PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

ADDENDUM NO. 2

NOTICE TO BIDDER

Referenced in Schedule 3 – Special Provisions 1.05(a) Availability of Relevant Publications, Archaeological Documents, Bidders should submit the Confidentiality Undertaking, in the form and within the timelines stipulated, to obtain the Archaeological Documents relevant for submitting a tender.

1. SCHEDULE 3 – SPECIAL PROVISIONS AND APPENDICES

SECTION 1 – GENERAL

1.05 Availability of Relevant Publications

(a) Archaeological Documents

(i) Archaeological Impact Assessment Status Memo

Replace the entire section with the following:

The Archaeological Documents are confidential and may contain sensitive information, disclosure of which could have significant archaeological impacts.

While the Archaeological Documents are not included in the Tender Document Package, they will be made available upon receipt, by the Ministry Contact Person, of a fully completed and executed Confidentiality Undertaking (attached to these Special Provisions).

The fully completed and executed Confidentiality Undertaking must be received by the Ministry Contact Person no less than seven (7) days prior to the Closing Date. If a compliant Confidentiality Undertaking is received by the Ministry Contact Person within the time specified, the Archaeological Documents will be provided within three (3) days.

The nature of the Archaeological Documents are such that they are intended to cover both the significant interests of the First Nation(s) and provide sufficient archaeological information to the Bidder. Failure on the part of the Bidder to provide the Confidentiality Undertaking and receive the Archaeological Documents is entirely the responsibility of the Bidder. Any failure in not obtaining the Archaeological Documents will be the sole responsibility of the Bidder and at the Bidders sole risk. The Ministry shall have no responsibility or liability for the Bidders failure to provide the Confidentiality Undertaking.

PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

ADDENDUM NO. 4

1. SCHEDULE T3 – SPECIFIC REFERENCE DOCUMENTS

Add the following:

Document Number	Document Description	Check (✓) the Appropriate Column(s)	
		Electronic Copy	Hardcopy Only
17	Updated Geotechnical Input For Surplus Disposal Area Memo	✓	

2. SCHEDULE 3 – SPECIAL PROVISIONS AND APPENDICES

APPENDIX/APPENDICES

Add the following:

Appendix – Draft Approval Conditions – Water Sustainability Act

SCHEDULE 3 – SPECIAL PROVISIONS AND APPENDICES

SECTION 1 – GENERAL

1.22 Protection of the Environment

(b) Regulatory Approvals

Add the following after the last paragraph:

The Contractor shall follow the draft WSA approval conditions as included in the Appendix - Draft Approval Conditions - Water Sustainability Act, as well as any and all conditions on the final WSA approvals for York and Whonnock Creek.

SECTION 2 – GRADING

2.08 River Road Surplus Disposal Site

(a) Geogrid

Delete the sub-title and sub-clauses entirely.

(b) Wick Drains

Replace the sub-title with the following:

"(a) Wick Drains"

SECTION 4 – STRUCTURES

4.13 Precast Concrete Interlocking Modular Block Retaining Walls

(h) Construction and Tolerances

Replace the sub-title with the following:

"(i) Construction and Tolerances"

(i) Measurement

Replace the sub-title with the following:

"(j) Measurement"

(j) Payment

Replace the sub-title with the following:

"(k) Payment"

Add the following:

(h) Geogrid

(i) General

The Contractor shall supply integrally formed uniaxial geogrid as shown on the Drawings.

- Product must be listed on the current edition of the Ministry's Recognized Products List.
- Product must be an AASHTO National Transportation Product Evaluation Program (NTPEP) audited uniaxial geogrid. The current NTPEP REGEO report must be submitted upon request.
- Uniaxial geogrid shall require approval by the Ministry Representative prior to installation. The Contractor shall submit a letter from the Geogrid Manufacturer confirming the calculated Long Term Design Strength (LTDS) of the Uniaxial Geogrid based on the following requirements.
- Specifications provided in the table below.

Table 25: Geogrid Specifications

Parameter	Test Method	Value
Long Term Design Strength (LTDS)	Calculated	15 kN/m
The uniaxial geogrid LTDS shall be calculated using reduction factors from the manufacturer's current NTPEP REGEO report using the standard formula: **Long Term Design Strength =** $T_{al} = \frac{T_{ULT}}{RF_D \times RF_{ID} \times RF_{CR}}$		

Notes:

1. Ultimate Tensile Strength (TULT) shall be a minimum average roll value (MARV) and tested in accordance with ASTM D6637.
2. Reduction Factor for Creep Deformation (RFCR), is the ratio of TULT to creep limited strength determined in accordance with ASTM D5262 and D6992. The results shall be extrapolated for a 100-year design life using elevated temperature and/or stress rupture testing from the geogrid manufacturer's current NTPEP REGEO audit report.
3. Reduction Factor for Durability (RFD) shall be based on polymer (PET/PP/HDPE) specific testing in accordance with FHWA 10-024 durability guidelines. The Manufacturer's current NTPEP REGEO audit report shall verify the product passes durability testing and state if FHWA 10-024 default RFD values can be used.
4. Reduction Factor for Installation Damage (RFID), shall be determined from construction damage tests for each product or product family proposed. Testing shall be consistent with AASHTO R69 and use values from the geogrid manufacturers current NTPEP REGEO audit report. The RFID value shall be based on Type 3 Test Aggregate (Silty Sand).

(ii) Installation

Geogrid shall be laid at the proper elevation and orientation as shown on the Drawings or as directed by the Ministry Representative. Correct orientation of the geosynthetic shall be verified by Contractor.

Geogrid may be temporarily secured in-place with staples, pins, sand-bags or backfill as required by fill properties, fill placement procedure or weather conditions, or as directed by the Ministry Representative.

Primary geogrid may not be overlapped or connected mechanically to form splices in the primary strength direction. Single panel lengths are required in the primary strength direction. No overlapping is required between adjacent rolls unless specified by the Engineer.

Backfill material shall be placed in lifts and compacted as directed under Project specifications. Backfill shall be placed, spread and compacted in such a manner as to minimize the development of wrinkles in and/or movement of the geosynthetic. A minimum fill thickness of 150 mm is required prior to the operation of tracked vehicles over the geosynthetic. Maximum fill thickness should be directed by the Ministry Representative to obtain minimum Project compaction requirements.

Turning of tracked vehicles should be kept to minimum to prevent tracks from displacing the fill and damaging the geosynthetic. Rubber tired equipment may pass over the geosynthetic reinforcement at low speeds, less than 15 km/h. Sudden braking and sharp turns shall be avoided. Any geosynthetic damaged during installation shall be replaced by the Contractor at no additional cost to the Ministry.

Measurement of Geogrid shall be by the square metre in place. Overlap of joints and seams shall be measured as a single layer of geogrid.

Payment for Geogrid will be made at the Unit Price bid per Square Metre and shall be considered full compensation for everything furnished and done to complete the Work.

SECTION 7 - SIGNING AND PAVEMENT MARKINGS

Add the following:

7.04 Raised Pavement Markers and Reflectors

The Contractor shall supply and install raised pavement markers and reflectors in accordance with spacing, and mounting locations outlined in the Ministry Manual of Standard Traffic Signs and Pavement Markings.

Raised pavement markers and reflectors shall be selected from the products listed in the current edition of the Ministry's Recognized Products List.

The supply and installation of raised pavement markers and reflectors are considered incidental to permanent pavement marking works and no additional payment will be made.

SECTION 8 - FENCING, SEEDING AND LANDSCAPING

8.01 Fencing and Gates

(a) Fencing

(ii) Fencing

Add the following at the end of the first paragraph:

Bicyclist fence modified to be mounted on concrete roadside barrier (CRB) shall be as shown on drawings.

3. SCHEDULE 7 - SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

The following items are amended:

Item No.	***Revision***
02.07.01	Item Deleted
03.02.01	Revised Quantity
03.02.02	Revised Quantity
03.03.01	Revised Quantity
03.03.04	Revised Quantity
04.06.16	New Item Added

A REPLACEMENT SCHEDULE 7, DATED AUGUST 30, 2022, AND MARKED **'REPLACEMENT C'** IS ATTACHED AND **MUST BE USED FOR TENDER PURPOSES.**

4. RESPONSES TO CONTRACTOR INQUIRIES

QUESTION 1: Are we required to keep the advance warning flasher signs active during construction? The speed limit will be reduced throughout the construction zone.

ANSWER 1: Advance Warning Flashers are to be maintained active during construction.

QUESTION 2: Who will be providing and paying for the timing plans for the temporarily relocated traffic signals if/when required?

ANSWER 2: Contractor will be providing and paying for the timing plan.
.

QUESTION 3: Drawing 8154-102 (Whonnock Creek Culvert) shows a steel fence on CMB barriers on the south shoulder of Hwy #7. Please provide details on what type of fence this is and where it is paid in the schedule of quantities.

ANSWER 3: The fence shown is intended to function similarly to the Bicyclist Fence in SP741-07.02, modified to accommodate mounting on concrete median barrier. The overall height above the base of the concrete barrier shall be 1400mm. There shall be two horizontal 60.3mm diameter steel pipe rails, with 350mm spacing center-to-centre between the rails. The fencing shall comprise individual units mounted atop each barrier unit, with the top and lower rails extending past the posts and formed to provide a closed loop. Each fence segment shall include two posts with foot plate bases for mounting on top face of the barrier. This modified fence is included in the Schedule 7 quantities for Bicyclist Fence and modifications are considered incidental to the item. No additional payment will be considered.

QUESTION 4: Quantity takeoffs for items 02.03.02 and 02.03.03 are showing 120% more than the given quantities. Our Quantity approx. 13000 M2 of cold milling whereas the provided quantity of items 02.03.02 and 02.03.03 combined give 5980 M2. Please advise on the discrepancy.

ANSWER 4: There are areas where grade will be raised above existing pavement surface. For these areas, the Contractor shall remove the existing asphalt, place new CBC, then overlay asphalt pavement. The removed asphalt shall not be re-used in the base layers. Please refer to typical sections for approximate station ranges for these areas. The Contractor shall review milling layout with Ministry Representative prior to milling activities.

QUESTION 5: Addendum #3 stipulates a maximum of 125mm milling depth. Geotechnical report shows asphalt depths up to 150mm thick. Please advise on areas where asphalt milling thickness is above 125mm.

ANSWER 5: See Addendum No. 3. The Geotechnical Engineer has confirmed that we did not encounter asphalt thicker than 125mm.

Replacement: C **Replacement Date:** 2022/08/30

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Protection of the Environment	L.S.	100%	L.S.	$_____
01.04	Traffic Management	L.S.	100%	L.S.	$_____
01.05	Controlled Excavation - Provisional Sum (Refer to SP 1.28)	P.S.	$500,000.00	P.S.	$500,000.00
01.06	Site Modifications - Provisional Sum (Refer to SP 1.37)	P.S.	$3,800,000.00	P.S.	$3,800,000.00
02	**SECTION 2 - GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	12.40	$_____	$_____
02.02	**Removal and Relocation of Existing Works**				
02.02.01	Remove Existing Culverts by Excavation	Metre	200	$_____	$_____
02.02.02	Abandon Existing Culverts	Cubic Metre	120	$_____	$_____
02.02.03	Remove and Dispose of Existing Whonnock Creek Culvert	L.S.	100%	L.S.	$_____
02.02.04	Remove Existing Concrete Catch Basins and Drainage Lead Pipes	Each	14	$_____	$_____
02.02.05	Remove and Dispose of Existing Concrete Barriers	Metre	550	$_____	$_____
02.02.06	Remove Existing Fencing	Metre	300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.02.07	Remove Existing Gates	Each	5	$_____	$_____
02.02.08	Demolition of Existing Residential Structures	Each	1	$_____	$_____
02.02.09	Remove Septic Tanks and Fields (CONDITIONAL ITEM)	Each	6	$_____	$_____
02.02.10	Well Decommissioning	Each	37	$_____	$_____
02.02.11	Slope Inclinometer Decommissioning (CONDITIONAL ITEM)	Each	2	$_____	$_____
02.02.12	Remove Existing Signs	Each	76	$_____	$_____
02.03	**Pavement Cutting, Cold Milling and Pavement Removal**				
02.03.01	Pavement Cutting	Metre	2,700	$_____	$_____
02.03.02	Cold Milling - up to 50mm Depth	Square Metre	2,380	$_____	$_____
02.03.03	Cold Milling - greater than 50mm Depth	Square Metre	3,600	$_____	$_____
02.03.04	Pavement Removal	Square Metre	46,900	$_____	$_____
02.04	**Roadway and Drainage Excavation**				
02.04.01	Organic Stripping	Cubic Metre	32,850	$_____	$_____
02.04.02	Vibration Control and Monitoring	L.S.	100%	L.S.	$_____
02.04.03	Type A Excavation	Cubic Metre	8,800	$_____	$_____
02.04.04	Type D Excavation to Embankment	Cubic Metre	15,400	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.04.05	Type D Excavation to River Road Disposal Site	Cubic Metre	14,400	$_____	$_____
02.04.06	Type D for Off-Site Disposal (IR #5)	Cubic Metre	116,900	$_____	$_____
02.04.07	Contaminated Soils (IL+) - Off-Site Disposal	Tonne	20,200	$_____	$_____
02.04.08	Contaminated Soils (Hazardous Material) - Off-Site Disposal	Tonne	60	$_____	$_____
02.04.09	Contaminated Soils (IL-) - Off-Site Disposal	Tonne	12,800	$_____	$_____
02.04.10	Granular Borrow	Cubic Metre	37,100	$_____	$_____
02.05	**Granular Materials**				
02.05.01	Select Granular Sub-Base Recycled Concrete Aggregate Material (RCAM)	Cubic Metre	41,200	$_____	$_____
02.05.02	Select Granular Sub-Base	Cubic Metre	8,100	$_____	$_____
02.05.03	25mm Well Graded Base	Cubic Metre	36,300	$_____	$_____
02.05.04	High Fines Surfacing Aggregate (HFSA) - Driveways	Cubic Metre	200	$_____	$_____
02.06	**Slope Stabilization and Drainage**				
02.06.01	10kg Rip Rap	Cubic Metre	6,900	$_____	$_____
02.06.02	25kg Rip Rap	Cubic Metre	6,400	$_____	$_____
02.07	**River Road Surplus Disposal Site**				
02.07.01	Item Deleted				
02.07.02	Wick Drains	Metre	4,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03	**SECTION 3 - DRAINAGE**				
03.01	**Culverts**				
03.01.01	Driveway Culverts (450mm HDPE)	Metre	290	$_____	$_____
03.01.02	Driveway Culverts (600mm HDPE)	Metre	30	$_____	$_____
03.01.03	600mm HDPE Culvert	Metre	192	$_____	$_____
03.01.04	750mm HDPE Culvert	Metre	120	$_____	$_____
03.01.05	900mm HDPE Culvert	Metre	120	$_____	$_____
03.01.06	1200mm HDPE Culvert	Metre	95	$_____	$_____
03.01.07	1500mm HDPE Culvert	Metre	160	$_____	$_____
03.01.08	2100mm x 1800mm Concrete Box Manhole @ 272 Street Creek	Metre	4	$_____	$_____
03.01.09	2100mm x 1200mm Concrete Box Manhole @ Potters Creek	Metre	4	$_____	$_____
03.01.10	Extend 1523mm OD Steel Pipe @ York Creek	Metre	17	$_____	$_____
03.01.11	Extend 2436mm OD Steel Pipe @ York Creek	Metre	16	$_____	$_____
03.01.12	Concrete Pipe Anchor	Each	14	$_____	$_____
03.01.13	750mm CL IV Conc Culvert	Metre	2	$_____	$_____
03.02	**Precast Concrete Catch Basins and Manholes**				
03.02.01	Precast Concrete Catch Basins	Each	66	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.02	Precast Concrete Lawn Basins	Each	12	$_____	$_____
03.02.03	2400mm Concrete Manhole	Metre	9	$_____	$_____
03.02.04	1800mm Concrete Manhole	Metre	6	$_____	$_____
03.02.05	1200mm Concrete Manhole	Metre	12	$_____	$_____
03.02.06	1050mm Concrete Manhole	Metre	8	$_____	$_____
03.02.07	Headwall Structure	Each	1	$_____	$_____
03.03	**Catch Basin Leads and Storm Pipes**				
03.03.01	200mm diam PVC Catch Basin Leads	Metre	815	$_____	$_____
03.03.02	250mm diam PVC Catch Basin Leads	Metre	194	$_____	$_____
03.03.03	375mm diam PVC Storm Pipes	Metre	161	$_____	$_____
03.03.04	450mm diam HDPE Storm Pipes	Metre	206	$_____	$_____
03.03.05	450mm diam CL IV Conc Storm Pipes	Metre	29	$_____	$_____
03.03.06	600mm diam CL IV Conc Storm Pipes	Metre	74	$_____	$_____
03.04	**Slope Drainage**				
03.04.01	Supply and Install 50mm PVC Pipe Toe Drains	Metre	1,100	$_____	$_____
03.05	**Culvert Riprap**				
03.05.01	Riprap aprons (Class 25kg)	Cubic Metre	282	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.05.02	Class 25 kg Riprap (York and Whonnock Creek)	Cubic Metre	80	$_____	$_____
03.05.03	Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)	Cubic Metre	1,860	$_____	$_____
03.06	**Emergency Flood Recovery**				
03.06.01	900mm HDPE Storm Pipes	Metre	71	$_____	$_____
03.06.02	1500mm Concrete Manhole	Metre	7	$_____	$_____
03.06.03	750mm HDPE Culvert	Metre	47	$_____	$_____
03.06.04	1800mm HDPE Culvert	Metre	36	$_____	$_____
03.06.05	Riprap Aprons (Class 25 kg)	Cubic Metre	65	$_____	$_____
03.06.06	Class 25 kg Riprap (York Creek Outlet)	Cubic Metre	5	$_____	$_____
03.07	Item Deleted				
03.07.06	Item Deleted				
04	**SECTION 4 - STRUCTURES**				
04.01	**Whonnock Creek Culvert No. 8154**				
04.01.01	Formwork and Falsework	Square Metre	869	$_____	$_____
04.01.02	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.01.03	Cast-In-Place Concrete	Cubic Metre	521	$_____	$_____
04.01.04	Precast Concrete-Box Culverts	L.S.	100%	L.S.	$_____
04.01.05	High Flow Culvert	L.S.	100%	L.S.	$_____
04.01.06	Silane Surface Treatment	Square Metre	410	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.02	**H7 River Rd Wall No. 10422**				
04.02.01	Mechanically Stabilized Earth Wall	Square Metre	273	$_____	$_____
04.02.02	Concrete Swale	Metre	54	$_____	$_____
04.02.03	Steel Sidewalk Fence	Metre	54	$_____	$_____
04.02.04	Silane Surface Treatment	Square Metre	60	$_____	$_____
04.03	**H7 Median Wall at 285th No. 10426**				
04.03.01	Mechanically Stabilized Earth Wall	Square Metre	915	$_____	$_____
04.03.02	Bridge End Fill	Cubic Metre	330	$_____	$_____
04.03.03	Formwork and Falsework	Square Metre	1,150	$_____	$_____
04.03.04	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.03.05	Reinforcing Steel (Stainless)	L.S.	100%	L.S.	$_____
04.03.06	Cast-In-Place Concrete	Cubic Metre	536	$_____	$_____
04.03.07	Steel Sidewalk Fence	Metre	266	$_____	$_____
04.03.08	Silane Surface Treatment	Square Metre	679	$_____	$_____
04.03.09	Parapet Railing	Metre	220	$_____	$_____
04.03.10	Bridge Parapet Transition Barrier	Each	2	$_____	$_____
04.04	**H7 EB at 285th #1 Wall No. 10439**				
04.04.01	Mechanically Stabilized Earth Wall	Square Metre	130	$_____	$_____
04.04.02	Steel Sidewalk Fence	Metre	67	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.04.03	Silane Surface Treatment	Square Metre	74	$_____	$_____
04.05	**H7 EB at 285th #2 Wall No. 10490**				
04.05.01	Mechanically Stabilized Earth Wall	Square Metre	275	$_____	$_____
04.05.02	Steel Sidewalk Fence	Metre	137	$_____	$_____
04.05.03	Silane Surface Treatment	Square Metre	150	$_____	$_____
04.06	**Precast Concrete Interlocking Modular Block Retaining Walls**				
04.06.01	BW-1	Square Metre	165	$_____	$_____
04.06.02	BW-2	Square Metre	30	$_____	$_____
04.06.03	BW-3	Square Metre	100	$_____	$_____
04.06.04	BW-4	Square Metre	250	$_____	$_____
04.06.05	BW-5	Square Metre	260	$_____	$_____
04.06.06	BW-6	Square Metre	265	$_____	$_____
04.06.07	BW-7	Square Metre	465	$_____	$_____
04.06.08	BW-8	Square Metre	270	$_____	$_____
04.06.09	BW-9	Square Metre	180	$_____	$_____
04.06.10	BW-10	Square Metre	110	$_____	$_____
04.06.11	BW-11	Square Metre	340	$_____	$_____
04.06.12	BW-12	Square Metre	275	$_____	$_____
04.06.13	Concrete Swale	Metre	1,240	$_____	$_____
04.06.14	Bridge End Fill	Cubic Metre	9,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.06.15	Pedestrian Sidewalk Fence	Metre	1,240	$_____	$_____
04.06.16	Geogrid	Square Metre	125	$_____	$_____
05	**SECTION 5 - PAVING**				
05.01	**End Product Specifications**				
05.01.01	EPS Payment Adjustment (Refer to SP 5.01, SS 502)	P.S.	$55,000.00	P.S.	$55,000.00
05.02	**Supply Asphalt Mix Aggregate in Stockpile**				
05.02.01	Asphalt Mix Aggregate	Tonne	34,000	$_____	$_____
05.03	**Emulsified Penetrating Primer**				
05.03.01	Supply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.03.02	Apply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.04	**Tack Coat**				
05.04.01	Supply Tack Coat	Litre	18,800	$_____	$_____
05.04.02	Apply Tack Coat	Litre	18,800	$_____	$_____
05.05	**Asphalt Pavement**				
05.05.01	Medium Mix Asphalt Pavement - Bottom Lift	Tonne	20,000	$_____	$_____
05.05.02	Medium Mix Asphalt Pavement - Top Lift	Tonne	13,400	$_____	$_____
05.05.03	Medium Mix Asphalt - Driveways	Tonne	500	$_____	$_____
05.06	**Base Repairs**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.06.01	Base Repairs (CONDITIONAL ITEM)	Square Metre	3,000	$_____	$_____
05.07	**Pavement Drainage**				
05.07.01	Asphalt Spillways	Each	150	$_____	$_____
05.07.02	Rip Rap Spillways	Each	182	$_____	$_____
05.08	**Shouldering**				
05.08.01	Shouldering	Cubic Metre	130	$_____	$_____
05.09	**Precast Concrete Barriers**				
05.09.01	Concrete Bull Nose (CBN) - Supply and Install	Each	54	$_____	$_____
05.09.02	Concrete Low Barrier (CLB) - Supply and Install	Each	284	$_____	$_____
05.09.03	Concrete Roadside Barrier (CRB) - Supply and Install	Each	2,148	$_____	$_____
05.09.04	Concrete Roadside Drainage Barrier (CDB) - Supply and Install	Each	117	$_____	$_____
05.09.05	Concrete Median Barrier (CMB) - Supply and Install	Each	1,826	$_____	$_____
05.09.06	Concrete Pier Barrier (CPB) - Supply and Install	Each	574	$_____	$_____
05.09.07	Concrete Transition Barrier (CTB-1E) - Supply and Install	Each	53	$_____	$_____
05.09.08	Concrete Transition Barrier (CTB-2H) - Supply and Install	Each	35	$_____	$_____
05.09.09	Concrete Median Drainage Barrier - Supply and Install	Each	74	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.10	**Concrete Works**				
05.10.01	Concrete Island Curb	Metre	190	$_____	$_____
05.10.02	Concrete Island Infill	Square Metre	230	$_____	$_____
05.10.03	Concrete Curb and Gutter	Metre	200	$_____	$_____
05.10.04	Concrete Sidewalk	Square Metre	266	$_____	$_____
05.10.05	Concrete Driveway Let Down	Square Metre	75	$_____	$_____
05.10.06	Truck Apron Mountable Concrete Curb and Gutter	Metre	100	$_____	$_____
05.11	**Colored Stamped Truck Apron**				
05.11.01	Colored Stamped Truck Apron	Square Metre	45	$_____	$_____
06	**SECTION 6 - ELECTRICAL**				
06.01	**Removal of Existing Electrical Equipment**				
06.01.01	Removal of Existing Electrical Equipment	L.S.	100%	L.S.	$_____
06.02	**Removal of Existing Underground Equipment**				
06.02.01	Removal of Existing Underground Equipment	L.S.	100%	L.S.	$_____
06.03	**Concrete Bases (SS 635.07.06)**				
06.03.01	Type B Concrete Bases	Each	1	$_____	$_____
06.03.02	Type C Concrete Bases	Each	31	$_____	$_____
06.03.03	Type H2 Concrete Bases	Each	2	$_____	$_____
06.03.04	Type L1 Concrete Bases	Each	4	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.03.05	Type L2 Concrete Bases	Each	8	$_____	$_____
06.03.06	Type M2 Concrete Bases	Each	2	$_____	$_____
06.03.07	Type S2 Concrete Bases	Each	3	$_____	$_____
06.03.08	Traffic Controller Base	Each	2	$_____	$_____
06.04	**Plastic Junction Boxes (SS 635.08.01)**				
06.04.01	Type 10 Junction Box	Each	95	$_____	$_____
06.04.02	Type 11 Junction Box	Each	3	$_____	$_____
06.04.03	Type 12 Junction Box	Each	9	$_____	$_____
06.05	**Concrete Junction Boxes (SS 635.08.02)**				
06.05.01	Concrete JB	Each	3	$_____	$_____
06.05.02	Vault	Each	12	$_____	$_____
06.06	**Conduits (SS 635.11.01)**				
06.06.01	25mm RPVC Conduit	Metre	94	$_____	$_____
06.06.02	50mm RPVC Conduit	Metre	16,540	$_____	$_____
06.07	**Trenching and Backfilling (SS 635.12.01)**				
06.07.01	Trenching and Backfilling	Metre	5,575	$_____	$_____
06.08	**Trenchless Conduit Installation (SS 635.13.01)**				
06.08.01	50mm RPVC Conduit with Steel Casing Pipe	Metre	15	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09	**Supply And Installation/Modification Of Signal/AWF Poles (SS 635.19.09)**				
06.09.01	**Hwy 7 at River Road East**				
06.09.01.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.01.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.01.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.01.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.01.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.01.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.02	**Hwy 7 at 272 ST**				
06.09.02.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.02.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.02.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.02.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.02.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.09.02.06	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.02.07	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.03	**Hwy 7 at 280 ST**				
06.09.03.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.03.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.03.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.03.04	Signal Pole 4	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09.03.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.03.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.04	**Hwy 7 at 287 ST**				
06.09.04.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.04.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.04.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.04.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.04.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.10	**Luminaire Poles (SS 635.19.10)**				
06.10.01	9.0m Luminaire Pole	Each	18	$_____	$_____
06.10.02	11.0m Luminaire Pole	Each	14	$_____	$_____
06.11	**Supply And Installation Of Emergency Vehicle Pre-Emption Equipment (SS 635.19.11)**				
06.11.01	Hwy 7 at River Road East	L.S.	100%	L.S.	$_____
06.11.02	Hwy 7 at 272 ST	L.S.	100%	L.S.	$_____
06.12	**Service Equipment (SS 635.20.01)**				
06.12.01	Service Panel No. 1 (TE -20027-1)	L.S.	100%	L.S.	$_____
06.12.02	Service Panel No. 3 (TE -20027-4)	L.S.	100%	L.S.	$_____
06.12.03	Service Panel No. 4 (TE -20027-6)	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.12.04	Service Panel No. 5 (TE -20027-7)	L.S.	100%	L.S.	$_____
06.13	**Modify Existing Lighting Equipment**				
06.13.01	Replace HPS Cobrahead with LED	Each	3	$_____	$_____
06.14	**Modify Existing Service Equipment**				
06.14.01	Service Panel No. 2 (TE -20027-2)	L.S.	100%	L.S.	$_____
06.14.02	Service Panel No. 1 (TE -04007-2)	L.S.	100%	L.S.	$_____
06.15	**Wiring (SS 635.19.01)**				
06.15.01	Service Area 1 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.02	Service Area 2 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.03	Service Area 3 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.04	Service Area 4 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.05	Service Area 5 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.06	Service Area 1 (TE-04007)	L.S.	100%	L.S.	$_____
06.16	**Supply and Install Traffic Counter Stations (SS 635.22)**				
06.16.01	Short Count Station	Each	1	$_____	$_____
06.17	**Detector Loops (SS 635.22.01)**				
06.17.01	Detector Loop (Round)	Each	2	$_____	$_____
06.17.02	Pre-Formed Loop (Square)	Each	40	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.17.03	Pre-Formed Loop (Rectangular)	Each	7	$_____	$_____
07	**SECTION 7 - SIGNING AND PAVEMENT MARKINGS**				
07.01	**Signing**				
07.01.01	Supply and Install Single Post Signs	Each	118	$_____	$_____
07.01.02	Supply and Install Double Post Signs	Each	5	$_____	$_____
07.01.03	Supply and Install Barrier-Mounted Signs	Each	57	$_____	$_____
07.01.04	Item Deleted				
07.02	**Pavement Markings**				
07.02.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.02.02	Temporary Pavement Markings	L.S.	100%	L.S.	$_____
07.02.03	Permanent Pavement Markings - Thermoplastic	Square Metre	296	$_____	$_____
08	**SECTION 8 - FENCING, SEEDING AND LANDSCAPING**				
08.01	**Fencing and Gates**				
08.01.01	Pedestrian Fencing	Metre	140	$_____	$_____
08.01.02	Bicyclist Fencing	Metre	230	$_____	$_____
08.01.03	Type 'B' Fencing	Metre	80	$_____	$_____
08.01.04	Type 'C' Fencing	Metre	650	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
08.01.05	Gates	Each	5	$_____	$_____
08.02	**Revegetation Seeding**				
08.02.01	Revegetation Seeding with HECP	Hectare	6	$_____	$_____
08.03	**Environmental Works at York and Whonnock Creek**				
08.03.01	York Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.02	Whonnock Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.03	Coho Gravels	Tonne	490	$_____	$_____
08.03.04	Large Woody Debris	Each	10	$_____	$_____
08.03.05	Habitat Boulders	Each	42	$_____	$_____
08.03.06	Cellular Confinement System incl. top soil	Square Metre	450	$_____	$_____
09	**SECTION 9 - WHONNOCK CREEK TEMPORARY DETOURS**				
09.01	Engineered Detour Designs	L.S.	100%	L.S.	$_____
09.02	Cold Milling of Tie-ins (CONDITIONAL ITEM)	Square Metre	400	$_____	$_____
09.03	Pavement Cutting	Metre	170	$_____	$_____
09.04	25mm Well Graded Base - Detour (CONDITIONAL ITEM)	Cubic Metre	1,300	$_____	$_____
09.05	Select Granular Sub-Base (CONDITIONAL ITEM)	Cubic Metre	2,200	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.06	Asphalt Pavement - Detour (CONDITIONAL ITEM)	Tonne	1,600	$_____	$_____
09.07	Shouldering (CONDITIONAL ITEM)	Cubic Metre	20	$_____	$_____
09.08	Install and Remove Signs - Detour (CONDITIONAL ITEM)	Each	14	$_____	$_____
09.09	Detour Construction Barrier (CONDITIONAL ITEM)	Metre	900	$_____	$_____
09.10	Detour Pavement Markings (CONDITIONAL ITEM)	Kilometre	1	$_____	$_____
09.11	Temporary Detour Drainage (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
09.12	Detour Removal (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$**_____

All dollar amounts are to be in Canadian Dollars. Do not include GST in any Unit Prices or Extended Amounts, or in the Tender Price. The Ministry will pay any applicable GST under the Contract. Invoices / progress estimates under the Contract must show the calculation of any applicable GST as a separate line item.

Contractor's **Name:** _____

Address: _____

_____

City: _____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Postal Code: _____

Phone: _____

Fax: _____

Date: _____

PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

ADDENDUM NO. 3

1. SCHEDULE 3 – SPECIAL PROVISIONS AND APPENDICES

SECTION 1 – GENERAL

1.10 Availability of Site or Right-of-Way

Replace Table 2 with the following:

Table 2: Anticipated Property Possession Dates

Legal Description	Plan Page	Anticipated Possession Date
011-182-393 Lot 2, DL 433, GRP 1, NWD, Plan 5883	104RW	December 31, 2022
014-250-501 Lot 1, DL 433, GRP 1, NWD, Plan 81627	104RW	March 31, 2023
014-250-551 Lot 2, DL 433, GRP 1, NWD, Plan 81627	104RW	September 30, 2022
006-406-947 Parcel "one", (SRW Plan 101), DL 433, GRP 1, NWD, Exc. Part Subdivided by Plan 63143	104RW & 105RW	March 31, 2023
009-455-604 Lot 7, DL 441, GRP 1, NWD, Plan 11107	106RW	August 30, 2022
002-175-088 Lot "B", DL 439 & 441, GRP 1, NWD, Plan 11111	106RW	March 31, 2023
011-355-751 Lot 2, DL 439, GRP 1, NWD, Plan 8949	106RW & 107RW	March 31, 2023
008-352-402 Lot 1, DL 439, GRP 1, NWD, Plan 8949	107RW	March 31, 2023
009-749-721 Lot "One" Except: The North 233 Ft; DL 439, GRP 1, NWD, Plan 7536	107RW	March 31, 2023
000-977-900 Lot "One" Except: The North 233 Ft; DL 439, GRP 1, NWD, Plan 7536	107RW	March 31, 2023
002-249-022 Lot 12, DL 439, GRP 1, NWD, Plan 60972	107RW	December 31, 2022
002-671-557 Lot 13, DL 439, GRP 1, NWD, Plan 60972	107RW	December 31, 2022

006-128-084 Lot 9, DL 439, GRP 1, NWD, Plan 41258	107RW & 108RW	September 30, 2022
012-876-011 Parcel "1" (SRW Plan 4598) of Parcel "A" (Ref. Plan 2503), DL 439, GRP 1, NWD	108RW	March 31, 2023
008-900-353 Lot 14, Except: Firstly: Part Sub'd by Plan 23931, Secondly: Part Sub'd by Plan 33032, DL 438, GRP 1, NWD, Plan 7537	108RW	March 31, 2023
000-444-031 Lot 29 Exc.: Part on SRW Plan LMP3310, DL 438, GRP 1, NWD, Plan 47148	108RW	March 31, 2023
002-515-474 Lot 20, DL 438, GRP 1, NWD, Plan 26725	108RW	March 31, 2023
001-768-905 The South 64 ft Lot 12, DL 438, GRP 1, NWD, Plan 7537	108RW	December 31, 2022
011-255-307 Lot 12 Exc.: South 64 ft., DL 438, GRP 1, NWD, Plan 7537	108RW	December 31, 2022
005-638-089 Lot 37, DL 438, GRP 1, NWD, Plan 57927	108RW	March 31, 2023
Plan 74332 CLSR / Plan LMP 4774 (LTO) Whonnock IR No. 1	105/106 RW	June 30, 2023

SECTION 2 – GRADING

2.04 Roadway and Drainage Excavation

(l) Type D Excavation – Off-Site Disposal (IR#5)

(i) General

Replace the last paragraph with the following:

All material taken to IR#5 shall not exceed the BC CSR Schedule 3.1 Low Density Residential Land Use Standards (RLLD) and be acceptable to the disposal facility's Geotechnical Engineer. Testing shall be conducted for every 250 cubic metres of material.

(m) Contaminated Soils – Off-Site Disposal

(i) General

Replace the first, second and third Bullets with the following:

- Soils with concentrations of COCs exceeding the BC CSR Hazardous Waste Regulation (HWR) Schedule 4, Table 1 Leachate Quality Standards

must be disposed of at a legally permitted hazardous waste disposal facility. Excavation, transport and disposal of Hazardous Waste quality soils will need be completed at a minimum in accordance with the BC EMA, BC CSR and HWR and the Transportation of Dangerous Goods Act (TDG) and associated regulations. Key requirements include but are not limited to the following:

- Notification to the Ministry of the Environment and Climate Change Strategy (ENV) in accordance with Section 54(2)(a) & (b) of the Environmental Management Act, Part 13 of the BC CSR and the associated ENV Protocol 12 requirements for Site Risk Classification reporting.
- Registration of the Site for BC Generator Number.
- Use of a qualified and licensed transporter.
- Completion of appropriate Manifests issued by the province of BC.

- Waste quality soils with concentrations of COCs exceeding the BC CSR Schedule 3.1 industrial land use standards (IL+) must be disposed of at facility(s) authorized under the BC EMA to accept IL+ contaminated soils. Excavation and disposal IL+ quality soils require notification to the Ministry of the Environment and Climate Change Strategy in accordance with Section 54(2)(a) & (b) of the Environmental Management Act and Part 13 of the BC CSR and the associated ENV Protocol 12 requirements for Site Risk Classification reporting.

- Type D Excavated materials from Schedule 2 Sites #1 to #10 with concentrations of contaminants of concern (COCs) less than the BC CSR Schedule 3.1 industrial land use standards (IL-), must be disposed of off-site at a legally acceptable receiving site. Excavation and disposal of IL-quality soils from a Schedule 2 Use Site will require notification to the Ministry of the Environment and Climate Change Strategy in accordance with the Stage 14 amendments to EMA and the CSR. The Order in Council for the BC CSR Stage 14 amendment was approved by Cabinet on June 1, 2022. The Stage 14 CSR amendment will bring into force the changes to soil relocation legislation introduced in Bill 3: Environmental Management Amendment Act, which received Royal Assent on March 5, 2020. The CSR amendments were deposited on June 6, 2022. Changes to soil relocation come into effect on March 1, 2023.

2.08 River Road Surplus Disposal Site

(b) Wick Drains

(i) General

Add the following after the first sentence:

Wick drains must be made of corrugated polymeric drainage core and a non-woven geotextile. The drains may be either non-bonded or bonded. For non-bonded drains, the geotextile must be wrapped around the corrugated core and seamed to itself. For bonded drains, geotextile must be fused to both faces of the core along the peaks of the corrugations.
The wick drains must have the following minimum properties when tested using the according standard.

- Total discharge capacity 5.7 L/min @ 40 psi and unit gradient (ASTM D4716).

The non-woven geotextile must have the following minimum properties when tested using the according standard.

- Grab tensile strength – 578N (ASTM D4632).
- Trapezoidal tear - 267n (ASTM D4533). This test is not required for bonded drains.
- Permittivity - 7 sec-1 (ASTM D4491).
- Apparent opening size - 0.212mm (ASTM D4751)

The core of non-bonded drains must have the following minimum properties when tested using the according standard:

- Grab tensile strength – 890N (ASTM D4632)

Assembled (i.e. the core and geotextile) bonded drains must have the following minimum properties when tested using the according standard:

- Grab tensile strength • 890N (ASTM D4595)

Handling and storage of wick drain materials must follow the manufactures recommendations. During shipment and storage, the wick drain material must be wrapped in a heavy-duty protective covering. Wick drains must be protected from sunlight, mud, dirt, dust, debris, and detrimental substances during storage. Wick drains must be free of defects, rips. holes, or flaws. Damaged materials shall be replaced at the contractor's expense.

Wick drains delivered to the site must be labeled or tagged for duality control purposes. Each roll must be identified by lot or control numbers. Individual roll number, date of manufacture, manufacturer. and product identification.

The wick drains manufacturer must have a quality control sprogram that includes independent third-party tests. These tests must be provided upon request.

Replace the sub-title "Measurement" with: "*(ii) Measurement*"

Replace the sub-title "(ii) Payment" with: "*(iii) Payment*"

SECTION 3 – DRAINAGE

3.04 Slope Drainage

(a) Toe Drains

(ii) Measurement

Replace the sentence with the following:

Measurement for Toe Drains will be made per metre installed.

SECTION 4 – STRUCTURES

4.04 Foundation Excavation and Backfill

(a) Excavation

Replace the first paragraph with the following:

The Contractor shall remove all materials as necessary for the construction of retaining walls. Excavations shall not be larger than is reasonably necessary. Excavations and adjacent highways and other facilities shall be protected as necessary by barricades, shoring, dykes and/or cofferdams. Foundation excavation shall be as shown on the Drawings and in accordance with SP 2.05 Roadway and Drainage Excavation.

(d) Measurement and Payment

Replace the paragraph with the following:

Payment for foundation excavation will be made at the rate for the type of material excavated in accordance with SP 2.04. Payment for supply and placement of Bridge End Fill as backfill to replace unsuitable sub-grade shall be paid in accordance with SP 4.05 Bridge End Fill.

4.13 Precast Concrete Interlocking Modular Block Retaining Walls

Add the following after (f):

(g) Cast-in-Place Concrete Components

All reinforcing steel supplied under this Item shall meet the requirements of SP 4.07 Reinforcing Steel. All costs for reinforcing steel shall be considered incidental to the Work and no additional payment will be made.

All formwork supplied under this Item shall meet the requirements of SP 4.06 Formwork and Falsework. All costs for formwork shall be considered incidental to the Work and no additional payment will be made.

All cast-in-place concrete supplied under this Item shall meet the requirements of SP 4.08 Cast-in-Place Concrete. All costs for cast-in-place concrete shall be considered incidental to the Work and no additional payment will be made.

Replace the sub-title "(g) Construction and Tolerances" with: *(h) Construction and Tolerances*

Replace the sub-title "(h) Measurement" with: *(i) Measurement*

Replace the sub-title "(i) Payment" with: *(j) Payment*

SECTION 5 – PAVING

5.08 Precast Concrete Barriers

(a) General

Add the following after the last paragraph:

For Curve 54, 41 ,31 and 21 on River Road (L300), Concrete Pier Barriers (CPB) to be installed in front of the Interlocking Concrete Block Wall No. 2 and No. 4 may require modifications to accommodate tight curvature installation.

(c) Payment

Replace the first paragraph with the following:

Payment for the supply and installation of Precast Concrete Barriers will be made at the Unit Price bid per Each per type and shall be accepted as full compensation for everything furnished and done in connection therewith, including modifications for tight curvature where required, the supply and installation of barrier mounted reflectors.

5.09 Concrete Works

Add the following after (e):

(f) Truck Apron Mountable Concrete Curb and Gutter

Truck Apron Mountable Concrete Curb and Gutter shall be constructed with extruded concrete in accordance with SS 582 and SS Drawing SP582 01.02 at the locations shown on the Drawings or as approved by the Ministry Representative.

Payment for Truck Apron Mountable Concrete Curb and Gutter will be made at the Unit Price bid per Lineal Metre and shall be accepted as full compensation for everything furnished and done to complete the work, including the supply and placing of air entrained concrete, joints, finishing, curing and protection.

Add the following after SP 5.09 Concrete Works:

5.10 Coloured Stamped Truck Apron

Truck Apron shall be stamped coloured asphalt. Colour shall be Pantone 194 or equivalent as approved by the Ministry Representative. Stamp to be paving bricks installed in courses parallel to curb, as approved by the Ministry Representative.

Payment

Payment for Coloured Stamped Truck Apron including the supply, colouring, forming and placing of asphalt, surface finishing, and protection will be made at the Unit Price bid per square metre and shall be considered as full compensation for everything furnished and done to complete the Work.

3. SCHEDULE 7 - SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

The following items are amended:

Item No.	*Revision*
02.07.02	Revised Quantity
04.06.04	Revised Unit Price
05.05.03	Revised Quantity
05.10.01	Revised Quantity
05.10.02	Revised Quantity
05.10.03	Revised Quantity
05.10.06	New Item Added
05.11	New Item Added
05.11.01	New Item Added
08.01.01	Revised Quantity
08.01.02	Revised Quantity

A REPLACEMENT SCHEDULE 7, DATED AUGUST 26, 2022, AND MARKED AS **'REPLACEMENT B'** IS ATTACHED AND MUST **BE USED FOR TENDER PURPOSES.**

4. RESPONSES TO CONTRACTOR INQUIRIES

QUESTION 1: For excavation material taken to IR #5, is the contractor required to 'place' (push & compact) the material in the dump site? Or will the contractor simply dump the material in the designated area for the disposal facility operator to push & compact it?

ANSWER 1: Contractor will not be required to "place" the material but will be able to simply dump the material in the designated area as directed by the facility operator.

QUESTION 2: As per file "! 12862MJ2022 Master Template - Part 1 of 3" on pg. 212 the demolition scope is for only for Lot 12, Plan 24810 PID 002-589-699 which is 26919 Lougheed Hwy. Maple Ridge Site #5 as per the same document pg. 355. After reviewing pg.355 I noticed site #8 has a structure on it as well. Is this structure part of the scope also or has it already been removed? I believe site #8's address is 26894 Lougheed Hwy. Maple Ridge for your reference.

ANSWER 2: The sketch on Pg 355 noted below has an older orthoimage in the background. The building in Site #8 has been removed. The only building required to be demolished is Lot 12, Plan 24810 PID 002-589-699 as noted in SP Table 15: Property to be Demolished.

QUESTION 3: Is Drawing # R1-952-302 referring to vertical wick drain or Horizontal strip drain or both?

ANSWER 3: Wick drains are installed horizontally throughout the stockpile as shown on Drawing R1-952-302. Vertical spacing shall be 1.2m and horizontal spacing shall be 3.0m. Wick drains for consecutive lifts shall be centered between previous lift wick drains and maintain a 3.0m horizontal spacing, creating a triangular pattern in section. There are no vertical wick drains.

QUESTION 4: What is the total area where wick drains will be installed?

ANSWER 4: Approximately 12,700^{m2}

QUESTION 5: What is the material spec for the wick drains?

ANSWER 5: See updated Wick Drains clause in SP 2.08 (b) in this Addendum No. 3.

QUESTION 6: What pattern of installation is required (square or triangular)?

ANSWER 6: Triangular pattern is preferred.

QUESTION 7: As per the specification call out. Will there be strip drain placed in multiple lift?

ANSWER 7: See Answer 3 above describing wick drain placement.

QUESTION 8: Are you able to quantify the volumes of soil that require offsite disposal strictly due to soluble chloride? Specifically looking to see if the remainder of parameters meet RLhd, and soluble chloride is less than 350mg/kg.

ANSWER 8: Estimated quantities of soil requiring off-site disposal strictly due to IL+ (most conservative Site-specific factor) soluble chloride are provided in Table 11 of the Step B report and Table 1 of the Step C report and noted as “Location 2: Sta. 169+30 to 170+45”, “Location 3: Sta. 176+65 to 177+15” and “Location 4: 187+70 to 189+10”.

QUESTION 9: When adding up IL- soils noted in the executive summary of the soil characterization / soil management plan, and IL- soils in Schedule 7 Approximate Quantities, I notice there is likely a discrepancy (depending on bulk density used for the material). Are you able to comment on the gap between these two quantities?

ANSWER 9: Refer to Schedule 7 for quantities.

QUESTION 10: Have project areas outside of the 2b, 2c, 2d, 2e, and 2f boxes been assessed against BC CSR 3.1? Can quantities of IL- be provided from these areas?

ANSWER 10: No. Given the response to the first part, no.

QUESTION 11: In regards to Payment Item “02.03.03 Cold Milling – greater than 50mm Depth” please clarify what is the maximum depth of asphalt that would be paid under this item. Would it be possible to reframe the item wording to outline a limit for such item?

ANSWER 11: The maximum depth of asphalt that would be paid under this item is 125mm.

QUESTION 12: In regards to the proposed Payment Item 02.03.04 Pavement Removal – given the extensive area of 46,900 m2 – please confirm if full depth milling would be an accepted method for this activity. If so, please clarify whether pavement millings can be reused on site.

ANSWER 12: Yes, Contractor can determine the methods to complete pavement removal as per Special Provisions and Standard Specifications. Pavement millings cannot be re-used in the granular base and sub-base.

QUESTION 13: Will works on Highway 7 be allowed Monday to Sunday at all times, except for Holiday Periods and Special Event Periods outlines on section (iv)?

ANSWER 13: Please see SP 1.09 Hours of Work for details.

QUESTION 14: Please confirm if SLAT will be allowed at Highway 7 (L100).

ANSWER 14: SLAT will not be allowed on Highway 7 (L100).

QUESTION 15: Is it possible to have CP Rail Train Schedules to assess the impact of the stop work requirements due to train approach when working within 10m of the track?

ANSWER 15: Contractor to coordinate with CP Rail for all railway matters.

QUESTION 16: Will the Contractor be allowed to run traffic on base course asphalt?

ANSWER 16: Yes, Contractor is permitted to run traffic on base course asphalt. Any damage caused by traffic running on base course asphalt shall be repaired at the Contractor's expense.

QUESTION 17: Please clarify contract escalations for Asphalt Cement. It is our understanding that BCRBAI is published on a monthly basis, however SP 10.05 states that AC price adjustments will take into consideration a weekly index. Please confirm if AC escalations will be determined on a weekly or monthly basis.

ANSWER 17: Per SP 5.05 the INDEX Weekly AC index price will be based upon the Vancouver BC Road Builders Asphalt Index and will be determined weekly by the Ministry when there is a change in rack prices and be effective one (1) week after.

QUESTION 18: According to SP 10.05 (a) all asphalt shall be paver laid. Please confirm if this recommendation also applies for aprons and driveways. In addition, asphalt spillways will require to be hand placed.

ANSWER 18: Yes, driveways and aprons shall be paver laid. Asphalt spillways can be hand placed.

QUESTION 19: Please clarify Payment Item "05.08.01 Shouldering" to be measured by Cubic Meter, as it seems like there are 3 types of shoulder configurations throughout the project as per typical sections: granular shoulder, asphalt shoulder 50mm Thick and asphalt shoulder 125mm Thick. Does Item 05.08.01 refer to granular shoulder only? If so, will the remainder be paid by MT of asphalt laid on top lift?

ANSWER 19: Item "05.08.01 Shouldering" refers to the shouldering aggregate in the typical sections.

QUESTION 20: Item 2.04(f)(1) Organic Stripping and Unsuitable Material Stripped and unsuitable material to be placed outside of embankment toes and spread as describe (presumably on embankment slopes); or hauled to temporary stockpile onsite and subsequently hauled back and spread on embankment slopes; or, if there is insufficient room to dispose of the stripped material at the embankment areas the excess material shall be removed and disposed of in the Contractor provided disposal site.

Is the Contractor required to provide a disposal site or does this refer to the Type D Excavation Off-Site Disposal (IR #5)?

ANSWER 20: The Contractor is required to provide a disposal site if there is excess material to be disposed of as per SP 2.04 (f) (i) (1) clauses.

QUESTION 21: Does MoTH have an assessment of the quantity of excess stripped material that will require disposal offsite?

ANSWER 21: No.

QUESTION 22: Could MoTH provide a separate pay item to excess stripped material to be disposed offsite?

ANSWER 22: See Answer 21.

QUESTION 23: Item 2.04(l)(i) All material taken to IR #5 shall meet(ing) low density residential standards and be acceptable to the disposal facility's Geotechnical Engineer. Testing shall be conducted for every 250 cubic meters of material.

MoTI has already identified areas of potential contamination and performed testing of those soils. MoTI has determined that there is IL-, IL+ and hazardous material onsite and requested unit prices for disposal of these materials.

Presumably, all of the remaining soil should meet low density residential standards. Please confirm.

ANSWER 23: The quality of soil not specifically characterized in the Step B\C reports cannot be confirmed. Soil outside the investigation areas, i.e., BC CSR Schedule 2 Use Sites is not characterized.

QUESTION 24: If we were to haul to one of our disposal facilities, this should be sufficient information for disposal per low density residential standards – can the IR #5 disposal facility's Geotechnical Engineer not provide acceptance accordingly – ie no further testing?

ANSWER 24: See Answer 23, the quality of soil for soil cuts within the BC CSR Schedule 2 Use sites has been characterized to IL-, IL+ and HAZ. Any soil analytical data not IL-, IL+ or HAZ would need to be recast to confirm that it meets the RLLD soil standards. The IR #5 disposal facility's Geotechnical Engineer\operator should be contacted directly for any additional soil acceptance criteria or requirements.

QUESTION 25: If indeed, we are required to perform testing for every 250 cubic meters of material disposed at IR #5, what testing parameters are we to perform?

ANSWER 25: See Answer 24, the IR #5 disposal facility's Geotechnical Engineer\operator should be contacted directly for any additional soil acceptance criteria or requirements.

QUESTION 26: Such testing, if required, is not performed real-time – there is a lag time to receive test results – typically when we are required to perform such testing, the soil is to be put into discreet piles, covered, tested and, once the results are received, the soil can be relocated to the disposal facility. Is this what is expected for Type D excavation?

ANSWER 26: Testing procedure is Contractor's responsibility.

QUESTION 27: Can the IR #5 confirm that there is sufficient capacity for 116,900 cubic meters of Type D excavation? Can IR #5 confirm what their daily capacity for receiving Type D excavated material will be?

ANSWER 27: Yes.

QUESTION 28: Is there any possibility that there will be excess Type D excavation for which the Contractor will be required to provide a disposal facility? If so, can MoTI provide for a unit rate for such eventuality?

ANSWER 28: MoTI will provide payment for Type D excavation as per the Schedule 7 items 02.04.04, 02.04.05, 02.04.06.

QUESTION 29: Item 4.04(b) Excavated materials will be classified in accordance with SS201.00 which includes, among others, Stripping, Type D and Type A materials.

Item 4.04(a) says that the Contractor shall remove all materials as necessary for the construction of retaining walls and Whonnock Creek culvert.

ANSWER 29: See updated Excavation clause in SP 4.04 (a) in this Addendum No. 3.

QUESTION 30: Item 404(d) says that foundation excavation shall be considered Type D excavation to Off-site Disposal (IR #5).

Presumably, the intent is to pay for such foundation excavation per unit rate. Please confirm.

ANSWER 30: Yes, excavation for the retaining walls will be paid per unit rate in accordance with SP2.04 Roadway and Drainage Excavation based on the type of material excavated. Excavation for Whonnock Creek culvert (including headwall) shall be included in the Lump Sum Price bid for the precast concrete box culverts as per SP4.09(d).

QUESTION 31: Type A material is clearly identified at some of the structure locations. Why would the Contractor not be paid as Type A in such situations?

ANSWER 31: See updated Measurement and Payment clause in SP 4.04(d) in this Addendum No. 3. Payment for foundation excavation will be made at the unit rate for the type of material excavated in accordance with SP 2.04.

QUESTION 32: Item 405 Bridge End Fill presumably, this applies to the construction of retaining walls and Whonnock Creek culvert and, presumably, the intent is to pay for such Bridge End Fill per unit rate. Please confirm.

ANSWER 32: Bridge End Fill pay items are identified in Schedule 7 and include Bridge End Fill behind the CIP wall portions of H7 Median Wall at 285th No. 10426 and the Precast Concrete Interlocking Modular Block Retaining Walls. Backfill for the Whonnock Creek Culverts and headwall shall be included in the Lump Sum pay item for Precast Concrete Box Culverts as per SP4.09(f). Structural Backfill for the MSE Retaining Walls shall be included in the Mechanically Stabilized Earth Wall pay item as per SP4.12(L).

QUESTION 33: Item 4.09(f) Payment for the Precast Concrete Box Culverts will include all work within the payment envelope shown on the Drawings and will be made at the Lump Sum price bid.

The Precast Concrete Box Culvert Pay Envelope shown on Dwg 8154-102 appears to include foundation excavation and bridge end fill. Bullet 2 & 3 of the above-noted payment clause also indicate that the Lump Sum price is to include foundation excavation and bridge end fill.

Please clarify whether foundation excavation for Precast Concrete Box Culvert is to be paid per 404(a) or to be included in the Lump Sum price.

ANSWER 33: It is to be included in the Lump Sum price.

QUESTION 34: Please clarify whether bridge end fill for Precast Concrete Box Culvert is to be paid per 405 or to be included in the Lump Sum price.

ANSWER 34: It is to be included in the Lump Sum price.

QUESTION 35: Item 6.03(k) Mechanically Stabilized Earth Walls Measurement.

Measurement for MSE Retaining Wall area shall be based on the exposed wall areas bounded by the finished grade at the front face of the wall and the tope of the wall. Why wouldn't you base the measurement on the full face of wall as you do with Interlocking Concrete Block Walls?

ANSWER 35: This is standard measurement for MSE walls and is done to ensure the amount of buried wall is minimized.

QUESTION 36: Item 6.03(l) Mechanically Stabilized Earth Walls Payment.

There is nothing to say that payment for excavation shall be in accordance with Type D (or other) excavation as is the case with Interlocking Concrete Block Walls. Presumably, such excavation would be paid per 404(b). Again, why only Type D? Please confirm that this is the case.

ANSWER 36: 4.12(j) indicates that excavation for MSE walls is to be per SP 4.04 Foundation Excavation and Backfill. This includes payment. As per response to question 3 above, payment for excavation is to be per the unit rate for the material type excavated.

QUESTION 37: There is nothing to say that payment for bridge end fill shall be in accordance with SP 4.05 as is the case with Interlocking Concrete Block Walls. Presumably, bridge end fill will be paid per 405. Please confirm.

ANSWER 37: Payment for Structural Backfill is to be included in the Lump Sum for the MSE wall.

QUESTION 38: It is our understanding that Structural Backfill and soil reinforcements are to be included in the payment envelope. Please confirm.

ANSWER 38: Correct.

QUESTION 39: Please confirm that the coho gravel, 100kg riprap, and boulders inside the 4.25x4.25m box culverts at Whonnock Creek will be paid under their own separate unit rates, and not part of bid item #04.01.04.

ANSWER 39: Coho gravel, 100 kg riprap, and boulders inside the 4.25 x 4.25 m box culverts at Whonnock Creek are part of the Lump Sum Item No. 04.01.04.

QUESTION 40: Barrier String 11 is a run of CPB that has 2 corners (#41, 25m curve radius and #54, 15m curve radius). I do not believe the CPB will be able to maintain these curves. MoTI's Section 941 does not have a minimum curve radius of CPB. They are based on CMB, which has a minimum curve radius of 95.5m. I believe allowances will need to be made for this barrier run.

ANSWER 40: Modified CPB's may be required for Barrier String 11 to accommodate Curve 54, 41, 31 and 21.

QUESTION 41: Barrier String 31 has a combination of CPB and Standard Bridge Parapet Transitions (SBPT). If the CPB are to be connected to the bridge parapet side, they will not connect has the SBPT has a horizontal hook (MK H3) that is designed to connect to a cast-in-place bridge parapet.

ANSWER 41: The 2 SBPT's are for Barrier String 32. Please refer to Structural Drawing 10426-8 for details. The SBPT's are used to connect the CMB's and CIP's at the transition between MSE and CIP wall on the westbound side (top of the wall). The Contractor has the option to use SBPT or CIP barrier at the locations noted on the structural Drawings.

QUESTION 42: SP409 Precast Concrete Box Culverts (f) Payment under this Lump Sum item will include the following:

> Foundation excavation for the precast concrete box culverts, cast-in-place concrete headwall, and bridge end fill…
>
> Supply of base materials, culvert embedment materials and backfill for the box culverts and headwall…
>
> Dwg 8154-102 Section E-E shows the pay envelope for foundation excavation and bridge end fill extending +/- 5m west of the two box culverts; then Type D embankment.
>
> Dwg 8154-103 Section A-A does not show any pay envelope, however, it does show foundation excavation and bridge end fill.
>
> Question – is the lump sum price for this item to include the foundation excavation and bridge end fill shown on Dwg 9154-103 Section A-A?

ANSWER 42: Yes

QUESTION 43: Can the foundation excavation material be disposed offsite at IR #5?

ANSWER 43: Yes, the material can be disposed of in accordance with SP 2.04 Type D Excavation – Off-Site Disposal (IR#5)

QUESTION 44: If so, will MoTI pay for such disposal fees?

ANSWER 44: There will be no tipping fee to the Contract for this material.

QUESTION 45: SP301 High Flow Culvert (c) Payment – contrary to SS303.9., payment for High Flow Culvert will be per Lump Sum bid, and does not include excavation. Excavation shall be considered with the particular type of excavation as identified in SP 2.05 Roadway and Drainage Excavation.

Isn't the High Flow Culvert situated within the payment envelope of the lump sum for Item SP409 Precast Concrete Box Culverts? Why would it be paid per SP 2.05 Roadway and Drainage Excavation?

ANSWER 45: Please refer to the Addendum No.1. The excavation for the overflow culvert shall be considered incidental to the work and not paid per SP 2.05 since it is part of the excavation envelope for the Precast Concrete Box Culverts.

QUESTION 46: I was not referring to perforated sub-drain behind the lock block walls – I realized that such pipe is incidental to the Precast Concrete Interlocking Modular Block Retaining Walls. Rather, I 150 R/W Subdrain as shown on the Drainage Drawing – for instance Dwg R1-952-704 where there is approximately 140lm of 150 R/W Subdrain shown between Sta 158+00 and 159+40 Rt – and numerous other such places on the drainagae drawings. Again, should there be an item in the SoQ for 150mm R/W Subdrain? And item in the SoQ for R/W subdrain cleanouts. Are there drawings for same in the current MoTI specifications?

ANSWER 46: The “150 mm R/W (Retaining Wall) Subdrain” is the same 150 mm perforated subdrain behind the wall. Solid or perforated subdrains are also required in other structural walls, please review related sections in Schedule 3 and drawings for details.

QUESTION 47: For the IL+ material, are you able to provide a comparison to RLHD standards? Can this material also qualify as RLHD? If not, can you provide information about what contaminated materials exceed the standard, and their exceedance values?

ANSWER 47: Please refer to the reports from the Schedule T3:

- Technical Circular T-03/20 Step A – Screening Summary: Highway 7 Widening from 266 Street to 287 Street.
- Technical Circular T-03/20 Step B – Soil Characterization: Highway 7 Widening from 266 Street to 287 Street.
- Highway 7 Widening from 266 Street to 287 Street, Technical Circular T-03/20 Step C – Soil Management Strategy.

QUESTION 48: In the typical section provided for Truck Apron Detail – it’s noted that stamped asphalt (adobe red colour) will be required. Please confirm under which item this material will be paid.

ANSWER 48: Pay Item and Special Provision Clause for Truck Apron has been added in this addendum.

QUESTION 49: Upon examining the plan drawings and sections provided – millings up to 50mm Thick are not shown anywhere. It is our understanding that 50 mm milling will be necessary when building lap joints as per pavement joint details provided. Is there any location other than lap joints that will require 50mm milling?

ANSWER 49: Milling up to 50mm are required at lap joints and other locations. Contractor shall review milling layout with the Ministry Representative prior to milling activities.

QUESTION 50: In regards to contaminated sites location #10, what’s the depth of the anticipated contaminated materials? Where contractor elects to remove pavement by means of milling will contaminants be a concern?

ANSWER 50: This site\soil cut has not been investigated or characterized and the contractor is to stockpile any Type D/stripping soil cuts from this area and have their AQP test soils and manage according to the quality (IL-/IL+/HAZ). The assumed depth is the assumed depth of the soil cut = 2 m. Environmental impacts are possible with freshly process reclaimed asphalt pavement if stockpiled and weathered.

QUESTION 51: The drawings show some truck mountable curbing, red stamped asphalt, and reverse curb & gutter at 272nd and 280th St intersections. However, there are no bid units for these items. Are we to include this in our pricing?

ANSWER 51: Mountable curbing and red stamped asphalt has been added to Schedule 3 and 7 in this Addendum No. 3. No reverse curb & gutter required at 272nd and 280th St

intersection. Curb and gutter shall be supplied and installed per Ministry Standard Specifications SP582-01.01.

QUESTION 52: Toe Drains – eg. Dwg R1-952-806 the typical sections shows 50mm finger drains at 5m spacing into the existing slope; extended through the wall backfill; is that 50mm finger drain to be connected to the 150mm subdrain? There's also a 50mm cleanout shown to the surface – does every finger drain require a cleanout? Or is the cleanout on the 150mm subdrain?

ANSWER 52: Toe drains should each have a cleanout where they are located behind a wall. The cleanouts for the wall subdrain are separate from the toe drain cleanouts. The toe drains don't physically connect to the wall subdrain where toe drains discharge behind the wall. However, the toe drain should discharge into the drain rock which encases the wall subdrain. The toe drain should not be capped so that the water can discharge.

QUESTION 53: On Dwg. 952-R1-ENV-106 Note 6 Install coir wrap along the boundary between Rip-Rap and regraded slope. We are not sure what this means. Could you mean that you want topsoil wrapped with coir? If so, what diameter? Could you mean that you want a coir wattle? Perhaps you could provide a detail.

ANSWER 53: Contractor shall underlay a roughly 0.5 m section of coir mat beneath the outer edge of the regraded slope topsoil, using staples to keep it in place. Then where it meets the riprap, fold the coir mat back upslope over the topsoil and staple in place again. The top portion of coir mat should be minimum 1 m width. 900 gram coir matting is recommended. This treatment would not apply to areas where cellular confinement is to be installed.

QUESTION 54: We have been informed that none of the manufacturers on the Ministry's Recognized Products List manufacture HDPE pipe with a water-tight gasket in sizes greater than 1500mm. STRM1 calls for 1800mm HDPE culvert. The only HDPE product that is available on the Ministry's Recognized Products List is Weholite pipe which comes in 50' lengths and is fusion welded – hardly the type of pipe that is suitable for installation beneath an existing 4-lane highway. Any suggestions? C76CLIV concrete pipe? Twin two smaller HDPE culverts?

ANSWER 54: 72" (1800 mm) Diametre Contech DuroMaxx Pipe with High Performance Joints is acceptable.

QUESTION 55: The high flow culvert at Whonnock Creek is shown to be 2700mm diameter. Our supplier does not make 2700mm concrete pipe – they suggest 3050mm C76 CLIV pipe as an alternate – would this be acceptable?

ANSWER 55: Yes,

Replacement: B **Replacement Date:** 2022/08/26

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Protection of the Environment	L.S.	100%	L.S.	$_____
01.04	Traffic Management	L.S.	100%	L.S.	$_____
01.05	Controlled Excavation - Provisional Sum (Refer to SP 1.28)	P.S.	$500,000.00	P.S.	$500,000.00
01.06	Site Modifications - Provisional Sum (Refer to SP 1.37)	P.S.	$3,800,000.00	P.S.	$3,800,000.00
02	**SECTION 2 - GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	12.40	$_____	$_____
02.02	**Removal and Relocation of Existing Works**				
02.02.01	Remove Existing Culverts by Excavation	Metre	200	$_____	$_____
02.02.02	Abandon Existing Culverts	Cubic Metre	120	$_____	$_____
02.02.03	Remove and Dispose of Existing Whonnock Creek Culvert	L.S.	100%	L.S.	$_____
02.02.04	Remove Existing Concrete Catch Basins and Drainage Lead Pipes	Each	14	$_____	$_____
02.02.05	Remove and Dispose of Existing Concrete Barriers	Metre	550	$_____	$_____
02.02.06	Remove Existing Fencing	Metre	300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.02.07	Remove Existing Gates	Each	5	$_____	$_____
02.02.08	Demolition of Existing Residential Structures	Each	1	$_____	$_____
02.02.09	Remove Septic Tanks and Fields (CONDITIONAL ITEM)	Each	6	$_____	$_____
02.02.10	Well Decommissioning	Each	37	$_____	$_____
02.02.11	Slope Inclinometer Decommissioning (CONDITIONAL ITEM)	Each	2	$_____	$_____
02.02.12	Remove Existing Signs	Each	76	$_____	$_____
02.03	**Pavement Cutting, Cold Milling and Pavement Removal**				
02.03.01	Pavement Cutting	Metre	2,700	$_____	$_____
02.03.02	Cold Milling - up to 50mm Depth	Square Metre	2,380	$_____	$_____
02.03.03	Cold Milling - greater than 50mm Depth	Square Metre	3,600	$_____	$_____
02.03.04	Pavement Removal	Square Metre	46,900	$_____	$_____
02.04	**Roadway and Drainage Excavation**				
02.04.01	Organic Stripping	Cubic Metre	32,850	$_____	$_____
02.04.02	Vibration Control and Monitoring	L.S.	100%	L.S.	$_____
02.04.03	Type A Excavation	Cubic Metre	8,800	$_____	$_____
02.04.04	Type D Excavation to Embankment	Cubic Metre	15,400	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.04.05	Type D Excavation to River Road Disposal Site	Cubic Metre	14,400	$_____	$_____
02.04.06	Type D for Off-Site Disposal (IR #5)	Cubic Metre	116,900	$_____	$_____
02.04.07	Contaminated Soils (IL+) - Off-Site Disposal	Tonne	20,200	$_____	$_____
02.04.08	Contaminated Soils (Hazardous Material) - Off-Site Disposal	Tonne	60	$_____	$_____
02.04.09	Contaminated Soils (IL-) - Off-Site Disposal	Tonne	12,800	$_____	$_____
02.04.10	Granular Borrow	Cubic Metre	37,100	$_____	$_____
02.05	**Granular Materials**				
02.05.01	Select Granular Sub-Base Recycled Concrete Aggregate Material (RCAM)	Cubic Metre	41,200	$_____	$_____
02.05.02	Select Granular Sub-Base	Cubic Metre	8,100	$_____	$_____
02.05.03	25mm Well Graded Base	Cubic Metre	36,300	$_____	$_____
02.05.04	High Fines Surfacing Aggregate (HFSA) - Driveways	Cubic Metre	200	$_____	$_____
02.06	**Slope Stabilization and Drainage**				
02.06.01	10kg Rip Rap	Cubic Metre	6,900	$_____	$_____
02.06.02	25kg Rip Rap	Cubic Metre	6,400	$_____	$_____
02.07	**River Road Surplus Disposal Site**				
02.07.01	Geogrid	Square Metre	10,800	$_____	$_____
02.07.02	Wick Drains	Metre	4,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03	**SECTION 3 - DRAINAGE**				
03.01	**Culverts**				
03.01.01	Driveway Culverts (450mm HDPE)	Metre	290	$_____	$_____
03.01.02	Driveway Culverts (600mm HDPE)	Metre	30	$_____	$_____
03.01.03	600mm HDPE Culvert	Metre	192	$_____	$_____
03.01.04	750mm HDPE Culvert	Metre	120	$_____	$_____
03.01.05	900mm HDPE Culvert	Metre	120	$_____	$_____
03.01.06	1200mm HDPE Culvert	Metre	95	$_____	$_____
03.01.07	1500mm HDPE Culvert	Metre	160	$_____	$_____
03.01.08	2100mm x 1800mm Concrete Box Manhole @ 272 Street Creek	Metre	4	$_____	$_____
03.01.09	2100mm x 1200mm Concrete Box Manhole @ Potters Creek	Metre	4	$_____	$_____
03.01.10	Extend 1523mm OD Steel Pipe @ York Creek	Metre	17	$_____	$_____
03.01.11	Extend 2436mm OD Steel Pipe @ York Creek	Metre	16	$_____	$_____
03.01.12	Concrete Pipe Anchor	Each	14	$_____	$_____
03.01.13	750mm CL IV Conc Culvert	Metre	2	$_____	$_____
03.02	**Precast Concrete Catch Basins and Manholes**				
03.02.01	Precast Concrete Catch Basins	Each	65	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.02	Precast Concrete Lawn Basins	Each	11	$_____	$_____
03.02.03	2400mm Concrete Manhole	Metre	9	$_____	$_____
03.02.04	1800mm Concrete Manhole	Metre	6	$_____	$_____
03.02.05	1200mm Concrete Manhole	Metre	12	$_____	$_____
03.02.06	1050mm Concrete Manhole	Metre	8	$_____	$_____
03.02.07	Headwall Structure	Each	1	$_____	$_____
03.03	**Catch Basin Leads and Storm Pipes**				
03.03.01	200mm diam PVC Catch Basin Leads	Metre	790	$_____	$_____
03.03.02	250mm diam PVC Catch Basin Leads	Metre	194	$_____	$_____
03.03.03	375mm diam PVC Storm Pipes	Metre	161	$_____	$_____
03.03.04	450mm diam HDPE Storm Pipes	Metre	178	$_____	$_____
03.03.05	450mm diam CL IV Conc Storm Pipes	Metre	29	$_____	$_____
03.03.06	600mm diam CL IV Conc Storm Pipes	Metre	74	$_____	$_____
03.04	**Slope Drainage**				
03.04.01	Supply and Install 50mm PVC Pipe Toe Drains	Metre	1,100	$_____	$_____
03.05	**Culvert Riprap**				
03.05.01	Riprap aprons (Class 25kg)	Cubic Metre	282	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.05.02	Class 25 kg Riprap (York and Whonnock Creek)	Cubic Metre	80	$_____	$_____
03.05.03	Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)	Cubic Metre	1,860	$_____	$_____
03.06	**Emergency Flood Recovery**				
03.06.01	900mm HDPE Storm Pipes	Metre	71	$_____	$_____
03.06.02	1500mm Concrete Manhole	Metre	7	$_____	$_____
03.06.03	750mm HDPE Culvert	Metre	47	$_____	$_____
03.06.04	1800mm HDPE Culvert	Metre	36	$_____	$_____
03.06.05	Riprap Aprons (Class 25 kg)	Cubic Metre	65	$_____	$_____
03.06.06	Class 25 kg Riprap (York Creek Outlet)	Cubic Metre	5	$_____	$_____
03.07	Item Deleted				
03.07.06	Item Deleted				
04	**SECTION 4 - STRUCTURES**				
04.01	**Whonnock Creek Culvert No. 8154**				
04.01.01	Formwork and Falsework	Square Metre	869	$_____	$_____
04.01.02	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.01.03	Cast-In-Place Concrete	Cubic Metre	521	$_____	$_____
04.01.04	Precast Concrete-Box Culverts	L.S.	100%	L.S.	$_____
04.01.05	High Flow Culvert	L.S.	100%	L.S.	$_____
04.01.06	Silane Surface Treatment	Square Metre	410	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.02	**H7 River Rd Wall No. 10422**				
04.02.01	Mechanically Stabilized Earth Wall	Square Metre	273	$_____	$_____
04.02.02	Concrete Swale	Metre	54	$_____	$_____
04.02.03	Steel Sidewalk Fence	Metre	54	$_____	$_____
04.02.04	Silane Surface Treatment	Square Metre	60	$_____	$_____
04.03	**H7 Median Wall at 285th No. 10426**				
04.03.01	Mechanically Stabilized Earth Wall	Square Metre	915	$_____	$_____
04.03.02	Bridge End Fill	Cubic Metre	330	$_____	$_____
04.03.03	Formwork and Falsework	Square Metre	1,150	$_____	$_____
04.03.04	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.03.05	Reinforcing Steel (Stainless)	L.S.	100%	L.S.	$_____
04.03.06	Cast-In-Place Concrete	Cubic Metre	536	$_____	$_____
04.03.07	Steel Sidewalk Fence	Metre	266	$_____	$_____
04.03.08	Silane Surface Treatment	Square Metre	679	$_____	$_____
04.03.09	Parapet Railing	Metre	220	$_____	$_____
04.03.10	Bridge Parapet Transition Barrier	Each	2	$_____	$_____
04.04	**H7 EB at 285th #1 Wall No. 10439**				
04.04.01	Mechanically Stabilized Earth Wall	Square Metre	130	$_____	$_____
04.04.02	Steel Sidewalk Fence	Metre	67	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.04.03	Silane Surface Treatment	Square Metre	74	$_____	$_____
04.05	**H7 EB at 285th #2 Wall No. 10490**				
04.05.01	Mechanically Stabilized Earth Wall	Square Metre	275	$_____	$_____
04.05.02	Steel Sidewalk Fence	Metre	137	$_____	$_____
04.05.03	Silane Surface Treatment	Square Metre	150	$_____	$_____
04.06	**Precast Concrete Interlocking Modular Block Retaining Walls**				
04.06.01	BW-1	Square Metre	165	$_____	$_____
04.06.02	BW-2	Square Metre	30	$_____	$_____
04.06.03	BW-3	Square Metre	100	$_____	$_____
04.06.04	BW-4	Square Metre	250	$_____	$_____
04.06.05	BW-5	Square Metre	260	$_____	$_____
04.06.06	BW-6	Square Metre	265	$_____	$_____
04.06.07	BW-7	Square Metre	465	$_____	$_____
04.06.08	BW-8	Square Metre	270	$_____	$_____
04.06.09	BW-9	Square Metre	180	$_____	$_____
04.06.10	BW-10	Square Metre	110	$_____	$_____
04.06.11	BW-11	Square Metre	340	$_____	$_____
04.06.12	BW-12	Square Metre	275	$_____	$_____
04.06.13	Concrete Swale	Metre	1,240	$_____	$_____
04.06.14	Bridge End Fill	Cubic Metre	9,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.06.15	Pedestrian Sidewalk Fence	Metre	1,240	$_____	$_____
05	**SECTION 5 - PAVING**				
05.01	**End Product Specifications**				
05.01.01	EPS Payment Adjustment (Refer to SP 5.01, SS 502)	P.S.	$55,000.00	P.S.	$55,000.00
05.02	**Supply Asphalt Mix Aggregate in Stockpile**				
05.02.01	Asphalt Mix Aggregate	Tonne	34,000	$_____	$_____
05.03	**Emulsified Penetrating Primer**				
05.03.01	Supply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.03.02	Apply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.04	**Tack Coat**				
05.04.01	Supply Tack Coat	Litre	18,800	$_____	$_____
05.04.02	Apply Tack Coat	Litre	18,800	$_____	$_____
05.05	**Asphalt Pavement**				
05.05.01	Medium Mix Asphalt Pavement - Bottom Lift	Tonne	20,000	$_____	$_____
05.05.02	Medium Mix Asphalt Pavement - Top Lift	Tonne	13,400	$_____	$_____
05.05.03	Medium Mix Asphalt - Driveways	Tonne	500	$_____	$_____
05.06	**Base Repairs**				
05.06.01	Base Repairs (CONDITIONAL ITEM)	Square Metre	3,000	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.07	**Pavement Drainage**				
05.07.01	Asphalt Spillways	Each	150	$_____	$_____
05.07.02	Rip Rap Spillways	Each	182	$_____	$_____
05.08	**Shouldering**				
05.08.01	Shouldering	Cubic Metre	130	$_____	$_____
05.09	**Precast Concrete Barriers**				
05.09.01	Concrete Bull Nose (CBN) - Supply and Install	Each	54	$_____	$_____
05.09.02	Concrete Low Barrier (CLB) - Supply and Install	Each	284	$_____	$_____
05.09.03	Concrete Roadside Barrier (CRB) - Supply and Install	Each	2,148	$_____	$_____
05.09.04	Concrete Roadside Drainage Barrier (CDB) - Supply and Install	Each	117	$_____	$_____
05.09.05	Concrete Median Barrier (CMB) - Supply and Install	Each	1,826	$_____	$_____
05.09.06	Concrete Pier Barrier (CPB) - Supply and Install	Each	574	$_____	$_____
05.09.07	Concrete Transition Barrier (CTB-1E) - Supply and Install	Each	53	$_____	$_____
05.09.08	Concrete Transition Barrier (CTB-2H) - Supply and Install	Each	35	$_____	$_____
05.09.09	Concrete Median Drainage Barrier - Supply and Install	Each	74	$_____	$_____
05.10	**Concrete Works**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.10.01	Concrete Island Curb	Metre	190	$_____	$_____
05.10.02	Concrete Island Infill	Square Metre	230	$_____	$_____
05.10.03	Concrete Curb and Gutter	Metre	200	$_____	$_____
05.10.04	Concrete Sidewalk	Square Metre	266	$_____	$_____
05.10.05	Concrete Driveway Let Down	Square Metre	75	$_____	$_____
05.10.06	Truck Apron Mountable Concrete Curb and Gutter	Metre	100	$_____	$_____
05.11	**Colored Stamped Truck Apron**				
05.11.01	Colored Stamped Truck Apron	Square Metre	45	$_____	$_____
06	**SECTION 6 - ELECTRICAL**				
06.01	**Removal of Existing Electrical Equipment**				
06.01.01	Removal of Existing Electrical Equipment	L.S.	100%	L.S.	$_____
06.02	**Removal of Existing Underground Equipment**				
06.02.01	Removal of Existing Underground Equipment	L.S.	100%	L.S.	$_____
06.03	**Concrete Bases (SS 635.07.06)**				
06.03.01	Type B Concrete Bases	Each	1	$_____	$_____
06.03.02	Type C Concrete Bases	Each	31	$_____	$_____
06.03.03	Type H2 Concrete Bases	Each	2	$_____	$_____
06.03.04	Type L1 Concrete Bases	Each	4	$_____	$_____
06.03.05	Type L2 Concrete Bases	Each	8	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.03.06	Type M2 Concrete Bases	Each	2	$_____	$_____
06.03.07	Type S2 Concrete Bases	Each	3	$_____	$_____
06.03.08	Traffic Controller Base	Each	2	$_____	$_____
06.04	**Plastic Junction Boxes (SS 635.08.01)**				
06.04.01	Type 10 Junction Box	Each	95	$_____	$_____
06.04.02	Type 11 Junction Box	Each	3	$_____	$_____
06.04.03	Type 12 Junction Box	Each	9	$_____	$_____
06.05	**Concrete Junction Boxes (SS 635.08.02)**				
06.05.01	Concrete JB	Each	3	$_____	$_____
06.05.02	Vault	Each	12	$_____	$_____
06.06	**Conduits (SS 635.11.01)**				
06.06.01	25mm RPVC Conduit	Metre	94	$_____	$_____
06.06.02	50mm RPVC Conduit	Metre	16,540	$_____	$_____
06.07	**Trenching and Backfilling (SS 635.12.01)**				
06.07.01	Trenching and Backfilling	Metre	5,575	$_____	$_____
06.08	**Trenchless Conduit Installation (SS 635.13.01)**				
06.08.01	50mm RPVC Conduit with Steel Casing Pipe	Metre	15	$_____	$_____
06.09	**Supply And Installation/Modification Of Signal/AWF Poles (SS 635.19.09)**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09.01	**Hwy 7 at River Road East**				
06.09.01.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.01.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.01.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.01.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.01.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.01.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.02	**Hwy 7 at 272 ST**				
06.09.02.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.02.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.02.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.02.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.02.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.09.02.06	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.02.07	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.03	**Hwy 7 at 280 ST**				
06.09.03.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.03.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.03.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.03.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.03.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.03.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09.04	**Hwy 7 at 287 ST**				
06.09.04.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.04.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.04.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.04.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.04.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.10	**Luminaire Poles (SS 635.19.10)**				
06.10.01	9.0m Luminaire Pole	Each	18	$_____	$_____
06.10.02	11.0m Luminaire Pole	Each	14	$_____	$_____
06.11	**Supply And Installation Of Emergency Vehicle Pre-Emption Equipment (SS 635.19.11)**				
06.11.01	Hwy 7 at River Road East	L.S.	100%	L.S.	$_____
06.11.02	Hwy 7 at 272 ST	L.S.	100%	L.S.	$_____
06.12	**Service Equipment (SS 635.20.01)**				
06.12.01	Service Panel No. 1 (TE -20027-1)	L.S.	100%	L.S.	$_____
06.12.02	Service Panel No. 3 (TE -20027-4)	L.S.	100%	L.S.	$_____
06.12.03	Service Panel No. 4 (TE -20027-6)	L.S.	100%	L.S.	$_____
06.12.04	Service Panel No. 5 (TE -20027-7)	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.13	**Modify Existing Lighting Equipment**				
06.13.01	Replace HPS Cobrahead with LED	Each	3	$_____	$_____
06.14	**Modify Existing Service Equipment**				
06.14.01	Service Panel No. 2 (TE -20027-2)	L.S.	100%	L.S.	$_____
06.14.02	Service Panel No. 1 (TE -04007-2)	L.S.	100%	L.S.	$_____
06.15	**Wiring (SS 635.19.01)**				
06.15.01	Service Area 1 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.02	Service Area 2 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.03	Service Area 3 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.04	Service Area 4 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.05	Service Area 5 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.06	Service Area 1 (TE-04007)	L.S.	100%	L.S.	$_____
06.16	**Supply and Install Traffic Counter Stations (SS 635.22)**				
06.16.01	Short Count Station	Each	1	$_____	$_____
06.17	**Detector Loops (SS 635.22.01)**				
06.17.01	Detector Loop (Round)	Each	2	$_____	$_____
06.17.02	Pre-Formed Loop (Square)	Each	40	$_____	$_____
06.17.03	Pre-Formed Loop (Rectangular)	Each	7	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
07	**SECTION 7 - SIGNING AND PAVEMENT MARKINGS**				
07.01	**Signing**				
07.01.01	Supply and Install Single Post Signs	Each	118	$_____	$_____
07.01.02	Supply and Install Double Post Signs	Each	5	$_____	$_____
07.01.03	Supply and Install Barrier-Mounted Signs	Each	57	$_____	$_____
07.01.04	Item Deleted				
07.02	**Pavement Markings**				
07.02.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.02.02	Temporary Pavement Markings	L.S.	100%	L.S.	$_____
07.02.03	Permanent Pavement Markings - Thermoplastic	Square Metre	296	$_____	$_____
08	**SECTION 8 - FENCING, SEEDING AND LANDSCAPING**				
08.01	**Fencing and Gates**				
08.01.01	Pedestrian Fencing	Metre	140	$_____	$_____
08.01.02	Bicyclist Fencing	Metre	230	$_____	$_____
08.01.03	Type 'B' Fencing	Metre	80	$_____	$_____
08.01.04	Type 'C' Fencing	Metre	650	$_____	$_____
08.01.05	Gates	Each	5	$_____	$_____
08.02	**Revegetation Seeding**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
08.02.01	Revegetation Seeding with HECP	Hectare	6	$_____	$_____
08.03	**Environmental Works at York and Whonnock Creek**				
08.03.01	York Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.02	Whonnock Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.03	Coho Gravels	Tonne	490	$_____	$_____
08.03.04	Large Woody Debris	Each	10	$_____	$_____
08.03.05	Habitat Boulders	Each	42	$_____	$_____
08.03.06	Cellular Confinement System incl. top soil	Square Metre	450	$_____	$_____
09	**SECTION 9 - WHONNOCK CREEK TEMPORARY DETOURS**				
09.01	Engineered Detour Designs	L.S.	100%	L.S.	$_____
09.02	Cold Milling of Tie-ins (CONDITIONAL ITEM)	Square Metre	400	$_____	$_____
09.03	Pavement Cutting	Metre	170	$_____	$_____
09.04	25mm Well Graded Base - Detour (CONDITIONAL ITEM)	Cubic Metre	1,300	$_____	$_____
09.05	Select Granular Sub-Base (CONDITIONAL ITEM)	Cubic Metre	2,200	$_____	$_____
09.06	Asphalt Pavement - Detour (CONDITIONAL ITEM)	Tonne	1,600	$_____	$_____
09.07	Shouldering (CONDITIONAL ITEM)	Cubic Metre	20	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.08	Install and Remove Signs - Detour (CONDITIONAL ITEM)	Each	14	$_____	$_____
09.09	Detour Construction Barrier (CONDITIONAL ITEM)	Metre	900	$_____	$_____
09.10	Detour Pavement Markings (CONDITIONAL ITEM)	Kilometre	1	$_____	$_____
09.11	Temporary Detour Drainage (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
09.12	Detour Removal (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$**_____

All dollar amounts are to be in Canadian Dollars. Do not include GST in any Unit Prices or Extended Amounts, or in the Tender Price. The Ministry will pay any applicable GST under the Contract. Invoices / progress estimates under the Contract must show the calculation of any applicable GST as a separate line item.

Contractor's

Name: _____

Address: _____

_____

City: _____

Postal Code: _____

Phone: _____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Fax: _____

Date: _____

PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

ADDENDUM NO. 1

NOTICE TO BIDDERS

1. TENDER ADVERTISING INSERTION ORDER

INVITATION TO TENDER – SUPPLEMENTAL CONDITIONS OF TENDER

SCT2.2 Tender **Closing/Opening Date Extended** to September 7, 2022.
Time and place remain unchanged.

2. SCHEDULE 3 – SPECIAL PROVISIONS AND APPENDICES

SECTION 1 – GENERAL

1.10 Availability of Site or Right-of-Way

Replace Table 2 with the following:

Table 2: Anticipated Property Possession Dates

Legal Description	Plan Page	Anticipated Possession Date
011-182-393 Lot 2, DL 433, GRP 1, NWD, Plan 5883	104RW	March 31, 2023
014-250-501 Lot 1, DL 433, GRP 1, NWD, Plan 81627	104RW	March 31, 2023
014-250-551 Lot 2, DL 433, GRP 1, NWD, Plan 81627	104RW	September 30, 2022
006-406-947 Parcel "one", (SRW Plan 101), DL 433, GRP 1, NWD, Exc. Part Subdivided by Plan 63143	104RW & 105RW	March 31, 2023
009-455-604 Lot 7, DL 441, GRP 1, NWD, Plan 11107	106RW	August 30, 2022
002-175-088 Lot "B", DL 439 & 441, GRP 1, NWD, Plan 11111	106RW	March 31, 2023
011-355-751 Lot 2, DL 439, GRP 1, NWD, Plan 8949	106RW & 107RW	March 31, 2023
008-352-402 Lot 1, DL 439, GRP 1, NWD, Plan 8949	107RW	March 31, 2023

Legal Description	Plan Page	Anticipated Possession Date
009-749-721 Lot "One" Except: The North 233 Ft; DL 439, GRP 1, NWD, Plan 7536	107RW	March 31, 2023
000-977-900 Lot "One" Except: The North 233 Ft; DL 439, GRP 1, NWD, Plan 7536	107RW	March 31, 2023
002-249-022 Lot 12, DL 439, GRP 1, NWD, Plan 60972	107RW	October 31, 2022
002-671-557 Lot 13, DL 439, GRP 1, NWD, Plan 60972	107RW	October 31, 2022
006-128-084 Lot 9, DL 439, GRP 1, NWD, Plan 41258	107RW & 108RW	September 30, 2022
012-876-011 Parcel “1” (SRW Plan 4598) of Parcel “A” (Ref. Plan 2503), DL 439, GRP 1, NWD	108RW	January 31, 2023
008-900-353 Lot 14, Except: Firstly: Part Sub’d by Plan 23931, Secondly: Part Sub’d by Plan 33032, DL 438, GRP 1, NWD, Plan 7537	108RW	March 31, 2023
000-444-031 Lot 29 Exc.: Part on SRW Plan LMP3310, DL 438, GRP 1, NWD, Plan 47148	108RW	March 31, 2023
002-515-474 Lot 20, DL 438, GRP 1, NWD, Plan 26725	108RW	March 31, 2023
001-768-905 The South 64 ft Lot 12, DL 438, GRP 1, NWD, Plan 7537	108RW	December 31, 2022
011-255-307 Lot 12 Exc.: South 64 ft., DL 438, GRP 1, NWD, Plan 7537	108RW	December 31, 2022
005-638-089 Lot 37, DL 438, GRP 1, NWD, Plan 57927	108RW	March 31, 2023
RD 2342 CLSR	LMP 4774 (LTO)	April 30, 2023
Plan 74332 CLSR / Plan LMP 4774 (LTO) Whonnock IR No. 1	105/106 RW	April 30, 2023

1.18 Traffic Management

(c) Part C – TRAFFIC MANAGEMENT OPERATIONAL DETAILS

(ii) Speed Zones

Table 5: Construction Speed Zone Reduction

In the Second Row, Replace “282nd St” with “280th St”

(iii) Closures and Delays

Table 6: Allowable Road Closure Windows

Replace "20:00 to 22:00" with "10:00 to 12:00"

Replace Table 7 with the following:

Table 7: Dates and Time Periods SLAT May Be Used

DAYS	TIME PERIODS SLAT MAY BE USED
Monday to Thursday	20:00 to 05:30
Friday	20:00 to 07:00 Saturday
Saturday	21:00 to 07:00 Sunday
Sunday	21:00 to 05:30 Monday

Table 8: Approved Work Windows

In the Second Row, Replace "07:00 to 21:00 **Hrs*** *" with "*07:00 to 21:00*"***

1.22 Protection of the Environment

(f) Invasive Plant Management

Disposal of *invasive* plant material and infested soils

Delete the second bullet in its entirety.

(p) Payment

Replace the first paragraph with the following:

Contrary to SS 165.03.06, costs associated with Protection of the Environment will be paid at the Lump Sum Price bid and shall be accepted as full compensation for all costs resulting from Protection of the Environment requirements as defined herein.

1.25 Utilities

Table 12: Utility Relocations, Constraints, and Precursor Works

Status of Utility Relocation:

Replace "Q3 2023 to Q2 2024 TBC*" with "*Q2 2023 to Q2 2024 TBC*".***

1.37 Provisional Sum for Site Modifications

Add the following before the last bullet:

- Controlled excavation

SECTION 2 – GRADING

2.01 Clearing and Grubbing

(d) Merchantable Timber

(ii) Ownership

Replace the clauses with the following:

Contrary to SS 200.01.03(c), Kwantlen First Nation have expressed interest in the merchantable timber in areas of the highway right-of-way and shall have first right of ownership. The merchantable timber that Kwantlen First Nation do not acquire shall become the property of the Contractor.

The following conditions apply:

Merchantable timber shall be:

- Processed in accordance with SS 200.01.03(d).
- Cold-decked at the abandoned mill site on I.R. #1 south of the highway (Station 172+15) or other location(s) determined by the Ministry Representative.
- Ministry Representative will advise the Contractor when Kwantlen First Nation have selected their timber. Contractor shall then have 2 weeks to be remove the balance of timber from the cold-deck site.

2.03 Pavement Cutting, Cold Milling and Pavement Removal

(a) General

Replace the second paragraph with the following:

The existing pavement thicknesses are as indicated in Table 16: Existing Asphalt Thicknesses.

2.04 Roadway and Drainage Excavation

(g) Type A Excavation

(i) General

Add the following after the last paragraph:

There is a likelihood of encountering Type A material during the utility / drainage trench excavation. Payment shall be made in accordance with SS 303.93

(iv) Vibration Control and Monitoring

Replace the clauses with the following:

Whenever vibration damage to adjacent structures including buildings, structures, yard improvement or utilities is possible, the Contractor shall monitor construction activities to ensure that vibrations do not exceed the safe

limits of such structures. The Contractor shall retain a Qualified Vibration Specialist utilizing approved seismographs(s) to establish the safe vibration limits and provide monitoring during construction. The Vibration Specialist shall not be an employee of the Contractor. The Contractor will be required to provide up to four (4) vibration monitors, including geophones. Suggested areas for vibration monitoring include the heritage properties on River Road west of 272nd Street. Vibration monitors must be placed between the Work Site and; buildings, structures, yard improvement or utilities, and are to record vibration data during all work activities.

Blast monitoring geophones should be affixed to bedrock, if available. If there are no bedrock outcrops, the sensors shall be placed directly on pavement or concrete and weighted with a sandbag of suitable size to cover the entire geophone or buried at least 0.25 m and placed on compact soil. Peak Particle Velocity (PPV) from all continuous vibration sources shall not exceed 7.5 mm/s unless otherwise recommended by the Qualified Vibration Specialist and approved by the Ministry Representative. Maximum Peak Particle Velocity (PPV) from all vibration sources shall not exceed 12.5 mm/s.

Payment will be made monthly basis prorated for the percentage of total Work completed as determined by the Ministry Representative. Payment for Vibration Monitoring will be made at the Lump Sum Price bid and shall be full compensation for all things furnished and done.

(l) Type D Excavation – Off-site Disposal (IR #5)

(i) General

Replace the last paragraph with the following:

All material taken to IR#5 shall meet the BC CSR Schedule 3.1 low density residential standards and be acceptable to the disposal facility's Geotechnical Engineer. Testing shall be conducted for every 250 cubic metres of material.

(m) Contaminated Soils – Off-site Disposal

(i) General

Replace the third bullet with the following:

- Type D Excavated materials from Schedule 2 Sites #1 to #10 with concentrations of contaminants of concern (COCs) less than the BC CSR Schedule 3.1 industrial land use standards (IL-), must be disposed of off-site at a legally acceptable receiving site. Excavation and disposal of IL-quality soils from a Schedule 2 Use Site will require notification to the Ministry of the Environment and Climate Change Strategy in accordance with the Stage 14 amendments to EMA and the CSR after March 1, 2023. The Order in Council for the BC CSR Stage 14 amendment was approved by Cabinet on June 1, 2022. The Stage 14 CSR amendment will bring into force the changes to soil relocation legislation introduced in Bill 3: Environmental Management Amendment Act, which received Royal Assent on March 5, 2020. The CSR amendments were deposited on June 6, 2022. Changes to soil relocation come into effect on March 1, 2023.

  Should additional soil characterization be required beyond that provided for disposal any and all costs associated with that work shall be at the

Contractors costs. Any third-party sampling and analysis must be completed by the Contractor's AQP. All results shall be summarized in a technical report(s) and that are signed by the AQP. These reports shall be submitted to the Ministry and must identify the areas of sampling, results and approximate volume of contaminated soils (if confirmed).".

2.07 Slope Stabilization and Drainage

(a) Rip Rap

(i) General

Replace the sub-title "*SECTION 3Measurement*" with: (ii) Measurement

Replace the sub-title "(ii) Payment*" with:*** (iii) Payment

3.01 River Road Surplus Disposal Site

Replace the title: **3.01 River Road Surplus Disposal Site**
With: **2.08 River Road Surplus Disposal Site**

(a) Geogrid

(i) General

Replace the title: "*SECTION 4Installation*" with: (ii) Installation

Replace the title "*SECTION 5Measurement*" with: (iii) Measurement

Replace the sub-title "(ii) Payment*" with:*** (iv) Payment

SECTION 6 – DRAINAGE

Replace the title "*SECTION 6 – DRAINAGE*" with: **SECTION 3 - DRAINAGE**

6.01 Culverts

Replace "6.01 Culverts" with: **3.01 Culverts**

(b) High Density Polyethylene (HDPE)

Replace the sub- title "*SECTION 7Measurement" *with: (ii) Measurement

Replace the sub-title "*SECTION 8Payment*" with: (iii) Payment

(c) Extend Concrete Box Culvert

Replace the sub-title "*SECTION 9Measurement*" with: (ii) Measurement

Replace the sub-title "*SECTION 10 Payment*" with: (iii) Payment

(d) Extend York Creek Steel Pipe

(i) General

Replace **No.** (6) ***with the following***

(6) The Contractor shall install welded steel baffles within the entire lengths of both completed pipes as shown on the drawings and accepted by the Ministry Representative.

(7) Within twenty-four (24) hours of completion of the pipe installation, the Contractor shall inspect the pipe for cracks, distortions, and any other visible signs of leakage or areas of pipe distress. A report of the findings shall be submitted to the Ministry Representative. Any cracks, distortions, points of leakage or signs of distress shall be repaired by the Contractor, at the Contractor's expense, to the satisfaction of the Ministry Representative.

(iii) Payment

Add the following after the first sentence:

Supply and installation of baffles shall be incidental to the Works and no additional payment shall be made.

Add the following after (e):

(f) Extend Concrete Circular Culvert

(i) General

Extend Concrete Circular Culvert shall be installed in accordance with SS 303 and as shown on the Drawings.

The Contractor shall confirm the actual dimensions of the existing concrete circular culvert to confirm dimensions and tie-in with the proposed concrete circular culvert.

All culvert joints shall be watertight, with a manufacturer supplied gasket. Proposed alternatives to address water-tightness at the joints shall be submitted to the Ministry Representative for review and approval. All culvert joints shall be completely wrapped with non-woven geotextile, with a minimum geotextile width of 1.0 m, extending a minimum of 0.5 m beyond the joint in each direction.

(ii) Measurement

Measurement shall be in accordance with SS 303.80.

(iii) Payment

Payment for Concrete Circular Culvert will be made in accordance with SS 303.90.

Further to SS 303.92 payment for Concrete Circular Culvert will be made at the Unit Price bid per Metre of pipe and shall be considered full compensation for all things furnished and done to complete the Work including tie-ins to the existing circular culvert and the proposed manhole (upstream).

There is a likelihood of encountering Type A material during the excavation. Payment shall be made in accordance with SS 303.93.

10.02 Precast Concrete Catch Basins and Manholes

Replace the sub-title: "*10.02 Precast Concrete Catch Basins and Manholes*"
***With:* 3.02 Precast Concrete Catch Basins and Manholes**

10.03 Catch Basin Leads and Storm Pipes

Replace the sub-title: "*10.03 Catch Basin Leads and Storm Pipes*"
With: **3.03 Catch Basin Leads and Storm Pipes**

10.04 Slope Drainage

Replace the sub-title "*10.04 Slope Drainage*" with: **3.04 Slope Drainage**

10.05 Culvert Riprap

Replace the sub-title "*10.05 Culvert Riprap*" with: **3.05 Culvert Riprap**

10.06 Emergency Flood Recovery

Replace the sub-title and clauses "*10.06 Emergency Flood Recovery*" with:

3.06 Emergency Flood Recovery

(a) Storm Pipes

The Contractor shall supply and install the storm pipes (PR. STRM1) as shown on the drawings. Storm Pipes shall be in accordance with SP 3.03.

(b) Culverts

The Contractor shall supply and install the storm culverts (PR. C16 and PR. C17) as shown on the drawings. Culverts shall be in accordance with SP 3.01 (b).

(c) Concrete Manhole

The Contractor shall supply and install the concrete manholes (PR. MH6 and PR. MH7) as shown on the drawings. Concrete Manhole shall be in accordance with SP 3.02 (d).

(d) Riprap

The Contractor shall supply and install riprap (PR. C16, PR. C17, and PR.STRM1) as shown on the drawings. Riprap shall be in accordance with SP 3.05. (a).

SECTION 4 – STRUCTURES

4.09 Precast Concrete Box Culverts

(d) Installation

Replace the sub-title "*SECTION 5Installation of Precast Concrete Box Units*" with: (ii) Installation of Precast Concrete Box Units

Replace the sub-title "*SECTION 6Backfill*" with: (iii) Backfill

6.01 High Flow Culverts

***Replace the sub-title and clauses "*6.01 High Flow Culverts*" with the following*:**

4.10 High Flow Culverts

(a) General

High Flow Culvert shall be a reinforced concrete pipe in accordance with ASTM C 76 – Class III and shall be supplied and installed in accordance with SS 582.

(b) Measurement

Contrary to SS 303.80 measurement shall be per Each.

(c) Payment

Contrary to SS 303.90, payment for High Flow Culvert will be per Lump Sum bid.

Contrary to SS 303.90, excavation shall be considered incidental to the work.

Payment for Riprap at culvert inlets and outlets shall be made in accordance with the riprap section of these Special Provisions.

6.02 Silane Surface treatment

***Replace "*6.02 Silane Surface treatment*" with:* 4.11 Silane Surface Treatment**

6.03 Mechanically Stabilized Earth Walls

Replace: "*6.03 Mechanically Stabilized Earth Walls*"

***with:* 4.12 Mechanically Stabilized Earth Walls**

(j) Supply and Installation

Replace the sub-title "*SECTION 7 Concrete for MSE Wall Panels*"
with: (ii) Concrete for MSE Wall Panels

Replace sub-title "*SECTION 8 Metal Components*" with: (iii) Metal Components

Replace sub-title "*SECTION 9 Foundation Excavation and Sub-excavation*"
with: (iv) Foundation Excavation and Sub-excavation

Replace "(ii) Structural Backfill" ***with:*** (v) Structural Backfill

Replace "(iii) Drainage Structures" ***with:*** (vi) Drainage Structures

9.01 Precast Concrete Interlocking Modular Block Retaining Walls

***Replace the sub-title "*9.01 Precast Concrete Interlocking Modular Block Retaining Walls*" with:* 4.13 Precast Concrete Interlocking Modular Block Retaining Walls**

(d) Wall Drainage

Add the following after the last paragraph:

The Contractor shall supply and install cleanout pipe in accordance with SP303-07. The cleanout pipes shall be the same size and material as the perforated PVC

sub-drain pipe, and installed at least every 30m along the length of the sub-drain or at any step change in the wall.

(i) Payment

Replace the first paragraph with the following:

Payment for Interlocking Concrete Block Walls will be made at the Unit Price Bid per Wall and shall be full compensation for everything furnished and done within as shown on the Drawings. Payment includes quality control, supply and installation of a granular leveling pad, interlocking concrete blocks, geogrid reinforcement, perforated drain pipe including cleanout, drain rock, and geotextile.

9.02 Concrete Swale

Replace **"9.02 Concrete Swale"** ***with:*** **4.14 Concrete Swale**

9.03 Steel Sidewalk Fence

Replace sub-title **"9.03 Steel Sidewalk Fence"** ***with:*** **4.15 Steel Sidewalk Fence**

9.04 Parapet Railing

Replace the sub-title **"9.04 Parapet Railing"** ***with:*** **4.16 Parapet Railing**

9.05 Bridge Parapet Transition Barrier

Replace the sub-title **"9.05 Bridge Parapet Transition Barrier"**
With: **4.17 Bridge Parapet Transition Barrier**

SECTION 10 – PAVING

Replace "SECTION 10 – PAVING" ***with:*** SECTION 5 – PAVING

10.01 General/End Product Specifications

Replace the sub-title **"10.01 General/End Product Specifications"**
With: **5.01 General/End Product Specifications**

10.02 Supply Asphalt Mix Aggregate in Stockpile

Replace the sub-title **"10.02 Supply Asphalt Mix Aggregate in Stockpile"**
With: **5.02 Supply Asphalt Mix Aggregate in Stockpile**

10.03 Emulsified Penetrating Primer

Replace the sub-title "10.03 Emulsified Penetrating Primer***"***
With: **5.03 Emulsified Penetrating Primer**

10.04 Tack Coat

Replace the sub-title "10.04 Tack Coat" with: **5.04 Tack Coat**

10.05 Asphalt Pavement

***Replace the sub-title "*10.05 Asphalt Pavement*" with:* 5.05 Asphalt Pavement**

10.06 Pavement Drainage

***Replace the sub-title "10.06 Pavement Drainage" with:* 5.06 Pavement Drainage**

10.07 Shouldering

***Replace the sub-title "*10.07 Shouldering*" with:* 5.07 Shouldering**

10.08 Precast Concrete Barriers

Replace the sub-title "*10.08 Precast Concrete Barriers*"
***with:* 5.08 Precast Concrete Barriers**

10.09 Concrete Works

***Replace the sub-title "*10.09 Concrete Works*" with:* 5.09 Concrete Works**

SECTION 11 – ELECTRICAL

***Replace the title "*SECTION 11 – ELECTRICAL*" with:* SECTION 6 – ELECTRICAL**

11.01 General

***Replace the sub-title "*11.01 General*" with:* 6.01 General**

11.02 Materials Supplied by the Contractor

Replace the sub-title "*11.02 Materials Supplied by the Contractor*"
***with:* 6.02 Materials Supplied by the Contractor**

11.03 Materials Supplied by the Ministry

Replace the sub-title "*11.03 Materials Supplied by the Ministry*"
***with:* 6.03 Materials Supplied by the Ministry**

11.04 Shop Drawings

***Replace the sub-title "*11.04 Shop Drawings*" with:* 6.04 Shop Drawings**

11.05 Product Data/Information Sheets

Replace the sub-title "*11.05 Product Data/Information Sheets*"
***with:* 6.05 Product Data/Information Sheets**

11.06 Ministry Review of Submissions

Replace the sub-title "*11.06 Ministry Review of Submissions*"
***with:* 6.06 Ministry Review of Submissions**

11.07 Marked-Up Drawings

Replace the sub-title "*11.07 Marked-Up Drawings*"
***with:* 6.07 Marked-Up Drawings**

11.08 Plastic Junction Boxes

***Replace "*11.08 Plastic Junction Boxes*" with:* 6.08 Plastic Junction Boxes**

11.09 Modifications to Existing Lighting and Traffic Signals

***Replace the sub-title "*11.09 Modifications to Existing Lighting and Traffic Signals*" with:* 6.09 Modifications to Existing Lighting and Traffic Signals**

11.10 Removal of Existing Electrical Equipment

Replace the sub-title "*11.10 Removal of Existing Electrical Equipment*"
***with:* 6.10 Removal of Existing Electrical Equipment**

11.11 Removal of Existing Underground Equipment

Replace the sub-title "*11.11 Removal of Existing Underground Equipment*"
***with:* 6.11 Removal of Existing Underground Equipment**

11.12 Removal of Asphalt and Patching

Replace the sub-title "*11.12 Removal of Asphalt and Patching*"
***with:* 6.12 Removal of Removal of Asphalt and Patching**

11.13 Supply and Installation of Concrete Bases

Replace the sub-title "*11.13 Supply and Installation of Concrete Bases*"
***with:* 6.13 Supply and Installation of Concrete Bases**

11.14 Supply and Installation of Plastic Junction Boxes

Replace the sub-title "*11.14 Supply and Installation of Plastic Junction Boxes*"
with: 6.14 Supply and Installation of Plastic Junction Boxes

11.15 Supply and Installation of Concrete Junction Boxes

***Replace the sub-title "*11.15 Supply and Installation of Concrete Junction Boxes*" with:* 6.15 Supply and Installation of Concrete Junction Boxes**

11.16 Supply and Installation of Conduits

Replace the sub-title "*11.16 Supply and Installation of Conduits*"
***with:* 6.16 Supply and Installation of Conduits**

11.17 Trenching and Backfilling

Replace the sub-title "*11.17 Trenching and Backfilling*"
***with:* 6.17 Trenching and Backfilling**

11.18 Trenchless Conduit Installation

***Replace the sub-title "*11.18 Trenchless Conduit Installation"**
***with:* 6.18 Trenchless Conduit Installation**

11.19 Supply and Installation/Modification of Signal/AWF Poles

***Replace "*11.19 Supply and Installation/Modification of Signal/AWF Poles*" with*: 6.19 Supply and Installation/Modification of Signal/AWF Poles**

11.20 Supply and Installation of Luminaire Poles

***Replace the sub-title "*11.20 Supply and Installation of Luminaire Poles*" with:* 6.20 Supply and Installation of Luminaire Poles**

11.21 Supply and Installation of Emergency Vehicle Pre-Emption Equipment

***Replace the sub-title "*11.21 Supply and Installation of Emergency Vehicle Pre-Emption Equipment*" with:* 6.21 Supply and Installation of Emergency Vehicle Pre-Emption Equipment**

11.22 Supply and Installation of Service Equipment

***Replace "*11.22 Supply and Installation of Service Equipment*" with:* 6.22 Supply and Installation of Service Equipment**

11.23 Modify Existing Lighting Equipment

***Replace "*11.23 Modify Existing Lighting Equipment*" with:* 6.23 Modify Existing Lighting Equipment**

11.24 Modify Existing Service Equipment

***Replace the sub-title "*11.24 Modify Existing Service Equipment*" with*: 6.24 Modify Existing Service Equipment**

11.25 Supply and Installation of Wiring

***Replace the sub-title "*11.25 Supply and Installation of Wiring*" with:* 6.25 Supply and Installation of Wiring**

11.26 Supply and Install Traffic Counter Stations

***Replace the sub-title "*11.26 Supply and Install Traffic Counter Stations*" with:* 6.26 Supply and Install Traffic Counter Stations**

11.27 Supply and Installation of Detector Loops

***Replace the sub-title "*11.27 Supply and Installation of Detector Loops*" with:* 6.27 Supply and Installation of Detector Loops**

SECTION 12 – SIGNING AND PAVEMENT MARKINGS

***Replace the title "*SECTION 12 – SIGNING AND PAVEMENT MARKINGS*" with:* SECTION 7 – SIGNING AND PAVEMENT MARKINGS**

12.01 Signs

***Replace the sub-title "*12.01 Signs*" with:* 7.01 Signs**

12.02 Supply and Install New Signs

***Replace the sub-title "*12.02 Supply and Install New Signs*" with:* 7.02 Supply and Install New Signs**

(c) Signs

Delete the last paragraph in its entirety.

12.03 Pavement Markings

***Replace the sub-title "*12.03 Pavement Markings*" with:* 7.03 Pavement Markings**

SECTION 13 – FENCING, SEEDING AND LANDSCAPING

***Replace the "*SECTION 13 – FENCING, SEEDING AND LANDSCAPING*" with*: SECTION 8 – FENCING, SEEDING AND LANDSCAPING**

13.01 Fencing and Gates

***Replace the sub-title "*13.01 Fencing and Gates*" with:* 8.01 Fencing and Gates**

(ii) Fencing

Add the following after the first paragraph:

The Contractor shall replace existing property fencing impacted by the Project with like-for-like fencing or as approved by the Ministry Representative.

13.02 Revegetation Seeding

***Replace sub-title "*13.02 Revegetation Seeding*" with:* 8.02 Revegetation Seeding**

13.03 Topsoil and Landscaping

***Replace the sub-title "*13.03 Topsoil and Landscaping*" with:* 8.03 Topsoil and Landscaping**

13.04 Environmental Works at York Creek and Whonnock Creek

***Replace the sub-title "13.04* Environmental Works at York Creek and Whonnock Creek*" with:* 8.04 Environmental Works at York Creek and Whonnock Creek**

SECTION 14 – WHONNOCK CREEK TEMPORARY DETOURS

***Replace the title "*SECTION 14 – WHONNOCK CREEK TEMPORARY DETOURS*" with:* SECTION 9 – WHONNOCK CREEK TEMPORARY DETOURS**

14.01 Whonnock Creek Temporary Detours

***Replace the sub-title "*14.01 Whonnock Creek Temporary Detours*" with:* 9.01 Whonnock Creek Temporary Detours**

3. SCHEDULE 4 – DRAWINGS

Revision 1 Drawings are issued for the following:

Drawing Number
R1-952-702
R1-952-703
R1-952-704
R1-952-706
R1-952-707
R1-952-716
R1-952-719
R1-952-720
R1-952-721
R1-952-730
R1-952-731
R1-952-732
R1-952-733

4. SCHEDULE 7 - SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

The following items are amended:

Item No.	*Revision*
03.01.03	Revised Quantity
03.01.04	Revised Quantity
03.01.05	Revised Quantity
03.01.08	Revised Item Description
03.01.09	Revised Item Description
03.01.10	Revised Item Description
03.01.11	Revised Item Description
03.01.13	New Item Added
03.04.01	Revised Quantity
03.06	Revised Item Description
03.06.01	Revised Item Description and Unit of Measure
03.06.02	New Item Added
03.06.03	New Item Added
03.06.04	New Item Added
03.06.05	New Item Added
03.06.06	New Item Added
04.06.04	Revised Quantity
04.06.07	Revised Quantity
04.06.08	Revised Quantity
04.06.10	Revised Quantity
04.06.13	Revised Quantity
04.06.15	Revised Quantity
07.01.04	Item Deleted
08.03.06	Revised Quantity

A REPLACEMENT SCHEDULE 7, DATED AUGUST 17, 2022, AND MARKED AS **'REPLACEMENT A'** IS ATTACHED AND MUST **BE USED FOR TENDER PURPOSES.**

5. RESPONSES TO CONTRACTOR INQUIRIES

QUESTION 1: Will there be an updated Archaeological Impact Assessment Status Memo?

ANSWER 1: We are preparing an updated version of this memo. As per the SP 1.05 Availability of Relevant Publications, the Archaeological Documents will be made available upon receipt, by the Ministry Contact Person, of a fully completed and executed Confidentiality Undertaking (attached to the Special Provisions).

The fully completed and executed Confidentiality Undertaking must be received by the Ministry Contact Person no less than ten (10) days prior to the Closing Date. If a compliant Confidentiality Undertaking is received by the Ministry Contact Person within the time specified, the Archaeological Documents will be provided within three (3) days.

QUESTION 2: Bid item 02.02.02 Abandon existing culverts: the bid quantity shows 120 m^3 of infill but I can only see about 100m of 250mm culvert at 272nd Street that is labeled as 'abandon' or infill. This would equate to roughly 5 m^3 of infill. Can you please indicate which other culverts/pipes require infill?

ANSWER 2: The storm system referenced is shown on Sheet R1-952-704 and is annotated "Abandon Ex. Stm." In accordance with SP 2.02 (c) and a General Drainage Note (Notes 12) on Sheet R1-952-751 which states: "All existing culverts within the project limits to be removed or abandoned in place", culverts deeper than 2.0m shall be abandoned and infilled. The 120m^3 represents the volume of concrete required to infill culverts deeper than 2m. This includes infilling a section of or the entire length of existing culverts within proximity of the following proposed culverts: C01, C03, C04, C08, C11, C12, C13, and C14.

QUESTION 3: Bid item 04.06.10 Block Wall #10: the bid quantity shows 200 m^2 of retaining wall but the drawings indicate only 111 m^2. Please confirm this quantity should be 111 m^2 as per the drawings.

ANSWER 3: This quantity should be 111m^2 as per the Drawings, rounded to 110m^2. Revised in Schedule 7 in this Addendum No. 1.

QUESTION 4: In regard to the drainage culverts, storm pipes, and emergency flood recovery items (Section 03.01, 03.03, and 03.07):

- The total quantities for 600mm HDPE, 750mm HDPE, 900mm HDPE, and 1500mm HDPE do not match what is shown on the drawings (out by 50m or more in some cases). Please confirm these quantities.

ANSWER 4: The quantities for culverts is revised in Schedule 7 in this Addendum No. 1 as follows:

- 600mm HDPE = 192m (170m plus 22m, also see Answer 17)
- 750mm HDPE = 118m (rounded to 120)
- 900mm HDEP = 120m
- 1200mm HDPE and 1500mm HDPE to remain as shown.

QUESTION 5: 1600mm HDPE and 750mm concrete pipe are not shown in the bid units at all but are shown on the drawings.

ANSWER 5: There are no 1600mm HDPE pipes in the design. This is a CAD default error and will be revised in the Drawings. All 1600mm HDPE pipes should be 1500mm HDPE as shown

in the bid units. The 1.6m length of 750mm concrete storm pipe at C03 shown in Drawing No. R1-952-713 will be rounded to 2.0m and added to the Schedule 7 bid units.

QUESTION 6: Please clearly indicate which culverts are designated as 'Emergency Flood Recovery'. Are these expected to be installed early on in the project?

ANSWER 6: Culverts PR. C16 and PR. C17 and storm sewer PR. STRM1 are designated as "Emergency Flood Recovery". This designation is in place solely to assist in tracking costs associated with earlier flood damage to these elements and does not indicate any specific or unique treatment required by the Contractor, including scheduling.

QUESTION 7: The fencing requirements don't seem to be shown on the drawings anywhere. Could you please provide these details?

ANSWER 7: In general, fences are required at top of lock block walls, top of structural walls, barriers in York and Whonnock Creek area, and a section of 272nd St (L200) sidewalk. There are two types of fences required for this project - Pedestrian Fence and Bicycle Fence. Contractor shall refer the MOTI's Standard Specifications SP741-07.01 and SP741-07.02 for details as noted on the drawings. Below is a list of drawing sets which show the fences.

- R1-952-300 series
- R1-952-800 series
- Structural drawings

In addition to the above, some of the existing property fences (Type B or C) will be impacted by the project. The Contractor shall replace any property fences impacted by the Project with like for like fences or as approved by the Ministry Representative.

QUESTION 8: There are two bid items for cellular confinement, #03.06.01 and #08.03.06. Bid item 03.06.01 is for the York Creek Inlet with a quantity of 120 m^2 which matches the drawing for that area. Bid item #08.03.06 is for York and Whonnock Creek with a quantity of 560 m^2. However, the drawing for Whonnock Creek only indicates about 340 m^2. Please indicate where the remaining cellular confinement area is.

ANSWER 8: Cellular confinement systems are only located at York and Whonnock Creek. The areas for the cellular confinement systems are 120 m^2 for York Creek and 330 m^2 for Whonnock Creek. Item No. 03.06.01 Cellular Confinement System is redundant and has been deleted in this Addendum No. 1. The total area has been captured in the revised Schedule 7 Item No. 08.03.06.

QUESTION 9: Please confirm that geogrid reinforcement is not required behind the lock block retaining walls.

ANSWER 9: No, geogrid reinforcement is not required. The three block high walls were designed without it.

QUESTION 10: Can we have more details on the casing pipe (Item 06.08.01). The drawings refer to McElhanney Dwg CTA-3 but I can't locate that drawing.

ANSWER 10: The CTA drawing is provided as a Schedule T3 Specific Reference Drawing.

QUESTION 11: Just want to confirm that no pre-emption is required at 280 St & 287 St. We just completed a couple of signals in Mission that had pre-emption.

ANSWER 11: There is no emergency pre-emption at 280 St. There is existing emergency pre-emption at 287 St, which is to remain. Bidders also refer to STS/TEC.
QUESTION 12: 06.17, Just want to confirm preformed loops are required.

ANSWER 12: Yes, MoTI now requests all loops are to be preformed in this region.

QUESTION 13: 07.01.04 – Relocate advance warning flasher, where are these located? The new advance warning signs are in the pay items with the signals.

ANSWER 13: All Advance Warning Flashers are new as per SP6.19 and Electrical Drawings. Schedule 7 Item No. 07.01.04 “Relocate Advance Warning Flasher” has been deleted.

QUESTION 14: Section 11.09 Modifications to Existing Lighting and Traffic Signals reads that any modifications to the traffic controllers will be performed by the Ministry Representative. Will this be paid for by the Ministry?

ANSWER 14: Done by Ministry’s Electrical Maintenance Contractor, paid by MOTI.

QUESTION 15: I believe I have found a discrepancy between the drawing and SoQ for 1500mm and 1600mm HDPE Culvert – please clarify.

Item 03.01.07 1500mm HDPE Culvert shows 160 meters and there is no Item for 1600mm HDPE Culvert

- Dwg R1-952-711 shows 42m of 1500mm HDPE Culvert
- Dwg R1-952-714 shows 40m of 1500mm HDPE Culvert
- Dwg R1-952-716 shows 30m of 1600mm HDPE Culvert
- Dwg R1-952-730 shows 48m of 1600mm HDPE Culvert

The drawings show an aggregate of 160m of 1500 & 1600 HDPE Culvert – are we to assume that all of this culvert is 1500mm HDPE or should there be an Item added for 1600mm HDPE Culvert?

ANSWER 15: All 1600mm HDPE culverts should be 1500mm HDPE.

QUESTION 16: I believe there are a couple of storm items for which there are no pay items:

- DWG R1-952-713 shows 2.5lm of 750mm CLIV Concrete Culvert
- DWG R1-952-732 shows 7.5m of 750mm CLIV Concrete Culvert
- DWG R1-952-716 shows MH5 as a 2000mm x 1200mm Box Manhole

ANSWER 16:

- For the DWG R1-952-713, it shows 1.6m of 750mm CLIV Concrete Culvert, Schedule 7 quantity has been rounded to 2m.

- For the DWG R1-952-732, it shows 7.5m of 750mm CLIV Concrete Culvert, this section of 750mm pipe should be HDPE and falls under the 750mm HDPE Culvert quantity in SP 3.06 Emergency Flood Recovery.

- For the DWG R1-952-716 shows MH5 as a 2000mm x 1200mm Box Manhole, the MH5 2000mm x 1200mm box MH is called out as “Extend 2100mm x 1200mm Concrete Box Manhole at Potter Creek” (03.01.09).

QUESTION 17: The SoQ calls up Item 03.02.07 1ea Headwall Structure – I cannot find a headwall on the drawings – please inform whether it’s an inlet or outlet and pipe diameter and type for which it is required.

ANSWER 17: There is a headwall structure shown on Drawing No. R1-952-704. The headwall collects drainage from the ditch between River Road and Highway 7 (~Sta 159+25) and acts as an inlet for PR. C03.
The inlet pipe between the headwall and PR C03 is ~22m of 600mm HDPE. Item No. 03.01.03 - 600mm DPE Culvert is revised in Schedule 7 in this Addendum No. 1.

QUESTION 18: There is approximately 1300lm of 150mm Subdrain shown on the drainage drawings – I cannot find any reference to this subdrain in the Special Provisions nor in the SoQ – there used to be a detail drawing for subdrains in the Standard Specifications that showed details of the subdrain installation, details of subdrain cleanouts and maybe frequency of cleanouts, however, I cannot find such in the current specifications. Where do I find such details? Should there be an item in the SoQ for 150mm Subdrain? Should there be an item in the SoQ for Subdrain Cleanouts?

ANSWER 18: Subdrain (perforated PVC sub-drain pipe) behind lock block walls is incidental to the work as per SP 4.13 Precast Concrete Interlocking Modular Block Retaining Walls (d) Wall Drainage and (i) Payment on Page 124 and 125 respectively. Please refer to 2020 Ministry’s Standard Specification for Highway Construction Section 303 SP 303-07 for details. Subdrain cleanout shall be installed at least every 30m or at any step change in the wall.

QUESTION 19: Please clarify where we can find the Appendix Suggested Areas for Vibration Monitoring July 2018 as noted in page 77 of the Schedule 3-Special provisions.

ANSWER 19: See updated Vibration Control and Monitoring clause in 2.04 (g) (iv) in this Addendum No. 1.

Replacement: A **Replacement Date:** 2022/08/17

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Protection of the Environment	L.S.	100%	L.S.	$_____
01.04	Traffic Management	L.S.	100%	L.S.	$_____
01.05	Controlled Excavation - Provisional Sum (Refer to SP 1.28)	P.S.	$500,000.00	P.S.	$500,000.00
01.06	Site Modifications - Provisional Sum (Refer to SP 1.37)	P.S.	$3,800,000.00	P.S.	$3,800,000.00
02	**SECTION 2 - GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	12.40	$_____	$_____
02.02	**Removal and Relocation of Existing Works**				
02.02.01	Remove Existing Culverts by Excavation	Metre	200	$_____	$_____
02.02.02	Abandon Existing Culverts	Cubic Metre	120	$_____	$_____
02.02.03	Remove and Dispose of Existing Whonnock Creek Culvert	L.S.	100%	L.S.	$_____
02.02.04	Remove Existing Concrete Catch Basins and Drainage Lead Pipes	Each	14	$_____	$_____
02.02.05	Remove and Dispose of Existing Concrete Barriers	Metre	550	$_____	$_____
02.02.06	Remove Existing Fencing	Metre	300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.02.07	Remove Existing Gates	Each	5	$_____	$_____
02.02.08	Demolition of Existing Residential Structures	Each	1	$_____	$_____
02.02.09	Remove Septic Tanks and Fields (CONDITIONAL ITEM)	Each	6	$_____	$_____
02.02.10	Well Decommissioning	Each	37	$_____	$_____
02.02.11	Slope Inclinometer Decommissioning (CONDITIONAL ITEM)	Each	2	$_____	$_____
02.02.12	Remove Existing Signs	Each	76	$_____	$_____
02.03	**Pavement Cutting, Cold Milling and Pavement Removal**				
02.03.01	Pavement Cutting	Metre	2,700	$_____	$_____
02.03.02	Cold Milling - up to 50mm Depth	Square Metre	2,380	$_____	$_____
02.03.03	Cold Milling - greater than 50mm Depth	Square Metre	3,600	$_____	$_____
02.03.04	Pavement Removal	Square Metre	46,900	$_____	$_____
02.04	**Roadway and Drainage Excavation**				
02.04.01	Organic Stripping	Cubic Metre	32,850	$_____	$_____
02.04.02	Vibration Control and Monitoring	L.S.	100%	L.S.	$_____
02.04.03	Type A Excavation	Cubic Metre	8,800	$_____	$_____
02.04.04	Type D Excavation to Embankment	Cubic Metre	15,400	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.04.05	Type D Excavation to River Road Disposal Site	Cubic Metre	14,400	$_____	$_____
02.04.06	Type D for Off-Site Disposal (IR #5)	Cubic Metre	116,900	$_____	$_____
02.04.07	Contaminated Soils (IL+) - Off-Site Disposal	Tonne	20,200	$_____	$_____
02.04.08	Contaminated Soils (Hazardous Material) - Off-Site Disposal	Tonne	60	$_____	$_____
02.04.09	Contaminated Soils (IL-) - Off-Site Disposal	Tonne	12,800	$_____	$_____
02.04.10	Granular Borrow	Cubic Metre	37,100	$_____	$_____
02.05	**Granular Materials**				
02.05.01	Select Granular Sub-Base Recycled Concrete Aggregate Material (RCAM)	Cubic Metre	41,200	$_____	$_____
02.05.02	Select Granular Sub-Base	Cubic Metre	8,100	$_____	$_____
02.05.03	25mm Well Graded Base	Cubic Metre	36,300	$_____	$_____
02.05.04	High Fines Surfacing Aggregate (HFSA) - Driveways	Cubic Metre	200	$_____	$_____
02.06	**Slope Stabilization and Drainage**				
02.06.01	10kg Rip Rap	Cubic Metre	6,900	$_____	$_____
02.06.02	25kg Rip Rap	Cubic Metre	6,400	$_____	$_____
02.07	**River Road Surplus Disposal Site**				
02.07.01	Geogrid	Square Metre	10,800	$_____	$_____
02.07.02	Wick Drains	Metre	5,400	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03	**SECTION 3 - DRAINAGE**				
03.01	**Culverts**				
03.01.01	Driveway Culverts (450mm HDPE)	Metre	290	$_____	$_____
03.01.02	Driveway Culverts (600mm HDPE)	Metre	30	$_____	$_____
03.01.03	600mm HDPE Culvert	Metre	192	$_____	$_____
03.01.04	750mm HDPE Culvert	Metre	120	$_____	$_____
03.01.05	900mm HDPE Culvert	Metre	120	$_____	$_____
03.01.06	1200mm HDPE Culvert	Metre	95	$_____	$_____
03.01.07	1500mm HDPE Culvert	Metre	160	$_____	$_____
03.01.08	2100mm x 1800mm Concrete Box Manhole @ 272 Street Creek	Metre	4	$_____	$_____
03.01.09	2100mm x 1200mm Concrete Box Manhole @ Potters Creek	Metre	4	$_____	$_____
03.01.10	Extend 1523mm OD Steel Pipe @ York Creek	Metre	17	$_____	$_____
03.01.11	Extend 2436mm OD Steel Pipe @ York Creek	Metre	16	$_____	$_____
03.01.12	Concrete Pipe Anchor	Each	14	$_____	$_____
03.01.13	750mm CL IV Conc Culvert	Metre	2	$_____	$_____
03.02	**Precast Concrete Catch Basins and Manholes**				
03.02.01	Precast Concrete Catch Basins	Each	65	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.02	Precast Concrete Lawn Basins	Each	11	$_____	$_____
03.02.03	2400mm Concrete Manhole	Metre	9	$_____	$_____
03.02.04	1800mm Concrete Manhole	Metre	6	$_____	$_____
03.02.05	1200mm Concrete Manhole	Metre	12	$_____	$_____
03.02.06	1050mm Concrete Manhole	Metre	8	$_____	$_____
03.02.07	Headwall Structure	Each	1	$_____	$_____
03.03	**Catch Basin Leads and Storm Pipes**				
03.03.01	200mm diam PVC Catch Basin Leads	Metre	790	$_____	$_____
03.03.02	250mm diam PVC Catch Basin Leads	Metre	194	$_____	$_____
03.03.03	375mm diam PVC Storm Pipes	Metre	161	$_____	$_____
03.03.04	450mm diam HDPE Storm Pipes	Metre	178	$_____	$_____
03.03.05	450mm diam CL IV Conc Storm Pipes	Metre	29	$_____	$_____
03.03.06	600mm diam CL IV Conc Storm Pipes	Metre	74	$_____	$_____
03.04	**Slope Drainage**				
03.04.01	Supply and Install 50mm PVC Pipe Toe Drains	Metre	1,100	$_____	$_____
03.05	**Culvert Riprap**				
03.05.01	Riprap aprons (Class 25kg)	Cubic Metre	282	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

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Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.05.02	Class 25 kg Riprap (York and Whonnock Creek)	Cubic Metre	80	$_____	$_____
03.05.03	Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)	Cubic Metre	1,860	$_____	$_____
03.06	**Emergency Flood Recovery**				
03.06.01	900mm HDPE Storm Pipes	Metre	71	$_____	$_____
03.06.02	1500mm Concrete Manhole	Metre	7	$_____	$_____
03.06.03	750mm HDPE Culvert	Metre	47	$_____	$_____
03.06.04	1800mm HDPE Culvert	Metre	36	$_____	$_____
03.06.05	Riprap Aprons (Class 25 kg)	Cubic Metre	65	$_____	$_____
03.06.06	Class 25 kg Riprap (York Creek Outlet)	Cubic Metre	5	$_____	$_____
03.07	Item Deleted				
03.07.06	Item Deleted				
04	**SECTION 4 - STRUCTURES**				
04.01	**Whonnock Creek Culvert No. 8154**				
04.01.01	Formwork and Falsework	Square Metre	869	$_____	$_____
04.01.02	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.01.03	Cast-In-Place Concrete	Cubic Metre	521	$_____	$_____
04.01.04	Precast Concrete-Box Culverts	L.S.	100%	L.S.	$_____
04.01.05	High Flow Culvert	L.S.	100%	L.S.	$_____
04.01.06	Silane Surface Treatment	Square Metre	410	$_____	$_____

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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.02	**H7 River Rd Wall No. 10422**				
04.02.01	Mechanically Stabilized Earth Wall	Square Metre	273	$_____	$_____
04.02.02	Concrete Swale	Metre	54	$_____	$_____
04.02.03	Steel Sidewalk Fence	Metre	54	$_____	$_____
04.02.04	Silane Surface Treatment	Square Metre	60	$_____	$_____
04.03	**H7 Median Wall at 285th No. 10426**				
04.03.01	Mechanically Stabilized Earth Wall	Square Metre	915	$_____	$_____
04.03.02	Bridge End Fill	Cubic Metre	330	$_____	$_____
04.03.03	Formwork and Falsework	Square Metre	1,150	$_____	$_____
04.03.04	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.03.05	Reinforcing Steel (Stainless)	L.S.	100%	L.S.	$_____
04.03.06	Cast-In-Place Concrete	Cubic Metre	536	$_____	$_____
04.03.07	Steel Sidewalk Fence	Metre	266	$_____	$_____
04.03.08	Silane Surface Treatment	Square Metre	679	$_____	$_____
04.03.09	Parapet Railing	Metre	220	$_____	$_____
04.03.10	Bridge Parapet Transition Barrier	Each	2	$_____	$_____
04.04	**H7 EB at 285th #1 Wall No. 10439**				
04.04.01	Mechanically Stabilized Earth Wall	Square Metre	130	$_____	$_____
04.04.02	Steel Sidewalk Fence	Metre	67	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.04.03	Silane Surface Treatment	Square Metre	74	$_____	$_____
04.05	**H7 EB at 285th #2 Wall No. 10490**				
04.05.01	Mechanically Stabilized Earth Wall	Square Metre	275	$_____	$_____
04.05.02	Steel Sidewalk Fence	Metre	137	$_____	$_____
04.05.03	Silane Surface Treatment	Square Metre	150	$_____	$_____
04.06	**Precast Concrete Interlocking Modular Block Retaining Walls**				
04.06.01	BW-1	Square Metre	165	$_____	$_____
04.06.02	BW-2	Square Metre	30	$_____	$_____
04.06.03	BW-3	Square Metre	100	$_____	$_____
04.06.04	BW-4	Square Metre	250	$_____	$_____
04.06.05	BW-5	Square Metre	260	$_____	$_____
04.06.06	BW-6	Square Metre	265	$_____	$_____
04.06.07	BW-7	Square Metre	465	$_____	$_____
04.06.08	BW-8	Square Metre	270	$_____	$_____
04.06.09	BW-9	Square Metre	180	$_____	$_____
04.06.10	BW-10	Square Metre	110	$_____	$_____
04.06.11	BW-11	Square Metre	340	$_____	$_____
04.06.12	BW-12	Square Metre	275	$_____	$_____
04.06.13	Concrete Swale	Metre	1,240	$_____	$_____
04.06.14	Bridge End Fill	Cubic Metre	9,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.06.15	Pedestrian Sidewalk Fence	Metre	1,240	$_____	$_____
05	**SECTION 5 - PAVING**				
05.01	**End Product Specifications**				
05.01.01	EPS Payment Adjustment (Refer to SP 5.01, SS 502)	P.S.	$55,000.00	P.S.	$55,000.00
05.02	**Supply Asphalt Mix Aggregate in Stockpile**				
05.02.01	Asphalt Mix Aggregate	Tonne	34,000	$_____	$_____
05.03	**Emulsified Penetrating Primer**				
05.03.01	Supply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.03.02	Apply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.04	**Tack Coat**				
05.04.01	Supply Tack Coat	Litre	18,800	$_____	$_____
05.04.02	Apply Tack Coat	Litre	18,800	$_____	$_____
05.05	**Asphalt Pavement**				
05.05.01	Medium Mix Asphalt Pavement - Bottom Lift	Tonne	20,000	$_____	$_____
05.05.02	Medium Mix Asphalt Pavement - Top Lift	Tonne	13,400	$_____	$_____
05.05.03	Medium Mix Asphalt - Driveways	Tonne	420	$_____	$_____
05.06	**Base Repairs**				
05.06.01	Base Repairs (CONDITIONAL ITEM)	Square Metre	3,000	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.07	**Pavement Drainage**				
05.07.01	Asphalt Spillways	Each	150	$_____	$_____
05.07.02	Rip Rap Spillways	Each	182	$_____	$_____
05.08	**Shouldering**				
05.08.01	Shouldering	Cubic Metre	130	$_____	$_____
05.09	**Precast Concrete Barriers**				
05.09.01	Concrete Bull Nose (CBN) - Supply and Install	Each	54	$_____	$_____
05.09.02	Concrete Low Barrier (CLB) - Supply and Install	Each	284	$_____	$_____
05.09.03	Concrete Roadside Barrier (CRB) - Supply and Install	Each	2,148	$_____	$_____
05.09.04	Concrete Roadside Drainage Barrier (CDB) - Supply and Install	Each	117	$_____	$_____
05.09.05	Concrete Median Barrier (CMB) - Supply and Install	Each	1,826	$_____	$_____
05.09.06	Concrete Pier Barrier (CPB) - Supply and Install	Each	574	$_____	$_____
05.09.07	Concrete Transition Barrier (CTB-1E) - Supply and Install	Each	53	$_____	$_____
05.09.08	Concrete Transition Barrier (CTB-2H) - Supply and Install	Each	35	$_____	$_____
05.09.09	Concrete Median Drainage Barrier - Supply and Install	Each	74	$_____	$_____
05.10	**Concrete Works**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
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Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.10.01	Concrete Island Curb	Metre	269	$_____	$_____
05.10.02	Concrete Island Infill	Square Metre	364	$_____	$_____
05.10.03	Concrete Curb and Gutter	Metre	128	$_____	$_____
05.10.04	Concrete Sidewalk	Square Metre	266	$_____	$_____
05.10.05	Concrete Driveway Let Down	Square Metre	75	$_____	$_____
06	**SECTION 6 - ELECTRICAL**				
06.01	**Removal of Existing Electrical Equipment**				
06.01.01	Removal of Existing Electrical Equipment	L.S.	100%	L.S.	$_____
06.02	**Removal of Existing Underground Equipment**				
06.02.01	Removal of Existing Underground Equipment	L.S.	100%	L.S.	$_____
06.03	**Concrete Bases (SS 635.07.06)**				
06.03.01	Type B Concrete Bases	Each	1	$_____	$_____
06.03.02	Type C Concrete Bases	Each	31	$_____	$_____
06.03.03	Type H2 Concrete Bases	Each	2	$_____	$_____
06.03.04	Type L1 Concrete Bases	Each	4	$_____	$_____
06.03.05	Type L2 Concrete Bases	Each	8	$_____	$_____
06.03.06	Type M2 Concrete Bases	Each	2	$_____	$_____
06.03.07	Type S2 Concrete Bases	Each	3	$_____	$_____
06.03.08	Traffic Controller Base	Each	2	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.04	**Plastic Junction Boxes (SS 635.08.01)**				
06.04.01	Type 10 Junction Box	Each	95	$_____	$_____
06.04.02	Type 11 Junction Box	Each	3	$_____	$_____
06.04.03	Type 12 Junction Box	Each	9	$_____	$_____
06.05	**Concrete Junction Boxes (SS 635.08.02)**				
06.05.01	Concrete JB	Each	3	$_____	$_____
06.05.02	Vault	Each	12	$_____	$_____
06.06	**Conduits (SS 635.11.01)**				
06.06.01	25mm RPVC Conduit	Metre	94	$_____	$_____
06.06.02	50mm RPVC Conduit	Metre	16,540	$_____	$_____
06.07	**Trenching and Backfilling (SS 635.12.01)**				
06.07.01	Trenching and Backfilling	Metre	5,575	$_____	$_____
06.08	**Trenchless Conduit Installation (SS 635.13.01)**				
06.08.01	50mm RPVC Conduit with Steel Casing Pipe	Metre	15	$_____	$_____
06.09	**Supply And Installation/Modification Of Signal/AWF Poles (SS 635.19.09)**				
06.09.01	**Hwy 7 at River Road East**				
06.09.01.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.01.02	Signal Pole 2	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09.01.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.01.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.01.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.01.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.02	**Hwy 7 at 272 ST**				
06.09.02.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.02.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.02.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.02.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.02.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.09.02.06	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.02.07	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.03	**Hwy 7 at 280 ST**				
06.09.03.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.03.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.03.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.03.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.03.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.03.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.04	**Hwy 7 at 287 ST**				
06.09.04.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.04.02	Signal Pole 2	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09.04.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.04.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.04.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.10	**Luminaire Poles (SS 635.19.10)**				
06.10.01	9.0m Luminaire Pole	Each	18	$_____	$_____
06.10.02	11.0m Luminaire Pole	Each	14	$_____	$_____
06.11	**Supply And Installation Of Emergency Vehicle Pre-Emption Equipment (SS 635.19.11)**				
06.11.01	Hwy 7 at River Road East	L.S.	100%	L.S.	$_____
06.11.02	Hwy 7 at 272 ST	L.S.	100%	L.S.	$_____
06.12	**Service Equipment (SS 635.20.01)**				
06.12.01	Service Panel No. 1 (TE -20027-1)	L.S.	100%	L.S.	$_____
06.12.02	Service Panel No. 3 (TE -20027-4)	L.S.	100%	L.S.	$_____
06.12.03	Service Panel No. 4 (TE -20027-6)	L.S.	100%	L.S.	$_____
06.12.04	Service Panel No. 5 (TE -20027-7)	L.S.	100%	L.S.	$_____
06.13	**Modify Existing Lighting Equipment**				
06.13.01	Replace HPS Cobrahead with LED	Each	3	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.14	**Modify Existing Service Equipment**				
06.14.01	Service Panel No. 2 (TE -20027-2)	L.S.	100%	L.S.	$_____
06.14.02	Service Panel No. 1 (TE -04007-2)	L.S.	100%	L.S.	$_____
06.15	**Wiring (SS 635.19.01)**				
06.15.01	Service Area 1 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.02	Service Area 2 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.03	Service Area 3 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.04	Service Area 4 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.05	Service Area 5 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.06	Service Area 1 (TE-04007)	L.S.	100%	L.S.	$_____
06.16	**Supply and Install Traffic Counter Stations (SS 635.22)**				
06.16.01	Short Count Station	Each	1	$_____	$_____
06.17	**Detector Loops (SS 635.22.01)**				
06.17.01	Detector Loop (Round)	Each	2	$_____	$_____
06.17.02	Pre-Formed Loop (Square)	Each	40	$_____	$_____
06.17.03	Pre-Formed Loop (Rectangular)	Each	7	$_____	$_____
07	**SECTION 7 - SIGNING AND PAVEMENT MARKINGS**				
07.01	**Signing**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
07.01.01	Supply and Install Single Post Signs	Each	118	$_____	$_____
07.01.02	Supply and Install Double Post Signs	Each	5	$_____	$_____
07.01.03	Supply and Install Barrier-Mounted Signs	Each	57	$_____	$_____
07.01.04	Item Deleted				
07.02	**Pavement Markings**				
07.02.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.02.02	Temporary Pavement Markings	L.S.	100%	L.S.	$_____
07.02.03	Permanent Pavement Markings - Thermoplastic	Square Metre	296	$_____	$_____
08	**SECTION 8 - FENCING, SEEDING AND LANDSCAPING**				
08.01	**Fencing and Gates**				
08.01.01	Pedestrian Fencing	Metre	160	$_____	$_____
08.01.02	Bicyclist Fencing	Metre	165	$_____	$_____
08.01.03	Type 'B' Fencing	Metre	80	$_____	$_____
08.01.04	Type 'C' Fencing	Metre	650	$_____	$_____
08.01.05	Gates	Each	5	$_____	$_____
08.02	**Revegetation Seeding**				
08.02.01	Revegetation Seeding with HECP	Hectare	6	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
08.03	**Environmental Works at York and Whonnock Creek**				
08.03.01	York Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.02	Whonnock Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.03	Coho Gravels	Tonne	490	$_____	$_____
08.03.04	Large Woody Debris	Each	10	$_____	$_____
08.03.05	Habitat Boulders	Each	42	$_____	$_____
08.03.06	Cellular Confinement System incl. top soil	Square Metre	450	$_____	$_____
09	**SECTION 9 - WHONNOCK CREEK TEMPORARY DETOURS**				
09.01	Engineered Detour Designs	L.S.	100%	L.S.	$_____
09.02	Cold Milling of Tie-ins (CONDITIONAL ITEM)	Square Metre	400	$_____	$_____
09.03	Pavement Cutting	Metre	170	$_____	$_____
09.04	25mm Well Graded Base - Detour (CONDITIONAL ITEM)	Cubic Metre	1,300	$_____	$_____
09.05	Select Granular Sub-Base (CONDITIONAL ITEM)	Cubic Metre	2,200	$_____	$_____
09.06	Asphalt Pavement - Detour (CONDITIONAL ITEM)	Tonne	1,600	$_____	$_____
09.07	Shouldering (CONDITIONAL ITEM)	Cubic Metre	20	$_____	$_____
09.08	Install and Remove Signs - Detour (CONDITIONAL ITEM)	Each	14	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.09	Detour Construction Barrier (CONDITIONAL ITEM)	Metre	900	$_____	$_____
09.10	Detour Pavement Markings (CONDITIONAL ITEM)	Kilometre	1	$_____	$_____
09.11	Temporary Detour Drainage (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
09.12	Detour Removal (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$**_____

All dollar amounts are to be in Canadian Dollars. Do not include GST in any Unit Prices or Extended Amounts, or in the Tender Price. The Ministry will pay any applicable GST under the Contract. Invoices / progress estimates under the Contract must show the calculation of any applicable GST as a separate line item.

Contractor's

Name: _____

Address: _____

_____

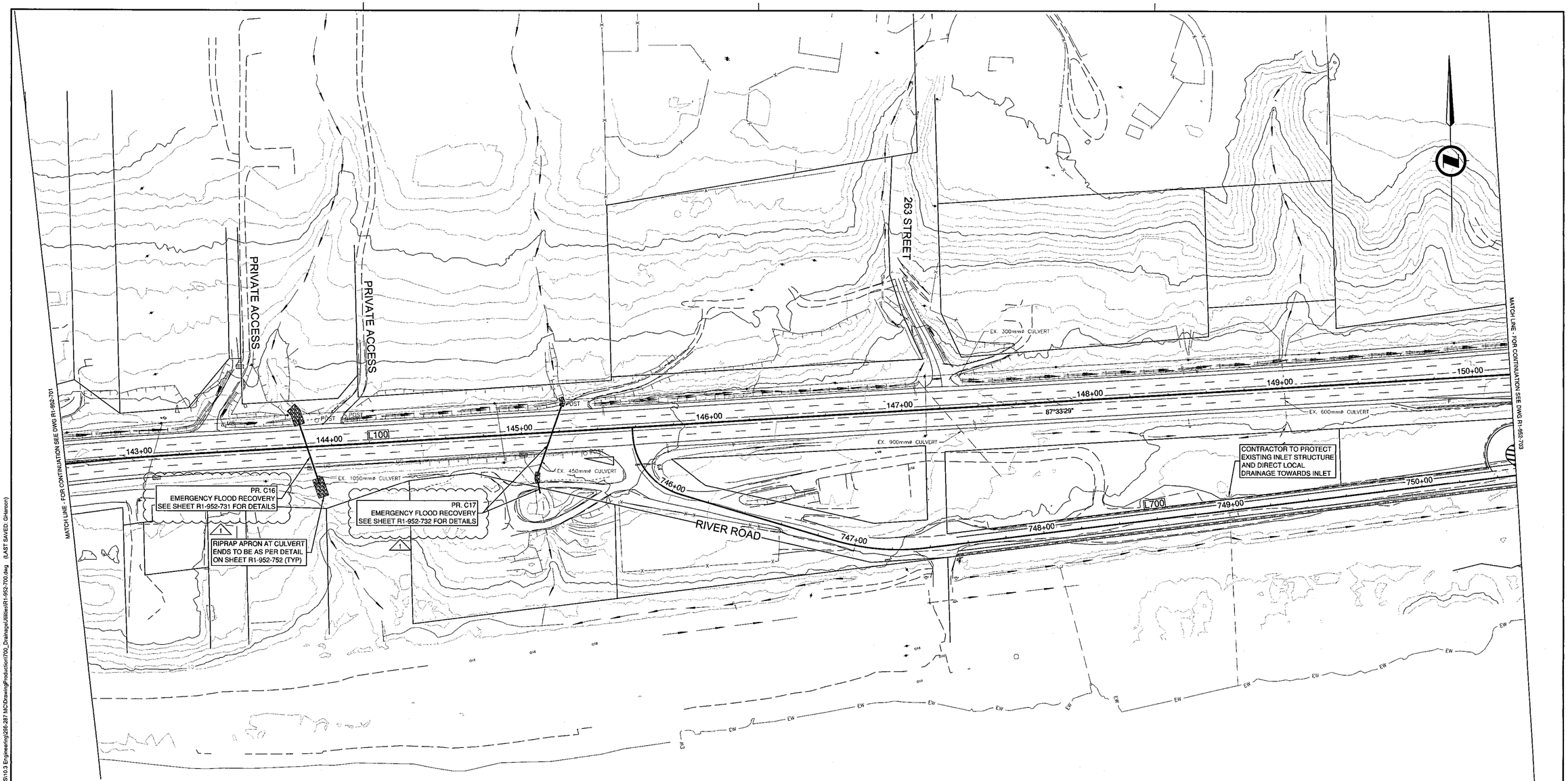
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Postal Code: _____

Phone: _____

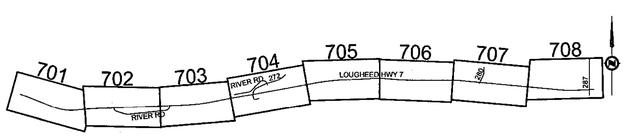
Fax: _____

Date: _____



PRINTED: August 11, 2022 - 4:01 PM
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REFERENCE DRAWINGS	
PLAN	R1-952-102
GEOMETRICS AND LANING	R1-952-402
SIGNING AND PAVEMENT MARKINGS	R1-952-602



SHEET INDEX

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

McElhanney

EGBC PERMIT TO PRACTICE No. 1003299

SCALE 0 10 1:1000 50m

CAD FILENAME R1-952-700
PLOT DATE 2022-08-11

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No.1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

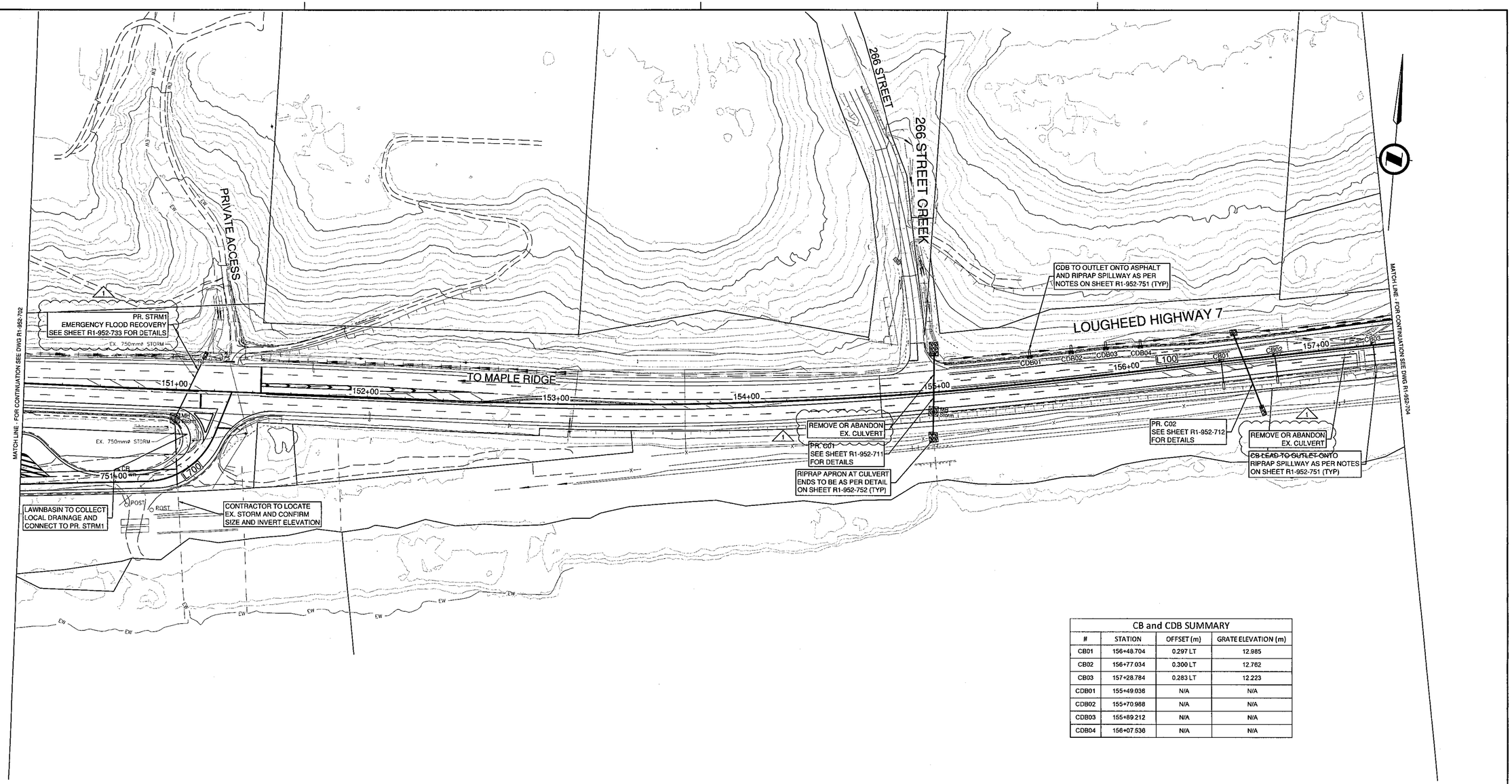
DRAINAGE

HIGHWAY 7
266 STREET TO 287 STREET WIDENING
STA. 142+60.000 TO 150+00.000

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

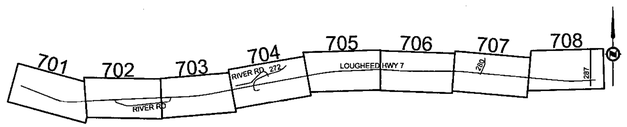
DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-702	1



CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CB01	156+48.704	0.297 LT	12.985
CB02	156+77.034	0.300 LT	12.762
CB03	157+28.784	0.283 LT	12.223
CDB01	155+49.036	N/A	N/A
CDB02	155+70.988	N/A	N/A
CDB03	155+89.212	N/A	N/A
CDB04	156+07.536	N/A	N/A

REFERENCE DRAWINGS	
PLAN	R1-952-103
PROFILE	R1-952-201
GEOMETRICS AND LANING	R1-952-403
SIGNING AND PAVEMENT MARKINGS	R1-952-603



SHEET INDEX

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

McElhanney

EGBC PERMIT TO PRACTICE No. 1003299

SCALE 0 10 1:1000 50m

CAD FILENAME R1-952-700

PLOT DATE 2022-08-11

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No.1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

DRAINAGE

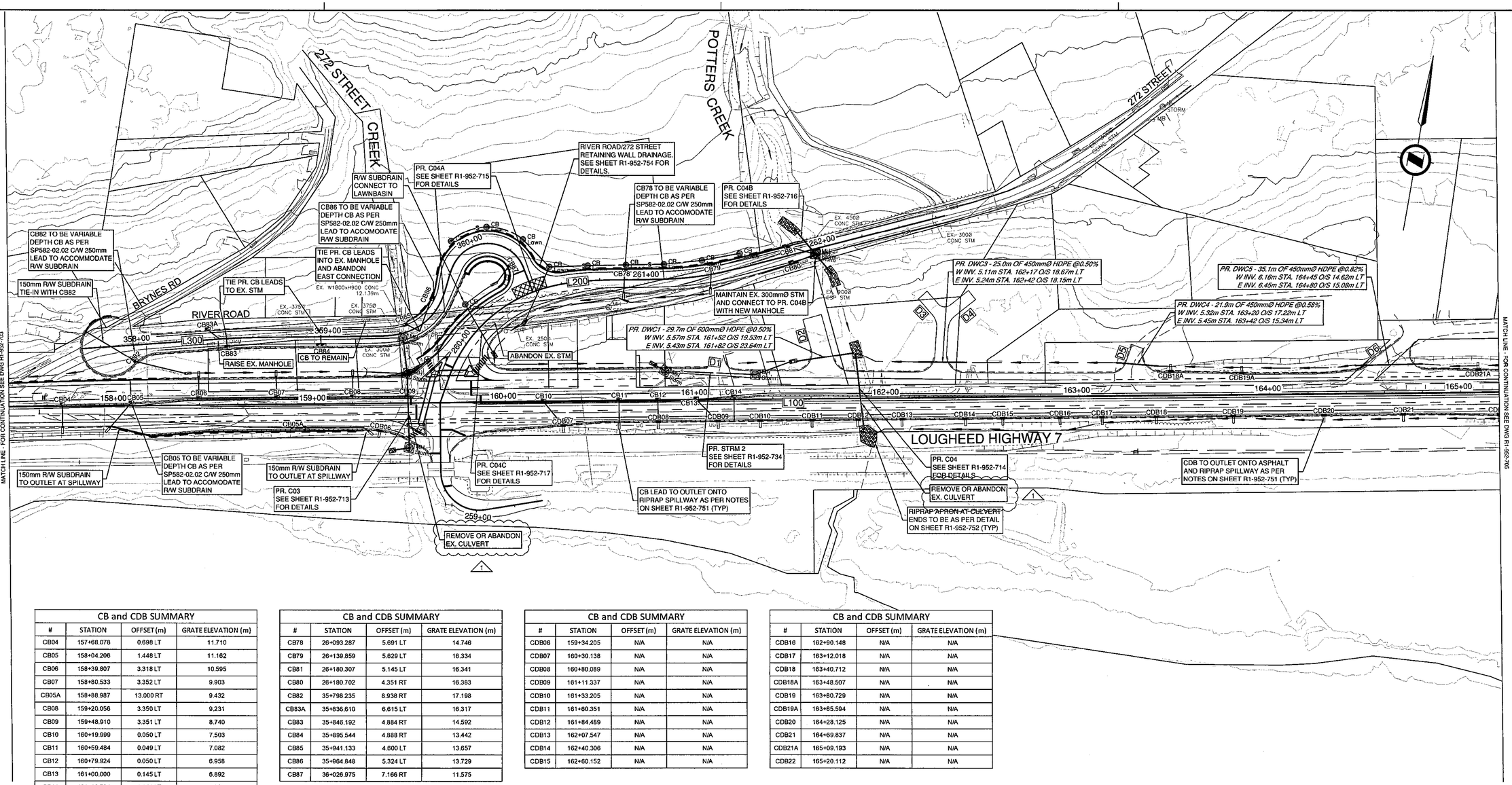
HIGHWAY 7
266 STREET TO 287 STREET WIDENING
STA. 150+00.000 TO 157+40.000

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL F. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LIEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-703	1

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CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CB04	157+68.078	0.698 LT	11.710
CB05	158+04.206	1.448 LT	11.162
CB06	158+39.807	3.318 LT	10.595
CB07	158+80.533	3.352 LT	9.903
CB05A	158+88.987	13.000 RT	9.432
CB08	159+20.056	3.350 LT	9.231
CB09	159+48.910	3.351 LT	8.740
CB10	160+19.999	0.050 LT	7.503
CB11	160+59.484	0.049 LT	7.082
CB12	160+79.924	0.050 LT	6.958
CB13	161+00.000	0.145 LT	6.892
CB14	161+19.724	1.141 LT	6.853

CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CB78	26+093.287	5.691 LT	14.746
CB79	26+139.859	5.629 LT	16.334
CB81	26+180.307	5.145 LT	16.341
CB80	26+180.702	4.351 RT	16.383
CB82	35+798.235	8.938 RT	17.198
CB83A	35+836.610	6.615 LT	16.317
CB83	35+846.192	4.884 RT	14.592
CB84	35+895.544	4.888 RT	13.442
CB85	35+941.133	4.600 LT	13.657
CB86	35+964.848	5.324 LT	13.729
CB87	36+026.975	7.166 RT	11.575

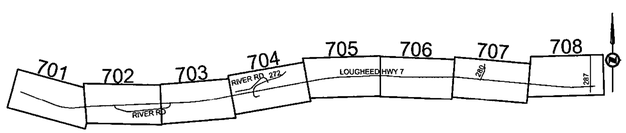
CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CDB06	159+34.205	N/A	N/A
CDB07	160+30.138	N/A	N/A
CDB08	160+80.089	N/A	N/A
CDB09	161+11.337	N/A	N/A
CDB10	161+33.205	N/A	N/A
CDB11	161+60.351	N/A	N/A
CDB12	161+84.489	N/A	N/A
CDB13	162+07.547	N/A	N/A
CDB14	162+40.306	N/A	N/A
CDB15	162+60.152	N/A	N/A

CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CDB16	162+90.148	N/A	N/A
CDB17	163+12.018	N/A	N/A
CDB18	163+40.712	N/A	N/A
CDB18A	163+48.507	N/A	N/A
CDB19	163+80.729	N/A	N/A
CDB19A	163+85.594	N/A	N/A
CDB20	164+28.125	N/A	N/A
CDB21	164+69.837	N/A	N/A
CDB21A	165+09.193	N/A	N/A
CDB22	165+20.112	N/A	N/A

NOTES:

1. UNLESS NOTED OTHERWISE, ABANDON EXISTING CB'S AND RAISE EXISTING MANHOLES TO PROPOSED GRADE ALONG EXISTING RIVER ROAD BETWEEN L300 STA 358+00 AND L200 STA 262+00.

REFERENCE DRAWINGS	
PLAN	R1-952-104
PROFILE	R1-952-201 to 202, 204, 206
GEOMETRICS AND LANING	R1-952-404
SIGNING AND PAVEMENT MARKINGS	R1-952-604



SHEET INDEX

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

McElhanney
EGBC PERMIT TO PRACTICE No. 1003299

SCALE 0 10 1:1000 50m
CAD FILENAME R1-952-700
PLOT DATE 2022-08-15

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

DRAINAGE

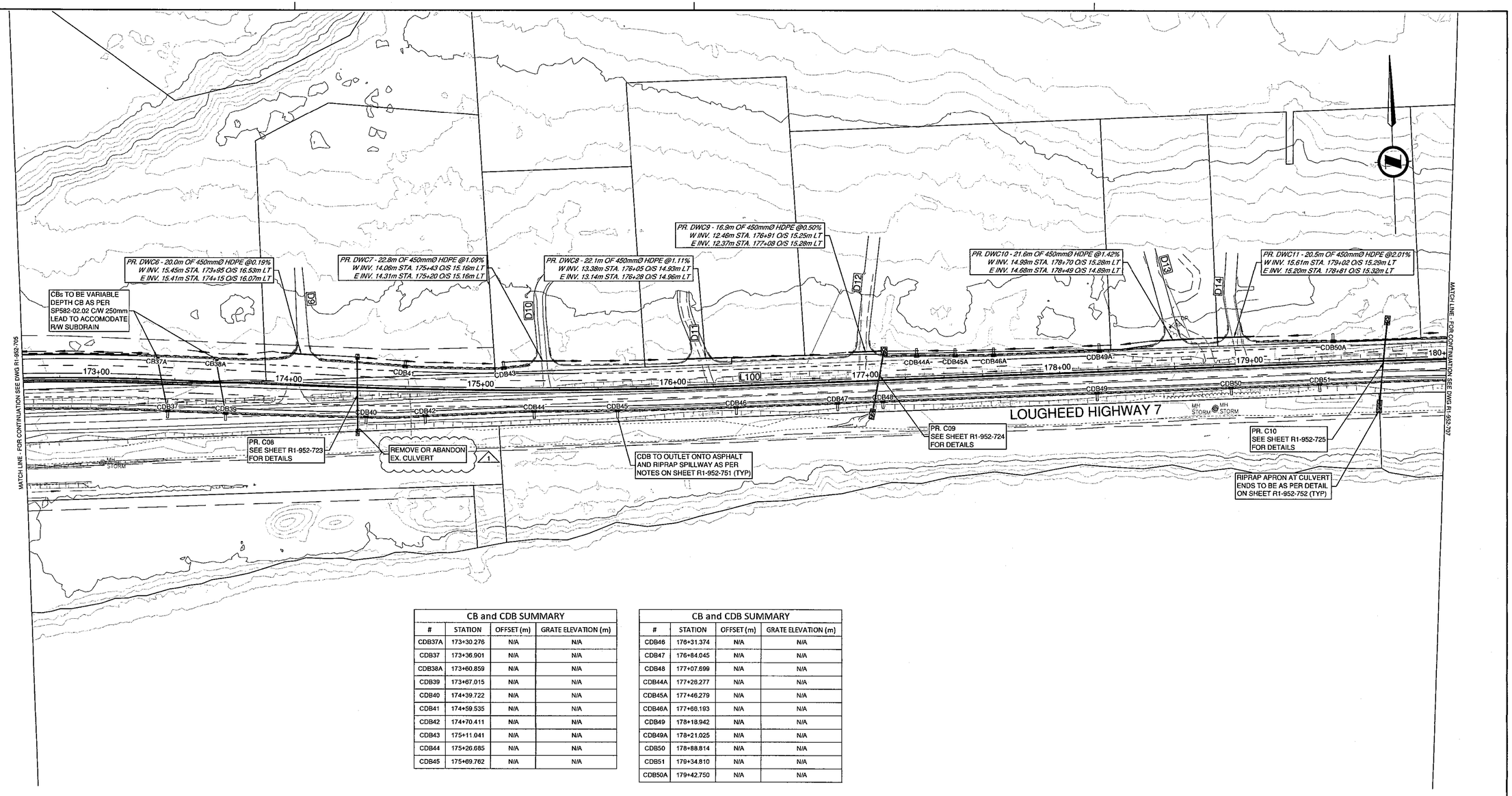
HIGHWAY 7
266 STREET TO 287 STREET WIDENING
STA. 157+40.000 TO 165+20.000

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-704	1

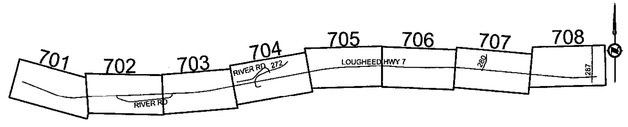
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CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CDB37A	173+30.276	N/A	N/A
CDB37	173+36.901	N/A	N/A
CDB38A	173+60.859	N/A	N/A
CDB39	173+67.015	N/A	N/A
CDB40	174+39.722	N/A	N/A
CDB41	174+59.535	N/A	N/A
CDB42	174+70.411	N/A	N/A
CDB43	175+11.041	N/A	N/A
CDB44	175+26.685	N/A	N/A
CDB45	175+69.762	N/A	N/A

CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CDB46	176+31.374	N/A	N/A
CDB47	176+84.045	N/A	N/A
CDB48	177+07.699	N/A	N/A
CDB44A	177+26.277	N/A	N/A
CDB45A	177+46.279	N/A	N/A
CDB46A	177+66.193	N/A	N/A
CDB49	178+18.942	N/A	N/A
CDB49A	178+21.025	N/A	N/A
CDB50	178+88.814	N/A	N/A
CDB51	179+34.810	N/A	N/A
CDB50A	179+42.750	N/A	N/A

REFERENCE DRAWINGS	
PLAN	R1-952-106
PROFILE	R1-952-202, 207
GEOMETRICS AND LANING	R1-952-406
SIGNING AND PAVEMENT MARKINGS	R1-952-606



SHEET INDEX

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

McElhanney
EGBC PERMIT TO PRACTICE No. 1003299

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CAD FILENAME R1-952-703
PLOT DATE 2022-08-11

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No.1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

DRAINAGE

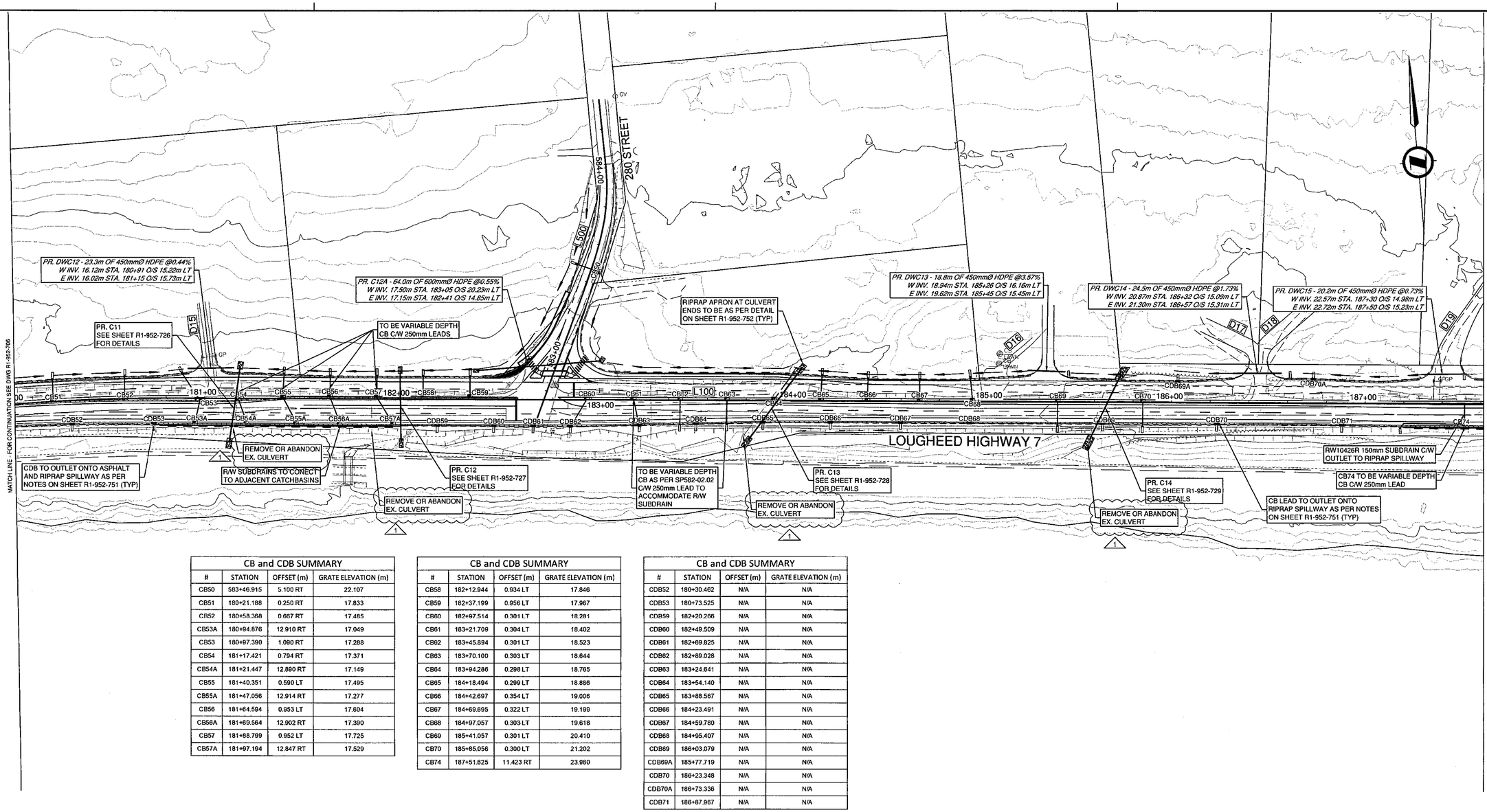
HIGHWAY 7
266 STREET TO 287 STREET WIDENING
STA. 172+60.000 TO 180+00.000

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-706	1

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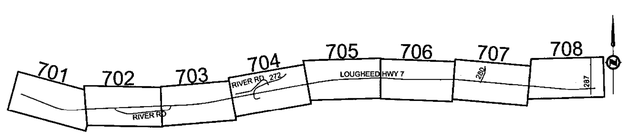


CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CB50	583+46.915	5.100 RT	22.107
CB51	180+21.188	0.250 RT	17.833
CB52	180+58.368	0.667 RT	17.485
CB53A	180+94.876	12.910 RT	17.049
CB53	180+97.390	1.090 RT	17.288
CB54	181+17.421	0.794 RT	17.371
CB54A	181+21.447	12.890 RT	17.149
CB55	181+40.351	0.590 LT	17.495
CB55A	181+47.056	12.914 RT	17.277
CB56	181+64.594	0.953 LT	17.604
CB56A	181+69.564	12.902 RT	17.390
CB57	181+88.799	0.952 LT	17.725
CB57A	181+97.194	12.847 RT	17.529

CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CB58	182+12.944	0.934 LT	17.846
CB59	182+37.199	0.956 LT	17.967
CB60	182+97.514	0.301 LT	18.281
CB61	183+21.709	0.304 LT	18.402
CB62	183+45.894	0.301 LT	18.523
CB63	183+70.100	0.303 LT	18.644
CB64	183+94.286	0.298 LT	18.765
CB65	184+18.494	0.299 LT	18.886
CB66	184+42.697	0.354 LT	19.006
CB67	184+69.895	0.322 LT	19.199
CB68	184+97.057	0.303 LT	19.618
CB69	185+41.057	0.301 LT	20.410
CB70	185+85.056	0.300 LT	21.202
CB74	187+51.825	11.423 RT	23.980

CB and CDB SUMMARY			
#	STATION	OFFSET (m)	GRATE ELEVATION (m)
CDB52	180+30.462	N/A	N/A
CDB53	180+73.525	N/A	N/A
CDB59	182+20.266	N/A	N/A
CDB60	182+49.509	N/A	N/A
CDB61	182+69.825	N/A	N/A
CDB62	182+89.028	N/A	N/A
CDB63	183+24.641	N/A	N/A
CDB64	183+54.140	N/A	N/A
CDB65	183+88.567	N/A	N/A
CDB66	184+23.491	N/A	N/A
CDB67	184+59.780	N/A	N/A
CDB68	184+95.407	N/A	N/A
CDB69	186+03.079	N/A	N/A
CDB69A	185+77.719	N/A	N/A
CDB70	186+23.348	N/A	N/A
CDB70A	186+73.336	N/A	N/A
CDB71	186+87.967	N/A	N/A

REFERENCE DRAWINGS	
PLAN	R1-952-107
PROFILE	R1-952-203, 205, 208
GEOMETRICS AND LANING	R1-952-407
SIGNING AND PAVEMENT MARKINGS	R1-952-607



SHEET INDEX

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

McElhanney

EGBC PERMIT TO PRACTICE No. 1003299

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CAD FILENAME R1-952-700

PLOT DATE 2022-08-11

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No.1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

DRAINAGE

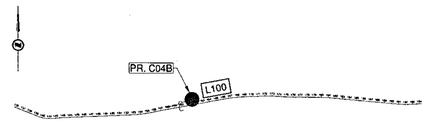
HIGHWAY 7
266 STREET TO 287 STREET WIDENING
STA. 180+00.000 TO 187+60.000

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

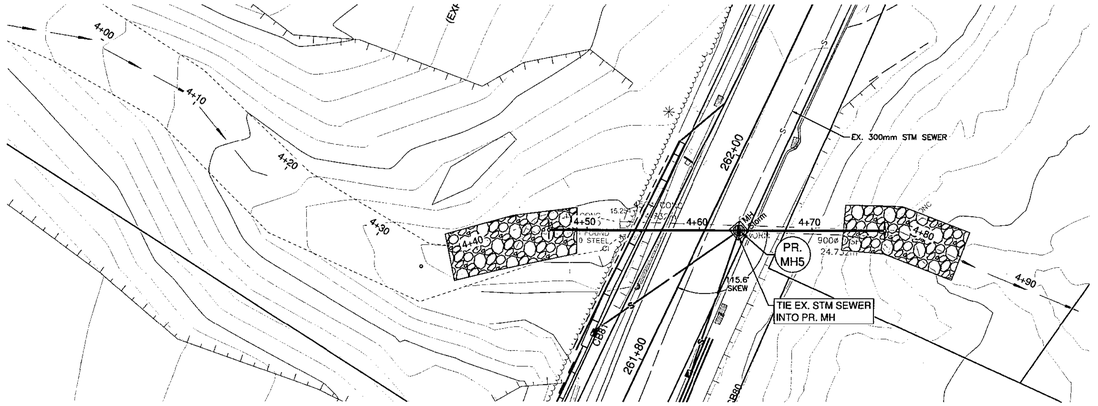
DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
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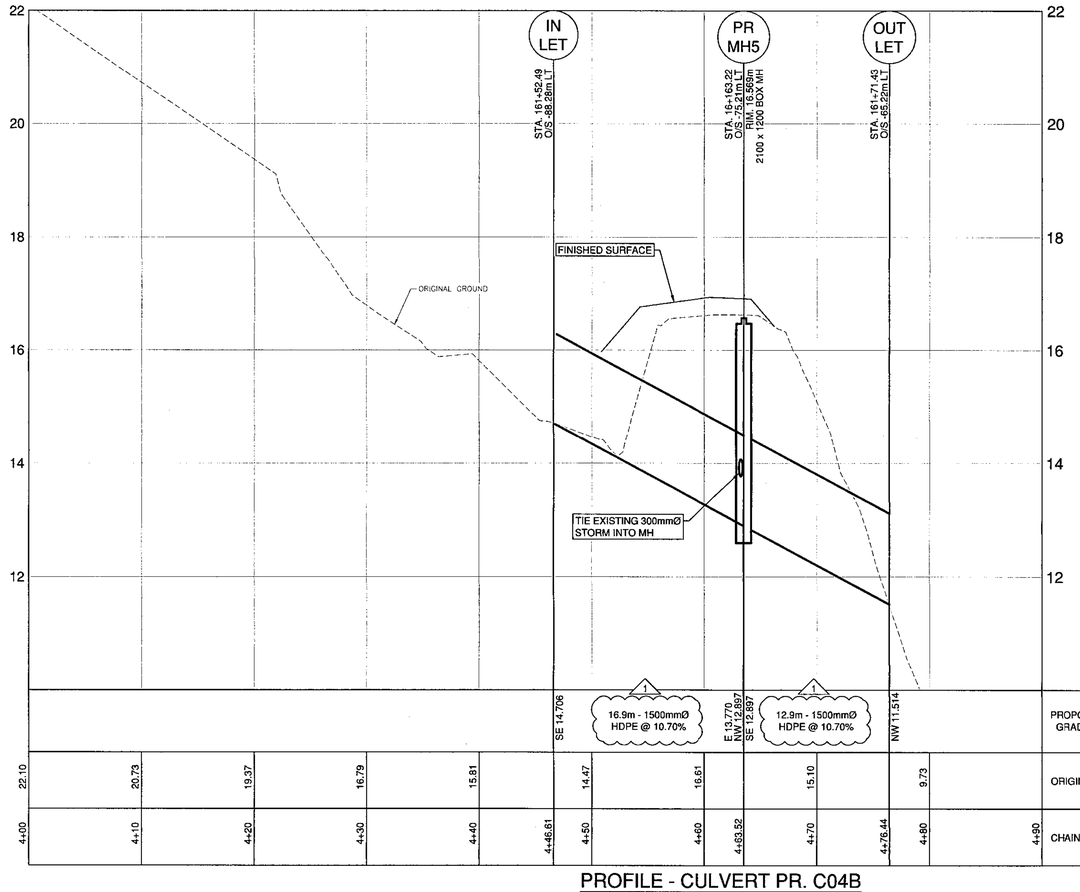
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KEY MAP



PLAN - CULVERT PR. C04B



PROFILE - CULVERT PR. C04B

REFERENCE DRAWINGS	
PLAN	R1-952-704

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, CONSTRUCTOR SHALL EXPOSE LOCATIONS OF EXISTING UTILITIES AND ADVISE THE ENGINEER OF RECORD OF POTENTIAL CONFLICTS.

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal
M. THIESSEN # 47424 ENGINEER BRITISH COLUMBIA
2022.08.12

SCALE 0 2 H 1:250 10m / 0 0.5 V 1:50 2m

CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

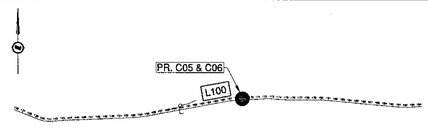
M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

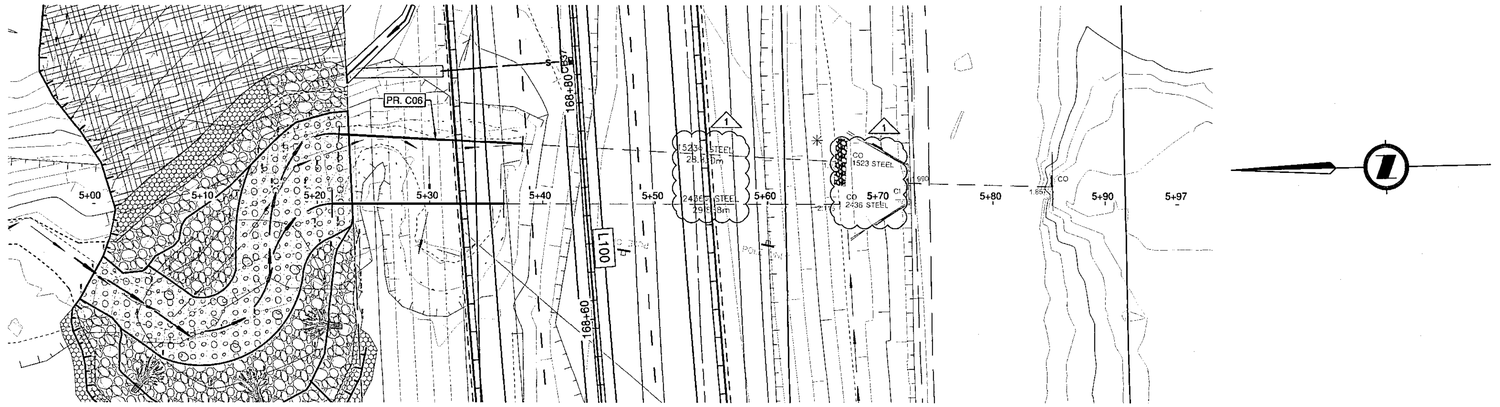
PLAN AND PROFILE
CULVERT PR. C04B
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING

FILE NUMBER	PROJECT NUMBER	REC	DRAWING NUMBER	REV
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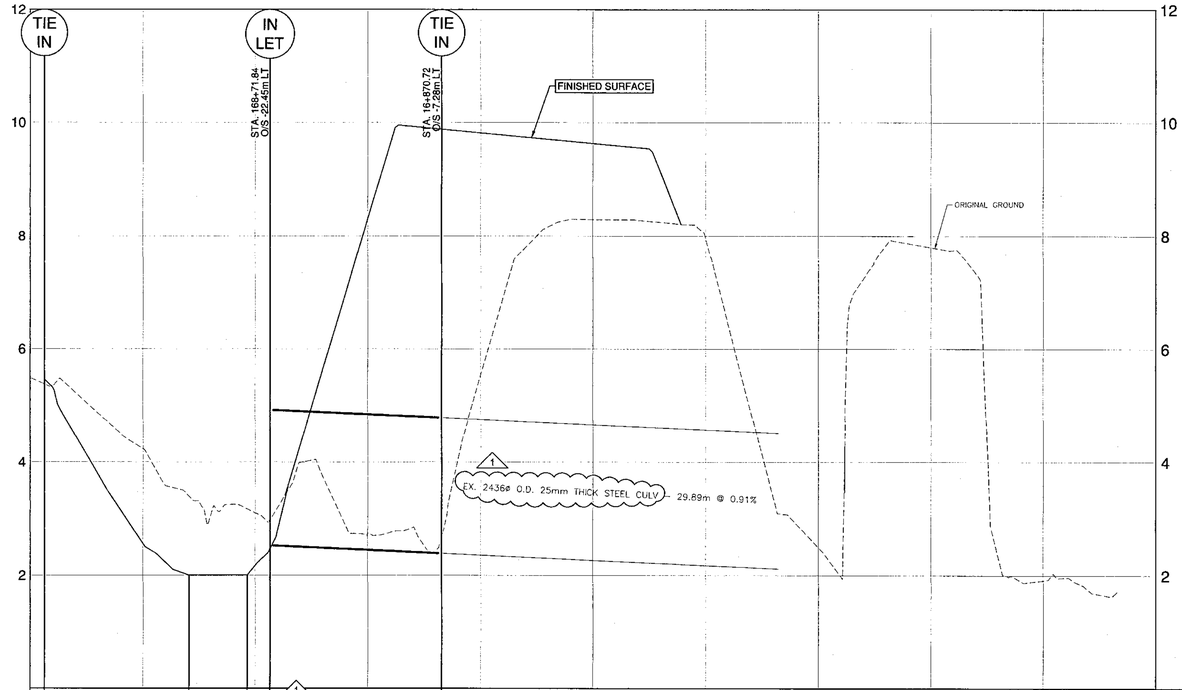
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KEY MAP



PLAN - CULVERT PR. C05 - YORK CREEK WEST



															PROPOSED CULVERT LENGTH, GRADE, MATERIAL & INVERT
5.49	5.46	4.23	2.00	2.00	3.10	2.75		5.54	8.29	7.97	2.49	7.80	1.91		ORIGINAL GROUND ELEVATION
5+00	5+01.25	5+10	5+14.09	5+19.30	5+20	5+21.33	5+30	5+35.54	5+40	5+50	5+60	5+70	5+80	5+90	6+00 CHAINAGE

PROFILE - CULVERT PR. C05 - YORK CREEK WEST

NOTES:

1. STEEL PIPE DIAMETER AND WALL THICKNESS TO MATCH EXISTING. CONTRACTOR TO CONFIRM DIMENSIONS PRIOR TO ORDERING MATERIAL.
2. JOINT BETWEEN NEW AND EXISTING PIPE TO BE BUTT WELL OR BUTT STRAP WELD.

REFERENCE DRAWINGS	
PLAN	R1-952-705

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, CONSTRUCTOR SHALL EXPOSE LOCATIONS OF EXISTING UTILITIES AND ADVISE THE ENGINEER OF RECORD OF POTENTIAL CONFLICTS.

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. THIESSEN 47294 SIGNATURE
2022.08.12

SCALE 0 2 H 1:250 10m / 0 0.5 V 1:50 2m
CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

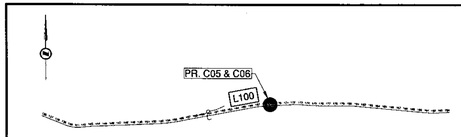
DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

PLAN AND PROFILE

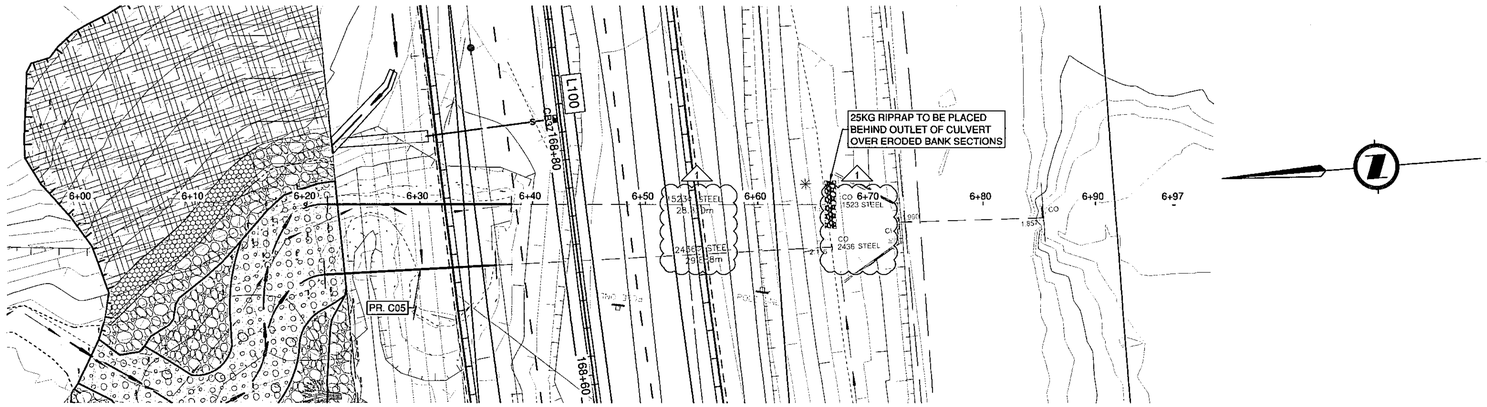
CULVERT PR. C05 - YORK CREEK WEST
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
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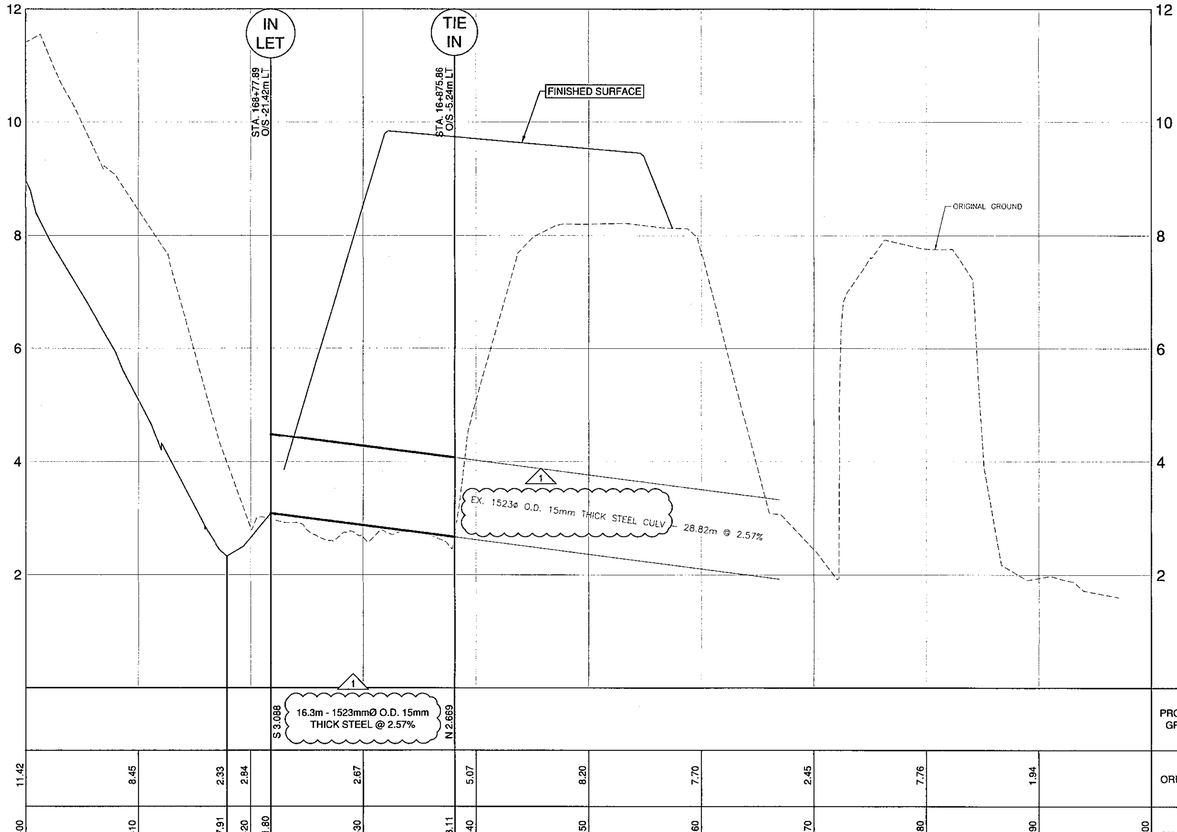
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KEY MAP



PLAN - CULVERT PR. C06 - YORK CREEK EAST



															PROPOSED CULVERT LENGTH, GRADE, MATERIAL & INVERT
11.42	8.45		2.33	2.84		2.67		5.07	8.20	7.70	2.45	7.76	1.94		ORIGINAL GROUND ELEVATION
6+00	6+10		6+17.91	6+20	6+21.80	6+30	6+38.11	6+40	6+50	6+60	6+70	6+80	6+90	7+00	CHAINAGE

PROFILE - CULVERT PR. C06 - YORK CREEK EAST

NOTES:

1. STEEL PIPE DIAMETER AND WALL THICKNESS TO MATCH EXISTING. CONTRACTOR TO CONFIRM DIMENSIONS PRIOR TO ORDERING MATERIAL.
2. JOINT BETWEEN NEW AND EXISTING PIPE TO BE BUTT WELL OR BUTT STRAP WELD.

REFERENCE DRAWINGS	
PLAN	R1-952-705

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, CONSTRUCTOR SHALL EXPOSE LOCATIONS OF EXISTING UTILITIES AND ADVISE THE ENGINEER OF RECORD OF POTENTIAL CONFLICTS.

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. THIESSEN 39394 CANADA
2022.08.12

SCALE 0 2 H 1:250 10m
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CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

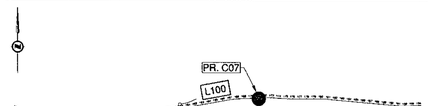
DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

PLAN AND PROFILE

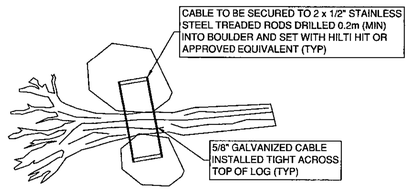
CULVERT PR. C06 - YORK CREEK EAST
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
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PLOT DATE: 2022/08/12 X:\2121\2121-00609-00-MoTI-Hwy 7 - 266 Street to 287 Street Widening\10.0 DRAWINGS\10.3 Engineering\286-287 MC\DrawingProduction\700_DrainageUtilities\R1-952-710.dwg



KEY MAP

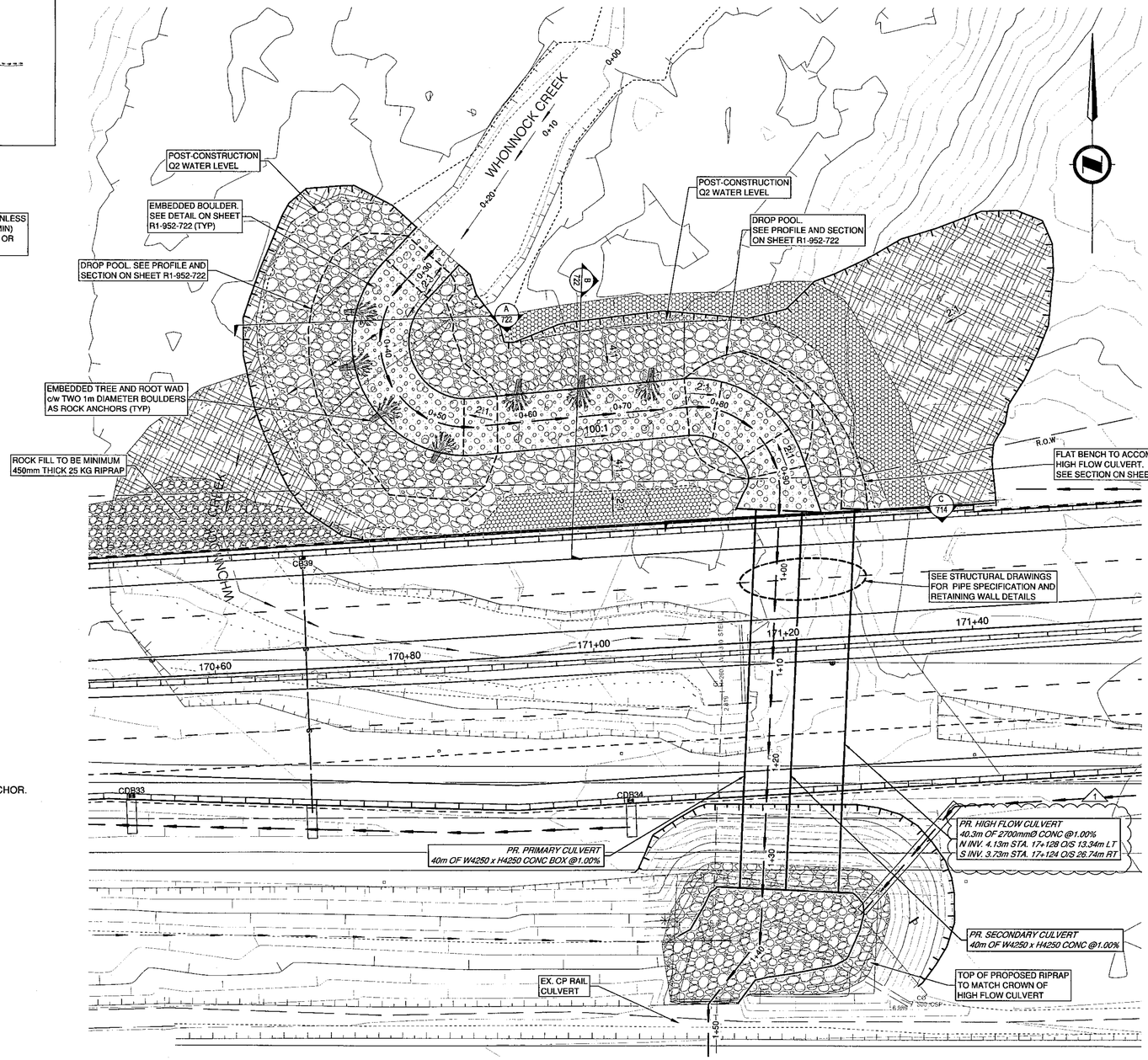


WOODY DEBRIS ANCHOR DETAIL

SCALE 1:50

NOTE:

1. REFER TO ANCHOR BOULDER DETAIL FOR WOODY DEBRIS ANCHOR.



PLAN - PR. WHONNOCK CREEK

REFERENCE DRAWINGS	
PLAN	R1-952-705

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, CONSTRUCTOR SHALL EXPOSE LOCATIONS OF EXISTING UTILITIES AND ADVISE THE ENGINEER OF RECORD OF POTENTIAL CONFLICTS.

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

SCALE 0 2 1:250 12m

CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

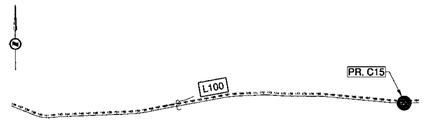
DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

DRAINAGE

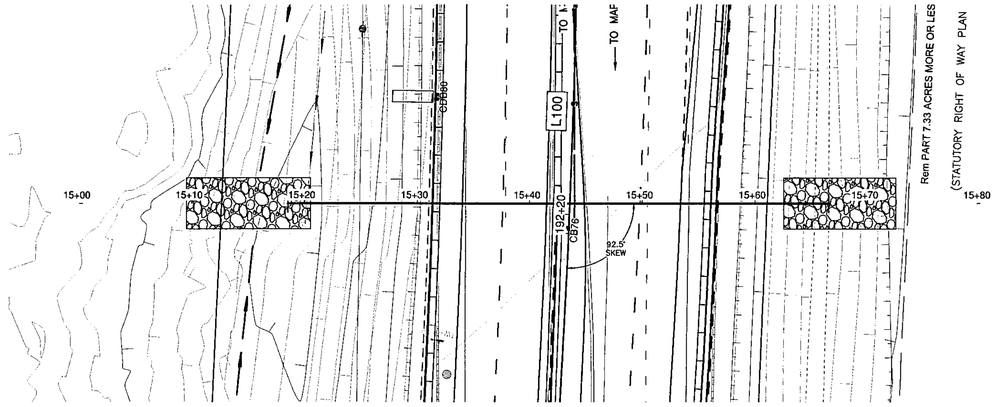
PR. WHONNOCK CREEK
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
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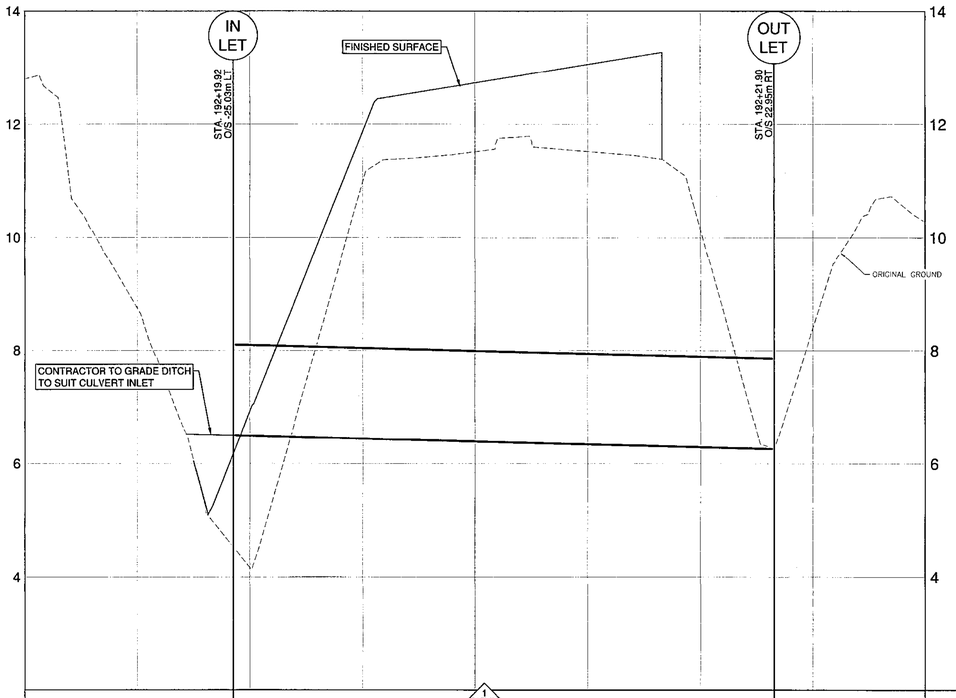
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KEY MAP



PLAN - CULVERT PR. C15



			S 6.500			1 48.0m - 1500mmØ HDPE @ 0.50%			N 6.260			PROPOSED CULVERT LENGTH, GRADE, MATERIAL & INVERT
12.79	8.74		4.17	10.98	11.51	11.52	10.14		8.41	10.28		ORIGINAL GROUND ELEVATION
15+00	15+10	15+18.53	15+20	15+30	15+40	15+50	15+60	15+66.55	15+70	15+80		CHAINAGE

PROFILE - CULVERT PR. C15

REFERENCE DRAWINGS	
PLAN	R1-952-708

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, CONSTRUCTOR SHALL EXPOSE LOCATIONS OF EXISTING UTILITIES AND ADVISE THE ENGINEER OF RECORD OF POTENTIAL CONFLICTS.

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

SCALE 0 2 H 1:250 10m / 0 0.5 V 1:50 2m

CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

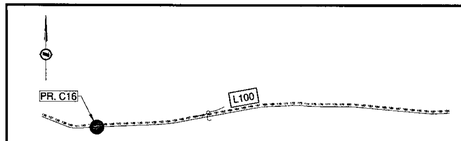
M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
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QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

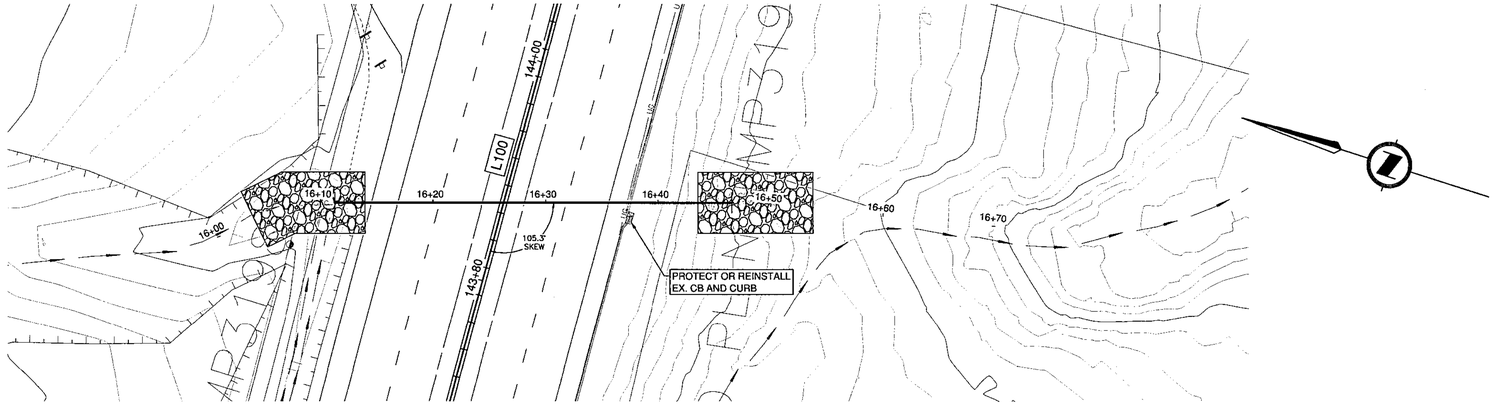
PLAN AND PROFILE
CULVERT PR. C15
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-730	1

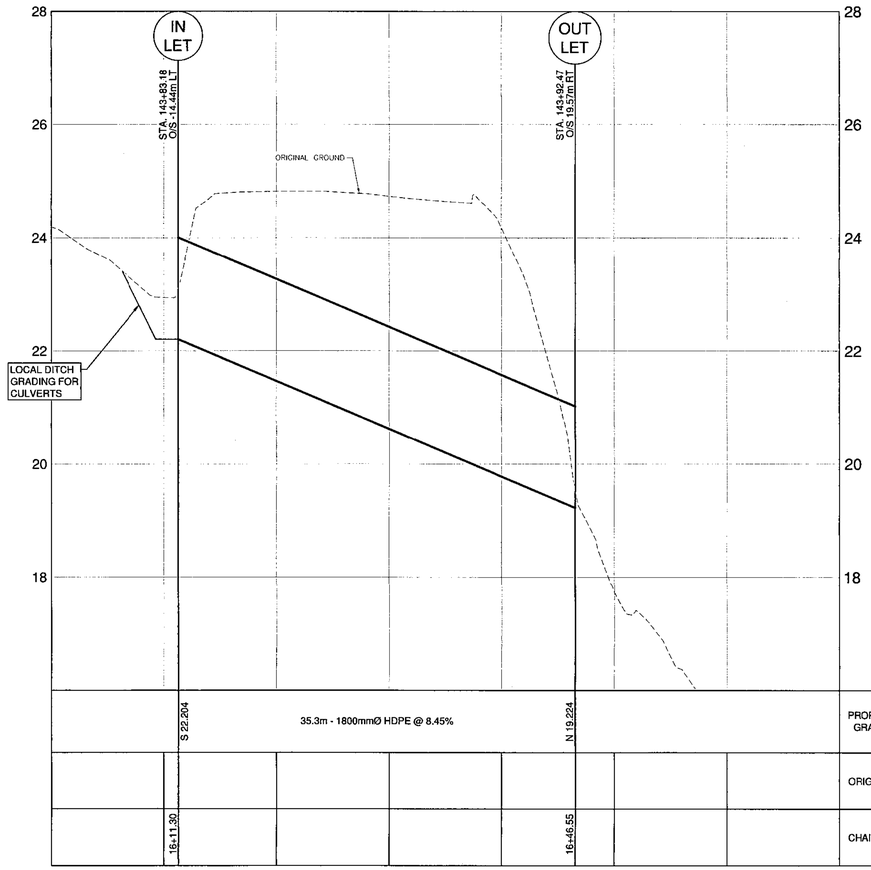
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KEY MAP



PLAN - CULVERT PR. C16



PROFILE - CULVERT PR. C16

REFERENCE DRAWINGS	
PLAN	R1-952-702

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, CONSTRUCTOR SHALL EXPOSE LOCATIONS OF EXISTING UTILITIES AND ADVISE THE ENGINEER OF RECORD OF POTENTIAL CONFLICTS.

PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. THIESSEN 45284
2022-08-17

SCALE 0 2 H 1:250 10m
0 0.5 V 1:50 2m

CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - TITLEBLOCK REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED	C. STELTER	DATE	2022-06-27
QUALITY CONTROL	E. NEWCOMBE	DATE	2022-06-27
QUALITY ASSURANCE	K. LEGGETT	DATE	2022-06-27
DRAWN	H. SHIN	DATE	2022-06-27

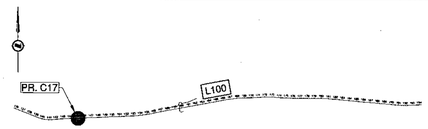
PLAN AND PROFILE

CULVERT PR. C16
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING

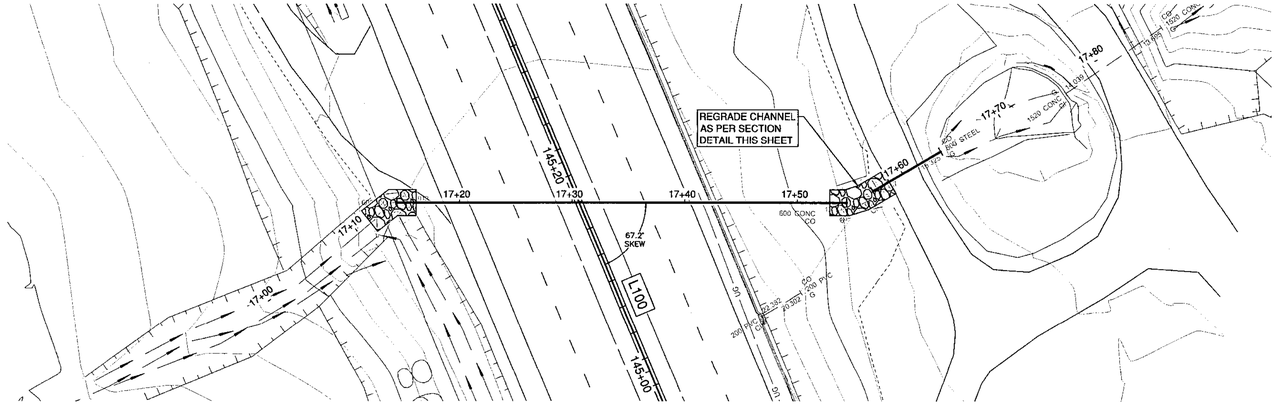
EMERGENCY FLOOD RECOVERY 1

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
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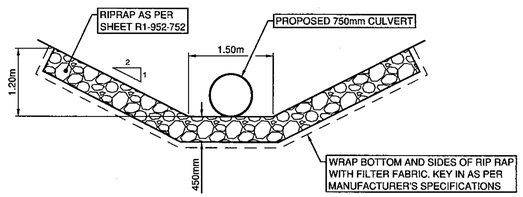
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KEY MAP

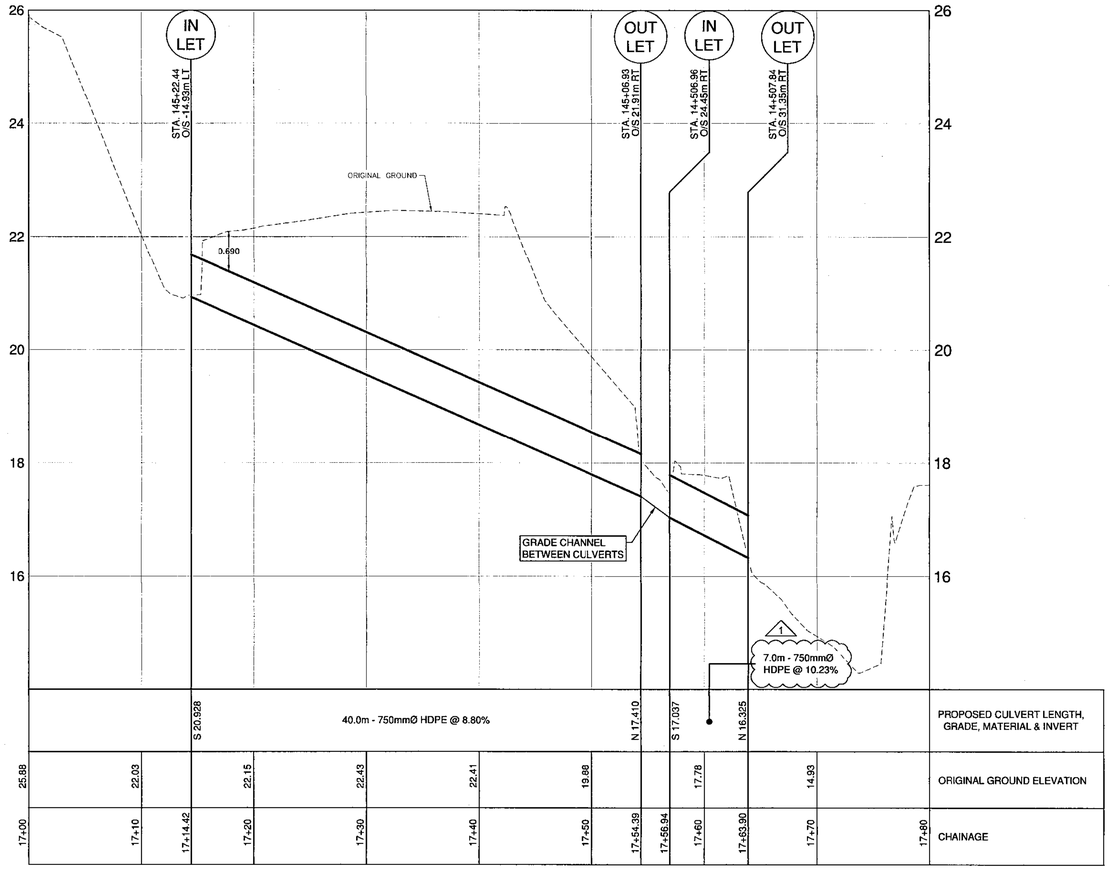


PLAN - CULVERT PR. C17



CHANNEL SECTION

SCALE 1:50



			S 20.928	40.0m - 750mmØ HDPE @ 8.80%				N 17.410	S 17.037		N 16.925			PROPOSED CULVERT LENGTH, GRADE, MATERIAL & INVERT
25.88		22.03		22.15	22.43	22.41	19.88		17.78		14.93			ORIGINAL GROUND ELEVATION
17+00	17+10	17+14.42	17+20	17+30	17+40	17+50	17+54.39	17+56.94	17+60	17+63.90	17+70	17+80		CHAINAGE

PROFILE - CULVERT PR. C17

REFERENCE DRAWINGS	
PLAN	R1-952-702

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PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. THIESSEN 47394 ENGINEER
2022.08.12

SCALE 0 2 H 1:250 10m / 0 0.5 V 1:50 2m
CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - NOTE REVISION	M. THIESSEN

BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

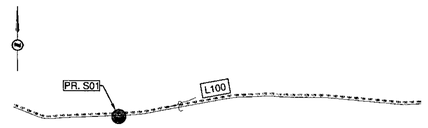
M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL E. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

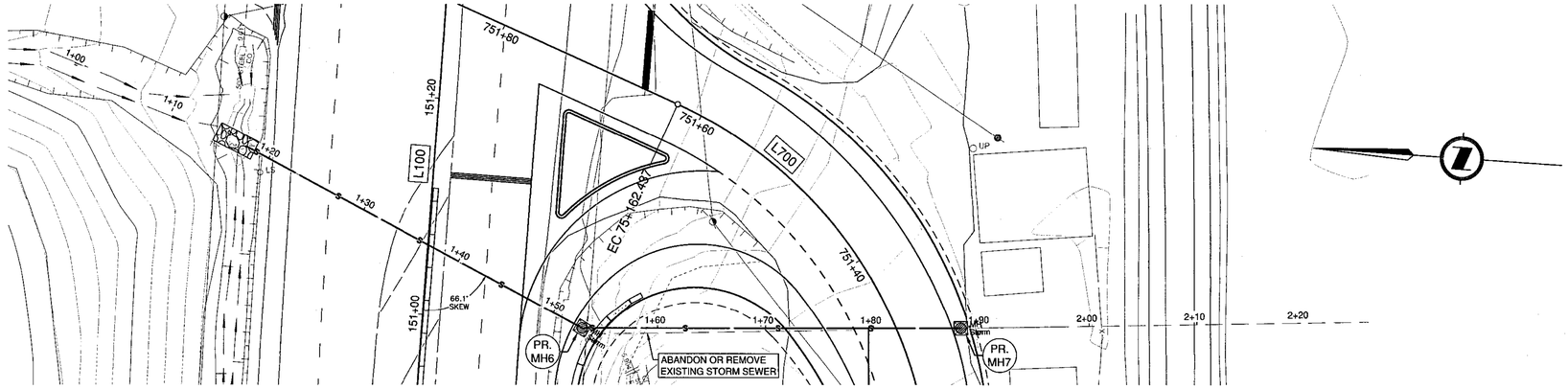
PLAN AND PROFILE
CULVERT PR. C17
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING
EMERGENCY FLOOD RECOVERY 1

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-732	1

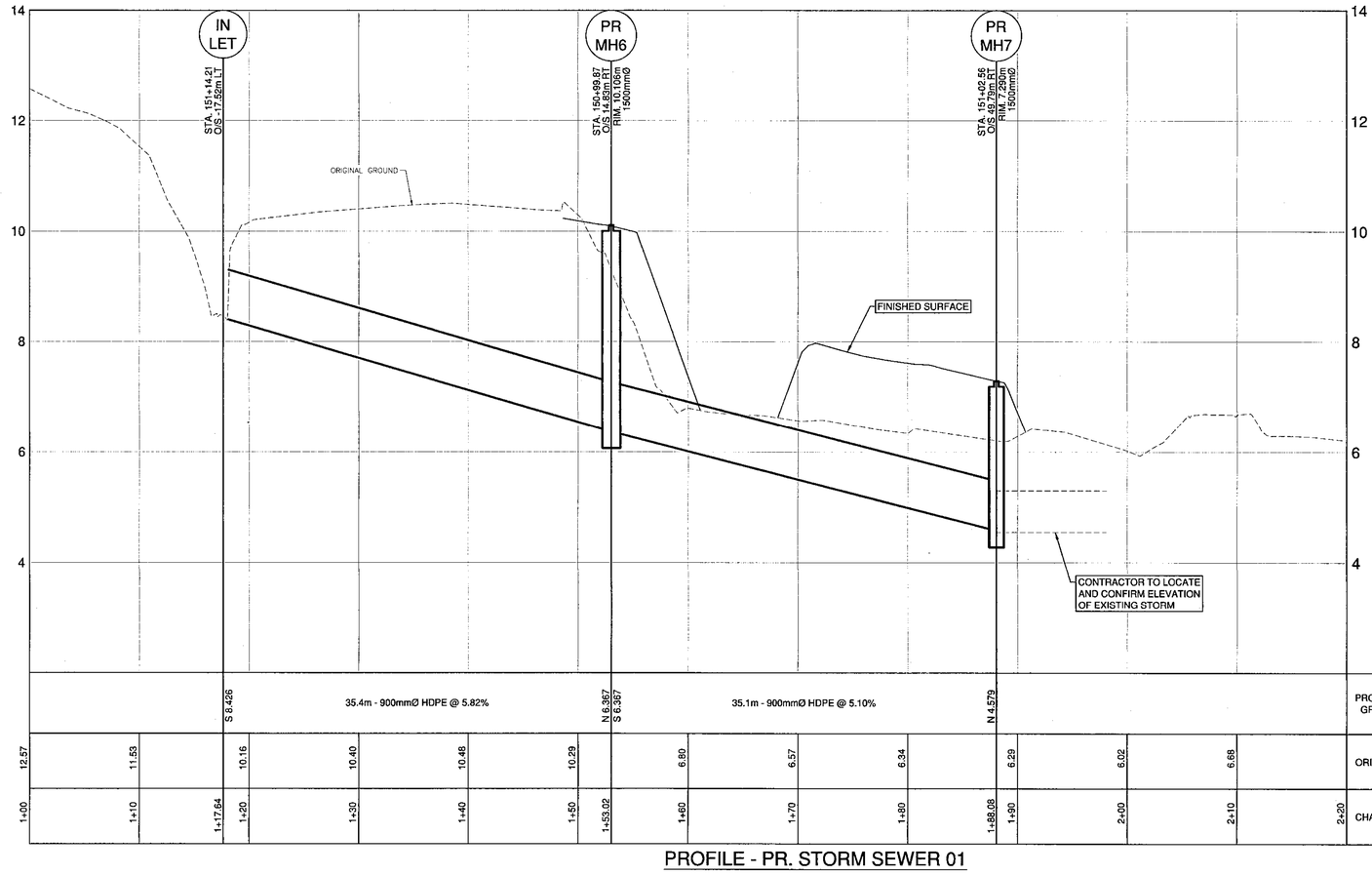
PLOT DATE: 2022/08/12 X:\2121\2121-00609-00-MoTI-Hwy 7 - 266 Street to 287 Street Widening\10.0 DRAWINGS\10.3 Engineering\266-287 MC\DrawingProduction\700_DraingeUtilities\R1-952-710.dwg



KEY MAP



PLAN - PR. STORM SEWER 01



			S 8.426	35.4m - 900mmØ HDPE @ 5.82%				N 6.867 S 6.367	35.1m - 900mmØ HDPE @ 5.10%			N 4.579										PROPOSED CULVERT LENGTH, GRADE, MATERIAL & INVERT
12.57		11.53		10.16		10.40	10.48	10.29		6.80		6.57	6.34		6.29		6.02		6.68				ORIGINAL GROUND ELEVATION
1+00		1+10	1+17.64	1+20		1+30	1+40	1+50	1+53.02	1+60		1+70	1+80	1+88.08	1+90		2+00		2+10		2+20		CHAINAGE

PROFILE - PR. STORM SEWER 01

REFERENCE DRAWINGS

PLAN	R1-952-703

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PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

Professional Seal

SCALE 0 2 H 1:250 10m
0 0.5 V 1:50 2m

CAD FILENAME R1-952-710
PLOT DATE 2022-08-12

REV	DATE	REVISIONS	NAME
1	2022-08-08	ADDENDUM No. 1 - TITLEBLOCK REVISION	M. THIESSEN

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
SOUTH COAST REGION
HIGHWAY ENGINEERING AND GEOMATICS

M. THIESSEN
SENIOR DESIGNER
DATE 2022-06-27

DESIGNED C. STELTER DATE 2022-06-27
QUALITY CONTROL F. NEWCOMBE DATE 2022-06-27
QUALITY ASSURANCE K. LEGGETT DATE 2022-06-27
DRAWN H. SHIN DATE 2022-06-27

PLAN AND PROFILE

PR. STORM SEWER 01
HIGHWAY 7 / 266 STREET TO 287 STREET WIDENING
EMERGENCY FLOOD RECOVERY 1

FILE NUMBER	PROJECT NUMBER	REG.	DRAWING NUMBER	REV
2121-00609-00	12862-2022	1	R1-952-733	1

PLOT DATE: 2022/08/12 X:\2121\2121-00609-00-MoTI-Hwy 7 - 266 Street to 287 Street Widening\10.0 DRAWINGS\10.3 Engineering\266-287 MC\DrawingProduction\700_DrainageUtilities\R1-952-710.dwg

PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

ADDENDUM NO. 5

1. SCHEDULE T3 – SPECIFIC REFERENCE DOCUMENTS

Add the following:

Document Number	Document Description	Check (✓) the Appropriate Column(s)	
		Electronic Copy	Hardcopy Only
18	Civil 3D Construction Tender Data Package (multiple files)	✓	

2. SCHEDULE 7 - SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

The following items are amended:

Item No.	*Revision*
03.02.08	New Item Added

A REPLACEMENT SCHEDULE 7, DATED AUGUST 31, 2022, AND MARKED **'REPLACEMENT D'** IS ATTACHED AND **MUST BE USED FOR TENDER PURPOSES.**

3. RESPONSES TO CONTRACTOR INQUIRIES

QUESTION 1: Drawing calls tie ins proposed culvert/storm/CB lead pipe to existing manhole or pipe but we couldn't find a pay item for this work.

ANSWER 1: Tie into existing manhole or pipe is considered incidental to the work.

QUESTION 2: Detail in Drawing 753 indicates welded steel baffles in proposed pipe and also existing pipe. Do existing steel pipes already have baffles? If not, then do we need to install welded baffles in entire length of existing pipes?

ANSWER 2: See Addendum No. 1.

QUESTION 3: Drawing 715 shows a 1350mm inlet manhole but there is no pay item for 1350mm manhole.

ANSWER 3: New Item No. 03.02.08 – 1350mm Concrete Manhole has been added to the Schedule 7 in this Addendum No. 5.

QUESTION 4: Does pay item 03.02.07 Headwall require grillage, railing, and energy dissipator?

ANSWER 4: No.

QUESTION 5: Fuel price fluctuation would have a major impact in this project. Please clarify if there is an escalation clause in this regard other than Asphalt Cement Escalation.

ANSWER 5: See Addendum No. 2.

Replacement: D **Replacement Date:** 2022/08/31

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Protection of the Environment	L.S.	100%	L.S.	$_____
01.04	Traffic Management	L.S.	100%	L.S.	$_____
01.05	Controlled Excavation - Provisional Sum (Refer to SP 1.28)	P.S.	$500,000.00	P.S.	$500,000.00
01.06	Site Modifications - Provisional Sum (Refer to SP 1.37)	P.S.	$3,800,000.00	P.S.	$3,800,000.00
02	**SECTION 2 - GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	12.40	$_____	$_____
02.02	**Removal and Relocation of Existing Works**				
02.02.01	Remove Existing Culverts by Excavation	Metre	200	$_____	$_____
02.02.02	Abandon Existing Culverts	Cubic Metre	120	$_____	$_____
02.02.03	Remove and Dispose of Existing Whonnock Creek Culvert	L.S.	100%	L.S.	$_____
02.02.04	Remove Existing Concrete Catch Basins and Drainage Lead Pipes	Each	14	$_____	$_____
02.02.05	Remove and Dispose of Existing Concrete Barriers	Metre	550	$_____	$_____
02.02.06	Remove Existing Fencing	Metre	300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.02.07	Remove Existing Gates	Each	5	$_____	$_____
02.02.08	Demolition of Existing Residential Structures	Each	1	$_____	$_____
02.02.09	Remove Septic Tanks and Fields (CONDITIONAL ITEM)	Each	6	$_____	$_____
02.02.10	Well Decommissioning	Each	37	$_____	$_____
02.02.11	Slope Inclinometer Decommissioning (CONDITIONAL ITEM)	Each	2	$_____	$_____
02.02.12	Remove Existing Signs	Each	76	$_____	$_____
02.03	**Pavement Cutting, Cold Milling and Pavement Removal**				
02.03.01	Pavement Cutting	Metre	2,700	$_____	$_____
02.03.02	Cold Milling - up to 50mm Depth	Square Metre	2,380	$_____	$_____
02.03.03	Cold Milling - greater than 50mm Depth	Square Metre	3,600	$_____	$_____
02.03.04	Pavement Removal	Square Metre	46,900	$_____	$_____
02.04	**Roadway and Drainage Excavation**				
02.04.01	Organic Stripping	Cubic Metre	32,850	$_____	$_____
02.04.02	Vibration Control and Monitoring	L.S.	100%	L.S.	$_____
02.04.03	Type A Excavation	Cubic Metre	8,800	$_____	$_____
02.04.04	Type D Excavation to Embankment	Cubic Metre	15,400	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.04.05	Type D Excavation to River Road Disposal Site	Cubic Metre	14,400	$_____	$_____
02.04.06	Type D for Off-Site Disposal (IR #5)	Cubic Metre	116,900	$_____	$_____
02.04.07	Contaminated Soils (IL+) - Off-Site Disposal	Tonne	20,200	$_____	$_____
02.04.08	Contaminated Soils (Hazardous Material) - Off-Site Disposal	Tonne	60	$_____	$_____
02.04.09	Contaminated Soils (IL-) - Off-Site Disposal	Tonne	12,800	$_____	$_____
02.04.10	Granular Borrow	Cubic Metre	37,100	$_____	$_____
02.05	**Granular Materials**				
02.05.01	Select Granular Sub-Base Recycled Concrete Aggregate Material (RCAM)	Cubic Metre	41,200	$_____	$_____
02.05.02	Select Granular Sub-Base	Cubic Metre	8,100	$_____	$_____
02.05.03	25mm Well Graded Base	Cubic Metre	36,300	$_____	$_____
02.05.04	High Fines Surfacing Aggregate (HFSA) - Driveways	Cubic Metre	200	$_____	$_____
02.06	**Slope Stabilization and Drainage**				
02.06.01	10kg Rip Rap	Cubic Metre	6,900	$_____	$_____
02.06.02	25kg Rip Rap	Cubic Metre	6,400	$_____	$_____
02.07	**River Road Surplus Disposal Site**				
02.07.01	Item Deleted				
02.07.02	Wick Drains	Metre	4,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03	**SECTION 3 - DRAINAGE**				
03.01	**Culverts**				
03.01.01	Driveway Culverts (450mm HDPE)	Metre	290	$_____	$_____
03.01.02	Driveway Culverts (600mm HDPE)	Metre	30	$_____	$_____
03.01.03	600mm HDPE Culvert	Metre	192	$_____	$_____
03.01.04	750mm HDPE Culvert	Metre	120	$_____	$_____
03.01.05	900mm HDPE Culvert	Metre	120	$_____	$_____
03.01.06	1200mm HDPE Culvert	Metre	95	$_____	$_____
03.01.07	1500mm HDPE Culvert	Metre	160	$_____	$_____
03.01.08	2100mm x 1800mm Concrete Box Manhole @ 272 Street Creek	Metre	4	$_____	$_____
03.01.09	2100mm x 1200mm Concrete Box Manhole @ Potters Creek	Metre	4	$_____	$_____
03.01.10	Extend 1523mm OD Steel Pipe @ York Creek	Metre	17	$_____	$_____
03.01.11	Extend 2436mm OD Steel Pipe @ York Creek	Metre	16	$_____	$_____
03.01.12	Concrete Pipe Anchor	Each	14	$_____	$_____
03.01.13	750mm CL IV Conc Culvert	Metre	2	$_____	$_____
03.02	**Precast Concrete Catch Basins and Manholes**				
03.02.01	Precast Concrete Catch Basins	Each	66	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.02	Precast Concrete Lawn Basins	Each	12	$_____	$_____
03.02.03	2400mm Concrete Manhole	Metre	9	$_____	$_____
03.02.04	1800mm Concrete Manhole	Metre	6	$_____	$_____
03.02.05	1200mm Concrete Manhole	Metre	12	$_____	$_____
03.02.06	1050mm Concrete Manhole	Metre	8	$_____	$_____
03.02.07	Headwall Structure	Each	1	$_____	$_____
03.02.08	1350mm Concrete Manhole	Metre	4.50	$_____	$_____
03.03	**Catch Basin Leads and Storm Pipes**				
03.03.01	200mm diam PVC Catch Basin Leads	Metre	815	$_____	$_____
03.03.02	250mm diam PVC Catch Basin Leads	Metre	194	$_____	$_____
03.03.03	375mm diam PVC Storm Pipes	Metre	161	$_____	$_____
03.03.04	450mm diam HDPE Storm Pipes	Metre	206	$_____	$_____
03.03.05	450mm diam CL IV Conc Storm Pipes	Metre	29	$_____	$_____
03.03.06	600mm diam CL IV Conc Storm Pipes	Metre	74	$_____	$_____
03.04	**Slope Drainage**				
03.04.01	Supply and Install 50mm PVC Pipe Toe Drains	Metre	1,100	$_____	$_____
03.05	**Culvert Riprap**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.05.01	Riprap aprons (Class 25kg)	Cubic Metre	282	$_____	$_____
03.05.02	Class 25 kg Riprap (York and Whonnock Creek)	Cubic Metre	80	$_____	$_____
03.05.03	Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)	Cubic Metre	1,860	$_____	$_____
03.06	**Emergency Flood Recovery**				
03.06.01	900mm HDPE Storm Pipes	Metre	71	$_____	$_____
03.06.02	1500mm Concrete Manhole	Metre	7	$_____	$_____
03.06.03	750mm HDPE Culvert	Metre	47	$_____	$_____
03.06.04	1800mm HDPE Culvert	Metre	36	$_____	$_____
03.06.05	Riprap Aprons (Class 25 kg)	Cubic Metre	65	$_____	$_____
03.06.06	Class 25 kg Riprap (York Creek Outlet)	Cubic Metre	5	$_____	$_____
03.07	Item Deleted				
03.07.06	Item Deleted				
04	**SECTION 4 - STRUCTURES**				
04.01	**Whonnock Creek Culvert No. 8154**				
04.01.01	Formwork and Falsework	Square Metre	869	$_____	$_____
04.01.02	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.01.03	Cast-In-Place Concrete	Cubic Metre	521	$_____	$_____
04.01.04	Precast Concrete-Box Culverts	L.S.	100%	L.S.	$_____
04.01.05	High Flow Culvert	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.01.06	Silane Surface Treatment	Square Metre	410	$_____	$_____
04.02	**H7 River Rd Wall No. 10422**				
04.02.01	Mechanically Stabilized Earth Wall	Square Metre	273	$_____	$_____
04.02.02	Concrete Swale	Metre	54	$_____	$_____
04.02.03	Steel Sidewalk Fence	Metre	54	$_____	$_____
04.02.04	Silane Surface Treatment	Square Metre	60	$_____	$_____
04.03	**H7 Median Wall at 285th No. 10426**				
04.03.01	Mechanically Stabilized Earth Wall	Square Metre	915	$_____	$_____
04.03.02	Bridge End Fill	Cubic Metre	330	$_____	$_____
04.03.03	Formwork and Falsework	Square Metre	1,150	$_____	$_____
04.03.04	Reinforcing Steel (Carbon)	L.S.	100%	L.S.	$_____
04.03.05	Reinforcing Steel (Stainless)	L.S.	100%	L.S.	$_____
04.03.06	Cast-In-Place Concrete	Cubic Metre	536	$_____	$_____
04.03.07	Steel Sidewalk Fence	Metre	266	$_____	$_____
04.03.08	Silane Surface Treatment	Square Metre	679	$_____	$_____
04.03.09	Parapet Railing	Metre	220	$_____	$_____
04.03.10	Bridge Parapet Transition Barrier	Each	2	$_____	$_____
04.04	**H7 EB at 285th #1 Wall No. 10439**				
04.04.01	Mechanically Stabilized Earth Wall	Square Metre	130	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.04.02	Steel Sidewalk Fence	Metre	67	$_____	$_____
04.04.03	Silane Surface Treatment	Square Metre	74	$_____	$_____
04.05	**H7 EB at 285th #2 Wall No. 10490**				
04.05.01	Mechanically Stabilized Earth Wall	Square Metre	275	$_____	$_____
04.05.02	Steel Sidewalk Fence	Metre	137	$_____	$_____
04.05.03	Silane Surface Treatment	Square Metre	150	$_____	$_____
04.06	**Precast Concrete Interlocking Modular Block Retaining Walls**				
04.06.01	BW-1	Square Metre	165	$_____	$_____
04.06.02	BW-2	Square Metre	30	$_____	$_____
04.06.03	BW-3	Square Metre	100	$_____	$_____
04.06.04	BW-4	Square Metre	250	$_____	$_____
04.06.05	BW-5	Square Metre	260	$_____	$_____
04.06.06	BW-6	Square Metre	265	$_____	$_____
04.06.07	BW-7	Square Metre	465	$_____	$_____
04.06.08	BW-8	Square Metre	270	$_____	$_____
04.06.09	BW-9	Square Metre	180	$_____	$_____
04.06.10	BW-10	Square Metre	110	$_____	$_____
04.06.11	BW-11	Square Metre	340	$_____	$_____
04.06.12	BW-12	Square Metre	275	$_____	$_____
04.06.13	Concrete Swale	Metre	1,240	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.06.14	Bridge End Fill	Cubic Metre	9,300	$_____	$_____
04.06.15	Pedestrian Sidewalk Fence	Metre	1,240	$_____	$_____
04.06.16	Geogrid	Square Metre	125	$_____	$_____
05	**SECTION 5 - PAVING**				
05.01	**End Product Specifications**				
05.01.01	EPS Payment Adjustment (Refer to SP 5.01, SS 502)	P.S.	$55,000.00	P.S.	$55,000.00
05.02	**Supply Asphalt Mix Aggregate in Stockpile**				
05.02.01	Asphalt Mix Aggregate	Tonne	34,000	$_____	$_____
05.03	**Emulsified Penetrating Primer**				
05.03.01	Supply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.03.02	Apply Emulsified Penetrating Primer	Litre	141,000	$_____	$_____
05.04	**Tack Coat**				
05.04.01	Supply Tack Coat	Litre	18,800	$_____	$_____
05.04.02	Apply Tack Coat	Litre	18,800	$_____	$_____
05.05	**Asphalt Pavement**				
05.05.01	Medium Mix Asphalt Pavement - Bottom Lift	Tonne	20,000	$_____	$_____
05.05.02	Medium Mix Asphalt Pavement - Top Lift	Tonne	13,400	$_____	$_____
05.05.03	Medium Mix Asphalt - Driveways	Tonne	500	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.06	**Base Repairs**				
05.06.01	Base Repairs (CONDITIONAL ITEM)	Square Metre	3,000	$_____	$_____
05.07	**Pavement Drainage**				
05.07.01	Asphalt Spillways	Each	150	$_____	$_____
05.07.02	Rip Rap Spillways	Each	182	$_____	$_____
05.08	**Shouldering**				
05.08.01	Shouldering	Cubic Metre	130	$_____	$_____
05.09	**Precast Concrete Barriers**				
05.09.01	Concrete Bull Nose (CBN) - Supply and Install	Each	54	$_____	$_____
05.09.02	Concrete Low Barrier (CLB) - Supply and Install	Each	284	$_____	$_____
05.09.03	Concrete Roadside Barrier (CRB) - Supply and Install	Each	2,148	$_____	$_____
05.09.04	Concrete Roadside Drainage Barrier (CDB) - Supply and Install	Each	117	$_____	$_____
05.09.05	Concrete Median Barrier (CMB) - Supply and Install	Each	1,826	$_____	$_____
05.09.06	Concrete Pier Barrier (CPB) - Supply and Install	Each	574	$_____	$_____
05.09.07	Concrete Transition Barrier (CTB-1E) - Supply and Install	Each	53	$_____	$_____
05.09.08	Concrete Transition Barrier (CTB-2H) - Supply and Install	Each	35	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.09.09	Concrete Median Drainage Barrier - Supply and Install	Each	74	$_____	$_____
05.10	**Concrete Works**				
05.10.01	Concrete Island Curb	Metre	190	$_____	$_____
05.10.02	Concrete Island Infill	Square Metre	230	$_____	$_____
05.10.03	Concrete Curb and Gutter	Metre	200	$_____	$_____
05.10.04	Concrete Sidewalk	Square Metre	266	$_____	$_____
05.10.05	Concrete Driveway Let Down	Square Metre	75	$_____	$_____
05.10.06	Truck Apron Mountable Concrete Curb and Gutter	Metre	100	$_____	$_____
05.11	**Colored Stamped Truck Apron**				
05.11.01	Colored Stamped Truck Apron	Square Metre	45	$_____	$_____
06	**SECTION 6 - ELECTRICAL**				
06.01	**Removal of Existing Electrical Equipment**				
06.01.01	Removal of Existing Electrical Equipment	L.S.	100%	L.S.	$_____
06.02	**Removal of Existing Underground Equipment**				
06.02.01	Removal of Existing Underground Equipment	L.S.	100%	L.S.	$_____
06.03	**Concrete Bases (SS 635.07.06)**				
06.03.01	Type B Concrete Bases	Each	1	$_____	$_____
06.03.02	Type C Concrete Bases	Each	31	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.03.03	Type H2 Concrete Bases	Each	2	$_____	$_____
06.03.04	Type L1 Concrete Bases	Each	4	$_____	$_____
06.03.05	Type L2 Concrete Bases	Each	8	$_____	$_____
06.03.06	Type M2 Concrete Bases	Each	2	$_____	$_____
06.03.07	Type S2 Concrete Bases	Each	3	$_____	$_____
06.03.08	Traffic Controller Base	Each	2	$_____	$_____
06.04	**Plastic Junction Boxes (SS 635.08.01)**				
06.04.01	Type 10 Junction Box	Each	95	$_____	$_____
06.04.02	Type 11 Junction Box	Each	3	$_____	$_____
06.04.03	Type 12 Junction Box	Each	9	$_____	$_____
06.05	**Concrete Junction Boxes (SS 635.08.02)**				
06.05.01	Concrete JB	Each	3	$_____	$_____
06.05.02	Vault	Each	12	$_____	$_____
06.06	**Conduits (SS 635.11.01)**				
06.06.01	25mm RPVC Conduit	Metre	94	$_____	$_____
06.06.02	50mm RPVC Conduit	Metre	16,540	$_____	$_____
06.07	**Trenching and Backfilling (SS 635.12.01)**				
06.07.01	Trenching and Backfilling	Metre	5,575	$_____	$_____
06.08	**Trenchless Conduit Installation (SS 635.13.01)**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.08.01	50mm RPVC Conduit with Steel Casing Pipe	Metre	15	$_____	$_____
06.09	**Supply And Installation/Modification Of Signal/AWF Poles (SS 635.19.09)**				
06.09.01	**Hwy 7 at River Road East**				
06.09.01.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.01.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.01.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.01.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.01.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.01.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.02	**Hwy 7 at 272 ST**				
06.09.02.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.02.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.02.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.02.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.02.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.09.02.06	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.02.07	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.03	**Hwy 7 at 280 ST**				
06.09.03.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.03.02	Signal Pole 2	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.09.03.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.03.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.03.05	Type L AWF Pole (WB)	L.S.	100%	L.S.	$_____
06.09.03.06	Type L AWF Pole (EB)	L.S.	100%	L.S.	$_____
06.09.04	**Hwy 7 at 287 ST**				
06.09.04.01	Signal Pole 1	L.S.	100%	L.S.	$_____
06.09.04.02	Signal Pole 2	L.S.	100%	L.S.	$_____
06.09.04.03	Signal Pole 3	L.S.	100%	L.S.	$_____
06.09.04.04	Signal Pole 4	L.S.	100%	L.S.	$_____
06.09.04.05	Signal Pole 5	L.S.	100%	L.S.	$_____
06.10	**Luminaire Poles (SS 635.19.10)**				
06.10.01	9.0m Luminaire Pole	Each	18	$_____	$_____
06.10.02	11.0m Luminaire Pole	Each	14	$_____	$_____
06.11	**Supply And Installation Of Emergency Vehicle Pre-Emption Equipment (SS 635.19.11)**				
06.11.01	Hwy 7 at River Road East	L.S.	100%	L.S.	$_____
06.11.02	Hwy 7 at 272 ST	L.S.	100%	L.S.	$_____
06.12	**Service Equipment (SS 635.20.01)**				
06.12.01	Service Panel No. 1 (TE -20027-1)	L.S.	100%	L.S.	$_____
06.12.02	Service Panel No. 3 (TE -20027-4)	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.12.03	Service Panel No. 4 (TE -20027-6)	L.S.	100%	L.S.	$_____
06.12.04	Service Panel No. 5 (TE -20027-7)	L.S.	100%	L.S.	$_____
06.13	**Modify Existing Lighting Equipment**				
06.13.01	Replace HPS Cobrahead with LED	Each	3	$_____	$_____
06.14	**Modify Existing Service Equipment**				
06.14.01	Service Panel No. 2 (TE -20027-2)	L.S.	100%	L.S.	$_____
06.14.02	Service Panel No. 1 (TE -04007-2)	L.S.	100%	L.S.	$_____
06.15	**Wiring (SS 635.19.01)**				
06.15.01	Service Area 1 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.02	Service Area 2 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.03	Service Area 3 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.04	Service Area 4 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.05	Service Area 5 (TE-20027)	L.S.	100%	L.S.	$_____
06.15.06	Service Area 1 (TE-04007)	L.S.	100%	L.S.	$_____
06.16	**Supply and Install Traffic Counter Stations (SS 635.22)**				
06.16.01	Short Count Station	Each	1	$_____	$_____
06.17	**Detector Loops (SS 635.22.01)**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.17.01	Detector Loop (Round)	Each	2	$_____	$_____
06.17.02	Pre-Formed Loop (Square)	Each	40	$_____	$_____
06.17.03	Pre-Formed Loop (Rectangular)	Each	7	$_____	$_____
07	**SECTION 7 - SIGNING AND PAVEMENT MARKINGS**				
07.01	**Signing**				
07.01.01	Supply and Install Single Post Signs	Each	118	$_____	$_____
07.01.02	Supply and Install Double Post Signs	Each	5	$_____	$_____
07.01.03	Supply and Install Barrier-Mounted Signs	Each	57	$_____	$_____
07.01.04	Item Deleted				
07.02	**Pavement Markings**				
07.02.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.02.02	Temporary Pavement Markings	L.S.	100%	L.S.	$_____
07.02.03	Permanent Pavement Markings - Thermoplastic	Square Metre	296	$_____	$_____
08	**SECTION 8 - FENCING, SEEDING AND LANDSCAPING**				
08.01	**Fencing and Gates**				
08.01.01	Pedestrian Fencing	Metre	140	$_____	$_____
08.01.02	Bicyclist Fencing	Metre	230	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
08.01.03	Type 'B' Fencing	Metre	80	$_____	$_____
08.01.04	Type 'C' Fencing	Metre	650	$_____	$_____
08.01.05	Gates	Each	5	$_____	$_____
08.02	**Revegetation Seeding**				
08.02.01	Revegetation Seeding with HECP	Hectare	6	$_____	$_____
08.03	**Environmental Works at York and Whonnock Creek**				
08.03.01	York Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.02	Whonnock Creek Revegetation	L.S.	100%	L.S.	$_____
08.03.03	Coho Gravels	Tonne	490	$_____	$_____
08.03.04	Large Woody Debris	Each	10	$_____	$_____
08.03.05	Habitat Boulders	Each	42	$_____	$_____
08.03.06	Cellular Confinement System incl. top soil	Square Metre	450	$_____	$_____
09	**SECTION 9 - WHONNOCK CREEK TEMPORARY DETOURS**				
09.01	Engineered Detour Designs	L.S.	100%	L.S.	$_____
09.02	Cold Milling of Tie-ins (CONDITIONAL ITEM)	Square Metre	400	$_____	$_____
09.03	Pavement Cutting	Metre	170	$_____	$_____
09.04	25mm Well Graded Base - Detour (CONDITIONAL ITEM)	Cubic Metre	1,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.05	Select Granular Sub-Base (CONDITIONAL ITEM)	Cubic Metre	2,200	$_____	$_____
09.06	Asphalt Pavement - Detour (CONDITIONAL ITEM)	Tonne	1,600	$_____	$_____
09.07	Shouldering (CONDITIONAL ITEM)	Cubic Metre	20	$_____	$_____
09.08	Install and Remove Signs - Detour (CONDITIONAL ITEM)	Each	14	$_____	$_____
09.09	Detour Construction Barrier (CONDITIONAL ITEM)	Metre	900	$_____	$_____
09.10	Detour Pavement Markings (CONDITIONAL ITEM)	Kilometre	1	$_____	$_____
09.11	Temporary Detour Drainage (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
09.12	Detour Removal (CONDITIONAL ITEM)	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$**_____

All dollar amounts are to be in Canadian Dollars. Do not include GST in any Unit Prices or Extended Amounts, or in the Tender Price. The Ministry will pay any applicable GST under the Contract. Invoices / progress estimates under the Contract must show the calculation of any applicable GST as a separate line item.

Contractor's **Name:** _____

Address: _____

_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 12862-2022
Project Name: Hwy 7 266th Street to 287th Street Widening

City: _____

Postal Code: _____

Phone: _____

Fax: _____

Date: _____

From: Porter, Jay C TRAN:EX (Jay.Porter@gov.bc.ca)
To: Hui, Sheila TRAN:EX (Sheila.Hui@gov.bc.ca)
Cc: Tsang, Amy TRAN:EX (Amy.Tsang@gov.bc.ca)
Subject: FW: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement
Sent: 10/20/2022 23:29:22
Attachments: CP-CASC-95.92 at-grade_public road crossing reconstruction agreement final Oct 7-22(final) - JS approved.pdf
Message Body:

Signed copy attached

From: Sandhu, Anupam TRAN:EX <Anupam.Sandhu@gov.bc.ca>
Sent: October 20, 2022 3:55 PM
To: Porter, Jay C TRAN:EX <Jay.Porter@gov.bc.ca>
Cc: Staite, Janelle A TRAN:EX <Janelle.Staite@gov.bc.ca>
Subject: RE: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement

My apologies, attached the wrong doc.in the last email.

Please see the correct doc attached.

Thanks

Best Regards

Anupam Sandhu (she/her/hers)

Executive Assistant | Business Management Services

Ministry of Transportation & Infrastructure | South Coast Regional Office

1500 Woolridge Street, Coquitlam, BC V3K 0B8

Anupam. Sandhu@gov.bc.ca | P: +1 (604) 219-7874 | W: www.gov.bc.ca/tran

From: Sandhu, Anupam TRAN:EX
Sent: October 20, 2022 3:54 PM
To: Porter, Jay C TRAN:EX <Jay.Porter@gov.bc.ca>
Cc: Staite, Janelle A TRAN:EX <Janelle.Staite@gov.bc.ca>
Subject: FW: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement

Hi Jay

Please see signed agreement attached.

Thanks

Best Regards

Anupam Sandhu (she/her/hers)

Executive Assistant | Business Management Services

Ministry of Transportation & Infrastructure | South Coast Regional Office

1500 Woolridge Street, Coquitlam, BC V3K 0B8

Anupam. Sandhu@gov.bc.ca | P: +1 (604) 219-7874 | W: www.gov.bc.ca/tran

From: Staite, Janelle A TRAN:EX <Janelle.Staite@gov.bc.ca>
Sent: October 20, 2022 3:46 PM
To: Sandhu, Anupam TRAN:EX <Anupam.Sandhu@gov.bc.ca>
Cc: Porter, Jay C TRAN:EX <Jay.Porter@gov.bc.ca>
Subject: Fwd: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement

Can you please add my signature and send back to Jay?

Thanks!

Get Outlook for iOS

From: Porter, Jay C TRAN:EX <Jay.Porter@gov.bc.ca>
Sent: Thursday, October 20, 2022 3:45:06 PM
To: Staite, Janelle A TRAN:EX <Janelle.Staite@gov.bc.ca>
Subject: FW: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement

From: Porter, Jay C TRAN:EX
Sent: October 7, 2022 11:53 AM
To: Staite, Janelle A TRAN:EX <Janelle.Staite@gov.bc.ca>
Subject: FW: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement

Janelle

s.13; s.17

From: Hui, Sheila TRAN:EX <Sheila.Hui@gov.bc.ca>
Sent: October 7, 2022 8:01 AM
To: Porter, Jay C TRAN:EX <Jay.Porter@gov.bc.ca>
Cc: Tsang, Amy TRAN:EX <Amy.Tsang@gov.bc.ca>
Subject: For approval / signature: Project 12862 H7 266th to 287th Final CPR agreement

Jay,

s.13; s.14

The project will be doing modification to the north approach at 272nd and therefore is requiring this agreement to move forward with this work.

s.13; s.17

s.13

If you have any questions, please let me know.

Please pass the executed copy back to me so that Gord can provide that to CP for execution.

Thanks,

Sheila Hui, PMP (She/her/hers)

Senior Project Manager

Project Delivery, South Coast Region, Ministry of Transportation and Infrastructure

Address: 310-1500 Woolridge Street, Coquitlam, BC V3K 0B8

Email: Sheila.hui@gov.bc.ca

Office: 604-527-2261 Cell: 604-779-9800

We value our ability to lead with passion, adapt to dynamic challenges, and build relationships, all with a customer focused vision.

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Page 136 of 367 to/à Page 143 of 367

Withheld pursuant to/removed as

s.13 ; s.16 ; s.17

From: Hui, Sheila TRAN:EX (Sheila.Hui@gov.bc.ca)
To: Tsang, Amy TRAN:EX (Amy.Tsang@gov.bc.ca)
Subject: Fwd: Project No. 12862-2022 - HWY 7 266TH STREET TO 287TH STREET WIDENING - Award Letter and Record
Sent: 09/14/2022 21:05:50
Attachments: Award and Records.pdf
Message Body:

For our records

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From: Attarian, Almas TRAN:EX <Almas.Attarian@gov.bc.ca>
Sent: Wednesday, September 14, 2022 1:12:14 PM
To: Hui, Sheila TRAN:EX <Sheila.Hui@gov.bc.ca>; mike.farynuk@wsp.com <mike.farynuk@wsp.com>; Duffus, Robert GCPE:EX <Robert.Duffus@gov.bc.ca>
Subject: Project No. 12862-2022 - HWY 7 266TH STREET TO 287TH STREET WIDENING - Award Letter and Record

Hello,

Please find the attached Award Letter and Record for Project No. 12862-2022 - HWY 7 266TH STREET TO 287TH STREET WIDENING.

Thank you

Almas Attarian

Contract Administrator

Ministry of Transportation and Infrastructure

Ste.310-1500 Woolridge Street

Coquitlam, BC V3K 0B8

Phone : 1 (236) 468 3456 | Email: Almas.Attarian@gov.bc.ca

BRITISH COLUMBIA

VIA EMAIL
April 12, 2023

File No. 1070-20
Contract No. 153CS1051

McElhanney Ltd.
200 - 858 Beatty Street
Vancouver BC V6B 1C1

Dear Erv Newcombe:

Re: Contract No. 153CS1051: Highway 7 - 266 Street to 287 Street Widening Detailed Design

Enclosed please find a signed copy of Amendment No. 03 for the above noted contract for your files and future reference.

Please ensure that your insurance broker is advised of the amendment to your contract.

Yours truly,

Sheila Brett
Regional Procurement Officer

attachment

copy: Contract File
Payment Services
Helen Cheung/Bonnie Cameron, South Coast Region
Corporate Insurance and Bonds Manager

Ministry of Transportation and Infrastructure
Contract Administration
South Coast Region

Mailing Address:
Suite 310 - 1500 Woolridge Street,
Coquitlam BC V3K 0B8

Telephone: 236 468-1897
Fax: 604 527-2151

Location:
Suite 310 - 1500
Woolridge Street,
Coquitlam BC V3K 0B8

www.gov.bc.ca/tran

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

AMENDING AGREEMENT
(Consulting Services)

CONTRACT IDENTIFICATION NUMBER
153 | CS | 1051
AMENDMENT NUMBER: 03

This Amending Agreement, IS MADE THE 12 DAY OF April, 2023

BETWEEN: HIS MAJESTY THE KING IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA REPRESENTED BY THE MINISTER OF TRANSPORTATION AND INFRASTRUCTURE

Address 310 - 1500 Woolridge Street, Coquitlam BC — V3K 0B8
(hereinafter called the "Province") — Postal Code

AND: McElhanney Ltd.

Address 200 - 858 Beatty Street, Vancouver BC — V6B 1C1
(hereinafter called the "Contractor") — Postal Code

WITNESS THAT WHEREAS

A. the parties entered into an Agreement dated the 10th of October, 2019 for:

Highway 97 - 266 Street to 287 Street Widening Detailed Design

(hereinafter called the "Agreement")

B. and whereas the parties have agreed to amend the agreement:
NOW THEREFORE in consideration of the covenants and agreements herein contained, the parties agree as follows:

(1) That the Agreement shall be amended as follows:

The Parties agree as follows:
The Province is, as of September 8th, 2022, "His Majesty the King in right of the Province of British Columbia as represented by Minister of Transportation and Infrastructure.

Increase the Total Contract Value to s.17 **on the Payment Schedule.**

(2) This amendment shall be effective January 30th, 2023

That in all other respects, the terms and conditions of the said Agreement are hereby ratified and confirmed.

THE PARTIES ARE DEEMED TO HAVE EXECUTED THIS AMENDING AGREEMENT THE DAY AND YEAR FIRST ABOVE WRITTEN		AFFIX CORPORATE SEAL, IF ANY
SIGNATURE OF CONTRACTOR Project Manager Print Name and Position	SIGNATURE OF DELEGATED MINISTRY AUTHORITY Katie Murphy Manager, Financial Services Print Name and Position	

H0463 (2022/09) Original – Contract Administration Copy – Contractor / Accounts Payable

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Withheld pursuant to/removed as

s.16 ; s.17

Page 148 of 367

Withheld pursuant to/removed as

s.14 ; s.16 ; s.17

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Withheld pursuant to/removed as

s.16 ; s.17

PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

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SCHEDULE 3 - SPECIAL PROVISIONS AND APPENDICES

PROJECT NO. 12862-2022

HWY 7 266TH STREET TO 287TH STREET WIDENING

SPECIAL PROVISIONS

SECTION 1 GENERAL

1.01 Location of the Site

The Site is located on Highway No. 7 (Lougheed Highway) within the City limits of Maple Ridge from current extent of median barrier west of Spilsbury Street (LKI Segment 2724 km 13.74) to 287th Street (LKI Segment 2724 km 19.39) 19.39. The Project length is approximately 5.65 km.

1.02 Scope of Work

The general nature of the Work to be carried out under the Contract consists of the following:

- Mobilization.
- Quality management.
- Traffic management.
- Protection of the Environment.
- Survey Layout.
- Coordination of utility relocations.
- Erosion and sediment control.
- Clearing and grubbing.
- Organic stripping.
- Disposal of contaminated material.
- Roadway and drainage excavation (Type A and Type D) including unsuitable and surplus material for embankment and disposal.
- Retaining wall construction.
- Culverts and storm drainage works
- Extend York Creek Steel Pipe
- Replace existing Whonnock Creek Culverts
- Pavement cutting, cold milling and removal.
- Supply and placement of granular materials.
- Supply and placement of asphalt pavement.
- Concrete sidewalk, curb and driveway letdowns
- Relocation, supply and installation of final concrete barriers.
- Supply and installation of traffic islands.
- Supplying and installing signing.
- Electrical works including the installation of roadway lighting and traffic signals.
- Temporary Detours
- Temporary pavement markings and layout of permanent pavement markings.

- Environmental offsetting aquatic and riparian habitat restoration work, including stream construction and riparian planting.
- Revegetation seeding.
- Clean-up and site restoration.
- Redline as-built drawings and survey of constructed work.

1.03 Interpretation

Cross-reference abbreviations are defined in the Glossary of Terms.

Ministry names may change and any changes from names used in this Contract shall be resolved in accordance with SS 000.01.

Current names of all Ministries may be found at the following link:

https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries

1.04 Applicable Specifications

(a) Standard Specifications

The 2020 Standard Specifications for Highway Construction and the attached Special Provisions Appendix for *Amendments to the 2020 Standard Specifications* apply to this Contract.

(b) Maintenance Specifications

The Ministry has transitioned to new road and bridge Maintenance Specifications for the highways within and around the Site.

Further to the Glossary of Terms definition of Maintenance Specifications, the Ministry hereby notifies the Contractor that the Maintenance Specifications applicable to this Contract have been replaced with the new "2018/2019 Maintenance Agreement Schedule 1 Specifications" which will be applicable to this Contract.

The new specifications are available to download from the following address:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/highway-bridge-maintenance/highway-maintenance/maintenance-agreements/maintenance-specifications/schedule_1a_specifications_-_final_-_2018-19.pdf

(c) Local Area Specifications:

Work under this Contract takes place in Ministry maintenance Service Area 6 – Lower Mainland

The Maintenance Specifications include any "Local Area Specification" for the above Service Area, which may be downloaded from the following address:

https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/contracting-to-transportation/highway-bridge-maintenance/highway-maintenance/agreement/local-area-specifications-las

(d) Electrical Maintenance Standards

Further to the Glossary of Terms definition of Electrical Maintenance Standards, the Ministry hereby notifies the Contractor that the Ministry is transitioning to updated Electrical Maintenance Standards for the highways within and around the Site. The 2020 Electrical Maintenance Standards applies to Vancouver Island now and will apply to all other areas of the Province effective September 1, 2021.

The Electrical Maintenance Standards are available to download from the following addresses:

2012: *https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/contracting-to-transportation/highway-bridge-maintenance/electrical-maintenance/agreement*

2020: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/highway-bridge-maintenance/electrical-maintenance/schedule_1_specifications.pdf

The Ministry Representative will provide notice to the Contractor should there be any change to the above effective date and, where applicable, provide the contact information of any new electrical maintenance Contractor.

After the actual effective date, the updated Electrical Maintenance Standards will be applicable to this Contract.

1.05 Availability of Relevant Publications

If a relevant publication is not available from the source indicated below, please contact the Ministry Representative.

(a) Archaeological Documents

The following documents (the "Archaeological Documents") form part of the Contract Document package:

(i) Archaeological Impact Assessment Status Memo

The Archaeological Documents are confidential and may contain sensitive information, disclosure of which could have significant archaeological impacts.

While the Archaeological Documents are not included in the Tender Document Package, they will be made available upon receipt, by the Ministry Contact Person, of a fully completed and executed Confidentiality Undertaking (attached to these Special Provisions).

The fully completed and executed Confidentiality Undertaking must be received by the Ministry Contact Person no less than ten (10) days prior to the Closing Date. If a compliant Confidentiality Undertaking is received by the Ministry Contact Person within the time specified, the Archaeological Documents will be provided within three (3) days.

The nature of the Archaeological Documents are such that they are intended to cover both the significant interests of the First Nation(s) and provide sufficient archaeological information to the Bidder. Failure on the part of the Bidder to provide the Confidentiality Undertaking and receive the Archaeological Documents is entirely the responsibility of the Bidder. Any failure in not obtaining the Archaeological Documents will be the sole responsibility of the Bidder and at the Bidders sole risk. The Ministry shall have no responsibility or liability for the Bidders failure to provide the Confidentiality Undertaking.

(b) Equipment Rental Rate Guide:

The Equipment Rental Rate Guide is available from:

B.C. Road Builders and Heavy Construction Association
Suite #307 - 8678 Greenall Avenue
Burnaby, British Columbia
V5J 3M6
Phone Number: (604) 436-0220 Fax Number: (604) 436-2627

https://www.roadbuilders.bc.ca/blue-book/

(c) Other Documents:

All other General Reference Documents and other relevant publications can be obtained through Queen's Printer at:

Queen's Printer
Government Publication Services
Box 9452, Stn Prov Govt
Victoria BC V8W 9V7

Phone toll free at: 1-800 663-6105

https://www.crownpub.bc.ca/

1.06 Insurance

The Contractor shall comply with the insurance requirements as described in Schedule 6 Insurance Specifications - Major Works Contracts - INS-152, Part 1 and Par 2, except the coverage limits for Part 2 shall be the total cost of the value of the retaining walls.

The following and any of their employees, servants or agents shall be added to the liability policy as additional insureds:

- Canadian Pacific Railway
- British Columbia Hydro and Power Authority
- Telus Corporation
- Shaw Communications
- Fortis BC
- Kwantlen First Nation
- City of Maple Ridge

The coverage under Clause 3 - Third Party Liability Insurance shall be increased to inclusive limits and in the annual aggregate of not less than $10,000,000.00 (ten million).

The Contractor shall obtain, maintain and provide evidence of "ALL RISKS" insurance coverage, satisfactory to the Ministry, covering all equipment owned, rented, or leased, or for which the Contractor may be responsible. The insurance policy shall also include a Waiver of Subrogation against Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure, together with the employees, servants and agents of the Minister.

1.07 Construction Schedule and Cash Flow Projection Schedule

Further to GC 16.01, the preliminary and all subsequent Construction Schedules shall comply with the following requirements.

(a) General

The Contractor shall submit the preliminary Construction Schedule to the Ministry Representative at least seven (7) days prior to the pre-construction meeting or within fourteen (14) days of the Award Date, whichever is sooner.

The Contractor shall comply with the Construction Schedule.

The Construction Schedule shall:

(i) Be consistent in all respects with the requirements of the Contract, show the order of the Work, be practical and consistent and make adequate provision for adverse weather which may be expected from records for the area.

(ii) Identify the sequencing of activities and time required for undertaking the Work.

(iii) Provide for orderly, timely and effective progress of the Work and contain sufficient detail to enable both the Contractor and the Ministry Representative to plan, coordinate, analyze, document and control their respective contract responsibilities.

(iv) Identify the critical path(s). The start date and finish date of each item on a critical path shall be identified in each submission.

(v) Identify, include provision for and accommodate utility relocations, availability of right-of-way, environmental restrictions, and any permitting required that is applicable to this Project.

(vi) Provide a comparison between actual start/finish times and originally scheduled start/finish times for each operation.

(vii) Identify any significant Hold Points and Witness Points, as defined in SS 145.12, or as otherwise specified by the Ministry Representative.

(b) Construction Schedule Format

Construction Schedules shall be provided in Microsoft Project scheduling software. The Ministry Representative may require that the submission be saved in a particular version, for compatibility with Ministry software. For every submittal the Contractor shall provide a Microsoft Project file, a PDF copy, and three hard copies.

All Construction Schedules shall be submitted in one of the following formats:

- A time scaled network diagram with a written narrative which shall, as a minimum, include all the operations listed in Table 1: Minimum Construction Schedule Breakdown, logically linking them to show the manner in which the Project will be constructed. These operations shall be further divided into subsections within the Work, as also shown below; or
- A time scaled bar chart, with written narrative, listing all of the same operations by subsections, and showing graphically the length of time needed for each.

Each page of the network diagram or bar chart shall include a title block showing the Contract name and number, Contractor's name, date of the original schedule, date of current update and a legend containing the symbols used, their definitions, and the time scale, shown graphically. To ensure readability the network diagram or bar chart shall be drawn on a reasonable size of paper to the satisfaction of the Ministry Representative.

The network diagram or bar chart shall be prepared as follows:

- The length of the bar chart shall represent the number of days worked.
- The time scale shall be appropriate for the duration of the Contract.
- The time scale shall be in calendar days.
- The smallest unit shown shall be one calendar day.
- The first day and midpoint of each month shall be identified by date.
- Distinct symbols shall be used to denote multiple shifts, holiday and weekend work, non-working days, and days with extended work hours.
- Expected beginning and completion dates of each activity along with duration.
- Milestone dates, the Completion Date, and all other critical dates.
- The quantity of Work, where appropriate, in the unit of measure.

The duration of each activity shall be verifiable by personnel and equipment allocation, in common units of measure or by delivery dates. All major resourcing is to be summarized.

The schedule shall show detailed work activities supported by a narrative as follows:

- Construction activities including, as a minimum, the operations shown in the table below,
- Description in common terminology,
- Submittal and approval of shop drawings,
- Fabrication and installation of special materials and equipment,
- Duration of the Work, including stages or phases and their duration.

(c) Scheduling Constraints

A suggested construction staging drawing is included in Schedule T3 – Specific Reference Documents. This is an example only. It is the Contractor's sole responsibility for developing their own staging.

The Construction Schedule shall identify and accommodate any scheduling constraints identified within the Contract. Without limitation, the following are some of the scheduling constraints to be accommodated:

- Property acquisitions, refer to SP 1.10 – Availability of Site or Right-of-Way.
- Allowable work and traffic stoppage windows, restrictions, and notification requirements as indicated in SP 1.18 – Traffic Management.
- The Bird Nesting Window which could affect the tree clearing schedule as indicated in SP 1.22 – Protection of the Environment.
- Fishery timing window for work in designated streams as indicated in SP 1.22 – Protection of the Environment.
- Utility relocations as indicated in SP 1.25 – Utilities.
- Noise bylaws as applicable on City of Maple Ridge as indicated in SP 1.09 – Hours of Work.
- Rock blasting windows as indicated in SP 1.09 – Hours of Work.
- Vertical drilling for retaining wall anchors.
- Restrictions on hours of operation and/or periods when materials will not be accepted at I.R. #5 surplus material facility as indicated in SP 2.05 – Geosynthetic.

(d) Scheduling Minimum Requirements

The table below describes the minimum amount of information that shall be shown on a Construction Schedule.

Table 1: Minimum Construction Schedule Breakdown

Operation	Subsections
Mobilization	By Date
Quality Management Plan	By Submittal Date
Traffic Management Plan	By Submittal Date
Construction Environmental Management Plan	By Submittal Date
Soil Disposal Plan	By Submittal Date

Operation	Subsections
Contaminated Soils Management Plan	By Submittal Date
Clearing and grubbing	By Location
Removal of Existing Works	By Location and Type
Utility Relocations	By Location per utility
Pavement cutting, cold milling and removal	By Location
Organic Stripping	By Location
Roadway and drainage excavation for each material type	By Location
Granular Materials	By Station per material type
Rockfill Toe	By Location
Wick Drains	By Location
Horizontal Toe Drains	By Location
Retaining walls	By each wall
Culverts and storm drainage	By Location
Extend York Creek Steel Pipe and channel works	By Activity. Identify if work is scheduled inside or outside Fisheries Timing Window
Whonnock Creek Culvert Installations and channel works (including staged construction)	By Activity. Identify if work is scheduled inside or outside Fisheries Timing Window
Paving	By Location • Top Lift • Bottom Lift
Concrete works	By Location
CRB and CMB Installation	By Location
Electrical works including pre-ducting and lighting	By Location
Signalization	By Location
Sign installation	By Location
Layout and application of temporary and permanent pavement markings	By Location
Revegetation Seeding	By Project
Whonnock Creek Habitat Enhancement	By Activity
York Creek Habitat Enhancement	By Activity
Demobilization and cleanup	By Project
Milestones / Completion Date	By Schedule 5 Dates

(e) Preliminary and Baseline Schedule

Within ten (10) days after the preconstruction meeting, the Ministry Representative and the Contractor shall meet to review the preliminary Construction Schedule as submitted. The Ministry Representative will review the Schedule for compliance with all Contract time limitations and other constraints.

Within ten (10) days, after the review meeting, the Contractor shall submit the baseline Construction Schedule with required revisions.

Review of this and subsequent Construction Schedules by the Ministry Representative will not relieve the Contractor of the responsibility for timely and efficient execution of the Contract.

(f) Monthly Construction Schedules

The Contractor shall provide an updated Construction Schedule on a monthly basis. The Ministry Representative will review the Schedule for compliance with all Contract time limitations and other constraints.

The Monthly updates shall include:

- Progress to date, showing the actual start and finish times of activities,
- Comparison to the Contractor's baseline Construction Schedule,
- Forecast to Project completion and identification of schedule revisions and operation revisions, so that the monthly Construction Schedule is compliant with all Contract time limitations, milestones and other constraints,
- A description of any past, current or expected changes or delaying factors and their effect on the Construction Schedule and cash flow projections.

Monthly Construction Schedules shall be provided to the Ministry Representative within seven (7) days after the end of each month, and shall be provided at any other time, within ten (10) days of the Ministry Representative's request. The Contractor shall comply with all monthly Construction Schedule updates.

Where the monthly update shows that the Contractor's execution of the Work is falling behind the Construction Schedule to the extent that in the opinion of the Ministry Representative any one of the Milestone Dates or the Completion Date shown in Schedule 5 – Time Schedule may not be met, the Contractor shall immediately submit to the Ministry Representative details of the action the Contractor proposes to take to bring the Work back on schedule.

The Contractor and the Ministry Representative shall meet within four (4) days following each updated monthly Construction Schedule. At this meeting the Contractor and the Ministry Representative will review Contract events and any changes that may have affected the Construction Schedule.

If necessary, the Contractor shall compile an updated Construction Schedule incorporating any changes. Within seven (7) days after the meeting the Contractor shall submit an updated Construction Schedule.

(g) Bi-weekly Construction Schedules

The Contractor shall submit a Bi-weekly look-ahead every second Friday. The Bi-weekly look-ahead shall clearly state the construction activities scheduled to be delivered in the next two (2) weeks.

(h) Cash Flow Projection Schedule

The Contractor shall also submit, with the Construction Schedule and monthly updates, a Cash Flow Projection Schedule based on the Work described in the Construction Schedule, which shall present the anticipated Progress Estimate value for each month until Completion.

(i) Payment

All Contractor activities required to provide Construction Schedules and Cash Flow Projections are at the Contractor's expense.

If the Contractor fails to submit an update compliant with the terms of the Contract, the Ministry Representative may withhold the payment of the Progress Estimate until an updated Construction Schedule meeting the requirements of the Contract is provided.

1.08 Mobilization

Mobilization and its payment will be in accordance with SS 145.08.

1.09 Hours of Work

(a) Working Within the Ministry Right-of-Way

The Contractor shall confine all Works to the following time periods, unless otherwise approved in writing by the Ministry Representative:

(i) The Contractor will be permitted to Work Monday to Saturday twenty-four (24) hours, except as restricted by the requirements below and in SP 1.18 - Traffic Management.

(ii) Prior to commencement of Work, the Contractor shall provide the Ministry Representative with written details on the hours of work the Contractor is anticipating throughout the duration of the Project.

(iii) Drilling, rock hammering, handling of rock “mucking” and anchor drilling activities shall be permitted only between the hours of 08:00 and 20:00 Monday to Friday and 09:00 to 18:00 Saturday. These activities are prohibited on Sundays and statutory holidays, unless the Contractor obtains the written approval of the Ministry Representative.

(iv) All Works shall be undertaken in compliance with the Traffic Management Special Provisions, including without limitation, the Approved Work Windows and Long Weekend/Special Event tables.

(b) Working Outside of the Ministry Right-of-Way

The Contractor shall comply with all of the applicable bylaws of the City of Maple Ridge except to the extent a variance is authorized in SP Appendix – Local Authority By-Law Applicability.

(c) Variances to Hours of Work

No Work will be carried out at times outside of these hours of work without written approval of the Ministry Representative.

1.10 Availability of Site or Right-of-Way

The Site is available for the immediate commencement of construction except the listed right-of-way, licenses to construct, and purchases of properties which have not been completed. These properties may be entered only after confirmation by the Ministry Representative that purchases are complete.

The Contractor shall schedule its Work accordingly.

The anticipated possession date(s) of the parcels are as follows:

Table 2: Anticipated Property Possession Dates

Legal Description	Plan Page	Anticipated Possession Date
011-182-393 Lot 2, DL 433, GRP 1, NWD, Plan 5883	104RW	March 31, 2023
014-250-501 Lot 1, DL 433, GRP 1, NWD, Plan 81627	104RW	March 31, 2023
014-250-551 Lot 2, DL 433, GRP 1, NWD, Plan 81627	104RW	March 31, 2023
006-406-947	104RW & 105RW	March 31, 2023

Parcel "one", (SRW Plan 101), DL 433, GRP 1, NWD, Exc. Part Subdivided by Plan 63143		
009-455-604 Lot 7, DL 441, GRP 1, NWD, Plan 11107	106RW	October 31, 2022
002-175-088 Lot "B", DL 439 & 441, GRP 1, NWD, Plan 11111	106RW	March 31, 2023
011-355-751 Lot 2, DL 439, GRP 1, NWD, Plan 8949	106RW & 107RW	March 31, 2023
008-352-402 Lot 1, DL 439, GRP 1, NWD, Plan 8949	107RW	March 31, 2023
009-749-721 Lot "One" Except: The North 233 Ft; DL 439, GRP 1, NWD, Plan 7536	107RW	March 31, 2023
000-977-900 Lot "One" Except: The North 233 Ft; DL 439, GRP 1, NWD, Plan 7536	107RW	March 31, 2023
002-249-022 Lot 12, DL 439, GRP 1, NWD, Plan 60972	107RW	August 31, 2022
002-671-557 Lot 13, DL 439, GRP 1, NWD, Plan 60972	107RW	August 31, 2022
006-128-084 Lot 9, DL 439, GRP 1, NWD, Plan 41258	107RW & 108RW	March 31, 2023
012-876-011 Parcel “1” (SRW Plan 4598) of Parcel “A” (Ref. Plan 2503), DL 439, GRP 1, NWD	108RW	October 31, 2022
008-900-353 Lot 14, Except: Firstly: Part Sub’d by Plan 23931, Secondly: Part Sub’d by Plan 33032, DL 438, GRP 1, NWD, Plan 7537	108RW	March 31, 2023
000-444-031 Lot 29 Exc.: Part on SRW Plan LMP3310, DL 438, GRP 1, NWD, Plan 47148	108RW	December 31, 2022
002-515-474 Lot 20, DL 438, GRP 1, NWD, Plan 26725	108RW	December 31, 2022
001-768-905 The South 64 ft Lot 12, DL 438, GRP 1, NWD, Plan 7537	108RW	August 31, 2022
011-255-307 Lot 12 Exc.: South 64 ft., DL 438, GRP 1, NWD, Plan 7537	108RW	August 31, 2022
005-638-089 Lot 37, DL 438, GRP 1, NWD, Plan 57927	108RW	March 31, 2023

1.11 Access to Site

Access to the Site can be gained by Highway 7.

1.12 Site Safety and Prime Contractor

(a) General:

Requirements and responsibilities for construction Site safety are set out in SS 135 - Construction Site Safety and have changed in the 2020 Standard Specifications.

Within the Site, the Contractor shall be responsible for and shall fulfill all of its obligations as an "employer" under the *Workers Compensation Act* and the *Occupational Health and Safety Regulation* and may, where designated as the "Prime Contractor" by the Ministry, have additional responsibilities for an "Area of Responsibility" as detailed in SS 135 and these Special Provisions.

The distinction between the geographic areas of the "Site" (where the Contractor is contracted to the Ministry to construct the works) and the "Area of Responsibility" – AoR (where the Contractor or another party has responsibilities for occupational health and safety issues between multiple employers) is important.

Further to SS 135 and SS 145.30, the Contractor shall not commence Work until the Ministry Representative has accepted the Contractor's Occupational Health and Safety Program and AoR Specific Safety Plan.

(b) Areas of Responsibility:

The Areas of Responsibility encompassing the Site are as described below and may, if agreeable to the Ministry and with proper notice to the Workers Compensation Board (WorkSafeBC) by the Prime Contractor for each affected Area of Responsibility, include other such areas as required by the specific methodology and equipment used during the course of the Work.

The Area(s) of Responsibility are:

Table 3: Areas of Responsibility

Area of Responsibility	***Description***
#1	The Site (LKI Segment 2724 km 19.39)
#2	Any pits, disposal sites or other areas the Contractor may utilize in the performance of the Work.
#3	River Road Disposal Site

(c) Prime Contractor Designations:

In accordance with SS 135, the Contractor shall be the Prime Contractor for the Area of Responsibility for the entire duration of the Work.

1.13 Contractor Vaccination Requirements

New requirements under the BC Public Service HR Policy 4: Occupational Health and Safety Policy 4 mandate that as of December 13, 2021, all Contractor and subContractor personnel entering a staff-only area of an indoor BC Public Service Workplace ("BCPS workplace") while BC government employees are present, for provision of performing services under a government contract, must be fully vaccinated against COVID-19 with a vaccine approved for use in Canada.

See attached Notice to Contractors of the BC Provincial Government outlining new Contractor vaccination requirements. Direction on applicability will be provided by the individual responsible for managing the contract.

1.14 Obscure Hazards

The Contractor shall continually assess, investigate and evaluate the Work and Site for potential hazards.

The hazards known within the Site include, but are not limited to:

(i) confined space within the existing culverts.

(ii) Soils, soil vapour and produced water with known or potential contamination as described in Appendix: Step B Soil Characterization Report

(iii) Silica Dust – The Contractor may encounter rock dust containing Silica, through various work activities. The Contractor will be responsible for ensuring they have appropriate plans and procedures for controlling exposure in accordance with the WorkSafeBC Regulation Part 6 – Substance Specific Requirements.

(iv) Swift water from existing water courses

(v) Possible sewage effluent from impacted septic fields.

(vi) Potential hazardous materials within existing buildings to be demolished.

(vii) At grade railway crossings

(viii) Asbestos-coated underground utilities.

1.15 Work by Others in Project Area

Further to GC 22.01, the parties listed below are anticipated to be working on or near the Site.

There will no compensation for any impacts or delays resulting from works by others in this Contract.

(a) Road & Bridge Maintenance Contractor:

Mainroad Lower Mainland Contracting LP
17474 56th Ave.
Surrey, BC V3S 1C3
Office: 604 575-7020

(b) Electrical Maintenance Contractor

The Ministry's Electrical Maintenance Contractor may be on Site or working nearby throughout the year, and at any time of day.

Contact information of the Electrical Maintenance Contractor is:

Cobra Electric
9688 190 Street
Surrey, BC V4N 3M9
Phone: (604) 594-1633

The Ministry is currently undertaking electrical maintenance contract renewal, and as a result the electrical maintenance contractor for the Service Area may change during this Contract. See SP 1.04**Error! Reference source not found.** for additional details. If a change does occur, the Ministry Representative will provide notice to the Contractor and provide updated contact information.

(c) Pavement Marking Contractor

The Ministry's Pavement Marking Contractor may be on-Site or working in close proximity to the Site throughout the year, as weather permits.

Lafrentz Road Marking
Mike Sidor
Township Rd 530A
Acheson, AB T7X 5A7
Phone: 1-250-878-8856
Email: msidor@lafrentz.ca

(d) First Nations Band Members:

Kwantlen First Nation
23690 Gabriel Lane
Langley, BC V1M 2R4

Ashley Doyle
Phone: (604) 888-2488
Ashley.doyle@seyemqwantlen.ca

There may be First Nations members on Site throughout the duration of the Works, monitoring for the presence of heritage resources and any impacts, in accordance with SP 1.26.

(e) BC Hydro

BC Hydro, LMN-COQ
2590 Barnet Highway
Coquitlam, BC V3H 3P2

Jagjit Uppal, P.Eng.
Project Manager, Consultant
Mobile: 1-604-725-6845
Email: Jagjit.Uppal@bchydro.com

(f) Telus

3777 Kingsway
Burnaby, BC V5H 3Z7

Edward Bolecz
OP Manager
Phone: 604-695-3236
Email: Edward.Bolecz@telus.com

(g) Shaw Communications Inc

10445 138th Street
Surrey, BC V3T 4X4

Roderick Umali
Intermediate Planner
T: 1-604-629-4354
E: roderick.umali@sjrb.ca

(h) Fortis BC Energy Inc

Holly Motherwell, BSBM, AA, Cert.
Project Manager
T: 1-604-315-5855
E: holly.motherwell@fortisbc.com

(i) CP Rail

Name: John Lavoie – or designate
E-mail: John_Lavoie@cpr.ca
Phone: (403) 863-8322

and

Name: Roy O'Handley – day to day contact
E-mail: Roy_O'Handley@cpr.ca
Phone: 604-860-9107

1.16 List of Subcontractors and Suppliers

The Contractor shall complete the "List of Subcontractors and Suppliers" form H1108, in accordance with the instructions on the form, submit this form to the Ministry Representative at the pre-construction meeting, and provide updates of any subsequent changes. The form is available at the following Link:

http://www.th.gov.bc.ca/forms/getForm.aspx?formId=784

Further to the Glossary of Terms definition of "Designated Supplier", clause (g), supply of precast concrete roadside/median barrier components (SS 941) and precast concrete interlocking modular blocks (SS 942) shall also be excluded.

1.17 Quality Management

(j) Further to SS 101.02, Contractor reviews of Quality Management activities delegated to third parties shall be performed monthly and be in sufficient detail to provide assurance to the Contractor and the Ministry that all quality management functions are being performed in accordance with the Contract.QC Plan Contract-Specific Work Submission Requirements

In accordance with SS 101.02.03(a), the Contractor's QC Plan shall provide details of the means, methods, and frequencies of quality control measures for all elements of Work in the Contract.

(k) Hold Points and Witness Points

(i) General

Hold Points and Witness Points (as defined in SS 145.12) are required at critical times for the Ministry Representative and the Engineer(s) of Record (EOR) to review crucial work processes.

(ii) Hold Points

Hold Points may be specified throughout these Special Provisions, the SP Appendices, the Drawings, and in the Standard Specifications.

The Contractor shall provide the Ministry Representative seven (7) days' notice in advance of a Hold Point to allow the Ministry Representative to provide adequate notice to the EOR.

Additional Hold Points may be added by the Ministry Representative at any time during the Contract, by written notice to the Contractor.

Hold Points:

(1) Review of all foundation excavation for all structural components prior to forming of footings.

(2) Review of formwork and reinforcing prior to concrete placement for all structural components

(3) Review of all embankment foundations prior to commencement of embankment construction.

(4) Review of pavement conditions after milling on areas within the Project limits designated for pavement rehabilitation

(5) Review of retaining wall subdrains and outlets prior to backfilling

(6) Quality verification for all aggregate materials prior to transportation to Site.

(7) Commissioning of any new or temporary creek beds, of Whonnock Creek.

(8) Review of Whonnock Creek channel construction to confirm placement and anchoring of Large Woody Debris (LWD), boulder placement, and other design components prior to wetting.

(iii) Witness Points

Witness Points may be specified throughout these Special Provisions, the SP Appendices, the Drawings, and in the Standard Specifications.

The Ministry Representative will provide the Contractor with notice of any additional Witness Points as the Contract progresses. The Contractor shall provide the Ministry Representative with one (1) clear day notice of the commencement of the work requiring witnessing.

Witness Points:

(1) Review of restoration planting at York and Whonnock Creeks on first and last days of planting

(l) Minimum Testing and Inspection Frequencies

Minimum QC testing and inspection frequencies shall meet or exceed those indicated in

Table 4 below, elsewhere in these Special Provisions, and/or in the Standard Specifications.

(d) Quality Management Reporting

The Contractor shall, in addition to the requirements of SS 101, submit a monthly summary of Quality Control activities for the month and verify that all Work during the month is compliant with the Contract.

(e) Payment

Lump Sum Price payment for Quality Management will be in accordance with SS 101.07.

Table 4: Minimum Frequencies of Quality Control Testing / Inspection

Product	Description	Minimum QC Testing / Inspection Frequencies [1, 2, 3]	Acceptance Criteria
Survey Control	Survey control accuracy	On-going verification methods of accuracy during lay-out (i.e., closure into known x, y z coordinates etc.)	SS 145 Benchmark Level loops: 2nd order: ±0.008 m √km Layout level loops: 3rd order: ±0.024 m √km Control Line Traverse: 1:10,000.
Survey/Layout	Staking accuracy	1 per 20 stakes	SS 145 – Appendix 145-B
Machine Controlled Grading	Grading accuracy	Verification to Drawings, lines and grades every 100 m	SS 145 – Appendix 145-B
Traffic Control / Management		On-going monitoring during active work, spot check after hours.	SS 194 & SPs
Concrete Roadside Barrier	Per SS 941	Materials and Concrete tests per SS 211, with all plastic concrete tests performed on each batch of concrete	Per SS 941
Bridge End Fill	ASTM C 117, Sieve Analysis of Aggregates by Washing	1 per 750 m3	SS 201
Roadway Aggregate Quality (other than gradation and fracture)	ASTM D 2419 Sand Equivalent	1 per aggregate source	SS 202
	D 6928 Micro Deval	1 per aggregate source	SS 202
	ASTM C 88 Mg SO_4 Soundness	1 per aggregate source, if Micro Deval fails	SS 202
	SS 202 Appendix 2 - Petrographic Analysis Test	1 per source if the aggregate fails any of the above three tests	To the satisfaction of the Ministry Representative
Add'l test for High Fines Surfacing Aggregate	ASTM D 4318 Plastic Limit	1 per aggregate source	SS 202

[1] QC frequencies may be reduced below this level, subject to the Ministry Representative's approval, should the Contractor's QC Plan be proven very effective.
[2] For all standards based on production, specified frequencies are based on hours of crusher or plant production time.
[3] A *shift* is a production period of up to 10 hours duration.

Product	Description	Minimum QC Testing / Inspection Frequencies [1, 2, 3]	Acceptance Criteria
During all Roadway Aggregate Production	ASTM C 117, Sieve Analysis of Aggregates by Washing	1 per 300 t or part thereof of production 1 per 1000 tons for SGSB and 75mm crush	SS 202 or SS 531
	SS 202 Appendix 1 - Fracture Count on Coarse Aggregate (BCH 1-13)	1 for every second sample of washed sieve test for base aggregates	SS 202 or SS 531
During Barge Loading	ASTM C 117, Sieve Analysis of Aggregates by Washing	1 per 2,000 t of production barge loading	SS 202 or SS 531
	SS 202 Appendix 1 - Fracture Count on Coarse Aggregate (BCH 1-13)	1 for every second sample of washed sieve test for base aggregates	
Compaction:			
• **Embankment**	Target Density, per SS 201.37	1 per material, or a variance of the material type.	To Ministry Representative's satisfaction
	ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	4 tests per 20m per lift (2 at randomly selected locations and 2 within 0.5m of the left and right edges.	SS 201
	Control Strip (see Appendix – Control Strip Compaction Method)	1 per material, or a variance of the material type, as required by the Ministry Representative	To Ministry Representative's satisfaction
	Proof Roll	As required by the Ministry Representative	To Ministry Representative's satisfaction
• **Bridge End Fill**	ASTM D698 Standard Test Method for Laboratory Compaction	1 per 5,000 m3	
	ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	1 per 100 m2 of each lift	SS 202

Product	Description	Minimum QC Testing / Inspection Frequencies [1, 2, 3]	Acceptance Criteria
• **Top 300 mm of Subgrade**	Target Density per SS 201.37	1 per material, or a variance of the material type	
	ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	4 tests per 20m per lift (2 at randomly selected locations and 2 within 0.5m of the left and right edges.	SS 201
• **Base and sub-base aggregates**	Target Density per SS 202.22	1 per 25,000 m3 of each type of material and whenever the accepted gradation curve is changed.	SS 202
	ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)"	4 tests per 20m per lift (2 at randomly selected locations and 2 within 0.5m of the left and right edges.	SS 202
All other Items and Work	Per the Contract.	Per the Contract. Where frequencies are not specified in the Contract, as mutually agreed between the Ministry Representative and the Contractor as necessary to ensure conformance with the specified quality requirements.	Per the Contract.

1.18 Traffic Management

(a) PART A – GENERAL

(i) Traffic Management shall comply with SS 194, the Traffic Management Manual for Work on Roadways(TMM) and the following Special Provisions.

The Traffic Management Manual for Work on Roadways can be found at:

https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/traffic-engineering-safety/trafficmanagementmanual

Technical Circular T-04/21- Notification of WorkSafeBC's amendments to Occupational Health and Safety Regulation (OHSR) Part 18 Traffic Control can be found at:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2021/t04-21.pdf

(ii) Further to SS 194.30, at the discretion of the Ministry Representative, the Contractor shall remove all equipment and personnel from the Highway so that all traffic can clear the work zone. The Contractor shall immediately comply with this directive and such requests will be excluded from the definition of Reimbursable Delay for the purposes of GC 42.00, and will not be accepted as cause for granting an Extension of Time.

(iii) Definitions

Active Work means that workers and equipment are present on the Site.

Periods of Inactivity means periods when no Active Work is taking place such as in between shifts, holidays, special events and seasonal shutdown.

A **Traffic Delay** is defined as the time interval from the first vehicle being stopped at a traffic control point, to the resumption of travel.

Travel Time is defined as the time interval a vehicle or traffic-controlled line requires to traverse the Project operation(s) areas(s) and attain normal highway speeds.

Road Closure(s) means a stoppage of traffic in one or both directions for the purpose of blasting rock, tie-ins, girder erection and paving activities, etc.

Lane Closure(s) means one (or more than one) lane of traffic is closed to traffic use in one or both directions, but the entire road has a minimum of one lane available for the passage of traffic for each direction.

Random Minor Traffic Interruption(s) means a very brief stoppage in traffic in one or more directions for construction activities. For the purposes of this Contract, a Random Minor Traffic Interruption shall be limited to less than two (2) minutes for such activities as allowing construction equipment to cross or enter/exit the highway.

Scheduled Stoppage(s) means a stoppage of traffic in one or both directions for the purpose of blasting rock and paving activities.

Total Delay means the difference in time it would take to traverse the site at the original posted speed limit(s) (i.e., before any construction speed zones or construction traffic control measure are implemented) and the time taken at any reduced travel speeds plus any Traffic Delay time.

(b) PART B – PLANNING AND SCHEDULING

(i) General

This Project is a Category 3 as defined in TMM Section 3: Traffic Management Plans.

The Traffic Management Plan shall be signed and sealed by a professional engineer licensed by the Association of Professional Engineers and Geoscientists of the Province of BC (APEGBC), qualified and experienced in traffic management planning and highway safety.

The Contractor is required to submit a Traffic Management Plan Audit Form/Checklist to ensure quality compliance of the submissions. Refer to Appendix D of the TMM for the Traffic Management Plan Documentation Audit Form/Checklist.

The Contractor shall include detailed documentation on “Risk Assessment” (as part of the TMP), developed in accordance with Section 18.3 (and applicable sub-sections) of the WorkSafeBC OHSR amendments to Part 18 Traffic Control.

Refer Technical Circular T-04/21 for specific requirements.

Submissions not complying with the Contract requirements shall be considered Unacceptable Work.

The Traffic Management Plan requires the following documentation:

- Traffic Control Plan
- Incident Management Plan
- Public Information Plan
- Implementation Plan

This documentation shall include the requirements specified in TMM Section 3 as well as any requirements listed below or as requested by the Ministry Representative.

All TMP submittals shall be submitted in accordance with SS 194.12.

Copies of the Traffic Management Plan shall be retained on Site by the Contractor’s Superintendent, the Traffic Control Supervisor(s), and by at least one Traffic Control Person at each specific work area. The Traffic Control Supervisor and each Traffic Control Person shall have a copy of the specific Traffic Control Plan applicable to the work area(s) under their control.

Upon request, any of the above parties shall immediately provide those documents to the Ministry Representative, a WorkSafeBC officer, or any other officials interested in the Traffic Control on the Site.

(ii) Traffic Control Plan

The Traffic Control Plan shall be in accordance with TMM 3.2.1 and accommodate all requirements in Part C: Traffic Management Operational Details of these Special Provisions.

The Traffic Control Plan shall include but is not limited to the following traffic control layouts, specific to the work zone:

- Traffic control layouts for each specific work activity area including pedestrian and cyclist management
- Single Lane Alternating Traffic
- Lane Closures
- Periods of inactivity
- Road closures
- Detours

Traffic control layouts shall be specific to the Works. Direct copies of the traffic control layouts in TMM Sections 7 to 19 inclusive are not considered Site specific.

(iii) Incident Management Plan

The Incident Management Plan shall be in accordance with TMM 3.2.2. and shall include:

- Where traffic queues cannot be cleared within thirty (30) minutes, include provisions for easily identifiable personnel to walk the traffic queue in each direction ensuring that:
  - Travellers are aware of the events.
  - Travellers are aware of their options.
  - Travellers are aware of the estimated time of opening and level of confidence for that estimate.
  - Any health issues or safety issues that may arise are tended to.
- The Contractor's plan to adequately store and/or redirect highway vehicles both on and off the Site in the event the highway is closed for longer than one (1) hour.
- A Communications Plan describing the procedures for informing and updating the Road Authority Maintenance Contractor and stakeholders of incidents.
- An alternate-route detour plan in the event the highway is closed for a period longer than two (2) hours.
- The Incident Management Plan shall describe the methods and strategies for implementing the alternate-route detour as quickly as possible when it is required. This may include, but is not limited to, pre-installing covered detour route signing, prepared traffic control plans, and arrangements with the Maintenance Contractor.

(iv) Public Information Plan

The Public Information Plan shall be in accordance with TMM 3.2.3.

Prior to implementing a pre-approved Lane Closure or delay, the Contractor shall provide advance notification to the public by means of advertisement or public messaging. In addition, notification would include but not be limited to the list below:

- All emergency services
- Ministry Representative
- DriveBC, through the Ministry Representative
- Transportation Management Centre of BC (TMCBC), through the Ministry Representative
- Local BC MoTI Road, Bridge and/or Electrical Maintenance Contractors
- BC Trucking Association
- Commercial Vehicle Safety and Enforcement (CVSE)
- BC Transit
- West Coast Express
- Kwantlen first Nations
- City of Maple Ridge
- Fraser Valley Regional District (FVRD)
- Maple Ridge Fire Department
- Local Cycling Association - Bruce Wenting (wentcyc@shaw.ca)

The stakeholders above, the public and the Ministry Representative shall be given a minimum of one (1) week notice prior to all Road Closures, Lane Closures, and other

traffic delays. These delays are to be in accordance with the Scheduled Stoppage tables identified within these Special Provisions and the advertising be done in such a way that the closures are consistent and predictable by the travelling public.

(v) Implementation Plan

The Implementation Plan shall be in accordance with TMM 3.2.4 and PART E of this Special Provision.

In addition, the Contractor is required to coordinate traffic management with adjacent projects. The coordination may require the Contractor to revise its Traffic Management Plan.

(c) PART C – TRAFFIC MANAGEMENT OPERATIONAL DETAILS

(i) General

(1) Provisions to accommodate commercial vehicle (truck) traffic on steep grades shall be demonstrated in the Traffic Control Plan, to achieve the allowable closures and delays. The Contractor shall ensure that no traffic queues are allowed through rock fall and/or avalanche zones and that no truck traffic shall be queued on grades greater than 6%. Queue staging areas should be identified where vehicles can be safely stored.

(2) The Contractor shall maintain access to all truck runaway lanes, public roads, intersections, highway ramps, businesses and residences, affected by the Work, at all times unless otherwise authorized by the Ministry Representative.

(3) Traffic operations at any existing signalised intersection shall be controlled by either existing traffic signal or Traffic Control Person (TCP) but not both at the same time. In the event TCP are controlling traffic at any signalised intersection, the Contractor shall be required to put the signal in flash mode by calling Ministry's Electrical Maintenance Contractor.

(4) The Contractor shall establish temporary pavement markings prior to removing construction channelizing devices. Temporary pavement markings shall be provided in accordance with TMM 4.4.

(5) Works requiring layouts as provided in TMM Section 13 are required to have additional advance warning signage as well as additional signage for managing queue to accommodate the advancement of the work.

(6) Distances between the work activity and the advance warning signage shall be in accordance with the TMM.

(ii) Speed Zones

Where the Ministry Representative and District Manager, Transportation consider it appropriate, a construction speed zone giving an overall reduction in speed limit may be granted in accordance with the Table below:

Table 5: Construction Speed Zone Reduction

Roadway	Minimum Construction Speed Zone Reduction – Active Construction	*Minimum Construction Speed Zone Reduction – Inactive Periods
Highway 7 (L100)	50 km/h	80 km/h
River Rd (L200/L300) / 282nd St / 287th St	30 km/h	30 km/h

**Minimum Construction Speed Zones for inactive periods may not be above the existing maximum posted speed*

(iii) Closures and Delays

(1) General

Contrary to the TMM, a Lane Closure Permit is not required. However, in accordance with SS 194.26, Road Closures shall not be permitted until the Contractor requests and receives written permission from the Ministry Representative.

A traffic stoppage shall not be initiated unless delays resulting from any previous traffic stoppage have been completely dissipated and the traffic is moving freely throughout the Site.

Scheduled Traffic Stoppages are permitted for rock blasting and cleanup, tree falling activities and paving related work. Traffic stoppages shall be implemented in accordance with the requirements in this clause and must be approved in advance by the Ministry Representative.

The Contractor must ensure that traffic delays do not exceed ten (10) minutes and that the total delay and travel time does not exceed fifteen (15) minutes through all the Project operations.

Should either of the above limits be exceeded without prior written authorization from the Ministry Representative the Contractor must immediately cease operations and restore the road conditions for safe passage of traffic.

Scheduled Traffic Stoppages/Road Closures must be advertised so drivers have advance warning; the Contractor shall meet the advance notification requirements of these Special Provisions.

The Contractor shall be required to follow the following Local Service Area Specifications for Lane Closures and/or Road Closures:

- https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/highway-bridge-maintenance/highway-maintenance/maintenance-agreements/local-area-specifications/sa06_schedule_1b_local_area_specifications_-_final_-_2019.pdf

A traffic stoppage shall not be initiated unless delays resulting from any previous traffic stoppage have been completely dissipated and the traffic is moving freely throughout the Site.

(2) Road Closure and Delay Specifications Table

Road Closures will be permitted for rock blasting and cleanup and tree falling and must be approved in advance by the Ministry Representative. The Contractor shall meet the advance notification requirements of these Special Provisions.

The Contractor must demonstrate to the Ministry Representative that the construction activity causing the Road Closure may be completed within the allowable Road Closure times as specified in the Closure Specifications Table. The Contractor must demonstrate this by progressive build-up of construction activities in order to prove to the Ministry Representative that the queue can be cleared within the minimum Queue Clearing Times specified.

Road closures shall be in accordance with the requirements and tables below. In accordance with SS 194.26, road closures will not be permitted until the Contractor requests and receives written authorization from the Ministry Representative.

In the event any of the limits are exceeded without prior written authorization from the Ministry Representative the Contractor must immediately cease operations and restore the road conditions for safe passage of traffic.

Table 6: Allowable Road Closure Windows

Monday to Saturday	Maximum Stoppage Duration	Type of Stoppage	Minimum Queue Clearing Times*
20:00 to 05:30*	15 minutes	Scheduled Road Closure	15 minutes
20:00 to 22:00	15 minutes	Scheduled Road Closure for Rock Blasting	15 minutes
05:30 to 17:00	2 minutes	Random Minor Traffic Interruption	5 minutes
* * *Minimum time the roadway shall be open for use*			

(3) Lane Closure Specifications

Lane Closure will be permitted.

Contrary to the TMM, a Lane Closure Request is not required.

(4) Single Lane Alternating Traffic (SLAT) Specifications

SLAT is permitted on the L200, L300, L500, L600 and must be in accordance with the information and table below.

Single lane alternating traffic will be permitted, as per the Table below, Monday to Saturday, except for the days noted herein when No Work is permitted, provided that:

- Single lane alternating traffic will only be permitted during periods of Active Work.
- The Contractor shall minimize delays by maintaining continuous 2-way traffic (one-lane in each direction) as much as possible during construction and when there is no work being performed.
- The distance between stopped traffic does not exceed 500 m.
- Traffic queue lengths in any one direction do not exceed 300 m.
- The total delay for traffic through the Project does not exceed that period allowed in SP 1.18 (c)(iii)(2) Table 6.

Table 7: Dates and Time Periods SLAT May Be Used

DAYS	TIME PERIODS SLAT MAY BE USED
Monday to Thursday	20:00pm to 05:30
Friday	20:00pm to 07:00 Saturday
Saturday	21:00pm to 07:00 Sunday
Sunday	21:00pm to 05:30 Monday

(5) Approved Work Windows

Table 8: Approved Work Windows

describes the work windows for specific sections of the Project. Work that affects traffic can only be undertaken during the hours shown in the table for the specified areas.

Table 8: Approved Work Windows

Alignment or Segment of Project	Days of Week	Direction	Approved Work Window Time
Hwy 7: 266th Street to 287th Street	Monday to Sunday	Eastbound and Westbound	00:00 to 23:59
L200, L300, L400, L500, L600	Monday to Saturday	All	07:00 to 21:00 Hrs
L700	Monday to Sunday	All	00:00 to 23:59

(iv) Long Weekend/Special Event

No Work that affects traffic will be permitted for the Holiday Periods and Special Event Periods specified in this section.

A Holiday Period is defined as:

- 12:00 PM Thursday to 12:00 PM Monday where a holiday or its day of observance is a Friday
- 12:00 PM Friday to 12:00 PM Tuesday where a holiday or its day of observance is a Monday.
- 12:00 PM the day before until 12:00 PM the day after where a holiday or its day of observance is a Tuesday, Wednesday, or Thursday.

A list of BC Statutory Holidays can be found at this link: https://www2.gov.bc.ca/gov/content/employment-business/employment-standards-advice/employment-standards/statutory-holidays

In addition to these provincially established dates, the following Holiday Periods shall be considered as holidays.

- Easter Monday
- Boxing Day

(v) Operational Requirements for Existing Roads

The requirements for detours are specified in Table 9: Design and Operational Requirements for Roads and the provisions below:

Table 9: Design and Operational Requirements for Roads

	EXISTING ROUTES		HWY 7 DETOUR	L200, L400 L300, L500, L600, L700 DETOURS
	HWY 7 (L100)	L200, L400 L300, L500, L600, L700		
DESIGN CRITERIA: *				
Road Category	Major	Collector/Minor	Major	Collector/Minor
Design Class	RAD4	RCU	RAD4	RCU
Min. Design Speed (km/h)	80	Varies	60	50
Design Vehicle	WB-20	WB-20	WB-20	WB-20
Maximum Grade	Existing	Existing	6%	Existing
Lane Width	3.6 m	Varies	3.6 m	existing
Running Surface	Existing	Existing	Paved	Paved
Shoulder Width	Existing	Existing	1.0 m paved (1.3 m adjacent to CRB+ 0.3 m behind CRB) 0.5 m gravel (0.3 m behind CRB)	1.0 m paved (1.3 m adjacent to CRB+ 0.3 m behind CRB) 0.5 m gravel (0.3 m behind CRB)
Barrier** Offset/Setback	Existing	Existing	1.3 m from lane edge to face of barrier	1.3 m from lane edge to face of barrier
OPERATIONAL REQUIREMENTS:				
Min. Posted Speed (km/h) *	50	30	50	30
• Active Work	50	30	50	30
• Non-Active Work	80	30	50	30
Number of Lanes to be open	1 per direction	1 per direction	1 per direction	1 per direction
• Active Work	1 per direction	1 SLAT	1 per direction	SLAT
• Non-Active Work	1 per direction	1 per direction	1 per direction	1 per direction

* Curve radii, taper ratios and vertical K values as per design speed requirements

** Shoulder width and/or set back distance to CRB (where provided) should be a MINIMUM of 1.5m where cyclists are present

(1) Highway 7 (L100)

The Contractor must ensure that Traffic Delays do not exceed limits as specified in Table 6 through all the Project operations. Should either these limits be exceeded without prior written authorization from the Ministry Representative the Contractor must immediately cease operations and restore the road conditions for safe passage of traffic.

Traffic shall not be permitted to run on a milled surface.

(2) Minor Roads (L200, L300, L400, L500, L600, L700)

The Contractor must ensure that Traffic Delays do not exceed five (10) minutes and that the total delay and Travel Time does not exceed ten (15) minutes limits as specified in Table 6 through all the Project operations. Should either these limits be

exceeded without prior written authorization from the Ministry Representative the Contractor must immediately cease operations and restore the road conditions for safe passage of traffic. traffic. The Contractor shall only be permitted to run traffic on a gravel or pulverized surface for a maximum of five (5) days. Public traffic on gravel surfaces shall be kept to an absolute minimum. The Contractor will be required to undertake extensive and onerous measures to control dust and maintain the gravel/pulverized surface on a twenty-four (24) hour basis. The Contractor shall implement a strict monitoring program for ensuring the safe travel of the public during periods of inactivity. This program shall be clearly detailed in the Traffic Management Plan.

(vi) Operational Requirement for Detours

Further to SS 194.27, the requirements for detours are specified in Table 9: Design and Operational Requirements for Roads. Detours shall only be used during incident management and identified in the incident management plan.

(d) PART D – TRAFFIC CONTROL DEVICES

(i) Dynamic Message Signs (DMS)

The Contractor shall provide 6 Dynamic Message Signs (DMS), to be used to inform highway traffic of existing and anticipated conditions. DMS are to be used at least 14 days prior to the commencement of construction through to the end of construction and shall comply with SS 194.46 and the requirements of the TMM 4.3: Dynamic Message Signs.

(ii) Speed Reader Boards (SRB)

The Contractor shall provide minimum 2 Speed Reader Boards for use when traffic control persons are controlling traffic or as required by the Ministry Representative. The deployment of the SRBs with regards to application and placement shall be in accordance with the TMM 4.11.3: Speed Reader Boards.

(iii) Treatment of Drop-offs and Travel Lane Excavations

The treatment of drop-offs shall be in accordance with TMM 6.5. The Traffic Control Plan shall clearly demonstrate that the drop-off requirements are met.

(iv) Idle Reduction Signs

The Contractor shall supply and install the appropriate Idle Reduction Signs as defined in TMM Appendix B.

(e) PART E – GENERAL MAINTENANCE

Pursuant to SS 194.51, the Implementation Plan shall provide Site specific monitoring strategies for the duration of active and inactive work and shall include maintaining written documentation of all inspection and maintenance actives undertaken, and the time each such activity took place.

(f) PART F – PAYMENT

In accordance with SS 194.91, the Contractor will be paid for Traffic Management. The payment of the Lump Sum Price bid will be made as follows:

- 25% of the Lump Sum when the Ministry accepts the complete Traffic Management Plan, as described in these Special Provisions.
- 65% of the Lump Sum paid prorated on a monthly basis based on the time percentage of the Contract completed. The prorated amount will be adjusted as and when the Contractor revises its Construction Schedule.

- 10% of the Lump Sum when the Contractor has completed all Work and has left the Site in a condition acceptable to the Ministry Representative.

The Lump Sum Price paid will be accepted as full compensation for all costs resulting from the foregoing requirements for Traffic Management.

1.19 Traffic Management for Oversize Vehicles

The Contractor shall maintain the following minimum clearance envelope(s) through the construction Site:

- Hwy 7 – Minimum Width = 5 m, Minimum Height = 5 m

If the Contractor is unable to maintain the minimum clearance envelopes through the construction Site, they shall receive approval from the Ministry Representative to implement a changed clearance envelope. The Contractor shall request approval from the Ministry Representative a minimum of fifteen (15) days before any changes to the clearance envelope are proposed to be implemented.

Once the Contractor receives approval of the changed clearance envelope, the Contractor shall notify the Transportation Management Centre of BC (TMCBC), through the Ministry Representative, about clearance envelope restrictions affecting over dimensional loads that will be imposed on traffic passing through the construction Site at least seven (7) days before any changes to clearance envelopes actually occur. The Contractor shall provide the following information in the notification:

- Project name
- Project contact person and their contact information
- Project location
- Highway number
- Duration of the Project
- Width restriction = what dimensions are allowed, when in effect, and for what duration
- Height restriction = what dimensions are allowed, when in effect, and for what duration
- A map indicating the closest alternative route around the clearance restriction able to accommodate up to 5.0 m height and 5.0 m wide.

If construction requires a vertical clearance less than 5.0 metres or a narrowing of the existing horizontal clearance, the Contractor shall provide signage in accordance with the Ministry's Manual of Standard Traffic Signs & Pavement Markings available at the following URL:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/traffic-engineering-and-safety/traffic-engineering/traffic-signs-and-pavement-markings/manual_signs_pavement_marking.pdf

For specific signs: Contact the Ministry Traffic Operations Engineer.

The Contractor shall also provide two (2) DMS (in addition to those that are required in SP 1.18 - Traffic Management that indicate the restricted dimensions and provide details regarding alternative routing for oversized vehicles.

The Contractor shall cooperate with haulers of oversized load to facilitate the passage of these loads through the construction Site whenever this can be reasonably accommodated by the Contractor.

1.20 Materials Supplied by the Ministry

Notwithstanding any reference to the contrary in the Standard Specifications, the Ministry will supply only the materials as listed below at the location specified:

Table 10: Materials Supplied by the Ministry

Material	Location
Traffic Controller	Cobra Electric 9688 190th St. Surrey, BC V4N 3M9 Contact: Steve Berry (604) 594-1633
Drive BC Camera	Mainroad Transtronic Services LP 17474 56th Ave. Surrey, BC V3S 1C3 Contact: Gordon Calhoun, gcalhoun@mainroad.ca

All items not indicated as being provided on the Site will be supplied on the Contractor's carrier at the supplier's yard. The Ministry will advise the Contractor of the name(s) of the supplier(s) and arrangements for the pickup shall be made by the Contractor.

Upon completion of the Work, the Contractor shall deliver all unused material which have been purchased by the Ministry to 9688 190th Street Surrey, B.C. V4N 3M9 and place the material at the locations specified by the Ministry Representative. Payment for returning unused materials will be compensated as Extra Work.

1.21 Available Ministry Pits

There are no Ministry pits available for this Contract.

1.22 Protection of the Environment

(a) General

Protection of the environment will be carried out according to SS 165, and SS 165 will apply to the Contract in its entirety unless otherwise specified in these Special Provisions.

The Work shall be conducted in accordance with any Authorizations/Approval/Permits issued for this Project, and with the measures to protect fish and fish habitat on the Fisheries and Oceans Canada website found at: http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html

No demolition debris, demolition runoff or construction materials are permitted to enter Whonnock or York Creeks. The Contractor shall provide facilities to contain demolition debris, demolition runoff and construction materials within the Site.

The Contractor and/ or the Contractor's Environmental Monitor will be responsible for making any and all incident reports to Environmental Agencies (e.g. Fisheries and Oceans Canada, Ministry of Environment, Ministry of Forest (MOF), formerly known as Ministry of Forest, Lands, Natural Resource Operations and Rural Development, (FLNRORD) for contraventions under the Fisheries Act, Water Sustainability Act, Environmental Management Act, and any other relevant

Acts. The environmental incident will be reported to the Ministry Representative concurrently to reporting to Environmental Authorities.

Where Ministry of Forests, Lands, Natural Resource Operations and Rural Development is referenced in SS 165, such reference shall now apply to Ministry of Forests or Land, Water and Resource Stewardship as applicable.

(b) Regulatory Approvals

Further to SS 165.03 Works within the designated sensitive areas shall be carried out in accordance with the following approvals:

- MoF Section 11 Water Sustainability Act Change Approval
- Whonnock Creek: The Approval has not been issued at time of tendering. The application for Approval and supporting documents are under review and have been assigned a tracking number: 2008907. The terms and conditions of the Approval will be made available to the Contractor once received by the Ministry. The Ministry expects to receive the Approval prior to the 2023 Fishery timing Window.
- York Creek: The Approval has not been issued at time of tendering. The application for Approval and supporting documents are under review and have been assigned a tracking number: 2009373. The terms and conditions of the Approval will be made available to the Contractor once received by the Ministry. The Ministry expects to receive the Approval prior to the 2023 Fishery timing Window.
- Notifications under Section 39 of the Water Sustainability Regulation for: the ancillary works at Potters Creek, 266 Street and 272 Street ditches are pending submission and once the Ministry has the Terms and Conditions they will be passed along to the Contractor. As these permits are time sensitive, any renewals of these permits will be the responsibility of the Contractor and their AQP.

The Contractor shall expect to follow the requirements of Change Approval - Changes In and About a Stream Terms and Conditions from the Ecosystems Officer in the Lower Mainland, included in the Appendix.

- Fisheries and Oceans Canada Fisheries Act Authorization

The Fisheries and Oceans Canada Fisheries Act Authorization at Whonnock Creek (21-HPAC-00787) and Request for Project Review for York Creek (22-HPAC-00226) are under review with the Federal agency. The Authorization and/or Letter of Advice supporting documents will be provided to the Contractor by the Ministry Representative when available. The Ministry expects to receive the Approval prior to the 2023 Fishery timing Window.

The Environmental Assessment Submission for Regulatory review ‘Highway 7 266 to 287 Street - Whonnock Creek, Maple Ridge BC’ and ‘Highway 7 266 to 287 Street - York Creek, Maple Ridge BC’. Submissions have been included in the T3 Reference Documents.

The permits authorize both permanent design impacts, and temporary access impacts as captured in the applications. Any temporary impacts greater than what is authorized in the permits would be the responsibility of the contractor and would require amendments prior to impact.

All project works shall be carried out in accordance with the authorizations and approvals listed above. Works below High-Water Mark, within Riparian or any Special Erosion Protection Areas shall not occur until Environmental Permits and Approvals have been issued by their respective regulatory agencies.

The Contractor will be responsible for obtaining any other permits / approvals, such as fish and/or wildlife salvage permits, or short-term water use permits, as required by environmental agencies or recommended by the Contractor’s Environmental Monitor.

The Contractor shall review all necessary permits, authorizations and approvals in place, including any Water Sustainability Act Approvals and Fisheries Act Authorization, and acquire any fish/amphibian/wildlife salvage permits required, prior to any Works below the "top of bank" or within the "Riparian area" and ensure that Works comply with all conditions as set out in the Environmental Permits and Approvals. The 'Riparian Area' is defined as that area within 30 m of the Top of Bank of any stream and considered a no go zone until the regulatory permits are in place.

The Contractor will be responsible for obtaining all other regulatory approvals as required by environmental agencies, Standard Specifications, these Special Provisions, and/or recommended by the Contractor's Environmental Monitor. The Contractor will also be responsible for obtaining any approval amendments, including extensions, to regulatory approvals obtained by the Ministry.

(c) Designated Fisheries Sensitive Zones/Designated Environmentally Sensitive Areas

The following streams are classified as a 'sensitive stream' under the Water Sustainability Act and in accordance with SS 165.01.04 and are subject to all the restrictions set out in SS 165 except as modified herein:

(i) Whonnock Creek

The following streams are classified as a 'designated stream' in accordance with SS 165.01.04 and are subject to all the restrictions set out in SS 165 except as modified herein:

(i) Whonnock Creek

(ii) York Creek

(iii) Potter Creek

(iv) 266 and 272 Street Creeks

(v) Any ditches that lead into the above-mentioned streams

(vi) Fraser River

Designated streams are also Environmentally Sensitive Areas (ESAs) as defined in SS 165.01.02. and subject to all restrictions set out in SS 165 and these Special Provisions.

Riparian areas are also considered ESAs as defined in SS 165.01.02. and subject to all restrictions set out in SS 165 and these Special Provisions. This area is defined as a 30 m buffer from the top of creek bank and are no go zones for construction (ie clearing, brushing and grubbing) until the authorization and approvals are in place and during relevant Environmental Timing Windows.

These ESAs will be fully restored as per the Drawings, Environmental Approvals, and these Special Provisions. Impacts to ESAs will be no more than approved in Regulatory Approvals.

All Whonnock Creek channel, culvert and riparian planting areas shown on dwg R1-952-721 will be authorized through a WSA Approval and a DFO Fisheries Authorization. All Whonnock Creek instream and riparian area works, both temporary and permanent, must fall within the construction footprint on this drawing. Whonnock Creek instream and riparian works cannot start until the WSA Approval and DFO Fisheries Authorization have been issued by Environmental Regulators and must occur during relevant Environmental Timing Windows.

All York Creek channel, culvert and riparian planting areas shown on dwg R1-952-718 will be authorized through a WSA Approval and a DFO Fisheries Authorization. All York Creek instream and riparian area works, both temporary and permanent, must fall within the construction footprint on this drawing. York Creek instream and riparian works cannot start until the WSA Approval and DFO Fisheries Authorization have been issued by Environmental Regulators and must occur during relevant Environmental Timing Windows.

Downstream flows shall not be impacted by the temporary site isolation. Fish passage shall always be maintained. The Environmentally Sensitive Areas will be fully restored upon completion of the Work.

Temporary work areas and clearing and grubbing limits for required site accesses will be clearly delineated from ESAs in the field, through the use of snow fencing or similar materials (R1-952-713).

(d) Fishery Timing Window

The Ministry's Work required to be completed within the Fishery Timing Window as critical path for the Work to completed by the Schedule 5 completion date. The Contractor shall make sure that the selected staging allows for all required works to be competed within the identified Fisheries Timing Windows. Failure to meet the Schedule 5 completion date as a result of work not being completed within the Fishery Timing Window will be addressed in accordance with GC 33.00.

The Fishery Timing Window for designated streams on this Project is the period from August 1 to September 15.

Any activity within the wetted perimeters of the following areas shall be carried out only within the Fishery Timing Window, except where the Contractor has received written notification from the Ministry Representative of any relaxation to this requirement that may have been permitted by FLNRORD and/or DFO:

The areas perpendicular to centreline, for the width of the right-of-way, bounded by:

- Whonnock Creek: Stations 171+00 and 171+10.
- York Creek: Stations 168+80 and 169+00.
- Potter Creek: Stations 161+90 and 162+00 and 272+00; and
- 266 Street Creek: Stations 154+90 and 155+00.
- 272 Street Creek: Stations 159+45

The Contractor shall review all necessary permits, authorizations, and approvals in place, including any Water Sustainability Act Approvals/Notifications and Fisheries Act Authorizations/Letter to Avoid and Mitigate, and acquire any fish salvage permits required, prior to any Works below the "top of bank" or "high water mark" and ensure that Works comply with all conditions as set out in the Environmental Permits and Approvals.

Any requests to Environmental Regulators (e.g. Ministry of Forests and/or Fisheries and Oceans Canada) for a variance to this Fishery Timing Window, and obtaining the necessary approvals from Environmental Regulators, will be the sole responsibility of the Contractor.

If the Contractor wants to seek a variance to the Fisheries Timing Window or to allow activities to be performed outside that window, the following process is to be followed, unless Regulatory Approvals dictate a different process:

- The Contractor will retain the services of an Appropriately Qualified Professional (R.P.Bio).
- The Contractor and AQP will develop a Work Plan that fully mitigates harmful alteration, disruption or destruction of fish habitats.
- The Contractor must provide the Work Plan to the Ministry Representative for review.
- If the Work Plan is deemed acceptable to MOTI, the Ministry Representative will forward the Contractor's detailed Work Plan through to the appropriate Ministry of Forests and/or DFO Staff for review.

- The Work Plan must be approved by MOF and/or DFO, or as specified in the regulatory approvals, before any works below the top of bank or high water mark may occur outside of the Fishery Timing Window of August 1 to September 15 on designated streams.

Construction of the new Whonnock Creek Channel, while not required to be undertaken during the above-specified window, must only occur upon receiving formal approval or authorization from senior environmental regulatory agencies. Commissioning and Tie-in of the new channel shall occur during the specified Fishery Timing Window. See Hold point in SP 1.17 (b).

(e) Breeding Bird Nesting

Further to SS 200.01.02 the Contractor shall avoid undertaking any clearing and grubbing operations for the Site during the regional breeding bird nesting period which is defined by Environment and Climate Change Canada to be March 15 to August 15 to minimize the risk of any contravention of the Migratory Birds Convention Act provisions. Additional information can be found at:

https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html.

If clearing and/or grubbing operations, including brushing or mowing, must occur during the defined nesting period, the Contractor's Environmental Monitor shall conduct an intensive survey of the Site where vegetation is to be removed following the Breeding Bird Nest Survey Protocol included as Appendix - Protection of the Environment - Breeding Bird Nest Survey Protocol.

Regardless of the time of year, a nest survey shall be conducted to ensure that no nests protected under the BC Wildlife Act are present within the project footprint. Per Section 34 of the Wildlife Act, nests of Osprey, eagle, peregrine falcon, gyrfalcon, heron or burrowing owl are protected year-round, whether or not the nest is occupied.

Clearing activities can commence if no protected nests are found. In the event that nest(s) protected by Migratory Bird Convention Act or Wildlife Act are identified, the Contractor's Environmental Monitor shall be responsible for developing and implementing a nest management plan including appropriate mitigation measures, such as no work buffers, to avoid contravention of the legislation.

Any required surveys shall be the sole the responsibility of the Contractor and will be performed and documented to the satisfaction of the Ministry Representative. All costs associated with these nest surveys shall be considered incidental to the Work and no additional payment will be made to the Contractor.

(f) Invasive Plant Management

In order to prevent the spread of invasive plants, the Contractor shall develop an Invasive Plant Management Plan that incorporates the procedures described in these Special Provisions, SS 751 and 769, as well as the BMPs for invasive plant management, available at the following link:

https://bcinvasives.ca/wp-content/uploads/2021/01/Weeds_Roads_BMP_Guide-2019-web.pdf

Invasive plants have been identified as occurring within or adjacent to the project. The following species are considered high priority and are discussed in more detail below.

- Knotweeds
- Additional species may be identified during construction

Mitigation Measures

The Contractor shall implement the following general mitigation measures site wide to prevent the introduction and spread of invasive plants both within and out of the Project site.

Preventing the introduction of invasive non-native vegetation is the most efficient and cost-effective approach to mitigation. Measures to prevent the introduction and spread of invasive plants, including aids for their early detection in the Project area, are critical components. These measures will be essential to avoid and minimize potential impacts to Environmentally Sensitive Areas (ESAs), as designated in these Specifical Provisions and defined in SS 165, within the Project area,. Specific measures will include:

- **Demarcate ESAs**—ESAs will be marked in the field by the Environmental Monitor and brought to the attention of equipment operators to avoid disturbance.
- **Surface runoff control**—erosion and sediment control measures will be installed to mitigate surface runoff from construction activities, which has the potential spread of invasive plants.
- **Minimize area of impact**—avoid or reduce disturbances to surface soils as disturbances can resurface or germinate dormant invasive seeds.
- **Seed disturbed area as soon as possible** — hydro seeding shall occur as soon as possible following disturbance to reduce the risk of invasive plants becoming established. Revegetation seeding shall be carried out according to SP 8.02 SP 6.01 Revegetation Seeding
- **Mark patches of knotweed**— Prior to ground disturbance, the Environmental Monitor will survey the project site to confirm the presence of these invasive plants and demarcate these invasives in the field using snow fencing or other high visibility barrier. Seek permission from the Ministry Representative before entering demarcated invasive plant sites.
- **Do not use invasive plant infested soil for topdressing**—Soil infested with invasive plants or their seeds and propagules must not be used for topdressing or other reclamation activities.
- **Do not park within infestations**—Do not park vehicles or equipment, or establish staging areas in locations infested with invasive plants, especially of high priority species.
- **Establish wash stations—**The Contractor's AQP will develop an Invasive Plant Wash Station Environmental Procedure as part of the CEMP. Wash stations will be used, at a minimum, as follows: 1) prior to entry into an ESA, 2) immediately after equipment completes work in a knotweed infestation area and prior to using that equipment anywhere else within the limits of construction or on another project, and 3) prior to equipment being moved off site to work on another project. At the wash station, the Contractor will inspect and clean vehicles and remove mud, seeds and plant parts from clothing, vehicles, and equipment (e.g excavators, dozers, mowers and tools). The wash station(s) will be established outside of ESAs, in a location away from natural areas where plant seeds or parts are not likely to spread before travelling to a new area. Wash stations shall include brushes for workers to clean their boots and clothes and shall include high pressure washers and/or a wash pit to clean vehicles before leaving site. Wash stations must be maintained and cleaned to continue functioning as intended.

Disposal of invasive plant material and infested soils

Soil infested with knotweeds must be disposed of at a site designated by the Ministry Representative. The following is a descending order of preference for infested soil disposal:

- Where applicable and with approval of the Ministry Representative, infested soils may be side-cast within an already infested soil area if done so in a manner that does not increase the area contaminated with invasive plants. This shall not occur within 30 metres of any ESA or where regrowth from this material will impact the project, new or existing

infrastructure, or potentially affect lands not under MOTI jurisdiction (including private lands).

- Where applicable and with approval of the Ministry Representative, infested soils may be side cast adjacent to an already infested soil area. This shall not occur within 30 meters of any ESA or where regrowth of the material will impact the project, new or existing infrastructure, or potentially affect lands not under MOTI jurisdiction (including private lands).
- Bury or deep bury the soil as per the species-specific invasive plant mitigation measures outlined below at disposal locations within the limits of construction approved by the Ministry Representative.
- The size and configuration of the completed disposal site(s) must be surveyed by GPS and the co-ordinates provided to the Ministry Representative for entry into the provincial invasive species management database. Deep-bury disposal locations must also be marked in the field, if possible, and included on as-built drawings.

Species-Specific High Priority Invasive Plant Mitigation Measures

The Contractor shall follow these specifications when working in knotweed infested areas. All soil within the infested area is considered contaminated with invasive plant root matter, propagules and/or seeds. Where removal of the invasive plant is not necessary, or only partially necessary, for the completion of the works, the plant shall be isolated from the work area to the satisfaction of the Ministry Representative.

Knotweed

There are four species of knotweed (Japanese, Giant, Bohemian and Himalayan) all of which occur within or nearby the project. Knotweeds grow extremely aggressively and quickly. They can grow through pavement and damage underground infrastructure. Any part of a plant, including roots, longer than approximately 2 cm can germinate into a new plant under the correct conditions. Bohemian Knotweed can also spread via seed.

The following BMPs shall be applied to Knotweed infestations:

- **Identification of infestations:** A knotweed infestation is defined as 5 stalks of knotweed or more within a 1m2 area, or as identified by the Contractor's AQP and accepted by the Ministry Representative. The Contractor's AQP will demarcate locations of knotweed infestations in the field. Seek permission from the Ministry Representative before entering.
- **Infested Area -** All material within at least a 15m radius of above ground growth to a depth of 3 m shall be considered infested with knotweed roots or seeds. The size and configuration of the infested area may be changed based on rationale provided by the Contractor's AQP and accepted by the Ministry Representative. Rationale for changing the limits of the infested soil area could include infestation size and observations made during excavation of the infested area.
- **Infested materials handling -** Avoid transporting Bohemian Knotweed in equipment when seed is present. Seed is produced from August to October. If Bohemian knotweed must be transported when seed is present, remove seed heads and bag them. Dispose of the knotweed seed heads at a landfill. When transporting knotweed infested soil or plant material it must be covered with a membrane to ensure no unintentional contamination of roadsides from knotweed soil being blown from the truck during hauling.

  Above ground knotweed plant matter that is to be disturbed during construction must be removed and placed in a sealed bags/containers and disposed of at a Contractor supplied incineration facility. If using the deep burial method of disposal, knotweed infested soil must be deep buried to a minimum depth of 3 m below surface. Do not deep bury

knotweed infested soils below or within 15meters of culverts, bridges, underpasses, or other Ministry structures or within 30m of ESAs.

- **Other considerations—**Unless required by the project, disturb knotweed to the minimum extent practical. “

(a) Payment

Measurement for Knotweed Infested Soil Relocation will be based on the actual volume of cubic meters of soil moved. The volume measurement will not include above ground plant matter.

Payment for cutting of knotweed plants, bagging of seed heads, incineration of the above ground plant material, Knotweed Infested Soil Relocation and appropriate handling and burial at a Ministry approved disposal location will be made from SP 1.37 Provisional Sum for Site Modifications and shall be considered full compensation for all things furnished and done including, but not limited to excavation, loading, hauling, and placing the excavated material at the disposal site.

Costs associated with cleaning of construction equipment, tools, other equipment, vehicles and footwear will be the responsibility of the Contractor and considered incidental to the work.”

(g) Special Erosion Protection Areas

The following areas of the Project, which may be characterized by poor drainage, standing water, and/or drainage flowing directly into fish-bearing streams or sensitive watercourses, are designated as Special Erosion Protection Areas:

- Any area within 10 m of the top of bank of all unnamed tributaries, 266 and 272 Street and Potter Creek and roadside ditches.
- Any area within 15 m of the top of bank of Whonnock and York Creeks; and
- Any catchment area which leads to a municipal storm drain.

Clearing, grubbing, drainage and grading work in the above areas should be conducted during dry summer conditions. It is anticipated that in any other period the Contractor will be required to undertake extensive and onerous precautions to satisfy the requirements herein with respect to the commencement and continuance of the Work in accordance with an accepted and still-valid Erosion and Sediment Control Plan.

Pursuant to SS 165.04.01, separate Erosion and Sediment Control Plans for Work in the Special Erosion Protection Areas will be required and will be subject to review on a weekly basis by the Ministry Representative and the Contractor. Where required by the Ministry, the Contractor shall submit an updated Erosion and Sediment Control Plan to the Ministry Representative for acceptance.

(h) Contractor’s Environmental Monitor

The Contractor shall retain an Environmental Monitor. This person shall be an appropriately Qualified Professional (AQP) as set out in SS 165.02. The Environmental Monitor must be available throughout the duration of the Work to represent the Contractor in all matters related to the protection of the environment and will attend all key meetings at which environmental protection measures are to be discussed.

Further to SS 165.02, this person shall be a Registered Professional Biologist (R.P.Bio.). The Environmental Monitor will prepare and seal the CEMP including all required updates to the Plan. The Environmental Monitor will be familiar with the document Environmental Assessment: included in Schedule T3 – Specific Reference Documents.

- The Environmental Monitor will have demonstrated experience implementing fish habitat restoration or enhancement projects to supervise and provide advice to the Contractor on the construction of the works at Whonnock and York Creeks.

- The Environmental Monitor shall conduct a wildlife sweep/survey prior to clearing and grubbing activities to identify the presence of small mammals, amphibians, and herptiles, including species at risk. If such species are encountered the Contractor's Environmental Monitor shall develop a strategy to mitigate impacts which shall be approved by the Ministry Representative.
- The Environmental Monitor shall conduct a documented environmental orientation and training session to the Contractor, staff, and all sub-contractors prior to the start of construction.

Further to SS165.02, the Environmental Monitor shall be onsite for all activities associated with works within 15m of the Top of Bank and all instream work for Whonnock and York Creeks, including but not limited to:

- Clearing, grubbing and excavation.
- Flow Diversion.
- Dewatering of isolated channel.
- Removal of existing infrastructure.
- Installation of new culverts (including extensions).
- Instream habitat replacement and complexing; and
- Revegetation and planting.

With the exception of the requirements for the Environmental Monitor to be on site, that are outlined above, the Environmental Monitor may appoint a suitably experienced designate meeting the definition of an AQP as set out in SS 165.02 and working under the direct supervision of the Environmental Monitor to conduct environmental monitoring and to oversee the implementation of the Contractor's CEMP for compliance with the environmental protection requirements in the Standard Specifications for Highway Construction, these Special Provisions and Environmental Agency approvals and permits during construction with prior written approval from the Ministry Representative.

Furthermore, the Environmental Monitor, or their suitably experienced designate, shall attend the site including during the following activities:

1. Daily when any works are occurring within Special Erosion Protection Areas
2. Prior to vegetation disturbance in order to inspect the Project footprint for knotweed infestations sites.
3. Installation and removal of any erosion and sediment control measures.
4. Within 24hours of periods of heavy rainfall. Heavy rainfall is defined as 25mm or greater within 24 hours.
5. Emergency spill incidents; and
6. During any shut down periods to review sediment and erosion control mitigation measures.

The Environmental Monitor, or their suitably experience designate, shall be available to respond to unforeseen incidents, such as spills of hazardous substances or releases of sediment to watercourses, within 30 minutes of being notified.

(i) Environmental Reporting

During periods of active construction, the Environmental Monitor shall perform at a minimum weekly Site inspections and shall submit bi-weekly environmental monitoring reports in accordance with the guidelines identified in the Ministry of Environment Standards and Best Practices for Instream Works:

http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf

The bi-weekly environmental monitoring report shall be sealed by the Environmental Monitor in an approved electronic format to the Ministry Representative which will include, but not be limited to the following information:

- Reporting period
- Project Name/ location
- Prime Contractor Firm Name/Contact
- Environmental Monitor Name/ Contact
- Summary of Construction Activities during the Reporting Period
- Summary of Environmental Issues Encountered during the Reporting Period
- Summary of Mitigation Measure Implemented during the Reporting Period
- Summary of Planned Corrective Measure to Address Site Deficiencies that arose during the Reporting Period
- Summary of Incident reports submitted during the Reporting Period
- Representative Site Photographs taken during the Reporting Period
- Schedule of Planned Activities for the next Reporting Period

Environmental monitoring reports are to be submitted to the Ministry Representative within seven (7) days of the monitoring period.

Further to SS165.04.02, the Contractor must report any spill of toxic or hazardous material to ground or water immediately to the Ministry Representative verbally. Written reporting to the Ministry Representative shall be submitted within two weeks of the verbal report.

If required by any environmental permits/approvals obtained for the project, the Environmental Monitor shall prepare a post-construction monitoring report that demonstrates compliance with the conditions of the permit(s)/approval(s).

(j) Construction Environmental Management Plan

The plan must be inclusive of all elements required to complete the Work as they relate to the protection of the environment as required by SS 165.02.02.

- The Contractor shall provide, in a form acceptable to the Ministry Representative, one hard copy and one digital PDF copy of a CEMP, and any subsequent updates to the plan. Any updates or addendums to the plan shall be numbered sequentially for clarity.
- The Environmental Monitor will prepare the CEMP including all required updates to the Plan to ensure compliance with the environmental protection requirements of the SS, Special Provisions, and environmental approvals during construction. The EM shall conduct a documented environmental orientation and training session to the Contractor, staff and all sub-contractors prior to the start of construction. The CEMP must be inclusive of all elements required to complete the Work providing construction procedures as they relate to the protection of the environment as required by SS 165.02.02. and SS 165.02.03, and these Special Provisions
- The CEMP will also be jointly signed by the Contractor and the Environmental Monitor and will be submitted to the Ministry for acceptance a minimum of fifteen (15) days prior to construction activities commencing.
- The CEMP will also be jointly signed by the Contractor and the Contractor's Environmental Monitor.

- The Contractor shall make copies of the CEMP accessible to personnel on-Site.

(k) Environmental Procedures

Further to SS 165.02.03(f) Site-specific Environmental Procedures will be required for the following:

- Environmental orientation/training procedures and record.
- Environmental procedure for commissioning of the new Whonnock Creek channel, including staged construction.
- Environmental procedure for the commissioning of the York Creek inlet pool.
- Fish salvage plan.
- Wildlife salvage plan (e.g. small mammals/species at risk).
- Bird nest survey plan.
- Wall construction around Whonnock Creek (including concrete pours)
- Clearing and grubbing with the ESAs plan.
- Topsoil salvage plan.
- Riparian planting plan.
- Seasonal shut-down, describing how the Project will be stabilized for the seasonal shut-down.

    o All contract requirements for environmental protection continue to be the responsibility of the Contractor throughout all Seasonal Shut-Down periods.

    o All areas of the Site Excavated, graded or otherwise disturbed by the Contractor shall be shaped and stabilized, by revegetation seeding or other means, so as to prevent weathering, erosion, slumping, or siltation, and so that the Contract requirements for protection of the environment have been, and will continue through the winder, to be met.

(l) Maintaining Water Quality

Erosion and sedimentation are major concerns with respect to their potential impact on water quality and fish habitat. The Contractor is responsible for planning, scheduling and performing this Work in such a manner that the quality of water flowing from the Site is at all times in compliance with the BC Water Quality Guidelines for Aquatic Life and the DFO Land Development Guidelines and will take immediate action to correct any deficiency in water quality. The Contractor is responsible for maintaining conditions which protect the environment not only during active construction on the Site, but also during periods when the Contractor has suspended its construction activity for any reason.

(m) Concrete and Concrete Waste Management Plan

Contrary to SS 165.14.04, the release of waste concrete, concrete slurry or water that has been in touch with uncured concrete is not permitted in the Project area. In addition, in accordance with SS 165.02.03, an Environmental Work Procedure is required as part of the CEMP to demonstrate how the Contractor will manage high-pH or turbid water and concrete slurry generated during removal of cast-in-place concrete barriers or concrete pours within Environmentally Sensitive Areas or Special Erosion Protection Areas. The Concrete Waste Work Procedure must demonstrate how these wastes will be collected and disposed of in way that prevents entry into Fisheries Sensitive Areas or Special Erosion Protection Areas in accordance with applicable laws, regulatory requirements, Ministry requirements and best practices.

(n) Water Detention and Treatment Facilities

The extent of water detention and treatment facilities required by the Contractor to meet its responsibilities for protection of the aquatic environment while carrying out the Work will depend on a number of factors, including but not limited to the methods and schedule chosen by the Contractor for performing the Work, and the weather or other Site conditions encountered during the Work.

Where facilities for water detention or treatment are shown on the Drawings, or otherwise required as part of the Work, they have been designed only for conditions which will apply after the completion of the Work. Unless otherwise stated elsewhere in these Special Provisions or on the Drawings, such facilities may be used by the Contractor for runoff detention and treatment while carrying out the Work, subject to the Ministry Representative's approval and subject to the Contractor's discretion as to their effectiveness for this purpose. Whether intentionally so used or not, these facilities shall be restored by the Contractor prior to completion of the Work to the lines and grades specified in the Contract Documents Package.

Whatever further water treatment facilities may be necessary shall be provided, maintained and removed by the Contractor.

(o) Idle Reduction

The Ministry is taking initiatives to reduce greenhouse gas emissions from the Project and has identified reduced idling of construction vehicles and equipment as a reduction strategy. Further to SS 165.02.02, and SS 165.16.02, the Contractor’s Construction Environmental Management Plan shall include procedures outlining how drivers and equipment operators will be engaged in idle reduction practices.

The Contractor is encouraged to develop innovative and practical methods to influence workers to participate in this program. The following are sample idle reduction strategies grouped within four areas of opportunity which may be applicable to the Project and that can be used as a basis for the Contractor to develop the Idle Reduction Plan:

(i) Location of staging areas to minimize impact of emissions:

- Locate combustion engines away from sensitive receptors such as fresh air intakes, air conditioners, and windows.
- Establish a staging zone for trucks that are waiting to load or unload material in the Contract area, away from sensitive receptors.

(ii) Idling time restrictions:

During periods of inactivity and while stopped within a queue formed under the direction of a traffic control person or device, idling of Contractor and Sub-Contractor off-road equipment shall be minimized and are not to exceed the following:

- Motor vehicles and light diesel trucks - 1 minute.
- Heavy duty diesel vehicles - 5 minutes.
- Diesel Vehicles involved in construction Site passenger transportation – 10 minutes; and
- Construction Equipment - exempt when actually employed at the Site for work intended.

Idling for more than the above times is permitted only under the following circumstances:

- When the vehicle or equipment is forced to remain motionless because of other traffic conditions or mechanical difficulties over which the operator has no control.

- To bring the vehicle or equipment to the manufacturer's recommended operating temperature.
- When the outdoor temperature is below 0°C or above +30°C and the operator or passengers are inside the vehicle, and there are no auxiliary power sources available to provide temperature control.
- When it is necessary to operate auxiliary equipment that is located in or on the vehicle or equipment to accomplish the intended use of the vehicle or equipment (for example, cranes and cement mixers).
- When the vehicle is detaching or exchanging a trailer.
- When the vehicle or equipment is being repaired or engaged in repairing another vehicle, if idling is necessary for such repair.
- When the vehicle or equipment is queued for inspection, if idling is necessary for such inspection.
- For designated emergency vehicles or any vehicle or equipment assisting in police, fire or ambulance services; and/or
- When defrosting or defogging windows. Idling shall end when fog, frost, or ice conditions have been eliminated.

(iii) Outreach and Communications:

- The Contractor shall implement a system of education and training as part of Site orientation for all on-Site staff and Sub-Contractors.
- The Contractor shall reinforce the idle reduction initiative via signage and during toolbox, health and safety, and Ministry meetings.

(iv) Idle Reduction Technologies:

The Contractor is encouraged to utilize idle reduction technologies where appropriate and applicable. Some examples are available at:

https://www.epa.gov/verified-diesel-tech/learn-about-idling-reduction-technologies-irts-trucks-and-school-buses

(p) Payment

Contrary to SS 165.03.06, costs associated with Environmental Management will be paid at the Lump Sum Price bid and shall be accepted as full compensation for all costs resulting from Protection of the Environment requirements as defined herein.

The payment of the Lump Sum Price bid will be made as follows:

- 25% of the Lump Sum when the Ministry Representative accepts the Contractor's CEMP.
- 65% of the Lump Sum paid prorated on a monthly basis based on the monetary percentage of the Contract completed.
- 10% of the Lump Sum when the Contractor has completed all Work and has left the Site in a condition acceptable to the Ministry Representative.

1.23 Protection of Railway Property

Protection of the Canadian Pacific Railway ("Railway") shall be in accordance with SS 145.28.04 except as modified herein.

The Contractor shall enter into permits and other forms to access Railway right-of-way as the Railway prescribes. The Contractor shall be responsible for any fees associated with these permits and forms.

Further to SS 145.28.04, prior to the Contractor moving onto Railway Property or conducting activities that may impact the Railway advance notice will be given to:

Name: John Lavoie – or designate
E-mail: John_Lavoie@cpr.ca
Phone: (403) 863-8322
and

Name: Roy O'Handley – day to day contact
E-mail: Roy_O'Handley@cpr.ca
Phone: 604-860-9107

Note: The Railway contact person may be changed at the discretion of the Railway.

The Contractor shall arrange Work and provide protective measures or any other protective procedures as necessary to prevent damage to Railway properties.

In general, the Railway representative will advise the Contractor 20 minutes in advance of the arrival of a train or rail based equipment to allow preparations for the safe passage of the train and for co-ordination of construction activities. Advance notice times may be adjusted based on train operations and specific construction activities at the discretion of the Railway.

The Contractor shall be responsible for ensuring that all Railway requirements are met to the satisfaction of the Railway, and shall be solely responsible for all costs and all delays arising from whatever requirements the Railway may impose.

Installation of 272nd Street crossing signal and gate upgrades by the Railway is anticipated to occur Winter 2023.

(a) Monitoring and Inspection by the Railway

For the purposes of allowing the Railway to monitor and inspect the Project, the Contractor shall permit the Railway full access to the Site, construction documentation as well as construction and supervisory personnel.

The Contractor shall meet with Railway representatives at the Project Site or suitable Project office to review the progress of and any issues relating to the Project as required. The Ministry Representative is to be present at these meetings.

The Contractor shall provide Project Site supervision as required by the Railway, at the sole cost and expense of the Contractor.

(b) Railway Work shall consist of the following:

- Railway flagging protection and associated requirements as required to protect operations within 10 m of the track or other works that may impact the Railway operations and facilities.
- Provide supervision and labour for Project related Railway work to ensure safe rail operations and facilities.
- Planning, co-ordinating, scheduling, monitoring, managing and supervising the Railway work.
- Reviewing construction plans and documents.
- Attendance at meetings with the Contractor related to schedule review, construction issues, standards, changed conditions and other matters in relation to the Railway.
- Attendance at regular progress update meetings as required.

- Reviewing progress reports provided by the Contractor. The Railway will require a monthly progress report and updated schedule.
- Periodic Site inspections to monitor construction activities and procedures that may, in the Railway's opinion, affect rail operations and facilities.
- Preparation of deficiency lists, reporting on same, and monitoring corrections.
- Final inspection and acceptance of all Railway related infrastructure.

The Contractor will be responsible for the cost of monitoring and inspection by the Railway or Railway designates.

The Contractor, upon completion of the Work, must promptly remove from the Railway's property all of Contractor's tools, equipment, implements and other materials, whether brought onto the property by the Contractor or any Subcontractor, employee or agent of Contractor or of any Subcontractor, and must leave the Railway property in a condition acceptable to the Railway's representative.

1.24 Accommodation of Railway Traffic

(a) General

The Contractor will ensure the safety of, and minimize interference with traffic on, the **Canadian Pacific Railway** the "Railway"). The Contractor shall coordinate access railway right-of-way as the Railway prescribes. The Contractor shall be responsible for any fees associated with these permits and forms.

(b) Working Adjacent to the Railway

The Contractor shall notify the Railway of its Work adjacent to the railway and develop work processes, in consultation with the Railway, for working in the proximity of the railway Right-of-Way.

All equipment within 10 m of the nearest rail shall stop working on the approach of a train and remain stopped until the train has passed.

(c) Working On or Over Railway Property

The Contractor will submit, for approval, procedures and schedules for any portion of the Work on or over the Railway right-of-way, with drawings as necessary, to:

Name: John Lavoie – or designate
E-mail: John_Lavoie@cpr.ca
Phone: (403) 863-8322

Note: The Railway contact person may be changed at the discretion of the Railway.

CP Right of Entry Permit (latest version), shall be completed and submitted to the Railway. No Work shall be done on the Railway right-of-way or with 10 m of the track without the written approval from the Railway. Copies of this information shall also be provided to the Ministry Representative.

The Contractor shall submit a complete and detailed methodology including schedules and plans and procedures for any work over or adjacent to the track. All access, laydown, storage and equipment operating areas, crossings and other physical works on the Railway property shall be identified and included in the Contractor's submission. When the Railway has reviewed and accepted plans and procedures it may require that the plans and procedures be signed and sealed

by a professional engineer licensed to practice in British Columbia. The submission shall be made at least thirty (30) days in advance of any scheduled work.

The Contractor shall adhere to the instructions and directions of the Railway flag persons, inspectors and supervisory personnel (including engineering and technical support) as the Railway may require supervising and/or monitoring any work on the Railway property. Instructions and directions may include orders with respect to security restrictions, safety requirements and/or emergency situations.

The Railway has the sole discretion to decide which operations require Railway flag persons. The Contractor shall arrange for Railway flag persons whenever it is working within 10 m of the track and for any other Works that may impact the Railway operations and facilities as defined herein at the Railway's Discretion.

The Contractor shall procure Railway flag persons in accordance with the following:

- As a first priority from the Railway, and in accordance with the terms of the permits, the Railway may be able to provide a maximum of two (2) flag persons for a maximum of forty (40) hours per week per flag persons (including travel time to and from the Project Site), Monday through Friday. The Railway will consider request to provide flag persons to work additional days overtime. However, the Contractor is advised that the Railway may not be able to fulfill these requests.
- All requests for provision of Railway flag persons from the Railway must be made at least sixty (60) days in advance. This will allow the Railway to potentially fill an internal posting for flag persons.
- All requests for provision of Railway flag persons must be for fixed blocks of time of at least one (1) month duration. For example, one (1) flag person could be ordered for 06:00 to 13:00 and a second Railway flag person could be ordered for 12:00 to 19:00 Monday to Friday from May 1 to June 1. If the Contractor chooses to not work one of the days the flag persons are ordered for, the Railway will charge the Contractor for those days not worked regardless of the circumstances.
- The Railway will consider other Railway flagging requests for shorter periods and additional hours but due to other schedules and limited availability the Railway may not be able to provide flag persons as requested
- The Railway cannot guarantee that Railway flag persons will be made available due to resourcing challenges.
- The Contractor shall be responsible for the costs of flag person services.

Notwithstanding the Railway's consent to commence construction and provide access to the Railway properties, if an emergency situation arises over, on or under the Railway properties, or the presence of the Contractor or their activities are causing an interference, the Railway may direct the Contractor to exit from and shut down all operations on the Railway properties for such period of time as the Railway deems appropriate. Any interference caused by the Contractor shall be remedied to the complete satisfaction of the Railway prior to the Railway allowing the Contractor to resume access onto the Railway properties. The Railway shall not be responsible for any construction delays or costs incurred by the Contractor due to an evacuation or shutdown of work on the Railway property.

The Railway will decide which operations require Railway flag persons and which operations require Rail traffic closure. The Contractor shall give the Railway ten (10) days' notice of the start of such operations and confirmation of the notice shall be submitted to the Ministry Representative at the same time. The Contractor shall not commence such operations until Railway flag persons

have been posted if required by the Railway. Railway flag persons will be provided by the Railway, who may opt to charge their costs to the Ministry. The Contractor will reimburse the Ministry for the costs of such traffic control persons in accordance with SS 145.28.04, except that no surcharge will be applied.

The Contractor is required to accommodate changes to train volumes and operations.

The Contractor will be responsible for the cost of any train delays caused by the actions of the Contractor.

The Contractor shall be responsible for all costs to restore the Railway properties and/or facilities that may be disturbed by the Contractor's operations. All such work shall be carried out to the satisfaction of the Railway.

All costs associated with Accommodation of Railway Traffic shall be considered incidental to the Work and no separate payment will be made.

1.25 Utilities

There is extensive utility relocation work that is required to be completed by utility companies as part of this Project.

The Contractor shall be responsible for the coordination of all utility relocations necessary to facilitate the Work and shall schedule the Work accordingly.

The following is a list of utility company representatives who are to be contacted regarding the co-ordination of scheduling of any Utility Relocation. The Contractor shall provide the Ministry Representative and the appropriate utility company representatives listed below at least fourteen (14) days' notice prior to commencement of any portion of the Work being undertaken adjacent to any utility:

Table 11: Utility Company Representatives

Telus	
Name: Edward Bolecz	Title: Dept. OP Manager
Address: 3777 Kingsway Burnaby, BC V5H 3Z7	Phone Number: 604-695-3236 Email: Edward.Bolecz@telus.com
BC Hydro	
Name: Jagjit Uppal, P.Eng.	Title: Project Manager, Consultant
Address: BC Hydro, LMN-COQ 2590 Barnet Highway Coquitlam, BC V3H 3P2	Phone Number: Cellular - 604-725-6845 Email: Jagjit.Uppal@bchydro.com
Shaw Cable	
Name: Roderick (Erick) Umali	Title: Intermediate Planner
Address: Shaw Communications Inc. 10445 - 138 Street Surrey, BC V3T 4K4	Phone Number: Office – 604-629-4354 Cellular – 604-629-4351 Email: roderick.umali@sjrb.ca
FortisBC Energy Inc.	

Name: Holly Motherwell, BSBM, AA	Title: Project Manager
Address: 16705 Fraser Highway Surrey, BC V4N 0E8	Phone Number: Office – 604-315-5855 Email: holly.motherwell@fortisbc.com

(a) Contractor's Coordination with Utilities

The Contractor shall arrange a series of documented meetings, as identified below, with the utility owners to discuss the scheduling and coordination of the Work. The Ministry Representative shall be invited to these meeting. The Contractor shall take minutes at the meetings, and distribute those minutes to all invitees to, and participants of, each meeting.

(i) Within fourteen (14) days of Award and prior to the preconstruction meeting.

(ii) Monthly meetings thereafter until utility works are complete; and

(iii) Additional meetings if, in the Contractor's or Ministry's opinion, there appears to be scheduling slippages by any party. The Contractor shall notify the Ministry Representative immediately of any perceived schedule slippage.

In addition to the meeting above, the Contractor shall communicate with the utility companies at least every two (2) weeks in-person, by phone or e-mail to coordinate and schedule the utility work on Site.

The Contractor shall keep records of all communications with any utility companies.

(b) Utilities Scheduling

BC Hydro and other utility companies on/in BC Hydro poles or ducts have agreed to completion and milestone dates for work related to their plant, subject to timely completion of precursor work required of the Contractor.

The relocation of utilities and the Contractor's conduct of the Work will be interdependent. The Contractor shall cooperate with the utility companies to ensure:

(i) that the utility companies have access at all times to any portion of their work site that is within the Site.

(ii) that the Contractor shall perform all required precursor work identified in Table 12: Utility Relocations, Constraints, and Precursor Works in a timely fashion, to facilitate both the Contractor's and the utilities companies' schedules.

(iii) that the Construction Schedule submitted and maintained by the Contractor in accordance with SP 1.07 – Construction Schedule and Cash Flow is realistic, and that its schedule and the utility companies' relocation schedule are mutually consistent and are also consistent with the availability of property as detailed in SP 1.10 - Availability of Site or Right-of-Way; and

(iv) that the utility relocation is not being delayed by the Contractor's scheduling and performance of the Work.

The Contractor shall notify the Ministry Representative immediately if it considers that its Work is being delayed by the failure of any utility company to relocate its services in a timely manner.

Table 12: Utility Relocations, Constraints, and Precursor Works

Name of Utility Company: BC Hydro, Telus
Type and Location of Utility: *Relocation of BC Hydro poles across the entire corridor as noted within:* (a) Schedule 4 Drawings (b) Schedule T3 – Specific Reference Documents (BC Hydro pole relocation plan)
Status of Utility Relocation: Utility relocation needs to be coordinated between BC Hydro and the Contractor prior to commencement of the Work. Estimated Timeline – Q3 2023 to Q2 2024 TBC.
Precursor works required to Facilitate Utility Relocations: Clearing, Grubbing and Grading (Type A & D) must be completed prior to BC Hydro coming to site to start relocations
Name of Utility Company: Shaw Cable
Type and Location of Utility: Overhead and underground relocations across the entire corridor noted within: (a) Schedule 4 Drawings (b) Schedule T3 Reference Documents
Status of Utility Relocation: Utility relocation needs to be coordinated between Shaw Cable and the Contractor prior to commencement of the Work. Estimated Timeline – Q3 2023 to Q2 2024 TBC.
Precursor Works to Facilitate Utility Relocations: Clearing, Grubbing and Grading (Type A & D) must be completed prior to Shaw Cable coming to site to start relocations
Name of Utility Company: Fortis BC Energy Inc.
Type and Location of Utility: Underground relocations around the 272nd St / River Road area and 285th St. area - as noted within: (a) Schedule 4 Drawings Schedule T3 Reference Documents
Status of Utility Relocation: Utility relocation needs to be coordinated between FortisBC and the Contractor prior to commencement of the Work. Estimated Timeline – Q3 2023 to Q2 2024 TBC.
Precursor Works to Facilitate Utility Relocations: Clearing, Grubbing, Grading (Type A & D) and SGSB must be completed prior to Shaw Cable coming to site to start relocations

(c) Utility Access

The Contractor, during the Contractor's operations, shall provide and maintain reasonable road access and egress for utility owners to undertake their relocations, adjustments or protection with the least inconvenience to the utility owners as they undertake their relocations and operations.

The Contractor shall not remove access to any utility plant without the written approval of the Ministry Representative.

In the event access for utilities is required outside the lines and grades of the Work, such access or egress will be compensated as Extra Work. Unless described elsewhere, such utility access or egress requirement will be solely decided in the opinion of the Ministry Representative.

Utility pole removal from within the lines and grade may be required once the Work begins. Provided the Contractor has satisfied all of its responsibilities of GC 23.00 Utilities and provided the Contractor's schedule did not anticipate utility pole removal from within the lines and grades, then work to repair the area directly impacted by the utility pole removal may be compensated in the sole discretion of the Ministry Representative as Extra Work.

(d) Asbestos-Coated Underground Utilities

Older, and at times abandoned, underground utilities may have what appears as a coal tar coating that may contain asbestos. As removal of these old utilities may involve cutting of sections where the asbestos may be liberated and become friable, proper asbestos abatement protocols must be followed. Regulatory requirements regarding asbestos and resource information can be found at:

- https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/296_97_04#part6; and
- http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/asbestos.pdf.

Should such underground utilities be found and require cutting, the Ministry will compensate the Contractor for any additional works required for asbestos abatement in accordance with GC 24.00.

(e) Unanticipated Buried Utilities

In the event unanticipated utility plant is found, the Contractor shall notify the Ministry Representative, immediately and in writing, of such utility plant and its location. If there is a requirement by the Contractor to protect, adjust, or relocate these utilities, such work will be as determined by the Ministry Representative and compensated in accordance with GC 38.00 Change to Work.

1.26 Trenching Existing Pavement Structures

Trenching and restoration shall be in accordance with SS 303. Where trenches are cut into existing pavement structures, backfill and pavement will match the existing materials and thickness. There will be no additional payment for import backfill material or pavement.

1.27 First Nations Monitoring and Resources

(a) First Nations Monitoring

There may be First Nations members on Site throughout the duration of the Works, monitoring for the presence of heritage resources and any impacts.

The First Nations shall be providing the following:

- Monitor(s) on Site for portions of the Project to monitor natural ground altering activities and in-stream works. The Contractor shall not conduct ground disturbance activities or in-stream works without the presence of First Nation monitor(s), unless approved by the Ministry Representative.

(b) First Nations Resources

The Contractor is strongly encouraged to engage local First Nations community resources, from the Bands listed below, for available opportunities on the Project. Each Band will provide lists of their available labour, equipment, and business resources.

Table 13: First Nations Contacts

	Kwantlen First Nation	***Matsqui***
Contact	Chantelle Wegwitz	***Chief Alice McKay***
Address	*9712 Glover Road*	*5720 Julian Drive*
Telephone	604-888-5556	604-826-6145
Mobile	604-761-4100	604-302-2849
Email	chantelle@seyem.ca	alice.mckay@matsqui.com

1.28 Archaeological Sites

(a) General

The Ministry has undertaken a detailed Archaeological Impact Assessment (AIA), which is still in progress. Site Alteration permit issuance is anticipated for Spring 2023. All excavation works within the sites shall be completed in accordance with the Site Alteration Permit once available.

Prior to commencement of construction activities, the Contractor shall arrange a documented meeting with the Ministry Representative, Ministry-appointed Project Archaeologist and the Cultural Monitors to ensure a clear understanding of the roles and responsibilities of each party with regard to land altering activities.

(b) Chance Finds

In the event that additional archaeological materials are uncovered during construction (a "Chance Find"), the Contractor shall follow the procedures outlined in SS 165.20 Archaeological and Paleontological Discoveries (Insert or delete the following, as appropriate to your project.) and in the Appendix - Archaeological Chance Find Procedure included appended to these Special Provisions.

The Contractor shall ensure that all workers and SubContractors are fully aware of the requirements and processes detailed in SS 165.20 Archaeological and Paleontological Discoveries and the Appendix - Archaeological Chance Find Procedure.

Further to SS 165.20, in the event of a discovery, the Contractor shall immediately flag off a 30 m radius around the discovery site(s) and relocate any impacted equipment to resume Work outside of the discovery site. The Ministry Representative may increase or decrease this radius in collaboration with the Project Archaeologist.

There shall be no additional cost to the Ministry for the flagging of the area or relocation of equipment to the alternate location, but the impacts of any additional mitigation measures required by the Ministry Representative shall be borne by the Ministry.

In the event the Contractor is prevented from relocating the equipment to an alternate location to resume work, the stoppage will be considered a Reimbursable Delay in accordance with GC 42.00.

The Contractor shall work in strict accordance with SS 165.20 Archaeological and Paleontological Discoveries. Any delays or costs caused by the Contractor's negligence shall be the Contractor's responsibility.

Controlled excavation, if required, shall be in accordance with this clause and the recommendations in the Site Alteration Permit.

(c) Works within Archaeological Sites

The location of the known Archaeological sites is identified in the Archeological Documents (available as indicated in SP 1.05)

Any Work within an Archeological site, including any Chance Find sites, shall only be undertaken in accordance with the Site Alteration Permit and in a manner acceptable to the Ministry Representative and the Project Archeologist.

All roadway and drainage works shall consider the following.

(i) Section 12 Site Alteration Permit

British Columbia's archaeological resources are protected under the *Heritage Conservation Act* (*HCA*). The provisions of the HCA apply whether archaeological sites are located on public or private land. A Site Alteration Permit will be issued following the completion of an Archaeological Impact Assessment (AIA). Protected Archaeological sites may not be altered without a Site Alteration Permit.

In accordance with the Site Alteration Permit requirements, all soils removed from within the boundaries of the archaeological sites shall be retained within the Ministry right-of-way. Organic stripping shall be used as slope dressing immediately adjacent to the point of origin and Type D material shall be used in embankment construction immediately adjacent to the point of origin unless deemed unsuitable. If deemed unsuitable the material shall be disposed of at the designated disposal site as defined in these Special Provisions, nearest to the specific archaeological site of origin.

The movement of material excavated within the Archaeological site shall be carefully tracked by the Contractor as described in this Special Provision and recorded on a separate drawing prepared to identify the excavation and placement of all material. The tracking and recording of the placement of these materials shall be accepted as incidental to the Contractor's Work and no additional payment will be made.

(ii) Archaeological Monitoring Within the Archaeological Sites

Archaeological Monitoring is required for the following archaeological sites:

Archaeological Site*	**Size (m^2)**
2021-23-DhRo-T1	19.55
2021-23-DhRo-T2	331.13
2021-23-DhRo-T3	572.93
2021-23-DhRo-T4	384.66
2021-23-DhRo-T5	19.55
2021-23-DhRo-T6	197.02
2021-23-DhRo-T7	19.55
2021-23-DhRo-T8	592.55
2021-23-DhRo-T9	1329.08
2021-23-DhRo-T10	90.36
2021-23-DhRo-T11	38.66
2021-23-DhRo-T12	458.64
2021-23-DhRo-T13	215.68
2021-23-DhRo-T14	546.58

Archaeological Site*	Size (m^2)
2021-23-DhRo-T15	189.46
2021-23-DhRo-T16	139.91
2021-23-DhRo-T17	142.93
2021-23-DhRo-T18	19.55
2021-23-DhRo-T19	159.57
2021-23-DhRo-T20	19.55
2021-23-DhRo-T21	19.55
2021-23-DhRo-T22	39.1
2021-23-DhRo-T23	19.55
2021-23-DhRo-T24	19.55
2021-23-DhRo-T25	211.79
2021-23-DhRo-T26	109.98
2021-23-DhRo-T27	19.55
2021-23-DhRo-T28	426.77
2021-23-DhRo-T29	90.57
Total	**6443.32**

* Note the sizes and number of the archaeological sites are subject to change as the AIA is ongoing.

The Ministry Representative, in consultation with the Project Archaeologist may adjust the boundaries of the sites requiring Archaeological Monitoring or add additional sites as deemed necessary.

The monitoring will be undertaken by the Archaeologist as described in the Site Alteration Permit. The Ministry will retain the services of professional Archaeologists and Cultural Monitors in consultation with First Nations.

Areas designated as requiring Archaeological monitoring may require controlled excavations as described below.

(d) Controlled Excavation within Archaeological Sites

This clause is only applicable to excavation within the designated Archaeological Site(s) and any areas associated with chance finds.

If an item of particular archaeological, heritage, historical, cultural or scientific interest, in accordance with SS 165.20 Archaeological and Paleontological Discoveries, is found within the Design excavation prism or sub-excavations, the Contractor shall follow these provisions considered further to an issued Site Alteration Permit.

“Controlled Excavation” is described as careful mechanical excavation, in lifts of limited depth, that is to take place ahead of the roadway and drainage excavation within the archaeological site(s) to allow for detailed monitoring of the removal of soils bearing potential cultural materials.

Controlled Excavation applies to organic stripping and Type D excavations.

Controlled Excavation shall be completed initially, where possible, by an excavator equipped with a finishing bucket (or smooth-edged scraping bucket). Later stage alterations may be completed by grader, scraper, or other machinery.

Controlled Excavation shall generally consist of taking the excavation in 10 cm lifts to a total depth as determined by the Project Archaeologist or outlined in the Site Alteration Permit. This material, referred to as "back dirt" in the Site Alteration Permit, shall be temporarily stockpiled in the general vicinity of the controlled excavation, in a location acceptable to the Ministry Representative in consultation with the Archaeologist.

Controlled excavations will occur within deposits found to contain archaeological materials, which are not always organic soils. The soil horizons containing archaeological materials may include (but are not limited to): active soil horizons, B soil horizons, deposits from previous fill events which have displaced archaeological sites, and paleosols).

As per the HCA, all ground disturbance within an archaeological site must be subject to archaeological monitoring and controlled excavation.

Once the Project Archaeologist determines that the back dirt does not have cultural significance this stockpiled material is now classified as Type D excavation and can be moved to nearest adjacent embankment or disposal area depending on material suitability.

If monitoring results in the identification of concentrations of artefacts, features or human remains, the Archaeology Branch and the affected First Nation shall be notified immediately and, when applicable, the Human Remains Contingency Plan for Monitoring, outlined in the Site Alteration Permit, shall be followed.

Upon completion of the controlled excavation and associated Archaeological Monitoring the Ministry Representative will provide the Contractor with written authorization to commence roadway and drainage excavation.

Payment

Controlled Excavation, where required, shall be executed on a Force Account basis and will be paid from the Provisional Sum Item for Controlled Excavation as described in this Special Provision.

Payment for back dirt, once cleared for use in embankment of disposal, will be paid as the respective Type D excavation item, depending on the end use of material. .

(e) Cultural Monitoring of the Site

Cultural monitors will be observing all land altering activities that take place within the Site, outside of the identified archaeological site boundaries and throughout the Contract period. Cultural monitors will be observing for Chance Finds and for evidence of cultural artefacts. The Contractor shall develop safe work procedures for working in the proximity of equipment and train the monitors and equipment operators in the implementation of the procedure.

Cultural monitoring may result in decreased productivity for associated Work. Such impacts are incidental to the prices bid for the Work and there will be no additional payment for any impacts caused by the cultural monitoring.

1.29 Project Signs

The Contractor shall supply all signs, including C-018-1A, C-082 and appropriate Idle Reduction Sign, with the exception of the C-035 Project signs.

If the C-035 Project signs are not already in place, the Ministry will supply the sign boards for erection and potential removal by the Contractor, with compensation paid as Extra Work from the Provisional Sum Item for Site Modifications. Maintenance of these signs during the term of the Contract shall be incidental.

If directed by the Ministry Representative, the Contractor shall remove the C-035 Project signs after completion of the Work and deliver them to a location determined by the Ministry Representative. Payment will be made as Extra Work from the Provisional Sum Item for Site Modifications.

1.30 Marked-Up Drawings

(a) General

As construction progresses, as-built information shall be recorded by the Contractor in a timely manner and be subject to a monthly review by the Ministry Representative.

Upon the completion of construction, the Contractor shall provide the Ministry Representative with one marked-up set of Contract Drawings to be used by the Ministry for the production of record drawings.

These drawings may be hand or PDF/CAD-produced, shall show in a neat and accurate manner all changes, additions, and deletions to the original Contract Drawings to show the “as-built” installation.

For the purpose of this SP clause, a change is defined as any installation that has been constructed outside of the Contract allowable tolerances. If no Design tolerances are provided the tolerances shall be 150 mm Horizontal and 20 mm Vertical or as otherwise specified by the Ministry Representative. This definition is only for the purpose of this SP clause and is only intended to define the parameters for the “as-built” details.

All “as-built” mark-ups shall be submitted to the Ministry Representative on or before completion of the Project. Pursuant to GC 35.00 and GC 53.00, the Completion Certificate and final progress payment will not be released if these as-built drawings, in compliance with the Contract and to the satisfaction of the Ministry Representative, have not been received.

(b) Mark-up Instructions

(i) Copies of the most current Drawings are to be used and marked-up as required to reflect the actual constructed roadway template and amenities at Project completion.

(ii) The Drawing numbers shall remain the same as the originals.

(iii) The marked-up Drawings shall be stand-alone documents and contain the original information plus all of the information with regard to changes, additions and deletions.

(iv) All underground utilities removed during construction shall be marked as “removed”. All underground utilities abandoned shall be marked as “abandoned”.

(v) All items on the Drawings shown to be relocated, either by the Contractor or others, shall be shown as “relocated” and the new locations shall be shown on the marked-up Drawings as an addition as described below.

(vi) The original Design information that has been changed shall be replaced by the information that represents the as-built works.

(vii) Each item that has been deleted from the Drawing shall also be crossed out and labelled on the Drawing as “Deleted”; and

(viii) Each item on the Drawing that has been changed, added or deleted from the Design shall have the revisions clearly marked and a description of the revision written adjacent to it Alternatively, a sequential number may be inserted at each revision, with a table of descriptions added elsewhere on the Drawing sheet.

(c) Contractor as Engineer of Record

For any portion of the Work which the Contractor is responsible to design (such as proprietary structures or elements of a Value Engineering Proposal), the Contractor’s Engineer of Record

shall produce record drawings in accordance with the Ministry's Technical Circulars T-06/09 Engineer of Record and Field Review Guidelines and T-07/09 Record Drawings, including any updates to either, and provide signed and sealed copies to the Ministry Representative.

These Technical Circulars are available from the Ministry Representative or on-line at the Ministry's web page:

INDEX: https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/technical-circulars

T-06/09: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t06-09.pdf

T-07/09: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t07-09b.pdf

(d) Quality Control

In the event that the Ministry Representative determines that the as-built information is not being adequately assembled, deductions from any monthly payment due the Contractor may be made in accordance with SS 101.07.

(e) Payment

No separate payment will be made for this Work and the cost thereof will be considered incidental to the various items of Work to be performed.

1.31 Partnering

The Ministry will offer an opportunity for the Contractor, the Ministry, key consultants, along with Ministry stakeholders, to participate in a partnering session prior to commencing Work.

This one-day session is aimed at building an understanding of the roles and responsibilities of each of the parties, building consistency of approach to contract implementation, and fostering an environment that allows everyone to work co-operatively in a spirit of trust and open communication to achieve common goals and objectives.

Each party will be invited to have their key team members (e.g., Contractor Senior Manager, Contractor Project Manager, Superintendent, major Subcontractor Superintendents; Ministry Representative and Assistant, Consultant Manager, Engineer's of Record for key components; Ministry Project Manager, Field Services Manager, and a Senior Ministry Manager, etc.) participate. The effectiveness of the partnering session hinges on the commitments made by these key players and their attendance is crucial.

The Ministry Representative, in consultation with the Contractor and the Ministry, will arrange the time and place, anticipated to be contiguous with the pre-construction meeting.

The Ministry will provide the facilities and facilitator and will cover each party's reasonable direct costs of attendance.

1.32 Contractor Survey Layout

The Contractor shall perform survey, layout and associated tasks in accordance with SS 145.

1.33 Provision of Electronic Information

At the Contractor's request the Ministry will provide the Contractor with electronic copies of the Drawings, design digital terrain model, or other such information.

Such information is provided "as is" without warranty of any kind, whether expressed or implied. All implied warranties, including, without limitation, implied warranties of accuracy, completeness, merchantability, fitness for a particular purpose, and non-infringement, are hereby expressly disclaimed.

Under no circumstances will the Ministry be liable to any person or business entity for any direct, indirect, special, incidental, consequential, or other damages based on any use of this information, or any information referenced therein, including, without limitation, any lost profits, business interruption, or loss of programs or information, even if the Ministry has been specifically advised of the possibility of such damages.

1.34 Acid Rock Drainage or Metal Leaching Potential for Contractor Supplied Materials

Where the Contractor elects to obtain material from a private quarry (or other private source) the Contractor shall engage a Qualified Professional (QP) who shall be responsible for evaluating the acid rock drainage (ARD) and metal leaching (ML) potential of the material. The QP is required to be registered as a professional engineer or geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) and have experience with ML/ARD evaluation and geological field mapping.

The evaluation shall fulfill the Ministry of Transportation and Infrastructure's Technical Circular T-04/13 *Evaluating the Potential for Acid Rock Drainage and Metal Leaching at Quarries, Rock Cut Sites and from Stockpiled Rock or Talus Materials Used by the MoTI*, available on-line at:

INDEX: http://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/technical-circulars

T-04/13: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2013/t04-13.pdf

The QP is responsible for ensuring that their evaluation is representative of the material within the proposed quarry development areas and/or other material sources (i.e., rock cuts, stockpiled rock, and/or talus materials). All QP reports shall include data to support their conclusion that the material is acceptable for use, it shall be signed and sealed by the QP, and it shall be provided to the Ministry Representative fourteen (14) days before any material is placed on the construction Site. No material shall be sourced or placed until the report is received and accepted by the Ministry Representative. Only materials that are evaluated as having low potential for ML/ARD shall be accepted by the Ministry.

In the event that the Contractor's off-Site source of rock is found to be adversely impacting the environment (proven by an ML/ARD evaluation and a contaminated sites investigation carried out by the Ministry), the Contractor shall remedy the situation and impacts entirely on their own account including reimbursing the Ministry for the investigation costs.

The Contractor shall engage a QP for a Stage 1&2 Preliminary Site Investigation, a Detailed Site Investigation (both as per the BC Environmental Management Act (EMA)) and have a remediation plan prepared by a QP to ensure that all potential environmental impacts are addressed as per the EMA (e.g. groundwater and soil contamination, etc.).

The Contractor's investigation and remediation plans, as prepared by the QP, shall be submitted and accepted by the Ministry (at the onset of discovery of the unsuitable material) and shall include but not be limited to:

- removal of all ML/ARD material brought onto the Site,
- disposal of all material to an environmentally accepted location (as per the EMA),
- the requisite contaminated site investigations as mentioned above,
- removal of any impacted material at the Site,
- all environmental and contaminated sites remedial works, and
- the location and provision of an alternative source of rock to replace the unsuitable material.

There will be no additional cost to the Ministry that may include but not be limited to: testing costs, source development costs and additional hauling and placement costs.

Payment

There will be no separate payment for ML/ARD evaluation, testing, and remediation in accordance with the above noted T-Circular. Payment will be incidental to the supply of material for the Project.

1.35 Equipment Rental Rate Premium

In addition to the "Equipment Rental Rates", the rate premiums specified in Table 14: Applicable Force Account Rate Premiums shall apply to any Work done by Force Account for this Contract:

Table 14: Applicable Force Account Rate Premiums

Description	Area of the Province	*Applicability – Equipment Rental Rate Guide Section (the Blue Book)*	Premium
Fuel cost adjustment	All Districts	Applicable to licensed on-road vehicles, and heavy off-road equipment in accordance with https://www2.gov.bc.ca/gov/content/industry/construction-industry/transportation-infrastructure/hired-equipment-program/fuel-price-adjustment	Revised frequently. See https://www2.gov.bc.ca/gov/content/industry/construction-industry/transportation-infrastructure/hired-equipment-program/fuel-price-adjustment for the applicable rate at the time the work is being performed
Pick-ups, light plants, service vehicles and other similar equipment are excluded from the equipment rental rate premium.			

Information on the Ministry's Hired Equipment List registration process can be found at:

https://www2.gov.bc.ca/gov/content/industry/construction-industry/transportation-infrastructure/hired-equipment-program.

1.36 Motor Vehicle Act Hours of Service

Solely for the purposes of the Motor Vehicle Act Regulations – Division 37, Part 3 Hours of Service, Section 37.11(h) the "site of the work" referenced therein shall include the Site and, subject to the approval in writing of the Ministry Representative, any of the following areas as the Contractor may explicitly request in writing as desired "Extensions to the *Site of the work*";

(i) any Contractor-provided pits, quarries, crusher or asphalt plant sites, and

(ii) such highway rights-of-way for the entire distance from a Limit of Construction to the property boundary of a Ministry- or Contactor-provided pit, quarry, crusher or asphalt plant site, up to a maximum cumulative length of thirty (30) km.

The above referenced Motor Vehicle Act Regulations may be found at the following link:

http://www.bclaws.ca/Recon/document/ID/freeside/26_58_12#section37.11

1.37 Provisional Sum for Site Modifications

The Provisional Sum for Site Modifications has been included as a source of funds for payment for Work that has not been fully defined at the time of Tender and for any other Work which is not anticipated or covered in these Special Provisions but is deemed necessary by the Ministry

Representative. Payment will be made in accordance with the applicable Special Provision(s), or where payment method is not specified, at a negotiated rate or on a Force Account Basis.

Specific Work that may be required includes, but is not limited to:

- Repairs to existing utilities, not damaged by the Contractor
- Property restoration work not covered within existing Contract units
- Additional and/or revised survey layout for any design changes
- Knotweed Infested Soil Relocation
- Any unanticipated work as designated by the Ministry Representative.

1.38 Time Compensation for Conditional Items and Site Modifications

(a) Conditional Items: Time required to accommodate construction of all Conditional Item Work is to be accommodated by the Contractor within the Construction Schedule.

(b) Site Modifications Work**:**

Site Modifications Work required to be performed on the critical path and valued in aggregate up to one percent (1%) or of the Contract Price, or any such Work that these Special Provisions explicitly require the Contractor to include within its Construction Schedule, is to be accommodated within the Contractor's Construction Schedule, without any additional time allowance.

For Site Modifications Work that is not on the critical path or for payment elements such as EPS bonuses or other allowance that are paid over and above other Work that is directly compensated (e.g. a First Nations employment incentive), no additional time allowance will be made.

For any portion of Site Modifications Work not captured above:

(iii) the Contractor shall

(1) allow five (5) days critical path float on the Construction Schedule, immediately before the Completion Date, to accommodate any such Work that may be required, and;

(2) include all Project overhead costs for the above specified float period within the Contract Price as awarded; and

(iv) the Ministry Representative may grant an Extension of Time, in a duration commensurate with the impact the Contractor can demonstrate to the Ministry Representative's satisfaction that such Work will have, or has had, on the Construction Schedule critical path, beyond the allowance specified above.

1.39 Force Account

Payment of Force Account work will be made in strict accordance with the General Conditions and the following.

(i) Prior to the commencement of Force Account work, the Contractor shall provide written, twenty-four (24) hour, advanced notice to the Ministry Representative related to a start date and location of Work.

(ii) In the event "Daily Report for Extra Work" submissions do not comply with timelines as specified herein, the Ministry's Representative decision with regard to payment of Force Account payment shall be final.

1.40 Use and Operation of Remotely Piloted Aircraft Systems (RPAS)

Remotely Piloted Aircraft Systems (RPAS, consisting of a control station and Unmanned Aerial Vehicles, or drones, may be used on this project, by the Ministry, the Contractor or others, only in accordance with the following conditions.

(a) Any RPAS operations are to be undertaken:

(i) in accordance with *Transport Canada* and *NAV CANADA* requirements.

(ii) with UAVs registered in accordance with Transport Canada requirements.

(iii) with a Special Flight Operations Certificate (SFOC) issued by Transport Canada if the UAV will be operated outside the rules for basic or advanced operations; and

(iv) by a qualified pilot, holding either a basic or advanced pilot certificate issued by Transport Canada.

(b) Any party wanting to use a RPAS on the Site shall provide the Contractor and the Ministry Representative with copies of any applicable pilot certificates and, if required, SFOCs complete with all associated documentation (certificates of insurance, operators' permits, etc.) a minimum of seven (7) days prior to the proposed flight.

(c) Safety:

(i) The Base Safety Plan and AoR Specific Safety Plans shall recognize and accommodate RPAS use by the Ministry and its representatives and should make reasonable accommodation for RPAS operations by others.

(ii) The RPAS pilot shall coordinate any flight operations with the Contractor and the Ministry Representative.

(iii) Where appropriate, the Contractor shall work with the RPAS pilot to identify and resolve any conflicts between control frequencies used on a RPAS and any other operations on Site.

(iv) Where blasting operations are taking place, unless there is an unresolvable frequency conflict, RPAS operations shall be accommodated outside of the safe approach distances determined based on the Institute of Explosives Makers "*Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electrical Detonators (Blasting Caps*)."

(d) Protection of Privacy:

(i) Flight plans shall be structured, to the extent possible while achieving the Project-related flight goals, to minimize capture, incidental or otherwise, of personal information as defined in the *Freedom of Information and Protection of Privacy Act*.

(ii) During any period of active RPAS flight operations, signing shall be provided on all road and heavily used pedestrian Site-access points, at or near the Limits of Construction or the flight area, to notify the public that such operations may be occurring. Sign wording is subject to the Ministry Representative's approval.

(iii) The personal information collected by the Ministry of Transportation and Infrastructure is done under *sections 26(c) and 26(e) of the Freedom of Information and Protection of Privacy Act* and for the purposes of documenting Project work.

(iv) The Contractor, as part of its Site orientation, shall ensure that any workers on Site are informed of the foregoing.

(v) Any party having questions about the Ministry's collection of personal information shall be referred to the Ministry Representative, who will provide contact information of the SFOC Operations Manager responsible for the Site.

(e) The Ministry may utilize an RPAS for any purposes it chooses including, without limitation, to document progress of the Work, circumstances related to any incident on Site, capture photogrammetry or LiDAR information to be used in the production of quantities (pay or otherwise), in support of the Project administration, and to provide photographs and videos that may be used for public release.

SECTION 2 GRADING

2.01 Clearing and Grubbing

(a) General

Clearing and Grubbing shall be carried out to the limits as shown on the Drawings or as otherwise modified by the Ministry Representative and in accordance with SS 200 and SS 165.05 except as modified herein.

Further to SS 200.01.02 Clearing and Grubbing shall be undertaken in accordance with SP 1.22(e) – Breeding Bird Nesting to avoid contravention of Section 34 of the Wildlife Act.

(b) Disposal of Material

The Contractor shall remove and dispose of clearing and grubbing debris in accordance with SS 200.02

Further to SS 200.02.02 disposal by burning will not be permitted.

(c) Measurement and Payment

Payment for Clearing and Grubbing will be made at the Unit Price bid per Hectare of clearing and grubbing and will, unless otherwise specified on the Drawings, comprise the full length and breadth of the clear and grub lines as shown on the Drawings or as directed by the Ministry Representative. Payment shall be accepted as full compensation for everything furnished and done in connection therewith, regardless of the nature or condition of the area.

(d) Merchantable Timber

(i) General

The Contractor shall remove and dispose of merchantable timber in accordance with SS 200.01.03 and as described herein.

It shall be the Contractor's responsibility to obtain a License to Cut and Remove Timber from the Ministry of Forests, Lands and Natural Resource Operations prior to the removal of merchantable timber from within the Project limits in accordance with SS 200.01.03(a)(ii).

(ii) Ownership

Contrary to SS 200.01.03(c), merchantable timber in areas of the highway right-of-way will become the property of the Contractor.

The following conditions apply:

Merchantable timber shall be:

- Processed in accordance with SS 200.01.03(d).
- Cold-decked at locations determined by the Ministry Representative to be removed by others.

(iii) Payment

Payment for merchantable timber shall be considered incidental to the Work in accordance with SS 200.92.

2.02 Removal and Relocation of Existing Works

(a) General

The Contractor shall remove from the Site, to a Contractor supplied off-Site disposal area, all materials marked on the Drawings for removal in accordance with SP 2.04(e) - Contractor Provided Disposal Site, unless otherwise specified in these Special Provisions.

The disposal of materials removed under this clause shall become the property of the Contractor at the point of removal, unless otherwise specified.

Excavations or voids resulting from the removal of existing works shall be backfilled with suitable native material or, where in the roadway, with material matching the existing roadway structure. The backfill consisting of native materials shall be compacted in accordance with SS 201.36, SS 201.37 or SS 202 as applicable and backfill within the existing roadway shall be compacted in layers not exceeding 100 mm in loose thickness to 100% of the laboratory density by following the current ASTM D698. Payment for such excavation and backfilling, including import backfill, will be incidental to the payment Items provided below.

(b) Remove Existing Culverts by Excavation

(i) General

The Contractor shall remove and dispose of existing culverts as shown on the Drawings.

The Contractor shall remove the culverts by excavation. The Work shall include end wall removal excavation, removal, hauling and disposal at a Contractor supplied disposal site. The void that remains after the culvert and end wall removal shall be backfilled in accordance with SP 2.03 (a).

(ii) Measurement

The culverts to be removed will be measured by the metre along the invert lengths of the pipe to be removed.

(iii) Payment

Payment for Remove Existing Culverts by Excavation will be made at the Unit Price bid per Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

(c) Abandon Existing Culverts

Culverts greater than 2.0m in depth and shown to be abandoned on the Drawings shall be filled with a flowable fill as follows.

A pipe to be abandoned shall be filled with a Sulphate (Acid) Resistant concrete slurry, capped and buried within the newly constructed embankment. The resulting concrete slurry-filled culvert shall be proven to be substantially free of voids. The Contractor shall provide a written procedure for filling the pipes, acceptable to the Ministry Representative.

Specifications for Flowable Fill:

- Water — Sufficient to produce a self-levelling flow with a slump of 150 – 200 mm
- Cement: — Type HS, 30 kg/m^3
- Fly Ash: — 40 kg/m^3
- Fine Aggregate: — 1860 kg/m^3

(i) Measurement

Measurement of the grout will be made by the cubic metre by calculating the end area of the inside diameter of the pipe and multiplying it by the length of the pipe to be abandoned.

(ii) Payment

Payment for Abandon Existing Culverts will be made at the Unit Price bid per Cubic Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

(d) Remove and Dispose Existing Whonnock Creek Culvert

(i) General

The Contractor shall Remove and Dispose Existing Whonnock Creek Culvert as shown on the Drawings.

Removal of Existing Whonnock Creek Culvert shall not commence until the flow from Whonnock Creek is through a new culvert and acceptable to the Ministry Representative.

The Contractor shall remove the culvert by excavation. The Work shall include excavation, removal, hauling and disposal at a Contractor supplied disposal site.

(ii) Payment

Payment for Remove and Dispose Existing Whonnock Creek Culvert will be made at the Lump Sum Price bid and shall be considered full compensation for everything furnished and done to complete the Work

(e) Remove Existing Concrete Catch Basins and Drainage Lead Pipes

(i) General

The Contractor shall remove and dispose of existing concrete catch basins and drainage lead pipes as shown on the Drawings.

The Work shall include excavation, removal, hauling and disposal of the catch basins at a Contractor supplied disposal site and backfilling the void in accordance with SP 2.03 (a). Any existing drainage lead pipes running into an existing storm drain or culvert shall be capped at the pipe it was running into.

(ii) Payment

Payment for Remove Existing Concrete Catch Basins and Drainage Lead Pipes will be made at the Unit Price bid per each catch basin and shall be considered full compensation for everything furnished and done to complete the Work.

(f) Remove and Dispose Existing Concrete Barriers

(i) General

The Contractor shall remove and dispose off-site the existing concrete barrier as shown on the Drawings and as described in these Special Provisions. The barriers will become property of the Contractor and disposed of in accordance with SS 145.27.02

The existing concrete barrier may also be used by the Contractor to separate public traffic from the work zones and for other traffic control purposes, in accordance with the accepted Traffic Management Plan required for this Project.

(ii) Measurement

Measurement will be made by the linear metre. Measurements will be made along the bottom traffic-side face of the barrier components.

(iii) Payment

Payment for Remove and Dispose Existing Concrete Barriers will be made at the Unit Price bid per Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

Temporary relocation of existing concrete barriers used for interim traffic control, at the Contractor's option, shall be considered incidental to the Work and no additional payment will be made.

(g) Remove Existing Fencing and Gates

(i) General

The Contractor shall remove and dispose of existing fencing, fence posts, gates and all associated appurtenances, as shown on the Drawings.

The Contractor shall not remove the existing fence until the new fence is in-place or a temporary fence has been installed to the satisfaction of the Ministry Representative. The Contractor shall contact each affected property owner prior to fence removal or installation to ensure the property owners concerns are addressed with regard to fencing requirements.

The void that remains after the fence posts have been removed shall be backfilled and compacted as specified herein.

(ii) Measurement

Measurement for fencing removal will be made by the linear metre. Measurements will be made parallel to the top wire of the existing fencing, including any tensioning assemblies, but excluding gate openings.

Gates will be measured at the unit for each gate removed, regardless of the size or type.

(iii) Payment

Payment for Remove Existing Fencing will be made at the applicable Unit Price bid per metre and shall be considered full compensation for everything furnished and done to complete the Work.

Payment for Remove Existing Gates will be made at the applicable Unit Price bid per each and shall be considered full compensation for everything furnished and done to complete the Work.

No separate payment will be made for any temporary fencing required, which shall be incidental to the Work.

(h) Demolition of Existing Residential Structures

(i) General

The Contractor shall complete the Demolition of Existing Residential Structures on the following property:

Table 15: Property to be Demolished

PROPERTY:	**DATE AVAILABLE:**
RIVER ROAD:	
Lot 12, Plan 24810 PID 002-589-699	June 29, 2022

All buildings, out-buildings, sheds, structures of any sort shall be completely demolished and removed from the above listed properties.

The Contractor is required to complete a Hazardous Materials Survey that complies with WorkSafe BC OH&S Regulation Part 20: Section 20.112. The abatement of any hazardous materials shall be completed by a certified Contractor. Any costs involved with the abatement/removal of hazardous materials will be paid from the Provisional Sum for Site Modifications in accordance with SP 1.35.

Any voids remaining following the demolition of the structures shall be backfilled with suitable fill material.

(ii) Payment

Payment for Demolition of Existing Residential Structures will be made at the Unit Price bid per Each and shall be full compensation for everything furnished and done including, Hazardous Materials Survey, demolition and disposal of all structures, foundations, fences to a Contractor provided disposal site, backfilling voids and site grading to the satisfaction of the Ministry Representative.

(i) Remove Septic Tanks and Fields (CONDITIONAL ITEM)

(i) General

The Contractor shall remove and dispose of the existing septic tanks and fields shown on the Drawings and as directed by the Ministry Representative.

The Contractor shall pump out all fluids and slurry from existing septic tanks and fields identified on the Drawings for removal and excavate all softened, contaminated and disturbed soils and debris from the base and sides to the satisfaction of the Ministry Representative.

All septic fluids and soils shall be transported to an approved disposal or reclamation facility. The excavated soils and debris shall be transported, in a suitable truck that will not leak liquids onto the roadway during transportation.

(ii) Payment

Payment for Remove Septic Tanks and Fields will be made at the Unit Price bid per Each and shall be accepted as full compensation for everything furnished and done in connection therewith.

(j) Well Decommissioning

(i) General

The Contractor is responsible for decommissioning of all water supply wells and monitoring wells within the Limits of Construction.

Wells that have been field verified as located within the Limits of Construction are indicated on the Drawings

Records indicate there may be other water wells and monitoring wells within the Limits of Construction that could not be field verified due to site conditions (i.e., overgrown with vegetation, covered with debris at industrial sites, etc.). The approximate locations of these non-verified wells from provincial records are also noted on the Drawings. The Contractor shall field-verify the presence and location of these wells inside the Limits of Construction prior to clearing and grubbing to include or exclude them from the well decommissioning scope of work. Not all wells with records may be present.

There may also be wells without records or registration that are present within the Limits of Construction. During execution of the Work, the Contractor shall notify the Ministry Representative immediately of any encountered residential, environmental, or commercial water wells within the Limits of Construction that were not identified on the

Drawings for direction on whether to include them in the decommissioning scope of work.

The Contractor is advised that there may be active, private water wells outside of the highway right-of-way and Limits of Construction, but adjacent to the work area. The Contractor shall exercise stringent construction control to protect these water wells from damage, and to avoid claims resulting from damage to the water wells. Upon receiving a report of well damage and/or well water quality alteration and/or well water productivity alteration, the Contractor shall immediately notify the Ministry Representative.

Well decommissioning must be completed in accordance with the Groundwater Protection Regulation under the *Water Sustainability Act;* in particular, Section 9 of the Groundwater Protection Regulation, Sections 69, 71 and 72, and Schedules 4 through 6.

Per the *Water Sustainability Act* (Section 49), the decommissioning of any wells greater in depth than 5 m, or any excavated (rather than drilled) wells greater in depth than 15 m, must be conducted by or overseen by a registered water well driller or a professional (e.g., professional engineer or geoscientist) with competency in the field of hydrogeology. Well pumps must be removed by a registered pump installer. The person overseeing or conducting the well decommissioning must be experienced and competent in decommissioning water wells.

Documentation of well decommissioning must be completed by the person responsible for well decommissioning and must consist of a completed Well Decommissioning Report form for each well. Minimum information provided on the forms must meet the requirements stated in Schedule 4 of the Groundwater Protection Regulation. A separate form must be completed for each decommissioned well. Per the Groundwater Protection Regulation, a copy of the well decommissioning report form must be submitted within 90 days of decommissioning to both the Ministry of Environment and Climate Change Strategy (ENV), the Ministry Representative and the landowner. Contact information for form submission to ENV is provided on page 2 of the Well Decommissioning form. The well owner and person responsible for decommissioning the well must retain copies of the submitted Well Decommission form for at least 10 years. A copy of the Well Decommissioning Report form can be downloaded from this website:

https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-wells/well_decommission_form.pdf.

There are two shallow monitoring wells located with the Limits of Construction that do NOT require decommissioning as described in this Special Provision. These monitoring wells, labelled MW22-E8-15 and MW22-E6-01, are shown on the Drawings and are included on the well list provided in the Reference Documents. The depths of these two monitoring wells are less than the planned depth of excavation and thus will be completely removed as part of earthworks.

(ii) Payment

Payment for Well Decommissioning will be made at the Unit Price bid per Each well and shall be considered full compensation for all tasks including but not limited to field-verification of water wells, well decommissioning, and completing and submitting Well Decommissioning Report forms.

(k) Slope Inclinometer Decommissioning

(i) General

The Contractor is responsible for Slope Inclinometer Decommissioning as shown on the Drawings.

(ii) Payment

Payment for Slope Inclinometer Decommissioning will be made at the Unit Price bid per Each and shall be considered full compensation for all tasks including but not limited to field-verification of slope inclinometers and decommissioning.

(l) Remove Existing Signs

(i) General

The Contractor shall remove all existing signs and their associated structure in accordance with SS 635, as shown on the Drawings.

The Contractor must obtain approval from the Ministry Representative prior to removing any signing equipment and, if so directed by the Ministry Representative, existing signs shall not be removed until new signs or temporary signs have been installed.

The Contractor shall remove and dispose of all existing sign faces, boards, redundant posts and bases to a Contractor supplied off-Site disposal area in accordance with SP 2.05(e). Voids remaining after the removal of sign bases shall be backfilled and compacted with suitable native materials.

Existing Ministry signs, which are not marked for removal or relocation but are in conflict with the progress of the Project, shall be removed and temporarily relocated as approved by the Ministry Representative. No separate payment will be made for these temporary relocations which shall be considered incidental to the Works and no additional payment will be made.

(ii) Payment

Payment for Remove Existing Signs including, but not limited to, excavation, removal, hauling, disposal of sign faces, removal and disposal of existing posts and bases, and backfilling the excavation Signs will be made at the Unit Price bid per Each sign and shall be considered full compensation for everything furnished and done in connection therewith. Signs without posts (pole-mounted, etc.) shall be considered the same as signs with posts for payment purposes.

No separate payment will be made for the removal and disposal of delineator posts which shall be considered incidental to the Works and no additional payment will be made.

2.03 Pavement Cutting, Cold Milling and Pavement Removal

(a) General

Pavement cutting, cold milling and pavement removal shall be carried out to the limits and grades shown on the Drawings.

The existing pavement thicknesses are as indicated in **Error! Reference source not found.**.

Table 16: Existing Asphalt Thicknesses

Location	*Asphalt thickness*	*Average Asphalt Thickness*
Sta 154+69 to Sta. 158+00	125 mm to 138 mm	125 mm
Sta. 158+00 to Sta. 171+00	25 mm to 125 mm	90 mm
Sta. 171+00 to Sta. 193+27	75 mm to 150 mm	100 mm

In the event the actual average pavement thicknesses and cold milling depths exceed those indicated in these Special Provisions, the Contractor shall immediately serve Notice to the Ministry

Representative. The Contractor will not be entitled to any additional payment for increased pavement thicknesses or depths if the Contractor fails to provide Notice.

The Contractor shall lay out all pavement cut lines and areas requiring pavement to be cold milled and removed for review by the Ministry Representative prior to performing any pavement removal works. The Ministry Representative may make alterations based upon this review.

(b) Pavement Cutting

(i) General

The Contractor shall perform pavement cutting where shown on the Drawings using a saw or other equipment which will leave a straight edge with a neat vertical face and will not distort the remaining pavement.

The Contractor shall be responsible for maintaining the cut face in good condition or provide an additional saw cut if the vertical face becomes damaged.

Generally, these cuts shall be at the tie-in points of new pavement to existing pavement and at limits of pavement removal.

(ii) Measurement

Pavement cutting will be measured by the linear metre for the actual lengths of pavement cut.

(iii) Payment

Payment for Pavement Cutting up to and including a depth of 150mm mm will be made at the Unit Price bid per Metre and shall be accepted as full compensation for everything furnished and done to complete the Work.

Payment for the additional asphalt thickness will be made from the SP 1.38 Provisional Sum Item for Site Modifications.

(c) Cold Milling

(i) General

The Contractor shall perform all cold milling in accordance with SS 511 to the lines and grades shown on the Drawings.

The cold milling will be broken out into two payment items:

1. Up to 50mm depth
2. Greater than 50mm depth

Material resulting from the cold milling shall be used in asphalt pavement construction (RAP) in accordance with SS 505, or embankment construction to the greatest extent possible. Milling material used in embankment construction shall be encapsulated within the embankment by a minimum of one metre (1 m) and the millings shall be thoroughly mixed with other embankment materials.

Milling materials that cannot be accommodated in the embankment construction or used for asphalt pavement construction, for whatever reason, shall be disposed of at a Contractor supplied off-Site disposal area in accordance with SP 2.04(e) - Contractor Provided Disposal Sites, SS 165, and SS 511.33.

The Contractor shall ensure that a suitable running surface is maintained on any portion of the existing highway that is open to traffic during construction. Milling operations will be restricted to one travelled lane and shoulder at a time to accommodate traffic.

Contrary to SS 511.32, at the conclusion of each shift all travelled lanes are to be milled to the same point to eliminate uneven edge between lanes.

The Contractor will not be permitted to allow traffic to run on a milled surface on any portion of the Highway 7 alignment (L100)

Contrary to SS 511.32, the transition from the milled surface to the existing paved surface shall be tapered at a maximum slope of 50:1.

Further to SS 511.32, following the cold milling operations in any area, sweeping shall be performed by using a self-contained mechanical pick-up sweeper. All excess milling materials shall be cleaned from the roadway surface immediately after milling operations and prior to public use.

Further to SS 511.92, asphalt mix required to repair the milled surface shall be to the Contractor's account if the delays are the result of the Contractor's actions as determined by the Ministry Representative. Otherwise the asphalt mix will be paid at the Unit Price bid for top lift asphalt.

(ii) Measurement

Cold Milling will be measured in accordance with SS 511.81. Further to SS 511.81 cold milling will be measured by the square metre.

(iii) Payment

Payment for cold milling up to and including a depth of **50** mm will be made at the Unit Price bid per Square Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

Payment for cold milling exceeding a depth of **50** mm will be made at the Unit Price bid per Square Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

(d) Pavement Removal

(i) General

The Contractor shall remove existing pavement as shown on the Drawings. Where asphalt curbs are within the areas identified as pavement removal, the pavement removal shall include the removal of the asphalt curb.

Material resulting from the pavement removal shall be used in asphalt pavement construction (i.e. in RAP), or embankment construction to the greatest extent possible. It shall be broken into pieces no larger than 150 mm on any side, thoroughly mixed with other excavated material, placed within the core of the embankment a minimum of 1m below the subgrade and completely encapsulated by other embankment material.

Pavement removed that cannot be accommodated in the embankment construction, for whatever reason, shall be disposed in accordance with SP 2.04(e) - Contractor Provided Disposal Site , SS 165, and SS 511.33. SS 511.33 applies to all methods of pavement removal.

Where pavement to be removed adjoins pavement to remain, the joint shall be saw cut, in accordance with these Special Provisions.

(ii) Measurement

Pavement Removal shall be measured by the square metre. The area will be determined by measurement of the actual surface from which the asphalt has been removed and computed to the nearest square metre.

(iii) Payment

Payment for Pavement Removal up to and including a depth of 150mm (The "estimated maximum pavement removal depth") will be made at the Unit Price bid per Square Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

2.04 Roadway and Drainage Excavation

(a) General

Roadway and Drainage Excavation shall be carried out in accordance with SS 201 and SS 165, except as modified herein.

Rounding of the excavation slopes at the intersection with the existing ground shall conform to the intent of SS Drawing SP201-01, but contrary to that Drawing, slope treatment including rounding shall be considered incidental to the Works and no additional payment will be made.

To prevent standing water in the cuts and fills, the Contractor shall at the end of each working day, grade, roll and seal the materials with a smooth wheel roller weighing not less than 5,400 kg, such that the water will not pond on the grade.

For informational purposes only, the Contractor shall provide the Ministry Representative, in a format satisfactory to the Ministry Representative, with daily load counts that tracks the material movement as follows:

- Date
- Material Type (Stripping, Borrow, Type D to Embankment, Type D to Disposal, Contaminated Soil)
- From (station range of individual cuts)
- To (embankment stationing, disposal site etc.)
- Number of loads
- Estimated volume (in bank cubic metres)

This information shall be provided to the Ministry Representative on a daily basis. Payment quantities will be based only on SS 201.

(b) Contaminated Soils Management Plan

In accordance with Technical Circular T-03-20, Identification and Characterization of Potentially Contaminated Soil (August 4, 2020), the Ministry conducted a Step A Screening Assessment (Step A), Step B Soil Characterization (Step B) and Step C – Soil Management Strategy (Step C) for the Site. Refer to reports in Appendix: McElhaney Ltd, Technical Circular T-03/20 Step A Screening Summary – Highway 7 Widening from 266 Street to 287 , McElhaney Ltd, Technical Circular T-03/20 Step B Soil Characterization – Highway 7 Widening from 266 Street to 287 and McElhaney Ltd, Technical Circular T-03/20 Step C Soil Management Strategy – Highway 7 Widening from 266 Street to 287. Ten areas of the Site were highlighted as having historical BC Contaminated Sites Regulation Schedule 2 Industrial/Commercial Uses (Schedule 2 Sites #1 to #10). An additional four areas of the Site with known chloride contamination (Location 1 to Location 4) were identified. Refer to Drawings R1-952-102, R1-952-104 through R1-952-108, R1-952-901 and R1-952-902.

The Contractor shall retain a contaminated sites AQP in accordance with SS 165.01.02. The contaminated sites AQP will prepare and seal a Contaminated Soil Management Plan (CSMP) including all required updates to the Plan. The CSMP must be inclusive of all elements

relevant to the excavation, storage, transport and disposal of contaminated soils for the duration of the work being undertaken and, including, but not limited to, the following:

An outline of the Roles and Responsibilities of the Owner, Contractor and AQP in managing contaminated soils on the Site.

- The name, address and operator of the selected facility(s) authorized under the BC EMA to accept hazardous waste quality soils (HAZ).
- The name, address and operator of the selected facility(s) authorized under the BC EMA to accept waste quality soils (IL+).
- The name, address and owner/operator of the selected legally acceptable receiving site(s) under the BC EMA for the industrial quality soils (IL-).
- Procedures for excavation, handling, stockpiling, transporting, equipment decontamination and disposing of contaminated soils.
- Methodology for soil tracking and copies of the forms that will be used during contaminated soil excavation, storage, transport and disposal.

The CSMP will not preclude conditions set out in the CEMP but form a supplement to the plan as described in SP 1.22(i).

- The Contractor shall provide, in a form acceptable to the Ministry Representative, one hard copy and one digital PDF copy of a CSMP and any subsequent updates to the plan. Any updates or addendums to the plan shall be numbered sequentially for clarity.
- The CSMP will also be jointly signed by the Contractor and the contaminated sites AQP and will be submitted to the Ministry for acceptance a minimum of thirty (30) days prior to construction activities commencing.

(c) Soil Deposit Plan

The Contractor shall develop a soil deposit plan that details the schedule and construction methodology used for stripping, excavation and disposal in accordance with these Special Provisions, measures in place to avoid mixing of the soil, submission of all tracking records, daily haul and disposal quantities and the necessary quality control measures in place for compliance with these Special Provisions. The soil deposit plan shall be considered a living document and may require updating from time to time based on actual site conditions. The soil deposit plan shall be submitted to the Ministry Representative ten (10) days prior to commencement of work on-site.

(d) Ministry Provided Disposal Sites

(i) General

It is anticipated that there is sufficient room in the Ministry provided disposal sites to accommodate 14,400m^3 of surplus and unsuitable material.

The disposal site shall be available to the Contractor for the disposal of stripping, unsuitable and surplus material as described in these Special Provisions. Any other material from the Project requiring disposal, including but not limited to clearing and grubbing materials, fences, old culverts, old concrete, contaminated soil, hazardous waste soils and asphalt, etc., shall be disposed of at the Contractor provided disposal sites in accordance with SP 2.05(e) – Contractor Provided Disposal Sites.

The on-Site disposal sites shall be utilized to their full potential before any Ministry off-Site disposal sites are developed.

Ministry provided disposal site shall be developed in accordance with SS 165.07.01 except as modified herein.

(ii) River Road On-Site Disposal Site

(1) General

The locations of the on-Site disposal areas are shown on the Drawings.

The following conditions apply to the disposal of material in this disposal site:

(A) The order of precedence for material to be deposited at the River Road On-Site Disposal Site shall be as follows:

- Material excavated 200mm deep beyond the organic stripping and 3 metres from the edge of existing pavement
- Other material acceptable to the Ministry Representative

(B) The use of the River Road On-Site Disposal Site requires construction staging in order to maximize disposal capacity as it requires the placement of material on the existing Highway.

(C) The staging of the River Road On-Site Disposal Site shall be detailed in the Soil Deposit Plan. This plan shall describe the methodology the Contractor will use to ensure the disposal of material will utilize this site to its maximum capacity. The Contractor shall not commence roadway and drainage excavation until the construction staging plan has been accepted by the Ministry Representative. In the event the Contractor is negligent in utilizing this site to its maximum capacity, the Ministry Representative may refuse payment for any off-Site disposal that could otherwise have been placed in this site.

(D) The Contractor shall ensure the River Road On-Site Disposal Site is maintained in accordance with SS 165.07.01 except as modified herein.

(E) Contrary to SS 165.07.01, the excavated material shall be properly drained, spread and trimmed to a stable slope not exceeding 2.5H to 1V, in a manner which minimizes disturbance of watercourses and vegetated areas.

(F) Further to SS 165.07.01, the proposed disposal plan shall identify the methods of controlling the drainage of the disposal site.

(G) The Contractor shall strip all organic materials from within the footprint of the waste area. Stripped material to be placed outside of the disposal footprint and spread over the disposal site prior to revegetation seeding.

(H) The material deposited at the River Road On-Site Disposal site shall be spread to a maximum thickness of 400 mm and compacted to at least 92% SPD (ASTM D698) and shaped to minimize the potential for ponding and over saturation.

(I) The Contractor shall supply and install Wick Drains as shown on the Drawings and in accordance with SP 3.04 (a).

(2) Payment

Payment will be made for Clearing and Grubbing the On-Site disposal site(s).

No separate payment will be made for any costs of access construction, stripping, site preparation and deactivation, development or final grading and the cost thereof will be considered incidental to the various Items of Work to be performed in the Contract.

(e) Contractor Provided Disposal Site

The Contractor shall provide disposal sites in accordance with SS 165.07.01 and SS 145.27.02.

The Contractor's disposal site(s) for contaminated Organic Stripping and/or Type D material described in SP 2.05(m) - Contaminated Soils – Off-Site Disposal, which exceeds the applicable BC CSR Schedule 3.1 Industrial Land Use standards (IL+) or BC hazardous Haste Regulation Schedule 4 table 1 leachate quality standards (HAZ) must be transported and/or disposed of at a facility(s) authorized under the BC EMA to accept the above noted quality of contaminated soils. The soil characterization of this material can be found in the Technical Circular T-03/20 Step B Soil Characterization – Highway 7 Widening from 266 Street to 287 report in the Appendix.

The Contractor shall track the material described in SP 2.05(m) – Contaminated Soils – Off-Site Disposal that is being disposed off-Site and provide a report to the Ministry Representative daily. The Contractor shall provide a letter from a AQP that certifies that the material described in SP 2.05(m) – Contaminated Soils – Off-Site Disposal has been disposed appropriately transported and/or disposed of at a facility(s) authorized under the BC EMA. For material disposed at facility(s) authorized under the BC EMA, the Contractor must provide any waste acceptance authorizations, manifest forms, soil tracking documents and/or scale tickets issued by the disposal site to the Ministry Representative.

A BC manifest form issued by the Government of BC must be completed for hazardous waste soils and submitted to the Ministry of Environment and Climate Change Strategy. The completed form(s) shall be provided to the Ministry Representative prior to the removal of the hazardous materials from the Site. The carrier of hazardous waste material must also have a transport license.

(f) Organic Stripping and Unsuitable Material

All topsoil, organic material and unsuitable material shall be removed in accordance with SS 201.14 as shown on the Drawings except as modified herein.

There is limited room between the toe of the embankment and right-of-way to place the stripped or unsuitable material.

(i) Organic Stripping

(1) General

The Site shall be stripped of topsoil and organic materials over the entire excavation and embankment areas in accordance with SS 201.14 and SS 165.06.02 except as modified herein:

- The Organic Stripping within 3.0m of any pavement edge, to a depth of 0.3m shall remain within the Ministry Right-of-Way.
- Materials stripped from the excavation areas shall be placed outside the embankment toes to the greatest extent possible. Upon completion of the embankments the material shall be spread as described in SS 201.14. As stated in SS 201.14 there shall be no additional costs to the Ministry for the spreading of material. In no circumstances shall the stripped material be placed above the subgrade elevation on the embankment slopes.
- Where there is insufficient room for the stripping to be placed outside of the embankment areas, as described in SS 201.14, the topsoil shall be stockpiled at a location determined by the Contractor for later use, to be hauled and spread on the cleared right-of way and up the fill slopes as described in SS 201.14.
- Where there is insufficient room to dispose of the stripped material at the embankment areas the excess material shall be removed and disposed of in the Contractor provided disposal site.

(2) Measurement

Stripping will be measured by the cubic metre, in-situ, surveyed upon completion of the grubbing operation and again upon completion of the stripping operation.

(3) Payment

Payment for Organic Stripping will be made at the Unit Price bid per Cubic Metre and shall be accepted as full compensation regardless of whether it is re-used on-site or to off-site disposal, for everything furnished and done in connection therewith.

(g) Type A Excavation

(i) General

Type A Excavation shall be carried out in accordance with and SS 165, SS 201, and SS 204.

The Contractor shall be responsible for rock scaling before, during and upon completion of Type A excavation.

An example of this during blasting activities is the gradual build-up of the blast sizes from 50% to 75%, 90%, and 100% of estimated design blasts, while assessing and modifying the blasting design and activities to ensure that all requirements of the Contract (i.e., Traffic, Safety, etc.) have been met before proceeding to the next increase. The Contractor shall not proceed with the next increased blast unless approved by the Ministry Representative.

The Ministry Representative will at all times have the authority to prohibit or halt the Contractor's blasting operations, or limit the extent of the blast, if it is apparent that the methods employed are not consistent with the blasting plan requirements, or the effect of such methods are unsatisfactory to the Ministry Representative.

Material resulting from Type A Excavation shall be used in embankment construction, riprap production, slope protection, and aggregate production.

The Contractor shall process the Type A excavated material in the following priority:

Where the excavated rock is used within the clear zones shown on the Drawings, it shall covered by a minimum of 1 m of Type D material. No exposed rock will be permitted within the clear zone.

Type A excavated materials from Schedule 2 Sites #1 to #9 are to be used for embankments, riprap and other drainage erosion applications within the Project area only.

(ii) Blast Matting

Further to SS 204.35 the Contractor shall utilize blasting mats for all blasting carried out within 200 m of habitable structures and shall be considered incidental to the Work and no additional payment will be made.

(iii) Pre-Blast Survey

The Contractor shall conduct a pre-blast survey in accordance with SS 204.04.08 and as modified herein.

Contrary to SS 204.04.08 the Contractor shall conduct the pre-blast survey no more than two (2) weeks before blasting operations commence.

Further to SS 204.04.08 the Contractor shall provide the Ministry Representative with written confirmation that the survey method used is acceptable to the Contractor's insurance company.

No additional payment will be made for Pre-Blast Survey and shall be considered incidental to the Work.

(iv) Vibration Control and Monitoring

Whenever vibration damage to adjacent structures including buildings, structures, yard improvement or utilities is possible, the Contractor shall monitor construction activities to ensure that vibrations do not exceed the safe limits of such structures. The Contractor shall retain a Qualified Vibration Specialist utilizing approved seismographs(s) to establish the safe vibration limits and provide monitoring during construction. The Vibration Specialist shall not be an employee of the Contractor. The Contractor will be required to provide up to four (4) vibration monitors, including geophones. The locations for vibration monitoring are detailed in the Appendix – Suggested Areas for Vibration Monitoring July 2018. Vibration monitors must be placed between the Work Site and buildings, structures, yard improvement or utilities, and are to record vibration data during all work activities.

Peak Particle Velocity (PPV) from all continuous vibration sources shall not exceed 7.5 mm/s unless otherwise recommended by the Qualified Vibration Specialist and approved by the Ministry Representative, and,

Maximum Peak Particle Velocity (PPV) from all vibration sources shall not exceed 12.5 mm/s.

Payment will be made monthly basis prorated for the percentage of total Work completed as determined by the Ministry Representative. Payment for Vibration Monitoring will be made at the Lump Sum Price bid and shall be full compensation for all things furnished and done.

(v) Measurement

Type A excavation will be measured by the cubic metre, in-situ, surveyed upon completion of the stripping operation and again upon completion of the Type A excavation.

(vi) Payment

Payment for Type A Excavation will be made at the Unit Price bid per Cubic Metre in accordance with SS 204.91 and shall be accepted as full compensation for everything furnished and done in connection therewith, regardless of whether it is hauled to embankment, utilized to create granular aggregates, disposed of as surplus material or any other use approved by the Ministry Representative.

Contrary to SS 204.92 Excavation Backslope (Smooth Wall) shall be considered incidental to Type A Excavation and no separate payment will be made. Further to SS 204.92 rock scaling before, during and upon completion of Type A excavation shall be considered incidental to the Work.

(h) Temporary Rock Fall Control Measures

The Contractor shall design, construct, and maintain any temporary rock fall control measures to protect highway users and adjacent infrastructures during construction. The temporary measures shall be an engineered, proven system and shall be fully integrated into the Contractor's blasting and work plans.

Further to SS 204.04 the Contractor shall provide work plans describing the temporary rock fall control measures the Contractor will undertake to mitigate this hazard. These work plans shall be provided to the Ministry Representative prior to conducting the blasting operations for any specific area.

The cost of rock fall measures is incidental to the Work and shall be considered included in the applicable Unit Prices bid. No additional compensation will be paid.

(i) Backslope Stabilization

(i) Excavation Backslope Stabilization

Excavation Backslope Stabilization, including scaling, shall be carried out in accordance with the applicable sections of SS 201, SS 204, SS 206, and SS 207.

Further to SS 204.47.01 and SS 204.34 the Ministry Representative will only provide direction on the types and locations of backslope stabilization required (bolting, scaling, meshing). The Contractor shall be responsible for providing a geotechnical engineer for all safe work procedures that may be required to carry out the Work in accordance with WorkSafeBC requirements.

Scaling shall be carried out in accordance with the applicable sections of SS 204, SS 206 and SS 207.

Further to SS 204.92 the Contractor shall be responsible for rock scaling before, during and upon completion of Type A excavation. The cost of rock scaling is incidental to the Work.

(j) Type D Excavation to Embankment

(i) General

Type D Excavation – On-Site Use is defined as all Type D Excavation that is utilized within embankment in the Project Limits of Construction. The Ministry expects most of the Type D Excavation to Embankment to come from the cut on the North side of the L300.

Excavated materials resulting from Type D Excavation shall be utilized in embankment construction to the greatest extent possible. The Contractor shall make every effort to maximize the use of the Project excavation for the construction of the embankments. No excavation shall be undertaken during weather conditions that would cause otherwise useable material to become unsuitable. In the event the Contractor is negligent in utilizing the Project excavations to fulfill the embankment requirements, the Ministry Representative will refuse payment for any associated costs.

(ii) Type D Embankments

The Contractor shall construct Type D embankments in accordance with SS 201.37 and as shown on the Drawings.

Further to SS 201.37, where the Drawings indicate that embankments are to be constructed with granular fill, the material shall consist of sand and gravel from Project excavations containing less than 5% by mass passing the 0.075 mm sieve, unless otherwise noted on the Drawings.

(iii) Measurement

Type D Excavation to Embankment will be measured by the cubic metre, in-situ, surveyed upon completion of the stripping operation and again upon completion of the Type D excavation.

(iv) Payment

Payment for Type D Excavation to Embankment will be made at the Unit Price bid per Cubic Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

(k) Type D Excavation to River Road Disposal Site

(i) General

Type D Excavation to River Road Disposal Site is defined as all Type D Excavation that is hauled to the Ministry Provided Disposal Site on River Road as described in SP 2.04(d)– Ministry Provided Disposal Sites.

(ii) Excavated materials resulting from Type D Excavation shall be utilized in embankment construction to the greatest extent possible. The Contractor shall make every effort to maximize the use of the Project excavation for the construction of the embankments. No excavation shall be undertaken during weather conditions that would cause otherwise useable material to become unsuitable. In the event the Contractor is negligent in utilizing the Project excavations to fulfill the embankment requirements, the Ministry Representative will refuse payment for any associated costs.

(iii) Measurement

Type D Excavation to River Road Disposal Site will be measured by the cubic metre, in-situ, surveyed upon completion of the stripping operation and again upon completion of the Type D excavation.

(iv) Payment

Payment for Type D Excavation to River Road Disposal Site will be made at the Unit Price bid per Cubic Metre and shall be accepted as full compensation for everything furnished and done in connection therewith.

(l) Type D Excavation – Off-Site Disposal (IR #5)

(i) General

Type D Excavation – Off-Site Disposal (IR #5) is defined as all Type D excavation, whether surplus or unsuitable material, that is hauled off-site to Kwantlen First Nation disposal facility located at 24647 Lougheed Highway, Maple Ridge as described in SP 2.04(e)– Contractor Provided Disposal Site). The Contractor shall take all acceptable material, not designated for other uses, to this facility. There will be no tipping fees to the Contractor for material disposed of at the IR#5 disposal facility. The Contractor shall maintain detailed records of all loads deposited at this facility, including type of truck and trailer. These records shall be submitted to the Ministry Representative on a monthly basis.

The Contractor is responsible for coordination with the IR#5 disposal facility operator, Matcon Civil . The facility is in operation 0700 to 1900 Monday to Friday. The facility may operate on Saturday's if 48 hours advance notice is provided.

The IR#5 disposal facility may be shut down due to weather or may be operating at a reduced capacity from time to time.

All material taken to IR#5 shall meeting low density residential standards and be acceptable to the disposal facility's Geotechnical Engineer. Testing shall be conducted for every 250 cubic metres of material.

(ii) Measurement

Type D Excavation to Off-Site disposal (IR #5) will be measured by the cubic metre, in-situ, surveyed upon completion of the stripping operation and again upon completion of the Type D excavation.

In the event it becomes onerous for the Ministry Representative to differentiate between the quantities of Type D Excavation – On-Site and the Type D Excavation -

Off-Site Disposal, the Contractor and Ministry Representative shall determine an alternate method of determining payment quantities in accordance with SS 145.21.01. Further to SS 145.21.01 this agreement shall be in writing.

(iii) Payment

Payment for Type D Excavation – Off-Site Disposal (IR #5) will be made at the Unit Price bid per Cubic Metre and shall be accepted as full compensation for all things furnished and done in connection therewith including, but not limited to, excavation, testing, loading, hauling, placing and trimming.

(m) Contaminated Soils – Off-Site Disposal

(i) General

Some of the organic stripping, surplus and/or unsuitable soil on this Project has been identified as contaminated. Refer to reports in the Appendix McElhaney Ltd, Technical Circular T-03/20 Step A Screening Summary – Highway 7 Widening from 266 Street to 287 and McElhaney Ltd, Technical Circular T-03/20 Step B Soil Characterization – Highway 7 Widening from 266 Street to 287 , McElhaney Ltd, Technical Circular T-03/20 Step C Soil Management Plan – Highway 7 Widening from 266 Street to 287 and Drawings R1-952-901 and R1-952-902. Ten areas of the Site were identified as having historical BC Contaminated Sites Regulation Schedule 2 Industrial/Commercial Uses (Schedule 2 Site #1 to #10) with varying quantities and levels of soil contamination. Additionally, chloride contaminated soils were identified within select portions of the project (Location 1 to Location 4) as shown on Drawing R1-952-902. Contaminated and hazardous waste soil shall be managed in accordance with the Ministry approved CSMP and with SS 201.16, SS 145.27.02, SS 165 and Appendix 165 A.

In general, SS 165-A require segregating, testing by the Contractor retained AQP (as required), handling, hauling, and disposal of the excavated material at a off-site legally acceptable receiving site or at an off-site facility(s) authorized under the BC EMA to accept contaminated soils . Prior to any disposal of contaminated and hazardous waste soils the Contractor shall identify the facility(s) authorized under the BC EMA to accept contaminated soils to the Ministry Representative.

- Soils with concentrations of COCs exceeding the BC CSR Hazardous Waste Regulation (HWR) Schedule 4, Table 1 Leachate Quality Standards must be disposed of at a legally permitted hazardous waste disposal facility. Excavation, transport and disposal of Hazardous Waste quality soils will need be completed at a minimum in accordance with the BC EMA, BC CSR and HWR and the Transportation of Dangerous Goods Act (TDG) and associated regulations. Key requirements include but are not limited to the following:
    - Notification to the Ministry of the Environment and Climate Change Strategy (ENV) in accordance with Section 54(a) of the *Environmental Management Act,* Part 13 of the BC CSR and the associated ENV Protocol 12 requirements for Site Risk Classification reporting.
    - Registration of the Site for BC Generator Number.
    - Use of a qualified and licensed transporter.
    - Completion of appropriate Manifests issued by the province of BC.
- Waste quality soils with concentrations of COCs exceeding the BC CSR Schedule 3.1 industrial land use standards (IL+) must be disposed of at facility(s) authorized under the BC EMA to accept IL+ contaminated soils. Excavation and disposal IL+ quality soils require notification to the Ministry of the Environment and Climate

Change Strategy in accordance with Section 54(a) of the *Environmental Management Act and* Part 13 of the BC CSR and the associated ENV Protocol 12 requirements for Site Risk Classification reporting.

Table 17: Summary of Contaminated Soils Areas (IL+ and Hazardous Waste)

Site	Reference Drawing	Soil Classification	Estimated Soil Volume (m^3)	Soil Relocation Requirements
Site #1	R1-952-901	IL+	845	Off-site disposal at a permitted facility
Site # 2	R1-952-901	N/A	N/A	N/A
Site # 3	R1-952-901	IL+	340	Off-site disposal at a permitted facility
Site # 4	R1-952-901	N/A	N/A	N/A
Site #5	R1-952-901	IL+	464	Off-site disposal at a permitted facility
Site # 6	R1-952-901	IL+	273	Off-site disposal at a permitted facility
Site #7	R1-952-901	IL+	1415	Off-site disposal at a permitted facility
Site #8	R1-952-901	IL+	2660	Off-site disposal at a permitted facility
Site #9 (L100)	R1-952-901	IL+	369	Off-site disposal at a permitted facility
		HAZ	30	Off-site disposal at a Hazardous Waste permitted facility
		IL+*	693*	Disposal requirements are dependent on soil characterization
Site #9 (L200)		IL+	97	Off-site disposal at a permitted facility
Site #10	R1-952-902	IL+*	427*	Disposal requirements are dependent on soil characterization
Chloride Area Sta. 161+00 to 162+00	R1-952-104	N/A	N/A	N/A

Site	Reference Drawing	Soil Classification	Estimated Soil Volume (m^3)	Soil Relocation Requirements
Location 2169+30 to 170+45	R1-952-902	IL+	1291	Off-site disposal at a permitted facility
Location 3. 176+65 to 177+15	R1-952-902	IL+	644	Off-site disposal at a permitted facility
Location 4 187+70 to 189+10	R1-952-902	IL+	1077	Off-site disposal at a permitted facility

N/A – Not Applicable

*Pending soil characterization

- Type D Excavated materials from Schedule 2 Sites #1 and #10 with concentrations of contaminants of concern (COCs) less than the BC CSR Schedule 3.1 industrial land use standards (IL-), must be disposed of off-site at a legally acceptable receiving site. Excavation and disposal of IL- quality soils from a Schedule 2 Use Site will require notification to the Ministry of the Environment and Climate Change Strategy in accordance with the Stage 14 amendments to EMA and the CSR. The Order in Council for the BC CSR Stage 14 amendment was approved by Cabinet on June 1, 2022. The Stage 14 CSR amendment will bring into force the changes to soil relocation legislation introduced in Bill 3: Environmental Management Amendment Act, which received Royal Assent on March 5, 2020. The CSR amendments were deposited on June 6, 2022. Changes to soil relocation come into effect on March 1, 2023.

Table 18: Summary of IL-Classified Soils

	Reference Drawing	Soil Classification	Estimated Soil Volume (m^3)	Soil Relocation Requirements
Site #1	R1-952-901	N/A	N/A	N/A
Site # 2	R1-952-901	IL-	333	Disposal to a legally acceptable receiving site
Site # 3	R1-952-901	N/A	N/A	N/A
Site # 4	R1-952-901	N/A	N/A	N/A
Site #5	R1-952-901	IL-	543	Disposal to a legally acceptable receiving site
Site # 6 (2 Areas)	R1-952-901	IL-	204	Disposal to a legally acceptable receiving site
Site #7	R1-952-901	IL-	973	Disposal to a legally acceptable receiving site

	Reference Drawing	Soil Classification	Estimated Soil Volume (m^3)	Soil Relocation Requirements
Site #8 (3 Areas)	R1-952-901	IL-	845	Disposal to a legally acceptable receiving site
Site #9 (2 areas L200)	R1-952-901	IL-	2125	Disposal to a legally acceptable receiving site
Site #9 (L300)		IL-	310	Disposal to a legally acceptable receiving site
Site #9 (L100)		IL-	444	Disposal to a legally acceptable receiving site

N/A – Not Applicable

Should additional soil characterization be required beyond that provided for disposal any and all costs associated with that work shall be at the Contractors costs. Any third-party sampling and analysis must be completed by the Contractor's AQP. All results shall be summarized in a technical report(s) and that are signed by the AQP. These reports shall be submitted to the Ministry and must identify the areas of sampling, results and approximate volume of contaminated soils (if confirmed).".

(ii) Measurement

Contrary to SS 201.82, measurement of Waste Quality Contaminated Soils (IL+) - Off-Site Disposal will be made based on scale tickets provided by the facility(s) authorized under the BC EMA to accept contaminated soil.

Contrary to SS 201.82, measurement of Contaminated Soils (Hazardous Waste) – Off-Site Disposal will be made based on scale tickets provided by the facility(s) authorized under the BC EMA to accept Hazardous Waste quality soil.

Contrary to SS 201.82, measurement of Industrial Quality Soils (IL-) - Off-Site Disposal will be made based on scale tickets provided by the legally acceptable receiving site.

(iii) Payment

Payment for Waste quality Soils (IL+) – Off-Site Disposal will be made at Unit Price bid per Tonne excavated and disposed and shall be accepted as full compensation for everything furnished and done including stripping, excavating, loading, hauling, temporary stockpile, environmental containment, delivery to and disposal at the legally acceptable receiving Site and facility(s) authorized under the BC EMA to accept contaminated soil and the provision of all specified documents from the facility(s) to the Ministry Representative.

Payment for Contaminated Soils (Hazardous Waste) – Off-Site Disposal will be made at Unit Price bid per Tonne excavated and disposed and shall be accepted as full compensation for everything furnished and done including stripping, excavating, loading, hauling, temporary stockpile, environmental containment, delivery to and disposal at the facility(s) authorized under the BC EMA to accept Hazardous Waste quality soil and the provision of all specified documents from the facility(s) to the Ministry Representative.

Payment for Industrial quality Soils (IL-) – Off-Site Disposal will be made at Unit Price bid per Tonne excavated and disposed and shall be accepted as full compensation for everything furnished and done including stripping, excavating, loading, hauling, temporary stockpile, environmental containment, delivery to and disposal at the legally acceptable receiving Site and facility(s) authorized under the BC EMA to accept contaminated soil and the provision of all specified documents from the facility(s) to the Ministry Representative.

(n) Granular Borrow

(i) General

The Contractor shall supply, and place Granular borrow, after effective use of the on-Site excavation, in accordance with SS 165.08, and SS 201.44 except as modified herein.

The Contractor shall make every effort to maximize the use of the Project excavation for the construction of the embankments prior to importing borrow. In the event the Contractor is negligent in utilizing the Project excavations to fulfill the embankment requirements, the Ministry Representative will refuse payment for any unnecessary borrow material.

Further to SS 201.44, where the Contract specifies granular borrow, the material shall consist of sand and gravel containing less than 5% by mass passing the 0.075 mm sieve.

(ii) Measurement

Measurement for Granular borrow shall be in accordance with SS 201.81.

Further to SS 201.81 boulders and unsuitable materials that are not used in embankments shall be piled separately in a neat and tidy manner that can be surveyed by the Ministry Representative to be deducted after applying an appropriate shrink/swell factor.

In the event it becomes onerous for the Ministry Representative to differentiate between the quantities of borrow, unsuitable materials and boulders, the Contractor and Ministry Representative shall determine quantities by alternate methods in accordance with SS 145.21.01. Further to SS 145.21.01 this agreement shall be in writing.

(iii) Payment

Payment for Granular Borrow will be made at the Unit Price bid per Cubic Metre in accordance with SS 201.91.

(o) Watering and Dust Control

Further to SS 201.46 the Contractor shall exercise diligent dust control to prevent construction dust damaging crops, or property, or creating labour intensive operations for the property owners. The Contractor shall be responsible for any crop or property damage and any claim as a result of construction activities.

The Contractor shall monitor the effects of dust on the travelling public and local residents and immediately rectify unfavourable conditions.

The Contractor shall make all necessary arrangements for obtaining and providing water at the Contractor's expense.

Payment for watering will not apply to any Item in this Contract. All watering shall be considered incidental to the Work.

2.05 Geosynthetics

(a) Non-Woven Geotextile

(i) General

The Contractor shall supply and place geotextile from the current edition of the Ministry's Recognized Products List at all locations specified on the Drawings or as directed by the Ministry Representative. Geotextile shall be non-woven and meet the requirements of Table 19: Non-Woven Geotextile Specifications.

Table 19: Non-Woven Geotextile Specifications

Parameter	ASTM Test Method	Value[Note1]
Grab Strength	D4632	900 N
Sewn Seam Strength	D4632	810 N
Tear Strength	D4533	350N
Static CBR Puncture Strength	D6241	1925 N
Permittivity	D4491	0.7 s^{-1}
Apparent Opening Size (AOS)	D4751	0.22 mm
Note 1: All values minimum average roll value except AOS which is maximum average roll value		

Non-Woven geotextile shall be installed where shown on the Drawings or as directed by the Ministry Representative.

Placement and securing of the geotextile shall be in accordance with manufacturer's recommendation. Securing pins shall be supplied and installed by the Contractor. Securing pins shall be a minimum of 9 mm in diameter, of steel, pointed at one end, and fabricated with a head to retain a washer having an outside diameter of no less than 100 mm. The length of the pins shall be no less than 300 mm. Securing pins with washers shall be inserted through both strips of overlapped fabric at not greater than 5.0 metre intervals, along a line through the midpoint of the 0.5 metre overlap. Securing pins with washers shall also be installed at 5.0 metre intervals along the outside edges of the Geotextiles.

The Contractor shall exercise care during fill and rock placement to avoid damage or displacement of the geotextile. Construction equipment shall not be permitted to operate directly on the surface of the geotextile. The Contractor shall at its own expense replace the geotextile that is damaged or displaced.

(ii) Payment

The supply and installation of Non-Woven Geotextile shall be considered incidental to riprap placement, Granular Blankets, splash pads, spillways and any other item of the Contract described as such.

2.06 Granular Materials

(a) General

Granular Materials shall be provided in accordance with SS 202. The Contractor shall be responsible for the supply and production of all granular materials each complying with the appropriate sections of the Standard Specifications.

Sources for aggregate to be used in close proximity to concrete shall be tested for sulphate and chloride content in accordance with CSA A23.2-B and ASTM C1218 and shall not exceed the Moderate site exposure category without Ministry approval.

(b) Aggregate Sources

No Ministry aggregate sources are available.

(c) Aggregate Gradation

The gradation for all granular material shall be as indicated in SS 202 Table 202-C.

(d) RCAM

a. General

Recycled Concrete Aggregate Material (RCAM) shall be a blended material which may be comprised of Recycled Concrete Aggregate (RCA), Reclaimed Asphalt Pavement (RAP), Recycled Granular Base Aggregate and virgin granular materials. RCAM reacts differently than virgin granular materials and the Contractor shall familiarize themselves with the process required to successfully work with RCAM.

b. Usage

RCAM can be used within the pavement structure as subbase course. RCAM shall not be used for any other purpose such as base course within the pavement structure, Bridge End Fill or backfill for retaining walls.

c. Composition

RCA material used in the RCAM blend shall consist of Portland Cement Concrete or other concrete containing pozzolanic binder material and durable aggregate and shall be at least 28 days or older prior to processing and blending into RCAM.

RAP content shall be limited to a maximum of 10 percent by weight of the final blended product as determined by test method MTO LS-621 (see table B).

The RCAM blend shall contain an aggregated weight of less than 1 percent of construction waste and deleterious materials. Construction waste and deleterious materials include reinforcing steel, other metals, expansion material, plastics, rubber, glass, organic materials, brick, mica, schist glass, gypsum, clay and friable materials. Construction waste and deleterious materials excluding clay and friable materials should be visually identified, separated, and removed from the sample for weighing. Testing for the clay and friable material component shall be according to ASTM C142 (see Table B) and shall be combined with the weight of the separated and removed materials for final weighing.

d. Restrictions on Use

Unless otherwise approved by the Ministry Representative or specified in Special Provisions or Drawings, the following shall apply:

i) Usage and Handling

RCAM shall only be used in the sub-base layer.

RCAM shall not be used as embankment fill.

RCAM shall not be used as trench backfill, above or below the sub-base layer.

RCAM shall not be used for temporary haul roads during construction.

RCAM shall not be double handled on site.

ii) Environment Restrictions

RCAM shall only be placed below areas that will be capped with pavement or another impermeable surface.

RCAM shall not be placed below the seasonal high-water table elevation.

RCAM materials shall not be stockpiled on the Project site.

RCAM shall not be placed within 30 m of designated streams (as defined by the BC Water Sustainability Act), as measured along a straight line along the ground surface from the edge of the RCAM to the seasonal high-water mark of the stream.

RCAM shall not be placed within 30 m of drinking water wells / intakes, as measured along a straight line along the ground surface from the edge of the RCAM to water well intake.

iii) Restrictions for Use Near Metal Structures:

RCAM shall not be placed within 5 meters of any metal structures unless the RCAM has been tested, meets the requirements in Table A and has been accepted for that use by the Ministry Representative. This shall include any exposed metal as part of a MSE structure

Sample collection for testing shall be completed at the off-site location where the RCAM is produced and/or stockpiled.

Table 20 - RCAM Testing for use within 5 m of Metal Structures

Description	***Test Method***	***Required Tolerance***	***Test Frequency***
pH	ASTM G51, AASHTO T89-91	5.5<pH<10	Prior to use within 5 meters of any metal structures and then once every 2,000 m3
Resistivity	ASTM G57, AASHTO T288-91	Greater than 5,000 ohm-cm	Prior to use within 5 meters of any metal structures and then once every 2,000 m3
Sulphates	ASTM D516, AASHTO T290-91	Less than 200 ppm	Prior to use within 5 meters of any metal structures and then once every 2,000 m3
Chlorides	ASTM D512, AASHTO T291-91	Less than 100 ppm	Prior to use within 5 meters of any metal structures and then once every 2,000 m3

iv) Production Requirements

The Contractor shall ensure the supplier produces a minimum 10,000 m^3 of RCAM in stockpile prior to the start of testing at the approved source location. Initial testing for approval to import to the Project site shall be done on the 10,000 m^3 of RCAM in stockpile. For projects with less than 10,000 m^3 of RCAM quantity the complete quantity shall be stockpiled prior to the start of testing.

During subsequent production and import to the Project site the Contractor shall ensure that the supplier always maintains a minimum 5,000 m^3 of RCAM produced and stockpiled for taking test samples at the approved source location.

RCAM materials for transport to the Project site shall be taken from approved production stockpiles; not directly from the RCAM processing plant.

v) Quality Testing

RCAM materials shall meet the quality test and acceptance requirements of SS 202 and the quality testing requirements noted in Table B below. Aggregate gradation shall be as specified in Table B below.

The quality test frequencies shall meet or exceed the frequencies indicated in Table C below.

All quality test results shall be submitted to the Ministry Representative for review, acceptance, and approval. RCAM shall not be imported to the Project site until approval to do so has been granted by the Ministry Representative.

Table 21 - RCAM: Quality Testing Requirements in Addition to SS 202		
Description	***Test Method***	***Acceptance Criterion***
Asphalt Coated particles Determination	MTO LS-621 (Ministry of Transportation of Ontario)	≤ 10%
Aggregate Gradation	ASTM C 136, C 117	Graduation requirements for 25 mm WGB per SS 202 Table 202-C
California Bearing Ratio (CBR) Soaked, %	ASTM D 1883	For Sub-base course Average of 3 tests > 45 with no individual value lower than 30
Coarse Aggregate Absorption	ASTM D6473	< 2% for Absorption
Fine Aggregate Absorption	ASTM D6473	< 2% for Absorption
Clay and Friable Materials	ASTM C142	< 1% by weight

Table 22 - RCAM: Minimum Frequency of Quality Control Testing	
Description	***Test Frequency***
Aggregate Gradation ASTM C 136, C 117	Prior to Importing RCAM to the Project site and then once every 2,000 m^3
Asphalt Coated particles Determination MTO LS-621	Prior to Importing RCAM to the Project site and then once every 2,000 m^3
Abrasion Loss by Micro Deval ASTM C 6928	Prior to Importing RCAM to the Project site and then once every 5,000 m^3
California Bearing Ratio (CBR) Soaked, % ASTM D 1883	Set of 3 prior to importing RCAM to the Project site and then set of 3 every 2,000 m^3
Coarse Aggregate Absorption ASTM D6473	Prior to Importing RCAM to the Project site and then once every 5,000 m^3
Fine Aggregate Absorption ASTM D6473	Prior to Importing RCAM to the Project site and then once every 5,000 m^3
Construction Waste and Deleterious Materials ASTM C142	Prior to Importing RCAM to the Project site and then once every 5,000 m^3

vi) Environmental Testing

Environmental testing for RCAM shall meet or exceed the frequencies and tolerances indicated in Table D below.

Samples shall be taken from the stockpile at the off-site location where the RCAM is produced. The Contractor shall retain a Appropriately Qualified Professional (AQP) to evaluate the results of environmental testing and submit written results of the evaluation to the Ministry Representative for review and acceptance. RCAM shall not be imported to the Project site until approval to do so has been granted by the Ministry Representative.

Table 23 - RCAM Leachate Quality Testing			
Parameter	***Test Methods***	***Minimum Test Frequency***	***Acceptance Criterion***
Dissolved Heavy Metals	Toxicity Characteristic Leaching Procedure (TCLP) per USA EPA 1311 and 6020A *	Prior to Importing RCAM to the Project site and then once every 2,000 m^3	Within leachate standards provided in Table 1, Part 3, Schedule 4, of the BC Hazardous Waste Regulation
Sulphate	Ion Chromatography (IC) analysis of final Shake Flask Extraction (SFE) or Water Leach Test (WLT) method extract **	Prior to Importing RCAM to the Project site and then once every 2,000 m^3	Within the applicable standards provided in Columns 3, 5 and 6 of Schedule 3.2 of the BC Contaminated Sites Regulation.
* US Environmental Protection Agency (EPA) **These laboratory methods may be adjusted as follows: excluding or minimizing crushing during sample preparation; using rainwater instead of deionized water as a leachant; and/or reducing the leaching contact time to match reasonably conservative on-site contact times. Any method modifications must be detailed and rationalized in the written summary submitted by the AQP and approved by the Ministry Representative.			

vii) Additional Environmental Testing as Directed by Ministry Representative

After the RCAM has been placed the Ministry Representative may direct the Contractor to arrange for sampling of RCAM runoff for leachate. The sampling and analysis shall be carried out by an AQP retained by the Contractor. If the results exceed the specified requirements in Table D “RCAM Leachate Quality Testing” then, the Contractor shall stop placing RCAM, engage their AQP to develop a mitigation plan and submit the Mitigation plan to the Ministry for review and the Contactor shall implement additional mitigative measures and re-test to ensure that the specified requirements in Table D “RCAM Leachate Quality Testing” have been met. All costs associated with mitigation of RCAM exceeding specified leachate levels shall be at the Contractor’s expense.

viii) Quality Control (QC) Compaction Testing

In place compaction testing of RCAM shall meet or exceed the acceptance criterion noted in the Standard Specifications. In place compaction testing of RCAM shall meet or exceed the frequencies indicated in Table E below.

If RAP is not present in the blend, compaction testing of placed RCAM material shall be by Lab Density as per SS 202.22(a).

If the Ministry Representative determines that significant quantities of RAP are present in the blend, compaction testing of placed RCAM material shall be by Field Density SS 202.22(b).

Table 24 - RCAM: Minimum QC Compaction Testing Frequency		
Description	***Test Method***	***Test Frequency***
Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft3 (600 kN-m/m3))	ASTM D-698	Prior to Importing RCAM to the Project site and then once every 2,000 m^3
Field Density SS 202.22(b).	SS 202.22	1 per 5,000 m^3 of RCAM material imported to the Project site and whenever a change in the blend is noted by the Ministry Representative.
Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)"	ASTM D6938	Four tests per 20m per lift. Two at randomly selected locations and two within 0.5m of the left and right edges.
Proof Roll	SS 201, SS 202	As required by the Ministry Representative

(e) Measurement

Granular materials include:

- Select Granular Sub-Base
- Recycled Concrete Aggregate Material (RCAM)
- 25mm Well Graded Base Course Aggregate (WGB),
- High Fines Surfacing Aggregate (HFSA),

Measurement of Granular Materials supplied and constructed in place, will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

All RCAM and leachate sampling, quality testing, proof rolling, testing for use near metal structures, environmental testing, and AQP evaluation shall be included in the payment unit rate.

If any of the tests under section 208 (h) do not meet the specified requirements then all costs in relation to sampling, testing and AQP evaluation are the responsibility of the Contractor. If all of the test results under section 208 (h) meet the specified requirements then the Ministry shall be responsible for the associated costs of sampling, testing and AQP evaluation.

The Contractor may utilize virgin aggregate meeting the requirements of SS 202 for SGSB in place of RCAM. Any SGSB used in place of RCAM will be paid for as RCAM in accordance with these special provisions.

(f) Payment

Granular materials include:

- Select Granular Sub-Base
- Select Granular Sub-Base (RCAM)
- 25mm Well Graded Base (WGB),
- High Fines Surfacing Aggregate (HFSA) - Driveways,

Measurement of Granular Materials supplied and constructed in place, will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

Payment for Granular Materials will be at the Unit Price bid per Cubic Metre in accordance with SS 202.36 for the applicable Items and shall be accepted as full compensation for everything furnished and done in connection therewith.

No payment will be made for any costs associated with reject RCAM.

Granular material produced for purposes other than the construction of surfacing, base and sub-base road gravels shall be considered incidental to the cost for the applicable Items and no additional payment will be made unless specifically stated in these Special Provisions. Some examples include, but are not limited to granular material for:

- Bedding and embedment material for culverts, catch basins, manholes, pipes.
- Paving aggregates; and
- Any other work requiring granular material other than the roadway gravels.

2.07 Slope Stabilization and Drainage

(a) Rip Rap

(i) General

10 kg riprap placed at the toe of a cut slope. 10 kg Rip Rap shall be installed at the locations specified on the Drawings or as directed by the Ministry Representative.

25 Kg Rip Rap shall be installed at the locations specified on the Drawings or as directed by the Ministry Representative. The 25 kg Rip Rap is generally used for slope stabilization where water seepage is witnessed along a cut slope. The actual locations may vary depending on the actual site conditions.

All other riprap placement shall be in accordance with SS 205 and SP 3.05

SECTION 3Measurement

Measurement for Riprap will be made in accordance with SS 205.11.

All excavation to complete Slope Stabilization shall be in accordance with the respective Type D item depending on end use of material.

(ii) Payment

Payment for 10 kg and 25 kg Rip Rap will be made at the Unit Price bid per Cubic Metre and shall be considered full compensation for all things furnished and done including, but not limited to supply and install of Non-Woven Geotextile, supply and placement of riprap and shaping of the finished surface. All Non-Woven Geotextile shall be in accordance with SP 2.06.

3.01 River Road Surplus Disposal Site

(a) Geogrid

(i) General

The Contractor shall supply integrally formed uniaxial geogrid as shown on the Drawings for the River Road On-Site Disposal Site.

- Product must be listed on the current edition of the Ministry's Recognized Products List.
- Product must be an AASHTO National Transportation Product Evaluation Program (NTPEP) audited uniaxial geogrid. The current NTPEP REGEO report must be submitted upon request.
- Uniaxial geogrid shall require approval by the Ministry Representative prior to installation. The Contractor shall submit a letter from the Geogrid Manufacturer confirming the calculated Long Term Design Strength (LTDS) of the Uniaxial Geogrid based on the following requirements.
- Specifications provided in the table below.

Table 25: Geogrid Specifications

Parameter	Test Method	Value
Long Term Design Strength (LTDS)	Calculated	30 kN/m
The uniaxial geogrid LTDS shall be calculated using reduction factors from the manufacturer's current NTPEP REGEO report using the standard formula: **Long Term Design Strength** $T_{al} = \frac{T_{ULT}}{RF_D \times RF_{ID} \times RF_{CR}}$		

Notes:

1. Ultimate Tensile Strength (T_{ULT}) shall be a minimum average roll value (MARV) and tested in accordance with ASTM D6637.
2. Reduction Factor for Creep Deformation (RF_{CR}), is the ratio of T_{ULT} to creep limited strength determined in accordance with ASTM D5262 and D6992. The results shall be extrapolated for a 100-year design life using elevated temperature and/or stress rupture testing from the geogrid manufacturer's current NTPEP REGEO audit report.
3. Reduction Factor for Durability (RF_D) shall be based on polymer (PET/PP/HDPE) specific testing in accordance with FHWA 10-024 durability guidelines. The Manufacturer's current NTPEP REGEO audit report shall verify the product passes durability testing and state if FHWA 10-024 default RF_D values can be used.
4. Reduction Factor for Installation Damage (RF_{ID}), shall be determined from construction damage tests for each product or product family proposed. Testing shall be consistent with AASHTO R69 and use values from the geogrid manufacturers current NTPEP REGEO audit report. The RF_{ID} value shall be based on Type 3 Test Aggregate (Silty Sand).

SECTION 4Installation

Geogrid shall be laid at the proper elevation and orientation as shown on the Drawings or as directed by the Ministry Representative. Correct orientation of the geosynthetic shall be verified by Contractor.

Geogrid may be temporarily secured in-place with staples, pins, sand-bags or backfill as required by fill properties, fill placement procedure or weather conditions, or as directed by the Ministry Representative.

Primary geogrid may not be overlapped or connected mechanically to form splices in the primary strength direction. Single panel lengths are required in the primary strength direction. No overlapping is required between adjacent rolls unless specified by the Engineer.

Backfill material shall be placed in lifts and compacted as directed under Project specifications. Backfill shall be placed, spread and compacted in such a manner as to minimize the development of wrinkles in and/or movement of the geosynthetic. A minimum fill thickness of 150 mm is required prior to the operation of tracked vehicles over the geosynthetic. Maximum fill thickness should be directed by the Ministry Representative to obtain minimum Project compaction requirements.

Turning of tracked vehicles should be kept to minimum to prevent tracks from displacing the fill and damaging the geosynthetic. Rubber tired equipment may pass over the geosynthetic reinforcement at low speeds, less than 15 km/h. Sudden braking and sharp turns shall be avoided. Any geosynthetic damaged during installation shall be replaced by the Contractor at no additional cost to the Ministry.

Measurement of Geogrid shall be by the square metre in place. Overlap of joints and seams shall be measured as a single layer of geogrid.

Payment for Geogrid will be made at the Unit Price bid per Square Metre and shall be considered full compensation for everything furnished and done to complete the Work.

SECTION 5Measurement

Measurement of Geogrid shall be by the square metre in place. Overlap of joints and seams shall be measured as a single layer of geogrid.

(ii) Payment

Payment for Geogrid will be made at the Unit Price bid per Square Metre and shall be considered full compensation for everything furnished and done to complete the Work.

(b) Wick Drains

(i) General

The Contractor shall supply and install Wick Drains as shown on the Drawings R1-952-302

Measurement

Measurement for Supply and Install of Wick Drain Drains will be made per metre of metre of drain installed.

(ii) Payment

Payment for Supply and Wick Drains will be made at the Unit Price Bid per metre and shall be considered full compensation for everything furnished and done to complete the Work.

SECTION 6 DRAINAGE

6.01 Culverts

(a) General

The Contractor shall supply and install culverts in accordance with SS 303 and at locations, depths, grades and lengths as necessary to field fit the designed pipe to the actual post-stripping ditches and drainage patterns.

Field-fit culverts shall be installed at a desirable grade of a least 1% and where this cannot be achieved, a minimum grade of not less than 0.5%. The maximum desirable grade is 10%.

Culverts shall have riprap and a non-woven geotextile placed at the inlets and outlets as shown on the Drawings.

Culverts are not designed for heavy equipment loading beyond the standard of normal highway loading limits. Any work necessary to protect the culvert from damage during construction is incidental to the Work and no separate payment will be made.

At the completion of grading the Contractor shall flush all culverts, storm drains and associated appurtenances to leave them clean and hydraulically efficient. Flushing of culverts and drains shall be considered incidental and no separate payment will be made.

Where practicable the first length of pipe on the inlet and outlet ends shall be full length to minimize the likelihood of uplift failure.

Where existing culverts are to be extended, the Contractor shall ensure that the existing pipe, at the connection point, is true to shape and in good condition. Where necessary due to damage to the existing pipe ends, the pipe shall be cut back to sound material or the length of damaged pipe removed and disposed of before making the extension.

Culverts that are located within the clear zone, or as shown on the Drawings, shall have the ends beveled to match the fill slope. Beveling the end of the pipes shall be considered incidental and no additional payment will be made. Bevelling to be as per manufacturer's recommendations.

Trenching for culvert installations shall be done in accordance with SS 303.21.04 with consideration to traffic safety. All trenches across the traveled portion of the highway shall be backfilled and paved prior to leaving the Site each day. Temporary restoration of the existing road structure shall match existing gravel and asphalt thicknesses unless otherwise approved by the Ministry Representative. Saw cutting, backfill and paving shall be considered incidental to the work for culvert installation and no additional or separate payment will be made.

All work required for directing and maintaining the drainage on a temporary basis shall be considered incidental to the Work and no additional or separate payment will be made.

Bedding shall be granular material in accordance with SS 303.21.05. Backfill shall be granular material in accordance with SS 303.21.08. Trenches shall be dry when bedding and backfill is placed.

(b) High Density Polyethylene (HDPE)

(i) General

HDPE culverts to conform to the current edition of the Ministry's Recognized Products List.

HDPE shall be installed with a water-tight gasket of the type as recommended by the manufacturer.

SECTION 7Measurement

Measurement shall be in accordance with SS 303.80.

SECTION 8Payment

Payment for HDPE Culverts will be made in accordance with SS 303.90.

Further to SS 303.92 payment for HDPE Culverts will be made at the Unit Price bid per Metre of pipe per size and shall be considered full compensation for all things furnished and done to complete the Work.

Payment for Riprap at culvert inlets and outlets shall be made in accordance with the riprap section of these Special Provisions.

(c) Extend Concrete Box Culvert

(i) General

Extend Concrete Box Culvert shall be installed in accordance with SS 303 and as shown on the Drawings.

The Contractor shall confirm the actual dimensions of the existing concrete box culvert to confirm dimensions and tie-in with the proposed concrete box culvert.

All culvert joints shall be watertight, with a manufacturer supplied gasket. Proposed alternatives to address water-tightness at the joints shall be submitted to the Ministry Representative for review and approval. All culvert joints shall be completely wrapped with non-woven geotextile, with a minimum geotextile width of 1.0 m, extending a minimum of 0.5 m beyond the joint in each direction.

SECTION 9Measurement

Measurement shall be in accordance with SS 303.80.

SECTION 10 Payment

Payment for Concrete Box Culvert will be made in accordance with SS 303.90.

Further to SS 303.92 payment for Concrete Box Culvert will be made at the Unit Price bid per Metre of pipe and shall be considered full compensation for all things furnished and done to complete the Work including tie-ins to the existing box culvert and the proposed manhole (downstream).

There is a likelihood of encountering Type A material during the excavation. Payment shall be made in accordance with SS 303.93

(d) Extend York Creek Steel Pipe

(i) General

Steel Pipe shall be supplied installed at locations and sizes as shown on the Drawings.

Steel Pipe shall be installed as follows:

(1) The steel pipe installation may be installed by open trenching.

(2) The minimum acceptable wall thickness shall be in accordance with the Drawings.

(3) Sections of the pipe shall be welded together to form a continuous pipe capable of accommodating all installation and operating stresses. Welded joints shall be butt weld or butt strap weld and continuous and sealed to prevent water leakage. The Contractor shall submit the joint weld detail to the Ministry Representative for review one (1) week prior to welding the first pipe joint.

(4) For each pipe, the Contractor shall provide to the Ministry Representative the as built locations of inlet and outlet, grades of the pipe with notable variances through the pipe, plus a description of damages or alterations made to the pipe installation. The Ministry Representative will review the pipe information to ensure drainage

will be maintained as per the design. Where the installed pipe alters from the design drawings, due to installation, and the design drainage is not maintained, the Contractor will be responsible to supply and construct revisions to ensure the design drainage is maintained.

(5) Wastewater generated from the installation procedure will not be permitted to be drained into or dumped into any drainage ditches in the area.

(6) Within twenty-four (24) hours of completion of the pipe installation, the Contractor shall inspect the pipe for cracks, distortions, and any other visible signs of leakage or areas of pipe distress. A report of the findings shall be submitted to the Ministry Representative. Any cracks, distortions, points of leakage or signs of distress shall be repaired by the Contractor, at the Contractor's expense, to the satisfaction of the Ministry Representative.

(ii) Measurement

The pipe shall be measured in accordance with SS 303.80.

(iii) Payment

Payment for Steel Pipe installation will be made at the Unit Price bid per Metre per size in accordance with SS 303.90.

(e) Concrete Pipe Anchor

(i) General

The Contractor shall supply and install concrete pipe anchors as shown on the Drawings.

(ii) Measurement

Concrete Pipe Anchor will be measured per Each pipe anchor installed.

(iii) Payment

Payment for Concrete Pipe Anchor shall be at the Unit Price bid per Each and shall be considered full compensation for everything furnished and done.

10.02 Precast Concrete Catch Basins and Manholes

(a) General

The Contractor shall supply and install precast concrete catch basins and manholes in accordance with SS 582.

(b) Precast Concrete Catch Basins

(i) General

The Contractor shall supply and install precast concrete catch basins as shown on the Drawings. Catch basins shall be in accordance with SS Drawings SP582-02.01 or SP582-02.02 as indicated on the Drawings. Grates for all catch basins shall be in accordance with SS Drawings SP582-05.02 and shall be in accordance with SS Drawings SP582-05.01 or SP582-05.02.

Precast concrete catch basins shall be installed with depressed gutters in accordance with SS Drawings SP582-05.05

(ii) Measurement

Precast Concrete Catch Basins will be measured in accordance with SS 582.82.

(iii) Payment

Payment for Precast Concrete Catch Basins will be made at the Unit Price bid per Each, in accordance with SS 582.92, and shall be accepted as full compensation for everything furnished and done to complete the Work.

(c) Precast Concrete Lawn Basins

(i) General

The Contractor shall supply and install precast concrete lawn basins at the locations and to the elevations and with the cast iron slotted inlet grates shown on the Drawings. Contractor to submit shop drawings for approval for each typical lawn basin configuration.

(ii) Measurement

Precast Concrete Lawn Basins will be measured in the same way as catch basins in accordance with SS 582.82.

(iii) Payment

Payment for Precast Concrete Lawn Basins will be made at the Unit Price bid for Each, in the same way as catch basins in accordance with SS 582.92, and shall be considered full compensation for everything furnished and done to complete the Work.

(d) Concrete Manholes

(i) General

The Contractor shall supply and install precast concrete manholes at the locations and to elevations shown on the Drawings. Circular manholes shall be in accordance with SS Drawing SP582-03.01. Base types shall be “Type-B” or a sump base as specified on the Drawings.

Contractor to submit shop drawings for all box manholes.

(ii) Measurement

Contrary to SS 582.83 Measurement shall be by Linear Metre depth from top of frame to invert.

(iii) Payment

Contrary to SS 582.93 Payment for Precast Reinforced Concrete Manholes (circular and box type) shall be made at the Unit Price Bid per Linear Metre and shall be considered full compensation for everything furnished and done in connection therewith, including: formwork, concreting, setting in of storm drains, construction of smooth invert sections, manhole riser sections, cement mortar settings, steel ladder rungs, brick construction, setting of manhole frames and covers, cleaning out, protection and superintendence, and all other things necessary.

(e) Headwall Structure

(i) General

The Contractor shall supply and install Headwall Structure at the locations shown on the Drawings.

(ii) Payment

Payment for Headwall Structure will be made at the Unit Price Bid per Each Headwall Structure and shall be considered full compensation for everything furnished and done in connection therewith.

10.03 Catch Basin Leads and Storm Pipes

(a) General

The Contractor shall supply and install PVC catch basin leads and storm pipes of the size and material type as specified on the Drawings in accordance with SS 582 and SS 318.

All cut ends shall be treated in accordance with the manufacturers' requirements. Cutting pipes to amend the lengths and related work shall be considered incidental and no additional payment will be made.

(b) Measurement

The pipe shall be measured by the metre along the invert lengths along the entire length of each pipe in accordance with SS 582.84.

(c) Payment

Payment for Catch Basin Leads and Storm Pipes shall be in accordance with SS 582.94 and include supply and installation of the pipe, fittings and connections, excavation, bedding, backfill, trench pavement restoration will be made at the Unit Price bid per Linear Metre for each respective size and shall be considered full compensation for everything furnished and done to complete the Work.

10.04 Slope Drainage

(a) Toe Drains

(i) General

The Contractor shall supply and install Toe Drains as shown on the Drawings. The Toe Drains shall comprise a minimum 50 mm diameter perforated PVC Pipe (no perforations for the last 2.5 m closest to the slope face). The exposed portion of the PVC Pipe that extends through the rockfill should shall be surrounded on all sides with at least 150 mm of Type 2 Filter Gravel in accordance with Drawing SP303-06. The drain pipe and surrounding filter gravel shall be wrapped in a non-woven geotextile with a minimum puncture resistance of 0.350 kN (ASTM D 4833) and a minimum flow rate of 4850l/min/m^2 (ASTM D 4491).

(ii) Measurement

Measurement for Toe Drains will be made per metre of wick drain installed.

(iii) Payment

Payment for Toe Drains will be made at the Unit Price Bid per metre and shall be considered full compensation for everything furnished and done to complete the Work.

10.05 Culvert Riprap

(a) Riprap

(i) General

The Contractor shall supply, and place riprap of the various classes as shown on the Drawings in accordance with SS 205. Typical riprap usage are:

- Culvert inlet and outlet treatments
- Splash pads
- Spillways
- Riprap surfacing

(ii) Measurement

Measurement for Riprap will be made in accordance with SS 205.11.

(iii) Payment

Payment for Riprap will be made at the Unit Price bid per Cubic Metre per class and useage in accordance with SS 205.12 except as modified herein.

Further to SS 205.12, payment will include the supply and installation of non-woven geotextile as shown on the Drawings.

(b) Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)

(i) General

Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)shall be used to assist with preventing flows from Whonnock Creek running sub-surface when the new channel is put into operation. New channel activation must be completed in strict accordance with SP 1.22 Protection of the Environment.

The Contractor shall supply and place Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)as shown on the Drawings. The Granular sodium bentonite shall only be placed after the Ministry Representative has provided acceptance, in writing, of the channel construction and riprap placement. The granular sodium bentonite shall be spread throughout the voids in the riprap to the extent that flows are not running sub surface. The Contractor shall retain sufficient volume of existing streambed material to spread in the voids after placement of Granular Sodium Bentonite.

(ii) Measurement

Measurement for Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)will be measured per Cubic Metre used to complete the work. The Contract shall allow for 90 Kilograms of granular sodium bentonite per cubic metre of riprap placed and shall provide documentation of the weight incorporated into the Work.

(iii) Payment

Payment for Class 100 kg Riprap with 15% Granular Sodium Bentonite (Sourced from onsite Type A Excavation)will be made at the Unit Price Bid per Cubic Metre and shall be considered full compensation for everything furnished and done to complete the work including supply and placement of sodium granular bentonite, excavation, stockpile and placement of existing streambed material, verification that the flow will not be running sub-surface and placement of additional granular sodium bentonite if flows are running sub-surface.

10.06 Emergency Flood Recovery

(a) Storm Pipes

Storm Pipes shall be in accordance with SP 3.01 (b).

(b) Concrete Manhole

Concrete Manhole shall be in accordance with SP 3.02 (d).

(c) Riprap

Riprap shall be in accordance with SP 3.05. (a).

SECTION 4 STRUCTURES

4.01 General

Payment for work will be made at the prices bid for the Items appearing in the Schedule of Approximate Quantities and Unit Prices. Pay items for all work are itemized separately for each of the structures under this Contract:

- Schedule 7 – Section 4.01 – Whonnock Creek Culvert No. 8154
- Schedule 7 – Section 4.02 – H7 River Rd Wall No. 10422
- Schedule 7 – Section 4.03 – H7 Median Wall at 285th No. 10426
- Schedule 7 – Section 4.04 – H7 EB at 285th #1 Wall No. 10439
- Schedule 7 – Section 4.05 – H7 EB at 285th #2 Wall No. 10490
- Schedule 7 – Section 4.06 – Precast Concrete Interlocking Modular Block Retaining Walls

The "Description of Work" for the above listed Schedule 7 Sections will govern which Special Provision is to be referenced for each Item.

Any work called for which is not listed as an Item in the Schedule of Approximate Quantities and Unit Prices will not be paid for separately. The cost of such work shall be included in the prices bid for the Items in the Schedule of Approximate Quantities and Unit Prices.

The Ministry may require an acceptable declaration from the Contractor transferring ownership of materials to the Ministry.

4.02 Structure Identification Numbers

The Ministry Representative will make available the numeral forms for the Contractor's use when the Contractor is required to imprint an identification number on the structure. The Contractor shall return the numeral forms to the Ministry Representative in good clean condition upon completion of the Work.

4.03 Dewatering

Dewatering shall include all work required to ensure that all concrete is placed in the dry and protected from damage by water.

Dewatering shall be considered incidental to the other applicable items of Work.

4.04 Foundation Excavation and Backfill

(a) Excavation

The Contractor shall remove all materials as necessary for the construction of retaining walls and Whonnock Creek culvert. Excavations shall not be larger than is reasonably necessary. Excavations and adjacent highways and other facilities shall be protected as necessary by barricades, shoring, dykes and/or cofferdams. Foundation excavation shall be as shown on the Drawings and in accordance with SP 2.05 Roadway and Drainage Excavation.

Excavations shall be constructed in compliance with the applicable Workers Compensation Act, Occupational Health and Safety Regulations, BC.

(b) Description of Material Types

Materials will be classified in accordance with SS 201.11

No distinction shall be made between wet and dry excavation.

(c) Preparation of Foundations

For excavations in material other than rock, care shall be taken to not disturb the bottom of the excavation. If the bottom of the excavation is disturbed, the Contractor shall remove and dispose

of all disturbed material and shall replace it with material meeting the material, placement and compaction requirements of SS 201.40 "Bridge End Fill". Sources of "Bridge End Fill" shall be tested for sulphate and chloride content in accordance with CSA A23.2-3B and ASTM C1218 or A23.2-4B and shall not exceed the site exposure category identified in SP 4.08 Cast-in-Place Concrete without consent of the Ministry Representative.

Where concrete is to be placed on rock, the rock surfaces shall be clean and free from any loose material.

Where, in the opinion of the Ministry Representative, the bottom of an excavation is not competent, the Ministry Representative may direct the Contractor to excavate deeper. The Ministry Representative may direct replacement of the incompetent material with material meeting the requirements SS 201.40 "Bridge End Fill" or with a concrete fill or sub-footing.

(d) Measurement and Payment

Foundation excavation shall be considered Type D excavation to Off-site Disposal (IR #5). Payment for supply and placement of Bridge End Fill as backfill to replace unsuitable sub-grade shall be paid in accordance with SP 4.05 Bridge End Fill.

4.05 Bridge End Fill

Bridge end fill shall be constructed as shown on the Drawings and in accordance with the material, placement and compaction requirements of the SS 201.40 "Bridge End Fill". The Contractor shall perform all quality control, sampling and testing required to verify that the completed bridge end fill meets the specified requirements. Sampling and testing shall include but may not necessarily be limited to; materials sampling, sieve analyses, laboratory proctor density testing and in-situ density testing. Sources of "Bridge End Fill" shall be tested for sulphate and chloride content in accordance with CSA A23.2-3B and ASTM C1218 or A23.2-4B and shall not exceed the site exposure category identified in SP 4.08 Cast-in-Place Concrete without consent of the Ministry Representative.

Drainage course material shall be installed as shown on the Drawings. The gradation of drainage course material shall be in accordance with SS 407, Table 407-A Drainage Course Material Gradation.

Measurement

Measurement of Bridge End Fill supplied and constructed in place, will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

Payment

Payment for Bridge end Fill will be made at the Unit Price Bid and shall be considered full compensation for all costs related to this work.

Payment for Bridge End Fill shall cover the supply and placement of gravel drainage and base courses, geotextile, filter cloth, and drainpipes, at the cast-in-place concrete retaining walls if shown on the Drawings.

4.06 Formwork and Falsework

The Contractor shall provide formwork and falsework in accordance with SS 211.

Payment for formwork will be made at the Unit Price Bid per Square Metre and shall be considered full compensation for all costs related to this work. Payment shall also include submissions and any falsework and bracings as required. No payment will be made under this Item for formwork required as part of another Item.

4.07 Reinforcing Steel

The Contractor shall supply and install reinforcing steel in accordance with SS 412 unless otherwise specified on the Drawings.

Payment for Reinforcing steel (Carbon Steel) and Reinforcing steel (Stainless Steel) will be made at the Lump Sum Price Bid and shall be considered full compensation for all costs related to this work. No payment will be made under this Item for reinforcing steel required as part of another Item.

4.08 Cast-in-Place Concrete

The Contractor shall complete all concrete work in accordance with SS 211 and SS 413, unless otherwise modified by this clause. The Project site has been identified as having a low degree of exposure to sulphates as defined by CSA A23.1.

The Contractor shall be responsible for the design and quality control for all concrete used on this project.

All concrete materials and admixtures for concrete shall conform to the requirements of SS 211.04, unless otherwise specified in these Special Provisions. Type GUL cement is not permitted for sites identified with a very severe degree of exposure to sulphates.

The Contractor shall be responsible for and shall provide the Ministry Representative with current certified results for all the applicable tests as outlined in Table 211-B of the SS 211 "Required Aggregate Testing for Normal Density Coarse and Fine Aggregate (Per Individual Product and Aggregate Source)". In addition to the requirements of SS211, all aggregate shall be tested for sulphate and chloride content in accordance with CSA A23.2-3B and ASTM C1218 or A23.2-4B. The aggregate shall have a sulphate content less than the identified exposure category unless approved by the Ministry Representative.

Concrete mixes shall meet the requirements given in the following table:

Table 26: Concrete Mix Requirements

Classification	Minimum Compressive Strength at 28 days (MPa)	Nominal Maximum Size of Coarse Aggregate (mm)	Air Content (%)	Slump (mm)	Maximum W/C_m Ratio by Mass
Parapet Concrete: Parapet, Barrier, Copings					
• GU Standard (1)(2)(3)	35	28(4)	5 ± 1	50 ± 20	0.38
• GUL early chloride exposure (5)(7)	35	28(4)	6 ± 1	80± 20(8)	0.38
Retaining Wall Concrete: Retaining Walls, Footings, Working Floors, Concrete Swales					
• GU Standard(1)(4)	30	20	5 ± 1	80 ± 20	0.45
• GUL low to moderate(1)(6)	30	20	5 ± 1	80 ± 20	0.45

Notes:

(1) Superplasticizers or high range water reducers shall not be used.

(2) No supplemental cementing materials shall be used in this concrete (i.e. silica fume, fly ash, etc.).

(3) Cement shall be Type GU and total cement content shall not exceed 380 kg/m^3.

(4) The addition of Type F fly ash shall not exceed 25% by mass of cementing materials. The addition of slag shall not exceed 40% by mass of cementing materials

(5) The total cement content shall not exceed 380 kg/m3.

(6) The addition of 15% Type F fly ash or 25% slag by mass of cementing materials is required.

(7) The addition of 12% Type F fly ash and 8% silica fume by mass of cementing materials or the addition of 20% slag and 5% silica fume by mass of cementing materials is required.

(8) Slump specification is based on superplasticized concrete.

The gradation of the aggregates shall conform to Table 211-E "Coarse Aggregate Gradations" and Table 211-G "Fine Aggregate Gradation" of the SS 211 unless noted otherwise in this clause.

Concrete Surface Finishes shall meet the requirements given in the following table:

Table 27: Concrete Surface Finishes

Surfaces submerged or buried	Class 1
Parapets, barriers and copings	Class 3
Exposed faces of cast-in-place retaining walls	Class 2

(a) Parapet Concrete

Parapets shall not be extruded. Exposed corners shall be chamfered, and surfaces finished as noted in these Special Provisions or on the Drawings.

(b) Payment

Payment for Cast-In-Place Concrete will be made at the Unit Price Bid per Cubic Metre as listed in the Schedule of Approximate Quantities and Unit Prices in accordance with SS 211.21.02. No payment will be made under this Item for concrete supplied as part of another Item, such as precast concrete.

Payment for Cast-In-Place Concrete will also include the preparation of all construction joints and control joints irrespective of their location, and the supply and installation of joint fillers, joint waterproofing membranes, and joint sealant as indicated on the Drawings.

For the purpose of establishing payment quantities, cast-in-place concrete shall include cast-in-place concrete retaining walls and cast-in-place concrete parapets and barriers. No payment will be made under this Item for cast-in-place concrete required as part of another Item.

(1) Parapet Concrete

Parapets shall not be extruded. Exposed corners shall be chamfered, and surfaces finished as noted in these Special Provisions or on the Drawings.

(2) Payment

Payment for concrete will be made in accordance with SS 211.21.02 at the applicable Unit Price per cubic metre as listed in the Schedule of Approximate Quantities and Unit Prices. No payment will be made under this Item for concrete supplied as part of another Item, such as precast concrete.

Payment for concrete will also include the preparation of all construction joints and control joints irrespective of their location, and the supply and installation of joint fillers, joint waterproofing membranes, and joint sealant as indicated on the Drawings.

For the purpose of establishing payment quantities, concrete used in bridge deck slabs, parapets, and approach slabs will be considered as deck concrete. Concrete used in piers and abutments including retaining walls, working floors, pile infill, and drilled shafts shall be considered as substructure concrete.

(c) Parapet Concrete

Parapets shall not be extruded. Exposed corners shall be chamfered, and surfaces finished as noted in these Special Provisions or on the Drawings.

(d) Payment

Payment for Cast-In-Place Concrete will be made at the Unit Price Bid per Cubic Metre as listed in the Schedule of Approximate Quantities and Unit Prices in accordance with SS 211.21.02. No payment will be made under this Item for concrete supplied as part of another Item, such as precast concrete.

Payment for Cast-In-Place Concrete will also include the preparation of all construction joints and control joints irrespective of their location, and the supply and installation of joint fillers, joint waterproofing membranes, and joint sealant as indicated on the Drawings.

For the purpose of establishing payment quantities, cast-in-place concrete shall include cast-in-place concrete retaining walls and cast-in-place concrete parapets and barriers. No payment will be made under this Item for cast-in-place concrete required as part of another Item.

4.09 Precast Concrete Box Culverts

(a) General

The Contractor shall design, fabricate, supply and install twin 4250mm x 4250mm precast concrete box culverts to replace the existing Whonnock Creek culvert at Highway 7 in accordance with the Contract Documents and ensure that the structure meets all of the Project requirements. As shown on the Drawings, the twin precast box culvert structure consists of:

- Design, fabrication, transportation and installation of the precast concrete box culvert.
- Foundation excavation.
- Supply and installation of gaskets and external non-woven geotextile; and
- Supply and placement of base materials, culvert embedment materials and backfill.

It is anticipated that the Contractor will have to stage the construction to accommodate traffic and the environmental requirements as identified in SP 1.22 Protection of the Environment. A suggested staging for the Whonnock Creek Box Culverts is included in the Schedule T3 Reference Documents. The Contractor may choose to stage the work differently than what is shown on the suggested staging drawing(s) and the Contractor shall base their price on how they have chosen to execute the work. The Contractor is responsible for all aspects of construction and ensuring all Project and environmental requirements are met regardless of how the work is staged. The 2700 mm diameter high flow culvert does not have the capacity to accommodate flows from Whonnock Creek during construction and alone can not be relied upon to divert all the flows from Whonnock Creek during construction.

(b) Design and Fabrication of the Precast Concrete Box Culverts

The final design and fabrication of the precast concrete box culvert shall be carried out in accordance with the following:

(i) BC MoTI Bridge Standards and Procedures Manual, Vol. 1 - Supplement to CHBDC S6-14.

(ii) BC MoTI Standard Specifications for Highway Construction SS 303 Culverts and SS 582 Concrete Curb and Gutter and Storm Drainage.

(iii) CAN/CSA-S6-14 (Canadian Highway Bridge Design Code).

(iv) ASTM C1433M (Standard Specifications for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers).

(v) Where there are discrepancies between the codes and standards listed above (SP 4.10 (b) (i) to (iv)), the governing order of precedence shall be taken as the order listed in SP 4.10 (b) (i) to (iv)).

(vi) Service Life shall be seventy-five (75) years. For time-dependent effects the design life shall be one-hundred (100) years.

(vii) Design live load shall be BCL-625.

(viii) Seismic design: Peak Ground Acceleration (PGA) = 0.223g (5% chance of exceedance in 50 years for Site Class C).

(ix) Minimum concrete strength shall be 35 MPa at twenty-eight (28) days; Minimum concrete strength shall be 35 MPa at twenty-eight (28) days. The project site has been identified as having a low degree of exposure to sulphates as defined by CSA A23.1 Type GUL cement may be used for precast concrete box culverts with the addition of 15% Type F fly ash or 25% slag by mass cementing material . All aggregate shall be tested for sulphate content in accordance with CSA A23.2-3B. The aggregate shall have a sulphate content less than the exposure category identified in SP 4.08 Cast-in-Place Concrete unless approved by the Ministry Representative.

(x) Design soil cover above the box culverts shall be as shown on the Drawings.

(xi) Joints in the precast concrete boxes shall be designed to meet the requirements of CSA A257.3, ASTM C443, or ASTM C1677. All culvert joints shall be completely wrapped with medium non-woven geotextile, with a minimum geotextile width of 1.0 m, extending a minimum of 0.5 m beyond the joint in each direction.

(xii) Allowable Bearing Pressure (on compacted granular base material):

- SLS = 150 kPa.
- ULS = 200 kPa; and
- ULS 5 = 280 kPa.

(xiii) The interior surface of the box culverts shall have a Class 2 finish in accordance with SS 211.17.02.

(xiv) The backfill materials below, adjacent to and above the precast box sections, but excluding the granular base material, as shown on the Drawings, shall meet the requirements for Bridge End Fill as specified in the Special Provision for Bridge Eng Fill with the following assumed properties:

- Unit Weight = 21 kN/m3.
- Soil Friction Angle = 34 degrees.

(xv) Reference geotechnical documents, as applicable, are listed in Schedule T3 Specific Reference Documents

The design for the precast concrete box culverts shall consider any special features related to construction staging for maintaining highway traffic and Whonnock Creek and any restrictions on the loads imposed by construction equipment crossing over or working adjacent to the culvert during construction as necessary.

The Contractor shall submit complete Project specific working Drawings for the precast concrete box culvert to the Ministry Representative in accordance with SS 415.04 except that working Drawings shall be submitted a minimum of four (4) weeks prior to commencement of precast concrete box culvert component fabrication.

The working Drawings shall be prepared and sealed by the Contractor's design Engineer of Record for the precast concrete box culverts and shall include complete installation procedures

for the box culvert components with specifications for bedding materials and compaction, erection and assembly details including details of box culvert joints including maximum allowable joint openings after assembly, backfilling and compaction procedures, any special requirements for maintenance of highway traffic during construction and restrictions on construction vehicle axle loads. The working Drawings shall also identify all applicable design loadings, design codes and standards, material specifications, fabrication standards, any variations from the specified design criteria, geotechnical design constraints, structural design constraints assumptions and methodologies etc.

The Contractor's design Engineer of Record for the concrete box culverts shall be a professional engineer registered in the Province of British Columbia. Installation of the precast concrete box culvert will not be allowed to proceed until the Ministry Representative has completed its review of the working Drawings and installation procedures. Any work done or materials ordered prior to the completion of the review process will be at the Contractor's risk.

(c) Compliance with Ministry "Engineer of Record and Field Review Guidelines"

The Contractor shall be responsible for supply of all services required to provide engineering assurance for all elements of the precast concrete box culvert design and construction in compliance with the Ministry's Technical Circular T-06/09 "Engineer of Record and Field Review Guidelines" (the EOR Guidelines) as contemplated for "design-build" works in Appendix 2 to the EOR Guidelines.

The technical circular is available on-line at:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t06-09.pdf

In interpreting the EOR Guidelines, Appendix 2 for the Precast Concrete Box Culvert works in this Contract, the "Lead" shall be the Contractor.

Without limiting the obligations of the Contractor and the Precast Concrete Box Culvert Supplier under the EOR Guidelines, the Contractor shall retain and be responsible for:

- An Engineer of Record (culvert EOR) for the precast concrete box culverts; and
- Field reviews by or under the direct supervision of the culvert EOR or other professional engineer acceptable to the EOR.

The Contractor shall identify:

- The precast concrete box culvert EOR at the commencement of design; and
- The Field Reviewer in the working Drawings.

Letters of Assurance in compliance with the EOR Guidelines shall be submitted as follows:

- With the Working Drawings submission for the structure.
    - Assurance of Professional Design and Commitment for Field Review.
- Within the earlier of sixty (60) days after the construction of the concrete box culverts are complete and prior to the issuance of the Completion Certificate.
    - Assurance of Professional Design Post Construction; and
    - Assurance of Field Reviews and Compliance.

The concrete box supplier shall provide its Letters of Assurance to the Contractor who, after having performed Quantity Control on the submissions, shall forward them to the Ministry Representative. All Letters of Assurance shall be in favour of the Ministry.

(d) Installation

(i) Foundation Excavation

Foundation excavation shall be carried out in accordance with SS 407 except that foundation excavation shall include excavation for box culvert granular base.

Contrary to SS 407, no separate payment will be made for foundation excavation required under this Item.

Foundation excavation for the precast box culverts, granular base, bridge end fill, and cast in place concrete headwall installation as shown on the Drawings will be included in the Lump Sum Price bid for the precast concrete box culverts.

Where directed by the Ministry Representative, excavation and replacement of incompetent foundation materials below the excavation line shown on the Drawings will be paid as Extra Work.

SECTION 5Installation of Precast Concrete Box Units

Transportation, handling, storage and installation of the precast concrete box units shall be in accordance with Drawings and installation procedures and these Contract Documents.

Precast concrete box units shall be transported, handled, stored and installed in a manner that prevents chipping, cracking or excessive bending stresses. Any member damaged so as to be, in the opinion of the Ministry Representative, unfit for the use for which it is intended shall be repaired or replaced at the Contractor's expense.

Precast concrete box units shall not be transported before the concrete has attained the specified 28-day strength. The Contractor shall verify that the box culvert concrete has attained the specified strength prior to shipping. Notwithstanding the above requirements, in no case shall the precast box culvert units be transported prior to ten (10) days after casting. The Contractor shall schedule the works accordingly.

Box units shall be installed to the alignment and grade as shown on the Drawings.

Bedding aggregates shall be supplied and constructed in accordance with the requirements of the design Engineer of Record for the precast concrete box culvert. Bedding materials shall be designed and installed to ensure uniform bearing across the structure base and to maintain the required structure grade.

The box culvert units shall be installed to the line and grade shown on the Drawings. Installation shall commence at the lower end and proceed in the upslope direction with the groove ends of the box units facing up-grade. The box culvert unit end elevations and locations shall be monitored to ensure proper grade and alignment as the work progresses.

The box culvert units shall be joined in accordance with the design engineer’s recommendations. Internal joint gaskets shall be installed in accordance with the manufacturer’s recommendations. The box culvert units shall be joined so there is no unevenness along the inside perimeter of the joint. Joint surfaces shall be kept clean and dry as the work progresses. Each box culvert unit shall be pulled or pushed home in a straight line with all parts of the box section on line and grade at all times. If the box culvert unit being installed is misaligned, the unit shall be completely disconnected, the alignment corrected, and the unit rejoined.

Prior to backfilling, all lifting holes shall be sealed to the satisfaction of the Ministry Representative. Any embedded lifting devices shall be cut off to a depth of the specified depth of concrete cover. Lifting holes and/or lifting device holes shall be filled using an epoxy mortar or non-shrink grout, properly cured to ensure a sound and

watertight plug. The finished surface shall be smooth and level with the adjacent box culvert concrete.

SECTION 6Backfill

Backfill for the precast concrete box culverts and adjacent cast-in-place concrete inlet headwall shall be in accordance with SP 4.05 Bridge End Fill except payment shall be in accordance with this SP 4.10 Precast Concrete Box Culverts.

Precast Concrete Culverts shall be supplied and installed at the location and elevations as shown on the Drawings or as directed by the Ministry Representative in accordance with the Drawings, SS 303 and SS 582. The project site has been identified as having a low degree of exposure to sulphates as defined by CSA A23.1 (i.e. S-3).

(e) Quality Control and Quality Assurance

The Contractor shall be responsible for all quality control to verify that the culvert meets all of the Contract requirements and the requirements of the design engineer of record for the precast concrete box culvert.

(i) Precast Box Culvert Design and Fabrication

The design of the precast concrete box culverts shall be prepared in accordance with these Special Provisions by a professional engineer registered in the Province of British Columbia and having suitable experience in the design of similar structures. If requested by the Ministry Representative, the Contractor shall submit the complete design calculations for the precast concrete box culvert for review by the Ministry.

All submissions including working Drawings, installation procedures and design calculations shall be signed and sealed by the Contractor's design Engineer of Record for the precast box culvert.

The Contractor's design Engineer of Record for the precast concrete box culverts shall provide field reviews during the installation of the box culvert. Field review and documentation of field review shall be in accordance with these Special Provisions.

The precast concrete box culvert units shall be supplied and fabricated in accordance with ASTM C 1433, Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers or SS 415 Manufacture and Erection of Precast and Precast Prestressed Members.

The plant supplying and fabricating the precast box culvert units shall be certified under the American Concrete Pipe Association Quality Cast Certification Program or CAN/CSA - A23.4. In plant quality control records such as copies of in-plant QA/QC inspection reports and copies of material certifications and/or laboratory test reports, including mill tests and all other test data, for Portland cement, blended cement, pozzolans, ground granulated blast-furnace slag, silica fume, aggregate, admixtures, and curing compounds proposed for use on this project shall be supplied to the Ministry Representative if requested.

Upon request, the precast concrete producer shall submit copies of test reports showing that the mix has been successfully tested to produce concrete with the properties specified and will be suitable for the project conditions. Such tests may include compressive strength, flexural strength, plastic or hardened air content, freeze-thaw durability, abrasion and absorption.

(ii) Installation

The quality control for the installation of the precast concrete box culverts shall be in accordance with the standards referenced herein for various components of the work.

Unless more stringent requirements are specified by the design Engineer of Record for the precast concrete box culverts, the installed precast box culverts shall meet the following tolerances:

Table 28: Precast Box Culvert Tolerances

Horizontal Dimension	± 12 mm
Elevations	± 12 mm
Line (horizontal and vertical)	Such that no abrupt deviations are visible

A minimum of two (2) weeks prior to installation of the precast box culverts, the Contractor shall submit a detailed program for monitoring construction for erection safety, structure integrity and material and geometric compliance. The program must be approved and endorsed by the design Engineer of Record for the precast concrete box culverts.

The monitoring program shall include but may not be limited to:

- Stages at which monitoring is to be performed.
- Method, frequency and location of measurement and testing.
- Method of controlling line and grade during culvert installation. Methods shall allow rapid checking of the previously laid sections.
- Method for checking joints to ensure the spigot end is correctly inserted.
- Allowable finished joint gap dimension and tolerances.
- Procedures to be followed if allowable joint gaps, line and/or grade tolerances are exceeded and details of corrective action to be taken.
- Availability on-site of documentation for review and reference including Letters of Assurance, WCB Inspection Reports, Site Erection Procedures and Quality Control Reports for off-site precast concrete or fabrication shop drawings.
- Assurance of Professional Design and Commitment to Field Reviews form as referenced in Technical Circular T06/09. The form shall be signed and sealed by the professional engineer responsible for design of the precast concrete box culvert.
- A detailed installation schedule indicating when inspections and field reviews will be performed.

The box culvert installation shall be inspected and supervised by the design engineer of record for the structure or its designated Site representative. The qualifications of the designated Site representative shall be subject to review and acceptance by the Ministry Representative.

The design engineer or the design engineer's designated Site representative shall be on Site to supervise and inspect the installation of the precast concrete box culvert on the following basis:

- As required to allow the Engineer of Record for the structure to sign-off on the Assurance of Professional Design; and

- Continuously during the initial installation of the concrete box culvert to establish correct procedures and tolerances for installation; and
- Final inspection of the completed installation.

The Contractor shall provide an Assurance of Professional Design Post Construction, as referenced in Technical Circular T06-09, completed by the design engineer of record for the precast box culvert stating that the design engineer has reviewed the structure foundation and backfill materials, in-situ test results and has monitored the installation of the structural components and certifies that the in-situ structure is in accordance with all its installation requirements. The Assurance of Professional Design Post Construction shall be sealed by the professional engineer who performed or was responsible for supervising the Site inspections.

The forms are available at:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t06-09.pdf

(iii) Quality Assurance

The Ministry will implement a quality assurance program by auditing the Contractor's quality control program and by inspection at its discretion. Quality assurance by the Ministry shall not relieve the Contractor from its obligation to perform the Work in accordance with the Contract.

The Ministry Representative may reject any work which, in its opinion, does not comply with the requirements of the Contract. The Contractor shall bear the cost of re-inspection of any rejected components of the Work.

The Contractor shall notify the Ministry Representative at least fourteen (14) days prior to fabrication or installation of each component of the Work. The Contractor shall allow the Ministry Representative access to all parts of the Work and shall supply such information and assistance as is required. The Contractor shall provide samples of any materials as requested by the Ministry Representative

(f) Payment

Payment for the Precast Concrete Box Culverts will include all work within the payment envelope shown on the Drawings and will be made at the Lump Sum price bid. Payment under this Item will include the following:

- Design, fabrication, transportation and installation of the precast concrete box culverts including precast concrete components, bedding materials, joint gaskets and geotextiles, submission of shop drawings, installation procedures, inspection and field reviews, Letters of Assurance and all quality control.
- Foundation excavation for the precast concrete box culverts, cast-in-place concrete headwall, and bridge end fill including any dewatering or temporary structures as required for the safety of workers and adjacent structures and to accommodate any construction staging requirements.
- Supply and placement of base materials, culvert embedment materials and backfill for the box culverts and headwall including all quality to verify that the completed fill meets the specified requirements; and
- Creek diversion(s) required to facilitate the Contractor's construction staging and final channel commissioning after installation of the precast concrete box culverts is complete. The creek diversion must provide sufficient capacity to by-pass a minimum of the 10-year

flow during construction. Stream diversions shall only be implemented during the least risk window. The Contractor shall base the required capacity off of 7m3/s.

The Ministry recognizes there is significant effort required for the design, fabrication and installation of the precast concrete box culverts. The Ministry Representative may authorize interim progress payments if requested.

6.01 High Flow Culvert

(a) General

High Flow Culvert shall be a reinforced concrete pipe in accordance with ASTM C 76 – Class III or HDPE pipe in accordance with ASTM D3350 and shall be supplied and installed in accordance SS 582.

(b) Measurement

Contrary to SS 303.80 measurement shall be per Each.

(c) Payment

Contrary to SS 303.90, payment for High Flow Culvert will be per Lump Sum bid, and does not include excavation. Excavation shall be considered with the particular type of excavation as identified in SP 2.05 Roadway and Drainage Excavation.

Payment for Riprap at culvert inlets and outlets shall be made in accordance with the riprap section of these Special Provisions SP 3.05.

6.02 Silane Surface treatment

The Contractor shall treat the top and both faces of cast-in-place concrete parapets, the top and exposed vertical faces of copings, and the vertical outside faces of cast-in-place retaining walls with a silane solution in accordance with SS 418.

Payment for silane surface treatment will be made at the Unit Price Bid per Square Metre in accordance with SS 418.08.

6.03 Mechanically Stabilized Earth Walls

(a) General

The following retaining walls incorporate a mechanically stabilized earth (MSE) retaining wall system that shall be designed, supplied and installed under this Contract as a proprietary structure:

- H7 River Rd Wall No. 10422R
- H7 Median Wall at 285th No. 10426
- H7 EB at 285th #1 Wall No. 10439
- H7 EB at 285th #2 Wall No. 10490

Drawings have been included in the Contract Document Package which shows the general arrangement and details of the MSE Wall. The proprietary wall structure shall include:

- Excavation and backfill for the MSE retaining wall system.
- Design, supply and installation of all precast concrete facing panels and galvanized steel soil reinforcement and connections.
- Design, supply, placement and compaction of structural backfill materials.
- Design, supply and installation of reinforced cast-in-place concrete copings and levelling pads.

- Design, supply and installation of all related drainage materials including piping, filter fabrics and drain rock, and.

The Contractor shall ensure that the proprietary MSE retaining wall is designed, supplied and constructed in accordance with the Contract Documents and that the structure meets all of the Project requirements.

(b) Project Requirements

The MSE wall must be designed, supplied and constructed to satisfy the following:

- The MSE wall shall be supplied from one of the following pre-qualified proprietors who are included in the current edition of the Ministry's Recognized Products List under the heading "Proprietary Structures" in the appropriate category: **Table 29**

WALL NAME AND NUMBER	WALL TYPE	WALL FACING	SOIL REINFORCEMENT TYPE
H7 River Rd Wall No. 10422	"Retaining Walls- (up to 9 m in height)"	Precast Concrete Panel Facing	Inextensible Steel Straps or Extensible Strips
H7 Median Wall at 285 No. 10426	"Retaining Walls- (up to 9 m in height)"	Precast Concrete Panel Facing	Inextensible Steel Straps or Extensible Strips
H7 EB At 285th #1 Wall No. 10439	"Retaining Walls- (up to 9 m in height)"	Precast Concrete Panel Facing	Inextensible Steel Straps or Extensible Strips
H7 EB At 285th #2 Wall No. 10490	"Retaining Walls- (up to 9 m in height)"	Precast Concrete Panel Facing	Inextensible Steel Straps or Extensible Strips

- The structure shall conform to the general arrangement shown on the Drawings. All references to horizontal and vertical alignments shall be maintained as shown. All details, including minimum levelling pad embedment depths, subsurface drainage, cast-in-place concrete copings and pedestrian fences, etc., shall be incorporated into the final design.
- Soil reinforcement shall be inextensible galvanized steel strips, galvanized smooth steel wire grids or extensible geogrids strip. The reinforcement length shall be uniform throughout the entire height of the wall unless otherwise noted.
- Walls shall have a cast-in-place concrete coping as shown on the Drawings.
- A galvanized steel welded pedestrian fence shall be anchored along the top of the MSE wall copings as shown on the Drawings

(c) MSE Wall Embossed Art Work

At time of Tender the Ministry has not finalized the details of the MSE Wall Embossed Art Work. The Contractor shall make an allowance in their bid for five (5) custom form-liners to be fabricated. The Ministry expects to provide the Contractor with the details of the MSE Wall Embossed Art Work by February 1, 2023. The Contractor shall make schedule allowances to facilitate this timing.

Precast concrete facing panels with embossed artwork cast into the facing of the panels at locations provided by the Ministry. The Contractor is responsible for:

- Providing feedback on conceptual artist design to ensure compatibility with precast panel fabrication

- All design, fabrication and construction required to incorporate the embossed precast panels into the retaining walls
- Fabrication and procurement of formliners, including preparation of shop drawings
- Providing mockups of embossed panels for Ministry acceptance
- Production of precast panels using formliners
- Verification of orientation of precast panels upon placement

(d) Design Requirements

The Contractor shall be responsible for the design of the MSE wall for external stability (sliding, overturning and bearing pressure) and internal stability (structural design of wall components including soil reinforcement, facial panels, facial panel connections to soil reinforcement and pull out etc.) for all applicable limit states.

The Ministry will be responsible for determining the global stability (slope stability, settlement and bearing capacity) of the MSE wall system. Therefore, as part of its design review process, the Ministry may impose specific limits on some parameters such as footing location, size and shape, pressure distribution on the footing and backfill, stress/strain/deformation parameters, and drainage assumptions.

The Contractor shall be responsible for supply of all services required to provide engineering assurance for all elements of the MSE wall design and construction in compliance with the Ministry's Technical Circular T-06/09 "Engineer of Record and Field Review Guidelines" (the EOR Guidelines) as contemplated for "design-build" works in Appendix 2 to the EOR Guidelines.

The technical circular is available on-line at:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t06-09.pdf

In interpreting the EOR Guidelines, Appendix 2 for the MSE wall works in this Contract, the "Lead" shall be the Contractor.

Without limiting the obligations of the Contractor and the MSE wall Supplier under the EOR Guidelines, the Contractor shall retain and be responsible for:

- An Engineer of Record (MSE EOR) for the MSE wall; and
- Field reviews by or under the direct supervision of the MSE EOR or other professional engineer acceptable to the EOR.

The Contractor shall identify:

- The MSE EOR at the commencement of design, and.
- The MSE Field Reviewer in the Proprietary Structure Design Report.

Letters of Assurance in compliance with the EOR Guidelines shall be submitted as follows:

- With the Proprietary Structure Design Report.
  - Assurance of Professional Design and Commitment for Field Review.
- Within the earlier of sixty (60) days following MSE wall completion or prior to the issuance of the Completion Certificate or use of the facility by the public.
  - Assurance of Coordination by Coordinating Professional Engineer (if applicable).
  - Assurance of Professional Design Post Construction.
  - Assurance of Field Reviews and Compliance, and.
  - Structure Record Drawings.

The MSE wall Supplier shall provide its Letters of Assurance to the Contractor who, after having performed Quantity Control on the submissions, shall forward them to the Ministry Representative. All Letters of Assurance shall be in favour of the Ministry.

(e) Design Criteria

Table 30: Design Criteria for MSE Wall

1. Design Life	75 years 100 years for corrosion loss calculations
2. Design Codes	In order of precedence and using the most current versions of: • BC MoTI Bridge Standards and Procedures Manual Volume 1 – Supplement to CHBDC S6-14 • CSA S6-14 • AASHTO LRFD Bridge Design Specifications 9th Edition, 2020 • FHWA-NH1-00-024/025 "Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes"; Vol. 1 and 2 (Berg et al. 2009) In the case of any discrepancies between the specified design codes and these Special Provisions and/or Drawings, these Special Provisions and/or Drawings shall govern.
3. Seismic Design	The MSE walls shall be designed to avoid collapse under the 5% in 50-year earthquake. The site peak ground acceleration (PGA) for this earthquake is 0.223g.
4. External Loads (unfactored)	All external loads shall be accounted for in the design including: Design Horizontal Loads: (at 1.05 m above top of coping): • P = 1.2 kN/m (safety rail) Traffic Surcharge: • LSchg. = 16 kPa
5. Soil Parameters, Allowable Bearing Pressure and Settlement	Structural Backfill (Reinforced Zone): • Unit weight: 21 kN/m^3 • Internal friction angle: ϕ = 36° Retained Backfill: • Unit weight: γ = 21 kN/m^3 • Internal friction angle: ϕ = 34° • Cohesion: c = 0 kPa Subgrade Soil: • Unit weight: γ = 19 kN/m^3

	• Internal friction angle: ϕ = 29° • Factored ULS Bearing Resistance: 300 kPa for H7 Median Wall at 285 No. 10426R and H7 EB At 285th #1 Wall No. 10439R 500 kPa for H7 River Rd Wall No. 10422R 250 kPa for H7 EB At 285th #2 Wall No. 10490R • Factored SLS Bearing Resistance: 200 kPa for H7 Median Wall at 285 No. 10426R and H7 EB At 285th #1 Wall No. 10439R 500 kPa for H7 River Rd Wall No. 10422R 150 kPa for H7 EB At 285th #2 Wall No. 10490R Interface friction coefficient at wall base: • The lower of tan (29^{O}) for discontinuous reinforcement or tan (friction angle between reinforcement and structural backfill (reinforced zone)) for continuous reinforcement Settlement: The wall shall be designed to accommodate post-construction, long-term, total settlement up to 100 mm and differential settlement up to 10 mm/m.
6.Corrosion Protection	All steel soil reinforcement shall be galvanized in accordance with ASTM A123M and ASTM A153M as applicable. Corrosion rates shall be computed in accordance with AASHTO LRFD Bridge Design Specifications, 9th Edition, for each exposed surface in contact with the backfill materials as follows: Galvanization loss is equal to: • 15 micrometers/year for first 2 years • 4 micrometers/year for subsequent years Carbon steel loss is equal to: • 12 micrometers/year after zinc depletion. Service Life: 100 years
7. Soil Reinforcement Length	The minimum soil reinforcement length provided for retaining walls shall be the maximum of: • 70% of the wall height, H[1], as measured from the levelling pad; or • 100% of the wall height, H[1], as measured from the levelling pad for H7 River Rd Wall No. 10422R when above bedrock horizon. • 2400 mm; or

	• Higher values as indicated on the Drawings • Reinforcement length shall be increased as required for surcharges and other external loads
8. Aesthetics	The top of the wall, whether level or sloping, shall be finished in straight line segments no shorter than 5 m in length. The wall coping shall be cast-in-place concrete finished to a Class 2 surface finish in accordance with SS 211. The coping shall be installed on a smooth curvilinear alignment to suit the top of the MSE wall with no abrupt deviations in horizontal or vertical alignment. The wall system shall include precast concrete facial panels which shall be supplied with a Vertical Grave Stake finish or approved equivalent and the Ministry supplied artwork design.
9. Acute Angle Corners	Wall corners with an included angle of less than seventy (70) degrees shall be designed for bin-type lateral pressures for the extent of the wall where the full length of the reinforcement cannot be installed without encountering a wall face. Acute angle corner structures shall not be stand-alone separate structures. Design calculations shall be provided to demonstrate deformation compatibility between the acute angle corner structure and the rest of the MSE wall. Full-height vertical slip joints shall be provided at the acute angle corner and after the last column of panels where the full length of reinforcement can be placed. The soil reinforcement attached to the slip joints shall be orientated perpendicular to the slip joint panels and shall be the full design length. Special connection and compaction details shall be provided in the Proprietary Structure Design Report.
10. Horizontal Deflection of Reinforcement	Obstructions, such as catch basins or storm drain crossings, in the soil reinforced zone shall be avoided by adjusting the reinforcement as described below. In the horizontal plane at a reinforcement level, a deviation up to fifteen (15) degrees from the normal to the face of the wall may be allowed for strip reinforcement and bolted connection (referred to as splay angle). Grid reinforcement may not be splayed unless the connection has been specifically fabricated to accommodate a splay and the connection detail has been approved by the Ministry. If approved, the splay in grid reinforcement shall be limited to fifteen (15) degrees. For obstructions that cannot be accommodated with splayed reinforcement, structural frames and connections shall be required, and shall be designed in accordance with CSA S6 for the maximum tension in the reinforcements. The structural frame shall be designed such that bending moments are not generated in the soil reinforcement or the connection at the wall face. The design, along with supporting calculations, shall be included in the Proprietary Structure Design Report.

11. Vertical Deflection of Reinforcement	Vertical deflection of the soil reinforcement to avoid obstructions such as utilities along the wall face shall be limited to a maximum of fifteen (15) degrees from normal to face of wall. Bends in the reinforcement shall be smooth and gradual to avoid damage to the galvanized coating.

[1]Wall Height, H, is defined as the difference in elevation between the top of the wall at the wall face (i.e., where the finished grade intersects the back of the wall face) and the top of the levelling pad.

(f) Proprietary Structure Design Report

The Contractor shall submit a Proprietary Structure Design Report to the Ministry Representative which has been prepared by the MSE wall Supplier and consists of all information necessary for the design, fabrication, transportation, quality control and installation of the proprietary structure, including but not limited to the following: Covering letter sealed by the proprietary design engineer or MSE EOR.

- Complete set of design calculations and notes including:
  - a list of all assumptions made in the design.
  - verification of design methodology and applicable design codes and standards.
  - a summary of geotechnical constraints and soil parameters.
  - a summary of loading conditions and load cases considered including force diagrams showing the magnitude, location and direction of all forces and resulting foundation loads including load inclination angles, effective footing width and bearing pressures for each load case.
  - service life calculations in accordance with the design criteria for corrosion rates.
  - backfill envelope details including details of any wall drainage and any other special details, and.
  - seismic design.
- Fabrication and installation drawings including:
  - a plan view of the wall system showing all information required for layout of the wall structure.
  - elevation views showing original and final ground profiles, designations and locations of the various panel types and all other elevations and dimensions required to construct the Work.
  - details and typical sections of all proprietary and associated components including soil reinforcement size, type and lengths, limits of excavation and structural backfill, drainage details, component layout, leveling pads, copings, movement joints, and drainage structures.
  - complete fabrication/shop drawings for each panel type.
  - notes listing design codes, design criteria, unfactored applied loads and material and construction specifications, and.
  - details and requirements for off-loading and handling of MSE wall components and stockpiling on Site prior to installation.

Fabrication and installation drawings shall include one full sized reproducible drawing set (approximately 600 mm x 850 mm). Lettering for notes and dimensions shall be at least 2.5 mm and 4 mm for headings. Drawings shall be legible when reduced to a half-sized format.

- Complete material and construction specifications including:
    - a field construction manual describing in detail, the step by step installation and backfilling process including equipment to be used, monitoring requirements and details of any temporary supports and bracing as required for installation as well as details of any excavation protection schemes and other temporary works, and.
    - identification and specification for materials and other work required under this Item, identifying where applicable, materials and work which will be provided by a proprietary structure supplier and materials and other work which will be supplied by the Contractor.
- Work Schedules and details including:
    - fabrication location and schedule.
    - delivery details and schedule, and.
    - excavation and installation schedule.
- Quality control procedures including:
    - a listing and description of the quality control procedures and installation tolerances required by the proprietor to verify that the completed structure will conform with its design requirements and will be fabricated and constructed in compliance with the Contract.
    - Identification of the MSE CPE and MSE Field Reviewer and providing the Assurance of Professional Design and Commitment for Field Review form as referenced in the EOR Guidelines. The form shall be signed and sealed by the MSE EOR responsible for design of the proprietary structure. The form to be submitted is available at:

      https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t06-09.pdf

The Contractor shall submit four (4) complete copies of the Proprietary Structure Design Report to the Ministry Representative a minimum of six (6) weeks prior to commencement of the MSE wall component fabrication work.

The Proprietary Structure Design Report shall be sealed by the MSE wall supplier's Engineer of Record, who shall be a professional engineer, registered in the province of British Columbia, with experience in the design and construction of similar structures.

The Ministry will review the submissions for general compliance with the Contract requirements.

If modifications are required, the Ministry Representative will return one (1) marked up copy of the Proprietary Structure Design Report to the Contractor. The Contractor shall have the appropriate revisions carried out and resubmit four (4) complete copies of the revised Proprietary Structure Design Report to the Ministry Representative for further review.

If no exceptions are taken, the Ministry Representative will return one (1) set of the reviewed Proprietary Structure Design Report to the Contractor. The Contractor shall forward an additional two (2) copies of the reviewed report to the Ministry Representative.

Any work done or materials ordered prior to the completion of the review process shall be at the Contractor's risk. Installation of the MSE wall will not be allowed to proceed prior to the completion of the Ministry's review of the Proprietary Structure Design Report.

The Contractor shall ensure that the Proprietary Structure Design Report is complete and in compliance with the Contract requirements. Incomplete or non-compliant submissions may, at the sole discretion of the Ministry Representative, be returned to the Contractor for resubmission

without review. Any delays to the Contractor's work schedule caused by incomplete submissions shall be the sole responsibility of the Contractor to remedy.

Any additional costs incurred by the Ministry for additional review of resubmissions will be back charged to the Contractor and will be recovered by the Ministry via deduction payments on the progress estimate. For this Contract, the Ministry will provide review of the original submission plus one resubmission at no cost to the Contractor.

The Ministry's review of the Proprietary Structure Design Report will not relieve the Contractor from its obligation to perform the work in accordance with the Contract.

(g) Construction Monitoring

The Contractor shall employ personnel with experience in the fabrication and construction of similar structures and ensure the retention of a professional engineer to fulfill the obligations of Field Reviewer in accordance with the EOR guidelines.

The Contractor's MSE wall Supplier shall provide a qualified and experienced representative to advise the Contractor on installation procedures and to resolve any construction problems. The MSE wall Supplier's representative shall be available as needed throughout the fabrication and construction of the structure.

The Contractor shall implement a quality control program and provide quality control documentation in accordance with the following:

Table 8: Required Quality Control Documentation

Component	Requirement
Cast-in-place Concrete	Provide concrete mix designs and strength test results to the Ministry Representative in accordance with SP 4.08 Cast-in-Place Concrete and SS 211.
Precast Concrete	Provide concrete mix designs, aggregate test results and strength test results to the Ministry Representative and perform Quality Control as required by SS 415.
Steel	Provide copies of the following to the Ministry Representative: • Mill certificates giving chemical and physical properties • Test reports confirming galvanizing in accordance with SS 422.36.
Structural Backfill	Provide test results to the Ministry Representative to verify that the structural backfill meets all material, placement and compaction criteria as specified in the Contract Documents and the requirements of the proprietary structure designer. Tests on structural backfill materials shall include but not necessarily be limited to sieve analysis, electrochemical tests, resistivity analysis, pH analysis, laboratory proctor density tests, aggregate density tests and in-situ density tests.

Unless more stringent tolerances are specified by the MSE wall designer, the completed structure shall meet the following tolerances:

Table 32: Tolerances for Completed MSE Wall

Horizontal Dimension	± 25 mm
Elevations	± 25 mm
Variations from Plumb or Batter	1:100 but not more than 30 mm
Reinforcement Elevation	± 50 mm variation from design
Line on Coping	Such that no abrupt deviations are visible

A minimum of two (2) weeks prior to fabrication, the Contractor shall submit to the Ministry Representative, a detailed quality control program for monitoring fabrication and construction of the MSE wall system. The program shall be approved and endorsed by the MSE wall Supplier, the MSE Engineer of Record and the MSE Field Reviewer.

The Quality Control program shall include but may not be limited to:

- Stages at which fabrication and construction monitoring is to be performed.
- Identification of those responsible for each aspect of the quality control program (e.g., MSE Field Reviewer, a person under the direct supervision of the Field Reviewer, or a third party)
- Method, frequency and location of measurement and testing.
- Allowable deflections or movement.
- Procedures to be followed if allowable deflection or tolerances are exceeded and, if procedures include a stoppage of work, details of corrective action to be taken as a prerequisite to resuming work.
- Availability of on-site documentation including installation procedures, Fabrication and Installation Drawings, Letters of Assurance, WorkSafeBC inspection reports, and Quality Control Reports for off-site manufactured components.
- Identification and contact information for the MSE wall Supplier's designated site representative.

A detailed schedule, updated at the start of each work week, indicating when inspections shall be performed and when the designated site representative(s) will be on Site.

(h) Post Construction Documentation

During fabrication and construction, the Contractor shall be responsible for coordinating and tracking any changes to the accepted fabrication and installation drawings that may be required during construction. Coordination shall consist of reporting and approving all such changes with the MSE EOR, the MSE Field Reviewer and the Ministry Representative. Tracking shall consist of maintaining a record of all such changes to the accepted fabrication and installation drawings on a set of field mark-up drawings which will be used for production of the record drawings for the structure.

After construction, the Contractor shall forward the field mark-up drawings to the MSE wall Supplier who shall modify the accepted fabrication and installation drawings to incorporate all field changes, using the same format as the accepted submission, and noting the revision as "Record Drawings". The record drawings shall be signed and sealed in accordance with the EOR

Guidelines by the MSE EOR and submitted, by the Contractor, to the Ministry Representative for review and acceptance.

The Contractor shall also provide an Assurance of Professional Design – Post Construction for the structure to the Ministry Representative as referenced in the EOR Guidelines. The form shall be signed and sealed by the MSE Field Review Engineer. The form to be submitted is available at:

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2009/t06-09.pdf

(i) Quality Assurance

The Ministry Representative will implement a quality assurance program by auditing the Contractor's quality control program and by conducting inspections of the Works at its discretion. Audit and inspection by the Ministry shall not relieve the Contractor of any obligation to perform the work in accordance with the Contract.

The Ministry Representative may reject any work which, in the opinion of the Ministry Representative, does not comply with the requirements of the Contract. The Contractor shall bear the cost of re-inspection of any rejected components of the Work.

The Contractor shall notify the Ministry Representative at least fourteen (14) calendar days prior to fabrication or installation of the structure. The Contractor shall allow the Ministry Representative access to all parts of the Work and shall supply such information and assistance as is required. The Contractor shall provide samples of any materials as requested by the Ministry Representative.

(j) Supply and Installation

The Contractor shall perform the work in accordance with the accepted Proprietary Structure Design Report, and the Contract requirements:

(i) Cast-in-Place Components

All reinforcing steel supplied under this Item shall meet the requirements of SP 4.07 Reinforcing Steel.

All formwork supplied under this Item shall meet the requirements of SP 4.06 Formwork and Falsework.

All cast-in-place concrete supplied under this Item shall meet the requirements of SP 4.08 Cast-in-Place Concrete.

Concrete coping shall contain control joints aligned with edges of facing panels and spaced no more than 3.0 m c/c. The coping shall be attached to the facing panels with at least 2-15M dowels cast into the top of each facing panel.

SECTION 7Concrete for MSE Wall Panels

SS 415 shall apply to the supply and installation of precast concrete components as modified by this clause.

Concrete shall be supplied in accordance with and meet the finish requirements set out in SP 4.08 Cast-in-Place Concrete.

Reinforcing inside the MSE wall panels shall be deformed billet steel reinforcing bars conforming to CSA G30.18 Grade 400W or welded deformed steel wire fabric conforming to ASTM A-1064M with yield strength of 484 MPa.

All reinforcing steel inside the panels shall be uncoated.

Minimum concrete cover to reinforcing steel shall be 50 mm from all faces.

SECTION 8Metal Components

SS 422 shall apply to metal MSE wall components.

SECTION 9Foundation Excavation and Sub-excavation

Foundation Excavation shall be as indicated in SP 4.04 Foundation Excavation and Backfill.

(ii) Structural Backfill

The Contractor shall supply and place structural backfill to the limits shown on the accepted fabrication and installation drawings.

Structural backfill is defined as the volume of backfill material that extends from the back face of the MSE wall facing to a vertical plane intersecting the ends of the longitudinal MSE wall soil reinforcement between the underside of the MSE wall levelling pad and the roadway gravels.

Structural backfill shall meet the requirements of SS 201.40 Bridge End Fill.

Structural backfill material shall also meet the following electrochemical requirements in accordance with the associated test method:

- pH of 5 to 10 (AASHTO T289)
- resistivity not less than 3000 ohm centimetres (AASHTO T288)
- chlorides not greater than 100 ppm (AASHTO T291)
- sulphates not greater than 200 ppm (AASHTO T290)
- organic content not greater than 1% (AASHTO T267)

Drainage course material shall be installed as shown on the Drawings. The gradation of drainage course material shall be in accordance with SS 407, Table 407-A Drainage Course Material Gradation.

(iii) Drainage Structures

The Contractor shall supply and install all solid and perforated PVC drainage pipes, drain rock and geotextiles as shown on the Drawings.

(k) Measurement

Measurement for Mechanically Stabilized Earth (MSE) Retaining Wall area shall be based on the exposed wall areas bounded by the finished grade at the front face of the wall and the top of the wall (TOW) elevation shown on the Drawings. Payment envelope shall be as shown on the Drawings.

(l) Payment

Payment for Mechanically Stabilized Earth (MSE) Retaining Wall will be made at the Unit Price Bid per Square Metre. Payment shall be for all works associated with the design, supply, installation, quality control and professional assurance of the MSE wall systems within the payment envelopes shown on the Drawings. Payment under this Item shall include:

- Submission of an acceptable Proprietary Structure Design Report including complete fabrication and installation drawings, design documentation, Letters of Assurance, construction material specifications, work schedules and quality control requirements.
- Design, installation and removal of any temporary staging requirements.
- Design and construction of all back slopes including excavation protection schemes.
- Design, supply and installation of cast-in-place concrete levelling pads.

- Design, supply and installation of all required drainage works behind the MSE wall systems and outlets.
- Design, supply and installation of all components of the MSE walls including, but not necessarily limited to, precast concrete wall face panels, soil reinforcements, connection elements and filter fabric.
- Design, supply, placement, compaction, laboratory and in-situ testing of all structural backfill materials.
- Design, supply and installation of all reinforced, cast-in-place concrete copings.
- Design and implementation of a quality control and construction monitoring program for the design, fabrication and installation of the MSE walls.
- Inspection and field reviews by proprietor's design engineer of record for the structure; and
- Submission of structure record drawings and Letters of Assurance for the completed works.

The Ministry recognizes there is significant effort required for the design and fabrication of the components making up Mechanically Stabilized Earth Walls. The Ministry Representative may authorize interim progress payments if requested.

9.01 Precast Concrete Interlocking Modular Block Retaining Walls

(a) General

The Contractor shall supply all materials and install smooth faced interlocking concrete block retaining walls as shown on the Drawings.

(b) Concrete Blocks

Precast concrete interlocking modular blocks shall be in accordance with SS 942

(c) Levelling Pad

A leveling pad shall be installed below the first layer of blocks as shown on the Drawings. The 25 mm WGB material shall be in accordance with SS 202 and compacted to 100% Standard Proctor Density as determined by the applicable method of ASTM Standard D698.

The leveling pads are to be constructed under dry conditions.

(d) Wall Drainage

The Contractor shall supply and install a perforated PVC sub-drain pipe along the entire length of wall and low points shall have a discharge pipe tee to the face of the wall.

The drain shall consist of perforated rigid pipe and shall be surrounded on all sides with at least 150 mm of Type 2 Filter Gravel in accordance with drawing SP303-06. The drain pipe and surrounding rock shall be wrapped in a non-woven geotextile with a minimum puncture resistance of 0.350 kN (ASTM D 4833) and a minimum flow rate of 4850l/min/m^2 (ASTM D 4491).

The drain pipe shall be sloped at a minimum gradient of 0.5% and connected to a positive drainage outlet to the satisfaction of the Ministry Representative.

(e) Bridge End Fill

Bridge End Fill shall be in accordance with SP 4.05 Bridge End Fill and as shown on the Drawings. Only hand-operated compaction equipment shall be allowed within 1m of the back face of the block wall.

Placement of the bridge end fill material shall closely follow the erection of successive courses of blocks.

(f) 10 kg RipRap

10 kg Riprap shall be in accordance with SP 2.07 and as shown on the Drawings. Only hand-operated compaction equipment shall be allowed within 1m of the back face of the block wall.

Placement of the 10 kg Riprap material shall closely follow the erection of successive courses of blocks.

(g) Construction and Tolerances

Concrete block elements shall be placed on a graded and compacted base to within the tolerances stated below:

- Vertical and Horizontal Alignment ± 20 mm in 3000 mm
- Overall vertical tolerance ± 20 mm (measured from top to bottom)

Component placement shall not vary more than 25 mm in plan or more than 12 mm from grade.

The first layer of blocks shall be placed so that a minimum of 500 mm of the block face is buried in the original ground. The second layer of blocks shall normally be placed after ten (10) bottom layer blocks have been placed, aligned and the keyways cleared of debris

Compacted 25 mm granular material shall be used for the toe fill as shown on the Drawings. The toe fill shall be placed after the first level of blocks has been placed.

(h) Measurement

Measurement for Interlocking Concrete Block Walls shall be made on the full front face from the underside of the bottom block to the top of the top block across the entire length of the wall, which includes all steps.

(i) Payment

Payment for Interlocking Concrete Block Walls will be made at the Unit Price Bid per Wall and shall be full compensation for everything furnished and done within as shown on the Drawings. Payment includes quality control, supply and installation of a granular leveling pad, interlocking concrete blocks, geogrid reinforcement, perforated drain pipe, drain rock, and geotextile.

Payment for excavation shall be in accordance with Type D excavation.

Payment for Bridge End Fill shall be in accordance with SP 4.05

9.02 Concrete Swale

(a) General

The Contractor shall supply all labour, materials, equipment and services to construct a concrete drainage swale as shown on the Drawings. The swale shall be constructed after MSE wall facing is completed or after the CIP coping has been constructed. The Contractor shall use an approved bond breaker between the drainage swale wall facings/CIP coping and shall seal the top of all vertical joints between swale and adjacent concrete elements as shown on the Drawings.

Concrete for the drainage swale shall meet the requirements of “Retaining Wall Concrete” in SP 4.08 Cast-in-Place Concrete.

Welded wire mesh shall meet the requirements of ASTM A1064M, have a minimum yield strength of 485 MPa (Grade 75) and be galvanized. Minimum cover for the welded wire mesh shall be 50 mm.

Payment

Payment for concrete swale shall be made at Unit Price Bid per Linear Metre. Payment shall include quality control; submittals; trenching; base gravel placement, compaction and shaping; supply, shipping, cutting and placing of welded wire mesh reinforcement; supply, placing, consolidating, finishing and curing of cast-in-place concrete; and preparation of all construction joints and control joints irrespective of their location, and the supply and installation of joint fillers.

9.03 Steel Sidewalk Fence

The Contractor shall supply, fabricate, and install Steel Sidewalk Fence as shown on the Drawings and in accordance with SS 316, SS 422 and SS 741. All steelwork shall be galvanized after fabrication.

Steel Sidewalk fence shall conform to SP 741-07.01.

Railing shall be adjusted to produce uniform height and smooth alignment.

Payment for Steel Sidewalk Fence will be made at the Unit Price Bid per Metre. Payment shall include shop drawings and supply, fabrication, galvanizing and installation of anchor bolts and fence, including the supply and placing of grout and shims, and concrete footings if required.

The length of fence shall be taken as the out-to-out length of metalwork.

9.04 Parapet Railing

The Contractor shall supply, fabricate and install the steel railing and steel components of the parapet railing system as shown on the Drawings and in accordance with SS 422. All steelwork shall be galvanized after fabrication.

Railing shall be adjusted to produce uniform height and smooth alignment.

Payment for railing will be made at the Unit Price(s) per metre bid. Payment shall include shop drawings and supply, fabrication, galvanizing and installation of anchor bolts and railing, including the supply and placing of grout and shims if required.

The length of railing shall be taken as the out-to-out length of metalwork.

9.05 Bridge Parapet Transition Barrier

The Contractor shall fabricate bridge parapet transitions in accordance with SS 941, Drawing SP941-03.04.01, and the Drawings and install at the locations shown on the Drawings.

The Contractor shall fabricate transition barriers in accordance with SS 941 and Drawings SP941-02.01.01 to SP941-02.01.04, and the Drawings and install at the locations shown on the Drawings.

Payment for bridge parapet transitions and transitions barriers will be made at the Unit Price bid per Each and shall be considered full compensation for supply, shipping, storage and installation.

SECTION 10 PAVING

10.01 General/End Product Specifications

(a) Applicable Specifications

SS 502 – Asphalt Pavement Construction (EPS) and SS 505 – Use of Reclaimed Asphalt Pavement in Asphalt Pavement Construction shall apply to the Work unless otherwise specified herein.

(b) Illumination of Work

Should night-time paving be performed on this Project, the Contractor shall supply, install and maintain adequate lighting so as to fully illuminate the Work to the satisfaction of the Ministry Representative. Tower lighting will be required. Pavement rolling equipment shall be equipped with adequate individual auxiliary lighting units. The Contractor shall provide auxiliary lighting such that the lamps can be adjusted or tilted so as not to be a safety hazard to traffic. Tube cones and pylons shall be equipped with reflective bands to provide maximum visibility. All costs of illumination shall be considered incidental to the Work and no additional payment will be made.

(c) EPS Payment Adjustments

A Provisional Sum Item has been included as a source of funds for EPS Payment Adjustments.

Smoothness Testing Variance: Further to SS 502.57.04 the following additional areas will be excluded from Smoothness reject limits.

- Side Roads

The areas outlined above are not exempt from the requirements of SS 502.57.09 Smoothness Deficiencies

10.02 Supply Asphalt Mix Aggregate in Stockpile

(a) General

The Contractor shall be responsible for all costs to supply any supplemental aggregates, if required.

(b) General Requirements for the Production of Aggregate

The following are general requirements for the production of aggregate which are in addition to any other requirements specified in these Special Provisions and the Standard Specifications:

(i) Quality Control

The Contractor shall carry out quality control and performance procedures and ensure that all requirements including material and product testing and documentation are achieved. The Contractor shall ensure that the Ministry Representative is provided with all documented test results to confirm that specifications are met.

The Contractor shall obtain samples from the stockpile area or from a location approved by the Ministry Representative using random sample techniques. The minimum frequency of testing shall be in accordance with SS 502 Appendix 502-A – Table 502-Q: - Guidelines for Minimum Test Frequencies.

If a QC test determines that the aggregate does not meet the specified requirements, the crusher operator shall be immediately notified and any additional material produced shall be stockpiled separately until such time that the specifications are met. Any out-of-specification findings shall be logged and immediately reported to the Ministry Representative.

(ii) Companion Sampling

When the Contractor takes samples for testing during aggregate production, companion samples shall also be obtained from the splitting process which may be tested by the Ministry Representative.

Companion samples shall be identified, dated, and numbered according to the Contractor's sequential testing numbers and retained by the Contractor for at least fourteen (14) days, after which time the Contractor may seek permission from the Ministry Representative to discard them.

(iii) Quality Assurance

The Ministry, or such other party, may perform quality assurance testing on the companion samples and/or material in stockpile. The purpose of quality assurance testing is to ensure that payment is made only for acceptable works/products, and may be based on a limited amount of sampling and testing.

The Ministry may decide that the Contractor's quality control test results/records will be sufficient to determine payment. The Ministry will monitor and may audit the quality control work to ensure compliance with the Contractor's Quality Control Plan.

(c) Asphalt Mix Aggregate

The Contractor shall supply Asphalt Medium Mix Aggregate in split stockpiles at the Contractor's plant site. This aggregate shall be used for all Top Lift, Bottom Lift and Level Course asphalt pavement production on this Project.

Asphalt medium mix aggregate shall meet the requirements of SS 502.06 and the gradation shall conform to Table 502-C-1.

Contrary to SS 502.06.05(b)(iv), the manufactured fines content shall be 70% of the fines aggregate.

Payment for the Asphalt Medium Mix Aggregate in Stockpile will be made at the Unit Price bid per Tonne and shall be considered full compensation for everything furnished and done in accordance with SS 502.35.

(d) Shoulder Aggregate

The Contractor shall supply Shoulder Aggregate in a single stockpile in accordance with SS 202 and SS 502. This material shall be used for the construction of the Shoulders.

Payment for Shoulder Aggregate will be included in the Unit Price bid for Shouldering. No separate payment will be made for Shoulder Aggregate in stockpile.

10.03 Emulsified Penetrating Primer

(a) General

Application shall be in accordance with SS 502.21 except as modified in these Special Provisions.

All vertical surfaces in areas to be paved shall be hand sprayed with tack coat.

The Contractor shall exercise caution before spraying the primer on the roadway to ensure absolutely no contamination will occur to any watercourse. This will mean not spraying when the weather forecast or visual assessment indicates the potential for rain.

(b) Supply Emulsified Penetrating Primer

The Contractor will supply an Emulsified Penetrating Primer, from the current edition of the Ministry's "Recognized Products List", that meets the requirements of SS 952.

Payment for Supply Emulsified Penetrating Primer including, supplying, ordering, receiving, storing, heating and all things necessary for the completion of the Work will be made at the Unit

Price bid per Litre, in accordance with SS 502.34.01, and shall be considered full compensation for everything furnished and done.

(c) Apply Emulsified Penetrating Primer

The Contractor will not dilute the product before spraying, unless approved by the Ministry Representative.

Prepared and accepted granular surfaces to be paved shall be primed at an application rate of 1.5 L/m2, or as approved by the Ministry Representative. Granular surfaces shall be primed to a width of 0.3 m beyond the proposed pavement edge.

Payment for Apply Emulsified Penetrating Primer will be made at the Unit Price Bid per Litre, in accordance with SS 502.34.02, and shall be accepted as full compensation for everything furnished and done in connection therewith.

10.04 Tack Coat

(a) General

Application shall be in accordance with SS 502.21 except as modified in these Special Provisions.

The Contractor shall exercise caution before spraying the tack coat on the roadway to ensure absolutely no contamination will occur to any watercourse. This will mean not spraying when the weather forecast or visual assessment indicates the potential for rain.

(b) Supply Tack Coat

The Contractor shall use a Tack Coat, listed in the current edition of the Ministry's Recognized Products List under "Tack Coats", that meets the requirements of SS 952.

Payment for Supply Tack Coat including supplying, ordering, receiving, storing, heating and all things necessary for the completion of the Work will be made at the Unit Price bid per litre in accordance with SS 502.34.01 and shall be accepted as full compensation for everything furnished and done in connection therewith.

(c) Apply Tack Coat

The Contractor shall not dilute the product before spraying, unless prior approval has been granted by the Ministry Representative.

Milled surfaces to be paved shall be swept clean and tack coated at an application rate of 0.20 L/m^2, or as approved by the Ministry Representative.

Existing or newly placed asphalt pavement shall be tack coated at an application rate of 0.15 L/m^2, or as approved by the Ministry Representative. Tack coating will normally not be permitted more than 300 m in front of the paver and in no case, for a greater distance than can be covered during the remainder of the shift.

Payment for Apply Tack Coat will be made at the Unit Price bid per Litre, in accordance with SS 502.34.02, and shall be accepted as full compensation for everything furnished and done in connection therewith.

10.05 Asphalt Pavement

(a) General

The Contractor shall supply a Class 1, Asphalt Medium Mix. All asphalt pavement course shall be paver laid.

The Job Mix Formula asphalt content for all the Asphalt Mix shall be based on 3.5% air voids, designed and produced. The production mix air voids must be maintained between 2.5% and 4.0%.

If the Contractor elects to use RAP in their Mix Design, the RAP Mix Design shall be based on SS 505.02 Category A – All Numbered Highways.

(i) Asphalt Cement

The Contractor shall supply a Group "A", 80-100 penetration graded asphalt cement from an approved supplier for asphalt mix used on the project.

(ii) Asphalt Cement Price Adjustment

The Ministry will make a payment adjustment, as described below, for the cost of Asphalt Cement (AC) used only in hot mix asphalt pavements for bottom and top lift paving.

This price adjustment is intended to be a sharing by the Ministry in a portion of the Contractor's risk which could result from potentially volatile price fluctuations that might occur throughout the duration of the Contract, and is not intended to serve as a guarantee of full compensation for AC price fluctuations.

The price adjustment is only applicable to the penetration or performance graded asphalt cements used in hot mix asphalt pavements; it is not applicable to AC used in admixes for Hot-in-Place Recycling, or to liquid asphalt, emulsified asphalt, or any other product.

The INDEX Weekly AC index price for this Project will be determined weekly by the Ministry and updated when there is a change in the rack prices, but the change shall only be effective one (1) week after. The AC index price adjustment will be based on the Vancouver BC Road Builders Asphalt index established by industry suppliers. For example, Vancouver BCRBAI index change September 1st, 2022 will only be effective starting September 8th, 2022. The AC price indexes are based on the dates they are applicable, below just an example in a Table format.

The Current fixed INDEX Basic AC index price for this Project is a Vancouver BCRB Asphalt Index of $1255.50/Tonne (Note that this is a fixed value for the duration of the Contract).

The price adjustment per Lot will be determined as:

$$\textbf{AC Price Adjustment} = \mathbf{Q_{Mix}\ X\ \left(\frac{\%AC}{1+\%AC}\right)\ X\ \left(INDEX_{Weekly} - INDEX_{Basic}\right)}$$

Where:

Q_{Mix} = Quantity in tonnes of acceptable asphalt mix laid in the Lot, as Lot is defined in SS 502.53

%AC = The actual percentage of asphalt cement (by dry aggregate) in the acceptable mix laid in the Lot, as determined in accordance with SS 502.53

$INDEX_{Basic}$ = "Basic Materials Index" is the value specified above.

$INDEX_{Weekly}$ = "Weekly Materials Index" in $/tonne, being the AC index price established by the Ministry and in effect during the actual period that the Lot was paved. Contact the Ministry Representative who will provide the applicable value(s).

Where the INDEX Weekly is higher than the INDEX Basic, the above adjustment will result in additional payment to the Contractor; where the INDEX Weekly is lower than the INDEX Basic, the adjustment will result in a reduction in payment due to the Contractor.

The cumulative total of the AC Price Adjustments for all Lots paved during a month will be added by the Ministry Representative to that month's progress estimate in a single line Item.

The AC price adjustment applies only to Items that are measured on a tonnage basis; there will be no AC price adjustment for asphalt measured for payment on a square metre basis or for asphalt not measured but included in pavement under other Items.

Payment for Asphalt Cement Price Adjustment shall be made from the Provisional Sum for Site Modifications.

(iii) Asphalt Mix Anti-Stripping Additives

An anti-stripping agent is to be used in all asphalt pavement in accordance with SS 502.08.03. All costs associated with supplying and blending the additive into the asphalt cement shall be incidental and included in the Unit Price bid for the varying classes and lifts of asphalt mix.

(b) Asphalt Medium Mix - Bottom Lift

Bottom Lift shall be Class 1, Asphalt Medium Mix and placed at 180 kg/m2 or as shown on the Drawings.

The following SS 502-EPS bonus/penalty criteria will apply to Bottom Lift.

- Gradation
- Asphalt Content
- Application Rate
- Density

Payment for Asphalt Medium Mix - Bottom Lift will be made at the Unit Price bid per Tonne in accordance with SS 502.36 and shall be considered full compensation for everything furnished and done.

(c) Asphalt Medium Mix - Top Lift

Top Lift shall be Class 1, Asphalt Medium Mix and placed at 120 kg/m2 as shown on the Drawings.

The following SS 502-EPS bonus/penalty criteria will apply to Top Lift.

- Gradation
- Asphalt Content
- Application Rate
- Density
- Segregation
- Smoothness (Table 502-P – Standard)

Payment for Asphalt Medium Mix - Top Lift will be made at the Unit Price bid per Tonne in accordance with SS 502.36 and shall be considered full compensation for everything furnished and done.

(d) Asphalt Medium Mix – Driveway Paving

Top Lift shall be Class 1, Asphalt Medium Mix and placed at 180 kg/m2 as shown on the Drawings.

The following SS 502-EPS bonus/penalty criteria will apply to Top Lift.

- Gradation
- Asphalt Content
- Application Rate
- Density
- Segregation
- Smoothness (Table 502-P – Standard)

Payment for Asphalt Medium Mix - Top Lift will be made at the Unit Price bid per Tonne in accordance with SS 502.36 and shall be considered full compensation for everything furnished and done.

(e) Base Repairs (CONDITIONAL ITEM)

(i) General

The Contractor shall complete Base Repairs at the locations shown on the Drawings or as directed by the Ministry Representative. Base Repairs will be made to areas with existing asphalt where failures below the existing asphalt are evident. The Contractor shall allow for up to 750mm of excavation from the underside of asphalt at all Base Repair locations. Any Base Repairs beyond 750mm in depth below the underside of asphalt shall be paid through Provisional Sum for Site Modifications.

(ii) Measurement

Measurement will be made per square metre of excavation surface at the top of the excavation.

(iii) Payment

Payment of Base Repair (CONDITIONAL ITEM) will be made at the Unit Price bid per square metre and shall be considered full compensation for all things furnished and done to complete the work including saw cutting existing asphalt, asphalt removal and disposal, excavation, well graded base backfill and compaction, asphalt base paving to match surrounding pavement structure and all materials testing.

10.06 Pavement Drainage

(a) General

Pavement Drainage shall be constructed in accordance with SS 504.

(b) Integral Asphalt Curb

(i) General

The Contractor shall construct integral asphalt curbs at the locations shown on the Drawings and in accordance with SS 504.31 and SS Drawing SP504-01.

(ii) Payment

Payment for Integral Asphalt Curb will made at the Unit Price bid per Metre in accordance with SS 504.94 and shall be accepted as full compensation for everything furnished and done in connection therewith.

Payment for the asphalt mix used in the construction of the integral asphalt curbs will be made at the Unit Price bid per Tonne for top lift asphalt.

(c) Asphalt Spillways

(i) General

The Contractor shall construct asphalt spillways at the locations shown on the Drawings and in accordance with the SS Drawing SP504-02. The asphalt used shall be Class 1, Asphalt Medium Mix.

To facilitate construction of the spillways the Contractor shall fine grade and shape the gravel shoulder to ensure consistent shape and pavement thickness.

Work for asphalt spillway construction include excavation, shaping, spreading, compaction and shaping of asphalt concrete, and all incidentals required to complete the installation of the asphalt spillways.

(ii) Payment

Payment for Asphalt Spillways will made at the Unit Price bid per Each and shall be accepted as full compensation for everything furnished and done in connection therewith.

Payment for the asphalt mix used in the construction of the spillways will be made at the Unit Price bid per Tonne for top lift asphalt.

(d) Riprap Spillway

The Contractor shall construct riprap spillway at the locations shown on the Drawings and in accordance with the Drawings.

Payment for Riprap Spillway will be made at the Unit Price bid per Each and shall be accepted as full compensation for everything furnished and done in connection therewith, including supply, production, hauling, slope shaping, geotextile underpay, placement, and installation of splash pads.

No separate payment will be made for excavation and disposal of excavated materials for the installation of riprap which shall be incidental to the Works and no additional payment will be made.

10.07 Shouldering

The Contractor shall, following the construction of top lift paving, construct granular shoulders in accordance with SS 502.27 and as shown on the Drawings.

Further to SS 502.27 an approved shouldering machine shall be used for placement of shouldering aggregate. Drainage courses shall not be impeded by this operation.

Shouldering aggregate is also required around accesses and intersections that are paved under this Contract. Gravel accesses will require shouldering aggregate to provide a smooth and suitable transition from gravel to pavement.

Payment for Shouldering will be made at the Unit Price bid per neat line Cubic Metre in accordance with SS 502.40 and shall be accepted as full compensation for everything furnished and done in connection therewith.

No separate payment will be made for the supply of shouldering aggregate into stockpile which shall be considered incidental to the Works and no additional payment will be made.

10.08 Precast Concrete Barriers

(a) General

The Contractor shall supply and install new precast concrete barriers in accordance with SS 941 and as shown on the Drawings.

See SP 1.16 for provisions exempting supply of precast concrete barrier components from Designated Supplier requirements.

Barrier units shall be protected from damage during handling and placing. Any barrier units that become damaged as a result of the Contractor's Work shall be replaced at the Contractor's expense. Concrete repair is not an option.

To prevent water passage underneath the concrete barrier, the Contractor shall supply and install 25 mm diameter closed cell rod sealant, approved by the Ministry Representative, under the roadside barriers on the low side of superelevated roadways and under median barriers on curved portions of the highway. After installing the barriers, the Contractor shall test the drainage using sufficient amounts of water to demonstrate that the water is contained by the barrier and directed to the appropriate drainage appurtenance.

(b) Barrier Mounted Reflectors

The Contractor shall supply and install top mounted reflectors on concrete barriers. The reflectors shall be installed in accordance with the colour, spacing, and mounting locations outlined in the Ministry Manual of Standard Traffic Signs and Pavement Markings, Section 7.6, Table 7.4a and Figure 7.14. Where required, installations shall commence at the end of the approach flare of the roadside barrier and the last roadside barrier unit shall also be reflectorized.

The reflector type shall be an approved top mounted barrier reflector as listed in the current edition of the Ministry's Recognized Products List.

A template approved by the Ministry Representative shall be used to ensure uniform placement of these reflectors. TRS 600 Adhesive or an equivalent Ministry approved epoxy shall be applied to the entire bottom of the reflector, which is then affixed to the designated area of the barrier, which shall be clean and dry. A minimum of one 300 ml tube of epoxy shall be used for every fifteen (15) reflectors. A wire brush shall be used to ensure cleanliness. The ambient air temperature shall be a minimum of 5º C when doing the work.

To ensure motorist and worker safety, the installation of reflectors shall be limited to one side of the roadway at a time. Workers are not permitted to cross open lanes of traffic.

The supply and installation of reflectors to concrete barriers shall be considered incidental to the Works and no additional payment will be made.

(c) Payment

Payment for the supply and installation of Precast Concrete Barriers will be made at the Unit Price bid per Each per type and shall be accepted as full compensation for everything furnished and done in connection therewith, including the supply and installation of barrier mounted reflectors.

Temporary moves to or from stockpile(s), as may be necessary to complete the Works or for drainage testing after installation of the precast concrete barrier, shall be considered incidental to the Works and no additional payments will be made.

10.09 Concrete Works

(a) Concrete Island Curb

Concrete Island Curb shall be constructed with extruded concrete curbs in accordance with SS SP582-01.04 at the locations shown on the Drawings. Sikadur 32 Hi-Mod Epoxy Adhesive (081) or approved equivalent must be applied, in accordance with the manufacturer's recommendations, to the interface between the concrete and the asphalt. The Contractor shall be responsible for cutting a 300 mm x 300 mm hole at the low point in the asphalt to allow for drainage within the median island.

Payment for Concrete Island Curb will be made at the Unit Price bid per Metre and shall include everything furnished and done in connection with the supply and placing of air entrained concrete, epoxy adhesive, joints, letdowns, finishing, curing and protection.

(b) Concrete Island Infill

The concrete islands shall be backfilled with 25 mm Well Graded Base Course Aggregate, shaped, graded and compacted to within 100 mm of the top of the extruded concrete curb.

The concrete mix for the island cap shall be the same as for the median island curb. Contraction joints shall be made at 3 m intervals such that the joints are in line through the curb and island. The concrete island capping shall be placed a minimum of 100 mm thick and shall be shaped to provide positive drainage and to prevent standing water or drainage into electrical junction boxes. Further to SS 211, the surface of the traffic islands inside the extruded curbs shall be broomed concrete finish. The Contractor shall apply a sealant, selected from the current edition of the Ministry's Recognized Product list, on the concrete medians. The supply and application of the sealant shall be incidental to the price bid for the Concrete Median Infill.

Measurement for payment will be to the neat line design quantities between the back of the extruded concrete curbs for medians and traffic islands.

The shaping of island ramps at all pedestrian crosswalk locations shall be in accordance with SP582-07.02 and SP582-07.03 and shall be considered incidental to the Work.

Payment for Concrete Island Infill will be made at the Unit Price bid per Square Metre and shall be full compensation for everything furnished and done including supplying, placing and compacting granular material, installation of the contraction joints, supplying and placing the concrete mix, including all hand work and finishing.

(c) Concrete Curb and Gutter

Concrete curb and gutter shall be constructed in accordance with SS drawing 582 and SP582-01.01 and SS drawing SP582-07.02 at the locations shown on the Drawings.

Payment for Concrete Curb and Gutter will be made at the Unit Price Bid per Metre and shall include all the necessary works and materials to construct the concrete curb and gutter.

(d) Concrete Sidewalk

Concrete sidewalk shall be constructed at the locations shown on the Drawings and in accordance with SS 582.

Control joints shall be placed at 1.5 m intervals, with every other joint in line with concrete curb control and expansion joints, or as directed by the Ministry Representative. Installation of control joints shall be considered incidental to the concrete sidewalk.

Quality Control and Testing of granular material shall comply with "Granular Materials" compaction requirements under Section 2 – Grading.

Measurement for payment will be per square metre, and shall include the concrete, granular materials, backfill and compaction.

No separate payment will be made for bedding and backfill. Granular material required under and adjacent to boulevard and sidewalk will be considered incidental to the work.

Payment for Concrete Sidewalk will be made at the Unit Price bid per Square Metre, and shall be full compensation for everything furnished and done to complete the Work including any transitions and pedestrian let downs.

(e) Concrete Driveway Let down

Concrete Driveway Let down shall be constructed at the locations shown on the Drawings and in accordance with SS 582.

Control joints and expansion joints shall be placed in accordance with SP582-07.01 or as directed by the Ministry Representative. Installation of control joints and expansion joints shall be considered incidental to the Concrete Driveway Let down

Quality Control and Testing of granular material shall comply with “Granular Materials” compaction requirements under Section 2 – Grading.

Measurement for payment will be per square metre, and shall include the concrete, granular materials, backfill and compaction.

No separate payment will be made for bedding and backfill. Granular material required under and adjacent to boulevard and sidewalk will be considered incidental to the work.

Payment for Concrete Driveway Let down will be made at the Unit Price bid per Square Metre, and shall be full compensation for everything furnished and done to complete the Work.

SECTION 11 ELECTRICAL

11.01 General

(a) Scope of Electrical Work

The Work generally involves, but is not limited to the following:

- Installation of electrical infrastructure including:
    - Supply and Installation of street lighting equipment.
    - Supply and Installation of traffic signal equipment.
    - Supply and Installation of wiring.
    - Supply and Installation of detector loops.
    - Supply and Installation of service equipment.
    - Supply and Installation of emergency pre-emption equipment.
    - Supply and Installation of conduit, junction boxes, vaults, concrete bases and foundations.
    - Supply and Installation of underpass lighting equipment.
    - Removal of existing electrical equipment.

Work is defined on the Electrical Drawings located in Schedule 4.

(b) Standards

All work within the Ministry jurisdiction is to be completed in accordance with the following standards:

(i) Latest edition of the Canadian Electrical Code and applicable bulletins.

(ii) Workers' Compensation Board regulations.

(iii) All other standards of parties having jurisdiction.

(iv) The Special Provisions contained herein are supplemental to and shall be used in conjunction with the latest edition of the following documents:

(v) Standard Specifications for Highway Construction.

(c) Co-ordination of Work

The Contractor shall coordinate electrical work with the Ministry Representative to ensure there is no interruption of existing traffic signals or lighting.

The Contractor shall contact the local Road Maintenance Contractor and Electrical Maintenance Contractor to ensure no conflicts exist in each other's work schedule.

The Contractor shall obtain permission from the Ministry Representative prior to turning off or removing any existing electrical equipment

The Contractor shall coordinate service installation and connections with the BC Hydro representative at least 8 weeks prior to commencing work.

All cost for coordination of work will be considered incidental to the Work. No separate payment will be made.

11.02 Materials Supplied by the Contractor

The Contractor shall supply all materials for the Ministry electrical works necessary for the satisfactory completion of the Project other than those listed SP 11.03 as being supplied by the Ministry.

All materials supplied by the Contractor for the electrical works shall be listed in the current edition of the Ministry's Recognized Products List unless otherwise noted on the Drawings.

All materials of a similar type must be from a single manufacturer.

All materials must be new.

All costs related to materials shall be included in the various Lump Sum items of work involved in the Contract. No additional compensation will be made for these materials.

11.03 Materials Supplied by the Ministry

The Ministry will provide the following materials:

Table 33: Materials Supplied by the Ministry

Item	Quantity	Supply Location/Terms
Type P6 Traffic controller cabinets c/w UPS including mounting hardware	1	Cobra Electric 9688 190th St. Surrey, BC V4N 3M9 Contact: Steve Berry (604) 594-1633
Drive BC Camera c/w Modem and Antenna	2	Mainroad Transtronic Services LP 17474 56th Ave. Surrey, BC V3S 1C3 Contact: Gordon Calhoun, gcalhoun@mainroad.ca

Materials listed above will be shipped F.O.B to an address provided by the Contractor, with the exception of the Traffic Control Assembly, which will be provided to the Ministry's Electrical Maintenance Contractor for installation.

The Contractor may request to have the supplied materials delivered to the Project Site, or the Contractor may opt to pick up the supplied materials. Should the Contractor choose to pick up the materials, the Ministry will advise the Contractor of the names(s) of the supplier(s) and arrangements for the pickup. All costs for off-loading materials at the Contractor's facility shall be borne by the Contractor. Any standby charges incurred by the shipping company shall be borne by the Contractor.

The approximate value of these materials is $80,000

The Contractor shall give the Ministry Representative at least sixty (60) days notice prior to requiring all materials.

The Contractor shall provide suitable storage and protection for these materials until they are installed. All materials, with the exception of poles and junction boxes, shall be stored under cover.

Upon receipt of materials the Contractor shall check the quantities and verify correctness of materials supplied. Any discrepancies or shortages should be reported immediately to the Ministry Representative. The Contractor shall be required to repair or replace any materials that are lost or damaged as a result of action or inaction of the Contractor at no additional cost to the Ministry.

Upon completion of the Work, the Contractor will deliver all unused electrical material which have been purchased by the Ministry to the work yard specified by the Ministry Representative and place the material at the locations specified by the Ministry Representative. Payment for returning unused materials will be compensated as Extra Work in accordance with GC 38.00.

11.04 Shop Drawings

The Contractor must submit shop drawings for all equipment and products that are not included in the current edition of the Ministry's Recognized Products List for review prior to manufacturing/ordering of equipment. The "Recognized Products List" is available online at:

https://www2.gov.bc.ca/gov/content/transportation/transportation infrastructure/engineeringstandards-guidelines/recognized-products-list

Shop drawings shall be submitted a minimum of three (3) weeks prior to production to the Ministry Representative for review. The Contractor shall provide a schedule outlining the production schedule for all Contractor supplied material. This schedule shall include submission dates for shop drawings.

Prior to submission to the Ministry Representative, the Contractor shall review all shop drawings and product data/information sheets. By this review, the Contractor has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data and that each shop drawing and product data sheet has been checked and coordinated with the requirements of the work and of the Plans. Stamp, date and signature of the responsible person shall indicate the Contractor's review of each shop drawing and product data/information sheets.

The Contractor is responsible for quantities and dimensions meeting all requirements of the Contract. The Contractor is responsible for quantities and dimensions to be confirmed and correlated at the job Site, for information that pertains solely to fabrication processes and for techniques of construction and installation.

The Contractor shall submit the following:

- Detailed dimensioned layout shop drawings (i.e. manufacturing drawings) including plans, elevations, sections, details, and equipment layout.

Shop drawings may be submitted electronically in PDF format.

No separate payment will be made for the supply of shop drawings and the costs thereof will be considered incidental to the various items of Work to be performed in the Contract.

11.05 Product Data/Information Sheets

Product data/information sheets shall be submitted for review and approval by the Ministry Representative for all equipment with the exception of junction boxes and conduit.

Product data/information sheets shall include, as applicable to the nature of the product:

- OEM manuals.
- Technical brochures.
- Data cut sheets.

All submissions shall be neatly bound and clearly labelled with the equipment reference label (as shown on the Drawings) and the relevant cabinet numbers.

No separate payment will be made for the supply of Product Data/Information Sheets and the costs thereof will be considered incidental to the various items of Work to be performed in the Contract.

11.06 Ministry Review of Submissions

The Ministry Representative review of the shop drawings, product data/information sheets, and maintenance manuals will be as follows:

(a) The Ministry Representative will review and return shop drawings and product data/information sheets in accordance with the schedule agreed upon, or otherwise with reasonable promptness.

This review by the Ministry Representative is for the sole purpose of ascertaining conformance with the general design concept. This review shall does not mean that Ministry Representative approves the detail design in the shop drawings and product data information sheets, responsibility for which shall remain with the Contractor. Such review shall not relieve the Contractor of the responsibility for errors and omissions in the shop drawings and product data information sheets or of the responsibility for meeting all requirements of the Contract.

(b) Review by the Ministry Representative shall not relieve the Contractor of its responsibility for errors or omissions in the shop drawings and data sheets or for proper completion of the Work in accordance with the Contract.

(c) The Contractor is responsible for verification and correlation of field dimensions, fabrication processes, techniques of construction, installation and co-ordination of all parts of the Work.

(d) After the Ministry Review, the drawings will be returned to the Contractor. The Contractor must revise the Drawings as required by and to the satisfaction of the Ministry Representative prior to fabrication. Drawings or data sheets sent back for revision shall be resubmitted for re-review.

(e) Purchase or fabrication of product shall not commence until the Contractor has received final reviewed shop drawings and the written notification to commence fabrication from the Ministry Representative.

11.07 Marked-Up Drawings

The Contractor shall record on a current set of Drawings, in a neat manner, all changes, additions and deletions to reflect the "as constructed" installation in accordance with SP 1.30- Marked-Up Drawings.

This set of Drawings shall be returned to the Ministry Representative and a copy forwarded to TRAN.ElectricalandITSDrawings@gov.bc.ca at the completion of the installation and prior to the issuance of a Completion Certificate.

All costs related to record drawings will be included in the various pay items of work involved in the contract. No additional compensation will be made.

11.08 Plastic Junction Boxes

Plastic underground electrical junction boxes specified for use on Ministry right-of-way are not CSA approved. In order to pass inspection by British Columbia Safety Authority (BCSA) a variance must be requested when completing the Electrical Installation Permit. The procedure for applying for the permit and variance are as follows:

(a) The Contractor must apply for a permit for each job Site where plastic underground electrical junction boxes are to be installed.

(b) On the application form under “Description of Work”, the Contractor must indicate that a variance is requested and provide the following information:

(i) The variance being requested is with respect to BC Electrical Code, Rule 2-024 Use of Approved Equipment, for use of junction boxes as identified in:

(1) Lab Test Report No. SI-2367 for junction boxes manufactured by Nova Pole, or

(2) P. Eng Letter: AER T204 VWCE for junction boxes manufactured by Valmont West Coast Engineering.

(ii) The manufacturer name and model number of the junction boxes that will be installed.

(iii) Confirmation that the junction boxes are similar in construction to the boxes identified in Lab Test Report No. SI-2367 or P. Eng Letter T204 VWCE.

(c) The Contractor must attach design drawings showing the location of junction boxes to the application.

(d) Issuance of the permit will signify acceptance of the variance.

11.09 Modifications to Existing Lighting and Traffic Signals

The Contractor shall maintain the operation of the existing traffic signals and lighting at the intersection until the new traffic signals are operational.

Any proposed construction related modifications to the existing traffic signals and lighting must be submitted in writing and be reviewed by the Ministry Representative and the Ministry Senior Traffic Operations Engineer and meet their approval prior to the modifications being made.

Any materials used for temporary relocation or modification to the signal and lighting system must be approved by the Ministry Representative prior to installation.

The Ministry will perform all required work related to the Traffic Controller Assembly. The Contractor shall give the Ministry Representative a minimum of 7 days notice prior to requiring this work.

Payment for modifications to existing traffic signals and lighting is considered incidental. No separate payment will be made for any temporary modifications through construction.

11.10 Removal of Existing Electrical Equipment

The Contractor shall remove existing electrical equipment as shown on the Drawings, or as directed by the Ministry Representative.

The Contractor must obtain permission from the Ministry Representative prior to removing any electrical equipment. The Contractor shall not deactivate the existing equipment until the new equipment is in place or approval has been received from the Ministry Representative.

Removal of existing electrical equipment shall include:

(a) The removal, disassembly, pick-up, delivery and off-loading of any luminaire, signal, sign poles, service equipment, post mounted flashers, traffic controllers, wiring and any electrical devices (as noted on the plans) to a location coordinated with the Ministry representative.

(b) Materials to be disposed of by the Contractor shall be disposed of at the Contractor's disposal site in accordance with SP 2.04(e) – Contractor Provided Disposal Site.

All existing wiring removed shall be disposed off-site by the Contractor.

Prior to construction the Contractor shall provide the Ministry Representative with an itemised spreadsheet of all items removed and returned to the designated works yard. Prior to returning any equipment the Contractor shall confirm the exact quantity of each item being returned.

The removals shall also include the backfilling, compacting and dressing of any resulting excavations to the satisfaction of the Ministry Representative.

Payment for Removal of Existing Electrical Equipment will be made at the Lump Sum Price bid and shall include all costs for labour, materials, and equipment necessary to complete the Works and shall be accepted as full compensation for everything furnished and done in connection therewith.

11.11 Removal of Existing Underground Equipment

The Contractor shall remove existing underground equipment as shown on the Plans or as directed by the Ministry Representative.

The Contractor must obtain permission from the Ministry Representative prior to removing any underground equipment.

Removal of existing underground equipment shall include:

(a) Removal of the existing concrete bases, their disposal off site and the supply and installation of 25mm Well Graded Base Course Aggregate material to fill the resulting holes. Where existing

bases and foundations cannot be removed without undermining or damaging the existing asphalt, the Contractor may jackhammer off the top of the concrete base or foundation to 600mm below the finished grade. This shall only apply where specifically indicated on the Plans or approved by the Ministry Representative. The excavation and backfill shall meet the requirements but not the payment provisions of SS 635.07.01.

(b) Removal of the existing junction boxes, their disposal off site and the supply and installation of 25mm Well Graded Base Course Aggregate to fill the resulting holes. The excavation and backfill shall meet the requirements but not the payment provisions of SS 635.07.01.

Payment for the Removal of Existing Underground Equipment will be made at the Contract Lump Sum price bid and shall be accepted as full compensation for everything furnished and done in connection therewith.

11.12 Removal of Asphalt and Patching

The Contractor shall remove all asphalt required to accommodate the installation of the concrete bases and conduits. This shall be above and beyond the asphalt removed as part of the general pavement removal.

Payment for the removal of pavement to accommodate the installation of conduits and bases will be made at the applicable Unit Price.

All temporary patching shall be considered incidental. No separate payment will be made.

Payment for any permanent patching will be paid under the roadworks units for asphalt.

11.13 Supply and Installation of Concrete Bases

The Contractor shall supply and install concrete bases of the type as identified on the Drawings and SS 635.07.

Payment for the Supply and Installation of Concrete Bases will be made at the Unit Price Bid per Each type of base as noted in Schedule 7.

The Unit Price shall include all costs of excavation, other than concrete and asphalt removal; Supply and Installation of shoring to meet WCB requirements, formwork, concrete, reinforcing steel and conduit; Supply and Installation of grout and sand to fill knock-outs voids in controller bases and concrete pads in front of controller bases; installation of individual anchor bolts or anchor bolts in cages; placing and compaction of excavated material as backfill; removal and disposal of excess excavated material; and all other labour, equipment, and materials necessary to complete the installation. Any additional costs for supplying higher strength concrete shall be borne by the Contractor. Payment shall be considered full compensation for everything furnished and done.

Unit price for the H2 Bases shall also include the Cast in Place infill, concrete, rebar and framework required to secure the base to the retaining wall as identified on the structural drawings No R1-952-807, R1-952-808 and R1-952-810.

11.14 Supply and Installation of Plastic Junction Boxes

The Contractor shall supply and install plastic junction boxes of the type as identified on the Drawings and SS 635.08.

Payment for the Supply and Installation of plastic junction boxes shall be made at the Unit Price Bid per Each type of junction box.

The Unit Price shall include all costs of excavation, other than concrete and asphalt removal; installation of junction box sections, lids, drain plates, adapter plates and braces; Supply and Installation of shoring to meet WCB requirements, conductor support bars in boxes, concrete collars, 25 mm Well Graded Base Course Aggregate material below the junction box; placing and

compaction of excavated material as backfill; removal and disposal of excess excavated material; and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.15 Supply and Installation of Concrete Junction Boxes

The Contractor shall supply and install concrete junction boxes as identified on the Drawings and SS 635.08.

Payment for the Supply and Installation of concrete junction boxes shall be made at the Unit Price Bid per Each concrete junction box.

The Unit Price shall include all costs of excavation, other than concrete and asphalt removal; Supply and Installation of the concrete junction box complete with collar and lid; Supply and Installation of conductor supports; Supply and Installation of 25 mm Well Graded Base Course Aggregate material below concrete junction box; placing and compaction of excavated material as backfill; removal and disposal of excess excavated material; and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.16 Supply and Installation of Conduits

The Contractor shall supply and install conduit of the type and size as identified on the Drawings and SS 635.11.

Payment for the Supply and Installation of conduit will be made at the Unit Price Bid per Metre per type and size of conduit.

The Unit Price shall include all costs for the Supply and Installation of underground conduit, fittings, cement and pull strings; and all other labour, equipment and materials necessary to complete the installation. Payment for conduits installed above ground on poles or sign structures is not included in this Subsection. Payment shall be considered full compensation for everything furnished and done.

11.17 Trenching and Backfilling

Trenching and backfilling shall be performed in accordance with the Drawings and SS 635.12.

Payment for Trenching and Backfilling for conduit will be made at the Unit Price Bid per Metre.

The Unit Price shall include all costs of excavation, other than concrete and asphalt removal; placing and compaction of excavated material as backfill; dewatering; Supply and Installation of trench marker tape; removal and disposal of excess excavated material; and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.18 Trenchless Conduit Installation

Trenchless Conduit Installation shall be performed in accordance with the Drawings and SS 635.13.

Steel casing pipe shall be as shown on the Drawings.

Payment for installing 50 mm RPVC Conduit with Steel Casing Pipe will be made at the Unit Price bid per Metre.

The Unit Price shall include all costs of excavation for set up; backfilling and restoration when finished, and all other labour, equipment and materials necessary to complete the installation.

No separate payment will be made for unsuccessful installation.

Payment for the Supply and Installation of conduit is covered under SS 635.11

11.19 Supply and Installation/Modification of Signal/AWF Poles

The Contractor shall supply and install new signal poles and modify existing signal poles as identified on the Drawings and SS 635.19.09.

Payment for the Supply and Installation of signal poles and modification of existing signal poles will be made at the Lump Sum Price Bid per type and area.

The Lump Sum Price for new poles shall include all costs for the supply and installation traffic signal poles and arms, sign arms, traffic signal heads including mounting hardware, luminaries, AWF signs, and street name signs; Supply and Installation of wiring to the handhole at the base of the pole, fuse holders, fuses and splices; and all other labour, equipment and materials necessary to complete the installation as noted on the Drawings. Payment shall be considered full compensation for everything furnished and done.

11.20 Supply and Installation of Luminaire Poles

The Contractor shall provide luminaire poles as identified on the Drawings and SS 635.19.10.

The Unit Price shall include all cost for the luminaire poles, LED Fixture, and frangible or breakaway bases, Supply and Installation of wiring to handhole at the base of the pole, fuse holders, fuses and splices, and all other labour, equipment and materials necessary to complete the installation.

Payment for the Supply and Installation of Luminaire Poles will be made at the Unit Price Bid per each type.

Payment shall be considered full compensation for everything furnished and done.

11.21 Supply and Installation of Emergency Vehicle Pre-Emption Equipment

The Contractor shall install the emergency vehicle pre-emption equipment as identified on the Drawings and SS 635.19.11, this document, and Section 400.7.8 of the Electrical and Traffic Engineering Design Guidelines.

Payment for Emergency Vehicle Pre-emption Equipment will be made at the Lump Sum Price Bid per area.

The Lump Sum shall include all costs for the Supply and Installation of the pre-emption control cabinet, control cables from the sensors to the pre-emption control cabinet, commissioning, set-up and adjusting; installation of the pre-emption equipment and electronics inside the control cabinet and the sensors, and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.22 Supply and Installation of Service Equipment

The Contractor shall supply and install service equipment as identified on the Drawings and SS 635.20.

Payment for the service equipment will be made at the Lump Sum Price Bid per service area.

The Lump Sum Price shall include all costs for the Supply and Installation of electrical service including the Type 2 Shaft if required; Supply and Installation of service wiring including; Supply and Installation of rigid metal conduit, fittings, mounting hardware, ground wire, ground clamp, insulating clevis, ground plate and branch circuit wiring to the hand hole at the base of the pole; Supply and Installation of a working pad including additional fill as required (see Drawing SP635-2.4.20); and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.23 Modify Existing Lighting Equipment

The Contractor shall modify the existing lighting equipment as identified on the Drawings.

Payment of Replace HPS Cobrahead with LED will be made at the Unit Price bid per Each.

The Unit Price shall include all costs for the modification of existing lighting hardware, rewiring existing conductors, supply and install of LED Fixtures, and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.24 Modify Existing Service Equipment

The Contractor shall modify the existing service equipment as identified on the Drawings.

Payment for the modification of existing service equipment will be made at the Lump Sum Price Bid per type of service panel.

The Lump Sum Price shall include Supply and Installation of circuit breakers and related wiring; and all other labour, equipment and materials necessary to complete the installation as noted on the Drawings. Payment shall be considered full compensation for everything furnished and done.

11.25 Supply and Installation of Wiring

The Contractor shall supply and install all underground wiring as identified on the Drawings and SS 635.21.

Payment for the Supply and Installation of wiring will be made at the Lump Sum Price Bid per area.

The Lump Sum Price shall include all costs for the Supply and Installation of wiring and cables located in the underground conduit system (unless otherwise noted) and splices; labeling of underground conductors; and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

11.26 Supply and Install Traffic Counter Stations

The Contractor shall supply and install all count stations as identified on the Drawings and SS 635.22.

The Ministry Maintenance contractor will connect all field wiring, trouble shoot problems and undertake equipment setup.

Payment for the installation of Traffic counter stations will be made at the Unit Price Bid per Each.

The Unit Price shall include all costs for the Supply and Installation of perforated steel tubing, above ground conduit and junction boxes, connectors; supply and on of rigid metal conduits, fittings, mounting hardware and branch circuit wiring to the handhole at the base of pole for pole mount cabinets; installation of counter cabinet including the pole where a separate pole is required; Supply and Installation of W-55 signs and concrete pad in front of the controller door; and all other labour, equipment and materials necessary to complete the installation.

11.27 Supply and Installation of Detector Loops

The Contractor shall install vehicle detector loops as identified on the Drawings and SS 635.24.

Payment for the installation of detector loops will be made at the Unit Price Bid per Each.

The Unit Price shall include all costs for layout of the loop, asphalt cutting and preparation of pavement cuts; Supply and Installation of loop conductors to the underground junction box; Supply and Installation of backer rod, sand and loop sealant; and all other labour, equipment and materials necessary to complete the installation. Payment shall be considered full compensation for everything furnished and done.

SECTION 12 SIGNING AND PAVEMENT MARKINGS

12.01 Signs

(a) Description of Work

Signs shall be installed in accordance with these Special Provisions, SS 635, and the Ministry's Manual of Standard Traffic Signs and Pavement Markings.

The work generally involves, but is not limited to the following:

(i) Supply and installation of new bases, sign posts

(ii) Removal and disposal of existing signs

(iii) Relocation of existing signs

Signs shall include all regulatory, warning, guide and directional signs, both permanent as indicated on the Drawings or in the Standard Specifications, and temporary as required for the implementation of the Traffic Management Plan.

(b) Staking of Sign Locations

The Contractor shall stake the exact location of all signs. The staked locations must be reviewed and approved by the Ministry Representative before sign installation.

Contrary to the various payment clauses contained within SS 635, the cost of staking of sign locations shall be considered incidental to the Work and no additional payment will be made.

12.02 Supply and Install New Signs

(a) Concrete Sign Bases

The Contractor shall supply and install concrete sign bases as shown on the Drawings and accordance with SS 635.07.

Concrete bases for signs bases shall be in accordance with SS Drawing SP635-1.1.36

Contrary to the various payment clauses contained within SS 635, the cost of excavation and backfill for sign bases will be considered incidental to the installation of the signs.

(b) Sign Posts

The Contractor shall supply and install round steel sign post structures in accordance with SS 635.31.

Round steel posts shall be supplied in accordance with SS Drawings SP635-3.8.1.

Barrier mounted sign posts shall be supplied and installed in accordance with SS Drawing SP635-3.8.3.

The supply and installation of sign post structures shall be considered incidental to the sign installation and no additional payment will be made.

(c) Signs

The Contractor shall supply and install new signs including, guide, warning and regulatory signs, as shown on the Drawings and in accordance with SS 635.

All permanent signs shall be obtained from a supplier approved by the Ministry, in accordance with SS 635.

Sign Records with a fabrication page are provided as an Appendix to the Contract.

Payment for the Supply and Install Single Post Signs including, supply and installation of bases, posts, sign faces, mounting hardware, backfill and compaction and all incidentals required to

complete the installation will be made at the Unit Price bid per sign and shall be considered full compensation for everything furnished and done in connection therewith.

Payment for the Supply and Install Double Post Signs including, supply and installation of bases, posts, sign faces, mounting hardware, backfill and compaction and all incidentals required to complete the installation will be made at the Unit Price bid per sign and shall be considered full compensation for everything furnished and done in connection therewith.

Payment for the Supply and Install Barrier-Mounted Signs will be made at the Unit Price bid per Each including, supply and installation of posts, sign faces, mounting hardware and all incidentals required to complete the installation and shall be accepted as full compensation for everything furnished and done in connection therewith.

Payment for Relocate Advance Warning Flasher will be made at the Unit Price bid per Each including, supply and installation of posts, sign faces, mounting hardware and all incidentals required to complete the installation and shall be accepted as full compensation for everything furnished and done in connection therewith.

12.03 Pavement Markings

(a) General

Permanent pavement line painting shall be done by a pavement marking Contractor retained by the Ministry. The Contractor shall coordinate with the Ministry Representative to identify the earliest possible opportunity for such markings to be placed and to accommodate the line painting services within their schedule.

(b) Temporary Markings

The Contractor shall supply and place temporary line markings on newly constructed hard surfaces (pavement, hot-in-place recycled pavement, sealcoat, etc.) throughout the Project, in accordance with SS 194.22, SS 194.45, and TMM 4.4.2, re-establishing centreline and all lane-dividing lines prior to being opened to traffic, and shall maintain such markings until the earlier of the Actual Completion Date or the date permanent markings have been placed. Temporary line markings are not required for lane edge lines (fog lines) unless otherwise directed for specific areas by the Ministry Representative.

Marking dimensions, spacing, colour, layout and other characteristics shall follow the recommendations of the TMM unless otherwise specified herein or approved by the Ministry Representative, and must be placed on each lift of pavement.

Temporary lines on the final surface shall be laid within ±100 mm of the permanent line design location, so as to not detract from the permanent lines when laid.

Centreline of undivided highway shall be marked throughout as “no passing” unless otherwise directed by the Ministry Representative.

For surfaces other than sealcoat, painted temporary lines are not permitted on the final surface.

In those areas where permanent markings have been applied prior to the Actual Completion Date, the Contractor shall remove the temporary pavement marking tape. Where the permanent marking has been sprayed on top of temporary tape, that piece of tape may be left in place.

(c) Permanent Marking Layout:

The Contractor shall, upon completion of the final hard surfacing, lay out all key control points throughout the Project, in accordance with the design Drawings.

For any portions of the Project where line marking designs are not included in the Contract, the Ministry Representative shall provide direction as to what specific services are required. Generally, such services will be laying out to a generic design or a pick-up survey of existing key

control prior to disturbing the roadway in those areas and, upon completion of the final hard surfacing, re-establishing those points.

Key control points are as follows on all paint lines, including centreline, lane lines, islands, etc.:

- Curvature points: EC, BC, TS, SC, CS, ST, and any other points of deflection.
- Intersections and Interchanges: PI for design control lines; curvature points (EC, BC, TS, SC, CS, ST) and any other points of deflection; all points as indicated on the "Typical Intersection Pavement Marking Control Points" (see Appendix) drawing and such additional points as may be required for more complex situations.
- Intermediate points (on centreline only for undivided highway; one lane line for each direction on a divided highway): On tangents, curves and spirals, at maximum 100 m spacing.
- Lane widening: Where the design incorporates pavement and lane widening designed into the curves and spirals to accommodate off-tracking of large vehicles, additional intermediate points shall be marked on centreline and all lane lanes at maximum 50 m spacing.

All layout markings shall be done with white or yellow centreline paint which will be clearly visible after exposure to all Site conditions for a minimum period of two (2) months past the Actual Completion Date.

Key control points shall be marked at their design location within tolerances of ±50 mm transversely and ±100 mm longitudinally. Longitudinal tolerances for intermediate points, when required, are ±10 m.

(d) Payment

The Lump Sum Price bid for Pavement Marking Layout shall include all costs and work necessary to provide permanent marking layout.

The Lump Sum Price bid for Temporary Pavement Marking shall include all costs and work necessary to provide temporary pavement markings. The removal of temporary markings that replicate permanent line markings will be paid at a negotiated rate or on a Force Account Basis from the Provisional Sum for Site Modifications.

The removal of all other temporary markings will be considered incidental and no additional payment will be made.

(e) Permanent Pavement Markings - Thermoplastic

The Contractor shall supply and install Transverse Pavement Markings in accordance with SS 321 and as shown on the Drawings. A long line shall be as shown in Figure 7.2 to 7.12 of the "Manual of Standard Traffic Signs and Pavement Markings"

Payment for Transverse Pavement Markings – Thermoplastic shall be at the Unit Price bid per Square Metre inclusive for supply and application of Traffic Marking Paint, glass beads, and Special Markings, material supply, application, related material manufacturer's requirements, costs for surface preparation and shall be accepted as full compensation for everything furnished and done in connection therewith.

SECTION 13 FENCING, SEEDING AND LANDSCAPING

13.01 Fencing and Gates

(a) Fencing

(i) General

The Contractor shall supply and install fencing and gates in accordance with SS 741 by the types and at the locations shown on the Drawings.

The Contractor shall not remove the existing fence until the new fence is in-place or a temporary fence has been installed to the satisfaction of the landowner. The Contractor shall provide each landowner seventy-two (72) hours notice before fence construction.

(ii) Fencing

The Contractor shall supply and install new fencing in accordance with SS 741 for the relevant fence type and at the locations shown on the Drawings.

Measurement

Measurement for fencing will be made in accordance with SS 741.81.

Payment

Payment for Fencing will be made at the Unit Price bid per Metre per type in accordance with SS 741.91

(b) Gates

Gates shall be constructed in accordance with SS 741 of the types and at the locations shown on the Drawings

Measurement

Measurement for Gates will be made in accordance with SS 741.82.

Payment

Payment for Gates will be made at the Unit Price bid per Each in accordance with SS 741.92.

13.02 Revegetation Seeding

(a) General

Revegetation Seeding shall be carried out according to SS 757 except as modified by these Special Provisions. Revegetation seeding shall be applied to all disturbed areas of the Site that are not covered by the streamside restoration drawings R1-952-ENV-101, -102, and -103, including all soil cuts and embankment slopes. No revegetation seeding shall be applied to areas shown in the streamside restoration drawings.

(b) Materials

(i) Seed/Application Rate

Further to SS 757.12 and Table 757-A seed type shall be Vancouver Island / Coastal Mix.

Additional fall rye and/or annual ryegrass nurse crop grass seed (aka cover crop grass seed) shall be provided by the Contractor, as needed for temporary erosion control on soil disturbances as required by the CEMP.

Contrary to SS 757.12.03, the Seed Analysis Reports/Certificates of Analysis shall be forwarded to the Ministry Representative at least three (3) weeks prior to the blending of mixes and shipping of the seed from the seed supplier to the Contractor.

(ii) Hydraulic Erosion Control Products (HECPs)

The Contractor shall supply and install HECPs in accordance with SS 757.14 and as described herein.

Region 2 Preference for Mulch

Further to SS 757.14, the Contractor shall supply and install a hydraulically applied bonded fiber matrix (BFM) product in accordance with SS 757.17.01.

The BFM shall be installed to continuously cover 100% of the exposed soil without spaces greater than 1mm, have no gaps between the product and the soil, and shall not form a crust impenetrable to water or vegetation. The BFM shall not be applied immediately before, during or after rainfall, such that the matrix will have opportunity to dry for up to twenty-four (24) hours after installation. Application rates for the BFM product shall be per the manufacturers' recommendation for the slope and Site conditions. The fertilizer and seed to be applied in combination with the BFM shall be as per the mixtures and application rates in SS 757.

The BFM product shall be applied by an applicator certified by the manufacturer or experienced in proper installation procedures, and the manufacturer's instructions regarding storage, handling, blending and installation shall be strictly adhered to. The product shall be protected from damage, weather, excessive temperatures and construction operations prior to installation.

Further to SS 757.14, the type of hydraulic mulch used shall be Eco-Solutions EcoFibre+ Premium Wood Fibre Mulch Plus Tackifier, or approved equivalent as determined by the Ministry Representative.

(c) Construction

All disturbed areas within the Project boundaries except those covered by restoration plantings per drawings R1-952-ENV-101, -102, and -103, are to receive treatment as soon as the Ministry Representative has approved the finished grading works. Seeding operations shall be carried out within forty-eight (48) hours of such approval being given. The Contractor shall record all details of seeding operations and shall provide these records to the Ministry Representative.

Further to SS 757.37 a copy of the "Daily Seeding/Application Record" shall be completed in conjunction with the Ministry Representative and signed by both parties at the end of each day of seeding.

(d) Watering

The Ministry Representative may direct the Contractor to apply water to seeded or planted areas on an as-needed basis during prolonged periods of dry or inclement weather to facilitate seed germination

(e) Measurement

Measurement for Revegetation Seeding will be measured in accordance with SS 757.81.

(f) Payment

Payment for Revegetation Seeding including installation of the mulch will be at the Unit Price per Hectare in accordance with SS 757.91.

Payment for watering, if required by the Ministry Representative, will be made from the Provisional Sum for Site Modifications on a Force Account Basis.

13.03 Topsoil and Landscaping

(a) General

The Contractor shall be responsible for obtaining certification for all imported materials to ensure materials are free of invasive species and/or noxious weeds. The Contractor shall also be responsible for any costs associated with the transportation and installation of required materials, specified per the Drawings.

13.04 Environmental Works at York Creek and Whonnock Creek

(a) General

The Contractor shall complete the habitat enhancement in accordance with the Drawings. Items such as riprap and streambed gravels shall be covered under their respective line items.

York Creek environmental works include: fish baffles installed in the existing 1500 mm and 2400 mm steel culverts and the new extensions, small downstream weir to back water the 2400 mm culvert area to address perching, removal of invasive plant species and riparian planting plan, instream features including large woody debris, and eco-boulders and hydroseeding/planting of riprap banks.

Whonnock Creek environmental woks include: twin box culverts embedded 20% and baffled for fish passage, realignment of Whonnock Creek to the north to accommodate the highway widening, rebuild the creek offline with a combination of hard scape and bio-engineered options, removal of invasive plant species to be replaced with native and First Nations agreed plant species for the riparian planting plan, instream features including large woody debris, stagging pools, a notch to connect the pools and eco-boulders and hydroseeding/planting of riprap banks.

Both York and Whonnock Creek environmental works include the use of cellular confinement systems in areas shown on drawings R1-952-ENV-101, and -102. The system, included in the Ministry of Transportation recognized products list, is designed to prevent or minimize destruction due to flooding.

(b) York Creek Revegetation

York Creek Revegetation shall be completed in accordance with the Drawings.

Payment for York Creek Revegetation will be made at the Lump Sum Price Bid.

The Lump Sum Price shall include all costs for the York Creek treatment area for the grubbing, existing topsoil and vegetation removal, regrading and scarification, riprap placement, and all other labour, equipment and materials necessary to complete the installations. Payment shall be considered full compensation for everything furnished and done.

Work shall be carried out according to SS 754 and as per drawings R1-952-ENV-101,102, 103. In accordance with SS 754.71, the Contractor shall maintain all plantings for a landscape maintenance period of one (1) year commencing when the conditions of SS 754.01 are all met.

(c) Whonnock Creek Revegetation

Whonnock Creek Revegetation shall be completed in accordance with the Drawings.

Payment for Whonnock Creek Revegetation will be made at the Lump Sum Price Bid.

The Lump Sum Price shall include all costs for the Whonnock Creek treatment area for the grubbing, existing topsoil and vegetation removal, regrading and scarification, riprap placement, and all other labour, equipment and materials necessary to complete the installations. Payment shall be considered full compensation for everything furnished and done.

Work shall be carried out according to SS 754 and as per drawings R1-952-ENV-101,102, 103. In accordance with SS 754.71, the Contractor shall maintain all plantings for a landscape maintenance period of one (1) year commencing when the conditions of SS 754.01 are all met.

(d) Coho Gravels

(i) General

Coho Gravel shall consist of uncrushed, rounded stone, and shall be comprised of hard and durable particles free from organic materials, salt, and foreign objects. Coho Gravel shall be suitable for use as fish habitat substrate. Coho Gravel shall be installed in accordance with the Drawings and conform to the gradation limits below.

Table 34: Coho Gravels Gradation Table

Size	% Passing
100 mm	100
75 mm	95
50 mm	80
25 mm	65
10 mm	40
5 mm	20
2 mm	0

(ii) Measurement

Measurement for Coho Gravel will be measured per tonne incorporated into the work.

(iii) Payment

Payment for Coho Gravel will be made at the Unit Price Bid per tonne and shall be considered full compensation for all things furnished and done to complete the Work.

(e) Large Woody Debris

Large woody debris (LWD), including tree and root wads, shall be one of the follow tree species: Cedar, hemlock, spruce, pine. The bark shall be relatively intact. Each piece shall be approximately 0.9 m minimum excluding the root wad and have a root wad attached. Each piece should have a diameter breast height (DBH) of 0.4 to 0.5 meters.

Rock anchors for LWD structures shall be boulders with dimensions as specified in the Drawings. All boulders shall be clean, hard, durable, rounded and suitable for use in fish habitat.

Attachment, cabling, and epoxy shall be as specified in the Drawings.

Payment for LWD shall be made at the Unit Price bid per each and shall be full compensation for everything furnished and done to complete the Work.

(f) Habitat Boulders

All habitat boulders shall be clean, hard, durable, rounded and suitable for use in fish habitat. All habitat boulders shall conform to size requirements be installed as shown on the Drawings.

Payment for Habitat Boulders shall be made at the Unit Price bid per each and shall be full compensation for everything furnished and done to complete the Work.

(g) Cellular Confinement System including Top Soil

The Contractor shall supply and install a cellular confinement system as shown on the Drawings.

Measurement for Cellular Confinement system including Top Soil shall be measured along the length and width of actual cellular confinement installed.

Payment for Cellular Confinement system including Top Soil shall be made at the Unit Price bid per Square Metre and shall be full compensation for everything furnished and done to complete the Work.

SECTION 14 WHONNOCK CREEK TEMPORARY DETOURS

14.01 Whonnock Creek Temporary Detours

(a) General

All Items in this Section are CONDITIONAL ITEMS as defined in GC 32.00 and GC 48.00, except for Engineered Detour Designs.

Temporary detours do not qualify for Value Engineering Proposals.

Safe and efficient traffic management is a critical success factor of this Project. The suite of Items within this Section will include engineering, construction and removal of detours as described herein. Temporary Detours will only be applicable to the Work at Whonnock Creek.

The Contractor shall incorporate the detour and all the required construction staging into the Traffic Management Plans.

The Contractor shall propose through their Traffic Management Plans all details that are required to operate the detour including but not limited to traffic control devices, traffic control personnel, and pavement markings.

Any Work for the Detour that is not included in the clauses below will be considered incidental to the various Items of Work to be performed in the Contract.

Temporary Detour Construction includes, but is not limited to organic stripping, and the supply, installation, removal and disposal of asphalt, gravels, signs, pavement markings, barriers, and all things necessary to complete the Work. Upon decommissioning and removal of the Detours, the Contractor shall return existing infrastructure in the same or better condition as found.

Detour construction shall be undertaken in accordance with the 2020 Standard Specifications for Highway Construction. All Standard Specifications and Special Provisions apply to Temporary Detours except as modified herein.

The Contractor shall be solely responsible for the maintenance and safe operation of Temporary Detours, no additional payment will be made.

(b) Engineered Detour Designs

Prior to commencing detour construction, the Contractor shall prepare an Engineered Detour Design showing planned temporary construction detours for review and approval by the Ministry Representative.

The Engineered Detour Design shall be signed and sealed by suitably qualified Professional Engineers registered in the Province of British Columbia. The Engineered Detours will be developed to facilitate traffic flows through the Project.

Engineering Detour Plans shall be completed in accordance with:

- Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (current edition).
- BC Supplement to TAC Geometric Design Guide (current edition).
- Ministry drainage design criteria using a minimum ten (10) year design storm.
- 2020 Standard Specifications for Highway Construction; and
- Design Criteria provided in these Special Provisions.

As a minimum, the Engineered Detour Design must include:

- Geometric layout for each detour regime similar to Ministry of Transportation and Infrastructure standard geometrics and laning Drawings. Drawings must clearly define, including but not necessarily limited to the following: all roadway geometrics; pavement

and roadside drainage elements, lane widths, tapers, locations of all paint markings, lighting, traffic signals, signs, barriers by type, temporary drainage and any related design items.

- Profiles for each detour, similar to Ministry of Transportation and Infrastructure standard profile drawings including, but not necessarily limited to the following: vertical geometry, utility crossings, drainage crossings, ditches where false grading is required and super-elevation. Quantities need not be shown at the top of the profile drawings.
- Typical cross sections for each detour stage similar to Ministry of Transportation and Infrastructure standard typical cross section drawings including, but not necessarily limited to the following: pavement structure, side slopes, edge treatments, barrier and lane widths.
- Detail designs and drawings for any non-standard details required to construct the detours.
- Operational requirements for the temporary detours shall conform to SP 1.18 – Traffic Management and be incorporated into the Traffic Management Plan.

The Contractor shall develop its own Engineered Detour Design to a detailed design stage suitable for construction and ensuring that the detour designs are compatible with the Contractor's intended construction methodology. The Engineered Detour Design shall be submitted to the Ministry for review and acceptance prior to the beginning of any detour construction Work.

The Contractor may elect to submit Engineered Detour Design to the Ministry for review and acceptance in stages to expedite the review process. The Contractor shall identify any significant deviation from the Detour Concept with the initial submission.

The Ministry's intent is for the detour design to provide a safe and efficient movement of vehicular traffic within the Project limits and vicinity. The Ministry expects that peak hour traffic throughout the project will adequately maintain suitable traffic flows to the travelling public, pedestrians and cyclists.

Detour designs will be in accordance with the design criteria as stipulated in Table 7: Design and Operational Requirements for Roads Operational Requirements.

The detour pavement structure utilized in the Engineered Detour Design shall:

- Match the design pavement structure as shown in the Drawings where the detour is coinciding with the final alignment as shown in the Drawings.
- Where the detour pavement will not be utilized in the final Work the detour pavement structure shall consist of:
    - 75 mm Class 1 Medium Mix asphalt.
    - 500 mm 25 mm WGB over approved embankment or native subgrade
    - Additional 25 mm WGB where over concrete box culverts, such that 1 minimum cover of 1 m is maintained.

Contrary to any reference to the Standard Specifications, payment for Engineered Detour Designs and Plans will be made at the Lump Sum Price bid and shall be considered full compensation for everything furnished and done to complete the Work, regardless of the number of plans.

(c) Cold Milling of Tie-Ins (CONDITIONAL ITEM)

The Contractor shall perform all cold milling in accordance with SS 511 to the lines and grades shown on the Drawings. Cold milling will be undertaken at the joints between existing and new asphalt as shown on the Drawings.

The Contractor shall ensure that a suitable running surface is maintained on any portion of the existing highway that is open to traffic during construction. Milling operations will be restricted to one (1) travelled lane and shoulder at a time to accommodate traffic.

Payment for Pavement Cold Milling up to and including a depth of 125 mm will be made at the Unit Price bid per Square Metre and shall be considered as full compensation for everything furnished and done to complete the Work.

(d) Pavement Cutting (CONDITIONAL ITEM)

The Contractor shall perform all cold milling in accordance with SS 511 to the lines and grades shown on the Drawings. Cold milling will be undertaken at the joints between existing and new asphalt as shown on the Drawings.

The Contractor shall ensure that a suitable running surface is maintained on any portion of the existing highway that is open to traffic during construction. Milling operations will be restricted to one (1) travelled lane and shoulder at a time to accommodate traffic.

Payment for Pavement Cold Milling up to and including a depth of 125 mm will be made at the Unit Price bid per Square Metre and shall be considered as full compensation for everything furnished and done to complete the Work.

(e) 25 mm Well Graded Base – Detour (CONDITIONAL ITEM)

25 mm Well Graded Base – Detour shall be provided in accordance with SS 202.

Measurement of 25mm Well Graded Base - Detour supplied and constructed in place, will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

Payment for 25mm Well Graded Base - Detour will be at the Unit Price bid per Cubic Metre in accordance with SS 202.36 and shall be accepted as full compensation for everything furnished and done in connection therewith.

(f) Select Granular Sub-Base – Detour (CONDITIONAL ITEM)

Select Granular Sub-Base – Detour shall be provided in accordance with SS 202.

Measurement of Select Granular Sub-Base - Detour supplied and constructed in place, will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

Payment for Select Granular Sub-Base - Detour will be at the Unit Price bid per Cubic Metre in accordance with SS 202.36 and shall be accepted as full compensation for everything furnished and done in connection therewith.

(g) Asphalt Pavement – Detour (CONDITIONAL ITEM)

The Contractor shall supply a Class 1, Asphalt Medium Mix, or other Asphalt as approved by the Ministry Representative. All asphalt pavement course shall be paver laid and compacted to a minimum depth of 75mm (single lift). The Class 1, Asphalt Medium Mix will meet the requirements of SS 502. Additionally, the Ministry will allow RAP application of 30% for the detour paving

Priming will not be required for the detour paving. Tack coating of the tie-ins will be considered incidental to the work.

EPS bonus/penalty provisions will not apply for the Detour Work, although rejection limits will apply for Detour Asphalt Pavement.

Payment for Asphalt Pavement - Detour will be made at the Unit Price bid per tonne and shall be accepted as full compensation for everything furnished and done in accordance with SS 502.36.

(h) Shouldering (CONDITIONAL ITEM)

Select Granular Sub-Base – Detour shall be provided in accordance with SS 202.

Measurement of Select Granular Sub-Base - Detour supplied and constructed in place, will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

Payment for Select Granular Sub-Base - Detour will be at the Unit Price bid per Cubic Metre in accordance with SS 202.36 and shall be accepted as full compensation for everything furnished and done in connection therewith.

(i) Install and Remove Signs – Detour (CONDITIONAL ITEM)

Detour Signs shall comply with SS 635 except as modified within this clause.

Payment for the Install and Remove Signs – Detour will be made at the Unit Price bid Each including the installation of the bases, posts, and signs, supply mounting hardware, removal of bases and posts and backfilling of voids and all incidentals required to complete the relocation, and shall be accepted as full compensation for everything furnished and done in connection therewith.

(j) Detour Construction Barrier (CONDITIONAL ITEM)

The Contractor shall supply and install 690 mm Precast Concrete Roadside Barrier in accordance with SS 941, and as shown on the Contractor's Engineered Detour Plans. The construction barrier does not need to be new, and some cosmetic damage is acceptable with Ministry Representative approval. The construction barrier will be used to protect traffic from drop-off hazards within the excavation zones.

Payment for Detour Construction Barrier will be made at the Unit Price bid per Metre in Schedule 7 and is full compensation for everything furnished and done to complete the work including, but not limited to, supply, loading, hauling, placing, removal and temporary storage.

(k) Detour Pavement Markings (Conditional Item)

The Contractor shall supply and place line markings on newly constructed hard detour surfaces and the adjacent existing facility throughout the Temporary Detour, in accordance with SS 194.22, and shall maintain such markings until traffic has been shifted to either the permanent roadway or another temporary detour. Line markings are required for lane edge lines (fog lines, center lines) and/or as directed by the Ministry Representative.

Marking dimensions, spacing, colour, layout, reflectivity and other characteristics shall follow the recommendations of the TMM unless otherwise specified herein or approved by the Ministry Representative.

Detour Pavement Markings and stop bars shall consist of traffic paint installed to the neat lines shown on the Engineered Detour Plans or on the Drawings in accordance with SS 321 and the Manual of Standard Traffic Signs and Pavement Markings.

Detour Pavement Markings to facilitate the detour construction and safe traffic movements will be made at the Unit Price bid per Kilometre and shall include all costs and work necessary to provide layout and pavement marking. Eradication of all pavement markings to facilitate the detour construction and safe traffic movements will be considered incidental to the Work and paid for by the Contractor. All pavement marking eradication shall be completed by hydro-blasting.

(l) Temporary Detour Drainage (Conditional Item)

Contractor shall utilize existing open drainage systems wherever practical. The Contractor shall supply and install any required drainage elements as identified in the Engineered Detour Plans.

The drainage systems shall ensure that the pavement surface and embankments are not subject to ponding or erosion.

Construction associated with temporary detours and detour drainage shall be undertaken in accordance with SS 165 and SP 1.24 – Utilities.

Payment for temporary detour drainage will be made at the Lump Sum Price Bid. Construction of temporary ditches, culverts, curbing and spillways or any other drainage element for erosion protection associated with Temporary Detours shall be considered incidental to Temporary Detours and shall be considered full compensation for everything furnished and done to complete the Work.

(m) Detour Removal (Conditional Item)

The Contractor shall remove Temporary Detours when no longer required in accordance with SP 1.18 – Traffic Management and as approved by the Ministry Representative. The Site shall be restored in accordance with the Drawings.

Detour removal shall include all things to remove the constructed detour approaches to the satisfaction of the Ministry Representative. Gravel materials may be used as SGSB or disposed of at the Contractor's disposal site.

Payment for Detour Removal will be made at the Lump Sum Price Bid and shall include pavement and aggregate removal, drainage reinstatement and all other things furnished and done for completion of the work.