

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British Columbia
V6Z 0B9
Bid Fax: (604) 775-9381

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise
indicated, all other terms and conditions of the Solicitation
remain the same.

Ce document est par la présente révisé; sauf indication contraire,
les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Public Works and Government Services Canada -
Pacific Region
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British C
V6Z 0B9

Title - Sujet Km742.5 to Km750.3 Hwy Realignment	
Solicitation No. - N° de l'invitation EZ899-152432/A	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client	Date 2015-05-11
GETS Reference No. - N° de référence de SEAG PW-\$PWY-020-7499	
File No. - N° de dossier PWY-4-37364 (020)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-05-21	Time Zone Fuseau horaire Pacific Daylight Saving Time PDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Ly, Ronny(PWY)	Buyer Id - Id de l'acheteur pwy020
Telephone No. - N° de téléphone (604) 666-0043 ()	FAX No. - N° de FAX (604) 775-6633
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PWGSC - Km742.5 to Km750.3 Alaska Highway, BC	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

EZ899-152432/A

Amd. No. - N° de la modif.

002

Buyer ID - Id de l'acheteur

pw020

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

PWY-4-37364

This Amendment 002 is raised to extend the closing date, as well as to incorporate a Revised Bid and Acceptance Form including Appendix A - Combine Price Form, Addendum #1 and higher resolution drawings.

Extension of Time

Km 742.5 to km 750.3 Highway Realignment Alaska Highway, BC

Solicitation No: EZ899-152432/A

Notice is hereby given that the time for reception of tenders previously due at
2:00 p.m. On May 19, 2015 is hereby extended to
2:00 p.m. on May 21, 2015.

See the revised Combined Price Form.

See the attached Addendum #1.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

NOTE TO TENDERERS: Use the mailing label below and affix it securely to the outside of the envelope or package containing your tender. For revisions to tenders submitted by facsimile (fax # (604) 775-9381), use this sheet as the cover sheet. Always ensure your company name, return address, tender number and closing date appear legibly on the outside of your bid submission.

**REAL PROPERTY CONTRACTING
Public Works & Government Services Canada
Room 219 - 800 Burrard Street
Vancouver, B.C. V6Z 0B9**

Requisition No.: EZ899-152432/A

Tender Closing Date & Time: 21 May 2015 at 14:00h

Project Description: Km 742.5 to km 750.3 Highway Realignment
Alaska Highway, BC

RL

Solicitation No. - N° de l'invitation

EZ899-152432/A

Client Ref. No. - N° de réf. du client

Amd. No. - N° de la modif.

002

File No. - N° du dossier

PWY-4-37364

Buyer ID - Id de l'acheteur

pw020

CCC No./N° CCC - FMS No/ N° VME

BID AND ACCEPTANCE FORM (BA) - Revised

BA01 IDENTIFICATION

Km742.5 to Km750.3 Highway Realignment
Alaska Highway, B.C.

BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone: _____ Fax: _____ PBN: _____

BA03 THE OFFER

The Bidder offers to Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the **TOTAL BID AMOUNT INDICATED IN APPENDIX 1.**

BA04 BID VALIDITY PERIOD

The bid shall not be withdrawn for a period of sixty [_60_] days following the date of solicitation closing.

BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

BA06 CONSTRUCTION TIME

The work shall commence onsite work on or after June 01, 2016, achieve substantial performance by June 15, 2017 and achieve completion by June 30, 2017.

BA07 BID SECURITY

The Bidder is enclosing bid security with its bid in accordance with GI08 - Bid Security Requirements of R2710T - General Instructions - Construction Services - Bid Security Requirements.

BA08 SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (Type or print)

Signature

Date

APPENDIX 1 - COMBINED PRICE FORM - revised (3 pages)

- 1) The prices per unit shall govern in establishing the Total Bid Amount. Any arithmetical errors in this Appendix will be corrected by Canada.
- 2) Canada may reject the bid if any of the prices submitted do not reasonably reflect the cost of performing the part of the work to which that price applies.

UNIT PRICE TABLE

The Unit Price Table designates Work to which a Unit Price Arrangement applies.

- (a) Work included in each item is as described in the referenced specification section.
- (b) The Price per Unit shall not include any amounts for Work that is not included in that unit price item.

Item No.	Specification Reference	Description of Work	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit GST extra (PU)	Extended Amount (EQ x PU) taxes extra
1	01 25 20	Mobilization	Lump Sum	1		
2	01 35 00.06	Traffic Control	Lump Sum	1		
3	01 45 00	Quality Management	Lump Sum	1		
4	31 11 00	Clearing and Grubbing	Ha	<u>41.0</u>		
5	31 24 13	Stripping	m ³	<u>100,500</u>		
6	31 24 13	Topsoil Placement	m ²	126,700		
7	31 26 13	Pulverization of Decommissioned Highway BST	m ²	40,900		
8	31 24 13	Embankment	m ³	<u>569,250</u>		
9	31 24 13	Specialty Embankment	m ³	<u>5,350</u>		
10	31 24 13	Cut Slope Stabilization Material	m ³	<u>13,600</u>		
11	32 11 24	Crushed Base Gravel	m ³	<u>35,200</u>		
12	32 11 19	Sub-base Course	m ³	<u>40,600</u>		
13	32 11 18	Select Subgrade Fill Material	m ³	62,900		
14	31 24 13	Geotechnical Instrumentation	L.S.	1		
15	02 41 13	Existing CSP Culvert Removal and Offsite Disposal (= 800 mm Diameter)	each	16		
16	02 41 13	Existing CSP Culvert Removal and Offsite Disposal (> 800 mm Diameter)	each	3		
17	02 41 13	Existing Wood Stave Culvert	each	1		

		Removal and Offsite Disposal (= 800 mm Diameter)				
18	02 41 13	Existing Box Culverts Removal and Offsite Disposal (Ed's Creek, Km 748+133)	L.S.	1		
19	33 42 13	Aluminized CSP Culverts				
a		600 mm	m	230.5		
b		800 mm	m	<u>146.0</u>		
c		900 mm	m	34.0		
d		<u>1000 mm</u>	<u>m</u>	<u>56.0</u>		
e		1200 mm	m	138.0		
f		1400 mm	m	44.0		
g		1800 mm	m	<u>101.5</u>		
20	33 42 13	Design-Build Culvert (Ed's Creek, Km 748+133)	L.S.	1		
21	31 23 33.01	Culvert Inlet and Outlet Riprap Protection (Culverts = 1800 mm Diameter)	each	<u>16</u>		
22	31 23 33.01	Steep Slope Riprap Protection	m	70		
23	31 23 33.01	Culvert Inlet Riprap Protection - Large Diameter Culvert (Ed's Creek, Km 748+133)	L.S.	1		
24	31 23 33.01	Culvert Outlet Riprap Protection and Stream Reestablishment - Large Diameter Culvert (Ed's Creek, Km 748+133)	L.S.	1		
25	31 23 33.01	Ditch Construction Following CSP Culvert & Wood Stave Culvert Removal (= 800 mm Diameter)	each	<u>12</u>		
26	31 23 33.01	Ditch Construction Following CSP Culvert Removal (> 800 mm Diameter)	each	1		
27	31 23 33.01	Armoured Ditching	m ²	1,850		
28	31 23 33.01	Cut Slope Drainage Swale	m	465		
29	31 23 33.01	Ditch Block	each	3		
30	32 32 34	Design-Build Retaining Wall	m ²	1,470		
31	32 11 24	Reshaping Existing Crushed Base Gravel for BST (Km 736+988 - Km 742+560)	L.S.	1		
32	32 12 35	Asphalt Material	tonnes	400		
33	32 12 35	Bituminous Surface Treatment	m ²	<u>167,800</u>		

34	32 17 23	Permanent Line Painting	Km	<u>40.3</u>		
35	32 93 21	Hydroseeding	Ha	36.7		
36	02 41 13	Remove and Temporarily Stockpile Existing Precast Concrete Lock Blocks	each	206		
37	02 41 13	Offsite Disposal of Existing Damaged Precast Concrete Lock Blocks	each	4		
38	34 71 13.01	Placement of Existing Precast Concrete Lock Blocks	each	202		
39	34 71 13.01	Precast Concrete Lock Blocks	each	470		
40	02 41 13	Remove and Temporarily Stockpile Existing Concrete Barrier	each	50		
41	34 71 13.01	Placement of Existing Precast Concrete Barrier				
a		Precast Concrete Bull-Nose	each	2		
b		Precast Concrete Transition Barrier (690 mm to 460 mm)	each	2		
c		Precast Concrete Transition Barrier (810 mm to 690 mm)	each	2		
d		Precast Concrete Median Barrier (810 mm)	each	44		
42	34 71 13.01	Precast Concrete Barrier				
a		Precast Concrete Bull-Nose (CBN-H)	each	6		
b		Precast Concrete Transition Barrier (690 mm to 460 mm) (CTB-1E)	each	6		
c		Precast Concrete Transition Barrier (810 mm to 690 mm) (CTB-2H)	each	6		
d		Precast Concrete Median Barrier (810 mm) (CMB-E)	each	89		
e		Precast Concrete Median Barrier (810 mm) (CMB-H)	each	85		
f		Precast Concrete Pier Barrier (810 mm) (CPB-E)	each	76		
g		Precast Concrete Pier Barrier (810 mm) (CPB-H)	each	76		
43	10 14 53	Traffic Signage	each	<u>22</u>		
TOTAL EXTENDED AMOUNT						
Excluding taxes						

The following changes/clarifications in the tender documents are effective immediately.

This addendum 001 will form part of the contract documents

This Addendum 001 is issued to provide responses to questions from bidders, and to provide amendment to the Unit Price Table, Specifications, and Contract Drawings as attached hereto.

Responses to Questions from Bidders

Q1. The specifications and drawings indicate that the granular material source is located in borrow pit at Km 750. Can the source of these materials be also the pit located at Km 746.2 to Km 746.8 as indicated in the Environmental Effects Evaluation (EEE) from Amendment 001 suggests?

R1. Yes, the available sources for granular materials includes the materials previously manufactured and stockpiled in the Km 750 Gravel pit and the other locations within the limits of the work where excavation is required. Excavation from Km 746.2 to Km 746.8 will be required. Refer to Section 31 05 16 – Aggregates: General for further details.

Q2. Please provide preliminary global stability analysis results indicating whether there will be any requirement for extended soil reinforcement lengths due to global stability requirements.

R2. A global stability analysis of the retaining wall is the responsibility of Contractor's designer. Preliminary global stability analysis results from PWGSC are not available.

Q3. In the culvert schedule for this project (C206), there are 1800mm dia. culverts specified with 2.0 steel thickness, and the specifications call for a 68x13mm corrugation profile. That CSP exceeds the minimum flexibility factor, and we would only supply 2.0mm steel with a 125x25mm corrugation at that diameter. The 68x13 corrugation would require 3.5mm thick steel which would also cost about 40% more than the deeper corrugated option.

Can you please let me know if we have approval to quote with the 125x25mm corrugation?

R3. The culvert corrugation requirements have been amended as part of this addendum. Refer to Section 33 42 13 – Pipe Culverts for further details.

Q4. Ø800 mm – Bid item states 202 m however culvert table (Drawing C206) states 146 m. Drawings show quantities totalling 146m. Please confirm correct quantity.

R4. Some culvert quantities have been amended. Refer to revised Appendix 1 – Combined Price Form.

Q5. Ø1000 mm – Does not appear on Bid item however culvert table (Drawing C206) states 56 m. I am able to find this diameter in the drawings. Please confirm correct quantity.

R5. Some culvert quantities have been amended as part of this addendum. Refer to the revised Appendix 1 – Combined Price Form .

Q5. Can the north end of this job not be started this year? and if not why ?

R6. No. The cut at km 746+500 is the major source for Granular Select, sub-base and base gravels for the South Contract. It's also the source for common borrow, and granular material for the North Contract. There is little room to work in and to avoid potential conflicts and delays, PWGSC has elected to complete the construction through two different Contracts spanning over two construction seasons.

Changes to the Specifications

1. Section – Specifications / Drawing Index

Delete:

Appendices

- F Km 737 -743.1 Highway Realignment Alaska Highway, BC – Issued for Tender Drawings
- G PWGSC Environmental Effects Evaluation
Note: Document to be provided via amendment during the tendering period.

Insert:

Appendices

- F Km 737 -743.1 Highway Realignment Alaska Highway, BC – Issued for Tender Drawings
Rev 0 / 1
- G Environmental Effects Evaluation (EEE) Report, Public Works and Government Services Canada – November 15, 2013, Revised March 29, 2015
- H Example Representative Construction Staging and Detour Drawings (C501 – C503)

Insert:

Reference Documentation

Manual of Standard Traffic Signs & Pavement Markings, BC Ministry of Transportation and Highways
– September 2000

Available online at:

http://www.th.gov.bc.ca/publications/eng_publications/electrical/most_pm.pdf

2012 Standard Specifications for Highway Construction, BC Ministry of Transportation and Highways
– November 1, 2011 – Volume 1 and 2

Available online at:

http://www.th.gov.bc.ca/publications/const_maint/contract_serv/standardspecs.htm

Delete:

List of Contract Drawings

Sheet No.	Title	Drawing Number	Revision Number
1	Cover Page	C000	0
2	Project Location Plan, Project Key Plan, Drawing Index, Survey Monuments, and Legend	C001	0
3	Plan / Profile	C110 – C123	0
4	Drainage and Associated Road Details	C201, C202, C203, C204, C205, C206	0
5	Typical Sections	XS22 – XS74	0

Insert:

List of Contract Drawings

Sheet No.	Title	Drawing Number	Revision Number
1	Cover Page	C000	0
2	Project Location Plan, Project Key Plan, Drawing Index, Survey Monuments, and Legend	C001	<u>1</u>
3	Plan / Profile	C110 – C123	0 / <u>1</u>
4	Drainage and Associated Road Details	C201 – <u>C206</u>	0 / <u>1</u>
5	Typical Sections <u>and Details</u>	<u>C301 – C306</u>	0 / <u>1</u>
<u>6</u>	<u>Mass Haul Diagram (For Information Only)</u>	<u>C401</u>	0
<u>7</u>	<u>Cross Sections</u>	XS22 – XS77	<u>0 / 1</u>

2. Section 01 11 10 – Summary of Work

Delete:

- 1.3.2.5 Pulverization of exiting and decommissioned portions of highway Bituminous Surface Treatment (BST).

Insert:

- 1.3.2.5 Pulverization of decommissioned portions of highway Bituminous Surface Treatment (BST).

Delete:

- 2.2.2 Commence onsite work on after June 1, 2016.

Insert:

- 2.2.2 Commence onsite work on or after June 1, 2016.

Delete:

- 2.2.3 Achieve Substantial Performance by October 15, 2016.

Insert:

- 2.2.3 Except for the elements of the project work noted below, all construction works shall be completed by October 15, 2016. The following elements of the work shall be completed between May 23, 2017 and June 15, 2017.

- .1 Reshaping Existing Crushed Base Gravel for BST (Km 736+988 – Km 742+560).

- .2 Bituminous Surface Treatment.

- .3 Permanent Line Painting.

- .4 Install and removal of some regulatory signage (see Section 01 25 20 – Mobilization and Demobilization for details).

- Achieve Substantial Performance by June 15, 2017.

Delete:

- 2.2.4 Achieve Completion by October 30, 2016.

Insert:

- 2.2.4 Achieve Completion by June 30, 2017.

Delete:

2.7.2.2 Deputy Project Superintendent: shall have the authority of the Project Superintendent during the latter's absence.

Insert:

2.7.2.2 Deputy Project Superintendent: shall have the authority of the Project Superintendent during the latter's absence for short periods of time.

Delete:

2.8.1.1.1 2.935 m x 3.25 m vertical ellipse SPCSP.

Insert:

2.8.1.1.1 2.935 m span x 3.25 m rise vertical ellipse SPCSP.

Delete:

2.8.1.1.2 2.4 m x 3.65 m Concrete Box Culvert.

Insert:

2.8.1.1.2 2.4 m span x 3.65 m rise Concrete Box Culvert.

Delete:

2.8.1.6 Onsite work will not commence until Commence onsite work on after June 1, 2016. See 2.2 – Work Completion above for addition project dates.

Insert:

2.8.1.5 Onsite work will not commence until on or after June 1, 2016. See 2.2 – Work Completion above for additional project dates.

Delete:

2.8.1.7 The Contractor will be responsible for the supply and installation of geotechnical instrumentation in high fill locations to monitor ground conditions during embankment fill placement.

The Contactor will be responsible for the monitoring of settlement rates and movement in the installed toe pegs using survey instruments throughout the placement of materials in the high fill locations. Survey data collected will be provided to the Departmental Representative.

The Departmental Representative will be responsible for the monitoring of data collected by the piezometers and inclinometers throughout the placement of materials in the high fill locations.

The Contractor will be responsible for staging the lifts of embankment and granular

material placement per the lift placement requirements in areas of high fills.

See Section 31 24 14 – Roadway Excavation, Embankment, and Compaction for further details.

Insert:

- 2.8.1.6 The Contractor will be responsible for the supply and installation of geotechnical instrumentation in high fill locations to monitor ground conditions during embankment fill placement.

The Contractor will be responsible for the monitoring of settlement rates and movement in the installed toe pegs using survey instruments throughout the placement of materials in the high fill locations. Survey data collected will be provided to the Departmental Representative.

The Departmental Representative will be responsible for the monitoring of data collected by the piezometers and inclinometers throughout the placement of materials in the high fill locations.

The Contractor will be responsible for staging the lifts of embankment and granular material placement per the lift placement requirements in areas of high fills.

See Section 31 24 14 – Roadway Excavation, Embankment, and Compaction for further details.

3. Section 01 14 00 – Work Restrictions, Access Development, Construction Staging, and Restoration

Delete:

- 1.2.7.2 No hauling of material during inclement weather.

Insert:

- 1.2.7.2 Request for approval to work in excess of 12 hrs per day must be submitted in writing to the Departmental Representative a minimum of five (5) days in advance of the planned change in working hours.

- 1.2.7.3 No hauling of material during inclement weather.

Delete:

- 1.9.2 Prior to undertaking the work, construction staging drawings shall be prepared by the contractor and submitted to the Departmental Representative for review and acceptance a minimum of Ten (10) days prior to undertaking the work (see Section 01 33 00 – Submittal Procedures). The drawings shall be sealed by a professional engineer qualified to undertake the design work. The construction staging drawings shall cover

each construction staging scenario and situations over the length of the project and shall:

- .1 Describe / show graphically the proposed stages of construction to complete the work.
- .2 Describe / show graphically how vehicle traffic will be accommodated throughout all stages of the work.

Insert:

- 1.9.2 Prior to undertaking the work, construction staging and detour drawings shall be prepared by the contractor and submitted to the Departmental Representative for review and acceptance a minimum of Ten (10) days prior to undertaking the work (see Section 01 33 00 – Submittal Procedures). The drawings shall be sealed by a professional engineer qualified to undertake the design work. The construction staging drawings shall cover each construction staging scenario, required detours and special situations over the length of the project and shall:

- .1 Describe and show graphically the proposed stages of construction to complete the work.
- .2 Describe and show graphically how vehicle traffic will be accommodated throughout all stages of the work (including vertical and horizontal alignments).

Delete:

- 1.9.3 Example representative construction staging drawing(s) are provided with the contract drawings to provide the Contractor with an example of the level of expected detail from the Contractors submitted construction staging drawings and to show the complexity of the staging issues on this project. The staging drawings provided are only example(s) of select construction staging scenarios on the project. The Contractor is responsible to provide construction staging drawings covering all construction staging scenarios and situations on the project.

Insert:

- 1.9.3 Example representative construction staging and detour drawings (from similar work in another area of the highway) are provided in Appendix H to provide the Contractor with an example of the level of expected detail from the Contractors submitted construction staging drawings and to show the complexity of the staging issues on this project. The staging drawings provided are only example(s) of select construction staging scenarios on the project. The Contractor is responsible to provide construction staging drawings covering all construction staging scenarios and situations on the project.

Delete:

- 1.9.4 When preparing staging drawings for the areas of work covered by the example

representative construction staging drawings provided with the contract drawings, the contractor may use the staging processes provided on these drawings or if desired, modify the staging processes shown to suite the Contractor's desired process.

Delete:

- 1.10.1.4 Removal of all gravels, other materials, or structures placed to create access points, roads, detours, or pads. Dispose of gravels, other materials, or structures at and off-site disposal facility acceptable to the Departmental Representative.

Insert:

- 1.10.1.4 Removal of all gravels, other materials, or structures placed to create access points, roads, detours, or pads. Dispose of gravels, other materials, or structures at an off-site disposal facility acceptable to the Departmental Representative.

4. Section 01 25 20 – Mobilization and Demobilization

Delete:

- 1.2.1.4 Removal and stockpiling of existing regulatory signage and posts designated for removal within the limits of the work.

Insert:

- 1.2.1.4 Removal and stockpiling of existing regulatory signage and posts designated for removal within the limits of the work. All signs identifying "Riparian Zone" and underground fiber optic utility shall remain in place. In addition to the signs being removed within the limits of work, the following signs outside the limits of the work (Km 742+500 – Km 750+300) shall be removed or replaced as indicated in the table.

Table: Traffic Signage Outside Limits of the Work			
Sign Type / Description	Station	Action	Timing of the Work
W-49 – Pavement End	736+600	Remove Sign and Sign Post	Following Completion of the Bituminous Surface Treatment and Line Painting
R-4X – Maximum 80 KM/H	737+200	Replace Sign with R-4X – Maximum 100 KM/H	Following Completion of the Bituminous Surface Treatment and Line Painting
W-26 – Road Narrows	743+020	Remove Sign and Sign Post	During or at the Completion of the 2016 Construction Season
W-49 – Pavement Ends	743+225	Remove Sign and Sign Post	During or at the Completion of the 2016 Construction Season
R-4X – Maximum 80 KM/H	743+225	Remove Sign and Sign Post	Following Completion of the Bituminous Surface Treatment and Line Painting
W-324 – Truck Rollover Warning	750+415	Remove Sign and Sign Post	During or at the Completion of the 2016 Construction Season
W-23 – Sunburst Advisory	750+510	Remove Sign and Sign	During or at the Completion of the

Speed		Post	2016 Construction Season
R-4X – Maximum 80 KM/H	750+750	Replace Sign with R-4X – Maximum 100 KM/H	Following Completion of the Bituminous Surface Treatment and Line Painting
R-3X – Maximum 80 KM/H Ahead	750+830	Remove Sign and Sign Post	Following Completion of the Bituminous Surface Treatment and Line Painting

Delete:

- 1.2.1.5 Installation and removal (if requested) of two PWGSC supplied Government of Canada “Accelerated Infrastructure Program” signs at each end of the project.

Insert:

- 1.2.1.5 Installation and removal (if requested) of two PWGSC supplied Government of Canada “Accelerated Infrastructure Program” signs at each end of the project. The signs will be approximately 1.2 m x 2.4 m in size and required two posts to secure in place.

Insert:

- 1.2.1.8 Completion of dust control and re-grading of the Crushed Base Gravel to eliminate any pot holes and washboard between Km 736+988 to Km 742+560. The Contractor shall be responsible for and undertake this upon mobilization to the site (June 1, 2016) through to the completion of construction for the 2016 season (October 15, 2016).

Insert:

- 1.2.1.9 Relocation of existing garbage receptacles from the existing rest area to the new pullout (Km 750+140).

Delete:

- 1.3.2.1 50% at the beginning of construction (to a maximum of 5% of the total Tender Price) after the Contractor required submittals (including Construction Schedule, Traffic Management Plan, Quality Management Plan, Environmental Protection Plan, Construction Staging, and any other submittals required prior to starting work) have been submitted for approval, accepted, and work onsite has commenced to the satisfaction of the Departmental Representative.

Insert:

- 1.3.2.1 50% at the beginning of construction (to a maximum of 5% of the total Tender Price) after the Contractor required submittals (including Construction Schedule, Traffic Management Plan, Quality Management Plan, Environmental Protection Plan, Construction Staging, and any other submittals required prior to starting work) have been submitted for review, accepted, and work onsite has commenced to the satisfaction of the Departmental Representative.

5. Section 01 29 00 – Payment Procedures

Delete:

- 1.3.3 A survey of the existing ground surfaces, river banks, stream channels, and other topographic features shall be undertaken by the Contractor prior to initiation of construction. The survey shall be provided to the Departmental Representative for review and acceptance. Additionally, during construction no material shall be placed unless the applicable surveys on the completed surfaces have been carried out and the data accepted by the Departmental Representative, and the completed surface has been inspected and accepted by the Departmental Representative.

Insert:

- 1.3.3 A survey of the existing ground surfaces, river banks, stream channels, and other topographic features shall be undertaken by the Contractor prior to initiation of construction, but in areas designated for Clearing and Grubbing after the Clearing and Grubbing has been completed to the satisfaction of the Departmental Representative. The survey shall be provided to the Departmental Representative for review and acceptance. Additionally, during construction no material shall be placed unless the applicable surveys on the completed surfaces have been carried out and the data accepted by the Departmental Representative, and the completed surface has been inspected and accepted by the Departmental Representative.

Delete:

- 1.3.5 Survey data shall be provided to the Departmental Representative in digital xyz format.

Insert:

- 1.3.5 Survey data shall be provided to the Departmental Representative in digital xyz format with an appropriate descriptor code as to the type of material surface or feature being surveyed.

6. Section 01 31 00 – Project Management and Coordination

Delete:

- 1.2.4.13 Other business as required by the Departmental Representative or Contractor.

Insert:

- 1.2.4.13 Contractor's site specific safety plan.

- 1.2.4.14 Other business as required by the Departmental Representative or Contractor.

Insert:

1.3.1.12 Contractor's site specific safety plan.

Delete:

- 1.5.2 Departmental Representatives and senior representatives of the Contractor, including but not necessarily limited to the Project Superintendent and major subcontractors shall be shall attend in person. Other contractor representatives including the Deputy Project Superintendent, Health and Safety Coordinator, Quality Control Manager, and Environmental Monitor shall attend in person or via teleconference.

Insert:

- 1.5.2 Departmental Representatives and senior representatives of the Contractor, including but not necessarily limited to the Project Superintendent and major subcontractors shall attend in person. Other contractor representatives including the Deputy Project Superintendent, Health and Safety Coordinator, Quality Control Manager, and Environmental Monitor shall attend in person or via teleconference.

7. Section 01 35 00.06 – Special Procedures – Traffic Control

Delete:

- 1.2.1 Payment for the cost of Traffic Control will be made on the basis of the Price per Unit Bid for Traffic Control in the Bid and Acceptance Form. The Price per Unit Bid shall include the completion of the Traffic Management Plan, signage, temporary concrete barriers and privacy fence, gravel shouldering (where required), traffic flaggers or automated traffic control devices and all other items necessary for the successful completion of the task.

Insert:

- 1.2.1 Payment for the cost of Traffic Control will be made on the basis of the Price per Unit Bid for Traffic Control in the Bid and Acceptance Form. The Price per Unit Bid shall include the completion of the Traffic Management Plan, construction signage, temporary concrete barriers and privacy fence (if required), temporary gravel surfacing and shouldering (if required), traffic flaggers or automated traffic control devices, pilot vehicles (if required), and all other items necessary for the successful completion of the task. Traffic control shall be required for the duration of project work and shall be undertaken as necessary during all works including dust control and re-grading between Km 736+988 to Km 742+560, the Reshaping Existing Crushed Base Gravel for BST (KM 736+988 – Km 742+560), and the completion of all BST and line painting.

Delete:

- 1.8.4.1.1 Where equipment is working on a section of roadway longer than 300 m or shorter if visibility is limited.

Insert:

- 1.8.4.1.1 Where equipment is working on a section of roadway longer than 300 m or shorter if visibility is limited.

Delete:

- 1.8.4.1.2 Where traffic is required to travel on partially completed roadway or on detours longer than 300 m or shorter if visibility is limited.

Insert:

- 1.8.4.1.2 Where traffic is required to travel on partially completed roadway or on detours longer than 300 m or shorter if visibility is limited.

Delete:

- 1.9.1.3 Horizontal and vertical geometrics for two Lane / two way traffic shall conform to the requirements as defined in table below.

Table: Roadway Requirements – Temporary Two-way / Two Lane Traffic	
Criteria	Value
Design Speed	30 km/hr
Design Vehicle	WB-20
Max Grade	8%
Maximum Superelevation	6%
Minimum Lane Width	3.3 m
Minimum Shoulder Width (Open)	0.5 m
Minimum Shoulder Width (Closed by Barrier)	1.0 m

Other geometric requirements (not listed) shall be in conformance with the BC MoT Supplement to TAC Geometric Design Guide (latest edition), and the Transportation Association Canada Geometric Design Guide for Canadian Roads (latest edition) for a 30 km/hr design speed.

Insert:

- 1.9.1.3 Horizontal and vertical geometrics for two Lane / two way traffic shall conform to the requirements as defined in table below.

Table: Roadway Requirements – Temporary Two-way / Two Lane Traffic	
Criteria	Value

Design Speed	30 km/hr
Design Vehicle	WB-20
Max Grade	8%
Maximum Superelevation	6%
Minimum Lane Width	3.3 m
Minimum Shoulder Width (Open)	0.5 m
Minimum Shoulder Width (Closed by Barrier)	1.0 m

Other geometric requirements (not listed, ex. off tracking and barrier flare requirements) shall be in conformance with the BC MoT Supplement to TAC Geometric Design Guide (latest edition, use Low-Volume Roads Chapter when required for 30 km/hr design speed), and the Transportation Association Canada Geometric Design Guide for Canadian Roads (latest edition) for a 30 km/hr design speed and 1000 AADT.

- 1.9.1.4 Horizontal and vertical geometrics for single lane alternating traffic shall conform with the requirements as defined in table below.

Table: Roadway Requirements – Temporary Two-way / Two Lane Traffic	
Criteria	Value
Design Speed	30 km/hr
Design Vehicle	WB-20
Max Grade	8%
Maximum Superelevation	6%
Minimum Lane Width	3.3 m
Minimum Shoulder Width (Open, width required both sides of lane)	0.5 m
Minimum Shoulder Width (Closed by Barrier, width required both sides of lane)	1.0 m

Other geometric requirements (not listed) shall be in conformance with the BC MoT Supplement to TAC Geometric Design Guide (latest edition), and the Transportation Association Canada Geometric Design Guide for Canadian Roads (latest edition) for a 30 km/hr design speed.

Insert:

- 1.9.1.4 Horizontal and vertical geometrics for single lane alternating traffic shall conform with the requirements as defined in table below.

Table: Roadway Requirements – Temporary Two-way / Two Lane Traffic	
Criteria	Value
Design Speed	30 km/hr

Design Vehicle	WB-20
Max Grade	8%
Maximum Superelevation	6%
Minimum Lane Width	3.3 m
Minimum Shoulder Width (Open, width required both sides of lane)	0.5 m
Minimum Shoulder Width (Closed by Barrier, width required both sides of lane)	1.0 m

Other geometric requirements (not listed, ex. off tracking and barrier flare requirements) shall be in conformance with the BC MoT Supplement to TAC Geometric Design Guide (latest edition, use Low-Volume Roads Chapter when required for 30 km/hr design speed), and the Transportation Association Canada Geometric Design Guide for Canadian Roads (latest edition) for a 30 km/hr design speed and 1000 AADT.

Insert:

- 1.9.1.5 Maintain 3H:1V or flatter embankment or gravel side slopes on both sides of all two way and single lane traffic lanes. Should the contractor choose to use temporary side slopes steeper than 3H:1V, temporary precast concrete barriers shall be installed.

Insert:

- 1.9.1.6 Ensure that all vehicles can safely travel and traverse the entire length of the project (including detours) without damage to vehicles regardless of the material type placed and used as a driving surface.

8. Section 01 35 43 – Environmental Protection

Delete:

- 1.13.4 A fire extinguisher shall be carried and available for use on each machine and at locations within the quarry in the event of fire. Should the contractor choose to burn timber and organic materials resulting from clearing operations, firefighting equipment (e.g. a water truck; minimum 500 imperial gallons with 500 feet of fire hose and a pump capable of producing 45 psi water pressure at the nozzle, three shovels, two Pulaski's, and two five gallon backpack pumps) shall be maintained at the construction site at a location known and easily accessible to all Contractors' staff. Contactor's staff shall receive basic training in early response to wildfire events during the "environmental briefing".

Insert:

- 1.13.4 A fire extinguisher shall be carried and available for use on each machine and at locations within the quarry in the event of fire. Should the contractor choose to burn timber and organic materials resulting from clearing operations, firefighting equipment (e.g. a water truck; minimum 2000 Liters with 150 meters of fire hose and a pump

capable of producing 300 kPa water pressure at the nozzle, three shovels, two Pulaski's, and two 20 liter backpack pumps) shall be maintained at the construction site at a location known and easily accessible to all Contractors' staff. Contactor's staff shall receive basic training in early response to wildfire events during the "environmental briefing" presented by the Contractor.

9. Section 01 45 00 – Quality Management

Delete:

- 1.2.1 British Columbia MoT – 2009 Standard Specifications for Highway Construction.

Insert:

- 1.2.1 British Columbia MoT – 2012 Standard Specifications for Highway Construction.

Delete:

- 1.8.1 Testing required to provide Quality Control to assure that the work strictly complies with the Contract requirements shall be completed by the Contractor and at a minimum include:

Insert:

- 1.8.1 Testing required to provide Quality Control to assure that the work strictly complies with the Contract requirements shall be completed by the Contractor using a fully equipped, operational, and staffed onsite field laboratory during times of construction activity and gravel manufacturing and at a minimum include.

Delete:

- 1.8.2.2 The minimum QC testing frequencies as defined in the table below.

Table: Minimum QC Testing Frequencies		
Activity	Test / Inspection	Frequency
Manufacture – Crushed Base Gravel	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Sub-base Course	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Select Subgrade Fill Material	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – BST Aggregate	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Specialty Embankment	Gradation	The more stringent of: 1 Test per 2000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Cut Slope Stabilization Material	Gradation	The more stringent of: 1 Test per 2000 m ³ Manufactured or 1 test per hour of manufacturing
Screening / Sorting – Riprap	Gradation	1 Test per Every 1 Day of Production

Screening / Sorting – Natural Substrate	Gradation	1 Test per Every 1 Day of Production
Manufacture / Screening / Sorting – Cut Slope Drainage Swale Material	Gradation	1 Test per Every 1 Day of Production
Placement / Site Tolerance – Crushed Base Gravel	Survey	Final Lift, 5 points Along Each Cross Section at 10 m Stations
Placement / Site Tolerance – Sub-base Course	Survey	Final Lift, 3 points Along Each Cross Section at 20 m Stations
Placement / Site Tolerance – Select Subgrade Fill Material	Survey	Final Lift, 3 points Along Each Cross Section at 20 m Stations
Placement / Site Tolerance – Embankment	Survey	Final Lift, 1 Point every 5 m Measured Along the Cross Section at 20 m Stations
Placement / Site Tolerance – Specialty Embankment	Survey	Final Lift, 1 Point every 5 m Measured Along the Cross Section at 20 m Stations
Placement / Site Tolerance – Cut Slope Stabilization Material	Survey	Final Lift, 1 Point every 5 m Measured Along the Cross Section at 20 m Stations
Placement / Site Tolerance – Riprap	Survey	1 Point every 5 m ² of Riprap placed or less as approved by the Departmental Representative
Placement / Site Tolerance – Natural Substrate	Survey	1 Point every 5 m ² of Natural Substrate placed or less as approved by the Departmental Representative
Placement / Site Tolerance – Cut Slope Drainage Swale Material	Survey	1 Point every 5 m ² of Cut Slope Drainage Swale Material placed or less as approved by the Departmental Representative
Compaction – Crushed Base Gravel	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Compaction – Sub-base Course	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Compaction – Select Subgrade Fill Material	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Compaction – Embankment	In-Place Density	1 Test per 200 m ² Per Lift of Placed Material or Proof Roll of Full Width of Each lift if 30% or More of the Embankment Material is Oversized (> 19 mm)
Compaction – Pulverized Existing BST for Reconstruction	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Manufacture – Pre-Cast Concrete Lock Blocks	Field Test of Plastic Properties (Air and Slump)	As per CSA Certified Manufacturing Plant QC Requirements
Manufacture – Pre-Cast Concrete Lock Blocks	Compressive Strength Tests	As per CSA Certified Manufacturing Plant QC Requirements
Manufacture – Precast Concrete Barrier	Field Test of Plastic Properties (Air and Slump)	As per CSA Certified Manufacturing Plant QC Requirements

Manufacture – Precast Concrete Barrier	Compressive Strength Tests	As per CSA Certified Manufacturing Plant QC Requirements
Cast-in-place Concrete – Concrete Culvert End Treatment	Field Test of Plastic Properties (Air and Slump)	1 Test per Every End Treatment Cast
Cast-in-place Concrete – Concrete Culvert End Treatment	Compressive Strength Tests	1 Set of 4 (one 7 Day and Three 28 Day) Cylinders for Every End Treatment Cast

Insert:

1.8.2.2 The minimum QC testing frequencies as defined in the table below.

Table: Minimum QC Testing Frequencies		
Activity	Test / Inspection	Frequency
Manufacture – Crushed Base Gravel	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Sub-base Course	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Select Subgrade Fill Material	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – BST Aggregate	Gradation	The more stringent of: 1 Test per 3000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Specialty Embankment	Gradation	The more stringent of: 1 Test per 2000 m ³ Manufactured or 1 test per hour of manufacturing
Manufacture – Cut Slope Stabilization Material	Gradation	The more stringent of: 1 Test per 2000 m ³ Manufactured or 1 test per hour of manufacturing
Screening / Sorting – Riprap	Gradation	1 Test per Every 1 Day of Production
Manufacture / Screening / Sorting – Cut Slope Drainage Swale Material	Gradation	1 Test per Every 1 Day of Production
Placement / Site Tolerance – Crushed Base Gravel	Survey	Final Lift, 5 points Along Each Cross Section at 10 m Stations
Placement / Site Tolerance – Sub-base Course	Survey	Final Lift, 3 points Along Each Cross Section at 20 m Stations
Placement / Site Tolerance – Select Subgrade Fill Material	Survey	Final Lift, 3 points Along Each Cross Section at 20 m Stations
Placement / Site Tolerance – Embankment	Survey	Final Lift, 1 Point every 5 m Measured Along the Cross Section at 20 m Stations
Placement / Site Tolerance – Specialty Embankment	Survey	Final Lift, 1 Point every 5 m Measured Along the Cross Section at 20 m Stations
Placement / Site Tolerance – Cut Slope Stabilization Material	Survey	Final Lift, 1 Point every 5 m Measured Along the Cross Section at 20 m Stations
Placement / Site Tolerance – Riprap	Survey	1 Point every 5 m ² of Riprap placed or less as approved by the Departmental Representative
Placement / Site Tolerance – Cut Slope Drainage Swale Material	Survey	1 Point every 5 m ² of Cut Slope Drainage Swale Material placed or less as approved by the Departmental Representative
Compaction – Crushed Base	In-Place Density	3 Randomly Located Tests Over the Full Width of

Gravel		Material Placed every 20 m Stations, Per each Lift of Placed Material
Compaction – Sub-base Course	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Compaction – Select Subgrade Fill Material	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Compaction – Embankment	In-Place Density	1 Test per 200 m ² Per Lift of Placed Material or Proof Roll of Full Width of Each lift if 30% or More of the Embankment Material is Oversized (> 19 mm)
Compaction – Pulverized Existing BST for Reconstruction	In-Place Density	3 Randomly Located Tests Over the Full Width of Material Placed every 20 m Stations, Per each Lift of Placed Material
Manufacture – Pre-Cast Concrete Lock Blocks	Field Test of Plastic Properties (Air and Slump)	As per CSA Certified Manufacturing Plant QC Requirements
Manufacture – Pre-Cast Concrete Lock Blocks	Compressive Strength Tests	As per CSA Certified Manufacturing Plant QC Requirements
Manufacture – Precast Concrete Barrier	Field Test of Plastic Properties (Air and Slump)	As per CSA Certified Manufacturing Plant QC Requirements
Manufacture – Precast Concrete Barrier	Compressive Strength Tests	As per CSA Certified Manufacturing Plant QC Requirements
Cast-in-place Concrete – Concrete Culvert End Treatment	Field Test of Plastic Properties (Air and Slump)	1 Test per Every End Treatment Cast
Cast-in-place Concrete – Concrete Culvert End Treatment	Compressive Strength Tests	1 Set of 4 (one 7 Day and Three 28 Day) Cylinders for Every End Treatment Cast

Addendum Note: The two activities related to “Natural Substrate” have been removed from the Minimum QC Testing Frequencies table.

10. Section 02 41 13 – Selective Site Demolition

Delete:

- 1.2.3 Measurement for Payment for completion of the removal and temporary stockpile of precast concrete lock blocks and precast concrete barrier will be made by the count of Precast Concrete Lock Blocks and Precast Concrete Barrier moved from within the project limits (Km 742+560 and Km 750+300) and temporarily stockpiled as accepted by the Departmental Representative.

Insert:

- 1.2.3 Measurement for Payment for completion of the removal and temporary stockpile of precast concrete lock blocks and precast concrete barrier will be made by the count of Precast Concrete Lock Blocks and Precast Concrete Barrier moved from within the

project limits (Km 742+560 and Km 750+300) and temporarily stockpiled as accepted by the Departmental Representative. The temporary removal of precast concrete lock blocks and precast concrete barrier to facilitate the installation of the Bituminous Surface Treatment during the 2017 construction season will not be include in the count of precast concrete lock blocks or precast concrete barrier measured for payment.

Delete:

- 3.4.2 Excavate and remove all existing culverts and associated components (screens, debris catchments etc., if present) within the limits of the work. Dispose of the culverts in an offsite disposal facility permitted to accept the culvert materials (steel and creosote treated timber) and acceptable to the Departmental Representative. If requested by the Departmental Representative, salvage the associated culvert components (screens, debris catchments etc.) and stockpile in a location directed by the Departmental Representative.

Insert:

- 3.4.2 Excavate and remove all existing culverts and associated components (screens, debris catchments etc., if present) within the limits of the work. Dispose of the culverts in an offsite disposal facility within British Columbia permitted to accept the culvert materials (steel and creosote treated timber) and acceptable to the Departmental Representative. If requested by the Departmental Representative, salvage the associated culvert components (screens, debris catchments etc.) and stockpile in a location directed by the Departmental Representative.

11. Section 10 14 53 – Traffic Signage

Delete:

- 1.2.2 Measurement for Payment for Traffic Signage will be made by the count of each traffic sign (sign and post) installed and accepted by the Departmental Representative.

Insert:

- 1.2.2 Measurement for Payment for Traffic Signage will be made by the count of each traffic sign (sign and post) installed and accepted by the Departmental Representative. A single sign post designated to hold a sign on both sides (for both the northbound and southbound traffic, ex. G-104 sign type) will only be counted as one sign for payment.

Delete:

- 1.3.2 British Columbia MoT – 2009 Standard Specifications for Highway Construction.

Insert:

- 1.3.2 British Columbia MoT – 2012 Standard Specifications for Highway Construction.

Insert:

- 1.3.3 Transportation Association of Canada - Manual of Uniform Traffic Control Devices for Canada (January 2014, or latest edition).

Delete:

- 2.1.1 The sign posts and hardware shall be in conformance with the BC MoT 2009 Standard Specification for Highway Construction, See Section 635, subsection 635.27 and the following requirements.

Insert:

- 2.1.1 The sign posts and hardware shall be in conformance with the BC MoT 2012 Standard Specification for Highway Construction, See Section 635, subsection 635.27 and the following requirements.

Delete:

- 2.2.1 Signs shall be per BC MoT Manual of Standard Traffic Signs & Pavement Markings and BC MoT 2009 Standard Specification for Highway Construction, See Section 635, subsection 635.32 and the following requirements.

.1 Signs shall be sheet aluminum.

Insert:

- 2.2.1 Signs shall be per the BC MoT 2012 Standard Specification for Highway Construction, See Section 635, subsection 635.32 and the following requirements.

.1 All signs shall be sheet aluminum.

.2 All sign shall be per the BC MoT Manual of Standard Traffic Signs & Pavement Markings. If not provided in the BC MoT Manual of Standard Traffic Signs & Pavement Markings the sign shall be per the Manual of Uniform Traffic Control Devices for Canada.

.3 All custom signs shall be to the same size, shape, colour, text size, and text content as per the existing custom in place signs prior to the start of the work.

Delete:

- 3.1.1 The wood posts and signs shall be installed per the BC MoT Manual of Standard Traffic Signs & Pavement Markings and BC MoT 2009 Standard Specification for Highway Construction, See Section 635, subsection 635.27 and subsection 635.32 and the following requirements.

Insert:

- 3.1.1 The wood posts and signs shall be installed per the BC MoT Manual of Standard Traffic Signs & Pavement Markings and BC MoT 2012 Standard Specification for Highway Construction, See Section 635, subsection 635.27 and subsection 635.32 and the following requirements.

12. Section 31 05 16 – Aggregates: General

Delete:

- 1.2.1 Measurement and Payment for Aggregate Materials shall be per the applicable work included in Section 31 23 33.01 – Excavating Trenching and Backfilling, Section 32 12 36.14 – BST, Section 32 11 18 – Select Subgrade Fill Material, Section 32 11 19 – Sub-base Course, Section 32 11 24 – Crushed Base Gravel, Section 33 42 13 – Pipe Culverts, and any other section as required by these specifications.

Insert:

- 1.2.1 Measurement and Payment for Aggregate Materials shall be per the applicable work included in Section 31 23 33.01 – Excavating Trenching and Backfilling, Section 32 12 35 – Bituminous Surface Treatment, Section 32 11 18 – Select Subgrade Fill Material, Section 32 11 19 – Sub-base Course, Section 32 11 24 – Crushed Base Gravel, Section 33 42 13 – Pipe Culverts, and any other section as required by these specifications.

Delete:

- 2.2.2.1 The material shall consist of hard durable particles free from clay lumps, frozen material, organic matter (max 1% by volume, max 2% fine organic material when tested in accordance with ASTM 02974) and other deleterious materials.

Insert:

- 2.2.2.1 The material shall consist of hard durable particles free from clay lumps, frozen material, organic matter, and other deleterious materials.

Delete:

- 2.3.2.1 The material shall consist of hard durable particles free from clay lumps, frozen material, organic matter (max 1% by volume, max 2% fine organic material when tested in accordance with ASTM 02974) and other deleterious materials.

Insert:

- 2.3.2.1 The material shall consist of hard durable particles free from clay lumps, frozen material, organic matter, and other deleterious materials.

Delete:

- 2.3.2.3 Grading of material shall not show marked fluctuations from opposite extremes of the

limits given in Table 1, and the curve plotted from the sieve analysis shall flow in a similar manner from acute changes in direction.

Insert:

2.3.2.3 Grading of material shall not show marked fluctuations from opposite extremes of the limits given in above Table, and the curve plotted from the sieve analysis shall flow in a similar manner from acute changes in direction.

Delete:

2.4.2.1 The material shall consist of hard durable particles free from clay lumps, frozen material, organic matter (max 1% by volume, max 2% fine organic material when tested in accordance with ASTM 02974) and other deleterious materials.

Insert:

2.4.2.1 The material shall consist of hard durable particles free from clay lumps, frozen material, organic matter and other deleterious materials.

Insert:

2.4.2.4 Liquid limit when tested in accordance to ASTM D4318-00, maximum 25.

Insert:

2.4.2.5 Plasticity index when tested in accordance to ASTM D4318-00, maximum 6.

Delete:

3.4 Cleanup

Insert:

3.5 Cleanup

13. Section 31 11 00 – Clearing and Grubbing

Delete:

3.3.2 In areas with highway embankment fill, grubbing requirements on the downslope side of the embankment fill slope shall altered be as follows.

Insert:

3.3.2 In areas with highway embankment fill, grubbing requirements between toe of new embankment fill and the new clearing limits shall be altered as follows.

14. Section 31 23 33.01 – Excavating, Trenching, and Backfilling

Delete:

1.1 Section Includes

- .1 Measurement and payment procedures.
- .2 Riprap.
- .3 Riprap underlayer.
- .4 Woven geotextile.
- .5 Crushed base gravel.
- .6 Cut slope drainage swale material.
- .7 Placement of riprap and riprap underlayer: general.
- .8 Ditch construction (following culvert removal).
- .9 Culvert inlet and outlet riprap protection.
- .10 Steep slope riprap protection
- .11 Ditch block.
- .12 Cut slope drainage swale.
- .13 Culvert inlet riprap protection (Ed's Creek, Km 748+133).
- .14 Culvert outlet riprap protection and stream reestablishment (Ed's Creek, Km 748+133).
- .15 Armoured ditching.

Insert:

1.1 Section Includes

- .1 Measurement and payment procedures.
- .2 Riprap.
- .3 Riprap underlayer.
- .4 Woven geotextile.

- .5 Crushed base gravel.
- .6 Cut slope drainage swale material.
- .7 Non-woven geotextile.
- .8 Placement of riprap and riprap underlayer: general.
- .9 Ditch construction (following culvert removal).
- .10 Culvert inlet and outlet riprap protection.
- .11 Steep slope riprap protection
- .12 Ditch block.
- .13 Cut slope drainage swale.
- .14 Culvert inlet riprap protection (Ed's Creek, Km 748+133).
- .15 Culvert outlet riprap protection and stream reestablishment (Ed's Creek, Km 748+133).
- .16 Armoured ditching.

Delete:

- 1.2.1 Payment for ditch construction following culvert removal will be made on the basis of the Price per Unit for Ditch Construction Following CSP Culvert & Wood Stave Culvert Removal (\leq 800 mm Diameter) and Ditch Construction Following CSP Culvert Removal ($>$ 800 mm Diameter) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and shaping of the ditch, disposal of the native materials on site, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of woven geotextile, and all other items necessary for successful completion of the work.

Insert:

- 1.2.1 Payment for ditch construction following culvert removal will be made on the basis of the Price per Unit for Ditch Construction Following CSP Culvert & Wood Stave Culvert Removal (\leq 800 mm Diameter) and Ditch Construction Following CSP Culvert Removal ($>$ 800 mm Diameter) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and shaping of the ditch, disposal of the native materials on site, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of nonwoven geotextile, and all other items necessary for successful completion of the work.

Delete:

- 1.2.3 Payment for culvert inlet and outlet protection on culverts ≤ 1800 mm diameter will be made on the basis of the Price per Unit Bid for Culvert Inlet and Outlet Riprap Protection (Culverts ≤ 1800 mm Diameter) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of woven geotextile, and all other items necessary for successful completion of the work.

Insert:

- 1.2.3 Payment for culvert inlet and outlet protection on culverts ≤ 1800 mm diameter will be made on the basis of the Price per Unit Bid for Culvert Inlet and Outlet Riprap Protection (Culverts ≤ 1800 mm Diameter) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of nonwoven geotextile, and all other items necessary for successful completion of the work.

Delete:

- 1.2.5 Payment for steep slope riprap protection will be made on the basis of the Price per Unit Bid for Steep Slope Riprap Protection in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of woven geotextile, tree and brush removal (if necessary), and all other items necessary for successful completion of the work.

Insert:

- 1.2.5 Payment for steep slope riprap protection will be made on the basis of the Price per Unit Bid for Steep Slope Riprap Protection in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of nonwoven geotextile, tree and brush removal (if necessary), and all other items necessary for successful completion of the work.

Delete:

- 1.2.9 Payment - Culvert Inlet Riprap Protection (3300 mm Ed's Creek Culvert, km 748+133)

Delete:

- 1.2.10 Payment for culvert inlet riprap protection at Ed's Creek Culvert, km 748+133 will be made on the basis of the Price per Unit Bid for Culvert Inlet Riprap Protection (Ed's Creek, Km 748+133) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for

the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of woven geotextile, and all other items necessary for successful completion of the work.

Insert:

- 1.2.9 Payment for culvert inlet riprap protection at Ed's Creek Culvert, km 748+133 will be made on the basis of the Price per Unit Bid for Culvert Inlet Riprap Protection (Ed's Creek, Km 748+133) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of nonwoven geotextile, and all other items necessary for successful completion of the work.

Delete:

- 1.2.11 Measurement for Payment for completion of the Culvert Inlet Riprap Protection (Ed's Creek, Km 748+133) will be made by will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

Insert:

- 1.2.10 Measurement for Payment for completion of the Culvert Inlet Riprap Protection (Ed's Creek, Km 748+133) will be made by will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

Delete:

- 1.2.12 Payment for culvert outlet riprap protection and stream reestablishment at Ed's Creek Culvert, km 748+133 will be made on the basis of the Price per Unit Bid for Culvert Outlet Riprap Protection and Stream Reestablishment (Ed's Creek, Km 748+133) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap and complete stream reestablishment slopes, selecting, loading, transport, and placement of 250 Kg Class riprap, 50 Kg class riprap and Riprap Underlay, the supply and install of woven geotextile, and all other items necessary for successful completion of the work.

Insert:

- 1.2.11 Payment for culvert outlet riprap protection and stream reestablishment at Ed's Creek Culvert, km 748+133 will be made on the basis of the Price per Unit Bid for Culvert Outlet Riprap Protection and Stream Reestablishment (Ed's Creek, Km 748+133) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap and complete stream reestablishment slopes, selecting, loading, transport, and placement of 250 Kg Class riprap, 50 Kg class riprap and Riprap Underlay, the supply and install of nonwoven geotextile, and all other items necessary for successful completion of the work.

Delete:

- 1.2.13 Measurement for Payment for completion of the Culvert Outlet Riprap Protection and Stream Reestablishment (Ed's Creek, Km 748+133) will be made by will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

Insert:

- 1.2.12 Measurement for Payment for completion of the Culvert Outlet Riprap Protection and Stream Reestablishment (Ed's Creek, Km 748+133) will be made by will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

Delete:

- 1.2.14 Payment for cut slope drainage swales will be made on the basis of the Price per Unit Bid for Cut Slope Drainage Swale in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials, supply and placement of the woven geotextile, manufacture and placement of the cut slope drainage swale material, and all other items necessary for successful completion of the work.

Insert:

- 1.2.13 Payment for cut slope drainage swales will be made on the basis of the Price per Unit Bid for Cut Slope Drainage Swale in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials, supply and placement of the woven geotextile, manufacture and placement of the cut slope drainage swale material, and all other items necessary for successful completion of the work.

Delete:

- 1.2.15 Measurement for Payment for completion of Cut Slope Drainage Swale will be made on the length of cut slope drainage swale surveyed in lineal metres, measured parallel to the centerline of the swale, and accepted by the Departmental Representative.

Insert:

- 1.2.14 Measurement for Payment for completion of Cut Slope Drainage Swale will be made on the length of cut slope drainage swale surveyed in lineal metres, measured parallel to the centerline of the swale, and accepted by the Departmental Representative.

Delete:

- 1.2.16 Payment for armored ditching will be made on the basis of the Price per Unit Bid for Armoured Ditching in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap,

selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of woven geotextile, and all other items necessary for successful completion of the work.

Insert:

- 1.2.15 Payment for armored ditching will be made on the basis of the Price per Unit Bid for Armoured Ditching in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and disposal of the native materials in preparation for the riprap, selecting, loading, transport, and placement of 50 Kg class riprap, the supply and install of nonwoven geotextile, and all other items necessary for successful completion of the work.

Delete:

- 1.2.17 Measurement for Payment for completion of the Armoured Ditching will be made by the count of the area of material surveyed in square meters, incorporated in the works and accepted by the Departmental Representative.

Insert:

- 1.2.16 Measurement for Payment for completion of the Armoured Ditching will be made by the area of material surveyed in square meters, incorporated in the works and accepted by the Departmental Representative.

Insert

2.5 Nonwoven Geotextile

- .1 The nonwoven geotextile shall be Nilex 4551 or pre-approved equivalent.

Delete:

- 3.1.2 Place Riprap and Riprap Underlayer materials on woven geotextile, on slopes and ground property shaped per the lines and grades shown in the Contract Drawings and free from debris, snow and ice or other deleterious material.

Insert:

- 3.1.2 Place Riprap and Riprap Underlayer materials on nonwoven geotextile, on slopes and ground property shaped per the lines and grades shown in the Contract Drawings and free from debris, snow and ice or other deleterious material.

Insert

3.2 Placement of Nonwoven and Woven Geotextile: General

- .1 Place nonwoven and woven geotextile material by unrolling onto excavated /

graded surface in orientation, manner and locations indicated on contract drawings and retain in position with pins. All nonwoven and woven geotextile placed on a slope shall at a minimum be secured with pins min 300 mm long every 2 m² of geotextile.

.2 Place nonwoven and woven geotextile material smooth and free of tension stress, folds, wrinkles and creases.

.3 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of nonwoven and woven geotextile.

.4 Overlap each successive strip of nonwoven and woven geotextile 1000 mm over previously laid strip. When nonwoven and woven geotextile are placed on a slope, ensure overlap is as follows:

.1 Geotextile placed higher on slope is placed above geotextile placed lower on slope.

.5 Pin successive strips of nonwoven and woven geotextile with securing pins at 1000 mm interval at midpoint of lap.

.6 Protect installed nonwoven and woven geotextile material from displacement, damage or deterioration before, during and after placement of material layers.

.7 Replace damaged or deteriorated nonwoven and woven geotextile to approval of Departmental Representative.

.8 Upon acceptance by the Departmental Representative, place succeeding material as shown on the contract drawings.

Delete:

3.2 Ditch Construction (Following Culvert Removal)

Insert:

3.3 Ditch Construction (Following Culvert Removal)

Delete:

3.2.2 Install 50 Kg Class Riprap and Woven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General, above. Ensure positive drainage following riprap placement.

Insert:

3.3.2 Install 50 Kg Class Riprap and Nonwoven Geotextile to the lines and grades shown on

the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General, above. Ensure positive drainage following riprap placement.

Delete:

- 3.3 Culvert Inlet and Outlet Riprap Protection

Insert:

- 3.4 Culvert Inlet and Outlet Riprap Protection

Delete:

- 3.3.3 Install 50 Kg Class Riprap and Woven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General, above. Ensure positive drainage following riprap placement.

Insert:

- 3.4.3 Install 50 Kg Class Riprap and Nonwoven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General, above. Ensure positive drainage following riprap placement.

Delete:

- 3.4 Steep Slope Riprap Protection

Insert:

- 3.5 Steep Slope Riprap Protection

Delete:

- 3.4.3 Install 50 Kg Class Riprap and Woven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General, above. Ensure positive drainage following riprap placement.

Insert:

- 3.5.3 Install 50 Kg Class Riprap and Nonwoven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General, above. Ensure positive drainage following riprap placement.

Delete:

- 3.5 Ditch Block

Insert:

- 3.6 Ditch Block

Delete:

- 3.6 Cut Slope Drainage Swale

Insert:

- 3.7 Cut Slope Drainage Swale

Delete:

- 3.6.3 Cut Slope Drainage Swale Material and Woven Geotextile to the lines and grades shown on the contract drawings. Ensure positive drainage following Cut Slope Drainage Swale Material placement.

Insert:

- 3.7.3 Install Cut Slope Drainage Swale Material and Woven Geotextile to the lines and grades shown on the contract drawings and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General. Ensure positive drainage following Cut Slope Drainage Swale Material placement.

Delete:

- 3.7 Culvert Inlet Riprap Protection (Ed's Creek, Km 748+133)

Insert:

- 3.8 Culvert Inlet Riprap Protection (Ed's Creek, Km 748+133)

Delete:

- 3.7.4 Install 50 Kg Class Riprap and Woven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap: General, above. Ensure positive drainage following riprap placement.

Insert:

- 3.8.4 Install 50 Kg Class Riprap and Nonoven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General, above. Ensure positive drainage following riprap placement.

Delete:

- 3.8 Culvert Outlet Riprap Protection and Stream Reestablishment (Ed's Creek, Km 748+133)

Insert:

- 3.9 Culvert Outlet Riprap Protection and Stream Reestablishment (Ed's Creek, Km 748+133)

Delete:

- 3.8.5 Install 250 Kg Class Riprap, 50 Kg Class Riprap, and Woven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap: General, above. Ensure positive drainage following riprap placement.

Insert:

- 3.9.5 Install 250 Kg Class Riprap, 50 Kg Class Riprap, and Nonwoven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General, above. Ensure positive drainage following riprap placement.

Delete:

- 3.9 Armoured Ditching

Insert:

- 3.10 Armoured Ditching

Delete:

- 3.9.4 Install 50 Kg Class Riprap and Woven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap: General, above. Ensure positive drainage following riprap placement.

Insert:

- 3.9.4 Install 50 Kg Class Riprap and Nonwoven Geotextile to the lines and grades shown on the contract drawings and to the requirements of Section 3.1 – Placement of Riprap and Riprap Underlayer: General and Section 3.2 – Placement of Nonwoven and Woven Geotextile: General, above. Ensure positive drainage following riprap placement.

15. Section 31 24 13 – Roadway Excavation, Embankment, and Compaction

Delete:

- 1.1.7 Woven Geotextile

Insert:

1.1.7 Nonwoven Geotextile

Delete:

- 1.2.5 Payment for the excavation, transport, manufacture, and placement of specialty embankment will be made on the basis of the Price per Unit Bid for Specialty Embankment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavation, manufacture, transport, placement, compaction, woven geotextile, and all other items necessary for successful completion of the work. The install of the 1 m high gravel berm as shown on the contract drawings shall be incidental to the work and will not be measured for payment.

Insert:

- 1.2.5 Payment for the excavation, transport, manufacture, and placement of specialty embankment will be made on the basis of the Price per Unit Bid for Specialty Embankment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavation, manufacture, transport, placement, compaction, nonwoven geotextile, and all other items necessary for successful completion of the work. The install of the 1 m high gravel berm as shown on the contract drawings shall be incidental to the work and will not be measured for payment.

Delete:

- 1.3.4.2 Boulder or rock fragments measuring in volume two cubic metres or more.

Insert:

- 1.3.4.2 Boulder or rock fragments measuring in volume one cubic metres or more.

Delete:

2.4 Woven Geotextile

- .1 The Woven Geotextile shall be Nilex 2002 or pre-approved equivalent.

Insert:

2.4 Nonwoven Geotextile

- .1 The nonwoven geotextile shall be Nilex 4551 or pre-approved equivalent.

Delete:

- 3.1.2 Striping depths as indicated on the contract drawings and as directed by Departmental Representative

Insert:

- 3.1.2 Stripping depths as indicated on the contract drawings and as directed by Departmental Representative. Stripping shall be completed to the extents as shown on the Typical Section in the Contract Drawings rather than the Cross Sections which show approximate representative stripping.

Delete:

- 3.3.1 Place excavated material as embankment and specialty embankment material following stripping to the design lines and grades, cross sections and dimensions as shown on the contract drawings. Wrap specialty embankment materials (underlay and overlay) with woven geotextile. Install geotechnical instrumentation in the required locations prior to the placement of embankment (see 3.4 – Geotechnical Instrumentation below). Install 1 m high gravel berm as shown on the contract drawings.

Insert:

- 3.3.1 Place excavated material as embankment and specialty embankment material following stripping to the design lines and grades, cross sections and dimensions as shown on the contract drawings. Wrap specialty embankment materials (underlay and overlay) with nonwoven geotextile. Install nonwoven geotextile per 3.2 - Section 31 23 33.01 – Excavating, Trenching, and Backfilling. Install geotechnical instrumentation in the required locations prior to the placement of embankment (see 3.4 – Geotechnical Instrumentation below). Install 1.5 m high gravel berm as shown on the contract drawing C202.

Delete:

- 3.3.2 In locations with high fills as identified in the table below, the Contractor shall be responsible for staging the placement of embankment and granular materials per the following time requirements.
- .1 Embankment and granular material, 0 m – 4 m (as measured from bottom of stripped material): No material placement time restrictions.
 - .2 Embankment and granular material, 4 m – Top Finish Grade (as measured from bottom of stripped material): Rate of material placement not to exceed a thickness of one (1) m per every five (5) days. Lift thickness shall be measured in a compacted state.

The above time requirements for placement and compaction of embankment and granular material may be relaxed at the sole discretion of the Departmental Representative based on the review of the geotechnical monitoring data, survey data, and field observations during construction.

Table: High Fill Areas Requiring Staged Construction and Geotechnical Instrumentation
Location

Km 744+640 – Km 744+780
Km 745+530 – Km 745+780
Km 746+000 – Km 746+380
Km 749+560 – Km 749+800

Insert:

3.3.2 In locations with high fills as identified in the table below, the Contractor shall be responsible for staging the placement of embankment and granular materials per the following time requirements.

- .1 Embankment and granular material, 0 m – 4 m (as measured from bottom of stripped material): No material placement time restrictions.
- .2 Embankment and granular material, 4 m – Top Finish Grade (as measured from bottom of stripped material): Rate of material placement not to exceed a thickness of one (1) m per every five (5) days. Lift thickness shall be measured in a compacted state.

The above time requirements for placement and compaction of embankment and granular material may be relaxed at the sole discretion of the Departmental Representative based on the results of the geotechnical monitoring data, survey data, and field observations during construction.

Table: High Fill Areas Requiring Staged Construction and Geotechnical Instrumentation
Location
Km 744+640 – Km 744+780
Km 745+530 – Km 745+780
Km 746+000 – Km 746+380
Km 749+560 – Km 749+800

Delete:

3.3.12 Compact each layer to minimum 95% maximum dry density (ASTM D698-12). If more than 30% of the embankment material is oversized (retained on a 19 mm sieve), test compaction of the embankment using proof rolling.

Proof rolling shall require one complete coverage of the entire embankment area for each lift by the tires of a truck having a 9 tonne single axle dual tire or 17 tonne tandem axle group with dual tires with a tire pressure of 600 kPa.

When testing the compaction of the embankment material using proof rolling, the material shall be considered compacted when upon completing a pass over the embankment area, the embankment exhibits deformations less than 5 mm in depth.

Insert:

- 3.3.12 Compact each layer to minimum 95% maximum dry density (ASTM D698-12). If more than 30% of the embankment material is oversized (retained on a 19 mm sieve), test compaction of the embankment using proof rolling.

Proof rolling shall require one complete coverage of the entire embankment area for each lift by the tires of a truck having a 9 tonne single axle dual tire or 17 tonne tandem axle group with dual tires with a tire pressure of 600 kPa.

When testing the compaction of the embankment material using proof rolling, the material shall be considered compacted when upon completing a pass over the embankment area, the embankment exhibits no observed unsuitable deflections or rutting.

Delete:

- 3.3.17 Round top of cut slope per Cut Slope Treatment Detail found in the contract drawings.

Insert:

- 3.3.17 Round top of cut slope per Crest Cut Slope Treatment Detail found in the contract drawings.

Delete:

- 3.4.2 Install Piezometers under the supervision of the Departmental Representative. Typical installation details are shown on the Drawings. The Contractor shall install the piezometers down a cased borehole to a depth of 15 m from the bottom of the stripped surface prior to the start of fill placement. Extend drill depth if directed by the Departmental Representative (additional drilling costs to be covered by Change Order). The Contractor shall install the vibrating-wire transducer within a sand filter zone capped by a bentonite seal 2 m thick. The Contractor shall install a protective cover or casing overtop of the vibrating-wire cable, which shall be run laterally (horizontally) along the ground surface to a distance of least 3 m outward from the toe of the embankment fill. The exposed end of the piezometer cable shall be housed within a protective metal casing installed at or near the toe of the embankment fill. Care shall be taken by the Contractor not to damage the piezometer tip or cable after installation. The depth and elevation of the piezometer tip shall be recorded by the Contractor upon initial installation, and this information shall be clearly marked on a permanent label which shall be affixed to the end of the piezometer cable by the Contractor. Piezometers shall be installed in the locations shown on the contract drawings. At the completion of the installation, the Piezometers shall be fully functional as intended for the data collection requirements completed by the Departmental Representative.

Insert:

- 3.4.2 Install Piezometers under the supervision of the Departmental Representative. Typical

installation details are shown on the Drawings. The Contractor shall install the piezometers down a cased borehole to a depth of 15 m or as directed by the Departmental Representative from the bottom of the stripped surface prior to the start of fill placement. Extend drill depth if directed by the Departmental Representative (additional drilling costs to be covered by Change Order). The Contractor shall install the vibrating-wire transducer within a sand filter zone capped by a bentonite seal 2 m thick. The Contractor shall install a protective cover or casing overtop of the vibrating-wire cable, which shall be run laterally (horizontally) along the ground surface to a distance of least 3 m outward from the toe of the embankment fill. The exposed end of the piezometer cable shall be housed within a protective metal casing installed near the toe of the embankment fill. Care shall be taken by the Contractor not to damage the piezometer tip or cable after installation. The depth and elevation of the piezometer tip shall be recorded by the Contractor upon initial installation, and this information shall be clearly marked on a permanent label which shall be affixed to the end of the piezometer cable by the Contractor. Piezometers shall be installed in the locations shown on the contract drawings. At the completion of the installation, the Piezometers shall be fully functional as intended for the data collection requirements completed by the Departmental Representative.

Delete:

- 3.4.3 Slope inclinometers shall be installed under the supervision of the Departmental Representative. Typical installation details are shown on the Drawings. The Contractor shall install slope inclinometers to a depth of 10 m from the bottom of the stripped surface prior to the start of fill placement. Extend drill depth if directed by the Departmental Representative (additional drilling costs to be covered by Change Order). The installation shall be secured to base of the hole using RST Instruments Ltd. inclinometer casing anchors or pre-approved equivalent. The Contractor shall ensure that probe grooves on the inside of the inclinometer casing are aligned in the anticipated direction of movement.

The annulus between the borehole wall and inclinometer casing shall be backfilled by the Contractor with a cement/bentonite grout compatible with the surrounding soil, which shall be placed in a manner not to damage or distort the casing (the use of grout ports to grout from the inside of the inclinometer casing is discouraged). Regardless of the method used, the Contractor shall not apply weight or force to the top of the inclinometer casing to hold it in place during grouting. The Contractor shall ensure that the upper portion of the inclinometer installation is protected by a 100 mm diameter outer steel casing to the dimensions shown on the Drawings. The inclinometer casing, and the 100 mm diameter outer steel casing, shall extend a minimum of 0.5 m above the final grade of the proposed embankment and granular materials.

At the completion of installation, the horizontal orientation (azimuth) of the probe grooves shall be measured by the Contractor using a compass and the primary ('A-A') groove clearly marked on the casing with permanent marking. The Contractor shall also carefully lower a sounding tape or "dummy" probe to the bottom of the completed installation, in a manner to prevent damage to the casing, in order to confirm there are no obstructions. The depth and elevation of the inclinometer tip shall be recorded by

the Contractor following initial installation, and this information shall be clearly marked by the Contractor on the inclinometer casing with permanent marking. Slope inclinometers shall be installed in the locations shown on the contract drawings. At the completion of the installation, the slope inclinometer casings shall be fully functional as intended for the data collection requirements completed by the Departmental Representative.

Insert:

- 3.4.3 Slope ~~Inclinometers~~ shall be installed under the supervision of the Departmental Representative. Typical installation details are shown on the Drawings. The Contractor shall install ~~Slope Inclinometers~~ to a depth of 10 m from the bottom of the stripped surface prior to the start of fill placement. Extend drill depth if directed by the Departmental Representative (additional drilling costs to be covered by Change Order). The installation shall be secured to base of the hole using RST Instruments Ltd. inclinometer casing anchors or pre-approved equivalent. The Contractor shall ensure that probe grooves on the inside of the inclinometer casing are aligned in the anticipated direction of movement.

The annulus between the borehole wall and inclinometer casing shall be backfilled by the Contractor with a cement/bentonite grout compatible with the surrounding soil, which shall be placed in a manner not to damage or distort the casing (the use of grout ports to grout from the inside of the inclinometer casing is discouraged). Regardless of the method used, the Contractor shall not apply weight or force to the top of the inclinometer casing to hold it in place during grouting. If required by the Departmental Representative, the Contractor shall ensure that the upper portion of the inclinometer installation is protected by a 100 mm diameter outer steel casing to the dimensions shown on the Drawings. The inclinometer casing, and the 100 mm diameter outer steel casing, shall extend a minimum of 0.5 m above the final grade of the proposed embankment and granular materials.

At the completion of installation, the horizontal orientation (azimuth) of the probe grooves shall be measured by the Contractor using a compass and the primary ('A-A') groove clearly marked on the casing with permanent marking. The Contractor shall also carefully lower a "dummy" probe or similar device to the bottom of the completed installation, in a manner to prevent damage to the casing, in order to confirm there are no obstructions. The depth and elevation of the inclinometer tip shall be recorded by the Contractor following initial installation, and this information shall be clearly marked by the Contractor on the inclinometer casing with permanent marking. Slope inclinometers shall be installed in the locations shown on the contract drawings. At the completion of the installation, the slope inclinometer casings shall be fully functional as intended for the data collection requirements completed by the Departmental Representative.

Delete:

- 3.4.5.1 Immediately following placement and compaction of the Crushed Base Course

Insert:

- 3.4.5.1 Immediately following placement and compaction of the Crushed Base Course,

Delete:

- 3.7.1 Spread topsoil on finished embankment slopes in locations approved by the Departmental Representative. Place topsoil to a thickness of 200 mm (+/- 25 mm, but not uniformly high or low). Neatly shape outside limits of topsoil material to eliminate sharp changes in lines and grades. Ensure ready run-off of surface water.

Insert:

- 3.7.1 Spread topsoil on finished embankment slopes in locations approved by the Departmental Representative. Finished slopes have to be accepted by the Departmental Representative and surveyed prior to spreading topsoil on them. Place topsoil to a thickness of 200 mm (+/- 25 mm, but not uniformly high or low). Neatly shape outside limits of topsoil material to eliminate sharp changes in lines and grades. Ensure ready run-off of surface water.

16. Section 31 26 13 – Pulverization of Existing BST

Delete:

- 1.2.1 Payment for pulverization of existing highway BST where the existing highway driving surface (top of BST) is located in the zone of proposed Select Subgrade Fill Material will be made on the basis of the Price per Unit Bid for Pulverization of Existing BST for Reconstruction in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for scarifying, mixing, re-grading (if required), compaction, and all other items necessary for successful completion of the work.

Insert:

- 1.2.1 Payment for pulverization of existing highway being decommissioned will be made on the basis of the Price per Unit Bid for Pulverization of Decommissioned Highway BST in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for scarifying, mixing, re grading (if required), and all other items necessary for successful completion of the work.

Delete:

- 1.2.2 Measurement for Payment for Pulverization of Existing BST for Reconstruction will be made by Lump Sum of the work completed and accepted by the Departmental Representative.

Insert:

- 1.2.2 Measurement for Payment for completion of Pulverization of Decommissioned Highway BST will be made on the area of material surveyed in square metres, incorporated in the works and accepted by the Departmental Representative.

Delete:

- 3.3 Pulverization of Decommissioned Highway BST

Insert:

- 3.1 Pulverization of Decommissioned Highway BST

17. Section 31 37 00 – Riprap and Surface Drainage Material

Delete:

- 1.1.7 Woven Geotextile.

Insert:

- 1.1.7 Woven and Nonwoven Geotextile.

Delete:

- 2.1.4 Obtain Natural Substrate and Cut Slope Drainage Swale Material from designated borrow areas outside the limits of the work only after suitable right-of-way excavations within the limits of the work have been exhausted.

Delete:

- 2.1.2.2 Is a graded material conforming with the following gradation limits:

50 Kg Class Riprap		
Mass (kg) *	Nominal Diameter (mm) @ 2650 kg/m ³	Percent Larger Than
300	600	0
150	500	15
50	350	50
5	160	85
1	95	100

250 Kg Class Riprap		
Mass (kg) *	Nominal Diameter (mm) @ 2650 kg/m ³	Percent Larger Than
1000	950	0
750	850	15

250	600	50
25	275	85
5	150	100

Insert:

2.1.2.2 Is a graded material conforming with the following gradation limits:

50 Kg Class Riprap		
<u>Mass (kg)</u>	<u>Nominal Diameter (mm) @ 2650 kg/m³</u>	<u>Percent Larger Than</u>
300	600	0
150	500	15
50	350	50
5	160	85
1	95	100

250 Kg Class Riprap		
<u>Mass (kg)</u>	<u>Nominal Diameter (mm) @ 2650 kg/m³</u>	<u>Percent Larger Than</u>
1000	950	0
750	850	15
250	600	50
25	275	85
5	150	100

Delete:

2.3.1 Cut Slope Drainage Swale Material shall be rounded aggregates or angular rock selected, sorted, screened, or manufactured by the Contractor into material achieving the Cut Slope Drainage Swale Material requirements from the following sources:

Insert:

2.3.1 Cut Slope Drainage Swale Material shall be angular rock manufactured by the Contractor from the "as is" material excavated or available from any combination of the following sources.

Delete:

2.3.2 Cut Slope Drainage Swale Material shall be a 300 mm minus material comprised of rounded aggregates or angular rock produced from screening and or blending of materials. The material shall have a generally uniform gradation conforming to following gradation limits:

Cut Slope Drainage Swale Material	
Sieve Designation (mm)	Percent Passing by Weight
300	100
150	20 – 50
50.0	0 – 10

Insert:

- 2.3.2 Cut Slope Drainage Swale Material shall be a manufactured 150 mm minus material comprised of angular rock. The material shall have a generally uniform gradation conforming to following gradation limits:

Cut Slope Drainage Swale Material	
Sieve Designation (mm)	Percent Passing by Weight
150	<u>100</u>
50.0	0 – 10

Delete:

- 2.3.3 The Natural Substrate shall be substantially free of clay lumps, organic matter, and other extraneous material.

Insert:

- 2.3.3 The Cut Slope Drainage Swale Material shall be substantially free of clay lumps, organic matter, and other extraneous material, and free from splits, seams or defects likely to impair its soundness during handling.

Delete:

- 2.4 Woven Geotextile

- .1 The Woven Geotextile shall be Nilex 2002 or pre-approved equivalent.

Insert:

- 2.4 Woven and Nonwoven Geotextile.

- .1 The Woven Geotextile shall be Nilex 2002 or pre-approved equivalent.

- .2 The Nonwoven Geotextile shall be Nilex 4551 or pre-approved equivalent.

Delete:

- 3.2.1 Placement of Riprap, Natural Substrate, Cut Slope Drainage Swale Material, and Woven

Geotextile shall be in accordance with Section 31 23 33.01 – Excavating, Trenching, and Backfilling.

Insert:

- 3.2.1 Placement of Riprap, Cut Slope Drainage Swale Material, Nonwoven Geotextile, and Woven Geotextile shall be in accordance with Section 31 23 33.01 – Excavating, Trenching, and Backfilling.

18. Section 32 11 18 – Select Subgrade Fill Materials

Delete:

- 1.2.1 Payment for Select Subgrade Fill Material will be made on the basis of the Price per Unit Bid for Select Subgrade Fill Material in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the excavation, manufacture, loading, transport, and placement of the Select Subgrade Fill Material, and all other items necessary for successful completion of the work.

Insert:

- 1.2.1 Payment for Select Subgrade Fill Material will be made on the basis of the Price per Unit Bid for Select Subgrade Fill Material in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the excavation, manufacture, stockpiling, loading, transport, placing, shaping, watering and/or drying and compaction of the Select Subgrade Fill Material, and all other items necessary for successful completion of the work.

19. Section 32 11 19 – Sub-base Course

Delete:

- 1.2.1 Payment for sub-base course material will be made on the basis of the Price per Unit Bid for Sub-base Course in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the excavation, manufacture, loading, transport, and placement of the sub-base course material, and all other items necessary for successful completion of the work.

Insert:

- 1.2.1 Payment for sub-base course material will be made on the basis of the Price per Unit Bid for Sub-base Course in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the excavation, manufacture, stockpiling, loading, transport, placing, shaping, watering and/or drying and compaction of the sub-base course material, and all other items necessary for successful completion of the work.

20. Section 32 11 24 – Crushed Base Gravel

Delete:

- 1.2.1 Payment for crushed base gravel will be made on the basis of the Price per Unit Bid for Crushed Base Gravel in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the excavation, manufacture, loading, transport, and placement of the crushed base gravel, and all other items necessary for successful completion of the work.

Insert:

- 1.2.1 Payment for crushed base gravel will be made on the basis of the Price per Unit Bid for Crushed Base Gravel in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the excavation, manufacture, stockpiling, loading, transport, placing, shaping, watering and/or drying and compaction of the crushed base gravel, and all other items necessary for successful completion of the work.

Delete:

- 3.2.4 Begin spreading Sub-base Course material on crown line or on high side of one way slope.

Insert:

- 3.2.4 Begin spreading Crushed Base Gravel material on crown line or on high side of one way slope.

21. Section 32 12 35 – Bituminous Surface Treatment

Delete:

- 1.2.3 Payment for bituminous surface treatment (BST) will be made on the basis of the Price per Unit Bid for Bituminous Surface Treatment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the manufacture, loading, transport, and placement of the BST aggregate, the supply and placement of asphalt materials and emulsion products, and all other items necessary for successful completion of the work.

Insert:

- 1.2.3 Payment for bituminous surface treatment (BST) will be made on the basis of the Price per Unit Bid for Bituminous Surface Treatment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the manufacture, loading, transport, and placement of the BST aggregate, the supply and placement of asphalt materials and emulsion products, the temporary removal and replacement of the precast concrete lock blocks and precast concrete barriers placed during the 2016 construction season, and all other items necessary for successful completion of the work.

Delete:

- 1.5.1 British Columbia MoT – 2009 Standard Specifications for Highway Construction.

Insert:

- 1.5.1 British Columbia MoT – 2012 Standard Specifications for Highway Construction.

Delete:

- 3.3.3 Apply BST in the areas, locations, and limits indicated on the contract documents.

Insert:

- 3.3.3 Apply BST in the areas, locations, and limits indicated on the contract documents. Temporarily remove the precast concrete lock blocks and precast concrete barrier to facilitate the install of the BST. The installation of the BST between Km 736+988 to Km 742+560 shall be completed per the requirements of the design drawings in Appendix F. All references to the BST being completed “By Others” on the design drawings in Appendix F shall disregarded for the work under this contract.

22. Section 32 17 23 – Pavement Marking

Insert:

3.3 Dimensions of Lines

- .1 Width of lines to be 110 mm.
.2 Width between double lines to be 110 mm.
.3 Length of dashed lines and gaps as per Contract Drawings.

Insert:

3.4 Condition of Surfaces

- .1 Contractor is to insure that pavement surface is free from surface water, frost, ice, dust, oil, grease and other foreign materials as required before painting.

Insert:

3.5 Application

- .1 Set up traffic control.
.2 Clean pavement surface of water, frost, ice, dust, gravel, oil or grease.

- .3 Apply paint only when air temperature is above 10°C and no rain is forecast for 6 hours.
- .4 Apply paint evenly at a wet film thickness of 400 micrometres, or 45 litre/Km of solid 110mm line.
- .5 Do not thin paint unless approved by Departmental Representative.
- .6 Symbols and letters to conform to Uniform Traffic Control Devices for Canada.
- .7 Paint lines to be uniform color and density with sharp edges.
- .8 Thoroughly clean distributor tank before refilling with paint of different color.
- .9 Apply glass beads at rate of 700-grams/ litre of paint.
- .10 Remove traffic control.

Insert:

3.6 Tolerances

- .1 Paint markings to be within plus or minus 12 mm of indicated dimensions.
 - .1 Paint thickness to be within plus or minus 10% of specified thickness or volume.
 - .2 Application of glass beads to be within 25 grams/litre of paint.
 - .3 Repaint or correct, as directed, markings that do not meet these tolerances.

Insert:

3.7 Protection of Completed Work

- .1 Protect pavement markings until dry.

23. Section 32 32 34 – Retaining Wall – Design-Build

Delete:

- 1.1.4 References.

Insert:

- 1.1.4 Codes and Standards.

Delete:

- 1.2.1 The retaining wall shall be provided by the Contractor as a design-build component of the project. The Contractor shall be responsible for all aspects of the wall design and construction to the requirements of this specification. The design of the retaining wall shall consider global stability and incorporate and be integrated with all features and properties of design-build culvert at Ed's Creek (Km 748+133, see Section 33 42 13.01 – Pipe Culverts – Design Build) and the culvert inlet and outlet riprap protection shown on the contract drawings (refer to Section 31 23 33.01 – Excavating Trenching and Backfilling).

Insert:

- 1.2.1 The retaining wall shall be provided by the Contractor as a design-build component of the project. The Contractor shall be responsible for all aspects of the wall design and construction to the requirements of this specification. The design of the retaining wall shall consider both internal and global stability under both static and seismic loading and incorporate and be integrated with all features and properties of design-build culvert at Ed's Creek (Km 748+133, see Section 33 42 13.01 – Pipe Culverts – Design Build) and the culvert inlet and outlet riprap protection shown on the contract drawings (refer to Section 31 23 33.01 – Excavating Trenching and Backfilling).

Delete:

- 1.3.4 Within two (2) weeks of submission and upon review of the shop drawings and supplemental information, the Departmental Representative will either:

- .1 Reject the shop drawings and provide comments outlining required changes or details of additional information needed. Following completion of edits, re-submit the shop drawing for review.
- .2 Accept the shop drawings.

If the shop drawings are rejected, the Contractor shall make edits and re-submit the shop drawings for review and acceptance. Any review or comments requested by the Departmental Representative does not in any way relieve the Contractor of any of their responsibilities for the design of the complete MSE wall system. No work that affects the MSE wall system will be permitted until the Traffic Management Plan has been accepted by the Departmental Representative.

Insert:

- 1.3.4 Within two (2) weeks of submission and upon review of the shop drawings and supplemental information, the Departmental Representative will either:

- .1 Reject the shop drawings and provide comments outlining required changes or details of additional information needed. Following completion of edits, re-submit the shop drawing for review.

- .2 Accept the shop drawings.

If the shop drawings are rejected, the Contractor shall make edits and re-submit the shop drawings for review and acceptance. Any review or comments requested by the Departmental Representative does not in any way relive the Contractor of any of their responsibilities for the design of the complete MSE wall system. No work that affects the MSE wall system will be permitted until the shop drawings have been accepted by the Departmental Representative.

Delete:

- 1.3.6 At the completion of the work, the designer shall seal the shop drawing mark-ups certifying that the work was completed per the design or mark-ups provided based the information provided by the Quality Control Manager or additional field inspections (if completed). Refer to Section 01 78 00 – Closeout Submittals for additional details.

Insert:

- 1.3.6 At the completion of the work, the designer shall seal the shop drawing mark-ups certifying that the work was completed per the design or mark-ups provided based on the information provided by the Quality Control Manager or additional field inspections (if completed). Refer to Section 01 78 00 – Closeout Submittals for additional details.

Delete:

- 1.4 References

- .1 American Society of Testing and Materials (ASTM)
 - .1 D374-94 – Test Methods for Thickness and Solid Electrical Insulation
 - .2 D1388-96 – Standard Test Method for Stiffness of Fabrics, Option A.
 - .3 D2455-96 – Standard Test Method for Identification of Carboxylic Acid in Alkyd Resins.
 - .4 D4595-94 – Standard Test Method of Tensile Properties of Geotextiles by the Wide Width strip method.
 - .5 D4355-92 – Standard Test Method for Deterioration of Geotextiles from Exposure to ultraviolet Light and Water (Xenon-Arc Type Apparatus).
 - .6 D4603-96- Test Method for Determining Inherent Viscosity of Poly (Ethylene Terephthalate).
 - .7 D4716-95 – Test Method for Constant Head Hydraulic Transmissivity (In-Plane Flow) of Geotextiles and Geotextile Related Products.

- .8 D4759-92 – Practice for Determining the Specification Conformance of Geosynthetics.
- .9 D5262-97 - Standard Test Method for Evaluating Unconfined Tensile Creep Behaviour of Geosynthetics.
- .10 D5818-95 – Practice for Obtaining Samples of Geosynthetics from a Test Section for Assessment of Installation Damage.
- .11 D6637-01 – Standard Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-rib Tensile Method.
- .2 Geosynthetics Research Institute (GRI)
 - .1 GG2-87 - Standard Test Method for Geogrid Junction Strength.
 - .2 GG4-91 – Determination of the Long-Term Design Strength of Geogrids.
 - .3 GG5-91 – Standard Test Method for “Geogrid Pullout”.
 - .4 GG7 - Standard Test Method for Carboxyl End Group Content of Poly (Ethylene Terephthalate) (PET) Yarns Based on a Relative Viscosity Value.
 - .5 GG8 - Determination of the Number Average Molecular Weight of Poly (Ethylene Terephthalate) (PET) Yarns.
- .3 U.S. Federal Highways Administration (U.S. FHWA).
 - .1 FHWA NHI-00-043 – Mechanically Stabilized Earth Walls and Reinforced Soil Slope Design and Construction Guidelines (Demonstration Project 82).
 - .2 FHWA NHI-00-044 – Corrosion/Degradation of Soil Reinforcements.
- .4 Canadian Highway Bridge Design Code (CAN/CSA-S6-06, latest edition).

Insert:

1.4 Codes and Standards

- .1 The Contractor shall ensure that all aspects of the design and construction work are carried out in accordance with, as applicable, the following codes and standards in descending order of precedence.
 - .1 BC Supplement to CAN/CSA-S6-06.

- .2 CAN/CSA-S6-14
- .3 MoT Technical Bulletin GM9801, "Guidelines for Geotechnical Reports", March 30, 1998.
- .4 AASHTO Standard Specifications.
- .5 FHWA Guidelines – NH1-00-043: "Mechanically Stabilized Earth Walls and Construction Guidelines", Section 5.3, (2001).
- .6 Canadian Foundation Engineering Manual (4th Edition, 2006).
- .7 BC MoT Recognized Product List. – Section: Retaining Walls – (up to 9 m in height) wire Faced Walls, Current Edition at Time of Tender Closing.
- .8 ATC-32 and MCEER/ATC-49.

Delete:

- 3.1.4 The design of the retaining walls shall be designed for internal stability of the retaining walls and global stability of the retaining walls with a minimum factor of safety of 1.5. The global stability design shall consider all opportunities for failure considering the Ed's Creek Culvert, required culvert inlet and out riprap protection, existing native materials.

Insert:

- 3.1.4 The design of the retaining walls shall consider both internal stability and global stability under both static and seismic loading. The global stability design shall consider all potential failure mechanisms in relation to the Ed's Creek Culvert, required culvert inlet and out riprap protection, existing native materials.

Delete:

- 3.1.6 The design the retaining walls, shall account for stability, long-term settlements and wall deformations. Stability analyses shall be carried out and the retaining wall designed for acceptable short term and long term stability in order to prevent failure or excessive deformation. Additional requirement related to stability and settlements include.

Insert:

- 3.1.6 The design the retaining walls shall account for stability, long-term settlements and wall deformations. Stability analyses shall be carried out and the retaining wall designed for acceptable short term and long term stability in order to prevent failure or excessive deformation. Additional requirements related to stability and settlements include.

Delete:

- 3.1.6.2 The expected range of embankment and wall displacements including settlement and lateral movements shall be taken into account in the design and performance of the retaining walls over the expected design life. Any differential settlement between the

retaining walls and design-build culvert at Ed's Creek shall be within industry standards and less than what would reasonably be expected to cause any failure of the retaining wall or design-build culvert at Ed's Creek.

Insert:

3.1.6.2 The expected range of embankment and wall displacements including settlement and lateral movements shall be taken into account in the design and performance of the retaining walls over the expected design life. Any differential settlement between the design-build retaining walls and design-build culvert at Ed's Creek shall be within industry standards and less than what would reasonably be expected to cause any failure of the design-build retaining wall or design-build culvert at Ed's Creek.

24. Section 32 93 21 – Hydraulic Seeding

Delete:

1.2.2 Measurement for Payment for completion of Hydroseeding will be made on the area of material surveyed in hectors, incorporated in the works and accepted by the Departmental Representative.

Insert:

1.2.2 Measurement for Payment for completion of Hydroseeding will be made on the area of material surveyed in hectares, incorporated in the works and accepted by the Departmental Representative. Areas of blending into the existing landscape will not be measured for payment.

Insert:

1.2.3 Payment for Hydroseeding will be made as follows.

- .1 75% (interim payment of the unit price bid) at the successful completion of the application and incorporation of the hydroseeding into the works.
- .2 25% (remaining payment of the unit price bid) at the successful completion of the Hydraulic Seeding warranty period.

Delete:

3.4.2.3 Mulch: According to 3.3.4 above.

Insert:

3.4.2.3 Mulch: 1500 kg/ha.

Delete:

3.4.2.4 Tackifier: 45 kg on slopes 1.5:1 or steeper.

Insert:

3.4.2.4 Tackifier: 45 kg on slopes 3H:1V or steeper.

25. Section 33 42 13 – Pipe Culverts

Delete:

1.3.1.2 CSA-B182.8-02, Profile Polyethylene Storm Sewer and Drainage Pipe and Fittings.

Delete:

2.1 Aluminized CSP Culverts

.1 Aluminized CSP Culverts shall be CSP with an aluminum coating such as Armtec Hel-Cor Aluminized Steel Type 2 CSP culverts, Atlantic Industries Limited Aluminized Type 2 CSP culverts, or a pre-approved equivalent. All culverts used on the project shall conform to the following.

.1 Corrugated steel pipe: to CSA-G401.

.2 Culverts to be annular or spiral with annular ends. Coupling bands to be two piece annular bolted with minimum width of nine corrugations.

.3 Minimum wall thickness to be.

.1 Culverts ≤ 1800 mm Diameter: 2.0 mm.

.4 Corrugations to be.

.1 Culverts ≤ 1800 mm Diameter: 68 mm x 13 mm.

.5 Aluminized type 2 coating – provide 75 year service life in a low-abrasion environment with pH between 5 and 9 and resistivity above 1,500 ohm-cm.

Insert:

2.1 Culverts

.1 Culverts ≤ 1800 mm in diameter shall be.

.1 Aluminized CSP Culverts shall be CSP with an aluminum coating such as Armtec Hel-Cor Aluminized Steel Type 2 CSP culverts, Atlantic Industries Limited Aluminized Type 2 CSP culverts, or a pre-approved equivalent. All culverts used on the project shall conform to the following.

- .1 Corrugated steel pipe: to CSA-G401.
- .2 Culverts to be annular or spiral with annular ends. Coupling bands to be two piece annular bolted with minimum width of nine corrugations.
- .3 Minimum wall thickness to be.
 - .1 Culverts \leq 1800 mm Diameter: 2.0 mm.
- .4 Corrugations to be.
 - .1 Culverts \leq 1200 mm Diameter: 68 mm x 13 mm.
 - .2 Culverts \geq 1400 mm Diameter - \leq 1800 mm Diameter: 125 mm x 25 mm.
- .5 Aluminized type 2 coating – provide 75 year service life in a low-abrasion environment with pH between 5 and 9 and resistivity above 1,500 ohm-cm.
- .2 Reinforced (ASTM Class C 76) or Non-Reinforced (ASTM Class C 14) concrete pipe. The use of concrete pipe is subject to the following.
 - .1 All concrete pipe culverts used shall be certified by a professional engineer guaranteeing the performance of the culverts under the proposed conditions (cover, highway loading, and potential settlement). The Contractor shall understand that temperature variations at this project location are significant and these temperature variations need to be accounted for in the culvert design. Also note, soil conditions with limited bearing capacity are present in some culvert locations.

Delete:

3.4 Culvert Joints.

- .1 Match corrugations of coupler with pipe sections before tightening.
- .2 Insert and tighten bolts.
- .3 Tap couplers firmly with a rubber mallet or similar non-marring tool as they are being tightened, to take up slack and ensure snug fit.
- .4 Repair spots where damage has occurred to coating in the field by applying two coats of zinc rich paint approved by the CSP supplier. Allow each coat to dry before placing second coat, bedding or backfill.

Insert:

3.4 Culvert Joints.

.1 Install culvert joints per the manufactures recommendation and following requirements.

.1 Repair spots where damage has occurred to coating in the field by applying two coats of zinc rich paint. Allow each coat to dry before placing second coat, bedding or backfill.

Delete:

3.5.2 Place Crushed Base Gravel in 150 mm layers to full width, alternately on each side of culvert, so as not to displace it laterally or vertically.

Insert:

3.5.2 Place Crushed Base Gravel in 150 mm layers to full width, alternately on each side of culvert, so as not to allow movement or uplift of the culvert.

26. Section 33 42 13 – Pipe Culverts – Design-Build

Delete:

1.2.1 The culvert at Ed's Creek (Km 748+133) shall be provided by the Contractor as a design-build component of the project. The Contractor shall be responsible for aspects of the culvert design and construction to the requirements of this specification. The design of the culvert shall consider and be integrated with all features and properties of the design-build retaining wall (see Section 32 32 34 – Retaining Wall – Design-Build) and the culvert inlet and outlet riprap protection shown on the contract drawings (refer to Section 31 23 33.01 – Excavating Trenching and Backfilling).

Insert:

1.2.1 The culvert at Ed's Creek (Km 748+133) shall be provided by the Contractor as a design-build component of the project. The Contractor shall be responsible for all aspects of the culvert design and construction to the requirements of this specification. The design of the culvert shall consider and be integrated with all features and properties of the design-build retaining wall (see Section 32 32 34 – Retaining Wall – Design-Build) and the culvert inlet and outlet riprap protection shown on the contract drawings (refer to Section 31 23 33.01 – Excavating Trenching and Backfilling).

Delete:

1.3 Submittals

Insert:

1.4 Submittals

Delete:

1.3.4 Within two (2) weeks of submission and upon review of the shop drawings and supplemental information, the Departmental Representative will either:

- .1 Reject the shop drawings and provide comments outlining required changes or details of additional information needed. Following completion of edits, re-submit the shop drawing for review.
- .2 Accept the shop drawings.

If the shop drawings are rejected, the Contractor shall make edits and re-submit the shop drawings for review and acceptance. Any review or comments requested by the Departmental Representative does not in any way relieve the Contractor of any of their responsibilities for the design of the complete MSE wall system. No work that affects the MSE wall system will be permitted until the Traffic Management Plan has been accepted by the Departmental Representative.

Insert:

1.4.4 Within two (2) weeks of submission and upon review of the shop drawings and supplemental information, the Departmental Representative will either:

- .1 Reject the shop drawings and provide comments outlining required changes or details of additional information needed. Following completion of edits, re-submit the shop drawing for review.
- .2 Accept the shop drawings.

If the shop drawings are rejected, the Contractor shall make edits and re-submit the shop drawings for review and acceptance. Any review or comments requested by the Departmental Representative does not in any way relieve the Contractor of any of their responsibilities for the design of the complete Ed's Creek Culvert. No work that affects Ed's Creek Culvert will be permitted until the shop drawings have been accepted by the Departmental Representative.

Delete:

1.4 References

Insert:

1.5 References

Delete:

1.5 Quality Management

Insert:

1.6 Quality Management

Delete:

2.1.1.1 2.935 m (span) x 3.25 m (rise) vertical ellipse SPCSP culvert, min. wall thickness 5.0 mm (galvanized crown, polymer coated invert). Inlet end treatment per Alberta Transportation Drawings.

Insert:

2.1.1.1 2.935 m (span) x 3.25 m (rise) vertical ellipse SPCSP culvert, min. wall thickness 5.0 mm (galvanized crown, polymer coated invert (to ½ culvert diameter height)). Inlet end treatment per Alberta Transportation Drawings.

Delete:

2.1.2 All components for the culvert shall come from single manufacturer or system designed to be jointly integrated.

Insert:

2.1.2 All components for the culvert shall come from a single manufacturer or system designed to be jointly integrated.

Delete:

2.1.4 The design of the culvert shall consider the cover requirements above the culvert and any additional loading, stability, or settlement requirements from the design-build retaining wall. This at a minimum will include:

Insert:

2.1.4 The design of the culvert shall consider the cover requirements above the culvert and any additional loading (including live loads – CL-625), stability, or settlement requirements from the design-build retaining wall. This at a minimum will include.

Delete:

2.1.6 The design of the culvert and culvert backfill, shall account for stability, long-term settlements and deformations. A stability and settlement analyses shall be carried to determine the expected range of deformations and displacements including settlement and lateral movements over the design life of the culvert.

The design of the culvert (including camber) shall account for short term and long term settlements, differential settlements between the culvert and the retaining wall in order

to prevent failure or excessive deformation.

Deformations of the culvert (including settlement and lateral movements) shall be determined using appropriate engineering analyses with representative soil parameters derived from site specific geotechnical investigations and local experience.

Insert:

- 2.1.6 The design of the culvert and culvert backfill, shall account for stability, long-term settlements and deformations. A stability and settlement analyses shall be completed and the design shall account for potential settlement ensuring a failure from settlement does not occur over the design life of the culvert.

The design of the culvert (including camber) shall account for short term and long term settlements, differential settlements between the culvert and the retaining wall in order to prevent failure or excessive deformation.

Deformations of the culvert (including settlement and lateral movements) shall be determined using appropriate engineering analyses with representative soil parameters derived from site specific geotechnical investigations and local experience.

Delete:

- 3.1.4 Excavate native materials (as required). Reuse excavated materials as embankment (if suitable) or dispose of the material in an onsite location and condition acceptable to the Departmental Representative.

Insert:

- 3.1.4 Excavate native materials (as required). Reuse excavated materials as embankment (if suitable) or dispose of the material in an onsite location (along the abandoned portion of the highway or Km 750 gravel pit) in a condition acceptable to the Departmental Representative.

27. Section 34 71 13.01 – Precast Concrete Barrier and Lock Blocks

Delete:

- 1.3.1 British Columbia MoT – 2009 Standard Specifications for Highway Construction.

Insert:

- 1.3.1 British Columbia MoT – 2012 Standard Specifications for Highway Construction.

Delete:

- 2.2.1 New precast concrete barrier shall be in accordance with Section 941 – Precast Reinforced Concrete Barriers of the British Columbia MoT – 2009 Standard

Specifications for Highway Construction. The precast concrete barrier units used shall be as follows.

Insert:

- 2.2.1 New precast concrete barrier shall be in accordance with Section 941 – Precast Reinforced Concrete Barriers of the British Columbia MoT – 2012 Standard Specifications for Highway Construction. The precast concrete barrier units used shall be as follows.

Changes to Contract Drawings

Delete:

Drawing C001 – Project Location Plan, Project Key Plan, Drawing Index, Survey Monuments and Legend – Rev 0 – Original Tender Submission – Dated: 15/03/27

Insert:

Drawing C001 – Project Location Plan, Project Key Plan, Drawing Index, Survey Monuments and Legend – Rev 1 – Tender Addendum No. 1 – Dated: 15/05/07

Delete:

Drawings C110, C111, C117, C119, C123, Plan Profile Sta. Varies To Sta. Varies – Rev 0 – Original Tender Submission – Dated: 15/03/27

Insert:

Drawings C110, C111, C117, C119, C123, Plan Profile Sta. Varies To Sta. Varies – Rev 1 – Tender Addendum No. 1 – Dated: 15/05/07

Delete:

General Notes “5. See Table Drawing C212 for Culvert Layout Details”, Drawings C112 – C116, C118, C120 – C122

Insert:

General Notes “5. See Table Drawing C206 for Culvert and Sign Layout Details”, Drawings C112 – C116, C118, C120 – C122

Delete:

Drawings C201 – C206, Drawings Title Varies – Rev 0 – Original Tender Submission – Dated: 15/03/27

Insert:

Drawings C201 – C206, Drawings Title Varies – Rev 1 – Tender Addendum No. 1 – Dated: 15/05/07

Delete:

Drawings C301, C304 - C306 – Typical Sections / Details – Rev 0 – Original Tender Submission – Dated: 15/03/27

Insert:

Drawings C301, C304 - C306 – Typical Sections / Details – Rev 1 – Tender Addendum No. 1 – Dated: 15/05/07

Insert:

Drawing C401 – Mass Haul Diagram (For Information Only) – Rev 0 – Tender Addendum No. 1 – Dated: 15/05/07

Delete:

Drawings XS22, XS23, XS28, XS41, XS48 - XS53, XS57, XS64, XS65, XS73, XS74 – Cross Sections Sta. Varies to Varies – Rev 0 – Original Tender Submission – Dated: 15/03/27

Insert:

Drawings XS22, XS23, XS28, XS41, XS48 - XS53, XS57, XS64, XS65, XS73, XS74 – Cross Sections Sta. Varies to Varies – Rev 1 – Tender Addendum No. 1 – Dated: 15/05/07

Insert:

Drawing XS75 – XS77 – Cross Sections Culverts – Rev 0 – Tender Addendum No. 1 – Dated: 15/05/07

Attachments

1. Appendix F - Km 737 -743.1 Highway Realignment Alaska Highway, BC – Issued for Tender Drawings Rev 0 / 1
2. Appendix H – Example Representative Construction Staging Detour Drawings (C501 – C503)
3. Contract Drawings: C001, C110, C111, C117, C119, C123, C201 – C206, C301, C304 - C306, C401, XS22, XS23, XS28, XS41, XS48 - XS53, XS57, XS64, XS65, XS73 – XS77

All other terms and conditions remain unchanged.