



**TENDER DOCUMENTS**  
for  
**TOWN OF DRUMHELLER**

**STIRLING DITCH & 2<sup>nd</sup> Ave**  
**TENDER NO. 2023-031**



**Kerr Wood Leidal Associates Ltd Project No: 3446.012**

**MAY 2023**

<b>1</b>	<b>INSTRUCTIONS TO PROPONENTS.....</b>	<b>4</b>
1.1	Preparation of Tenders.....	4
1.2	Delivery of Tenders.....	4
1.3	Tender Submission .....	4
1.4	Tender Submission Requirements .....	5
1.5	Conditions of Tender .....	5
1.6	Acceptability of Tenders .....	8
1.7	Town of Drumheller Authorized Representatives - Project Enquiries.....	9
1.8	Omissions or Discrepancies.....	9
1.9	Availability of Tender Documents.....	9
1.10	Plans and Drawings .....	10
1.11	Completing Tender Forms .....	10
1.12	Tender Deposit.....	10
1.13	Site Conditions .....	11
1.14	Tenderer’s Meeting.....	11
1.15	Project Scheduling and Completion of the Work.....	11
1.16	Subcontractors .....	11
1.17	Hiring of Apprentices.....	11
1.18	Goods and Services Tax (G.S.T.) .....	12
1.19	Time for Executing Contract and Damages for Failure to Execute.....	12
1.20	Acceptance of Tender and its Effect.....	12
1.21	Safety Prequalification.....	12
1.22	Freedom of Information and Privacy Act (FOIP).....	13
1.23	Gifts and Donations.....	13
1.24	Agreement on Internal Trade and New West Partnership Trade Agreement.....	13
1.25	Liquidated Damages .....	13
1.26	Addenda .....	13
1.27	Insurance .....	14
1.28	Warranty .....	15
<b>2</b>	<b>TENDER FORMS .....</b>	<b>16</b>
2.1	Tender Form.....	16
2.2	Tender Submission Checklist .....	17
2.3	Compliance with the Specifications and Project Documentation.....	18
2.4	Addenda Received .....	19
<b>3</b>	<b>SPECIFICATIONS .....</b>	<b>20</b>
3.1	Modifications To Scope Of Work.....	20
3.2	Scope of Work .....	20
3.2.1	SUBMITTALS .....	20
3.2.2	MOBILIZATION .....	20
3.2.3	SITE PREPARATION .....	20
3.2.4	CLEARING .....	21
3.2.5	GRADING .....	23
3.2.6	CULVERTS .....	30
3.2.7	RIPRAP .....	32
3.2.8	TOPSOIL PLACEMENT .....	33

3.2.9	FENCING .....	34
3.2.10	SEEDING.....	35
3.2.11	SUPPLY OF AGGREGATE .....	40
3.2.12	TEMPORARY STOCKPILING .....	43
3.2.13	HAULING.....	44
3.2.14	SUPPLY OF FENCE MATERIAL .....	46
3.2.15	SUPPLY OF CORRUGATED METAL PIPE .....	49
3.2.16	GEOTEXTILE.....	50
3.2.17	WATER VALVE EXTENSION .....	54
3.2.18	SANITARY CLEANOUT PROTECTION .....	54
3.2.19	SHED REMOVAL.....	54
3.2.20	REMOVE AND SALVAGE EXISTING TRAFFIC SIGN.....	54
3.2.21	REMOVAL OF EXISTING SIDEWALK.....	55
3.2.22	PLACEMENT OF SIDEWALK.....	55
3.2.23	RECLAIMED ASPHALT PAVEMENT.....	59
3.3	Measurement and Payment Schedule.....	63
3.4	Project Scheduling and Completion .....	79
3.5	Work Locations.....	79
3.6	Work Location Restrictions.....	79
3.7	Work Restrictions/Milestone Dates .....	80
3.8	Temporary Sanitation Facilities .....	80
3.9	Road Restrictions / Road Bans .....	80
3.10	Survey By Owner’s Representative.....	80
3.11	Work In The Vicinity Of Utilities .....	81
3.12	Regulatory Responsibility.....	81
3.13	Working Hours .....	81
3.14	Waste Management.....	81
3.15	Hazardous Materials.....	81
3.16	Contract Time .....	82
3.17	Proponent’s Investigation .....	82
3.18	Differing Conditions .....	83
3.19	Contract Acceptance Procedures .....	83
3.20	Inspection for Performance.....	83
3.20.1	Substantial Performance of the Work.....	84
3.20.2	Prerequisites to Construction Completion.....	84
3.20.3	Inspection for Construction Completion .....	84
3.20.4	Construction Completion of the Work .....	84
3.20.5	Inspection for Final Acceptance .....	85
3.20.6	Final Acceptance of the Work.....	85
<b>4</b>	<b>ADDENDA.....</b>	<b>86</b>
<b>5</b>	<b>AGREEMENT.....</b>	<b>87</b>
5.1	Article A-1 The Work.....	87
5.2	Article A-2 Contract Documents.....	87
5.3	Article A-3 Contract Price.....	88
5.4	Article A-4 Payment.....	88

5.5 Article A-5 Rights and Remedies.....89  
5.6 Article A-6 Receipt Of And Addresses For Notices.....90  
5.7 Article A-7 Law Of The Contract .....90  
5.8 Article A-8 Language Of The Contract .....90  
5.9 Article A-9 Succession .....91

**Attachments**

- Project Drawings
- Schedule of Prices
- Tree Clearing Figure
- Class A Fence Standard Detail

## 1 INSTRUCTIONS TO PROPONENTS

### 1.1 PREPARATION OF TENDERS

The Town of Drumheller (herein referred to as "the Owner") intends to award one contract for all required scopes of work. A Tender must be submitted on the forms provided. Each Proponent shall specify on the appended **Schedules of Prices** the unit price or lump sum values for separate items indicated in the Schedule and provide a total value excluding GST. Complete separately Schedule A.

The Proponent shall sign their Tender correctly in ink or digitally and their post office address must be shown.

### 1.2 DELIVERY OF TENDERS

Proponents must submit the **Tender Forms** in addition to **all Addenda** as issued by the Issuing Office.

Submission will be received until: **2:00 pm, Local Time, Thursday May 18, 2023**

Proponents are advised that The Owner accepts no responsibility for submission delays for any reason whatsoever and submissions received after the closing time will be rejected.

Tenders must be submitted in a single email, complete with all required attachments in PDF format (maximum file size = 25Mb). Zip files will NOT be accepted. Any appendices and supporting documentation are to be provided in a separate pdf attachment(s).

To: [purchasing@drumheller.ca](mailto:purchasing@drumheller.ca)

Subject: **Town of Drumheller – STIRLING DITCH & 2<sup>nd</sup> AVE – TENDER NO. 2023-031**

Upon review of the bids, the tender results will be available electronically on Alberta Purchasing Connection (APC) and the Town of Drumheller website.

### 1.3 TENDER SUBMISSION

This Tender Document states the instructions for submitting Tenders and the procedures and criteria by which Proponents will be selected.

The Owner reserves the right to reject any or all Tenders. All costs incurred by Proponents in responding to this tender document are solely to the Proponent's account. Under no circumstances, including the cancellation of this tender and/or the decision not to proceed with the tendering process, will The Owner be liable for any costs incurred by the interested Proponents. Furthermore, in no way will this document suggest or constitute a contractual arrangement between the Proponents and The Owner.

The Proponent's Tender and all supporting information become the property of The Owner. All such documentation may be reproduced by The Owner, provided that such reproduction is made solely for internal use or for any purpose required by law.

---

## **1.4 TENDER SUBMISSION REQUIREMENTS**

### 1. Tender Forms:

- Tender Form
- Tender Submission Checklist
- Compliance with the Specifications and Project Documentation
- Addenda Received

Schedule of Prices (included separately) – to be submitted in pdf format separately.

- Schedule A – Stirling Ditch & 2<sup>nd</sup> Ave

### 2. Supplemental Documentation

Refer to Tender Submission Checklist form for full list of submission requirements, including supplemental documentation.

## **1.5 CONDITIONS OF TENDER**

All communications regarding this Tender shall be sent to the Owner or Authorized Representative. The Owner will assume no responsibility for oral instructions or suggestions. Should the Proponent find discrepancies in, or omissions from the specifications, or should the Proponent be in doubt as to their meaning, the Proponent shall notify the Owner or Authorized Representative, who may, if necessary, send written addenda to all Proponents.

Proponents are advised that all the instructions to Proponents and General Conditions of Tender as may be supplemented herewith, must be strictly complied with. Failure to do so either in whole or in part may invalidate the Tender submitted.

It is understood that:

- The estimated quantities shown in this Tender are approximate only and are used for the purpose of comparing bids.
- No claim shall be made by the Proponent on account of any loss of anticipated profits resulting from any excess or deficiency in the estimated quantities.
- The Contractor is to complete the Unit Price for all items on the Schedule of Prices.
- Payment for work under this Contract will be made on the basis of quantities measured on the site and at the unit prices submitted, which shall be compensated in full for all the work done under the terms of the Contract.
- The prices quoted shall bear a proper relationship to the value of work done or materials supplied.
- The Owner reserves the right to terminate or to cancel any or all portions of the work and no claim shall be made on account of any loss of anticipated profits resulting from any cancellations or terminations in this Contract.

- The Owner reserves the right to accept or reject any or all tenders and to waive irregularities and informalities at its discretion.
- The Owner reserves the right to accept a tender other than the lowest cost tender without stating reasons.
- Without limiting the generality of the foregoing, the Owner may consider any other factor besides price and capability to perform the work that it deems in its sole discretion to be relevant to its decision including but not limited to the following:
  - any past experience with the Proponent, or lack thereof;
  - the results of any reference check done by the Owner;
  - information relating to the financial state of the Proponent, however obtained;
  - length of construction period;
  - specific time for construction.
  - By the act of submitting its bid, the Proponent waives any right to contest in any legal proceeding or action the right of the Owner to award the work to whomever it chooses, in its sole and unfettered discretion, and for whatever reasons the Owner deems appropriate.

Tenders shall be properly executed in full compliance with the following:

- Tenders must be signed by the representative for the Proponent;
- if the Tender is made by a corporation, the full name of the corporation shall be accurately printed immediately above the signatures of its duly authorized officers and the corporate seal shall be affixed;
- if the Tender is made by a partnership, the firm name or business name shall be accurately printed above the signature of the firm and the Tender shall be signed by a partner or partners who have authority to sign for the partnership;
- if the Tender is made by an individual carrying on business under a name other than his or her own, his or her business name together with the individual's name shall be printed immediately above its signature; and
- if the Tender is made by a sole proprietor who carries on business in his or her own name, the proprietor shall print his or her name immediately below his or her signature.

In accordance with approved policy of The Owner, each Proponent shall, as a condition of supplying goods and services to The Owner, make full disclosure of any of the following existing business relationships with any member of Council, Directors, Town staff, or Town of Drumheller Chief Administrative Officer:

- If a private company - Details of ownership of shares by any of the above.

- If a public company - Details of any ownership of shares, in excess of 1% of total shares issued by any of the above.
- If a partnership - Details of any partnership arrangement of any of the above.
- Details of any directorship of any of the above, unless the directorship is only by reason of the individual being a member of Council, and who has Council's authorization to vote.
- Details of any direct or indirect pecuniary interest of any of the above in the supply of such goods and services.

Disclosure, if any, of an existing business relationship shall be made in writing at time Tender submission or at the time the Proponent become, or ought to have become, aware of any such relationship.

Each Proponent shall make full disclosure of any relationship of any employee of Town of Drumheller who makes recommendations concerning the award of the Tender or any employee who may allot work to or order supplies from the awarded Tender. In addition, Proponents are to reveal details of ownership or partnership arrangements of any immediate relative employed by The Owner who alone or with other relatives hold more than a 25% interest. Failure to disclose this information may result in the rejection of the Tender and/or cancellation of the award. The Owner will not be liable for any costs incurred by the Proponent due to cancellation of the award.

The law applicable to this Tender shall be the law in effect in the Province of Alberta. Except for an appeal from an Alberta Court to the Supreme Court of Canada, no action in respect to this Tender shall be brought or maintained in any Court other than in a court of the appropriate jurisdiction of the Province of Alberta.

## **OTHER GENERAL CONDITIONS APPLICABLE TO THIS TENDER**

### **SCHEDULES, ATTACHMENTS AND ADDENDA**

Any schedule and attachment to this tender document, and any subsequent addenda are incorporated into and form part of this tender. The information and data contained in any appendices and any subsequent addenda may form the basis upon which the Contract will be entered into with The Owner.

### **DISCLAIMER OF LIABILITY AND INDEMNITY**

By submitting a Tender, a Proponent agrees:

- to be responsible for conducting its own due diligence on data and information upon which its Tender is based;
- that it has fully satisfied itself as to its rights and the nature extended to the risks it will be assuming;
- that it has gathered all information necessary to perform all of its obligations under its Tender;
- that it is solely responsible for ensuring that it has all information necessary to prepare its Tender and for independently verifying and informing itself with respect to any terms or conditions that may affect its Tender;

- to hold harmless The Owner, its elected officials, officers, employees, agents or advisors and all of their respective successors and assigns, from all claims, liability and costs related to all aspects of the tender process;
- that it shall not be entitled to claim against The Owner, its elected officials, officers, employees, insurers, agents or advisors on grounds that any information, whether obtained from The Owner or otherwise (including information made available by its elected officials, officers, employees, agents or advisors), regardless of the manner or form in which the information is provided is incorrect or insufficient;
- that The Owner will not be responsible for any costs, expenses, losses, damages or liability incurred by the Proponent as a result of, or arising out of, preparing, submitting, or disseminating a Tender, or for any presentations or interviews related to the Tender, or due to The Owner's acceptance or non-acceptance of a Tender; and
- to waive any right to contest in any proceeding, case, action or application, the right of The Owner to negotiate with any Proponent for the Contract whom The Owner deems, in its sole and unfettered discretion, to have submitted the Tender most beneficial to The Owner and acknowledges that The Owner may negotiate and contract with any Proponent it desires.

#### **REPRESENTATIONS AND WARRANTIES**

The Owner makes no representations or warranties other than those expressly contained herein as to the accuracy and/or completeness of the information provided in this tender document.

Proponents are hereby required to satisfy themselves as to the accuracy and/or completeness of the information provided in this tender.

No implied obligation of any kind by, or on behalf of, The Owner shall arise from anything contained in this tender, and the express representations and warranties contained in this tender, and made by The Owner, are and shall be the only representations and warranties that apply.

Information referenced in this tender, or otherwise made available by The Owner or any of its elected officials, officers, employees, agents or advisors as part of the procurement process, is provided for the convenience of the Proponent only and none of The Owner, its elected officials, officers, employees, agents and advisors warrant the accuracy or completeness of this information. The Proponent is required to immediately bring forth to The Owner any conflict or error that it may find in the tender document. All other data is provided for informational purposes only.

#### **1.6 ACCEPTABILITY OF TENDERS**

The Proponent will be allowed to withdraw and modify his or her Tender up to **thirty (30) minutes** before the tender closing time. The modified Tender must be resubmitted in accordance with the instructions contained in **Section 1.2 Delivery of Tenders**, even if the amendment is of unit prices only.

Tenders that are unsigned, incomplete, conditional, illegible, unbalanced, obscure, or contain additions not called for, reservations, erasures, alterations, or irregularities of any kind, may be rejected as unacceptable and rejected.

The Proponent shall fill in every item on the Tender Form. Where quantities are not given, unit prices shall only be entered.

If there is a discrepancy found between the unit prices and the total amount, the unit price will be considered as representing the intention of the Proponent.

The lowest or any Tender will not necessarily be accepted.

### **1.7 TOWN OF DRUMHELLER AUTHORIZED REPRESENTATIVES - PROJECT ENQUIRIES**

The only persons who are, or shall be, authorized to speak or act for Town of Drumheller with respect to this Tender, are those whose positions or names have been specifically designated by The Owner. Questions or concerns regarding this tender must be received by the contact below via email before the question period deadline.

For information regarding this project, you may contact:

Kerr Wood Leidal Associates Ltd.  
110 - 1212 1 Street SE  
Calgary, AB, T2G 2H8  
Contact: Chris Sullivan, P.Eng.  
Email: [CSullivan@kwl.ca](mailto:CSullivan@kwl.ca)

**Deadline for written questions and inquires is end of business day 2:00 pm local time on Wednesday May 10, 2023.** The Issuing Office will formally respond to all inquiries by no later than Friday May 12, 2023.

### **1.8 OMISSIONS OR DISCREPANCIES**

All communications regarding this tender shall be sent to The Owner, The Owner will assume no responsibility for oral instructions or suggestions. Should the Proponent find discrepancies in, or omissions from the specifications, or should the Proponent be in doubt as to their meaning, the Proponent shall notify The Owner, who may if necessary, send written addenda to all Proponents.

Should a Proponent find discrepancies in, or omissions from, the Drawings or other Tender Documents, or should a Proponent be in doubt as to their meaning, the Proponent should at once notify the Issuing Office who may send direction to all Proponents. No oral interpretations shall be made to any Proponent as to the meaning of any part of the Tender Documents. Every request for an interpretation shall be made in writing and addressed to The Owner's Authorized Representative:

Kerr Wood Leidal Associates Ltd.  
110 - 1212 1 Street SE  
Calgary, AB, T2G 2H8  
Contact: Chris Sullivan, P.Eng.  
Email: [CSullivan@kwl.ca](mailto:CSullivan@kwl.ca)

### **1.9 AVAILABILITY OF TENDER DOCUMENTS**

Tender Documents are available in electronic format from Alberta Purchasing Connection (APC) and on the Town of Drumheller Bids and Tenders website (<https://www.drumheller.ca/do->

[business/tenders](#)). The Owner assumes no responsibility or liability for the completeness of Tender Documents obtained from any other source. In the event of a discrepancy with Tender Documents obtained from any other source the Tender Documents issued above will govern.

Proponents shall promptly notify the Issuing Office upon discovery of any such omissions and/or discrepancies.

### **1.10 PLANS AND DRAWINGS**

Plans and drawings listed in the tender document will be available with the tender package and made available through APC and on the Town of Drumheller website.

Hard copies of these documents are not available.

### **1.11 COMPLETING TENDER FORMS**

The Schedules of Prices must be completed by:

- showing the Unit Price (where applicable), and the total for each item in the "Total Bid" column (in case of discrepancy the unit price figure will take precedence), and
- showing the tendered lump sum (where applicable) in the "Total Bid" column, and
- showing the sum of all tender item totals in the space marked "Total Tender."

The Tender must be signed by an authorized representative of the Proponent, and

- the official title of the Proponent must be shown, and
- the official seal of the Proponent must be affixed or the signature must be witnessed.

### **1.12 TENDER DEPOSIT**

The Tender must be accompanied by a photocopy or image of a certified cheque or bid bond made payable to the Town of Drumheller in the amount of ten percent (10%) of the total sum tendered for the work. The top two bidders shall courier the original copies of the certified cheque or bid bond to the Town of Drumheller Office within 4 business days after tender closing.

The unsuccessful Proponents' certified cheques or bid bonds will be returned as soon as possible after the award of the Contract, or, if no Contract is awarded, after such decision is reached by The Owner. The successful Proponent's certified cheque or bid bond will be returned upon receipt by The Owner of the necessary guarantee bonds.

If a bid bond is provided, it shall be issued by a Surety Company licensed to do business in the Province wherein the work is located.

The cost of the bonds shall be borne by the Contractor.

The Proponent, with his or her Tender, shall enclose a "Consent of Surety" from the Surety Company stating that it is willing to supply the bonds referred to previously. The Consent of Surety will be required whether the Proponent uses a certified cheque or bid bond.

### **1.13 SITE CONDITIONS**

The Proponent must examine the site of the work before submitting a bid, either personally or through a representative, and satisfy him/herself as to the nature, location and access to the work site, local conditions, soil structure and topography at the site of the work, the equipment and facilities needed prior to and during the prosecution of the work, safety requirements for the work, and all other matters which can in any way affect the work under this Contract. Submission of a Tender by the Proponent acknowledges awareness of all matters that such a site inspection would reveal to the reasonable Proponent.

### **1.14 TENDERER'S MEETING**

A non-mandatory pre-bid meeting is scheduled for Monday May 8, 2023, at 10:00 AM local time. The work site is to be reviewed in person. The Owner's representative will be in attendance. All Bidders are strongly encouraged to attend this one time only pre-bid meeting. The meeting will start at Town of Drumheller Public Works office at 702 Premier Way Drumheller prior to going to site.

### **1.15 PROJECT SCHEDULING AND COMPLETION OF THE WORK**

The Owner reserves the right to divide the scopes of work. The Contractor shall schedule their operations to complete all of the Work under this Contract as follows:

- **Tenderer's Meeting** **May 8, 2023, as noted in Section 1.14**
- **Deadline for written questions:** **May 10, 2023, as noted in Section 1.7**
- **Tender Close:** **May 18, 2023, as noted in Section 1.2**
- Tree clearing, grubbing, and disposal of trees and brush must be completed by June 30, 2023
- Construction completion and site clean-up must be completed by October 15, 2023

### **1.16 SUBCONTRACTORS**

The Contractor named in the Agreement is solely responsible for all work under the Contract and for the allocation of work to Subcontractors.

The Contractor is responsible for the administration of all Subcontractors. All disputes as to the scope of work to be carried out by the various Subcontractors shall be the responsibility of the Contractor, so that all work is carried out to the satisfaction of the Consultant. No claims for Extras will be allowed on the basis that a Subcontractor did not include same in their scope of work due to any subdivision of the work expressed or implied in the Plans or Specifications.

### **1.17 HIRING OF APPRENTICES**

The Government of Alberta encourages all Proponents to consider employing apprentices on public sector construction projects. To find out more about hiring an apprentice and the supports available for their training, please visit <http://tradesecrets.alberta.ca/>.

**1.18 GOODS AND SERVICES TAX (G.S.T.)**

Tender prices are to be submitted G.S.T. exempt. Appropriate adjustments for G.S.T. will be added to the total tendered amounts by The Owner, if required.

**1.19 TIME FOR EXECUTING CONTRACT AND DAMAGES FOR FAILURE TO EXECUTE**

Tenders shall be open for acceptance by the Owner for **thirty (30) days** after the tender closing date. Any Proponent whose Tender is accepted within the time set out above will be required to execute the Contract.

**1.20 ACCEPTANCE OF TENDER AND ITS EFFECT**

The acceptance of the Tender shall bind the successful Proponent to execute the Contract. Refer to **Section 3.19 – Contract Acceptance Procedures**.

If the Consultant, after acceptance of the Tender but before execution of the Contract, objects to any Subcontractor proposed to be employed by the successful Proponent in the performance of the Contract, and the Contractor refuses or neglects to nominate another Subcontractor, acceptable to the Consultant, the Tender may be rejected.

**1.21 SAFETY PREQUALIFICATION**

Contracts will only be awarded to Proponents who, prior to the time fixed for receiving tenders, possess a safety certification, as issued by the Alberta Construction Safety Association (ACSA) or another certifying partner authorized by the Alberta Ministry of Labour to issue CORs, TLCs, or CORELs OR provide evidence that the certification process has been initiated and is underway to, at minimum, “Step 2. Implement a health and safety management system” according to the Government of Alberta’s outlined process “How to get a COR” (<https://www.alberta.ca/get-certificate-recognition.aspx>). Possession of a Certificate of Recognition other than a standard COR, SECOR, TCL, or COREL is not acceptable.

Acceptable certifications include:

- a valid Certificate of Recognition (COR);
- a valid Small Employer Certificate of Recognition (SECOR);
- a valid Temporary Letter of Certification (TLC) for a standard COR; or
- a valid COR Equivalency Letter (COREL) for out of province Proponents;
- The COR, SECOR, TLC, or COREL must be relevant to the work.

Prospective Proponents who do not possess a COR, a SECOR, a TLC for standard COR, or a COREL and wish to obtain information about obtaining one, are advised to contact The Alberta Construction Safety Association (contact information below) or another certifying partner authorized by the Alberta Ministry of Labour.

The Alberta Construction Safety Association  
225 Parsons Rd. SW | Edmonton, AB | T6X 0W6  
Telephone: (780) 453-3311 or (Toll Free) 1-800-661-2272

Web Site: [www.acsa-safety.org](http://www.acsa-safety.org)

E-mail: [edmonton@acsa-safety.org](mailto:edmonton@acsa-safety.org)

It is the Proponent's responsibility to ensure his or her registration in the program is properly documented with the issuing certifying partner and The Owner will assume no liability for errors or omission in the regard. The Proponent shall submit copies of valid safety certification with the Tender submission.

### **1.22 FREEDOM OF INFORMATION AND PRIVACY ACT (FOIP)**

The Owner acknowledges that each Tender may contain information in the nature of a Proponent's trade secrets or commercial, financial, labour relations, scientific or technical information of or about a Proponent. The Owner acknowledges and agrees that Tenders in response to this Request for Tender are provided in confidence and protected from disclosure to the extent permitted under law. The Owner is bound by the Freedom of Information and Privacy Act (Alberta) and all documents submitted to The Owner will be subject to this protection and all disclosure provisions of this legislation.

### **1.23 GIFTS AND DONATIONS**

The successful Proponent shall ensure that no representative of the successful Proponent shall extend entertainment, gifts, gratuities, discounts, or special services, regardless of value, to any employee of The Owner. The successful Proponent shall report to The Owner, any attempt by The Owner's employees to obtain such favors.

### **1.24 AGREEMENT ON INTERNAL TRADE AND NEW WEST PARTNERSHIP TRADE AGREEMENT**

The provisions of the Agreement on Internal Trade, Part IV, Chapter Five – Procurement and Annex 502.4, ("AIT") and the New West Partnership Trade Agreement ("NWPTA") apply to this Tender.

### **1.25 LIQUIDATED DAMAGES**

Liquidated Damages will not be applicable to this Work.

### **1.26 ADDENDA**

Addenda, when issued, form part of the Tender Documents. The Proponent shall acknowledge receipt of each addendum in the space provided on the Tender forms. The individual items included in the addendum shall be added, deleted, or changed in accordance with the instructions contained in the addendum letter. A copy of each addendum will be inserted into the Contract document.

During the tendering period all Addenda issued by The Owner will be available in electronic format from the APC and on the Town of Drumheller website. Email notifications of the Addenda will be sent to the Proponents to the address of each party recorded by The Owner.

Notwithstanding any other provision of this Tender, each Proponent must ascertain, prior to the time fixed for receiving tenders, that it has received all Addenda issued by The Owner.

## **1.27 INSURANCE**

For the duration of the Project up until Construction Completion, unless otherwise specified, the Contractor must, without limiting its obligations or liabilities herein and at its own expense, provide and maintain the following insurances in compliance with the Alberta Insurance Act, and in forms and amounts acceptable to The Owner:

- i. General Liability Insurance in an amount not less than five million dollars (\$5,000,000) inclusive per occurrence, insuring against bodily injury, personal injury and property damage including loss of use thereof. To achieve the desired limit, primary insurance and umbrella or excess liability insurance may be used. If this requirement is satisfied with a General Liability Wrap-up insurance policy, The Owner must be a named insured on the policy and other insureds must include all subcontractors, consultants and subconsultants involved in the Work, whether named or unnamed in the policy. The Owner as a Named insured under the Wrap-up Liability insurance policy must have the right to make a claim directly to the insurer. In addition, if this requirement is satisfied with a General Liability Wrap-up liability insurance policy, the policy must contain completed operations liability coverage, which must remain in effect until Contract Completion. Furthermore, such Wrap Up liability insurance must cover all operations related to the Work whether conducted on the Site or elsewhere.
- ii. Automobile Liability on all vehicles owned or licensed in the name of the Contractor in an amount not less than five million dollars (\$5,000,000).

All the foregoing insurance must be primary and not require the pro rata sharing of any loss by any insurer of The Owner.

Prior to commencement of any activities on Site and at any other time requested by The Owner, the Contractor will provide The Owner with evidence that insurance coverages are in effect and meet specified requirements. In addition, the Contractor must at any time upon request by The Owner, promptly submit to The Owner a certified true copy of all required insurance policies, in a form acceptable to The Owner. Delivery to and examination by The Owner of any certificate or policy of insurance evidencing such insurance does not relieve the Contractor of any of its obligations pursuant to the provisions of this Contract and does not operate as a waiver by The Owner of any rights.

Except for automobile liability insurance required under clause ii) of this section, all required insurance must be endorsed to provide The Owner with 30 days advance written notice of cancellation, including cancellations for non-payment of premium.

The Contractor must require and ensure that each subcontractor provides evidence of comparable insurance to that set forth in clauses (i) through (ii) of this section.

The Contractor is responsible for insuring its equipment against "all risks" of accidental loss or damage. The Contractor waives its right of recourse against The Owner with regard to any loss or damage to the equipment and must make its insurer aware of this waiver.

## **1.28 WARRANTY**

Upon notice from the Contractor of completion of the Work, The Owner and Consultant will schedule an inspection of the Work. If The Owner and the Consultant find the Work to be completed in accordance with the Contract, this inspection will constitute the Construction Completion inspection and the Consultant will issue a Construction Completion Certificate indicating acceptance of the Work and the start of the warranty period. The date of the acceptance in the Construction Completion Certificate, if all the Work is found to be complete, will be the date the Project was ready for the Construction Completion Inspection.

If this inspection discloses any Deficiencies on the Site the Contractor must immediately correct the Deficiencies and then notify The Owner and Consultant. The Construction Completion Certificate is issued once the Consultant confirms that all Work has been satisfactorily completed. The date of the acceptance in the Construction Completion Certificate will be the date all the Work is found to be complete.

During the warranty period, the Contractor must warrant the Work to be free from any Defect and to withstand climatic, maintenance and normal operational conditions.

The Contractor must repair, at its own expense, any such Defect which occurs in the Work prior to the expiry of the warranty period. The Owner will notify the Contractor, in writing, of Defects identified during the warranty period; and the Contractor must promptly make the necessary repairs. If the Contractor believes that there is no Defect in the Work, and the Defect did not arise or result from climatic, maintenance or normal operational conditions then the Contractor must provide evidence of what caused the Defect and why it is not covered by warranty.

Warranty repairs are a performance requirement of the Contract, and must be assured by the security provided for the entire warranty period.

Without limiting any other rights or remedies The Owner has under this Contract, in equity or at law, if the Contractor fails to carry out repairs promptly or to the satisfaction of The Owner, The Owner may then make other arrangements to have the repairs done, the cost of which will be a debt due and owing by the Contractor and the Surety to The Owner.

Unless otherwise specified, the warranty period:

- one year for the Work; and

Commences on the date of Construction Completion as determined by The Owner.

Specific requirements concerning the timing of any warranty work required for seeding are detailed in Section 3.2.10, Seeding.

After the warranty period has expired and upon completion of all above requirements, a Final Acceptance Certificate will be issued by The Owner.

2 TENDER FORMS

2.1 TENDER FORM

The Undersigned (also referred to as the "Proponent" and the "Contractor"), having carefully reviewed and accepted the Conditions of Tender, having read the Contract Documents and having inspected the site, hereby agrees to execute and complete the Work contemplated in strict accordance with the said Contract documents at the prices stipulated in the Schedule of Prices.

The undersigned Proponent hereby provides the attached Tender Submission to perform the project/work as described, subject to acceptance and successful negotiation of a contract suitable to the Town of Drumheller.

The \_\_\_\_\_, Sureties are willing to provide a Performance Bond and a Labour and Materials Bond each in the amount of **50 percent (50%)** of the total amount tendered. The "Consent of Surety" form to this effect is complete. The Owner may choose to retain the bid securities in lieu of Performance Bond and Labour and Material Bonds.

Accompanying this Tender is the completed "Consent of Surety" along with a certified cheque or bid bond in the amount of **10 percent (10%)** of the total amount tendered for the Work.

If our Tender is accepted, we agree to commence the Work by the \_\_\_\_ day of \_\_\_\_\_, and to complete the Work on or before the \_\_\_\_ day of \_\_\_\_\_, or such later date as the Owner may for any reason determine.

It is understood that if this Tender is accepted within **thirty (30) days** of the time stated for Tender closing date, and if the Proponent fails or declines to enter into a Contract in accordance with the terms of the Tender, the Proponent's certified cheque or bid bond shall be forfeited to the Owner as an accepted and agreed determination of the damages to which the Owner may be entitled by reason of the Proponent's failure or refusal to enter into such Contract.

\_\_\_\_\_  
Contractor's Signature

\_\_\_\_\_  
Contractor's Name (Proponent)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Witness or Seal

\_\_\_\_\_  
Position in Company

\_\_\_\_\_  
Date

\_\_\_\_\_  
Address

## 2.2 **TENDER SUBMISSION CHECKLIST**

### FORMS

- 2.1 – TENDER FORM**
- 2.2 – TENDER SUBMISSION CHECKLIST**
- 2.3 - COMPLIANCE WITH THE SPECIFICATIONS AND PROJECT DOCUMENTATION**
- 2.4 - ADDENDA RECEIVED**

### **SCHEDULE OF PRICES (included separately)**

- Schedule A – Stirling Ditch & 2<sup>nd</sup> Ave

### SUPPORTING DOCUMENTATION

- PROOF OF TENDER DEPOSIT**
- CONSENT OF SURETY [PERFORMANCE + MATERIALS BOND, IF AWARDED]**
- PROOF OF INSURANCE**
- PROOF OF COR, SECOR, TLC, COREL or EQUIVALENT**

**2.3 COMPLIANCE WITH THE SPECIFICATIONS AND PROJECT DOCUMENTATION**

**This form must be completed and signed to constitute a formal Tender.**

We have examined these Specifications, Drawings, and Plans, and we thoroughly and fully understand all conditions that do or can affect the Work to be done. We hereby certify that the Work offered in our Tender complies in every respect to the Owner's Specifications and Project Documentation.

\_\_\_\_\_  
Contractor's Name (Print)

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Signature or Seal of Contractor  
(Proponent)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Position in Company

\_\_\_\_\_  
Alberta Construction Safety  
Association Number or Equivalent  
Safety Certification Number  
**mandatory**

\_\_\_\_\_  
Date

**2.4 ADDENDA RECEIVED**

**(All Addenda Must be returned with tender submission)**

**Addendum:**

#1 \_\_\_\_\_  
Date Received

#2 \_\_\_\_\_  
Date Received

#3 \_\_\_\_\_  
Date Received

#4 \_\_\_\_\_  
Date Received

#5 \_\_\_\_\_  
Date Received

\_\_\_\_\_  
Contractor's Representative Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Position in Company

\_\_\_\_\_  
Contractor's Name (Proponent)

\_\_\_\_\_  
Date

### 3 SPECIFICATIONS

The Specifications for the work, which shall form part of the Contract Agreement.

#### 3.1 MODIFICATIONS TO SCOPE OF WORK

The Owner shall be entitled to increase or reduce the Scope of Work due to budgetary constraints or for any reason whatsoever upon the Owner providing written notice to the successful Contractor. If this is necessary, the actual type of work acceptably completed will be paid at the applicable prices bid shown in the Unit Price Schedule.

#### 3.2 SCOPE OF WORK

##### 3.2.1 SUBMITTALS

Submit a Work Plan to the Town of Drumheller ("the Town") outlining the proposed schedule and any proposed laydown area, stockpile locations, or site office.

Submit a site-specific Health and Safety Plan to the Town.

Submit an ECO Plan to the Town.

Submit a Haul Route Plan to the Town with respect to any import material and disposal activities. The Haul Route Plan should identify where the disposal locations for various materials are proposed to be. No disposal shall occur until The Owner has approved the Haul Route Plan.

Submit a Traffic Accommodation Strategy to the Town.

##### 3.2.2 MOBILIZATION

Where Mobilization is included as a bid item, this bid item includes, but is not limited to, the movement of necessary personnel, equipment, supplies and incidentals to the Site, the establishment of offices, camps, and other facilities to commence the Project and for associated costs which must be performed in order to commence the Project.

Mobilization shall also cover the costs for a portable toilet to be on site for the duration of the construction.

The mobilization bid item shall also include all work required to complete the submittal requirements (Section 3.2.1), the demobilization from site, and any final site clean up.

##### 3.2.3 SITE PREPARATION

Protect trees, shrubs, and other vegetation within the specified site clearing and grubbing areas that are designated to remain in place, against unnecessary cutting, breaking, and any other damage.

Protect from damage, fences, roadways, and other existing site improvements within the specified site clearing and grubbing areas that are designated to remain in place.

Protect survey reference points from damage.

All equipment entering the project site must be cleaned before arrival to prevent the spread of weed species.

### **3.2.4 CLEARING**

Clearing consists of cutting, removing, and disposing of trees, brush, stumps, logs and roots from areas designated by the Consultant. This includes any grubbing work as well.

#### **3.2.4.1 BLACK KNOT FUNGUS**

To control the spread of black knot fungus, caused by *Dibotryon morbosum* or *Apiosporina morbosa*. 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 hauled to landfill to prevent spread of spores. Burning is not permitted.

#### **3.2.4.2 DUTCH ELM DISEASE**

To control the spread of Dutch elm disease, caused by *Ophiostoma ulmi* or *Ophiostoma novae-ulmi*, European elm bark beetle (*Scolytus multistriatus*) and native elm bark beetle (*Hylurgopinus rufipes*), the Contractor must develop and implement a site- and species-specific Dutch elm disease management plan in accordance with the Agricultural Pests Act (R.S.A. 2000, c. A-8), the Pest and Nuisance Control Regulation, and Alberta's Dutch Elm Disease Response Plan.

The Contractor shall carry out his or her operations in accordance with the provisions in the 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 buried to prevent spread. All felled elm trees are to be hauled to the landfill to err on the side of caution.

Report all suspect infected trees immediately to the STOPDED Hotline at 1-877-837-ELMS (3567).

As part of the Work 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 Town's Agricultural Fieldman.

#### **3.2.4.3 CLEARING**

The Contractor shall cut trees and brush within the areas designated for clearing work and dispose of the resulting debris. Debris from clearing operations must be contained within the limits of the areas to be cleared, and not be deposited on adjacent backslopes, ditches, side slopes and/or roadway surfaces. Any debris from clearing or mulching operations that is inadvertently deposited outside the clearing areas must be removed immediately. All costs associated with the removal of

debris deposited outside the limits of the areas to be cleared will be considered incidental to the Work, and no separate or additional payment will be made.

Burying of material will not be permitted.

Branches from standing trees extending into the site boundary which hang within 6.0 m off the ground shall be cut-off close to the trunk in a neat and workmanlike manner. Underbrush and downed trees protruding into the site boundary must be removed and disposed of.

At the completion of clearing operations, the limits of the right-of-way must be left in a condition suitable for fencing.

#### **3.2.4.3.1 PRESERVATION OF TREES**

The Consultant may require the Contractor to preserve certain trees within the site boundary. Underbrush, downed timber, snags, and roots must be removed from the vicinity of trees designated for preservation and the materials disposed of.

#### **3.2.4.3.2 HAZARDOUS TREES**

Trees located outside areas to be cleared which, in the opinion of the Consultant, may present a hazard must be removed and disposed of.

#### **3.2.4.4 DISPOSAL OF CLEARING DEBRIS**

##### **3.2.4.4.1 TREES**

Felled trees, and brush, is to be disposed offsite at a location approved by The Owner. Prior to leaving the site, the trees and brush may be mulched or can be hauled offsite in larger pieces as long as safe to do so.

##### **3.2.4.4.2 MULCHING**

Mulching shall consist of the breaking down of timber or snags, brush, shrubs, slash, waste wood and wood debris left after clearing and/or clearing and timber salvage operations have been completed.

Acceptable mulching methods include flailing, rotary cutting and grinding, pulverizing, or chipping. Alternative methods may be used subject to approval by the Consultant.

##### **3.2.4.4.3 DISPOSAL OF MULCH**

Mulched material is to be hauled and disposed of offsite. The Contractor is to propose where the disposed material will go and approval from The Owner is needed prior to removing any material from site.

##### **3.2.4.4.4 DISPOSAL OF BLACK KNOT FUNGUS AND ELM TREES**

Black knot infected wood is to be hauled to landfill to prevent spread of spores.

Elm wood is to be disposed at the landfill immediately after felling. Elm tree stumps are to be grinded, and the mulched stump material is also to be taken to the landfill.

The landfill is located at 2500 Highway 10 East Drumheller, AB. Contractor to coordinate landfill disposal with Sonya Adams, Landfill Manager at (403) 823-1345. The landfill requires a 1-hour notice prior to arrival at the dump. Note that trees cannot be delivered to the dump under rainy conditions.

Elm trees or trees/limbs infected with black knot fungus need to be disposed of at the dump. For loads of these trees and limbs, the landfill waybills will be reimbursed by The Owner. Proof of waybills be required and only waybills corresponding to elm trees or black knot fungus loads will be reimbursed.

### **3.2.5 GRADING**

Grading consists of the excavation of soil materials, the salvage of select soil materials, and the construction of embankment. This work includes the removal and/or satisfactory placement of all materials necessary for the construction and preparation of embankments, slopes, drainage works and connections to the required alignment, grade, and cross-sections. It also includes the excavation for culverts.

#### **3.2.5.1 DIMENSIONS OF EXCAVATIONS AND EMBANKMENTS**

Generally, the dimensions of the excavations and embankments shall be as shown on the Drawings, however, the dimensions of any or all excavations and embankments may be increased or decreased at any time by the Consultant as conditions and circumstances dictate.

#### **3.2.5.2 MATERIALS**

##### **3.2.5.2.1 GENERAL DESCRIPTION OF SUITABLE AND UNSUITABLE MATERIALS**

The following provides a general description of the materials typically encountered during grading construction and how such materials shall be handled in the course of carrying out the Work. Specific requirements concerning the use of these materials are detailed elsewhere in this Specification.

Materials considered as "suitable" shall be used for backfilling and constructing embankments. Materials considered as "unsuitable" shall either be disposed of or salvaged depending on the nature of the material.

Vegetation, roots, stumps and refuse are considered unsuitable materials. Such materials shall be disposed of in a manner satisfactory to the Consultant.

Topsoil excavated from inside and outside the site boundary is considered an unsuitable material. Topsoil shall be salvaged and subsequently handled as specified elsewhere in this Specification.

Subsoil excavated from inside the site boundary is considered a suitable material.

All other excavated material obtained from inside or outside the site boundary will be considered suitable materials, regardless of the moisture content of the material.

During the performance of the Work, the Consultant will be the final authority in determining suitable and unsuitable materials.

### **3.2.5.2.2 RESERVATION OF SPECIAL MATERIALS**

The Contractor shall notify the Town immediately whenever gravel, stone or other material which has the potential of being suitable for special use by the Town is found.

When required by the Town, such materials shall be reserved and deposited in suitable locations identified by the Town.

### **3.2.5.2.3 DESCRIPTION OF TOPSOIL AND SUBSOIL**

In this Specification, the terms "topsoil" and "subsoil" are used to describe separate select soils requiring specific handling during construction. The following general descriptions are provided to assist the Contractor in distinguishing these select soils in the course of carrying out the Work. The specific handling requirements for topsoil and subsoil are specified elsewhere in this Specification.

The uppermost layers of soil both inside and outside the site boundary may consist of any or all of the following.

- Topsoil is the uppermost layer of soil that:
  - i. Contains the majority of plant roots.
  - ii. Is normally referred to as the plough layer in agriculture soils.
  - iii. Is typically darker in colour than the subsoil layer.
- Subsoil is the layer of soil directly below the topsoil layer that:
  - i. Contains the lower portion of the root zone.
  - ii. Is typically lighter in colour than the topsoil layer.

### **3.2.5.3 CLASSES OF EXCAVATION**

All excavation, for whatever purpose, will be classified as specified herein. The classifications for common excavation and borrow excavation stipulate excavating and placing the material. In the event the excavated material is unsuitable, the term "excavating and placing" shall be taken to mean "excavating and stockpiling" or "excavating and disposing", as applicable.

#### **3.2.5.3.1 COMMON EXCAVATION**

Common excavation consists of the excavation and placement of material obtained from within the right-of-way and/or site boundary.

#### **3.2.5.3.2 IMPORT FILL**

Import fill consists of suitable material supplied by the Contractor.

#### **3.2.5.3.3 COMMON EXCAVATION DISPOSED OFF SITE**

Common excavation disposed off site consists of the excavation, loading to trucks and disposing of designated materials that are obtained from locations inside the site boundary to an approved location by the Consultant.

### **3.2.5.4 CONSTRUCTION**

#### **3.2.5.4.1 GENERAL REQUIREMENTS**

##### **3.2.5.4.1.1 EQUIPMENT OPERATION ON PAVED SURFACES**

Where the location of common excavation material or import fill necessitates the hauling on an existing paved roadway the operation shall be carried out as follows:

1. Where haul along or across a road is undertaken by trucks, the prevalent load limit restrictions for haul along roadways or over bridges shall apply.
2. Under no circumstances shall regular grading equipment be allowed to operate on existing roadway surfaces.
3. Dust abatement material shall be applied when necessary.

Repair of any damage incurred in the pavement or subgrade structure, as a result of the haul operations, shall be the sole responsibility of the Contractor. The damage shall be repaired, and the surface restored to a condition equivalent to that which existed prior to the commencement of haul operations.

##### **3.2.5.4.1.2 EQUIPMENT OPERATION ON GRAVEL SURFACES**

Where the location of common excavation material or import fill necessitates the hauling on an existing gravel roadway the operation shall be carried out as follows:

1. Where haul along or across a road is undertaken by trucks, the prevalent load limit restrictions for haul along roadways or over bridges shall apply.
2. Under no circumstances shall regular grading equipment be allowed to operate on existing roadway surfaces.
3. Dust abatement material shall be applied when necessary.

Repair of any damage incurred in the gravel surface or subgrade structure, as a result of the haul operations, shall be the sole responsibility of the Contractor. The damage shall be repaired, and the surface restored to a condition equivalent to that which existed prior to the commencement of haul operations.

#### **3.2.5.4.2 PRESERVATION OF SURVEY MONUMENTS**

The Contractor shall preserve all survey monuments and property marks within and adjacent to the site boundary. The Contractor shall use suitable precautions to protect from damage or disturbance such survey monuments and property marks until their location has been witnessed, or otherwise referenced, and he shall not remove them until directed by the Consultant.

#### **3.2.5.5 COMMON EXCAVATION**

All topsoil in disturbed areas or to the limits shown on the Drawings or where designated by the Consultant, shall be salvaged for reuse. Any required stockpiling of topsoil material shall be performed to minimize topsoil losses and contamination of the topsoil and surrounding materials.

---

Following the excavation and salvage of topsoil, all other material shall be excavated to the extent specified on the Drawings or as determined by the Consultant. Suitable material shall be used for constructing embankments. Any unsuitable material encountered shall be disposed of in a manner satisfactory to the Consultant.

#### **3.2.5.5.1 IMPORT FILL**

Import fill is to come from a suitable source. The use of Import Fill for constructing embankments will be allowed only after all common excavations have been completed and the resulting suitable material hauled into the embankment, or as directed by the Consultant.

If the Contractor proposes to use a new borrow (e.g., dugout) to source this material, all permitting and testing for the new borrow source will be the responsibility of the Contractor.

The Owner shall provide final approval for proposed import fill sources.

#### **3.2.5.5.2 COMMON EXCAVATION DISPOSED OFF SITE**

Excess common excavation or unsuitable common excavation material shall be disposed of offsite in a manner satisfactory to the Consultant.

#### **3.2.5.5.3 CONSTRUCTING ROADWAYS AND DITCHES**

##### **3.2.5.5.3.1 EMBANKMENTS**

Embankment shall be constructed by placing, shaping, adjusting the moisture content where necessary, and compacting excavation materials. Only suitable materials shall be used for constructing the embankment except as otherwise approved by the Consultant under the specific conditions described herein.

The embankments shall be constructed in conformity with the lines, grades, and cross-sections shown on the Drawings, or designated by the Consultant.

##### **3.2.5.5.3.2 CONSTRUCTING NEW ROADWAYS**

###### **3.2.5.5.3.2.1 FILL SECTIONS**

All topsoil shall be salvaged unless otherwise shown on the Drawings, described in the Special Provisions, or directed by the Consultant.

The exposed surface shall be bladed, compacted and backfilled using suitable materials placed in successive layers to the required lines and grades.

###### **3.2.5.5.3.2.2 CUT SECTIONS**

Where the design subgrade surface is in cut and following the excavation and salvage of topsoil and subsoil, excavation shall be carried out to a depth of the design subgrade surface; and the suitable excavated material used to construct embankments. The exposed surface shall be bladed and compacted, and the excavated area backfilled using suitable materials placed in successive layers to the required lines and grades.

### 3.2.5.5.3.3 RECONSTRUCTING EXISTING DRIVEWAYS

Where a new embankment of 0.3 m or less is placed on an existing driveway, the existing surface shall be scarified to a depth of 0.15 m unless otherwise directed by the Consultant. The moisture content in this scarified material shall be adjusted as required, and the material compacted to the density requirements in accordance with the Drawings.

### 3.2.5.5.3.4 PLACING MATERIAL

Embankment shall be constructed so that after settlement is complete the required grade and cross-section is attained at all points. If at any time before the time of construction completion the embankment settles below the required grade, it shall be brought back to the required grade by the Contractor. This work will be paid for at the applicable unit price bid for the class of material used.

### 3.2.5.5.3.5 MOISTURE ADJUSTMENT AND COMPACTION

#### 3.2.5.5.3.5.1 LAYER AND DENSITY REQUIREMENTS

Unless otherwise specifically permitted by the Consultant, all material placed in embankments shall be spread and bladed smooth in successive layers, not to exceed 0.15 m in depth when compacted and to the full width of the cross-section. Each layer shall be compacted by means suitable to the Consultant to a minimum of 95 or 98 percent, as described in the Drawings, of the maximum dry density established by the Moisture-Density Relation tests using standard compaction. The material in each layer shall be compacted at the optimum moisture content, unless otherwise directed by the Consultant. In case of controversy, the degree of compaction and/or moisture content will be determined by a moisture-density test before the succeeding layer is placed.

When working with soils that have moderate or greater swelling potential, as determined by the Consultant, the moisture content for compaction shall be within a range of optimum to 3 percent above optimum, or as designated by the Consultant. High plastic clay soils are considered to have moderate to very high swelling potential unless proven otherwise. When working with predominately silt materials, as determined by the Consultant, the moisture content shall be within a range of 3 percent below optimum to optimum.

#### 3.2.5.5.3.5.2 TEST METHODS

Quality assurance testing for acceptance of the Work is the responsibility of the Consultant. Tests performed by the Consultant will not be considered to be quality control tests. The Contractor shall be responsible for all quality control testing and for all costs associated with quality control testing.

Various alternative test methods may be used by the Consultant to confirm that specification requirements are being met.

In cases of dispute regarding the degree of compaction and/or moisture contents, all testing to confirm compliance with the Specifications will be carried out by the Consultant using the most recent edition of the following standard test methods.

	<b>Test Descriptions</b>	<b>Method No.</b>
1.	Classification of Soils for Engineering Purposes	ASTM Designation D2487 <sup>(1)</sup>
	a) Determining the Liquid Limit of Soils	AASHTO Designation T 89
	b) Determining the Plastic limit and Plasticity Index of Soils	AASHTO Designation T 90
	c) Particle Size Analysis of Soils	AASHTO Designation T 88
2.	Soils Identification, Hand Method	ATT-29
3.	Moisture-Density Relation	
	a) Standard Compaction, - 5 000 µm Material	ATT-23
	b) Standard Compaction, + 5 000 µm Material	ATT-19
	c) One-Point	ATT-20
4.	Density	
	a) In-Place, Sand Method	ATT-9
	b) In-Place, Balloon Method	ATT-8
	c) In-Place, Nuclear Method	ATT-11
5.	Moisture Content	
	a) Oven Method, Soil and Gravel	ATT-15, Part I
	b) Microwave Oven Method	ATT-15, Part IV
	c) Speedy Moisture Teller	ATT-44
	d) In-Place, Nuclear Method	ATT-11
6.	Correction Factors, Nuclear Moisture-Density Measurements	ATT-48

## NOTES:

- (1) As modified by the Prairie Farm Rehabilitation Administration (PFRA) to include medium plastic clay with the symbol Cl.
- (2) In all Test Methods used as reference in this specification, metric sieves as specified in Canadian General Standards Board specifications 8-GP-2M shall be substituted for any other specified wire cloth sieves in accordance with Section 3.2.11, Supply of Aggregate.
- (3) In all cases the latest amendment or revision current at the closing date of the tender is implied when reference is made to one of the above standards in the Specification.

### 3.2.5.5.3.5.3 COMPACTION OPERATIONS

Compaction over the entire surface area of each layer shall be obtained by the use of tamping rollers, or other equipment to meet the specified density requirements. Hauling equipment will not be accepted in lieu of compaction equipment. Compaction to the specified density shall be obtained uniformly throughout each layer.

### 3.2.5.5.3.5.4 MOISTURE CONTENT ADJUSTMENTS FOR COMPACTION

#### 3.2.5.5.3.5.4.1 Drying

Where moisture content tests indicate that material being used for embankment is above optimum moisture, the material shall be thoroughly disced and worked until a uniform optimum moisture content is achieved.

The use of lime or any other additive to assist in drying of material shall be at the Contractor's discretion. However, the maximum allowable percentage of lime or other additive per mass of dry soil shall be determined by the Consultant.

#### 3.2.5.5.3.5.4.1.1 Contractor's use of Lime

The type of lime used shall be pulverized quicklime.

Where using quicklime, the Contractor shall order the quicklime at his or her own expense and:

- a. Make all arrangements for the delivery of pulverized quicklime in suitable tanker trucks equipped with distribution equipment appropriate for the direct application of the quicklime onto the wet soils.
- b. So organize his or her Work that all personnel are able to avoid contact with the quicklime.
- c. Take special precautions during windy conditions at the site to avoid damage to personnel and property during the quicklime application.
- d. Shall be responsible for any trucking costs related to standby.
- e. Pay all transportation charges on quicklime returned to the supplier as surplus to requirements, for any cause whatsoever.

Prior to treatment with the quicklime the soil shall be loosened with suitable equipment. The Contractor shall thoroughly mix the quicklime with the soil until a uniform colour and texture is achieved.

#### 3.2.5.5.3.5.4.2 Water for Compaction

Where moisture content tests indicate the material for embankment is below optimum moisture, water shall be added. The material shall be thoroughly disced and broken down, water added in amounts as required, and the material thoroughly worked to mix the water uniformly throughout the soil prior to commencing compaction operations.

### **3.2.5.6 FINISHING PREVIOUS CLEARING**

The Contractor shall remove and dispose of any stumps, debris, and new tree growth within the limits of the previously cleared areas.

### **3.2.6 CULVERTS**

This specification covers the installation of pipe culverts less than 1,500 mm equivalent diameter.

Abbreviations for the various types of culverts when indicated on the Drawings or used in the Specifications are as follows:

C.S.P.

Corrugated Steel Pipe

### **3.2.6.1 MATERIALS**

#### **3.2.6.1.1 CULVERT MATERIAL**

The Contractor shall supply culvert material in accordance with Section 3.2.15, Supply of Corrugated Metal Pipe and Pipe Arches.

#### **3.2.6.1.2 GRAVEL MATERIAL FOR CULVERTS**

When the Contract stipulates, the Contractor shall supply gravel material for culvert bedding. The Contractor shall supply aggregate in accordance with Section 3.2.11, Supply of Aggregate.

### **3.2.6.2 CONSTRUCTION**

#### **3.2.6.2.1 EXCAVATION AND PREPARATION OF BASE**

Excavation for the culvert base shall be to a depth of not less than 0.3 m below the invert grade and shall be of sufficient width to permit assembly of the pipe and the operation of compaction equipment on either side of the pipe. All soft, yielding, or unsuitable material at this level shall be removed to a depth satisfactory to the Consultant. Excavated material shall be replaced with gravel or other acceptable material to provide a firm foundation of uniform density throughout the entire length of the pipe.

On completion of excavation for the culvert base and the removal and replacement of any soft, yielding, or unsuitable material the Contractor shall compact the exposed surface to uniform density. The Contractor shall then construct the culvert bed to the established elevation using gravel material or other material acceptable to the Consultant. The width of the culvert bed shall be 3 times the culvert diameter or span.

#### **3.2.6.2.2 INSTALLATION**

The culvert shall be installed on the prepared base, true to the designed lines and grades unless otherwise established by the Consultant. Separate sections shall be securely joined together in accordance with the Manufacturer's instructions. Coupler bands shall be used for metal pipe.

The Contractor shall use due care when installing the culvert to avoid damaging the material. Damaged culvert materials shall be removed and replaced by the Contractor at his or her own expense.

**3.2.6.2.2.1 INSTALLATION OF CORRUGATED METAL PIPE**

Pipe shall be carefully handled to prevent damage to the protective coating. Any damage to coatings shall be repaired by the Contractor at his or her own expense in accordance with CSA/CAN 3-G401.

**3.2.6.2.3 BACKFILLING**

Backfill under the haunches and immediately adjacent to the culvert extending from the culvert base up to an elevation of 30 percent of the vertical height of the culvert shall be comprised of select gravel or soil material, as directed by the Consultant. Backfill immediately adjacent to the culvert above this level shall be comprised of select soil material. All backfill material shall be free from frozen lumps and organic material. Backfill within 300 mm of the culvert wall shall be free from stones of diameter larger than 80 mm.

All backfill material shall be placed in layers not exceeding 0.15 m in depth. Each layer shall be thoroughly compacted at optimum moisture content by means of pneumatic or other mechanical tamping equipment. Backfill and compaction layers shall be brought up simultaneously and evenly on both sides of the culvert filling all corrugations and ensuring firm contact with the entire bottom surface of the pipe. This compaction procedure shall be continued until the backfill reaches a minimum elevation of 0.3 m above the top of the pipe, or greater, as determined by the Consultant if necessary to carry the weight of construction equipment without damage to the culvert.

Backfilling of the remainder of the culvert excavation, beyond the immediate region of the culvert, shall be carried out in accordance with Section 3.2.6, Grading. Compacting equipment shall be operated parallel to the longitudinal axis of the culvert, until sufficient fill has been placed to proceed with construction of the embankment in the normal manner.

The remaining construction of the grade embankment over the installation may then proceed in accordance with Section 3.2.5, Grading.

**3.2.6.2.3.1 HAND-LAID RIPRAP**

Immediately following completion of culvert installation, hand-laid riprap shall be placed in accordance with Section 3.2.7, Riprap.

**3.2.6.2.3.2 REMOVAL**

Where removal and disposal of existing culverts or drainage structures from the roadbed, ditches, or other waterways is specified, the Contractor shall remove and dispose of the material at locations acceptable to the Consultant.

**3.2.7 RIPRAP**

This specification covers the supply and placement of riprap. Riprap is a protective covering consisting of hand-laid or randomly deposited rock, which is placed around culvert inlets and outlets and along slopes, embankments, and ditches.

**3.2.7.1 MATERIALS**

All materials necessary for riprap installations shall be supplied by the Contractor. Materials shall be resistant to weathering and water action. Sandstone or shale materials shall not be used.

**3.2.7.2 RIPRAP**

Materials supplied by the Contractor shall meet the following requirements.

**3.2.7.2.1 ROCK RIPRAP**

Rock riprap material shall consist of sound, durable stones that meet the following Class 1M gradation requirements in Table 3.2.7.2.1.

**Table 3.2.7.2.1: Class 1M Riprap Gradation**

(Nominal Diameter of 175 mm)	Equivalent Diameter (mm)	Percentage (by Weight) of Riprap Greater than Equivalent Diameter
	300	0%
	200	20% to 50%
	175	50% to 80%
	125	100%
<p>Note: Sizes are equivalent spherical diameter and are for guidance only.</p> <p style="padding-left: 40px;">The minimum dimensions of any single rock shall not be less than one third of its maximum dimension</p>		

The Class 1M riprap supplied shall be angular material. Rounded river rock is not acceptable.

**3.2.7.3 CONSTRUCTION**

**3.2.7.3.1 PLACING RANDOM ROCK RIPRAP**

Random riprap gravel shall be dumped over the area to be treated, until the required depth is attained. Manual handling of the material may be required.

**3.2.7.3.2 PLACING HAND-LAID RIPRAP**

Hand-laid riprap shall be placed at culvert inlets and outlets, and at other locations as directed by the Consultant.

### 3.2.7.3.2.1 ROCK RIPRAP

Stones shall be placed with their beds at right angles to the slope, the larger stones being placed first in the bottom courses and graduating to the smaller stones at the top. Stones shall be laid in close contact so as to break joints, and in such manner that the weight is carried by the earth and not by the adjacent stones. The spaces between the larger stones shall be filled with spalls, securely rammed into place. The finished work shall present an even, tight surface as shown on the Drawings and satisfactory to the Consultant.

## **3.2.8 TOPSOIL PLACEMENT**

Topsoil placement consists of the placing and finishing of select topsoil material on the areas designated on the Drawings or as directed by the Consultant, for the purpose of establishing vegetation for erosion control.

Generally, those areas containing highly erodible soils such as sand; those areas containing sterile soils such as gravel; and those areas containing exposed subsoil which is subjected to highly erosive action such as in the case of flow channels, will be considered for a covering of topsoil.

### **3.2.8.1 MATERIALS**

Topsoil shall consist of a natural, friable surface soil of organic character suitable for agricultural purposes. Topsoil shall be free of objectionable quantities of sub-soil, roots, stones, and other deleterious substances.

Topsoil shall be obtained from within the site boundary unless directed by the Consultant. When topsoil is to be imported from locations/sources outside of the site boundary, the material shall be approved for use by the Consultant prior to placement.

The excavation and removal of topsoil from any source shall be under the direction of the Consultant, insofar as the selection of material and/or the exact location of excavation is involved.

### **3.2.8.2 CONSTRUCTION**

The excavation of the topsoil shall be carried out to the lines and depths as established by the Consultant. Topsoil shall be selected as to quality during excavation. Excavated material, which in the opinion of the Consultant, is not suitable for use as topsoil shall be disposed of as directed by the Consultant.

Topsoil placement shall be undertaken as either a single- or two-phase operation.

When topsoil placement is done in a single operation, the excavated topsoil shall be moved directly to its final position without intermediate stockpiling.

When done in two phases, the first phase of the work shall consist of excavating select topsoil from the designated sources and hauling to stockpile sites. Generally, stockpile sites shall be located within the site boundary. The location of all stockpile sites shall be subject to the approval of the Consultant.

The second phase shall be undertaken when the ditch grades are near completion. In this operation, the topsoil shall be excavated from the stockpiles, hauled, and placed in its final

position. Temporary stockpiles shall have suitable ESC measures (e.g., silt fence) around them to prevent sedimentation concerns.

Upon completion of excavation, stockpile sites shall be trimmed to present a neat and tidy appearance, and debris resulting from the operation shall be removed and disposed of, all in a manner satisfactory to the Consultant.

### **3.2.8.2.1 PREPARATION OF PLACEMENT AREAS**

Before placing the topsoil, the areas to be covered with topsoil shall be shaped to the uniform lines prescribed. The surface shall then be loosened to a minimum depth of 50 mm, by means of discs, spike-tooth harrows, or other means satisfactory to the Consultant.

### **3.2.8.2.2 PLACING TOPSOIL**

Topsoil shall be uniformly spread on the prepared areas, to the minimum required depth of 100 mm, or a greater depth as directed by the Consultant. If there is insufficient topsoil to attain a 100 mm depth throughout the Work, the Consultant may direct spreading topsoil to a lesser depth or over a lesser area. After spreading, all hard lumps shall be broken down and all rocks larger than 70 mm in dimension, roots, stumps, and other foreign matter shall be removed and disposed of in a manner satisfactory to the Consultant. After the topsoil has been spread, it shall be satisfactorily compacted. The area covered with topsoil shall be left in a condition suitable for seeding or planting, without additional preparation of any nature.

At the completion of topsoil placement, the adjacent roadway surfaces shall be cleaned of all debris resulting from the operation, and the completed work left in a neat and tidy condition.

## **3.2.9 FENCING**

~~Fencing consists of the supply and installation of fence, gates and related appurtenances of the class or classes specified, in accordance with these specifications; as shown on the Drawings; or as directed by the Consultant.~~

~~Where specified, existing fence shall be removed and disposed of, or removed and re-installed to the satisfaction of the Consultant.~~

### **3.2.9.1 FENCE CLASSIFICATIONS**

~~Fencing will be classified according to type as follows:~~

~~Class A: ——— 3 barbed wires with wooden posts at 5.0 m maximum spacing (Dwg. CB6-2.12M1)~~

### **3.2.9.2 MATERIALS**

~~The Contractor shall supply all materials necessary for the installation of new fencing and the reinstallation of existing fencing. Materials shall be supplied in accordance with the requirements of Section 3.2.14, Supply of Fence Material.~~

### **3.2.9.3 CONSTRUCTION**

~~Fencing shall be installed at the locations shown on the Drawings or as designated by the Consultant.~~

Fence installation shall be carried out as shown on the Drawings; in accordance with these specifications; and as directed by the Consultant.

#### **3.2.9.3.1 — CLEARING FOR FENCE INSTALLATION**

All trees, brush, or other obstacles which may interfere with fence construction shall be removed prior to commencing fence installation. The resulting debris shall be disposed of to the satisfaction of the Consultant.

#### **3.2.9.3.2 — WOOD POSTS**

The posts shall be set in holes to the required depth; and tamped in a plumb and firm position to the lines and spacings shown on the Drawings or as directed by the Consultant. Post holes shall be large enough to allow for proper tamping. Posts shall be set with the large end down. Backfill shall be placed in layers not exceeding 0.15 m, and compacted by hand tampers, machine tampers, or other suitable equipment. Completed backfill shall be crowned slightly to permit drainage away from the posts.

Driving of posts, including methods employing drilled pilot holes, will only be permitted if the results of these methods produce a satisfactory, uniform, undamaged, plumb installation with the post firmly implanted into the soil to the specified depth. If, in the opinion of the Consultant, the results obtained from the driving of posts unsatisfactory, then this method shall be discontinued.

Sharpening of posts will not be permitted.

Intermediate brace posts shall be erected in conformance with the maximum spacing requirement shown on the Drawings and at any additional locations that may be designated by the Consultant.

#### **3.2.9.3.3 — WIRE**

Fence wire shall be pulled tight with hand stretchers or other approved tensioning apparatus capable of adjustment. The use of tractors or trucks for tightening the fence wire will not be permitted unless the pull is controlled by an adjustable tensioning apparatus.

#### **3.2.9.3.4 — GATES**

Openings for gates shall be provided at locations shown on the Drawings, or as designated by the Consultant.

Gates shall be constructed as shown on the Drawings or as directed by the Consultant.

#### **3.2.9.3.5 — REMOVAL AND DISPOSAL OF EXISTING FENCE**

Where removal and disposal of existing fences is specified, the Contractor shall completely remove the fence and dispose of the materials at a location satisfactory to the Consultant.

### **3.2.10 SEEDING**

This specification covers preparation of the area to be seeded, the supply and application of seed and fertilizer, and the finishing of seeded areas. Areas to be seeded shall include any disturbed or exposed earth surfaces within the site boundary and as determined by the Consultant.

**3.2.10.1 MATERIALS**

**3.2.10.1.1 SUPPLY OF MATERIALS**

Materials for seeding, including grass seed mix, fertilizer, mulch, and water shall be supplied by the Contractor.

Seed and fertilizer materials shall be stored dry and protected from direct sunlight and other detrimental conditions. Materials that have been subjected to detrimental conditions, as determined by the Consultant, will not be accepted for use on the project.

**3.2.10.1.2 GRASS SEED**

Grass seed shall meet the minimum requirements as shown in Table 3.2.10.1.2. The seed shall be mixed by a conditioner and bulk storage facility approved by the Authority responsible for Canada Seeds Act & Regulations. All seed shall be tested by a Registered Seed Lab, and each bag shall be clearly marked with the name of the supplier and the mixture composition.

**Table 3.2.10.1.2: Specification for Grass Seed Mix**

<b>Current botanical name</b>	<b>Previous botanical name</b>	<b>Common name</b>	<b>% by weight</b>	<b>Notes</b>
Festuca saximontana	NA	Rocky Mountain fescue	40	Early germinating; low height with little leaf biomass
Deschampsia cespitosa	NA	tufted hair grass	20	Provides later coverage; tufted and as such, produces less biomass than other species as flower stalks are taller than leaves and leaves are mostly basal
Elymus trachycaulus ssp. trachycaulus	Agropyron subsecundum	slender wheatgrass	15	Later germinating than F. saximontana; after germination, produces thick coverage; often reduces in canopy cover within 4 year's time; produces more biomass and as such, put in at a low % by weight; can reduce % by weight or leave out based on desired outcome
Lolium multiflorum	NA	annual ryegrass	15	Provides very early cover; often comes in from surrounding sites; has a tendency to die off with time in certain situations although it may persist on a site depending on the cultivar; can reduce % by weight or leave out based on desired outcome
Elymus hybrid	NA	AC Saltlander green wheatgrass	10	Very salt tolerant; has ability to take over; produces high biomass; put in at lower % by weight to ensure coverage but not monoculture; can reduce % by weight or leave out based on desired outcome and availability; limited availability

Prior to the use on the project, the Contractor shall provide the Consultant with a Certificate of Analysis for each lot of seed supplied. Test results from the Certificate of Seed Analysis shall specify the germination, or for native seeds that are not a part of the seed tables the Tetrazolium, and purity for each seed species of the mix as well as the seed mix composition expressed as a percentage of each seed species by dry mass for each seed mix specified.

#### **3.2.10.1.3 FERTILIZER**

If fertilizer is required, the contractor shall submit their proposed fertilizer mix to the Owner for review and approval.

Fertilizer shall be stored in standard containers clearly marked with the name of the Manufacturer, weight, and specified composition.

#### **3.2.10.1.4 HYDRO-MULCH**

Mulch material shall be cellulose fibre unless otherwise approved by the Consultant. Mulch shall be clean and free of weeds and other foreign matter. Mulch shall be 100% biodegradable, compatible with the environment, and shall contain no germination-inhibiting components.

#### **3.2.10.1.5 TACKIFIER**

The binder must be capable of joining together the mulch particles to secure the mulch to the ground. The binder shall not form an impervious seal that will prevent the penetration of moisture to underlying soil.

#### **3.2.10.1.6 WATER**

Water supplied by the Contractor shall be free of any impurities that might inhibit germination of the seed.

### **3.2.10.2 CONSTRUCTION**

#### **3.2.10.2.1 TRAFFIC ACCOMMODATION**

The Contractor shall address the traffic accommodation issues associated with his or her seeding operations in his or her Traffic Accommodation Strategy. No seeding operations or associated activities shall be started without an accepted Traffic Accommodation Strategy.

#### **3.2.10.2.2 NOTIFICATION OF COMMENCEMENT OF WORK**

The Contractor shall notify the Consultant a minimum of 48 hours prior to any seeding work. Seeding operations shall not commence until all areas designated for seeding have been prepared to the satisfaction of the Consultant.

Seeding operations shall not commence until the Consultant has reviewed the Certificate of Seed Analysis and verified the specified seed mixture supplied.

#### **3.2.10.2.3 SURFACE PREPARATION**

Grading or topsoil placement shall be completed to the satisfaction of the Consultant prior to any surface preparation.

All eroded areas shall be corrected prior to surface preparation, as determined by the Consultant, using imported material or material adjacent to the area being filled.

Areas to be seeded shall be finished to a smooth and uniform surface, which is loosened to a depth of not less than 25 mm at the time of seeding. Where necessary, the surface shall be scarified, and the Contractor shall dispose of stones and other debris as determined by the Consultant.

Seeding will not be permitted on hardened, crusted, or rutted soil.

#### **3.2.10.2.4 WEATHER CONDITIONS**

The Contractor shall not proceed with the Work when, in the opinion of the Consultant, weather conditions are unsuitable. The Consultant will not allow work to proceed when wind conditions are such that material is being carried beyond the designated work areas or that the material is not being uniformly applied.

#### **3.2.10.2.5 CLASSES OF SEEDING**

All seeding, for whatever purpose, will be classified as specified herein.

##### **3.2.10.2.5.1 DRILL SEEDING**

Drill seeding shall include the supply of suitable equipment to perform the Work, the supply and placement of the specified seed mixtures and fertilizer (when specified) at locations specified in the Special Provisions or as directed by the Consultant. In areas that are inaccessible to conventional equipment, the Contractor may utilize broadcast seeding methods.

Distribution of the seed and fertilizer (if required) shall be at a uniform rate and not less than the minimum specified rate of application. The Contractor's equipment shall be calibrated to distribute seed and fertilizer into the soil at not less than specified minimum rates of application. The equipment shall then cover the seed and fertilizer with a suitable covering of soil.

##### **3.2.10.2.5.2 BROADCAST SEEDING**

Broadcast seeding shall include the application of the specified seed mixtures and fertilizer (when specified) at locations specified in the Special Provisions, or as determined by the Consultant using an acceptable cyclone seeder or approved hand methods. Any areas seeded using broadcast methods shall be immediately harrowed to provide an acceptable covering of soil for the seed, and surface textured using track-walking or some other means acceptable to the Consultant.

The Contractor shall provide a means of verifying the quantities of seed and fertilizer applied using cyclone or hand-methods, either by weight or by a system of volume measurement acceptable to the Consultant.

##### **3.2.10.2.5.3 HYDRO SEEDING**

Hydro seeding shall include the supply of suitable equipment and the application of a spray pumped mixture of water, seed, fertilizer (if required), hydro-mulch and tackifier at locations specified in the Special Provisions or as directed by the Consultant.

Hydro seeding equipment shall have a storage tank with continuous agitation to maintain seed, fertilizer, and hydro-mulch uniformly mixed until pumped from the tank. The pump pressure shall maintain a continuous non-fluctuating stream of solution that is calibrated to distribute seed into the soil at not less than specified minimum rates of application.

Generally, those areas which, in the opinion of the Consultant, are impractical to drill seed due to the terrain characteristics or access problems will be designated for hydro seeding.

**3.2.10.2.6 SLOPE TEXTURING**

Slope texturing is the roughening of the surface by some mechanical means acceptable to the Consultant, or by track-walking a dozer or similar tracked vehicle perpendicular to the slope, to provide a serrated texture that will reduce erosion potential. The Work shall be performed in accordance with B.M.P. 34a of the *Design Guidelines for Erosion and Sediment Control*, except as modified herein.

All cut and fill slopes with slopes equal to or steeper than 3H:1V with a vertical height greater than 1.5 m.

For hydro seeding, the slope texturing shall be performed prior to the application of seed. For broadcast seeding, the slope texturing shall be performed after the application of seed. For drill seeding, slope texturing is not required.

**3.2.10.2.7 APPLICATION RATES**

The following application rates are the minimum required:

Drill Seeding	7 - 15 kg/ha
Broadcast Seeding	30 kg/ha
Fall Cover Crop	5 kg/ha
Hydro Seeding	75 - 100 kg/ha
Hydro-Mulch	1150 kg/ha

**3.2.10.2.8 HARROWING**

When required, the Contractor shall harrow areas designated for harrowing immediately after seed and fertilizer is applied.

**3.2.10.2.9 PROTECTION**

The Contractor shall take reasonable care to prevent the contamination of structures, signs, guardrails, fences, utilities, and other installations by his or her operations. Where such contamination occurs, the Contractor shall remove the offending material using methods acceptable to the Consultant.

The Contractor shall ensure that hydro-seeding does not dislodge soil or cause erosion.

The Contractor shall be responsible for the protection of the Work and shall, at his or her own expense, repair all areas damaged by any cause, until the Work has been accepted by the Consultant.

**3.2.10.2.10 RE-SEEDING**

At locations that fail to show a uniform stand of grass for any reason during the calendar year following the year of initial seeding, the Contractor shall repair the defective locations as determined by the Consultant. A uniform stand of grass will be considered growth that shows no deterioration or contiguous bare spots greater than 1.0 m<sup>2</sup> in area and provides a minimum of 80 percent ground cover as determined by the Consultant.

The initial inspection of seeding will occur during the month of May of the calendar year following the year of initial seeding. The Contractor shall complete any required reseeding work prior to June 15 of that year. This date will be extended if, in the opinion of the Consultant, the weather conditions prior to June 15 are not suitable for reseeding work.

The requirement to re-seed will be considered to be a warranty requirement in accordance with Section 1.28, Warranty, and shall meet all the requirements for initial the seeding, including seeding method, seed and fertilizer mixtures, application rates, harrowing, and slope texturing as applicable. The Contractor will not be required to reseed any area more than once during the warranty period.

The Contractor shall supply all materials necessary for reseeding work and complete all reseeding work entirely at his or her own expense.

**3.2.11 SUPPLY OF AGGREGATE**

This specification covers the general requirements for the supply of aggregate materials by the Contractor. Aggregate materials are considered the total of the granular portion of construction materials consisting of the coarse and fine gravel splits, blend sand and manufactured fines when required.

**3.2.11.1 AGGREGATE CATEGORIES**

For the purposes of administering the operational and payment conditions concerning the supply of aggregate for the Work, aggregate sources are categorized as follows:

**3.2.11.1.1 AGGREGATE SOURCES NOT CONTROLLED BY THE TOWN**

The following are deemed to be aggregate sources not controlled by the Town:

- i. a Crown source on undeeded land, operated primarily under lease or license and for which the Town does not have a reservation.
- ii. a private source for which the Town does not have a royalty agreement and does not hold an approval under the Environmental Protection and Enhancement Act.

**3.2.11.2 GENERAL REQUIREMENTS FOR THE USE OF ALL AGGREGATE SOURCES**

When supplying aggregate from any source, the Contractor shall:

- i. assume full responsibility for the quantity and quality of the material in the aggregate source;

- ii. specify the location of the proposed aggregate source(s) and haul routes, prior to Contract award;
- iii. acquire the necessary rights to remove materials from all aggregate sources, if needed, except sources controlled by the Town;
- iv. save the Town harmless from any and all claims resulting from the use of the aggregate sources.

The Town will not consider the use of aggregates from existing stockpiles unless the Contractor can satisfy the Town that the aggregate in question meets all required specifications.

**3.2.11.3 MATERIALS**

The Contractor shall supply aggregate materials in accordance with Section 3.2.11, Supply of Aggregate. The aggregate supplied shall meet the classifications outlined on the drawings and the following gradation requirements (Table 3.2.11.3).

For the existing driveway at 724 Hunter Drive, the finishing surface consists of red shale gravel. Work on this driveway may be required to be finished with the same or similar red shale gravel.

**SPECIFICATIONS**

**TABLE 3.2.11.3 SPECIFICATIONS FOR AGGREGATE**

DESIGNATION	1				2				3				4			5		6		7	8	9		
	10	12.5	16	25	*16(N2)	20	25	40	12.5AW	12.5BW	12.5C	16	20	25	40	10A	10B	80	125	40	25	8		
Percent Passing Metric Sieve  (CGSB 8-GP-2M) µm	125 000																		100	100				
	80 000																	100						
	50 000																	55-100	55-100					
	40 000							100							100						100			
	25 000				100			100	70-94						100				38-100	38-100		100		
	20 000				85-95		100	82-97						100		55-90								
	16 000			100	75-87	100	84-94	70-94	55-85				100						32-85	32-85		90-100		
	12 500		100	80-92	65-80	89-100				100	100	100	72-95											
	10 000	100	83-92	70-84	58-72	78-94	63-86	52-79	44-74	35-65	55-75	70-93	53-82	35-77	30-77	25-72	100	100				85-100	45-75	
	8 000																						100	
	5 000	60-75	55-70	50-65	40-58	55-70	40-67	35-64	32-62	0-15	0-15	30-60	27-54	15-55	15-55	8-55	70-90	45-70	20-65	20-65		0-15	85-100	
	1 250	26-45	26-45	26-45	25-44	26-45	20-43	18-43	17-43	0-3	0-3	9-28	9-28	0-30	0-30	0-30	20-45	20-45				40-100	0-5	45-75
	630	18-38	18-38	18-38	16-36	18-38	14-34	12-34	12-34															30-50
	315	12-30	12-30	12-30	10-28	12-30	9-26	8-26	8-26			0-15	0-15				9-22	9-22	6-30	6-30		17-100		18-30
	160	8-20	8-20	8-20	6-18	8-20	5-18	5-18	5-18			0-11	0-11				5-15	5-15						10-21
80	4-10	4-10	4-10	4-10	4-10	2-10	2-10	2-10	0-0.3	0-0.3	0-8	0-8	0-12	0-12	0-12	0-10	0-10	2-10	2-15		6-30		5-15	
% FRACTURE BY WEIGHT (2 FACES)	ALL +5000	*See Note (N1)				60+	60+	60+	50+	75+ (100% 1 Face)	75+ (100% 1 Face)	60+	60+	40+	40+	25+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
PLASTICITY INDEX (PI)	NP	NP	NP	NP	NP	NP-6	NP-6	NP-6	N/A	N/A	NP-4	NP-4	NP-8	NP-8	NP-8	NP-6	NP-6	NP-8	NP-8	NP-5	NP-5	NP		
L.A. ABRASION (% LOSS MAX.)	40	40	40	40	50	50	50	50	35	35	35	35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35	
MICRO-DEVAL (% LOSS MAX.)	17	17	17	17	21	21	21	21																
FLAKINESS INDEX	N/A								MAX 15				N/A											
COEFFICIENT OF UNIFORMITY (CU)	N/A																		3+	N/A				

Designations:

- Designation 1 - Asphalt Concrete Pavement
- Designation 2 - Base Course Aggregate
- Designation 3 - Seal Coat Aggregate
- Designation 4 - Gravel Surfacing Aggregate
- Designation 5 - Sanding Material
- Designation 6 - Gravel Fill
- Designation 7 - Cement Stabilized Base Course Aggregate
- Designation 8 - Granular Filter Aggregate
- Designation 9 - Slurry Seal Aggregate

\* Notes:

- N1. According to Specification 3.50, Asphalt Concrete Pavement - EPS or 3.53, Asphalt Concrete Pavement - Superpave and Mix Type Specified of the Standard Specifications for Highway Construction
- N2. Designation 2 Class 16 Material is for ASBC
- N3. For crushed aggregates other than all Designation 5 and Designation 9 materials, a tolerance of three percent in the amount passing the maximum size sieve will be permitted provided all oversize material passes the next larger standard sieve size.
- N4. Unless otherwise specified, Pit-Run Aggregate will be defined as unprocessed granular material, with no specified gradation requirement, that is extracted from an aggregate deposit

---

### **3.2.12 TEMPORARY STOCKPILING**

This specification covers the general requirements for stockpiling of aggregate material and other materials on site, including, but not limited to common excavation, import fill, riprap, and topsoil.

#### **3.2.12.1 CONSTRUCTION**

##### **3.2.12.1.1 STOCKPILING**

When temporary stockpiles are used as part of construction operations, the following shall apply:

- i. If, in order to expedite his or her construction operation, the Contractor constructs temporary stockpiles at sites of his or her own choosing, he shall arrange for such sites and be responsible for them in all respects, including all costs for clearing, removal and salvage of overburden and other site preparation and reclamation. The Consultant shall approve the locations proposed for the temporary stockpiles prior to any material being stockpiled.
- ii. Stockpiles shall not be constructed at locations or by methods that will interfere with or damage any utilities such as power lines, telephone lines, pipelines, and underground utilities.
- iii. If different types of material are to be stockpiled, the piles shall be located and constructed so that no intermixing of material will occur.
- iv. ESC measures shall be in place around the stockpiles, as needed to ensure no deleterious material runs offsite. ESC measures are required for but not limited to common excavation stockpiles, imported fill stockpiles, and topsoil stockpiles. ESC measures shall be confirmed and approved by the Consultant prior to erection. ESC measures around stockpiles are deemed incidental to the Work and no extra payment for ESC measures around the stockpiles will be made.

#### **3.2.12.2 GRAVEL SURFACING**

Gravel surfacing shall consist of the shaping of the road surface as required, and the placing of crushed gravel thereon as designated by the Consultant.

#### **3.2.12.3 MATERIALS**

The Contractor shall supply crushed aggregate in accordance with Section 3.2.11, Supply of Aggregate. The Contractor shall haul aggregate materials in accordance with Section 3.2.13, Hauling.

#### **3.2.12.4 CONSTRUCTION**

Equipment used for shaping or for spreading gravel shall operate in the direction of normal traffic flow at all times.

---

### **3.2.12.4.1 PLACING OF GRAVEL MATERIAL**

The road surface shall be shaped to the proper grade, crown and super elevation as shown on the Drawings or as directed by the Consultant.

The Contractor shall advise the Consultant at least 24 hours prior to commencement of gravel surfacing operations to allow inspection of the prepared road surface. Gravel surfacing may proceed only on sections of road which have been approved by the Consultant.

The gravel shall be placed in one or more layers as designated by the Consultant, and the amount of gravel surfacing material to be placed in each layer will be as shown on the Drawings or as designated by the Consultant.

Gravel shall be promptly and uniformly spread, and in all cases shall be spread before darkness each day. Every precaution shall be taken by the Contractor to provide for the safety of traffic in the area of operations.

After gravel surfacing is complete, the Contractor shall repair all damage to the shoulders or ditches resulting from his or her operations, leaving the road neatly trimmed and true to cross-section and grade.

The contractor shall provide the necessary equipment, staff, material, to compact the gravel surface to the necessary compaction requirements.

The Contractor shall maintain the graveled surface until it is accepted by the Consultant. Maintenance shall be at the Contractor's own expense and shall be carried out daily or at frequent intervals, depending upon the effects of traffic and weather upon the graveled sections of roadway.

### **3.2.13 HAULING**

#### **3.2.13.1 GENERAL**

##### **3.2.13.1.1 DESCRIPTION**

This specification applies to the hauling of all granular materials produced under Section 3.2.11, Supply of Aggregate, and the hauling of all mixtures of granular material under the applicable specification as required by the Drawings or as designated by the Consultant. This specification covers the following:

- a. The administration of haul roads from all aggregate sources;
- b. Hauling granular materials and mixtures of granular material with asphalt or cement bid by unit weight or volume;
- c. Hauling granular materials and mixtures of granular material with asphalt or cement bid "In-Place".

##### **3.2.13.1.2 DEFINITIONS**

For purposes of this specification, the following definitions will apply:

---

#### 3.2.13.1.2.1 AGGREGATE SOURCES

The categories of aggregate sources are as specified in Section 3.2.11, Supply of Aggregate.

#### 3.2.13.1.2.2 HAULING

The process of transporting material from its point of loading to its designated delivery point.

#### 3.2.13.1.2.3 HAUL ROAD

A route over which materials are hauled for the performance of the Contract with the exception of any portion of the road within the contract construction limits.

#### 3.2.13.1.2.4 CONVERSION FACTORS

Where the application of conversion factors is necessary, the following standard values shall be used:

- 1.63 t/m<sup>3</sup> for gravel (pit-run and crushed, regardless of class), and
- 1.36 t/m<sup>3</sup> for sand.

### **3.2.13.1.3 IDENTIFICATION OF HAUL ROUTES**

At the time of Contract execution, the Contractor shall provide land title or public land standing reports and shall state the location of his or her proposed aggregate sources and haul routes. The Contractor shall be responsible for obtaining authority to haul over the proposed haul routes from the agency having jurisdiction. The use of provincial highways as haul routes is subject to prior approval by the Town, and may also require approval from Alberta Transportation.

The Contractor shall abide by all road restrictions established by the road or bridge authority having jurisdiction, including all roads and portions of the highway or road within the Contract construction limits.

### **3.2.13.2 HAULING**

#### **3.2.13.2.1 VEHICLE REQUIREMENTS**

Haul vehicles shall comply with the Alberta Traffic Safety Act and shall have Alberta Class 1 registration.

Each truck used for hauling shall have current registration with the Alberta Sand and Gravel Association (ASGA) Registry, or equivalent registry system designed to allow the public to lodge haul related complaints.

Each haul truck shall display signs on three sides of the vehicle indicating the name of the registry system and displaying a clearly visible toll-free telephone contact number and unique truck identifier. The truck identifier shall have no more than 8 characters, with a minimum height of 150 mm per character.

The registry system used shall forward all complaints received to the Contractor; shall record the nature of the complaint; and shall be able to provide the Town with summary statistics when requested.

Prior to a haul truck being used, the Contractor shall provide the Consultant with identification information including the haul truck number, truck registration identifier, allowable gross vehicle weight and tare vehicle weight.

For vehicles hauling on a cubic meter basis the approved capacity will be the struck measure of the box as calculated by the Consultant to the closest 0.1 m<sup>3</sup>.

### **3.2.13.2.2 HAULING RESTRICTIONS**

The Consultant may direct that hauling operations will not be permitted if excessive damage to highways or public roads will occur or when hauling operations cause serious hazards or difficulties to the travelling public. The conditions when this may occur will generally be:

- a. When spring thaw is taking place;
- b. During or after heavy rainfall;
- c. During periods of exceptionally heavy traffic.

The Contractor shall abide by all load restrictions established by the road or bridge authority having jurisdiction.

If work must be carried over from one construction season to the next, the Consultant may order that when work closes down for the season, the Contractor shall repair any damage to public roads caused by his or her hauling operations.

### **3.2.13.2.3 CONSTRUCTION, INITIAL CONDITIONING AND MAINTENANCE OF HAUL ROADS**

The Contractor shall initially condition, maintain and restore roads used as haul roads to the satisfaction of the agency having jurisdiction. The Contractor shall also be responsible for construction of new haul roads where necessary.

All costs incurred in such work shall be borne by the Contractor.

The Contractor shall, at his or her own expense, spread and compact the asphalt mixes.

## **~~3.2.14 SUPPLY OF FENCE MATERIAL~~**

### **~~3.2.14.1 GENERAL~~**

#### **~~3.2.14.1.1 DESCRIPTION~~**

~~The Work consists of supplying all required materials for the construction of fence including, but not limited to, the following:~~

- ~~• Split Cedar Posts~~
- ~~• Pressure Treated Wood Posts and Braces~~
- ~~• Single Strand Barbed Wire~~
- ~~• Brace Wire~~
- ~~• Staples~~

---

### **~~3.2.14.1.2 ABBREVIATIONS AND DEFINITIONS~~**

Wherever in these specifications the following abbreviations are used, the intent and meaning shall be as follows:

A.S.T.M.: ~~\_\_\_\_\_~~ The American Society for Testing Materials

C.S.A.: ~~\_\_\_\_\_~~ The Canadian Standards Association

### **~~3.2.14.2 MATERIALS~~**

#### **~~3.2.14.2.1 GENERAL FOR WOOD POSTS~~**

Posts shall be of sound quality, free from all decay, shakes, splits, multiple crooks or any other defects which would render them structurally unsuitable for the purpose intended. All posts shall comply with the minimum-maximum top diameter as specified. The top of the post shall mean the small end of the post. The ends of the posts shall be cut square and the length of individual posts shall not vary by more than plus or minus 25 mm from the length required for the applicable installation.

#### **~~3.2.14.2.2 SPLIT CEDAR POSTS~~**

Untreated split cedar posts shall be cut from sound timber and shall have an allowable taper from end to end not exceeding 114 mm in perimeter.

#### **~~3.2.14.2.3 PRESSURE TREATED WOOD POSTS AND BRACES~~**

Pressure treated wood posts and braces shall be fir or pine timber, as specified. Knots that are sound, well spaced, smoothly trimmed and which do not impair the strength of the posts or braces will be permitted providing they do not exceed 38 mm in diameter on any face. Posts shall be naturally round and shall have all bark peeled or otherwise removed. Allowable taper from end to end of posts shall not exceed 38 mm in diameter.

Braces shall be sawn square or rectangular to the standard nominal dimensions as specified.

Posts and braces shall be treated by pressure methods with 50/50 creosote-petroleum solution or a chromated copper arsenate solution. The preservative agent shall conform to the requirements of the current edition of C.S.A. Standard 080. The minimum retention of preservative in the wood, as determined by assay, shall be as specified in the following Table 3.2.14.2.3.

**Table 3.2.14.2.3: Minimum Retention of Preservative in the Wood**

	<b>Round Posts</b>	<b>Sawn Braces</b>
Sample Zone for Assay (mm from surface)	0-19	0-16
Minimum Net Retention (kg/m <sup>3</sup> ) Creosote – Petroleum	96	96
Chromated Copper Arsenate (CCA)	6.4	6.4

Requirements for the preservative treatment of round posts and sawn braces shall conform to the current requirements of C.S.A. Standard 080 with specific attention to 080.1, 080.2 and 080.5.

**3.2.14.2.4 SINGLE STRAND BARBED WIRE**

Single strand barbed wire shall conform to the requirements of the current edition A.S.T.M. Designation A121, "Standard Specifications for Zinc-Coated (Galvanized) Steel Barbed Wire". The requirements regarding uniform twisting of strands will be waived. Single strand barbed wire shall conform to the following minimum requirements:

Measure of wire per spool	402 m
Minimum mass per spool	24 kg
Wire thickness	2.64 mm
Minimum tensile breaking strength of wire	500 kg
Barb spacing	125 mm
Number of points per barb	4

The barbs shall be firmly and securely fixed in position.

**3.2.14.2.5 BRACE WIRE**

For all fence types other than Class "F", brace wire shall be minimum 3.66 mm thick, soft galvanized wire, with a mass of not less than 2.5 kg for each 30.5 m of wire. Brace wire for Class "F" fence shall consist of doubled, minimum 9-gauge galvanized wire.

**3.2.14.2.6 STAPLES**

Staples shall be minimum 40 mm long barbed staples, manufactured from minimum 3.66 mm thick galvanized wire. There shall be approximately 140 staples per kilogram.

**3.2.14.2.6.1 INSPECTION, SAMPLING AND TESTING**

At the time of shipment, the Contractor shall provide certification indicating the specification number according to which the material being supplied was produced and tested.

All materials shall be subject to inspection, sampling and quality assurance testing by the Consultant and the Contractor shall provide safe, convenient access, acceptable to the Consultant, for inspection and sampling of the materials, and shall co-operate in the inspection and sampling process when requested to do so. The Contractor shall be responsible for any costs resulting from such inspections, including the cost of replacing any fence materials damaged by such inspection, sampling, or testing.

Any material found unacceptable by the Consultant shall be immediately removed and replaced with acceptable material by the Contractor, at the Contractor's expense.

### **3.2.15 SUPPLY OF CORRUGATED METAL PIPE**

This specification covers the requirements for the supply of corrugated metal pipe and pipe arches up to 1,400 mm equivalent diameter by the Contractor.

Abbreviations for the various types of metal pipe are as follows:

- C.S.P. - Corrugated Steel Pipe

#### **3.2.15.1 MATERIALS**

The Contractor shall ensure that the supply and fabrication of all galvanized, polymer coated and aluminum coated corrugated steel pipe (CSP) and pipe arches including couplers and appurtenances are in accordance with the latest edition of Canadian Standards Association (CSA) G401 Specification, with the following modifications:

Previously installed pipe shall not be used. All pipe supplied shall be clearly marked with the following information at intervals of not more than 3 m.

- Manufacturer's Name or Trademark
- Nominal Thickness and Type of Metal
- Plate/Metal Coating (for non-standard coating)
- Specification Designation
- Plant Designation Code
- Date of Manufacture

##### **3.2.15.1.1 SLOPED END SECTIONS**

Sloped end sections are required for each culvert. When 4:1 and 3:1 sloped end sections are specified, templates CB6-5.15M1 and CB6-5.15M2 will apply.

##### **3.2.15.1.2 COUPLERS**

Annular corrugated couplers for pipe greater than 300 mm in diameter shall be of sufficient width to cover at least two outside crest corrugations on each recorrugated end.

---

**3.2.15.1.3 COUPLER BANDS**

Coupler bands for pipe greater than 800 mm in diameter shall have a minimum of three bolts.

**3.2.15.1.4 RECORRUGATED ENDS**

Spirally corrugated metal pipe shall have ends recorrugated to provide annular corrugations for couplers.

**3.2.15.2 INSPECTION, SAMPLING AND TESTING**

All materials shall be subject to inspection, sampling and quality assurance testing by the Consultant and the Contractor shall provide safe, convenient access, acceptable to the Consultant, for inspection and sampling of the materials, and shall co-operate in the inspection and sampling process when requested to do so.

The Contractor shall contact the Consultant at least 72 hours prior to shipping the materials to coordinate any inspection, sampling or testing at the manufacturing location and the delivery site that the Consultant deems necessary.

Any material found unacceptable by the Consultant shall be replaced with acceptable material by the Contractor at his or her own expense.

**3.2.16 GEOTEXTILE****3.2.16.1 GENERAL**

The Work includes the supply and installation of both nonwoven and woven geotextile at locations shown on the Drawings, described in the Special Provisions, or as directed by the Consultant.

**3.2.16.1.1 NON-WOVEN GEOTEXTILE FILTER FABRIC**

Contractor to supply and place non-woven geotextile filter fabric prior to the placement of bedding gravel. The Contractor shall supply and install non-woven geotextile filter fabric in accordance with Alberta Transportation's Standard Specifications for Bridge Construction, Section 10, Heavy Rock Riprap. The non-woven geotextile should meet Type C Nonwoven specifications in the Table 3.2.16.1.1 below.

Supplier and product shall be a product which is currently on Alberta Transportation Product List at the time of installation. Installation of the product shall follow manufacturer guidelines.

**Table 3.2.16.1.1 : Separation and Filtration Geotextile Properties**

Property	ASTM Test	Mechanical Properties		
		Minimum Average Roll Values		
		Type A Nonwoven	Type B Nonwoven	Type C Nonwoven
Grab Tensile Strength (N)	D4632	500	700	900
Grab Tensile Elongation (%)	D4632	50%	50%	50%
Static Puncture Strength (N)	D6241	990	1375	1925
Trapezoid Tear (N)	D4533	180	250	350
Sewn Seam Strength (N)	D4632	450	630	810
Ultraviolet Stability (% Retained Strength)	D4355	50% @ 500 hr.	50% @ 500 hr.	50% @ 500 hr.
Apparent Opening Size (mm)	D4751	0.3 max	0.3 max	0.3 max
Permittivity (per sec)	D4491	1.7	1.5	1.2

Notes:

1. All numeric values in Table 3.2.16.1.1, except AOS, represent minimum average roll values (MARV) in the weaker principal direction. Values of AOS represent maximum average roll values.
2. If sewn, minimum two rows of sewing is required with at least 200 mm of overlap. The sewn strength shall be equal to or greater than 90% the specified grab strength.
3. Default value. Permittivity of the geotextile should be greater than that of the soil. The Consultant may also require the permeability of the geotextile to be greater than that of the soil.

### **3.2.16.1.2 EROSION CONTROL PRODUCTS & ROLLED EROSION CONTROL PRODUCTS**

Contractor to supply and place erosion control products as described on the drawings, including, but not limited to GEOCOIR, or as directed by the Consultant. The erosion control products should be placed prior on top of the finished topsoil prior to hydroseeding/hydro-mulching. If seeding is completed via broadcast or drill seeding, the erosion control product is to be placed after the seeding is completed.

The erosion control products should be temporary, bio-degradable, and designed to last at a minimum the project warranty period.

Supplier and product shall be a product which is currently on Alberta Transportation Product List at the time of installation. Installation of the product shall follow manufacturer guidelines.

---

### **3.2.16.2 QUALITY CONTROL AND ASSURANCE**

The Contractor shall provide the Consultant a manufacturer's certificate stating the name of the manufacturer, product name, style number, chemical composition of the filaments or yarns, and other pertinent information to fully describe the geotextile. Only Mill Certificates originating from the manufacturer will be accepted.

The manufacturer is responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. Documentation describing the quality control program shall be made available upon request. Quality control measures such as laboratory testing shall have been conducted by a laboratory accredited by the Geosynthetic Accreditation Institute Laboratory Accreditation Program (GAI-LAP) to perform the required test methods.

The manufacturer's certificate shall state that the furnished geosynthetic meets minimum average roll value (MARV) requirements. A person having the legal authority to bind the manufacturer shall attest to the certificate.

The Consultant may verify the quality of Geotextile by testing at a laboratory accredited by the Geosynthetic Accreditation Institute Laboratory Accreditation Program (GAILAP). In such case, the Sampling of Geosynthetics shall be done in accordance with ASTM D4354.

### **3.2.16.3 IDENTIFICATION, SHIPMENT, AND STORAGE**

Geosynthetics are to be labelled in accordance with ASTM D4873/D4873M and must clearly show the manufacturer name, product style number and roll number.

Products without proper identification or labelling, mislabelling, or misrepresentation of materials shall be rejected. The labelling should be clearly visible on product rolls at regular intervals.

Geotextile rolls shall be wrapped with a material that will protect the geosynthetic, including the ends of the roll, from damage due to shipment, water, sunlight, and contaminants.

Protective wrapping shall be maintained during shipment and storage and shall remain on the geotextile fabric until installation.

During storage, geotextile rolls shall be elevated off the ground and adequately covered to protect them from site construction damage, precipitation, contamination by dirt or dust, extended ultraviolet radiation, and any other environmental condition that may damage the physical properties of the geosynthetic.

### **3.2.16.4 CONSTRUCTION**

The surface to receive the geotextile shall be prepared to a relatively smooth condition free of protrusions, depressions, debris, and soft or low-density pockets of material. The geotextile fabric shall be installed free from tensile stresses, folds, wrinkles, or creases.

In order to minimize the adverse effects of natural elements, the geotextile shall be covered shortly after placement, and within sufficient time so that the damage does not occur. In no case shall this time exceed 7 days for ultraviolet radiation exposed material, or 14 days for ultraviolet radiation protected material and low ultraviolet susceptible polymer geotextile.

The geotextile fabric shall be protected all times during construction. Wheeled or tracked vehicles shall not be allowed to travel directly on the geotextile fabric. Any geotextile fabric damaged during installation or during placement of overlying material shall be replaced by the Contractor at their own expense.

If a sewn seam is to be used for seaming the geotextile, the thread used shall consist of high strength polypropylene or polyester which are resistant to ultraviolet radiation. Nylon thread shall not be used.

**3.2.16.4.1 NON-WOVEN GEOTEXTILE FILTER FABRIC**

The geotextile shall be laid smooth without wrinkles or folds on the prepared subgrade in the direction of construction traffic. Adjacent geotextile panels shall be overlapped or sewn, as indicated on the plans. See Table 3.2.16.4.1 for overlap requirements.

**Table 3.2.16.4.1: Geosynthetic Overlap Requirements**

CBR $\geq$ 3%	400 – 450 mm overlap
1% $\leq$ CBR < 3%	600 – 900 mm overlap
0.5% $\leq$ CBR < 1%	900 mm overlap or sewn
CBR < 0.5%	Sewn with two rows of stitches over 200 mm overlap

Prior to covering, the geotextile shall be inspected to ensure that it has not been damaged during installation. The inspection shall be done by the Consultant. Damaged geotextiles, as identified by the Consultant, shall be repaired immediately. A geotextile patch shall be placed over the damaged area, extending beyond the damaged area a distance equal to the overlap specified in Table 3.2.16.4.1.

The soil or aggregate shall be placed by end dumping onto the geotextile from the edge of the geotextile or from previously placed soil or aggregate.

Construction vehicles shall not be allowed directly on the geotextile. The soil or aggregate shall be placed such that at least the minimum specified lift thickness shall always be between the geotextile and equipment tires or tracks. Turning of vehicles shall not be permitted on the first lift above the geotextile.

Riprap and heavy stone filling shall not be dropped from a height of more than 300 mm. Stone with a mass of more than 100 kg shall not be allowed to roll down the slope.

**3.2.16.4.2 EROSION CONTROL CONSTRUCTION**

The geotextile shall be placed in contact with the soils without wrinkles or folds and anchored on a smooth graded surface approved by the designer. The geotextile shall be placed in such a manner that placement of the overlying materials will not excessively stretch nor tear the geotextile. Anchoring of the terminal ends of the geotextile such as at the crest, toe and sides,

---

shall be accomplished through the use of anchor trenches or aprons of 300 mm deep, inserting the terminal edge of the geotextile fabric and backfilling with compacted soil.

The geotextile shall be placed with the machine direction parallel to the direction of water flow, which is usually parallel to the slope for erosion control runoff and wave action and parallel to the stream or channel in the case of streambank and channel protection. Adjacent geotextile panels shall be joined by either sewing or overlapping. Overlapped seams of roll ends shall be a minimum of 400 mm except where placed under water. In such instances, either the overlap shall be a minimum of 200 mm sewn in at least two rows, or a minimum of 1000 mm unsewn overlap. In all cases, overlaps shall be pinned using 6 mm diameter steel pins fitted with washers and spaced at 1 m intervals along the overlaps.

**Note:** When overlapping, successive panels of geotextile shall be overlapped upstream over downstream, and/or upslope over downslope. In cases where wave action or multidirectional flow is anticipated, all seams perpendicular to the direction of flow shall be sewn.

The armour system placement shall begin at the toe and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile.

### **3.2.17 WATER VALVE EXTENSION**

The Work includes the supply and installation of an extension to the existing water valve shown in the Drawings.

The Contractor shall provide all labour, materials, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.

### **3.2.18 SANITARY CLEANOUT PROTECTION**

The Work includes the supply and installation of a new concrete collar and manhole lid to protect the sanitary cleanout stub. The Contractor will also need to trim the existing cleanout to a suitable height to accommodate the concrete collar and manhole lid.

The Contractor shall provide all labour, materials, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.

### **3.2.19 SHED REMOVAL**

The Work is to remove and dispose of the existing shed within the existing Town right-of-way around Stirling Ditch.

The Contractor shall provide all labour, materials, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.

### **3.2.20 REMOVE AND SALVAGE EXISTING TRAFFIC SIGN**

The Work is to remove and salvage the existing traffic sign and post at the end of 2<sup>nd</sup> Ave. The sign and post are to be brought to the Town's public works yard 702 Premiere Way, Drumheller, AB T0J 0Y6.

For the existing sign post at 724 Hunter Dr, the post is to be removed, salvaged, stored, and re-installed.

The Contractor shall provide all labour, materials, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.

**3.2.21 REMOVAL OF EXISTING SIDEWALK**

The Work is to remove and dispose of the existing sidewalk located along Hunter Drive near the driveways for 724 Hunter Drive and 748 Hunter Drive. The proposed disposal location of the sidewalk should be satisfactory to the Consultant.

The Contractor shall provide all labour, materials, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.

**3.2.22 PLACEMENT OF SIDEWALK**

**3.2.22.1 GENERAL**

Concrete sidewalk and driveway crossings be constructed in accordance with these Specifications and the Drawings. The type of construction used, and the location shall be as shown on the Drawings or as directed by the Engineer and be in accordance with the provisions of this chapter.

The required mix properties shall be as shown in Table 3.2.22.1(1): Mix Properties of Concrete Sidewalk.

**TABLE 3.2.22.1(1): MIX PROPERTIES OF CONCRETE SIDEWALK**

<b>Type of Cement</b>	<b>Supplementary Cementing Materials</b>	<b>Maximum Water-to-Cementing Materials Ratio</b>	<b>Nominal Maximum Coarse Aggregate Size</b>	<b>Air Content</b>	<b>Slump</b>
GU, GUb or HSb	Type F <sup>1</sup> Up to 20% <sup>2</sup>	0.45	20 mm	5 % to 8%	As required by method of placement

1. CaO content of type F fly ash shall not exceed 12 %.

2. By mass of total cementing materials.

The required performance characteristics shall be as shown below in Table 3.2.22.1(2).

**TABLE 3.2.22.1(2): PERFORMANCE CHARACTERISTICS OF CONCRETE SIDEWALK**

<b>Compressive Strength at 28 Days<sup>1</sup></b>	<b>Maximum Air Void Spacing Factor</b>
32 MPa	230 µm

1. For concrete placed between September 30 and May 1, minimum specified compressive strength shall be achieved in seven days.

**3.2.22.2 PREPARATION OF BASE**

Excavate to the required depth and to a width that will allow forming. Remove unsuitable material below the required depth and replace with sound earth. Shape base to conform to the section shown on the plans and compact to 100% of design density.

---

Any subgrade preparation shall be completed prior to placing base granular material. Subgrade preparation to follow Section 3.2.5, Grading.

### **3.2.22.3 WEATHER REQUIREMENTS**

#### **3.2.22.3.1 COLD WEATHER REQUIREMENTS**

When the air temperature is at or below 5°C, or when there is a probability of the temperature falling below 5°C within 24 hours of placing as forecast by the nearest official meteorological office, cold weather requirements for concrete placement shall apply.

##### **3.2.22.3.1.1 JOB PREPARATION**

When concrete is placed in cold weather, all equipment needed for adequate protection and curing shall be on hand and ready for use before concrete placement is started.

##### **3.2.22.3.1.2 PLACING**

Snow and ice shall be removed using heat where necessary. In no case shall concrete be deposited on or against any surface at a temperature of less than 5°C.

##### **3.2.22.3.1.3 TEMPERATURE CONTROL**

At their sole discretion, the Engineer may require the Contractor, at the Contractor's expense, to establish, by way of an independent third party, a record of the daily temperature of the concrete for its initial 72 hours in each pour of 150 linear meters or portion thereof.

##### **3.2.22.3.1.4 AUXILIARY HEATING**

If the Contractor uses forced air heating units, the concrete shall be kept continuously moist during the complete heating and curing period. Combustion-type heaters may be used, but they shall be so constructed and so placed that their combustion gases do not encounter concrete surfaces during placing and curing, causing carbonation of concrete. The protection period shall be seven days, and the Contractor shall bear the cost of all heating and protection.

#### **3.2.22.3.2 HOT WEATHER REQUIREMENTS**

When the ambient air temperature is at or above 27°C, or when there is a probability of the temperature rising to 27°C during the placing period, as forecast by the nearest official meteorological office, facilities shall be provided for protection of the concrete in place from the effects of hot and drying weather. The concrete temperature at the time of placing shall not exceed 30°C.

Fogging and evaporation protection shall be used subject to the approval of the Engineer.

#### **3.2.22.3.3 TEMPERATURE NON-COMPLIANCE**

Any concrete failing to comply with the temperature requirements shall:

- If compliant to all other Specifications, be left in place with no payment.
- If non-compliant in any other aspect, be replaced.

- If freezing has occurred, be replaced.

Where non-compliance occurs, the test indicating non-compliance shall be held as representative of the test area.

#### **3.2.22.4 FORMS**

Forms for sidewalk, curb and gutter, combined sidewalk curb and gutter, aprons, invert crossings, and catch basins shall be of metal or timber properly seasoned and free from warps or other defects. Metal forms shall be of approved type and section. The face of the curb form shall be removable without disturbing back and gutter forms. Forms shall be smooth and clean on the surface(s) next to the concrete and be oiled with an approved lubricant.

Forms shall be rigidly held true to the established lines and grades. No concrete shall be deposited against forms until the forms and their placing has been approved by the Engineer.

#### **3.2.22.5 PLACING AND FINISHING CONCRETE**

Concrete operations shall be continuous until the section, panel, or scheduled pour is completed. Placing concrete during the rain or when there is imminent danger of rain is at the Contractor's risk. Lateral movement of concrete can cause segregation and shall not be permitted. Concrete shall be compacted thoroughly and uniformly using hand-tamping tools, vibrators, or finishing machines to obtain a dense, homogenous structure, free of cold joints, fill planes, voids, and honeycombing. Special care shall be taken to place the concrete against the forms, particularly in corners, to prevent voids, rough areas, and honeycombing.

Freshly placed concrete shall be protected against adverse conditions such as high wind, precipitation, freezing high temperatures, temperature differentials, and moisture loss for the period of time necessary to develop the desired properties of the concrete.

#### **3.2.22.6 JOINTS**

##### **3.2.22.6.1 EXPANSION JOINTS**

Lateral expansion joints are required at the beginning and end of every corner. The joint shall consist of an approved mastic preformed material, 15 mm by 90 mm cross-section, laid plumb and straight, 6 mm below the finished sidewalk grade.

##### **3.2.22.6.2 CONTRACTION JOINTS**

Contraction joints shall be cut at every 1.5 m using a marking tool or other approved method. Joints shall not be less than 30 mm in depth and 6 mm in width. The edges of the joint shall be rounded off with an edger having a radius of 6 mm.

Contraction joints in medians, traffic islands, and gores shall extend the entire width of the median, traffic island, curb and gutter, and gore. If the matching of joints is impossible because of irregular shapes, the Engineer may approve an alternate jointing pattern.

Contraction joints in monolithic sidewalk shall extend through the entire width of the sidewalk and curb and gutter.

---

Contraction joints in regional pathways shall be sawed. In lieu of sawing, the tool mark shall be broomed after cutting.

Contraction joints at catch basins shall be cut through the entire width of the sidewalk in line with both outside edges of the catch basin side inlet.

#### **3.2.22.6.3 SAWED JOINTS**

Saw cuts as specified are made with a concrete saw capable of producing a true straight joint of constant depth as specified.

#### **3.2.22.6.4 SURFACE JOINTS**

Surface joints shall be 15 mm in depth and 6 mm in width. The edge of the joint shall be rounded off with an edger having a radius of 6 mm.

#### **3.2.22.7 FINISHING**

Application of water to the concrete surface to aid finishing is not permitted. Fogging and/or applying admixtures to control surface evaporation is acceptable.

A steel trowel finish shall not be applied to air entrained concrete. One or more passes of a magnesium float shall be made at suitable time intervals to obtain a level finish free of ridges. Broom finish shall be applied when concrete has hardened sufficiently. The broom strokes should be square across the slab with adjacent strokes slightly overlapped to produce regular corrugations not over 3 mm in depth. The broom finish shall be carried out in accordance with applicable drawings and such a manner and at such a time as to minimize the depth and quantity of broom marks.

Broom finish shall be applied perpendicular to the pedestrian traffic except at crossings brushed perpendicular to the vehicle traffic.

#### **3.2.22.8 CURING**

A curing compound shall protect the surface of the concrete. The material shall be applied uniformly; the application rate shall be as per the manufacturer's recommendations.

#### **3.2.22.9 PROTECTION OF WORK**

The Contractor shall supply and place all necessary material to protect the work from rain, dust, frost, or hot weather conditions. The Contractor shall mist concrete elements with water at their own expense if deemed necessary by the Engineer to protect the work.

The Contractor shall barricade the work and keep people, animals, and vehicles off the work for a period of five days after the finishing of the concrete is completed. Any damage occurring to the work during this five-day period regardless of origin shall be replaced or repaired by the Contractor to the satisfaction of the Engineer within one month after notice is given to the Contractor.

Where the Engineer considers damage to any private walk, driveway, steps, fence, gate, posts, or other private property is caused by negligence on the part of the Contractor, the Contractor, at their own expense and within two weeks of the notice being given, shall repair or replace the

specific damage to the satisfaction of the Engineer. The Engineer's decision on all matters pertaining shall be final.

### **3.2.22.10 BACKFILLING**

After the concrete gains the needed strength, remove fixed forms and backfill with sound earth. Compact and level the backfill 30 mm below the concrete surface.

### **3.2.23 RECLAIMED ASPHALT PAVEMENT**

#### **3.2.23.1 GENERAL**

This specification covers the requirements for Cold In-Place Recycling (CIR) which consists of reclaiming the existing asphalt pavement; sizing the reclaimed material; adding corrective aggregate (if required); adding a bituminous stabilizer; adding other additives; mixing of all components and spreading and compacting the cold in-place recycled mix.

#### **3.2.23.1.1 TEST PROCEDURES**

ATT 11	Density, In-Place Nuclear Method
ATT 12 & ATT 26	Extraction and Sieve Analysis (25 000 µm minus)
ATT 13	Forming Marshall Specimens, Field Method
ATT 15	Moisture Content, Part II, Oven Method, Emulsified Asphalt Mixtures
ASTM D 1188	Bulk Specific Gravity / Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
ASTM D6752	Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixes

#### **3.2.23.1.2 DEFINITIONS**

**Cold In-Place Recycling (CIR)**, for the purposes of this project, is defined as a pavement rehabilitation technique where the top portion of the asphalt pavement is recycled and stabilized in-place without heat; the construction process is carried out with a train of multi-functional recycling equipment.

**Cold In-Place Recycled (CIR) Mix** means the in-situ mixture of reclaimed existing asphalt pavement, corrective aggregate if used, Portland cement or other approved additive, bituminous stabilizer, and water.

---

**Bituminous Stabilizer**, unless otherwise specified, an emulsified asphalt or foamed asphalt cement, but not both, may be used.

**Foamed Asphalt** means a process where heated asphalt cement is expanded from its normal volume by the addition of precise amounts of water.

**Visually Failed Area** is an area of CIR mat which fails, loses specified density, becomes too wet, ravels, contains excess bituminous stabilizer or oil spills, becomes rutted, distorted, loose or rough, or contains any other defect judged by the Consultant to negatively affect the long-term performance of the pavement structure.

### **3.2.23.2 MATERIALS**

#### **3.2.23.2.1 RECLAIMED ASPHALT PAVEMENT**

Millings shall be supplied by the Town. The contractor can pickup millings at the landfill located at 2500 Highway 10 East Drumheller, AB. Contractor to coordinate landfill pickup directly with landfill staff and within the regular business hours of the landfill. Landfill hours can be found at the following link and are generally 8:00am to 4:30pm Monday to Friday; 9:00am to 5:00pm Saturday; and closed on Sunday. Extending the landfill hours will not be considered.

<https://www.drumhellerlandfill.com/general-info/hoursfees>

Trucks are to be weighed in out of the landfill for quantity tracking.

Further contact with the landfill can be coordinated with Sonya Adams, Landfill Manager at (403) 823-1345.

#### **3.2.23.2.2 BITUMINOUS STABILIZER**

Unless otherwise specified, the type of bituminous stabilizer to be used by the Contractor shall be either an emulsified asphalt or an asphalt cement to be used as part of a foaming process.

The Contractor shall select the grade of emulsified asphalt to be used in accordance with the grades listed in Specification 5.7 Supply of Asphalt of the Alberta Standard Specifications for Highway Construction. Use of alternative grades not listed in Specification 5.7 of the Alberta Standard Specifications for Highway Construction will be subject to the approval of the Consultant. When proposing to use an alternative grade the Contractor shall provide the appropriate ASTM or AASHTO material specification.

The Contractor shall select the grade of asphalt cement best suited for foaming purposes. Asphalt cement used for foamed asphalt shall meet the requirements of Specification 5.7, Supply of Asphalt, of the Alberta Standard Specifications for Highway Construction, for the grade selected.

Sampling of the bituminous stabilizer shall be as outlined in Specification 5.7 of the Alberta Standard Specifications for Highway Construction at a frequency of one sample per three Lots.

#### **3.2.23.2.3 CIR ADDITIVE**

A Portland cement additive shall be incorporated into all CIR mixes at a nominal rate of 1.0 percent by weight of reclaimed pavement material. Other addition rates for Portland cement, to a maximum of 1.5 percent, will be allowed if the material characteristics are demonstrated to have

---

been improved in the mix design process. Portland cement shall be Type GU that meets the requirements of Specification 5.11, Supply of Portland Cement, of the Alberta Standard Specifications for Highway Construction.

Other additives such as lime may be used subject to approval of the Consultant.

#### **3.2.23.2.4 CORRECTIVE AGGREGATE**

Corrective aggregate is only to be used if so, specified within the contract documents or the mix properties are demonstrated to be improved.

Corrective aggregate, if required by the mix design, shall meet the requirements of a Designation 1 Class 12.5 aggregate as outlined in Section 3.2.11, Supply of Aggregate unless otherwise approved by the Consultant.

When required, the Contractor shall supply aggregate in accordance with Section 3.2.11, Supply of Aggregate and haul materials in accordance with Section 3.2.13, Hauling.

#### **3.2.23.2.5 WATER**

Water shall be clean and free from deleterious concentrations of acids, alkalis, salts or other organic or chemical substances.

### **3.2.23.3 CONSTRUCTION**

#### **3.2.23.3.1 OPERATIONAL CONSTRAINTS**

When using an emulsion stabilizing agent the work shall not be carried out when the ambient temperature is less than 10°C, or when the overnight low is forecast to be less than 2°C. When using foamed asphalt, the work shall not be carried out when the ambient temperature is less than 5°C. The work shall be carried out when the roadway is clean and free of standing water.

When emulsion is used for bituminous stabilization, the wearing surface course shall not be placed until the Contractor has demonstrated that the specification requirements have been met.

When foamed asphalt is used for bituminous stabilization, the wearing surface course shall not be placed until the CIR mix has been allowed to cure for a minimum of 2 days and the Contractor has demonstrated that the specification requirements have been met.

#### **3.2.23.3.2 GENERAL**

The CIR mix shall be spread and compacted to the specified width, thickness, and cross slope dimensions. The Contractor shall be responsible for managing and disposing of any excess CIR or reclaim pavement material in a manner subject to the approval of the Consultant. Spreading excess material across existing paved shoulders will not be permitted. No separate or additional payment will be provided to the Contractor for the disposal of excess materials unless otherwise provided in the special provisions.

All traffic, including construction traffic, shall be kept off the freshly placed CIR mat until it is able to carry traffic without damage. The Contractor shall be responsible for repair of the damaged CIR mat.

---

**3.2.23.3.3 PREPARATION OF LONGITUDINAL AND TRANSVERSE JOINTS**

All deleterious and loose milled material shall be removed from the milled surfaces at longitudinal and transverse joints after reclaiming operations are completed and before placing the CIR mix.

**3.2.23.3.4 MIXING**

The bituminous stabilizer shall be added at the design rate.

The Contractor shall add water, when required, in a controlled manner to facilitate uniform mixing.

**3.2.23.3.5 SURFACE APPEARANCE**

The compacted CIR mat shall be smooth and conform to the cross fall and grade specified in the contract documents. The surface of the CIR mat shall be of uniform texture, free of segregation and any visually failed areas.

**3.2.23.4 QUALITY ASSURANCE**

Quality assurance (QA) testing shall be carried out by the Consultant. Samples shall be tested to determine compliance for moisture content and compaction. Acceptance criteria shall be based on the Lot mean computed from QA test results for each segment within a Lot.

If a tested sample fails to meet the Contract requirements, the Consultant will notify the Contractor of the failure immediately.

**3.2.23.5 ACCEPTANCE CRITERIA****3.2.23.5.1 ACCEPTANCE CRITERIA FOR COMPACTION**

The compaction of the CIR mix shall be determined according to ASTM D 1188 or ASTM D6752. Each lot of CIR mix shall be compacted to a minimum mean of 96.0 percent.

**3.2.23.5.2 BITUMINOUS STABILIZER**

The supplied emulsified asphalt or asphalt cement samples shall be compliant with the requirements herein when tested according to the test methods designated.

Failure of the sample to conform to any of the material requirements shall be cause for rejection of the material. The CIR that has incorporated bituminous stabilizer represented by the failed test result shall be unacceptable and remedial measures up to and including removal and placement of the deficient mix shall be negotiated with the Consultant.

**3.2.23.5.3 SURFACE TOLERANCE AND APPEARANCE**

After compaction the Consultant will inspect the CIR mat for surface tolerances and appearance.

The surface of the CIR mat shall be free from localized deviations exceeding 10 mm, as measured in any direction with a 3 m straight edge. The finished CIR mat shall also meet the surface tolerances for base course work as outlined in specification amendment AMC\_S155 Amendment to Section 3.2.5, Grading and all Base Course Specifications Regarding Tolerance for Surface Finish.

**3.3 MEASUREMENT AND PAYMENT SCHEDULE**

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.1	<b>Mobilization (including demobilization and submittals)</b>	<b>3.2.2</b>	<p>The Town will pay for Mobilization at the lump sum price bid by the Contractor for "Mobilization". This payment is compensation in full for all costs associated with Mobilization. No payment for Mobilization will be made until the value of the Work completed on bid items other than Mobilization exceeds 10% of the total tender price.</p> <p>When the amount bid for Mobilization exceeds 10% of the original Total Tender amount, the Town will withhold the portion in excess of 10% of the original Total Tender until the date of Construction Completion.</p> <p>The total amount bid for Mobilization will be paid only once, regardless of the number of times the Contractor mobilizes to the Site.</p> <p>Payment for demobilization is included in the Total Bid amount for Mobilization and there will be no separate or additional payment made for demobilization. Submittals required for the project are also included in this price.</p>
1.2	<b>Remove and Salvage Traffic Sign</b>	<b>3.2.20</b>	<p>Measurement for the removal of the sign, including post, will be based on the number of signs.</p> <p>Payment will be based on the number of signs removed. Payment will be made at the unit price bid for "Remove and Salvage Traffic Sign", and will be full compensation for all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.3	<b>Remove and Dispose Fence</b>	<b>3.2.9</b>	<p>Measurement will be by length (meter) of existing fence.</p> <p>Payment will be made at the unit price bid for "Remove and Dispose Fence", and will be full compensation for all labour, equipment, tools, labour and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.4	<b>Remove and Dispose Culvert (&lt;700mm)</b>	<b>3.2.6</b>	<p>Measurement for the removal and disposal of existing culverts, regardless of material type, and drainage structures will be made in meters based on total length of pipe removed.</p> <p>Payment will be made at the unit price bid per meter for "Remove and Dispose Culvert (&lt;700mm)". This payment will be full compensation for removing and disposing of all the culvert pipe material, and all materials, labour, equipment, tools and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.5	<b>Common Excavation (including placement and compaction)</b>	3.2.5	<p>Common excavation will be measured by cubic meter, as measured in its original position.</p> <p>Common Excavation will be paid for at the unit price bid for "Common Excavation and Placement", and this payment will be full compensation for all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant. In locations where placing and compacting the common excavation material is needed, all work required to achieve compaction is considered incidental to the work and covered under this unit price.</p> <p>The excavation and utilization or disposal of existing surfacing and subgrade materials resulting from obliteration operations will be classified and paid for as "Common Excavation". Conditioning of the material be required for its satisfactory incorporation into embankment construction, and work required to complete the restoration of the obliterated areas, except for the placement of subsoil and topsoil, will be considered incidental to the Work, and no separate or additional payment will be made.</p> <p>The placement of topsoil will be paid for in accordance with Section 3.2.8, Topsoil Placement.</p>
1.6	<b>Common Excavation and Dispose Offsite</b>	3.2.5	<p>The unit of measure of common excavation loaded to trucks for disposal offsite will be the cubic meter, as measured in its original position.</p> <p>Payment will be based on the unit price bid for "Common Excavation and Dispose Offsite", and will be full compensation for all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.7	<b>Import Fill Material (including placement and compaction)</b>	3.2.5	<p>Import Fill will be measured by the cubic meter, as measured by truck tickets or stockpile survey.</p> <p>Import Fill will be paid for at the unit price bid for "Import Fill", and will be full compensation for all labour, equipment, tools, supply, hauling, placing, compaction, and incidentals necessary to complete the Work to the satisfaction of the Consultant. All work required to achieve compaction is considered incidental to the work and covered under this unit price.</p>
1.8	<b>Topsoil Placement</b>	3.2.8	<p>Topsoil placement will be measured by the square meter of surface topsoiled based on horizontal measurements. No allowances will be made for uneven or sloping ground.</p> <p>Payment will be made at the unit price bid per square meter, regardless of depth, for "Topsoil Placement". This payment will be full compensation for preparing the surface and placing the topsoil material.</p>
1.9	<b>Supply and Install Class 1M Riprap</b>	3.2.7	<p>All costs associated with the supply and placement of riprap at culvert installation locations, including any required riprap aprons, shall be included in the unit prices bid for the various types and sizes of culvert installations and no separate or additional payment will be made.</p> <p>Measurement of "Supply and Install Class 1M Riprap" placed at locations other than for culvert installation, will be measured by the cubic meter.</p> <p>Payment will be made at the unit price bid for "Supply and Install Riprap" and will be full compensation for bed preparation as required; the supply, processing hauling and placement of rock; and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.10	<b>Supply and Install Culvert 300 mm</b>	3.2.6 3.2.15	<p>Measurement for the supply and installation of culverts will be made in meters based on the total invert length of pipe installed.</p> <p>Payment will be made at the unit price bid per meter for "Supply and Install Culvert 300 mm". This payment will be full compensation for supplying all culvert pipe materials including couplers and appurtenances, installing &amp; preparing the culvert bed, supply of and packing of granular base, installing the pipe, backfilling, the supply and placement of riprap, and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p> <p>Backfilling the culvert excavation extents to subgrade level included in the unit price.</p>
1.11	<b>Supply and Install Culvert 600 mm</b>	3.2.6 3.2.15	<p>Measurement for the supply and installation of culverts will be made in meters based on the total invert length of pipe installed.</p> <p>Payment will be made at the unit price bid per meter for "Supply and Install Culvert 600 mm". This payment will be full compensation for supplying all culvert pipe materials including couplers and appurtenances, installing &amp; preparing the culvert bed, supply of and packing of granular base, installing the pipe, backfilling, the supply and placement of riprap, and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p> <p>Backfilling the culvert excavation extents to subgrade level included in the unit price.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.12	<b>Supply and Install Granular Filter</b>	<p><b>3.2.11</b></p> <p><b>3.2.12</b></p> <p><b>3.2.13</b></p>	<p>Measurement of "Supply and Install Granular Filter" will be in cubic meters. The granular filter applies only to the granular filter below the Class 1M riprap in the Stirling Ditch.</p> <p>Volume measurements will be based on truck box measurement. The capacity of the gravel hauling vehicles will be measured by the Consultant. The measurements will be to the nearest 0.1 m<sup>3</sup> capacity, and the capacity of the vehicle once measured shall not be changed without the consent of the Consultant.</p> <p>The gravel shall be leveled, using a strike-off method, by the Contractor before measurement. No heaping or rounding of the load above the top of box level will be allowed. Truck boxes used in the haul of gravel shall be thoroughly cleaned upon unloading.</p> <p>Payment of "Supply and Install Granular Filter" will be made at the unit price bid per cubic meter. This payment will be full compensation for shaping the surface, processing, hauling, and placing the gravel material.</p> <p>There will be no separate or additional payment for placement of gravel surfacing in more than one layer.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.13	Supply and Install 6-80 Gravel	<p>3.2.11</p> <p>3.2.12</p> <p>3.2.13</p>	<p>Measurement of "Supply and Install 6-80 Gravel" will be in cubic meters.</p> <p>Volume measurements will be based on truck box measurement. The capacity of the gravel hauling vehicles will be measured by the Consultant. The measurements will be to the nearest 0.1 m<sup>3</sup> capacity, and the capacity of the vehicle once measured shall not be changed without the consent of the Consultant.</p> <p>The gravel shall be leveled, using a strike-off method, by the Contractor before measurement. No heaping or rounding of the load above the top of box level will be allowed.</p> <p>Truck boxes used in the haul of gravel shall be thoroughly cleaned upon unloading.</p> <p>Payment of "Supply and Install 6-80 Gravel" will be made at the unit price bid per cubic meter. This payment will be full compensation for shaping the surface, processing, hauling, placing the gravel material, and compaction. All work required to achieve compaction is considered incidental to the work and covered under this unit price.</p> <p>There will be no separate or additional payment for placement of gravel surfacing in more than one layer.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.14	Supply and Install 4-20 Gravel	<p>3.2.11</p> <p>3.2.12</p> <p>3.2.13</p>	<p>Measurement of "Supply and Install 4-20 Gravel" will be in cubic meters.</p> <p>Volume measurements will be based on truck box measurement. The capacity of the gravel hauling vehicles will be measured by the Consultant. The measurements will be to the nearest 0.1 m<sup>3</sup> capacity, and the capacity of the vehicle once measured shall not be changed without the consent of the Consultant.</p> <p>The gravel shall be leveled, using a strike-off method, by the Contractor before measurement. No heaping or rounding of the load above the top of box level will be allowed.</p> <p>Truck boxes used in the haul of gravel shall be thoroughly cleaned upon unloading.</p> <p>Payment of "Supply and Install 4-20 Gravel" will be made at the unit price bid per cubic meter. This payment will be full compensation for shaping the surface, processing, hauling, placing the gravel material, and compaction. All work required to achieve compaction is considered incidental to the work and covered under this unit price.</p> <p>There will be no separate or additional payment for placement of gravel surfacing in more than one layer.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.15	<b>Supply and Install Red Shale Gravel</b>	<p>3.2.11</p> <p>3.2.12</p> <p>3.2.13</p>	<p>Measurement of "Supply and Install Red Shale Gravel" will be in cubic meters.</p> <p>Volume measurements will be based on truck box measurement. The capacity of the gravel hauling vehicles will be measured by the Consultant. The measurements will be to the nearest 0.1 m<sup>3</sup> capacity, and the capacity of the vehicle once measured shall not be changed without the consent of the Consultant.</p> <p>The gravel shall be leveled, using a strike-off method, by the Contractor before measurement. No heaping or rounding of the load above the top of box level will be allowed. Truck boxes used in the haul of gravel shall be thoroughly cleaned upon unloading.</p> <p>Payment of "Supply and Install Red Shale Gravel" will be made at the unit price bid per cubic meter. This payment will be full compensation for shaping the surface, processing, hauling, placing the gravel material, and compaction. All work required to achieve compaction is considered incidental to the work and covered under this unit price.</p> <p>There will be no separate or additional payment for placement of gravel surfacing in more than one layer.</p>
1.16	<b>Supply and Install Class A Fence (including gate)</b>	<p>3.2.9</p> <p>3.2.14</p>	<p><del>Measurement will be made by length (meter) and any gate(s) will be included in the total length.</del></p> <p><del>Payment will be made at the unit price bid for "Supply and Install Class A Fence" and will be full compensation for the supply and installation of the fence complete in place including gates; and all labour, equipment, tools and incidentals necessary to complete the Work to the satisfaction of the Consultant.</del></p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.17	<b>Topsoil Stripping</b>	<b>3.2.5</b>	<p>Topsoil stripping will be measured in cubic meters, as measured in its original position.</p> <p>Topsoil excavation areas will be paid for at the unit price bid for "Topsoil Stripping", and will be full compensation for the excavation, salvage and separate stockpiling of the topsoil and subsoil materials from the common or borrow excavation areas; including all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p> <p>No additional payment will be made for handling material in layers.</p>
1.18	<b>Hydroseeding/ Hydromulching</b>	<b>3.2.10</b>	<p>Seeding will be measured in square meters. Quantities for payment will be based on horizontal measurements as determined by the Consultant; no allowance will be made for uneven or sloping ground, nor overlapping areas.</p> <p>Payment for seeding will be made at the unit prices bid for "Hydroseeding/Hydromulching", will be full compensation for the supply and application of seed; the supply and application of fertilizer and hydro-mulch; harrowing where applicable; and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p> <p>Reseeding where required will be considered incidental to the Work, and no separate or additional payment will be made.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.19	<b>Tree &amp; Brush Clearing</b>	3.2.4	<p>Tree &amp; Brush Clearing will be measured in square meters. Quantities for payment will be based on horizontal measurements as determined by the Consultant; no allowance will be made for uneven or sloping ground, nor overlapping areas.</p> <p>Payment for "Tree &amp; Brush Clearing" will be per square meter and be full compensation for the removal of trees, shrubs, forbs, and other vegetation remaining after felling and clearing; hauling, disposal fees, and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p> <p>Elm trees and Black Knot Fungus trees/limbs are to be disposed of at the landfill and landfill waybills will be reimbursed. Only Elm tree and black knot fungus waybills will be reimbursed.</p>
1.20	<b>Supply and Install Non-Woven Geotextile</b>	3.2.16	<p>Measurement for payment for "Supply and Install Non-Woven Geotextile" will be the square meter (m<sup>2</sup>) of ground covered, excluding the area associated with laps or stitching, and acceptably placed, measured to the nearest 1 m<sup>2</sup>. Quantities for payment will be based on horizontal measurements as determined by the Consultant; no allowance will be made for uneven or sloping ground, nor overlapping areas.</p> <p>Payment for "Supply and Install Non-Woven Geotextile" will be full compensation for supplying all geotextile materials, staples, preparing the geotextile bed, installing the geotextile, and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.21	<b>Supply and Install GEOCOIR</b>	3.2.16	<p>Measurement for payment for "Supply and Install GEOCOIR" will be the square meter (m<sup>2</sup>) of ground covered, excluding the area associated with laps or stitching, and acceptably placed, measured to the nearest 1 m<sup>2</sup>. Quantities for payment will be based on horizontal measurements as determined by the Consultant; no allowance will be made for uneven or sloping ground, nor overlapping areas.</p> <p>Payment for "Supply and Install GEOCOIR" will be full compensation for supplying all geotextile materials, staples, preparing the geotextile bed, installing the geotextile, and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.22	<b>Water Valve Extension</b>	3.2.17	<p>Measurement and payment for the "Water Valve Extension" will be lump sum to cover all labour, equipment, tools, material, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.23	<b>Sanitary Cleanout Protection</b>	3.2.18	<p>Measurement and payment for the "Sanitary Cleanout Protection" will be lump sum to cover all labour, equipment, tools, material, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.24	<b>Shed Removal</b>	3.2.19	<p>Measurement and payment for the "Shed Removal" will be lump sum to cover all labour, equipment, tools, material, hauling, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.25	<b>Prepare Subgrade Surface</b>	3.2.5	<p>Measurement for payment for the "Prepare Subgrade Surface" will be the square meter (m<sup>2</sup>) of ground that received blading and compaction, measured to the nearest 1 m<sup>2</sup>. Quantities for payment will be based on horizontal measurements as determined by the Consultant; no allowance will be made for uneven or sloping ground, nor overlapping areas.</p>
1.26	<b>Remove and Dispose Concrete Sidewalk</b>	3.2.21	<p>Measurement for the removal and disposal of existing sidewalk will be made in length (meters) based on the length of the sidewalk removed.</p> <p>Payment will be made at the unit price for "Remove and Dispose Concrete Sidewalk". This payment will be full compensation for removing and disposing of all sidewalk material, hauling, and all materials, labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.27	<b>Supply and Install Concrete Sidewalk</b>	3.2.22	<p>Measurement for the supply and installation of concrete sidewalk will be made in length (meters) based on the total length of the sidewalk installed.</p> <p>Payment will be made at the unit price bid per meter for "Supply and Install Concrete Sidewalk". This payment will be full compensation for supplying all materials, installation, and preparation for the proposed sidewalk including formwork, hauling, rebar, supply and placement of concrete. Payment also includes all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.28	<b>Supply and Install RAP Asphalt</b>	3.2.23	<p>Measurement for the supply and installation of RAP Driveway will be made in square meters.</p> <p>Payment will be made at the unit price bid per meter squared for "Supply and Install RAP Asphalt". This payment will be full compensation for supplying all materials, installation, hauling, supply and placement of asphalt, and compaction. Payment also includes all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.29	<b>Remove and Re-Install 724 Sign Post (Driveway at 724 Hunter Dr.)</b>	3.2.20	<p>Measurement for the removal, salvage, and replacement of the address post will be each.</p> <p>Payment will be made at the unit price bid for "Remove, Salvage, and Reinstall Address Sign", and will be full compensation for all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p>
1.30	<b>Remove and Re-Install 500 mm CSP Culvert</b>	3.2.6	<p>Measurement and payment will be metres for "Remove, Salvage, and Reinstall Culvert". This payment will be full compensation for removal, storage, and install of all culvert pipe at 724 Hunter Drive. Payment also includes all materials including couplers and appurtenances, installing &amp; preparing the culvert bed, supply of and packing of granular base, installing the pipe, backfilling, the supply and placement of riprap, and all labour, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.</p> <p>Backfilling the culvert excavation extents to subgrade level included in the unit price.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.31	<p><b>2023 Mobilization (including demobilization and submittals)</b></p>	<p><b>3.2.2</b></p>	<p>The Town will pay for Mobilization at the lump sum price bid by the Contractor for "2023 Mobilization (including demobilization and submittals)". This payment is compensation in full for all costs associated with Mobilization in 2023. No payment for Mobilization will be made until the value of the Work completed on bid items other than Mobilization exceeds 10% of the total tender price.</p> <p>When the amount bid for Mobilization exceeds 10% of the original Total Tender amount, the Town will withhold the portion in excess of 10% of the original Total Tender until the date of Construction Completion.</p> <p>The total amount bid for Mobilization will be paid only once, regardless of the number of times the Contractor mobilizes to the Site in 2023.</p> <p>Payment for demobilization is included in the Total Bid amount for Mobilization and there will be no separate or additional payment made for demobilization. Submittals required for the project are also included in this price.</p>

ITEM NO.	ITEM NAME	SECTION	MEASUREMENT AND PAYMENT
1.32	2024 Mobilization (including demobilization and submittals)	3.2.2	<p>The Town will pay for Mobilization at the lump sum price bid by the Contractor for "2024 Mobilization (including demobilization and submittals)". This payment is compensation in full for all costs associated with Mobilization in 2024. No payment for Mobilization will be made until the value of the Work completed on bid items other than Mobilization exceeds 10% of the total tender price.</p> <p>When the amount bid for Mobilization exceeds 10% of the original Total Tender amount, the Town will withhold the portion in excess of 10% of the original Total Tender until the date of Construction Completion.</p> <p>The total amount bid for Mobilization will be paid only once, regardless of the number of times the Contractor mobilizes to the Site in 2024 and/or beyond.</p> <p>Payment for demobilization is included in the Total Bid amount for Mobilization and there will be no separate or additional payment made for demobilization. Submittals required for the project are also included in this price.</p>

### **3.4 PROJECT SCHEDULING AND COMPLETION**

The Contractor shall schedule his or her operations to complete all of the Work under this Contract as follows:

- **Tenderer's Meeting: May 8, 2023, as noted in Section 1.14**
- **Deadline for written questions: May 10, 2023, as noted in Section 1.7**
- **Tender Close: May 18, 2023, as noted in Section 1.2**
- 2<sup>nd</sup> Ave Construction completion and site clean-up must be completed by October 15, 2023
- Tree clearing, grubbing, and disposal of trees and brush must be completed by April 15, 2024
- Sterling Ditch Construction completion and site clean-up must be completed by October 15, 2024

### **3.5 WORK LOCATIONS**

The work site of this Contract are located within the Town of Drumheller in Nacmine at the end of 2<sup>nd</sup> Avenue and in Town property between 724 and 748 Hunter Drive.

### **3.6 WORK LOCATION RESTRICTIONS**

Prior to the commencement of their operations, the Contractor shall consult with the Consultant to determine the location of properties with construction restrictions and conduct his or her operations accordingly.

The work site currently has construction restrictions:

- Potential Historical Resources Act approvals
- Potential Water Act approvals
- Potential Migratory Bird Act impacts

If the restricted properties are still not available by the time the contractor has completed all other work, The Owner reserves the right to either:

- Modify the design and construction as required;
- Delete the affected portion of the work from the Contract.

All work items actually completed will be paid for at the applicable contract unit prices. No separate or additional payment will be made as a result of any alteration or elimination of original contract quantities.

The Contractor shall complete One-Calls to confirm all utilities within the work site.

---

### **3.7 WORK RESTRICTIONS/MILESTONE DATES**

Trimming of elm trees cannot be conducted between April 1 and September 30.

Clearing cannot be conducted without an additional pre-disturbance nest sweep and approval.

Attain 2<sup>nd</sup> Ave Substantial Performance of the Work by September 30, 2023.

Attain 2<sup>nd</sup> Ave Construction Completion of the Work by October 15, 2023.

Attain Stirling Ditch Substantial Performance of the Work by September 30, 2024.

Attain Stirling Ditch Construction Completion of the Work by October 15, 2024.

### **3.8 TEMPORARY SANITATION FACILITIES**

Provide and pay for separate sanitation facilities for male and female workers on the Site in accordance with the requirements of the local health authorities.

Provide toiletry consumables and maintain sanitation facilities in a clean condition.

Arrange and pay for costs of sanitation facility maintenance and waste removal.

### **3.9 ROAD RESTRICTIONS / ROAD BANS**

The Contractor is advised that all Alberta Transportation provincial road restrictions / road bans and Town of Drumheller local road restrictions / road bans on hauls roads to and from the project shall be enforced. No extra payment will be made for hauling of materials under road ban conditions.

Information on provincial Alberta Transportation road bans can be obtaining by call 1-855-762-3226 or by visiting Alberta Transportation's web site at [www.alberta.ca/road-restrictions-and-bans-overview.aspx](http://www.alberta.ca/road-restrictions-and-bans-overview.aspx)

Information on local Town of Drumheller road bans can be obtained by calling Roadata Services at 1-888-830-7623.

Submit a Haul Route Plan to the Town for approval prior to commencing any hauling.

### **3.10 SURVEY BY OWNER'S REPRESENTATIVE**

The Consultant is to perform the following survey work:

- Identification of trees to be removed using paint markings or survey lathe.
- Provide one (1) set of survey stakes at the commencement of the project for ditch alignment, right-of-way, culvert stubs, ditch slope stakes, and roadway centerline stakes.
- Complete an as-built record survey
  - Interim survey for quantities will be the responsibility of the Contractor and shall be supplied to the Consultant for confirmation.

The Contractor shall have no claim against the Owner for any adjustment to his or her schedule due to the availability of the Owner's Representative survey work. No additional compensation

will be paid by the Owner for any delay, inconvenience or damage sustained by the Contractor which is caused by the adjustment to the Contractor's schedule due to the availability of the Owner's Representative survey team.

**3.11 WORK IN THE VICINITY OF UTILITIES**

The Contractor shall arrange for locating utilities where required. The Contractor will be responsible for and will conduct their work in such a manner as to safeguard all communication / telephone lines, power lines, gas lines, water lines, sanitary lines, and oil pipelines within the limits of this project. It is also the Contractor's responsibility to maintain liaison with the utility owners and take all other precautions to maintain the utility services.

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.

**3.12 REGULATORY RESPONSIBILITY**

Remain in compliance with Provincial and Federal Regulatory Laws and Requirements and pay all fees and give all notices required by them.

The Town will obtain the approvals necessary for the Project that involve agreement between the Minister and the regulatory agency having jurisdiction.

**3.13 WORKING HOURS**

Contractor shall adhere to Town of Drumheller Community Standards Bylaw No. 16-10 for working hours.

The Contractor shall abide by all Federal, Provincial, and Town of Drumheller regulations regarding the noise level generated by the Contractor's operations or equipment.

**3.14 WASTE MANAGEMENT**

Remove clearing waste from the Site unless otherwise specified. Dispose of such waste at the waste disposal facility as directed by the contract.

Do not burn, bury, or otherwise discharge construction or demolition waste on the Site.

Do not divert, alter, or disrupt water flows in rivers, streams, and other surface bodies of water.

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.

**3.15 HAZARDOUS MATERIALS**

Transport hazardous materials to and from the Site in accordance with Regulatory Requirements.

Use and store hazardous materials in accordance with Regulatory Requirements.

---

Remove spilled hazardous materials, including hazardous liquid wastes, in accordance with Regulatory Requirements, and reclaim land and other property. Report spills to the Town and Alberta Environment and Parks (1-800-222-6514).

Dispose of hazardous waste materials, including hazardous liquid wastes, in accordance with Regulatory Requirements.

Handling of Construction Equipment Fuels and Lubricants:

- Employ persons qualified to handle Construction Equipment fuels and lubricants.
- Carry, at minimum, the following protection materials in all fuel and service vehicles:
  - 10 kg of suitable sorbent material.
  - 30 m<sup>2</sup> of 6 mil polyethylene.
  - A shovel.
  - An empty fuel barrel with the lid removed.
- Refuel and service equipment away from rivers, streams, and other surface bodies of water. Ensure equipment that enters the water is free from external grease, oil, and mud.
- Prevent handling and fueling 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.
- Clearly mark and barricade fuel storage areas and non-portable transfer lines. Use markers that are visible under all weather conditions.
- Store waste Construction Equipment lubricants in a tank or closed container and dispose of off-Site in accordance with the Regulatory Requirements.

### **3.16 CONTRACT TIME**

The Contract will commence on the date on which the Letter of Acceptance is issued.

Attain Construction Completion of the Work by October 15, 2023, except for the following.

- Final clean-up
- Contract Record Documents Submission

### **3.17 PROPONENT'S INVESTIGATION**

The Proponent is responsible for examining the Plans, Specifications, Tender and Contract forms and to carefully investigate and satisfy itself of every condition affecting the Projects and Site including, but not limited to, the site conditions, and the Work to be provided. The contractor acknowledges and agrees that its submission of a tender is conclusive evidence that the Contractor made such investigation and that whether or not it has so investigated, it is willing to assume and does assume all risk regarding conditions affecting the Project and the Site.

---

### **3.18 DIFFERING CONDITIONS**

If, during the execution of the Work, the Contractor encounters vegetation or elements not identified for protection (e.g., memorial object, utility infrastructure) then the Contractor must notify the Consultant and Owner promptly, before such conditions are disturbed. In any event the Contractor must give written notice to the Consultant and Owner within one (1) calendar day after first observance of the conditions. On receipt of such notice from the Contractor, the Consultant will promptly investigate such conditions. Failure to provide written notice within the prescribed time period will preclude the Contractor from proceeding under this section.

If the Consultant or Owner notice potential differing conditions, the Consultant will give notice to the Contractor and the Consultant will investigate such conditions.

If as a result of the Consultant's investigation, the Consultant determines that a differing condition exists, which would cause or result in an increase or decrease to the scope of the Work, the cost to be incurred by the Contractor, or in the time required to perform the Work, then the Consultant may recommend to the Owner for the Owner's consideration, one or more of the following:

- Provide instruction to the Contractor on how to proceed including, but not limited to, removing all or a portion of the Work, revisiting all or a portion of the Work, or continuing the Work as set out in the Contract.
- Adjust the amount of payment for the Work or reduce the amount to be paid under the Contract. Additional costs will be based on unit rates as set out in the Contract, or as negotiated as appropriate.

Upon encountering differing conditions, the Contractor is responsible for implementing measures to reduce impacts related to these conditions. The Contractor is not entitled to payment for that portion of costs incurred which could have been reasonably avoided by the Contractor.

### **3.19 CONTRACT ACCEPTANCE PROCEDURES**

Prerequisites to Substantial Performance - Prior to requesting the Town's inspection for Substantial Performance carry out the following:

- Correct all Contract Deficiencies.
- Complete the Work and have it ready for the purpose intended.
- 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.

### **3.20 INSPECTION FOR PERFORMANCE**

Submit a written request to the Town 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.

The Town will, within a reasonable time after receipt of the Contractor's request:

- 
- Proceed with the inspection; or
  - Advise the Contractor that prerequisites are not adequately fulfilled.

Results of the Town's inspection for Substantial Performance will form the Substantial Performance Contract Deficiency List (SPC Deficiency List).

### **3.20.1 SUBSTANTIAL PERFORMANCE OF THE WORK**

Following the inspection, the Town will:

- 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; or
- Advise the Contractor that prerequisites to Substantial Performance are not fulfilled and repeat the inspection for Substantial Performance as necessary.

### **3.20.2 PREREQUISITES TO CONSTRUCTION COMPLETION**

Prior to requesting the Town's inspection for Construction Completion carry out the following:

- Perform the entire Work, including the correction of all Contract Deficiencies, except those items arising from the warranty provisions of the Contract Documents.
- Review the Contract Documents and inspect the Work to confirm that prerequisites to Construction Completion have been met and that the Work is ready for inspection for Construction Completion.

### **3.20.3 INSPECTION FOR CONSTRUCTION COMPLETION**

Submit a written request to the Town for inspection for Construction Completion, including a copy of the Town'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 Town and the Contractor. List known exceptions, if any, in the request.

The Town will, within a reasonable time after receipt of the Contractor's request:

- Proceed with the inspection; or
- Advise the Contractor that prerequisites are not adequately fulfilled.

### **3.20.4 CONSTRUCTION COMPLETION OF THE WORK**

Following the inspection, the Town will:

- Issue a Certificate of Construction Completion of the Work, stating the effective date of Total Performance; or
- Advise the Contractor of Contract Deficiencies that must be corrected prior to issuance of a Certificate of Construction Completion of the Work.

### **3.20.5 INSPECTION FOR FINAL ACCEPTANCE**

Upon the one-year anniversary of the Construction Completion Certificate being issued; the Town and the Contractor will schedule a site meeting to complete Final Acceptance inspection.

### **3.20.6 FINAL ACCEPTANCE OF THE WORK**

Following the inspection, the Town will:

- Issue a Certificate of Final Acceptance of the Work, stating the Work is completed and the warranty period is over; or
- Advise the Contractor of Contract Deficiencies that must be corrected prior to issuance of a Certificate of Final Acceptance of the Work.

**4 ADDENDA**

*(Attach addenda, if any, behind this page.)*

## 5 AGREEMENT

This Agreement made on the \_\_\_\_\_ day of \_\_\_\_\_ in the year **Two Thousand Twenty Three**

by and between **Town of Drumheller**  
hereinafter called the **"Owner"**

and  
hereinafter called the **"Contractor"**

witnesses that the parties agree as follows:

### Term of Agreement

The Term of Agreement will commence on the date on which the Letter of Acceptance is issued and shall be for three (3) calendar years.

#### 5.1 ARTICLE A-1 THE WORK

The Contractor shall:

Perform the Work required by the Contract Documents for **Town of Drumheller** which have been signed by the parties, and which were prepared by **Kerr Wood Leidal Associates Ltd.**

- a. Acting as and hereinafter called **"Consultant"** and
- b. Do and fulfill everything indicated by this Agreement, and
- c. Attain Construction Completion of the Work, as certified by the Consultant, by the **15<sup>th</sup> day of October, 2023.**

#### 5.2 ARTICLE A-2 CONTRACT DOCUMENTS

The following is an exact list of the Contract Documents referred to in Article A-1 of this Agreement. This list is subject to subsequent amendments in accordance with the provisions of the Contract and agreed upon between the parties.

1. Instructions to Proponents
2. Tender Forms
3. Specifications
4. Addenda
5. Agreement
6. Attachments
7. Schedules of Prices
8. IFT Drawings

---

### 5.3 **ARTICLE A-3 CONTRACT PRICE**

The quantities shown in the **Schedules of Prices** are estimated. The Contract Price shall be the final sum of the products of the actual quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, and the appropriate Contract Unit Prices, together with any adjustments that are made in accordance with the provisions of the Contract Documents.

- a. The Estimated Contract Price shall be the sum of the products of the estimated quantities and the appropriate Contract Unit Prices in the Schedules of Prices.

### 5.4 **ARTICLE A-4 PAYMENT**

(a) The Owner shall pay the Contractor in Canadian Funds for the performance of the Contract, the amounts being determined by actual measured quantities of the individual work items contained in the Unit Price Schedule in Article A-3(a) of this Agreement and measured in accordance with the methods of measurement given in the specifications.

(b) Subject to applicable legislation and the provisions of the Contract Documents, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a **10% holdback**, the Owner shall:

1. Make progress payments to the Contractor on account of the work performed as certified by the Consultant, which will become due and payable 45 days following the cut-off date of the progress certificate, (which unless agreed to differently, will be the 25th day of the month), and
2. Upon Final Construction Completion Acceptance of the Work as certified by the Consultant pay to the Contractor the unpaid balance of holdback monies then due, and
3. Upon termination of the warranty period as certified by the Consultant pay to the Contractor the unpaid balance of monies then due.

(c) If the Owner fails to make payments to the Contractor as they become due under the terms of this Contract or in an award by arbitration or court, interest of **three percent (3%)** per annum on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

**5.5 ARTICLE A-5 RIGHTS AND REMEDIES**

(a) The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

(b) No action or failure to act by the Owner, Consultant or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## **5.6 ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES**

Communications in writing between the parties or between them and the Consultant shall be considered to have been received by the addressee on the date of delivery if delivered by hand to the individual or to a member of the firm or to an officer of the corporation for whom they are intended or if sent by post or by telegram, to have been delivered within five (5) working days of the date of mailing, dispatch or of delivery to the telegraph company when addressed as follows:

The Owner at           **Kelcie Wilson, C.E.T., Capital Project Manager**  
                                  **Town of Drumheller**  
                                  **702 Premier Way**  
                                  **Drumheller AB T0J 0Y0**

The Contractor at

The Consultant at       **Chris Sullivan, P.Eng.**  
                                  **Kerr Wood Leidal Associates Ltd.**  
                                  **100 – 1212 1 Street SE**  
                                  **Calgary, AB, T2G 2H8**

## **5.7 ARTICLE A-7 LAW OF THE CONTRACT**

The law of the Place of the Work shall govern the interpretation of the Contract.

## **5.8 ARTICLE A-8 LANGUAGE OF THE CONTRACT**

This Agreement is drawn in English at the request of all parties hereto; ce marche est redige en anglais a la demande de toutes les parties.

**5.9 ARTICLE A-9 SUCCESSION**

The General Specifications of the Contract, and the other aforesaid Contract Documents, are to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall ensure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and assigns.

**In witness whereof** the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

**SIGNED, SEALED AND DELIVERED**

in the presence of:

**OWNER**

**TOWN OF DRUMHELLER**

\_\_\_\_\_  
**Name**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**print name and title**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**print name and title**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Witness**

\_\_\_\_\_  
**print name and title**

**CONTRACTOR**

---

**Name**

---

**Signature**

---

**Witness**

---

**print name and title**

---

**print name and title**

---

**Date**

*N.B. Where legal jurisdiction, local practice, or Owner or Contractor requirement calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the corporation or partnership, parties to this Agreement, should be attached.*