

1.0 GENERAL

1.1 WORK OF THIS CONTRACT

- .1 The main items of Work of this Contract include the following:
 - .1 Raising and widening of existing Drumheller Downtown Dike with impervious fill.
 - .2 Installation of riprap bank stabilization and aproning at locations along the new dike footprint.
 - .3 Installation of two (2) soil reinforced Redi-Rock retaining walls.
 - .4 Storm system improvements.
 - .5 Installation of asphalt pedestrian pathway on top of new dike and other trail works.
 - .6 Landscaping including topsoil, seeding, sodding, and tree and shrub planting.
 - .7 Other works as identified in the Drawings.
- .2 The Site of the Work of this Contract is located in Sections NW and SW 11, Township 29, Range 20, West of 4th Meridian, commonly referred to the "Downtown Dike", in the community of Drumheller, Alberta.
- .3 The municipal address for construction laydown is: 240 Riverside Dr E, Drumheller, AB T0J 0Y4

1.2 CONTRACT TIME

- .1 The Contract will commence on the date on which the contract has been signed by both parties.
- .2 Upon receipt of the Letter of Acceptance, promptly, and without undue delay, commence work at the Site.
- .3 Attain Substantial Performance of the Work by **August 19, 2022** except for the following:
 - .1 Seeding as specified in Clause 1.3.4.
 - .2 **BCF Area (Sta D0+300 to D0+500) Substantial Performance by June 20, 2022.**
 - .3 **BCF Area (Sta D0+300 to D0+500) Total Performance and Turnover to the Owner by June 30, 2022.**
- .4 Refer to the contract documents of the Assignable Contract for contract time provisions specified for the Assignable Contract.

1.3 WORK RESTRICTION/MILESTONE DATES

- .1 Contractor shall adhere to all applicable Town of Drumheller Community Standards Bylaws. In particular, No. 06.19, section 'Prohibited Noise', item 3.38, which states that equipment can not be operated between 10:00pm and 7:00am on a Week and from 10:00pm to 9:00am on a weekend. for working hours.
- .2 As a Class C water body, construction operations in the Red Deer River are prohibited between the dates of April 16 and June 30 of any year.
- .3 Complete seeding per Landscaping Drawing specifications.
- .4 Perform the Work in the following stages:
 - .1 No conditions on staged work. Must obtain substantial completion BCF area (Sta D0+300 to D0+500) by **June 20, 2022 and final performance and turnover by June 30, 2022.**
- .5 Attain Total Performance of the Work by **October 15, 2022.**

1.4 REFERENCE STANDARD DOCUMENTS

- .1 Not Used

1.5 RELATED WORK BY OWNER

- .1 The following work will be performed by The Owner utilizing his own forces:
 - .1 Quality Assurance testing of fill placement (by Engineer)
- .2 Allow The Owner every opportunity to introduce and store Owner's materials or products.
- .3 Co-ordinate and connect the Work of this Contract to accommodate The Owner's work.

1.6 BORROW AREAS

- .1 The Contractor shall source their own borrow areas for supply of Zone 1A Impervious Fill and Retaining Wall Reinforced Fill Zone material as described in Section 02330 – Earthwork Materials.
- .2 The location(s), excavation layout(s), excavation methods, scheduling, and sequencing of Borrow Area Excavation to provide suitable Impervious Fill Zone 1A and Retaining Wall Reinforced Fill Zone materials is the sole responsibility of the Contractor.
- .3 The Contractor is responsible to obtain all applicable permits (may include Alberta Transportation, Historical and Paleontological Resources, etc), agreements, access rights, and approvals necessary to source borrow material. The Contractor is to comply with any specific conditions required by the applicable landowner(s).
- .4 Where there are conflicts with existing utilities at the borrow source(s) the Contractor is responsible for obtaining required agreements with each utility company and protection of the utility throughout any borrow development.
- .5 The chosen borrow material(s) must be pre-qualified by the Contactor and Owner/Engineer

of Record as outlined in Section 02330 – Earthwork Materials. Only the pre-qualified borrow materials may be used for the project. If at any point in the project the Contractor requires material from a different borrow source, the new borrow area material must be pre-qualified for use by the Contactor and Owner/Engineer of Record.

- .6 The Contractor must allow access to the designated borrow areas to the Owners selected 3rd party testing agency and consultants to complete Quality Assurance testing at their discretion.

1.7 USE OF THE SITE

- .1 The Site Limits are specified in the Contract Documents.
- .2 Approximate locations of existing utility lines within the Site that are known to The Owner are specified in the Contract Documents.
- .3 Construction boundaries and easements to allow for construction of the dike, retaining walls other works are specified in the Contract Documents. These boundaries and easements are subject to the following conditions:
 - .1 Access to ATCO Lease (Plan 8966 EJ), if deemed necessary by Contractor, requires Crossing Agreement.
 - .2 Owner to provide Temporary Site Laydown in empty Canalta Lot. See Drawings.
- .4 Use of the areas within the Site described below are subject to the following conditions:
 - .1 Return temporary construction access and laydown area and any other areas disturbed by contractors construction activities, to pre-construction conditions or better.
- .5 Assume responsibility for the care and protection of the existing work within the Site.

1.8 PUBLIC ROADS

- .1 Determine the condition and availability of public roads, clearances, restrictions, bridge load limits, bond requirements, conditions of use, and other limitations that may affect ingress to and egress from the Site.
- .2 For information and requirements of local haul routes the Contractor shall contact the following: Information on local Town of Drumheller road bans can be obtained by calling Roadata Services at 1-88-830-7623

2.0 PRODUCTS NOT USED

3.0 EXECUTION NOT USED

END OF SECTION

1.0 GENERAL

1.1 PERFORMANCE OF WORK COVERED BY ALLOWANCES

- .1 The Owner will determine who will perform the Work covered by the allowances.
- .2 If not specified, the Owner will determine the manner in which prices are obtained for Work covered by the allowances.
- .3 When requested or specified, assist the Owner by identifying potential Suppliers and Subcontractors and obtaining prices for Work covered by the allowances.
- .4 Work and expenditures from the allowances will only be made when authorized in writing by the Owner.

1.2 CONTRACTOR'S RESPONSIBILITIES

- .1 The Contractor's responsibilities for Work covered by the allowances shall be the same as for other Work of this Contract.
- .2 On notification in writing of the selection of a Supplier or Subcontractor by the Owner, execute a contract for the Products or Work with the designated Supplier or Subcontractor.

1.3 SCHEDULING WORK COVERED BY ALLOWANCES

- .1 For Work covered by the allowances, including the allowance[s] for unforeseen work:
 - .1 perform the Work within the Contract Time; and
 - .2 include the Work in the construction schedule.
- .2 The Owner will supply the Contractor with required documentation or information within the time specified or, where such time is not specified, in sufficient time to permit the construction schedule to be maintained.

1.4 ALLOWANCES: UNFORESEEN WORK

- .1 The amount of the allowance includes all costs. Do not include in the Contract Price any separate costs in excess of the allowance amount.
- .2 Work performed under the allowance will be authorized by Change Order and valued in accordance with Section 00725 – General Conditions, clause 8.3 - Valuation of Changes in the Work.
- .3 Allow the amount specified in the Schedule of Prices for unforeseen work.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION



Project: **Flood Mitigation Program** Date: _____

Contractor: _____

Contract Title: _____

Reference No.: _____ File No.: _____

Change Order No.: _____

Change Order Title: _____

Description of Change in Scope of Work:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____

Reason For Change

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____

Change to Contract:

Addition to Contract (out of Scope)	\$ _____	(excluding GST)
Deduction from Contract (regular work)	\$ _____	(excluding GST)
Original Contract Amount		(excluding GST)
Total Current Contract Amount		(excluding GST)
Total Amount Invoiced to Date		(excluding GST)
Revised Substantial Performance date:	_____	

Confirmation:

Submission:	_____	_____
	Date	Contractor
Accepted:	_____	_____
	Date	Flood Resiliency Director- Deighen Blakely
Approved:	_____	_____
	Date	Town of Drumheller - Darryl Drohomerski

1.0 GENERAL

1.1 MEASUREMENT SYSTEM

- .1 This section specifies the measurement rules that will generally be used for payment purposes unless otherwise specified in the Contract Documents. In case of conflict between the method of measurement specified in this section and the requirements specified in Section 01280 – Measurement Schedule, the latter will govern.
- .2 Work will be measured in the International System of Units (SI) in accordance with CAN/CSA–Z234.1–89 Canadian Metric Practice Guide.
- .3 When used in the Contract, the following abbreviations and symbols have the meaning assigned to them.

Abbreviation/Symbol	Meaning
µm.....	micrometre or micron
mm.....	millimetre
m.....	metre
mm ² or mm ²	square millimetre
m ² or m ²	square metre
ha.....	hectare
kPa.....	kilopascal
MPa.....	megapascal
m ³ or m ³	cubic metre
l (or where clarity is needed L).....	litre
L.S.....	lump sum
g.....	gram
kg.....	kilogram
N.....	newton
kN.....	kilonewton
t.....	tonne
no.....	number (quantity)
min.....	minute (time)
h.....	hour
d.....	day
wk.....	week
%.....	percent
>.....	greater than
≥.....	greater than or equal to
<.....	less than
≤.....	less than or equal to
\$.....	Canadian dollars
°.....	degree (angle)
°C.....	degree Celsius

1.2 METHOD OF MEASUREMENT

- .1 Unless otherwise indicated in the Contract Documents:
 - .1 earthwork materials will be measured net in place after compaction, with no allowance for bulking, shrinkage, compression, foundation settlement, or waste;
 - .2 products will be measured net, with no allowance for waste;
 - .3 dimensions used in calculating quantities will be rounded to the nearest unit of dimension as follows:

Quantity	Dimension
Volume of earth.....	cubic meter
Length of pipe.....	metre
Area of land.....	square meter
 - .4 the survey station line system adopted will be at 10 linear metres spacing for measuring quantities, respectively;
 - .5 contours are based on LiDAR and ground survey captured by Hunter Wallace Surveys in 2021 and are approximate only. Actual ground elevations and location co-ordinates will be determined in the field during the course of the Work for measurement purposes; and
 - .6 measurement and payment will not be made for work carried out beyond measurement and payment lines and limits as shown on the Drawings and specified in the Contract Documents.
- .2 When boundaries between different items of Work are not specified in the Contract Documents, such boundaries will be established by The Owner.
- .3 Mass:
 - .1 Mass will be measured by weigh scale or by estimated or theoretical mass taken from reference documents, as specified.
 - .2 Mass will be measured to 3 decimal places.
- .4 Length:
 - .1 Length will be measured at the item centreline or mean chord.
 - .2 Items to be measured by linear dimension will be measured parallel to the base or foundation upon which such items are placed.
 - .3 Items to be measured by station will be measured horizontal to the base or foundation upon which such items are placed.
 - .4 Centre line for pipes, ducts, culverts, and similar items will be the line equidistant between inside faces of pipe walls.
- .5 Area:

- .1 For rectangular and regular shaped objects, area will be measured using mean length and width or radius.
- .2 For irregular objects, area will be measured by the sum of squares, triangles, and circles, etc., as selected by The Owner.
- .6 Volume:
 - .1 Unless otherwise indicated, volume will be measured using mean length, width, and height or thickness.
 - .2 Excavation and fill volumes will be computed using survey data input to CAD – Civil 3D software program; which computes volumes using the triangulation method of comparing pre and post construction digital elevation surface models.
- .7 Time:
 - .1 Construction Equipment to be paid for on a time basis will be measured in hours of actual working time, and necessary travelling time, when under its own power to the nearest tenth thereof.
 - .2 Hauling equipment to be paid for on a time basis will be measured in hours of actual working time to the nearest tenth thereof.
- .8 Number of items will be measured on a per item basis.
- .9 When standard manufactured items are identified by their physical characteristics, such characteristics will be considered as nominal. Unless more stringently controlled by specified tolerances, manufacturing tolerances established by the industry involved will be accepted.

1.3 MEASUREMENT COMPUTATION

- .1 Formulae and computer programs used for measurement computation will be as specified or, when not specified, as selected by The Owner.

1.4 MEASUREMENT OF WORK

- .1 Unless otherwise specified, The Owner will measure the Work for the purpose of determining payment to the Contractor.
- .2 The Owner will request the Contractor to attend with The Owner in making measurements.
- .3 If the Contractor does not attend pursuant to clause 1.4.2, measurements made or approved by The Owner will be considered to be the correct measurement for such part of the Work.
- .4 The Owner will prepare survey records and drawings for payment purposes as the Work progresses. The Owner will request the Contractor to attend, within 14 days, to examine and verify such records and drawings. If the Contractor does not attend to examine and verify such records and drawings, they will be considered to be correct.
- .5 If, after attending pursuant to clause 1.4.2 or 1.4.4, the Contractor disagrees with such measurements or records or drawings, they will nevertheless be considered correct until the Contractor notifies The Owner, in writing, of the aspects in which they are considered

incorrect. On receipt of such notice, The Owner will review the measurements or records or drawings and either confirm or vary them.

1.5 QUANTITIES

- .1 Unless otherwise indicated, quantities specified in the Schedule of Prices for Unit Price Work are estimated quantities and will not be considered as actual quantities of Work to be performed. Subject to the Contract terms, unit prices stated in the Schedule of Prices will be applied to actual quantities of Work performed as measured in accordance with the Contract Documents.
- .2 When it is stated that the Contractor will be paid only for the quantity specified for an item of Work, such quantity will be considered as a fixed quantity and the Contractor will be paid for the quantity specified, regardless of the actual quantity performed. If a change in the Work directed by The Owner results in a change in a fixed quantity, the quantity will be adjusted in accordance with the Contract Documents and payment will be made for the adjusted quantity.

1.6 SCHEDULE OF PRICES

- .1 The Schedule of Prices is divided into items for purposes of measurement and payment of Work. Price each item in accordance with the methods of measurement specified in the Contract.
- .2 Item names in the Schedule of Prices identify the work covered by the respective item, but do not define the size or nature of the unit.
- .3 Read item names in the Schedule of Prices as part of the item scope, measurement, and payment requirements to which they apply in the Measurement Schedule.
- .4 For each price specified in the Schedule of Prices include all costs and charges required to perform the Work including overhead charges and profit, and all costs of all related Work for which payment is not specified elsewhere.
- .5 Subject to the provisions of the Contract Documents, the total amount of the Schedule of Prices shall cover all of the Contractor's obligations under the Contract and all matters and things necessary for performance of the Work in accordance with the Contract Documents.
- .6 Payment will be made only for items specified in the Schedule of Prices. Costs and charges not directly provided for in the Schedule of Prices will be deemed to be included therein.
- .7 Work or material included in any one item will not also be measured for payment under another item. No item will be paid for more than once.
- .8 Omissions or errors in any item including quantities in the Schedule of Prices will not invalidate the Contract nor release the Contractor from any of his obligations or liabilities under the Contract.

1.7 LUMP SUM ITEMS

.1 Breakdown of Lump Sum Items

- .1 If requested, submit to The Owner a breakdown of each Lump Sum item included in the Schedule of Prices, within 21 days after the commencement date of the Contract.
- .2 Provide sufficient details as may be required by The Owner to identify the principal components of the Work and to permit ready valuation of Work performed.

.2 Lump Sum Items Paid in Accordance with a Schedule

- .1 When an interim payment is to be a specified percentage of a lump sum item, and is calculated based on the ratio of the value of Work completed to the interim date, and the Contract Bid Amount, that specified percentage will be included in the calculation of the value of the Work completed to that interim date.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 MEASUREMENT SCHEDULE

.1 Schedule: See next page.

.2 Quantity Calculations – Scheduled Lump Sum items.

.1 When an interim payment is to be a specified percentage of a lump sum item, and is calculated based on the ratio of the value of Work completed to the interim date, and the Contract Bid Amount, that specified percentage will be included in the calculation of the value of the Work completed to that interim date.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
1. GENERAL REQUIREMENTS			
1.01	Mobilization and Demobilization	01390, 01391, 01510, 01520, 01552, 01580, 01742	<p>.1 Scope: Mobilization includes supplying and transporting to the Site, labour, equipment, products and incidentals; providing and maintaining temporary facilities and controls, including site offices, utilities, safety and security measures including temporary fencing, and other construction necessary for Contractor's methods carried out during the performance of the Contract and which does not remain as part of the Permanent Work; and all related work and materials for which payment is not included elsewhere.</p> <p>Demobilization includes removing and transporting from the Site, labour equipment, products, and other items not required to remain upon Total Performance of the Work; cleaning up of the Site including laydown; and all related work and materials for which payment is not included elsewhere.</p> <p>Mobilization and Demobilization include interim and partial mobilization and demobilization activities required to perform the Work of the Contract.</p> <p>.2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item.</p> <p>25% of the Lump Sum value on completion of 5% of the contract bid amount; 25% of the Lump Sum value on completion of 25% of the contract bid amount; 25% of the Lump Sum value on completion of 50% of the contract bid amount; and Final 25% of the Lump Sum value after issuance of the Construction Completion Certificate.</p>
1.02	Existing and Temporary Access Roads & Trails	01552	<p>.1 Scope: Includes all work required to design, prepare, install, maintain during construction, and post construction to restore back to original condition or better the construction access roads, pathways, trails, and parking areas required for and used by Contractor-generated traffic. Includes providing surface protection measures, barriers, detours, signage, flag persons, and other measures to safely regulate traffic; preparing submittals, obtaining approvals, and paying all levies required by The Town; conducting video surveys or other means accepted by The Owner Representative to document pre-construction conditions; providing temporary protection measures; and all other work and materials to complete this item for which payment is not included elsewhere.</p> <p>.2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item.</p> <p>50% of the Lump Sum value on completion of an approved traffic control plan and the completion of the installation of traffic regulation measures; and, 50% of the Lump Sum value after issuance of the Construction Completion Certificate and when all measures have been removed and the existing accesses restored.</p>
1.03	Quality Control		<p>.1 Scope: Quality Control includes the development, submission and revisions of a site and project specific Quality Control plan. It also includes the implementation and execution of the approved Quality Control plan necessary for the Contractor to complete the scopes of work as specified in the approved project drawings and specifications; and all related work and materials for which payment is not included elsewhere.</p> <p>.2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item.</p> <p>25% of the Lump Sum value on completion and approval of the Quality Control Plan; 25% of the Lump Sum value on completion of 50% of the contract bid amount; 25% of the Lump Sum value on completion of 75% of the contract bid amount; and Final 25% of the Lump Sum value after issuance of the Construction Completion Certificate.</p>
1.04	Environmental Monitoring and ESC		<p>.1 Scope: Environmental Monitoring and ESC (Erosion and Sediment Control) includes the development, submission and revisions of a site and project specific ECO Plan and ESC Plan. It also includes the implementation and execution of the approved ECO Plan and ESC Plan, environmental protection (excluding instream activity), and other construction necessary for Contractor's methods carried out during the performance of the Contract and which does not remain as part of the Permanent Work; and all related work and materials for which payment is not included elsewhere.</p> <p>.2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item.</p> <p>25% of the Lump Sum value on completion and approval of the ECO Plan and ESC Plan; 25% of the Lump Sum value on completion of 50% of the contract bid amount; 25% of the Lump Sum value on completion of 75% of the contract bid amount; and Final 25% of the Lump Sum value after issuance of the Construction Completion Certificate.</p>
1.05	Warranty		<p>.1 Scope: Warranty includes the maintenance and operation of all installed equipment and materials for a period of 2 years from a start date of the Construction Total Performance. The Contractor will be required to maintain all equipment and material installed as part of the scope of work, as indicated in the drawings and contract document.</p> <p>.2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item.</p> <p>25% of the Lump Sum value on the first day of the first spring, following the Construction Total Performance date and following approval of a maintenance inspection completed by the Owner; 25% of the Lump Sum value on the first day of the first fall, following the Construction Total Performance date and following approval of a maintenance inspection completed by the Owner; 25% of the Lump Sum value on the first day of the second spring, following the Construction Total Performance date and following approval of a maintenance inspection completed by the Owner; Final 25% of the Lump Sum value on the first day of the second fall, following the Construction Total Performance date and following approval of a maintenance inspection completed by the Owner;</p>

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
2. ALLOWANCES			
2.01	Unforeseen Work Allowance		.1 Scope: Provide all labour, equipment, and material to complete unforeseen work not identified on the Drawings and where payment is not included elsewhere, at the direction of the Owner. Work under this allowance will be authorized by Change Order. .2 Payment: Payment is by Change Order for completion of all unforeseen work as directed by the Owner. Completion of unforeseen work without direction and authorization from the Owner will not be compensated for.
3. SITE WORK			
3.01	Demolition, Salvage, Removal, and Re-installation	02220, 02232	.1 Scope: Provide all labour, equipment, and materials necessary for demolition, salvage removal, and re-installation of items identified in the Drawings, specifications, and all items incidental to complete the work and for which payment is not included elsewhere. Salvaged items to be retained at a location approved by the Owner. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 80% of the Lump Sum value on completion of demolition and salvage; and, 20% of the Lump Sum value after issuance of the Construction Completion Certificate and when all re-installations are complete.
3.02	Site Grubbing	02232	.1 Scope: Includes all labour, equipment and materials needed to grub vegetation within the construction footprint identified in the Drawings including removal of all stumps, brush, and root balls and materials for which payment is not included elsewhere. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 100% of the Lump Sum value on completion of grubbing
3.03	Care of Water and Instream Work	02240, 02242	.1 Scope: Design, supply, install, construct, operate, monitor, maintain and remove temporary care of water provisions, isolation measures such as turbidity curtains, fish salvage required to perform the work, and all related work and materials for which payment is not included elsewhere according to contractor's ECO Plan and regulatory conditions. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 50% of the Lump Sum value on completion of installation care of water measures including isolation; and, 25% of the Lump Sum value after completion of instream work and removal of instream isolations. 25% of the Lump Sum value after issuance of the Construction Completion Certificate.
3.04	Topsoil & Subsoil Stripping	02232, 02234, Drawings	.1 Scope: Includes all labour, equipment, and resources required to strip and stockpile existing topsoil and subsoil material from the dike crest and side slopes as per Drawings and specifications, storage of material, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be cubic meters of stripped soil, as determined by post-stripping surveyed area and depth. Survey to be verified by Owner's representative. .3 Payment: Unit Price per cubic meter.
3.05	Excavation - Common	02315, 02330	.1 Scope: Provide all labour, equipment and materials necessary for earthworks (excavation) to design rough grade and sub-base prep, including grading, shaping, compacting, moisture conditioning, and proof rolling as required and all items incidental to complete the work and for which payment is not included elsewhere. Applies to all site earthworks. .2 Measurement: Shall be by cubic meter of fill removed based on survey and shall be full compensation for all work related to rough grading.. .3 Payment: Unit Price per cubic meter.
3.06	Off-Site Haul & Disposal of Excess Cut		.1 Scope: Provide all labour, equipment, and materials to load, haul, handle, and dispose excess cut material, and all items incidental to complete the work and for which payment is not included elsewhere. It is the responsibility of the Contractor to determine an off-site location to haul and dispose of the excess cut. .2 Measurement: Shall be by bank cubic meter for completion of all off-site haulage as identified in the Drawings. Overages in off-site haulage without the direction and authorization of the Province will not be compensated for. .3 Payment: Unit Price per cubic meter.
3.07	Zone 1A Impervious Fill - Supply, Place, and Compact	02315, 02330	.1 Scope: Includes all labour, equipment, and resources required to investigate, test, verify suitable quality, provide submittals and quality control, supply and place, and compact Zone 1A Impervious fill to the design lines, grades, and elevations as shown on Drawings and in the Contract Documents; and all related work and materials for which payment is not included elsewhere. It is the responsibility of the Contractor to determine a suitable fill source location. Material that does not meet requirements of Zone 1A Impervious fill delivered to site will not be compensated for. Overages in fill delivered to site will not be compensated for. .2 Measurement: Shall be cubic meters of suitable Zone 1A fill, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per cubic meter.
3.08	Supply and Install Bank Stabilization	C-104, C-105, C-106, C-501, C-502	.1 Scope: Includes all labour, equipment and resources required to supply and install Bank Stabilization including non-woven geotextile, 150 mm coarse riprap bedding zone 5B, and 1000 mm of riprap (50% Class 1, 50% Class 2 by weight) to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be volume bank stabilization, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per cubic meter.

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
3.09	Ø300 mm PVC Pipe Extension - Supply and Install	C-303, C-306	.1 Scope: Includes all labour, equipment, and materials required to supply and install new Ø300 mm PVC pipe extension at existing outfall, as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be meter of pipe installed, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents or as adjusted by The Owner Representative. .3 Payment: Unit Price per meter.
3.10	Ø450 mm Concrete Pipe - Supply and Install	C-303	.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø450 mm concrete pipe, as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be meter of pipe placed, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents or as adjusted by The Owner Representative. .3 Payment: Unit Price per meter.
3.11	Ø450 mm Concrete Pipe Extension - Remove and Replace	C-305	.1 Scope: Includes all labour, equipment, and materials required to remove existing damaged Ø450 mm concrete pipe, supply and install new Ø450 mm concrete pipe extension at existing outfall, as shown in the Design Drawings, and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be meter of pipe installed, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents or as adjusted by The Owner Representative. .3 Payment: Unit Price per meter.
3.12	Ø1050 mm Concrete Pipe - Supply and Install	C-309	.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø1050 mm concrete pipe, including flared end, as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be meter of pipe installed, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents or as adjusted by The Owner Representative. .3 Payment: Unit Price per meter.
3.13	Ø1200 mm Concrete Pipe Extension - Supply and Install	C-308	.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø1200 mm concrete pipe inlet extension at existing end outfall, including salvage and reinstallation of existing flared end headwall as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be meter of pipe extension installed, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents or as adjusted by The Owner Representative. Headwall salvage and reinstallation to be included in price of pipe extension. .3 Payment: Unit Price per meter.
3.14	5A Manhole - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install 5A concrete manhole as shown in the Design Drawings, including excavation, base preparation, installation of barrel, backfill, risers, lid/grate, and all other and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be by vertical meter of manhole extension as inspected by The Owner Representative. .3 Payment: Unit Price per vertical meter.
3.15	5A Manhole Extension - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install 5A concrete manhole rise extension on existing manhole(s) as shown in the Design Drawings, and all related work and materials for which payment is not included elsewhere incl. excavation. .2 Measurement: Shall be by vertical meter of manhole extension as inspected by The Owner Representative. .3 Payment: Unit Price per vertical meter.
3.16	D0+240 Storm Tie-in	C-305	.1 Scope: Includes all labour, equipment, and materials required to tie-in new 5A manhole to existing concrete storm system including tie in pr. manhole to existing pipes incl. gaskets as shown in the Design Drawings, and all related work and materials for which payment is not included elsewhere. Note payment for new concrete pipe, and new 5A manhole is elsewhere. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 100% of the Lump Sum value on completion of D0+240 Storm Tie-in
3.17	D0+500 Storm Pipe Upgrade	C-306, C-307	.1 Scope: Includes all labour, equipment, and materials required to upgrade the storm pipe at D0+500 including remove existing system, infill existing manhole sump with concrete, coring to facilitate new manhole connections as required, tie in pr. manhole to existing pipes incl. gaskets, and decommissioning old manhole connections, as shown in the Design Drawings, and all related work and materials for which payment is not included elsewhere. Note payment for new PVC pipe, new manhole, and manhole extension is elsewhere. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 100% of the Lump Sum value on completion of D0+500 Storm Pipe Upgrade
3.18	Tideflex Check-Valve (TF-1) Ø300 mm - Supply and Install	C-303	.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø300 mm Tideflex Check-Valve (TF-1) as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø300 mm Tideflex Check-Valve (TF-1) .3 Payment: Unit Price per Ø300 mm Tideflex Check-Valve (TF-1)
3.19	Tideflex Check-Valve (TF-1) Ø450 mm - Supply and Install	C-304	.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø450 mm Tideflex Check-Valve (TF-1) as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø450 mm Tideflex Check-Valve (TF-1) .3 Payment: Unit Price per Ø450 mm Tideflex Check-Valve (TF-1)

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
3.20	Tideflex Check-Valve (TF-1) Ø1050 mm - Supply and Install	C-309	.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø1050 mm Tideflex Check-Valve (TF-1) as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø1050 mm Tideflex Check-Valve (TF-1) .3 Payment: Unit Price per Ø1050 mm Tideflex Check-Valve (TF-1)
3.21	Concrete Headwall for Ø300 mm Pipe - Supply and Install	C-303	.1 Scope: Includes all labour, equipment, and materials required to supply and install concrete headwall for Ø300 mm pipe as shown in the Design Drawings and specifications and all related work and materials for which payment is not included elsewhere. This includes supply and install of 20mm crushed gravel and all bedding prep work. .2 Measurement: Shall be per concrete headwall for Ø300 mm pipe .3 Payment: Unit Price per concrete headwall for Ø300 mm pipe
3.22	Concrete Headwall for Ø450 mm Pipe - Supply and Install	C-304	.1 Scope: Includes all labour, equipment, and materials required to supply and install concrete headwall for Ø450 mm pipe as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. This includes supply and install of 20mm crushed gravel and all bedding prep work. .2 Measurement: Shall be per concrete headwall for Ø450 mm pipe .3 Payment: Unit Price per concrete headwall for Ø450 mm pipe
3.23	Concrete Headwall for Ø1050 mm Pipe - Supply and Install	C-309	.1 Scope: Includes all labour, equipment, and materials required to supply and install concrete headwall for Ø1050 mm pipe as shown in the Design Drawings and specifications, and all related work and materials for which payment is not included elsewhere. This includes supply and install of 20mm crushed gravel and all bedding prep work. .2 Measurement: Shall be per concrete headwall for Ø1050 mm pipe .3 Payment: Unit Price per concrete headwall for Ø1050 mm pipe
3.24	Class 1 Riprap - Supply and Place	02315, 02330	.1 Scope: Includes all labour, equipment, and resources required supply and place Class 1 Riprap to the design lines, grades, and elevations as shown on Drawings and in the Contract Documents; and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be cubic meters of Class 1 Riprap, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per cubic meter.
3.25	Redi-Rock Retaining Wall with Guardrail - Aquaplex - Supply and Install	B 101, B 301	.1 Scope: Includes all labour, equipment and resources required to supply and install Redi-Rock Retaining Wall System at Aquaplex to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. Includes excavation, installation of 28" Redi-rock blocks, geogrid, coarse gravels, perforated drain pipe, nonwoven geotextile, reworked clay till fill, hand compacted clay fill, sleeve-it fence system, guardrail, and concrete fill and all other details as shown in Drawing B-301 and guardrail details as shown in L-901 and L-904. .2 Measurement: Shall be by face square meters of redi-rock wall (prior to backfill of wall face) as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per face square meter.
3.26	Redi-Rock Retaining Wall with Guardrail and Steel Gate - Riverview Terrace - Supply and Install	B-102, B-301	.1 Scope: Includes all labour, equipment and resources required to supply and install Redi-Rock Retaining Wall System at Riverview Terrace to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. Includes installation of 28" Redi-rock blocks, excavation, geogrid, coarse gravels, perforated drain pipe, nonwoven geotextile, reworked clay till fill, hand compacted clay fill, sleeve-it fence system, guardrail, and concrete fill and all other details as shown in Drawing B-301 and guardrail and steel gate details as shown in L-901 and L-904. .2 Measurement: Shall be by face square meters of redi-rock wall (prior to backfill of wall face) as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per face square meter.
3.27	Concrete Swale with Slotted Drain - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to construct concrete swale with slotted drain as shown in the Design Drawings, including all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be linear meter of concrete swale with slotted drain constructed, as determined by survey lines, grades, slopes, and elevations specified in the Contract Documents or as adjusted by The Owner Representative. .3 Payment: Unit Price per meter.
3.28	Concrete Sidewalk - Supply and Install	D-901 Detail D	.1 Scope: Includes all labour, equipment and resources required to supply and install concrete sidewalk (and staircase landings) including excavation, subgrade preparation, crushed gravel leveling course, and reinforcement to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. This scope excludes the concrete sidewalk and curb to be installed adjacent to the Drumheller High School. .2 Measurement: Shall be by square meters of concrete sidewalk as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
3.29	Concrete Stairs with Handrail - Supply and Install	L-901 Detail C	.1 Scope: Includes all labour, equipment and resources required to supply and install 4m wide concrete stairs with handrail to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be by vertical meter of stair (riser+tread) as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per vertical meter.

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
3.30	Pedestrian Handrail - Supply and Install	L-902, L-903	.1 Scope: Includes all labour, equipment and resources required to supply and install pedestrian handrail at ramp to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be by linear meter of handrail as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per linear meter.
3.31	Bridge/Ramp Connection at Riverview Terrace - Supply and Install	L-903 Detail A	.1 Scope: Includes all labour, equipment and resources required to supply and install handrail, bridge/ramp, and concrete abutment from existing Riverview Terrace ramp to proposed concrete sidewalk to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 100% of the Lump Sum value on completion of item
3.32	Asphalt Pathway - Supply and Install	C-502 Details 2A and 2B, C-503 Detail 1	.1 Scope: Includes all labour, equipment and resources required to supply and install asphalt pathway including base gravels to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be square meters of asphalt trail surface, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
3.33	Gravel Pathway - Supply and Install		.1 Scope: Includes all labour, equipment and resources required to supply and install gravel pathway structure to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be square meters of gravel trail surface, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
3.34	Pathway Root Barrier - Supply and Install		.1 Scope: Includes all labour, equipment and resources required to supply and install root barrier under specified pathways to the lines, grades, and elevations as shown on Drawings and in the Contract Documents and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be by square meters of asphalt pathway surface or gravel pathway surface, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
3.35	Type 4 Double Gate - Supply and Install	C-503	.1 Scope: Includes all labour, equipment and resources required to supply and install Type 4 Double steel road gate as per Drawings, and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be per Type 4 double gate .3 Payment: Unit Price per Type 4 double gate.
3.36	Topsoil - Supply		.1 Scope: Includes supplying additional topsoil from off-site sources, paying royalties, excavating, sorting, loading, and hauling of topsoil, per Contract Documents. It is the responsibility of the Contractor to determine a suitable topsoil source location. Material that does not meet requirements of topsoil delivered to site will not be compensated for. Overages in topsoil delivered to site will not be compensated for. .2 Measurement: Shall be cubic meters of suitable topsoil (in excess of stripped topsoil volume), as determined by survey of final bank cubic meters installed. .3 Payment: Unit Price per cubic meter.
3.37	Topsoil Placement		.1 Scope: Includes all labour, equipment and resources required to prepare receiving surfaces, dump, spread, grade, compact, rake, shape, and trim Topsoil to the finished grade surface to achieve the lines, grades, and elevations shown on Drawings and in the Contract Documents. .2 Measurement: Shall be cubic meters of Topsoil placed (stripped + supplied), as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per cubic meter.
3.38	Trees - Supply and Planting (small)		.1 Scope: Provide all labour, equipment, and materials necessary to supply and plant trees and all items incidental to complete work and for which payment is not included elsewhere as shown on Drawings and in the Contract Documents. "Small" trees are indicated in the Tree Planting Schedule by a size of "#15 CONT." .2 Measurement: Shall be shall be based on unit rates for complete planting of trees on-site as specified in the drawings. Total amounts for such payment shall not exceed the amount bid for this item. .3 Payment: Unit Price per small tree.
3.39	Trees - Supply and Planting (Med - Large)		.1 Scope: Provide all labour, equipment, and materials necessary to supply and plant trees and all items incidental to complete work and for which payment is not included elsewhere as shown on Drawings and in the Contract Documents. "Med-Large" trees are indicated in the Tree Planting Schedule by any size 50mm or larger. .2 Measurement: Shall be shall be based on unit rates for complete planting of trees on-site as specified in the drawings. Total amounts for such payment shall not exceed the amount bid for this item. .3 Payment: Unit Price per medium to large tree.

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
3.40	Shrubs - Supply and Planting		.1 Scope: Provide all labour, equipment, and materials necessary to supply and plant shrubs and all items incidental to complete work and for which payment is not included elsewhere as shown on Drawings and in the Contract Documents. .2 Measurement: Shall be based on unit rates for complete planting of shrubs as specified in the drawings. Total amounts for such payment shall not exceed the amount bid for this item. .3 Payment: Unit Price per shrub.
3.41	Tree Seedlings-Supply and Planting		.1 Scope: Provide all labour, equipment, and materials necessary to supply and plant tree seedlings and all items incidental to complete work and for which payment is not included elsewhere as shown on Drawings and in the Contract Documents. .2 Measurement: Shall be based on unit rates for complete planting of tree seedlings as specified in the drawings. Total amounts for such payment shall not exceed the amount bid for this item. .3 Payment: Unit Price per tree seedling.
3.42	Seeding		.1 Scope: Includes all labour, equipment and resources required to place seeding (Seed Mix 1, Seed Mix 2A, Seed Mix 3) as shown on Drawings and in the Contract Documents. .2 Measurement: Shall be square meters of seeded area, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
3.43	Sodding		.1 Scope: Includes all labour, equipment and resources required to place sodding as shown on Drawings and in the Contract Documents. .2 Measurement: Shall be square meters of sodded area, as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
3.44	New Picnic Tables with Concrete Pads		.1 Scope: Includes all labour, equipment and resources required to supply and install a new picnic table with a concrete pad as per Drawings, and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be per picnic table with concrete pad. .3 Payment: Unit Price per picnic table with concrete pad.
3.45	Rolled Concrete Curb (remove and replace)		.1 Scope: Includes all labour, equipment and resources required to remove existing rolled concrete curb and supply and install new rolled concrete curb as indicated on the drawings and as per the City of Calgary Specification for rolled concrete curbs, and all items incidental to complete the work and for which payment is not included elsewhere. .2 Measurement: Shall be per linear meter. .3 Payment: Unit Price per linear meter.
3.46	Concrete Sidewalk and Curb at Drumheller High School - Curb Removal, Supply and Install		.1 Scope: Includes all labour, equipment and resources required to remove and dispose of existing concrete curb, supply and install new concrete sidewalk and curb; including excavation, subgrade preparation, crushed gravel leveling course, reinforcement and asphalt tie-in. The new concrete sidewalk and curb are to be constructed and installed as per the City of Calgary specifications at a 2m width. This scope of work and measurement of payment is specific to the stretch of sidewalk on Riverside Dr E and 19 St E, from the corner of Riverside Drive E and 17 St E to the corner of 19 St E and 7 Ave E, and all items incidental to complete the work and for which payment is not included elsewhere. This scope excludes the concrete sidewalk and curb to be installed adjacent to the Drumheller High School. .2 Measurement: Shall be by square meters of concrete sidewalk as determined by survey and the finished grade lines, grades, slopes, and elevations specified in the Contract Documents. .3 Payment: Unit Price per square meter.
4. PROVISIONAL ITEMS			
4.01	Irrigation System - Supply and Install		.1 Scope: Includes all labour, equipment and materials needed to install irrigation system as identified in the Drawings including all items for which payment is not included elsewhere. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 75% of the Lump Sum value on completion of installation of irrigation system, 25% of the Lump Sum value after issuance of the Construction Completion Certificate
4.02	Playground - Supply and Install		.1 Scope: Includes all labour, equipment and materials needed to install playground as identified in the Drawings including all items for which payment is not included elsewhere. .2 Payment: Lump Sum paid in accordance with the schedule below. The total amount of such payments shall not exceed the amount bid for this item. 75% of the Lump Sum value on completion of installation of playground, 25% of the Lump Sum value after issuance of the Construction Completion Certificate
4.03	Tideflex Checkmate Ultraflex Inline Check-Valve Ø300 mm - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø300 mm Tideflex Checkmate Ultraflex Inline Check-Valve, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø300 mm Tideflex Checkmate Ultraflex Inline Check-Valve .3 Payment: Unit Price per Ø300 mm Tideflex Checkmate Ultraflex Inline Check-Valve

ITEM NO.	ITEM NAME	SECTION	SCOPE, MEASUREMENT AND PAYMENT
4.04	Tideflex Checkmate Ultraflex Inline Check-Valve Ø450 mm - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø450 mm Tideflex Checkmate Ultraflex Inline Check-Valve, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø450 mm Tideflex Checkmate Ultraflex Inline Check-Valve .3 Payment: Unit Price per Ø450 mm Tideflex Checkmate Ultraflex Inline Check-Valve
4.05	Tideflex Checkmate Ultraflex Inline Check-Valve Ø525 mm - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø525 mm Tideflex Checkmate Ultraflex Inline Check-Valve, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø525 mm Tideflex Checkmate Ultraflex Inline Check-Valve .3 Payment: Unit Price per Ø525 mm Tideflex Checkmate Ultraflex Inline Check-Valve
4.06	Tideflex Checkmate Ultraflex Inline Check-Valve Ø1050 mm - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø1050 mm Tideflex Checkmate Ultraflex Inline Check-Valve, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø1050 mm Tideflex Checkmate Ultraflex Inline Check-Valve .3 Payment: Unit Price per Ø1050 mm Tideflex Checkmate Ultraflex Inline Check-Valve
4.07	Tideflex Checkmate Ultraflex Inline Check-Valve Ø1200 mm - Supply and Install		.1 Scope: Includes all labour, equipment, and materials required to supply and install Ø1200 mm Tideflex Checkmate Ultraflex Inline Check-Valve, and all related work and materials for which payment is not included elsewhere. .2 Measurement: Shall be per Ø1200 mm Tideflex Checkmate Ultraflex Inline Check-Valve .3 Payment: Unit Price per Ø1200 mm Tideflex Checkmate Ultraflex Inline Check-Valve

END OF SECTION

1.0 GENERAL

1.1 COORDINATION

- .1 Co-ordinate all construction activities to provide efficient and orderly construction of each and every part of the Work.
- .2 Where construction of one part of the Work is dependent on construction of other parts, schedule and co-ordinate construction activities in the sequence needed to obtain the best results.
- .3 Where availability of space is limited, co-ordinate construction of different parts of the Work to provide maximum accessibility for maintenance, service, and repair.
- .4 Make adequate provisions to accommodate Work scheduled for later construction by Other Contractors or by The Owner's own forces.

1.2 COMMUNICATION: EQUIPMENT

- .1 Provide suitable telephone and computer equipment at the Contractor's office specified in this section for receiving communications by voice and email.
- .2 Provide suitable computer equipment and software at the Contractor's office specified in this section for exchange of electronic data by e-mail of the following types of documents:
 - .1 Letters and Memos Microsoft® Word
 - .2 Document Readers Adobe Acrobat®Reader
 - .3 Schedules Microsoft® Project or Microsoft® Excel
 - .4 Drawings AutoCAD®
 - .5 Communication Microsoft® Outlook
 - .6 Quantities and Calculations Microsoft® Excel

1.3 COMMUNICATION METHODS

- .1 Communications will be sufficiently given by any one of the following methods:
 - .1 Delivered personally to the Contractor, the Contractor's representative, or left at the Contractor's address as specified in this section.
 - .2 Mailed at any post office to the Contractor's address as specified in this section.
 - .3 Couriered to the Contractor's address as specified in this section.
 - .4 Transmitted by facsimile to the Contractor's facsimile number as specified in this section.
 - .5 Transmitted by Internet to the Contractor's e-mail address as specified in this section.

1.4 CONTRACT ADMINISTRATION

- .1 Co-ordinate scheduling and timing of administrative procedures with other construction activities to avoid delays and provide orderly progress of the Work. Administrative procedures include the following:
 - .1 Preparation and monitoring of schedules.
 - .2 Co-ordination of construction and removal of temporary facilities.
 - .3 Co-ordination, review, and processing of submittals.
 - .4 Participation in project meetings.
 - .5 Following Contract acceptance procedures.
 - .6 Preparation of change order proposals.

1.5 CONTRACTOR'S ADDRESS FOR CORRESPONDENCE

- .1 Submit the name, address, telephone number, and e-mail address to be used for correspondence with the Contractor within 10 days of the date of commencement of the Contract. Update whenever information changes during the Contract.

1.6 OWNER'S ADDRESS FOR CORRESPONDENCE

- .1 The Owner will provide to the Contractor the name, address, telephone number, facsimile number, and e-mail address to be used for correspondence with The Owner within 10 days of the date of commencement of the Contract. This information will be updated as required during the Contract.

1.7 CONTRACTOR'S REPRESENTATIVES AND SITE MANAGEMENT

- .1 Submit an organization chart showing the names, positions, telephone numbers, and responsibilities and levels of authority for the Contractor's representatives and site management organization, within 10 days of the date of commencement of the Contract, and update whenever information changes during the Contract.

1.8 OWNER'S REPRESENTATIVES AND ASSISTANTS

- .1 The Owner will provide to the Contractor an organization chart showing the names, positions, telephone numbers, and responsibilities and levels of authority for The Owner's Representative and assistants, within 10 days of the date of commencement of the Contract, and will update whenever information changes during the Contract.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 ADMINISTRATIVE RESPONSIBILITIES

- .1 The Owner will be responsible for administrative requirements for the following Contract meetings:
 - .1 Pre-construction
 - .2 Construction Progress
- .2 The Contractor shall be responsible for administrative requirements for the following Contract meetings:
 - .1 Workplace Orientation
 - .2 Safety
 - .3 Weekly site meetings
- .3 The Owner or the Contractor may request additional meetings related to installation of equipment, commissioning progress, warranty, dispute resolution, and/or environmental issues. Unless otherwise specifically requested by the Contractor, The Owner will be responsible for administrative duties related to these meetings. The agenda for these meetings may be combined with that of the construction progress meetings.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 The administrative requirements for Contract meetings include the following:
 - .1 Scheduling and administering the weekly meetings throughout the progress of the Work.
 - .2 Preparing the agenda for the meetings.
 - .3 Distributing to the relevant attendees written notice of each meeting and the proposed agenda at least 4 days in advance of the meeting date.
 - .4 Presiding at the meetings.
 - .5 Recording the minutes including attendance, significant proceedings and decisions, and action required by the parties.
 - .6 Reproducing and distributing copies of the minutes within 7 days after each meeting to the meeting participants and affected parties not in attendance.
- .2 Representatives of the Contractor, Subcontractors, and Suppliers shall attend meetings as necessary and be authorized to act on behalf of the party each represents.

1.3 PRE-CONSTRUCTION MEETING

- .1 Frequency: Within 15 days after award of the Contract and prior to commencement of activities at the Site.
- .2 Purpose: To review personnel assignments, responsibilities, schedules, submissions, and administrative and procedural requirements.
- .3 Attendees:
 - .1 Contractor's representatives: senior management, site superintendent, major Subcontractors, and others as necessary.
 - .2 Owner's representatives: as determined by The Owner.
- .4 Agenda may include the following:
 - .1 Appointment of representatives of participants in the Work.
 - .2 Schedule of the Work and progress scheduling.
 - .3 Schedule of submittals.
 - .4 Requirements for temporary facilities, site signage, offices, storage sheds, utilities, and fences.
 - .5 Schedule of equipment delivery.
 - .6 Site safety and security.
 - .7 Change proposals, change orders, approvals required, costing and mark-up percentages permitted, time extensions, overtime, and administrative requirements.
 - .8 Products and materials provided by The Owner.
 - .9 Record documents.
 - .10 Maintenance manuals.
 - .11 Takeover procedures, acceptance, and warranties.
 - .12 Monthly progress claims, administrative procedures, and holdbacks.
 - .13 Inspection and testing.
 - .14 Insurance and transcripts of policies.
 - .15 Environmental management principles.
 - .16 Mobilization to the Site.

1.4 CONSTRUCTION PROGRESS MEETINGS

- .1 Frequency: Weekly during the course of the Work.
- .2 Purpose: To monitor construction progress, to identify problems and actions required for their solution, and to expedite the Work.
- .3 Attendees:
 - .1 Contractor's representatives: site superintendent and, when so requested by The Owner, Subcontractors, Suppliers, and other parties involved in the Work.
 - .2 Owner's representatives: as determined by The Owner.
- .4 Agenda may include the following:
 - .1 Review and approval of minutes of the previous meeting.
 - .2 Review of the Work progress since the previous meeting.
 - .3 Field observations, problems, and conflicts.
 - .4 Problems that impede the construction schedule.
 - .5 Off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain the Contract schedule.
 - .7 Revisions to the construction schedule.
 - .8 Progress and schedule for the succeeding work period.
 - .9 Submittal schedules.
 - .10 Adherence to quality standards.
 - .11 Change proposal effects on the construction schedule and Contract Time.
 - .12 Contentious items of the Work.
 - .13 Contract closeout issues.
 - .14 Safety and security issues.
 - .15 Environmental issues.
 - .16 Landowner and stakeholder issues.
 - .17 Other business.

1.5 WORKPLACE ORIENTATION MEETINGS

- .1 Frequency: As required for all new workers prior to commencement of Work on the Site per Contractor's COR Safety Program.
- .2 Purpose: To familiarize new workers with site conditions, rules, regulations, safety, and security requirements.
- .3 Attendees: All new Contractor and Owner's personnel scheduled to work on the Site.
- .4 Agenda may include the following:
 - .1 Covid-19 protocols.
 - .2 Project description including areas of work and other concurrent construction contracts.
 - .3 Hazardous areas including open excavations, construction equipment traffic, blasting, and chemical or explosive storage, etc.
 - .4 Safety equipment to be worn by workers, including areas with special requirements.
 - .5 Traffic routes on the Site.
 - .6 Evacuation procedures.
 - .7 First aid procedures.
 - .8 Excavation or work permit procedures.
 - .9 WHMIS (Workplace Hazardous Materials Information System) requirements for handling and storage of chemicals.
 - .10 Fire safety rules and regulations.
 - .11 Rules and regulations regarding wildlife, environmental concerns, drugs, alcohol, etc.

1.6 SAFETY MEETINGS

- .1 Frequency: Per Contractor's COR Safety Program, no less than weekly during the course of the Work for each area of work. Safety Meetings may form part of the Weekly meeting agenda.
- .2 Purpose: To review safety concerns and implement preventive safety measures.
- .3 Attendees: Contractor's and Owner's personnel for each area of work.
- .4 Agenda may include the following:
 - .1 Review and discussion of safety concerns, accidents, and "near misses."
 - .2 Remedial or preventive actions to be taken.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 FORMAT OF SCHEDULE

- .1 Base the format of the construction schedule on the following:
 - .1 Horizontal bar chart of sufficient size to clearly indicate all required information.
 - .2 Time divided into months, weeks, and days. Identify the first workday of each week.
 - .3 Space for revisions.

1.1 QUALITY OF SCHEDULE

- .1 Provide a separate bar for each activity.
- .2 Indicate the start and completion dates for each activity, and the work restriction and Milestone Dates, and the Contract Time specified in Section 01110 – Summary of Work.
- .3 Indicate the projected percentage of completion for each activity as of the first day of each month.

1.2 SUBMITTALS

- .1 Provide the following submittals.
- .2 Construction schedule:
 - .1 Within 10 days of receipt, the Owner will either return the submitted construction schedule to the Contractor with no exceptions taken or require revisions to the construction schedule. Provide a revised construction schedule within 5 days of receiving the Owner's comments, if any.
 - .2 An initial construction schedule for the Owner's review within 15 days after the date of commencement of the Contract.
 - .3 Not Used.
 - .4 Progress revisions within 15 days after receiving notice to do so from the Owner.

1.3 USE OF THE CONSTRUCTION SCHEDULE

- .1 Adhere to, and require that all Subcontractors and Suppliers adhere to, the construction schedule.

1.4 PROGRESS REVISIONS

- .1 Revise the construction schedule upon request by the Owner if, in the Owner's opinion:

- .1 the progress of the Work is substantially different from the latest construction schedule and the date of Substantial Performance of the Work appears to be in jeopardy;
 - .2 the Work is being performed in a sequence that is not in keeping with the general work sequence of the latest construction schedule; or
 - .3 a revision is necessary to reflect a required adjustment to the Contract Time that has been authorized by the Owner.
- .2 Outline methods to be used to complete the Work within the Contract Time.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 DEFINITIONS

- .1 “Administrative Submittals” means data presented for review to ensure administrative requirements of the Contract are met.
- .2 “Shop Drawings” means technical data specifically prepared for work of this Contract including drawings, diagrams, schedules, templates, patterns, and similar information not in standard printed form.
- .3 “Product Data” means standard printed information describing materials, products, equipment, and systems not specifically prepared for work of this Contract. Product Data consisting of manufacturers’ standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations, and descriptive data will be accepted in lieu of Shop Drawings provided that:
 - .1 information not applicable to the work of this Contract is deleted; and
 - .2 standard information is supplemented with information specifically applicable to the Work of this Contract.
- .4 “Samples” means cuts or containers of materials or partial sections of manufactured or fabricated components that are physically identical to products proposed for use.
- .5 “Field Samples” means volumes of materials as specified, which are physically representative of the materials proposed for use.

1.2 SCHEDULE OF SUBMITTALS

- .1 Submittals required for the Contract are specified in each section of the Contract Documents.
- .2 Additional submittals required but not specified in other sections of the contract are appended to this section. Submit these submittals prior to commencement of Work at the Site.

1.3 SUBMITTAL PREPARATION

- .1 Determine and verify the following:
 - .1 Field measurements.
 - .2 Field construction criteria.
 - .3 Catalogue numbers and similar data.
 - .4 Compliance with the Contract Documents.
- .2 Co-ordinate each submittal with requirements of the Work and the Contract Documents.
- .3 Notify The Owner, in writing, on the submittal and at the time of submission, of any deviations from the requirements of the Contract Documents.

1.4 SUBMITTAL REQUIREMENTS

- .1 Make submittals within the times required by the Contract Documents and sufficiently in advance of the date that reviewed submittals will be required, and in such sequence as to cause no delay in the Work.
- .2 Make submittals in the form specified or in a form considered as an industry standard.
- .3 Provide a transmittal letter with each submittal containing the following:
 - .1 Date.
 - .2 Project Name.
 - .3 Contract Name.
 - .4 Tender Number.
 - .5 Contractor's name and address.
 - .6 Number of each Shop Drawing, Product Data, and Sample submitted.
- .4 Include in the submittals the following:
 - .1 Date and revision dates.
 - .2 Project Name.
 - .3 Contract Name.
 - .4 Tender Number.
 - .5 Name of:
 - .1 Contractor.
 - .2 Subcontractor.
 - .3 Supplier.
 - .4 Manufacturer.
 - .5 Name of detailer when details are not prepared by the Contractor, Subcontractor, or Supplier.
 - .6 The Contractor's stamp, signed, certifying its review of the submittal, verification of field measurements, and compliance with the Contract Documents, or that deviations, if incorporated, will be compatible with other elements of the Work.

1.5 REVIEW OF SUBMITTALS

- .1 The Owner will review each submittal within 10 working days of receipt of the submittal unless specified otherwise in the Contract Documents. Owner review time of submittals shall be factored into consideration for construction execution and shall not be reason for claiming delay.

- .2 Make corrections or changes to reviewed submittals and resubmit as specified for the initial submission.
- .3 Until a reviewed submittal is received, and does not require re-submittal, do not proceed with the Work related to the submittal.
- .4 The Owner's review of any submittal does not relieve the Contractor from responsibility for errors and omissions, nor deviations from the requirements of the Contract Documents.

1.6 REPRODUCTION OF SUBMITTALS

- .1 After review of the submittal, The Owner will reproduce the number of copies of the submittal that The Owner requires, and return the reviewed reproducible documents.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 RELATED SPECIFICATIONS

- .1 Section 01391 Environmental Protection.
- .2 Alberta Transportation Erosion and Sediment Control Manual June, 2011

1.2 ENVIRONMENTAL LEGISLATION

- .1 The Owner will obtain the environmental approvals, permits, licences, and authorizations required for the Project.
- .2 The Contractor shall familiarize itself with all applicable federal and provincial legislation and regulations concerning environmental protection and shall conduct its activities in accordance with such legislation and regulations, including, but not necessarily limited to, the provincial Historical Resources Act, Environmental Protection and Enhancement Act and Water Act and the federal Fisheries Act and Navigable Waters Protection Act.
- .3 Comply with the conditions of all environmental approvals, permits, licences and authorizations issued for the Contract. Obtain any further environmental approvals, permits, licences and authorizations for temporary work as may be required for the Contract.
- .4 Provide The Owner with written confirmation of Contractor's full compliance with all approvals, permits, licences and authorizations before the full amount of holdback will be released.
- .5 The Contractor shall also familiarize itself with all applicable Codes of Practice issued by Alberta Environment and shall conduct its activities in accordance with such Codes of Practice, including, but not necessarily limited to, the Code of Practice for Asphalt Paving Plants and the Code of Practice for Pits, both under the Environmental Protection and Enhancement Act and the Code of Practice for Watercourse Crossings under the Water Act.
- .6 In the event of conflicting statements between the various Acts, Authorizations, Permits, and Codes of Practice, the more stringent requirement shall apply.
- .7 Keep on Site, copies of approvals, permits, licences and authorizations. Make these documents readily available to authorized persons at the Site. Keep documents on Site until the date of Warranty Performance of the Work or at such earlier dates accepted by The Owner.

1.3 ECO PLAN

- .1 Prepare and implement an Environmental Construction Operations Plan for each phase of the Contract in accordance with the Alberta Transportation manual entitled "Environmental Construction Operations Plan (ECO Plan) Framework," July 2020 version. Completed ECO Plans consist of written procedures and drawings that address the environmental protection issues relevant to the site-specific activity being performed and shall detail temporary environmental control measures and environmental monitoring that the Contractor undertakes to comply with all applicable legislation, regulations and approvals during the course of

construction and during "winter shut down," and other similar "shut down". The ECO Plan shall incorporate a Siltation and Erosion Control Plan (SECP) and provisions for sections below.

- .2 Prepare the ECO Plan specific to the Work and the Site. Ensure effective implementation of the ECO Plan by assigning responsibility for the implementation, and maintenance of the work prescribed by the ECO Plan, including temporary erosion control measures, to one individual, herein called the work zone representative. The work zone representative shall be identified at the pre-construction meeting.
- .3 The ECO Plan shall not cover any permanent or long term environmental or erosion control devices or work specified in the Contract.
- .4 Submit the ECO Plan to The Owner at least 7 calendar days prior to the pre-construction meeting. The Owner will review the ECO Plan and communicate any concerns to the Contractor at least 7 calendar days prior to the pre-construction meeting. Address any issues or concerns regarding the proposed ECO Plan to the satisfaction of The Owner prior to the commencement of the Work.
- .5 Finalized ECO Plans shall be agreed to by all parties and shall be signed by the Contractor's 'Principal-In-Charge' and the Contractor's work zone representative before the commencement of Work. When the Contractor's work zone representative changes, the new work zone representative shall provide a letter of acknowledgment to The Owner indicating that the new work zone representative has reviewed the ECO Plan and will comply with its requirements.
- .6 The finalization of the ECO Plan to the mutual satisfaction of The Owner and the Contractor does not constitute an approval or assurance from The Owner that the "temporary environmental control measures" detailed in the ECO Plan are sufficient to ensure compliance with all applicable legislation, regulations or conditions of approval. The Contractor is ultimately responsible to ensure all measures, used on the Work, are sufficient to ensure compliance with all applicable authorities. This may mean increasing the number of installations, providing alternate devices or modifying procedures.
- .7 If at any time during the performance of the Work of the Contract, it is determined that the devices or procedures detailed in the ECO Plan (any specific measures, locations or quantities proposed) are inappropriate or insufficient, The Owner will notify the Contractor in writing and the Contractor shall modify the ECO Plan accordingly.
- .8 The Owner may suspend work in cases where in The Owner's opinion the Contractor fails to comply with procedures stated in the ECO Plan. If the Contractor fails to adhere to finalized ECO Plans, The Owner may make other arrangements to have the Work done and deduct the cost thereof from any money owing to the Contractor.
- .9 The cost of preparing the ECO Plan and the performance of all Work necessary to ensure compliance with the ECO Plan and applicable legislation, regulations or conditions of approval including removing and disposing of material from silt containment ponds and sediment barriers will be incidental to the Work and will not be paid for separately.

1.4 GENERAL ENVIRONMENTAL PROTECTION REQUIREMENTS

- .1 Advise The Owner as soon as possible of any accidents.

- .2 Conduct accident investigations.

1.5 DISPOSAL OF WASTE MATERIALS

- .1 Do not release, dump, spill or dispose of any substance into the environment that causes or could cause impairment of or damage to the environment or human health or safety. Mitigate to ensure compliance with all regulatory legislation, any wastes arising from the work and any other substances that causes or could cause impairment of or damage to the environment or human health or safety, and should Contractor fail to do so, The Owner may, without further notice, arrange the clean-up of such wastes and other substance at the expense of the Contractor.
- .2 Remove and dispose of any inert solid waste materials resulting from the work in accordance with Alberta Environment's Construction, Renovation and Demolition Waste Reduction Guidelines and as determined by The Owner prior to Total Performance of the Work or other time scheduled in the Contract Documents. The Contractor may temporarily store such material in interim stockpiles on the disturbed land.
- .3 Where applicable, dispose of waste materials at the Drumheller Landfill.

1.6 REPORTING PROCEDURES FOR SPILLS OF DELETERIOUS OR HAZARDOUS MATERIALS

- .1 During the construction, any release of silt or other deleterious substance into a body of water or watercourse Contractor shall immediately report to The Owner, Alberta Environment and the Federal Department of Fisheries and Oceans (1-800-222-6514).
- .2 In the event of the release of silt or other deleterious substance into a body of water or watercourse, the Contractor shall take all reasonable measures to contain the release and repair any damage at its expense.
- .3 Spills or releases of hazardous materials and any other substances that cause or could cause impairment of or damage to the environment or human health or safety shall also be immediately reported to The Owner, Alberta Environment and, if a body of water or watercourse is involved, The Owner, Alberta Environment and the Federal Department of Fisheries and Oceans (1-800-222-6514). Take all reasonable measures to contain the spill and cleanup and any such work shall be performed in accordance with the applicable legislation and regulations at the Contractors' expense.

1.7 WEED CONTROL & CLUBROOT MANAGEMENT PLAN & WHIRLING DISEASE

- .1 Whirling Disease

Whirling disease is caused by *Myxobolus cerebralis*, a microscopic parasite of salmonid fish, including trout and whitefish. This disease can cause high levels of mortality in some fish.

To prevent the spread of Whirling Disease in Alberta, all equipment that may come in contact with the stream environment (water, sediment, aquatic flora and fauna) must arrive and depart the worksite clean, dry and disinfected. Care should be taken to ensure water from cleaning does not re-enter any nearby waterways through runoff, ditches, or storm drains. The

contractor must comply with all decontamination conditions contained in regulatory approvals and as per the latest Alberta Government guidelines:

(<https://www.alberta.ca/stop-whirling-disease.aspx>). As part of the ECO Plan the Contractor shall detail their proposed Whirling Disease control measures for all instream work and work within the riparian area.

.2 Clubroot Management Plan

Clubroot, caused by *Plasmodiophora brassicae*, is a serious disease of cruciferous crops (i.e. mustards, canola, etc.) which can result in reduced to severe yield losses. Clubroot was declared a pest under Alberta's Agricultural Pests Act in April 2007. Enforcement of the Act is the responsibility of the Agricultural Service Board located in each municipality.

The Contractor shall carry out his or her operations in accordance with the provisions in the attached Weed Control and Clubroot Management Plan and the Best Management Practices outlined in the Alberta Clubroot Management Plan which is available on-line at the following location:

[http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/agdex11519](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/agdex11519)

As part of the ECO Plan, the Contractor shall detail his or her proposed Clubroot control measures for soil disturbance work at locations involving Clubroot infected soils. Details shall include proposed equipment cleaning procedures as well as any control measures recommended by the Municipality's Agricultural Fieldman.

Soil disturbance work shall not commence until the Contractor's ECO Plan has been reviewed and accepted by the Consultant.

All costs associated with the implementation of Clubroot control measures, including those required by the applicable Agricultural Service Board, will be considered incidental to the Work and no separate or additional payment will be made.

.3 Black Knot Fungus

To control the spread of black knot fungus, caused by *Dibotryon morbosum* or *Apiosporina morbosa*, contractors must develop and implement a site-and species-specific weed management plan, as per Alberta Weed Control Act and Weed Control Regulations. A localized weed survey is to be conducted between June and August at construction sites and along equipment movement corridors to identify any weed species present. All equipment entering the project site must be cleaned before arrival to prevent the spread of weed species. Removing and destroying wood infected with black knot fungus is the only way to control the disease once it is present. If black knot fungus is identified, the diseased wood must be immediately removed and destroyed, by burning or by burying it at the Drumheller Landfill, to prevent the spread of spores. DRFMO has established designated burning sites for the disposal of black knot fungus.

As part of the ECO Plan the Contractor shall detail their proposed Black Knot Fungus control measures for removal and hauling of any black knot found on Site.

All costs associated with the implementation of Black Knot Fungus control measures will be considered incidental to the Work and no separate or additional payment will be made.

.4 Dutch Elm Disease

To control the spread of Dutch Elm Disease, caused by *Ophiostoma ulmi* or *Ophiostoma nova-ulmi*, European Elm Bark Beetle (*Scolytus multistriatus*) and Native Elm Bark Beetle (*Hylurgopinus rufipes*), contractors must develop and implement a site-and species-specific weed management plan, as per Alberta Weed Control Act and Weed Control Regulations.

The Contractor shall carry out his or her operations in accordance with the provisions in the attached Alberta Government Dutch Elm Disease Prevention and Control Plan and the Best Management Practices outlined in the Alberta Dutch Elm Disease Prevention and Control Plan Management Plan which is available on-line at the following location:

<http://www.alberta.ca/dutch-elm-disease.aspx>

<http://www.alberta.ca/dutch-elm-disease-prevention-what-you-can-do.aspx>

Removing and destroying wood infected with Dutch Elm Disease / European Elm Bark Beetle / Native Elm Bark Beetle is the only way to control the disease once it is present. If Dutch Elm Disease / European Elm Bark Beetle / Native Elm Bark Beetle is identified, the diseased wood must be immediately removed and destroyed, by burning, to prevent spread. DRFMO has established designated burning sites for the disposal of Dutch Elm Disease / European Elm Bark Beetle / Native Elm Bark Beetle. The Contractor shall haul any Dutch Elm Disease / European Elm Bark Beetle / Native Elm Bark Beetle found on Site and removed to a designated burning site for disposal.

As part of the ECO Plan, the Contractor shall detail his or her proposed Dutch Elm Disease/ European Elm Bark Beetle / Native Elm Bark Beetle control and removal measures. Details shall include any control measures recommended by the Municipality's Agricultural Fieldman.

All costs associated with the implementation of Dutch Elm Disease / European Elm Bark Beetle / Native Elm Bark Beetle control measures will be considered incidental to the Work and no separate or additional payment will be made.

1.8 CONTROL OF SURFACE WATER RUN-OFF

- .1 All exposed areas resulting from construction activities will require erosion control devices. Extra erosion and sediment control materials shall be on site during the construction period should a precipitation or snowmelt event occur at a vulnerable time.
- .2 If runoff or sediment laden water from the area disturbed by the construction exists, it should be diverted to a settling pond, sediment trap, or through a vegetated area to minimize erosion and sedimentation of the waterbody and/or storm drain inlets. All flow diversion will be conducted such that it does not adversely affect the land and in a manner such that it will not disturb sediments in the waterbody.
- .3 Stabilize all disturbed areas, including exposed soils and slopes, by:
 - .1 Immediately installing temporary erosion control measures to remain in place until vegetation or other long-term erosion control methods are fully established and functioning.
 - .2 Installing and placing long-term erosion control measures including, but not limited to, slope stabilization and re-vegetation.
- .4 The Contractor is required to have a Flood Emergency Response Plan as part of their ECO Plan. All supervisors must have access to this plan throughout the duration of the project.

1.9 ASSUMED INSTREAM REGULATORY CONDITIONS

- .1 For the purposes of bidding, assume the following regulatory conditions for instream work must be met. Once permit approvals have been obtained, the permit conditions will replace these assumptions. In the event that the following assumptions are substantially different than permit conditions, a Change will be issued.
 - .1 All mitigation measures outlined in Contract Documents including report "*Fall Riverine Habitat Inventory of the Red Deer & Rosebud Rivers in 08/09/10/11-29-20 W4M and 20/29-28-19 W4M*"
 - .2 Isolation plan as outlined in Contract Documents including report "*Fall Riverine Habitat Inventory of the Red Deer & Rosebud Rivers in 08/09/10/11-29-20 W4M and 20/29-28-19 W4M*"
 - .3 Turbidity Monitoring Plan as outlined in Contract Documents including report "*Fall Riverine Habitat Inventory of the Red Deer & Rosebud Rivers in 08/09/10/11-29-20 W4M and 20/29-28-19 W4M*"

END OF SECTION

1.0 GENERAL

1.1 SURFICIAL AQUATIC RESOURCES

.1 Physical:

- .1 Unless otherwise provided for in the Contract Documents, do not divert, alter, or disrupt water flows in rivers, streams, and other surface bodies of water.
- .2 Conform to the Environmental Construction Operations (ECO) Plan as specified in Section 01390 – ECO Plan.
- .3 Prevent bark, slash, wood chips, sawdust, ashes, organic debris, topsoil, fuel and lubricants, or other substances harmful to aquatic life from entering a river, stream, or other surface bodies of water.
- .4 Do not perform construction operations within the wetted perimeter of a river, stream, and other surface bodies of water unless such work is part of the Permanent Work or Temporary Work.
- .5 Do not deepen by excavation or place fill material on the river or stream bed or other surface bodies of water unless such work is part of the Permanent Work or Temporary Work.
- .6 Temporary crossings not allowed.
- .7 Use Construction Equipment with bio-friendly hydraulic fluids, free from external oil and grease when operating in, or within the wetted perimeter, of a river, stream, and other surface bodies of water.
- .8 Use clean granular fill with less than 10% fines passing the 80 µm sieve size when exposed to a river or stream for Temporary Work such as cofferdams, causeways, and access ramps. Fine-grained soils may be used, provided only clean granular fill is exposed to the body of water at any time during construction and restoration operations.
- .9 Remove Temporary Work, including culverts and bridges, and reclaim river and stream banks and beds, and other disturbed areas, prior to attaining Substantial Performance of the Work unless specified otherwise.
- .10 Silt Fence Management:
 - .1 Be responsible for, and maintain, the fabric in silt fences until the date of Warranty Performance of the Work.
 - .2 Inspect the fabric, posts, and pins, in the silt fencing at intervals appropriate to weather events. Based on inspections, maintain the fencing to perform for the purpose intended.
 - .3 Remove silt accumulations and dispose of silt on Site, at locations acceptable to The Owner.

- .4 Removal and disposal of silt materials collected at silt fabric fencing will be considered incidental to the Work.
 - .5 Unless otherwise specified in the Contract Documents, or otherwise requested by The Owner, remove temporary silt fencing within 30 days after the date of Warranty Performance of the Work.
- .2 Biological:
- .1 Protect fish and fish habitat in rivers, streams, and other surface bodies of water located within the Site in accordance with the Contract Documents and Regulatory Requirements.
 - .2 As a Class C water body, construction operations in the Red Deer River are prohibited between the dates of April 16 and June 30 of any year.
 - .3 Any work completed within close proximity to any bodies of water, require an environmental monitor, prior to work being completed, during the work being completed and after the work being completed. The environmental monitor must be a qualified professional and is to be subcontracted by the Contractor.

1.2 GROUND WATER RESOURCES

- .1 Physical:
- .1 Do not change ground water levels in wells located on adjacent lands.
- .2 Biological:
- .1 Do not change ground water quality in adjacent landowner wells.

1.3 TERRESTRIAL RESOURCES

- .1 Wildlife:
- .1 Within 7 days prior to the start of construction wildlife habitat and bird nesting surveys must be completed by a Qualified Professional, and results submitted to the owner. All work must undertaken in compliance with the *Migratory Birds Convention Act* (Zone B4, with a regional nesting period of mid-April to late August).
 - .2 Maintain setback distances between construction operations and the habitat of birds or wildlife, as designated by the Qualified Professional.
 - .3 Do not allow pets on the Site.
 - .4 Do not allow firearms, hunting, or shooting on the Site.
 - .5 Prevent livestock from entering the Site by:
 - .1 installing new fences specified in the Contract Documents; and
 - .2 installing temporary fences as necessary.
 - .6 Do not harass wildlife.

.2 Vegetation:

- .1 Remove or control existing and new adverse vegetation that affects adjacent landowners and their croplands, construction operations, or the function of the Permanent Work.
- .2 Do not import any materials to the Site that are contaminated with weed seeds. Clean dirty construction and reclamation equipment to prevent importing weed seeds.
- .3 Notify The Owner prior to commencing adverse vegetation control measures.
- .4 Be responsible for damage to crops, both on and off the Site, resulting from the Contractor's use of herbicides, or other adverse vegetation control measures.
- .5 Maintain records of the types and amounts of herbicides purchased, delivered, stored, mixed, and used, and the means of disposal of all excess. Maintain the records current and accurate, and make them available for review by The Owner.
- .6 Comply with standards and practices of the Industrial Vegetation Management Association of Alberta.

.3 Vegetation and Weed Control:

- .1 Remove or control existing and new adverse vegetation that affects adjacent landowners and their croplands, construction operations, or the function of the Permanent Work.
- .2 Do not import any materials to the Site that are contaminated with weed seeds. Clean dirty construction and reclamation equipment to prevent importing weed seeds.
- .3 Notify The Owner prior to commencing adverse vegetation control measures.
- .4 Be responsible for damage to crops, both on and off the Site, resulting from the Contractor's use of herbicides, or other adverse vegetation control measures.
- .5 Maintain records of the types and amounts of herbicides purchased, delivered, stored, mixed, and used, and the means of disposal of all excess. Maintain the records current and accurate and make them available for review by The Owner.
- .6 Monitor the site for early detection of weed growth during the growing season.
- .7 Control weeds once by mechanical equipment before they go to seed, but not before.

.4 Waste Management:

- .1 Remove construction waste, including demolition waste, from the Site unless otherwise specified. Dispose of such waste at the waste disposal facility identified in the ECO Plan.
- .2 Do not burn, bury, or otherwise discharge construction or demolition waste on the Site unless specified otherwise.
- .3 When practical, minimize the amount of waste generated from construction operations and demolitions by salvaging materials for recycling. Salvage and segregate metal,

plastic, paper, cardboard, and glass and transfer them to the nearest appropriate collection facility.

.5 Hazardous Materials:

- .1 Transport hazardous materials to and from the Site in accordance with Regulatory Requirements.
- .2 Use and store hazardous materials in accordance with Regulatory Requirements.
- .3 Remove spilled hazardous materials, including hazardous liquid wastes, in accordance with Regulatory Requirements, and reclaim land and other property. Report spills to Alberta Environment and The Owner.
- .4 Dispose of hazardous waste materials, including hazardous liquid wastes, in accordance with Regulatory Requirements.

.6 Handling of Construction Equipment Fuels and Lubricants:

- .1 Employ persons qualified to handle Construction Equipment fuels and lubricants.
- .2 Carry the following protection materials in all fuel and service vehicles:
 - .1 10 kg of suitable sorbant material.
 - .2 30 m² of 6 mil polyethylene.
 - .3 A shovel.
 - .4 An empty fuel barrel with the lid removed.
- .3 Prevent handling and fuelling operations from contaminating the ground, surface water, and ground water. Use containment berms and an impermeable base course or other system to contain spilled fuel.
- .4 Clearly mark and barricade fuel storage areas and non-portable transfer lines. Use markers that are visible under all weather conditions.
- .5 Store waste Construction Equipment lubricants in a tank or closed container, and dispose of off-Site in accordance with the Regulatory Requirements.

1.4 HISTORICAL AND ARCHAEOLOGICAL RESOURCES

- .1 Complete all work in compliance with *Historical Resources Act* Approval #4956-20-0069-002
- .2 Protect known heritage resources specified in the Contract Documents with the specified fencing and marking devices.
- .3 Protect new heritage resources found during the Contract Time. Flag an area of 15 m beyond the edge, and surrounding, a new found heritage resource, and report the finding immediately to the Owner.
- .4 Additional work required to protect new found heritage resources will be authorized by Change Order and valued in accordance with Section 00725 – General Conditions, clause 8.3 - Valuation of Changes in the Work.

1.5 SOCIO-ECONOMIC

.1 Air Pollution:

- .1 Prevent the discharge of atmospheric contaminants from construction operations in accordance with Regulatory Requirements.
- .2 Do not operate equipment, including Construction Equipment, that shows excessive emissions of exhaust gases until corrective repairs or adjustments are made.
- .3 Control dust on the Site, and prevent dust from the Site from damaging crops, orchards, cultivated fields, and dwellings, or causing a nuisance to persons. Be responsible for damages from dust caused by construction operations.

- .1 Dust abatement shall be achieved by watering, application of dust abatement materials chosen from the Alberta Transportation Recognized Product List; or through the use of biodegradable soil stabilizers approved by the Owner.

Dust suppressant materials shall be applied, as required, by method subject to the approval of the Owner. The completed treatment shall provide a smooth and relatively dust free surface.

The Contractor shall perform the Work in accordance with the materials supplier's recommended application rates, and methods of roadway preparation and placing of material unless otherwise directed by the Owner.

All costs associated with dust abatement, regardless of number of applications, or required maintenance will be considered incidental to the Work, and no separate or additional payment will be made.

.2 Noise:

- .1 Do not exceed noise levels of 120 decibels in the daytime and 100 decibels at night, on weekdays and weekends. At the Contractor's option, provide noise barriers to maintain acceptable noise levels outside the barriers.
- .2 Perform blasting, drilling, jackhammering, pile driving, and other operations producing high-intensity impact noise between the hours of 9:00 am and 5:00 pm on weekdays except Statutory Holidays. Adhere to other work restrictions specified in the Contract Documents.
- .3 Contractor shall adhere to all applicable Town of Drumheller Community Standards Bylaws. In particular, No. 06.19, section 'Prohibited Noise', item 3.38, which states that equipment can not be operated between 10:00pm and 7:00am on a Week and from 10:00pm to 9:00am on a weekend. for working hours.

.3 Light:

- .1 Direct all stationary floodlights to shine downward at an angle less than horizontal. Provide shielding for all floodlights and do not direct at residences.

.4 Vibration:

- .1 The Contractor shall cooperate with the Owner to facilitate vibration monitoring during the Work. Should the Owner note that vibration is becoming an issue near buildings and structures, the Owner may direct the Contractor to use less vibratory effort for fill placement and compaction, to mitigate impacts to adjacent infrastructure.

2.0 PRODUCTS - NOT USED

3.0 EXECUTION - NOT USED

END OF SECTION

1.0 GENERAL

1.1 REGULATORY RESPONSIBILITY

- .1 Conform to Regulatory Requirements and pay all fees and give all notices required by them.
- .2 Obtain approvals necessary for the Work and the Contract from the regulatory agencies having jurisdiction, except those approvals obtained by The Owner as identified in this section.
- .3 The Owner will obtain the approvals necessary for the Project that involve agreement between The Owner and the regulatory agency having jurisdiction.

1.2 VARIATIONS BETWEEN THE CONTRACT DOCUMENTS AND THE REGULATORY REQUIREMENTS

- .1 If the Contract Documents are at variance with Regulatory Requirements, notify The Owner in writing, requesting direction, immediately after such variance becomes known.
- .2 The Owner may make Changes in the Work due to Regulatory Requirements, and such changes will be authorized by Change Order and valued in accordance with Section 00725 - General Conditions, clause 8.3 – Valuation of Changes in the Work.
- .3 If the Contractor fails to notify The Owner in writing and obtain The Owner's direction related to variations in Regulatory Requirements and performs work knowing it to be contrary to Regulatory Requirements, the Contractor accepts responsibility for correcting violations thereof, and bears the costs, expenses, and damages attributable to the Contractor's failure to comply with the provisions of such Regulatory Requirements.

1.3 ALBERTA BUILDING CODE

- .1 Conform to and perform work in accordance with the Alberta Building Code, except as otherwise indicated in the Contract Documents.

1.4 OWNER OBTAINED APPROVALS

- .1 The Owner has obtained or will obtain the approvals listed below.
 - .1 Environmental Protection and Enhancement Act (EPEA)
 - .1 Instrument: Conservation and Reclamation Approval
 - .2 Agency: Alberta Environment.
 - .3 Activity: Approval of stormwater management system.
 - .2 Historical Resources Act
 - .1 Instrument: Approval.
 - .2 Agency: Alberta Culture and Status of Women.
 - .3 Activity: To alter historical resources with mitigation.
 - .3 Municipal Government Act

- .1 Instrument: Approval.
- .2 Agency: Municipal Authority.
- .3 Activity: To close roads and road allowances
- .4 Public Lands Act
 - .1 Instrument: "D" Reservation.
 - .2 Agency: Alberta Environment.
 - .3 Activity: To reserve public lands for the development of the Project.
- .5 Water Act
 - .1 Instrument: Approval and amendment.
 - .2 Agency: Alberta Environment.
 - .3 Activity: To construct the Project and perform instream activities
- .6 Fisheries Act
 - .1 Instrument: Authorization
 - .2 Agency: Fisheries and Oceans Canada
 - .3 Activity: To perform instream activities.
- .7 Navigable Waters Act
 - .1 Instrument: Authorization
 - .2 Agency: Transport Canada
 - .3 Activity: To perform instream activities.

2.0 PRODUCTS - NOT USED

3.0 EXECUTION - NOT USED

END OF SECTION

1.0 GENERAL

1.1 WORK SITE SAFETY – THIS CONTRACTOR IS “PRIME CONTRACTOR”

- .1 For the purposes of the Occupational Health and Safety Act (Alberta), and for the duration of the Work of this Contract:
 - .1 be the “prime contractor” for the “work site”; and
 - .2 do everything that is reasonably practicable to establish and maintain a system or process that complies with the Act and its regulations, and as required to provide for the health and safety of all persons at the “work site.”
- .2 Direct all Subcontractors, Sub-subcontractors, Other Contractors, employers, workers, and any other persons at the “work site” on safety related matters, to the extent required to fulfil “prime contractor” responsibilities pursuant to the Act, regardless of:
 - .1 whether or not any contractual relationship exists between the Contractor and any of these entities; and
 - .2 whether or not such entities have been specifically identified in this Contract.

1.2 CERTIFICATE OF RECOGNITION (COR)

- .1 Maintain a valid COR, Temporary Letter of Certification (TLC) or Certificate of Recognition Equivalency Letter (COREL) for the duration of the Work of this Contract.

1.3 SAFETY REQUIREMENTS

- .1 Establish and maintain a system or process to provide for the safety for all persons at the Site during the Contract Time, including:
 - .1 the development and implementation of satisfactory safety plans for all aspects of work and the co-ordination of all plans;
 - .2 the establishment of a safety committee; and
 - .3 conducting safety meetings and workplace orientation meetings.
- .2 Communicate and co-operate on safety matters with The Owner and Occupational Health and Safety.
- .3 Comply with federal, provincial, and municipal legislation, including the Workplace Hazardous Materials Information System.
- .4 Rectify unsafe conditions, and be responsible for all related costs and delays.
- .5 Advise The Owner as soon as possible of all accidents.
- .6 Investigate any accident that causes injury, and complete accident forms and prepare accident reports.

- .7 Provide and maintain a first aid room and equipment as required by the Occupational Health and Safety Regulations.
- .8 Maintain first aid supplies, space, and trained personnel on Site as required by the Occupational Health and Safety Regulations.
- .9 Have at least one qualified first aider on Site for each work shift.

1.4 SUBMITTALS

- .1 Provide the following submittals.
- .2 The Certificate of Recognition (COR), TLC or COREL prior to commencing Work at the Site.
- .3 WCB Clearance Letter prior to commencing Work at the Site.
- .4 The Contractor's safety plan, including the Contractor's safety policy, safety procedures, and a safety education program, at least 10 days prior to commencing Work at the Site.
- .5 The name of the person responsible for supervision of the Contractor's safety plan at the Site prior to commencing Work at the Site.
- .6 The names of workers qualified as first aiders prior to commencing Work at the Site including monthly updates.
- .7 At the end of each month, a list of accidents including lost time injuries incurred for the month, and a cumulative summary of all accidents and total lost time including a comparison with the total work time since the start of the Contract.
- .8 Completed incident forms and reports as soon as possible.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 QUALITY CONTROL

- .1 Establish and maintain an effective quality control system including quality control procedures and testing to ensure compliance with the requirements of the Contract Documents.
- .2 Conduct tests incorporated in the quality control system and as required in the Specifications.
- .3 Engage qualified personnel, professional engineers, and independent CSA certified materials engineering and testing companies to carry out designs and to perform tests when required by the Specifications.
- .4 Quality documentation verifying conformance of materials and installation is required prior to acceptance for payment.

1.2 QUALITY ASSURANCE

- .1 The Owner will perform quality assurance testing and inspection as the Owner deems appropriate. No such testing by the owner or its representatives shall relieve the Contractor of its responsibility to construct the work in accordance with the drawings and specifications.
- .2 Co-operate with the Owner and provide assistance required by the Owner for testing, inspection, and sampling; provide access including off-Site locations; and provide equipment and labour to obtain samples.
- .3 If the quality assurance testing identifies quality deficiencies, the extent of removal and replacement of potentially deficient materials will be at the discretion of the Owner and will include, at least, all related materials placed after the Owner's previous quality assurance testing indicated acceptable quality.
- .4 If the quality assurance testing identifies ongoing quality deficiencies, submit to the Owner in writing, proposed revisions to the quality control procedures and testing that will prevent quality deficiencies. Continue the work only when the proposed quality control revisions have been reviewed with no exceptions taken by the Owner and implemented by the Contractor.

2.0 PRODUCTS - NOT USED

3.0 EXECUTION - NOT USED

END OF SECTION

1.0 GENERAL

1.1 CONTRACTOR'S GENERAL RESPONSIBILITIES FOR EXISTING UTILITIES

- .1 The approximate location and elevation of service lines known to the Owner are indicated in the Contract Documents. Confirm the number, type, location and elevation of all existing service lines. Contact the appropriate Utility to locate all lines, conduits, and other such structures. Notify the Owner if any service lines have been omitted from or are incorrectly specified in the Contract Documents.
- .2 Identify, stake, and flag all existing service line locations and elevations. Maintain staking and flagging.
- .3 Notify the appropriate Utility prior to carrying out operations in the vicinity of the service lines. Comply with the requirements of, and co-operate fully with, each Utility for the location and protection of the service lines during the Work.
- .4 Be responsible to the Utility for any claims resulting from damage to the service lines as a result of the Contractor's construction operations.
- .5 Promptly notify the Utility and the Owner in the event of any damage or interruption to any services caused by the Contractor's construction operations. Co-operate with the Utility in the restoration of service as promptly as possible and bear all costs arising from the damage or interruption.
- .6 There will be no separate payment for locating and protection of utilities; all costs associated with this work shall be considered incidental to this Contract.
- .7 The Contractor shall not have any claim for compensation or damages against the Owner for any stoppage, delays, inconvenience or damages sustained by him due to any interference to the presence, adjustment, obtaining crossing agreements, or any coordination with any utility.

1.2 UTILITY CONTACTS

- .1 **ATCO ELECTRIC**
Phone No.: 1-800-668-5506
Mr. Greg Smith, Operation Supervisor
Atco Electric
610-12 Street S.W.
Drumheller, AB T0J 0Y0
Email: greg.smith@atco.com
Phone: 403 820-7503
Cell: 403 820-3593

.2 TELUS
Phone No.: 587-876-0715
Mr. Roger Medavarapu, Area Manager
Drumheller, AB T0J 0Y0
Email: roger.medavarapu@telus.com

.3 APEX UTILITIES
Phone No.: 1-866-222-2067
Email: customercare@apexutilities.com

.4 TOWN OF DRUMHELLER
Phone No.: 403-823-6300
224 Centre Street
Drumheller, AB T0J 0Y4

1.3 TEMPORARY UTILITIES

.1 Provide the specified temporary utilities and as otherwise required in order to execute the Work expeditiously. Remove the temporary utilities from the Site upon completion of the Work unless specified otherwise.

1.4 TEMPORARY SANITATION FACILITIES

.1 Provide separate sanitation facilities for male and female workers on the Site in accordance with the requirements of the local health authorities and following Covid-19 protocols. Provide any additional facilities required to suit construction operations or to satisfy the requirements of the local health authorities.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 GENERAL

- .1 Provide and maintain temporary buildings required to perform the Work.
- .2 Locate temporary buildings within the specified area.

1.2 SITE OFFICE

- .1 Provide a Contractor's Site office. Within the office, provide a furnished room for holding Contract meetings.

1.3 FIRE PROTECTION

- .1 Provide and maintain appropriate temporary fire protection equipment during the performance of the Work as required by Regulatory Requirements.

1.4 TEMPORARY FENCING

- .1 Provide and maintain appropriate temporary fencing during the performance of the Work as required to isolate active construction areas.
- .2 Provide and maintain appropriate temporary fencing around riprap stockpiles.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 TRAFFIC ACCOMMODATION STRATEGY

- .1 Traffic Accommodation applies to road systems and trail networks. All accommodation must consider both vehicle and pedestrian impacts and mitigations.
- .2 Provide a Traffic Accommodation Strategy detailing the measures proposed to safely accommodate the travelling public. The minimum requirements are specified in the Department manual: "Traffic Accommodation in Work Zones" (Latest Edition); Any Contract specific requirements, in excess of the minimum requirements, will be identified in this Section 01552.
- .3 Provide a Traffic Accommodation Strategy consisting of drawings detailing the configuration of temporary construction signs and other traffic control devices at the Site and provide written confirmation of the methods or procedures being used by the Contractor to address specific traffic safety related issues or situations at the Site.
- .4 When road and/or trail detours are required, ensure the Traffic Accommodation Strategy includes detailed drawings identifying the corresponding proposed traffic accommodation measures.
- .5 Ensure any issues or concerns regarding the Contractor's proposed Traffic Accommodation Strategy are addressed to the mutual satisfaction of the Contractor and The Owner prior to the commencement of the Work.
- .6 The Contractor shall have no claim against The Owner resulting from The Owner's failure to accept the Contractor's Traffic Accommodation Strategy submission.
- .7 The Contractor is responsible for all costs to address concerns raised by The Owner during the review of the Contractor's Traffic Accommodation Strategy submission.

1.2 REQUIREMENTS FOR TRAFFIC ACCOMMODATION

- .1 Unless otherwise specified, accommodate public traffic on a 24-hour per day basis using any means at the Contractor's discretion, subject to the minimum requirements of the "Traffic Accommodation in Work Zones" (Latest Edition).
- .2 Make suitable provisions, including the use of detours, to accommodate all vehicular and pedestrian traffic safely and with a minimum of inconvenience.
- .3 Provide, install, maintain and protect traffic control devices such as signs, barriers, fences and lights at the Contractor's expense and in accordance with Section 1.6 "Temporary Construction Signing".
- .4 Install, maintain and protect at the Contractor's expense, any additional traffic control devices deemed necessary by The Owner.
- .5 Provide the required number of flagpersons, during all periods of active equipment operations which may affect normal traffic operations.

- .6 Control the Contractor's operations to ensure normal school bus operations are not interfered with.
- .7 Ensure uninterrupted access is provided to developments along the Site.
- .8 Obtain prior approval from The Owner before changing or disrupting existing accesses and road crossings.
- .9 Carry out construction operations in one continuous operation at road crossings, intersections and entrances for the Site.
- .10 Provide and use such other methods or equipment necessary to accommodate public traffic safely.
- .11 Promptly make any modifications to the traffic accommodation operations deemed necessary by The Owner. The Owner may suspend Work in accordance with Section 00725 – General Conditions, Clause 12.1, Suspension of Work, in cases where the Contractor fails to adequately provide for the safety of the public, for recurring safety issues or when the Contractor fails to comply with orders issued by The Owner regarding traffic accommodation operations.
- .12 Remove or cover all traffic control devices when not essential for the safe accommodation of public traffic, in order to eliminate unnecessary inconvenience to the traffic.
- .13 Coordinate traffic accommodation measures with those of other forces at or adjacent to the Work, as required, to accommodate public traffic safely and conveniently. This shall not relieve the Contractor of his responsibility for the safe accommodation of traffic over the whole of the Site.

1.3 PUBLIC HIGHWAYS AND ROADS

- .1 Comply with all requirements of the road authority having jurisdiction over public roads used by the Contractor in the execution of the Work including but not limited to road bans and Traffic Accommodation Strategy approvals.
- .2 Determine the condition and availability of public highways and roads, clearances, restrictions, bridge load limits, bond requirements, and other limitations that may affect ingress to and egress from the Site.
- .3 Comply with applicable load regulations during hauling of materials and equipment over public highways, roads, or bridges. Minimize interference with local traffic.
- .4 Before commencing the Work, conduct a detailed video and photographic survey, in the presence of The Owner, of the following facilities that are to be used. This survey establishes the restoration standard for such facilities. Submit a report to The Owner that summarizes the existing conditions and includes the photographs and video report.
 - .1 Public sidewalks, pathways, highways, roads and bridges
 - .2 Existing access roads including local roads and dike access roads upstream and downstream of the Site.

1.4 TEMPORARY ROADS

- .1 Design and construct all temporary roads including access, haul and detour roads, temporary parking areas, and drainage structures required for construction operations.
- .2 Provide detours required for the execution of the Work.
- .3 Confine construction traffic to the limits of temporary roads and avoid disturbances to adjacent lands.
- .4 Contain hauled material in vehicles, and keep routes clear of mud, fallen rock, and debris resulting from construction operations.
- .5 Control dust, remove snow, and maintain road surfaces daily or at frequent intervals depending upon weather or traffic and as required by The Owner.
- .6 Reclaim all temporary roads when they are no longer required. Scarify, grade to original contours, cultivate, replace topsoil, and seed to grass.

1.5 TYPICAL DRAWINGS

- .1 Drawings detailing minimum requirements for temporary signing and other traffic control devices for typical rural highway situations are contained in Section II of the Department manual entitled "Traffic Accommodation in Work Zones" (Latest Edition).
- .2 Develop any drawings necessary to address non-typical rural or urban highway situations and include in the Traffic Accommodation Strategy.

1.6 TEMPORARY CONSTRUCTION SIGNING

- .1 Materials
 - .1 Supply all signing materials including sign posts, weighted stands, brackets and any required mounting hardware and miscellaneous materials required for the erection of temporary construction signs.
 - .2 Provide signs, barricades and other traffic control devices conforming to the requirements for shape, colour and size specified in the Department manual entitled "Traffic Accommodation in Work Zones" (Latest Edition). Ensure the orange portion of all signs, barricades and other traffic control devices are fully reflectorized using High Brightness, Retroreflective, Non-Metallized, Prismatic Sheeting Material which incorporates durable, transparent, fluorescent pigment and meets the brightness requirements as specified in ASTM D4956 Type VIII sheeting. Unless otherwise approved by The Owner, ensure the orange coloured reflective sheeting supplied by the Contractor is one of the Proven Products for "Temporary Orange Work Zone/Construction Signs" listed on the Alberta Transportation Products List on the Department's web site.
 - .3 Ensure all other colours of sheeting material are Type III or Type IV high intensity retroreflective sheeting meeting or exceeding the minimum requirements as specified in ASTM-D4956.
 - .4 Larger construction signs or oversized signs may be used where conditions require greater visibility in order to be effective. Use larger or oversized signs in special circumstances where more than average attention value is required from the sign.

- .2 Equipment
 - .1 Supply all equipment for Traffic Accommodation.
- .3 Erection of Signs
 - .1 Do not commence work on the Site until all necessary temporary construction signs and all other traffic control devices as proposed in the traffic accommodation strategy are in place.
 - .2 When signs require frequent moves, portable type signs, mounted on weighted stands, may be used. Place portable signs on the shoulder of the road such that the face of the sign is fully visible to oncoming traffic and the bottom of the sign is not less than 300 mm above the road surface. Provide securely weighted stands and erect in a manner to ensure against being blown over by prevailing winds or gusts from passing vehicles.
 - .3 Ensure non-portable signs are conspicuously posted, and erected at right angles to the road, with the bottom of the sign at a height of 1500 mm above the road surface, and not less than 2000 mm or more than 6000 mm from the nearest traffic lane.
 - .4 Erect traffic signs and devices close to the construction work adjacent to the road, or the road work, in progress. Move them to remain close to the work with the progress of the construction.
 - .5 Mark objects within or immediately adjacent to the road which constitute a hazard to traffic with alternating black and orange stripes attached directly to the object or erected immediately in front of it.
 - .6 Ensure the use of signs is held to a minimum to prevent confusion.
 - .7 Install "STOP" signs on all subsidiary roads (local, district, municipal, service or approach) intersecting a primary highway detour route.
 - .8 Post speed zones, where required, as indicated on the applicable drawing contained in the "Traffic Accommodation in Work Zones" (Latest Edition).
- .4 Maintenance and Removal of Signs
 - .1 Replace, repair or clean without delay any poorly maintained, defaced, damaged or dirty construction signs. Take special care to ensure that construction materials and dust are not allowed to obscure the face of a sign.
 - .2 Cover or remove signs not in effect and remove all construction signs after the Work is completed.
- .5 Modifications to Temporary Construction Signing
 - .1 The Contractor is responsible for the supply and proper placement of temporary construction signs. However, in the case of potential danger to the traveling public or other circumstances where The Owner determines that signing is inadequate, The Owner will require changes to the Contractor's operations to remedy the situation. These changes may involve the use of different types and/or sizes of signs, modifying

the number or locations of signs, and any other modifications or additions required to protect the safety of the travelling public.

1.7 REMOVAL AND SALVAGE OF EXISTING SIGNS AND GUIDEPOSTS

- .1 Salvage any existing signs and guideposts which must be removed during the execution of the Work. Maintain critical signs necessary for the protection of traffic such as railroad crossing signs or stop signs.

1.8 FLAGPERSONS

.1 General

- .1 Provide flagpersons when construction operations or Site conditions cause interruption, delay or hazard to the traveling public or anyone on the Site. Provide and equip responsible flagpersons as necessary for the direction and control of traffic. Ensure that flagpersons are instructed in and use proper traffic control procedures appropriate for the prevailing conditions.
- .2 Ensure flagpersons are certified from a recognized training program on traffic control procedures. The Owner will recognize traffic control programs administered by the Alberta Construction Safety Association, however The Owner reserves the right to accept or reject certification from any other institute.

.2 Safety Apparel

.1 Coveralls

- .1 Ensure flagpersons are dressed in coveralls which meet the Class 3 Level 2 requirements of CSA Z96-02, High Visibility Safety Apparel. Each pair of coveralls shall have a permanent label affixed certifying compliance with Class 3 Level 2 of CSA Z96-02.
- .2 The colour of the coveralls shall be fluorescent yellow-green with silver retroreflective striping. The retroreflective striping shall be a minimum of 50mm wide, and shall be sewn onto a 100 mm wide fluorescent red-orange background material. Ensure flagperson safety apparel are kept clean and in good condition at all times. Replace faded, torn and/or dirty coveralls, or coveralls without CSA certification labels.

.2 Headgear

- .1 Prior to commencement of the Work, identify and assess existing and potential hazards at the Site. Where there is a foreseeable risk of injury to a worker's head, flagperson's shall wear fluorescent orange protective hardhats meeting the requirements of CSA Standard Z94.1-92.
- .2 Where no foreseeable risk of head injury exists, flagpersons will be permitted to wear any type of fluorescent orange headgear.

.3 Night Time Operations

- .1 During hours of darkness, equip flagpersons with hand held red traffic signal wands of sufficient brightness to be clearly visible to approaching traffic. In addition, illuminate

flagging stations by overhead lighting; and mark signs indicating hazardous conditions and signs requiring increased attention with flashers

1.9 DETOURS

- .1 Design, construct, maintain and remove all detours required for the Work. Where necessary, provide any Environmental Authorizations, temporary relocation of any utilities and reclamation of the disturbed areas to a similar condition as existed prior to the disturbance. Do not construct Detours without the prior authorization of The Owner.
- .2 Design, construction, maintenance, graveling, dust abatement, detour removal, reclamation and utility relocation will be considered incidental to the Work.

1.10 ROAD MAINTENANCE

- .1 Obtain any necessary approvals from the agency having jurisdiction to haul materials or equipment over the proposed haul routes. Abide by all road restrictions and maintenance requirements established by the road or bridge authority having jurisdiction, including all roads and portions of the highway within the Site.
- .2 When Contract generated Traffic disturbs public highways, roads and bridges, maintain and repair the roads and bridges at the Contractor's expense. In addition to the requirements of the road agency having jurisdiction, keep the disturbed areas of travelled lanes well graded and free of potholes, maintain surfacing gravel and replace when required, and control dust using water or other dust abatement material approved by The Owner. Following completion of the Work, restore the road to a condition as good as existed prior to the commencement of work.
- .3 Carry out winter snow removal and ice control for traffic accommodation for public highways, roads and bridges within the Site.
- .4 If the Contractor fails to promptly maintain the public highways, roads, and bridges The Owner may make other arrangements to have the Work done and deduct the cost thereof from any money owing to the Contractor.

1.11 PROLONGED SHUT DOWN

- .1 Prior to any prolonged shut-down of construction, ensure that any disturbed road surface is restored to a condition suitable for traffic operations and acceptable to The Owner. Carry out winter snow removal and ice control for traffic accommodation for public highways, roads and bridges within the Site during the period of prolonged shut-down.
- .2 Prior to commencing any prolonged shut-down of the Work, host a meeting between the Contractor and The Owner for the purpose of developing a "Shutdown Plan" based on the specific needs and requirements of the Site. The "Shutdown Plan" shall outline the Contractor's methods and procedures for monitoring and maintaining the Site during the shutdown period and will outline any responsibilities of the other parties.
- .3 Notwithstanding the above, no component of the shut-down plan will negate the Contractor's responsibilities for the Contract.

1.12 MONITORING TRAFFIC ACCOMMODATION AT THE SITE

- .1 To ensure the traffic accommodation strategy is performing as intended; monitor and maintain traffic accommodation measures at the Site on a regular basis. Designate a specific individual or individuals to perform this function to ensure any issues arising are addressed in a consistent and timely manner.
- .2 The worker(s) carrying out the traffic accommodation monitoring shall be qualified, trained and experienced in traffic control and must be knowledgeable in the operation of the traffic control devices and other related equipment. Provide these workers with vehicles equipped with revolving warning lights and suitable communication devices to contact others for assistance if and when required.
- .3 Monitor all traffic control devices, temporary signing and road conditions during periods of inactivity. Ensure the frequency of inspection is commensurate with the traffic volumes on the highway or road. For all detours, consecutive inspections will not be more than 6 hours apart, unless otherwise agreed by the Owner. Document all site inspections by the Contractor and make this information available for the Owner's review upon request.
- .4 The traffic accommodation measures will be monitored by the Owner. If, in the opinion of The Owner, traffic is being unduly hindered, the Contractor may be required to modify his traffic accommodation measures.

1.13 COMPLIANCE

- .1 In cases where the Contractor is not in compliance with the specifications and, in the opinion of the Owner there is imminent danger to the travelling public, the Owner has the authority to order the immediate suspension of Work. Such orders must be made in writing.
- .2 In other cases where the Contractor is not in compliance with the specifications but, in the opinion of the Owner the infraction is not causing imminent danger to the travelling public, the Owner will use the following escalating process to address the situation:
 - .1 Issue verbal instructions requiring the Contractor to correct the infraction
 - .2 Issue a written warning instructing the Contractor to correct the infraction
 - .3 Issue a written order instructing the Contractor to suspend Work until the infraction is corrected to the satisfaction of The Owner.

1.14 SUBMITTALS

- .1 Provide the following submittals.
- .2 Submit the Traffic Accommodation Strategy to The Owner 7 days prior to the pre-construction meeting for the Contract or to a schedule as agreed upon by The Owner. The Owner will review the Traffic Accommodation Strategy and communicate any concerns to the Contractor within 3 days of the pre-construction meeting.
- .3 Plans showing the location of temporary access and haul roads and detours, drainage structures, and bridges required for execution of the Work, at least 10 days prior to commencement of the Work at the Site.

- .4 Video Survey Report at least 14 days prior to commencement of the Work at the Site.
- .5 Daily Records of Temporary Construction Signing
 - .1 Record the location of all temporary construction signs and any other traffic control devices used at the Site on a daily basis and as the Work Area changes. Record this information on a form suitable to The Owner and submit it to The Owner on a weekly basis or when requested.
- .6 Plan showing the location of the proposed haul roads 7 days prior to the pre-construction meeting. The Owner will review the haul routes and communicate any concerns to the Contractor within 3 days of the pre-construction meeting.
- .7 If required for a pro-longed shutdown period, submit a Shutdown Plan at least 14 days prior to the scheduled shutdown.
- .8 Names of those workers who will be responsible for monitoring and maintaining the traffic control devices at the pre-construction meeting.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 REFERENCES

- .1 References are made to standards as listed in the Specifications.
 - .1 Conform to these standards, in whole or in part, as required in the Specifications.
 - .2 Conform to the latest date of issue of the standards in effect on the date of the submission of bids, except where another date or issue is specified.

1.2 SUBMITTALS

- .1 Provide the following submittals.
- .2 When requested by The Owner, a complete description of the procedures for installing the product.
- .3 When requested by The Owner, appropriate design calculations for the products to be installed.
- .4 Products List, complete with the product name, model number, manufacturer's name, and applicable Specification section for each item listed, within 15 days of the date of commencement of the Contract. A form of Products List is appended to this section.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Inspect each shipment of products and timely replace any missing or damaged items.
- .2 Handle and store products in a manner to prevent damage, alteration, deterioration, and soiling, and in accordance with the manufacturer's written instructions when applicable.
- .3 Store packaged or bundled products in original and undamaged condition with the manufacturer's seal and label intact. Do not remove products from packaging or bundling until required in the Work.
- .4 Store products subject to damage from weather in weatherproof enclosures.

2.0 PRODUCTS

2.1 PRODUCT QUALITY

- .1 Provide products that conform to the Contract Documents, are new, not damaged or defective, and of the best quality (compatible with the Specifications) for the purpose intended. If requested by The Owner, furnish evidence as to the type, source, and quality of products provided.
- .2 Defective products, whenever identified prior to the completion of the Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility from the Contractor, but provides a precaution against oversight or error.

- .3 Unless otherwise indicated in the Contract Documents, maintain uniformity of manufacture for any particular or like items.
- .4 Do not place permanent labels, trademarks, or nameplates on products in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

3.0 EXECUTION

3.1 PRODUCT CONTROL

- .1 Maintain an inventory of all products delivered to the Site and placed in temporary storage.
- .2 Record the use of products during the course of construction.
- .3 When requested by The Owner, provide inventory records for verification of quantities.

3.2 INSTALLATIONS STANDARDS

- .1 Unless otherwise specified in the Contract Documents, install products in accordance with the manufacturer's instructions. Do not rely on labels or enclosures provided with the products. Obtain written instructions directly from the manufacturers.
- .2 Notify The Owner, in writing, of conflicts between the Contract Documents and the manufacturer's instruction, so that The Owner may establish a course of action.

3.3 REMEDIAL WORK

- .1 Repair or replace the parts or portions of the Work identified by The Owner as defective or unacceptable.
- .2 Retain specialists familiar with the products affected to perform remedial work in a manner that neither damages nor endangers any portion of the Work.

END OF SECTION

1.0 GENERAL

1.1 DEFINITIONS

- .1 “Proprietary Specification” means a specification that lists one or more proprietary names of products or manufacturers and may also include descriptive language, references to standards, or lists performance requirements, or any combination thereof.
- .2 “Non–proprietary Specification” means a specification that uses descriptive language, references to standards, or lists performance requirements, or any combination thereof, but does not include proprietary names of products or manufacturers.
- .3 “Substitute Product” means a product not specified by proprietary name that may be acceptable in place of a product which is specified by proprietary name.
- .4 “Substitute Manufacturer” means a manufacturer not specified by proprietary name that may be acceptable in place of manufacturer which is specified by proprietary name.
- .5 “Substitution” means a Substitute Product or Substitute Manufacturer.

1.2 PRODUCT OPTIONS

- .1 For products specified by Non–proprietary Specification:
 - .1 select any product by any manufacturer that meets the requirements of the Contract Documents.
- .2 For products specified by Proprietary Specification:
 - .1 select any product or manufacturer named; or
 - .2 select a substitute product or manufacturer in accordance with clause 1.3.
- .3 For products specified by Proprietary Specification and accompanied by words indicating that substitutions will not be accepted:
 - .1 select any product or manufacturer named; Substitutions will not be permitted.

1.3 SUBSTITUTIONS

- .1 Where Substitute Products are permitted, unnamed products will be authorized by The Owner, subject to the following:
 - .1 Substitute Products shall be the same types as, be capable of performing the same functions as, and meet or exceed the standards of quality and performance of the named product(s). Substitute Products shall not require revisions to the Contract Documents nor to work of Other Contractors.
- .2 Where Substitute Manufacturers are permitted, unnamed manufacturers will be authorized by The Owner, subject to the following:

- .1 Substitute Manufacturers shall have capabilities comparable to those of the named manufacturer(s). Substitute Manufacturers shall not require revisions to the Contract Documents nor to work of Other Contractors.
- .3 Do not order or install Substitutions without The Owner's authorization.
- .4 If, in The Owner's opinion, a Substitution does not meet the requirements of the Contract Documents, provide a product that, in The Owner's opinion, does meet the requirements of the Contract Documents.

1.4 CHANGES TO AUTHORIZED PRODUCTS AND MANUFACTURERS

- .1 Do not change products or manufacturers, authorized by The Owner for use in performance of the Work, without The Owner's written authorization.
- .2 Submit requests to change authorized products and manufacturers to The Owner in writing, including the product data indicated in clause 1.5.

1.5 PRODUCT DATA

- .1 When requested by The Owner, submit complete data substantiating compliance of a product with the requirements of the Contract Documents. Include the following:
 - .1 Product identification, including the manufacturer's name and address.
 - .2 Manufacturer's literature providing product description, applicable reference standards, and performance and test data.
 - .3 Samples, as applicable.
 - .4 Name and address of projects where the product has been used and the date of each installation.
 - .5 For Substitutions and requests for changes to authorized products, include, in addition to the above, the following:
 - .1 Itemized comparison of the substitution with the named product(s). List significant variations.
 - .2 Availability of maintenance services and sources of replacement products and parts.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 SURVEY REFERENCE POINTS

- .1 Primary horizontal and vertical survey reference points have been established by The Owner as specified in the Contract Documents. The Owner is responsible for the accuracy of the primary survey reference points.
- .2 Locate, confirm, and protect primary reference points prior to starting Work on the Site. Preserve permanent reference points during construction.
- .3 Make no changes to or relocations of the primary survey reference points without prior written authorization of The Owner.
- .4 Report to The Owner when a reference point is lost or damaged or requires relocation because of the Work.
- .5 Replace damaged reference points in accordance with the original survey control.

1.2 CONTRACTOR SURVEY WORK

- .1 Employ qualified construction surveyors to perform survey work.
- .2 Record survey data in accordance with standard survey methods in a form acceptable to The Owner.
- .3 Establish secondary survey reference points required for laying out and staking the Work and for checking tolerances. Be solely responsible for the accuracy of the secondary survey reference points and the layout, staking, and checking of the Work.
- .4 Establish lines, grades, and elevations, and locate and lay out the Work.
- .5 Provide final grade staking of each line, grade or elevation required for The Owner's checking of the work and for measurement for payment purposes, as defined in Section 01280 – Measurement Schedule, for checking by The Owner. Maintain final grade stakes in place until The Owner has authorized their removal.
- .6 Provide such assistance as may be required by The Owner for carrying out surveys in clause 1.3.
- .7 Establish and maintain survey reference points in all work areas, including elevations and locations relative to established stationing and offset systems or otherwise required by The Owner. Provide reference points within 50 m horizontal distance and 2 m vertical distance of all locations where testing, observations of conditions, or other similar activities are undertaken by The Owner, such that The Owner can establish the location and elevations at those locations.
- .8 The Owner will carry out surveys for the purpose of measuring the Work for payment.

1.3 OWNER SURVEY REQUIREMENTS

- .1 The Owner may carry out surveys, as The Owner deems necessary, to check the accuracy of the Contractor's layout, stakes, and measurement.

1.4 SUBMITTALS

- .1 Provide the following submittals.
- .2 The name and address of the Contractor's surveyor to The Owner prior to commencing the Work at the Site.
- .3 When requested, submit a copy of reduced notes for surveys or portions of surveys to The Owner.
- .4 A certificate signed by the Contractor's surveyor confirming that the lines, grades, elevations, and dimensions of the completed Work are in conformance or not in conformance with the Contract Documents. Provide details of all non-conformances.
- .5 Electronic survey data files in a format acceptable to The Owner.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 GENERAL

- .1 Perform final cleaning operations prior to the request for inspection for Substantial Performance.
- .2 Remove surplus products, tools, construction machinery, and equipment not required for the performance of the remaining Work prior to the request for inspection for Substantial Performance.
- .3 Remove waste products and debris resulting from the Work of the Contractor, and leave the Work clean and suitable for use by The Owner.
- .4 Repair, patch, and touch-up marred surfaces to match adjacent finishes.
- .5 Leave all surfaces in a neat, levelled condition.
- .6 Excavate and dispose of contaminated soils from equipment service and maintenance areas.
- .7 Excavate and dispose of excess soils including impervious, random, granular, and riprap materials.
- .8 Clean up and dispose of all foreign matter including wire, posts, logs, branches, roots, rocks, and construction debris.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 SUMMARY OF PROCESS

- .1 A Contract acceptance process will be used to facilitate The Owner's acceptance of the Work. The process can be summarized as follows:
 - .1 Substantial Performance of the Work:
 - .1 Fulfilment of prerequisites to Substantial Performance.
 - .2 Inspection for Substantial Performance.
 - .3 Issuance of a Certificate of Substantial Performance of the Work.
 - .2 Total Performance of the Work:
 - .1 Fulfilment of prerequisites to Total Performance.
 - .2 Inspection for Total Performance.
 - .3 Issuance of a Certificate of Total Performance of the Work.
 - .3 Warranty Performance of the Work:
 - .1 Fulfilment of prerequisites to Warranty Performance.
 - .2 Inspection for Warranty Performance.
 - .3 Issuance of Certificate of Warranty Performance of the Work.

1.2 SUBSTANTIAL PERFORMANCE OF PART OF THE PERMANENT WORK

- .1 When utilization of part of the Permanent Work is required and Substantial Performance of part of the Permanent Work is a condition of such utilization, the applicable requirements specified in this section will apply to the part of the Permanent Work to be utilized.

1.3 PREREQUISITES TO SUBSTANTIAL PERFORMANCE

- .1 Prior to requesting The Owner's inspection for Substantial Performance carry out the following:
 - .1 Perform Commissioning.
 - .2 Obtain and submit evidence of compliance with Regulatory Requirements, including:
 - .1 Health and Safety records.
 - .2 ECO Inspection and Maintenance records.
 - .3 Remove from the Site temporary facilities along with construction tools, equipment, mock-ups, and similar items.

- .4 Complete final clean-up.
- .5 Submit Contract Record Documents.
- .6 Submit Operation and Maintenance Data.
- .7 Submit product warranties and extended warranties when specified in the Contract Documents.
- .8 Provide spare parts and maintenance products.
- .9 Make final change-over of locks and transmit keys to The Owner.
- .10 Complete installation of architectural finish items, including all mechanical and electrical covers and trims.
- .11 Correct all Contract Deficiencies that may affect operation of the facility.
- .12 Complete the Work and have it ready for the purpose intended.
- .13 Review the Contract Documents and inspect the Work to confirm that prerequisites to Substantial Performance have been fulfilled and that the Work is ready for inspection for Substantial Performance.

1.4 INSPECTION FOR SUBSTANTIAL PERFORMANCE

- .1 Submit a written request to The Owner for inspection for Substantial Performance, certifying that prerequisites have been fulfilled and specifying known exceptions in the form of a list of items to be completed, corrected, or submitted.
- .2 The Owner will, within a reasonable time after receipt of the Contractor's request:
 - .1 proceed with the inspection; or
 - .2 advise the Contractor that prerequisites are not adequately fulfilled.
- .3 Results of The Owner's inspection for Substantial Performance will form the Substantial Performance Contract Deficiency List (SPC Deficiency List).

1.5 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Following the inspection, The Owner will:
 - .1 issue a Certificate of Substantial Performance of the Work stating the effective date of Substantial Performance, with a copy of the SPC Deficiency List attached (A form of a Certificate of Substantial Performance is appended to this section); or
 - .2 advise the Contractor that prerequisites to Substantial Performance are not fulfilled and repeat the inspection for Substantial Performance as necessary.
- .2 Upon issuance of a Certificate of Substantial Performance of the Work, The Owner will assume responsibility for care, custody, and control of the Work, including responsibility for the following:
 - .1 Dike operation, including all systems and equipment.

1.6 PREREQUISITES TO TOTAL PERFORMANCE

- .1 Prior to requesting The Owner's inspection for Total Performance carry out the following:
 - .1 Maintenance of the dike including all landscaping works
 - .2 Perform the entire Work, including the correction of all Contract Deficiencies, except those items arising from the warranty provisions of the Contract Documents.
 - .3 Removal of all ESC and ECO plan items
 - .4 Review the Contract Documents and inspect the Work to confirm that prerequisites to Total Performance have been met and that the Work is ready for inspection for Total Performance.

1.7 INSPECTION FOR TOTAL PERFORMANCE

- .1 Submit a written request to The Owner for inspection for Total Performance, including a copy of The Owner's most recent SPC Deficiency List, and certify that each Contract Deficiency has been corrected or otherwise resolved in a manner agreed to between The Owner and the Contractor. List known exceptions, if any, in the request.
- .2 The Owner will, within a reasonable time after receipt of the Contractor's request:
 - .1 proceed with the inspection; or
 - .2 advise the Contractor that prerequisites are not adequately fulfilled.

1.8 TOTAL PERFORMANCE OF THE WORK

- .1 Following the inspection, The Owner will:
 - .1 issue a Certificate of Total Performance of the Work, stating the effective date of Total Performance (A form of a Certificate of Total Performance is appended to this section); or
 - .2 advise the Contractor of Contract Deficiencies that must be corrected prior to issuance of a Certificate of Total Performance of the Work.

1.9 PREREQUISITES TO WARRANTY PERFORMANCE

- .1 The prerequisites to Warranty Performance are:
 - .1 Total Performance of the Work;
 - .2 expiry of the 2 year warranty period; and
 - .3 correction of items arising from the warranty period required by the Contract Documents.

1.10 INSPECTION FOR WARRANTY PERFORMANCE

- .1 Just prior to the end of the warranty period, The Owner will conduct an inspection for Warranty Performance.

1.11 WARRANTY PERFORMANCE OF THE WORK

- .1 Following the inspection, The Owner will:
 - .1 issue a Certificate of Warranty Performance of the Work (A form of a Certificate of Warranty is appended to this section); or
 - .2 advise the Contractor of items that must be corrected prior to issuance of the Certificate of Warranty Performance of the Work.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

SUBSTANTIAL COMPLETION CERTIFICATE

DATE ISSUED:	DATE OF SUBSTANTIAL PERFORMANCE:
TOWN BUSINESS UNIT:	PROJECT TITLE:
TOWN REPRESENTATIVE:	PURCHASE ORDER NUMBER:
CONTRACTOR:	DESIGN PROFESSIONAL (IF APPLICABLE):
<p>This <i>Substantial Completion Certificate</i> acknowledges that <i>The Town</i> has received a <i>Certificate of Substantial Performance</i> from the <i>Contractor</i>, and that, in the opinion of the <i>Contractor</i>, <i>Substantial Performance</i> of the <i>Work</i> has been achieved. In addition, the <i>Contractor</i> has satisfied all requirements.</p> <p>By executing this form, <i>The Town Representative</i> acknowledges that <i>Substantial Performance</i> of the <i>Work</i>, as per the <i>Builders' Lien Act</i>, has been achieved and that all liens have been discharged against the <i>Project</i>.</p>	

WARANTY PERIOD

WARANTY PERIOD COMMENCEMENT:	Upon issuance of Substantial Completion Certificate (see DATE ISUED above)
WARRANTY PERIOD TERMINATION:	Upon issuance of the Final Acceptance Certificate by the Town Representative, anticipated
WARRANTY PERIOD DURATION:	

AMOUNT PAYABLE AT SUBSTANTIAL PERFORMANCE

STATUTORY HOLDBACK TO BE RELEASED:	
GST:	
TOTAL PAYABLE AT SUBSTANTIAL PERFORMANCE:	
TOWN REPRESENTATIVE'S COMMENTS:	

TOWN REPRESENTATIVE AUTHORIZATION

RECOMMENDED BY THE TOWN			
DESIGN PROFESSIONAL (if applicable)			
	PRINT NAME	SIGNATURE	DATE
TOWN REPRESENTATIVE			
	PRINT NAME	SIGNATURE	DATE
Note: In the event that there is a conflict in the defined terms, the meanings as ascribed in the Agreement shall prevail.			

[CONTRACT NAME]

Tender No.: []
Contract No.: []

Contractor:
Address:

Owner: Town of Drumheller []
Address: 702 Premier Way, Drumheller, Alberta T0J 0Y0

This Certificate of Total Performance is issued pursuant to clause 6.10 Section 00725 - General Conditions and clause 1.8 Section 01775 - Contract Acceptance Procedures of the Contract Documents.

The Work performed under the Contract has been reviewed, and to the best of the Town of Drumheller's knowledge meets the requirements for Total Performance of the Work. Pursuant to clause 1.7 of Section 00725 – General Conditions, any review, comment, consent, acceptance or approval, or lack thereof, by the Town of Drumheller shall not relieve the Contractor of any of its responsibilities or liabilities under the Contract.

The effective date of Total Performance of the Work is [Click here to enter a date.](#)

CONSULTANT'S RECOMMENDATION

I have reviewed the Certificate and recommend it for authorization by the Town of Drumheller.

[Click here to enter a date.](#)

Signature of Consultant's Authorized Representative

Printed name of the above representative

Printed name of Consultant Firm

TOWN OF DRUMHELLER'S AUTHORIZATION

I authorize this Certificate of Substantial Performance of the Work.

[Click here to enter a date.](#)

Signature of Town of Drumheller's Authorized Representative

Printed name and title of the above representative

[CONTRACT NAME]

Tender No.: []
Contract No.: []

Contractor:
Address:

Owner: Town of Drumheller []
Address: 702 Premier Way, Drumheller, Alberta T0J 0Y0

This Certificate of Warranty Performance is issued pursuant to clause 6.11 Section 00725 - General Conditions and clause 1.11 Section 01775 - Contract Acceptance Procedures of the Contract Documents.

The Work performed under the Contract has been reviewed, and to the best of the Town of Drumheller's knowledge meets the requirements for Warranty Performance of the Work. Pursuant to clause 1.7 of Section 00725 – General Conditions, any review, comment, consent, acceptance or approval, or lack thereof, by the Town of Drumheller shall not relieve the Contractor of any of its responsibilities or liabilities under the Contract.

The effective date of Warranty Performance of the Work is [Click here to enter a date.](#)

CONSULTANT'S RECOMMENDATION

I have reviewed the Certificate and recommend it for authorization by the Town of Drumheller.

[Click here to enter a date.](#)

Signature of Consultant's Authorized Representative

Printed name of the above representative

Printed name of Consultant Firm

TOWN OF DRUMHELLER'S AUTHORIZATION

I authorize this Certificate of Substantial Performance of the Work.

[Click here to enter a date.](#)

Signature of Town of Drumheller's Authorized Representative

Printed name and title of the above representative

1.0 GENERAL

1.1 DESIGNATION OF CONTRACT RECORD DOCUMENTS

- .1 At the commencement of the Work, The Owner will provide the following documents to be designated and retained as Contract Record Documents:
 - .1 One copy of the Specifications.
 - .2 Two complete sets of the Drawings.
 - .3 One set of all addenda issued.
- .2 Maintain one record copy of the following:
 - .1 Change Orders and other modifications to the Contract.
 - .2 Reviewed Shop Drawings, Product Data, and Samples.
 - .3 Field-test records.
 - .4 Inspection certificates.
 - .5 Manufacturers' certificates.
 - .6 Final survey data.

1.2 MAINTENANCE OF CONTRACT RECORD DOCUMENTS

- .1 Store Contract Record Documents in the Contractor's Site office apart from documents used for construction. Provide files, racks, and secure storage.
- .2 Label each document "CONTRACT RECORD" in large, neatly printed letters.
- .3 Maintain Contract Record Documents in a clean, dry, and legible condition. Do not use these documents for construction purposes.
- .4 Keep Contract Record Documents available for inspection by The Owner. Revise the content of the documents as required prior to final submittal.
- .5 Maintain Contract Record Documents as work progresses. Record information for each area of work within 14 days after completion.

1.3 RECORDING INFORMATION ON CONTRACT RECORD DOCUMENTS

- .1 Record information on the Contract Record Documents provided by The Owner.
- .2 Use coloured erasable pencils OR electronic means to record information.
- .3 Use a different colour to record information pertaining to each major system.
- .4 Record changes and variations from the Drawings concurrently with construction progress. Do not cover any work until the required information is recorded.

- .5 Legibly mark Contract Record Drawings to record actual construction, including the following:
 - .1 Measured dimensions, depths, elevations, and horizontal co-ordinates of foundation excavations and fill surfaces, including the interfaces of fill zones.
 - .2 Measured dimensions, elevations, and horizontal co-ordinates of structure components and foundations.
 - .3 Measured depths, elevations, and horizontal co-ordinates of underground utilities and appurtenances. Reference locations to permanent surface improvements.
 - .4 Measured depths, elevations, and horizontal co-ordinates of internal utilities and appurtenances covered in construction. Reference to visible and accessible features of construction.
 - .5 Measured depths, elevations, and horizontal co-ordinates of instrumentation installed in foundations and structures.
 - .6 Field changes of dimensions and details.
 - .7 Changes to equipment layout and services.
 - .8 Details not on the original Drawings.
 - .9 References to related Shop Drawings and modifications.
- .6 Legibly mark the Specifications to record actual construction including the following:
 - .1 Manufacturer trade name and catalogue number of each product actually installed, particularly optional and substitute items.
 - .2 Changes made by addenda and Change Orders.
- .7 Maintain other documents including manufacturer's certifications, inspection certifications, field test records required by individual Specification sections.
- .8 All records kept by the contractor are to be made available for review and inspection by the Owner or its representatives at all times.

1.4 SUBMITTALS

- .1 Provide the following submittals.
- .2 Contract Record Drawings at least monthly throughout the course of the Work as the information becomes available or the information is received. The Owner's representative will check the Contract Record Drawings and confirm the accuracy of the information by field notes, surveys, photographs, or other field observation methods and return the Contract Record Drawings to the Contractor after review for ongoing revisions. No failure of the owner or its representative shall relieve the contractor of its responsibility to construct the work in accordance with the drawings and specifications.
- .3 Completed Contract Record Documents before or with the request for inspection for Substantial Performance.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED
END OF SECTION

1.0 GENERAL

1.1 DESCRIPTION OF TYPES OF OPERATION AND MAINTENANCE DATA

- .1 The following documents are designated as Operation and Maintenance Data.
- .2 For systems designed by the Contractor, Contractor Designed System Data includes the following:
 - .1 System Design and Performance Criteria.
 - .2 System and Controls Descriptions.
 - .3 System and Controls Schematics.
 - .4 Operating Instructions.
 - .5 Equipment Data.
 - .6 Other data as required by The Owner.
- .3 Installation Instructions includes the manufacturer's printed instructions describing the recommended installation procedures, and photographs, video footage, and computer software.
- .4 Operating Instructions includes the manufacturer's printed instructions describing proper operation, and photographs, video footage, and computer software.
- .5 Equipment Identification includes the nameplate information for each piece of equipment, in a form, and with content acceptable to The Owner.
- .6 Maintenance Instructions includes the manufacturer's printed instructions describing the manufacturer's recommended maintenance and photographs, video footage, and computer software.
- .7 Spare Parts Lists includes parts lists and the manufacturer's recommended maintenance products and spare parts.
- .8 Suppliers and Contractors List includes a list of Contractor, Subcontractors, and Suppliers who supplied and installed equipment, systems, materials, or finishes, organized by the Division of Specifications and system, and company names, addresses, and telephone numbers.
- .9 Tag Directory includes a directory identifying tag number and equipment description and location.
- .10 Drawings List includes a list of Drawings.
- .11 Shop Drawings includes the final reviewed Shop Drawings.
- .12 Product Data includes the manufacturer's product data for equipment, systems, materials, and finishes, and photographs, video footage, and computer software.

- .13 Material Safety Data Sheets (MSDS) includes the MSDS for all relevant products.
- .14 Certifications includes the following:
 - .1 Copies of inspection reports prepared by authorities having jurisdiction.
 - .2 Certified copies of test reports prepared by independent testing agencies.
 - .3 Any other certificates required by the Contract Documents.
- .15 Warranties and Bonds include The Owner's copy of manufacturer's warranties, maintenance bonds, and service contracts.
- .16 Reports includes the following:
 - .1 Documentation certifying the performance of tests required by the Contract Documents and the results of those tests.
 - .2 Documentation of other material, equipment, or system related information required by the Contract Documents.

1.2 SUBMITTALS

- .1 Provide the following submittals.
- .2 4 copies of the following Operation and Maintenance Data prior to requesting the inspection for Substantial Performance:
 - .1 Contractor Designed System Data.
 - .2 Installation Instructions.
 - .3 Operating Instructions.
 - .4 Equipment Identification.
 - .5 Maintenance Instructions including schedules.
 - .6 Spare Parts Lists.
 - .7 Suppliers and Contractors Lists.
 - .8 Tag Directory.
 - .9 Drawings List.
 - .10 Shop Drawings.
 - .11 Product Data.
 - .12 MSDS.
 - .13 Certifications.
 - .14 Warranties and Bonds.

- .15 Reports.
- .3 1 draft copy of the operation and maintenance manual prior to requesting inspection for Substantial Performance.
- .4 3 copies and 1 digital copy of the completed operation and maintenance manual prior to requesting inspection for Total Performance.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 SOURCE OF SUPPLY

- .1 Provide spare parts manufactured by the original equipment manufacturer.
- .2 Provide maintenance products identical to those installed.
- .3 Provide special tools as required by the equipment manufacturer.
- .4 Provide Material Safety Data Sheets (MSDS) for all relevant products.

1.2 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver the required items to the Site and store in temporary locations determined by the Contractor.
- .2 Deliver and store items in original factory packaging with the manufacturer's seal and labels, complete with tags identifying their function and associated equipment.
- .3 Identify, on the carton or package, the name of the item, colour, or part number, as applicable. Identify the equipment, the system, and the location and area for which each item is intended.
- .4 Maintain an inventory list of all items delivered. For each item, record the name of the item, quantity, location where stored, and include all relevant MSDS.
- .5 Be responsible for stored items until Substantial Performance of the Work is attained.
 - .1 Protect stored items against theft or damage.
 - .2 Store products that would be damaged by freezing, in heated and ventilated rooms.
 - .3 Store items subject to damage from the weather in weatherproof enclosures.
 - .4 Provide the manufacturer's instructions for long-term storage and shelf life.
- .6 Handle items as necessary, until stored in the long-term storage locations designated by The Owner.

1.3 INSPECTION

- .1 Prior to requesting The Owner's inspection for Substantial Performance:
 - .1 Verify that the inventory list includes all items required by the Contract Documents.
 - .2 Verify that items on the inventory list are in their designated storage locations.
 - .3 Inspect all the items to verify that specified requirements are met and that they are in serviceable condition.
 - .4 Arrange for delivery of all missing items.

- .5 Arrange for replacement of items not meeting the specified requirements or not in appropriate condition.
- .6 Provide The Owner with a copy of the inventory list indicating the status of all required items. Include relevant MSDS.
- .2 Review the inventory list with The Owner during The Owner's inspection for Substantial Performance.
- .3 For items not delivered prior to attaining Substantial Performance of the Work, submit a duplicate copy of the delivery slip and obtain The Owner's signature upon delivery. The Owner will only accept responsibility for care, custody, and control of items properly received, stored in the designated long-term storage locations, and signed for.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION

1.0 GENERAL

1.1 DEFINITIONS

- .1 “Commissioning” means a series of activities including start-up and testing of equipment and systems, and instructing The Owner on operation and maintenance that bring the Work to a fully operational state. Completion of Commissioning is a prerequisite to Substantial Performance of the Work.
- .2 “Initial Commissioning” means the partial commissioning of the systems and equipment under the specified conditions except as indicated in Final Commissioning. Completion of Initial Commissioning is a prerequisite to Substantial Performance of the Work.
- .3 “Final Commissioning” means the completion of the commissioning of the systems and equipment under the specified conditions once available, and providing a completed installation that meets the operational requirements specified in the Contract Documents. Completion of Final Commissioning is a prerequisite to Total Performance of the Work.

1.2 GENERAL COMMISSIONING REQUIREMENTS

- .1 Perform the following services during Commissioning:
 - .1 Develop a Commissioning plan outlining the activities to be conducted and the schedule for their completion.
 - .2 Provide a qualified supervisor to oversee all work.
 - .3 Comply with standards set out by the certifying association under whose standard services will be provided.
 - .4 Provide access to all equipment and services. Co-operate with the Owner.
 - .5 Provide all instrumentation, equipment, and materials required for Commissioning.
 - .6 Undertake all pre-start inspections, preparations, checks, and tests.
 - .7 Advise The Owner in writing, at least 5 days prior to performing the specified operational testing. Perform testing in the presence of The Owner and where required, in the presence of the manufacturer’s representative.
 - .8 Conduct operational tests, record results, and note all deficiencies.
 - .9 Diagnose deficiencies, determine causes, and take corrective actions. Document each deficiency, cause, and corrective action taken.
 - .10 Repeat Commissioning activities as required to verify that deficiencies have been corrected.
 - .11 Demonstrate the operation of the systems and equipment to The Owner’s personnel.
 - .12 Provide training for The Owner’s personnel.
 - .13 Complete Commissioning records.

1.3 COMMISSIONING RECORDS

- .1 Provide Commissioning reports including systems and equipment checklists for all commissioning activities.
- .2 Provide equipment checklists to facilitate installation and servicing of equipment. Prepare equipment checklists in a form acceptable to The Owner, and include the following:
 - .1 Name of the company and the personnel performing the inspection, including the date and time.
 - .2 Equipment manufacturer and model number.
 - .3 Safety devices.
 - .4 Operating characteristics.
- .3 Complete the checklist for each piece of equipment as it is inspected and checked for proper installation and servicing prior to start-up.
- .4 Provide Commissioning reports in a form acceptable to The Owner, and include the following:
 - .1 Completed equipment checklists.
 - .2 Name, address, and telephone number of the company and the names of the personnel performing the Commissioning, and the date, time, and site conditions during Commissioning.
 - .3 Equipment start-up tests and records performed by the manufacturer and the Contractor.
 - .4 Operational testing and adjusting records.
 - .5 Deficiency records including diagnosis, causes, and corrective actions taken.

1.4 TRAININGS

- .1 Demonstrate operation, and maintenance of each item of equipment.
- .2 Train The Owner's personnel at the established times and location on all phases of the operation and maintenance.
- .3 Provide all instruction aids.
- .4 The Owner will provide a list of personnel to receive training, and will schedule and co-ordinate their attendance with the Contractor.

1.5 SUBMITTALS

- .1 Provide the following submittals.
- .2 A Commissioning plan at least 30 days prior to starting the Final Commissioning.

.3 Commissioning reports no later than 10 days after the Final Commissioning is completed.

2.0 PRODUCTS – NOT USED

3.0 EXECUTION – NOT USED

END OF SECTION