



Government of Newfoundland and Labrador
Department of Municipal Affairs and Environment
Water Resources Management Division

PERMIT TO ALTER A BODY OF WATER

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **JUNE 10, 2020**

File No: **525**
Permit No: **ALT11080-2020**

Permit Holder: **Labrador Island Link Limited Partnership**
500 Columbus Drive
St. John's, NL A1B 4K7
JackieWells@nalcenergy.com

Attention: **Jackie Wells**

Re: **Upgrading and rehabilitation of existing bridges and culverts along the access road of Labrador-Island Transmission Link from Port Blandford to Deer Lake - Segment 4**

Permission is hereby given for : **upgrading and rehabilitation of one hundred sixty (160) bridges and culverts, which were originally constructed on a temporary basis during the construction of Labrador-Island Transmission Link, along the access road in segment-4 from Port Blandford to Deer Lake to retain them in existing locations as permanent structures in order to facilitate inspection, repairing and maintenance of the Transmission Link, with reference to the application dated February 18, 2020 and additional information received on March 6, April 17, and May 20, 2020**

- This Permit does not release the Permit Holder from the obligation to obtain appropriate approvals from other concerned municipal, provincial and federal agencies.
- The Permit Holder must obtain the approval of the Crown Lands Administration Division if the project is being carried out on Crown Land.
- This Permit is subject to the terms and conditions indicated in Appendices A and B (attached).
- It should be noted that prior to any significant changes in the design or installation of the proposed works, or in event of changes in ownership or management of the project, an amendment to this Permit must be obtained from the Department of Municipal Affairs and Environment under Section 49 of the *Water Resources Act*.

(for) MINISTER

APPENDIX A
Terms and Conditions for Permit

Culvert Design

1. The crossing structure must provide adequate capacity to safely discharge flood flows without causing backwater effects upstream or increased flow velocity downstream.
2. To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria:
A complete list of culverts as per the following table in Appendix E

Crossing Name / No.	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m³/s)	Minimum Size (mm)	Number of Pipes	Length (m)	PPWSA
See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E

Culvert Installation

3. Drainage ditches must collect and transport surface runoff in a manner that does not cause flooding, erosion or sedimentation of adjacent land or receiving waters.
4. Inlet and outlet areas of culvert installations must be adequately protected from erosion by placing rip-rap, fitted stone, or concrete headwalls.
5. Culvert installations must follow the stream channel gradient to the maximum extent possible and placed in line with the direction of the main flow to minimize disturbance to the channel. Culverts must not disrupt the flow of water or cause ponding at the upstream side of the installation.
6. In multiple culvert installations, one culvert must be set a minimum of 150 mm lower than the others to provide adequate water depth and velocity for fish passage during low flow conditions. In addition, multiple culverts must be installed within 0.6 to 0.9 metres apart for maximum stability.
7. Where pumping is used to bypass flow, cofferdams must be installed both above and below areas of construction. The Permit Holder must provide pumps with sufficient capacity to prevent washout of cofferdams.
8. Cofferdams must be properly designed and constructed of suitable materials to prevent leakage and to resist loss of any material as a result of erosion. Cofferdams must be removed upon completion of their intended function. All material must be removed carefully to prevent disturbance of the water body and to prevent water quality degradation.
9. All work involving minor alteration to the stream channel to permit culvert placement must be carried out at a time of low flow, and in a manner that prevents downstream siltation and unnecessary alteration of the channel.
10. Grading and finishing of roadways or road embankments must not cause damage to culverts or allow road material to enter the watercourse.
11. Roadside embankments near the watercourse must be adequately protected from erosion by sodding, seeding or placing of rip-rap.

12. Culverts must be inspected regularly so that immediate action can be taken to clear blockages caused by ice or debris or to undertake repairs as required.
13. The inlet and outlet of culverts must be clearly marked so that operators of road grading and snow clearing equipment can avoid blocking culverts.
14. Any damage to culverts during installation or due to inadequate capacity and/or improper construction must be reported to this Department. Damaged culverts must be replaced immediately to prevent overtopping, erosion, or flooding.
15. If a culvert is installed in natural fish habitat it must be embedded a minimum of 150 mm below the natural streambed (up to a maximum of 1/3 of the culvert diameter).

Bridge Design

16. The crossing structure must provide adequate capacity to safely discharge flood flows without causing backwater effects upstream or increased flow velocity downstream.
17. Piers must be designed to prevent failure resulting from scouring of streambed material.
18. The bridge(s) must have the following minimum dimensions: A complete list of bridges as per the following table in Appendix F

Crossing Name / No.	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m³/s)	Span (m)	Waterway Opening (m²)	Height Above Stream Bed (m)	Freeboard (m)	PPWSA
See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F

Bridge Construction

19. The use of creosote treated wood is strictly prohibited within 15 metres of all bodies of fresh water in the province.
20. Drainage ditches must collect and transport surface runoff in a manner that does not cause flooding, erosion or sedimentation of adjacent land or receiving waters.
21. Bridge abutments must be set back 0.5 metres from the normal edge of a watercourse to prevent constriction during high flow conditions.
22. Infilling must not cause increased water elevation upstream or increase flow velocity downstream of the site. Reduction of the natural cross sectional area of any watercourse is not permitted.
23. The upstream and downstream sides of abutments must be protected with rip-rap, concrete or heavy timber to prevent erosion and scouring.
24. Where pumping is used to bypass flow, cofferdams must be installed both above and below areas of construction. The Permit Holder must provide pumps with sufficient capacity to prevent washout of cofferdams.
25. Cofferdams must be properly designed and constructed of suitable materials to prevent leakage and to resist loss of any material as a result of erosion. Cofferdams must be removed upon completion of their intended function. All material must be removed carefully to prevent disturbance of the water body and to prevent water quality degradation.

26. Abutments and piers must be constructed in the dry and during times of low flow.
27. Roadside embankments near the watercourse must be adequately protected from erosion by sodding, seeding or placing of rip-rap.
28. Adequate erosion protection must be provided where roadside ditches discharge into watercourses near bridges.

General Alterations

29. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
30. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
31. Water pumped from excavations or work areas, or any runoff or effluent directed out of work sites, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to a body of water. Effluent discharged into receiving waters must comply with the *Environmental Control Water and Sewage Regulations, 2003*.
32. All operations must be carried out in a manner that prevents damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.
33. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment must be confined to dry stable areas.
34. All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.
35. During the construction of concrete components, formwork must be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.
36. Wood preservatives such as penta, CCA or other such chemicals must not be applied to timber near a body of water. All treated wood or timber must be thoroughly dry before being brought to any work site and installed.
37. Any areas adversely affected by this project must be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if considered necessary in the opinion of this Department.
38. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by this project, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
39. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
40. Periodic maintenance such as painting, resurfacing, clearing of debris, or minor repairs, must be carried out without causing any physical disruption of any watercourse. Care must be taken to prevent spillage of pollutants into the water.
41. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
42. Sediment and erosion control measures must be installed before starting work. All control measures must be inspected regularly and any necessary repairs made if damage is discovered.
43. Fill material must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters.

44. The attached Completion Report (Appendix C) for Permit No. 11080 must be completed and returned to this Department upon completion of the approved works. Pictures must be submitted along with the completion report, showing the project site prior to and after development.
45. This Permit is valid for two years from the date of issue. Work must be completed by that date or the application and approval procedure must be repeated.
46. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
47. All work must be carried out within the Permit Holder's legal property boundaries.

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
Department of Municipal Affairs and Environment

File No: 525
Permit No: ALT11080-2020

APPENDIX B

Special Terms and Conditions for Permit

1. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall keep all systems and works in good condition and repair and in accordance with all laws, by-laws, directions, rules and regulations of any governmental authority. The Permit Holder or its agent(s), subcontractor(s), or consultant(s) shall immediately notify the Minister if any problem arises which may threaten the structural stability of the systems and works, endanger public safety and/or the environment or adversely affect others and/or any body of water either in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for all damages suffered by the Minister and Government resulting from any defect in the systems and works, operational deficiencies/inadequacies, or structural failure.
2. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall operate the said Project and its systems and works in a manner which does not cause any water related and/or environmental problems, including but not limited to problems of erosion, deposition, flooding, and deterioration of water quality and groundwater depletion, in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for any and all damages associated with these problems caused as a result of changes, deficiencies, and inadequacies in the operational procedures by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
3. If the Permit Holder or its agent(s), subcontractor(s), or consultant(s) fails to perform, fulfil, or observe any of the terms and conditions, or provisions of this Permit, as determined by this Department, the Minister may, without notice, amend, modify, suspend or cancel this Permit in accordance with the *Water Resources Act*.
4. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) indemnify and hold the Minister and Government harmless against any and all liabilities, losses, claims, demands, damages or expenses including legal expenses of any nature whatsoever whether arising in tort, contract, statute, trust or otherwise resulting directly or indirectly from granting this Permit, systems and works in or outside the said Project areas, or any act or omission of the Permit Holder or its agent(s), subcontractor(s), or consultant(s) in or outside the said Project areas, or arising out of a breach or non-performance of any of the terms and conditions, or provisions of this Permit by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
5. This Permit is subject to all provisions of the *Water Resources Act* and any regulations in effect either at the date of this Permit or hereafter made pursuant thereto or any other relevant legislation enacted by the Province of Newfoundland and Labrador in the future.
6. This Permit shall be construed and interpreted in accordance with the laws of the Province of Newfoundland and Labrador.

- cc: File Copy for Binder
- cc: Dave Mercer (Central)
Land Management Specialist
Crown Lands Administration Division
Department of Fisheries and Land Resources
davemercer@gov.nl.ca
- cc: Jeff Bannister (Western and Labrador)
Western and Labrador Regional Lands Manager
Crown Lands Administration Division
JeffBannister@gov.nl.ca
- cc: Fisheries Protection Division
Ecosystem Management Branch
Fisheries and Oceans Canada
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- cc: Amir Ali Khan, Ph.D., P.Eng.
Manager, Water Rights, Investigations and Modelling Section
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Government of Newfoundland and Labrador
Department of Municipal Affairs and Environment
Water Resources Management Division

Appendix C - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **JUNE 10, 2020**

File No: **525**

Permit No: **ALT11080-2020**

Permit Holder: **Labrador Island Link Limited Partnership
500 Columbus Drive
St. John's, NL A1B 4K7
JackieWells@nalcenergy.com**

Attention: **Jackie Wells**

Re: **Upgrading and rehabilitation of existing bridges and culverts along the access road of
Labrador-Island Transmission Link from Port Blandford to Deer Lake - Segment 4**

Permission was given for : **upgrading and rehabilitation of one hundred sixty (160) bridges and culverts, which were originally constructed on a temporary basis during the construction of Labrador-Island Transmission Link, along the access road in segment-4 from Port Blandford to Deer Lake to retain them in existing locations as permanent structures in order to facilitate inspection, repairing and maintenance of the Transmission Link, with reference to the application dated February 18, 2020 and additional information received on March 6, April 17, and May 20, 2020**

I (the Permit Holder named above or agent authorized to represent the Permit Holder) do hereby certify that the project described above was completed in accordance with the plans and specifications submitted to the Department of Municipal Affairs and Environment and that the work was carried out in strict compliance with the terms and conditions of the Permit issued for this project.

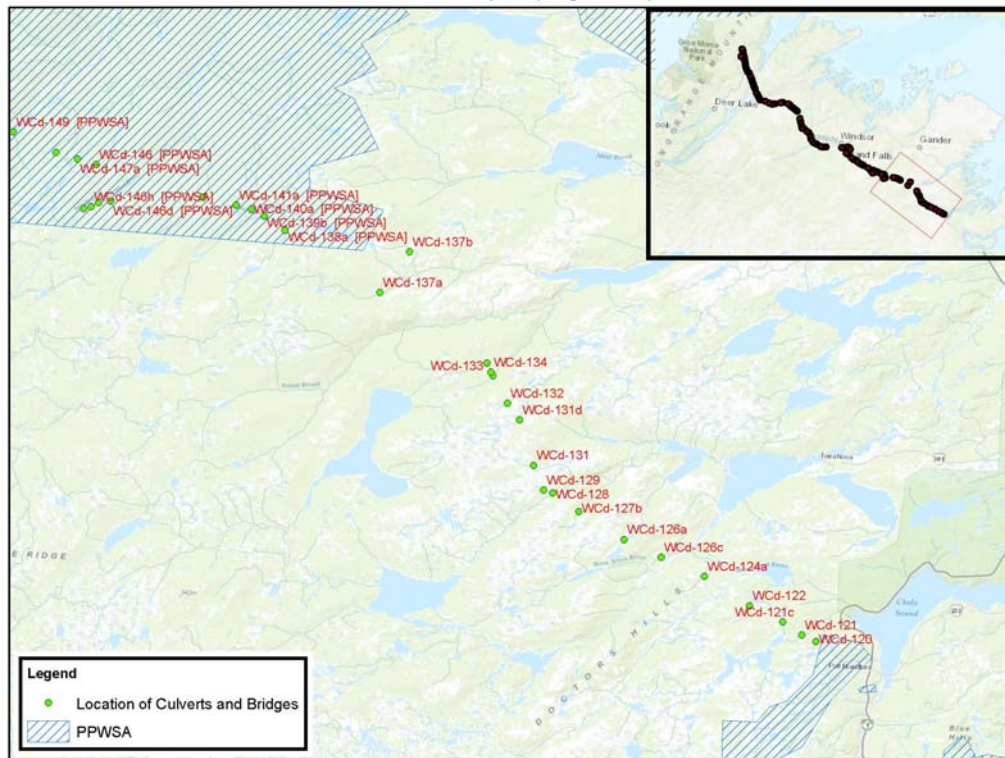
Date: _____ Signature: _____

This completion report must be completed and forwarded to the following address upon completion of the approved work.

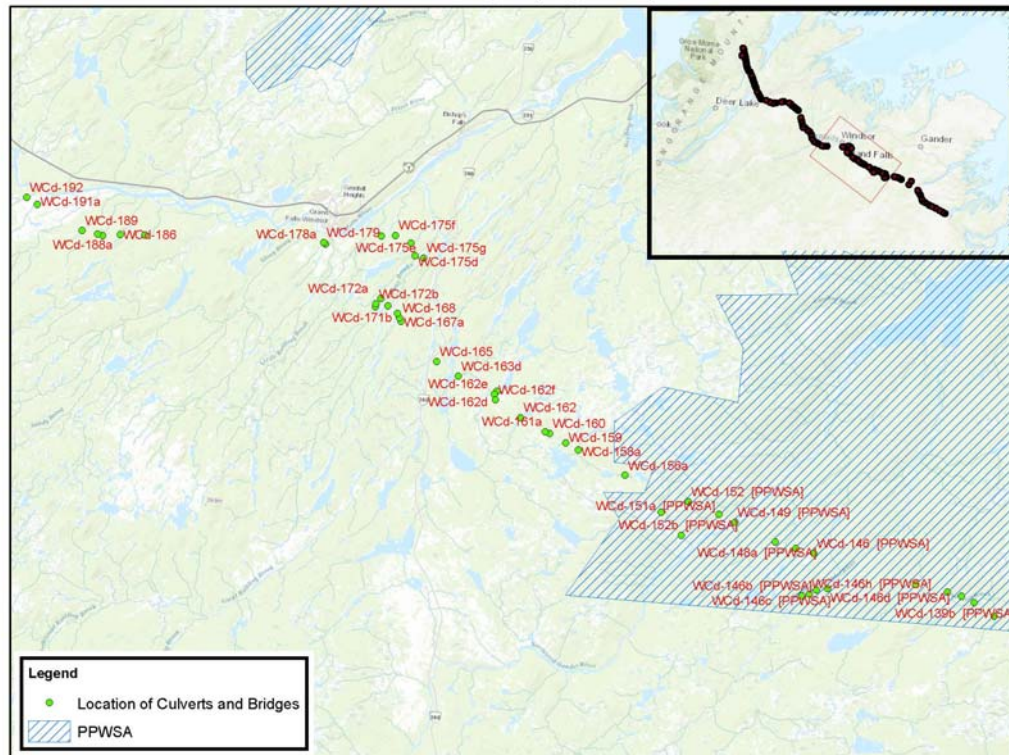
Department of Municipal Affairs and Environment
Water Resources Management Division
PO Box 8700
St. John's NL A1B 4J6

APPENDIX D
Location Map for Permit

Location Map 1 (Segment 4)

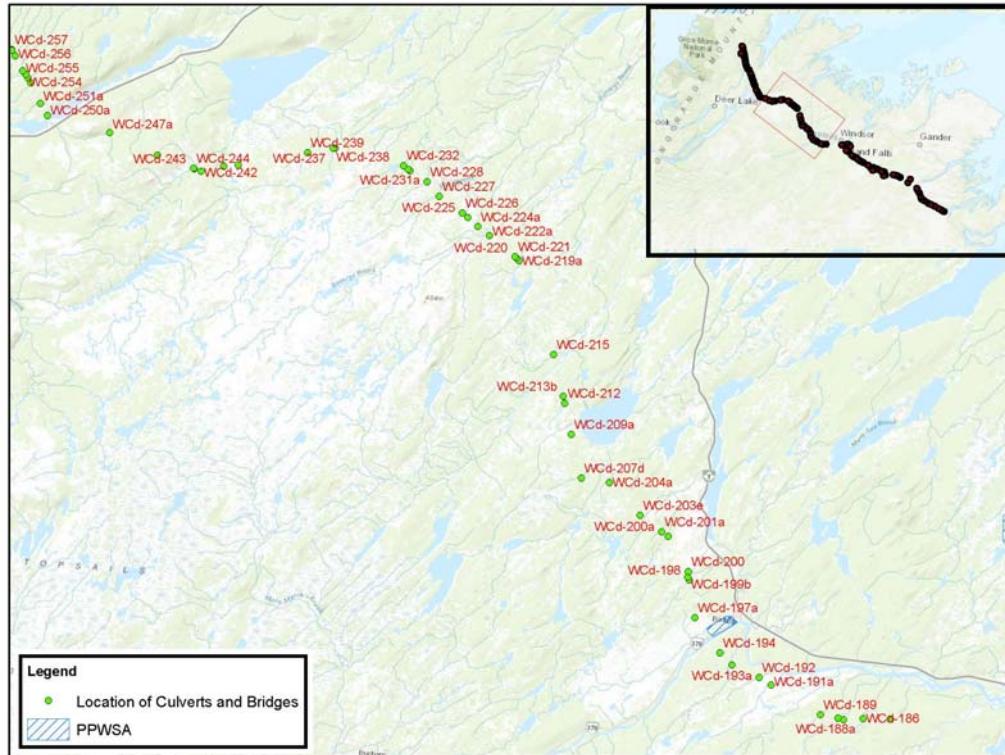


Location Map 2 (Segment 4)



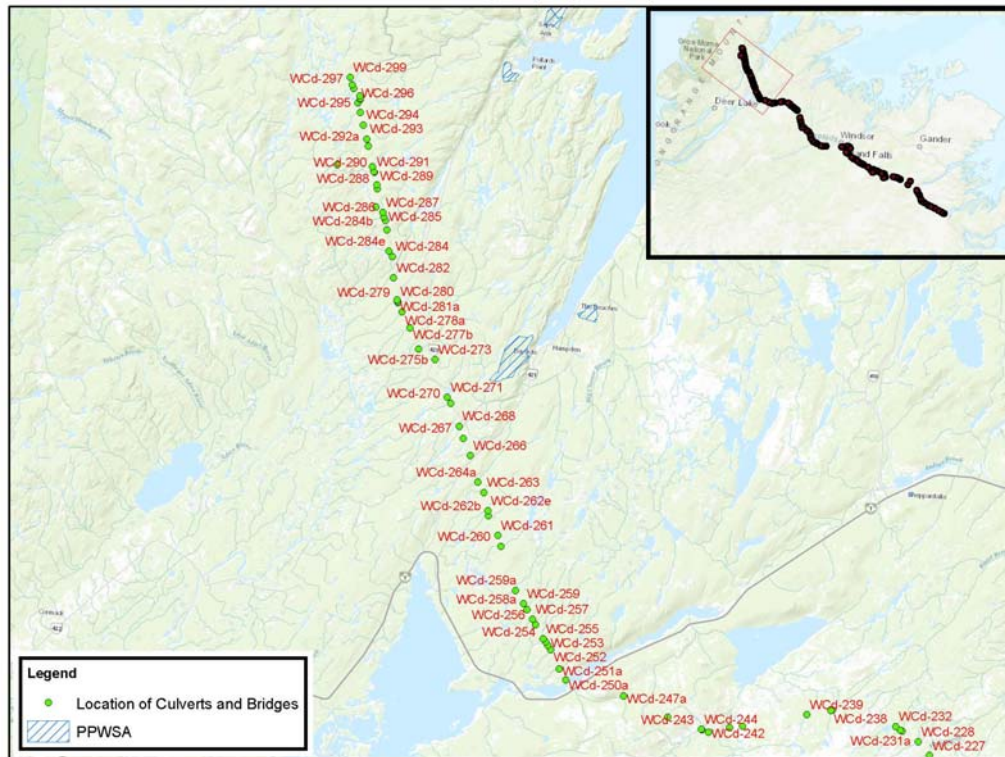
Third Attached Image File

Location Map 3 (Segment 4)



Fourth Attached Image File

Location Map 4 (Segment 4)



Appendix E - Hydraulic design criteria for culverts

To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: Segment no - 4 from Port Blandford to Deer Lake

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Minimum size (mm)	Number of pipes	Length (m)	PPWSA
WCd-120	5360916	704749	21	1:05	2.3590	2-1000	2	9	No
WCd-122	5363413	699083	21	1:05	2.4683	2-1000	2	9	No
WCd-124a	5365552	695176	21	1:20	0.9482	1-800	1	9	No
WCd-126c	5366821	691477	21	1:20	1.9480	1-1000 & 1-450	2	12	No
WCd-129	5371592	681406	21	1:20	0.8841	1-800	1	9	No
WCd-131	5373580	680419	21	1:20	0.9571	1-800	1	9	No
WCd-132	5378514	677881	21	1:10	2.0005	1-1000 & 1-600	2	9	No
WCd-134	5380966	676296	21	1:20	2.6875	1-1000 & 1-800	2	9	No
WCd-140a	5392810	655541	21	1:05	1.6056	1-1200	1	9	Yes
WCd-141a	5393066	654308	21	1:20	2.2975	1-1000 & 1-600	2	9	Yes
WCd-146	5395486	642531	21	1:05	0.6657	1-800	1	9	Yes
WCd-146b	5391775	641789	21	1:05	1.3832	1-1000	1	9	Yes
WCd-146c	5392356	642995	21	1:20	0.0005	1-450	1	9	Yes
WCd-146h	5391980	642402	21	1:05	1.6609	1-1000 & 1-600	2	9	Yes
WCd-147a	5395816	640941	21	1:05	1.7908	1-1000 & 1-800	2	9	Yes
WCd-148a	5396222	639131	21	1:05	1.2004	1-1000	1	9	Yes
WCd-151a	5398216	634098	21	1:20	0.1326	1-450	1	9	Yes
WCd-152	5399096	631377	21	1:05	1.1409	1-1000	1	9	Yes
WCd-156a	5400963	625755	21	1:05	4.6650	2-1200	2	9	No
WCd-160	5404036	618956	21	1:05	2.4046	2-1000	2	9	No
WCd-161a	5404148	618571	21	1:20	1.2240	1-1000	1	9	No
WCd-162e	5407049	613970	21	1:05	1.9927	1-1000 & 1-800	2	9	No
WCd-162f	5406557	614082	21	1:05	1.9841	1-1000 & 1-800	2	9	No
WCd-165	5409456	608774	21	1:20	1.1491	1-1000	1	9	No
WCd-167a	5412676	605412	21	1:05	1.1766	1-1000	1	9	No
WCd-168	5412942	605264	21	1:10	1.2256	1-1000	1	9	No
WCd-172a	5414514	603528	21	1:20	1.0692	1-1000	1	9	No
WCd-172b	5413995	603127	21	1:05	0.8232	1-1000	1	9	No
WCd-175b	5419868	603140	21	1:05	1.8966	1-1000 & 1-800	2	9	No
WCd-175c	5419479	605730	21	1:05	1.4595	1-1000 & 1-450	2	9	No
WCd-175e	5418276	606910	21	1:05	7.2800	Bridge	1	9	No
WCd-175f	5420038	604376	21	1:05	1.0957	1-1000	1	9	No
WCd-185a	5418364	582770	21	1:05	2.0976	1-1000 & 1-800	2	9	No
WCd-186	5418236	580661	21	1:05	2.2964	2-1000	2	9	No
WCd-187a	5418049	579165	21	1:05	1.5274	1-1000 & 1-450	2	9	No
WCd-189	5418299	577344	21	1:05	2.7797	2-1000	2	9	No
WCd-192	5420798	572375	21	1:05	3.0690	1-1200 & 1-1000	2	9	No

To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: Segment no - 4 from Port Blandford to Deer Lake

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Minimum size (mm)	Number of pipes	Length (m)	PPWSA
WCd-194	5422437	569170	21	1:10	1.2179	1-1000	1	9	No
WCd-197a	5425028	567025	21	1:20	1.0197	1-800	1	9	No
WCd-199b	5428124	566240	21	1:05	0.6051	1-800	1	9	No
WCd-200	5428548	566227	21	1:20	0.0038	1-450	1	9	No
WCd-201a	5431470	563941	21	1:05	0.9650	2-800	2	9	No
WCd-203e	5432612	562146	21	1:05	0.7776	1-600 & 1-800	2	9	No
WCd-204a	5434975	559593	21	1:05	1.0410	2-800	2	9	No
WCd-207d	5435135	557369	21	1:05	0.5195	1-800 & 1-600	2	9	No
WCd-209a	5438453	556323	21	1:20	0.0032	1-450	1	9	No
WCd-213b	5441356	555482	21	1:05	0.8970	2-800	2	9	No
WCd-219a	5451598	551209	21	1:20	0.4922	1-800	1	9	No
WCd-220	5451782	550994	21	1:20	1.2225	1-1000	1	9	No
WCd-221	5451867	550864	21	1:20	0.5331	1-800	1	9	No
WCd-222a	5453345	548760	21	1:20	1.1573	1-1000	1	9	No
WCd-224a	5453991	547800	21	1:05	0.3571	1-800 & 1-600	2	9	No
WCd-225	5454600	546970	21	1:20	0.8708	1-800	1	9	No
WCd-230a	5457895	542228	21	1:05	0.7884	2-800	2	9	No
WCd-231a	5457968	542071	21	1:05	0.6988	1-800	1	9	No
WCd-237	5459179	536278	21	1:05	0.7932	2-800	2	9	No
WCd-239	5458629	534175	21	1:05	1.4956	1-1000 & 1-600	2	9	No
WCd-240a	5457253	528886	21	1:05	1.4566	1-1000 & 1-800	2	9	No
WCd-240b	5457060	527781	21	1:20	1.9045	1-1000 & 1-450	2	18	No
WCd-242	5456538	526071	21	1:05	0.9193	1-800 & 1-600	2	9	No
WCd-244	5456733	525451	21	1:05	1.2898	1-1000	1	15	No
WCd-245a	5457509	522578	21	1:05	2.9587	2-1200	2	9	No
WCd-247a	5458979	518752	21	1:05	0.3191	1-1000	1	9	No
WCd-250a	5459915	513807	21	1:05	0.6582	1-800	1	9	No
WCd-252	5462347	512347	21	1:05	1.8175	1-1000 & 1-800	2	9	No
WCd-253	5462692	512082	21	1:05	3.0234	1-1200 & 1-800	2	9	No
WCd-254	5462969	511897	21	1:20	2.1020	1-1000 & 1-600	2	9	No
WCd-256	5464329	510943	21	1:05	2.0549	1-1000 & 1-800	2	9	No
WCd-257	5464770	510645	21	1:05	2.5203	2-1000	2	9	No
WCd-257a	5464763	510641	21	1:05	2.5793	2-1000	2	9	No
WCd-258a	5465559	510126	21	1:05	2.5752	2-1000	2	9	No
WCd-259	5466028	509815	21	1:05	0.6245	1-800	1	9	No
WCd-261	5471528	507208	21	1:05	0.7775	1-600 & 1-800	2	9	No
WCd-262b	5473110	506260	21	1:05	4.5770	2-1200	2	9	No
WCd-264a	5475853	505189	21	1:20	1.2056	1-1000	1	9	No
WCd-266	5478004	504385	21	1:05	1.3140	1-1000	1	15	No

To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: Segment no - 4 from Port Blandford to Deer Lake

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Minimum size (mm)	Number of pipes	Length (m)	PPWSA
WCd-268	5480392	503249	21	1:05	1.7255	1-1000 & 1-800	2	9	No
WCd-271	5482724	502076	21	1:05	0.9133	1-1000	1	9	No
WCd-277b	5486539	499353	21	1:05	1.5483	1-1000 & 1-600	2	9	No
WCd-278a	5489546	497734	21	1:05	2.7372	1-1200 & 1-1000	2	12	No
WCd-279	5490284	497329	21	1:05	0.2810	1-800	1	9	No
WCd-280	5490396	497267	21	1:20	0.0625	1-450	1	9	No
WCd-281a	5490510	497202	21	1:05	1.3996	1-1000 & 1-600	2	9	No
WCd-282	5492312	496787	21	1:05	1.5563	1-1000 & 1-600	2	9	No
WCd-284	5494093	496561	21	1:05	0.6307	1-800	1	9	No
WCd-284b	5496256	495903	21	1:05	1.5832	1-1000 & 1-800	2	9	No
WCd-284e	5494517	496230	21	1:05	1.5772	1-1000 & 1-800	2	9	No
WCd-288	5499649	494849	21	1:20	0.2850	1-600	1	9	No
WCd-289	5499962	494776	21	1:20	0.2595	1-600	1	9	No
WCd-290	5500993	494500	21	1:05	1.4840	1-1000 & 1-600	2	9	No
WCd-291a	5501465	494272	21	1:05	0.3825	1-800	1	9	No
WCd-292a	5503141	493815	21	1:05	0.8062	2-800	2	9	No
WCd-293	5503728	493628	21	1:20	0.0184	1-450	1	9	No
WCd-294	5504876	493225	21	1:20	0.6961	1-800	1	9	No
WCd-296b	5506965	492824	21	1:05	0.6531	1-800	1	9	No
WCd-296c	5507073	492798	21	1:20	1.2831	2-1000	2	9	No
WCd-296d	5507255	492754	21	1:20	0.0039	1-450	1	9	No
WCd-298b	5508142	492062	21	1:05	0.2820	1-600	1	9	No

Appendix F - Hydraulic design criteria for bridges

The bridge(s) must have the following minimum dimensions: Segment no - 4 from Port Blandford to Deer Lake

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Span (m)	Waterway Opening (m ²)	Height above streambed (m)	Freeboard (m)	PPWSA
WCd-121	5361329	703533	21	1:20	35.67	12.20	32.11	1.6	3.5	No
WCd-121c	5362287	701906	21	1:20	4.83	6.10	12.90	2.0	1.5	No
WCd-126a	5368063	688334	21	1:20	7.89	6.10	3.47	0.5	1.3	No
WCd-127b	5370083	684442	21	1:20	9.49	9.15	10.51	2.0	2.0	No
WCd-128	5371428	682160	21	1:20	34.62	21.34	42.68	2.0	2.5	No
WCd-131d	5377236	678940	21	1:20	13.47	12.20	Unknown until installation	Unknown until installation	1.8	No
WCd-133	5380676	676477	21	1:20	7.64	9.15	10.20	1.0	2.0	No
WCd-135a	5381699	675890	21	1:20	5.90	9.15	20.74	2.0	2.0	No
WCd-137a	5386812	666652	21	1:20	22.28	18.29	25.29	1.0	2.5	No
WCd-137b	5390344	668846	21	1:20	0.16	6.10	6.66	1.0	At least 1.0	No
WCd-138a	5391317	658478	21	1:20	3.08	9.15	20.04	2.0	1.8	Yes
WCd-139b	5392336	656673	21	1:20	39.34	9.15	20.04	2.0	3.0	Yes
WCd-142a	5393496	651535	21	1:20	94.42	9.15	20.04	2.0	4.0	Yes
WCd-146d	5392560	643950	21	1:20	2.87	6.10	6.38	1.0	3.0	Yes
WCd-149	5397635	635513	21	1:20	28.56	15.24	23.64	1.0	2.0	Yes
AWCd-152a	5398025	629116	21	1:20	4.37	6.10	3.61	0.5	0.8	Yes
WCd-152b	5396175	631008	21	1:20	37.38	18.29	25.29	1.0	At least 1.0	Yes
WCd-158a	5402805	621537	21	1:20	8.14	6.10	6.27	1.0	1.5	No
WCd-159	5403328	620423	21	1:20	4.45	6.10	6.41	1.0	0.8	No
WCd-162	5405195	616349	21	1:20	12.76	9.15	11.67	1.0	1.5	No
WCd-162d	5407296	614144	21	1:20	26.90	9.15	11.67	1.0	2.3	No
WCd-163d	5408346	610735	21	1:20	52.21	18.29	28.09	1.0	1.9	No
WCd-169b	5413339	605046	21	1:20	7.18	9.15	10.27	1.0	2.0	No
WCd-170a	5413939	604182	21	1:20	24.34	9.15	10.27	1.0	1.9	No
WCd-171b	5413750	603116	21	1:20	13.13	12.20	Unknown until installation	Unknown until installation	1.8	No

The bridge(s) must have the following minimum dimensions: Segment no - 4 from Port Blandford to Deer Lake

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Span (m)	Waterway Opening (m ²)	Height above streambed (m)	Freeboard (m)	PPWSA
WCd-175d	5418436	606195	21	1:20	7.29	9.15	9.88	1.0	At least 1.0	No
WCd-175g	5418277	606921	21	1:20	32.24	24.39	Unknown until installation	Unknown until installation	2.0	No
WCd-178a	5418796	598420	21	1:20	5.08	6.10	6.38	1.0	0.8	No
WCd-179	5418913	598241	21	1:20	5.31	6.10	7.78	1.0	0.8	No
WCd-188a	5418114	578706	21	1:20	5.03	6.10	8.20	1.0	1.8	No
WCd-191a	5420272	573324	21	1:20	10.79	9.15	9.15	1.0	2.3	No
WCd-193a	5421599	570186	21	1:20	1.25	12.20	17.24	1.0	1.2	No
WCd-198	5427910	566341	21	1:20	5.59	9.15	20.39	2.0	1.7	No
WCd-200a	5431157	564448	21	1:20	8.15	12.20	27.19	2.0	1.5	No
WCd-212	5440814	555616	21	1:20	2.89	6.10	6.80	1.0	2.1	No
WCd-215	5444537	554454	21	1:20	13.09	12.20	17.15	1.2	1.4	No
WCd-226	5454938	546539	21	1:20	1.73	6.10	Unknown until installation	Unknown until installation	1.7	No
WCd-227	5456079	544647	21	1:20	12.81	18.29	37.44	1.5	2.5	No
WCd-228	5457114	543629	21	1:20	4.68	18.29	18.29	1.0	2.5	No
WCd-232	5458240	541669	21	1:20	11.41	24.39	51.26	1.7	1.4	No
WCd-238	5459141	536135	21	1:20	8.73	12.20	26.15	2.0	2.1	No
WCd-243	5456696	525485	21	1:20	31.23	21.34	45.35	1.6	3.0	No
WCd-247a	5460798	513205	21	1:20	7.26	9.00	Unknown until installation	Unknown until installation	At least 1.0	No
WCd-251a	5463212	511643	21	1:20	8.96	6.10	6.03	0.3	1.5	No
WCd-255	5467065	509053	21	1:20	9.81	12.20	21.72	1.5	1.5	No
WCd-259a	5470624	507532	21	1:20	9.00	9.15	2.74	0.3	1.5	No
WCd-260	5473539	506222	21	1:20	10.71	6.10	2.88	0.3	1.0	No
WCd-262e	5475020	505728	21	1:20	1.72	6.10	3.30	0.3	0.7	No
WCd-263	5475020	505728		1:20	5.55	6.10	1.89	0.2	0.7	No
WCd-267	5479412	503656		1:20	0.45	6.10	2.11	0.3	0.6	No
WCd-270	5482235	502394		1:20	3.27	6.10	2.32	0.3	0.6	No

The bridge(s) must have the following minimum dimensions: Segment no - 4 from Port Blandford to Deer Lake

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Span (m)	Waterway Opening (m ²)	Height above streambed (m)	Freeboard (m)	PPWSA
WCd-273	5485774	500818		1:20	3.04	6.10	2.14	0.3	0.6	No
WCd-277b	5488260	498478		1:20	10.31	9.15	16.44	1.6	1.5	No
WCd-285	5497070	495716		1:20	3.48	12.20	40.51	3.0	2.0	No
WCd-286	5497325	495598		1:20	2.26	18.29	36.38	1.3	1.5	No
WCd-287	5497700	495471		1:20	15.35	24.39	68.03	2.0	3.0	No
WCd-287a	5498129	494831		1:20	21.34	15.24	Unknown until installation	Unknown until installation	2.1	No
WCd-291	5501031	494450		1:20	5.19	9.15	18.81	1.8	2.0	No
WCd-295	5505888	492896		1:20	3.70	6.10	10.37	1.7	1.5	No
WCd-296	5506672	492658		1:20	6.08	6.10	6.71	1.1	1.4	No
WCd-297	5507858	492224		1:20	30.56	15.24	30.11	1.7	3.5	No
WCd-299	5508739	491849		1:20	4.39	6.10	5.49	0.9	0.6	No
WCd-300a	5501389	491315		1:20	5.58	6.10	1.83	0.3	0.6	No