year-Existing	28.60	103.56	104.89	105.36	106.40	0.052255	5.92	6.33	9.23	1.81
BellsB	M002	2054.52	20Year-Existing	28.60	103.13	104.42	104.90	106.07	0.071114	6.62	6.07	8.41	2.07
BellsB	M002	2040.56	20Year-Existing	28.60	102.39	104.60	104.22	105.03	0.006518	3.31	12.23	8.13	0.73
BellsB	M002	2033.27	20Year-Existing	28.60	102.08	104.29	104.29	104.94	0.013712	3.99	9.70	8.15	0.95
BellsB	M002	2025.44	20Year-Existing	28.60	101.58	103.92	103.47	104.21	0.004621	2.73	14.91	11.18	0.60
BellsB	M002	2021.67	20Year-Existing	28.60	101.43	103.56	103.56	104.15	0.012364	3.72	10.15	9.66	0.91
BellsB	M002	2014.53	20Year-Existing	28.60	99.96	101.43	102.09	103.78	0.113710	6.81	4.29	6.06	2.41
BellsB	M002	2010.46	20Year-Existing	28.60	99.08	100.16	100.88	103.18	0.148848	8.51	4.30	6.70	2.93
BellsB	M002	2007.37	20Year-Existing	28.60	98.52	99.87	100.62	102.72	0.127863	7.56	4.01	5.35	2.57
BellsB	M002	1996.87	20Year-Existing	28.60	97.97	99.03	99.69	101.40	0.098099	7.49	4.85	6.50	2.46
BellsB	M002	1982.97	20Year-Existing	28.60	97.73	98.89	99.27	100.13	0.048695	5.74	6.75	7.86	1.77
BellsB	M002	1966.25	20Year-Existing	28.60	96.75	98.74	98.88	99.51	0.018789	4.37	8.96	8.87	1.10
BellsB	M002	1951.81	20Year-Existing	28.60	96.56	98.74	98.13	98.89	0.003528	2.16	19.07	14.09	0.50
BellsB	M002	1939.94	20Year-Existing	28.60	96.29	98.27	98.27	98.77	0.012240	3.49	11.08	11.79	0.90
BellsB	M002	1918.81	20Year-Existing	28.60	95.86	97.90	97.66	98.25	0.007941	3.17	13.45	11.25	0.75
BellsB	M002	1910.32	20Year-Existing	28.60	95.58	97.52	97.52	98.13	0.012598	3.73	9.68	8.81	0.94
BellsB	M002	1896.87	20Year-Existing	28.60	94.38	95.84	96.38	97.68	0.069193	6.62	5.70	7.85	1.99
BellsB	M002	1887.59	20Year-Existing	28.60	93.87	96.07	95.50	96.26	0.003764	2.31	18.04	13.13	0.53
BellsB	M002	1880.79	20Year-Existing	28.60	93.33	96.09		96.23	0.001970	1.98	21.09	12.22	0.40
BellsB	M002	1870.34	20Year-Existing	28.60	92.77	96.10		96.20	0.001082	1.75	25.11	10.37	0.31
BellsB	M002	1857.16	20Year-Existing	28.60	91.88	96.12		96.18	0.000553	1.31	33.38	14.32	0.22
BellsB	M002	1848.27	20Year-Existing	28.60	91.91	96.13		96.17	0.000265	0.99	44.09	16.56	0.16
BellsB	M002	1834.27	20Year-Existing	28.60	90.88	96.14		96.16	0.000165	0.87	50.93	17.22	0.13
BellsB	M002	1821.35	20Year-Existing	28.60	90.90	96.14		96.16	0.000095	0.72	68.21	20.45	0.10
BellsB	M002	1807.43	20Year-Existing	28.60	89.83	96.14		96.15	0.000057	0.59	80.79	21.37	0.08
BellsB	M002	1800.77	20Year-Existing	28.60	89.59	96.14		96.15	0.000055	0.59	85.81	22.48	0.08
BellsB	M002	1777.98	20Year-Existing	28.60	88.77	96.15		96.15	0.000019	0.38	132.15	29.86	0.05
BellsB	M002	1753.27	20Year-Existing	28.60	88.22	96.15		96.15	0.000021	0.42	125.95	29.43	0.05
BellsB	M002	1729.73	20Year-Existing	28.60	88.17	96.15		96.15	0.000012	0.33	155.69	32.23	0.04
BellsB	M002	1705.77	20Year-Existing	28.60	87.60	96.15		96.15	0.000005	0.26	244.30	62.25	0.03
BellsB	M002	1688.91	20Year-Existing	28.60	86.72	96.15	89.69	96.15	0.000007	0.29	202.12	62.94	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	28.60	83.97	86.93	86.93	88.40	0.008340	5.37	5.32	18.90	1.00
BellsB	M002	1605.59	20Year-Existing	28.60	81.49	82.23	82.85	86.93	0.543663	10.15	3.20	11.04	5.56
BellsB	M001	1582.05	20Year-Existing	45.43	80.41	81.49	82.36	85.35	0.133079	8.92	5.64	8.59	3.17
BellsB	M001	1563.67	20Year-Existing	45.43	79.96	81.21	81.82	83.31	0.056011	6.88	8.19	10.42	2.16
BellsB	M001	1544.26	20Year-Existing	45.43	79.04	80.80	81.30	82.40	0.028602	6.12	9.84	9.30	1.61
BellsB	M001	1529.04	20Year-Existing	45.43	78.24	79.42	80.09	81.75	0.056165	7.00	7.35	8.27	2.17
BellsB	M001	1515.66	20Year-Existing	45.43	77.30	79.08	79.66	80.97	0.044669	6.26	8.11	7.48	1.71
BellsB	M001	1502.43	20Year-Existing	45.43	69.64	70.23	71.07	78.67	1.046293	12.88	3.54	10.16	6.85
BellsB	M001	1483.47	20Year-Existing	45.43	68.89	69.88	70.34	71.64	0.116633	6.53	8.60	16.29	2.54
BellsB	M001	1454.75	20Year-Existing	45.43	68.03	69.47	69.57	70.09	0.021727	4.37	14.96	15.84	1.22
BellsB	M001	1406.62	20Year-Existing	45.43	66.49	68.53	68.56	69.23	0.014771	4.34	14.30	11.45	1.04
BellsB	M001	1358.51	20Year-Existing	45.43	65.17	66.60	67.03	68.02	0.044450	5.69	9.85	11.71	1.69
BellsB	M001	1310.38	20Year-Existing	45.43	63.80	65.30	65.59	66.23	0.027260	4.72	12.83	16.46	1.35
BellsB	M001	1286.33	20Year-Existing	45.43	62.81	64.16	64.52	65.32	0.052622	5.65	11.34	18.67	1.80
BellsB	M001	1262.25	20Year-Existing	45.43	62.09	64.38	64.39	64.72	0.009007	3.46	23.62	29.28	0.79
BellsB	M001	1251.58	20Year-Existing	45.43	61.46	63.06	63.75	64.44	0.045318	6.63	10.71	11.82	1.77
BellsB	M001	1234.76	20Year-Existing	45.43	60.57	62.06	62.53	63.57	0.061077	6.85	11.08	19.24	1.97
BellsB	M001	1214.13	20Year-Existing	45.43	59.55	61.56	60.98	61.73	0.003459	2.13	29.60	22.92	0.51
BellsB	M001	1200.58	20Year-Existing	45.43	58.90	61.00	61.00	61.60	0.011858	3.92	16.34	14.64	0.93
BellsB	M001	1182.98	20Year-Existing	45.43	58.59	60.69	60.76	61.36	0.013806	4.24	15.62	14.67	1.01
BellsB	M001	1166.01	20Year-Existing	45.43	58.39	59.74	60.09	60.92	0.042533	5.49	11.72	17.45	1.65
BellsB	M001	1153.18	20Year-Existing	45.43	57.70	59.42	59.71	60.37	0.035143	5.85	13.91	19.66	1.52
BellsB	M001	1141.88	20Year-Existing	45.43	56.72	58.01	58.52	59.76	0.064728	6.34	8.90	13.02	2.01
BellsB	M001	1128.34	20Year-Existing	45.43	56.53	57.70	58.02	58.75	0.053716	5.58	10.93	14.75	1.80
BellsB	M001	1117.89	20Year-Existing	45.43	55.58	56.82	57.23	58.12	0.063016	6.54	10.49	13.28	1.98
BellsB	M001	1096.03	20Year-Existing	45.43	54.61	56.23	56.49	57.14	0.027586	4.79	12.91	15.70	1.36
BellsB	M001	1077.81	20Year-Existing	45.43	54.24	55.32	55.70	56.49	0.050733	5.46	11.30	17.18	1.78
BellsB	M001	1069.76	20Year-Existing	45.43	53.70	54.44	54.82	55.78	0.118034	6.25	9.93	19.05	2.53
BellsB	M001	1064.67	20Year-Existing	45.43	53.19	53.96	54.30	55.18	0.110742	6.02	10.45	20.35	2.44
BellsB	M001	1051.64	20Year-Existing	45.43	51.97	53.01	53.38	54.26	0.063673	5.72	10.97	17.92	1.95
BellsB	M001	1032.36	20Year-Existing	45.43	50.97	52.42	52.66	53.26	0.034951	5.26	13.53	16.32	1.51
BellsB	M001	1021.64	20Year-Existing	45.43	50.03	51.40	51.81	52.76	0.048546	5.61	10.49	16.05	1.75
BellsB	M001	1014.11	20Year-Existing	45.43	49.46	51.01	51.46	52.42	0.043554	5.70	10.12	13.75	1.67
BellsB	M001	1006.24	20Year-Existing	45.43	49.15	50.38	50.86	52.01	0.057538	6.14	9.41	13.96	1.91
BellsB	M001	996.42	20Year-Existing	45.43	48.11	49.41	49.95	51.35	0.083423	7.20	8.71	13.42	2.24
BellsB	M001	987.27	20Year-Existing	45.43	47.17	48.66	49.25	50.69	0.061564	6.91	8.52	11.04	2.00
BellsB	M001	973.52	20Year-Existing	45.43	46.79	48.15	48.69	49.86	0.045124	6.05	8.83	12.35	1.84

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	45.43	45.77	47.25	47.75	48.87	0.048509	6.22	9.70	15.42	1.87
BellsB	M001	931.51	20Year-Existing	45.43	44.86	46.11	46.59	47.69	0.073135	7.39	9.21	13.39	2.27
BellsB	M001	925.41	20Year-Existing	45.43	44.69	46.32	46.59	47.22	0.026181	5.35	13.25	18.23	1.40
BellsB	M001	901.68	20Year-Existing	45.43	43.69	45.14	45.55	46.47	0.034656	5.80	10.10	11.05	1.65
BellsB	M001	877.27	20Year-Existing	45.43	43.18	45.42	45.03	45.77	0.005296	3.05	19.77	13.64	0.69
BellsB	M001	857.41	20Year-Existing	45.43	42.16	45.57	44.49	45.65	0.000803	1.58	48.54	39.65	0.29
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	46.75	38.54	42.07	41.03	42.59	0.003495	3.25	14.96	11.77	0.57
BellsB	M001	810.13	20Year-Existing	46.75	37.80	42.29	39.87	42.37	0.000547	1.37	46.45	29.32	0.22
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	46.75	34.33	36.52	37.39	39.22	0.060960	7.33	6.64	8.12	1.97
BellsB	M001	782.27	20Year-Existing	46.75	33.92	34.82	35.50	37.76	0.176645	8.13	6.56	11.06	3.11
BellsB	M001	772.73	20Year-Existing	46.75	30.94	32.55	33.33	36.09	0.165268	10.70	7.11	10.00	2.97
BellsB	M001	766.74	20Year-Existing	46.75	30.65	32.49	33.19	35.06	0.098807	9.41	8.34	10.10	2.39
BellsB	M001	760.32	20Year-Existing	46.75	30.34	31.94	32.65	34.49	0.079577	8.24	8.29	10.25	2.26
BellsB	M001	755.97	20Year-Existing	46.75	30.05	31.63	32.28	34.12	0.085520	7.73	8.14	11.23	2.27
BellsB	M001	749.69	20Year-Existing	46.75	29.30	30.96	31.65	33.56	0.086064	8.28	8.11	10.12	2.30
BellsB	M001	742.14	20Year-Existing	46.75	28.38	29.64	30.45	32.81	0.101927	8.41	6.87	8.80	2.56
BellsB	M001	736.73	20Year-Existing	46.75	28.24	29.07	29.77	32.06	0.166155	8.29	6.52	10.67	3.08
BellsB	M001	722.61	20Year-Existing	46.75	27.35	28.46	28.94	30.20	0.071651	6.42	9.05	14.44	2.09
BellsB	M001	712.04	20Year-Existing	46.75	26.27	27.82	28.35	29.54	0.053829	6.32	9.18	10.80	1.84
BellsB	M001	702.42	20Year-Existing	46.75	26.04	27.39	27.87	28.97	0.056551	6.18	9.58	12.07	1.89
BellsB	M001	691.68	20Year-Existing	46.75	25.03	26.62	27.15	28.35	0.056931	6.12	8.68	10.62	1.87
BellsB	M001	686.22	20Year-Existing	46.75	24.46	25.72	26.35	27.93	0.083348	6.66	7.44	10.26	2.22
BellsB	M001	675.26	20Year-Existing	46.75	24.08	25.29	25.81	27.01	0.060290	6.19	8.69	10.60	1.95
BellsB	M001	668.37	20Year-Existing	46.75	23.58	24.94	25.43	26.60	0.055796	6.11	9.10	11.90	1.87
BellsB	M001	655.45	20Year-Existing	46.75	23.02	24.24	24.71	25.85	0.058020	5.98	9.16	12.86	1.89
BellsB	M001	636.88	20Year-Existing	46.75	21.46	22.84	23.40	24.71	0.060310	6.23	8.35	10.37	1.94
BellsB	M001	619.06	20Year-Existing	46.75	20.82	22.40	22.80	23.72	0.037375	5.58	10.60	11.61	1.57
BellsB	M001	608.48	20Year-Existing	46.75	20.13	21.58	22.08	23.23	0.047390	5.91	9.27	13.25	1.75
BellsB	M001	592.31	20Year-Existing	46.75	18.95	20.41	20.97	22.29	0.069662	7.02	9.00	11.32	2.09
BellsB	M001	582.72	20Year-Existing	46.75	18.14	19.29	19.91	21.50	0.087314	7.23	8.07	10.20	2.33
BellsB	M001	577.91	20Year-Existing	46.75	17.66	19.29	19.87	21.11	0.042687	6.51	9.33	9.17	1.73
BellsB	M001	561.51	20Year-Existing	46.75	17.02	18.44	18.96	20.21	0.070028	6.67	9.56	13.34	2.07
BellsB	M001	553.07	20Year-Existing	46.75	16.35	17.53	18.15	19.60	0.071381	6.53	8.01	10.70	2.10
BellsB	M001	541.54	20Year-Existing	46.75	15.41	16.63	17.21	18.71	0.085616	6.46	7.79	12.13	2.24
BellsB	M001	529.17	20Year-Existing	46.75	14.85	16.03	16.53	17.66	0.063827	5.70	8.56	9.10	1.77
BellsB	M001	514.53	20Year-Existing	46.75	14.21	15.37	15.77	16.67	0.058663	5.51	10.17	12.09	1.72
BellsB	M001	467.56	20Year-Existing	46.75	11.61	12.86	13.24	14.15	0.048479	5.11	9.75	10.37	1.57
BellsB	M001	420.59	20Year-Existing	46.75	8.75	12.30	11.07	12.53	0.002518	2.26	26.08	12.52	0.41
BellsB	M001	400.25	20Year-Existing	46.75	8.57	12.11	10.64	12.46	0.002627	2.64	17.68	6.52	0.45
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	46.75	0.83	4.15	2.90	4.28	0.000935	1.86	45.86	48.65	0.33
BellsB	M001	47.74	20Year-Existing	46.75	0.56	4.20	2.78	4.21	0.000163	0.82	135.67	125.78	0.14
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	46.75	0.70	4.20	2.86	4.21	0.000137	0.74	145.60	130.08	0.13
BellsB	M001	20.51	20Year-Existing	46.75	0.57	4.19		4.20	0.000170	0.80	139.86	139.59	0.14

Corner Brook 20yr Q+20%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	161.04	36.31	39.01	39.01	40.16	0.009766	5.25	40.54	21.41	1.05
CornerB	M004	2838.71	20Year-Existing	161.04	36.15	38.24	38.64	39.57	0.013602	5.32	37.44	30.88	1.19
CornerB	M004	2796.61	20Year-Existing	161.04	35.35	38.28	37.70	38.82	0.004255	3.61	61.65	40.28	0.70
CornerB	M004	2769.85	20Year-Existing	161.04	34.80	37.51	37.51	38.36	0.013454	6.25	49.56	30.93	1.23
CornerB	TR001	206.04	20Year-Existing	27.48	43.81	44.71	44.99	45.65	0.042051	5.07	7.89	13.83	1.80
CornerB	TR001	156.04	20Year-Existing	27.48	41.63	42.64	42.93	43.59	0.040232	4.48	7.39	16.62	1.71
CornerB	TR001	106.04	20Year-Existing	27.48	39.17	39.80	40.16	41.04	0.066538	5.23	6.21	12.61	2.16
CornerB	TR001	56.04	20Year-Existing	27.48	37.27	38.07	38.27	38.78	0.030585	3.95	8.08	13.36	1.50
CornerB	TR001	36.04	20Year-Existing	27.48	35.50	38.25	37.45	38.25	0.000077	0.45	119.63	81.16	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	27.48	35.18	37.18	37.18	38.05	0.010358	4.14	6.65	78.60	1.00
CornerB	M003	2689.92	20Year-Existing	175.80	33.55	35.55	35.92	37.26	0.030593	7.30	41.83	43.61	1.74
CornerB	M003	2645.73	20Year-Existing	175.80	32.87	36.45	34.77	36.56	0.000890	1.96	145.85	65.74	0.34
CornerB	M003	2602.09	20Year-Existing	175.80	32.20	36.45		36.53	0.000433	1.50	184.39	67.69	0.24
CornerB	M003	2557.73	20Year-Existing	175.80	31.34	36.40		36.50	0.000434	1.69	154.75	48.36	0.25
CornerB	M003	2537.73	20Year-Existing	175.80	30.77	36.33	34.64	36.49	0.000690	2.33	152.60	64.26	0.32
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	175.80	30.35	34.05	34.05	35.88	0.007932	5.99	29.35	23.51	1.00
CornerB	M003	2507.21	20Year-Existing	175.80	30.75	32.39	33.23	35.24	0.052366	8.39	26.95	21.66	2.22
CornerB	M003	2459.31	20Year-Existing	175.80	30.13	31.76	32.16	33.17	0.024124	5.88	38.71	31.47	1.52
CornerB	M003	2411.41	20Year-Existing	175.80	29.27	31.56	31.61	32.25	0.010267	4.65	61.70	47.66	1.04
CornerB	M003	2363.51	20Year-Existing	175.80	28.77	30.51	30.76	31.56	0.018749	5.14	45.78	40.05	1.34
CornerB	M003	2315.61	20Year-Existing	175.80	27.93	29.79	29.95	30.82	0.012662	4.60	42.33	29.24	1.12
CornerB	M003	2267.71	20Year-Existing	176.16	26.30	30.18	28.79	30.52	0.001624	2.74	78.67	28.15	0.46
CornerB	M003	2264.01	20Year-Existing	176.16	26.10	30.14	29.36	30.50	0.004625	2.67	67.78	29.90	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	176.16	26.10	30.02		30.42	0.005566	2.82	63.94	29.69	0.60
CornerB	M003	2260.98	20Year-Existing	176.16	25.80	30.07		30.36	0.001246	2.52	86.31	29.00	0.40
CornerB	M003	2240.88	20Year-Existing	176.16	27.01	29.96		30.30	0.002604	2.75	77.45	40.28	0.54
CornerB	M003	2212.25	20Year-Existing	176.16	26.87	29.88		30.23	0.002521	2.85	78.59	36.35	0.54
CornerB	M003	2183.63	20Year-Existing	176.16	25.56	28.99	28.99	30.04	0.007577	5.11	49.41	27.26	0.94
CornerB	M003	2163.63	20Year-Existing	176.16	25.35	28.95	28.18	29.63	0.003584	3.76	50.69	31.90	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	176.16	24.87	27.64	28.05	29.39	0.015681	6.36	33.52	21.63	1.31
CornerB	M003	2131.66	20Year-Existing	176.16	24.57	26.94	27.60	29.07	0.025774	6.69	29.90	20.59	1.59
CornerB	M003	2119.46	20Year-Existing	176.16	24.12	26.08	26.86	28.65	0.038741	7.44	27.50	21.83	1.92
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	176.16	24.04	26.36	26.93	28.24	0.021537	6.23	31.58	21.59	1.47
CornerB	M003	2080.62	20Year-Existing	176.16	23.73	25.53	26.08	27.41	0.027167	6.31	31.80	24.99	1.61
CornerB	M003	2068.44	20Year-Existing	176.16	23.76	25.50	25.98	27.00	0.022387	5.71	35.97	28.46	1.46
CornerB	M003	2022.25	20Year-Existing	176.16	22.74	24.75	25.10	26.09	0.016479	5.45	39.44	28.50	1.29
CornerB	M003	1991.14	20Year-Existing	176.16	22.18	24.51	24.70	25.62	0.010835	4.99	44.21	28.05	1.08
CornerB	M003	1985.82	20Year-Existing	176.16	21.97	24.11	24.43	25.51	0.015890	5.64	38.80	25.70	1.29
CornerB	M003	1975.95	20Year-Existing	176.16	21.78	23.76	24.20	25.32	0.020258	6.09	37.31	26.79	1.43
CornerB	M003	1929.72	20Year-Existing	176.16	20.08	22.26	22.84	24.26	0.024406	6.58	31.11	20.41	1.56
CornerB	M003	1883.49	20Year-Existing	176.16	19.23	21.84	22.11	23.31	0.012652	5.76	37.63	19.67	1.18
CornerB	TR002	21.04	20Year-Existing	10.44	22.27	22.91	23.45	25.37	0.150171	7.52	1.80	4.48	3.16
CornerB	TR002	18.08	20Year-Existing	10.44	21.40	21.81	22.28	24.67	0.379695	8.46	1.64	6.19	4.66
CornerB	M002	1826.39	20Year-Existing	177.84	16.92	18.49	19.32	21.79	0.119804	8.67	25.25	30.02	2.52
CornerB	M002	1790.92	20Year-Existing	177.84	15.49	18.65	18.74	20.01	0.015546	5.65	39.34	17.14	1.05
CornerB	M002	1773.95	20Year-Existing	177.84	14.72	19.30	17.70	19.58	0.002180	2.65	86.93	28.76	0.41
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	177.84	14.87	19.30	17.42	19.50	0.001222	2.28	108.20	37.24	0.35
CornerB	M002	1733.13	20Year-Existing	177.84	15.23	19.35		19.41	0.000354	1.19	188.12	74.10	0.19
CornerB	M002	1717.41	20Year-Existing	177.84	15.12	19.35		19.40	0.000296	1.10	210.74	83.26	0.17
CornerB	M002	1691.96	20Year-Existing	177.84	14.62	19.35		19.39	0.000245	1.04	236.95	102.20	0.16
CornerB	M002	1654.15	20Year-Existing	177.84	13.87	19.35		19.38	0.000118	0.76	309.39	132.13	0.11
CornerB	M002	1613.91	20Year-Existing	177.84	13.08	19.36		19.37	0.000057	0.63	360.67	150.48	0.09
CornerB	M002	1567.16	20Year-Existing	177.84	12.15	19.37		19.37	0.000009	0.28	733.37	209.33	0.04
CornerB	M002	1551.89	20Year-Existing	177.84	11.85	19.37		19.37	0.000004	0.17	1117.32	271.94	0.02
CornerB	M002	1539.91	20Year-Existing	176.52	11.62	19.37		19.37	0.000002	0.13	1517.86	305.19	0.02
CornerB	M002	1526.59	20Year-Existing	176.52	11.36	19.37		19.37	0.000002	0.13	1545.60	310.41	0.02
CornerB	M002	1517.99	20Year-Existing	176.52	11.18	19.37		19.37	0.000002	0.15	1306.50	266.54	0.02
CornerB	M002	1505.64	20Year-Existing	176.52	10.94	19.37		19.37	0.000004	0.19	973.18	196.28	0.02
CornerB	M002	1490.63	20Year-Existing	176.52	10.64	19.36		19.37	0.000009	0.29	671.82	138.18	0.04
CornerB	M002	1463.65	20Year-Existing	176.52	10.11	19.35		19.37	0.000037	0.59	367.37	85.92	0.07
CornerB	M002	1415.93	20Year-Existing	176.52	9.17	19.35		19.36	0.000032	0.58	346.84	73.68	0.07
CornerB	M002	1386.11	20Year-Existing	176.52	8.58	19.34		19.36	0.000047	0.68	316.15	77.07	0.08
CornerB	M002	1363.91	20Year-Existing	176.52	8.14	19.33		19.36	0.000078	0.87	254.40	56.69	0.10
CornerB	M002	1356.61	20Year-Existing	176.52	8.00	19.32		19.36	0.000215	1.10	263.08	71.97	0.12
CornerB	M002	1354.61	20Year-Existing	176.52	15.35	18.73	18.71	19.30	0.005210	4.07	70.37	53.12	0.71
CornerB	M002	1354.11	20Year-Existing	176.52	15.35	18.71	18.71	19.30	0.005436	4.14	69.04	52.65	0.72
CornerB	M002	1352.01	20Year-Existing	176.52	8.00	9.40	11.18	18.43	0.491155	0.36	13.26	9.51	0.14
CornerB	M002	1347.51	20Year-Existing	176.52	7.72	9.52	10.75	15.14	0.229767	10.51	16.81	16.60	3.32
CornerB	M002	1336.58	20Year-Existing	176.52	7.69	9.25	10.23	12.78	0.117112	8.36	21.55	20.34	2.47
CornerB	M002	1326.83	20Year-Existing	176.52	7.68	10.70	9.90	11.08	0.004575	2.87	70.21	30.80	0.56
CornerB	M002	1317.22	20Year-Existing	176.52	7.66	10.56		11.02	0.006332	3.13	63.03	31.54	0.65
CornerB	M002	1315.18	20Year-Existing	176.52	7.28	10.08	10.08	10.96	0.016778	4.49	46.36	28.36	1.01
CornerB	M002	1313.58	20Year-Existing	176.52	6.48	9.26	9.72	10.84	0.034192	5.87	34.49	24.55	1.41
CornerB	M002	1312.39	20Year-Existing	176.52	6.23	8.81	9.40	10.76	0.044129	6.42	30.68	23.02	1.59
CornerB	M002	1311.16	20Year-Existing	176.52	5.92	8.38	9.07	10.67	0.060173	6.82	27.41	22.16	1.81
CornerB	M002	1309.11	20Year-Existing	176.52	5.91	7.98	8.74	10.52	0.067470	7.15	25.93	21.30	1.92
CornerB	M002	1305.35	20Year-Existing	176.52	5.37	7.33	8.14	10.20	0.078622	7.83	25.84	24.17	2.09

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	176.52	5.06	6.84	7.66	9.75	0.094886	7.64	24.15	22.98	2.23
CornerB	M002	1296.49	20Year-Existing	176.52	4.91	7.00	7.72	9.33	0.051187	6.92	27.70	20.21	1.73
CornerB	M002	1289.64	20Year-Existing	176.52	4.71	7.00	7.55	8.90	0.038334	6.31	30.88	20.61	1.51
CornerB	M002	1284.12	20Year-Existing	176.52	4.41	7.11	7.46	8.63	0.023439	5.71	35.41	20.32	1.22
CornerB	M002	1279.52	20Year-Existing	176.52	4.23	6.71	7.20	8.48	0.028756	6.07	32.51	20.13	1.35
CornerB	M002	1258.94	20Year-Existing	176.52	3.53	5.33	6.02	7.58	0.063508	6.98	29.29	27.95	1.88
CornerB	M002	1246.98	20Year-Existing	176.52	3.37	4.89	5.49	6.87	0.043117	6.31	29.63	25.49	1.73
CornerB	M002	1233.83	20Year-Existing	176.52	3.10	4.64	5.10	6.18	0.043108	5.73	35.22	37.79	1.70
CornerB	M002	1215.66	20Year-Existing	176.52	2.70	4.18	4.58	5.42	0.028334	5.02	39.88	47.04	1.40
CornerB	M002	1206.83	20Year-Existing	176.52	2.54	4.84	4.47	5.16	0.005052	2.76	85.85	67.43	0.63
CornerB	M002	1194.69	20Year-Existing	176.52	2.39	4.82		5.09	0.004243	2.63	92.08	65.05	0.59
CornerB	M002	1185.06	20Year-Existing	176.52	2.26	4.81		5.04	0.003229	2.45	100.33	66.69	0.52
CornerB	M002	1142.41	20Year-Existing	176.52	1.70	4.72		4.92	0.002595	2.28	114.58	83.11	0.47
CornerB	M002	1137.55	20Year-Existing	176.52	1.60	4.26	4.26	4.84	0.010196	3.57	64.30	69.63	0.87
CornerB	M002	1110.53	20Year-Existing	176.52	1.39	4.10	3.80	4.60	0.005755	3.36	71.73	65.61	0.70
CornerB	M002	1090.67	20Year-Existing	176.52	1.10	4.31		4.43	0.001486	1.88	145.69	91.80	0.36
CornerB	M002	1070.69	20Year-Existing	176.52	0.80	4.33	2.94	4.40	0.000689	1.46	190.24	89.20	0.26
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	176.52	0.76	4.31	2.85	4.38	0.000617	1.41	190.76	86.55	0.24
CornerB	M002	1047.01	20Year-Existing	176.52	0.75	4.29		4.36	0.000589	1.54	184.91	78.48	0.27
CornerB	M002	1004.03	20Year-Existing	176.52	0.77	4.26		4.34	0.000561	1.50	210.50	130.61	0.26
CornerB	M002	959.21	20Year-Existing	176.52	0.70	4.27		4.31	0.000399	1.26	317.24	280.05	0.22
CornerB	M002	915.75	20Year-Existing	175.44	0.68	4.27		4.28	0.000285	1.04	391.75	295.48	0.18
CornerB	M002	869.66	20Year-Existing	175.44	0.69	4.26		4.27	0.000167	0.82	426.87	223.06	0.14
CornerB	M002	828.33	20Year-Existing	169.80	0.77	4.25		4.27	0.000172	0.80	415.01	220.49	0.14
CornerB	M002	784.55	20Year-Existing	169.80	0.82	4.25		4.26	0.000117	0.67	435.54	231.76	0.12
CornerB	M002	739.85	20Year-Existing	169.80	0.82	4.25		4.26	0.000116	0.64	447.92	270.74	0.12
CornerB	M002	696.36	20Year-Existing	169.80	0.64	4.23		4.25	0.000163	0.81	391.26	266.87	0.14
CornerB	M001	659.37	20Year-Existing	178.08	0.75	4.23		4.24	0.000175	0.79	369.03	232.82	0.15
CornerB	M001	643.93	20Year-Existing	178.08	0.74	4.21	3.00	4.24	0.000264	0.99	311.74	217.30	0.18
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	178.08	0.83	3.91	2.99	3.98	0.000651	1.46	214.71	179.14	0.28
CornerB	M001	608.52	20Year-Existing	178.08	0.76	3.90		3.96	0.000811	1.56	206.11	162.98	0.30
CornerB	M001	570.12	20Year-Existing	178.08	0.61	3.90		3.93	0.000416	1.19	276.22	186.26	0.22
CornerB	M001	535.83	20Year-Existing	178.08	0.56	3.89	1.96	3.92	0.000243	0.99	284.77	220.26	0.17
CornerB	M001	520.22	20Year-Existing	178.08	0.55	3.89	2.05	3.91	0.000184	0.86	333.00	291.71	0.15
CornerB	M001	472.07	20Year-Existing	178.08	0.58	3.84	2.49	3.90	0.000461	1.31	238.79	201.78	0.24
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	178.08	0.44	3.42	2.26	3.61	0.001264	2.09	152.72	216.81	0.39
CornerB	M001	425.41	20Year-Existing	178.08	0.48	3.45		3.54	0.000825	1.64	239.96	293.65	0.31
CornerB	M001	401.99	20Year-Existing	178.08	0.74	3.47		3.51	0.000471	1.20	332.79	339.27	0.23
CornerB	M001	381.26	20Year-Existing	178.08	0.79	3.40	3.10	3.49	0.001091	1.74	245.37	347.50	0.35
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	178.08	0.79	3.13	3.13	3.37	0.002764	2.60	161.68	339.80	0.55
CornerB	M001	352.89	20Year-Existing	178.08	0.68	3.11	2.28	3.30	0.001747	2.11	143.18	288.45	0.44
CornerB	M001	324.13	20Year-Existing	178.08	0.67	3.10		3.24	0.001435	1.92	156.04	203.92	0.40
CornerB	M001	292.92	20Year-Existing	178.08	0.65	3.09		3.19	0.001079	1.64	208.40	306.08	0.34
CornerB	M001	274.62	20Year-Existing	178.08	0.96	3.07	2.71	3.16	0.002132	2.04	225.64	345.48	0.47
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	178.08	1.01	3.04	2.66	3.09	0.001987	1.95	247.69	364.06	0.45
CornerB	M001	245.99	20Year-Existing	178.08	0.64	3.00		3.06	0.001295	1.68	277.99	421.23	0.37
CornerB	M001	210.89	20Year-Existing	178.08	0.68	2.97		3.01	0.001155	1.48	276.93	377.31	0.34
CornerB	M001	174.77	20Year-Existing	178.08	0.69	2.94		2.97	0.001030	1.27	299.71	428.40	0.32
CornerB	M001	155.66	20Year-Existing	178.08	0.64	2.93	2.54	2.95	0.001219	1.25	337.12	546.33	0.33
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	178.08	0.55	2.92	2.48	2.94	0.000935	1.09	350.60	500.91	0.29
CornerB	M001	129.05	20Year-Existing	178.08	0.40	2.89		2.91	0.000691	1.14	370.64	479.99	0.26
CornerB	M001	80.73	20Year-Existing	178.08	0.20	2.84		2.88	0.000645	1.24	325.89	388.02	0.26
CornerB	M001	23.81	20Year-Existing	178.08	0.32	2.80	2.07	2.84	0.000699	1.20	308.45	431.13	0.27
BellsB	TR001	178.13	20Year-Existing	15.00	92.91	94.14	94.51	95.32	0.043025	4.90	3.38	5.38	1.70
BellsB	TR001	159.86	20Year-Existing	15.00	92.15	94.50	93.59	94.58	0.001182	1.51	15.58	11.98	0.34
BellsB	TR001	139.54	20Year-Existing	15.00	91.13	94.35	92.73	94.54	0.001554	1.95	7.69	10.12	0.35
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	15.00	89.49	91.01	91.23	92.10	0.019676	4.66	3.33	3.90	1.25
BellsB	TR001	88.17	20Year-Existing	15.00	88.47	89.37	89.93	91.63	0.115714	7.06	2.59	5.19	2.76
BellsB	TR001	84.12	20Year-Existing	15.00	87.66	88.41	88.93	90.94	0.201639	7.17	2.27	6.37	3.45
BellsB	TR001	79.14	20Year-Existing	15.00	86.53	87.31	87.89	90.04	0.152706	7.55	2.32	5.84	3.17
BellsB	TR001	72.74	20Year-Existing	15.00	85.76	86.42	86.93	88.86	0.188567	7.02	2.31	6.66	3.35
BellsB	TR001	67.75	20Year-Existing	15.00	85.04	85.60	86.03	87.71	0.206128	6.76	2.58	8.04	3.44
BellsB	TR001	64.04	20Year-Existing	15.00	84.47	85.19	85.64	86.99	0.136799	5.94	2.53	5.98	2.86
BellsB	TR001	60.69	20Year-Existing	15.00	84.14	85.13	85.52	86.51	0.082183	5.37	3.10	6.76	2.29
BellsB	TR001	56.76	20Year-Existing	15.00	83.97	84.92	85.30	86.17	0.069118	4.98	3.14	6.91	2.11
BellsB	TR001	50.93	20Year-Existing	15.00	83.68	84.71	85.02	85.71	0.062381	4.54	3.66	8.72	1.99
BellsB	TR001	43.86	20Year-Existing	15.00	83.34	84.24	84.52	85.24	0.070589	4.51	3.68	9.93	2.09
BellsB	TR001	37.01	20Year-Existing	15.00	82.98	83.91	84.17	84.80	0.050325	4.42	4.06	9.08	1.83
BellsB	TR001	12.14	20Year-Existing	15.00	82.15	83.04	83.21	83.65	0.036731	3.70	4.80	10.07	1.55
BellsB	M002	5166.11	20Year-Existing	12.48	190.79	191.86	191.78	192.02	0.010211	2.42	9.62	17.73	0.79
BellsB	M002	5149.23	20Year-Existing	12.48	190.57	191.54	191.54	191.80	0.015126	2.66	7.17	14.25	0.94
BellsB	M002	5117.45	20Year-Existing	12.48	189.91	191.40	190.74	191.43	0.001398	1.15	20.89	23.44	0.31
BellsB	M002	5090.85	20Year-Existing	12.48	189.62	190.98	190.98	191.31	0.013550	3.12	6.87	11.07	0.92
BellsB	M002	5067.47	20Year-Existing	12.48	189.18	189.71	189.97	190.59	0.133272	5.51	3.54	9.16	2.56
BellsB	M002	5017.78	20Year-Existing	12.48	188.12	189.22	189.22	189.50	0.016665	3.10	7.03	11.97	1.01
BellsB	M002	4967.57	20Year-Existing	12.48	186.55	187.72	187.88	188.32	0.033475	4.11	4.52	7.24	1.35

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	12.48	185.69	186.81	186.46	186.90	0.004281	1.68	12.22	19.14	0.52
BellsB	M002	4873.31	20Year-Existing	12.48	184.61	186.55		186.70	0.004282	2.19	10.15	14.22	0.54
BellsB	M002	4853.42	20Year-Existing	12.48	183.55	186.47	185.12	186.65	0.001625	1.89	6.60	26.50	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	12.48	181.53	182.81	183.08	183.89	0.030275	4.61	2.71	5.58	1.39
BellsB	M002	4785.76	20Year-Existing	12.48	181.35	182.30	182.51	183.01	0.041407	4.18	3.96	7.36	1.52
BellsB	M002	4756.65	20Year-Existing	12.48	180.12	180.98	181.20	181.65	0.051981	4.50	4.51	11.82	1.69
BellsB	M002	4727.54	20Year-Existing	12.48	179.02	179.79	179.95	180.33	0.037317	3.91	5.33	16.23	1.53
BellsB	M002	4707.54	20Year-Existing	12.48	177.96	178.32	178.52	179.04	0.135468	4.55	3.92	16.53	2.61
BellsB	M002	4702.24	20Year-Existing	12.48	177.65	178.47	178.50	178.71	0.017463	2.67	7.34	17.45	1.05
BellsB	M002	4682.48	20Year-Existing	12.48	176.63	177.32	177.54	178.06	0.056626	4.28	4.24	13.70	1.84
BellsB	M002	4658.79	20Year-Existing	12.48	175.50	176.60	176.79	177.27	0.021870	3.93	4.21	6.60	1.24
BellsB	M002	4633.41	20Year-Existing	12.48	174.51	175.19	175.48	176.26	0.093955	5.76	3.74	11.98	2.39
BellsB	M002	4609.61	20Year-Existing	12.48	173.50	174.68	174.44	174.83	0.005976	2.21	8.81	11.67	0.67
BellsB	M002	4583.99	20Year-Existing	12.48	172.77	174.15	174.15	174.59	0.012342	3.14	5.07	6.80	0.93
BellsB	M002	4534.72	20Year-Existing	12.48	170.00	170.89	171.39	172.97	0.119820	7.80	2.62	5.89	2.79
BellsB	M002	4485.52	20Year-Existing	12.48	168.20	168.82	168.96	169.27	0.050320	3.96	5.51	17.46	1.72
BellsB	M002	4436.28	20Year-Existing	22.56	165.85	167.01	167.30	167.63	0.026921	4.59	8.62	14.21	1.41
BellsB	M002	4387.04	20Year-Existing	22.56	164.06	165.25	165.53	166.10	0.034754	5.30	7.44	12.18	1.61
BellsB	M002	4337.81	20Year-Existing	22.56	162.60	163.74	163.94	164.36	0.032984	4.89	9.65	22.66	1.54
BellsB	M002	4288.56	20Year-Existing	22.56	161.30	162.44	162.57	162.92	0.028365	4.40	10.04	20.05	1.40
BellsB	M002	4239.33	20Year-Existing	22.56	159.65	160.65	160.89	161.43	0.038011	4.78	7.59	14.77	1.63
BellsB	M002	4190.09	20Year-Existing	22.56	158.43	159.56	159.69	160.03	0.020735	3.87	9.96	17.85	1.23
BellsB	M002	4140.85	20Year-Existing	22.56	157.30	157.94	158.05	158.35	0.055627	4.42	9.15	22.64	1.85
BellsB	M002	4091.61	20Year-Existing	22.56	155.30	156.10	156.15	156.43	0.030613	3.90	10.34	20.20	1.44
BellsB	M002	4042.37	20Year-Existing	22.56	153.74	154.63	154.72	155.08	0.024190	3.64	9.12	15.03	1.29
BellsB	M002	3993.13	20Year-Existing	22.56	152.65	153.46	153.53	153.80	0.031680	3.70	10.50	23.00	1.40
BellsB	M002	3943.89	20Year-Existing	22.56	151.36	152.25	152.29	152.59	0.023754	3.58	10.62	19.40	1.28
BellsB	M002	3894.65	20Year-Existing	22.56	149.52	151.04	151.22	151.63	0.019614	4.08	9.55	17.83	1.19
BellsB	M002	3869.08	20Year-Existing	22.56	148.87	150.08	150.36	150.95	0.033384	4.82	6.84	11.00	1.54
BellsB	M002	3845.41	20Year-Existing	22.56	148.37	149.64	149.81	150.20	0.023637	4.08	9.34	17.89	1.23
BellsB	M002	3822.22	20Year-Existing	22.56	147.71	149.13	148.68	149.23	0.003820	1.89	18.63	18.59	0.52
BellsB	M002	3796.17	20Year-Existing	22.56	146.89	148.69	148.60	149.06	0.008945	3.16	11.11	13.03	0.80
BellsB	M002	3765.39	20Year-Existing	22.56	146.40	148.64		148.84	0.003790	2.30	14.04	11.52	0.52
BellsB	M002	3746.94	20Year-Existing	22.56	145.76	148.76		148.77	0.000250	0.79	44.99	23.66	0.15
BellsB	M002	3724.94	20Year-Existing	22.56	145.32	148.71		148.76	0.000624	1.26	26.41	13.79	0.23
BellsB	M002	3697.71	20Year-Existing	22.56	145.05	148.72		148.74	0.000286	0.93	34.11	15.02	0.16
BellsB	M002	3677.71	20Year-Existing	22.56	143.44	148.53	145.68	148.72	0.000776	1.91	11.83	18.71	0.27
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	22.56	142.47	144.63	144.63	145.67	0.010820	4.52	4.99	9.53	1.00
BellsB	M002	3623.19	20Year-Existing	22.56	142.10	143.59	144.07	145.12	0.050036	6.10	4.80	7.07	1.82
BellsB	M002	3573.45	20Year-Existing	22.56	140.89	142.28	142.70	143.16	0.027182	4.55	6.34	9.51	1.39
BellsB	M002	3520.99	20Year-Existing	22.56	139.30	140.81	140.88	141.74	0.026154	4.71	6.11	8.03	1.35
BellsB	M002	3473.83	20Year-Existing	22.56	137.98	139.69	139.85	140.46	0.023758	4.73	6.89	9.05	1.27
BellsB	M002	3424.29	20Year-Existing	22.56	136.49	138.55	138.09	138.81	0.003710	2.43	11.96	10.70	0.56
BellsB	M002	3400.36	20Year-Existing	22.56	135.96	138.68		138.72	0.000396	0.98	32.36	33.19	0.20
BellsB	M002	3386.31	20Year-Existing	22.56	135.48	138.66	137.53	138.71	0.000436	1.22	42.76	69.33	0.22
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	22.56	135.22	138.68	137.25	138.69	0.000037	0.38	114.67	67.46	0.06
BellsB	M002	3329.08	20Year-Existing	28.56	134.96	138.68		138.68	0.000050	0.45	121.61	57.41	0.08
BellsB	M002	3303.55	20Year-Existing	28.56	133.82	138.64	136.34	138.68	0.000242	1.13	55.36	50.42	0.17
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	28.56	131.39	134.32	134.32	135.54	0.010767	4.88	5.85	19.35	1.00
BellsB	M002	3203.83	20Year-Existing	28.56	131.13	132.36	132.97	134.73	0.107520	7.50	5.33	12.04	2.61
BellsB	M002	3176.31	20Year-Existing	28.56	130.02	131.43	131.82	132.67	0.044475	5.81	7.58	12.66	1.76
BellsB	M002	3157.63	20Year-Existing	28.56	129.89	131.25	131.40	131.80	0.030979	4.54	10.98	19.04	1.40
BellsB	M002	3130.11	20Year-Existing	28.56	128.68	130.40	130.53	131.17	0.017320	4.32	8.75	8.46	1.15
BellsB	M002	3083.82	20Year-Existing	28.56	127.94	129.53	129.78	130.28	0.021178	4.56	11.32	24.06	1.27
BellsB	M002	3037.68	20Year-Existing	28.56	127.11	128.02	128.25	128.80	0.052708	5.33	9.92	24.14	1.90
BellsB	M002	2991.47	20Year-Existing	28.56	126.28	128.14	127.29	128.16	0.000601	0.97	47.95	44.96	0.23
BellsB	M002	2945.26	20Year-Existing	28.56	125.32	127.75	127.21	128.07	0.005426	2.58	14.00	31.90	0.56
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	28.56	125.12	127.01	127.01	127.96	0.010865	4.31	6.63	5.08	1.00
BellsB	M002	2918.61	20Year-Existing	28.56	124.99	126.63	126.97	127.65	0.024842	5.09	8.20	14.25	1.38
BellsB	M002	2899.46	20Year-Existing	28.56	125.25	126.47	126.74	127.14	0.015448	3.78	10.13	33.62	1.12
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	28.56	124.44	125.95	125.95	126.12	0.003424	2.04	18.45	21.12	0.56
BellsB	M002	2861.32	20Year-Existing	28.56	123.64	124.71	125.03	125.71	0.042763	5.36	8.01	16.52	1.82
BellsB	M002	2823.69	20Year-Existing	28.56	123.23	124.31	124.34	124.60	0.020377	3.38	15.20	30.68	1.12
BellsB	M002	2777.91	20Year-Existing	28.56	122.77	123.97	123.70	124.01	0.003333	1.51	36.95	60.07	0.46
BellsB	M002	2727.91	20Year-Existing	28.56	122.21	123.55	123.55	123.81	0.011738	2.94	17.47	42.08	0.87
BellsB	M002	2677.99	20Year-Existing	28.56	121.13	122.71	122.69	123.12	0.013005	3.30	11.75	13.47	0.93
BellsB	M002	2628.09	20Year-Existing	28.56	120.69	122.23	122.23	122.51	0.011765	3.28	18.21	32.93	0.89
BellsB	M002	2578.18	20Year-Existing	28.56	119.94	121.56	121.52	121.79	0.009333	2.93	19.17	31.44	0.79
BellsB	M002	2528.27	20Year-Existing	28.56	119.10	120.83	120.83	121.25	0.013419	3.61	13.02	15.72	0.95
BellsB	M002	2518.19	20Year-Existing	28.56	118.62	120.10	120.39	121.00	0.034115	5.04	9.02	13.93	1.46
BellsB	M002	2496.15	20Year-Existing	28.56	118.53	120.42	120.03	120.60	0.005754	2.57	21.45	29.02	0.64
BellsB	M002	2478.37	20Year-Existing	28.56	117.97	120.17		120.48	0.006618	3.02	15.03	13.46	0.69
BellsB	M002	2450.61	20Year-Existing	28.56	117.55	119.66	119.66	120.21	0.011940	4.00	11.61	11.27	0.93
BellsB	M002	2428.46	20Year-Existing	28.56	117.19	118.44	118.83	119.63	0.057934	5.55	7.65	14.73	1.82
BellsB	M002	2408.52	20Year-Existing	28.56	116.63	117.91	118.14	118.64	0.043382	4.90	9.92	18.83	1.58
BellsB	M002	2378.55	20Year-Existing	28.56	116.15	117.63	117.70	118.05	0.020078	4.06	13.69	22.15	1.13
BellsB	M002	2367.92	20Year-Existing	28.56	115.61	116.73	117.00	117.66	0.052350	5.46	8.97	17.77	1.78

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	28.56	115.07	116.28	116.49	116.99	0.036566	4.80	9.91	16.56	1.50
BellsB	M002	2328.64	20Year-Existing	28.56	113.99	115.89	115.78	116.31	0.011840	3.65	13.90	17.83	0.91
BellsB	M002	2307.61	20Year-Existing	28.56	112.94	116.12	115.40	116.15	0.000533	1.03	51.35	47.49	0.20
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	28.56	111.75	113.30	113.74	114.85	0.051211	5.53	5.18	5.27	1.56
BellsB	M002	2275.77	20Year-Existing	31.20	112.06	113.90	113.90	114.28	0.012363	3.73	15.36	22.37	0.93
BellsB	M002	2232.72	20Year-Existing	31.20	110.58	112.33	112.67	113.41	0.028265	5.24	9.04	13.12	1.37
BellsB	M002	2200.99	20Year-Existing	31.20	109.61	111.81	111.58	112.14	0.007260	3.13	15.47	13.91	0.73
BellsB	M002	2173.21	20Year-Existing	31.20	108.98	111.22	111.22	111.86	0.011691	3.95	11.03	9.62	0.89
BellsB	M002	2133.27	20Year-Existing	31.20	107.79	109.14	109.65	110.84	0.062395	6.61	6.79	10.49	1.98
BellsB	M002	2117.78	20Year-Existing	31.20	107.46	108.95	109.18	110.00	0.030786	5.16	8.48	10.43	1.44
BellsB	M002	2103.01	20Year-Existing	31.20	106.45	107.89	108.31	109.31	0.057280	6.25	7.16	9.85	1.85
BellsB	M002	2085.77	20Year-Existing	31.20	105.17	106.67	107.18	108.27	0.057179	6.71	6.73	7.99	1.90
BellsB	M002	2068.57	20Year-Existing	31.20	104.36	105.40	105.87	107.12	0.090140	6.99	6.68	11.93	2.33
BellsB	M002	2059.88	20Year-Existing	31.20	103.56	104.94	105.42	106.52	0.051538	6.07	6.84	9.65	1.82
BellsB	M002	2054.52	20Year-Existing	31.20	103.13	104.47	104.97	106.19	0.070366	6.79	6.48	8.50	2.07
BellsB	M002	2040.56	20Year-Existing	31.20	102.39	104.68	104.31	105.14	0.006766	3.45	12.88	8.31	0.74
BellsB	M002	2033.27	20Year-Existing	31.20	102.08	104.38	104.38	105.05	0.013458	4.09	10.44	8.40	0.95
BellsB	M002	2025.44	20Year-Existing	31.20	101.58	103.00	103.56	104.76	0.051433	6.26	6.20	7.59	1.81
BellsB	M002	2021.67	20Year-Existing	31.20	101.43	103.31	103.65	104.43	0.027960	5.02	7.84	8.48	1.33
BellsB	M002	2014.53	20Year-Existing	31.20	99.96	101.48	102.18	103.94	0.110287	6.98	4.60	6.27	2.40
BellsB	M002	2010.46	20Year-Existing	31.20	99.08	100.20	100.96	103.35	0.146208	8.72	4.60	6.80	2.93
BellsB	M002	2007.37	20Year-Existing	31.20	98.52	99.93	100.71	102.90	0.123935	7.74	4.30	5.45	2.56
BellsB	M002	1996.87	20Year-Existing	31.20	97.97	99.07	99.77	101.61	0.099060	7.76	5.14	6.60	2.49
BellsB	M002	1982.97	20Year-Existing	31.20	97.73	98.92	99.35	100.29	0.051281	6.03	7.04	7.96	1.83
BellsB	M002	1966.25	20Year-Existing	31.20	96.75	98.79	98.96	99.62	0.019899	4.58	9.37	8.98	1.13
BellsB	M002	1951.81	20Year-Existing	31.20	96.56	98.82	98.18	98.98	0.003558	2.23	20.21	14.25	0.50
BellsB	M002	1939.94	20Year-Existing	31.20	96.29	98.33	98.33	98.86	0.012272	3.59	11.85	12.02	0.91
BellsB	M002	1918.81	20Year-Existing	31.20	95.86	98.00	97.73	98.35	0.007643	3.22	14.55	11.55	0.75
BellsB	M002	1910.32	20Year-Existing	31.20	95.58	97.60	97.60	98.24	0.012369	3.82	10.43	9.11	0.93
BellsB	M002	1896.87	20Year-Existing	31.20	94.38	95.89	96.45	97.79	0.067771	6.77	6.14	8.04	1.98
BellsB	M002	1887.59	20Year-Existing	31.20	93.87	95.04	95.57	97.03	0.097023	6.98	5.98	9.97	2.37
BellsB	M002	1880.79	20Year-Existing	31.20	93.33	96.12	95.23	96.29	0.002206	2.12	21.57	12.30	0.42
BellsB	M002	1870.34	20Year-Existing	31.20	92.77	96.14		96.26	0.001232	1.88	25.52	10.44	0.33
BellsB	M002	1857.16	20Year-Existing	31.20	91.88	96.16		96.23	0.000627	1.41	34.01	14.41	0.23
BellsB	M002	1848.27	20Year-Existing	31.20	91.91	96.18		96.22	0.000302	1.06	44.85	16.70	0.17
BellsB	M002	1834.27	20Year-Existing	31.20	90.88	96.18		96.21	0.000189	0.94	51.72	17.34	0.13
BellsB	M002	1821.35	20Year-Existing	31.20	90.90	96.19		96.21	0.000109	0.77	69.17	20.58	0.11
BellsB	M002	1807.43	20Year-Existing	31.20	89.83	96.19		96.20	0.000066	0.64	81.79	21.49	0.08
BellsB	M002	1800.77	20Year-Existing	31.20	89.59	96.19		96.20	0.000064	0.64	86.88	22.61	0.08
BellsB	M002	1777.98	20Year-Existing	31.20	88.77	96.20		96.20	0.000021	0.41	133.58	30.00	0.05
BellsB	M002	1753.27	20Year-Existing	31.20	88.22	96.19		96.20	0.000025	0.45	127.36	29.71	0.05
BellsB	M002	1729.73	20Year-Existing	31.20	88.17	96.19		96.20	0.000014	0.36	157.22	32.37	0.04
BellsB	M002	1705.77	20Year-Existing	31.20	87.60	96.20		96.20	0.000006	0.29	247.29	63.54	0.03
BellsB	M002	1688.91	20Year-Existing	31.20	86.72	96.19	89.87	96.20	0.000008	0.32	205.14	64.45	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	31.20	83.97	87.10	87.10	88.66	0.008226	5.54	5.63	19.35	1.00
BellsB	M002	1605.59	20Year-Existing	31.20	81.49	82.25	82.89	87.17	0.527349	10.39	3.43	11.38	5.53
BellsB	M001	1582.05	20Year-Existing	49.56	80.41	81.54	82.45	85.61	0.131565	9.19	6.02	8.75	3.18
BellsB	M001	1563.67	20Year-Existing	49.56	79.96	81.25	81.91	83.53	0.058132	7.19	8.61	10.58	2.21
BellsB	M001	1544.26	20Year-Existing	49.56	79.04	80.86	81.40	82.58	0.029194	6.36	10.42	9.50	1.64
BellsB	M001	1529.04	20Year-Existing	49.56	78.24	79.48	80.19	81.92	0.054789	7.18	7.87	8.42	2.16
BellsB	M001	1515.66	20Year-Existing	49.56	77.30	79.15	79.77	81.15	0.044608	6.47	8.63	7.64	1.72
BellsB	M001	1502.43	20Year-Existing	49.56	69.64	70.26	71.19	78.87	0.987231	13.01	3.83	10.46	6.72
BellsB	M001	1483.47	20Year-Existing	49.56	68.89	69.90	70.40	71.80	0.119634	6.79	9.04	16.36	2.59
BellsB	M001	1454.75	20Year-Existing	49.56	68.03	69.52	69.63	70.18	0.022542	4.55	15.67	15.98	1.25
BellsB	M001	1406.62	20Year-Existing	49.56	66.49	68.64	68.65	69.35	0.013907	4.39	15.59	11.81	1.02
BellsB	M001	1358.51	20Year-Existing	49.56	65.17	66.65	67.12	68.16	0.045235	5.90	10.42	11.85	1.72
BellsB	M001	1310.38	20Year-Existing	49.56	63.80	65.35	65.66	66.34	0.027684	4.89	13.67	16.98	1.37
BellsB	M001	1286.33	20Year-Existing	49.56	62.81	64.20	64.57	65.42	0.052982	5.82	12.10	19.25	1.81
BellsB	M001	1262.25	20Year-Existing	49.56	62.09	64.37	64.43	64.78	0.010981	3.81	23.42	29.26	0.88
BellsB	M001	1251.58	20Year-Existing	49.56	61.46	63.15	63.80	64.49	0.041354	6.60	11.82	12.27	1.70
BellsB	M001	1234.76	20Year-Existing	49.56	60.57	62.10	62.59	63.65	0.061341	7.01	11.90	19.95	1.99
BellsB	M001	1214.13	20Year-Existing	49.56	59.55	61.66	61.03	61.83	0.003349	2.17	31.90	23.57	0.51
BellsB	M001	1200.58	20Year-Existing	49.56	58.90	61.08	61.08	61.71	0.011789	4.03	17.53	15.09	0.94
BellsB	M001	1182.98	20Year-Existing	49.56	58.59	60.75	60.85	61.47	0.014268	4.40	16.54	15.07	1.03
BellsB	M001	1166.01	20Year-Existing	49.56	58.39	59.78	60.19	61.03	0.042949	5.66	12.49	17.75	1.67
BellsB	M001	1153.18	20Year-Existing	49.56	57.70	59.46	59.76	60.46	0.036194	6.04	14.70	19.79	1.55
BellsB	M001	1141.88	20Year-Existing	49.56	56.72	58.06	58.60	59.85	0.062032	6.44	9.65	13.37	1.98
BellsB	M001	1128.34	20Year-Existing	49.56	56.53	57.74	58.08	58.85	0.053959	5.76	11.58	14.96	1.81
BellsB	M001	1117.89	20Year-Existing	49.56	55.58	56.88	57.30	58.23	0.062289	6.71	11.20	13.57	1.98
BellsB	M001	1096.03	20Year-Existing	49.56	54.61	56.28	56.55	57.25	0.028076	4.95	13.69	15.92	1.38
BellsB	M001	1077.81	20Year-Existing	49.56	54.24	55.36	55.76	56.59	0.050330	5.61	12.11	17.73	1.79
BellsB	M001	1069.76	20Year-Existing	49.56	53.70	54.47	54.87	55.88	0.116247	6.42	10.55	19.21	2.53
BellsB	M001	1064.67	20Year-Existing	49.56	53.19	53.98	54.36	55.29	0.111007	6.21	11.04	20.47	2.47
BellsB	M001	1051.64	20Year-Existing	49.56	51.97	53.05	53.44	54.36	0.064052	5.90	11.64	18.11	1.97
BellsB	M001	1032.36	20Year-Existing	49.56	50.97	52.47	52.72	53.36	0.035073	5.41	14.37	16.58	1.52
BellsB	M001	1021.64	20Year-Existing	49.56	50.03	51.45	51.88	52.86	0.047754	5.75	11.31	16.56	1.75
BellsB	M001	1014.11	20Year-Existing	49.56	49.46	51.07	51.53	52.52	0.042670	5.82	10.94	14.32	1.66
BellsB	M001	1006.24	20Year-Existing	49.56	49.15	50.43	50.92	52.12	0.056901	6.29	10.09	14.27	1.91
BellsB	M001	996.42	20Year-Existing	49.56	48.11	49.45	50.02	51.46	0.082689	7.37	9.34	13.72	2.24
BellsB	M001	987.27	20Year-Existing	49.56	47.17	48.72	49.33	50.82	0.060379	7.06	9.19	11.45	2.00
BellsB	M001	973.52	20Year-Existing	49.56	46.79	48.20	48.77	50.00	0.045050	6.23	9.48	12.89	1.85

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	49.56	45.77	47.29	47.81	48.99	0.049170	6.42	10.38	16.08	1.90
BellsB	M001	931.51	20Year-Existing	49.56	44.86	46.16	46.66	47.80	0.072562	7.58	9.84	13.77	2.28
BellsB	M001	925.41	20Year-Existing	49.56	44.69	46.36	46.65	47.33	0.027594	5.58	13.91	18.50	1.44
BellsB	M001	901.68	20Year-Existing	49.56	43.69	45.22	45.63	46.57	0.033038	5.89	10.93	11.30	1.63
BellsB	M001	877.27	20Year-Existing	49.56	43.18	45.47	45.11	45.86	0.005726	3.23	20.46	13.81	0.72
BellsB	M001	857.41	20Year-Existing	49.56	42.16	45.64	45.10	45.73	0.000839	1.64	51.58	40.86	0.29
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	51.00	38.54	42.10	41.16	42.71	0.004068	3.52	15.06	11.84	0.61
BellsB	M001	810.13	20Year-Existing	51.00	37.80	42.35	39.97	42.44	0.000606	1.46	48.29	30.86	0.23
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	51.00	34.33	36.62	37.49	39.38	0.057371	7.43	7.21	8.42	1.93
BellsB	M001	782.27	20Year-Existing	51.00	33.92	34.86	35.58	37.95	0.173927	8.35	6.97	11.14	3.11
BellsB	M001	772.73	20Year-Existing	51.00	30.94	32.60	33.39	36.29	0.166789	11.01	7.59	10.33	3.00
BellsB	M001	766.74	20Year-Existing	51.00	30.65	32.54	33.25	35.24	0.100824	9.71	8.87	10.42	2.42
BellsB	M001	760.32	20Year-Existing	51.00	30.34	32.00	32.72	34.66	0.080194	8.49	8.86	10.55	2.28
BellsB	M001	755.97	20Year-Existing	51.00	30.05	31.68	32.37	34.27	0.085759	7.95	8.68	11.34	2.28
BellsB	M001	749.69	20Year-Existing	51.00	29.30	31.01	31.75	33.71	0.085890	8.49	8.66	10.28	2.32
BellsB	M001	742.14	20Year-Existing	51.00	28.38	29.70	30.54	32.98	0.098832	8.59	7.42	9.10	2.54
BellsB	M001	736.73	20Year-Existing	51.00	28.24	29.10	29.85	32.26	0.164039	8.52	6.93	10.78	3.09
BellsB	M001	722.61	20Year-Existing	51.00	27.35	28.49	29.00	30.36	0.074399	6.68	9.50	14.54	2.14
BellsB	M001	712.04	20Year-Existing	51.00	26.27	27.88	28.43	29.67	0.052720	6.47	9.85	11.05	1.84
BellsB	M001	702.42	20Year-Existing	51.00	26.04	27.44	27.94	29.11	0.056745	6.38	10.18	12.27	1.91
BellsB	M001	691.68	20Year-Existing	51.00	25.03	26.68	27.23	28.49	0.056129	6.28	9.29	10.90	1.87
BellsB	M001	686.22	20Year-Existing	51.00	24.46	25.78	26.43	28.08	0.080969	6.82	7.99	10.44	2.21
BellsB	M001	675.26	20Year-Existing	51.00	24.08	25.34	25.89	27.17	0.060643	6.40	9.20	10.75	1.97
BellsB	M001	668.37	20Year-Existing	51.00	23.58	24.98	25.52	26.76	0.057471	6.36	9.59	12.06	1.91
BellsB	M001	655.45	20Year-Existing	51.00	23.02	24.28	24.78	25.99	0.058513	6.17	9.71	12.99	1.91
BellsB	M001	636.88	20Year-Existing	51.00	21.46	22.90	23.48	24.85	0.059343	6.40	8.93	10.55	1.94
BellsB	M001	619.06	20Year-Existing	51.00	20.82	22.45	22.88	23.86	0.038061	5.79	11.21	11.82	1.60
BellsB	M001	608.48	20Year-Existing	51.00	20.13	21.63	22.15	23.37	0.047922	6.10	9.91	13.44	1.77
BellsB	M001	592.31	20Year-Existing	51.00	18.95	20.46	21.05	22.43	0.069358	7.21	9.60	11.55	2.10
BellsB	M001	582.72	20Year-Existing	51.00	18.14	19.34	20.00	21.66	0.085408	7.41	8.63	10.32	2.33
BellsB	M001	577.91	20Year-Existing	51.00	17.66	19.36	19.98	21.26	0.041849	6.68	10.05	9.54	1.73
BellsB	M001	561.51	20Year-Existing	51.00	17.02	18.48	19.03	20.37	0.071406	6.91	10.11	13.52	2.11
BellsB	M001	553.07	20Year-Existing	51.00	16.35	17.59	18.23	19.75	0.069793	6.70	8.63	11.26	2.09
BellsB	M001	541.54	20Year-Existing	51.00	15.41	16.68	17.28	18.86	0.084326	6.64	8.37	12.77	2.24
BellsB	M001	529.17	20Year-Existing	51.00	14.85	16.08	16.61	17.82	0.063903	5.90	9.06	9.22	1.79
BellsB	M001	514.53	20Year-Existing	51.00	14.21	15.41	15.84	16.82	0.059775	5.73	10.73	12.24	1.75
BellsB	M001	467.56	20Year-Existing	51.00	11.61	12.92	13.32	14.28	0.047447	5.25	10.40	10.51	1.56
BellsB	M001	420.59	20Year-Existing	51.00	8.75	12.68	11.17	12.88	0.001911	2.13	31.08	13.51	0.36
BellsB	M001	400.25	20Year-Existing	51.00	8.57	12.47	10.76	12.82	0.002247	2.61	19.53	6.69	0.42
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	51.00	0.83	1.87	3.03	6.81	0.113417	9.85	5.18	5.47	3.09
BellsB	M001	47.74	20Year-Existing	51.00	0.56	4.24	3.27	4.26	0.000176	0.86	141.23	128.37	0.15
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	51.00	0.70	4.24	3.28	4.25	0.000147	0.77	151.30	131.31	0.13
BellsB	M001	20.51	20Year-Existing	51.00	0.57	4.24		4.25	0.000180	0.84	145.98	141.07	0.15

Corner Brook 20yr Q+30%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	174.46	36.31	39.07	39.07	40.35	0.010544	5.54	41.89	21.95	1.10
CornerB	M004	2838.71	20Year-Existing	174.46	36.15	38.32	38.74	39.73	0.013875	5.51	39.88	32.78	1.21
CornerB	M004	2796.61	20Year-Existing	174.46	35.35	38.39	37.80	38.95	0.004273	3.71	66.19	42.83	0.71
CornerB	M004	2769.85	20Year-Existing	174.46	34.80	37.63	37.63	38.49	0.013256	6.38	53.12	32.16	1.23
CornerB	TR001	206.04	20Year-Existing	29.77	43.81	44.74	45.03	45.72	0.042073	5.21	8.35	14.02	1.81
CornerB	TR001	156.04	20Year-Existing	29.77	41.63	42.67	42.99	43.66	0.040081	4.60	7.91	17.28	1.72
CornerB	TR001	106.04	20Year-Existing	29.77	39.17	39.83	40.21	41.13	0.065879	5.37	6.58	12.80	2.16
CornerB	TR001	56.04	20Year-Existing	29.77	37.27	38.10	38.38	38.86	0.031046	4.10	8.48	13.49	1.53
CornerB	TR001	36.04	20Year-Existing	29.77	35.50	38.30	37.54	38.30	0.000081	0.47	123.91	81.92	0.09
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	29.77	35.18	37.27	37.27	38.19	0.010218	4.25	7.00	79.41	1.00
CornerB	M003	2689.92	20Year-Existing	190.45	33.55	36.64	36.20	36.97	0.003841	3.56	99.32	64.86	0.67
CornerB	M003	2645.73	20Year-Existing	190.45	32.87	36.74		36.85	0.000755	1.91	165.98	72.49	0.31
CornerB	M003	2602.09	20Year-Existing	190.45	32.20	36.74		36.81	0.000378	1.47	204.21	68.56	0.23
CornerB	M003	2557.73	20Year-Existing	190.45	31.34	36.69		36.79	0.000399	1.69	168.89	48.90	0.24
CornerB	M003	2537.73	20Year-Existing	190.45	30.77	36.64	34.84	36.78	0.000585	2.23	172.75	64.91	0.30
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	190.45	30.35	34.25	34.25	36.18	0.007823	6.16	30.92	26.14	1.00
CornerB	M003	2507.21	20Year-Existing	190.45	30.75	32.45	33.35	35.51	0.053695	8.71	28.18	21.79	2.26
CornerB	M003	2459.31	20Year-Existing	190.45	30.13	31.80	32.25	33.35	0.025564	6.17	40.07	31.64	1.57
CornerB	M003	2411.41	20Year-Existing	190.45	29.27	31.60	31.68	32.36	0.011047	4.89	63.64	47.96	1.08
CornerB	M003	2363.51	20Year-Existing	190.45	28.77	30.59	30.85	31.66	0.017861	5.20	49.21	40.66	1.32
CornerB	M003	2315.61	20Year-Existing	190.45	27.93	30.16	30.05	30.94	0.007490	4.03	53.28	30.26	0.89
CornerB	M003	2267.71	20Year-Existing	190.84	26.30	30.29		30.66	0.001701	2.86	81.99	28.58	0.47
CornerB	M003	2264.01	20Year-Existing	190.84	26.10	30.28	29.45	30.65	0.004529	2.74	71.76	30.12	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	190.84	26.10	30.16		30.57	0.005324	2.87	68.19	29.93	0.59
CornerB	M003	2260.98	20Year-Existing	190.84	25.80	30.21		30.52	0.001286	2.62	90.34	29.22	0.41
CornerB	M003	2240.88	20Year-Existing	190.84	27.01	30.12		30.47	0.002426	2.77	84.23	41.07	0.53
CornerB	M003	2212.25	20Year-Existing	190.84	26.87	30.05		30.40	0.002407	2.89	84.58	37.20	0.54
CornerB	M003	2183.63	20Year-Existing	190.84	25.56	29.12	29.12	30.21	0.007547	5.24	52.98	28.64	0.95
CornerB	M003	2163.63	20Year-Existing	190.84	25.35	29.12	28.31	29.84	0.003545	3.86	53.41	33.90	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	190.84	24.87	27.73	28.18	29.62	0.016270	6.63	34.86	21.92	1.34
CornerB	M003	2131.66	20Year-Existing	190.84	24.57	27.01	27.72	29.29	0.026180	6.93	31.46	20.91	1.61
CornerB	M003	2119.46	20Year-Existing	190.84	24.12	26.15	26.98	28.87	0.038633	7.66	29.09	22.14	1.93
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	190.84	24.04	26.43	27.06	28.46	0.022126	6.47	33.11	21.94	1.50
CornerB	M003	2080.62	20Year-Existing	190.84	23.73	25.60	26.37	27.61	0.027517	6.53	33.46	25.32	1.64
CornerB	M003	2068.44	20Year-Existing	190.84	23.76	25.56	26.09	27.18	0.023291	5.96	37.51	28.82	1.50
CornerB	M003	2022.25	20Year-Existing	190.84	22.74	24.84	25.21	26.24	0.016384	5.60	41.88	29.13	1.30
CornerB	M003	1991.14	20Year-Existing	190.84	22.18	24.68	24.80	25.76	0.009644	4.95	49.17	29.80	1.03
CornerB	M003	1985.82	20Year-Existing	190.84	21.97	24.22	24.54	25.67	0.015374	5.75	41.59	26.30	1.28
CornerB	M003	1975.95	20Year-Existing	190.84	21.78	23.86	24.31	25.47	0.019597	6.20	40.01	27.46	1.42
CornerB	M003	1929.72	20Year-Existing	190.84	20.08	22.36	22.97	24.44	0.023689	6.72	33.18	20.74	1.55
CornerB	M003	1883.49	20Year-Existing	190.84	19.23	21.95	22.24	23.51	0.012604	5.92	39.86	19.97	1.19
CornerB	TR002	21.04	20Year-Existing	11.31	22.27	22.94	23.50	25.52	0.150170	7.73	1.91	4.59	3.18
CornerB	TR002	18.08	20Year-Existing	11.31	21.40	21.83	22.32	24.81	0.374620	8.67	1.73	6.23	4.67
CornerB	M002	1826.39	20Year-Existing	192.66	16.92	18.54	19.41	21.99	0.119597	8.90	26.76	30.26	2.54
CornerB	M002	1790.92	20Year-Existing	192.66	15.49	18.82	18.89	20.21	0.014893	5.74	42.27	17.50	1.04
CornerB	M002	1773.95	20Year-Existing	192.66	14.72	19.38	17.82	19.70	0.002372	2.80	89.42	29.14	0.43
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	192.66	14.87	19.39	17.53	19.61	0.001316	2.40	111.60	37.48	0.37
CornerB	M002	1733.13	20Year-Existing	192.66	15.23	19.44		19.51	0.000379	1.25	195.33	75.98	0.20
CornerB	M002	1717.41	20Year-Existing	192.66	15.12	19.45		19.50	0.000316	1.16	218.87	84.95	0.18
CornerB	M002	1691.96	20Year-Existing	192.66	14.62	19.44		19.49	0.000262	1.09	246.95	104.41	0.17
CornerB	M002	1654.15	20Year-Existing	192.66	13.87	19.45		19.48	0.000127	0.80	322.42	134.74	0.12
CornerB	M002	1613.91	20Year-Existing	192.66	13.08	19.45		19.47	0.000061	0.67	375.48	151.89	0.09
CornerB	M002	1567.16	20Year-Existing	192.66	12.15	19.46		19.47	0.000010	0.29	754.05	209.90	0.04
CornerB	M002	1551.89	20Year-Existing	192.66	11.85	19.47		19.47	0.000004	0.18	1144.22	272.56	0.02
CornerB	M002	1539.91	20Year-Existing	191.23	11.62	19.47		19.47	0.000002	0.13	1548.06	305.78	0.02
CornerB	M002	1526.59	20Year-Existing	191.23	11.36	19.47		19.47	0.000002	0.13	1576.32	310.98	0.02
CornerB	M002	1517.99	20Year-Existing	191.23	11.18	19.47		19.47	0.000003	0.16	1332.88	267.13	0.02
CornerB	M002	1505.64	20Year-Existing	191.23	10.94	19.47		19.47	0.000004	0.20	992.60	197.14	0.03
CornerB	M002	1490.63	20Year-Existing	191.23	10.64	19.46		19.47	0.000010	0.31	685.46	139.09	0.04
CornerB	M002	1463.65	20Year-Existing	191.23	10.11	19.45		19.47	0.000041	0.63	375.74	87.35	0.08
CornerB	M002	1415.93	20Year-Existing	191.23	9.17	19.44		19.46	0.000036	0.61	353.96	74.20	0.07
CornerB	M002	1386.11	20Year-Existing	191.23	8.58	19.44		19.46	0.000053	0.73	323.53	77.48	0.09
CornerB	M002	1363.91	20Year-Existing	191.23	8.14	19.42		19.46	0.000087	0.93	259.71	57.02	0.11
CornerB	M002	1356.61	20Year-Existing	191.23	8.00	19.42		19.46	0.000238	1.17	269.85	72.33	0.12
CornerB	M002	1354.61	20Year-Existing	191.23	15.35	18.82	18.78	19.40	0.005265	4.16	74.90	53.96	0.71
CornerB	M002	1354.11	20Year-Existing	191.23	15.35	18.78	18.78	19.40	0.005635	4.27	72.72	53.31	0.74
CornerB	M002	1352.01	20Year-Existing	191.23	8.00	9.51	11.30	18.52	0.445595	0.36	14.39	9.51	0.13
CornerB	M002	1347.51	20Year-Existing	191.23	7.72	9.58	10.87	15.42	0.224941	10.70	17.88	16.94	3.31
CornerB	M002	1336.58	20Year-Existing	191.23	7.69	9.30	10.33	13.08	0.117979	8.64	22.64	20.63	2.50
CornerB	M002	1326.83	20Year-Existing	191.23	7.68	9.27	9.99	11.75	0.081052	7.21	28.92	26.90	2.08
CornerB	M002	1317.22	20Year-Existing	191.23	7.66	10.68	10.11	11.16	0.006228	3.21	66.87	31.88	0.65
CornerB	M002	1315.18	20Year-Existing	191.23	7.28	10.18	10.18	11.10	0.016391	4.59	49.36	28.89	1.01
CornerB	M002	1313.58	20Year-Existing	191.23	6.48	9.36	9.83	10.99	0.032807	5.97	36.98	25.07	1.40
CornerB	M002	1312.39	20Year-Existing	191.23	6.23	8.91	9.51	10.91	0.042039	6.52	32.98	23.50	1.57
CornerB	M002	1311.16	20Year-Existing	191.23	5.92	8.47	9.19	10.82	0.056953	6.91	29.45	22.51	1.78
CornerB	M002	1309.11	20Year-Existing	191.23	5.91	8.07	8.85	10.67	0.063785	7.25	27.87	21.66	1.89
CornerB	M002	1305.35	20Year-Existing	191.23	5.37	7.40	8.26	10.36	0.076332	7.98	27.63	24.42	2.08

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	191.23	5.06	6.91	7.77	9.93	0.091467	7.79	25.76	23.24	2.22
CornerB	M002	1296.49	20Year-Existing	191.23	4.91	7.09	7.83	9.51	0.049593	7.07	29.56	20.59	1.72
CornerB	M002	1289.64	20Year-Existing	191.23	4.71	7.09	7.67	9.09	0.038101	6.49	32.65	20.82	1.52
CornerB	M002	1284.12	20Year-Existing	191.23	4.41	7.22	7.58	8.81	0.023325	5.87	37.53	20.69	1.23
CornerB	M002	1279.52	20Year-Existing	191.23	4.23	6.82	7.33	8.66	0.028250	6.21	34.64	20.61	1.34
CornerB	M002	1258.94	20Year-Existing	191.23	3.53	5.39	6.12	7.77	0.063649	7.19	31.02	28.54	1.90
CornerB	M002	1246.98	20Year-Existing	191.23	3.37	4.96	5.60	7.06	0.043303	6.52	31.24	25.85	1.74
CornerB	M002	1233.83	20Year-Existing	191.23	3.10	4.69	5.11	6.34	0.044512	5.96	36.81	38.18	1.73
CornerB	M002	1215.66	20Year-Existing	191.23	2.70	4.23	4.66	5.55	0.029086	5.21	42.16	48.40	1.43
CornerB	M002	1206.83	20Year-Existing	191.23	2.54	4.92	4.54	5.25	0.004967	2.81	91.59	67.94	0.63
CornerB	M002	1194.69	20Year-Existing	191.23	2.39	4.90		5.19	0.004221	2.70	97.60	65.53	0.59
CornerB	M002	1185.06	20Year-Existing	191.23	2.26	4.89		5.14	0.003256	2.52	105.96	67.25	0.52
CornerB	M002	1142.41	20Year-Existing	191.23	1.70	4.81		5.01	0.002598	2.34	121.85	83.64	0.47
CornerB	M002	1137.55	20Year-Existing	191.23	1.60	4.33	4.33	4.93	0.010043	3.65	69.76	74.77	0.87
CornerB	M002	1110.53	20Year-Existing	191.23	1.39	4.10	3.88	4.69	0.006693	3.63	72.07	65.88	0.75
CornerB	M002	1090.67	20Year-Existing	191.23	1.10	4.35		4.49	0.001619	1.98	150.47	113.52	0.38
CornerB	M002	1070.69	20Year-Existing	191.23	0.80	4.37	3.01	4.45	0.000758	1.55	194.56	89.38	0.27
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	191.23	0.76	4.36	2.90	4.43	0.000680	1.49	194.85	86.74	0.26
CornerB	M002	1047.01	20Year-Existing	191.23	0.75	4.34		4.42	0.000655	1.64	188.34	78.68	0.28
CornerB	M002	1004.03	20Year-Existing	191.23	0.77	4.30		4.39	0.000621	1.60	215.90	133.23	0.28
CornerB	M002	959.21	20Year-Existing	191.23	0.70	4.31		4.35	0.000429	1.32	329.47	282.13	0.23
CornerB	M002	915.75	20Year-Existing	190.06	0.68	4.31		4.33	0.000306	1.08	404.48	295.95	0.19
CornerB	M002	869.66	20Year-Existing	190.06	0.69	4.30		4.32	0.000184	0.87	436.30	223.88	0.15
CornerB	M002	828.33	20Year-Existing	183.95	0.77	4.30		4.31	0.000189	0.85	424.21	221.38	0.15
CornerB	M002	784.55	20Year-Existing	183.95	0.82	4.29		4.30	0.000128	0.70	445.15	232.57	0.13
CornerB	M002	739.85	20Year-Existing	183.95	0.82	4.29		4.30	0.000127	0.67	459.02	272.41	0.12
CornerB	M002	696.36	20Year-Existing	183.95	0.64	4.27		4.29	0.000178	0.85	401.90	267.19	0.15
CornerB	M001	659.37	20Year-Existing	192.92	0.75	4.26		4.28	0.000192	0.84	378.11	234.30	0.15
CornerB	M001	643.93	20Year-Existing	192.92	0.74	4.25	3.14	4.28	0.000289	1.04	319.92	218.84	0.19
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	192.92	0.83	3.96	3.08	4.03	0.000692	1.52	223.20	181.10	0.29
CornerB	M001	608.52	20Year-Existing	192.92	0.76	3.95		4.01	0.000858	1.62	213.70	163.78	0.31
CornerB	M001	570.12	20Year-Existing	192.92	0.61	3.95		3.98	0.000444	1.24	284.88	186.64	0.23
CornerB	M001	535.83	20Year-Existing	192.92	0.56	3.93	2.02	3.97	0.000265	1.04	292.86	221.01	0.18
CornerB	M001	520.22	20Year-Existing	192.92	0.55	3.93	2.14	3.96	0.000201	0.91	341.60	292.39	0.16
CornerB	M001	472.07	20Year-Existing	192.92	0.58	3.88	2.87	3.94	0.000498	1.38	247.19	204.24	0.25
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	192.92	0.44	3.45	2.36	3.66	0.001382	2.20	160.12	223.57	0.41
CornerB	M001	425.41	20Year-Existing	192.92	0.48	3.49		3.58	0.000884	1.71	251.10	300.05	0.32
CornerB	M001	401.99	20Year-Existing	192.92	0.74	3.51		3.55	0.000502	1.25	346.00	341.49	0.24
CornerB	M001	381.26	20Year-Existing	192.92	0.79	3.43	3.14	3.53	0.001137	1.79	258.46	348.85	0.36
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	192.92	0.79	3.18	3.16	3.41	0.002780	2.64	176.66	349.92	0.55
CornerB	M001	352.89	20Year-Existing	192.92	0.68	3.14	2.33	3.35	0.001897	2.22	152.88	309.19	0.46
CornerB	M001	324.13	20Year-Existing	192.92	0.67	3.12		3.29	0.001630	2.06	161.31	231.91	0.43
CornerB	M001	292.92	20Year-Existing	192.92	0.65	3.12		3.23	0.001179	1.72	217.57	317.74	0.36
CornerB	M001	274.62	20Year-Existing	192.92	0.96	3.10	2.74	3.19	0.002247	2.11	236.29	354.49	0.48
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	192.92	1.01	3.07	2.70	3.13	0.002097	2.02	258.31	370.68	0.47
CornerB	M001	245.99	20Year-Existing	192.92	0.64	3.03		3.09	0.001371	1.74	289.57	426.69	0.38
CornerB	M001	210.89	20Year-Existing	192.92	0.68	2.99		3.04	0.001269	1.57	285.63	387.10	0.36
CornerB	M001	174.77	20Year-Existing	192.92	0.69	2.96		3.00	0.001127	1.33	308.39	435.32	0.33
CornerB	M001	155.66	20Year-Existing	192.92	0.64	2.95	2.56	2.97	0.001320	1.31	347.72	554.88	0.35
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	192.92	0.55	2.94	2.50	2.96	0.001023	1.15	359.84	508.64	0.31
CornerB	M001	129.05	20Year-Existing	192.92	0.40	2.90		2.93	0.000769	1.21	377.80	483.81	0.28
CornerB	M001	80.73	20Year-Existing	192.92	0.20	2.85		2.89	0.000741	1.33	328.93	389.44	0.28
CornerB	M001	23.81	20Year-Existing	192.92	0.32	2.80	2.12	2.85	0.000820	1.30	308.45	431.13	0.29
BellsB	TR001	178.13	20Year-Existing	16.25	92.91	94.18	94.57	95.43	0.043019	5.05	3.59	5.54	1.72
BellsB	TR001	159.86	20Year-Existing	16.25	92.15	94.93	93.64	94.98	0.000635	1.26	21.13	13.76	0.25
BellsB	TR001	139.54	20Year-Existing	16.25	91.13	94.78	92.81	94.95	0.001199	1.86	8.72	11.35	0.31
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	16.25	89.49	91.06	91.32	92.25	0.020450	4.87	3.45	5.07	1.28
BellsB	TR001	88.17	20Year-Existing	16.25	88.47	89.40	89.99	91.77	0.115269	7.26	2.75	5.29	2.77
BellsB	TR001	84.12	20Year-Existing	16.25	87.66	88.43	88.98	91.09	0.198254	7.35	2.41	6.51	3.45
BellsB	TR001	79.14	20Year-Existing	16.25	86.53	87.33	87.94	90.19	0.151404	7.75	2.48	6.04	3.18
BellsB	TR001	72.74	20Year-Existing	16.25	85.76	86.44	86.97	89.02	0.188266	7.23	2.45	6.84	3.37
BellsB	TR001	67.75	20Year-Existing	16.25	85.04	85.62	86.08	87.85	0.209086	6.98	2.72	8.06	3.48
BellsB	TR001	64.04	20Year-Existing	16.25	84.47	85.21	85.69	87.12	0.136369	6.12	2.66	6.08	2.88
BellsB	TR001	60.69	20Year-Existing	16.25	84.14	85.15	85.56	86.64	0.084764	5.58	3.25	6.93	2.34
BellsB	TR001	56.76	20Year-Existing	16.25	83.97	84.95	85.34	86.28	0.069439	5.14	3.32	7.14	2.13
BellsB	TR001	50.93	20Year-Existing	16.25	83.68	84.73	85.06	85.80	0.064021	4.72	3.84	8.94	2.03
BellsB	TR001	43.86	20Year-Existing	16.25	83.34	84.26	84.56	85.31	0.070871	4.66	3.89	10.00	2.11
BellsB	TR001	37.01	20Year-Existing	16.25	82.98	83.93	84.21	84.87	0.050257	4.55	4.30	9.17	1.84
BellsB	TR001	12.14	20Year-Existing	16.25	82.15	83.06	83.25	83.72	0.037189	3.83	5.04	10.14	1.58
BellsB	M002	5166.11	20Year-Existing	13.52	190.79	191.90	191.81	192.06	0.009884	2.44	10.32	18.03	0.78
BellsB	M002	5149.23	20Year-Existing	13.52	190.57	191.57	191.57	191.85	0.015204	2.74	7.61	14.54	0.95
BellsB	M002	5117.45	20Year-Existing	13.52	189.91	191.45	190.76	191.48	0.001393	1.17	22.11	23.80	0.31
BellsB	M002	5090.85	20Year-Existing	13.52	189.62	191.03	191.03	191.36	0.013347	3.18	7.40	11.50	0.92
BellsB	M002	5067.47	20Year-Existing	13.52	189.18	189.74	190.00	190.65	0.130583	5.63	3.76	9.24	2.55
BellsB	M002	5017.78	20Year-Existing	13.52	188.12	189.25	189.25	189.54	0.016881	3.19	7.42	12.18	1.02
BellsB	M002	4967.57	20Year-Existing	13.52	186.55	187.77	187.93	188.38	0.032221	4.17	4.86	7.40	1.34

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	13.52	185.69	186.93	186.50	187.00	0.003206	1.56	14.66	21.20	0.46
BellsB	M002	4873.31	20Year-Existing	13.52	184.61	186.76		186.87	0.002809	1.92	13.65	18.73	0.45
BellsB	M002	4853.42	20Year-Existing	13.52	183.55	186.63	185.19	186.82	0.001576	1.93	6.99	27.96	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	13.52	181.53	182.83	183.16	184.05	0.032935	4.88	2.77	5.68	1.45
BellsB	M002	4785.76	20Year-Existing	13.52	181.35	182.32	182.56	183.08	0.042689	4.34	4.15	7.51	1.55
BellsB	M002	4756.65	20Year-Existing	13.52	180.12	181.01	181.22	181.70	0.051887	4.61	4.82	12.24	1.70
BellsB	M002	4727.54	20Year-Existing	13.52	179.02	179.81	179.97	180.37	0.037777	4.01	5.64	16.31	1.55
BellsB	M002	4707.54	20Year-Existing	13.52	177.96	178.34	178.54	179.08	0.133005	4.65	4.16	16.61	2.61
BellsB	M002	4702.24	20Year-Existing	13.52	177.65	178.49	178.52	178.74	0.018176	2.78	7.66	17.52	1.07
BellsB	M002	4682.48	20Year-Existing	13.52	176.63	177.34	177.57	178.08	0.054342	4.32	4.61	14.10	1.82
BellsB	M002	4658.79	20Year-Existing	13.52	175.50	176.65	176.85	177.34	0.021045	3.99	4.57	6.92	1.23
BellsB	M002	4633.41	20Year-Existing	13.52	174.51	175.21	175.50	176.34	0.096832	5.96	3.94	12.31	2.44
BellsB	M002	4609.61	20Year-Existing	13.52	173.50	174.74	174.48	174.89	0.005636	2.22	9.55	12.01	0.66
BellsB	M002	4583.99	20Year-Existing	13.52	172.77	174.21	174.21	174.66	0.011989	3.20	5.48	7.16	0.93
BellsB	M002	4534.72	20Year-Existing	13.52	170.00	170.92	171.45	173.07	0.119579	7.98	2.80	6.09	2.81
BellsB	M002	4485.52	20Year-Existing	13.52	168.20	168.84	168.98	169.31	0.051778	4.10	5.78	17.75	1.75
BellsB	M002	4436.28	20Year-Existing	24.44	165.85	167.05	167.34	167.68	0.026452	4.67	9.23	14.59	1.41
BellsB	M002	4387.04	20Year-Existing	24.44	164.06	165.29	165.58	166.17	0.034669	5.42	7.95	12.59	1.62
BellsB	M002	4337.81	20Year-Existing	24.44	162.60	163.77	163.97	164.41	0.033705	5.02	10.23	23.30	1.56
BellsB	M002	4288.56	20Year-Existing	24.44	161.30	162.47	162.61	162.96	0.028154	4.47	10.65	20.18	1.40
BellsB	M002	4239.33	20Year-Existing	24.44	159.65	160.69	160.96	161.48	0.037268	4.86	8.13	15.10	1.63
BellsB	M002	4190.09	20Year-Existing	24.44	158.43	159.59	159.72	160.09	0.021069	3.98	10.54	18.21	1.25
BellsB	M002	4140.85	20Year-Existing	24.44	157.30	157.96	158.08	158.39	0.055124	4.51	9.66	22.76	1.86
BellsB	M002	4091.61	20Year-Existing	24.44	155.30	156.12	156.19	156.48	0.030728	4.01	10.91	20.46	1.45
BellsB	M002	4042.37	20Year-Existing	24.44	153.74	154.67	154.75	155.13	0.023804	3.72	9.68	15.19	1.29
BellsB	M002	3993.13	20Year-Existing	24.44	152.65	153.47	153.56	153.85	0.033015	3.84	10.95	23.27	1.43
BellsB	M002	3943.89	20Year-Existing	24.44	151.36	152.29	152.33	152.64	0.022562	3.61	11.45	19.89	1.25
BellsB	M002	3894.65	20Year-Existing	24.44	149.52	151.07	151.25	151.68	0.020135	4.20	10.10	18.09	1.21
BellsB	M002	3869.08	20Year-Existing	24.44	148.87	150.13	150.42	151.02	0.031967	4.87	7.42	11.46	1.52
BellsB	M002	3845.41	20Year-Existing	24.44	148.37	149.67	149.84	150.26	0.024829	4.24	9.76	18.03	1.27
BellsB	M002	3822.22	20Year-Existing	24.44	147.71	149.51	148.72	149.57	0.001680	1.48	25.99	19.96	0.36
BellsB	M002	3796.17	20Year-Existing	24.44	146.89	149.42		149.52	0.001838	1.83	21.89	16.08	0.38
BellsB	M002	3765.39	20Year-Existing	24.44	146.40	149.39		149.47	0.001129	1.55	23.47	13.80	0.30
BellsB	M002	3746.94	20Year-Existing	24.44	145.76	149.44		149.45	0.000120	0.63	61.90	26.25	0.11
BellsB	M002	3724.94	20Year-Existing	24.44	145.32	149.41		149.44	0.000309	1.02	36.78	15.92	0.17
BellsB	M002	3697.71	20Year-Existing	24.44	145.05	149.41		149.43	0.000158	0.78	45.29	17.16	0.12
BellsB	M002	3677.71	20Year-Existing	24.44	143.44	149.24	145.79	149.41	0.000582	1.81	13.53	20.78	0.24
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	24.44	142.47	144.75	144.75	145.84	0.010615	4.64	5.27	9.75	1.00
BellsB	M002	3623.19	20Year-Existing	24.44	142.10	143.62	144.14	145.27	0.052447	6.36	5.02	7.26	1.87
BellsB	M002	3573.45	20Year-Existing	24.44	140.89	142.32	142.73	143.24	0.027336	4.68	6.74	9.81	1.40
BellsB	M002	3520.99	20Year-Existing	24.44	139.30	140.86	140.90	141.83	0.025946	4.82	6.53	8.30	1.36
BellsB	M002	3473.83	20Year-Existing	24.44	137.98	139.73	139.86	140.54	0.023911	4.85	7.33	9.34	1.28
BellsB	M002	3424.29	20Year-Existing	24.44	136.49	138.57	138.17	138.86	0.004213	2.61	12.13	10.81	0.60
BellsB	M002	3400.36	20Year-Existing	24.44	135.96	138.72		138.76	0.000437	1.04	33.69	41.10	0.21
BellsB	M002	3386.31	20Year-Existing	24.44	135.48	138.70	137.64	138.76	0.000466	1.27	45.44	72.90	0.23
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	24.44	135.22	138.74	137.36	138.74	0.000041	0.40	118.56	69.52	0.07
BellsB	M002	3329.08	20Year-Existing	30.94	134.96	138.74		138.74	0.000055	0.48	124.88	57.86	0.08
BellsB	M002	3303.55	20Year-Existing	30.94	133.82	138.70	136.48	138.74	0.000261	1.18	57.31	50.82	0.17
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	30.94	131.39	134.46	134.46	135.74	0.010613	5.02	6.17	19.99	1.00
BellsB	M002	3203.83	20Year-Existing	30.94	131.13	132.39	133.00	134.90	0.111386	7.78	5.63	12.43	2.67
BellsB	M002	3176.31	20Year-Existing	30.94	130.02	131.46	131.87	132.77	0.045756	6.01	8.01	13.02	1.79
BellsB	M002	3157.63	20Year-Existing	30.94	129.89	131.27	131.43	131.87	0.032781	4.73	11.38	19.09	1.44
BellsB	M002	3130.11	20Year-Existing	30.94	128.68	130.50	130.57	131.25	0.015672	4.30	9.64	8.81	1.11
BellsB	M002	3083.82	20Year-Existing	30.94	127.94	129.54	129.81	130.38	0.023413	4.82	11.63	24.16	1.34
BellsB	M002	3037.68	20Year-Existing	30.94	127.11	128.05	128.29	128.82	0.050186	5.35	10.74	24.80	1.87
BellsB	M002	2991.47	20Year-Existing	30.94	126.28	128.21	127.32	128.23	0.000591	0.98	50.98	45.75	0.23
BellsB	M002	2945.26	20Year-Existing	30.94	125.32	127.94	127.32	128.16	0.003708	2.25	21.81	50.87	0.47
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	30.94	125.12	127.12	127.12	128.12	0.010598	4.42	7.00	5.36	1.00
BellsB	M002	2918.61	20Year-Existing	30.94	124.99	126.65	127.01	127.78	0.026867	5.37	8.62	15.94	1.44
BellsB	M002	2899.46	20Year-Existing	30.94	125.25	126.48	126.77	127.23	0.017093	4.01	10.57	34.18	1.18
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	30.94	124.44	125.95	125.95	126.15	0.004018	2.21	18.45	21.12	0.61
BellsB	M002	2861.32	20Year-Existing	30.94	123.64	124.76	125.07	125.73	0.039855	5.35	8.79	17.32	1.77
BellsB	M002	2823.69	20Year-Existing	30.94	123.23	124.34	124.38	124.64	0.021245	3.51	15.92	31.40	1.14
BellsB	M002	2777.91	20Year-Existing	30.94	122.77	124.00	123.72	124.05	0.003369	1.55	38.85	60.51	0.47
BellsB	M002	2727.91	20Year-Existing	30.94	122.21	123.61	123.61	123.85	0.010830	2.92	20.10	51.77	0.84
BellsB	M002	2677.99	20Year-Existing	30.94	121.13	122.70	122.73	123.19	0.015597	3.60	11.66	13.42	1.01
BellsB	M002	2628.09	20Year-Existing	30.94	120.69	122.27	122.29	122.55	0.011426	3.30	19.79	34.55	0.88
BellsB	M002	2578.18	20Year-Existing	30.94	119.94	121.62	121.55	121.83	0.008667	2.90	20.99	32.41	0.76
BellsB	M002	2528.27	20Year-Existing	30.94	119.10	120.88	120.88	121.32	0.013332	3.69	13.89	16.13	0.95
BellsB	M002	2518.19	20Year-Existing	30.94	118.62	120.15	120.44	121.07	0.034211	5.17	9.63	14.38	1.47
BellsB	M002	2496.15	20Year-Existing	30.94	118.53	120.52	120.10	120.68	0.004763	2.43	24.49	29.48	0.58
BellsB	M002	2478.37	20Year-Existing	30.94	117.97	120.25		120.57	0.006555	3.09	16.08	13.90	0.70
BellsB	M002	2450.61	20Year-Existing	30.94	117.55	119.73	119.73	120.30	0.011810	4.08	12.47	11.70	0.93
BellsB	M002	2428.46	20Year-Existing	30.94	117.19	118.47	118.88	119.72	0.058618	5.71	8.14	15.23	1.84
BellsB	M002	2408.52	20Year-Existing	30.94	116.63	117.94	118.18	118.70	0.044633	5.07	10.46	19.36	1.61
BellsB	M002	2378.55	20Year-Existing	30.94	116.15	117.70	117.75	118.10	0.018727	4.05	15.24	24.28	1.10
BellsB	M002	2367.92	20Year-Existing	30.94	115.61	116.75	117.04	117.73	0.052903	5.60	9.50	17.99	1.80

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	30.94	115.07	116.32	116.53	117.05	0.036204	4.89	10.54	16.75	1.51
BellsB	M002	2328.64	20Year-Existing	30.94	113.99	115.76	115.92	116.39	0.019504	4.43	11.75	14.75	1.15
BellsB	M002	2307.61	20Year-Existing	30.94	112.94	116.15	115.44	116.19	0.000585	1.09	52.79	47.92	0.21
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	30.94	111.75	113.50	113.84	114.86	0.037227	5.18	5.99	6.04	1.36
BellsB	M002	2275.77	20Year-Existing	33.80	112.06	113.96	113.96	114.34	0.012009	3.77	16.77	23.91	0.92
BellsB	M002	2232.72	20Year-Existing	33.80	110.58	112.38	112.73	113.49	0.028078	5.35	9.73	13.39	1.37
BellsB	M002	2200.99	20Year-Existing	33.80	109.61	111.91	111.64	112.24	0.006760	3.13	16.94	14.46	0.71
BellsB	M002	2173.21	20Year-Existing	33.80	108.98	111.30	111.30	111.96	0.011678	4.05	11.80	9.98	0.89
BellsB	M002	2133.27	20Year-Existing	33.80	107.79	109.18	109.71	110.94	0.062121	6.77	7.27	10.86	1.99
BellsB	M002	2117.78	20Year-Existing	33.80	107.46	109.01	109.46	110.09	0.029945	5.26	9.17	11.06	1.43
BellsB	M002	2103.01	20Year-Existing	33.80	106.45	107.93	108.37	109.41	0.057292	6.41	7.60	10.03	1.87
BellsB	M002	2085.77	20Year-Existing	33.80	105.17	106.73	107.25	108.37	0.056321	6.85	7.18	8.20	1.90
BellsB	M002	2068.57	20Year-Existing	33.80	104.36	105.43	105.92	107.24	0.091269	7.20	7.06	12.09	2.36
BellsB	M002	2059.88	20Year-Existing	33.80	103.56	104.99	105.48	106.63	0.051102	6.22	7.33	10.04	1.82
BellsB	M002	2054.52	20Year-Existing	33.80	103.13	104.52	105.04	106.30	0.069599	6.94	6.89	8.58	2.07
BellsB	M002	2040.56	20Year-Existing	33.80	102.39	104.75	104.40	105.25	0.006996	3.59	13.51	8.49	0.76
BellsB	M002	2033.27	20Year-Existing	33.80	102.08	104.46	104.46	105.16	0.013435	4.20	11.11	8.62	0.96
BellsB	M002	2025.44	20Year-Existing	33.80	101.58	104.09	103.64	104.41	0.004702	2.90	16.84	11.66	0.61
BellsB	M002	2021.67	20Year-Existing	33.80	101.43	103.73	103.73	104.35	0.011902	3.88	11.80	10.41	0.90
BellsB	M002	2014.53	20Year-Existing	33.80	99.96	101.55	102.24	103.98	0.098152	6.94	5.06	6.57	2.29
BellsB	M002	2010.46	20Year-Existing	33.80	99.08	100.26	101.04	103.43	0.137094	8.79	4.98	6.92	2.86
BellsB	M002	2007.37	20Year-Existing	33.80	98.52	99.99	100.80	103.00	0.115123	7.81	4.66	5.57	2.49
BellsB	M002	1996.87	20Year-Existing	33.80	97.97	99.12	99.85	101.78	0.098196	7.97	5.45	6.71	2.50
BellsB	M002	1982.97	20Year-Existing	33.80	97.73	98.96	99.42	100.44	0.053175	6.28	7.35	8.06	1.87
BellsB	M002	1966.25	20Year-Existing	33.80	96.75	98.82	99.03	99.74	0.021491	4.82	9.67	9.06	1.18
BellsB	M002	1951.81	20Year-Existing	33.80	96.56	98.89	98.24	99.06	0.003592	2.30	21.31	14.39	0.51
BellsB	M002	1939.94	20Year-Existing	33.80	96.29	98.40	98.40	98.94	0.012266	3.68	12.61	12.24	0.91
BellsB	M002	1918.81	20Year-Existing	33.80	95.86	98.10	97.79	98.45	0.007286	3.25	15.72	11.86	0.73
BellsB	M002	1910.32	20Year-Existing	33.80	95.58	97.68	97.68	98.35	0.012198	3.91	11.16	9.39	0.94
BellsB	M002	1896.87	20Year-Existing	33.80	94.38	95.95	96.52	97.89	0.066423	6.90	6.57	8.22	1.97
BellsB	M002	1887.59	20Year-Existing	33.80	93.87	95.07	95.63	97.14	0.096468	7.16	6.35	10.10	2.38
BellsB	M002	1880.79	20Year-Existing	33.80	93.33	96.15	95.30	96.34	0.002487	2.26	21.89	12.35	0.45
BellsB	M002	1870.34	20Year-Existing	33.80	92.77	96.16		96.30	0.001403	2.02	25.81	10.49	0.36
BellsB	M002	1857.16	20Year-Existing	33.80	91.88	96.20		96.27	0.000710	1.51	34.47	14.49	0.24
BellsB	M002	1848.27	20Year-Existing	33.80	91.91	96.21		96.26	0.000343	1.14	45.42	16.80	0.18
BellsB	M002	1834.27	20Year-Existing	33.80	90.88	96.22		96.25	0.000215	1.01	52.31	17.43	0.14
BellsB	M002	1821.35	20Year-Existing	33.80	90.90	96.22		96.24	0.000124	0.83	69.90	20.68	0.12
BellsB	M002	1807.43	20Year-Existing	33.80	89.83	96.23		96.24	0.000075	0.69	82.56	21.57	0.09
BellsB	M002	1800.77	20Year-Existing	33.80	89.59	96.23		96.24	0.000073	0.68	87.68	22.71	0.09
BellsB	M002	1777.98	20Year-Existing	33.80	88.77	96.23		96.24	0.000025	0.44	134.67	30.10	0.05
BellsB	M002	1753.27	20Year-Existing	33.80	88.22	96.23		96.24	0.000028	0.48	128.43	29.95	0.06
BellsB	M002	1729.73	20Year-Existing	33.80	88.17	96.23		96.23	0.000016	0.39	158.40	32.48	0.04
BellsB	M002	1705.77	20Year-Existing	33.80	87.60	96.23		96.23	0.000007	0.31	249.62	64.32	0.03
BellsB	M002	1688.91	20Year-Existing	33.80	86.72	96.23	90.04	96.23	0.000010	0.34	207.48	65.60	0.04
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	33.80	83.97	87.27	87.27	88.92	0.008078	5.69	5.94	19.87	1.00
BellsB	M002	1605.59	20Year-Existing	33.80	81.49	82.27	82.94	87.40	0.513546	10.63	3.66	11.70	5.51
BellsB	M001	1582.05	20Year-Existing	53.69	80.41	81.58	82.54	85.84	0.129678	9.42	6.40	8.88	3.18
BellsB	M001	1563.67	20Year-Existing	53.69	79.96	81.29	81.98	83.74	0.059920	7.47	9.02	10.73	2.26
BellsB	M001	1544.26	20Year-Existing	53.69	79.04	80.92	81.50	82.75	0.029856	6.59	10.97	9.69	1.66
BellsB	M001	1529.04	20Year-Existing	53.69	78.24	79.54	80.28	82.09	0.053731	7.36	8.37	8.57	2.16
BellsB	M001	1515.66	20Year-Existing	53.69	77.30	79.21	79.87	81.33	0.044615	6.66	9.14	7.79	1.73
BellsB	M001	1502.43	20Year-Existing	53.69	69.64	70.28	71.25	79.06	0.937349	13.14	4.12	10.76	6.60
BellsB	M001	1483.47	20Year-Existing	53.69	68.89	69.93	70.45	71.96	0.122670	7.04	9.46	16.43	2.63
BellsB	M001	1454.75	20Year-Existing	53.69	68.03	69.56	69.69	70.28	0.023393	4.73	16.34	16.12	1.28
BellsB	M001	1406.62	20Year-Existing	53.69	66.49	68.72	68.74	69.46	0.013960	4.52	16.51	12.07	1.03
BellsB	M001	1358.51	20Year-Existing	53.69	65.17	66.71	67.18	68.28	0.044518	6.03	11.10	12.02	1.72
BellsB	M001	1310.38	20Year-Existing	53.69	63.80	65.39	65.72	66.44	0.028389	5.06	14.43	17.43	1.40
BellsB	M001	1286.33	20Year-Existing	53.69	62.81	64.24	64.62	65.51	0.053318	5.98	12.84	19.76	1.83
BellsB	M001	1262.25	20Year-Existing	53.69	62.09	64.40	64.47	64.84	0.011632	3.96	24.31	29.33	0.90
BellsB	M001	1251.58	20Year-Existing	53.69	61.46	63.24	63.84	64.56	0.038435	6.60	12.89	12.68	1.66
BellsB	M001	1234.76	20Year-Existing	53.69	60.57	62.14	62.63	63.74	0.062070	7.20	12.67	20.67	2.01
BellsB	M001	1214.13	20Year-Existing	53.69	59.55	61.75	61.09	61.93	0.003258	2.22	34.16	24.18	0.51
BellsB	M001	1200.58	20Year-Existing	53.69	58.90	61.16	61.16	61.81	0.011705	4.12	18.72	15.52	0.94
BellsB	M001	1182.98	20Year-Existing	53.69	58.59	60.82	60.93	61.57	0.014323	4.52	17.61	15.53	1.04
BellsB	M001	1166.01	20Year-Existing	53.69	58.39	59.82	60.25	61.12	0.043209	5.81	13.25	18.05	1.68
BellsB	M001	1153.18	20Year-Existing	53.69	57.70	59.50	59.82	60.55	0.037401	6.24	15.42	19.91	1.58
BellsB	M001	1141.88	20Year-Existing	53.69	56.72	58.12	58.66	59.94	0.059824	6.53	10.39	13.71	1.96
BellsB	M001	1128.34	20Year-Existing	53.69	56.53	57.78	58.14	58.96	0.054534	5.94	12.19	15.16	1.83
BellsB	M001	1117.89	20Year-Existing	53.69	55.58	56.93	57.36	58.34	0.061818	6.87	11.89	13.85	1.99
BellsB	M001	1096.03	20Year-Existing	53.69	54.61	56.33	56.62	57.35	0.028514	5.11	14.44	16.12	1.39
BellsB	M001	1077.81	20Year-Existing	53.69	54.24	55.41	55.87	56.68	0.049648	5.75	12.96	18.44	1.79
BellsB	M001	1069.76	20Year-Existing	53.69	53.70	54.50	54.93	55.98	0.114741	6.58	11.16	19.36	2.53
BellsB	M001	1064.67	20Year-Existing	53.69	53.19	54.01	54.41	55.39	0.111000	6.39	11.62	20.58	2.48
BellsB	M001	1051.64	20Year-Existing	53.69	51.97	53.08	53.49	54.46	0.064379	6.07	12.29	18.30	1.99
BellsB	M001	1032.36	20Year-Existing	53.69	50.97	52.52	52.78	53.45	0.035217	5.56	15.18	16.82	1.54
BellsB	M001	1021.64	20Year-Existing	53.69	50.03	51.50	51.93	52.95	0.047173	5.87	12.09	16.95	1.75
BellsB	M001	1014.11	20Year-Existing	53.69	49.46	51.13	51.58	52.62	0.041952	5.94	11.75	14.83	1.66
BellsB	M001	1006.24	20Year-Existing	53.69	49.15	50.48	50.98	52.22	0.056212	6.43	10.77	14.58	1.91
BellsB	M001	996.42	20Year-Existing	53.69	48.11	49.50	50.09	51.57	0.081962	7.54	9.95	14.00	2.25
BellsB	M001	987.27	20Year-Existing	53.69	47.17	48.78	49.40	50.94	0.059468	7.21	9.84	11.73	2.00
BellsB	M001	973.52	20Year-Existing	53.69	46.79	48.25	48.84	50.13	0.044895	6.40	10.14	13.42	1.86

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	53.69	45.77	47.33	47.88	49.11	0.049863	6.61	11.04	16.69	1.92
BellsB	M001	931.51	20Year-Existing	53.69	44.86	46.20	46.72	47.91	0.072477	7.76	10.45	14.11	2.29
BellsB	M001	925.41	20Year-Existing	53.69	44.69	46.39	46.71	47.43	0.029196	5.82	14.49	18.74	1.49
BellsB	M001	901.68	20Year-Existing	53.69	43.69	45.29	45.71	46.68	0.032052	5.99	11.70	11.53	1.62
BellsB	M001	877.27	20Year-Existing	53.69	43.18	45.48	45.18	45.93	0.006560	3.47	20.64	13.85	0.77
BellsB	M001	857.41	20Year-Existing	53.69	42.16	45.69	45.18	45.79	0.000912	1.73	53.44	41.57	0.31
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	55.25	38.54	42.11	41.29	42.82	0.004708	3.80	15.12	11.89	0.66
BellsB	M001	810.13	20Year-Existing	55.25	37.80	42.40	40.07	42.51	0.000666	1.54	50.12	32.32	0.24
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	55.25	34.33	36.71	37.60	39.53	0.054339	7.53	7.79	8.70	1.90
BellsB	M001	782.27	20Year-Existing	55.25	33.92	34.90	35.65	38.13	0.170806	8.56	7.39	11.23	3.11
BellsB	M001	772.73	20Year-Existing	55.25	30.94	32.64	33.47	36.48	0.168113	11.29	8.07	10.66	3.03
BellsB	M001	766.74	20Year-Existing	55.25	30.65	32.59	33.33	35.41	0.102640	9.99	9.39	10.73	2.46
BellsB	M001	760.32	20Year-Existing	55.25	30.34	32.05	32.80	34.82	0.080108	8.70	9.44	10.87	2.30
BellsB	M001	755.97	20Year-Existing	55.25	30.05	31.73	32.44	34.44	0.086494	8.18	9.19	11.44	2.31
BellsB	M001	749.69	20Year-Existing	55.25	29.30	31.06	31.82	33.87	0.085833	8.70	9.20	10.43	2.33
BellsB	M001	742.14	20Year-Existing	55.25	28.38	29.76	30.63	33.13	0.096183	8.76	7.96	9.33	2.53
BellsB	M001	736.73	20Year-Existing	55.25	28.24	29.14	29.92	32.45	0.161553	8.73	7.35	10.90	3.09
BellsB	M001	722.61	20Year-Existing	55.25	27.35	28.52	29.06	30.52	0.076893	6.93	9.94	14.64	2.19
BellsB	M001	712.04	20Year-Existing	55.25	26.27	27.93	28.51	29.81	0.052423	6.64	10.47	11.27	1.85
BellsB	M001	702.42	20Year-Existing	55.25	26.04	27.48	28.02	29.25	0.057213	6.57	10.74	12.45	1.93
BellsB	M001	691.68	20Year-Existing	55.25	25.03	26.73	27.31	28.62	0.055391	6.44	9.89	11.16	1.87
BellsB	M001	686.22	20Year-Existing	55.25	24.46	25.83	26.51	28.21	0.078389	6.95	8.56	10.62	2.19
BellsB	M001	675.26	20Year-Existing	55.25	24.08	25.39	25.98	27.32	0.060654	6.59	9.72	10.91	1.98
BellsB	M001	668.37	20Year-Existing	55.25	23.58	25.02	25.59	26.91	0.058233	6.56	10.10	12.22	1.94
BellsB	M001	655.45	20Year-Existing	55.25	23.02	24.32	24.84	26.12	0.059224	6.36	10.24	13.11	1.93
BellsB	M001	636.88	20Year-Existing	55.25	21.46	22.95	23.56	24.99	0.058406	6.56	9.50	10.72	1.94
BellsB	M001	619.06	20Year-Existing	55.25	20.82	22.50	22.96	24.00	0.038670	5.98	11.82	12.01	1.62
BellsB	M001	608.48	20Year-Existing	55.25	20.13	21.67	22.22	23.50	0.048341	6.28	10.53	13.62	1.79
BellsB	M001	592.31	20Year-Existing	55.25	18.95	20.51	21.13	22.57	0.068993	7.39	10.19	11.78	2.11
BellsB	M001	582.72	20Year-Existing	55.25	18.14	19.39	20.08	21.80	0.083382	7.57	9.18	10.45	2.32
BellsB	M001	577.91	20Year-Existing	55.25	17.66	19.44	20.09	21.40	0.041055	6.83	10.77	9.90	1.73
BellsB	M001	561.51	20Year-Existing	55.25	17.02	18.52	19.10	20.52	0.072924	7.15	10.64	13.69	2.14
BellsB	M001	553.07	20Year-Existing	55.25	16.35	17.64	18.30	19.91	0.068834	6.87	9.23	11.88	2.10
BellsB	M001	541.54	20Year-Existing	55.25	15.41	16.72	17.34	19.02	0.083996	6.84	8.92	13.38	2.25
BellsB	M001	529.17	20Year-Existing	55.25	14.85	16.13	16.70	17.99	0.064483	6.10	9.52	9.33	1.81
BellsB	M001	514.53	20Year-Existing	55.25	14.21	15.45	15.91	16.96	0.061303	5.94	11.23	12.38	1.79
BellsB	M001	467.56	20Year-Existing	55.25	11.61	12.98	13.40	14.40	0.046623	5.38	11.04	10.65	1.56
BellsB	M001	420.59	20Year-Existing	55.25	8.75	13.10	11.27	13.26	0.001450	2.00	36.86	14.56	0.32
BellsB	M001	400.25	20Year-Existing	55.25	8.57	12.88	10.88	13.21	0.001900	2.56	21.54	6.87	0.39
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	55.25	0.83	1.93	3.15	7.08	0.109106	10.05	5.50	5.54	3.06
BellsB	M001	47.74	20Year-Existing	55.25	0.56	4.28	3.29	4.30	0.000188	0.90	146.51	130.77	0.15
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	55.25	0.70	4.28	3.32	4.29	0.000157	0.81	156.66	132.46	0.14
BellsB	M001	20.51	20Year-Existing	55.25	0.57	4.28		4.29	0.000191	0.87	151.73	142.45	0.15

Corner Brook 20yr Q-10%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	120.78	36.31	38.68	38.68	39.58	0.008996	4.60	33.88	20.04	0.98
CornerB	M004	2838.71	20Year-Existing	120.78	36.15	37.96	38.21	39.03	0.013029	4.72	29.79	23.99	1.14
CornerB	M004	2796.61	20Year-Existing	120.78	35.35	37.93	37.34	38.35	0.003873	3.14	49.46	28.04	0.65
CornerB	M004	2769.85	20Year-Existing	120.78	34.80	37.11	37.11	37.89	0.014737	5.85	38.01	26.53	1.26
CornerB	TR001	206.04	20Year-Existing	20.61	43.81	44.60	44.84	45.40	0.042076	4.61	6.44	13.28	1.76
CornerB	TR001	156.04	20Year-Existing	20.61	41.63	42.54	42.80	43.33	0.040033	4.04	5.84	14.48	1.66
CornerB	TR001	106.04	20Year-Existing	20.61	39.17	39.70	40.01	40.74	0.069062	4.75	5.04	11.99	2.14
CornerB	TR001	56.04	20Year-Existing	20.61	37.27	37.97	38.12	38.53	0.028987	3.49	6.80	12.94	1.43
CornerB	TR001	36.04	20Year-Existing	20.61	35.50	38.16	37.14	38.16	0.000051	0.36	112.53	79.89	0.07
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	20.61	35.18	36.87	36.87	37.59	0.011101	3.76	5.48	10.45	1.00
CornerB	M003	2689.92	20Year-Existing	131.85	33.55	36.48	35.83	36.68	0.002402	2.71	89.57	59.85	0.52
CornerB	M003	2645.73	20Year-Existing	131.85	32.87	36.54		36.60	0.000449	1.42	152.27	68.06	0.24
CornerB	M003	2602.09	20Year-Existing	131.85	32.20	36.55		36.59	0.000221	1.09	190.83	67.98	0.17
CornerB	M003	2557.73	20Year-Existing	131.85	31.34	36.52		36.57	0.000220	1.23	160.64	48.58	0.18
CornerB	M003	2537.73	20Year-Existing	131.85	30.77	36.49	33.99	36.57	0.000327	1.64	163.05	64.57	0.22
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	131.85	30.35	32.62	33.41	35.40	0.023447	7.39	17.84	14.83	1.58
CornerB	M003	2507.21	20Year-Existing	131.85	30.75	32.17	32.85	34.51	0.052663	7.54	22.26	21.11	2.16
CornerB	M003	2459.31	20Year-Existing	131.85	30.13	31.60	31.86	32.64	0.020301	5.02	33.80	30.85	1.37
CornerB	M003	2411.41	20Year-Existing	131.85	29.27	31.36	31.38	31.91	0.009300	4.12	52.00	46.16	0.97
CornerB	M003	2363.51	20Year-Existing	131.85	28.77	30.25	30.51	31.22	0.021620	4.87	35.70	38.21	1.39
CornerB	M003	2315.61	20Year-Existing	131.85	27.93	29.50	29.64	30.38	0.013775	4.24	33.90	28.04	1.13
CornerB	M003	2267.71	20Year-Existing	132.12	26.30	29.80	28.41	30.05	0.001344	2.32	68.40	26.77	0.41
CornerB	M003	2264.01	20Year-Existing	132.12	26.10	29.73	29.06	30.03	0.004927	2.43	55.48	29.21	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	132.12	26.10	29.56		29.92	0.006624	2.66	50.59	28.93	0.63
CornerB	M003	2260.98	20Year-Existing	132.12	25.80	29.62		29.84	0.001089	2.18	73.61	28.18	0.37
CornerB	M003	2240.88	20Year-Existing	132.12	27.01	29.42		29.77	0.003403	2.70	56.88	37.09	0.60
CornerB	M003	2212.25	20Year-Existing	132.12	26.87	29.35		29.67	0.003052	2.72	59.92	33.34	0.58
CornerB	M003	2183.63	20Year-Existing	132.12	25.56	28.52	28.52	29.47	0.008281	4.76	37.60	22.97	0.96
CornerB	M003	2163.63	20Year-Existing	132.12	25.35	28.41	27.76	28.96	0.003722	3.40	42.01	24.45	0.65
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	132.12	24.87	27.39	27.62	28.67	0.013215	5.43	29.47	20.73	1.18
CornerB	M003	2131.66	20Year-Existing	132.12	24.57	26.69	27.19	28.37	0.024439	5.91	24.93	19.51	1.51
CornerB	M003	2119.46	20Year-Existing	132.12	24.12	25.85	26.49	27.96	0.039077	6.70	22.51	20.80	1.87
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	132.12	24.04	26.15	26.53	27.55	0.018800	5.35	27.05	20.52	1.34
CornerB	M003	2080.62	20Year-Existing	132.12	23.73	25.32	25.75	26.79	0.025397	5.54	26.70	23.93	1.52
CornerB	M003	2068.44	20Year-Existing	132.12	23.76	25.35	25.60	26.41	0.018044	4.79	31.77	27.46	1.29
CornerB	M003	2022.25	20Year-Existing	132.12	22.74	24.46	24.75	25.60	0.017410	4.98	31.47	26.33	1.29
CornerB	M003	1991.14	20Year-Existing	132.12	22.18	24.13	24.25	25.11	0.012153	4.64	34.23	24.33	1.11
CornerB	M003	1985.82	20Year-Existing	132.12	21.97	23.78	24.09	25.01	0.017471	5.23	30.57	23.81	1.31
CornerB	M003	1975.95	20Year-Existing	132.12	21.78	23.47	23.85	24.80	0.021296	5.57	29.83	24.83	1.43
CornerB	M003	1929.72	20Year-Existing	132.12	20.08	21.94	22.45	23.67	0.026869	6.07	24.81	19.39	1.59
CornerB	M003	1883.49	20Year-Existing	132.12	19.23	21.47	21.69	22.70	0.012886	5.20	30.59	18.71	1.16
CornerB	TR002	21.04	20Year-Existing	7.83	22.27	22.83	23.30	24.89	0.150172	6.79	1.44	4.12	3.08
CornerB	TR002	18.08	20Year-Existing	7.83	21.40	21.76	22.16	24.18	0.388006	7.69	1.34	6.03	4.59
CornerB	M002	1826.39	20Year-Existing	133.38	16.92	18.33	19.05	21.17	0.121652	7.92	20.35	29.00	2.48
CornerB	M002	1790.92	20Year-Existing	133.38	15.49	18.66	18.26	19.42	0.008609	4.22	39.56	17.17	0.78
CornerB	M002	1773.95	20Year-Existing	133.38	14.72	19.00	17.32	19.20	0.001606	2.17	78.66	27.45	0.35
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	133.38	14.87	19.00	17.08	19.13	0.000934	1.89	96.90	36.42	0.30
CornerB	M002	1733.13	20Year-Existing	133.38	15.23	19.03		19.07	0.000274	0.99	165.32	67.90	0.16
CornerB	M002	1717.41	20Year-Existing	133.38	15.12	19.03		19.06	0.000230	0.92	184.82	77.42	0.15
CornerB	M002	1691.96	20Year-Existing	133.38	14.62	19.02		19.06	0.000192	0.87	205.12	94.86	0.14
CornerB	M002	1654.15	20Year-Existing	133.38	13.87	19.03		19.05	0.000089	0.63	269.41	113.25	0.10
CornerB	M002	1613.91	20Year-Existing	133.38	13.08	19.03		19.04	0.000041	0.52	315.08	126.52	0.08
CornerB	M002	1567.16	20Year-Existing	133.38	12.15	19.04		19.04	0.000007	0.22	666.69	192.22	0.03
CornerB	M002	1551.89	20Year-Existing	133.38	11.85	19.04		19.04	0.000003	0.14	1029.23	259.02	0.02
CornerB	M002	1539.91	20Year-Existing	132.39	11.62	19.04		19.04	0.000001	0.10	1418.16	299.65	0.01
CornerB	M002	1526.59	20Year-Existing	132.39	11.36	19.04		19.04	0.000001	0.10	1443.97	306.19	0.01
CornerB	M002	1517.99	20Year-Existing	132.39	11.18	19.04		19.04	0.000002	0.12	1219.25	263.75	0.02
CornerB	M002	1505.64	20Year-Existing	132.39	10.94	19.04		19.04	0.000003	0.15	909.19	193.42	0.02
CornerB	M002	1490.63	20Year-Existing	132.39	10.64	19.04		19.04	0.000006	0.23	627.07	135.18	0.03
CornerB	M002	1463.65	20Year-Existing	132.39	10.11	19.03		19.04	0.000025	0.47	340.57	78.33	0.06
CornerB	M002	1415.93	20Year-Existing	132.39	9.17	19.03		19.04	0.000021	0.46	323.41	71.62	0.06
CornerB	M002	1386.11	20Year-Existing	132.39	8.58	19.02		19.04	0.000032	0.54	291.77	75.64	0.07
CornerB	M002	1363.91	20Year-Existing	132.39	8.14	19.01		19.03	0.000052	0.69	236.79	55.61	0.08
CornerB	M002	1356.61	20Year-Existing	132.39	8.00	19.01		19.03	0.000148	0.89	240.66	70.75	0.10
CornerB	M002	1354.61	20Year-Existing	132.39	15.35	18.47	18.46	18.98	0.004820	3.71	56.73	50.50	0.67
CornerB	M002	1354.11	20Year-Existing	132.39	15.35	18.46	18.46	18.98	0.004905	3.74	56.25	50.25	0.68
CornerB	M002	1352.01	20Year-Existing	132.39	8.00	9.05	10.80	18.10	0.692899	0.35	9.93	9.51	0.16
CornerB	M002	1347.51	20Year-Existing	132.39	7.72	9.32	10.36	14.17	0.242191	9.76	13.57	15.52	3.33
CornerB	M002	1336.58	20Year-Existing	132.39	7.69	9.08	9.85	11.81	0.110536	7.33	18.25	19.42	2.34
CornerB	M002	1326.83	20Year-Existing	132.39	7.68	10.32	9.59	10.62	0.004480	2.56	58.46	29.75	0.54
CornerB	M002	1317.22	20Year-Existing	132.39	7.66	10.16		10.55	0.006797	2.87	50.78	30.13	0.65
CornerB	M002	1315.18	20Year-Existing	132.39	7.28	9.75	9.75	10.50	0.017750	4.10	37.41	26.76	1.01
CornerB	M002	1313.58	20Year-Existing	132.39	6.48	8.94	9.36	10.39	0.040557	5.57	26.68	22.88	1.48
CornerB	M002	1312.39	20Year-Existing	132.39	6.23	8.49	9.05	10.30	0.052931	6.11	23.64	21.51	1.68
CornerB	M002	1311.16	20Year-Existing	132.39	5.92	8.09	8.73	10.20	0.073080	6.49	21.25	21.05	1.93
CornerB	M002	1309.11	20Year-Existing	132.39	5.91	7.70	8.38	10.01	0.081641	6.79	20.13	20.18	2.04
CornerB	M002	1305.35	20Year-Existing	132.39	5.37	7.09	7.81	9.66	0.087530	7.30	20.18	22.42	2.14

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	132.39	5.06	6.63	7.33	9.14	0.105906	7.06	19.30	22.00	2.28
CornerB	M002	1296.49	20Year-Existing	132.39	4.91	6.72	7.33	8.71	0.055473	6.36	22.20	19.06	1.74
CornerB	M002	1289.64	20Year-Existing	132.39	4.71	6.75	7.17	8.26	0.036980	5.59	25.79	19.98	1.45
CornerB	M002	1284.12	20Year-Existing	132.39	4.41	6.80	7.04	8.02	0.022712	5.08	29.29	19.19	1.18
CornerB	M002	1279.52	20Year-Existing	132.39	4.23	6.38	6.78	7.87	0.030063	5.53	26.12	18.65	1.34
CornerB	M002	1258.94	20Year-Existing	132.39	3.53	5.13	5.70	6.98	0.062818	6.27	23.92	25.99	1.83
CornerB	M002	1246.98	20Year-Existing	132.39	3.37	4.68	5.17	6.29	0.043120	5.65	24.43	24.25	1.68
CornerB	M002	1233.83	20Year-Existing	132.39	3.10	4.54	4.85	5.63	0.034295	4.79	31.25	36.81	1.49
CornerB	M002	1215.66	20Year-Existing	132.39	2.70	3.99	4.32	5.01	0.028244	4.52	31.48	40.40	1.36
CornerB	M002	1206.83	20Year-Existing	132.39	2.54	4.55	4.24	4.83	0.005434	2.57	66.90	61.95	0.64
CornerB	M002	1194.69	20Year-Existing	132.39	2.39	4.52		4.77	0.004528	2.45	72.97	62.41	0.59
CornerB	M002	1185.06	20Year-Existing	132.39	2.26	4.51		4.72	0.003288	2.25	80.76	64.70	0.51
CornerB	M002	1142.41	20Year-Existing	132.39	1.70	4.43		4.59	0.002497	2.05	92.00	69.34	0.45
CornerB	M002	1137.55	20Year-Existing	132.39	1.60	4.09	3.99	4.52	0.008557	3.05	53.56	59.14	0.78
CornerB	M002	1110.53	20Year-Existing	132.39	1.39	4.03		4.34	0.003646	2.62	67.47	62.06	0.55
CornerB	M002	1090.67	20Year-Existing	132.39	1.10	4.15		4.23	0.001100	1.55	131.88	86.20	0.31
CornerB	M002	1070.69	20Year-Existing	132.39	0.80	4.16	2.72	4.21	0.000487	1.19	175.67	88.56	0.21
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	132.39	0.76	4.15	2.64	4.20	0.000431	1.14	177.00	85.89	0.20
CornerB	M002	1047.01	20Year-Existing	132.39	0.75	4.14		4.19	0.000404	1.24	173.02	77.75	0.22
CornerB	M002	1004.03	20Year-Existing	132.39	0.77	4.12		4.17	0.000393	1.22	192.12	125.00	0.22
CornerB	M002	959.21	20Year-Existing	132.39	0.70	4.12		4.15	0.000309	1.08	275.61	273.20	0.19
CornerB	M002	915.75	20Year-Existing	131.58	0.68	4.12		4.13	0.000221	0.88	347.77	293.83	0.16
CornerB	M002	869.66	20Year-Existing	131.58	0.69	4.11		4.12	0.000119	0.67	394.34	220.22	0.12
CornerB	M002	828.33	20Year-Existing	127.35	0.77	4.11		4.12	0.000122	0.66	383.22	216.94	0.12
CornerB	M002	784.55	20Year-Existing	127.35	0.82	4.11		4.11	0.000083	0.55	402.22	228.93	0.10
CornerB	M002	739.85	20Year-Existing	127.35	0.82	4.10		4.11	0.000083	0.52	409.66	264.25	0.10
CornerB	M002	696.36	20Year-Existing	127.35	0.64	4.09		4.10	0.000122	0.68	354.01	265.73	0.12
CornerB	M001	659.37	20Year-Existing	133.56	0.75	4.09		4.10	0.000126	0.65	337.41	227.57	0.12
CornerB	M001	643.93	20Year-Existing	133.56	0.74	4.08	2.67	4.10	0.000192	0.82	283.09	211.84	0.15
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	133.56	0.83	3.80	2.57	3.84	0.000471	1.21	194.30	174.11	0.23
CornerB	M001	608.52	20Year-Existing	133.56	0.76	3.79		3.83	0.000560	1.26	188.14	160.20	0.25
CornerB	M001	570.12	20Year-Existing	133.56	0.61	3.79		3.81	0.000297	0.98	255.37	185.35	0.19
CornerB	M001	535.83	20Year-Existing	133.56	0.56	3.78	1.73	3.80	0.000164	0.79	265.54	218.48	0.14
CornerB	M001	520.22	20Year-Existing	133.56	0.55	3.78	1.81	3.80	0.000124	0.69	312.51	290.11	0.12
CornerB	M001	472.07	20Year-Existing	133.56	0.58	3.75	2.18	3.79	0.000313	1.06	220.39	195.93	0.19
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	133.56	0.44	3.30	1.94	3.43	0.000887	1.70	128.33	173.50	0.32
CornerB	M001	425.41	20Year-Existing	133.56	0.48	3.31		3.38	0.000652	1.41	201.44	270.35	0.27
CornerB	M001	401.99	20Year-Existing	133.56	0.74	3.33		3.36	0.000384	1.04	285.25	331.14	0.21
CornerB	M001	381.26	20Year-Existing	133.56	0.79	3.25	2.47	3.34	0.000989	1.59	196.29	342.37	0.33
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	133.56	0.79	3.00	2.43	3.23	0.002495	2.38	119.21	309.33	0.52
CornerB	M001	352.89	20Year-Existing	133.56	0.68	3.01		3.14	0.001232	1.72	117.80	226.95	0.37
CornerB	M001	324.13	20Year-Existing	133.56	0.67	3.01		3.10	0.000947	1.52	140.00	162.22	0.32
CornerB	M001	292.92	20Year-Existing	133.56	0.65	3.00		3.07	0.000766	1.34	181.62	271.07	0.29
CornerB	M001	274.62	20Year-Existing	133.56	0.96	2.98	2.56	3.04	0.001686	1.75	194.34	317.35	0.41
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	133.56	1.01	2.95	2.52	2.99	0.001562	1.67	216.59	344.45	0.40
CornerB	M001	245.99	20Year-Existing	133.56	0.64	2.93		2.97	0.000943	1.39	246.72	389.31	0.31
CornerB	M001	210.89	20Year-Existing	133.56	0.68	2.90		2.93	0.000778	1.19	253.65	350.51	0.28
CornerB	M001	174.77	20Year-Existing	133.56	0.69	2.88		2.91	0.000707	1.02	276.53	409.36	0.26
CornerB	M001	155.66	20Year-Existing	133.56	0.64	2.87	2.48	2.89	0.000858	1.02	309.60	507.23	0.28
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	133.56	0.55	2.87	2.42	2.88	0.000638	0.88	327.17	458.94	0.24
CornerB	M001	129.05	20Year-Existing	133.56	0.40	2.85		2.87	0.000448	0.91	352.34	476.71	0.21
CornerB	M001	80.73	20Year-Existing	133.56	0.20	2.82		2.84	0.000383	0.95	318.41	384.54	0.20
CornerB	M001	23.81	20Year-Existing	133.56	0.32	2.80	1.91	2.82	0.000393	0.90	308.45	431.13	0.20
BellsB	TR001	178.13	20Year-Existing	11.25	92.91	94.01	94.32	94.98	0.043040	4.40	2.73	4.86	1.66
BellsB	TR001	159.86	20Year-Existing	11.25	92.15	93.71	93.42	93.89	0.004665	2.16	7.38	8.69	0.62
BellsB	TR001	139.54	20Year-Existing	11.25	91.13	93.65	92.45	93.83	0.001978	1.87	6.02	7.55	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	11.25	89.49	90.75	90.95	91.67	0.021369	4.27	2.72	3.50	1.26
BellsB	TR001	88.17	20Year-Existing	11.25	88.47	89.26	89.75	91.22	0.123766	6.50	2.05	4.85	2.77
BellsB	TR001	84.12	20Year-Existing	11.25	87.66	88.33	88.78	90.51	0.219803	6.60	1.80	5.88	3.49
BellsB	TR001	79.14	20Year-Existing	11.25	86.53	87.22	87.72	89.55	0.160147	6.90	1.82	5.15	3.16
BellsB	TR001	72.74	20Year-Existing	11.25	85.76	86.35	86.81	88.33	0.187550	6.28	1.88	6.08	3.25
BellsB	TR001	67.75	20Year-Existing	11.25	85.04	85.55	85.91	87.24	0.192244	6.00	2.16	7.94	3.25
BellsB	TR001	64.04	20Year-Existing	11.25	84.47	85.12	85.49	86.57	0.132793	5.34	2.11	5.52	2.76
BellsB	TR001	60.69	20Year-Existing	11.25	84.14	85.05	85.38	86.15	0.072148	4.74	2.59	6.13	2.11
BellsB	TR001	56.76	20Year-Existing	11.25	83.97	84.84	85.15	85.84	0.068120	4.43	2.58	6.13	2.04
BellsB	TR001	50.93	20Year-Existing	11.25	83.68	84.65	84.88	85.39	0.054981	3.91	3.12	8.01	1.83
BellsB	TR001	43.86	20Year-Existing	11.25	83.34	84.18	84.41	84.97	0.067521	4.00	3.04	9.44	1.99
BellsB	TR001	37.01	20Year-Existing	11.25	82.98	83.82	84.04	84.56	0.049738	3.97	3.31	8.79	1.77
BellsB	TR001	12.14	20Year-Existing	11.25	82.15	82.96	83.10	83.45	0.035297	3.29	4.01	9.82	1.49
BellsB	M002	5166.11	20Year-Existing	9.36	190.79	191.73	191.68	191.89	0.011510	2.33	7.43	16.59	0.82
BellsB	M002	5149.23	20Year-Existing	9.36	190.57	191.44	191.44	191.67	0.014802	2.42	5.79	13.32	0.91
BellsB	M002	5117.45	20Year-Existing	9.36	189.91	191.22	190.64	191.25	0.001457	1.07	16.87	22.23	0.31
BellsB	M002	5090.85	20Year-Existing	9.36	189.62	190.84	190.84	191.13	0.013658	2.87	5.37	9.73	0.90
BellsB	M002	5067.47	20Year-Existing	9.36	189.18	189.64	189.85	190.40	0.143548	5.09	2.86	8.88	2.58
BellsB	M002	5017.78	20Year-Existing	9.36	188.12	189.10	189.10	189.35	0.016324	2.83	5.72	11.22	0.98
BellsB	M002	4967.57	20Year-Existing	9.36	186.55	187.58	187.73	188.14	0.037444	3.89	3.51	6.72	1.39

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	9.36	185.69	186.63	186.36	186.72	0.005040	1.61	9.11	16.18	0.55
BellsB	M002	4873.31	20Year-Existing	9.36	184.61	185.98	185.98	186.34	0.014355	3.06	4.59	7.16	0.92
BellsB	M002	4853.42	20Year-Existing	9.36	183.55	185.99	184.88	186.14	0.001733	1.72	5.45	18.03	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	9.36	181.53	182.84	182.84	183.41	0.015544	3.36	2.78	5.70	1.00
BellsB	M002	4785.76	20Year-Existing	9.36	181.35	182.15	182.37	182.86	0.053044	4.10	2.92	6.56	1.66
BellsB	M002	4756.65	20Year-Existing	9.36	180.12	180.93	181.10	181.43	0.041629	3.83	3.89	10.96	1.49
BellsB	M002	4727.54	20Year-Existing	9.36	179.02	179.68	179.87	180.20	0.041775	3.70	3.88	12.49	1.58
BellsB	M002	4707.54	20Year-Existing	9.36	177.96	178.29	178.45	178.86	0.125094	4.02	3.32	16.31	2.46
BellsB	M002	4702.24	20Year-Existing	9.36	177.65	178.40	178.42	178.60	0.016557	2.41	6.10	17.14	1.00
BellsB	M002	4682.48	20Year-Existing	9.36	176.63	177.23	177.44	177.94	0.064958	4.09	3.14	11.65	1.92
BellsB	M002	4658.79	20Year-Existing	9.36	175.50	176.43	176.60	177.04	0.024555	3.69	3.19	5.56	1.28
BellsB	M002	4633.41	20Year-Existing	9.36	174.51	175.14	175.40	176.01	0.083517	5.08	3.09	10.89	2.22
BellsB	M002	4609.61	20Year-Existing	9.36	173.50	174.47	174.32	174.63	0.007588	2.17	6.55	10.57	0.73
BellsB	M002	4583.99	20Year-Existing	9.36	172.77	173.98	173.98	174.36	0.012780	2.87	3.97	6.02	0.92
BellsB	M002	4534.72	20Year-Existing	9.36	170.00	170.78	171.24	172.70	0.127271	7.28	2.02	5.17	2.81
BellsB	M002	4485.52	20Year-Existing	9.36	168.20	168.77	168.88	169.13	0.045093	3.50	4.61	16.35	1.60
BellsB	M002	4436.28	20Year-Existing	16.92	165.85	166.87	167.01	167.46	0.029020	4.34	6.71	13.02	1.43
BellsB	M002	4387.04	20Year-Existing	16.92	164.06	165.11	165.36	165.87	0.035088	4.87	5.87	10.78	1.59
BellsB	M002	4337.81	20Year-Existing	16.92	162.60	163.65	163.83	164.20	0.030675	4.43	7.70	19.91	1.46
BellsB	M002	4288.56	20Year-Existing	16.92	161.30	162.34	162.47	162.80	0.029145	4.17	8.09	19.64	1.39
BellsB	M002	4239.33	20Year-Existing	16.92	159.65	160.54	160.76	161.25	0.039501	4.45	5.99	13.73	1.63
BellsB	M002	4190.09	20Year-Existing	16.92	158.43	159.45	159.55	159.86	0.019959	3.51	8.06	16.47	1.19
BellsB	M002	4140.85	20Year-Existing	16.92	157.30	157.87	157.97	158.22	0.055852	4.06	7.58	22.21	1.82
BellsB	M002	4091.61	20Year-Existing	16.92	155.30	156.00	156.05	156.29	0.030803	3.58	8.47	19.32	1.41
BellsB	M002	4042.37	20Year-Existing	16.92	153.74	154.51	154.60	154.90	0.025189	3.35	7.40	14.51	1.28
BellsB	M002	3993.13	20Year-Existing	16.92	152.65	153.39	153.44	153.66	0.027969	3.25	8.96	22.04	1.29
BellsB	M002	3943.89	20Year-Existing	16.92	151.36	152.13	152.18	152.44	0.026419	3.38	8.33	18.00	1.31
BellsB	M002	3894.65	20Year-Existing	16.92	149.52	150.93	151.10	151.45	0.018436	3.71	7.64	16.90	1.13
BellsB	M002	3869.08	20Year-Existing	16.92	148.87	149.91	150.18	150.75	0.039441	4.62	5.10	9.51	1.62
BellsB	M002	3845.41	20Year-Existing	16.92	148.37	149.51	149.57	149.97	0.021609	3.60	7.22	14.12	1.16
BellsB	M002	3822.22	20Year-Existing	16.92	147.71	148.92	148.57	149.01	0.004368	1.80	14.68	17.81	0.54
BellsB	M002	3796.17	20Year-Existing	16.92	146.89	148.42	148.39	148.80	0.011155	3.11	7.90	10.61	0.86
BellsB	M002	3765.39	20Year-Existing	16.92	146.40	147.90	147.90	148.40	0.015552	3.40	6.45	8.35	0.98
BellsB	M002	3746.94	20Year-Existing	16.92	145.76	147.44	146.90	147.50	0.002111	1.51	17.14	17.82	0.39
BellsB	M002	3724.94	20Year-Existing	16.92	145.32	147.09		147.40	0.007738	2.68	8.14	8.84	0.71
BellsB	M002	3697.71	20Year-Existing	16.92	145.05	147.16		147.25	0.001670	1.52	14.36	10.42	0.35
BellsB	M002	3677.71	20Year-Existing	16.92	143.44	146.98	145.32	147.20	0.001542	2.09	8.10	14.29	0.36
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	16.92	142.47	144.27	144.27	145.13	0.011548	4.11	4.12	8.83	1.00
BellsB	M002	3623.19	20Year-Existing	16.92	142.10	143.48	143.86	144.64	0.041799	5.23	4.09	6.43	1.64
BellsB	M002	3573.45	20Year-Existing	16.92	140.89	142.14	142.38	142.89	0.026819	4.12	5.07	8.48	1.35
BellsB	M002	3520.99	20Year-Existing	16.92	139.30	140.64	140.89	141.46	0.026942	4.33	4.82	7.13	1.34
BellsB	M002	3473.83	20Year-Existing	16.92	137.98	139.53	139.75	140.20	0.022771	4.29	5.57	8.11	1.22
BellsB	M002	3424.29	20Year-Existing	16.92	136.49	138.44	137.87	138.61	0.002657	1.98	10.82	9.93	0.47
BellsB	M002	3400.36	20Year-Existing	16.92	135.96	138.53		138.56	0.000257	0.76	28.71	17.94	0.16
BellsB	M002	3386.31	20Year-Existing	16.92	135.48	138.51	137.17	138.55	0.000358	1.07	33.02	54.43	0.20
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	16.92	135.22	138.43	136.89	138.43	0.000029	0.31	98.62	58.22	0.06
BellsB	M002	3329.08	20Year-Existing	21.42	134.96	138.42		138.43	0.000040	0.39	107.23	55.40	0.07
BellsB	M002	3303.55	20Year-Existing	21.42	133.82	138.39	135.92	138.42	0.000204	1.00	46.50	48.56	0.15
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	21.42	131.39	133.90	133.90	134.90	0.011484	4.44	4.83	16.93	1.00
BellsB	M002	3203.83	20Year-Existing	21.42	131.13	132.28	132.79	134.16	0.094858	6.56	4.36	10.71	2.41
BellsB	M002	3176.31	20Year-Existing	21.42	130.02	131.31	131.64	132.34	0.040709	5.16	6.17	11.38	1.65
BellsB	M002	3157.63	20Year-Existing	21.42	129.89	131.19	131.29	131.60	0.024346	3.86	9.78	18.88	1.23
BellsB	M002	3130.11	20Year-Existing	21.42	128.68	130.08	130.28	130.89	0.024383	4.34	6.25	7.41	1.31
BellsB	M002	3083.82	20Year-Existing	21.42	127.94	129.51	129.66	129.98	0.013369	3.58	10.72	23.88	1.01
BellsB	M002	3037.68	20Year-Existing	21.42	127.11	127.89	128.15	128.75	0.066996	5.37	7.10	20.34	2.08
BellsB	M002	2991.47	20Year-Existing	21.42	126.28	127.90	127.19	127.92	0.000693	0.94	37.42	42.10	0.24
BellsB	M002	2945.26	20Year-Existing	21.42	125.32	127.61	126.88	127.84	0.004065	2.13	10.73	13.61	0.48
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	21.42	125.12	126.72	126.68	127.47	0.010641	3.82	5.61	4.57	0.96
BellsB	M002	2918.61	20Year-Existing	21.42	124.99	126.54	126.54	127.18	0.016941	4.02	7.17	9.54	1.13
BellsB	M002	2899.46	20Year-Existing	21.42	125.25	126.70	126.65	126.82	0.002840	1.82	22.83	79.06	0.49
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	21.42	124.44	125.67	125.73	126.33	0.013665	3.61	5.94	18.10	1.08
BellsB	M002	2861.32	20Year-Existing	21.42	123.64	124.55	124.89	125.68	0.058648	5.49	5.59	13.74	2.06
BellsB	M002	2823.69	20Year-Existing	21.42	123.23	124.23	124.23	124.46	0.018191	2.99	12.66	28.02	1.04
BellsB	M002	2777.91	20Year-Existing	21.42	122.77	123.85	123.64	123.89	0.003606	1.45	29.67	58.31	0.47
BellsB	M002	2727.91	20Year-Existing	21.42	122.21	123.36	123.36	123.65	0.015217	2.97	11.95	22.24	0.96
BellsB	M002	2677.99	20Year-Existing	21.42	121.13	122.58	122.48	122.89	0.010795	2.81	10.15	12.63	0.83
BellsB	M002	2628.09	20Year-Existing	21.42	120.69	122.10	122.10	122.36	0.011368	3.02	14.29	28.49	0.86
BellsB	M002	2578.18	20Year-Existing	21.42	119.94	121.33	121.43	121.69	0.015723	3.38	12.32	27.50	0.99
BellsB	M002	2528.27	20Year-Existing	21.42	119.10	120.63	120.66	121.03	0.014469	3.41	10.08	14.23	0.96
BellsB	M002	2518.19	20Year-Existing	21.42	118.62	119.95	120.21	120.78	0.035869	4.71	6.96	12.33	1.47
BellsB	M002	2496.15	20Year-Existing	21.42	118.53	120.15	119.88	120.31	0.006088	2.35	15.08	17.52	0.63
BellsB	M002	2478.37	20Year-Existing	21.42	117.97	119.90		120.19	0.007024	2.82	11.65	11.93	0.70
BellsB	M002	2450.61	20Year-Existing	21.42	117.55	119.42	119.42	119.91	0.012093	3.68	9.10	9.90	0.91
BellsB	M002	2428.46	20Year-Existing	21.42	117.19	118.33	118.65	119.35	0.055851	5.01	6.09	13.05	1.75
BellsB	M002	2408.52	20Year-Existing	21.42	116.63	117.81	118.00	118.41	0.038782	4.33	8.21	17.07	1.47
BellsB	M002	2378.55	20Year-Existing	21.42	116.15	117.37	117.46	117.88	0.029413	4.25	8.93	15.95	1.31
BellsB	M002	2367.92	20Year-Existing	21.42	115.61	116.63	116.87	117.44	0.048488	4.91	7.39	17.07	1.69

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	21.42	115.07	116.17	116.35	116.80	0.035782	4.40	8.08	16.00	1.46
BellsB	M002	2328.64	20Year-Existing	21.42	113.99	115.48	115.67	116.11	0.022916	4.20	8.09	12.12	1.20
BellsB	M002	2307.61	20Year-Existing	21.42	112.94	115.86	114.95	115.89	0.000546	0.97	39.68	42.05	0.20
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	21.42	111.75	112.99	113.45	114.51	0.072059	5.46	3.92	4.09	1.77
BellsB	M002	2275.77	20Year-Existing	23.40	112.06	113.71	113.71	114.07	0.012737	3.50	11.63	17.63	0.92
BellsB	M002	2232.72	20Year-Existing	23.40	110.58	112.11	112.47	113.15	0.031330	4.97	6.36	10.23	1.40
BellsB	M002	2200.99	20Year-Existing	23.40	109.61	111.04	111.36	112.08	0.038354	5.08	6.39	9.68	1.53
BellsB	M002	2173.21	20Year-Existing	23.40	108.98	110.93	110.93	111.51	0.012394	3.68	8.46	8.30	0.89
BellsB	M002	2133.27	20Year-Existing	23.40	107.79	108.99	109.45	110.48	0.061906	6.02	5.38	9.30	1.93
BellsB	M002	2117.78	20Year-Existing	23.40	107.46	108.79	109.04	109.66	0.029334	4.62	6.89	9.43	1.37
BellsB	M002	2103.01	20Year-Existing	23.40	106.45	107.74	108.11	109.00	0.058439	5.76	5.74	9.22	1.83
BellsB	M002	2085.77	20Year-Existing	23.40	105.17	106.49	106.93	107.91	0.060945	6.23	5.30	7.28	1.91
BellsB	M002	2068.57	20Year-Existing	23.40	104.36	105.29	105.69	106.76	0.086121	6.31	5.47	11.39	2.23
BellsB	M002	2059.88	20Year-Existing	23.40	103.56	104.77	105.23	106.16	0.054452	5.60	5.30	8.31	1.82
BellsB	M002	2054.52	20Year-Existing	23.40	103.13	104.33	104.75	105.81	0.071461	6.21	5.25	8.23	2.04
BellsB	M002	2040.56	20Year-Existing	23.40	102.39	104.42	104.02	104.78	0.006060	3.01	10.81	7.70	0.69
BellsB	M002	2033.27	20Year-Existing	23.40	102.08	104.10	104.10	104.69	0.014175	3.77	8.22	7.63	0.95
BellsB	M002	2025.44	20Year-Existing	23.40	101.58	102.80	103.30	104.40	0.057372	5.87	4.76	6.73	1.85
BellsB	M002	2021.67	20Year-Existing	23.40	101.43	103.11	103.39	104.06	0.027818	4.54	6.24	7.55	1.29
BellsB	M002	2014.53	20Year-Existing	23.40	99.96	101.30	101.91	103.55	0.136716	6.65	3.54	5.52	2.57
BellsB	M002	2010.46	20Year-Existing	23.40	99.08	100.05	100.71	102.88	0.161880	8.15	3.62	6.48	2.99
BellsB	M002	2007.37	20Year-Existing	23.40	98.52	99.76	100.43	102.36	0.140781	7.21	3.40	5.13	2.64
BellsB	M002	1996.87	20Year-Existing	23.40	97.97	98.93	99.51	100.98	0.095887	6.91	4.25	6.28	2.39
BellsB	M002	1982.97	20Year-Existing	23.40	97.73	98.81	99.10	99.81	0.043068	5.13	6.13	7.65	1.65
BellsB	M002	1966.25	20Year-Existing	23.40	96.75	98.63	98.73	99.27	0.016871	3.95	8.01	8.62	1.03
BellsB	M002	1951.81	20Year-Existing	23.40	96.56	98.56	98.01	98.69	0.003467	2.01	16.66	13.76	0.49
BellsB	M002	1939.94	20Year-Existing	23.40	96.29	98.13	98.13	98.59	0.012260	3.27	9.46	11.28	0.89
BellsB	M002	1918.81	20Year-Existing	23.40	95.86	97.26	97.52	98.14	0.032916	4.79	6.85	9.22	1.43
BellsB	M002	1910.32	20Year-Existing	23.40	95.58	97.30	97.33	97.90	0.014475	3.63	7.86	8.02	0.98
BellsB	M002	1896.87	20Year-Existing	23.40	94.38	95.72	96.23	97.42	0.071609	6.27	4.81	7.35	1.98
BellsB	M002	1887.59	20Year-Existing	23.40	93.87	95.96	95.37	96.11	0.003181	2.04	16.61	12.90	0.48
BellsB	M002	1880.79	20Year-Existing	23.40	93.33	95.98		96.08	0.001574	1.72	19.76	12.00	0.35
BellsB	M002	1870.34	20Year-Existing	23.40	92.77	95.99		96.06	0.000822	1.49	23.97	10.17	0.27
BellsB	M002	1857.16	20Year-Existing	23.40	91.88	96.00		96.04	0.000424	1.13	31.71	14.07	0.19
BellsB	M002	1848.27	20Year-Existing	23.40	91.91	96.01		96.04	0.000201	0.84	42.12	16.22	0.14
BellsB	M002	1834.27	20Year-Existing	23.40	90.88	96.01		96.03	0.000123	0.74	48.86	16.90	0.11
BellsB	M002	1821.35	20Year-Existing	23.40	90.90	96.02		96.03	0.000070	0.61	65.71	20.10	0.09
BellsB	M002	1807.43	20Year-Existing	23.40	89.83	96.02		96.03	0.000042	0.50	78.16	21.07	0.07
BellsB	M002	1800.77	20Year-Existing	23.40	89.59	96.02		96.03	0.000040	0.50	83.05	22.13	0.06
BellsB	M002	1777.98	20Year-Existing	23.40	88.77	96.02		96.03	0.000013	0.32	128.45	29.50	0.04
BellsB	M002	1753.27	20Year-Existing	23.40	88.22	96.02		96.02	0.000015	0.35	122.32	29.01	0.04
BellsB	M002	1729.73	20Year-Existing	23.40	88.17	96.02		96.02	0.000009	0.28	151.70	31.85	0.03
BellsB	M002	1705.77	20Year-Existing	23.40	87.60	96.02		96.02	0.000004	0.22	236.75	58.86	0.02
BellsB	M002	1688.91	20Year-Existing	23.40	86.72	96.02	89.33	96.02	0.000005	0.24	194.54	58.98	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	23.40	83.97	86.56	86.56	87.85	0.008738	5.03	4.65	18.11	1.00
BellsB	M002	1605.59	20Year-Existing	23.40	81.49	82.18	82.74	86.44	0.587083	9.62	2.74	10.33	5.65
BellsB	M001	1582.05	20Year-Existing	37.17	80.41	81.40	82.17	84.80	0.136465	8.34	4.87	8.23	3.14
BellsB	M001	1563.67	20Year-Existing	37.17	79.96	81.13	81.65	82.86	0.051119	6.21	7.33	10.08	2.03
BellsB	M001	1544.26	20Year-Existing	37.17	79.04	80.67	81.08	82.04	0.027471	5.62	8.60	8.84	1.55
BellsB	M001	1529.04	20Year-Existing	37.17	78.24	79.29	79.89	81.37	0.059442	6.60	6.29	7.95	2.18
BellsB	M001	1515.66	20Year-Existing	37.17	77.30	78.93	79.43	80.57	0.044611	5.81	7.04	7.14	1.67
BellsB	M001	1502.43	20Year-Existing	37.17	69.64	70.17	70.98	78.25	1.207166	12.60	2.95	9.52	7.19
BellsB	M001	1483.47	20Year-Existing	37.17	68.89	69.82	70.22	71.31	0.109467	5.96	7.66	16.14	2.42
BellsB	M001	1454.75	20Year-Existing	37.17	68.03	69.37	69.44	69.89	0.020395	4.00	13.33	15.50	1.17
BellsB	M001	1406.62	20Year-Existing	37.17	66.49	68.30	68.37	68.99	0.016942	4.24	11.76	10.69	1.09
BellsB	M001	1358.51	20Year-Existing	37.17	65.17	66.50	66.87	67.71	0.042289	5.22	8.68	11.41	1.62
BellsB	M001	1310.38	20Year-Existing	37.17	63.80	65.19	65.42	66.01	0.026550	4.38	11.05	15.31	1.31
BellsB	M001	1286.33	20Year-Existing	37.17	62.81	64.07	64.41	65.12	0.051885	5.28	9.75	17.42	1.76
BellsB	M001	1262.25	20Year-Existing	37.17	62.09	64.26	64.29	64.59	0.009106	3.34	20.26	29.04	0.79
BellsB	M001	1251.58	20Year-Existing	37.17	61.46	62.88	63.29	64.31	0.054135	6.62	8.66	11.00	1.89
BellsB	M001	1234.76	20Year-Existing	37.17	60.57	61.97	62.37	63.36	0.059062	6.42	9.50	17.89	1.92
BellsB	M001	1214.13	20Year-Existing	37.17	59.55	61.34	60.85	61.50	0.003774	2.04	24.82	21.53	0.52
BellsB	M001	1200.58	20Year-Existing	37.17	58.90	60.83	60.83	61.38	0.011898	3.68	13.94	13.69	0.92
BellsB	M001	1182.98	20Year-Existing	37.17	58.59	60.52	60.58	61.14	0.013978	3.99	13.24	13.55	1.00
BellsB	M001	1166.01	20Year-Existing	37.17	58.39	59.64	59.97	60.70	0.041897	5.12	10.04	16.27	1.61
BellsB	M001	1153.18	20Year-Existing	37.17	57.70	59.35	59.60	60.16	0.031059	5.32	12.49	19.41	1.42
BellsB	M001	1141.88	20Year-Existing	37.17	56.72	57.89	58.37	59.56	0.071045	6.11	7.39	12.18	2.06
BellsB	M001	1128.34	20Year-Existing	37.17	56.53	57.62	57.88	58.50	0.050226	5.10	9.76	14.37	1.71
BellsB	M001	1117.89	20Year-Existing	37.17	55.58	56.71	57.08	57.89	0.064847	6.17	9.01	12.64	1.97
BellsB	M001	1096.03	20Year-Existing	37.17	54.61	56.12	56.35	56.92	0.026747	4.43	11.20	14.99	1.31
BellsB	M001	1077.81	20Year-Existing	37.17	54.24	55.21	55.58	56.27	0.052078	5.14	9.63	16.04	1.77
BellsB	M001	1069.76	20Year-Existing	37.17	53.70	54.37	54.71	55.55	0.119699	5.84	8.68	18.73	2.50
BellsB	M001	1064.67	20Year-Existing	37.17	53.19	53.90	54.20	54.95	0.108352	5.57	9.25	20.09	2.38
BellsB	M001	1051.64	20Year-Existing	37.17	51.97	52.93	53.26	54.04	0.062614	5.33	9.58	17.51	1.91
BellsB	M001	1032.36	20Year-Existing	37.17	50.97	52.31	52.52	53.07	0.034799	4.93	11.77	15.77	1.48
BellsB	M001	1021.64	20Year-Existing	37.17	50.03	51.29	51.68	52.56	0.051077	5.34	8.75	14.79	1.76
BellsB	M001	1014.11	20Year-Existing	37.17	49.46	50.89	51.31	52.19	0.045577	5.41	8.46	12.52	1.67
BellsB	M001	1006.24	20Year-Existing	37.17	49.15	50.28	50.72	51.77	0.058991	5.80	7.99	13.29	1.90
BellsB	M001	996.42	20Year-Existing	37.17	48.11	49.31	49.81	51.10	0.085100	6.81	7.43	12.79	2.22
BellsB	M001	987.27	20Year-Existing	37.17	47.17	48.53	49.09	50.41	0.064634	6.56	7.14	10.16	2.01
BellsB	M001	973.52	20Year-Existing	37.17	46.79	48.03	48.52	49.56	0.045478	5.65	7.50	11.16	1.81

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	37.17	45.77	47.16	47.61	48.56	0.045501	5.71	8.43	14.23	1.79
BellsB	M001	931.51	20Year-Existing	37.17	44.86	46.02	46.45	47.43	0.073129	6.94	7.95	12.62	2.24
BellsB	M001	925.41	20Year-Existing	37.17	44.69	46.25	46.47	46.99	0.022388	4.80	12.00	17.70	1.28
BellsB	M001	901.68	20Year-Existing	37.17	43.69	44.99	45.38	46.25	0.038085	5.59	8.48	10.55	1.69
BellsB	M001	877.27	20Year-Existing	37.17	43.18	45.34	44.86	45.60	0.004151	2.63	18.68	13.38	0.61
BellsB	M001	857.41	20Year-Existing	37.17	42.16	45.35	44.24	45.52	0.001485	2.05	28.64	36.45	0.39
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	38.25	38.54	40.75	40.75	41.73	0.012946	4.46	8.92	9.23	1.01
BellsB	M001	810.13	20Year-Existing	38.25	37.80	39.04	39.67	41.21	0.085186	6.53	5.86	7.07	2.23
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	38.25	34.33	36.47	37.11	38.43	0.046484	6.24	6.34	7.96	1.71
BellsB	M001	782.27	20Year-Existing	38.25	33.92	34.77	35.34	37.17	0.160855	7.33	5.93	10.92	2.92
BellsB	M001	772.73	20Year-Existing	38.25	30.94	32.45	33.18	35.60	0.157195	9.92	6.17	9.31	2.86
BellsB	M001	766.74	20Year-Existing	38.25	30.65	32.38	33.04	34.63	0.091835	8.66	7.31	9.45	2.27
BellsB	M001	760.32	20Year-Existing	38.25	30.34	31.83	32.48	34.09	0.077560	7.66	7.15	9.59	2.20
BellsB	M001	755.97	20Year-Existing	38.25	30.05	31.54	32.12	33.71	0.081852	7.14	7.06	10.61	2.19
BellsB	M001	749.69	20Year-Existing	38.25	29.30	30.85	31.47	33.16	0.083067	7.69	7.06	9.82	2.23
BellsB	M001	742.14	20Year-Existing	38.25	28.38	29.51	30.25	32.40	0.107187	7.95	5.80	8.21	2.57
BellsB	M001	736.73	20Year-Existing	38.25	28.24	28.99	29.61	31.61	0.167300	7.72	5.69	10.44	3.04
BellsB	M001	722.61	20Year-Existing	38.25	27.35	28.39	28.80	29.86	0.065119	5.83	8.11	14.23	1.97
BellsB	M001	712.04	20Year-Existing	38.25	26.27	27.70	28.17	29.23	0.053763	5.89	7.93	10.30	1.81
BellsB	M001	702.42	20Year-Existing	38.25	26.04	27.29	27.70	28.65	0.054156	5.69	8.43	11.68	1.82
BellsB	M001	691.68	20Year-Existing	38.25	25.03	26.50	26.97	28.03	0.057757	5.72	7.48	9.96	1.84
BellsB	M001	686.22	20Year-Existing	38.25	24.46	25.61	26.17	27.60	0.088463	6.29	6.31	9.68	2.24
BellsB	M001	675.26	20Year-Existing	38.25	24.08	25.20	25.64	26.66	0.057860	5.68	7.68	10.30	1.88
BellsB	M001	668.37	20Year-Existing	38.25	23.58	24.84	25.27	26.28	0.053526	5.64	8.00	11.55	1.81
BellsB	M001	655.45	20Year-Existing	38.25	23.02	24.14	24.56	25.57	0.056713	5.55	7.99	12.58	1.84
BellsB	M001	636.88	20Year-Existing	38.25	21.46	22.72	23.22	24.41	0.063592	5.89	7.10	9.88	1.95
BellsB	M001	619.06	20Year-Existing	38.25	20.82	22.28	22.63	23.42	0.035844	5.14	9.30	11.18	1.52
BellsB	M001	608.48	20Year-Existing	38.25	20.13	21.43	21.92	22.93	0.051335	5.60	7.58	9.40	1.78
BellsB	M001	592.31	20Year-Existing	38.25	18.95	20.30	20.80	21.97	0.068575	6.53	7.83	10.82	2.04
BellsB	M001	582.72	20Year-Existing	38.25	18.14	19.17	19.73	21.17	0.091778	6.82	6.93	9.93	2.34
BellsB	M001	577.91	20Year-Existing	38.25	17.66	19.12	19.65	20.78	0.045081	6.16	7.85	8.40	1.74
BellsB	M001	561.51	20Year-Existing	38.25	17.02	18.37	18.81	19.85	0.063662	6.05	8.54	13.00	1.95
BellsB	M001	553.07	20Year-Existing	38.25	16.35	17.42	17.99	19.25	0.073376	6.11	6.85	10.03	2.08
BellsB	M001	541.54	20Year-Existing	38.25	15.41	16.54	17.06	18.34	0.085513	5.98	6.72	11.18	2.19
BellsB	M001	529.17	20Year-Existing	38.25	14.85	15.91	16.33	17.31	0.063692	5.26	7.51	8.85	1.73
BellsB	M001	514.53	20Year-Existing	38.25	14.21	15.28	15.60	16.36	0.053946	4.99	9.13	11.79	1.63
BellsB	M001	467.56	20Year-Existing	38.25	11.61	12.73	13.06	13.87	0.050638	4.79	8.41	10.06	1.57
BellsB	M001	420.59	20Year-Existing	38.25	8.75	11.74	10.84	12.00	0.003512	2.35	19.63	10.69	0.47
BellsB	M001	400.25	20Year-Existing	38.25	8.57	11.60	10.38	11.92	0.002944	2.52	15.15	6.29	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	38.25	0.83	4.06	2.64	4.17	0.000764	1.65	41.51	48.13	0.29
BellsB	M001	47.74	20Year-Existing	38.25	0.56	4.10	2.59	4.11	0.000138	0.74	123.54	119.95	0.13
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	38.25	0.70	4.10	2.62	4.11	0.000118	0.67	132.91	127.29	0.12
BellsB	M001	20.51	20Year-Existing	38.25	0.57	4.09		4.10	0.000149	0.74	126.29	136.24	0.13

Corner Brook 20yr Q-20%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	107.36	36.31	38.54	38.54	39.38	0.009108	4.42	31.03	19.62	0.98
CornerB	M004	2838.71	20Year-Existing	107.36	36.15	37.84	38.01	38.82	0.013187	4.52	27.00	21.29	1.13
CornerB	M004	2796.61	20Year-Existing	107.36	35.35	37.78	37.22	38.16	0.003759	2.96	45.61	25.18	0.64
CornerB	M004	2769.85	20Year-Existing	107.36	34.80	37.00	37.00	37.71	0.014041	5.52	35.25	25.37	1.22
CornerB	TR001	206.04	20Year-Existing	18.32	43.81	44.57	44.79	45.31	0.042013	4.43	5.92	13.08	1.74
CornerB	TR001	156.04	20Year-Existing	18.32	41.63	42.50	42.75	43.24	0.040306	3.87	5.30	13.64	1.65
CornerB	TR001	106.04	20Year-Existing	18.32	39.17	39.67	39.95	40.63	0.069496	4.55	4.64	11.78	2.12
CornerB	TR001	56.04	20Year-Existing	18.32	37.27	37.93	38.06	38.44	0.028465	3.31	6.33	12.79	1.40
CornerB	TR001	36.04	20Year-Existing	18.32	35.50	38.12	37.03	38.13	0.000044	0.32	109.78	79.39	0.07
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	18.32	35.18	36.77	36.77	37.43	0.011183	3.60	5.09	10.00	0.99
CornerB	M003	2689.92	20Year-Existing	117.20	33.55	35.32	35.76	36.70	0.027440	6.30	31.87	41.57	1.61
CornerB	M003	2645.73	20Year-Existing	117.20	32.87	36.04	34.39	36.11	0.000645	1.54	121.15	55.22	0.28
CornerB	M003	2602.09	20Year-Existing	117.20	32.20	36.04		36.09	0.000267	1.10	157.19	64.63	0.18
CornerB	M003	2557.73	20Year-Existing	117.20	31.34	36.01		36.07	0.000275	1.27	136.20	47.63	0.19
CornerB	M003	2537.73	20Year-Existing	117.20	30.77	35.96	33.75	36.06	0.000463	1.82	128.94	62.28	0.26
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	117.20	30.35	32.45	33.19	35.04	0.024425	7.14	16.42	14.38	1.59
CornerB	M003	2507.21	20Year-Existing	117.20	30.75	32.16	32.72	34.05	0.043485	6.80	21.94	21.08	1.96
CornerB	M003	2459.31	20Year-Existing	117.20	30.13	31.55	31.76	32.46	0.018613	4.68	32.14	30.64	1.30
CornerB	M003	2411.41	20Year-Existing	117.20	29.27	31.24	31.28	31.80	0.009888	4.07	46.68	45.32	0.99
CornerB	M003	2363.51	20Year-Existing	117.20	28.77	30.17	30.42	31.08	0.021822	4.69	32.78	37.66	1.38
CornerB	M003	2315.61	20Year-Existing	117.20	27.93	29.39	29.54	30.22	0.014402	4.11	30.85	27.58	1.14
CornerB	M003	2267.71	20Year-Existing	117.44	26.30	29.67	28.27	29.89	0.001226	2.16	64.96	26.29	0.39
CornerB	M003	2264.01	20Year-Existing	117.44	26.10	29.59	28.97	29.86	0.004963	2.32	51.43	28.98	0.54
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	117.44	26.10	29.40		29.74	0.007197	2.60	45.83	28.66	0.64
CornerB	M003	2260.98	20Year-Existing	117.44	25.80	29.46		29.66	0.001021	2.05	69.13	27.68	0.36
CornerB	M003	2240.88	20Year-Existing	117.44	27.01	29.23		29.58	0.003892	2.70	49.62	35.89	0.63
CornerB	M003	2212.25	20Year-Existing	117.44	26.87	29.14		29.46	0.003388	2.69	53.21	32.19	0.60
CornerB	M003	2183.63	20Year-Existing	117.44	25.56	28.34	28.34	29.26	0.008748	4.65	33.46	21.26	0.97
CornerB	M003	2163.63	20Year-Existing	117.44	25.35	28.22	27.61	28.73	0.003759	3.26	38.95	22.60	0.65
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	117.44	24.87	27.31	27.47	28.42	0.011992	5.04	28.19	20.44	1.12
CornerB	M003	2131.66	20Year-Existing	117.44	24.57	26.60	27.05	28.13	0.024119	5.63	23.09	19.10	1.49
CornerB	M003	2119.46	20Year-Existing	117.44	24.12	25.76	26.36	27.72	0.039554	6.43	20.69	20.40	1.86
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	117.44	24.04	26.07	26.39	27.31	0.017684	5.02	25.46	20.13	1.29
CornerB	M003	2080.62	20Year-Existing	117.44	23.73	25.24	25.63	26.58	0.024776	5.26	24.85	23.54	1.49
CornerB	M003	2068.44	20Year-Existing	117.44	23.76	25.30	25.49	26.21	0.016183	4.43	30.42	27.13	1.22
CornerB	M003	2022.25	20Year-Existing	117.44	22.74	24.35	24.62	25.43	0.018046	4.82	28.59	25.51	1.30
CornerB	M003	1991.14	20Year-Existing	117.44	22.18	23.99	24.13	24.92	0.012685	4.51	31.01	23.56	1.12
CornerB	M003	1985.82	20Year-Existing	117.44	21.97	23.66	23.95	24.82	0.018129	5.07	27.77	23.13	1.31
CornerB	M003	1975.95	20Year-Existing	117.44	21.78	23.37	23.71	24.61	0.021713	5.36	27.26	24.12	1.43
CornerB	M003	1929.72	20Year-Existing	117.44	20.08	21.83	22.31	23.45	0.027787	5.86	22.68	19.03	1.59
CornerB	M003	1883.49	20Year-Existing	117.44	19.23	21.34	21.53	22.47	0.012811	4.97	28.24	18.38	1.15
CornerB	TR002	21.04	20Year-Existing	6.96	22.27	22.80	23.24	24.71	0.150182	6.51	1.32	3.98	3.05
CornerB	TR002	18.08	20Year-Existing	6.96	21.40	21.75	22.11	23.99	0.389798	7.39	1.23	5.98	4.55
CornerB	M002	1826.39	20Year-Existing	118.56	16.92	18.26	18.94	20.95	0.124211	7.65	18.44	27.70	2.48
CornerB	M002	1790.92	20Year-Existing	118.56	15.49	18.61	18.09	19.24	0.007236	3.83	38.70	17.06	0.71
CornerB	M002	1773.95	20Year-Existing	118.56	14.72	18.89	17.17	19.05	0.001421	2.00	75.51	27.08	0.33
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	118.56	14.87	18.88	16.93	19.00	0.000831	1.75	92.67	35.73	0.29
CornerB	M002	1733.13	20Year-Existing	118.56	15.23	18.90		18.94	0.000246	0.92	157.17	65.72	0.15
CornerB	M002	1717.41	20Year-Existing	118.56	15.12	18.90		18.94	0.000207	0.86	175.48	75.19	0.14
CornerB	M002	1691.96	20Year-Existing	118.56	14.62	18.90		18.93	0.000173	0.81	193.68	92.07	0.13
CornerB	M002	1654.15	20Year-Existing	118.56	13.87	18.91		18.92	0.000078	0.58	255.93	105.92	0.09
CornerB	M002	1613.91	20Year-Existing	118.56	13.08	18.91		18.92	0.000036	0.48	300.01	118.28	0.07
CornerB	M002	1567.16	20Year-Existing	118.56	12.15	18.91		18.92	0.000006	0.20	643.42	183.11	0.03
CornerB	M002	1551.89	20Year-Existing	118.56	11.85	18.91		18.92	0.000002	0.13	997.57	250.48	0.02
CornerB	M002	1539.91	20Year-Existing	117.68	11.62	18.91		18.92	0.000001	0.09	1381.09	296.57	0.01
CornerB	M002	1526.59	20Year-Existing	117.68	11.36	18.91		18.92	0.000001	0.09	1406.09	303.46	0.01
CornerB	M002	1517.99	20Year-Existing	117.68	11.18	18.91		18.91	0.000001	0.11	1186.67	260.44	0.01
CornerB	M002	1505.64	20Year-Existing	117.68	10.94	18.91		18.91	0.000002	0.14	885.51	185.85	0.02
CornerB	M002	1490.63	20Year-Existing	117.68	10.64	18.91		18.91	0.000005	0.21	610.38	134.04	0.03
CornerB	M002	1463.65	20Year-Existing	117.68	10.11	18.91		18.91	0.000021	0.43	331.14	76.67	0.06
CornerB	M002	1415.93	20Year-Existing	117.68	9.17	18.90		18.91	0.000018	0.41	314.88	67.96	0.05
CornerB	M002	1386.11	20Year-Existing	117.68	8.58	18.90		18.91	0.000027	0.49	282.62	74.93	0.06
CornerB	M002	1363.91	20Year-Existing	117.68	8.14	18.89		18.91	0.000044	0.63	230.16	55.07	0.08
CornerB	M002	1356.61	20Year-Existing	117.68	8.00	18.89		18.91	0.000126	0.82	232.23	70.09	0.09
CornerB	M002	1354.61	20Year-Existing	117.68	15.35	18.37	18.37	18.86	0.004593	3.55	52.08	49.57	0.65
CornerB	M002	1354.11	20Year-Existing	117.68	15.35	18.37	18.37	18.86	0.004672	3.57	51.64	49.36	0.66
CornerB	M002	1352.01	20Year-Existing	117.68	8.00	8.93	10.66	17.97	0.797415	0.35	8.83	9.51	0.16
CornerB	M002	1347.51	20Year-Existing	117.68	7.72	9.25	10.23	13.79	0.244954	9.44	12.47	15.14	3.32
CornerB	M002	1336.58	20Year-Existing	117.68	7.69	9.03	9.72	11.46	0.106908	6.93	17.13	19.10	2.28
CornerB	M002	1326.83	20Year-Existing	117.68	7.68	10.17	9.49	10.45	0.004449	2.44	54.22	29.36	0.54
CornerB	M002	1317.22	20Year-Existing	117.68	7.66	10.02		10.38	0.007024	2.77	46.44	29.52	0.65
CornerB	M002	1315.18	20Year-Existing	117.68	7.28	9.64	9.64	10.33	0.018148	3.95	34.31	26.20	1.01
CornerB	M002	1313.58	20Year-Existing	117.68	6.48	8.82	9.24	10.22	0.043576	5.46	24.03	22.34	1.52
CornerB	M002	1312.39	20Year-Existing	117.68	6.23	8.38	8.91	10.13	0.057301	6.00	21.23	20.97	1.72
CornerB	M002	1311.16	20Year-Existing	117.68	5.92	7.99	8.60	10.02	0.079439	6.36	19.13	20.64	1.98
CornerB	M002	1309.11	20Year-Existing	117.68	5.91	7.60	8.25	9.83	0.088381	6.64	18.16	19.79	2.09
CornerB	M002	1305.35	20Year-Existing	117.68	5.37	7.00	7.69	9.46	0.092447	7.11	18.17	21.43	2.17

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	117.68	5.06	6.55	7.21	8.89	0.109332	6.81	17.70	21.58	2.29
CornerB	M002	1296.49	20Year-Existing	117.68	4.91	6.63	7.19	8.47	0.056240	6.11	20.43	18.67	1.73
CornerB	M002	1289.64	20Year-Existing	117.68	4.71	6.67	7.04	8.03	0.035761	5.30	24.11	19.77	1.41
CornerB	M002	1284.12	20Year-Existing	117.68	4.41	6.66	6.90	7.81	0.023576	4.92	26.65	18.68	1.18
CornerB	M002	1279.52	20Year-Existing	117.68	4.23	6.25	6.63	7.66	0.031316	5.35	23.72	18.06	1.35
CornerB	M002	1258.94	20Year-Existing	117.68	3.53	5.06	5.58	6.75	0.061768	5.97	22.12	25.28	1.79
CornerB	M002	1246.98	20Year-Existing	117.68	3.37	4.61	5.05	6.06	0.042257	5.37	22.74	23.81	1.64
CornerB	M002	1233.83	20Year-Existing	117.68	3.10	4.50	4.76	5.44	0.031498	4.47	29.67	36.41	1.42
CornerB	M002	1215.66	20Year-Existing	117.68	2.70	4.46	4.21	4.79	0.006140	2.65	53.77	54.80	0.67
CornerB	M002	1206.83	20Year-Existing	117.68	2.54	4.45		4.72	0.005480	2.47	60.82	59.39	0.63
CornerB	M002	1194.69	20Year-Existing	117.68	2.39	4.42		4.65	0.004496	2.35	66.81	59.98	0.58
CornerB	M002	1185.06	20Year-Existing	117.68	2.26	4.41		4.60	0.003274	2.17	74.06	64.01	0.51
CornerB	M002	1142.41	20Year-Existing	117.68	1.70	4.33		4.47	0.002408	1.95	85.18	66.41	0.44
CornerB	M002	1137.55	20Year-Existing	117.68	1.60	4.05	3.81	4.42	0.007573	2.82	51.00	57.47	0.73
CornerB	M002	1110.53	20Year-Existing	117.68	1.39	4.00		4.26	0.003019	2.37	65.86	60.66	0.50
CornerB	M002	1090.67	20Year-Existing	117.68	1.10	4.10		4.17	0.000957	1.43	127.35	85.97	0.28
CornerB	M002	1070.69	20Year-Existing	117.68	0.80	4.11	2.64	4.15	0.000416	1.08	170.86	88.35	0.20
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	117.68	0.76	4.10	2.56	4.14	0.000367	1.04	172.45	85.68	0.19
CornerB	M002	1047.01	20Year-Existing	117.68	0.75	4.09		4.13	0.000342	1.12	169.07	77.50	0.20
CornerB	M002	1004.03	20Year-Existing	117.68	0.77	4.07		4.11	0.000336	1.12	186.15	123.83	0.20
CornerB	M002	959.21	20Year-Existing	117.68	0.70	4.07		4.09	0.000272	1.00	262.16	272.63	0.18
CornerB	M002	915.75	20Year-Existing	116.96	0.68	4.07		4.08	0.000195	0.82	333.45	293.29	0.15
CornerB	M002	869.66	20Year-Existing	116.96	0.69	4.06		4.07	0.000102	0.61	383.78	219.29	0.11
CornerB	M002	828.33	20Year-Existing	113.20	0.77	4.06		4.07	0.000105	0.60	372.95	215.63	0.11
CornerB	M002	784.55	20Year-Existing	113.20	0.82	4.06		4.07	0.000071	0.50	391.43	228.01	0.09
CornerB	M002	739.85	20Year-Existing	113.20	0.82	4.06		4.06	0.000071	0.48	397.39	262.03	0.09
CornerB	M002	696.36	20Year-Existing	113.20	0.64	4.05		4.06	0.000106	0.63	341.95	265.37	0.11
CornerB	M001	659.37	20Year-Existing	118.72	0.75	4.04		4.05	0.000108	0.60	327.30	225.86	0.11
CornerB	M001	643.93	20Year-Existing	118.72	0.74	4.03	2.56	4.05	0.000165	0.75	273.98	210.08	0.14
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	118.72	0.83	3.72	2.46	3.77	0.000438	1.14	181.91	170.75	0.22
CornerB	M001	608.52	20Year-Existing	118.72	0.76	3.72		3.76	0.000516	1.19	176.92	156.17	0.24
CornerB	M001	570.12	20Year-Existing	118.72	0.61	3.72		3.74	0.000276	0.92	242.15	184.77	0.18
CornerB	M001	535.83	20Year-Existing	118.72	0.56	3.71	1.64	3.73	0.000147	0.74	252.93	217.30	0.13
CornerB	M001	520.22	20Year-Existing	118.72	0.55	3.71	1.72	3.72	0.000110	0.64	299.22	289.06	0.12
CornerB	M001	472.07	20Year-Existing	118.72	0.58	3.68	2.06	3.71	0.000286	1.00	207.27	192.32	0.18
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	118.72	0.44	3.17	1.83	3.30	0.000897	1.66	106.62	149.91	0.32
CornerB	M001	425.41	20Year-Existing	118.72	0.48	3.18		3.26	0.000730	1.44	166.30	246.08	0.29
CornerB	M001	401.99	20Year-Existing	118.72	0.74	3.19		3.23	0.000443	1.08	241.45	322.52	0.22
CornerB	M001	381.26	20Year-Existing	118.72	0.79	3.06	2.35	3.20	0.001508	1.86	133.43	308.90	0.40
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	118.72	0.79	2.96	2.35	3.17	0.002274	2.24	107.08	300.06	0.49
CornerB	M001	352.89	20Year-Existing	118.72	0.68	2.98		3.09	0.001045	1.57	110.69	207.84	0.34
CornerB	M001	324.13	20Year-Existing	118.72	0.67	2.98		3.05	0.000798	1.38	134.94	156.76	0.29
CornerB	M001	292.92	20Year-Existing	118.72	0.65	2.97		3.02	0.000657	1.23	173.20	262.89	0.27
CornerB	M001	274.62	20Year-Existing	118.72	0.96	2.95	2.50	3.01	0.001499	1.63	184.67	310.19	0.39
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	118.72	1.01	2.92	2.49	2.96	0.001374	1.55	207.41	338.42	0.37
CornerB	M001	245.99	20Year-Existing	118.72	0.64	2.90		2.94	0.000811	1.28	237.78	381.64	0.29
CornerB	M001	210.89	20Year-Existing	118.72	0.68	2.88		2.91	0.000659	1.09	246.86	347.10	0.26
CornerB	M001	174.77	20Year-Existing	118.72	0.69	2.87		2.89	0.000593	0.93	269.99	402.34	0.24
CornerB	M001	155.66	20Year-Existing	118.72	0.64	2.86	2.45	2.87	0.000724	0.93	302.21	494.04	0.25
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	118.72	0.55	2.85	2.40	2.87	0.000534	0.80	320.95	451.76	0.22
CornerB	M001	129.05	20Year-Existing	118.72	0.40	2.84		2.85	0.000367	0.82	347.47	475.83	0.19
CornerB	M001	80.73	20Year-Existing	118.72	0.20	2.82		2.84	0.000307	0.85	316.54	383.66	0.18
CornerB	M001	23.81	20Year-Existing	118.72	0.32	2.80	1.84	2.82	0.000311	0.80	308.45	431.13	0.18
BellsB	TR001	178.13	20Year-Existing	10.00	92.91	93.97	94.24	94.85	0.043046	4.21	2.51	4.66	1.64
BellsB	TR001	159.86	20Year-Existing	10.00	92.15	93.08	93.36	94.00	0.052057	4.55	2.75	6.13	1.83
BellsB	TR001	139.54	20Year-Existing	10.00	91.13	93.47	92.35	93.63	0.001997	1.79	5.59	6.74	0.37
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	10.00	89.49	90.67	90.84	91.51	0.021813	4.10	2.51	3.44	1.26
BellsB	TR001	88.17	20Year-Existing	10.00	88.47	89.23	89.68	91.07	0.127400	6.29	1.86	4.73	2.78
BellsB	TR001	84.12	20Year-Existing	10.00	87.66	88.30	88.72	90.34	0.228460	6.38	1.64	5.70	3.52
BellsB	TR001	79.14	20Year-Existing	10.00	86.53	87.18	87.66	89.37	0.164222	6.66	1.65	4.89	3.16
BellsB	TR001	72.74	20Year-Existing	10.00	85.76	86.32	86.76	88.13	0.186557	5.99	1.74	5.87	3.21
BellsB	TR001	67.75	20Year-Existing	10.00	85.04	85.53	85.86	87.07	0.186900	5.71	2.01	7.91	3.18
BellsB	TR001	64.04	20Year-Existing	10.00	84.47	85.09	85.43	86.43	0.130248	5.13	1.95	5.33	2.71
BellsB	TR001	60.69	20Year-Existing	10.00	84.14	85.01	85.31	86.02	0.069505	4.53	2.39	5.87	2.06
BellsB	TR001	56.76	20Year-Existing	10.00	83.97	84.81	85.09	85.72	0.068487	4.24	2.38	5.83	2.02
BellsB	TR001	50.93	20Year-Existing	10.00	83.68	84.62	84.83	85.30	0.054817	3.73	2.88	7.68	1.80
BellsB	TR001	43.86	20Year-Existing	10.00	83.34	84.15	84.36	84.87	0.066914	3.81	2.80	9.05	1.96
BellsB	TR001	37.01	20Year-Existing	10.00	82.98	83.79	83.99	84.47	0.049224	3.79	3.05	8.69	1.75
BellsB	TR001	12.14	20Year-Existing	10.00	82.15	82.93	83.05	83.38	0.034848	3.14	3.72	9.73	1.46
BellsB	M002	5166.11	20Year-Existing	8.32	190.79	191.69	191.64	191.84	0.011856	2.28	6.69	15.93	0.82
BellsB	M002	5149.23	20Year-Existing	8.32	190.57	191.40	191.40	191.62	0.014855	2.33	5.27	12.95	0.90
BellsB	M002	5117.45	20Year-Existing	8.32	189.91	191.16	190.61	191.18	0.001483	1.04	15.40	21.56	0.31
BellsB	M002	5090.85	20Year-Existing	8.32	189.62	190.78	190.78	191.06	0.013713	2.77	4.85	9.23	0.89
BellsB	M002	5067.47	20Year-Existing	8.32	189.18	189.61	189.82	190.33	0.149124	4.94	2.62	8.79	2.60
BellsB	M002	5017.78	20Year-Existing	8.32	188.12	189.06	189.06	189.29	0.016447	2.74	5.22	10.93	0.97
BellsB	M002	4967.57	20Year-Existing	8.32	186.55	187.53	187.68	188.06	0.038397	3.78	3.18	6.55	1.39

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	8.32	185.69	186.57	186.32	186.65	0.005299	1.57	8.16	15.15	0.56
BellsB	M002	4873.31	20Year-Existing	8.32	184.61	185.91	185.91	186.26	0.014655	2.97	4.12	6.72	0.92
BellsB	M002	4853.42	20Year-Existing	8.32	183.55	185.83	184.79	185.97	0.001754	1.64	5.06	17.02	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	8.32	181.53	182.75	182.75	183.28	0.016113	3.24	2.57	5.34	1.00
BellsB	M002	4785.76	20Year-Existing	8.32	181.35	182.13	182.31	182.74	0.047701	3.80	2.78	6.45	1.57
BellsB	M002	4756.65	20Year-Existing	8.32	180.12	180.89	181.05	181.38	0.042717	3.73	3.49	10.36	1.50
BellsB	M002	4727.54	20Year-Existing	8.32	179.02	179.66	179.84	180.14	0.041675	3.56	3.52	11.88	1.56
BellsB	M002	4707.54	20Year-Existing	8.32	177.96	178.27	178.42	178.81	0.125535	3.87	3.07	16.22	2.44
BellsB	M002	4702.24	20Year-Existing	8.32	177.65	178.37	178.39	178.56	0.016949	2.35	5.56	17.00	1.00
BellsB	M002	4682.48	20Year-Existing	8.32	176.63	177.20	177.41	177.89	0.067631	3.98	2.79	10.93	1.93
BellsB	M002	4658.79	20Year-Existing	8.32	175.50	176.37	176.53	176.95	0.025390	3.57	2.87	5.26	1.29
BellsB	M002	4633.41	20Year-Existing	8.32	174.51	175.11	175.35	175.92	0.080772	4.85	2.84	10.43	2.16
BellsB	M002	4609.61	20Year-Existing	8.32	173.50	174.40	174.28	174.56	0.008347	2.15	5.81	10.19	0.76
BellsB	M002	4583.99	20Year-Existing	8.32	172.77	173.91	173.91	174.27	0.013177	2.78	3.58	5.72	0.93
BellsB	M002	4534.72	20Year-Existing	8.32	170.00	170.74	171.18	172.58	0.129075	7.05	1.82	4.91	2.80
BellsB	M002	4485.52	20Year-Existing	8.32	168.20	168.75	168.85	169.08	0.043078	3.33	4.29	15.83	1.55
BellsB	M002	4436.28	20Year-Existing	15.04	165.85	166.82	166.99	167.39	0.029978	4.24	6.03	12.42	1.44
BellsB	M002	4387.04	20Year-Existing	15.04	164.06	165.06	165.29	165.78	0.035023	4.69	5.34	10.27	1.57
BellsB	M002	4337.81	20Year-Existing	15.04	162.60	163.61	163.79	164.14	0.030035	4.26	6.96	18.65	1.43
BellsB	M002	4288.56	20Year-Existing	15.04	161.30	162.31	162.44	162.75	0.028554	4.03	7.47	19.51	1.37
BellsB	M002	4239.33	20Year-Existing	15.04	159.65	160.49	160.71	161.18	0.040985	4.35	5.37	13.11	1.64
BellsB	M002	4190.09	20Year-Existing	15.04	158.43	159.41	159.50	159.79	0.019493	3.36	7.39	15.76	1.16
BellsB	M002	4140.85	20Year-Existing	15.04	157.30	157.84	157.93	158.17	0.056365	3.94	6.99	22.02	1.81
BellsB	M002	4091.61	20Year-Existing	15.04	155.30	155.97	156.02	156.24	0.030731	3.45	7.82	19.00	1.39
BellsB	M002	4042.37	20Year-Existing	15.04	153.74	154.47	154.55	154.84	0.025626	3.24	6.79	14.32	1.28
BellsB	M002	3993.13	20Year-Existing	15.04	152.65	153.36	153.40	153.61	0.026834	3.09	8.37	21.65	1.25
BellsB	M002	3943.89	20Year-Existing	15.04	151.36	152.08	152.14	152.39	0.027591	3.30	7.54	17.49	1.32
BellsB	M002	3894.65	20Year-Existing	15.04	149.52	150.89	151.04	151.39	0.017995	3.57	6.93	16.54	1.11
BellsB	M002	3869.08	20Year-Existing	15.04	148.87	149.85	150.11	150.68	0.042507	4.55	4.51	8.95	1.66
BellsB	M002	3845.41	20Year-Existing	15.04	148.37	149.48	149.55	149.89	0.020056	3.38	6.73	12.77	1.11
BellsB	M002	3822.22	20Year-Existing	15.04	147.71	148.84	148.53	148.93	0.004580	1.76	13.33	17.48	0.54
BellsB	M002	3796.17	20Year-Existing	15.04	146.89	148.31	148.31	148.71	0.012858	3.15	6.73	9.57	0.91
BellsB	M002	3765.39	20Year-Existing	15.04	146.40	147.85	147.87	148.29	0.014595	3.20	6.02	8.07	0.94
BellsB	M002	3746.94	20Year-Existing	15.04	145.76	147.34	146.86	147.40	0.002239	1.49	15.40	17.18	0.40
BellsB	M002	3724.94	20Year-Existing	15.04	145.32	146.83	146.83	147.27	0.013712	3.11	5.94	7.77	0.92
BellsB	M002	3697.71	20Year-Existing	15.04	145.05	146.86	146.20	146.97	0.002538	1.67	11.34	9.52	0.42
BellsB	M002	3677.71	20Year-Existing	15.04	143.44	146.71	145.20	146.92	0.001612	2.02	7.45	13.47	0.37
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	15.04	142.47	143.83	144.14	145.06	0.024418	4.91	3.07	7.13	1.39
BellsB	M002	3623.19	20Year-Existing	15.04	142.10	143.53	143.79	144.33	0.027668	4.38	4.40	6.71	1.34
BellsB	M002	3573.45	20Year-Existing	15.04	140.89	142.04	142.30	142.85	0.032766	4.24	4.27	7.75	1.46
BellsB	M002	3520.99	20Year-Existing	15.04	139.30	140.60	140.83	141.33	0.024823	4.06	4.54	6.92	1.28
BellsB	M002	3473.83	20Year-Existing	15.04	137.98	139.46	139.65	140.12	0.023873	4.21	4.97	7.65	1.23
BellsB	M002	3424.29	20Year-Existing	15.04	136.49	138.31	137.79	138.48	0.002887	1.95	9.51	9.10	0.49
BellsB	M002	3400.36	20Year-Existing	15.04	135.96	138.39		138.42	0.000258	0.73	26.26	17.44	0.16
BellsB	M002	3386.31	20Year-Existing	15.04	135.48	138.36	137.05	138.41	0.000384	1.07	26.18	40.82	0.20
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	15.04	135.22	137.83	136.77	137.83	0.000047	0.35	69.85	41.98	0.07
BellsB	M002	3329.08	20Year-Existing	19.04	134.96	137.83		137.83	0.000050	0.38	79.24	34.93	0.07
BellsB	M002	3303.55	20Year-Existing	19.04	133.82	137.56	135.77	137.80	0.001249	2.17	8.76	25.11	0.36
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	19.04	131.39	133.75	133.75	134.67	0.011766	4.26	4.47	15.93	1.00
BellsB	M002	3203.83	20Year-Existing	19.04	131.13	132.24	132.73	133.96	0.090494	6.22	4.01	10.19	2.33
BellsB	M002	3176.31	20Year-Existing	19.04	130.02	131.26	131.57	132.22	0.039513	4.93	5.66	10.87	1.61
BellsB	M002	3157.63	20Year-Existing	19.04	129.89	131.16	131.24	131.53	0.022101	3.62	9.32	18.82	1.16
BellsB	M002	3130.11	20Year-Existing	19.04	128.68	129.97	130.19	130.79	0.028519	4.37	5.43	7.03	1.40
BellsB	M002	3083.82	20Year-Existing	19.04	127.94	129.49	129.59	129.89	0.011278	3.26	10.39	23.78	0.92
BellsB	M002	3037.68	20Year-Existing	19.04	127.11	127.85	128.11	128.75	0.075115	5.41	6.15	18.90	2.18
BellsB	M002	2991.47	20Year-Existing	19.04	126.28	127.84	127.16	127.86	0.000665	0.90	35.00	41.41	0.24
BellsB	M002	2945.26	20Year-Existing	19.04	125.32	127.61	126.76	127.79	0.003223	1.90	10.70	13.40	0.42
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	19.04	125.12	126.67	126.57	127.30	0.009318	3.50	5.44	4.48	0.90
BellsB	M002	2918.61	20Year-Existing	19.04	124.99	126.52	126.52	127.05	0.014039	3.63	7.03	9.44	1.03
BellsB	M002	2899.46	20Year-Existing	19.04	125.25	126.79	126.53	126.84	0.001355	1.31	30.19	86.23	0.34
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	19.04	124.44	125.64	125.64	126.19	0.011793	3.29	5.78	17.78	1.00
BellsB	M002	2861.32	20Year-Existing	19.04	123.64	124.52	124.83	125.58	0.058317	5.29	5.09	13.09	2.04
BellsB	M002	2823.69	20Year-Existing	19.04	123.23	124.17	124.19	124.41	0.019807	2.99	11.15	26.31	1.07
BellsB	M002	2777.91	20Year-Existing	19.04	122.77	123.79	123.63	123.84	0.003962	1.46	26.54	57.54	0.49
BellsB	M002	2727.91	20Year-Existing	19.04	122.21	123.32	123.32	123.58	0.014699	2.83	11.01	21.36	0.94
BellsB	M002	2677.99	20Year-Existing	19.04	121.13	122.53	122.41	122.81	0.010035	2.64	9.56	12.30	0.79
BellsB	M002	2628.09	20Year-Existing	19.04	120.69	122.05	122.05	122.30	0.011418	2.94	12.81	26.62	0.86
BellsB	M002	2578.18	20Year-Existing	19.04	119.94	121.29	121.39	121.64	0.015412	3.27	11.24	26.82	0.98
BellsB	M002	2528.27	20Year-Existing	19.04	119.10	120.58	120.59	120.95	0.013815	3.24	9.35	13.84	0.93
BellsB	M002	2518.19	20Year-Existing	19.04	118.62	119.89	120.15	120.69	0.036469	4.57	6.26	11.66	1.46
BellsB	M002	2496.15	20Year-Existing	19.04	118.53	120.04	119.82	120.21	0.006821	2.36	13.25	16.79	0.66
BellsB	M002	2478.37	20Year-Existing	19.04	117.97	119.81		120.08	0.007161	2.73	10.52	11.37	0.70
BellsB	M002	2450.61	20Year-Existing	19.04	117.55	119.32	119.32	119.80	0.012395	3.58	8.16	9.35	0.92
BellsB	M002	2428.46	20Year-Existing	19.04	117.19	118.29	118.59	119.24	0.054747	4.80	5.56	12.42	1.72
BellsB	M002	2408.52	20Year-Existing	19.04	116.63	117.78	117.94	118.32	0.037396	4.13	7.57	16.36	1.43
BellsB	M002	2378.55	20Year-Existing	19.04	116.15	117.37	117.43	117.77	0.022718	3.74	9.01	15.99	1.16
BellsB	M002	2367.92	20Year-Existing	19.04	115.61	116.58	116.83	117.38	0.050965	4.82	6.50	15.46	1.71

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	19.04	115.07	116.13	116.30	116.72	0.034991	4.22	7.44	15.64	1.43
BellsB	M002	2328.64	20Year-Existing	19.04	113.99	115.41	115.58	116.03	0.023705	4.11	7.23	11.44	1.21
BellsB	M002	2307.61	20Year-Existing	19.04	112.94	115.24	114.84	115.64	0.006306	2.79	6.83	31.16	0.67
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	19.04	111.75	112.91	113.34	114.34	0.074177	5.30	3.59	3.99	1.78
BellsB	M002	2275.77	20Year-Existing	20.80	112.06	113.64	113.64	113.99	0.013145	3.42	10.32	15.64	0.93
BellsB	M002	2232.72	20Year-Existing	20.80	110.58	112.03	112.40	113.04	0.032404	4.84	5.62	7.77	1.41
BellsB	M002	2200.99	20Year-Existing	20.80	109.61	110.98	111.27	111.96	0.037682	4.87	5.86	9.34	1.50
BellsB	M002	2173.21	20Year-Existing	20.80	108.98	110.82	110.82	111.38	0.012738	3.57	7.58	7.79	0.89
BellsB	M002	2133.27	20Year-Existing	20.80	107.79	108.94	109.37	110.34	0.061872	5.80	4.88	8.84	1.91
BellsB	M002	2117.78	20Year-Existing	20.80	107.46	108.72	108.95	109.54	0.029260	4.44	6.28	9.03	1.36
BellsB	M002	2103.01	20Year-Existing	20.80	106.45	107.68	108.04	108.88	0.058686	5.56	5.24	8.99	1.82
BellsB	M002	2085.77	20Year-Existing	20.80	105.17	106.42	106.83	107.78	0.062999	6.05	4.79	7.01	1.92
BellsB	M002	2068.57	20Year-Existing	20.80	104.36	105.26	105.64	106.61	0.083139	6.01	5.06	11.21	2.18
BellsB	M002	2059.88	20Year-Existing	20.80	103.56	104.71	105.15	106.02	0.055964	5.42	4.77	7.80	1.82
BellsB	M002	2054.52	20Year-Existing	20.80	103.13	104.27	104.67	105.67	0.071892	5.99	4.81	8.14	2.02
BellsB	M002	2040.56	20Year-Existing	20.80	102.39	104.32	103.92	104.65	0.005796	2.84	10.07	7.47	0.67
BellsB	M002	2033.27	20Year-Existing	20.80	102.08	104.00	104.00	104.56	0.014347	3.63	7.48	7.35	0.95
BellsB	M002	2025.44	20Year-Existing	20.80	101.58	102.73	103.20	104.26	0.060254	5.71	4.27	6.41	1.88
BellsB	M002	2021.67	20Year-Existing	20.80	101.43	103.04	103.29	103.92	0.027776	4.36	5.69	7.20	1.28
BellsB	M002	2014.53	20Year-Existing	20.80	99.96	101.23	101.81	103.40	0.146092	6.53	3.19	5.25	2.62
BellsB	M002	2010.46	20Year-Existing	20.80	99.08	100.00	100.62	102.71	0.168397	7.92	3.28	6.37	3.01
BellsB	M002	2007.37	20Year-Existing	20.80	98.52	99.69	100.33	102.16	0.148488	7.00	3.08	5.01	2.67
BellsB	M002	1996.87	20Year-Existing	20.80	97.97	98.88	99.41	100.75	0.093994	6.58	3.94	6.17	2.34
BellsB	M002	1982.97	20Year-Existing	20.80	97.73	98.76	99.02	99.64	0.039897	4.79	5.80	7.54	1.57
BellsB	M002	1966.25	20Year-Existing	20.80	96.75	98.56	98.64	99.15	0.016263	3.76	7.41	8.39	1.00
BellsB	M002	1951.81	20Year-Existing	20.80	96.56	98.47	97.94	98.59	0.003436	1.93	15.37	13.46	0.48
BellsB	M002	1939.94	20Year-Existing	20.80	96.29	98.05	98.05	98.48	0.012284	3.15	8.60	11.00	0.88
BellsB	M002	1918.81	20Year-Existing	20.80	95.86	97.19	97.43	98.04	0.033785	4.65	6.21	9.00	1.43
BellsB	M002	1910.32	20Year-Existing	20.80	95.58	97.17	97.24	97.78	0.016646	3.64	6.81	7.53	1.03
BellsB	M002	1896.87	20Year-Existing	20.80	94.38	95.66	96.13	97.27	0.073354	6.07	4.34	6.98	1.99
BellsB	M002	1887.59	20Year-Existing	20.80	93.87	95.88	95.30	96.02	0.002998	1.92	15.59	12.71	0.47
BellsB	M002	1880.79	20Year-Existing	20.80	93.33	95.90		95.99	0.001419	1.59	18.83	11.84	0.33
BellsB	M002	1870.34	20Year-Existing	20.80	92.77	95.91		95.97	0.000712	1.36	23.18	10.02	0.25
BellsB	M002	1857.16	20Year-Existing	20.80	91.88	95.92		95.96	0.000370	1.04	30.57	13.90	0.17
BellsB	M002	1848.27	20Year-Existing	20.80	91.91	95.93		95.95	0.000173	0.77	40.78	16.00	0.13
BellsB	M002	1834.27	20Year-Existing	20.80	90.88	95.93		95.95	0.000104	0.67	47.46	16.67	0.10
BellsB	M002	1821.35	20Year-Existing	20.80	90.90	95.94		95.94	0.000059	0.55	64.03	19.86	0.08
BellsB	M002	1807.43	20Year-Existing	20.80	89.83	95.94		95.94	0.000035	0.45	76.39	20.87	0.06
BellsB	M002	1800.77	20Year-Existing	20.80	89.59	95.94		95.94	0.000034	0.45	81.19	21.89	0.06
BellsB	M002	1777.98	20Year-Existing	20.80	88.77	95.94		95.94	0.000011	0.29	125.97	29.25	0.04
BellsB	M002	1753.27	20Year-Existing	20.80	88.22	95.94		95.94	0.000013	0.32	119.88	28.72	0.04
BellsB	M002	1729.73	20Year-Existing	20.80	88.17	95.94		95.94	0.000007	0.25	149.01	31.60	0.03
BellsB	M002	1705.77	20Year-Existing	20.80	87.60	95.94		95.94	0.000003	0.20	231.86	55.81	0.02
BellsB	M002	1688.91	20Year-Existing	20.80	86.72	95.94	89.13	95.94	0.000003	0.20	190.73	40.35	0.02
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	20.80	83.97	86.36	86.36	87.55	0.009032	4.85	4.29	17.68	1.00
BellsB	M002	1605.59	20Year-Existing	20.80	81.49	82.16	82.68	86.17	0.615519	9.33	2.50	9.95	5.70
BellsB	M001	1582.05	20Year-Existing	33.04	80.41	81.35	82.07	84.50	0.138453	8.01	4.46	8.06	3.13
BellsB	M001	1563.67	20Year-Existing	33.04	79.96	81.08	81.55	82.62	0.048329	5.85	6.88	9.89	1.96
BellsB	M001	1544.26	20Year-Existing	33.04	79.04	80.59	80.97	81.85	0.027118	5.37	7.91	8.58	1.53
BellsB	M001	1529.04	20Year-Existing	33.04	78.24	79.21	79.78	81.18	0.061931	6.38	5.73	7.78	2.20
BellsB	M001	1515.66	20Year-Existing	33.04	77.30	78.85	79.31	80.36	0.044603	5.55	6.48	6.96	1.65
BellsB	M001	1502.43	20Year-Existing	33.04	69.64	70.14	70.89	78.03	1.308653	12.45	2.65	9.17	7.39
BellsB	M001	1483.47	20Year-Existing	33.04	68.89	69.79	70.15	71.14	0.105791	5.65	7.14	16.06	2.36
BellsB	M001	1454.75	20Year-Existing	33.04	68.03	69.31	69.36	69.79	0.019645	3.80	12.46	15.32	1.14
BellsB	M001	1406.62	20Year-Existing	33.04	66.49	68.18	68.28	68.86	0.018395	4.19	10.48	10.29	1.12
BellsB	M001	1358.51	20Year-Existing	33.04	65.17	66.45	66.78	67.54	0.040519	4.94	8.09	11.26	1.58
BellsB	M001	1310.38	20Year-Existing	33.04	63.80	65.12	65.34	65.89	0.026564	4.20	10.06	14.65	1.30
BellsB	M001	1286.33	20Year-Existing	33.04	62.81	64.60	64.35	64.78	0.005562	2.33	20.50	22.22	0.62
BellsB	M001	1262.25	20Year-Existing	33.04	62.09	63.98	63.98	64.56	0.017256	4.09	12.00	24.91	1.06
BellsB	M001	1251.58	20Year-Existing	33.04	61.46	62.80	63.24	64.19	0.056270	6.47	7.83	10.65	1.90
BellsB	M001	1234.76	20Year-Existing	33.04	60.57	61.92	62.31	63.24	0.057689	6.17	8.68	17.16	1.88
BellsB	M001	1214.13	20Year-Existing	33.04	59.55	61.23	60.78	61.38	0.003986	1.99	22.37	20.77	0.53
BellsB	M001	1200.58	20Year-Existing	33.04	58.90	60.74	60.74	61.25	0.012131	3.57	12.61	13.14	0.92
BellsB	M001	1182.98	20Year-Existing	33.04	58.59	60.43	60.49	61.02	0.014326	3.88	11.93	12.90	1.00
BellsB	M001	1166.01	20Year-Existing	33.04	58.39	59.58	59.90	60.59	0.042017	4.94	9.12	15.57	1.60
BellsB	M001	1153.18	20Year-Existing	33.04	57.70	59.30	59.54	60.07	0.029958	5.11	11.54	19.24	1.39
BellsB	M001	1141.88	20Year-Existing	33.04	56.72	57.82	58.29	59.47	0.076674	6.02	6.56	11.60	2.11
BellsB	M001	1128.34	20Year-Existing	33.04	56.53	57.57	57.81	58.38	0.049325	4.87	9.07	14.14	1.68
BellsB	M001	1117.89	20Year-Existing	33.04	55.58	56.65	56.99	57.76	0.066224	5.98	8.24	12.29	1.97
BellsB	M001	1096.03	20Year-Existing	33.04	54.61	56.06	56.27	56.80	0.025919	4.22	10.35	14.46	1.28
BellsB	M001	1077.81	20Year-Existing	33.04	54.24	55.16	55.44	56.15	0.051928	4.93	8.84	15.55	1.75
BellsB	M001	1069.76	20Year-Existing	33.04	53.70	54.34	54.65	55.43	0.120704	5.61	8.02	18.56	2.48
BellsB	M001	1064.67	20Year-Existing	33.04	53.19	53.86	54.14	54.83	0.107098	5.32	8.60	19.91	2.34
BellsB	M001	1051.64	20Year-Existing	33.04	51.97	52.89	53.19	53.92	0.062034	5.11	8.83	17.30	1.88
BellsB	M001	1032.36	20Year-Existing	33.04	50.97	52.25	52.45	52.96	0.034788	4.75	10.83	15.47	1.47
BellsB	M001	1021.64	20Year-Existing	33.04	50.03	51.23	51.61	52.45	0.053012	5.20	7.85	14.08	1.77
BellsB	M001	1014.11	20Year-Existing	33.04	49.46	50.81	51.22	52.07	0.047775	5.28	7.56	11.79	1.69
BellsB	M001	1006.24	20Year-Existing	33.04	49.15	50.22	50.65	51.64	0.060141	5.61	7.23	12.81	1.90
BellsB	M001	996.42	20Year-Existing	33.04	48.11	49.25	49.72	50.95	0.086600	6.59	6.72	11.94	2.22
BellsB	M001	987.27	20Year-Existing	33.04	47.17	48.46	48.99	50.25	0.066132	6.35	6.46	9.70	2.01
BellsB	M001	973.52	20Year-Existing	33.04	46.79	47.97	48.43	49.39	0.045260	5.41	6.85	10.53	1.79

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	33.04	45.77	47.12	47.53	48.41	0.043935	5.44	7.75	13.61	1.75
BellsB	M001	931.51	20Year-Existing	33.04	44.86	45.96	46.37	47.29	0.072670	6.68	7.31	12.21	2.21
BellsB	M001	925.41	20Year-Existing	33.04	44.69	46.22	46.40	46.87	0.020069	4.47	11.40	17.44	1.21
BellsB	M001	901.68	20Year-Existing	33.04	43.69	44.91	45.29	46.15	0.040974	5.50	7.60	10.26	1.73
BellsB	M001	877.27	20Year-Existing	33.04	43.18	45.29	44.76	45.51	0.003652	2.42	17.97	13.20	0.57
BellsB	M001	857.41	20Year-Existing	33.04	42.16	45.29	44.12	45.44	0.001331	1.91	26.85	35.66	0.36
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	34.00	38.54	40.60	40.60	41.50	0.013227	4.28	8.26	8.96	1.00
BellsB	M001	810.13	20Year-Existing	34.00	37.80	38.96	39.55	41.00	0.087236	6.33	5.38	6.88	2.23
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	34.00	34.33	36.38	36.96	38.17	0.046284	5.96	5.85	7.69	1.68
BellsB	M001	782.27	20Year-Existing	34.00	33.92	34.73	35.26	36.93	0.160269	7.01	5.50	10.83	2.89
BellsB	M001	772.73	20Year-Existing	34.00	30.94	32.39	33.08	35.37	0.155928	9.56	5.63	8.89	2.82
BellsB	M001	766.74	20Year-Existing	34.00	30.65	32.32	32.95	34.43	0.089578	8.30	6.72	9.05	2.23
BellsB	M001	760.32	20Year-Existing	34.00	30.34	31.76	32.39	33.89	0.076956	7.36	6.53	9.21	2.17
BellsB	M001	755.97	20Year-Existing	34.00	30.05	31.47	32.02	33.52	0.081876	6.87	6.41	10.12	2.16
BellsB	M001	749.69	20Year-Existing	34.00	29.30	30.79	31.37	32.98	0.082546	7.40	6.46	9.65	2.21
BellsB	M001	742.14	20Year-Existing	34.00	28.38	29.44	30.15	32.21	0.112359	7.74	5.22	7.87	2.60
BellsB	M001	736.73	20Year-Existing	34.00	28.24	28.95	29.52	31.37	0.168096	7.41	5.26	10.31	3.01
BellsB	M001	722.61	20Year-Existing	34.00	27.35	28.36	28.73	29.68	0.061587	5.52	7.59	14.12	1.90
BellsB	M001	712.04	20Year-Existing	34.00	26.27	27.63	28.07	29.06	0.053881	5.66	7.27	10.02	1.79
BellsB	M001	702.42	20Year-Existing	34.00	26.04	27.24	27.62	28.49	0.052964	5.42	7.82	11.49	1.78
BellsB	M001	691.68	20Year-Existing	34.00	25.03	26.44	26.88	27.88	0.059026	5.52	6.84	9.72	1.84
BellsB	M001	686.22	20Year-Existing	34.00	24.46	25.55	26.08	27.43	0.093198	6.11	5.70	9.03	2.27
BellsB	M001	675.26	20Year-Existing	34.00	24.08	25.14	25.55	26.48	0.056853	5.41	7.14	10.13	1.84
BellsB	M001	668.37	20Year-Existing	34.00	23.58	24.79	25.19	26.11	0.052050	5.37	7.42	11.35	1.77
BellsB	M001	655.45	20Year-Existing	34.00	23.02	24.09	24.48	25.41	0.055993	5.31	7.36	12.40	1.81
BellsB	M001	636.88	20Year-Existing	34.00	21.46	22.66	23.13	24.25	0.065596	5.70	6.46	9.53	1.96
BellsB	M001	619.06	20Year-Existing	34.00	20.82	22.22	22.53	23.26	0.034759	4.89	8.64	10.95	1.48
BellsB	M001	608.48	20Year-Existing	34.00	20.13	21.36	21.84	22.77	0.052793	5.41	6.91	9.11	1.78
BellsB	M001	592.31	20Year-Existing	34.00	18.95	20.25	20.71	21.79	0.067941	6.26	7.22	10.55	2.01
BellsB	M001	582.72	20Year-Existing	34.00	18.14	19.11	19.64	21.00	0.094513	6.60	6.33	9.79	2.35
BellsB	M001	577.91	20Year-Existing	34.00	17.66	19.03	19.53	20.60	0.046722	5.97	7.10	8.03	1.75
BellsB	M001	561.51	20Year-Existing	34.00	17.02	18.32	18.72	19.65	0.059970	5.70	8.01	12.81	1.88
BellsB	M001	553.07	20Year-Existing	34.00	16.35	17.36	17.90	19.06	0.074439	5.87	6.26	9.67	2.07
BellsB	M001	541.54	20Year-Existing	34.00	15.41	16.49	16.98	18.14	0.085441	5.72	6.18	10.69	2.17
BellsB	M001	529.17	20Year-Existing	34.00	14.85	15.85	16.23	17.12	0.062857	5.01	6.99	8.72	1.70
BellsB	M001	514.53	20Year-Existing	34.00	14.21	15.23	15.51	16.20	0.051929	4.72	8.54	11.62	1.58
BellsB	M001	467.56	20Year-Existing	34.00	11.61	12.66	12.97	13.72	0.051772	4.61	7.73	9.91	1.57
BellsB	M001	420.59	20Year-Existing	34.00	8.75	11.49	10.72	11.75	0.004107	2.37	16.95	10.05	0.50
BellsB	M001	400.25	20Year-Existing	34.00	8.57	11.37	10.25	11.67	0.003022	2.43	14.01	6.18	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	34.00	0.83	4.02	2.51	4.11	0.000662	1.52	39.53	47.90	0.27
BellsB	M001	47.74	20Year-Existing	34.00	0.56	4.05	2.47	4.06	0.000122	0.69	118.05	117.21	0.12
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	34.00	0.70	4.05	2.53	4.06	0.000105	0.63	127.07	125.99	0.11
BellsB	M001	20.51	20Year-Existing	34.00	0.57	4.05		4.06	0.000134	0.69	120.07	134.68	0.12

Corner Brook 20yr Q-30%

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	93.94	36.31	38.39	38.39	39.17	0.009194	4.23	28.13	19.19	0.97
CornerB	M004	2838.71	20Year-Existing	93.94	36.15	37.72	37.86	38.61	0.013092	4.29	24.59	20.50	1.11
CornerB	M004	2796.61	20Year-Existing	93.94	35.35	37.63	37.08	37.97	0.003719	2.81	41.77	24.61	0.63
CornerB	M004	2769.85	20Year-Existing	93.94	34.80	36.91	36.91	37.54	0.013219	5.19	32.79	24.89	1.17
CornerB	TR001	206.04	20Year-Existing	16.03	43.81	44.52	44.74	45.22	0.042014	4.25	5.38	12.87	1.72
CornerB	TR001	156.04	20Year-Existing	16.03	41.63	42.46	42.67	43.14	0.040716	3.70	4.75	12.74	1.63
CornerB	TR001	106.04	20Year-Existing	16.03	39.17	39.64	39.89	40.51	0.069675	4.33	4.24	11.55	2.09
CornerB	TR001	56.04	20Year-Existing	16.03	37.27	37.89	38.01	38.35	0.027953	3.13	5.83	12.62	1.37
CornerB	TR001	36.04	20Year-Existing	16.03	35.50	38.09	36.92	38.09	0.000036	0.29	107.36	78.94	0.06
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	16.03	35.18	36.65	36.65	37.26	0.011662	3.45	4.64	9.47	1.00
CornerB	M003	2689.92	20Year-Existing	102.55	33.55	35.24	35.63	36.55	0.026917	6.04	28.84	40.93	1.59
CornerB	M003	2645.73	20Year-Existing	102.55	32.87	35.52	34.28	35.61	0.001015	1.71	93.61	50.89	0.34
CornerB	M003	2602.09	20Year-Existing	102.55	32.20	35.53		35.57	0.000365	1.16	127.21	51.79	0.21
CornerB	M003	2557.73	20Year-Existing	102.55	31.34	35.49		35.56	0.000359	1.34	111.58	46.16	0.22
CornerB	M003	2537.73	20Year-Existing	102.55	30.77	35.41	33.51	35.54	0.000634	1.98	97.65	51.47	0.30
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	102.55	30.35	32.31	32.95	34.59	0.023631	6.70	15.31	13.96	1.55
CornerB	M003	2507.21	20Year-Existing	102.55	30.75	32.15	32.58	33.62	0.034052	5.99	21.77	21.06	1.73
CornerB	M003	2459.31	20Year-Existing	102.55	30.13	31.47	31.65	32.28	0.017651	4.38	29.87	30.21	1.26
CornerB	M003	2411.41	20Year-Existing	102.55	29.27	31.14	31.19	31.67	0.009948	3.93	42.22	44.60	0.98
CornerB	M003	2363.51	20Year-Existing	102.55	28.77	30.09	30.32	30.95	0.022613	4.53	29.48	36.98	1.39
CornerB	M003	2315.61	20Year-Existing	102.55	27.93	29.28	29.42	30.05	0.014870	3.94	27.90	27.03	1.15
CornerB	M003	2267.71	20Year-Existing	102.76	26.30	29.54	28.12	29.72	0.001091	1.98	61.56	25.81	0.36
CornerB	M003	2264.01	20Year-Existing	102.76	26.10	29.45	28.87	29.70	0.004904	2.20	47.51	28.75	0.53
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	102.76	26.10	29.22		29.55	0.007959	2.54	40.90	28.37	0.66
CornerB	M003	2260.98	20Year-Existing	102.76	25.80	29.30		29.47	0.000943	1.90	64.53	27.16	0.34
CornerB	M003	2240.88	20Year-Existing	102.76	27.01	29.01		29.37	0.004622	2.71	42.11	34.61	0.67
CornerB	M003	2212.25	20Year-Existing	102.76	26.87	28.92		29.24	0.003919	2.68	46.12	30.93	0.63
CornerB	M003	2183.63	20Year-Existing	102.76	25.56	28.13	28.13	29.02	0.009367	4.53	29.32	19.40	0.99
CornerB	M003	2163.63	20Year-Existing	102.76	25.35	26.96	27.45	28.63	0.029352	5.81	18.82	16.93	1.62
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	102.76	24.87	27.31	27.31	28.16	0.009235	4.42	28.13	20.43	0.98
CornerB	M003	2131.66	20Year-Existing	102.76	24.57	26.50	26.89	27.87	0.023561	5.31	21.24	18.67	1.45
CornerB	M003	2119.46	20Year-Existing	102.76	24.12	25.66	26.22	27.46	0.040102	6.14	18.81	19.99	1.85
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	102.76	24.04	25.98	26.23	27.07	0.016630	4.68	23.70	19.69	1.24
CornerB	M003	2080.62	20Year-Existing	102.76	23.73	25.16	25.50	26.36	0.024395	4.98	22.81	23.09	1.46
CornerB	M003	2068.44	20Year-Existing	102.76	23.76	25.25	25.37	26.01	0.014289	4.05	28.97	26.77	1.14
CornerB	M003	2022.25	20Year-Existing	102.76	22.74	24.24	24.49	25.24	0.018853	4.65	25.64	24.65	1.31
CornerB	M003	1991.14	20Year-Existing	102.76	22.18	23.87	23.99	24.72	0.012770	4.30	28.17	22.85	1.11
CornerB	M003	1985.82	20Year-Existing	102.76	21.97	23.55	23.81	24.62	0.018355	4.84	25.18	22.49	1.31
CornerB	M003	1975.95	20Year-Existing	102.76	21.78	23.26	23.57	24.41	0.021907	5.12	24.73	23.41	1.41
CornerB	M003	1929.72	20Year-Existing	102.76	20.08	21.72	22.15	23.22	0.028808	5.63	20.50	18.66	1.60
CornerB	M003	1883.49	20Year-Existing	102.76	19.23	21.21	21.37	22.24	0.012708	4.72	25.82	18.03	1.13
CornerB	TR002	21.04	20Year-Existing	6.09	22.27	22.77	23.17	24.52	0.150184	6.20	1.19	3.81	3.01
CornerB	TR002	18.08	20Year-Existing	6.09	21.40	21.73	22.06	23.81	0.392457	7.07	1.12	5.92	4.52
CornerB	M002	1826.39	20Year-Existing	103.74	16.92	18.18	18.82	20.72	0.127871	7.37	16.47	26.28	2.48
CornerB	M002	1790.92	20Year-Existing	103.74	15.49	18.54	17.91	19.05	0.006052	3.44	37.51	16.91	0.65
CornerB	M002	1773.95	20Year-Existing	103.74	14.72	18.76	17.02	18.90	0.001236	1.82	72.13	26.68	0.30
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	103.74	14.87	18.75	16.79	18.85	0.000726	1.60	88.18	34.98	0.27
CornerB	M002	1733.13	20Year-Existing	103.74	15.23	18.77		18.80	0.000216	0.84	148.70	61.88	0.14
CornerB	M002	1717.41	20Year-Existing	103.74	15.12	18.77		18.80	0.000183	0.78	165.70	72.80	0.13
CornerB	M002	1691.96	20Year-Existing	103.74	14.62	18.77		18.79	0.000153	0.75	181.72	89.06	0.12
CornerB	M002	1654.15	20Year-Existing	103.74	13.87	18.77		18.79	0.000068	0.53	242.22	100.55	0.08
CornerB	M002	1613.91	20Year-Existing	103.74	13.08	18.78		18.78	0.000031	0.43	284.90	109.14	0.06
CornerB	M002	1567.16	20Year-Existing	103.74	12.15	18.78		18.78	0.000005	0.18	619.51	174.25	0.03
CornerB	M002	1551.89	20Year-Existing	103.74	11.85	18.78		18.78	0.000002	0.11	964.63	241.28	0.02
CornerB	M002	1539.91	20Year-Existing	102.97	11.62	18.78		18.78	0.000001	0.08	1341.56	293.57	0.01
CornerB	M002	1526.59	20Year-Existing	102.97	11.36	18.78		18.78	0.000001	0.08	1365.54	301.60	0.01
CornerB	M002	1517.99	20Year-Existing	102.97	11.18	18.78		18.78	0.000001	0.10	1152.01	256.88	0.01
CornerB	M002	1505.64	20Year-Existing	102.97	10.94	18.78		18.78	0.000002	0.12	861.00	181.15	0.02
CornerB	M002	1490.63	20Year-Existing	102.97	10.64	18.78		18.78	0.000004	0.19	592.55	132.74	0.02
CornerB	M002	1463.65	20Year-Existing	102.97	10.11	18.77		18.78	0.000017	0.38	321.03	76.24	0.05
CornerB	M002	1415.93	20Year-Existing	102.97	9.17	18.77		18.78	0.000015	0.37	306.12	65.29	0.05
CornerB	M002	1386.11	20Year-Existing	102.97	8.58	18.77		18.78	0.000022	0.44	272.83	74.15	0.06
CornerB	M002	1363.91	20Year-Existing	102.97	8.14	18.76		18.78	0.000036	0.56	223.06	54.46	0.07
CornerB	M002	1356.61	20Year-Existing	102.97	8.00	18.76		18.78	0.000105	0.74	223.20	69.37	0.08
CornerB	M002	1354.61	20Year-Existing	102.97	15.35	18.26	18.25	18.73	0.004453	3.41	46.54	48.44	0.64
CornerB	M002	1354.11	20Year-Existing	102.97	15.35	18.25	18.25	18.73	0.004531	3.43	46.13	48.27	0.64
CornerB	M002	1352.01	20Year-Existing	102.97	8.00	8.81	10.49	17.84	0.936769	0.35	7.74	9.50	0.17
CornerB	M002	1347.51	20Year-Existing	102.97	7.72	9.17	10.08	13.38	0.248081	9.09	11.33	14.73	3.31
CornerB	M002	1336.58	20Year-Existing	102.97	7.69	8.96	9.59	11.10	0.102263	6.48	15.98	18.76	2.20
CornerB	M002	1326.83	20Year-Existing	102.97	7.68	10.03	9.37	10.27	0.004352	2.30	50.03	28.97	0.52
CornerB	M002	1317.22	20Year-Existing	102.97	7.66	9.88		10.21	0.007110	2.64	42.34	28.94	0.65
CornerB	M002	1315.18	20Year-Existing	102.97	7.28	9.51	9.51	10.15	0.018879	3.80	30.97	25.58	1.02
CornerB	M002	1313.58	20Year-Existing	102.97	6.48	8.70	9.10	10.04	0.046689	5.31	21.44	21.79	1.55
CornerB	M002	1312.39	20Year-Existing	102.97	6.23	8.27	8.77	9.94	0.061704	5.84	18.89	20.43	1.76
CornerB	M002	1311.16	20Year-Existing	102.97	5.92	7.89	8.45	9.83	0.085516	6.19	17.06	20.15	2.02
CornerB	M002	1309.11	20Year-Existing	102.97	5.91	7.50	8.11	9.61	0.095599	6.46	16.22	19.39	2.14
CornerB	M002	1305.35	20Year-Existing	102.97	5.37	6.90	7.56	9.22	0.097126	6.87	16.22	20.38	2.19

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	102.97	5.06	6.48	7.08	8.62	0.111229	6.50	16.15	21.16	2.28
CornerB	M002	1296.49	20Year-Existing	102.97	4.91	6.54	7.04	8.20	0.055899	5.79	18.74	18.29	1.71
CornerB	M002	1289.64	20Year-Existing	102.97	4.71	6.59	6.90	7.77	0.033140	4.92	22.62	19.58	1.35
CornerB	M002	1284.12	20Year-Existing	102.97	4.41	6.55	6.74	7.58	0.022820	4.63	24.58	18.28	1.15
CornerB	M002	1279.52	20Year-Existing	102.97	4.23	6.12	6.48	7.43	0.032740	5.16	21.30	17.45	1.36
CornerB	M002	1258.94	20Year-Existing	102.97	3.53	4.98	5.46	6.52	0.060892	5.66	20.22	24.51	1.76
CornerB	M002	1246.98	20Year-Existing	102.97	3.37	4.53	4.93	5.84	0.042301	5.09	20.82	23.30	1.62
CornerB	M002	1233.83	20Year-Existing	102.97	3.10	4.46	4.66	5.25	0.027673	4.08	28.30	36.06	1.32
CornerB	M002	1215.66	20Year-Existing	102.97	2.70	4.36	4.10	4.66	0.005992	2.51	48.59	52.05	0.66
CornerB	M002	1206.83	20Year-Existing	102.97	2.54	4.35		4.59	0.005460	2.36	54.89	56.79	0.63
CornerB	M002	1194.69	20Year-Existing	102.97	2.39	4.32		4.53	0.004395	2.23	60.82	57.52	0.57
CornerB	M002	1185.06	20Year-Existing	102.97	2.26	4.30		4.48	0.003195	2.06	67.44	62.87	0.49
CornerB	M002	1142.41	20Year-Existing	102.97	1.70	4.23		4.36	0.002265	1.83	78.72	63.84	0.42
CornerB	M002	1137.55	20Year-Existing	102.97	1.60	4.00		4.31	0.006516	2.56	48.49	55.78	0.68
CornerB	M002	1110.53	20Year-Existing	102.97	1.39	3.97		4.18	0.002438	2.11	64.07	59.08	0.45
CornerB	M002	1090.67	20Year-Existing	102.97	1.10	4.05		4.11	0.000805	1.29	122.99	85.69	0.26
CornerB	M002	1070.69	20Year-Existing	102.97	0.80	4.06	2.54	4.09	0.000344	0.98	166.22	88.15	0.18
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	102.97	0.76	4.05	2.46	4.08	0.000303	0.93	168.06	85.47	0.17
CornerB	M002	1047.01	20Year-Existing	102.97	0.75	4.04		4.07	0.000280	1.01	165.27	77.26	0.18
CornerB	M002	1004.03	20Year-Existing	102.97	0.77	4.02		4.06	0.000277	1.01	180.48	122.59	0.18
CornerB	M002	959.21	20Year-Existing	102.97	0.70	4.02		4.04	0.000230	0.91	249.40	269.26	0.17
CornerB	M002	915.75	20Year-Existing	102.34	0.68	4.02		4.03	0.000167	0.75	319.86	292.78	0.14
CornerB	M002	869.66	20Year-Existing	102.34	0.69	4.02		4.03	0.000084	0.55	373.78	218.40	0.10
CornerB	M002	828.33	20Year-Existing	99.05	0.77	4.02		4.02	0.000086	0.54	363.24	214.38	0.10
CornerB	M002	784.55	20Year-Existing	99.05	0.82	4.02		4.02	0.000059	0.45	381.22	227.13	0.08
CornerB	M002	739.85	20Year-Existing	99.05	0.82	4.01		4.02	0.000059	0.43	385.84	259.93	0.08
CornerB	M002	696.36	20Year-Existing	99.05	0.64	4.00		4.01	0.000089	0.57	330.56	265.02	0.10
CornerB	M001	659.37	20Year-Existing	103.88	0.75	4.00		4.01	0.000090	0.54	317.82	224.25	0.10
CornerB	M001	643.93	20Year-Existing	103.88	0.74	3.99	2.44	4.01	0.000137	0.68	265.47	208.42	0.13
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	103.88	0.83	3.61	2.35	3.65	0.000428	1.10	162.20	158.88	0.22
CornerB	M001	608.52	20Year-Existing	103.88	0.76	3.60		3.64	0.000523	1.16	158.74	150.23	0.24
CornerB	M001	570.12	20Year-Existing	103.88	0.61	3.60		3.62	0.000280	0.91	220.23	183.74	0.18
CornerB	M001	535.83	20Year-Existing	103.88	0.56	3.59	1.56	3.61	0.000139	0.70	231.78	215.33	0.13
CornerB	M001	520.22	20Year-Existing	103.88	0.55	3.59	1.63	3.61	0.000104	0.61	277.08	287.30	0.11
CornerB	M001	472.07	20Year-Existing	103.88	0.58	3.56	1.95	3.60	0.000282	0.97	185.07	181.07	0.18
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	103.88	0.44	3.19	1.71	3.29	0.000661	1.43	109.95	157.24	0.28
CornerB	M001	425.41	20Year-Existing	103.88	0.48	3.20		3.25	0.000530	1.23	171.41	249.86	0.25
CornerB	M001	401.99	20Year-Existing	103.88	0.74	3.21		3.23	0.000324	0.93	246.45	323.72	0.19
CornerB	M001	381.26	20Year-Existing	103.88	0.79	3.14	2.22	3.22	0.000891	1.46	157.27	325.19	0.31
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	103.88	0.79	2.93	2.23	3.11	0.001971	2.06	96.73	291.92	0.46
CornerB	M001	352.89	20Year-Existing	103.88	0.68	2.95		3.04	0.000855	1.41	104.43	190.07	0.30
CornerB	M001	324.13	20Year-Existing	103.88	0.67	2.94		3.01	0.000652	1.24	130.15	151.53	0.27
CornerB	M001	292.92	20Year-Existing	103.88	0.65	2.94		2.98	0.000542	1.11	165.44	252.82	0.24
CornerB	M001	274.62	20Year-Existing	103.88	0.96	2.92	2.43	2.97	0.001285	1.50	175.74	303.50	0.36
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	103.88	1.01	2.90	2.43	2.93	0.001166	1.42	198.86	332.05	0.34
CornerB	M001	245.99	20Year-Existing	103.88	0.64	2.88		2.91	0.000664	1.15	229.64	373.98	0.26
CornerB	M001	210.89	20Year-Existing	103.88	0.68	2.87		2.89	0.000538	0.98	240.62	343.95	0.23
CornerB	M001	174.77	20Year-Existing	103.88	0.69	2.85		2.87	0.000480	0.83	264.15	389.92	0.21
CornerB	M001	155.66	20Year-Existing	103.88	0.64	2.85	2.43	2.86	0.000588	0.83	295.67	484.45	0.23
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	103.88	0.55	2.84	2.37	2.85	0.000430	0.71	315.38	450.53	0.20
CornerB	M001	129.05	20Year-Existing	103.88	0.40	2.83		2.84	0.000291	0.72	343.17	475.06	0.17
CornerB	M001	80.73	20Year-Existing	103.88	0.20	2.81		2.83	0.000238	0.74	314.91	382.89	0.16
CornerB	M001	23.81	20Year-Existing	103.88	0.32	2.80	1.75	2.81	0.000238	0.70	308.45	431.13	0.16
BellsB	TR001	178.13	20Year-Existing	8.75	92.91	93.92	94.17	94.72	0.043050	4.00	2.28	4.46	1.62
BellsB	TR001	159.86	20Year-Existing	8.75	92.15	93.04	93.30	93.87	0.050711	4.31	2.52	5.97	1.79
BellsB	TR001	139.54	20Year-Existing	8.75	91.13	93.29	92.25	93.44	0.002000	1.70	5.16	5.93	0.37
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	8.75	89.49	90.58	90.74	91.35	0.022201	3.91	2.30	3.37	1.25
BellsB	TR001	88.17	20Year-Existing	8.75	88.47	89.18	89.60	90.92	0.131932	6.05	1.67	4.59	2.79
BellsB	TR001	84.12	20Year-Existing	8.75	87.66	88.27	88.66	90.17	0.237824	6.13	1.48	5.52	3.53
BellsB	TR001	79.14	20Year-Existing	8.75	86.53	87.15	87.59	89.16	0.166850	6.36	1.48	4.64	3.14
BellsB	TR001	72.74	20Year-Existing	8.75	85.76	86.30	86.64	87.92	0.183925	5.66	1.59	5.66	3.15
BellsB	TR001	67.75	20Year-Existing	8.75	85.04	85.51	85.81	86.90	0.180750	5.40	1.85	7.88	3.10
BellsB	TR001	64.04	20Year-Existing	8.75	84.47	85.06	85.37	86.29	0.127891	4.92	1.78	5.13	2.67
BellsB	TR001	60.69	20Year-Existing	8.75	84.14	84.98	85.25	85.90	0.066909	4.31	2.18	5.57	2.00
BellsB	TR001	56.76	20Year-Existing	8.75	83.97	84.77	85.03	85.60	0.068164	4.04	2.17	5.52	2.00
BellsB	TR001	50.93	20Year-Existing	8.75	83.68	84.59	84.78	85.19	0.052380	3.50	2.68	7.38	1.75
BellsB	TR001	43.86	20Year-Existing	8.75	83.34	84.13	84.32	84.77	0.064608	3.58	2.58	8.68	1.91
BellsB	TR001	37.01	20Year-Existing	8.75	82.98	83.76	83.94	84.38	0.049030	3.61	2.77	8.58	1.72
BellsB	TR001	12.14	20Year-Existing	8.75	82.15	82.90	83.01	83.31	0.034240	2.97	3.42	9.63	1.43
BellsB	M002	5166.11	20Year-Existing	7.28	190.79	191.64	191.59	191.79	0.012157	2.21	5.95	15.12	0.83
BellsB	M002	5149.23	20Year-Existing	7.28	190.57	191.36	191.36	191.56	0.014846	2.23	4.74	12.56	0.89
BellsB	M002	5117.45	20Year-Existing	7.28	189.91	191.08	190.58	191.10	0.001507	1.01	13.86	20.62	0.31
BellsB	M002	5090.85	20Year-Existing	7.28	189.62	190.72	190.72	190.99	0.013769	2.67	4.32	8.68	0.89
BellsB	M002	5067.47	20Year-Existing	7.28	189.18	189.58	189.77	190.25	0.151173	4.74	2.39	8.69	2.58
BellsB	M002	5017.78	20Year-Existing	7.28	188.12	189.02	189.02	189.23	0.015684	2.59	4.81	10.68	0.94
BellsB	M002	4967.57	20Year-Existing	7.28	186.55	187.46	187.62	187.99	0.041863	3.72	2.78	6.17	1.43

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	7.28	185.69	186.51	186.29	186.58	0.005682	1.54	7.18	14.01	0.57
BellsB	M002	4873.31	20Year-Existing	7.28	184.61	185.84	185.84	186.17	0.015152	2.87	3.63	6.26	0.93
BellsB	M002	4853.42	20Year-Existing	7.28	183.55	185.66	184.70	185.79	0.001766	1.56	4.66	15.98	0.36
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	7.28	181.53	182.66	182.66	183.15	0.016415	3.09	2.35	5.00	1.00
BellsB	M002	4785.76	20Year-Existing	7.28	181.35	182.10	182.26	182.63	0.043975	3.53	2.60	6.30	1.49
BellsB	M002	4756.65	20Year-Existing	7.28	180.12	180.85	181.01	181.33	0.044462	3.64	3.07	9.69	1.51
BellsB	M002	4727.54	20Year-Existing	7.28	179.02	179.63	179.80	180.07	0.039955	3.37	3.21	11.30	1.52
BellsB	M002	4707.54	20Year-Existing	7.28	177.96	178.25	178.39	178.76	0.128451	3.73	2.78	16.11	2.44
BellsB	M002	4702.24	20Year-Existing	7.28	177.65	178.35	178.37	178.52	0.014932	2.16	5.28	16.93	0.94
BellsB	M002	4682.48	20Year-Existing	7.28	176.63	177.16	177.38	177.87	0.077156	3.98	2.36	9.95	2.03
BellsB	M002	4658.79	20Year-Existing	7.28	175.50	176.31	176.46	176.85	0.025655	3.42	2.58	5.02	1.28
BellsB	M002	4633.41	20Year-Existing	7.28	174.51	175.09	175.30	175.83	0.077014	4.58	2.59	9.96	2.10
BellsB	M002	4609.61	20Year-Existing	7.28	173.50	174.32	174.24	174.48	0.009449	2.14	5.04	9.77	0.79
BellsB	M002	4583.99	20Year-Existing	7.28	172.77	173.84	173.84	174.18	0.013384	2.66	3.20	5.42	0.92
BellsB	M002	4534.72	20Year-Existing	7.28	170.00	170.69	171.12	172.47	0.133462	6.84	1.61	4.61	2.81
BellsB	M002	4485.52	20Year-Existing	7.28	168.20	168.73	168.82	169.03	0.040978	3.14	3.94	15.26	1.50
BellsB	M002	4436.28	20Year-Existing	13.16	165.85	166.76	166.94	167.32	0.031110	4.13	5.33	11.68	1.45
BellsB	M002	4387.04	20Year-Existing	13.16	164.06	165.01	165.23	165.68	0.034553	4.48	4.81	9.74	1.55
BellsB	M002	4337.81	20Year-Existing	13.16	162.60	163.57	163.74	164.07	0.029314	4.08	6.19	17.18	1.40
BellsB	M002	4288.56	20Year-Existing	13.16	161.30	162.28	162.41	162.71	0.028398	3.91	6.77	19.36	1.36
BellsB	M002	4239.33	20Year-Existing	13.16	159.65	160.44	160.66	161.11	0.042368	4.22	4.75	12.33	1.65
BellsB	M002	4190.09	20Year-Existing	13.16	158.43	159.36	159.45	159.72	0.018992	3.20	6.69	15.00	1.14
BellsB	M002	4140.85	20Year-Existing	13.16	157.30	157.81	157.90	158.12	0.056860	3.80	6.39	21.82	1.80
BellsB	M002	4091.61	20Year-Existing	13.16	155.30	155.93	155.98	156.18	0.030648	3.31	7.14	18.66	1.38
BellsB	M002	4042.37	20Year-Existing	13.16	153.74	154.43	154.50	154.77	0.026111	3.12	6.15	14.12	1.28
BellsB	M002	3993.13	20Year-Existing	13.16	152.65	153.33	153.36	153.56	0.025799	2.93	7.72	21.23	1.22
BellsB	M002	3943.89	20Year-Existing	13.16	151.36	152.04	152.10	152.33	0.028664	3.20	6.77	16.98	1.33
BellsB	M002	3894.65	20Year-Existing	13.16	149.52	150.84	150.99	151.32	0.017638	3.43	6.16	16.14	1.09
BellsB	M002	3869.08	20Year-Existing	13.16	148.87	149.78	150.05	150.60	0.046526	4.47	3.93	8.35	1.71
BellsB	M002	3845.41	20Year-Existing	13.16	148.37	149.43	149.50	149.80	0.018851	3.17	6.19	11.54	1.06
BellsB	M002	3822.22	20Year-Existing	13.16	147.71	148.75	148.48	148.83	0.005071	1.75	11.76	17.02	0.56
BellsB	M002	3796.17	20Year-Existing	13.16	146.89	148.22	148.21	148.60	0.013192	3.04	5.95	8.81	0.91
BellsB	M002	3765.39	20Year-Existing	13.16	146.40	147.79	147.79	148.18	0.013828	3.00	5.53	7.73	0.91
BellsB	M002	3746.94	20Year-Existing	13.16	145.76	147.23	146.81	147.30	0.002416	1.47	13.60	16.49	0.41
BellsB	M002	3724.94	20Year-Existing	13.16	145.32	146.75	146.75	147.15	0.013831	2.98	5.33	7.35	0.91
BellsB	M002	3697.71	20Year-Existing	13.16	145.05	146.51	146.13	146.66	0.004858	1.97	8.19	8.49	0.55
BellsB	M002	3677.71	20Year-Existing	13.16	143.44	146.41	145.06	146.60	0.001729	1.95	6.73	12.57	0.37
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	13.16	142.47	143.74	144.01	144.83	0.023953	4.62	2.85	6.79	1.36
BellsB	M002	3623.19	20Year-Existing	13.16	142.10	143.55	143.70	144.13	0.019662	3.73	4.53	6.83	1.13
BellsB	M002	3573.45	20Year-Existing	13.16	140.89	141.95	142.22	142.79	0.037917	4.25	3.63	7.12	1.54
BellsB	M002	3520.99	20Year-Existing	13.16	139.30	140.55	140.73	141.19	0.023119	3.79	4.20	6.65	1.22
BellsB	M002	3473.83	20Year-Existing	13.16	137.98	139.38	139.57	140.02	0.024719	4.10	4.40	7.19	1.24
BellsB	M002	3424.29	20Year-Existing	13.16	136.49	138.04	137.69	138.24	0.004385	2.13	7.25	7.57	0.58
BellsB	M002	3400.36	20Year-Existing	13.16	135.96	138.15		138.17	0.000316	0.75	22.06	16.40	0.17
BellsB	M002	3386.31	20Year-Existing	13.16	135.48	137.89	136.91	138.14	0.002144	2.25	6.00	10.41	0.46
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	13.16	135.22	136.99	136.63	137.44	0.005641	2.97	4.43	37.87	0.71
BellsB	M002	3329.08	20Year-Existing	16.66	134.96	137.21		137.21	0.000095	0.44	58.50	32.27	0.10
BellsB	M002	3303.55	20Year-Existing	16.66	133.82	136.91	135.61	137.18	0.001856	2.32	7.18	21.69	0.43
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	16.66	131.39	133.59	133.59	134.44	0.012139	4.08	4.08	15.24	1.00
BellsB	M002	3203.83	20Year-Existing	16.66	131.13	132.21	132.65	133.75	0.085163	5.83	3.66	9.64	2.25
BellsB	M002	3176.31	20Year-Existing	16.66	130.02	131.21	131.50	132.09	0.038292	4.68	5.12	10.32	1.58
BellsB	M002	3157.63	20Year-Existing	16.66	129.89	131.14	131.20	131.45	0.019547	3.35	8.82	18.53	1.09
BellsB	M002	3130.11	20Year-Existing	16.66	128.68	129.85	130.10	130.70	0.034352	4.41	4.62	6.66	1.50
BellsB	M002	3083.82	20Year-Existing	16.66	127.94	129.48	129.54	129.80	0.009209	2.92	10.07	23.68	0.83
BellsB	M002	3037.68	20Year-Existing	16.66	127.11	127.79	128.07	128.76	0.087132	5.49	5.18	17.30	2.31
BellsB	M002	2991.47	20Year-Existing	16.66	126.28	127.75	127.12	127.77	0.000693	0.88	31.37	40.01	0.24
BellsB	M002	2945.26	20Year-Existing	16.66	125.32	127.44	126.64	127.69	0.002553	2.25	7.40	6.39	0.49
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	16.66	125.12	126.64	126.44	127.14	0.007676	3.13	5.32	4.42	0.81
BellsB	M002	2918.61	20Year-Existing	16.66	124.99	126.54	126.51	126.93	0.010014	3.10	7.24	9.58	0.87
BellsB	M002	2899.46	20Year-Existing	16.66	125.25	126.67	126.45	126.76	0.001959	1.50	21.04	77.22	0.41
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	16.66	124.44	125.55	125.55	126.05	0.012141	3.15	5.29	16.78	1.00
BellsB	M002	2861.32	20Year-Existing	16.66	123.64	124.48	124.77	125.45	0.055734	5.00	4.66	12.49	1.97
BellsB	M002	2823.69	20Year-Existing	16.66	123.23	124.08	124.14	124.37	0.026666	3.20	8.91	23.55	1.22
BellsB	M002	2777.91	20Year-Existing	16.66	122.77	123.74	123.60	123.78	0.004322	1.47	23.52	56.78	0.51
BellsB	M002	2727.91	20Year-Existing	16.66	122.21	123.26	123.26	123.51	0.015046	2.74	9.79	20.14	0.94
BellsB	M002	2677.99	20Year-Existing	16.66	121.13	122.48	122.33	122.72	0.009290	2.46	8.90	11.93	0.76
BellsB	M002	2628.09	20Year-Existing	16.66	120.69	121.99	121.99	122.24	0.011421	2.84	11.32	24.59	0.85
BellsB	M002	2578.18	20Year-Existing	16.66	119.94	121.25	121.33	121.58	0.014848	3.13	10.15	26.13	0.95
BellsB	M002	2528.27	20Year-Existing	16.66	119.10	120.49	120.53	120.86	0.015129	3.22	8.11	13.13	0.97
BellsB	M002	2518.19	20Year-Existing	16.66	118.62	119.83	120.07	120.59	0.037070	4.41	5.55	10.94	1.46
BellsB	M002	2496.15	20Year-Existing	16.66	118.53	119.92	119.77	120.10	0.008000	2.40	11.32	15.98	0.71
BellsB	M002	2478.37	20Year-Existing	16.66	117.97	119.70		119.96	0.007353	2.64	9.35	10.76	0.70
BellsB	M002	2450.61	20Year-Existing	16.66	117.55	119.22	119.22	119.68	0.012719	3.46	7.22	8.75	0.92
BellsB	M002	2428.46	20Year-Existing	16.66	117.19	118.24	118.52	119.11	0.053043	4.55	5.03	11.76	1.68
BellsB	M002	2408.52	20Year-Existing	16.66	116.63	117.73	117.89	118.24	0.035815	3.91	6.91	15.60	1.39
BellsB	M002	2378.55	20Year-Existing	16.66	116.15	117.39	117.41	117.68	0.016316	3.20	9.23	16.11	0.98
BellsB	M002	2367.92	20Year-Existing	16.66	115.61	116.51	116.77	117.32	0.055688	4.77	5.55	13.63	1.76

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	16.66	115.07	116.08	116.25	116.63	0.034355	4.03	6.72	14.85	1.41
BellsB	M002	2328.64	20Year-Existing	16.66	113.99	115.33	115.50	115.93	0.024519	3.99	6.37	10.68	1.22
BellsB	M002	2307.61	20Year-Existing	16.66	112.94	115.10	114.73	115.46	0.006356	2.65	6.29	28.91	0.67
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	18.20	111.75	113.76	113.30	114.10	0.007363	2.58	7.09	7.09	0.62
BellsB	M002	2275.77	20Year-Existing	18.20	112.06	113.55	113.55	113.90	0.013572	3.34	9.09	13.44	0.93
BellsB	M002	2232.72	20Year-Existing	18.20	110.58	111.93	112.32	112.92	0.034587	4.73	4.92	7.09	1.44
BellsB	M002	2200.99	20Year-Existing	18.20	109.61	110.93	111.20	111.80	0.035442	4.57	5.38	8.94	1.44
BellsB	M002	2173.21	20Year-Existing	18.20	108.98	110.70	110.70	111.24	0.013170	3.45	6.69	7.25	0.90
BellsB	M002	2133.27	20Year-Existing	18.20	107.79	108.88	109.29	110.18	0.061287	5.54	4.39	8.37	1.88
BellsB	M002	2117.78	20Year-Existing	18.20	107.46	108.66	108.88	109.40	0.028578	4.21	5.71	8.63	1.33
BellsB	M002	2103.01	20Year-Existing	18.20	106.45	107.63	107.97	108.75	0.058901	5.35	4.73	8.75	1.80
BellsB	M002	2085.77	20Year-Existing	18.20	105.17	106.34	106.75	107.64	0.065024	5.85	4.29	6.73	1.92
BellsB	M002	2068.57	20Year-Existing	18.20	104.36	105.21	105.56	106.45	0.082205	5.71	4.52	9.92	2.14
BellsB	M002	2059.88	20Year-Existing	18.20	103.56	104.64	105.04	105.87	0.057346	5.21	4.26	7.26	1.82
BellsB	M002	2054.52	20Year-Existing	18.20	103.13	104.22	104.59	105.52	0.070832	5.71	4.39	8.05	1.99
BellsB	M002	2040.56	20Year-Existing	18.20	102.39	104.21	103.80	104.50	0.005521	2.67	9.29	7.24	0.65
BellsB	M002	2033.27	20Year-Existing	18.20	102.08	103.90	103.90	104.42	0.014532	3.49	6.73	7.06	0.94
BellsB	M002	2025.44	20Year-Existing	18.20	101.58	102.65	103.10	104.11	0.063914	5.55	3.77	6.07	1.91
BellsB	M002	2021.67	20Year-Existing	18.20	101.43	102.96	103.18	103.77	0.027761	4.16	5.13	6.82	1.26
BellsB	M002	2014.53	20Year-Existing	18.20	99.96	101.17	101.72	103.25	0.157640	6.39	2.85	4.95	2.69
BellsB	M002	2010.46	20Year-Existing	18.20	99.08	99.95	100.52	102.51	0.175135	7.66	2.94	6.26	3.03
BellsB	M002	2007.37	20Year-Existing	18.20	98.52	99.63	100.22	101.94	0.157243	6.76	2.77	4.89	2.71
BellsB	M002	1996.87	20Year-Existing	18.20	97.97	98.83	99.31	100.51	0.091429	6.21	3.63	6.07	2.28
BellsB	M002	1982.97	20Year-Existing	18.20	97.73	98.72	98.92	99.47	0.036471	4.43	5.46	7.42	1.49
BellsB	M002	1966.25	20Year-Existing	18.20	96.75	98.47	98.54	99.02	0.016260	3.60	6.67	8.08	0.99
BellsB	M002	1951.81	20Year-Existing	18.20	96.56	98.37	97.88	98.48	0.003411	1.84	14.02	13.08	0.47
BellsB	M002	1939.94	20Year-Existing	18.20	96.29	97.96	97.96	98.37	0.012494	3.04	7.65	10.56	0.88
BellsB	M002	1918.81	20Year-Existing	18.20	95.86	97.11	97.35	97.92	0.034498	4.49	5.56	8.72	1.43
BellsB	M002	1910.32	20Year-Existing	18.20	95.58	97.02	97.13	97.66	0.019858	3.67	5.77	7.01	1.11
BellsB	M002	1896.87	20Year-Existing	18.20	94.38	95.59	96.04	97.10	0.074887	5.84	3.87	6.60	1.98
BellsB	M002	1887.59	20Year-Existing	18.20	93.87	95.72	95.23	95.85	0.003396	1.91	13.54	12.19	0.49
BellsB	M002	1880.79	20Year-Existing	18.20	93.33	95.74		95.82	0.001445	1.53	16.95	11.51	0.33
BellsB	M002	1870.34	20Year-Existing	18.20	92.77	95.75		95.80	0.000662	1.26	21.61	9.78	0.24
BellsB	M002	1857.16	20Year-Existing	18.20	91.88	95.76		95.79	0.000346	0.97	28.35	13.55	0.17
BellsB	M002	1848.27	20Year-Existing	18.20	91.91	95.77		95.79	0.000157	0.71	38.22	15.56	0.12
BellsB	M002	1834.27	20Year-Existing	18.20	90.88	95.77		95.78	0.000092	0.62	44.79	16.24	0.09
BellsB	M002	1821.35	20Year-Existing	18.20	90.90	95.77		95.78	0.000052	0.50	60.84	19.40	0.07
BellsB	M002	1807.43	20Year-Existing	18.20	89.83	95.77		95.78	0.000030	0.41	73.03	20.47	0.06
BellsB	M002	1800.77	20Year-Existing	18.20	89.59	95.77		95.78	0.000029	0.41	77.66	21.44	0.05
BellsB	M002	1777.98	20Year-Existing	18.20	88.77	95.77		95.78	0.000009	0.26	121.23	28.77	0.03
BellsB	M002	1753.27	20Year-Existing	18.20	88.22	95.77		95.78	0.000011	0.29	115.24	28.17	0.03
BellsB	M002	1729.73	20Year-Existing	18.20	88.17	95.77		95.78	0.000006	0.23	143.90	31.10	0.03
BellsB	M002	1705.77	20Year-Existing	18.20	87.60	95.78		95.78	0.000002	0.17	224.11	46.12	0.02
BellsB	M002	1688.91	20Year-Existing	18.20	86.72	95.77	88.93	95.78	0.000003	0.18	184.22	39.39	0.02
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	18.20	83.97	86.15	86.15	87.25	0.009331	4.64	3.92	17.24	1.00
BellsB	M002	1605.59	20Year-Existing	18.20	81.49	82.14	82.62	85.89	0.607041	9.01	2.27	9.57	5.62
BellsB	M001	1582.05	20Year-Existing	28.91	80.41	81.30	81.96	84.21	0.141912	7.67	4.04	7.87	3.12
BellsB	M001	1563.67	20Year-Existing	28.91	79.96	81.03	81.44	82.38	0.045460	5.46	6.39	9.69	1.88
BellsB	M001	1544.26	20Year-Existing	28.91	79.04	80.50	80.85	81.66	0.027390	5.13	7.14	8.28	1.51
BellsB	M001	1529.04	20Year-Existing	28.91	78.24	79.14	79.67	80.98	0.065115	6.16	5.15	7.59	2.22
BellsB	M001	1515.66	20Year-Existing	28.91	77.30	78.77	79.19	80.14	0.044532	5.28	5.91	6.77	1.63
BellsB	M001	1502.43	20Year-Existing	28.91	69.64	70.10	70.81	77.80	1.418493	12.29	2.35	8.81	7.59
BellsB	M001	1483.47	20Year-Existing	28.91	68.89	69.75	70.08	70.96	0.102206	5.33	6.59	15.97	2.29
BellsB	M001	1454.75	20Year-Existing	28.91	68.03	69.25	69.29	69.68	0.018942	3.60	11.52	15.12	1.10
BellsB	M001	1406.62	20Year-Existing	28.91	66.49	68.05	68.17	68.72	0.020131	4.12	9.22	9.87	1.15
BellsB	M001	1358.51	20Year-Existing	28.91	65.17	66.39	66.69	67.37	0.038884	4.65	7.45	11.09	1.53
BellsB	M001	1310.38	20Year-Existing	28.91	63.80	65.05	65.25	65.76	0.026518	4.01	9.06	13.94	1.29
BellsB	M001	1286.33	20Year-Existing	28.91	62.81	63.97	64.26	64.88	0.050746	4.84	8.09	16.00	1.70
BellsB	M001	1262.25	20Year-Existing	28.91	62.09	63.91	63.91	64.44	0.016259	3.86	10.82	13.19	1.02
BellsB	M001	1251.58	20Year-Existing	28.91	61.46	62.72	63.13	64.07	0.058888	6.31	6.97	10.29	1.93
BellsB	M001	1234.76	20Year-Existing	28.91	60.57	61.88	62.24	63.09	0.055047	5.85	7.90	16.42	1.82
BellsB	M001	1214.13	20Year-Existing	28.91	59.55	60.35	60.71	61.68	0.108420	5.52	6.42	15.35	2.36
BellsB	M001	1200.58	20Year-Existing	28.91	58.90	60.56	60.63	61.13	0.015203	3.68	10.39	12.16	1.01
BellsB	M001	1182.98	20Year-Existing	28.91	58.59	60.39	60.39	60.88	0.012231	3.52	11.42	12.64	0.92
BellsB	M001	1166.01	20Year-Existing	28.91	58.39	59.51	59.82	60.47	0.043460	4.78	8.08	14.72	1.61
BellsB	M001	1153.18	20Year-Existing	28.91	57.70	59.25	59.46	59.96	0.028183	4.83	10.58	18.85	1.34
BellsB	M001	1141.88	20Year-Existing	28.91	56.72	57.75	58.20	59.35	0.082579	5.89	5.77	11.05	2.16
BellsB	M001	1128.34	20Year-Existing	28.91	56.53	57.53	57.73	58.24	0.046884	4.58	8.44	13.92	1.62
BellsB	M001	1117.89	20Year-Existing	28.91	55.58	56.58	56.90	57.63	0.068082	5.77	7.43	11.92	1.97
BellsB	M001	1096.03	20Year-Existing	28.91	54.61	56.00	56.19	56.67	0.025457	4.01	9.40	13.85	1.26
BellsB	M001	1077.81	20Year-Existing	28.91	54.24	55.11	55.38	56.03	0.053112	4.74	7.95	14.98	1.75
BellsB	M001	1069.76	20Year-Existing	28.91	53.70	54.30	54.58	55.30	0.120435	5.35	7.37	18.39	2.45
BellsB	M001	1064.67	20Year-Existing	28.91	53.19	53.83	54.08	54.70	0.105606	5.05	7.92	19.71	2.30
BellsB	M001	1051.64	20Year-Existing	28.91	51.97	52.84	53.13	53.80	0.061475	4.88	8.05	17.06	1.85
BellsB	M001	1032.36	20Year-Existing	28.91	50.97	52.19	52.38	52.85	0.034840	4.56	9.85	15.15	1.46
BellsB	M001	1021.64	20Year-Existing	28.91	50.03	51.16	51.54	52.33	0.055150	5.03	6.95	13.34	1.78
BellsB	M001	1014.11	20Year-Existing	28.91	49.46	50.74	51.14	51.94	0.049726	5.11	6.69	11.05	1.70
BellsB	M001	1006.24	20Year-Existing	28.91	49.15	50.14	50.57	51.49	0.063780	5.43	6.26	10.52	1.92
BellsB	M001	996.42	20Year-Existing	28.91	48.11	49.20	49.64	50.77	0.085564	6.30	6.10	11.53	2.18
BellsB	M001	987.27	20Year-Existing	28.91	47.17	48.39	48.89	50.07	0.067136	6.10	5.79	9.22	2.00
BellsB	M001	973.52	20Year-Existing	28.91	46.79	47.91	48.33	49.20	0.044887	5.14	6.20	9.85	1.76

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	28.91	45.77	47.06	47.44	48.24	0.042222	5.14	7.06	12.93	1.70
BellsB	M001	931.51	20Year-Existing	28.91	44.86	45.91	46.29	47.14	0.072554	6.40	6.63	11.76	2.18
BellsB	M001	925.41	20Year-Existing	28.91	44.69	46.18	46.32	46.74	0.017467	4.10	10.81	17.18	1.12
BellsB	M001	901.68	20Year-Existing	28.91	43.69	44.82	45.19	46.04	0.045006	5.42	6.69	9.95	1.79
BellsB	M001	877.27	20Year-Existing	28.91	43.18	45.21	44.67	45.40	0.003308	2.24	16.92	12.93	0.53
BellsB	M001	857.41	20Year-Existing	28.91	42.16	45.20	43.98	45.34	0.001226	1.80	24.33	34.52	0.35
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	29.75	38.54	40.44	40.44	41.27	0.013614	4.10	7.55	8.65	1.00
BellsB	M001	810.13	20Year-Existing	29.75	37.80	38.89	39.43	40.79	0.087480	6.11	4.87	6.58	2.21
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	29.75	34.33	36.28	36.81	37.91	0.046832	5.68	5.32	7.39	1.67
BellsB	M001	782.27	20Year-Existing	29.75	33.92	34.69	35.17	36.68	0.158561	6.66	5.06	10.73	2.84
BellsB	M001	772.73	20Year-Existing	29.75	30.94	32.33	33.00	35.13	0.154349	9.16	5.08	8.43	2.78
BellsB	M001	766.74	20Year-Existing	29.75	30.65	32.25	32.86	34.21	0.086939	7.91	6.10	8.62	2.18
BellsB	M001	760.32	20Year-Existing	29.75	30.34	31.69	32.28	33.67	0.076617	7.04	5.88	8.80	2.14
BellsB	M001	755.97	20Year-Existing	29.75	30.05	31.41	31.93	33.29	0.080694	6.54	5.79	9.63	2.13
BellsB	M001	749.69	20Year-Existing	29.75	29.30	30.73	31.27	32.76	0.081076	7.07	5.86	9.47	2.17
BellsB	M001	742.14	20Year-Existing	29.75	28.38	29.36	30.04	31.99	0.118173	7.49	4.64	7.51	2.63
BellsB	M001	736.73	20Year-Existing	29.75	28.24	28.90	29.43	31.11	0.167432	7.05	4.82	10.19	2.97
BellsB	M001	722.61	20Year-Existing	29.75	27.35	28.32	28.66	29.50	0.057580	5.18	7.05	14.01	1.83
BellsB	M001	712.04	20Year-Existing	29.75	26.27	27.56	27.97	28.90	0.054897	5.44	6.55	9.71	1.79
BellsB	M001	702.42	20Year-Existing	29.75	26.04	27.18	27.52	28.32	0.051794	5.14	7.17	11.26	1.75
BellsB	M001	691.68	20Year-Existing	29.75	25.03	26.37	26.78	27.70	0.059737	5.28	6.20	9.47	1.83
BellsB	M001	686.22	20Year-Existing	29.75	24.46	25.48	25.98	27.24	0.098871	5.90	5.12	8.36	2.30
BellsB	M001	675.26	20Year-Existing	29.75	24.08	25.09	25.45	26.28	0.055101	5.11	6.59	9.96	1.80
BellsB	M001	668.37	20Year-Existing	29.75	23.58	24.74	25.10	25.93	0.050067	5.06	6.82	11.16	1.72
BellsB	M001	655.45	20Year-Existing	29.75	23.02	24.04	24.40	25.25	0.055154	5.05	6.69	11.93	1.78
BellsB	M001	636.88	20Year-Existing	29.75	21.46	22.58	23.03	24.07	0.068265	5.49	5.79	9.16	1.97
BellsB	M001	619.06	20Year-Existing	29.75	20.82	22.16	22.43	23.09	0.032986	4.59	7.99	10.71	1.43
BellsB	M001	608.48	20Year-Existing	29.75	20.13	21.28	21.75	22.61	0.055713	5.23	6.19	8.78	1.80
BellsB	M001	592.31	20Year-Existing	29.75	18.95	20.18	20.61	21.61	0.067272	5.97	6.58	10.25	1.98
BellsB	M001	582.72	20Year-Existing	29.75	18.14	19.05	19.53	20.81	0.097003	6.34	5.73	9.65	2.35
BellsB	M001	577.91	20Year-Existing	29.75	17.66	18.93	19.40	20.41	0.048422	5.75	6.36	7.69	1.76
BellsB	M001	561.51	20Year-Existing	29.75	17.02	18.28	18.63	19.47	0.056742	5.36	7.40	12.60	1.81
BellsB	M001	553.07	20Year-Existing	29.75	16.35	17.29	17.79	18.88	0.077614	5.65	5.61	9.25	2.09
BellsB	M001	541.54	20Year-Existing	29.75	15.41	16.44	16.89	17.92	0.084505	5.41	5.65	10.19	2.13
BellsB	M001	529.17	20Year-Existing	29.75	14.85	15.79	16.13	16.93	0.062545	4.74	6.42	8.58	1.68
BellsB	M001	514.53	20Year-Existing	29.75	14.21	15.17	15.43	16.04	0.050140	4.44	7.89	11.37	1.54
BellsB	M001	467.56	20Year-Existing	29.75	11.61	12.58	12.87	13.56	0.053546	4.42	7.00	9.72	1.57
BellsB	M001	420.59	20Year-Existing	29.75	8.75	11.22	10.59	11.49	0.004953	2.39	14.32	9.38	0.53
BellsB	M001	400.25	20Year-Existing	29.75	8.57	11.13	10.10	11.41	0.003113	2.32	12.81	6.07	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	29.75	0.83	3.98	2.36	4.06	0.000553	1.38	37.70	47.68	0.25
BellsB	M001	47.74	20Year-Existing	29.75	0.56	4.01	2.35	4.02	0.000104	0.63	112.96	114.62	0.11
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	29.75	0.70	4.01	2.44	4.01	0.000091	0.58	121.59	124.76	0.10
BellsB	M001	20.51	20Year-Existing	29.75	0.57	4.00		4.01	0.000116	0.64	114.27	133.21	0.12

Corner Brook 20yr WSEL+1m

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M004	2888.71	20Year-Existing	134.20	36.31	38.82	38.82	39.78	0.008906	4.76	36.65	20.43	0.99
CornerB	M004	2838.71	20Year-Existing	134.20	36.15	38.07	38.37	39.22	0.013029	4.91	32.53	26.68	1.15
CornerB	M004	2796.61	20Year-Existing	134.20	35.35	38.05	37.46	38.52	0.004126	3.35	53.15	34.12	0.68
CornerB	M004	2769.85	20Year-Existing	134.20	34.80	37.25	37.25	38.06	0.014241	5.99	41.92	28.10	1.25
CornerB	TR001	206.04	20Year-Existing	22.90	43.81	44.64	44.90	45.49	0.042061	4.77	6.94	13.47	1.77
CornerB	TR001	156.04	20Year-Existing	22.90	41.63	42.58	42.85	43.43	0.040338	4.20	6.35	15.21	1.68
CornerB	TR001	106.04	20Year-Existing	22.90	39.17	39.74	40.06	40.84	0.067986	4.91	5.44	12.21	2.14
CornerB	TR001	56.04	20Year-Existing	22.90	37.27	38.00	38.17	38.62	0.029579	3.65	7.24	13.09	1.46
CornerB	TR001	36.04	20Year-Existing	22.90	35.50	38.20	37.24	38.20	0.000059	0.38	115.69	80.45	0.08
CornerB	TR001	25		Culvert									
CornerB	TR001	21.31	20Year-Existing	22.90	35.18	36.98	36.98	37.75	0.010725	3.88	5.89	10.95	1.00
CornerB	M003	2689.92	20Year-Existing	146.50	33.55	35.44	35.90	36.99	0.029229	6.84	37.03	42.64	1.69
CornerB	M003	2645.73	20Year-Existing	146.50	32.87	36.22	34.59	36.32	0.000807	1.79	131.52	59.76	0.32
CornerB	M003	2602.09	20Year-Existing	146.50	32.20	36.22		36.28	0.000386	1.37	168.95	67.01	0.22
CornerB	M003	2557.73	20Year-Existing	146.50	31.34	36.18		36.27	0.000366	1.51	144.31	47.95	0.22
CornerB	M003	2537.73	20Year-Existing	146.50	30.77	36.11	34.21	36.25	0.000610	2.13	138.77	63.82	0.30
CornerB	M003	2530		Bridge									
CornerB	M003	2527.22	20Year-Existing	146.50	30.35	33.11	33.63	35.42	0.014956	6.74	21.75	15.87	1.31
CornerB	M003	2507.21	20Year-Existing	146.50	30.75	32.23	32.98	34.82	0.055230	7.96	23.48	21.26	2.23
CornerB	M003	2459.31	20Year-Existing	146.50	30.13	31.66	31.96	32.82	0.021811	5.33	35.42	31.06	1.43
CornerB	M003	2411.41	20Year-Existing	146.50	29.27	31.43	31.45	32.03	0.009585	4.30	55.50	46.71	0.99
CornerB	M003	2363.51	20Year-Existing	146.50	28.77	30.34	30.60	31.34	0.020640	4.97	39.03	38.83	1.37
CornerB	M003	2315.61	20Year-Existing	146.50	27.93	29.61	29.75	30.53	0.013169	4.35	36.94	28.44	1.12
CornerB	M003	2267.71	20Year-Existing	146.80	26.30	29.93	28.54	30.21	0.001442	2.47	71.95	27.25	0.43
CornerB	M003	2264.01	20Year-Existing	146.80	26.10	29.87	29.16	30.19	0.004801	2.51	59.74	29.45	0.55
CornerB	M003	2263.5		Bridge									
CornerB	M003	2263.01	20Year-Existing	146.80	26.10	29.72		30.09	0.006164	2.71	55.25	29.20	0.61
CornerB	M003	2260.98	20Year-Existing	146.80	25.80	29.78		30.02	0.001145	2.30	78.03	28.55	0.38
CornerB	M003	2240.88	20Year-Existing	146.80	27.01	29.61		29.96	0.003044	2.71	64.01	38.23	0.58
CornerB	M003	2212.25	20Year-Existing	146.80	26.87	29.54		29.87	0.002806	2.75	66.47	34.43	0.56
CornerB	M003	2183.63	20Year-Existing	146.80	25.56	28.69	28.69	29.68	0.007995	4.89	41.56	24.49	0.95
CornerB	M003	2163.63	20Year-Existing	146.80	25.35	28.59	27.90	29.19	0.003697	3.53	44.91	26.38	0.66
CornerB	M003	2150		Bridge									
CornerB	M003	2141.65	20Year-Existing	146.80	24.87	27.48	27.77	28.91	0.014017	5.74	30.93	21.05	1.22
CornerB	M003	2131.66	20Year-Existing	146.80	24.57	26.78	27.34	28.61	0.024767	6.17	26.70	19.90	1.54
CornerB	M003	2119.46	20Year-Existing	146.80	24.12	25.93	26.62	28.19	0.038728	6.95	24.27	21.17	1.88
CornerB	M003	2115		Bridge									
CornerB	M003	2114.73	20Year-Existing	146.80	24.04	26.23	26.67	27.79	0.019699	5.65	28.65	20.91	1.38
CornerB	M003	2080.62	20Year-Existing	146.80	23.73	25.40	25.92	27.00	0.025939	5.80	28.50	24.31	1.55
CornerB	M003	2068.44	20Year-Existing	146.80	23.76	25.40	25.73	26.62	0.019918	5.14	33.02	27.76	1.36
CornerB	M003	2022.25	20Year-Existing	146.80	22.74	24.56	24.87	25.78	0.017420	5.18	33.92	27.01	1.30
CornerB	M003	1991.14	20Year-Existing	146.80	22.18	24.26	24.39	25.28	0.011676	4.77	37.49	25.46	1.10
CornerB	M003	1985.82	20Year-Existing	146.80	21.97	23.89	24.23	25.19	0.017026	5.39	33.24	24.44	1.30
CornerB	M003	1975.95	20Year-Existing	146.80	21.78	23.57	23.97	24.99	0.020960	5.76	32.34	25.50	1.43
CornerB	M003	1929.72	20Year-Existing	146.80	20.08	22.05	22.58	23.87	0.025976	6.25	26.93	19.74	1.58
CornerB	M003	1883.49	20Year-Existing	146.80	19.23	21.60	21.83	22.91	0.012680	5.38	33.11	19.06	1.16
CornerB	TR002	21.04	20Year-Existing	8.70	22.27	22.86	23.35	25.06	0.150172	7.05	1.57	4.25	3.11
CornerB	TR002	18.08	20Year-Existing	8.70	21.40	21.78	22.20	24.34	0.385079	7.96	1.44	6.09	4.62
CornerB	M002	1826.39	20Year-Existing	148.20	16.92	18.38	19.14	21.39	0.121119	8.19	22.04	29.49	2.50
CornerB	M002	1790.92	20Year-Existing	148.20	15.49	18.68	18.43	19.60	0.010439	4.66	39.81	17.20	0.86
CornerB	M002	1773.95	20Year-Existing	148.20	14.72	19.11	17.44	19.33	0.001797	2.33	81.57	27.92	0.37
CornerB	M002	1772		Bridge									
CornerB	M002	1770.94	20Year-Existing	148.20	14.87	19.10	17.20	19.26	0.001031	2.03	100.86	36.72	0.32
CornerB	M002	1733.13	20Year-Existing	148.20	15.23	19.14		19.19	0.000301	1.06	173.11	69.92	0.17
CornerB	M002	1717.41	20Year-Existing	148.20	15.12	19.14		19.18	0.000253	0.99	193.72	79.47	0.16
CornerB	M002	1691.96	20Year-Existing	148.20	14.62	19.14		19.17	0.000211	0.93	216.03	97.44	0.15
CornerB	M002	1654.15	20Year-Existing	148.20	13.87	19.14		19.16	0.000099	0.68	282.72	120.09	0.10
CornerB	M002	1613.91	20Year-Existing	148.20	13.08	19.15		19.16	0.000047	0.56	329.99	136.97	0.08
CornerB	M002	1567.16	20Year-Existing	148.20	12.15	19.15		19.16	0.000008	0.24	689.36	201.13	0.03
CornerB	M002	1551.89	20Year-Existing	148.20	11.85	19.15		19.16	0.000003	0.15	1059.67	267.51	0.02
CornerB	M002	1539.91	20Year-Existing	147.10	11.62	19.15		19.15	0.000001	0.11	1452.91	302.50	0.01
CornerB	M002	1526.59	20Year-Existing	147.10	11.36	19.15		19.15	0.000001	0.11	1479.48	309.09	0.01
CornerB	M002	1517.99	20Year-Existing	147.10	11.18	19.15		19.15	0.000002	0.13	1249.78	265.22	0.02
CornerB	M002	1505.64	20Year-Existing	147.10	10.94	19.15		19.15	0.000003	0.17	931.55	194.42	0.02
CornerB	M002	1490.63	20Year-Existing	147.10	10.64	19.15		19.15	0.000007	0.25	642.67	136.23	0.03
CornerB	M002	1463.65	20Year-Existing	147.10	10.11	19.14		19.15	0.000029	0.51	349.74	82.83	0.07
CornerB	M002	1415.93	20Year-Existing	147.10	9.17	19.14		19.15	0.000025	0.50	331.58	72.56	0.06
CornerB	M002	1386.11	20Year-Existing	147.10	8.58	19.13		19.15	0.000037	0.59	300.29	76.17	0.07
CornerB	M002	1363.91	20Year-Existing	147.10	8.14	19.12		19.15	0.000061	0.75	242.96	55.99	0.09
CornerB	M002	1356.61	20Year-Existing	147.10	8.00	19.12		19.15	0.000170	0.97	248.51	71.17	0.10
CornerB	M002	1354.61	20Year-Existing	147.10	15.35	18.57	18.53	19.10	0.004897	3.82	61.83	51.49	0.68
CornerB	M002	1354.11	20Year-Existing	147.10	15.35	18.53	18.53	19.10	0.005241	3.92	59.97	50.96	0.70
CornerB	M002	1352.01	20Year-Existing	147.10	8.00	9.16	10.95	18.21	0.610588	0.35	11.04	9.51	0.15
CornerB	M002	1347.51	20Year-Existing	147.10	7.72	9.39	10.51	14.52	0.239014	10.03	14.66	15.90	3.33
CornerB	M002	1336.58	20Year-Existing	147.10	7.69	9.14	9.98	12.15	0.113151	7.70	19.37	19.74	2.39
CornerB	M002	1326.83	20Year-Existing	147.10	7.68	10.45	9.70	10.78	0.004512	2.67	62.51	30.12	0.55
CornerB	M002	1317.22	20Year-Existing	147.10	7.66	10.30		10.72	0.006624	2.96	54.96	30.70	0.65
CornerB	M002	1315.18	20Year-Existing	147.10	7.28	9.86	9.86	10.66	0.017449	4.24	40.41	27.29	1.01
CornerB	M002	1313.58	20Year-Existing	147.10	6.48	9.05	9.48	10.54	0.037667	5.66	29.42	23.48	1.45
CornerB	M002	1312.39	20Year-Existing	147.10	6.23	8.60	9.18	10.46	0.049141	6.21	26.07	22.04	1.64
CornerB	M002	1311.16	20Year-Existing	147.10	5.92	8.19	8.84	10.36	0.067743	6.60	23.35	21.43	1.88
CornerB	M002	1309.11	20Year-Existing	147.10	5.91	7.79	8.50	10.19	0.076142	6.92	22.08	20.56	2.00
CornerB	M002	1305.35	20Year-Existing	147.10	5.37	7.17	7.93	9.86	0.084448	7.50	22.07	23.09	2.12

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
CornerB	M002	1300.06	20Year-Existing	147.10	5.06	6.70	7.44	9.37	0.102925	7.30	20.87	22.42	2.28
CornerB	M002	1296.49	20Year-Existing	147.10	4.91	6.81	7.47	8.94	0.054702	6.59	23.94	19.43	1.75
CornerB	M002	1289.64	20Year-Existing	147.10	4.71	6.83	7.30	8.49	0.037895	5.87	27.45	20.19	1.48
CornerB	M002	1284.12	20Year-Existing	147.10	4.41	6.91	7.19	8.23	0.023175	5.31	31.30	19.57	1.20
CornerB	M002	1279.52	20Year-Existing	147.10	4.23	6.49	6.94	8.09	0.029714	5.73	28.24	19.15	1.34
CornerB	M002	1258.94	20Year-Existing	147.10	3.53	5.20	5.83	7.19	0.062716	6.51	25.81	26.70	1.84
CornerB	M002	1246.98	20Year-Existing	147.10	3.37	4.76	5.29	6.49	0.043064	5.88	26.22	24.71	1.69
CornerB	M002	1233.83	20Year-Existing	147.10	3.10	4.57	4.95	5.81	0.037565	5.13	32.57	37.14	1.57
CornerB	M002	1215.66	20Year-Existing	147.10	2.70	4.07	4.41	5.15	0.027584	4.66	34.67	43.78	1.36
CornerB	M002	1206.83	20Year-Existing	147.10	2.54	4.65	4.32	4.95	0.005340	2.65	73.15	64.47	0.64
CornerB	M002	1194.69	20Year-Existing	147.10	2.39	4.62		4.88	0.004452	2.52	79.46	63.95	0.59
CornerB	M002	1185.06	20Year-Existing	147.10	2.26	4.61		4.83	0.003270	2.32	87.47	65.39	0.51
CornerB	M002	1142.41	20Year-Existing	147.10	1.70	4.53		4.70	0.002548	2.14	99.20	73.15	0.46
CornerB	M002	1137.55	20Year-Existing	147.10	1.60	4.16	4.07	4.63	0.008977	3.22	57.63	62.79	0.81
CornerB	M002	1110.53	20Year-Existing	147.10	1.39	4.08		4.44	0.004119	2.83	70.63	64.71	0.59
CornerB	M002	1090.67	20Year-Existing	147.10	1.10	4.22		4.32	0.001196	1.65	138.12	86.50	0.32
CornerB	M002	1070.69	20Year-Existing	147.10	0.80	4.24	2.80	4.29	0.000542	1.27	182.17	88.84	0.23
CornerB	M002	1070		Bridge									
CornerB	M002	1065.81	20Year-Existing	147.10	0.76	4.23	2.71	4.27	0.000482	1.22	183.20	86.19	0.21
CornerB	M002	1047.01	20Year-Existing	147.10	0.75	4.21		4.26	0.000455	1.33	178.46	78.09	0.24
CornerB	M002	1004.03	20Year-Existing	147.10	0.77	4.19		4.24	0.000435	1.31	200.76	126.66	0.23
CornerB	M002	959.21	20Year-Existing	147.10	0.70	4.19		4.22	0.000328	1.13	295.00	276.22	0.20
CornerB	M002	915.75	20Year-Existing	146.20	0.68	4.19		4.20	0.000234	0.92	368.47	294.61	0.17
CornerB	M002	869.66	20Year-Existing	146.20	0.69	4.18		4.19	0.000131	0.72	409.71	221.57	0.13
CornerB	M002	828.33	20Year-Existing	141.50	0.77	4.18		4.19	0.000135	0.70	398.30	218.86	0.13
CornerB	M002	784.55	20Year-Existing	141.50	0.82	4.18		4.18	0.000092	0.58	418.08	230.28	0.11
CornerB	M002	739.85	20Year-Existing	141.50	0.82	4.17		4.18	0.000091	0.56	427.91	267.51	0.10
CornerB	M002	696.36	20Year-Existing	141.50	0.64	4.16		4.17	0.000131	0.71	372.11	266.29	0.13
CornerB	M001	659.37	20Year-Existing	148.40	0.75	4.16		4.17	0.000138	0.69	352.82	230.14	0.13
CornerB	M001	643.93	20Year-Existing	148.40	0.74	4.14	2.79	4.17	0.000208	0.86	297.26	214.56	0.16
CornerB	M001	635		Bridge									
CornerB	M001	629.03	20Year-Existing	148.40	0.83	3.97	2.67	4.01	0.000398	1.16	225.69	181.67	0.22
CornerB	M001	608.52	20Year-Existing	148.40	0.76	3.97		4.00	0.000487	1.23	216.84	164.11	0.24
CornerB	M001	570.12	20Year-Existing	148.40	0.61	3.97		3.99	0.000253	0.94	288.38	186.79	0.17
CornerB	M001	535.83	20Year-Existing	148.40	0.56	3.96	1.81	3.98	0.000150	0.79	297.65	221.45	0.14
CornerB	M001	520.22	20Year-Existing	148.40	0.55	3.96	1.89	3.97	0.000115	0.69	346.26	292.75	0.12
CornerB	M001	472.07	20Year-Existing	148.40	0.58	3.93	2.29	3.96	0.000268	1.02	257.29	207.16	0.18
CornerB	M001	460		Bridge									
CornerB	M001	445.11	20Year-Existing	148.40	0.44	3.84	2.05	3.89	0.000370	1.23	256.68	282.74	0.21
CornerB	M001	425.41	20Year-Existing	148.40	0.48	3.84		3.87	0.000227	0.94	364.74	333.03	0.17
CornerB	M001	401.99	20Year-Existing	148.40	0.74	3.85		3.86	0.000138	0.71	465.85	360.92	0.13
CornerB	M001	381.26	20Year-Existing	148.40	0.79	3.84	2.59	3.86	0.000223	0.87	402.65	366.53	0.16
CornerB	M001	380		Bridge									
CornerB	M001	375.14	20Year-Existing	148.40	0.79	3.83	2.53	3.84	0.000221	0.88	419.14	389.31	0.16
CornerB	M001	352.89	20Year-Existing	148.40	0.68	3.82		3.84	0.000179	0.81	433.21	439.85	0.15
CornerB	M001	324.13	20Year-Existing	148.40	0.67	3.81		3.83	0.000199	0.85	420.25	465.90	0.16
CornerB	M001	292.92	20Year-Existing	148.40	0.65	3.81		3.83	0.000134	0.69	521.84	530.34	0.13
CornerB	M001	274.62	20Year-Existing	148.40	0.96	3.81	2.62	3.82	0.000158	0.69	556.37	563.06	0.13
CornerB	M001	270		Bridge									
CornerB	M001	266.99	20Year-Existing	148.40	1.01	3.81	2.57	3.82	0.000135	0.64	590.55	542.67	0.12
CornerB	M001	245.99	20Year-Existing	148.40	0.64	3.81		3.82	0.000087	0.54	709.69	640.16	0.10
CornerB	M001	210.89	20Year-Existing	148.40	0.68	3.81		3.81	0.000091	0.53	700.42	628.91	0.10
CornerB	M001	174.77	20Year-Existing	148.40	0.69	3.81		3.81	0.000059	0.40	798.94	641.06	0.08
CornerB	M001	155.66	20Year-Existing	148.40	0.64	3.81	2.49	3.81	0.000048	0.34	959.19	785.98	0.07
CornerB	M001	152.5		Bridge									
CornerB	M001	150.09	20Year-Existing	148.40	0.55	3.81	2.42	3.81	0.000045	0.33	933.78	758.00	0.07
CornerB	M001	129.05	20Year-Existing	148.40	0.40	3.81		3.81	0.000034	0.33	1018.10	772.09	0.06
CornerB	M001	80.73	20Year-Existing	148.40	0.20	3.80		3.80	0.000041	0.39	876.95	638.50	0.07
CornerB	M001	23.81	20Year-Existing	148.40	0.32	3.80	1.97	3.80	0.000039	0.37	902.92	691.01	0.07
BellsB	TR001	178.13	20Year-Existing	12.50	92.91	94.06	94.39	95.10	0.043036	4.58	2.95	5.04	1.68
BellsB	TR001	159.86	20Year-Existing	12.50	92.15	93.93	93.48	94.07	0.002993	1.93	9.46	9.63	0.51
BellsB	TR001	139.54	20Year-Existing	12.50	91.13	93.83	92.55	94.02	0.001943	1.94	6.45	8.35	0.38
BellsB	TR001	100		Culvert									
BellsB	TR001	91.42	20Year-Existing	12.50	89.49	90.84	91.04	91.82	0.020919	4.42	2.92	3.56	1.26
BellsB	TR001	88.17	20Year-Existing	12.50	88.47	89.30	89.82	91.36	0.120775	6.70	2.23	4.97	2.76
BellsB	TR001	84.12	20Year-Existing	12.50	87.66	88.36	88.83	90.66	0.212982	6.80	1.96	6.05	3.48
BellsB	TR001	79.14	20Year-Existing	12.50	86.53	87.25	87.78	89.72	0.157349	7.14	1.99	5.39	3.16
BellsB	TR001	72.74	20Year-Existing	12.50	85.76	86.37	86.85	88.52	0.189500	6.56	2.02	6.28	3.30
BellsB	TR001	67.75	20Year-Existing	12.50	85.04	85.57	85.95	87.40	0.197367	6.27	2.31	7.98	3.32
BellsB	TR001	64.04	20Year-Existing	12.50	84.47	85.15	85.54	86.71	0.134989	5.54	2.26	5.71	2.80
BellsB	TR001	60.69	20Year-Existing	12.50	84.14	85.08	85.43	86.27	0.075121	4.95	2.77	6.37	2.17
BellsB	TR001	56.76	20Year-Existing	12.50	83.97	84.87	85.20	85.95	0.068059	4.62	2.77	6.41	2.06
BellsB	TR001	50.93	20Year-Existing	12.50	83.68	84.67	84.94	85.51	0.058273	4.15	3.29	8.24	1.90
BellsB	TR001	43.86	20Year-Existing	12.50	83.34	84.20	84.45	85.06	0.068270	4.17	3.27	9.78	2.02
BellsB	TR001	37.01	20Year-Existing	12.50	82.98	83.85	84.09	84.64	0.049570	4.12	3.58	8.90	1.79
BellsB	TR001	12.14	20Year-Existing	12.50	82.15	82.99	83.14	83.52	0.035888	3.44	4.28	9.90	1.51
BellsB	M002	5166.11	20Year-Existing	10.40	190.79	191.78	191.71	191.94	0.011136	2.37	8.15	17.09	0.81
BellsB	M002	5149.23	20Year-Existing	10.40	190.57	191.48	191.48	191.71	0.014721	2.49	6.29	13.67	0.91
BellsB	M002	5117.45	20Year-Existing	10.40	189.91	191.28	190.68	191.31	0.001433	1.10	18.25	22.65	0.31
BellsB	M002	5090.85	20Year-Existing	10.40	189.62	190.89	190.89	191.19	0.013330	2.94	5.93	10.25	0.90
BellsB	M002	5067.47	20Year-Existing	10.40	189.18	189.66	189.89	190.47	0.142850	5.27	3.07	8.97	2.60
BellsB	M002	5017.78	20Year-Existing	10.40	188.12	189.14	189.14	189.40	0.016506	2.93	6.16	11.48	0.99
BellsB	M002	4967.57	20Year-Existing	10.40	186.55	187.63	187.78	188.20	0.035864	3.97	3.85	6.90	1.38

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	4917.46	20Year-Existing	10.40	185.69	186.68	186.40	186.77	0.005163	1.68	9.81	16.89	0.56
BellsB	M002	4873.31	20Year-Existing	10.40	184.61	186.11	186.04	186.43	0.010987	2.89	5.63	8.04	0.82
BellsB	M002	4853.42	20Year-Existing	10.40	183.55	186.15	184.96	186.31	0.001704	1.78	5.83	23.63	0.37
BellsB	M002	4850		Culvert									
BellsB	M002	4805.77	20Year-Existing	10.40	181.53	182.76	182.92	183.58	0.024343	4.01	2.59	5.39	1.23
BellsB	M002	4785.76	20Year-Existing	10.40	181.35	182.22	182.42	182.87	0.042284	3.95	3.43	6.97	1.51
BellsB	M002	4756.65	20Year-Existing	10.40	180.12	180.93	181.13	181.53	0.049106	4.19	3.97	11.07	1.63
BellsB	M002	4727.54	20Year-Existing	10.40	179.02	179.72	179.89	180.23	0.038374	3.71	4.39	13.31	1.53
BellsB	M002	4707.54	20Year-Existing	10.40	177.96	178.30	178.47	178.93	0.133037	4.25	3.49	16.37	2.55
BellsB	M002	4702.24	20Year-Existing	10.40	177.65	178.44	178.45	178.63	0.014692	2.38	6.86	17.33	0.96
BellsB	M002	4682.48	20Year-Existing	10.40	176.63	177.25	177.47	178.01	0.066174	4.26	3.40	12.17	1.95
BellsB	M002	4658.79	20Year-Existing	10.40	175.50	176.49	176.67	177.12	0.023562	3.78	3.53	5.92	1.27
BellsB	M002	4633.41	20Year-Existing	10.40	174.51	175.16	175.43	176.10	0.087376	5.32	3.31	11.27	2.28
BellsB	M002	4609.61	20Year-Existing	10.40	173.50	174.54	174.37	174.70	0.007029	2.19	7.27	10.93	0.71
BellsB	M002	4583.99	20Year-Existing	10.40	172.77	174.05	174.05	174.44	0.012281	2.94	4.39	6.32	0.92
BellsB	M002	4534.72	20Year-Existing	10.40	170.00	170.81	171.29	172.82	0.126427	7.51	2.21	5.40	2.82
BellsB	M002	4485.52	20Year-Existing	10.40	168.20	168.79	168.91	169.18	0.046824	3.66	4.94	16.84	1.64
BellsB	M002	4436.28	20Year-Existing	18.80	165.85	166.92	167.05	167.52	0.028104	4.42	7.37	13.45	1.42
BellsB	M002	4387.04	20Year-Existing	18.80	164.06	165.16	165.42	165.95	0.035133	5.03	6.39	11.26	1.60
BellsB	M002	4337.81	20Year-Existing	18.80	162.60	163.69	163.87	164.26	0.031370	4.59	8.40	21.03	1.48
BellsB	M002	4288.56	20Year-Existing	18.80	161.30	162.38	162.51	162.84	0.028992	4.26	8.75	19.78	1.40
BellsB	M002	4239.33	20Year-Existing	18.80	159.65	160.58	160.81	161.31	0.038799	4.56	6.55	14.10	1.62
BellsB	M002	4190.09	20Year-Existing	18.80	158.43	159.49	159.60	159.92	0.020227	3.64	8.73	17.04	1.20
BellsB	M002	4140.85	20Year-Existing	18.80	157.30	157.89	157.99	158.26	0.055895	4.19	8.11	22.38	1.83
BellsB	M002	4091.61	20Year-Existing	18.80	155.30	156.03	156.08	156.34	0.030690	3.69	9.12	19.63	1.42
BellsB	M002	4042.37	20Year-Existing	18.80	153.74	154.55	154.64	154.96	0.024866	3.45	7.98	14.69	1.29
BellsB	M002	3993.13	20Year-Existing	18.80	152.65	153.41	153.47	153.71	0.028949	3.39	9.53	22.40	1.32
BellsB	M002	3943.89	20Year-Existing	18.80	151.36	152.17	152.22	152.49	0.025321	3.45	9.11	18.49	1.29
BellsB	M002	3894.65	20Year-Existing	18.80	149.52	150.97	151.13	151.52	0.019050	3.86	8.26	17.21	1.16
BellsB	M002	3869.08	20Year-Existing	18.80	148.87	149.97	150.24	150.82	0.037021	4.69	5.68	10.03	1.59
BellsB	M002	3845.41	20Year-Existing	18.80	148.37	149.55	149.60	150.05	0.022603	3.77	7.78	15.54	1.19
BellsB	M002	3822.22	20Year-Existing	18.80	147.71	149.00	148.61	149.09	0.003983	1.81	16.25	18.13	0.52
BellsB	M002	3796.17	20Year-Existing	18.80	146.89	148.46	148.46	148.89	0.012237	3.32	8.31	10.95	0.91
BellsB	M002	3765.39	20Year-Existing	18.80	146.40	148.02	148.05	148.49	0.013580	3.37	7.45	9.24	0.93
BellsB	M002	3746.94	20Year-Existing	18.80	145.76	147.63	146.95	147.68	0.001564	1.41	20.64	19.04	0.34
BellsB	M002	3724.94	20Year-Existing	18.80	145.32	147.40		147.61	0.004290	2.27	11.04	9.80	0.55
BellsB	M002	3697.71	20Year-Existing	18.80	145.05	147.44		147.51	0.001219	1.42	17.40	11.25	0.30
BellsB	M002	3677.71	20Year-Existing	18.80	143.44	147.23	145.45	147.47	0.001494	2.16	8.71	15.06	0.36
BellsB	M002	3650		Culvert									
BellsB	M002	3643.21	20Year-Existing	18.80	142.47	144.39	144.39	145.32	0.011258	4.25	4.42	9.07	1.00
BellsB	M002	3623.19	20Year-Existing	18.80	142.10	143.52	143.94	144.81	0.044724	5.53	4.34	6.66	1.70
BellsB	M002	3573.45	20Year-Existing	18.80	140.89	142.19	142.41	142.98	0.026875	4.27	5.51	8.85	1.36
BellsB	M002	3520.99	20Year-Existing	18.80	139.30	140.70	140.92	141.56	0.026660	4.47	5.26	7.44	1.34
BellsB	M002	3473.83	20Year-Existing	18.80	137.98	139.59	139.80	140.29	0.023121	4.44	6.02	8.45	1.23
BellsB	M002	3424.29	20Year-Existing	18.80	136.49	138.48	137.94	138.68	0.003026	2.14	11.19	10.18	0.51
BellsB	M002	3400.36	20Year-Existing	18.80	135.96	138.58		138.61	0.000307	0.84	29.62	20.22	0.17
BellsB	M002	3386.31	20Year-Existing	18.80	135.48	138.56	137.29	138.60	0.000393	1.13	35.89	59.21	0.21
BellsB	M002	3375		Culvert									
BellsB	M002	3358.51	20Year-Existing	18.80	135.22	138.52	137.02	138.52	0.000032	0.33	104.27	61.63	0.06
BellsB	M002	3329.08	20Year-Existing	23.80	134.96	138.52		138.52	0.000044	0.41	112.48	56.15	0.07
BellsB	M002	3303.55	20Year-Existing	23.80	133.82	138.48	136.07	138.52	0.000216	1.04	49.75	49.25	0.16
BellsB	M002	3250		Culvert									
BellsB	M002	3222.52	20Year-Existing	23.80	131.39	134.04	134.04	135.12	0.011275	4.60	5.17	17.97	1.00
BellsB	M002	3203.83	20Year-Existing	23.80	131.13	132.31	132.84	134.36	0.099290	6.89	4.70	11.19	2.48
BellsB	M002	3176.31	20Year-Existing	23.80	130.02	131.35	131.70	132.45	0.041912	5.39	6.66	11.84	1.69
BellsB	M002	3157.63	20Year-Existing	23.80	129.89	131.21	131.32	131.67	0.026850	4.11	10.17	18.93	1.29
BellsB	M002	3130.11	20Year-Existing	23.80	128.68	130.19	130.37	130.98	0.021344	4.33	7.08	7.78	1.25
BellsB	M002	3083.82	20Year-Existing	23.80	127.94	129.51	129.70	130.08	0.015930	3.92	10.90	23.94	1.10
BellsB	M002	3037.68	20Year-Existing	23.80	127.11	127.94	128.18	128.76	0.060468	5.33	8.07	21.72	2.00
BellsB	M002	2991.47	20Year-Existing	23.80	126.28	127.98	127.23	128.00	0.000671	0.96	40.70	43.01	0.24
BellsB	M002	2945.26	20Year-Existing	23.80	125.32	127.64	127.00	127.91	0.004769	2.33	11.16	17.29	0.52
BellsB	M002	2940.01		Culvert									
BellsB	M002	2937.88	20Year-Existing	23.80	125.12	126.80	126.80	127.63	0.011313	4.06	5.87	4.69	1.00
BellsB	M002	2918.61	20Year-Existing	23.80	124.99	126.67	126.91	127.31	0.015264	4.07	8.83	16.74	1.09
BellsB	M002	2899.46	20Year-Existing	23.80	125.25	126.42	126.69	126.99	0.013160	3.40	8.61	31.63	1.02
BellsB	M002	2890		Bridge									
BellsB	M002	2881.51	20Year-Existing	23.80	124.44	125.82	125.82	126.46	0.011127	3.54	6.72	19.70	1.00
BellsB	M002	2861.32	20Year-Existing	23.80	123.64	124.58	124.94	125.82	0.062809	5.81	5.92	14.15	2.14
BellsB	M002	2823.69	20Year-Existing	23.80	123.23	124.25	124.28	124.51	0.019468	3.16	13.40	28.82	1.08
BellsB	M002	2777.91	20Year-Existing	23.80	122.77	123.89	123.66	123.93	0.003446	1.46	32.34	58.96	0.46
BellsB	M002	2727.91	20Year-Existing	23.80	122.21	123.41	123.41	123.70	0.014795	3.03	13.16	23.34	0.95
BellsB	M002	2677.99	20Year-Existing	23.80	121.13	122.62	122.54	122.97	0.011632	2.99	10.68	12.92	0.87
BellsB	M002	2628.09	20Year-Existing	23.80	120.69	122.15	122.15	122.41	0.011281	3.09	15.77	30.25	0.86
BellsB	M002	2578.18	20Year-Existing	23.80	119.94	121.36	121.46	121.73	0.016234	3.50	13.28	28.08	1.01
BellsB	M002	2528.27	20Year-Existing	23.80	119.10	120.66	120.72	121.11	0.016259	3.66	10.46	14.43	1.02
BellsB	M002	2518.19	20Year-Existing	23.80	118.62	120.01	120.27	120.85	0.034436	4.79	7.73	12.97	1.45
BellsB	M002	2496.15	20Year-Existing	23.80	118.53	120.24	119.93	120.41	0.005930	2.42	16.76	19.30	0.63
BellsB	M002	2478.37	20Year-Existing	23.80	117.97	120.00		120.29	0.006832	2.88	12.82	12.48	0.69
BellsB	M002	2450.61	20Year-Existing	23.80	117.55	119.50	119.50	120.02	0.012123	3.80	9.92	10.37	0.92
BellsB	M002	2428.46	20Year-Existing	23.80	117.19	118.37	118.71	119.44	0.055911	5.18	6.65	13.68	1.77
BellsB	M002	2408.52	20Year-Existing	23.80	116.63	117.85	118.05	118.48	0.040069	4.52	8.83	17.73	1.50
BellsB	M002	2378.55	20Year-Existing	23.80	116.15	117.54	117.54	117.91	0.019025	3.76	11.78	19.23	1.08
BellsB	M002	2367.92	20Year-Existing	23.80	115.61	116.66	116.92	117.53	0.051415	5.16	7.85	17.28	1.74

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M002	2352.81	20Year-Existing	23.80	115.07	116.20	116.40	116.87	0.036300	4.55	8.69	16.19	1.48
BellsB	M002	2328.64	20Year-Existing	23.80	113.99	115.91	115.70	116.19	0.007786	2.98	14.27	18.33	0.74
BellsB	M002	2307.61	20Year-Existing	23.80	112.94	116.06	115.05	116.09	0.000427	0.91	48.45	46.63	0.18
BellsB	M002	2300		Bridge									
BellsB	M002	2295.83	20Year-Existing	23.80	111.75	113.05	113.55	114.71	0.072598	5.71	4.17	4.32	1.80
BellsB	M002	2275.77	20Year-Existing	26.00	112.06	113.79	113.79	114.15	0.012369	3.56	12.98	19.47	0.92
BellsB	M002	2232.72	20Year-Existing	26.00	110.58	112.21	112.54	113.26	0.029042	5.04	7.54	12.50	1.37
BellsB	M002	2200.99	20Year-Existing	26.00	109.61	111.08	111.44	112.21	0.039750	5.31	6.85	9.90	1.57
BellsB	M002	2173.21	20Year-Existing	26.00	108.98	111.03	111.03	111.63	0.012081	3.77	9.34	8.77	0.89
BellsB	M002	2133.27	20Year-Existing	26.00	107.79	109.04	109.52	110.61	0.062217	6.24	5.85	9.71	1.95
BellsB	M002	2117.78	20Year-Existing	26.00	107.46	108.84	109.12	109.78	0.029809	4.81	7.44	9.79	1.40
BellsB	M002	2103.01	20Year-Existing	26.00	106.45	107.79	108.18	109.11	0.058225	5.94	6.21	9.43	1.84
BellsB	M002	2085.77	20Year-Existing	26.00	105.17	106.55	107.03	108.03	0.059560	6.40	5.78	7.53	1.90
BellsB	M002	2068.57	20Year-Existing	26.00	104.36	105.33	105.76	106.89	0.087738	6.55	5.88	11.58	2.27
BellsB	M002	2059.88	20Year-Existing	26.00	103.56	104.83	105.30	106.29	0.053186	5.77	5.82	8.79	1.81
BellsB	M002	2054.52	20Year-Existing	26.00	103.13	104.37	104.82	105.95	0.071708	6.43	5.66	8.32	2.06
BellsB	M002	2040.56	20Year-Existing	26.00	102.39	104.51	104.13	104.91	0.006300	3.16	11.53	7.92	0.71
BellsB	M002	2033.27	20Year-Existing	26.00	102.08	104.20	104.20	104.82	0.013956	3.89	8.96	7.90	0.95
BellsB	M002	2025.44	20Year-Existing	26.00	101.58	102.87	103.39	104.52	0.055021	6.01	5.24	7.03	1.84
BellsB	M002	2021.67	20Year-Existing	26.00	101.43	103.18	103.48	104.19	0.027855	4.72	6.79	7.88	1.30
BellsB	M002	2014.53	20Year-Existing	26.00	99.96	101.36	102.00	103.69	0.126148	6.77	3.89	5.78	2.50
BellsB	M002	2010.46	20Year-Existing	26.00	99.08	100.10	100.80	103.05	0.156527	8.36	3.95	6.59	2.97
BellsB	M002	2007.37	20Year-Existing	26.00	98.52	99.81	100.53	102.55	0.134473	7.40	3.70	5.24	2.61
BellsB	M002	1996.87	20Year-Existing	26.00	97.97	98.98	99.60	101.20	0.097325	7.22	4.55	6.39	2.43
BellsB	M002	1982.97	20Year-Existing	26.00	97.73	98.85	99.19	99.97	0.046031	5.44	6.44	7.76	1.71
BellsB	M002	1966.25	20Year-Existing	26.00	96.75	98.69	98.81	99.39	0.017709	4.15	8.52	8.76	1.06
BellsB	M002	1951.81	20Year-Existing	26.00	96.56	98.65	98.07	98.79	0.003500	2.09	17.88	13.93	0.49
BellsB	M002	1939.94	20Year-Existing	26.00	96.29	98.20	98.20	98.68	0.012190	3.38	10.30	11.55	0.89
BellsB	M002	1918.81	20Year-Existing	26.00	95.86	97.79	97.59	98.14	0.008609	3.15	12.17	10.88	0.78
BellsB	M002	1910.32	20Year-Existing	26.00	95.58	97.43	97.43	98.02	0.012864	3.63	8.92	8.49	0.94
BellsB	M002	1896.87	20Year-Existing	26.00	94.38	95.78	96.30	97.56	0.070753	6.47	5.25	7.66	1.99
BellsB	M002	1887.59	20Year-Existing	26.00	93.87	96.04	95.45	96.20	0.003316	2.14	17.63	13.06	0.50
BellsB	M002	1880.79	20Year-Existing	26.00	93.33	96.05		96.18	0.001712	1.83	20.71	12.16	0.37
BellsB	M002	1870.34	20Year-Existing	26.00	92.77	96.06		96.15	0.000928	1.61	24.77	10.31	0.29
BellsB	M002	1857.16	20Year-Existing	26.00	91.88	96.08		96.13	0.000477	1.21	32.85	14.24	0.20
BellsB	M002	1848.27	20Year-Existing	26.00	91.91	96.09		96.12	0.000228	0.91	43.46	16.45	0.15
BellsB	M002	1834.27	20Year-Existing	26.00	90.88	96.10		96.12	0.000141	0.80	50.26	17.12	0.12
BellsB	M002	1821.35	20Year-Existing	26.00	90.90	96.10		96.11	0.000081	0.66	67.40	20.34	0.09
BellsB	M002	1807.43	20Year-Existing	26.00	89.83	96.10		96.11	0.000048	0.54	79.93	21.28	0.07
BellsB	M002	1800.77	20Year-Existing	26.00	89.59	96.10		96.11	0.000047	0.54	84.91	22.36	0.07
BellsB	M002	1777.98	20Year-Existing	26.00	88.77	96.11		96.11	0.000016	0.35	130.94	29.74	0.04
BellsB	M002	1753.27	20Year-Existing	26.00	88.22	96.11		96.11	0.000018	0.38	124.77	29.29	0.04
BellsB	M002	1729.73	20Year-Existing	26.00	88.17	96.11		96.11	0.000010	0.31	154.38	32.11	0.04
BellsB	M002	1705.77	20Year-Existing	26.00	87.60	96.11		96.11	0.000004	0.24	241.79	61.14	0.03
BellsB	M002	1688.91	20Year-Existing	26.00	86.72	96.11	89.52	96.11	0.000006	0.27	199.60	61.65	0.03
BellsB	M002	1650		Culvert									
BellsB	M002	1624.32	20Year-Existing	26.00	83.97	86.75	86.75	88.13	0.008516	5.21	4.99	18.51	1.00
BellsB	M002	1605.59	20Year-Existing	26.00	81.49	82.21	82.79	86.69	0.563366	9.89	2.97	10.69	5.60
BellsB	M001	1582.05	20Year-Existing	41.30	80.41	81.45	82.27	85.08	0.134987	8.65	5.25	8.41	3.16
BellsB	M001	1563.67	20Year-Existing	41.30	79.96	81.17	81.73	83.09	0.053743	6.56	7.77	10.25	2.10
BellsB	M001	1544.26	20Year-Existing	41.30	79.04	80.74	81.19	82.22	0.028002	5.88	9.23	9.08	1.58
BellsB	M001	1529.04	20Year-Existing	41.30	78.24	79.35	79.99	81.57	0.057864	6.81	6.82	8.11	2.18
BellsB	M001	1515.66	20Year-Existing	41.30	77.30	79.01	79.55	80.77	0.044738	6.05	7.57	7.31	1.69
BellsB	M001	1502.43	20Year-Existing	41.30	69.64	70.20	71.03	78.47	1.118290	12.74	3.25	9.84	7.00
BellsB	M001	1483.47	20Year-Existing	41.30	68.89	69.85	70.28	71.47	0.112985	6.25	8.14	16.22	2.48
BellsB	M001	1454.75	20Year-Existing	41.30	68.03	69.43	69.50	69.99	0.020909	4.18	14.20	15.68	1.19
BellsB	M001	1406.62	20Year-Existing	41.30	66.49	68.41	68.47	69.11	0.015813	4.30	13.02	11.07	1.06
BellsB	M001	1358.51	20Year-Existing	41.30	65.17	66.55	66.95	67.87	0.043396	5.46	9.28	11.56	1.66
BellsB	M001	1310.38	20Year-Existing	41.30	63.80	65.25	65.51	66.12	0.026682	4.54	11.99	15.93	1.33
BellsB	M001	1286.33	20Year-Existing	41.30	62.81	64.12	64.47	65.23	0.052477	5.48	10.54	18.05	1.78
BellsB	M001	1262.25	20Year-Existing	41.30	62.09	64.34	64.34	64.65	0.008492	3.31	22.51	29.20	0.77
BellsB	M001	1251.58	20Year-Existing	41.30	61.46	62.97	63.35	64.37	0.049304	6.62	9.68	11.41	1.82
BellsB	M001	1234.76	20Year-Existing	41.30	60.57	62.01	62.45	63.47	0.060457	6.65	10.28	18.57	1.95
BellsB	M001	1214.13	20Year-Existing	41.30	59.55	61.45	60.91	61.62	0.003596	2.09	27.24	22.25	0.52
BellsB	M001	1200.58	20Year-Existing	41.30	58.90	60.92	60.92	61.49	0.011917	3.81	15.13	14.17	0.93
BellsB	M001	1182.98	20Year-Existing	41.30	58.59	60.61	60.68	61.26	0.013936	4.12	14.42	14.11	1.00
BellsB	M001	1166.01	20Year-Existing	41.30	58.39	59.69	60.04	60.82	0.042654	5.33	10.85	16.87	1.64
BellsB	M001	1153.18	20Year-Existing	41.30	57.70	59.39	59.65	60.27	0.033371	5.61	13.19	19.53	1.48
BellsB	M001	1141.88	20Year-Existing	41.30	56.72	57.95	58.45	59.66	0.067605	6.23	8.15	12.65	2.03
BellsB	M001	1128.34	20Year-Existing	41.30	56.53	57.66	57.95	58.63	0.052474	5.36	10.33	14.56	1.76
BellsB	M001	1117.89	20Year-Existing	41.30	55.58	56.77	57.16	58.01	0.063855	6.36	9.76	12.97	1.97
BellsB	M001	1096.03	20Year-Existing	41.30	54.61	56.18	56.42	57.04	0.027086	4.61	12.10	15.48	1.33
BellsB	M001	1077.81	20Year-Existing	41.30	54.24	55.27	55.65	56.38	0.051223	5.30	10.48	16.57	1.77
BellsB	M001	1069.76	20Year-Existing	41.30	53.70	54.41	54.76	55.67	0.118225	6.04	9.33	18.89	2.51
BellsB	M001	1064.67	20Year-Existing	41.30	53.19	53.93	54.25	55.07	0.109672	5.80	9.86	20.24	2.41
BellsB	M001	1051.64	20Year-Existing	41.30	51.97	52.97	53.32	54.15	0.063176	5.53	10.29	17.72	1.93
BellsB	M001	1032.36	20Year-Existing	41.30	50.97	52.37	52.59	53.17	0.034855	5.10	12.67	16.05	1.50
BellsB	M001	1021.64	20Year-Existing	41.30	50.03	51.35	51.75	52.66	0.049640	5.48	9.63	15.44	1.75
BellsB	M001	1014.11	20Year-Existing	41.30	49.46	50.95	51.38	52.31	0.044468	5.56	9.29	13.15	1.67
BellsB	M001	1006.24	20Year-Existing	41.30	49.15	50.33	50.79	51.89	0.058023	5.97	8.72	13.64	1.90
BellsB	M001	996.42	20Year-Existing	41.30	48.11	49.36	49.88	51.22	0.084014	7.01	8.09	13.12	2.23
BellsB	M001	987.27	20Year-Existing	41.30	47.17	48.60	49.17	50.55	0.062865	6.74	7.84	10.62	2.01
BellsB	M001	973.52	20Year-Existing	41.30	46.79	48.09	48.61	49.73	0.045661	5.87	8.14	11.75	1.83

HEC-RAS Plan: Plan 13 Profile: 20Year-Existing (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
BellsB	M001	951.43	20Year-Existing	41.30	45.77	47.21	47.68	48.72	0.046923	5.97	9.08	14.80	1.83
BellsB	M001	931.51	20Year-Existing	41.30	44.86	46.07	46.52	47.56	0.073071	7.17	8.59	13.02	2.25
BellsB	M001	925.41	20Year-Existing	41.30	44.69	46.29	46.53	47.11	0.024344	5.08	12.64	17.97	1.34
BellsB	M001	901.68	20Year-Existing	41.30	43.69	45.07	45.47	46.36	0.036139	5.70	9.31	10.81	1.67
BellsB	M001	877.27	20Year-Existing	41.30	43.18	45.40	44.95	45.70	0.004552	2.81	19.49	13.57	0.64
BellsB	M001	857.41	20Year-Existing	41.30	42.16	45.52	44.37	45.60	0.000718	1.48	46.75	38.93	0.27
BellsB	M001	840		Culvert									
BellsB	M001	816.09	20Year-Existing	42.50	38.54	42.04	40.89	42.48	0.002983	2.98	14.81	11.66	0.52
BellsB	M001	810.13	20Year-Existing	42.50	37.80	42.22	39.77	42.29	0.000487	1.28	44.54	27.64	0.20
BellsB	M001	800		Bridge									
BellsB	M001	796.37	20Year-Existing	42.50	34.33	36.42	37.24	39.03	0.064409	7.19	6.09	7.82	2.00
BellsB	M001	782.27	20Year-Existing	42.50	33.92	34.79	35.43	37.54	0.177869	7.87	6.15	10.97	3.09
BellsB	M001	772.73	20Year-Existing	42.50	30.94	32.50	33.26	35.88	0.163350	10.37	6.62	9.64	2.93
BellsB	M001	766.74	20Year-Existing	42.50	30.65	32.43	33.12	34.87	0.096469	9.08	7.80	9.77	2.34
BellsB	M001	760.32	20Year-Existing	42.50	30.34	31.88	32.57	34.31	0.079147	7.98	7.71	9.91	2.24
BellsB	M001	755.97	20Year-Existing	42.50	30.05	31.59	32.20	33.92	0.083964	7.45	7.60	11.00	2.23
BellsB	M001	749.69	20Year-Existing	42.50	29.30	30.90	31.56	33.38	0.085410	8.02	7.56	9.97	2.28
BellsB	M001	742.14	20Year-Existing	42.50	28.38	29.57	30.35	32.62	0.104986	8.21	6.32	8.50	2.57
BellsB	M001	736.73	20Year-Existing	42.50	28.24	29.03	29.69	31.85	0.167554	8.03	6.10	10.55	3.07
BellsB	M001	722.61	20Year-Existing	42.50	27.35	28.43	28.87	30.03	0.068596	6.14	8.59	14.34	2.03
BellsB	M001	712.04	20Year-Existing	42.50	26.27	27.76	28.26	29.39	0.053610	6.11	8.57	10.56	1.82
BellsB	M001	702.42	20Year-Existing	42.50	26.04	27.34	27.79	28.81	0.055427	5.94	9.02	11.88	1.86
BellsB	M001	691.68	20Year-Existing	42.50	25.03	26.56	27.06	28.20	0.057282	5.93	8.09	10.35	1.85
BellsB	M001	686.22	20Year-Existing	42.50	24.46	25.67	26.26	27.77	0.085425	6.48	6.89	10.07	2.22
BellsB	M001	675.26	20Year-Existing	42.50	24.08	25.24	25.73	26.84	0.059529	5.96	8.18	10.45	1.92
BellsB	M001	668.37	20Year-Existing	42.50	23.58	24.89	25.35	26.44	0.054471	5.87	8.57	11.73	1.84
BellsB	M001	655.45	20Year-Existing	42.50	23.02	24.19	24.64	25.71	0.057333	5.77	8.59	12.72	1.86
BellsB	M001	636.88	20Year-Existing	42.50	21.46	22.78	23.32	24.56	0.061915	6.07	7.73	10.18	1.95
BellsB	M001	619.06	20Year-Existing	42.50	20.82	22.34	22.72	23.58	0.036705	5.37	9.96	11.40	1.55
BellsB	M001	608.48	20Year-Existing	42.50	20.13	21.51	22.00	23.09	0.048481	5.74	8.44	11.33	1.75
BellsB	M001	592.31	20Year-Existing	42.50	18.95	20.36	20.89	22.14	0.069663	6.80	8.40	11.07	2.07
BellsB	M001	582.72	20Year-Existing	42.50	18.14	19.23	19.82	21.35	0.089877	7.04	7.49	10.07	2.34
BellsB	M001	577.91	20Year-Existing	42.50	17.66	19.20	19.77	20.95	0.044044	6.36	8.57	8.76	1.74
BellsB	M001	561.51	20Year-Existing	42.50	17.02	18.41	18.88	20.03	0.067035	6.37	9.06	13.17	2.02
BellsB	M001	553.07	20Year-Existing	42.50	16.35	17.48	18.08	19.42	0.071957	6.32	7.45	10.38	2.09
BellsB	M001	541.54	20Year-Existing	42.50	15.41	16.59	17.13	18.53	0.085628	6.23	7.26	11.64	2.22
BellsB	M001	529.17	20Year-Existing	42.50	14.85	15.97	16.43	17.49	0.064145	5.50	8.03	8.98	1.76
BellsB	M001	514.53	20Year-Existing	42.50	14.21	15.32	15.69	16.52	0.056123	5.25	9.68	11.95	1.67
BellsB	M001	467.56	20Year-Existing	42.50	11.61	12.79	13.15	14.01	0.049461	4.95	9.09	10.22	1.57
BellsB	M001	420.59	20Year-Existing	42.50	8.75	11.99	10.96	12.24	0.003075	2.34	22.39	11.50	0.44
BellsB	M001	400.25	20Year-Existing	42.50	8.57	11.82	10.52	12.17	0.002876	2.62	16.25	6.39	0.46
BellsB	M001	100		Culvert									
BellsB	M001	68.07	20Year-Existing	42.50	0.83	4.13	2.78	4.24	0.000814	1.73	44.70	48.51	0.30
BellsB	M001	47.74	20Year-Existing	42.50	0.56	4.17	2.69	4.18	0.000145	0.77	131.91	124.00	0.13
BellsB	M001	43		Bridge									
BellsB	M001	41.05	20Year-Existing	42.50	0.70	4.17	2.70	4.17	0.000122	0.70	141.73	129.23	0.12
BellsB	M001	20.51	20Year-Existing	42.50	0.57	4.16		4.17	0.000152	0.76	135.76	138.59	0.13