

PERMIT TO ALTER A BODY OF WATER

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

Date: **JUNE 24, 2020**

File No: **528**
Permit No: **ALT11086-2020**

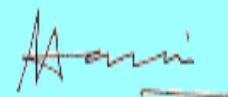
Permit Holder: **Labrador Island Link Limited Partnership**
500 Columbus Drive
St. John's, NL A1B 4K7
JackieWells@nalconenergy.com

Attention: **Jackie Wells**

Re: **Upgrading and rehabilitation of existing bridges and culverts along the access road of Labrador-Island Transmission Link in Labrador - Segment 2**

Permission is hereby given for : **upgrading and rehabilitation of seventy four (74) 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-2 in Labrador (between coordinates 21U 501738mE, 5702147mN and 21U 436025mE, 5788720mN) 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 April 17, 2020 and additional information received on May 12, May 21, June 5, and June 12, 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 (m ³ /s)	Span (m)	Waterway Opening (m ²)	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

General Alterations

19. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
20. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
21. 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*.
22. 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.
23. 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.
24. 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.

25. 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.
26. 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.
27. 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.
28. 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.
29. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
30. 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.
31. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
32. 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.
33. 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.
34. The attached Completion Report (Appendix C) for Permit No. 11086 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.
35. 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.
36. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
37. All work must be carried out within the Permit Holder's legal property boundaries.

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: 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
P.O. Box 5667
St. John's, NL A1C 5X1
FPP-NL@dfo-mpo.gc.ca
- cc: Mark Bugden
Senior Analyst
Executive Council
Indigenous Affairs
mbugden@gov.nl.ca
- cc: Amir Ali Khan, Ph.D., P.Eng.
Manager, Water Rights, Investigations and Modelling Section
Water Resources Management Division
Department of Municipal Affairs and Environment
P.O. Box 8700
4th Floor, West Block, Confederation Building
St. John's, NL A1B 4J6
akhan@gov.nl.ca



Appendix C - Completion Report

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

Date: **JUNE 24, 2020**

File No: **528**
Permit No: **ALT11086-2020**

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

Attention: **Jackie Wells**

Re: **Upgrading and rehabilitation of existing bridges and culverts along the access road of Labrador-Island Transmission Link in Labrador - Segment 2**

Permission was given for : **upgrading and rehabilitation of seventy four (74) 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-2 in Labrador (between coordinates 21U 501738mE, 5702147mN and 21U 436025mE, 5788720mN) 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 April 17, 2020 and additional information received on May 12, May 21, June 5, and June 12, 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.

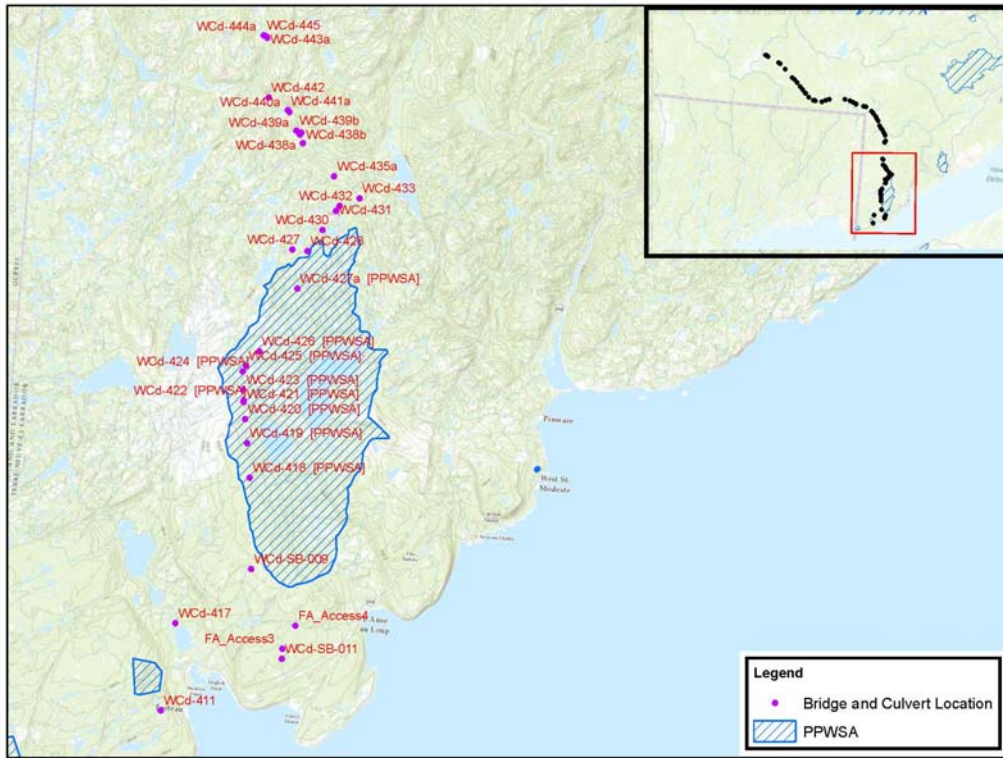
Date: _____ Signature: _____

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

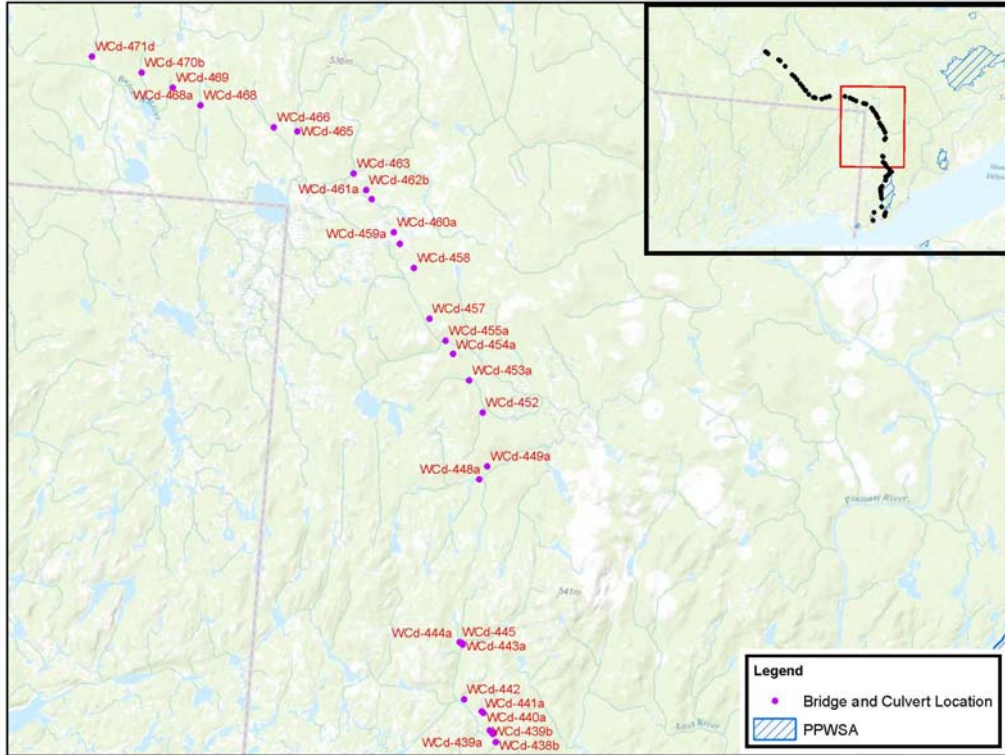
APPENDIX D
Location Map for Permit

Location Map 1 (Segment 2)



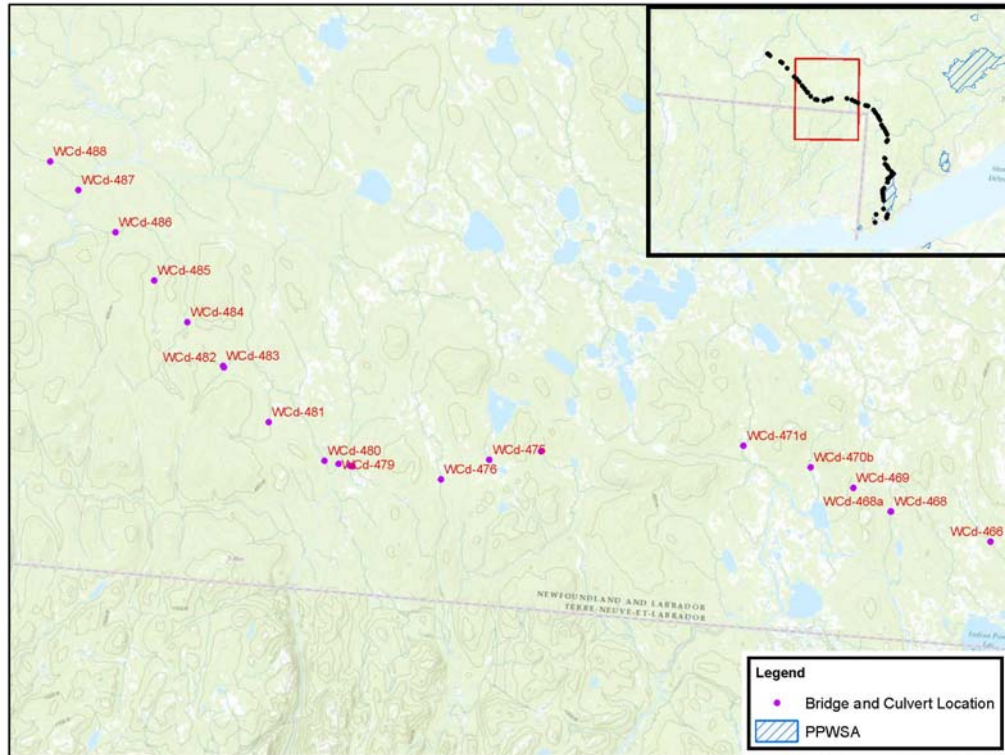
Second Attached Image File

Location Map 2 (Segment 2)



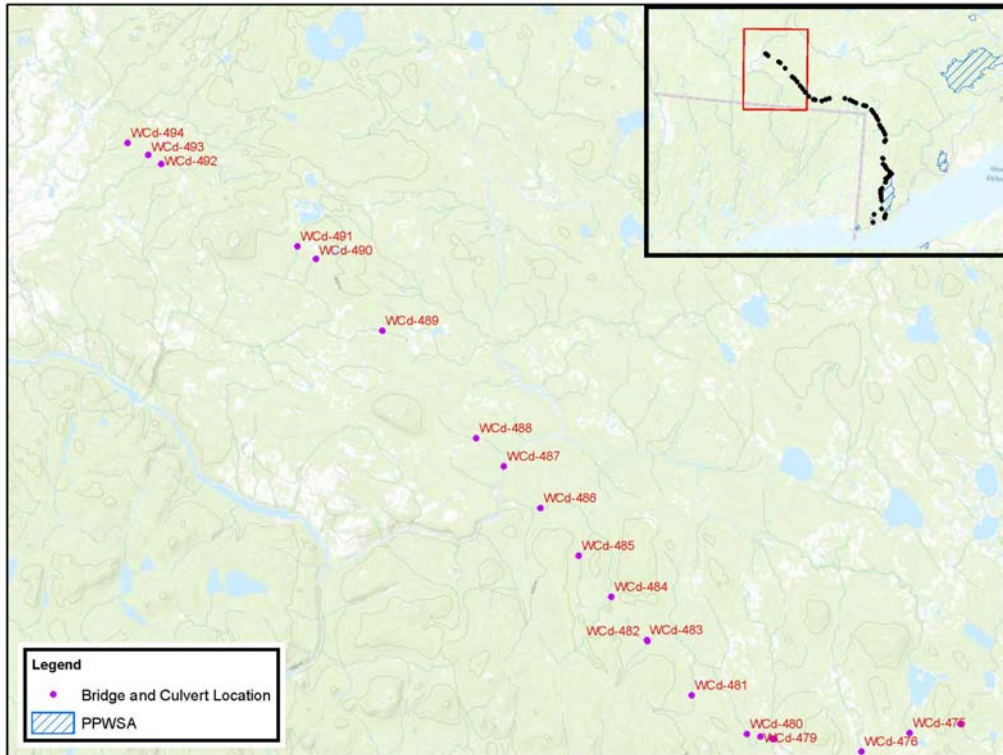
Third Attached Image File

Location Map 3 (Segment 2)



Fourth Attached Image File

Location Map 4 (Segment 2)



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 - 2 Labrador (between 21U 501738mE, 5702147mN and 21U 436025mE, 5788720mN)

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
FA_Access4	5707083	508320	21	1:05	Unknown	1-1200	1	9	No
WCd-411	5702147	501738	21	1:05	0.329	1-800	1	9	No
WCd-418	5714512	505341	21	1:20	0.382	2-600	2	9	Yes
WCd-420	5717509	504837	21	1:20	0.669	2-800	2	9	Yes
WCd-421	5718399	504708	21	1:20	0.518	1-800	1	9	Yes
WCd-422	5718463	504699	21	1:20	2.545	2-1000 & 1-800	3	9	Yes
WCd-423	5719008	504630	21	1:20	0.497	1-800	1	9	Yes
WCd-424	5719974	504503	21	1:20	0.317	1-600	1	9	Yes
WCd-425	5720268	504658	21	1:05	1.403	1-1000 & 1-600	2	9	Yes
WCd-426	5721064	505279	21	1:20	0.173	1-450	1	9	Yes
WCd-428	5726456	507347	21	1:20	0.106	1-450	1	9	No
WCd-430	5727615	508032	21	1:20	0.311	1-600	1	9	No
WCd-431	5728644	508639	21	1:20	0.346	1-600	1	9	No
WCd-432	5728921	508803	21	1:20	1.244	1-1000	1	9	No
WCd-433	5729392	509801	21	1:20	0.654	1-800	1	9	No
WCd-435a	5730423	508405	21	1:05	0.877	1-1000	1	9	No
WCd-438b	5731990	506662	21	1:10	1.367	1-1000	1	9	No
WCd-439a	5732521	506519	21	1:05	1.556	1-1000 & 1-600	2	9	No
WCd-439b	5732604	506253	21	1:20	0.197	1-600	1	9	No
WCd-440a	5733544	505813	21	1:20	0.259	1-600	1	9	No
WCd-449a	5747329	504917	21	1:20	0.986	1-1000	1	9	No
WCd-454a	5753429	502473	21	1:05	1.399	1-1000 & 1-600	2	9	No
WCd-457	5755275	501002	21	1:20	1.248	1-1000	1	9	No
WCd-459a	5759317	499018	21	1:05	0.671	1-800	1	9	No
WCd-460a	5759937	498613	21	1:20	0.300	1-600	1	9	No
WCd-462b	5762150	496877	21	1:05	2.800	1-1200 & 1-800	2	9	No
WCd-469	5766966	485637	21	1:20	0.442	1-800	1	9	No
WCd-474c	5767406	472698	21	1:20	0.486	1-800	1	9	No

To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: Segment no - 2 Labrador (between 21U 501738mE, 5702147mN and 21U 436025mE, 5788720mN)

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-477	5766150	465014	21	1:05	1.421	1-1000 & 1-450	2	9	No
WCd-478	5766164	464901	21	1:20	0.799	1-800	1	9	No
WCd-482	5769777	459385	21	1:20	2.268	1-1000 & 1-800	2	9	No
WCd-483	5769821	459349	21	1:20	2.141	1-1000 & 1-800	2	9	No
WCd-485	5773105	456221	21	1:05	2.662	2-1000	2	9	No
WCd-490	5784551	444269	21	1:20	1.288	2-1000	2	9	No
WCd-491	5785001	443440	21	1:20	1.312	2-1000	2	9	No
WCd-493	5788293	436921	21	1:05	1.072	2-800	2	9	No
WCd-494	5788720	436025	21	1:20	0.066	1-450	1	9	No
WCd-SB-009	5709823	505801	21	1:20	Unknown	1-1000 & 1-600	2	9	No

Appendix F - Hydraulic design criteria for bridges

The bridge(s) must have the following minimum dimensions: Segment no - 2 Labrador (between 21U 501738mE, 5702147mN and 21U 436025mE, 5788720mN)

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
FA_Access3	5705842	507726	21	Unknown	Unknown	6.1	Unknown until installation	Unknown until installation	1.0	No
WCd-417	5706690	502112	21	1:20	0.30	6.10	Unknown until installation	Unknown until installation	1.4	No
WCd-419	5716277	505051	21	1:20	0.84	4.88	Unknown until installation	Unknown until installation	1.2	Yes
WCd-427	5726456	506554	21	1:20	2.66	12.20	Unknown until installation	Unknown until installation	1.2	No
WCd-427a	5724465	506972	21	1:20	0.47	6.10	Unknown until installation	Unknown until installation	1.8	Yes
WCd-438a	5732411	506447	21	1:20	52.47	33.54	Unknown until installation	Unknown until installation	4.0	No
WCd-441a	5733629	505727	21	1:20	1.36	6.10	Unknown until installation	Unknown until installation	1.6	No
WCd-442	5734213	504683	21	1:20	3.01	6.10	2.27	1.4	1.2	No
WCd-443a	5737271	504361	21	1:20	9.93	6.10	Unknown until installation	Unknown until installation	1.2	No
WCd-444a	5737355	504313	21	1:20	7.07	6.10	Unknown until installation	Unknown until installation	1.2	No
WCd-445	5737395	504175	21	1:20	3.67	6.10	6.36	2.4	1.4	No
WCd-448a	5746562	504513	21	1:20	14.79	12.20	Unknown until installation	Unknown until installation	2.3	No
WCd-452	5750302	504404	21	1:20	4.62	6.10	9.41	2.7	1.2	No
WCd-453a	5752016	503496	21	1:20	3.31	6.10	Unknown until installation	Unknown until installation	1.2	No
WCd-455a	5754116	502018	21	1:20	25.48	15.24	Unknown until installation	Unknown until installation	2.0	No
WCd-458	5758045	499916	21	1:20	1.49	6.10	1.83	1.5	1.2	No
WCd-461a	5761677	497232	21	1:20	4.53	6.10	Unknown until installation	Unknown until installation	1.5	No
WCd-463	5763010	496112	21	1:20	35.57	27.44	69.39	5.5	3.0	No
WCd-465	5765114	492780	21	1:20	18.78	6.10	8.02	2.6	1.6	No
WCd-466	5765216	491461	21	1:20	5.47	6.10	6.36	2.3	1.3	No
WCd-468	5266119	487272	21	1:20	3.35	6.10	2.44	1.5	1.1	No
WCd-468a	5766123	487247	21	1:20	8.45	6.10	Unknown until installation	Unknown until installation	1.0	No
WCd-470b	5767673	483821	21	1:20	4.94	9.15	Unknown until installation	Unknown until installation	2.0	No
WCd-471d	5768324	481000	21	1:20	2.27	15.24	15.24	2.7	1.7	No
WCd-475	5766872	470606	21	1:20	1.84	9.15	12.80	3.1	1.7	No

The bridge(s) must have the following minimum dimensions: Segment no - 2 Labrador (between 21U 501738mE, 5702147mN and 21U 436025mE, 5788720mN)

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-476	5765914	468675	21	1:20	5.44	9.15	3.66	2.1	1.7	No
WCd-479	5766210	464413	21	1:20	10.09	9.15	10.98	2.7	1.5	No
WCd-480	5766266	463833	21	1:20	14.43	18.29	42.95	3.1	1.9	No
WCd-481	5767675	461413	21	1:20	4.57	9.15	8.23	2.4	1.5	No
WCd-484	5771507	457724	21	1:20	4.68	12.20	17.80	2.8	1.8	No
WCd-486	5774961	454467	21	1:20	10.63	15.24	6.10	2.6	2.2	No
WCd-487	5776554	452806	21	1:20	99.90	45.73	125.86	5.4	3.0	No
WCd-488	5777640	451548	21	1:20	4.58	12.20	6.10	2.2	1.7	No
WCd-489	5781780	447274	21	1:20	1.44	6.10	Unknown until installation	Unknown until installation	1.5	No
WCd-492	5787952	437493	21	1:20	3.75	9.15	5.49	4.6	2.0	No
WCd-SB-011	5705312	507758	21	Unknown	Unknown	9.15	Unknown until installation	Unknown until installation	1.6	No