

Sealed Tenders clearly marked on the envelope as to contents will be received at the **Town of Westlock Office, Front Reception Desk, 10003–106 Street, Westlock, AB T7P 2K3** before **14:00** local time, **Tuesday July 30, 2024** for the construction of:

**TOWN OF WESTLOCK
2024-2028 ASPHALT OVERLAY PROGRAM**

The work included in this project is located in **Westlock, Alberta**.

Major work items are as follows:

1. Asphalt Milling.
2. Crack, Chip, and Slurry Sealing
3. Hot Mix Asphalt Overlay.

Tender documents can be picked up at the office of the Owner, Town of Westlock, 10003–106 Street, Westlock, Alberta T7P 2K3. Tender Documents will be available for pick-up after **14:00, Tuesday July 16, 2024**.

The Owner reserves the right to waive informalities in, or reject any or all tenders, or accept the Tender deemed most favourable in the interest of the Owner.

Tenders will be opened in Private.

Town of Westlock
10003–106 Street
Westlock, Alberta T7P 2K3

Telephone: 780-349-4444

END OF SECTION

1. BID SUBMISSION

- .1 Bidders may submit physical copies of the bids at the following location only.
10003–106 Street, Westlock, Alberta T7P 2K3
- .2 Bidders may submit bids only before **14:00** local time on the date set by for receiving bids.
- .3 The official time of receipt of a bid shall be established using the time recorder clock used by the Owner’s representative to time and date stamp bid submissions.
- .4 Bidders must submit bids on the forms issued by the Owner’s representative with the Bid Documents.
- .5 Bidders must submit bids on forms supplied with Bid Documents, sealed in an envelope clearly displaying the following information:

Bidder’s Name: _____
Address: _____

TENDER

Town of Westlock
2024-2028 Asphalt Overlay Program

Job No. DPC 30-094-A
Closing before 14:00, local time,
on Tuesday July 30, 2024

- .6 The Bidder must indicate its name and address clearly in the upper left-hand corner of the envelope so that the tender submission can be identified.
- .7 Oral, telephone, telegram, fax, or e-mail bids will not be accepted nor acknowledged.
- .8 The foregoing states the date and time before which bids will be received hereinafter called the “bid closing time.” The Owner may extend the bid closing time by addendum.
- .9 Bids shall be prepared and submitted, and the bidding process will be administered in accordance with these bidding requirements.

2. SUMMARY

- .1 The intent of this bid call is to solicit and receive formal offers for:

Town of Westlock
2024-2028 Asphalt Overlay Program

- .2 Refer to Section 01110 - Summary of Work for a summary of the Project, including requirements pertaining to Contract Time.

3. BASIS OF BID - STIPULATED PRICE

- .1 Bids shall be on a stipulated price basis as provided by the Town.
- .2 The unit prices, lump sums and allowances stated in the Schedule of Prices shall form the basis of the bid price for the total stipulated price provided by the Town in Section 00411 Clause 2.
- .3 Make entries in the Schedule of Prices in figures only. Ensure that figures are legible.
- .4 Where, in the Owner's opinion, there is a question as to the legibility of figures entered by the Bidder, the Owner will make a determination as to legibility. The Owner may, at the Owner's sole discretion, declare as invalid and reject any bid that contains figures which, in the Owner's opinion, are illegible or open to dispute.
- .5 Extensions of unit prices and addition of extended unit prices, lump sums and allowances entered in the Schedule of Prices will be checked by the Owner. If arithmetical errors are discovered, the unit prices shall be considered as representing the Bidder's intentions and the unit price extensions and the total amount entered in the Schedule of Prices and the Bid Form will be corrected by the Owner. The Bidder shall be bound to such corrected amounts.
- .6 If no unit price is stated for an item, but an extended amount is stated, a unit price determined by dividing the extended amount by the estimated quantity shall be considered as representing the Bidder's intentions.
- .7 The total amount of the bid shall be the arithmetically correct sum of the arithmetically correct unit price extensions, lump sums, and allowances in the Schedule of Prices.
- .8 Each unit price stated in the Schedule of Prices shall be a reasonable price for that item of work. The unit price shall be subject for review if the Owner considers the unit price is unreasonable.
- .9 Unless otherwise indicated, quantities specified in the Schedule of Prices are estimated quantities and shall not be considered as actual quantities of work to be performed. Subject to Contract terms, unit prices stated in the Schedule of Prices shall be applied to actual quantities of work performed as measured in accordance with the Contract. Actual quantities of work to be completed may be amended by the Town to ensure stipulated price is not exceeded.

4. SUFFICIENCY OF BID

- .1 The submission of a bid shall constitute an incontrovertible representation by the Bidder that:
 - .1 The Bidder has complied with all bidding requirements,

- .2 The Bidder is qualified and experienced to perform the Work in accordance with the Bid Documents,
- .3 The bid is based upon performing the Work in accordance with the Bid Documents, without exception, and
- .4 The price or prices stated in the bid cover all the Bidder's obligations under the Contract and all matters and things necessary for the performance of the Work in accordance with the Bid Documents.

5. BID DOCUMENTS

- .1 The Bid Documents are the documents issued or made available to Bidders by the Owner for the purpose of preparing a bid. The Bid Documents consist of the following:
 - .1 Instructions to Bidders.
 - .2 Mandatory Pre-Bid Meeting.
 - .3 Bid Form and Bid Form Supplements.
 - .4 Bid Modification Form.
 - .5 Agreement Form.
 - .6 Definitions.
 - .7 Payment Conditions.
 - .8 Insurance Conditions.
 - .9 General Conditions of Contract.
 - .10 Supplementary Conditions.
 - .11 Specifications, Divisions 1 to 2 inclusive.
 - .12 Drawings.
 - .13 Addenda issued during the bid period.
 - .14 Contract Information Documents.

6. BID FORM

- .1 Fill in all blanks in the Bid Form and sign as follows:
 - .1 Limited Company: Print or type in the space provided the full name of the company and the name(s) and status of authorized signing officer(s). Authorized signing officer(s) shall sign. Sign the Bid Form in the presence of a witness who shall also sign, or in the absence of a witness, affix the corporate seal.

- .2 Limited Company Joint Venture: Each joint venture company shall sign as for a limited company.
 - .3 Partnership: Print or type in the space provided the firm's name and the name(s) of person(s) signing. One or more of the partners shall sign in the presence of a witness who shall also sign.
 - .4 Sole Proprietorship: Print or type in the space provided the business name and the name of the sole proprietor. The sole proprietor shall sign in the presence of a witness who shall also sign.
- .2 Complete the Bid Form in its entirety. Any required information that is omitted or illegible, any alterations to the text, or any conditions added on or submitted with the Bid Form, may cause the bid to be declared invalid and rejected.

7. BID FORM SUPPLEMENTS

- .1 Prepare and submit each of the following Bid Form Supplements together with the Bid Form:
- .1 Section 00431 - Schedule of Prices: complete the Schedule in its entirety, including all extensions and additions, and attach it to the Bid Form.
 - .2 Section 00495A - Schedule of Relevant Experience: Complete the schedule in its entirety and attach it to the bid form.
 - .3 Section 00495B - Schedule of Local Experience: Complete the schedule in its entirety and attach it to the bid form.
 - .4 Section 00495C - Schedule of Local Content: Complete the schedule in its entirety and attach it to the bid form.
- .2 Any required information that is omitted or illegible, any alterations to the text, or any conditions added or submitted with a Bid Form Supplement, may cause the bid to be declared invalid and rejected.
- .3 Enclose and submit all Bid Form Supplements in a sealed envelope, together with the Bid Form.
- .4 The Owner may, after bid closing time and before contract award, require any Bidder to submit, in a form prescribed by or acceptable to the Owner, supplementary information about any aspect of the Bidder's bid which, in the Owner's opinion, is necessary for bid evaluation purposes.

8. BID MODIFICATION

- .1 A bid submitted in accordance with these bidding requirements may be modified:

- .1 Any modifications or changes after an initial bid submission has been submitted prior to bid closing, will be required to re-submit the entire bid package.
- .2 When submitting a modification directing a change in a bid amount, do not reveal the original amount nor the revised amount:
 - .1 On unit price bids, state only the amount to be added to or deducted from each original unit price or lump sum in the Schedule of Prices. Bidders may use the Section 00491 – Unit Price Bid Modification Form included in the Bid Documents.
- .3 By submitting a bid modification, the Bidder acknowledges and accepts that its bid modification supersedes all Bidder's previous bid modifications including those containing modifications to its other bid items. Previously submitted bid modifications are all null and void.
- .4 Modify the list of Addendum Number(s) on the Bid Modification Form, if different from what was indicated on the originally submitted Bid Form.
- .5 The Bidder accepts full responsibility for any lack of confidentiality arising from submitting a bid modification using a facsimile submission process.
- .6 Failure of a bid modification to arrive before the closing time, accurately or completely for any reason will render this bid modification null and void.
- .7 The Owner will assume no responsibility or liability for the content of modifications, or for modifications that are, for any reason, delayed, illegible, unclear as to intent, ambiguous, contrary to these instructions, or otherwise improperly received.

9. BID WITHDRAWAL AND ACCEPTANCE

- .1 A bid may be withdrawn at any time before the bid closing time provided the request is in the form of:
 - .1 A letter received at the address specified in 1.1 before the bid closing time.
- .2 Withdrawn bids may be resubmitted in accordance with these bidding requirements providing the resubmitted bid is received at the office indicated in 1.1, before the bid closing time.
- .3 A bid may not be withdrawn at or after bid closing time and shall be open to acceptance by the Owner until:
 - .1 Some other Bidder has entered into a contract with the Owner for the Work, or
 - .2 60 days after the bid closing time,whichever occurs first.
- .4 The 60-day period referred to above shall commence at midnight of the date of the bid closing and shall terminate at midnight of the 60th day thereafter. If the 60th day falls on a

statutory holiday, such day, and any subsequent contiguous holidays, shall be omitted from the computation.

- .5 The 60-day acceptance period referred to above may be extended at the Owner's request and subject to the Bidder's written agreement to the extension.
- .6 The Contract shall be established upon the Owner issuing to the successful Bidder, a letter accepting the bid without qualification or, if the letter accepting the bid contains one or more qualifications, upon the Bidder's written acceptance of all such qualifications.
- .7 The lowest or any bid will not necessarily be accepted, and the Owner may reject any and all bids.
- .8 The Owner may negotiate contract terms with the Bidder submitting the lowest valid bid, provided that the negotiated changes to the Bid Documents result in either no change to the bid price or a reduced bid price. Such changes may be formalized in the form of a Post-Bid Addendum that, upon written acceptance by the Bidder, shall form part of the Contract Documents.

10. EVALUATION AND QUALIFICATION

- .1 Qualified bidders will be evaluated based on four criteria which are defined and weighted as follows:
 - .1 Bid Price 50%
 - .2 Relevant Experience 5%
 - .3 Local Experience 25%
 - .4 Local Content 20%
- .2 Subject to the requirements of FOIP, the evaluations shall be confidential and not released to any party. The Evaluation Team will make the final selection, if any, based on the Bid Proposal's evaluation scoring and reference checks.
- .3 Evaluation Criteria
 - .1 Bidders will be qualified and scored based on bid price and demonstrated response to the bid supplement requirements set out below. All Bidders should seek to understand and respond to the desirable provisions and submission requirements outlined below. It should be noted that successfully responding to desirable provisions will result in a higher score for the Bidder. Failure to respond to desirable provisions and bid submission requirements will result in a lower score for the Bidder. The Bidder with the highest score will be selected for award of the Contract.
 - .2 Bid Price
 - .1 Bidders shall be scored and evaluated based on total bid price as identified in their Bid Submission.

.3 Relevant Experience

- .1 Bidders shall be scored and evaluated based on their relevant experience as demonstrated by the following Bid Form Supplement:

Project Examples: Using “Relevant Experience Sheet” in Section 00495A, reference and identify projects with which the Bidder has been involved that are similar in size, scope, and nature of proposed works under this Tender. The intent of these project examples is to showcase and demonstrate the Bidder’s relevant skills and experience in completing projects similar to that of the works proposed in this Tender. Bidders must use the “Relevant Experience Sheet” in Section 00495A for referencing these project examples. Project examples that do not use this format will not be considered, evaluated or scored.

.4 Local Experience

- .1 Bidders shall be scored and evaluated based on their local experience as demonstrated by the following Bid Form Supplement:

Project Examples: Using the “Local Experience Sheet” in Section 00495B, reference and identify projects with which the Bidder has completed for the Town in the five (5) years preceding the date of issue of this Tender. The intent of these project examples is to showcase and demonstrate the Bidder’s experience and effectiveness completing projects within the Town. Project examples that demonstrate experience with the works proposed in this Tender will be evaluated more favorably than unrelated projects. If the Bidder has not completed or commenced any projects for the Town in the five (5) years preceding the date of issue of this Tender, then the Bidder must state that in the “Local Experience Sheet” in Section 00495B. Bidders must use the “Local Experience Sheet” in Section 00495B for referencing these project examples. Project examples that do not use this format will not be considered, evaluated or scored.

.5 Local Content

- .1 Using the “Local Content Sheet” in Section 00495C, identify all local material, labour and/or equipment that will be used to complete the proposed works under this Tender. The intent of this section is to encourage the usage of local materials, labour, and equipment. Bidders must use the “Local Content Sheet” in Section 00495C for referencing all local content that will be utilized for this project. Local content provided without the use of this format will not be considered, evaluated, or scored.

.4 Summary of Bid Evaluation and Scoring Methodology

OVERALL EVALUATION METHODOLOGY			
Criteria	Weight		Score
Bid Price	50%	Lowest Valid Bid Price (Divided By) Bidder's Submitted Bid Price x 50 =	
Relevant Experience	5%	Total Evaluated Score (Divided By) Maximum Available Score x 5 =	
Local Experience	25%	Total Evaluated Score (Divided By) Maximum Available Score x 25 =	
Local Content	20%	Total Evaluated Score (Divided By) Maximum Available Score x 20 =	
		Total	/100

The total score for the bid will be determined and form the basis for ranking Bids. If within available budget amounts, the Contract will be awarded to the Bidder with the highest total score.

RELEVANT EXEPIENCE EVALUATION METHODOLOGY				
Criteria	Max Rating	Rating (0-6)	Weight	Score
Example Projects utilizing Project Example Sheet appended to this Section. Rating assigned will be based on all example projects considered together.	6	___ x	1.00 =	
Total				/6

LOCAL EXEPIENCE EVALUATION METHODOLOGY				
Criteria	Max Rating	Rating (0-6)	Weight	Score
Example Projects utilizing Project Example Sheet appended to this Section. Rating assigned will be based on all example projects considered together.	6	___ x	1.00 =	
Total				/6

LOCAL CONTENT EVALUATION METHODOLOGY				
Criteria	Max Rating	Rating (0-6)	Weight	Score
Synopsis of the specialty subcontractor's project understanding relevant to the proposed works of this Tender.	6	___ x	.50 =	
Previous relevant experience completed by the specialty sub-contractor.	6	___ x	.50 =	
Total				___/6

VALUATION CRITERIA RATING VALUES		
Rating		Definition
6	Excellent	Exceeds the requirements of the criterion and is decided to be the best of the Bids.
5	Very Good	Exceeds the requirements of the criterion.
4	Above Average	Meets all requirements of the criterion. Exceeds minimum in some areas.
3	Average	Meets all requirements of the criterion.
2	Below Average	Meets minimum requirements of the criterion. May be lacking in some areas.
1	Poor	Falls short of expectations. Meets some but not all of the requirements of the criterion. Lacking in critical areas.
0	Non-Responsive or Inadequate	Fails to meet the requirements. Inadequate. Poor probability of success or not addressed in the bid.

.5 Debriefing:

- .1 Unsuccessful Bidder(s) will be notified within 5 days after Letter of Intent to Enter Contract has been sent to the successful Bidder. All Bidders may request a debriefing within 10 business days of the notification from the Town. The request shall be in writing and submitted to the individual identified as the contact person for debriefing on the notification. Debriefing can be arranged in person or by telephone with a maximum of two representatives for the Bidder. Time and place for each individual debriefing will be as mutually agreed by the Town and the Bidder.
- .2 The purpose of the debriefing is to provide feedback to Bidders of the strength and areas for improvement of its Bid submission to help Bidders better understand the competitive bidding process and the quality of their submissions as to enhance the quality of their submissions in the future.
- .3 Debriefing will be held on a without-prejudice basis and will be conducted in a respectful manner.
- .4 The following will not be provided at a debriefing:
 - .1 Ranking of all Bid submissions;
 - .2 Scoring of all Bid submissions; and
 - .3 Information on the content of other Bidder's submissions.

11. BID OPENING

- .1 Bids will be opened in private immediately after the bid closing time, at the address specified in 1.1.

12. IRREGULARITIES

- .1 A bid that is informal, incomplete, qualified, non-compliant with the requirements of the Bid Documents, or otherwise irregular in any way, may be declared invalid and rejected.
- .2 The Owner may accept or waive a minor and inconsequential irregularity, or where practicable to do so, the Owner may, as a condition of bid acceptance, request a Bidder to correct a minor and inconsequential irregularity with no change in the bid price.
- .3 The determination of what is, or is not, a minor and inconsequential irregularity, the determination of whether to accept, waive or require correction of an irregularity, and the final determination of the validity of a bid, shall be at the Owner's sole discretion.
- .4 Discrepancies between words and figures will be resolved in favour of words.

13. SAFETY PREQUALIFICATION

- .1 Prime contract Bidders shall possess, prior to contract execution, a valid Certificate of Recognition (COR) as issued by the Alberta Construction Safety Association (ACSA) or another certifying organization authorized by Alberta Human Resources and Employment to issue CORs.
- .2 Bidders not in possession of a valid COR qualify if in possession of a valid Temporary Letter of Certification (TLC) issued by the ACSA at the time of contract execution.
- .3 A bid from a Bidder who does not possess a valid COR or TLC may be declared invalid and may be rejected.
- .4 The Owner will confirm that the Bidder possesses a valid COR or TLC through the Alberta Construction Safety Association.
- .5 Prospective Bidders who do not possess a COR, and wish to obtain information about obtaining a COR or TLC, are advised to contact:

The Alberta Construction Safety Association

WEB address: www.acsa-safety.org

225 Parsons Road SW, Edmonton, Alberta T6X 0W6

Toll Free Numbers - **Ph:** 1-800-661-2272 / **Fax:** 1-877-441-0440

Email edmonton@acsa-safety.org

OR

101, 292060 Wagonwheel Link, Rocky View, Alberta T4A 0E2

Toll Free Numbers - **Ph:** 1-800-661-6090 / **Fax:** 1-877-258-5881

14. AVAILABILITY OF BID DOCUMENTS

- .1 Bid Documents are available to prime contract Bidders at the following address only:

Town of Westlock
10003-106 Street
Westlock, Alberta T7P 2K3

Tel: 780 349-4444
- .2 A Bid Document deposit is not required.
- .3 The Owner will assume no responsibility or liability for the completeness of any Bid Documents obtained from a source other than the address specified in 13.1.

15. RETURN OF BID DOCUMENTS

- .1 Bid documents are not required to be returned.

16. EXAMINATION OF BID DOCUMENTS AND THE SITE

- .1 Bidders shall, before submitting a bid:
 - .1 Examine and read the Bid Documents thoroughly,
 - .2 Visit the site and its surroundings and other locations to become familiar with local and other conditions affecting the Work,
 - .3 Consider the effect of regulatory requirements applicable to the Work,
 - .4 Study and correlate Bidder's Site observations with the Bid Documents,
 - .5 Immediately notify the Owner of all perceived omissions and discovered conflicts, errors and discrepancies in the Bid Documents, and
 - .6 Understand the Bid Documents and be competent to undertake and complete the Work.
- .2 Refer to Section 00300 – Information Documents which identifies available information pertaining to the Project and specifies the status of and the extent, if any, to which the Bidder may rely upon such Information Documents.
- .3 Before submitting a bid, each Bidder shall, at the Bidder's expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the conditions at, under, or contiguous with the site, which may affect performance of the Work and which the Bidder deems necessary to determine its bid for performing the Work in accordance with the Bid Documents. Bidders shall obtain the Owner's prior approval for access to the site for the purpose of carrying out any such activities. Bidders shall restore the site to a condition acceptable to the Owner upon completion of such activities.

- .4 Lands upon which Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by the Contractor in performing the Work are identified in the Bid Documents. Additional lands and access thereto required for performance of the Work shall be provided by Contractor.
- .5 When Section 00250 - Pre-Bid Meeting, is included in the Bid Documents, a pre-bid meeting is arranged by the Owner to take place during the bid period. Attendance is mandatory. The date and time of the meeting will be indicated on the cover of the Bid Documents.

17. ALLOWANCES

- .1 Include in the bid price all allowances specified in Section 01280.

18. PRODUCT OPTIONS AND SUBSTITUTIONS

- .1 Product options: Comply with the requirements of Section 01621.
- .2 Substitutions:
 - .1 Comply with the requirements of Section 01621.
 - .2 Where products are specified by a proprietary specification, and substitutions are permitted, Bidders may base their bids on a named product or manufacturer or on unnamed substitutions, subject to the requirements specified for substitutions in Section 01621.
 - .3 During the bid period, it is the sole responsibility of each Bidder to determine whether a substitution meets the requirements specified in Section 01621.
 - .4 The Owner will not consider requests for approval of substitutions from Bidders during the bid period.
 - .5 Substitutions will be evaluated and approved or rejected by the Owner after the contract award.
- .3 Product Acceptability:
 - .1 The Owner may, after the bid submission and before the contract award, require any Bidder to submit proof that a product proposed for use complies with the requirements of the Bid Documents. Such proof shall be in the form of product data as specified in Section 01621.
 - .2 Should the Owner determine that a proposed product does not meet the requirements of the Bid Documents, the Bidder shall propose a product which, in the Owner's opinion, does meet requirements of Bid Documents, otherwise such Bidder's bid may be declared invalid and rejected.

19. AGREEMENT

- .1 The successful Bidder will be required to enter into a formal Agreement with the Owner for the performance of the Work.

20. DIVISION OF WORK

- .1 Work specified in the Specifications is divided into Divisions and Sections for reference purposes only. Except as may be otherwise specified in the Bid Documents, the division of the Work among the Contractor, Subcontractors, Sub-subcontractors and suppliers is the Bidders' responsibility.

21. INTERPRETATION AND MODIFICATION OF BID DOCUMENTS

- .1 Submit questions about the meaning and intent of the Bid Documents to the Owner at the office identified under "Inquiries". Interpretations and modifications considered necessary by the Owner in response to such questions will be issued by the Owner in writing in the form of an Addendum.
- .2 Addenda may also be issued by the Owner to modify the Bid Documents as deemed necessary by the Owner.
- .3 Submit questions as early as possible in the bid period. The Owner may not respond to questions received too close to the bid closing time to permit issuance of an Addendum.
- .4 Submit inquiries as early as possible in the bid period. If an inquiry requires an interpretation or modification of the Bid Documents, but is received too close to the bid closing time to permit issuance of an Addendum, the Owner may be unable to respond to that inquiry.
- .5 Any replies to inquiries or interpretations or modifications of the Bid Documents made verbally, by e-mail, or by any manner other than in the form of a written Addendum, shall not be binding.

22. ADDENDA

- .1 Addenda, when issued, will become part of the Bid and Contract Documents.
- .2 Each Bidder shall ascertain before bid submission, and before each bid amendment, that it has received all Addenda issued by the Owner, and shall indicate in the Bid Form, or amendment, the Addendum number(s) of all Addenda received.
- .3 During the Bid period, all Addenda issued by the Owner will be sent by fax, e-mail, or courier to the address for all Parties recorded by the Owner as having obtained hard copy Bid Documents.
- .4 Bidders who have obtained Bid Documents from any another source may not automatically receive addenda via fax, e-mail, or courier.

23. INQUIRIES

- .1 Direct inquiries during bid period to:

Carmen Clark
Executive Assistant to the Director of Operations
Town of Westlock
10003-106 Street
Westlock, Alberta T7P 2K3

Tel: 780 350-0710

END OF SECTION

1. PRE-BID MEETING AND SITE INSPECTION

- .1 A pre-bid meeting and site inspection will not be held.
- .2 Site access is not restricted.

END OF SECTION

Job No. DPC 30-094-A

1. FROM (Bidder): _____
(Name)

(Address)

TO: **Town of Westlock
10003-106 Street
Westlock, Alberta T7P 2K3**

PROJECT: **2024-2028 ASPHALT OVERLAY PROGRAM**

2. We, the undersigned, having examined and read the Bid Documents for the above noted contract, and having visited the site and examined all conditions affecting the Work, are satisfied we understand the Bid Documents and declare ourselves competent to undertake and complete the Work and do hereby irrevocably bid and agree to carry out the 2024 Scope of Work in accordance with the Bid Documents, for the stipulated price of:

\$ _____ which amount includes GST.
(Total Amount In Figures Only)

3. This Bid is based on and submitted in accordance with Section 00431 - Schedule of Prices which is attached hereto, and which forms an integral part of this bid.

4. This bid includes provisions of the following addenda issued during the bid period:

Addendum Number(s) _____, _____, _____, _____, _____.

5. It is understood that the unit prices, lump sums and allowances set out in the Schedule of Prices form the basis of the bid price and that the extensions of unit prices and addition of unit price extensions, lump sums and allowances price shall be less than or equal to the stipulated price.

6. The following are being submitted with this bid:

- .1 Section 00431 – Schedule of Prices.
- .2 Section 00495A – Schedule of Relevant Experience
- .3 Section 00495B – Schedule of Local Experience
- .4 Section 00495C – Schedule of Local Content

7. If notified in writing by the Owner of the acceptance of this bid within 60 days after the bid closing time, the undersigned will, within 21 days after date of issuance of such notification, execute a formal Agreement with the Owner for the performance of the Work for the above stated compensation and comply with all other requirements of the Bid Documents.

8. It is understood that, with respect to the Bid Form and Schedule of Prices, should any required information be omitted or illegible, should any alteration be made to the text, or should any condition be added on or submitted with the Bid Form or Schedule of Prices, the bid may be declared informal, and the bid may be rejected.

Job No. DPC 30-094-A

9. Executed this _____ day of _____, 2024

NAME AND ADDRESS
OF BIDDER:

SIGNATURE OF AUTHORIZED
REPRESENTATIVE(S):

NAME AND STATUS OF PERSON(S)
SIGNING BESIDE: (Print or Type)

WITNESS'S SIGNATURE OR CORPORATE SEAL:

END OF SECTION

Job No. DPC 30-094-A

1. FROM (Bidder):

(Name)

(Address)

TO:

Town of Westlock
10003-106 Street
Westlock, Alberta T7P 2K3

PROJECT:

2024-2028 ASPHALT OVERLAY PROGRAM

2. This Schedule of Prices forms an integral part of the Bid for the above noted project and shall be read and considered in conjunction with Section 00425 - Unit Price Bid Form.
3. It is understood and agreed that with respect to the submission of this Schedule of Prices, the following shall apply:
 - .1 Items of Work are priced in accordance with the Bid Documents, including Section 00630 - Payment Conditions, Section 01275 - Measurement Rules, and Section 01280 - Measurement Schedule.
 - .2 Every price requested shall be submitted or the Bid may be declared informal, and the Bid may be rejected.
 - .3 Should any item be omitted or illegible, should any alteration be made to the text, or should any condition be added on or submitted with the Schedule of Prices, the Bid may be declared informal, and the Bid may be rejected.
4. Schedules: See next page.

SCHEDULE A – SPIRIT CENTRE PARKING LOT**Town of Westlock
2024-2028 Asphalt Overlay Program****2024 Scope of Work**

The undersigned, having carefully read these Specifications, hereby agrees to supply all labour, superintendence, plant and materials for the completion of the Works described in these Specifications. Payment for Work described by these Specifications will include the following items:

	Description	Qty	Unit	Unit Price	Extension
1.	Remove Curb	10	l.m.	\$_____	\$_____
2.	Remove Curb and Gutter	16.3	l.m.	\$_____	\$_____
3.	Asphalt Removal	130	m ²	\$_____	\$_____
4.	Excavation	1124	m ³	\$_____	\$_____
5.	Topsoil Stripping	18	m ²	\$_____	\$_____
6.	Base Course (110mm) Removal	131	m ²	\$_____	\$_____
7.	Subgrade Preparation	2950	m ²	\$_____	\$_____
8.	Granular Base Course – 250mm	2950	m ²	\$_____	\$_____
9.	Asphalt Overlay	2755	m ²	\$_____	\$_____
TOTAL SCHEDULE A					\$_____

SCHEDULE B – 100 AVENUE CONCRETE UPGRADES**Town of Westlock
2024-2028 Asphalt Overlay Program****2024 Scope of Work**

The undersigned, having carefully read these Specifications, hereby agrees to supply all labour, superintendence, plant and materials for the completion of the Works described in these Specifications. Payment for Work described by these Specifications will include the following items:

	Description	Qty	Unit	Unit Price	Extension
1.	Edge Milling (50mm) – 3000mm Wide	540	m ²	\$_____	\$_____
2.	Gravel Base Course (150mm)	90	m ²	\$_____	\$_____
3.	Asphalt Overlay (55 mm)	540	m ²	\$_____	\$_____
4.	Asphalt Overlay (100 mm)	90	m ²	\$_____	\$_____
5.	Valve Adjustment	1	unit	\$_____	\$_____
TOTAL SCHEDULE B					\$ _____

SCHEDULE C – MAINTENANCE AND MISCELLANEOUS ROAD REPAIRS

Town of Westlock 2024-2028 Asphalt Overlay Program

The undersigned, having carefully read these Specifications, hereby agrees to supply all labour, superintendence, plant and materials for the completion of the Works described in these Specifications. Payment for Work described by these Specifications will include the following items:

Description		Qty	Unit	2024 Unit Price	Extension
1.	Crack Sealing		l.m.	\$ _____	\$ 15,000.00
2.	Miscellaneous Road Repairs				
	Remove and Replace				
	50mm thickness (Price to include tack coat)		m ²	\$ _____	\$ _____ N/A
	0-200 sq. m		m ²	\$ _____	\$ _____ N/A
	200 – 500 sq. m				
	500-1000 sq. m		m ²	\$ _____	\$ _____ N/A
	1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
	Existing Base Prep. (price to include prime and tack coat)				
	0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
	200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A
	500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
	1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
	Misc. Road Repairs 100mm thickness (price to include prime and tack coat)				
	100mm Thickness				
	0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
	200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A
	500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
	1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
	Existing Base Prep.				
	0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
	200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A
	500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
	1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
	Utility Cut Road Repair				
	75mm Thickness (Price to include prime and tack coat)				
	0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
	200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A

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Description	Qty	Unit	2024 Unit Price	Extension
500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
Existing Base Prep. (Price to include prime and tack coat)				
0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A
500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
Miscellaneous Road Repairs 100mm Thickness (Price to include prime and tack coat)				
100mm Thickness				
0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A
500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
Existing Base Prep.				
0 – 200 sq. m		m ²	\$ _____	\$ _____ N/A
200 – 500 sq. m		m ²	\$ _____	\$ _____ N/A
500 – 1000 sq. m		m ²	\$ _____	\$ _____ N/A
1000 – 2500 sq. m		m ²	\$ _____	\$ _____ N/A
3. 50mm Overlay (Price to include tack coat)				
0-750 Sq. m		m ²	\$ _____	\$ _____ N/A
750 – 1500 sq. m		m ²	\$ _____	\$ _____ N/A
1500 – 3000 Sq. m		m ²	\$ _____	\$ _____ N/A
4. Edge Milling				
600mm wide				
400m		m ²	\$ _____	\$ _____ N/A
800m		m ²	\$ _____	\$ _____ N/A
1200m		m ²	\$ _____	\$ _____ N/A
1200mm wide				
400m		m ²	\$ _____	\$ _____ N/A
800m		m ²	\$ _____	\$ _____ N/A
1200m		m ²	\$ _____	\$ _____ N/A
1800 mm wide				
400m		m ²	\$ _____	\$ _____ N/A
800m		m ²	\$ _____	\$ _____ N/A
1200m		m ²	\$ _____	\$ _____ N/A

2025 to 2029 MAINTENANCE AND MISCELLANEOUS ROAD REPAIRS rates will be negotiated each year and agreed to by both the contractor and owner prior to work being completed. The contractor will be required to demonstrate how the input costs such as fuel, Asphalt oil, Gravel, etc., change the

Job No. DPC 30-094-A

annual rates. The owner will expect that market pricing will both increase and decrease unit rates each year.

SUMMARY OF SCHEDULES AND PRICES

SCHEDULE A – SPIRIT CENTRE PARKING LOT	\$	
SCHEDULE B – 100 AVENUE CONCRETE UPGRADES	\$	
SCHEDULE C–MAINTENACE AND MISCELLANEOUS ROAD REPAIRS	\$	See Schedule C for unit Pricing
SUB-TOTAL	\$	
G.S.T. (5%)	\$	
TOTAL AMOUNT	\$	

END OF SECTION

1. I _____, the undersigned, being an authorized representative of the Bidder, modify the Schedule of Prices for our bid as shown in the following schedule.

from submitting a bid modification using a facsimile submission process.

- .3 Failure of this bid modification to arrive before the closing time, accurately or completely for any reason will render this bid modification null and void.

Signature of Authorized Representative

**Status of Person Signing Beside
(Print or Type)**

Name Of Bidder (Print Or Type)

Date

Send to the location identified in Section 00200 - Instruction to Bidders.

END OF SECTION

Job No. DPC 30-094-A

1.

FROM (Bidder):

(Name)

(Address)

TO:

Town of Westlock
10003, 106 Street
Westlock, AB
T7P 2K3

PROJECT:

2024-2028 ASPHALT OVERLAY PROGRAM

RELEVANT EXPERIENCE

Project Name	Project Description/Scope

Job No. DPC 30-094-A

Project Name	Project Description/Scope

Job No. DPC 30-094-A

Project Name	Project Description/Scope

Job No. DPC 30-094-A

Project Name	Project Description/Scope

END OF SECTION

Job No. DPC 30-094-A

1.

FROM (Bidder):

(Name)

(Address)

TO:

Town of Westlock
10003, 106 Street
Westlock, AB
T7P 2K3

PROJECT:

2024-2028 ASPHALT OVERLAY PROGRAM

LOCAL EXPERIENCE

Project Name	Project Description/Scope

Project Name	Project Description/Scope

Project Name	Project Description/Scope

Project Name	Project Description/Scope

END OF SECTION

Job No. DPC 30-094-A

1. FROM (Bidder): _____
(Name)

(Address)

TO: **Town of Westlock
10003, 106 Street
Westlock, AB
T7P 2K3**

PROJECT: **2024-2028 ASPHALT OVERLAY PROGRAM**

LOCAL CONTENT

Trade/Material/Equipment	Name and Address of Local Subcontractor/Supplier

END OF SECTION

Job No. DPC 30-094-A

AGREEMENT BETWEEN Town of Westlock AND

This Agreement made in triplicate on the day of 20.....:

between

Town of Westlock, hereinafter called the "Owner"

and

.....
(Name of Contractor)

.....
(address)

.....
(City, Prov, Postal code)

hereinafter called the "Contractor"

witnesses: that the parties agree as follows:

ARTICLE 1: THE WORK

The Contractor shall perform the Work required by the Contract Documents for:

**Town of Westlock
2024-2028 Asphalt Overlay Program**

and do and fulfill everything required by this Agreement.

ARTICLE 2: CONTRACT DOCUMENTS

The Contract Documents referred to in Article 1 of this Agreement shall be as defined in the Contract Documents. Terms used in the Contract Documents which are defined in the Definitions and Interpretation Section shall have the meanings designated therein.

Job No. DPC 30-094-A

ARTICLE 3: CONTRACT TIME

The Contractor shall attain Substantial Performance of the Work by the following date:

1st day of October of each year of the Contract.

The Contractor shall attain Total Performance of the Work by the following date:

30th day of October of each year of the Contract.

ARTICLE 4: CONTRACT PRICE

The Contract Price is dollars

and cents.

(\$.....) in Canadian funds (GST in).

ARTICLE 5: TAXES AND DUTIES

Unless otherwise stated in the Contract Documents, the Contractor shall pay all government sales taxes, customs duties and excise taxes with respect to the Contract.

Any increase or decrease in costs to the Contractor due to changes in such taxes and duties, after the closing date of the Tender submissions, shall increase or decrease the Contract Price accordingly.

Where an exemption from or recovery of government sales taxes, duties or excise taxes is applicable to the Contract, the procedure shall be as established in the Payment conditions and other applicable provisions in the Contract Documents.

ARTICLE 6: PAYMENT

The Owner shall make payment in Canadian funds to the Contractor on account of the Contract Price in accordance with the Payment Conditions and other applicable provisions in the Contract Documents.

The Owner shall hold back an amount equal to 10% from each progress payment as provided for in the Payment Conditions of the Contract Documents.

ARTICLE 7: RIGHTS AND REMEDIES

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. No action or failure to act by the Owner 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.

ARTICLE 8: LANGUAGE AND LAW OF THE CONTRACT

The language of the Contract is English and the Contract shall be construed and interpreted accordingly. The law prevailing in the Province of Alberta, Canada shall govern the interpretation of the Contract.

ARTICLE 9: SUCCESSION

The 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 permitted assigns.

ARTICLE 10: NOTICES

Notices to be given under the Contract shall be addressed to the parties as follows:

The Owner at:

Town of Westlock
10003-106 Street
Westlock, Alberta T7P 2K3

Telephone: 780-349-4444

The Contractor at:

.....
(name)

.....
(address)

.....

.....
(City, Prov, Postal code)

Telephone: Facsimile:

Job No. DPC 30-094-A

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

SIGNED, SEALED AND DELIVERED in the presence of:

CONTRACTOR

.....
Company Name

.....
Signature of Authorized Signing Officer

.....
Name of Officer

.....
Title of Officer

Corporate Seal

OWNER

.....
Town of Westlock
Name

.....
Signature of Authorized Signing Officer

.....
Name of Officer

.....
Title of Officer

Corporate Seal

END OF SECTION

1. DEFINITIONS

In the Contract, the following terms shall have the meanings assigned to them:

- .1 "Additional Instruction" means a written instruction, issued by the Owner to the Contractor, clarifying or finalizing requirements of the Contract Documents and not involving a change in the Contract Price or the Contract Time.
- .2 "Agreement Form" means the document which, when executed by the Owner and the Contractor, formalizes the Contract.
- .3 "Bid" means the Contractor's priced offer to the Owner for the performance of the Work in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.
- .4 "Certificate of Total Performance" means the certificate issued by the Owner's Representative, when to the best of his knowledge, information and belief, the entire Work has been performed to the requirements of the Contract Documents, except for defects in the Work not discovered by the Owner's Representative and the making good of faulty workmanship or materials during the maintenance period.
- .5 "Certificate of Warranty Performance" means the certificate issued by the Owner's Representative following a period of twelve (12) months from the date of the Certificate of Substantial Performance, or, if a Certificate of Substantial Performance is not issued, following a period of twelve (12) months from the date of the Certificate of Total Performance, which twelve (12) month period is hereafter referred to as the "maintenance period", certifying that to the best of his knowledge, information and belief the performance of the Work (except for defects in the Work not discovered by the Owner's Representative) has been completed.
- .6 "Change Order" means a written instruction, issued by the Owner to the Contractor on or after the date of execution of the Agreement Form, authorizing or ordering a Change in the Work or a change in the Contract Price or the Contract Time or any combination thereof.
- .7 "Change in the Work" means an addition to, deletion from or other modification of the Work consistent with the scope and intent of the Contract.
- .8 "Construction Equipment" means equipment, appliances and things required for the performance of the Work, but does not include Permanent Work or Temporary Work.
- .9 "Contemplated Change" means a written communication, issued by the Owner to the Contractor on or after the date of execution of the Agreement Form, containing a contemplated Change in the Work and requiring the Contractor to submit a quotation for executing such contemplated change, including the Contractor's proposed changes to either or both the Contract Price or the Contract Time.
- .10 "Contract" means the undertaking by the Owner and the Contractor to perform their respective duties, responsibilities and obligations as prescribed in the Contract Documents and represents the entire agreement between the Owner and the Contractor. The Contract Documents form the Contract.

- .11 "Contract Deficiency" means a deficiency in the Work, or part thereof, for which the Contractor is responsible under the Contract and includes a deficiency in any design for which the Contractor is responsible.
- .12 "Contract Documents" means: - the Letter of Acceptance; - the executed Agreement Form; - Instructions to Bidders, completed Bid Form, Schedule of Prices, and Supplements to Bid Form; - Information Documents specifically incorporated into the Contract Documents; - Definitions and Interpretation, Payment Conditions, Security Conditions, Insurance Conditions, General Conditions, Supplementary Conditions; - the Specifications; - the Drawings; - Addenda; - and such other documents as may be identified as Contract Documents, and shall include amendments thereto made pursuant to the provisions of the Contract.
- .13 "Contract Price" means the total amount payable by the Owner to the Contractor under the Contract as stated in the Agreement Form, including authorized adjustments thereto.
- .14 "Contract Time" means the period of time specified in the Contract for attainment of substantial Performance of the Work, including authorized adjustments thereto.
- .15 "Contractor" means the person, firm or corporation contracting directly with the Owner to perform the Work.
- .16 "Cost Plus Work" means a contractual arrangement that prescribes the cost of the work plus an allowance for overhead and profit, as expressly defined in the Contract, as payment for performance of the item of work to which it relates.
- .17 "Day" means a calendar day.
- .18 "Drawings" means the graphic and pictorial portions of the Contract Documents showing the design, location or dimensions of the Work, generally including plans, elevations, sections, details and diagrams.
- .19 "Information Documents" means information of any type and in any form related to the Project and identified in the Contract Documents as such, but which does not form part of the Contract unless specifically incorporated therein.
- .20 "Invention" means any new and useful practice, process, machine, device, manufacture or composition of matter, or any new and useful improvement thereof.
- .21 "Letter of Acceptance" means the formal acceptance by the Owner of the Contractor's Bid, including any modifications to the Bid agreed to by the Owner and the Contractor and incorporated therein.
- .22 "Lump Sum Work" means a contractual arrangement that prescribes a lump sum as payment for performance of the item of work to which it relates.
- .23 "Other Contractor" means any person, firm or corporation employed by or having a separate contract with the Owner for work related to the project other than that required by the Contract Documents.
- .24 "Owner" means the Owner as named elsewhere in these Contract Documents and includes a person acting for, or in place of, the Owner.

- .25 "Owner's Representative" means the employee identified in writing by a duly authorized officer to represent the Owner under the Contract.
- .26 "Permanent Work" means any structure, Product or thing constructed, manufactured or installed in the performance of the Work, but does not include Temporary Work.
- .27 "Products" means material, components, elements, machinery, equipment, fixtures, systems and other items forming the Work or part thereof but does not include Construction Equipment. "Products" is synonymous with "Materials".
- .28 "Project" means the total construction of which the Work to be provided under the Contract may be the whole or a part.
- .29 "Prompt Payment and Construction Lien Act" means the Prompt Payment and Construction Lien Act (Alberta), R.S.A. 2000, c. B-7 and is referred to as the Prompt Payment Act.
- .30 "Proper Invoice" means an application for payment containing the information that is required for the application for payment to constitute a "Proper Invoice" under the Prompt Payment Act and this Contract.
- .31 "Regulatory Requirements" means laws, ordinances, rules, regulations, orders, codes, and other legally enforceable requirements in effect and applicable to the performance of the Work.
- .32 "Schedule of Prices" means the completed Schedule of Prices submitted by the Contractor with his Bid, as accepted by the Letter of Acceptance.
- .33 "Site" means the designated Site or location of the Work and any other places as may be specifically designated in the Contract as forming part of the Site.
- .34 "Specifications" means that portion of the Contract Documents comprising Divisions 1 to 16 of the specification format including the General Requirements and technical specifications.
- .35 "Subcontractor" means a person, firm or corporation having a contract with the Contractor for the performance of a part of the Work at the Site.
- .36 "Sub-subcontractor" means a person, firm or corporation having a contract with a Subcontractor for the performance of a part of the Work at the Site.
- .37 "Substantial Performance of the Work" means the time when the prerequisites to Substantial Performance of the Work required by the Contract are fulfilled and the Work is ready for use or is being used for the purpose intended and the state of the work is so declared, in writing, by the Owner.
- .38 "Supplier" means a person, firm or corporation having a contract with the Contractor, a Subcontractor or a Sub-subcontractor for the supply of goods or services to be incorporated into or utilized in the performance of the Work.
- .39 "Temporary Work" means site offices, temporary structures, facilities and controls and other temporary things required for the performance of the Work, but does not include Construction Equipment.

- .40 "The Standards" means reference to the Town of Westlock Design Standards 2022.
- .41 "Total Performance of the Work" means the time when the prerequisites to Total Performance of the Work required by the Contract are fulfilled and the entire Work, except those items arising from the warranty provisions of the Contract, has been performed to the requirements of the Contract Documents and is so declared, in writing, by the Owner.
- .42 "Unit Price" means the amount payable by the Owner to the Contractor under the Contract for a single unit of each separately identified item of work for which a unit price is prescribed as the basis of payment, as stated in the Schedule of Prices.
- .43 "Unit Price Work" means a contractual arrangement that prescribes the product of a Unit Price multiplied by a number of units of measurement of a class as payment for performance of the item of work to which it relates.
- .44 "Warranty Performance of the Work" means the time when the prerequisites to Warranty Performance of the Work required by the Contract are fulfilled and all items arising from the warranty period or periods required by the Contract have been corrected by the Contractor and the state of the Work is so declared, in writing, by the Owner.
- .45 "Work" means the total construction and related services required by the Contract Documents.

2. INTERPRETATION

The Contract shall be interpreted as follows:

- .1 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all.
- .2 Words importing the singular also include the plural and the masculine includes the feminine and vice-versa where the context requires.
- .3 "Herein", "hereby", "hereof", "hereunder" and similar expressions refer to the Contract as a whole and not to a particular part thereof, unless the context indicates otherwise.
- .4 Words and abbreviations which have well known technical meanings are used in the Contract in accordance with such recognized meanings.
- .5 Words importing persons or parties shall include firms and corporations and any organization having legal capacity.
- .6 In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an", but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.
- .7 The imperative mood is used extensively in the Contract Documents, particularly the Specifications. Such language is always directed to the Contractor, and it is the Contractor's responsibility to perform the Work specified in the imperative mood, unless specifically stated otherwise.

- .8 Unless the context indicates otherwise, where a term is defined in the Contract Documents, other parts of speech or grammatical forms of the same word or expression have corresponding meanings.
- .9 Unless the context indicates otherwise, all monetary amounts shall be interpreted as amounts in the lawful currency of Canada.
- .10 When provision is made for the giving or issue of any notice, consent, approval, certificate or determination by any person, unless otherwise specified, such notice, consent, approval, certificate or determination shall be in writing and the words "notify", "certify" or "determine" shall be construed accordingly. Any such consent, approval, certificate or determination shall not unreasonably be withheld or delayed.
- .11 When provision is made for a communication to be "written" or "in writing" this means any handwritten, typewritten or printed communication, including facsimile transmissions.
- .12 Except in relation to a change in the Contract Time, any period of time in the Contract within which the Owner or the Contractor is to take action or decide anything may be extended by agreement, notwithstanding that the period of time has expired.
- .13 The term "including" or "includes" shall be construed as inclusive and not exclusive, and shall be interpreted to mean including but not necessarily limited to the items referred to.
- .14 In the event of ambiguities, discrepancies and conflicts between the several documents forming the Contract Documents the following order of precedence shall apply:
 - .1 Executed Agreement Form.
 - .2 Letter of Acceptance.
 - .3 Addenda.
 - .4 Supplementary Conditions.
 - .5 Conditions of Contract, including General, Payment, Security and Insurance Conditions.
 - .6 Specifications.
 - .7 Drawings.
 - .8 Drawings of larger scale shall govern over those of smaller scale of the same date.
 - .9 Figured dimensions shown on a Drawing shall govern even though they may differ from dimensions scaled on the same Drawing.

Notwithstanding the foregoing, documents of later date shall always govern over the documents amended.

END OF SECTION

1. RELATED REQUIREMENTS

- .1 Hold Harmless Agreement: General Conditions.

2. GENERAL REQUIREMENTS FOR INSURANCE

- .1 Without restricting the generality of the hold harmless provisions of the General Conditions of Contract and without limiting the obligations or liabilities under the Contract, Contractor shall, provide, maintain, and pay for the insurance coverages specified in this Section.
- .2 Form: Insurance policies shall be placed with Insurers, licensed to conduct business in the Province of Alberta, who comply with the Insurance Act (Alberta) and be in forms acceptable to the Owner.
- .3 Duration: Unless otherwise specified, required insurance coverages shall be maintained continuously from date of commencement of the Work until date of Total Performance of the Work.
- .4 Waiver of Recourse and Subrogation: Contractor waives all rights of recourse and subrogation against Owner for damages to Contractor's property.
- .5 Notice of Change to Policy: Each required policy shall be endorsed to provide the Owner with not less than 30 days' advance written notice of cancellation or material change restricting coverage.
- .6 Proof of Insurance: Prior to commencement of any activities on site, Contractor shall provide Owner with proof that insurance coverages are in effect and meet specified conditions. In addition, Contractor shall at any time upon request, promptly file certified true copy of any insurance policy and shall otherwise provide proof of any required insurance, in a form acceptable to the Owner.
- .7 Subcontractors' Insurance: Contractor shall ensure that Subcontractors provide their own General Liability Insurance, Automobile Liability Insurance, where such risks exist, Aircraft and Watercraft Liability Insurance, and Other Insurance equivalent to that specified herein. With respect to General Liability Insurance, Contractor may alternatively provide such insurance on a wrap-up basis insuring himself, his Subcontractors, and anyone employed directly or indirectly by himself or his Subcontractors to perform a part of the Work.

3. GENERAL LIABILITY INSURANCE

- .1 General Liability Insurance shall be in the name of the Contractor. The policy shall include the Owner and the Owner's Representative as Additional Insured with respect to liability arising from the Contractor's operations with regard to the work. The limits shall not be less than five million dollars inclusive per occurrence. The insurance coverage shall include at least the following extensions: Premises, Property and Operations; Occurrence basis, Owners/Contractors' protective, Products and Completed Operations; Blanket Contractual; Employees as Additional Insureds: Broad Form Property Damage; Broad Form Loss of Use; Personal Injury; Incidental Malpractice; Contingent Employers' Liability; Cross Liability/Severability of Interests; Non-Owned Automobile Liability

including Endorsement Form 96; Intentional Injury to protect persons or property, X-plate/unlicensed/specially licensed vehicles; Attached Machinery; Voluntary Medical Payments. To achieve the desired limit, umbrella or excess liability insurance may be used. The Policy shall be endorsed to provide the Owner with not less than 30 days' notice in writing in advance of any cancellation or change or amendment restricting coverage.

4. AUTOMOBILE LIABILITY INSURANCE

- .1 Automobile Liability Insurance in respect of licensed vehicles shall have limits of not less than five million dollars inclusive per occurrence for bodily injury, death, and damage to property, in the following forms endorsed to provide the Owner with not less than fifteen (15) days' written notice in advance of any cancellation or change or amendment restricting coverage:
 - .1 Standard Owner's Form SPF #1 Automobile Policy providing Third Party Liability and Accident Benefits Insurance and covering licensed vehicles owned or operated by or on behalf of the Contractor.

5. AIRCRAFT AND WATERCRAFT LIABILITY INSURANCE

- .1 Aircraft and Watercraft Liability Insurance with respect to owned or non-owned aircraft or watercraft if used directly or indirectly in the performance of the Work, including use of additional premises, shall be subject to limits of not less than two million dollars inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than one million dollars for Aircraft Passenger Hazard. Such insurance shall be in the form acceptable to the Owner. The policies shall be endorsed to provide the Owner with not less than thirty (30) days' written notice in advance of cancellation, change or amendment restricting coverage.

6. COURSE OF CONSTRUCTION AND BOILER INSURANCE

- .1 All Risk Property Insurance shall be in the joint names of the Contractor and the Owner, insuring not less than the sum of the Contract Price and the full value, as stated in the General Requirements, of products that are specified to be provided by the Owner for incorporation into the Work. The insurance coverage shall be maintained continuously until ten (10) days after the date of the Certificate of Total Performance.
- .2 Boiler Insurance insuring the interests of the Contractor, the Owner and the Owner's Representative for not less than the replacement value of boilers and pressure vessels forming part of the Work. The insurance coverage shall be maintained continuously from the commencement of use or operation of the property insured and until ten (10) days after the date of the Certificate of Total Performance.
- .3 Should the Owner wish to use or occupy part or all of the Work, he shall give thirty (30) days' written notice to the Contractor of the intended purpose and extent for such use or occupancy. Prior to such use or occupancy the Contractor shall notify the Owner in writing of the additional premium cost, if any, to maintain such insurance which shall be at the Owner's expense. If because of such use or occupancy the Contractor is unable to provide coverage, the Owner, upon written notice from the Contractor and prior to such use or occupancy, shall assume the responsibility to provide, maintain and pay for

Property and Boiler Insurance insuring the full value of the Work, as in (a) and (b) above, including coverage for such use or occupancy and the Contractor shall refund to the Owner the unearned premiums applicable to the Contractor's Policies upon termination of coverage.

- .4 The Policies shall provide that, in the event of a loss or damage, payment shall be made to the Owner and the Contractor as their respective interests may appear. The Contractor shall act on behalf of the Owner and himself for the purpose of adjusting the amount of such loss or damage payment with the Insurers. When the extent of the loss or damage is determined, the Contractor shall proceed to restore the Work. Loss or damage shall not affect the rights and obligations of either party under the Contract except that the Contractor will be entitled to such reasonable extension of time for completion of the Work as the Owner's Representative may decide.

.5 **Payment for Loss or Damage:**

.1 When the property insurance has been obtained by the Contractor in accordance with the requirements of this Section: The Contractor shall be entitled to receive from the payments made by the Insurer the amount of his interest in the restoration of the work. In addition, the Contractor shall be entitled to receive from the Owner (in addition to the amount due under the Contract) the amount in which the Owner's interest in the restoration of the Work has been appraised, such amount to be paid upon receipt of payment or payments from the Insurer in accordance with the Owner's Representative's certificates for payment.

.2 When the property insurance has been obtained by the Owner pursuant to the terms of the Contract Documents: The Contractor shall be entitled to receive from the payments made by the Insurer the amount of the Contractor's interest in the restoration of the Work. In addition, the Contractor shall be entitled to receive from the Owner (in addition to the amount due under the Contract) the amount in which the owner's interests in the restoration of the Work has been appraised, such amount to be paid as the restoration of the Work proceeds and in accordance with the requirements of Contract Documents.

- .6 The Contractor shall be responsible for deductible amounts under the policies.

7. CONTRACTORS' EQUIPMENT INSURANCE

- .1 All Risks Contractors' Equipment Insurance covering construction machinery and equipment owned or rented and used by the Contractor and/or Subcontractors for the performance of the Work, including Boiler Insurance on temporary boilers and pressure vessels, shall be in the form acceptable to the Owner.

8. OTHER INSURANCE

- .1 Contractor shall provide, maintain and pay for any additional insurance required to be provided by law, or which he considers necessary to cover risks not otherwise covered by insurance specified in the Contract Documents.

END OF SECTION

1. FEDERAL GOODS AND SERVICES TAX

- .1 Monies payable by the Owner to the Contractor shall be inclusive of the Federal Goods and Services Tax (GST).

2. BASIS OF PAYMENT

- .1 Payment for Lump Sum Work shall be based on the prices in the Contract and, when required by the Contract, the approved schedule of values for such work.
- .2 Payment for Unit Price Work shall be based on the Unit Prices in the Contract.
- .3 Payment for Cost Plus Work shall be based on the cost of such work, as specified herein, plus a fee in the amount of 10% of the cost of such work for the Contractor's overhead and profit except that no fee shall be applied to the cost of Construction Equipment when such cost is based on rates which already include the Contractor's overhead and profit.
- .4 The cost of Cost Plus Work shall be computed as the sum of the following cost elements as applicable to such work:
 - .1 Cost of labour (other than labour costs included in other cost elements) comprised of payroll costs for employees in the direct employ of the Contractor. Such employees shall include the superintendent and foremen at the Site. Payroll costs shall include salary, fringe benefits and statutory charges paid by Contractor. Fringe benefits shall include health care, vacations with pay, sick time allowance, and pension plan, life and disability insurance, dental and medication plan contributions. Statutory charges shall include contributions for Canada Pension Plan, Workers' Compensation, statutory holidays and Unemployment Insurance. Labour rates shall be consistent with rates actually paid for equivalent job classifications in the normal performance of Lump Sum Work or Unit Price Work or, if there are no such equivalencies, under a schedule of job classifications and labour rates agreed upon by the Owner and the Contractor, if possible before labour costs are incurred.
 - .2 Cost of Products supplied and incorporated into Permanent Work, including cost of transportation and storage thereof and Supplier's site services required in connection therewith. Cash discounts shall accrue to the Contractor. Trade discounts, rebates and refunds and returns from sale of surplus Products shall accrue to the Owner.
 - .3 Cost of Construction Equipment:

Cost of Construction Equipment shall be paid at the rates specified in the current edition of the Equipment Rental Rates Guide published by the Alberta Roadbuilders and Heavy Construction Association, hereinafter called the "Rates Guide", subject to the following:

 - .1 Rates specified in the Rates Guide shall be deemed to include all overhead and profit, regardless of whether Construction Equipment is provided by the Contractor, Subcontractors or Sub-subcontractors.

- .2 Rates specified in the Rates Guide shall be deemed to include cost of owning, operating, loading, unloading, assembling, erecting, and dismantling.
 - .3 When applicable rates are not included in the Rates Guide, costs shall be paid at the rates agreed upon by the Owner and the Contractor, if possible before such costs are incurred.
 - .4 Cost of moving Construction Equipment to and from the Site shall not be payable, unless such cost is solely attributable to the Work and is approved as such by the Owner.
 - .5 Except for Construction Equipment traveling under its own power, travel time for Construction Equipment shall not be payable. Unless otherwise approved by the Owner, Construction Equipment shall be moved by the most economical method.
- .5 Cost of Temporary Work, including cost of transportation and maintenance thereof, used and consumed in the performance of the Work and the cost less fair market value of such work used but not consumed which shall remain the property of the Contractor.
- .6 Cost of special services, including the cost of architects, engineers, specifiers, surveyors, testing laboratories and inspection agencies.
- .7 Supplemental costs, including:
 - .1 Travel and subsistence costs of Contractor's employees.
 - .2 Statutory charges, including fees, cost of permits and licenses and custom duties.
 - .3 Cost of rights-of-way and other land related costs.
 - .4 Royalty payments and patent license fees.
 - .5 Deposits lost for causes other than the Contractor's fault or negligence.
- .8 Subcontract and Sub-subcontract costs, including payments made by the Contractor to Subcontractors and by Subcontractors to Sub-subcontractors in accordance with the requirements of such contracts. Subcontractors' and Sub-subcontractors' costs and fee for overhead and profit for Cost Plus Work to be performed under such contracts shall be determined in the same manner as the Contractor's cost and fee.
- .9 With respect to Cost Plus Work:
 - .1 Costs payable by Owner shall be directly related to or shall have been necessarily and properly incurred in the performance of such work.
 - .2 Overhead shall include the Contractor's costs related to the operation and maintenance of his head office and branch offices, administration at head office and branch offices, general management, legal, audit and accounting services, buying organization, corporate tax, financing and other bank charges, company directors, salaries and other compensation of personnel stationed off-site, design of Construction Equipment and Temporary Work, supervision, planning and scheduling of work, expendable and unexpendable small tools, including maintenance thereof, clean up and recruitment and training of site staff.

- .3 Contractor shall obtain the Owner's prior approval to subcontract or enter into other agreements for Cost Plus Work.
- .4 Costs claimed for delay or extension of the contract will be considered only if the Contractor has clearly demonstrated the work delayed or extended the critical path of the project.
- .5 The Owner may refuse to pay all or part of the cost of any Work item under any cost element, where the item in question was, in the Owner's opinion, unsuitable for the Work performed.

3. MEASUREMENT FOR PAYMENT

- .1 Unless otherwise specified in the Contract, the Owner shall measure the Work for the purpose of determining payment to the Contractor in accordance with the measurement provisions of the Contract.

4. PROGRESS PAYMENTS

- .1 Prior to Substantial Performance of the Work, the Owner shall make monthly payments to the Contractor.
- .2 Within 5 days prior to the end of each monthly payment period, the Contractor shall submit to the Owner a draft of the Contractor's proposed application for payment for all of the Work performed by the Contractor in that month, in order to facilitate and expedite payments, including an estimate of the Work to be performed and Products to be delivered at the date of such application for payment but before the end of that month, and including any reports or certificates confirming the satisfactory completion of any commissioning and testing required by the Contract Documents for any completed part of the Work that the Contractor will include in its application for payment
 - .1 The Contractor shall review with the Owners Representative, the draft application for payment and the percentage of the Work completed for each item indicated in the schedule of values. This procedure shall be complied with for each draft application for payment.
 - .2 Nothing in this paragraph is intended to be a condition, pre-condition, prevent or delay the Contractor's right to submit its applications for payment and the Prompt Payment Act.
- .3 Within 5 days after the end of each monthly payment period, the Contractor shall submit to the Owner:
 - .1 Proper Invoice containing the information required for the application for payment to constitute a "Proper Invoice" under the Prompt Payment and Construction Lien Act (Alberta), R.S.A. 2000, c. B-7 including:
 - .1 Contractor's name and business address.
 - .2 Date of the invoice and the period during which the work was done or materials were furnished.

- .3 The applicable contract number.
 - .4 A clear description, including quantity if appropriate, of the Work or Materials furnished.
 - .5 The amount requested for payment and the corresponding payment terms broken down for the work done or materials furnished.
 - .6 The name, title, telephone number, email address and mailing address of the person to whom payment is to be sent.
 - .7 A statement indicating that the invoice provided is intended to constitute a Proper Invoice.
- .2 Completed Statutory Declaration Form, at and after the second monthly payment period.
- .3 Workers' Compensation Board verification that the Contractor's account is in good standing.
- .4 Any data requested by the Owner to assist the Owner to determine the amount due and payable to the Contractor.
- .5 For Products stored by the Contractor on the Site for incorporation in Permanent Work but not incorporated in such Work, proof of purchase price and delivery to the Site, along with a statement of the quantity of such Products and the Schedule of Prices item to which the Products relate.
- .4 The Owner shall, within 28 days after the receipt of a Proper Invoice and subject to having received within the time specified any required information referred to in clause 4.2, pay to the Contractor the undisputed amount due and payable, up to the end of the monthly payment period in respect of:
- .1 The value of Work executed.
 - .2 The value of Work executed pursuant to authorized Changes in the Work.
 - .3 The value of Products stored by the Contractor on the Site for incorporation in Permanent Work but not incorporated in such Work.
 - .4 Adjustments due to changes in Regulatory Requirements or price fluctuation provisions of the Contract, if applicable.
 - .5 Any other amount determined by the Owner.
 - .6 Subject to:
 - .1 any deductions under clause 10:
 - .2 any withholdings under clause 11; and

- .3 retention of the holdback amount calculated by applying the holdback percentage referred to in clause 5 to the amount payable to the Contractor under clause 4.3 after any deductions and withholdings.
- .5 If the amount of any invoice is disputed by the Owner, the Owner shall give notice of dispute (Form 1 "Owners' Notice of Dispute" attached) within specifying the amount of the Proper Invoice that is not being paid and detailing all the reasons for non-payment.
- .6 For Unit Price Work, Owner may, at his discretion, make partial payment based on partial completion of the scope of a single unit of an item of Work. Partial payment (payment of the undisputed amount by the owner) can only occur if a notice of dispute (Form 1 "Owners' Notice of Dispute") was issued within 14 days after the Owner received a Proper Invoice.
- .7 If, after receipt of a progress payment from the Owner, the Contractor disagrees with the amount of such payment, such amount shall nevertheless be considered to be correct unless the Contractor, within 7 days after such receipt, notifies the Owner of the respects in which such payment is claimed by him to be incorrect. On receipt of such notice, the Owner shall review the amount of the payment and either confirm or vary it. If the Owner varies the payment, such variance shall be added to the next progress payment.
- .8 Notwithstanding the terms of this clause or any other clause of the Contract, no amount shall be paid by the Owner until the contract security and proof of insurance, if required under the Contract, have been provided by the Contractor.

5. HOLDBACK

- .1 The Owner shall hold back the percentage specified in the Agreement Form from each progress payment referred to in clause 4.
- .2 Sixty (60) days after the date of a Certificate of Substantial Performance, if issued, the Owner will pay to the Contractor, the unpaid balance of holdback moneys then due, provided:
 - .1 Third party claims, received by the Owner pursuant to the Prompt Payment Act or applicable requirements of the Contract have been resolved, or addressed and a course of action agreed to by the Owner and the Contractor,
 - .2 The Contractor has submitted to the Owner, within 7 days after the date of Substantial Performance, a letter of clearance from the Workers' Compensation Board and a completed Statutory Declaration Form,
 - .3 The Contractor has submitted to the Owner, a letter from the Contractor's Surety (if any) approving the release of the holdback,
 - .4 The Contractor has submitted to the Owner, all Record Documents, showing changes as constructed, Operating and Maintenance Manuals, guarantees, warranties, certificates, reports, spare parts and spare material required by the Contract Documents,

- .5 The Contractor has submitted to the Owner, a statement verifying that "all payment quantities on the completed portion of the Contract have been accepted; and all claims, all demands for Extra Work, or otherwise, under or in connection with the completed portion of the Contract have been presented to the Owner's Representative".
- .3 Sixty (60) days after the date of Total Performance, the Owner will pay to the Contractor, the unpaid balance of holdback moneys then due, provided:
 - .1 Third party claims, received by the Owner pursuant to the Prompt Payment Act or applicable requirements of the Contract have been resolved, or addressed and a course of action agreed to by the Owner and the Contractor,
 - .2 The Contractor has submitted to the Owner, within 7 days after the date of Substantial Performance, a letter of clearance from the Workers' Compensation Board and a completed Statutory Declaration Form,
 - .3 The Contractor has submitted to the Owner, a letter from the Contractor's Surety (if any) approving the release of the holdback,
 - .4 The Contractor has submitted to the Owner, all Record Documents, showing changes as constructed, Operating and Maintenance Manuals, guarantees, warranties, certificates, reports, spare parts and spare material required by the Contract Documents,
 - .5 The Contractor has submitted to the Owner, a statement verifying that "all payment quantities on the completed portion of the Contract have been accepted; and all claims, all demands for Extra Work, or otherwise, under or in connection with the completed portion of the Contract have been presented to the Owner's Representative".

6. FINAL PAYMENT

- .1 Upon the accepted date of Total Performance, the Contractor shall submit an application for final payment in the form of a Proper Invoice containing all of the documents and information required under this Agreement, including all final reports and certificates confirming satisfactory completion of all required commissioning and testing, to the extent applicable.
- .2 Upon receipt of the final invoice the Owner will pay to the Contractor the unpaid balance of any monies then due under the Contract, PROVIDED THAT the Owner's Representative may dispute, and withhold, or on account of subsequently discovered evidence, nullify the whole or any part of any certificate to such an extent as may be necessary to protect the Owner from loss on account of:
 - .1 The Contractor's unsatisfactory prosecution of the Work.
 - .2 Defective or damaged Work requiring correction or replacement.
 - .3 Claims or liens filed or reasonable evidence indicating the probable filing of claims or liens.

- .4 Failure of the Contractor to make payments promptly to subcontractors or for materials or labour.
 - .5 A reasonable doubt that the Contract can be completed for balance unpaid.
 - .6 Damage to an Other Contractor's Work which has not been settled which may result in the Other Contractor whose Work has been damaged bringing action against the Owner. In case of action, the Contractor will bear the expense of same.
 - .7 When the above conditions are resolved to the satisfaction of the Owner, payment shall be made for the amounts withheld because of them.
- .3 The final payment shall represent full and final settlement of all monies due to the Contractor pursuant to the Contract except with respect to unresolved claims, if any.

7. OWNER'S LIABILITY

- .1 After the final payment issued has been made, the Owner shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract, except as may be provided elsewhere in the Contract, unless the Contractor shall have made a claim in respect thereof prior to or within the time specified in the Prompt Payment Act.

8. DELAY IN MAKING PAYMENT

- .1 In respect of progress payments, payment after Substantial Performance of the Work, payment of holdback, and final payment, the Owner shall pay the Contractor an amount that the Owner considers to be due to the Contractor, pursuant to the Contract, within the time specified.

9. RIGHT OF SET-OFF

- .1 Without limiting any right of set-off, deduction or recovery given or implied by law or elsewhere in the Contract, the Owner may set off any amount payable to the Owner by the Contractor, or recoverable from the Contractor by the Owner, under the Contract or under any other current contract against any amount payable to the Contractor under this Contract.
- .2 For the purposes of these Payment Conditions, "other current contract" means a contract between the Owner and the Contractor under which the Contractor has an undischarged obligation to perform or supply work, labour, or material, or in respect of which the Owner has, since the date of execution of the contract agreement, exercised any right to take the work that is the subject of the contract out of the Contractor's hands.

10. DEDUCTIONS FROM PAYMENTS

- .1 Owner may dispute and deduct any amount claimed by or payable to Contractor in conjunction with General Conditions 15 including but not limited to:
 - .1 An amount at least equal to the value, as determined by Owner, of Work not in accordance with Contract Documents.
 - .2 The amount of any unresolved third-party claim submitted pursuant to the Prompt Payment Act or applicable requirements of the Contract.
 - .3 The amount of any unpaid and overdue statutory account related to the Contract and of which the Owner has received notice, and which is enforceable against the Owner.
 - .4 The amount of any overpayment made by the Owner to the Contractor.
 - .5 Any other amount recoverable by the Owner from the Contractor under the Contract.

11. WITHHOLDING OF PAYMENT

- .1 Owner may issue a Notice of Dispute in accordance with the Prompt Payment Act and withhold all or part of any amount payable to Contractor in order to protect the Owner or third parties from loss due to Contractor's:
 - .1 Failure to make payments properly to Subcontractors or for labour, materials or equipment.
 - .2 Failure to ensure that Subcontractors make payments properly to Sub-subcontractors or for labour, materials, or equipment.
 - .3 Inability to complete the Work within the Contract Time.
 - .4 Inability to complete the Work for the unpaid balance of the Contract Price.
 - .5 Persistent failure to perform the Work in accordance with the Contract Documents.
- .2 When the causes for withholding payment pursuant to 11.1 are removed to the Owner's satisfaction, the Owner shall pay the Contractor the amount previously due and payable with the next progress payment.

12. TITLE TO AND ACCEPTANCE OF WORK

- .1 Contractor warrants that title to work and Products covered by any payment made by the Owner to the Contractor will pass to the Owner, at the time of payment, free and clear of all claims, interests and encumbrances.
- .2 Contractor further warrants that Products stored at the Site and for which payment has been received, shall not be removed from the Site and shall be kept secure and protected.

- .3 Payments made by Owner shall not be construed as an acceptance that the Work, Products, or any part thereof is complete, is satisfactory or is in accordance with the Contract Documents.

Form 1

Owner's Notice of Dispute
(Section 32.2(2) of the Act)

Name of Owner:

Owner address:

Work site legal land description:

Name of Contractor:

Contractor address:

Contractor address for service, if known:

The Owner disputes the proper invoice dated _____,
submitted to the Owner by the Contractor in respect to the work
done or material furnished. The Owner will not pay the indicated
amount payable under the invoice:

(Please check the appropriate box)

☐ The full amount of the proper invoice, being
\$ _____

☐ A portion of the amount of the proper invoice, being
\$ _____

Reason(s) for non-payment:

Date

Signature (Owner)

END OF SECTION

Job No. DPC 30-094-A

Statutory Declaration of Payment Distribution

Identification of Contract

Contract Name (location and description of the Work as it appears in the Contract Documents)

Date of This Application for Payment
Month Day Year
Date of Last (Immediate Preceding) Application for Payment
Month Day Year

Identification of Declarant (person making the declaration)

Full Name of Declarant	Position or Title (of office held with Contractor)		
Business Name (Name of Contractor)			
Business Address			
City or Town	Province	Postal Code	

Declaration

I, the undersigned, solemnly declare that as of the date of this application for payment:

- .1 all the Contractor's lawful obligations to subcontractors and suppliers, in respect of work contracted for and performed before the date of the last (immediate preceding) application for payment, are fully discharged, except for (i) hold back monies properly retained, and (ii) payments deferred by agreement;
- .2 all the Contractor's lawful obligations to workers, in respect to work contracted for, are fully discharged;
- .3 all assessments and payments required to be made by the Contractor under law have been made in full; and that
- .4 I am an authorized signing officer of the Contractor and have personal knowledge of the contract identified and the facts stated in this statutory declaration.

I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath.

Making a false or fraudulent declaration is a contravention of the Criminal Code of Canada, and could carry, upon conviction, penalties including fines, imprisonment, or both.

Signature of declarant

Attestation (to be completed by a person empowered to receive declarations, e.g. Commissioner of Oaths, Notary Public, etc.)

DECLARED before me at _____ this _____ day of _____ 20 _____		
City/Town and Province		
_____ Signature of person before whom declaration is made	_____ Authority to receive solemn declarations	_____ Expiry date
_____ Name (please print)	Any changes or corrections on this Statutory Declaration must be initiated by the person before whom the declaration is made.	

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		4.12	Responsibility to Rectify Loss or Damage
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1.2	Owner's Representative	4.14	Regulatory Requirements
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1.4	Instructions in Writing	4.16	Patent Rights
1.5	Owner Interpreter of Contract	4.17	Royalties
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		4.21	Record of Labour and Construction Equipment
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1. OWNER AND OWNER'S REPRESENTATIVE

1.1 OWNER'S DUTIES AND AUTHORITY

- .1 The Owner shall carry out the duties and exercise the authority specified in the Contract.

1.2 OWNER'S REPRESENTATIVE

- .1 The Owner shall appoint a representative, who shall, unless the Contractor is expressly advised otherwise by the Owner, have full authority to act on behalf of and bind the Owner under the Contract.

1.3 APPOINTMENT OF ASSISTANTS

- .1 The Owner's Representative may appoint any number of persons to assist him in carrying out his duties. He shall notify the Contractor of the names, duties and scope of authority of such persons.
- .2 The failure of any assistants appointed pursuant to clause 1.3.1 to disapprove any work shall not prejudice the authority of the Owner to disapprove such work and to give instructions for the rectification thereof.

1.4 INSTRUCTIONS IN WRITING

- .1 The Contractor shall take instructions only from the Owner or any assistants appointed pursuant to clause 1.3. Instructions given by the Owner shall be in writing, provided that if the Owner considers it necessary to give any instruction orally, the Contractor shall comply with such instruction. Confirmation in writing of such oral instruction given by the Owner, whether before or after the carrying out of the instruction, shall be deemed to be an instruction within the meaning of this clause. Provided that if the Contractor, within 7 days, confirms in writing to the Owner any oral instruction of the Owner and such confirmation is not contradicted in writing within 7 days by the Owner, it shall be deemed to be an instruction of the Owner.

1.5 OWNER INTERPRETER OF CONTRACT

- .1 The Owner in the first instance shall be the interpreter of the Contract and the judge of the Contractor's performance.

1.6 OWNER'S DETERMINATIONS

- .1 When the Owner is required to exercise his discretion by giving his decision, opinion or consent, or expressing his satisfaction or approval, or determining value, or otherwise taking action which may affect the rights and obligations of the Contractor he shall exercise such discretion within the terms of the Contract after due consultation with the Contractor and shall promptly notify the Contractor of such decision, opinion, consent, approval or determination.

1.7 OWNER'S REVIEW

- .1 Any review, comment, consent, acceptance or approval, or lack thereof, by the Owner, shall not relieve the Contractor of any of its responsibilities or liabilities under the Contract.

2. ASSIGNMENT, SUBCONTRACTING AND NOMINATION

2.1 ASSIGNMENT

- .1 The Contractor shall not assign the Contract, either in whole or in part, without the previous written consent of the Owner, which consent, notwithstanding other provisions of the Contract, shall be at the Owner's sole discretion.
- .2 The Owner shall not be bound by any assignment by the Contractor of any monies payable or to become payable to the Contractor under the Contract, without the written consent of the Owner, which consent:
 - .1 Will not be given for a general assignment of book debts, but
 - .2 May, at the Owner's sole discretion, be given for a specific assignment of all or part of monies payable to the Contractor under the Contract, subject however, in all cases, to the provisions of the Financial Administration Act (Alberta).

2.2 SUBCONTRACTING

- .1 The Contractor:
 - .1 Shall not sublet the Contract as a whole,
 - .2 Shall not subcontract any part of the Work without the Owner's prior consent, which shall not be unreasonably withheld,
 - .3 Shall provide such details of any Subcontractor he wishes to engage as the Owner may require,
 - .4 Shall contract with those Subcontractors proposed by him and accepted by the Owner and such Subcontractors shall not be changed without the Owner's prior consent.
- .2 The Owner may, for reasonable cause, object to the use of a proposed Subcontractor and require the Contractor to contract with another Subcontractor.
- .3 If the Owner requires a change from a proposed Subcontractor, the Contract Price shall be adjusted by any difference in cost and markup occasioned by such required change, except where such change is required due to the Contractor's default or negligence, in which case there shall be no change in the Contract Price.
- .4 The Owner may, upon reasonable request and at his discretion, provide to a Subcontractor information as to the percentage or quantity of the Subcontractor's work for which payment has been approved.
- .5 Nothing contained in the Contract shall create a contractual relationship between a Subcontractor and the Owner and subcontracting part of the Work shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents, servants or workers as fully as if they were his own.

- .6 The Contractor shall enter into contracts or written agreements with his Subcontractors to require them to perform their work in accordance with the Contract, and the Contractor shall incorporate the terms and conditions of the Contract Documents, to the extent that they apply, into all subcontracts.

2.3 NOMINATED SUBCONTRACTORS AND SUPPLIERS

- .1 A nominated Subcontractor or nominated Supplier means a person, firm or corporation with whom the Contract requires the Contractor to enter into a contract for the performance of a subcontract or the supply of things related to the Work.
- .2 Nothing contained in the Contract shall create a contractual relationship between the Owner and a nominated Subcontractor or nominated Supplier and such nomination shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any nominated Subcontractor or nominated Supplier, his agents, servants or workers as fully as if they were his own.

3. DOCUMENTS

3.1 PROPERTY AND USE OF CONTRACT DOCUMENTS

- .1 The Contract Documents are the sole property of the Owner and unless it is necessary for the purposes of the Contract, the Contract Documents shall not, without the consent of the Owner, be used by or communicated to a third party by the Contractor.

3.2 REPORTING OF CONFLICTS, ERRORS AND DISCREPANCIES

- .1 If the Contractor finds a conflict, error or discrepancy in the Contract Documents, the Contractor shall so report to the Owner in writing at once and, before proceeding or continuing with the Work affected thereby, shall obtain a written interpretation or clarification from the Owner; however, the Contractor shall not be liable to the Owner for failure to report any conflict, error or discrepancy in the Contract Documents unless the Contractor had actual knowledge thereof or should reasonably have known thereof.
- .2 The Contractor shall obtain from the Owner any dimensions required but not indicated in figures in the Contract Documents nor calculable from figures in the Contract Documents. Scaling of Drawings, for any purpose, shall be at the Contractor's risk.

3.3 DISRUPTION OF PROGRESS

- .1 The Contractor shall notify the Owner when planning or execution of the Work is likely to be delayed or disrupted unless any further document or instruction required of the Owner under the Contract is issued by the Owner within a reasonable time. The notice shall include details of the document or instruction required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

- .2 If, by reason of any failure or inability of the Owner to issue, within a reasonable time, any document or instruction for which notice has been given by the Contractor in accordance with clause 3.3.1, the Contractor suffers delay or incurs costs then the Owner shall determine:

.1 Any extension of time to which the Contractor is entitled under clause 6.4, and

.2 The amount of such costs, which shall be added to the Contract Price.

- .3 If the failure or inability of the Owner to issue any documents or instruction is caused in whole or in part by the failure of the Contractor to submit documents, which he is required to submit under the Contract, the Owner shall take such failure by the Contractor into account when making his determination pursuant to clause 3.3.2.

3.4 ADDITIONAL INSTRUCTIONS

- .1 The Owner shall have authority to issue to the Contractor, from time to time, such Additional Instructions as may be necessary for the proper performance of the Work. The Contractor shall carry out and be bound by such Additional Instructions.

3.5 FORMS

- .1 Forms to be used pursuant to the Contract or as otherwise may be required for the administration of the Contract shall be as prescribed or approved by the Owner.

4. GENERAL OBLIGATIONS

4.1 CONTRACTOR'S RESPONSIBILITIES

- .1 The Contractor shall, with due care and diligence, design, to the extent provided for by the Contract, execute and complete the Work and remedy any defects therein in accordance with the provisions of the Contract. This shall include the provision of superintendence, labour, Products, Construction Equipment, Temporary Work and all other things, whether of a temporary or permanent nature, required in and for such design, execution, completion and remedying of any defects. The Contractor shall comply with and adhere strictly to the Owner's instructions on any matter, whether mentioned in the Contract or not, concerning the Work.

4.2 SITE OPERATIONS AND METHODS OF CONSTRUCTION

- .1 The Contractor shall be fully responsible for the adequacy, stability and safety of all Site operations and methods of construction.
- .2 The Contractor shall submit at such times and in such detail as the Owner may require such information pertaining to the methods of construction (including Temporary Work and the use of Construction Equipment) which the Contractor proposes to use and such calculations of stresses, strains and deflections that will arise, in the Permanent Work or any part thereof, from the use of such methods during execution of the Work.
- .3 The Owner shall, on request from the Contractor, provide to the Contractor such design criteria relevant to the Permanent Work or any Temporary Work designed by the Owner as may be necessary to enable the Contractor to comply with clause 4.3.2.

- .4 For the purposes of this clause, "method of construction" means a method, means, technique, sequence, or procedure of construction.

4.3 DIFFERING PHYSICAL CONDITIONS OR OBSTRUCTIONS

- .1 If, during the execution of the Work, the Contractor encounters physical obstructions or physical conditions, including sub-surface obstructions or conditions, other than weather conditions or conditions due to weather conditions, on the Site, which, in his opinion, differ substantially from those indicated in the Contract and which were not reasonably foreseeable, the Contractor shall as soon as possible give notice thereof to the Owner. On receipt of such notice, the Owner shall, if in his opinion such obstructions or conditions differ substantially from those indicated in the Contract Documents and could not have been reasonably foreseen, determine:

- .1 Any extension of time to which the Contractor is entitled under clause 6.4, and
- .2 The amount of any costs, valued in accordance with clause 8.3, which may have been incurred by the Contractor by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price.
- .2 A determination by the Owner pursuant to clause 4.4.1 shall take account of:
- .1 The time of the Contractor's notice to the Owner of a differing physical condition or obstruction,
- .2 Any instruction which the Owner may have issued to the Contractor in connection therewith, and
- .3 Any proper and reasonable measures acceptable to the Owner, which the Contractor may have taken in the absence of specific instructions from the Owner.

4.4 CLIMATIC AND WEATHER CONDITIONS

- .1 The relevant climatological records and related information published by the Canadian Climate Centre of Environment Canada, for one or more locations in the vicinity of the Site, shall be used as a basis for any evaluations and determinations concerning climate and weather.

4.5 CONTRACTOR'S SUPERINTENDENCE

- .1 The Contractor shall provide all necessary superintendence during the execution of the Work and as long thereafter as the Owner may consider necessary for the proper fulfilling of the Contractor's obligations. The Contractor, or a competent and authorized representative approved of by the Owner, which approval may at any time be withdrawn, shall give his whole time to the superintendence of the Work. Such authorized representative shall receive, on behalf of the Contractor, instructions from the Owner.
- .2 If approval of the Contractor's representative is withdrawn by the Owner, the Contractor shall, as soon as is practicable, after receiving notice of such withdrawal, remove the representative from the Work and shall not employ him again on the Work in any capacity and shall replace him by another representative approved by the Owner.

4.6 CONTRACTOR'S EMPLOYEES

- .1 The Contractor shall provide on the Site in connection with the execution and completion of the Work and the remedying of any defects therein:
 - .1 Technical assistants who are skilled and experienced in their respective trades and such foremen and others as are competent to give proper superintendence of the Work, and
 - .2 Labour as is necessary for the proper and timely fulfilling of the Contractor's obligations.

4.7 OWNER MAY OBJECT

- .1 The Owner may object to and require the Contractor to remove forthwith from the Site any person who, in the opinion of the Owner, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose presence is otherwise considered by the Owner to be undesirable, and such person shall not be allowed on the Site without the consent of the Owner.

4.8 SAFETY, SECURITY AND PROTECTION OF THE ENVIRONMENT

- .1 The Contractor shall, throughout the execution of the Work and the remedying of any defects therein:
 - .1 Have full regard for the health and safety of all persons upon the Site and keep the Site and the Work, to the extent that they are under his control, in an orderly state appropriate to the avoidance of danger to such persons, and
 - .2 Provide and maintain at his own cost all temporary facilities and controls when and where necessary or required by the Owner or by any duly constituted authority, for the protection of the Work or for the safety and convenience of the public or others, and
 - .3 Take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or any other causes arising as a consequence of his methods of operation.
- .2 The Contractor shall appoint a person at the Site who shall manage an accident prevention program. This person shall be Contractor's superintendent unless another person is appointed and approved by the Owner.

4.9 OWNER'S RESPONSIBILITIES FOR SAFETY

- .1 If under clause 4.18 the Owner carries out work on the Site with his own workers he shall, in respect of such work and subject to clause 4.9:
 - .1 Have full regard to the safety of all persons upon the Site, and
 - .2 Keep the Site in an orderly state appropriate to the avoidance of danger to such persons.

- .2 If under clause 4.18 the Owner contracts with Other Contractors on the Site he shall require them to have the same regard for safety and avoidance of danger.

4.10 CARE OF WORK

- .1 The Contractor shall take full responsibility for the care of the Work from the date of commencement of Work at the Site until the date of issue of the Certificate of Substantial Performance of the Work, when the responsibility for such care shall pass to the Owner, provided that:
 - .1 Except where otherwise specified in the Contract, if the Owner accepts a Certificate of Substantial Performance for part of the Permanent Work the Contractor shall cease to be liable for the care of that part from the date of issue of such certificate, then the responsibility for the care of that part shall pass to the Owner, and
 - .2 The Contractor shall take full responsibility for the care of any outstanding Work which he undertakes to finish during the warranty period until such outstanding Work has been completed.

4.11 RESPONSIBILITY TO RECTIFY LOSS OR DAMAGE

- .1 If there is any loss or damage to the Work, or any part thereof, or to Products for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, the Contractor shall, at his own cost, rectify such loss or damage so that the Work conforms with the provisions of the Contract to the satisfaction of the Owner. The Contractor shall also be liable for any loss or damage to the Work occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under the warranty provisions of the Contract.

4.12 HOLD HARMLESS AGREEMENT

- .1 The Contractor shall hold harmless the Owner from any and all third party claims, demands, or actions for which the Contractor is legally responsible, including those arising out of negligence, willful harm, or crimes by the Contractor or the Contractor's employees or agents. This hold harmless shall survive the Contract.

4.13 REGULATORY REQUIREMENTS

- .1 The Contractor shall conform in all respects, including by the giving of all notices and the paying of all fees, with the provisions of:
 - .1 Any Regulatory Requirements, and
 - .2 The rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Work, and the Contractor shall keep the Owner indemnified against all penalties and liability of every kind for breach of any such provisions.
- .2 The Owner shall be responsible for obtaining any planning, zoning or other similar permission required for the Project to proceed.

- .3 Without limiting the Contractor's obligations under clause 4.14.1, the Contractor shall:
 - .1 Comply with all requirements of and pay all fees in connection with the Workers' Compensation Act (Alberta),
 - .2 Comply with the Occupational Health and Safety Act (Alberta) and all safety requirements as contained in the regulations thereto,
 - .3 Ensure that wages, hours of work and other conditions of employment of all persons employed by the Contractor in the performance of any work required by the Contract are in compliance with the requirements of the Employment Standards Code (Alberta), the Labour Relations Code (Alberta) and any other applicable law, rule, regulation or order, and
 - .4 Pay all fees and charges levied by a municipal authority in respect of applicable permits and licences.

4.14 ARTIFACTS AND FOSSILS

- .1 Coins, fossils, artifacts, structures and other remains or things of geological or archaeological interest discovered on the Site shall, as between the Owner and the Contractor, be deemed to be the property of the Owner. The Contractor shall take reasonable precautions to prevent his workers or any other persons from removing or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, inform the Owner of such discovery and carry out the Owner's instructions for dealing with same. If, by reason of such instructions, the Contractor suffers delay or incurs costs then the Owner shall determine:
 - .1 Any extension of time to which the Contractor is entitled under clause 6.4, and
 - .2 The amount of such costs, which shall be added to the Contract Price.

4.15 PATENT RIGHTS

- .1 The Contractor shall indemnify the Owner from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Product, Construction Equipment, Temporary Work or other thing used for or in connection with or for incorporation in the Work and from and against all damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or specification provided by the Owner.

4.16 ROYALTIES

- .1 Except as otherwise provided in the Contract, the Contractor shall be liable for all tonnage and other royalties, rent and other payments or compensation, if any, for obtaining stone, sand, gravel, clay, or other materials required for the Work.
- .2 The Contractor shall be liable for all payments or other compensation, if any, levied in relation to the dumping of all or part of any waste materials.

4.17 OTHER CONTRACTORS

- .1 The Contractor shall, in accordance with the requirements of the Owner, afford all reasonable opportunities for carrying out their work to:
 - .1 Any Other Contractors of the Owner and their workers,
 - .2 The workers of the Owner, and
 - .3 The workers of any duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Owner may enter into in connection with or ancillary to the Work.
- .2 Pursuant to clause 4.18.1 and except as may be provided in the Contract, the Contractor shall, on the request of the Owner:
 - .1 Make available to any person referred to in clause 4.18.1, any roads or ways for the maintenance of which the Contractor is responsible, or
 - .2 Permit the use, by any such persons, of Temporary Work or Construction Equipment on the Site, or
 - .3 Provide any other service for any such person, the Owner shall determine an addition to the Contract Price in accordance with clause 8.3.

4.18 PERMANENT WORK DESIGNED BY CONTRACTOR

- .1 Where the Contract provides that part of the Permanent Work shall be designed by the Contractor, he shall submit to the Owner, for review:
 - .1 Such drawings, specifications, calculations, and other information as is necessary for the Owner's review, and
 - .2 Operation and maintenance manuals, as applicable, together with drawings of the Permanent Work as completed, in sufficient detail to enable the Owner to operate, maintain, dismantle, reassemble, and adjust the Permanent Work incorporating that design, and such design and any alterations thereto shall be performed by a qualified design professional licensed to practice in Alberta.
- .2 The Contractor shall not commence any work to which the information referred to in clause 4.19.1 relates unless such information has been reviewed by the Owner, and the Contractor shall not thereafter alter such design without the Owner's review.

4.19 RECORDS AND AUDIT

- .1 With respect to Cost Plus Work, the Contractor shall:
 - .1 Keep accurate records of estimated and actual costs, payments made, and time spent.
 - .2 Keep record copies of bids, quotations, contracts, correspondence, invoices, receipts, and vouchers related thereto.

- .3 Make such records available for inspection and audit by the Owner for a period of at least 2 years after the date of Total Performance of the Work.
- .4 Provide the Owner with copies and extracts therefrom when requested by the Owner.
- .5 Afford facilities for audit and inspection by the Owner at mutually agreeable times and places.
- .2 The Contractor shall cause Subcontractors and other persons directly or indirectly controlled by or affiliated with the Contractor and persons directly or indirectly having control of the Contractor to comply with clause 4.20.1 as if they were the Contractor.

4.20 RECORD OF LABOUR AND CONSTRUCTION EQUIPMENT

- .1 The Contractor shall, if required by the Owner, deliver to the Owner a record in detail, in such form and at such intervals as the Owner may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Construction Equipment as the Owner may require.

4.21 CUSTOMS

- .1 With respect to the importation and re-export of Construction Equipment, Temporary Work, Products, and other things required for the Work, the Contractor shall:
 - .1 Be liable for all applicable customs, import duties, taxes, and brokerage fees, and
 - .2 Be responsible for obtaining clearance through Customs. If requested by the Contractor, the Owner may assist in obtaining such clearance.

4.22 URGENT REMEDIAL WORK

- .1 If, due to any accident, or failure, or other event occurring to, in, or in connection with the Work, or any part thereof, either during the execution of the Work, or during the warranty period, any remedial or other work is, in the opinion of the Owner, urgently necessary for the safety of the Work, persons or property and the Contractor is unable or unwilling at once to do such work, the Owner may employ other persons or contract with other firms or corporations to carry out such work as the Owner may consider necessary.
- .2 If the work or repair done by the Owner pursuant to clause 4.23.1 is work which, in the opinion of the Owner, the Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall be determined by the Owner and shall be recoverable from the Contractor by the Owner.

5. QUALITY OF PRODUCTS AND WORK

5.1 PRODUCTS AND WORKMANSHIP

- .1 Products and workmanship shall be:
 - .1 Of the respective kinds described in the Contract, and
 - .2 Subjected from time to time to such tests as the Owner may require at the place of manufacture, fabrication, or preparation, or on the Site or at such other place or places as may be specified in the Contract, or at all or any of such places.
- .2 The Contractor shall:
 - .1 At his cost provide all things necessary for examining, measuring, and testing Products including labour, electricity, fuels, stores, apparatus, and instruments, and
 - .2 Supply samples of materials, before incorporation in the Work, for testing as may be selected and required by the Owner.

5.2 COST OF SAMPLES

- .1 All samples shall be supplied by the Contractor at his own cost if the supply thereof is provided for in the Contract.

5.3 COST OF TESTS PROVIDED FOR

- .1 The cost of making any test shall be borne by the Contractor if such test is:
 - .1 Specified in the Contract to be performed by the Contractor, or
 - .2 In cases of a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfill, specified in the Contract in sufficient detail to enable the Contractor to price or allow for the same in his Bid.

5.4 COST OF TESTS NOT PROVIDED FOR

- .1 If the Owner requires any test which is not provided for in the Contract and such test shows the Products or workmanship not to be in accordance with the Contract, then the cost of such test shall be borne by the Contractor, but in any other case clause 5.4.2 shall apply.
- .2 Where, pursuant to clause 5.4.1, this clause applies, the Owner shall determine:
 - .1 Any extension of time to which the Contractor is entitled under clause 6.4, and
 - .2 The amount of any costs incurred by the Contractor, which shall be added to the Contract Price.

5.5 INSPECTION AND TESTING

- .1 The Owner shall at reasonable times have access to the Site and to all workshops and places where Products are being manufactured, fabricated, or prepared for the Work and the Contractor shall afford every facility for, and every assistance in, obtaining the right to such access.
- .2 The Owner shall be entitled, during manufacture, fabrication, or preparation to inspect and test the Products to be supplied under the Contract. If Products are being manufactured, fabricated, or prepared in workshops or places other than those of the Contractor, the Contractor shall obtain permission for the Owner to carry out such inspection and testing in those workshops or places. Such inspection or testing shall not release the Contractor from any obligation under the Contract.

5.6 DATES FOR INSPECTION AND TESTING

- .1 The Contractor shall agree with the Owner on the time and place for the inspection or testing of any Products as provided in the Contract. The Owner shall give the Contractor not less than 48 hours' notice of his intention to carry out the inspection or to attend the tests. If the Owner does not attend on the date agreed, the Contractor may, unless otherwise instructed by the Owner, proceed with the tests. The Contractor shall forthwith forward to the Owner certified copies of the test results.

5.7 REJECTION

- .1 If, at the time and place agreed in accordance with clause 5.6, Products are not ready for inspection or testing or if, as a result of the inspection or testing referred to in clause 5.5, the Owner determines that the Products are defective or otherwise not in accordance with the Contract, he may reject the Products and shall notify the Contractor thereof immediately. The notice shall state the Owner's objections with reasons. The Contractor shall then promptly make good the defect or ensure that rejected Products comply with the Contract. If the Owner so requests, inspection and testing of rejected Products shall be made or repeated under the same terms and conditions.

5.8 COST FOR INSPECTION AND TESTING

- .1 All costs incurred by the Owner because of rescheduling, or undue delay of inspection and testing, and for which the Contractor is responsible, shall be determined by the Owner and shall be recoverable from the Contractor by the Owner.

5.9 INDEPENDENT INSPECTION

- .1 Inspection and testing of Products to be carried out by the Owner may be delegated to an independent agency. Any such delegation shall be effected in accordance with clause 1.3 and for this purpose such independent agency shall be considered as an assistant of the Owner.

5.10 EXAMINATION OF WORK BEFORE COVERING UP

- .1 The Contractor shall afford full opportunity for the Owner to examine and measure any part of the Work which is about to be covered up or put out of view and to examine exposed or excavated surfaces before any part of the Work is placed thereon. The Contractor shall give notice to the Owner whenever any such part of the Work or exposed

or excavated surface is or are ready or about to be ready for examination and the Owner shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such part of the Work or of examining such surfaces.

5.11 UNCOVERING AND MAKING OPENINGS

- .1 The Contractor shall uncover any part of the Work or make openings in or through the same as the Owner may from time to time instruct and shall reinstate and make good such part. If any such part has been covered up or put out of view after compliance with the requirement of clause 5.9 and is found to be executed in accordance with the Contract, the Owner shall determine the amount of the Contractor's costs in respect of such uncovering, making openings in or through, reinstating and making good, which shall be added to the Contract Price. In any other case all costs shall be borne by the Contractor.

5.12 REMOVAL OF IMPROPER WORK OR PRODUCTS

- .1 The Owner shall have authority to issue instructions for:
 - .1 The removal from the Site, within such time or times as may be specified in the instruction, of any Products which, in the opinion of the Owner, are not in accordance with the Contract,
 - .2 The substitution of proper and suitable Products, and
 - .3 The removal and proper re-execution, notwithstanding any previous test thereof or progress payment therefore, of any work which is not in accordance with the Contract.
- .2 In case of default by the Contractor in carrying out instructions pursuant to clause 5.12.1 within the time specified therein or, if none, within a reasonable time, the Owner may employ other persons or contract with other firms or corporations to carry out the same, and all costs consequent thereon or incidental thereto shall be determined by the Owner and shall be recoverable from the Contractor by the Owner.

6. COMMENCEMENT, COMPLETION, CONTRACT TIME AND DELAYS

6.1 COMMENCEMENT OF WORK

- .1 The Contractor shall commence the Work as soon as is reasonably possible in accordance with the instructions contained in the Letter of Acceptance and other provisions of the Contract. Thereafter, the Contractor shall proceed with the Work without delay.

6.2 POSSESSION OF SITE AND ACCESS TO SITE

- .1 If the Contractor suffers delay or incurs costs from failure of the Owner to give possession of the Site or part thereof in accordance with the provisions of the Contract, the Owner shall determine:
 - .1 Any extension of time to which the Contractor is entitled under clause 6.4, and
 - .2 The amount of such costs, which shall be added to the Contract Price.

- .2 The Contractor shall bear all costs and charges for special or temporary rights-of-way required by him in connection with the Work. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Work.

6.3 CONTRACT TIME

- .1 The Contractor shall achieve Substantial Performance of the Work as a whole within the Contract Time.
- .2 When the Contractor is required to achieve Substantial Performance of part or parts of the Work prior to achieving Substantial Performance of the Work as a whole, the Contractor shall achieve Substantial Performance of such part or parts of the Work within the time or times specified and such time or times shall be considered to be the Contract Time or Times for such part or parts.

6.4 EXTENSION OF CONTRACT TIME

- .1 In the event of:
 - .1 A change in the Work made under clause 8.1, or
 - .2 Any cause of delay referred to in the Contract, or
 - .3 Abnormally adverse weather conditions, abnormal weather being defined as temperature, precipitation, humidity or wind that is outside of plus or minus one standard deviation from the mean, for the time period in question, determined pursuant to clause 4.5, or
 - .4 Any delay, impediment or prevention by the Owner, or
 - .5 Other special circumstances which may occur, other than through a default of or breach of Contract by the Contractor or for which he is responsible, being such as to affect an activity on the critical path of the Contractor's schedule, the Owner shall determine the extension of the Contract Time for the whole or part of the Work, to which the Contractor may be entitled.

6.5 CONTRACTOR TO PROVIDE NOTIFICATION AND DETAILS

- .1 The Owner shall not be bound to make any determination pursuant to clause 6.4 unless the Contractor has:
 - .1 Within 7 days after such event has first arisen notified the Owner, and
 - .2 Within 14 days, or such other reasonable time as may be agreed by the Owner after such notification, submitted to the Owner details of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.

6.6 INTERIM DETERMINATION OF EXTENSION OF TIME

- .1 Where an event has a continuing effect such that it is not practicable for the Contractor to submit details within the period of 14 days referred to in clause 6.5.1.2, he may claim for an extension of time provided that he has submitted to the Owner interim details at intervals of not more than 14 days and final details within 14 days of the end of the effects resulting from the event. On receipt of such interim details, the Owner may make an interim determination of extension of time and, on receipt of the final details, the Owner shall review all the circumstances and may determine an overall extension of time in regard to the event. No final review shall result in a decrease of any extension of time already determined by the Owner. The Owner may determine an extension of the Contract Time notwithstanding that the Contract Time may have passed without being extended.

6.7 RATE OF PROGRESS

- .1 If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Work or any part is at any time, in the opinion of the Owner, too slow to comply with the Contract Time, the Owner may notify the Contractor who shall immediately take such steps as are necessary, subject to the consent of the Owner, to expedite progress so as to comply with the Contract Time. The Contractor shall not be entitled to any additional payment for taking such steps. If any steps, taken by the Contractor in meeting his obligations under this clause, involve the Owner in additional costs, such costs shall be determined by the Owner and shall be recoverable from the Contractor by the Owner.

6.8 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 When the whole of the Work has been substantially performed and any pre-requisites to Substantial Performance of the Work prescribed by the Contract have been met, the Contractor may so submit to the Owner a Certificate of Substantial Performance, accompanied by a written undertaking to finish without delay any outstanding work during the warranty period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Owner to accept or reject the Certificate of Substantial Performance.
- .2 The Owner shall, within 21 days after the date of receipt of the certificate referred to in clause 6.8.1, either issue to the Contractor, a letter, stating the date on which, in his opinion, the Work was substantially performed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the work which, in the Owner's opinion, is required to be done by the Contractor before the acceptance of such certificate. The Owner shall also notify the Contractor of any defects in the Work affecting substantial performance that may appear after such instructions and before completion of the Work specified therein. The Contractor shall be entitled to receive such notification within 21 days after completion, to the satisfaction of the Owner, of the Work so specified and remedying all defects so notified. The Owner may specify the date for Total Performance of the Work in such notice.

6.9 SUBSTANTIAL PERFORMANCE OF PART OR PARTS OF WORK

- .1 In accordance with the procedure set out in clause 6.8, the Contractor may submit a Certificate of Substantial Performance to the Owner in respect of any substantial part of the Permanent Work which has been substantially completed and which has been or will be occupied or used by the Owner or an Other Contractor prior to Substantial Performance of the Work as a whole, whether or not such prior occupation or use is provided for in the Contract.

6.10 TOTAL PERFORMANCE OF THE WORK

- .1 When the whole of the Work has been totally performed and any pre-requisites to Total Performance of the Work prescribed by the Contract have been met, the Contractor may so submit written notice to the Owner. Such notice shall be deemed to be a request by the Contractor for the Owner to issue a Certificate of Total Performance of the Work.
- .2 The Owner shall, in accordance with the procedure set out in clause 6.8.2, either issue a Certificate of Total Performance of the Work or give instructions.

6.11 WARRANTY PERFORMANCE OF THE WORK

- .1 The Work of the Contract shall only be considered as completed when a Certificate of Warranty Performance of the Work has been signed by the Owner and delivered to the Contractor, stating the date on which the Contractor has completed his obligations to execute and complete the Work and remedy any defects therein to the Owner's satisfaction. The Certificate of Warranty Performance of the Work shall be given by the Owner within 28 days after the expiration of the warranty period, or, if different warranty periods are applicable to different parts of the Permanent Work, the expiration of the latest such period, or as soon thereafter as any Work instructed, pursuant to clause 7, has been completed to the satisfaction of the Owner.

6.12 ACCELERATION

- .1 If the Owner wishes to reduce the Contract Time for the Work or any part thereof, he shall issue to the Contractor a notice thereof and an instruction requiring the Contractor to submit to him within the period specified in the instruction:
 - .1 The Contractor's priced proposals for reducing the Contract Time, together with any consequential modifications to the construction schedule, or
 - .2 The Contractor's explanation why he is unable to reduce the Contract Time.
- .2 If the Owner accepts the Contractor's proposals submitted pursuant to clause 6.12.1.1, including amendments thereto agreed by both parties, the Owner shall issue instructions to the Contractor modifying the Contract accordingly. Such instructions shall include:
 - .1 The revised Contract Time or Times,
 - .2 The modifications to the construction schedule,
 - .3 The revised Contract Price, and
 - .4 Any other relevant modifications to the Contract.

- .3 The Contractor may at any time submit to the Owner proposals to reduce the Contract Time for the Work or part thereof. The Owner shall consider such proposals and if he accepts them, he shall take action as in clause 6.12.2.

6.13 DAMAGES FOR DELAY

- .1 Without prejudice to any other right the Owner may have with respect to damages, if the Contractor fails to achieve Substantial Performance of the Work or, if applicable, of part of the Work, within the Contract Time or Times, the Contractor shall pay to the Owner an amount equal to the sum of:
 - .1 **One Thousand Dollars (\$1,000)** as liquidated damages and not as a penalty for each calendar day the Work is not substantially complete after the Date of Substantial Performance. The said sum being a fair estimate of the actual damages the Owner will incur if the Work is not completed by the said Substantial Performance Date.
 - .2 **One Thousand Dollars (\$1,000)** as liquidated damages and not as a penalty for each calendar day the Work remains uncompleted after the date of Total Performance. The said sum being a fair estimate of the actual damages the Owner will incur if the Work is not completed by the said Total Performance Date.
 - .3 All other costs and damages incurred or sustained by the Owner as a result of the Contractor's failure to achieve Substantial Performance of the Work or part thereof within the Contract Time or Times.
- .2 The Owner may, without prejudice to any other method of recovery, deduct the amount referred to in clause 6.13.1 from any monies due or to become due to the Contractor under the Contract. The payment or deduction of such amount shall not relieve the Contractor from his obligation to complete the Work or from any other of his contractual obligations.
- .3 For the purposes of this clause, "period of delay" means the period commencing on the date specified in the Contract for Substantial Performance of the Work or part thereof and ending on the day immediately preceding the date on which Substantial Performance of the Work or part thereof is actually achieved.

7. WARRANTY

7.1 WARRANTY PERIOD

- .1 In the Contract the term "warranty period" shall mean a period of one (1) year, except for seeding which shall have a Warranty Period of Two (2) years or such longer period as may be provided elsewhere in the Contract, calculated from:
 - .1 The date of Substantial Performance of the Work, certified by the Owner in accordance with clause 6.8, or
 - .2 In the event of more than one certificate having been issued by the Owner under clause 6.9, the respective dates so certified, or

- .3 In the case of outstanding work to be completed after the date or dates of Substantial Performance referred to in clauses 7.1.1.1 and 7.1.1.2, the date upon which such work is certified as complete by the Owner, and in relation to the warranty period the term "the Work" shall be construed accordingly.

7.2 COMPLETION OF OUTSTANDING WORK

- .1 The Contractor shall complete work outstanding at the date of Substantial Performance of the Work within the time specified by the Owner in the Certificate of Substantial Performance of the Work.

7.3 REMEDYING DEFECTS

- .1 The Contractor shall, during or as soon as practicable after the expiration of the warranty period, remedy any defects in the Work and execute any work of modification or reconstruction related thereto, as the Owner may, during the warranty period or within 14 days after its expiration instruct the Contractor to do.
- .2 Work referred to in clause 7.3.1 shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the Owner, due to:
 - .1 Defects in Products or workmanship, or defects in design for which the Contractor is responsible,
 - .2 The neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract. If, in the opinion of the Owner, such necessity is due to any other cause, he may determine an addition to the Contract Price in accordance with clause 8.

7.4 CONTRACTOR'S FAILURE TO CARRY OUT INSTRUCTIONS

- .1 If the Contractor defaults in carrying out instructions issued pursuant to clause 7.2 or 7.3, the Owner may employ other persons or contract with other firms or corporations to carry out the same. If such work is work, which, in the opinion of the Owner, the Contractor was liable to do at his own cost, then all costs consequent thereon or incidental thereto shall be determined by the Owner and shall be recoverable from the Contractor by the Owner.

7.5 CONTRACTOR TO SEARCH

- .1 If any defect in the Work appears at any time prior to the end of the warranty period, the Owner may instruct the Contractor to search for the cause thereof. If such defect is one for which the Contractor is liable, the cost of the work carried out in searching shall be borne by the Contractor and he shall in such case remedy such defect at his own cost in accordance with the provisions of clauses 7.3 and 7.4. If such defect is one for which the Contractor is not liable under the Contract, the Owner shall determine the amount of the costs of such search incurred by the Contractor, which shall be added to the Contract Price.

8. CHANGES AND VARIATIONS

8.1 CHANGES IN THE WORK

- .1 Consistent with the Work, the Owner may make changes in the Work or any part thereof, and he shall have the right to instruct the Contractor to make such changes and the Contractor shall make such changes, which may include:
 - .1 Increasing or decreasing the quantity of any work included in the Contract,
 - .2 Omitting any work, but not if the omitted work is to be carried out by the Owner or by an Other Contractor except by reason of the Contractor's default or negligence,
 - .3 Changing the character or quality or kind of any work,
 - .4 Changing the levels, lines, position and dimensions of any part of the Work,
 - .5 Executing additional work of any kind necessary for the completion of the Work,
 - .6 Changing any specified sequence or timing of construction of any part of the Work.
- .2 No such change shall invalidate the Contract, but the effect, if any, of such changes on the Contract Price shall be valued in accordance with clause 8.3 and any extension of the Contract Time shall be determined in accordance with clause 6.4. Where an instruction to change the Work is necessitated by default or negligence of the Contractor or for which he is responsible, any cost and time attributable to such default or negligence shall be borne by the Contractor.

8.2 INSTRUCTIONS FOR CHANGES IN THE WORK

- .1 The Contractor shall not make any changes in the Work without a written instruction from the Owner.
- .2 No instruction shall be required for:
 - .1 An increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this clause, but is the result of quantities exceeding or being less than those stated in the Schedule of Prices, and
 - .2 A change or adjustment in lines, levels, grades or elevations when such change or adjustment is already provided for in the Contract.

8.3 VALUATION OF CHANGES IN THE WORK

- .1 Changes referred to in clause 8.1 and any changes to the Contract Price which are required to be determined in accordance with this clause (for the purposes of this clause referred to as "changed work"), shall be valued, at the Owner's option:
 - .1 At the rates and prices set out in the Contract if, in the opinion of the Owner, these are applicable, or

- .2 If the rates and prices set out in the Contract are not applicable to the changed work, at rates and prices deduced or extrapolated from such rates and prices, or
 - .3 By acceptance by the Owner of rates and prices submitted by the Contractor or other rates and prices as may be agreed by negotiation, or
 - .4 By acceptance by the Owner of a lump sum quotation submitted by the Contractor or other lump sum as may be agreed by negotiation, or
 - .5 As Cost Plus Work in accordance with the provisions of Section 00630 – Payment Conditions.
- .2 If there is disagreement on the value of changed work, the Owner shall fix such rates or prices as are, in his opinion, appropriate and shall notify the Contractor accordingly. Until such time as rates or prices are agreed or fixed, the Owner shall determine provisional rates or prices to enable on-account payments to be made in accordance with the payment conditions of the Contract.

8.4 IMPACT OF CHANGES IN THE WORK

- .1 If in the opinion of the Owner or the Contractor the nature or amount of any changed work relative to the nature or amount of the whole of the Work or to any part thereof, is such that the rate or price contained in the Contract for any item of the Work is, by reason of such changed work, rendered inappropriate or inapplicable, then, after due consultation by the Owner with the Contractor, a suitable rate or price may be agreed upon between the Owner and the Contractor.
- .2 If there is disagreement on the rates or prices referred to in clause 8.4.1, the Owner shall fix such rate or price as is, in his opinion, appropriate and shall notify the Contractor. Until such time as rates or prices are agreed or fixed, the Owner shall determine provisional rates or prices to enable on-account payments to be made in accordance with the payment conditions of the Contract.

8.5 QUANTITY VARIATIONS

- .1 The quantities set out in the Schedule of Prices are approximate only and no claim shall be made by the Contractor against the Owner on account of any excess or deficiencies absolute or relative, in the same.
- .2 The price or prices provided in the Contract whether stipulated sum or unit price or both shall be accepted by the Contractor, as full compensation for everything furnished and done by the Contractor under the Contract, including all Work required but not included in the items herein mentioned, and also for all loss or damages arising out of the nature of the Work or the action of the weather, elements, or any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the Work, and for all expenses incurred by or in the consequence of any delay or suspension or discontinuance of the work as herein specified, and for well and faithfully completing the Work as provided in the Contract.

9. CHANGES IN COST AND REGULATORY REQUIREMENTS

9.1 INCREASE OR DECREASE IN COST

- .1 Subject to clause 9.2, the Contract Price shall not be subject to any adjustment in respect of rise or fall in the cost of labour, Products or any other matters affecting the cost of execution of the Contract.

9.2 CHANGES IN REGULATORY REQUIREMENTS

- .1 If, after the latest date for submission of Bids for the Contract, there is a change to any Regulatory Requirement, or a new Regulatory Requirement is introduced, which causes additional or reduced cost to the Contractor in the execution of the Contract, such additional or reduced cost shall be determined by the Owner and shall be added to or deducted from the Contract Price.
- .2 When a Regulatory Requirement is changed or introduced during the period of time referred to in clause 9.2.1 but public notice thereof has been given by the applicable authority before the commencement of such period of time, the change or introduction shall be deemed to have occurred before the commencement of such period of time.

10. CLAIMS

10.1 NOTICE OF CLAIMS

- .1 If the Contractor intends to claim any additional payment, he shall give notice of his intention to the Owner within 7 days after the event giving rise to the claim has first arisen.
- .2 Upon the occurrence of the event referred to in clause 10.1.1, the Contractor shall take all reasonable measures required to mitigate any loss or damage, which may be incurred as a result of such event.

10.2 CONTEMPORARY RECORDS

- .1 Upon the occurrence of the event referred to in clause 10.1, the Contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make, including records of time and cost relating to labour, products, construction equipment and other resources used in the work. The Contractor shall permit the Owner to inspect all records kept pursuant to this clause and shall supply him with copies thereof as and when the Owner so instructs.

10.3 SUBSTANTIATION OF CLAIMS

- .1 Within 14 days, or such other reasonable time as may be agreed by the Owner, of giving notice under clause 10.1, the Contractor shall send to the Owner an account giving detailed particulars of the amount claimed and the grounds upon which the claim is based. Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the Contractor shall, at such intervals as the Owner may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. In cases where interim accounts are sent to the Owner, the Contractor shall send a final account within 14 days after the end of the effects resulting from the event.

10.4 PAYMENT OF CLAIMS

- .1 The Contractor shall be entitled to have included in any progress payment such amount in respect of any claims as the Owner may consider due to the Contractor. If information is insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment in respect of such part of the claim as such information may substantiate to the satisfaction of the Owner.

10.5 OBLIGATIONS TO AND CLAIMS OF THIRD PARTIES

- .1 The Contractor shall, with respect to lawful obligations of and lawful claims against the Contractor or any Subcontractor arising from the Contract:
 - .1 Discharge such obligations of and satisfy such claims against the Contractor, and
 - .2 Ensure the discharge of such obligations of and the satisfaction of such claims against Subcontractors.
- .2 The Contractor shall, when requested by the Owner, make a statutory declaration deposing to the existence and condition of any obligations and claims referred to in clause 10.5.1.
- .3 If a third party sends written notice to the Owner of an undischarged obligation or unsatisfied claim referred to in clause 10.5.1, the Owner may, 30 days after giving written notice to the Contractor, and surety where applicable:
 - .1 Pay any amount that is due and payable to the Contractor pursuant to the Contract directly to the obligees of and the claimants against the Contractor or the Subcontractor, and
 - .2 Where security for payment of claims has been provided in the form of a security deposit, the Owner may deduct such amount from the security deposit, or
 - .3 Where a security deposit has not been provided or insufficient monies are available in the security deposit, the Owner may deduct such amount, or portion thereof, from the amount payable to the Contractor under the Contract.
- .4 Clause 10.5.3 shall apply only when written notice of the obligation or claim is sent to Owner as set out in the Prompt Payment Act.

10.6 CLAIMS AGAINST OWNER ONLY

- .1 Any claims, demands or actions by the Contractor, arising out of alleged errors, omissions or misrepresentations in the Contract Documents or arising out of acts or omissions of the Owner's Representative or his assistants during the execution of the Work, shall be made only to or against the Owner. The Contractor waives any right to commence or carry on such claims, demands or actions against any person or party other than the Owner.

11. RELEASE FROM PERFORMANCE

11.1 FRUSTRATION

- .1 If any circumstance outside the control of both the Owner and the Contractor arises after the award of the Contract which renders it impossible or unlawful for either party to fulfill his contractual obligations, then the Owner or the Contractor may terminate the Contract by giving notice to the other party and, upon such notice, the Contract shall, except as to the rights of the parties under this clause and to the operation of clause 15, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.

11.2 REMOVAL OF CONSTRUCTION EQUIPMENT ON TERMINATION

- .1 If the Contract is terminated pursuant to clause 11.1, the Contractor shall remove from the Site all Construction Equipment.

11.3 PAYMENT IF CONTRACT TERMINATED

- .1 If the Contract is terminated pursuant to clause 11.1, the Contractor shall be paid by the Owner, insofar as such amounts or items have not already been covered by payments on account made to the Contractor, for all Work executed prior to the date of termination at the rates and prices provided in the Contract and in addition:
 - .1 The cost of Products reasonably ordered for the Work which have been delivered in acceptable condition to the Contractor or of which the Contractor is liable to accept delivery, such Products becoming the property of the Owner upon such payments being made by him,
 - .2 The amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Work insofar as such expenditure has not been covered by any other payments referred to in this clause,
 - .3 Such proportion of the cost as may be reasonable, taking into account payments made or to be made for work executed, for removal of Construction Equipment under clause 11.2 provided that against any payment due from the Owner under this clause, the Owner shall be credited with any amounts which, at the date of termination, were recoverable by the Owner from the Contractor.
- .2 Any amount payable under this clause shall be determined by the Owner.

12. SUSPENSION AND TERMINATION BY OWNER

12.1 SUSPENSION OF WORK

- .1 The Contractor shall, on the instructions of the Owner, suspend the progress of the Work or any part thereof for such time and in such manner as the Owner may consider necessary and shall, during such suspension, properly protect and secure the Work or such part thereof so far as is necessary in the opinion of the Owner. Clause 12.2 shall apply unless such suspension is:
 - .1 Otherwise provided for in the Contract, or

- .2 Necessary by reason of some default of or breach of contract by the Contractor or for which he is responsible, or
- .3 Necessary by reason of normal weather conditions on the Site, or
- .4 Necessary for the proper execution of the Work or for the safety of the Work or any part thereof, except to the extent that such necessity arises from any act or default by the Owner, in which case such suspension shall be at the Contractor's expense.

12.2 OWNER'S DETERMINATION FOLLOWING SUSPENSION

- .1 Where, pursuant to clause 12.1, this clause applies the Owner shall determine:
 - .1 Any extension of time to which the Contractor is entitled under clause 6.4, and
 - .2 The amount, which shall be added to the Contract Price, in respect of the cost incurred by the Contractor by reason of such suspension.

12.3 SUSPENSION LASTING MORE THAN 91 DAYS

- .1 If the progress of the Work or any part thereof is suspended on the written instructions of the Owner and if permission to resume work is not given by the Owner within a period of 91 days after the date of suspension then, unless such suspension is the Contractor's responsibility pursuant to clauses 12.1.1.1 to 12.1.1.4, the Contractor may give notice to the Owner requesting permission, within 28 days from the receipt thereof, to proceed with the Work or that part thereof in regard to which progress is suspended. If, within such time, such permission is not granted, the Contractor may elect to treat the suspension, where it affects only part of the Work, as an omission of such part under clause 8.1 by giving a further notice to the Owner to that effect, or, where it affects the whole of the Work, treat the suspension as an event of default by the Owner and terminate the Contract in accordance with the provisions of clause 14, in which case the provisions of clauses 14.2 and 14.3 shall apply.

12.4 TERMINATION OF CONTRACT

- .1 The Owner may terminate the Contract at any time by giving a notice of termination to the Contractor. When such a notice is received by the Contractor he shall, subject to the provisions of such notice, forthwith cease all operations in performance of the Contract.
- .2 If the Owner terminates the Contract pursuant to clause 12.4.1, the Owner shall be under the same obligations to the Contractor in regard to payment as if the Contract had been terminated under the provisions of clause 14.

13. DEFAULT OF CONTRACTOR

13.1 DEFAULT

- .1 If the Contractor:
 - .1 Is deemed by law unable to pay his debts as they fall due, or becomes insolvent, or

- .2 Enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or
 - .3 If any act is done or event occurs with respect to the Contractor or his assets which, under any applicable law, has a similar effect to any of the foregoing, or if he
 - .4 Has contravened clause 2.1, or
 - .5 Has repudiated the Contract, then the Owner may, upon written notice, enter upon the Site and the Work and immediately terminate the Contractor's right to continue with the Work.
- .2 If the Owner determines, that, in his opinion, the Contractor without reasonable excuse:
- .1 Has failed to commence and proceed with the Work or any part thereof in accordance the provisions of the Contract, or
 - .2 Has failed to comply with a notice issued pursuant to clause 6.7 or an instruction issued pursuant to clause 6.12 within 14 days after receiving it, or
 - .3 Despite previous warning from the Owner, in writing, is otherwise persistently or flagrantly neglecting to comply with any of his obligations under the Contract, or
 - .4 Has contravened clause 2.2, or
 - .5 Has failed to attain Substantial Performance of the Work or part or parts of the Work within the Contract Time or Times pursuant to clause 6.3, then the Owner may, after giving 14 days' notice to the Contractor, and unless the Contractor has within such period remedied the default, enter upon the Site and the Work and terminate the Contractor's right to continue with the Work in whole or in part.
- .3 If the Owner terminates the Contractor's right to continue with the Work, in whole or in part, pursuant to clause 13.1.1 or clause 13.1.2, such termination shall not release the Contractor from any of his obligations or liabilities under the Contract, and shall not affect the rights and authorities conferred on the Owner by the Contract, and the Owner may complete the Work or part thereof, or may contract with any Other Contractor to complete the Work or part thereof. The Owner or such Other Contractor may use for such completion so much of the Construction Equipment, Temporary Work and Products as he or they may think proper.

13.2 VALUATION AT DATE OF TERMINATION

- .1 The Owner shall, as soon as practicable after any entry and termination by the Owner pursuant to clause 13.1, determine:
 - .1 What amount (if any) had, at the time of such entry and termination, been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract, and
 - .2 The value of any unused or partially used Products, any Construction Equipment and any Temporary Work.

13.3 PAYMENT AFTER TERMINATION

- .1 If the Owner terminates the Contractor's right to continue with the Work in whole or in part under clause 13.1, he shall not be liable to pay to the Contractor any further amount in respect of the Contract until the expiration of the warranty period and thereafter until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Owner have been determined. The Contractor shall then be entitled to receive only such sum (if any) as the Owner may determine would have been payable to him upon due completion by him after deducting the said amount. If such amount exceeds the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Owner the amount of such excess and it shall be deemed a debt due by the Contractor to the Owner and shall be recoverable accordingly.

13.4 ASSIGNMENT OF BENEFIT OF AGREEMENT

- .1 The Contractor shall, if so instructed by the Owner within 14 days of the entry and termination referred to in clause 13.1, assign to the Owner the benefit of any agreement for the supply of any goods or materials or services and/or for the execution of any work for the purposes of the Contract, which the Contractor may have entered into.

14. DEFAULT OF OWNER

14.1 FAILURE OF OWNER TO PAY

- .1 If the Owner fails to pay to the Contractor any amount due under the Contract within 28 days after the expiry of the time stated in the Payment Conditions within which payment is to be made, the Contractor may terminate the Contract by giving notice to the Owner. Such termination shall take effect 14 days after the giving of such notice unless payment is received within such period.

14.2 REMOVAL OF CONSTRUCTION EQUIPMENT

- .1 Upon the termination of the Contract referred to in clause 14.1, the Contractor shall remove promptly from the Site all Construction Equipment.

14.3 PAYMENT ON TERMINATION

- .1 In the event of termination pursuant to clause 14.1 the Owner shall be under the same obligations to the Contractor in regard to payment as if the Contract had been terminated under the provisions of clause 11, but, in addition to the payments specified in clause 11.3, the Owner shall pay to the Contractor the amount of any loss or damage, including reasonable profit, to the Contractor directly arising out of or in connection with or by consequence of such termination.

14.4 CONTRACTOR MAY SUSPEND WORK

- .1 As an alternative to termination under clause 14.1 but without prejudice to the Contractor's entitlement to terminate under clause 14.1, the Contractor may, after giving 14 days' prior notice to the Owner, suspend work or reduce the rate of work.

- .2 If the Contractor suspends or reduces the rate of work pursuant to clause 14.4.1 and thereby suffers delay or incurs cost the Owner shall determine:

- .1 Any extension of time to which the Contractor is entitled under clause 6.4, and

- .2 The amount of such costs, which shall be added to the Contract Price.

14.5 RESUMPTION OF WORK

- .1 When the Contractor suspends work or reduces the rate of work pursuant to clause 14.4.1 and the Owner subsequently pays the amount due, the Contractor's entitlement under clause 14.1 shall, if notice of termination has not been given, lapse and the Contractor shall resume normal working as soon as is reasonably possible.

15. SETTLEMENT OF DISPUTES

15.1 DISPUTES

- .1 If a dispute of any kind arises between the Owner and the Contractor in connection with, or arising out of, the Contract or the execution of the Work, whether during the execution of the Work or after its completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Owner, the matter in dispute shall be settled in accordance with the provisions of this clause 15.
- .2 Unless the Contract has already been repudiated or terminated, the Contractor shall, during the course of any dispute settlement, and without prejudice to any claim the Contractor may have:
 - .1 Proceed with the Work without delay, and
 - .2 Comply with any instructions issued by the Owner with respect thereto, unless and until such instructions are revised, as hereinafter provided, in a negotiated settlement or an arbitral or judicial award.

15.2 NOTICE OF DISPUTE

- .1 A dispute shall be deemed to arise when the Owner or the Contractor serves on the other party a written notice of dispute stating the nature of the dispute. No notice of dispute shall be served by either party unless all other applicable provisions of the Contract have been invoked.

15.3 NEGOTIATED SETTLEMENT

- .1 The Owner and the Contractor shall make bona fide efforts to settle any dispute arising between them by negotiations, in accordance with this clause 15.3, and provide timely disclosure of all relevant facts, information and documents to such negotiations.
- .2 Within 14 days after the serving of a notice of dispute by one party on the other pursuant to clause 15.2, the parties shall commence negotiations for the purposes of settling the dispute. Such settlement process may include, if both parties agree, the use of mediation.

- .3 If, after 28 days, or such longer period as the parties and the mediator, if any, may agree, after the commencement of negotiations pursuant to clause 15.3.2, the parties have not settled the dispute, it shall be referred to arbitration, unless the parties mutually agree otherwise.

15.4 MEDIATION

- .1 If, in their efforts to reach a negotiated settlement, the parties agree to use mediation pursuant to clause 15.3.2, such mediation shall be conducted by a single mediator acceptable to both parties and under terms-of-reference established by both parties and the mediator. The parties shall share equally the cost of mediation.

15.5 ARBITRATION

- .1 A reference to arbitration pursuant to clause 15.3.3 shall be effected by either party serving on the other party a notice to refer the dispute to arbitration and such dispute shall be referred to a single arbitrator agreed for that purpose or, in default of agreement within a reasonable time, appointed at the request of the Owner or the Contractor by the Alberta Arbitration and Mediation Society.
- .2 A reference to arbitration under this clause shall be a reference to which the Arbitration Act (Alberta) applies and any award pursuant thereto shall bind the parties, except as otherwise provided by the Act.

END OF SECTION

1. SUPPLEMENTARY CONDITIONS

- .1 These Supplementary Conditions provide information relative to specific items not covered in other sections.

2. BUSINESS LICENSE

- .1 The Contractor shall be required to apply for and obtain a Business License within each jurisdiction where construction occurs.

3. WARRANTY PERIOD

- .1 The Warranty Period for all work is One (1) Year except for seeding, which shall have a Warranty Period of Two (2) years.
- .2 Thirty to sixty days prior to the end of the Warranty Period the Contractor shall apply to the Owner for acceptance of the Warranty Performance of the Work. The Owner will review the work and advise the Contractor of any defects that require remedy under the Contract. The Owner will issue a certificate of Warranty Performance of the Work, after all defects have been remedied.
- .3 No extra payment will be made for these required maintenance items.

4. INCIDENTAL ITEMS

- .1 The following items are incidental to the contract and no separate payment will be made for this work:
 - .1 All submittals.
 - .2 All Road Restoration beyond the Limits of Work, which have been damaged or disturbed by the Work.
 - .3 All Site Restoration beyond the Limits of Work, which have been damaged or disturbed by the Work.
 - .4 Locating and protecting existing trees, fences, buildings, etc.
 - .5 Working in proximity to and crossing of utilities including Alberta One-Call notification, third party locations and hydrovacing / hand exposure as required. Contractor must protect utilities throughout the duration of the project.
 - .6 Traffic controls and accommodation. Pedestrian accommodation.
 - .7 Access to businesses. Contractor must allow continued access to businesses through store front access.
 - .8 Public notification program.
 - .9 Road/lane closure and traffic control, providing access to existing residences, businesses or facilities as required or to provide nearby alternate parking.

- .10 Cleaning and delivery of salvaged material removed during construction to the Owner's Public Works yard.
- .11 Proof rolling.
- .12 Dust control.
- .13 Care of Water.
- .14 Removal and replacement of guardrail, fencing, signs, etc., necessary to complete the work.
- .15 Wheel cutting of asphalt or concrete.
- .16 Co-ordination of solid waste (garbage) collection with residents and the Public Works Department.
- .17 Protection of trees, lights, signs, planters, garbage bins and all other existing infrastructure items.

5. DISPOSAL OF WASTE MATERIAL

- .1 All materials having a salvage value shall be excavated and removed in such a manner that no damage shall be done to the material. Such material shall be removed, cleaned and stored at a location within the work area. At the completion of the project all salvage items shall be transferred to the Owner's Public Works yard for storage. There will be no separate payment for salvaging or transferring to storage of these items.
- .2 Unless indicated otherwise, non-salvageable materials will be excavated, transported and disposed of at the nearest sanitary landfill site. Burying of non-salvageable materials will not be allowed under any circumstances.
- .3 There will be no separate payment for Disposal of Waste Materials. The cost of Disposal of Waste Materials including the cost of materials, labour, equipment supply, excavation, handling, hauling, and disposal shall be included in the prices bid in the Tender Form.

6. REMOVAL OF CONCRETE MATERIALS

- .1 Saw cut the concrete as required for all concrete removal work and as indicated by the Owner's Representative. All cutting to be approved by Owner's Representative prior to cutting.
- .2 Re-cut concrete edges that are damaged or chipped due to the work, at no expense to the Owner.
- .3 Jack hammer, excavate, load, haul and dispose of the waste concrete materials at a location authorized by the Owner's Representative. Concrete materials shall be of an acceptable size to the Owner and shall be free of protruding rebar.
- .4 No separate payment will be made for saw cutting concrete, unless otherwise noted.

7. REMOVAL OF GRAVEL MATERIALS

- .1 Gravel removals shall be excavated, loaded, hauled and disposed of at a licensed landfill, unless otherwise authorized by the Owner's Representative.

8. EXISTING LANDSCAPE

- .1 Minimize damage to trees, plants and shrubs during the course of construction.
- .2 Attend to damaged trees, plants, or shrubs by qualified personnel.

9. GUARANTEE FUND

- .1 A Guarantee Fund shall be retained from the Contract Amount in the amount of \$50,000.
- .2 The Owner shall retain the Guarantee Fund for the duration of the Warranty Period.
- .3 In lieu of providing a cash Guarantee Fund, the Contractor may provide an irrevocable letter of credit issued by a chartered bank payable to the Town of Westlock.
- .4 The irrevocable letter of credit shall be in a form acceptable to the Town of Westlock.
- .5 The letter of credit shall be in effect for the Warranty Period.
- .6 Should the Contractor fail to correct all deficiencies and defects occurring in the Work during the Warranty Period, the Owner shall be entitled to make withdrawals from the Guarantee Fund sufficient to correct all such deficiencies and defects.
- .7 In the event the Contractor proceeds to correct all deficiencies and defects in the Work, occurring during the Warranty Period, the Owner shall pay the Contractor all monies remaining in the Guarantee Fund upon the expiration of the Guarantee Period.
- .8 No interest will be paid on the Guarantee Period.

10. MAINTAINING EXISTING TRAFFIC AND DETOURS

- .1 The work is located along existing urban streets and highways. These streets and highways are used continuously by all forms of vehicles.
- .2 Supply, install and maintain all necessary signs and barricades for the project.
- .3 Notify the proper authorities of any detours and/or road closures prior to implementing the detour or closure.
- .4 Detour traffic around any construction whenever possible. If detours are not possible, submit a road closure plan to the Owner for review and comment. Road closures must be approved at least 48 hours in advance so that the appropriate arrangements could be made for detours.
- .5 Maintain all temporary road surfaces to ensure public safety.
- .6 Replace all permanent signs removed during construction.

- .7 The Owner will not provide any traffic accommodation, detour or construction zone signage, barricade, flasher or such items.
- .8 No separate payment will be made for this work.

11. COORDINATION OF WORK WITH OTHERS

- .1 The Contractor is advised that other work could be currently taking place in the vicinity of the proposed Work or work could commence at any time in the vicinity of the proposed work.
- .2 The Contractor shall co-ordinate his work with other contractors, as applicable. All coordination between the Contractor and other contractors shall be reviewed by the Owner's Representative prior to work occurring.
- .3 The Owner will assume no responsibilities for the co-ordination of the various work activities and will not be involved in scheduling of the work if there is a conflict in work schedules.
- .4 No separate payment will be made for this item.

END OF SECTION

1. GENERAL

1.1 MEASUREMENT SYSTEM

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

Abbreviation/Symbol	Meaning
µm	micrometre or micron
mm	millimetre
m	metre
mm ² or mm2	square millimetre
m ² or m2	square metre
ha	hectare
kPa	kilopascal
MPa	megapascal
m ³ or m3	cubic metre
L	litre
L.S.	lump sum
g	gram
kg	kilogram
N	newton
kN	kilonewton
t	tonne
no.	number (quantity)
min	minute (time)
h	hour
d	day
wk	week
%	percent
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
\$	Canadian dollars
°	degree (angle)
°C	degree Celsius
vm	vertical metre
rpm	revolutions per minute
US gpm	US gallon per minute
gal	gallon
Btu	British thermal unit
VDC	volts of direct current
VAC	volts of alternating current
Ah	amp hour

1.2 METHOD OF MEASUREMENT

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

<u>Quantity</u>	<u>Dimension</u>
Volume of earth	centimetre
Volume of concrete	millimetre
Length of pipe	centimetre
Area of land	decimetre
 - .4 The survey station grid system adopted will be at 10 linear metres spacing on curves and 20 linear metres spacing on tangent sections for measuring earthwork quantities, respectively.
 - .5 Contours may be based on aerial photograph interpretation and are approximate only. Actual ground elevations and location co-ordinates will be determined in the field during the course of the Work for measurement purposes.
 - .6 Measurement and payment will not be made for work carried out beyond measurement and payment lines and limits specified in the Contract Documents.
- .2 When boundaries between different items of Work are not specified in the Contract Documents, such boundaries will be established by the Owner.
- .3 Mass:
- .1 Mass will be measured by weigh scale or by estimated or theoretical mass taken from reference documents, as specified.
 - .2 Mass will be measured to 3 decimal places.
- .4 Length:
- .1 Length will be measured at the item centreline or mean chord.
 - .2 Items to be measured by linear dimension will be measured parallel to the base or foundation upon which such items are placed.
 - .3 Items to be measured by station will be measured horizontal to the base or foundation upon which such items are placed.
 - .4 Centre line for pipes, ducts, culverts, and similar items will be the line equidistant between inside faces of pipe walls.

- .5 Area:
 - .1 For rectangular and regular shaped objects, area will be measured using mean length and width or radius.
 - .2 For irregular objects, area will be measured by the sum of squares, triangles, and circles, etc., as selected by the Owner.
- .6 Volume:
 - .1 Unless otherwise indicated, volume will be measured using mean length, width, and height or thickness.
 - .2 Excavation and fill volumes will be computed using a digital terrain modelling computer software program.
- .7 Time:
 - .1 Construction Equipment to be paid for on a time basis will be measured in hours of actual working time, and necessary travelling time, when under its own power to the nearest tenth thereof.
 - .2 Hauling equipment to be paid for on a time basis will be measured in hours of actual working time to the nearest tenth thereof.
- .8 Number of items will be measured on a per item basis.
- .9 Lump Sum items will not be measured for payment.
- .10 When standard manufactured items are identified by their physical characteristics, such characteristics will be considered as nominal. Unless more stringently controlled by specified tolerances, manufacturing tolerances established by the industry involved will be accepted.

1.3 MEASUREMENT COMPUTATION

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

1.4 MEASUREMENT OF WORK

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

- .5 If, after attending pursuant to Paragraph 1.4.2 or 1.4.4, the Contractor disagrees with such measurements or records or drawings, they will nevertheless be considered correct until the Contractor notifies the Owner of the aspects in which they are considered incorrect. On receipt of such notice, the Owner will review the measurements or records or drawings and either confirm or vary them.

1.5 QUANTITIES

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

1.6 SCALES

- .1 Unless otherwise indicated, provide weigh scales, certified by Industry Canada, for measurement purposes.
- .2 Provide scales that are accurate to within 0.5% of correct mass throughout the range of use. Spring balances will not be permitted.
- .3 Prior to use and at any time requested by the Owner, provide the services of a qualified independent person, acceptable to the Owner, for the testing and servicing of weigh scales. Perform baseline tests and record results. Service and adjust weigh scales to meet requirements of Industry Canada and the Contract Documents. Submit a final report of weigh scale tests, services, and adjustments.
- .4 Scales indicating more than true mass will not be permitted to operate and material measured subsequent to the last previous correct accuracy test will be reduced by the percentage of error in excess of 0.5%.
- .5 Scales indicating less than true mass will be adjusted and no additional payment will be made for materials previously scaled and recorded.

1.7 SCHEDULE OF PRICES

- .1 The Schedule of Prices is divided into items for purposes of measurement and payment of Work. Price each item in accordance with the methods of measurement specified in the Contract.
- .2 Item names in the Schedule of Prices identify the work covered by the respective item, but do not define the size or nature of the unit.
- .3 Read item names in the Schedule of Prices as part of the item scope, measurement, and payment requirements to which they apply in the Measurement Schedule.

- .4 For each price specified in the Schedule of Prices include all costs and charges required to perform the Work including overhead charges and profit, and all costs of all related Work for which payment is not specified elsewhere.
- .5 Subject to the provisions of the Contract Documents, the total amount of the Schedule of Prices shall cover all of the Contractor's obligations under the Contract and all matters and things necessary for performance of the Work in accordance with the Contract Documents.
- .6 Payment will be made only for items specified in the Schedule of Prices. Costs and charges not directly provided for in the Schedule of Prices will be deemed to be included therein.
- .7 Work or material included in any one item will not also be measured for payment under another item. No item will be paid for more than once.
- .8 Omissions or errors in any item including quantities in the Schedule of Prices will not invalidate the Contract nor release the Contractor from any of his obligations or liabilities under the Contract.

1.8 LUMP SUM ITEMS

- .1 Breakdown of Lump Sum Items
 - .1 If requested, submit to the Owner a breakdown of each Lump Sum item included in the Schedule of Prices, within 21 days after the commencement date of the Contract.
 - .2 Provide sufficient details as required by the Owner to identify the principal components of the Work and to permit ready valuation of Work performed.
- .2 Lump Sum Items Paid in Accordance with a Schedule
 - .1 For Mobilization and Demobilization, Existing and Temporary Roads, and Care of Water, where payment of the respective Lump Sum amount will be made in accordance with a schedule as specified in Section 01280 – Measurement Schedule, the measurement of the completed Work by the Owner will include the amount of any work completed for Mobilization and Demobilization, Existing and Temporary Roads, and Care of Water.

1.9 SCHEDULE OF PRICES – DIVIDED BID ITEMS

- .1 Where Divided Bid items are included in the Schedule of Prices or the Measurement Schedule, such items shall be excluded from the provisions for variations specified in the General Conditions.
- .2 Include in the Unit Price for the first quantity of the divided item:
 - .1 Costs and profit for each unit of first quantity, and
 - .2 Contractor's fixed costs for the total quantity of the divided item specified in the Schedule of Prices plus additional quantities as specified in 1.9.4 Contractor's fixed costs shall include fixed costs for labour, Products, Construction Equipment, Temporary Work and overhead.

- .3 Include in the Unit Price for the quantity of Work over the first quantity, hereinafter called the 'second quantity', cost and profit for each unit of Work, excluding fixed costs included in 1.9.2.2.
- .4 Where the actual total quantity of the Divided Bid item is less than 120% of the estimated total quantity specified in the Schedule of Prices, the Unit Prices bid for the second quantity shall apply to all quantities in excess of the first quantity.
- .5 Where the actual total quantity of the Divided Bid item is more than 120% of the estimated total quantity of the Divided Bid Item, the Contractor's fixed costs per unit of Work shall be calculated by the Owner as follows:

Fixed costs per Unit of work = $((\text{FQUP} - \text{SQUP}) \times \text{FQ}) / \text{TQ}$

Where: FQUP – First Quantity Unit Price bid
 SQUP – Second Quantity Unit Price bid
 FQ – First Quantity in the Schedule of Prices
 TQ – Total Quantity in the Schedule of Prices

Payment for the actual quantity which exceeds 120% of the total quantity in the Schedule of Prices shall be based on the Unit Price bid for the second quantity plus the fixed costs calculated by the Owner.

- .6 The Unit Price for the second quantity of Work shall not exceed the Unit Price for the first quantity. Where a Unit Price for the second quantity of Work is greater in amount than the Unit Price for the first quantity, the Unit price and its extension will be corrected by the Owner to the Unit Price of the first quantity. Accordingly, the Bid will be evaluated and the Work will be paid for at the Unit Price of the first quantity. Contractor shall be bound to such corrected amounts.

2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

1. GENERAL

- .1 Requirements specified in this Section apply to the scope and measurement of work for purposes of determining payment under the Contract.

2. MEASUREMENT SCHEDULE

2.1 EXTRA WORK ALLOWANCES

.1 Unforeseen Work:

- .1 Scope: Includes unforeseen work for which payment is not included elsewhere. Unforeseen work shall be approved by Owner.
- .2 Measurement: Shall be made by the Owner after assessment of the nature of the unforeseen work. Method of measurement, extent of work, and the limit of work shall be agreed to prior to commencing the unforeseen work.
- .3 Payment: Shall be made by an approved change order describing the unforeseen work and setting out the method of payment (ie., lump sum, unit price and/or force account). Payment amount shall be taken from the Extra Work Allowance provided for in the Contract.

2.2 SCHEDULES A – SPIRIT CENTRE PARKING LOT

.1 Remove Curb

- .1 Scope: Includes but is not limited to all labour, material and equipment remove curb and gutter as per the Drawings, Specifications, and as directed by the Owner's Representative. Unit price to include saw cut of concrete and asphalt, remove, excavate, load, haul, and dispose, including disposal fees, existing curb and gutter. Remove Curb includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Remove Curb will be measured on a per metre basis.
- .3 Payment: Unit Price per metre.

.2 Remove Curb and Gutter

- .1 Scope: Includes but is not limited to all labour, material and equipment remove curb and gutter as per the Drawings, Specifications, and as directed by the Owner's Representative. Unit price to include saw cut of concrete and asphalt, remove, excavate, load, haul, and dispose, including disposal fees, existing curb and gutter. Remove Curb and Gutter includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Remove Curb and Gutter will be measured on a per metre basis.
- .3 Payment: Unit Price per metre.

.3 Asphalt Removal

- .1 Scope: Includes but is not limited to all labour, material, and equipment for excavation of cold mix and asphalt, as per the Drawings, Specifications and as Directed by the Owner's Representative. Asphalt Removal includes saw cutting, sorting, loading, dumping, temporary stockpiling of materials and rehandling, and transportation and disposal to the contractors waste site or local landfill. Asphalt Removal includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Asphalt Removal will be measured per cubic metre.
- .3 Payment: Unit price per cubic metre.

.4 Excavation

- .1 Scope: Includes but is not limited to all labour, material, and equipment for excavation of unsuitable subgrade material, granular material, cold mix and asphalt, as per the Drawings, Specifications and as Directed by the Owner's Representative. Excavation of waste includes sorting, loading, dumping, temporary stockpiling of materials and rehandling, and transportation and disposal to the contractors waste site or local landfill. Excavation includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Excavation will be measured per cubic metre.
- .3 Payment: Unit price per cubic metre.

.5 Topsoil Stripping

- .1 Scope: Includes but is not limited to all labour, material and equipment necessary for topsoil stripping, hauling and stockpiling as per the Drawings or at a location designated by the Owner's Representative. Topsoil Stripping includes all related work for which payment is not included elsewhere.
- .2 Measurement: Topsoil Stripping shall be measured on a square meter basis.
- .3 Payment: Unit price per square meter basis.

.6 Base Course (110mm) Removal

- .1 Scope: Includes but is not limited to all labour, material, and equipment for excavation of granular materials, as per the Drawings, Specifications and as Directed by the Owner's Representative. Base Course (110mm) Removal includes sorting, loading, dumping, temporary stockpiling of materials and rehandling, and transportation and disposal to the contractors waste site or local landfill. Base Course (110mm) Removal includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Base Course (110mm) Removal will be measured per cubic metre.
- .3 Payment: Unit price per cubic metre.

.7 Subgrade Preparation

- .1 Scope: Includes but is not limited to all labour, equipment and materials to scarify existing subgrade to a 200mm depth as per the Drawings and as directed by the Owner's Representative. Subgrade shall be compacted to 100% Standard Proctor Density. Subgrade Preparation includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Subgrade Preparation will be measured on a square metre basis at finished Subgrade Preparation surface.
- .3 Payment: Unit price per square metre.

.8 Granular Base Course – 250mm

- .1 Scope: Includes but is not limited to all labour, material and equipment to supply, load, haul, place and compact granular base course, as per the Drawings, Specifications and as directed by the Owner's Representative. Base Granular – 250mm includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Base Granular – 250mm will be measured on a per square metre basis at finished Base Gravel surface.
- .3 Payment: Unit price per square metre.

.9 Asphalt Overlay

- .1 Scope: Includes but is not limited to all labour, material and equipment to supply, place and compact 90 mm M1 hot mix asphalt in lifts not exceeding 50 mm, as per the Standards and as directed by the Owner's Representative. M1 asphalt mix design shall be approved by the Owner's Representative prior to placement. Contractor shall also to supply and place bituminous prime coat on granular base and butiminous tack coat between asphalt layers. Asphalt Overlay includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Asphalt Overlay shall be measured on a square metre basis.
- .3 Payment: Unit price per square metre.

2.3 SCHEDULES B – 100 AVENUE CONCRETE UPGRADES

.1 Edge Milling (50 mm) – 3000mm Wide

- .1 Scope: Includes but is not limited to all labour, material and equipment to cold mill existing pavement to 50 mm depth for a width of 3000mm as per the Standards and as directed by the Owner's Representative. The Contractor shall sweep the milled area, load, haul, and stockpile the millings at the location designated by the Owner's Representative. All millings will be the property of the Town of Westlock and will be loaded and hauled to the Town's designated site or as directed by the Owner's Representative. Asphalt Milling (50 mm) – 3000mm Wide includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Asphalt Milling (50 mm) – 3000mm Wide shall be measured on a square metre basis.
- .3 Payment: Unit price per square metre.

.2 Granular Base Course (150mm)

- .1 Scope: Includes but is not limited to all labour, material and equipment to supply, place and compact 150mm of Alberta Transportation Designation 2, Class 20 base course as well as procure, process, load, haul, place, rake, shape road slope and work around appurtenances as per the Drawings, Specifications, and as directed by the Owner's Representative. The Contractor shall do such work between the lip of gutter and edge of asphalt removed for concrete forming. Granular Base Course (150mm) includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Granular Base Course (150mm) will be measured on a square metre basis.
- .3 Payment: Unit Rate per square metre.

.3 Asphalt Overlay (50mm)

- .1 Scope: Includes but is not limited to all labour, material and equipment to supply, place and compact 50 mm M1 hot mix asphalt to 98% SPD in lifts not exceeding 50 mm, as per the Standards and as directed by the Owner's Representative. Contractor shall include Prime Coat (as required) and Tack Coat as incidental to the Asphalt Overlay (50mm). M1 asphalt mix design shall be approved by the Owner's Representative prior to placement. Asphalt Overlay (50mm) includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Asphalt Overlay (50mm) shall be measured on a square metre basis.
- .3 Payment: Unit price per square metre.

.4 Asphalt Overlay (100mm)

- .1 Scope: Includes but is not limited to all labour, material and equipment to supply, place and compact 100 mm M1 hot mix asphalt to 98% SPD in lifts not exceeding 50 mm, as per the Standards and as directed by the Owner's Representative. Contractor shall include Prime Coat (as required) and Tack Coat as incidental to the Asphalt Overlay (100mm). M1 asphalt mix design shall be approved by the Owner's Representative prior to placement. Asphalt Overlay (100mm) includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Asphalt Overlay (100mm) shall be measured on a square metre basis.
- .3 Payment: Unit price per square metre.

.5 Valve Adjustment

- .1 Scope: Includes but is not limited to all labour, material and equipment to raise or lower valve boxes to finished road grade as per the Standards and as directed by the Owner's Representative. Adjustment shall only be measured when no other work is completed on the appurtenance. Valve Adjustment includes all other related work for which payment is not included elsewhere.
- .2 Measurement: Valve Adjustment shall be measured on a per unit basis.
- .3 Payment: Unit price per unit.

END OF SECTION

1. GENERAL

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

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

1.2 CERTIFICATE OF RECOGNITION (COR)

- .1 Maintain a valid COR for the duration of the Work of this Contract.

1.3 SAFETY REQUIREMENTS

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

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

1.4 SUBMITTALS

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

2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

1. GENERAL

1.1 EXISTING UTILITIES

.1 Contractor's General Responsibilities:

- .1 The approximate existence of service lines known to the Owner are indicated in the Contract Documents. Confirm the number, type, location and elevation of all existing service lines. Contact the appropriate Utility to locate all lines, conduits, and other such structures. Notify the Owner if any service lines have been omitted from or are incorrectly specified in the Contract Documents.
- .2 Identify, stake, and flag all existing service line locations and elevations. Maintain staking and flagging.
- .3 Notify the appropriate Utility prior to carrying out operations in the vicinity of the service lines. Comply with the requirements of and co-operate fully with, each Utility for the location and protection of the service lines during the Work.
- .4 Be responsible to the Utility for any claims resulting from damage to the service lines as a result of the Contractor's construction operations.
- .5 Promptly notify the Utility and the Owner in the event of any damage or interruption to any services caused by the Contractor's construction operations. Co-operate with the Utility in the restoration of service as promptly as possible and bear all costs arising from the damage or interruption.
- .6 Excavation adjacent to power poles may require the poles to be supported. Contact the Owner of the power poles to determine if pole supporting is required for the construction methodology employed. Support power poles as necessary to complete the work.
- .7 At no time interfere with the operations of existing utilities.
- .8 Notify the utility owner at least 48 hours in advance of any interruption required for purposes of the work of an affected utility.
- .9 Co-ordinate the timing of the connections with the affected Owner of the specific utilities as required for the construction works.
- .10 Do not operate any existing water main valves and hydrants.
- .11 Only the utility owner's personnel shall operate the utility. Contact the Owner's personnel at **780-349-0178**
- .12 Advise the proper authorities and Fire Departments of hydrants which will be out of commission, so that alternate fire protection can be provided for.
- .13 Install a non-shrink grout plug at each end of any abandoned pipe that is not removed during construction.
- .14 Meet Occupational Health and Safety (OH&S) regulations and requirements for all work associated with asbestos cement water materials.

.2 Utility Crossings:

- .1 The shallow Utility Owner(s) shall complete all relocation, modification, and repair work as highlighted in the drawings. The costs of shallow utility relocations, modifications, and repairs undertaken by the shallow Utility Owner(s) and shown on the drawings shall be borne by the Owner. All other shallow utility relocations, modifications, and repairs shall be borne by the Contractor.
- .2 Co-ordinate all relocation, modification and repair work with the construction schedule and assist the utility Owner where needed. No separate payment will be made for this work.

.3 Hydro Excavation:

- .1 Hydro excavation shall be used to locate and expose existing utilities to be crossed by the underground utility works.
- .2 The hydro excavation work includes locates; hydro excavation; measuring and recording of the hydro excavation information; securing and protecting the locate holes; and sand backfill.
- .3 No separate payment will be made for relocating of existing utilities that were previously hydro excavated and measured for payment.
- .4 No separate payment will be made for hydro excavating of shallow utilities related to roadwork unless approved by the Owner's Representative.
- .5 Provide monthly written statements to the Owner's Representative for the hydro excavation hours for review and approval. Keep a running total of approved hydro excavation hours to date and shall provide that information to the Owner's Representative upon request.

1.2 TEMPORARY UTILITIES

- .1 Provide the specified temporary utilities and as otherwise required in order to execute the Work expeditiously.
- .2 Temporary Power and Light:
 - .1 Not applicable.
- .3 Temporary Heating and Ventilation:
 - .1 Not applicable.
- .4 Temporary Sanitation Facilities:
 - .1 Provide and maintain temporary sanitary facilities on site for work as required by legislation.

1.3 CROSSING AGREEMENTS

- .1 The Town of Westlock will apply for crossing agreement and execute all required crossings agreements with the respective utility companies.

2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

1. GENERAL

1.1 REFERENCES

- .1 Provide traffic accommodation in accordance with the latest edition and revisions of the Alberta Transportation – “Traffic Accommodation in Work Zones”, unless otherwise specified.
- .2 All traffic accommodation signage shall be in accordance with the latest edition of the “Manual of Uniform Traffic Control Devices for Canada” by the Traffic Association of Canada (TAC).

1.2 EXISTING ROADS

- .1 Protect the integrity of existing road structures including using suitably sized equipment and implementing construction procedures that will minimize damage to the structures.
- .2 Determine the condition and availability of public roads, clearances, restrictions, bridge load limits, bond requirements, conditions of use, and other limitations that may affect ingress to and egress from the site.
- .3 Complete a detailed video survey of all roadways and private property that may be used or impacted by the construction activities, prior to commencing any construction activities. The video survey will establish the condition of those areas prior to construction and will be the basis for any restoration work that may arise. Provide a copy of the video survey to the Owner’s Representative within 7 days of commencement of work.
- .4 Clean existing roads impacted by the construction activities, as directed by the Owner’s Representative and at no cost to the Owner.
- .5 Motor scrapers, rock trucks or tracked equipment are not permitted to travel on highways, bridges, irrigation works, paved roadways and lanes.
- .6 Do not block or impede access roads or driveways to local landowner residences located adjacent to the work sites.

1.3 TEMPORARY ACCESS ROADS, HAUL ROADS AND DETOURS

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

1.4 TRAFFIC ACCOMMODATION STRATEGY

- .1 Comply with all requirements of the road authority having jurisdiction over public roads used by the Contractor in the execution of the Work.
- .2 Determine the condition and availability of public highways and roads, clearances, restrictions, bridge load limits, bond requirements, and other limitations that may affect ingress to and egress from the Site.
- .3 Comply with applicable load regulations during hauling of materials and equipment over public highways, roads, or bridges. Minimize interference with local traffic.
- .4 Keep public highways and roads impacted by the Work open to traffic and passable at all times.
- .5 Retain qualified personnel or organizations specializing in such work to develop a Traffic Accommodation Strategy in accordance with Alberta Transportation - "Traffic Accommodation in Work Zones" documents and the requirements of other road authorities having jurisdiction.
- .6 The Traffic Accommodation Strategy work includes all equipment, material and labour required for the preparation, notification, implementation, modification, maintenance and removal component works necessary to complete the contract work.
- .7 The major components of the Traffic Accommodation works includes the following:
 - .1 Preparation:
 - .1 Utilize any traffic accommodation plans provided in the contract drawings as a basis to develop a plan for their work schedule. Assume ownership of any information from the provided traffic accommodation plan that is used to develop the traffic accommodation plan work.
 - .2 Prepare and provide the Owner's Representative a copy of their proposed traffic accommodation plan for review and comment a minimum of 14 days prior to implementation. Accommodating review comments is considered incidental.
 - .3 Undertake a detailed video survey of all highway, bridges, irrigation works, roadways, and lanes to be used or impacted by the Traffic Accommodation Strategy work. The video survey will establish the condition of those areas as the basis for any restoration work that may arise. Provide a copy of the video survey to the Owner's Representative within 7 days of commencement of traffic accommodation works.
 - .2 Notifications:
 - .1 At least 14 days prior to implementation of the traffic accommodation plan, provide written notification to the proper authorities including emergency services of proposed traffic accommodation works, detours, road closures and alternate traffic routes.

- .2 Seven days prior to implementation of the traffic accommodation plan, distribute written construction notifications to all affected residences, businesses, institutions and facilities informing them the nature of the work to be performed, how long the inconvenience will last, who to contact to register any complaint/claim. Submit the proposed notification to Owner's Representative for review and comment prior to distribution to the public.
- .3 Implementation:
 - .1 Supply and install all detours, construction signage, traffic control and information signage required by their traffic accommodation plan and that is necessary to protect the work site and the safety of the workers and the public. The signage may include arrow boards, traffic signalization, barricades, delineators, glow posts, flashers, flashing lights, flagmen and associated items.
 - .2 Supply and install all protective measures required by their traffic accommodation plan necessary to protect the work site and the safety of the workers and the public. The protective measures may include barricades, protective barriers, fences, delineators, glow posts, flashers, flashing lights, flagmen and associated items.
 - .3 Provide qualified flagmen to control traffic at all locations where the Contractor's operations interfere with public highways, roads, and detours.
 - .4 The Owner will not provide any signage, protective measures or such items.
 - .5 Provide and maintain a barrier between his work site and the public, where possible.
 - .6 Safeguard all on-site equipment and materials.
- .4 Modification:
 - .1 Supplement, modify and/or improve the traffic accommodation works on an ongoing basis to meet any vehicle and/or pedestrian traffic issues that may arise. This may include the addition or deletion of signage, protective measures and associated works. All modifications must be documented, submitted and reviewed by the Owner's Representative prior to implementation.
- .5 Maintenance:
 - .1 When working onsite, check and maintain all traffic accommodation signage and protective measures work at least three times daily or as required. All maintenance items shall be remedied immediately upon notification.
 - .2 When not working onsite, check and maintain all traffic accommodation signage and protective measures work at least twice daily or as required. All maintenance items shall be remedied immediately upon notification.

- .3 Check, maintain and repair all traffic accommodation signage and protective measures for the duration of the work to ensure a safe protected route for both pedestrian and vehicular traffic at all times.
- .4 Promptly provide dust control and repair any damage to public highways, roads, and bridges resulting from traffic accommodation works in order to maintain public safety, access and use.
- .6 Removal:
 - .1 At the completion of the contract work, remove all traffic accommodation signage and protective measures. All covered/salvaged permanent signage removed during construction shall be uncovered/re-installed.
 - .2 Upon achieving substantial performance of the Contract work, the Contractor, Owner's Representative and Owner shall review all traffic accommodation works and detour routes to determine if any corrective works are required. Any corrective work will be included in the project deficiency list. All corrective work is considered incidental.

2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

1. GENERAL

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

2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

1. GENERAL

1.1 SUMMARY OF PROCESS

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

1.2 SUBSTANTIAL PERFORMANCE OF PART OF THE PERMANENT WORK

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

1.3 PREREQUISITES TO SUBSTANTIAL PERFORMANCE

- .1 Prior to requesting the Owner's inspection for Substantial Performance carry out the following:
 - .1 Obtain and submit evidence of compliance with Regulatory Requirements.
 - .2 Remove from the Site temporary facilities along with construction tools, equipment, mock-ups, and similar items not required for the performance of the remaining work.
 - .3 Correct all Contract Deficiencies that may affect safe use of sidewalks, pararamps, concrete surfaces, driveways, parking lots, and roadways.
 - .4 Complete the Work and have it ready for the purpose intended except for the parts of the Permanent Work specified in Articles 1.3.2 and 1.6.
 - .5 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.

- .6 Submit product warranties and extended warranties when specified in the Contract Documents.
- .2 Complete all work items such that the works can be used for the purpose intended. Work that does not have to be completed to obtain Substantial Performance follows:
 - .1 Subsoil and topsoil placement.
 - .2 Seeding.
 - .3 Signs.
 - .4 Final cleanup.
 - .5 Road gravel.
 - .6 Record drawings.

1.4 INSPECTION FOR SUBSTANTIAL PERFORMANCE

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

1.5 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Following inspection, the Owner will:
 - .1 Accept the Certificate of Substantial Performance of the Work stating the effective date of Substantial Performance, with a copy of the SPC Deficiency List attached; or
 - .2 Reject the Certificate of Substantial Performance and advise the Contractor that prerequisites to Substantial Performance are not fulfilled and repeat the inspection for Substantial Performance as necessary.
- .2 Upon acceptance of a Certificate of Substantial Performance of the Work, the Owner will assume responsibility for care, custody, and control of the Work, including responsibility for the following:
 - .1 Maintenance.
 - .2 Security.
 - .3 Property insurance.
 - .4 Utility costs.

1.6 PREREQUISITES TO TOTAL PERFORMANCE

- .1 Prior to requesting the Owner's inspection for Total Performance, carry out the following:
 - .1 Perform the entire Work, including the correction of all Contract Deficiencies, including items listed in Article 1.3.2 and except those items arising from the warranty provisions of the Contract Documents.
 - .2 Review the Contract Documents and inspect the Work to confirm that prerequisites to Total Performance have been met and that the Work is ready for inspection for Total Performance.

1.7 INSPECTION FOR TOTAL PERFORMANCE

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

1.8 TOTAL PERFORMANCE OF THE WORK

- .1 Following the inspection, the Owner will:
 - .1 Accept the Certificate of Total Performance of the Work, stating the effective date of Total Performance; or
 - .2 Reject the Certificate of Total Performance and advise the Contractor of Contract Deficiencies that must be corrected prior to issuance of a Certificate of Total Performance of the Work.

1.9 PREREQUISITES TO WARRANTY PERFORMANCE

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

1.10 INSPECTION FOR WARRANTY PERFORMANCE

- .1 Thirty to sixty days prior to the end of the warranty period, the Contractor shall apply to the Owner for acceptance of the Warranty Performance of the Work.
- .2 Just prior to the end of the warranty period, the Owner will conduct an inspection for Warranty Performance.

1.11 WARRANTY PERFORMANCE OF THE WORK

.1 Following the inspection, the Owner will:

.1 Issue a Certificate of Warranty Performance of the Work; or

.2 Advise the Contractor of items that must be corrected prior to issuance of the Certificate of Warranty Performance of the Work.

2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

CERTIFICATE OF SUBSTANTIAL PERFORMANCE
OF PRIME CONTRACT

(Pursuant to Builders' Lien Act, R.S.A. 1980, Chapter B-12,
with amendments in force as of June 5, 1985)

To Town of Westlock _____ Owner

Project 2024-2028 Asphalt Overlay Program _____

Address 10003 – 106 Street, Westlock, Alberta _____

Westlock, Alberta T7P 2K3 _____

In accordance with the contract dated _____

between Town of Westlock _____, the

owner, and _____

the contractor, the contractor hereby certifies that, WITH EXCEPTION OF THE ITEMS LISTED ON THE ATTACHED PAGE.

Delete
either
(a) or
(b) of
Item 1.

1. (a) the work or a substantial part thereof is ready for use,
or
(b) the work is being used for the purposes intended;

AND

2. the work to be done under the contract is capable of completion or correction at a cost of not more than

\$ _____

The contractor and his subcontractors shall continue to work towards total completion. Holdback monies withheld under the contract are due and payable in accordance with the given time period as laid down by Alberta Statute.

Signed by _____ Date _____

Distribution: Owner

Contractor

Jobsite Posting



CERTIFICATE of TOTAL PERFORMANCE

**Contract: Town of Westlock
2024-2028 Asphalt Overlay Program**

This Certificate is issued pursuant to Section 6.10 of the General Conditions of the Contract dated:

between _____
Town of Westlock

and _____

This Total Performance Certificate is for all tender and extra work items and represents completion of the Contract as of _____.

This Certificate has been made to the best of the Owner's knowledge, information and belief. It does not constitute an acceptance of any work not in accordance with the Contract requirements, whether or not such defect or deficiency could have been observed or discovered during construction.

PREPARED BY: The Town of Westlock

Per: _____

Date: _____

ACCEPTED BY: Town of Westlock

Per: _____

Date: _____

Per: _____

Date: _____



CERTIFICATE of WARRANTY PERFORMANCE

**Contract: Town of Westlock
2024-2028 Asphalt Overlay Program**

This Certificate is issued pursuant to Section 6.11 of the General Conditions of the Contract dated:

between

Town of Westlock

and

This Warranty Performance Certificate is for all tender and extra work items and represents final acceptance of the Contract as of _____ based upon substantial performance and the warranty requirements for 1 year.

This Certificate has been made to the best of the Owner's knowledge, information and belief. It does not constitute an acceptance of any work not in accordance with the Contract requirements, whether or not such defect or deficiency could have been observed or discovered during construction.

PREPARED BY: Town of Westlock

Per: _____

Date: _____

ACCEPTED BY: Town of Westlock

Per: _____

Date: _____

Per: _____

Date: _____

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for the location, use and placement of “Cold Milling Asphalt Pavement” requirements specified herein.

1.2 DEFINITIONS

- .1 “Reclaimed asphalt pavement (RAP)” is defined as all material produced as a result of cold milling.
- .2 “Entire roadway width” will be that portion of the roadway facility associated with the movement of traffic.

2. PRODUCTS

2.1 GENERAL - EQUIPMENT

- .1 The cold milling equipment to be a cold planning machine specifically designed for automatically controlled profiling.
- .2 The automatic controls to provide for accurately establishing profile grades at each edge of the machine by referencing from the existing pavement or an independent grade reference, where required, or be capable of automatically maintaining a designated cross slope from a single reference.
- .3 The cutting head capable at full drum width milling of a 75 mm thickness of asphaltic concrete in a single pass.
- .4 The cold milling machine to be self-propelled and to have sufficient power, traction and stability to maintain an accurate depth of cut.
- .5 The cold milling machine will be equipped with means to effectively control dust generated by the cutting operation.
- .6 Provide hauling equipment to receive milled material directly from the milling machine.
- .7 Equipment for removing any loose material during the sweeping operation will have the capability to pick the material up off the milled and/or adjacent roadway and be able to unload onto the hauling equipment.

2.2 GRADATION OF RAP

- .1 Reclaimed asphalt pavement will meet the following gradation requirements:

Sieve Size (µm)	% Passing By Weight
125 000	100
80 000	99 – 100
40 000	95 – 100

3. EXECUTION

3.1 GENERAL - CONSTRUCTION

- .1 Cold milling asphalt pavement will be performed in a manner which prevents the tearing and breaking of underlying and adjacent pavement and the contamination of the RAP with granular, subgrade or deleterious materials.
- .2 All RAP will be loaded directly into trucks from the milling machine and transported to the designated stockpile or disposal site.
- .3 In the event of rain or other inclement weather, suspend cold milling operations. Make the necessary allowances for drainage of water that may pond in areas where the milled sections have not been paved.
- .4 Dust produced from asphalt milling operations will be controlled to a level acceptable to the Owner.
- .5 Pulverizing the existing asphalt will not be permitted.

3.2 ASPHALT REMOVAL

- .1 All asphaltic concrete materials that cannot be cold milled due to physical or geometrical constraints will be removed and disposed of at a designated location as directed by the Owner's Representative.
- .2 No separate payment will be made for asphalt removal and disposal in areas paid for as cold milling, unless otherwise noted.

3.3 ASPHALT MILLING FOR OVERLAY AND FOR MAINTAINING TRAFFIC

- .1 The pavement surface will be removed by milling to the specified depth, width, grade, and cross section as directed by the Owner's Representative.
- .2 The Contractor will be responsible to determine the number of passes required to achieve the specified width, grading, depth and drainage.
- .3 The texture of the milled surface produced by the planing operation will be uniform, discontinuous longitudinal striations or other patterns, which will, in the opinion of the Owner's Representative, provide a satisfactory riding surface and skid resistance.
- .4 The milled surface deviation will not exceed 16 mm in 10 m for a final wearing surface, or 21 mm in 10 m in preparation for overlay.
- .5 Expose frames of all manholes, water valves, survey monuments, power and telephone poles and water valves to the required depth of milling.
- .6 Mill the entire roadway width to a uniform termination point in any given working day. At the point of daily termination of milling operations, avoid abrupt changes in the roadway surface profile. The longitudinal transition will be a maximum of 25 mm vertically per metre.

- .7 In the event the entire roadway of pavement along a section has not been milled by the end of the working period, resulting in a vertical longitudinal face, the maximum deviation between the two surfaces will not exceed 40 mm.
- .8 Vertical cuts along a gutter line will be allowed at the end of the working period. Provide adequate signage and warning devices when depth of milling cut is 75 mm or greater, or that may be hazardous to traffic.
- .9 Asphaltic concrete that is not removed by the milling equipment because of physical or geometrical constraints will be removed by other methods as approved by the Owner's Representative.
- .10 Minimize tearing and breaking out of the underlying and adjacent material.
- .11 Sweep the milled roadway surface clean immediately after the removal of the milled material, and in no case will the sweeping operation be more than 100 metres behind the milling operation.
- .12 Any distress of the newly milled surface resulting from the milling which may constitute a driving hazard, will be promptly repaired to the satisfaction of the Owner's Representative.
- .13 Install temporary asphalt ramps to allow access to existing driveways, lanes, wheel chair ramps and adjacent roadways with grade deviations greater than 40 mm. Temporary RAP ramps may be used as approved by the Owner's Representative.
- .14 Install temporary lane pavement markings if the milled surface does not receive an asphalt overlay within 24 hours of milling work.

3.4 STOCKPILING

- .1 RAP will be neatly stockpiled at the designated RAP stockpile located at an Owner approved location, or as directed by the Owner's representative.
- .2 At the completion of the project the Owner will assume ownership of all remaining RAP material.
- .3 The stockpile location will be located to assure positive surface drainage away from the RAP stockpile.
- .4 The stockpile location will be stripped of all clay loam, organic material and other soils as directed by the Owner's Representative.
- .5 No equipment will be permitted to operate on the RAP stockpile.
- .6 RAP materials will not be compacted after placement into the stockpile. The contractor will be responsible to maintain an efficient stockpile.
- .7 The RAP materials may be stockpiled to a maximum permissible height of 3.0 metres and will be stockpiled in as small an area as possible.
- .8 The minimum free fall distance of the RAP materials is 2.0 m.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for requirements for “Earthwork and Granular Material Testing” specified herein.
- .2 Read this Section in conjunction with requirements for testing specified in General Conditions Section 00725.

1.2 TESTING

- .1 Contractor is responsible for performance testing in performance of the Work.
- .2 The Owner’s Representative will perform quality assurance testing and related functions.
- .3 The Owner’s Representative will perform quality assurance testing according to the testing standards listed in the Contract Documents as selected by the Owner.
- .4 Provide samples requested by Owner’s Representative for testing.
- .5 Co-operate with the Owner’s Representative in site sampling for testing.

2. PRODUCTS

- .1 Not applicable.

3. EXECUTION

3.1 FILL MATERIAL TESTING

- .1 Fill materials may be tested, before and after placement, for conformance with specified requirements and to confirm suitability for intended uses.
- .2 Acceptance of fill material will be made only after the material has been dumped, spread and compacted in place. Owner may reject fill material in the borrow areas, in the stockpiles, in the transporting vehicle or in place. Cooperate with the Owner to ensure only acceptable fill material will be placed in the Work.
- .3 If requested by the Owner’s Representative, provide 1 m³ of each type of imported granular fill material for testing purposes.

3.2 COMPACTION AND MOISTURE CONTENT TESTING

- .1 Compaction and moisture content testing will be performed during fill material placement operations to ensure that specified requirements are met.
- .2 The frequency of compaction and moisture content testing will be determined by the Owner.

3.3 GRAVEL TESTING

- .1 The Owner's Representative may carry out testing of the gravel material while it is being processed.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location, use, and placement of Granular Materials specified herein.
- .2 This Section is intended to be used as a reference Section; it is not a "section of work". All materials specified in Part 2, Products, may not necessarily be required.

2. PRODUCTS

2.1 MATERIAL QUALITY

- .1 "Gravel" in general means a mixture of natural gravel, crushed gravel or crushed stone, and natural or crushed sand, meeting the gradation limits specified below for each type.
- .2 Use only clean, sound, hard, durable particles, free from silt, clay, soft shale, flaky particles, topsoil, organic matter, and other detrimental material.
- .3 Ensure granular materials are not gap graded and have a smooth gradation curve with no excess or deficiency of any particular grain size within the required range.
- .4 Where blending is required, thoroughly mix the granular materials in such a manner that a homogeneous material of the specified gradation is achieved prior to placing of the material into the work or stockpiles.
- .5 "Crushed Gravel" means angular shaped particles of crushed gravel or stone, washed, meeting the gradation limits specified. Ensure minimum of 50% by weight, of material retained on 5 mm sieve has at least one face resulting from fracture.
- .6 Riprap and bedding materials means clean, sound, hard durable rock particles, free from silt, clay, flaky particles, organic matter and foreign substances. Ensure the ratio of maximum dimension to minimum dimension of individual stones does not exceed 3.0.

2.2 GRANULAR MATERIALS

Granular materials shall conform to City of Edmonton Standards as outlined in Tables 2.1, 2.2, and 2.3.

Table 2.1 – Granular Materials Designation 1-3

Designation	1			2	3				
Class	12.5	16.0	25	20	20	25	40	63	80
Application	ACR & ACO	SMA	ACB	Soil Cement	Granular Base	Granular Base	Granular Base	Granular Base	Granular Sub-Base
80 000									100
63 000							100	100	
25 000			100			100	70 – 94	55 – 75	46 – 85
20 000		100	80 – 95	100	100	82 – 97	60 – 90	50 – 70	40 – 81
16 000		97 – 100	-	-	84 – 95	70 – 93	55 – 85	45 – 65	32 – 76
12 500	100	88 – 100	68 – 85	60 – 96	60 – 90	60 – 86	50 – 80	40 – 60	30 – 70
10 000	75 – 90	30 – 80	60 – 80	-	50 – 84	52 – 79	44 – 74	-	-
6 300	-	22 – 45	-	-	-	-	-	21 – 47	-
5 000	50 – 70	20 – 35	40 – 60	36 – 75	37 – 62	35 – 64	32 – 62	20 – 45	25 – 50
2 500	35 – 50	16 – 26	30 – 50	-	-	-	-	-	-
2 000	-	-	-	24 – 54	26 – 50	24 – 50	20 – 50	14 – 38	19 – 42
1 250	25 – 40	14 – 22	25 – 40	20 – 43	19 – 43	19 – 43	17 – 43	12 – 34	15 – 38
630	20 – 30	13 – 20	20 – 30	14 – 34	14 – 34	14 – 34	12 – 34	10 – 28	10 – 32
400	-	-	-	11 – 29	11 – 28	10 – 27	10 – 28	8 – 24	7 – 27
315	14 – 23	12 – 18	15 – 23	9 – 26	10 – 25	9 – 24	8 – 25	7 – 22	6 – 64
160	7 – 14	10 – 16	9 – 15	6 – 20	6 – 18	6 – 18	5 – 18	4 – 17	3 – 18
80	4 – 8	9 – 13	4 – 8	2 – 10	2 – 10	0 – 10	0 – 10	0 – 10	0 – 10

Table 2.2 – Granular Materials Designation 4-7

Designation	4		5		6		7	
Class	2.5	10	5	80	20	25	10	80
Application	Unit Pavers Joint Sand	Unit Pavers Bedding	Grout Sand	Culvert Bedding	Sub-Drain Rock	Sewer Rock	Sewer Backfill	Culvert Backfill
80 000				100				100
25 000				-		100		-
20 000				85 – 100	100	-		-
14 000				-	90 – 100	-		-
10 000		100		-	45 – 75	-	100	-
5 000		95 – 100	100	70 – 90	0 – 15	10 max	70 – 100	30 – 60
2 500	100	80 – 100	-	-	0 – 5	-	-	-
1 250	85 – 100	50 – 85	-	-	-	-	-	-
800	-	-	-	40 – 80	-	-	-	-
630	50 – 90	25 – 60	-	-	-	-	-	-
315	25 – 60	10 – 30	50 – 95	-	-	-	-	-
160	12 – 30	5 – 15	-	-	-	-	5 – 20	-
80	10 – 15	0 – 10	25 max	0 – 15	-	2 max	0 – 12	0 – 15

2.3 Non-shrink Backfill:

- .1 Non-shrink Backfill is a very weak mixture of Portland Cement or Lime/Fly Ash, concrete aggregates and water that resists settlement when placed in utility trenches and is capable of being readily excavated.
 - .1 Portioned and mixed to provide:
 - .1 Maximum compressive strength of 0.4 MPa at 28 days.
 - .2 Maximum Portland cement content of 25 kg/m³ with 40% fly ash replacement: to CSA-A3001-A5, Type 10.
 - .3 Minimum strength of 0.07 MPa at 24 h.
 - .4 Concrete aggregates: to CSA-A23.1/A23.2.
 - .5 Portland cement: Type 10.
 - .6 Slump: 160 to 200 mm.
 - .2 Minimum slump - 75 mm. Maximum slump - 125mm.
 - .3 Minimum entrained air 6.0% by volume. Maximum entrained air 8.0% by volume.
 - .4 Minimum Portland cement content 30 kg/m².
 - .5 Calcium chloride admixture may be used. Air entrainment admixture may be used to improve workability.
 - .6 Cold Weather Requirements: Non shrink backfill delivered in cold weather will conform to the requirement specified in Section 18 of C.S.A Standard CAN3-A23.1-M77.

3. EXECUTION

3.1 GENERAL

- .1 Drain, clean and maintain foundation and subgrades free from debris, snow, ice, water, topsoil or any loose objectionable material. Do not proceed with granular material, riprap, gravel armour protection or road gravel placement until the Owner's Representative has inspected and approved the foundations and subgrade areas.
- .2 Place granular materials, riprap, gravel armour protection and road gravel to the lines, grades and elevations specified in the Contract Documents.
- .3 Suspend all granular material, riprap, gravel armour protection and road gravel placement at any time when satisfactory work cannot be conducted due to rain, floods, snow or other unsatisfactory conditions.
- .4 Select temporary stockpile sites that minimize potential for contamination with underlying soils.
- .5 Stockpile material in a manner that minimizes segregation.
- .6 Replace stockpiled material that becomes contaminated, damaged or lost at no cost to the Owner.

- .7 Refer to other Sections for location, use and placement of Granular Materials specified herein.

3.2 PLACEMENT

- .1 Granular Bedding or Granular Backfill Materials:
 - .1 Place granular material in layers not exceeding 150 mm in thickness when compacted, to the lines, grades and elevations shown in the Contract Documents. Compact to a minimum density of 100% Standard Proctor Density. Compact each layer before placing the succeeding layer. Ensure the granular materials are installed within - 3% and + 3% of optimum moisture content, unless indicated elsewhere in the Contract Documents.
 - .2 If any granular bedding material is too dry to allow adequate compaction, apply water into the material until uniform distribution of moisture is obtained. Control water application accurately in amounts so that free water will not appear on surface during or subsequent to rolling or tamping.
 - .3 If the material is too wet, dry and spread material in thin lifts on subgrade and permit to dry until the moisture content is reduced to the specified moisture content.
 - .4 Provide tamping with hand-operated mechanical tampers such as vibratory plate tampers, jumping jacks or walk-along double drum rollers. Do not use large compaction equipment in tamped backfill zones.

3.3 TOLERANCES

- .1 Granular Bedding or Granular Backfill Materials:
 - .1 Place granular materials within -20 mm and +20 mm of design grades, but not uniformly high or low.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location and requirement of “Subgrade Preparation” specified herein.

2. DEFINITIONS

- .1 “Scarification” is defined as loosing or breaking up of surface of soils with a disk, cultivator, shanks, or ripper teeth to a depth of 150 mm unless specified otherwise in the Contract Documents.

3. PRODUCTS

- .1 Not applicable.

4. EXECUTION

4.1 SUBGRADE PREPARATION

- .1 Subgrade preparation includes the following work:
 - .1 Place, scarify, moisture condition, shape and compact the upper 150 mm of subgrade earth materials to 100% Standard Proctor Density, moisture conditioned to within -1% to +2% of optimum moisture content and to design subgrade elevation.
 - .2 When the moisture content in the subgrade material is lower than that specified, add water and mixed with the material to achieve uniform moisture content in the material to conform to the requirements.
 - .3 When the moisture content in the subgrade material is higher than that specified, dry the material by scarifying, disking, mixing and harrowing to achieve uniform moisture content in the material that conforms to the requirements.
 - .4 Remove and dispose of unsuitable materials as authorized by the Owner’s Representative. Replace with an approved suitable material and compact as specified herein.
 - .5 Maintain the subgrade to the specified section, grades and condition required for filter fabric and/or granular material placement. Provide interim drainage to prevent damage to the work and unstable conditions due to high moisture contents. No separate payment will be made for these items.
 - .6 The subgrade will pass density and proof rolling requirements prior to the placement of filter fabric and/or granular materials.

4.2 TOLERANCES

- .1 Shape and compact subgrade to the required cross-section and grade to within - 10 mm and + 10 mm of design elevations but not uniformly high or low, and maintain surface drainage as required to protect the work.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location use and placement of “Geotextile Fabric” specified herein.

1.2 SUBMITTALS

- .1 Provide the following submittals:
- .1 The manufacturer’s affidavit certifying that the geotextile being supplied meets the specified requirements prior to delivery to the Site.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Keep geotextile wrapped in its original packaging until immediately prior to its installation. Protect geotextile from direct sunlight, excessive heat, dirt, and rodents while in transit and storage.

2. PRODUCTS

2.1 MATERIALS

- .1 Provide woven geotextile fabric material, composed of a minimum 85% polypropylene or polyester polymers, formulated to resist deterioration by ultraviolet exposure and free of manufacturing defects, cuts, tears, or any other physical damage, that meets or exceeds the following physical properties:

Property	Value	Unit	ASTM Test Method
Grab Strength	1402	N	D-4632
Elongation	15	%	D-4632
CBR Puncture	4005	N	D-6241
Trapezodial Tear	503	N	D-4533
Ultraviolet Degradation	70	%	D-4355
Apparent Opening Size (AOS)	0.425	mm	D-4751
Permittivity	0.05	Sec ⁻¹	D-4491
Water Flow Rate	163	l/min/m ²	D-4491
UV Resistance	70	%@500hrs	D4355

Approved Products: Nilex 2006 – woven geotextile
or approved equal

- .2 Provide non-woven geotextile fabric material, needle punched, composed of polypropylene fibres, formulated to resist deterioration by ultraviolet exposure and free of manufacturing defects, cuts, tears, or any other physical damage, that meets or exceeds the following physical properties:

Property	Value	Unit	ASTM Test Method
Grab Strength	912	N	D-4632
Elongation	50	%	D-4632
CBR Puncture	2336	N	D-6241
Trapezoidal Tear	356	N	D-4553
Ultraviolet Resistance	70	%	D-4355
Apparent Opening Size (OAS)	0.180	mm	D-4751
Permittivity	1.5	Sec ⁻¹	D-4491
Water Flow Rate	4482	l/min/m ²	D-4491

Approved Products: Nilex 4553 - non-woven geotextile
or approved equal

- .3 Geo-grid to be biaxial type. The geo-grid is to be in accordance with the following standards (latest revision) ASTM D6637, ASTM D5818, and GRI-GG2-05.

Specifications for Biaxial Geogrid		
Properties	Test Method	Geogrid Requirement (Min Average Roll Values)
Resistance to Long Term Degradation (%)	—	100
Resistance to Installation Damage (SC% / CP%)	ASTM D5818-06 and ASTM D6637-01	95 / 90
Ultimate Tensile Strength (kN/m)	ASTM D 6637-01	20
Tensile Strength at 2% Strain (kN/m)	ASTM D 6637-01	8
Tensile Strength at 5% Strain (kN/m)	ASTM D 6637-01	17
Junction Efficiency (%)	GRI-GG2-05	93
Aperture Size (mm)		40 x 40

Approved Products: Nilex Type 2 – bi-axial geogrid
or approved equal

2.2 SHOP FABRICATION

- .1 Provide shop-made sewn seams as required to produce the minimum roll widths and lengths specified. Provide seams that meet or exceed the strength properties of the geotextile. Use sewing thread that has equal or better resistance against chemical and biological degradation as the geotextile.

3. EXECUTION

3.1 PREPARATION

- .1 Excavate and prepare the subgrade to the lines, grades, and elevations specified in the Contract Documents. Remove rock fragments or other objects having sharp projections.
- .2 Remove snow, ice, loose or other deleterious materials from the subgrade.
- .3 Do not place geotextile until the prepared subgrade surfaces have been inspected by the Owner's Representative. Rectify any defects identified by the Owner's Representative.

3.2 INSTALLATION

- .1 Install geotextile products at the locations specified in the Contract Documents and in accordance with the manufacturer recommendations.
- .2 Minimum allowable overlap of the geotextile will be 0.5 metres. Overlap sections must be anchored sufficiently to prevent overlap separation by weather or placement of granular material.
- .3 Temporarily anchor the geotextile with sandbags or weights placed at the outer edges, along seams, and at other intermediate points as required to prevent displacement. Geotextile that extends up the sides of roadwork or excavations will be held in place with nails at 3 metre intervals, or as required.
- .4 Extend the geotextile to the outer edges to the specified lines and trim any excess geotextile.
- .5 Protect the geotextile from damage. Repair or replace geotextile damaged during installation or construction of subsequent work.
- .6 Do not allow any equipment to operate directly on the geotextile or the overlying material.
- .7 Cover the geotextile within 1 day of installation with the specified fill material.
- .8 During placement of the specified material, limit the height from which the fill material is placed to 0.3 m or lower, as required to avoid damaging or displacing the geotextile. Install the geotextile with sufficient slack to prevent tearing during placement of the fill material.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location, use, and placement of “Sub-Base Granular Materials” specified herein.

2. PRODUCTS

2.1 GRANULAR SUB-BASE MATERIAL

- .1 Granular sub-base material will consist of sound, hard, durable, well graded pit-run or crushed gravel or sand as specified.
- .2 Granular sub-base material will not contain clay, loam, roots, plants, or other deleterious materials. The materials are to be well graded from coarse to fine within the gradation limits specified and will not be subject to extreme variation between the lower and upper limits of the gradation envelope specified.

2.2 GRADATION

- .1 Gradation to be within the following limits when tested to ASTM C117, and giving a smooth curve without sharp breaks when plotted on a semi-log grading chart.
- .2 Sub-Base Granular Material – Town supplied material.

3. EXECUTION

3.1 PLACEMENT OF SUB-BASE MATERIALS

- .1 Process, handle, and transport aggregates to avoid segregation, contamination, and degradation.
- .2 Place sub-base granular material on a prepared subgrade and/or geotextile fabric. Do not place granular materials on snow, ice, or frozen surfaces.
- .3 Place the sub-base material in uniform layers not exceeding 150 mm compacted depth. Shape each layer to a smooth contour and compact to specified density before placing the next layer. Remove and replace areas that become segregated during spreading at the Contractor’s expense. Compact the final lift of the sub-base material to proper grade and cross-section.
- .4 Maintain the sub-base material to the specified section, grade, and condition required for the placement of other materials or as required by the Owner’s Representative. Provide interim drainage to prevent damage to the work and unstable conditions due to high moisture contents.
- .5 Do not place the base material until the sub-base material has been inspected, surveyed, proof-rolled, tested, and approved by the Owner’s Representative.

3.2 COMPACTION OF SUB-BASE MATERIALS

- .1 Granular sub-base materials to be compacted by rolling with a pneumatic tired roller, vibratory smooth drum roller, or other approved equipment.
- .2 During compaction, add water by an applicator in such quantities that the moisture content will be maintained at the optimum level as determined by Standard Proctor test. If the moisture content exceeds the optimum moisture content, aerate the material by mechanical means or cease work temporarily until the material has dried sufficiently to reach the optimum moisture content.
- .3 Compact sub-base material to 100% of Standard Proctor Density and within - 2% and + 2% of optimum moisture content.

3.3 TOLERANCES

- .1 The final surface to be even, uniformly shaped, and compacted within a tolerance of + 20 mm and - 20 mm of established grade but not uniformly low or high, while maintaining surface drainage.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location, use and placement of “Proof Rolling” specified herein.
- .2 This Section is intended to be used as a reference Section. Provide proof rolling equipment and perform the Proof Rolling as required. Proof Rolling work is considered incidental to the Contract.

2. PRODUCTS

2.1 PROOF ROLLING EQUIPMENT

- .1 Perform proof rolling using a tandem axle, dual wheel dump truck with a minimum gross weight of the loaded truck of 24,800kg. A weight scale slip shall be available upon request to confirm the truck weight. Tire pressure shall be no less than 90% of the manufacturer’s recommended maximum inflation.
- .2 Owner’s Representative may authorize use of other acceptable proof rolling equipment.

3. EXECUTION

3.1 GENERAL

- .1 Proof roll at level in grade indicated. If alternative proof rolling equipment is authorized, Owner’s Representative will determine level of proof rolling.
- .2 Where proof rolling reveals areas of defective subgrade, Owner’s Representative will determine limits of unsuitable subgrade excavation and specify replacement material.

3.2 SUBGRADE PROOF ROLLING

- .1 Perform subgrade proof rolling on a daily basis prior to the placement of geotextile fabric, sub-base granular material, and base granular material immediately after the subgrade material has been shaped, graded and compacted to the specified density and moisture content. The loaded vehicle to be driven slowly (walking pace) in a systematic pattern so that each successive pass is next to or partially overlaps the previous pass. Where the area to be tested is large enough, successive passes will be conducted at right angles across the previous passes. While the test is being performed, the Owner’s Representative will observe the surface for deflections, cracking or rutting.
- .2 Once the subgrade proof roll is complete and deficient areas have been sub cut and repaired, the Contractor is now responsible for the condition of the road. Any further road failures in the future due to weather or any other conditions will be the responsibility of the Contractor to repair at his cost.

3.3 SUB-BASE PROOF ROLLING

- .1 Perform sub-base proof rolling on a daily basis prior to the placement of base granular material and immediately after the sub-base granular material has been placed, shaped, graded and compacted to the specified density and moisture content. The loaded vehicle to be driven slowly (walking pace) in a systematic pattern so that each successive pass is next to or partially overlaps the previous pass. Where the area to be tested is large enough, successive passes will be conducted at right angles across the previous passes. While the test is being performed, the Owner's Representative will observe the surface for deflections, cracking or rutting.

3.4 BASE PROOF ROLLING

- .1 Perform base proof rolling immediately prior to the placement of asphalt and after the base material has been placed, shaped, graded and compacted to the specified density and moisture content. The loaded vehicle to be driven slowly (walking pace) in a systematic pattern so that each successive pass is next to or partially overlaps the previous pass. Where the area to be tested is large enough, successive passes will be conducted at right angles across the previous passes. While the test is being performed, the Owner's Representative will observe the surface for deflections, cracking or rutting.

3.5 TOLERANCES

- .1 Where an area of subgrade material deflects, then rebounds more than 10 mm, the area will be deemed as failing the proof roll test. The failed areas identified by the Owner's Representative will be repaired to a passing condition and re-tested by proof roll method again at no cost to the Owner.
- .2 Where an area of sub-base granular material deflects, then rebounds more than 10 mm, the area will be deemed as failing the proof roll test. The failed areas identified by the Owner's Representative will be repaired to a passing condition and re-tested by proof roll method again at no cost to the Owner.
- .3 Where an area of base granular material deflects, then rebounds more than 5 mm, the area will be deemed as failing the proof roll test. The failed areas identified by the Owner's Representative will be repaired to a passing condition and re-tested by proof roll method again at no cost to the Owner.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location, use and placement of “Bituminous Prime Coat, Tack Coat and Fog Coat” specified herein.
- .2 The Work covered in this Section consists of the furnishing of all labour, plant and material and performing all operations in connection with supplying and placing “Bituminous Prime Coat, Tack Coat and Fog Coat” as specified and/or in accordance with industry standards established by the Asphalt Institute.

2. PRODUCTS

2.1 PRIME COAT, TACK COAT, FOG COAT

- .1 The asphalt required will be SS-1 emulsified asphalt and SS-1H emulsified asphalt conforming to the current issue of ASTM D2028 for Asphalt, Cut Back (Rapid Curing Type) or ASTM D2027 for Asphalt, Cut Back (Medium Curing Type).

2.2 SAND COVER

- .1 The materials for sand cover will consist of clean granular mineral material approved by the Owner’s Representative, all of which will pass a 5mm sieve.

3. EXECUTION

3.1 APPLICATION TEMPERATURE

- .1 The application temperature of the prime, fog and tack coat will be as specified by the Manufacturer. The ambient air temperature will be at least 4 degrees C. when applying the prime, tack or fog coat.

3.2 PRIME COAT

- .1 Immediately prior to applying the prime coat the surface of the base course will be brought to uniform cross-section by patching all depressions and defective areas using an approved patching material and by removing all bumps and irregularities. All loose and foreign material will be removed from the surface.
- .2 The prime coat will consist of a ratio of two parts SS-1 emulsified asphalt to one part water and applied uniformly at a rate of 1.75 to 2.25 l/m², depending on the surface's absorption characteristics. The prime coat will be applied to a uniformly damp base course when the ambient air temperature is at least 4 degrees Celsius. The prime coat will be allowed to cure for a minimum of two hours or until full curing has taken place.
- .3 To ensure uniformity of application a drip pan will be inserted under the nozzles when the application is stopped, and building paper will be spread over the treated surface to allow sufficient distance on restarting so that the nozzles are operating at full force when the untreated surface is reached. The building paper will then be removed and destroyed. A narrow spout pouring pot or hand spray will be used to apply primer material necessary to touch up spots unavoidably missed by the distributor.

- .4 Work adjacent to the roadway will be completely protected from the application operation by a suitable covering. Any unnecessary splashing of the concrete will be cleaned at the expense of the Contractor. Maintain the primed surface until the surface course has been placed. Maintenance will include spreading any additional sand and patching any breaks in the primed surface with additional asphaltic material.

3.3 TACK COAT

- .1 Apply tack coat between successive lifts of asphaltic concrete. The surface will be free from foreign material prior to application of the Tack Coat. Sweep the asphalt surface prior to the tack coating, if required. The Tack Coat will consist of a ratio of one part SS-1H emulsified asphalt to one part water and applied at a uniform rate of 0.5 litres per square metre. The Tack Coat will be allowed to cure for a minimum of two hours or until full curing has taken place.

3.4 FOG COAT

- .1 The surface will be free from foreign material prior to application of the fog coat. The fog coat, if required, will consist of a ratio of one part SS-1H emulsified asphalt to one part water and applied at a uniform rate of 0.5 l/m². The fog coat will be allowed to cure for a minimum of two hours or until full curing has taken place.
- .2 Traffic may be permitted to run on the completed fog coat immediately after the asphalt has cured.

3.5 SAND COVER

- .1 The prime coat should preferably be entirely absorbed by the base course and therefore require no sand cover. If, however, the asphalt has not been completely absorbed 24 hours after application, then just sufficient sand will be spread over the surface to blot up excess prime coat and prevent it from being picked up by any traffic.

3.6 EQUIPMENT

- .1 The pressure distributor used for applying asphaltic material will distribute the asphaltic material in a uniform spray without atomization, in the amount and between the limits of temperature specified. Suitable means for accurately indicating the temperature of the asphaltic material will be provided at all times.
- .2 The thermometer well will be so placed as not to be in contact with a heating tube. The distributor will be so designed that the normal width of application will be not less than 2 metres with provision for the application of lesser width when necessary.
- .3 If provided with heating attachments the distributor will be so equipped and operated that the asphaltic material will be circulated or agitated throughout the entire heating process.
- .4 The distributor will be equipped with a speed indicator registering metres per minute and a meter registering litres per minute passing through the nozzles. Both of these gauges will be readily visible to the operator of the distributor.

3.7 DEFICIENT APPLICATION

- .1 Areas that have uneven, non uniform, excessive or deficient application will be repaired immediately at the expense of the Contractor.

3.8 QUALITY OF MATERIALS

Submit data from an independent accredited testing laboratory as required by the Engineer to substantiate that the quality of materials proposed meet these specifications. Provide manufacturer's data as requested by the Owner's Representative.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location, use and placement of “Hot Mix Asphaltic Concrete” specified herein.
- .2 The Work includes the supply of aggregates and asphalt cement, asphalt plant mixing, transporting, placement, finishing and compaction to requirements specified herein.

1.2 DEFINITIONS

- .1 “RAP” is defined as Recycled Asphalt Product that is obtained from the cold milling of hot mix asphaltic concrete.
- .2 “A Lot” is a portion of the work being considered for acceptance, and is defined as one day of plant production for each mix type. Any portion of the work may be deemed a lot at the discretion of the Owner’s Representative.
- .3 “Job Mix Formula” is defined as the aggregate proportioning (including RAP), target gradation, asphalt content and air void content from the Mix Design that subject to approval by the Owner’s Representative.

1.3 SAMPLES

- .1 At least two (2) weeks prior to commencing work, inform the Owner’s Representative of proposed source of aggregates and provide access for sampling.
- .2 At least four (4) weeks prior to commencing work submit to the Owner’s Representative one 5L container of asphalt cement proposed for use.
- .3 Submit asphalt cement samples in new metal containers.
- .4 Identify the supplier of the asphalt cement.
- .5 Provide access for Owner’s Representative to sample material actually incorporated in the work as required.

1.4 SUBMISSIONS

- .1 Submit proposed asphalt concrete mix design and trial mix design results to Owner’s Representative for review and approval at least two (2) weeks prior to commencing.
- .2 Submit new mix design at least two (2) weeks prior to contemplated change in source of asphalt cement or aggregate.
- .3 Trial mix designs will be performed by an independent testing consultant and submitted under the signature and professional seal of a qualified materials engineer to the Owner’s Representative.

1.5 DELIVERY AND STORAGE

- .1 Aggregates:
 - .1 Deliver and stockpile aggregates in accordance with the requirements of this Section.
 - .2 Stockpile minimum of 50% of the total amount of aggregate required before commencing production of trial mix design.
 - .3 Handle and transport aggregates to avoid segregation, contamination and degradation.
 - .4 Stockpile aggregates in sufficient quantities to meet project schedules. When hauling into stockpiles after plant mixing commenced, do not deposit material against working face of stockpile.
 - .5 Separate aggregate stockpiles by substantial dividers or stockpiles far enough apart to prevent intermixing.
 - .6 Reject intermixing or contaminated materials. Remove and dispose of rejected materials as directed by the Owner's Representative within 48 hours of rejection.
 - .7 Construct stockpiles in uniform lifts using trucks or rubber tired loading equipment, being careful to avoid segregation by spillage of material over the ends of previously placed lifts. Do not use conveyors or tracked equipment in stockpile construction.
 - .8 Provide a previously stabilized stockpile base or provide a compacted sand base not less than 300mm in depth to prevent contamination. Alternatively, stockpile aggregates on ground but do not incorporate bottom 300mm of pile into work.
- .2 Asphalt Cement:
 - .1 Provide approved storage, heated tanks and pumping facilities for asphalt cement.
 - .2 Provide, upon request, freight and waybills for asphalt cement shipments received.
 - .3 Stockpile minimum of 100% of total amount of RAP required before commencing production of trial mix design.
 - .4 Handle and transport RAP to avoid segregation, contamination and degradation.
 - .5 Separate aggregate and RAP stockpiles by substantial dividers or stockpiles far enough apart to prevent intermixing.
 - .6 Reject intermixing or contaminated materials. Remove and dispose of rejected materials as directed by the Owner's Representative within 48 hours of rejection.

- .7 Conveyors may be allowed to stockpile RAP subject to approval by the Owner's Representative. No equipment will be allowed on the RAP stockpile. Construct stockpiles being careful to avoid segregation by spillage of material over the ends of previously placed lifts.
- .8 Provide free draining gravel stockpile base not less than 300mm in depth to prevent contamination of RAP.

2. PRODUCT

2.1 MATERIALS

.1 Aggregates:

.1 Samples:

Submit samples of aggregates to be used for asphaltic concrete two (2) weeks prior to commencing work, to an approved testing laboratory, for preliminary approval. Representative samples to weigh not less than 25 kg. Provide location and access to the aggregate source for sampling. Sampling shall be done in accordance with the current issue of ASTM D75. Provide the Owner's Representative with a report on the suitability of the aggregate, and a sieve analysis.

.2 Approval:

Preliminary approval of the aggregate as represented by the samples shall not constitute general acceptance of all material in the deposit or source of supply, and acceptance shall be subject to field tests taken at the discretion of the Owner's Representative and paid for by the Owner. Materials may be considered unsuitable even though particle sizes are within the limits of gradation if the material fails to provide a pavement suitable for traffic. Rejected material will not be paid for. The Owner's Representative will determine the acceptability of the final material.

.3 Coarse Materials:

.1 Coarse aggregate is aggregate retained on the 5mm sieve.

.2 Aggregate material shall be crushed stone consisting of hard, durable, highly angular, natural aggregate with pitted or rough surface textures and free from clay lumps, cementation, organic materials, frozen material and any other deleterious materials.

.3 Gradations to conform to the requirements for "Crushed Stone, Gravel Or Bituminous Concrete Base and Surface Courses" of Pavements ASTM Designation D692".

.4 The percentage wear of the aggregate as measured in the Los Angeles Abrasion Test AASHTO T96 (ASTM C131) shall not exceed 35 percent for the surface course or 40 percent for the base course material.

.4 Fine Aggregate:

- .1 To consist of natural or manufactured sand passing 5mm sieve and to consist of hard, tough grain, free of clay loam or other deleterious substances.
- .2 Shall conform to the requirements of ASTM D1073, Fine Aggregate for Bituminous Paving Mixtures.
- .3 Fractures evident on a minimum of 65 percent of the grains.

.5 Mineral Filler:

- .1 Finely ground particles of limestone, hydrated lime, Portland cement or other non-plastic mineral matter, thoroughly dry and free from lumps.
- .2 Add mineral filler when necessary to meet job mix aggregate gradation.
- .3 Meet the following minimum gradation:

<u>Size</u>	<u>Percent Passing by Weight</u>
160 µm	90
80 µm	65

.2 Aggregate Gradation Schedule:

SIEVE SIZE (Metric) mm	Alberta Transportation (Mix "M1") Percent Passing
12,500	100
10,000	83-92
5,000	55-70
1,250	26-45
630	18-38
315	12-30
160	8-20
80	4-10

.1 Combining of Aggregates:

- .1 Coarse aggregate, manufactured sand, natural sand as well as blend sand and mineral filler, if required, to be fed to plant through calibrated mechanical feeders.
- .2 Gradation of aggregates when blended to job mix formula to be within limits specified herein and giving a smooth curve without sharp breaks when plotted on semi-log grading chart.

.3 Asphalt Cement:

- .1 Asphalt binder to be a PG 58-28 grade.
- .2 Asphalt Cement shall be prepared by the refining of petroleum, uniform in character and not foam when heated to 177 degrees C. The tolerance allowed by ASTM for testing precision will be applied for acceptance of asphalt cement. Requirements are:

MINIMUM REQUIREMENTS	ASTM METHOD	TEST VALUES
Kinematic Viscosity at 135°C. (mm ² /sec)	D2170	255-360
Absolute Viscosity at 60°C, 300mm, hg Vacuum, (Pa.S)	D2171	78-155
Flash Point (Cleveland Open Cup), °C	D92	205
Thin Film Oven Test Penetration after test at 25°C, 100g, 5 sec.; (% of Original)	D5	150
Ductility at 25°C mm, (cm/min)	D113	100
Solubility in Trichloroethylene, (% by Mass)	D2042	99.5

At least two (2) weeks prior to commencing work, the Contractor shall submit to an approved testing laboratory for design mix, at least 5 litres in a new metal container of the asphalt cement he intends to use in the work along with the name of the supplier of the asphalt cement. Additionally the Contractor shall provide if required, a current temperature - viscosity chart for the asphalt cement showing Kinematic Viscosity in mm ²/sec over a temperature range of 105° C to 175° C, and submit the manufacturer's test data and certification that the asphalt cement meets the requirements within these specifications. The Contractor shall pay for all shipping costs and for all laboratory tests.

.3 Handling and Storage of Materials:

The various Aggregates shall be stockpiled in separate stockpiles at the mixing plant in such a manner that no segregation, contamination and degradation occur within each stockpile nor intermixing between stockpiles. The stockpiles shall be sufficient quantities to meet project schedules. When hauling into stockpiles after plant mixing has commenced, do not deposit material against working face of stockpile. Do not use the bottom 300 millimetre of the stockpile in the work if aggregates are stockpiled on the ground.

The asphalt cement shall be stored in suitable tanks with approved heating and pumping facilities at a temperature not exceeding 150 degrees C.

2.2 MIX DESIGN

- .1 Design and prepare hot-mixed, hot-laid pavement mixtures utilizing asphalt cement and aggregate in accordance with ASTM D3515-96, and to meet the Marshall Mix Design Schedule, as follows:

PROPERTY	Alberta Transportation Mix "M1"
Marshall Stability @ 60°C; kN	8.0
Marshall Flow @ 60°C; 0.25mm Units	8 – 14
Voids in Mineral Aggregate, %	13.5 min.
Air Voids in Mixture, %: Design Range:	3.5 – 4.0
Asphalt Film Thickness, mm	6.2

- .2 Test Standards:

- Percent V.M.A. – minimum compaction 75 blows each face (mechanical compactor).
- Marshall Stability, N – at 60° Celcius, compaction 75 blows each face (mechanical compactor).
- Flow – measured at point where the load just begins to decrease.
- Percent Air Voids – that portion of asphalt cement absorbed into the aggregate shall be compensated for in the calculation.

The design asphalt cement content used shall be determined at 4% air voids. The test properties at this asphalt content are then checked to ensure compliance with the respective criteria. Alternate designs may be considered at the sole discretion of the Material & Research Owner's Representative. No design will be approved having a film thickness less than those specified.

Asphalt cement contents shall be established for a calculated minimum specified film thickness on both the fine (ACf) and coarse (ACc) sides of the mix gradation envelope.

Design asphalt cement content shall govern on all compliance testing except where the minimums cited above are not met.

- .3 Before any mix shall be used a laboratory design mix formula for each class of asphalt hot mix to be placed on work shall be developed. A compliance design mix formula consists of an envelope gradation within the range of values of Conventional Mixes. At no time shall the filler content (passing 80 micron) exceed 20 percent of the fine aggregate fraction (passing 2.36mm). Density values shall be established by the Marshall Method – 75 blows with mechanical compaction. Bulk specific gravity shall be determined using oven dried aggregate.

The percentages of aggregate include mineral filler, when used, and refer to the completed dry mix. The percentages of asphalt cement refer to the complete asphalt concrete mixture. All percentages are by weight.

At least (7) days prior to the use of any mix on work covered by these Specifications the Contractor shall provide the Owner's Representative with a sample minimum weight of 60 kg, of the mix to be used. The Owner's Representative shall cause the sample to be tested by an approved independent testing laboratory to assure compliance to each and every applicable design Specification. When the testing indicates such compliance, the Owner's Representative shall approve in writing the use of the mix. Thereafter, the test results shall constitute the design mix formula for the mix for purposes determining deviations and variations.

Do not use any mix not covered by these Specifications without the written approval of the Owner's Representative.

Any deviation from any standard shall be cause for refusal.

- .4 All mixtures shall be supplied to the approved job mix formula within the range of tolerances specified.

Asphalt cement content: $\pm 0.3\%$ of the design mix within a test lot.

Aggregate Gradation:

AGGREGATE PASSING SIEVE SIZE (Micron)	TOLERANCE (% PASSING BY WEIGHT)
160 and coarser	± 3.0
80 ± 1.0	

Temperature: Mix temperature at point of plant discharge shall not vary from that specified in the job mix formula by more than 10° C.

Moisture in Mix: Maximum permissible moisture, at point of plant discharge, is 0.2 percent by weight of mix.

A qualified testing firm shall perform all trial and job mix designs and all data shall be submitted under the seal of a Professional Engineer.

The approved job mix formula shall not be changed without prior approval of the Owner's Representative. Should a change in a material source be required, then at least three (3) working days in advance of proposing to use the new mix submit the new job mix formula for review by the Owner's Representative.

2.3 JOB MIX FORMULA

- .1 Subject to approval by the Owner's Representative, the aggregate proportioning (including RAP), target gradation, asphalt content and air void content from the Mix Design will become the Job Mix Formula for the supply of hot mix asphalt.
- .2 Once established, no alterations to the Job Mix Formula will be permitted unless the Contractor submits a new Job Mix Formula and it is approved by the Owner's Representative.

- .3 If the sum of any alteration to the Job Mix Formula is in excess of any one of the following limits, a new Mix Design is required.
 - .1 + or – 5% passing the 5,000µm sieve size
 - .2 + or – 1% passing the 80µm sieve size
 - .3 + or – 0.30% asphalt content.
- .4 Any alterations to the Job Mix Formula will not result in properties which do not meet the requirement of this specification.

2.4 TOLERANCES

- .1 All mixtures will be supplied to the approved Job Mix Formula within the range of tolerances specified.
- .2 Asphalt cement content: + or – 0.3% of approved Job Mix Formula value.
- .3 Aggregate Gradation:

Aggregate Passing Sieve Size (µm)	Tolerance (% By Mass)	
	Individual Sample	Average of Last 3 Samples
20,000	± 5.0	± 3.0
12,500	± 5.0	± 3.0
10,000	± 5.0	± 3.0
5,000	± 5.0	± 3.0
2,500	± 4.0	± 2.5
1,250	± 4.0	± 2.5
630	± 3.0	± 2.0
315	± 3.0	± 2.0
160	± 2.0	± 1.5
80	± 1.5	± 1.0

- .4 Temperature: Mix temperature at point of plant discharge will not vary from that specified in the Job Mix Formula by more than + or – 10°C.
- .5 Air Voids: + or – 1.0% of the Job Mix Formula value.
- .6 Mixture Properties: Marshall Stability, Marshall Flow, Voids Filled with Asphalt, Voids in Mineral Aggregate and Film Thickness as per Mix Design.
- .7 Moisture in Mix: Maximum permissible moisture at point of plant discharge is 0.2% by mass of mix.
- .8 Asphalt cement recovered from freshly produced hot mix by the Abson Method, ASTM D1856 and subsequently tested in accordance with ASTM D5, will retain a minimum value of 50% of its original penetration value.

3. EXECUTION

3.1 CONTINUITY OF PRODUCTION

- .1 During the time period that work is in progress on any project for which this specification is in effect, and at the discretion of the Owner's Representative, the plant may be limited to producing only the mix type required for that project.

3.2 ASPHALT MIXING PLANT

- .1 Asphalt mixing plant registered with Alberta Environmental Protection and operated in accordance with the "Code of Practice for Asphalt Plants". The plant shall be capable of combining, drying and heating the mineral aggregate, heating the asphalt and accurately proportioning all materials to produce an asphaltic hot mix possessing the foregoing characteristics within designated tolerances. Essentially it shall meet the requirements of ASTM D995-956, complete with a drier equipped with a dust collector, a gradation control unit to reject oversize material and to separate and store the dried aggregate into at least three hot material bins, a positive displacement asphalt pump, a twin shaft pugmill, a weigh box or hopper equipped for accurately weighing the aggregates, and proper thermometric equipment.
- .2 The Owner's Representative shall have access at any time to all parts of the asphalt plant.
- .3 The plant used shall be so designed, co-ordinated and operated to provide a mixture conforming to the job mix requirements.
- .4 Equipment for preparation of bituminous Materials:
 - .1 Tanks for storage of bituminous materials to be equipped for heating the material, under effective and positive control at all times, to the temperature required in the paving mixture specifications. Heating shall be done by steam or oil coils, electricity, or other means such that no flame shall contact the heating tank.
 - .2 A circulation system for the bituminous material shall be of adequate capacity to provide proper and continuous circulation between the storage tank and proportioning units during the entire operating period.
 - .3 All pipe lines and fittings shall be steam or oil jacketed or otherwise properly insulated to prevent heat loss.
 - .4 The discharge end of the bituminous binder circulating pipe shall be kept below the surface for the bituminous material in the storage tank to prevent discharging the hot bituminous material into the open air.
 - .5 Storage tank capacity shall suffice for at least one days' run.
- .5 Cold Feed Control:
 - .1 The plant shall be provided with mechanical means for uniformly feeding the aggregate into the dryer so that uniform production and temperatures may be assured. Stockpiled aggregates shall be blended through separate, synchronized cold feed bins, which have been calculated to enable the design aggregate blending formula to be uniformly delivered to the dryer.

.6 Dryer:

- .1 A dryer of satisfactory design shall be provided. The dryer shall be capable of drying and heating the aggregate to the moisture and temperature requirements set forth in the paving mixture specifications, without leaving any visible unburned oil or carbon residue on the aggregate discharged from the dryer.

.7 Screens:

- .1 Plant screens shall have adequate capacity and size range to properly separate all of the aggregate into the sizes required for proportioning so that they may be recombined consistently within the specification limits.
- .2 Overrun shall be limited to having not more than ten (10) percent in any one bin.
- .3 Screens shall be checked daily and cleaned when necessary.

.8 Bins:

- .1 The plant shall have hot bin storage of sufficient capacity to ensure uniform and continuous operation. Bins shall be divided into the specified number of compartments arranged to ensure separate and adequate storage of appropriate fractions of the aggregate.
- .2 Each compartment shall be provided with an overflow pipe of such size and at such location to prevent backing up of material into other bins or into contact with the screen.
- .3 Adequate additional dry storage shall be provided for mineral filler, when required, and provisions shall be made for accurate proportioning.
- .4 Bins shall be equipped with 'telltale' devices to indicate the position of the aggregate in the bins at the lower quarter points. An automatic plant shutoff shall be provided to operate when any aggregate bin becomes empty.
- .5 Adequate and convenient facilities shall be provided for obtaining aggregate samples from each bin.

.9 Weigh Box or Hopper:

- .1 The equipment shall include a means for accurately weighing each bin size of aggregates into a weigh box or hopper, suspended on scales and ample in size to hold a full batch without running over.
- .2 The weigh box or hopper shall be supported on fulcrums and knife edges that will not easily be thrown out of alignment or adjustment.
- .3 Gates, both on the box and the hopper shall be constructed to prevent leakage when closed.

.10 Aggregate Scales:

- .1 Scales for any weigh box or hopper may be of either beam or spring-less dial type and shall be of standard make and design having tolerances on over registration not exceeding 0.1 percent of the indicated weight when tested for accuracy.
- .2 All weighing equipment shall be tested and sealed as often as the Owner's Representative may deem necessary to ensure accuracy.

.11 Bituminous Control Unit:

- .1 Satisfactory means, either by weighing or metering, shall be provided to obtain the proper amount of bituminous material. Metering devices shall prove accurate to within two (2) percent variation, above or below the actual weight in kg required.
- .2 Adding the bituminous material shall not take more than ten (10) seconds. Where the quantity of bitumen is metered, provision shall be made to check the delivery of the meter by actual weight.
- .3 Suitable means shall be provided either by steam or oil jacketing or other insulation for maintaining specific temperatures of the bitumen in the pipe lines, meters, weigh buckets, spray bars, and other containers or flow lines.

.12 Thermometric Equipment:

- .1 An armoured recording thermometer of suitable range shall be fixed in the bituminous material feed line at a suitable location near the discharge at the mixer unit.
- .2 The plant shall be equipped with approved automatic recording thermometers, pyrometers, or other approved recording thermometric instruments at the discharge chute of the dryer and in the hot fines bin to register and record automatically the temperatures of the heated aggregate.

.13 Mixer Unit for Batch Method:

- .1 The plant shall include a batch mixer of an approved twin pugmill type capable producing a uniform mixture within the permissible job mix tolerances.
- .2 It shall have a batch capacity of not less than 0.9t.
- .3 The mixer to be designed to provide means of adjusting the clearance between the mixer blades and liner plates to ensure proper and efficient mixing.
- .4 The mixer to be of the enclosed type.
- .5 The mixer to be constructed to prevent leakage of the contents.
- .6 Mixer discharge not to cause appreciable segregation.

- .7 The mixer to have an accurate time lock to control the operation of a complete mixing cycle by locking the weigh box gate after the charging of the mixer until closing of the mixer gates at the completion of the cycle; it shall lock the bituminous material control unit throughout the dry and wet mixing period.
- .8 The dry mixing period is defined as the interval of time between the opening of the weigh box gate and the application of the bituminous material and opening of the mixer gate.
- .9 The timing control shall be flexible and capable of being set at intervals of not more than five (5) seconds throughout cycles up to three (3) minutes.
- .14 Dust Collectors:
 - .1 When plants are located where dust may be objectionable or where dust interferes with the efficient operation of the plant, proper housing, mixer covers, or duct collective systems shall be installed. Provisions shall be made to waste the material collected or to return it uniformly to the mixture as the Owner's Representative may direct.
- .15 Safety Requirements:
 - .1 Adequate and safe stairways to mixer platforms shall be provided and guarded ladders to other plant units shall be thoroughly protected.
 - .2 All gears, pulleys, chains, sprockets and other dangerous moving parts shall be thoroughly protected.
 - .3 Ample unobstructed space shall be provided on the mixing platform.
 - .4 An unobstructed passage shall be maintained at all times in and around the truck-loading area. This space shall be kept free of drippings from the mixing platform. A ladder or platform shall be located at the truck-loading space to permit easy and safe inspection of the mixture as it is delivered into the trucks. Overhead protection shall be provided where required.
- .16 Continuous Mixing Plant:
 - .1 Continuous mixing plants will not be accepted unless prior approval is received from the Owner's Representative.
 - .2 Approval will depend on uniformity of source of aggregates, type of plant and location.
 - .3 The use of continuous mix plants will be allowed subject to the following requirements:
 - .1 The device for proportioning volumetrically the mineral aggregate shall be equipped with accurately controlled and calibrated gates or other satisfactory devices for each bin of the various sizes of aggregates and be so designed that the flow of aggregate of each bin can be accurately determined and controlled.

- .2 The drive shaft of the aggregate feeder shall be equipped with a revolution counter reading to 1/100th of a revolution and of sufficient capacity to register the total number of revolutions in a days' run.
 - .3 A positive signal system shall be provided to indicate the level of aggregates in each bin, and a device shall be provided to close down the plant automatically at any time that the level of material in any one bin falls to the strike-off capacity of the feed gate.
 - .4 The volumetric proportioning device for the asphalt shall be a positive displacement type of pump and a satisfactory spray nozzle arrangement at the mixer.
 - .5 Means shall be provided to maintain pressures constant on each side of the pump. Means shall be provided for diverting the flow of asphalt from the pump into a suitable container of a minimum 50 kg capacity in order that the accuracy of the asphalt delivery from the pump may be checked at the intervals to be determined by the Owner's Representative.
- .4 Dryer-Drum Plants:
- .1 The use of a dryer drum plant may be approved, subject to the verification that the plant configuration and operational practices are in strict accordance with the manufacturer's design and operation manuals, and has not been significantly modified there-from.
 - .2 The plant shall be equipped with a by-pass chute so that mix produced during start-up and shutdown operations can be discarded.
 - .3 An approved hot mix storage silo shall be provided. Mix produced during the continuous mixing operation shall be conveyed to the silo, prior to the Owner's Representatives' approval being given to utilize the silo, the Contractor shall demonstrate that no mix segregation that will result from hot mix being conveyed through the silo, and that mix temperature can be retained during the time it is stored within the silo. The silo shall be equipped with high and low level indicators. Mix shall not be discharged when low level indicator is on except at the end of the production day.

3.3 PREPARATION OF HOT MIX MATERIAL

- .1 Preparation of Mineral Aggregate:
 - .1 The mineral aggregates will be dried to ensure the mix is discharged containing not more than 0.2 percent moisture, heated so that when delivered to the mixing unit, they will be at as low a temperature as is consistent with proper mixing and laying and in no case to exceed 163° C. The mineral aggregate may be fed simultaneously into the same dryer, but in all cases immediately after heating, they will be screened into bins.
 - .2 Where reclaimed asphalt pavement (RAP) will be incorporated into the mix, the virgin aggregate may be heated to a higher temperature such that when dry mixed with the RAP the temperature is less than 163° C. The RAP will be passed over a 50mm screen prior to entering the plant.

- .3 For batch plants RAP will be introduced into the weigh hopper after some aggregate has been weighed. For approved drum or continuous plant RAP will be introduced through a calibrated cold feeder.
- .2 Preparation of Asphalt Cement:
 - .1 The asphalt cement will be carefully heated to a specified temperature between 118° C and 150° C depending on the temperature viscosity relationship, by approved means designed to secure uniform heating of the storage tank. The temperature differential aggregates and asphalt cement will at no time be more than 4° C.
- .3 Composition of Mixture:
 - .1 The mineral aggregate and asphalt cement will be mixed in a manner to produce a homogeneous mixture in which all particles of the mineral aggregate are uniformly coated and in such proportions as to produce a mixture having asphalt cement content as indicated by the approved job mix formula. When the mixture is prepared in a twin pug mixer, the volume of mineral aggregate and asphalt cement will not be so great as to extend above the tops of the mixer blades when the blades are in a vertical position.
 - .2 After the hot aggregate and mineral filler have been charged into the mixer, and thoroughly mixed for a period of not less than fifteen (15) seconds, as directed by the Owner's Representative, the asphalt cement will be added and the mixing continued for a period of at least twenty-five (25) seconds, and not more than forty-five (45) seconds.
 - .3 Asphalt cement recovered from freshly produced hot mix by the Adson Method, ASTM D1856, and subsequently tested in accordance with ASTM D5, will retain a minimum value of fifty percent (50%) of its original penetration value.

3.4 COMPLIANCE WITH SPECIFICATIONS

- .1 Aggregate Gradation:
 - .1 When the gradation does not comply with tolerances set forth in Section 2.1.1 of this specification, the Owner's Representative will initiate the following action:
 - .1 When two (2) consecutive gradation analyses identify non-compliance with the specified tolerances, the Contractor will be served notice and a third test will be initiated.
 - .2 If continued non-compliance is indicated from the third test, the Contractor will suspend production. He will not commence production again until he has demonstrated that corrective action has been taken and that the aggregate gradation is within the specified tolerance limits.
- .2 Asphalt Temperature:
 - .1 Plant mix which does not meet temperature requirements of Section 2.1.2, at the point of plant discharge will be rejected.

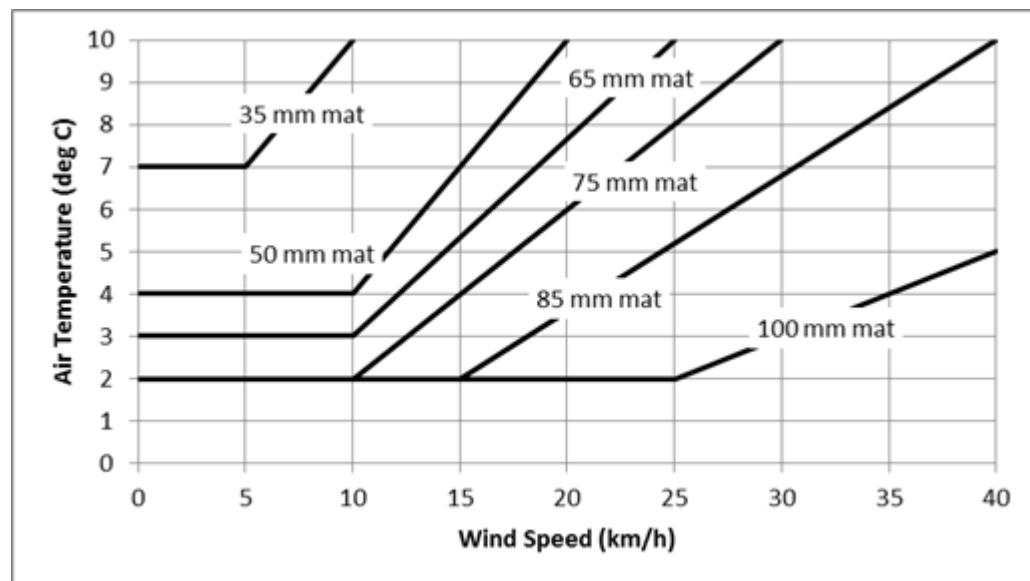
3.5 PREPARATION FOR PAVING

.1 General:

- .1 The Contractor will give the Owner's Representative a minimum of six (6) hours notice of his intention of commencing paving over any previously approved primed or tacked surface.
- .2 The hot asphaltic mixture will be laid upon a dry firm base, true to grade and cross-section and free from all screening or other loose or foreign material. No hot mix will be spread when the sub-base is wet or when other conditions prevent proper spreading, finishing or compaction.
- .3 If undercutting, and subsequent backfill with asphaltic concrete is done, the backfill operation will be performed sufficiently far ahead of the paving operation to allow the asphaltic concrete time to cool down enough to support equipment.

.2 Asphalt Placing Temperature:

- .1 No asphalt will be dispatched to the field unless the temperature as issued by Environment Canada, is rising and meets the following minimum temperature requirements for the mat depth:



- .2 A tolerance will be permitted for plant start-up temperature.
- .3 No surface lift asphalt will be placed regardless of temperature until the road base is 5°C or higher.

.3 Hours of Operation:

- .1 No loads of asphalt will be dispatched from the plant after sunset or during hours of darkness unless loads can be placed and compacted in accordance with these specifications, and suitable artificial illumination is provided, all subject to the approval of the Owner's Representative.

.4 Transportation of Hot Asphaltic Mixtures:

- .1 To protect the load from adverse weather conditions during transit, trucks will carry at all times tarpaulins of sufficient weights and size to cover the entire open area of the truck box. Regardless of weather conditions, tarpaulins will be used when ordered by the Owner's Representative.
- .2 Vehicles used for the transportation of hot mix asphalt from the plant to the site of work will have tight metal boxes previously cleaned of all foreign matter, the inside surface may be lightly lubricated with a thin oil or soap solution just before loading. Excess lubrication will not be permitted.
- .3 For purposes of checking asphalt mixture temperatures, trucks will have an accessible 13mm diameter hole drilled into the driver's side of the truck box, at a distance of 0.3m from the bottom of the box and 150mm clear of the reinforcing ribs.
- .4 The speed and weight of hauling trucks will be regulated so that, if in the opinion of the Owner's Representative, no damage will occur to any portion of the work underway. Any damage to the prime coat or the bituminous mat caused by the Contractor's equipment will be repaired by the Contractor at his own expense.
- .5 Asphalt arriving on-site will have a measured temperature between 135 °C and 175 °C in the bed of the truck.
- .6 The Asphalt mat immediately behind the paver will have a measured temperature between 125 °C and 150 °C.

3.6 SPREADING AND FINISHING EQUIPMENT

.1 Asphalt Spreader:

- .1 The track mounted spreading machine will be self-propelled and capable of placing a uniform layer of asphalt mix to a depth shown on the plans or as ordered by the Owner's Representative.
- .2 The screed will include a tamping bar or vibratory strike-off device for use when required. The screed will strike-off the mix to the depth and cross-sections specified and produce a finished surface of uniform texture.
- .3 Control of the screed will be by automatic sensing devices. Longitudinal control will be accomplished by a sensor, which follows a string-line, ski, or other reference. The grade sensor will be movable and mounts provided so that grade control can be established on either side of the paver. A slope control will also be provided to maintain the proper transverse slope of the screed.

- .2 Hand Tools:
 - .1 Only lutes will be used during the spreading operation and when the asphalt is worked by hand in areas in which the paver cannot reach.
 - .2 Tamping irons used to consolidate the material along curbs, gutters and other structures inaccessible to the rollers will not weigh less than 11 kg and will have a bearing area not exceeding 310 sq. cm. Mechanical compaction equipment, satisfactory to the Owner's Representative, may be used instead of tamping irons.
 - .3 For purposes of checking the finished surface, Contractors must provide and carry on each paving machine a 3 metre straight edge with an attached level.
 - .4 The Contractor will supply propane torches for heating joints.

3.7 SPREADING OPERATIONS

- .1 Pre-levelling for Asphalt Concrete:
 - .1 Pre-levelling of uneven or broken surfaces over which asphalt concrete is to be placed will be accomplished by the use of asphaltic concrete placed with a grader, paver, hand or by a combination of these methods as directed by the Owner's Representative.
 - .2 After placement, the asphalt concrete used for pre-levelling will be compacted thoroughly with a pneumatic-tired roller.
- .2 Asphalt Spreading Operation:
 - .1 The asphaltic concrete will be laid to the design thickness as shown on the contract drawings or as specified. New construction where an established; i.e. curb, is lacking, a string-line reference will be required. The maximum spacing between string-line stakes will not exceed 10 metres. The line will be tensioned to 450 N and secured. Adjacent mats on the same lift are to be controlled by use of the grade sensor. No relaxation of the above procedure will be permitted without written approval of the Owner's Representative.
 - .2 The spreader will be operated in such a manner as to distribute the asphaltic concrete mix to proper cross-section, width and thickness without causing segregation of the mix. Small segregated areas that may occur will be corrected immediately. The forward motion of the spreader will be controlled so that no irregularities in the pavement surface caused by excessive speed. The rate of placement of the mixture will be uniform, and will be co-ordinated with the production rate of the asphalt plant without intermittent operation of the spreader.
 - .3 Any failure of the machine to produce a smooth, uniformly dense mat, free from irregularities, will be corrected immediately to the satisfaction of the Owner's Representative.

.3 Areas Inaccessible to Spreaders:

- .1 Areas that are inaccessible to the spreading machine may be paved by other methods, as directed by the Owner's Representative. Graders or approved types of truck-attached spreaders will be used to pave inaccessible or irregularly shaped areas. Hand raking will be kept to a minimum.
- .2 In small areas or where the use of mechanical equipment is not practical, the mix may be spread and finished by hand. The asphaltic mixture will be dumped on the area and immediately thereafter distributed into place by shovels and spread with lutes in a loose uniform layer of uniform density and correct depth. Material must be handled so as to avoid segregation. Excessive oiling of tools will not be tolerated. Loads will be dumped any faster than can be adequately distributed by the rakers. Raking must be carefully and skilfully done, in such a manner that after the first passage of the roller over the mixture, a minimum amount of additional patching will be required.

3.8 COMPACTION EQUIPMENT

- .1 The Contractor will supply sufficient compaction equipment to:
 - .1 Provide a compaction rate that will equal or exceed the placing rate of the spreader spreader.
 - .2 Ensure full compaction of the asphaltic concrete before the temperature of the mat falls below 80° C.

3.9 COMPACTION PROCEDURES

- .1 General:
 - .1 The rollers will be kept in continuous motion while on the hot mat in such a manner that all parts of the pavement receive equal compression.
 - .2 The surface of the mixture after compaction will be smooth and true to established section and grade. Areas of .09 sq. m. or more in which any mixture shows an excess or deficiency of asphalt, or uneven distribution of asphalt due to insufficient mixing, or which become loose, broken, ravelled, mixed with dirt, or is in any way defective, will be removed and replaced with fresh asphalt at the Contractors' expense and be immediately compacted to conform with the surrounding area.
 - .3 Areas inaccessible to the roller will be compacted with mechanical or hand tampers.

3.10 JOINTS

- .1 Longitudinal and Transverse Joints:
 - .1 Longitudinal and transverse joints will be made in a careful manner.
 - .2 Paving joints will not be placed in the same vertical plane. Longitudinal joints will be offset at least 150mm and transverse joints will be offset at least 2.0m.

- .3 Edges which additional pavement is to be placed will be vertically formed to true line. A lute will be used immediately behind the paver when required to obtain a true line and vertical edge.
- .4 The exposed edges of all cold asphalt joints and the face of the concrete curb and gutter will be cleansed and painted with a thin coat of asphalt tack oil.
- .5 In making the joint along any adjoining pavement and after the hot mixture is placed by the finishing machine, just enough of the material will be carried back to fill any space left open. This joint will be properly "set up" with the back of the lute at proper height and level to receive the maximum compression under the rolling.
- .6 At the end of each day's paving of the surface course and upper lift of the base course mix, the uncompleted paving mats will be provided with vertically cut transverse joints. Joints between old and new pavements or between successive days' work will be carefully made in such a manner as to ensure a thorough and continuous bond between the old and new surfaces.

3.11 SURFACE SMOOTHNESS

- .1 General:
 - .1 The completed surface of the top or wearing surface will be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. Tolerances in both profile and crown are:
 - .1 Base Course - 10mm in 5 m
 - .2 Surface Course - 6mm in 5 m
 - .2 When the surface smoothness does not comply with tolerances, the pavement surface will be corrected by the addition of asphalt concrete mixture of an appropriate class to low places or the removal of material from high places by methods satisfactory to the Owner's Representative. Correction of defects will be carried out until there are no deviations anywhere greater than the allowable tolerances.
- .2 Repair of Defective Areas:
 - .1 Asphalt spreaders will be required for areas greater than 90 sq. m. The required equipment will be on site before placing of asphalt hot mix may commence.
 - .2 Where sixty percent (60%) of the road requires patching and/or several other patches are required across the width of the street it will be necessary to extend the treatment across the full width of the street.
 - .3 Placing of a patch on top of another will not be acceptable and in these cases the original asphalt must be removed.
 - .4 Where, in the opinion of the Owner's Representative, possible bridging exists, it will be necessary to remove the asphalt and the defective area. The base course will be brought back up to proper grade and use full depth asphalt patching.
 - .5 All patches should be square with no jagged edges.

- .6 Asphalt patches should retain the proper cross-section and the edges will be properly feathered out.
- .7 Asphalt skin patching will be subject to the temperature requirements for asphalt surfacing.

3.12 TESTING

.1 Quality Control:

- .1 Quality control is the responsibility of the Contractor throughout every stage of the Work from aggregate processing to the final accepted product. Tests performed by the Owner's Representative will not be considered as quality control tests.
- .2 The Contractor will be totally responsible for production of materials and construction that meet all specified requirements.
- .3 All quality control will be conducted by qualified personnel. The Contractor will bear the cost of all quality control testing and consulting services.
- .4 Pre-Production Quality Control Requirements are as follows:

Quality Control Requirement	Test Standard	Minimum Frequency
Asphalt Cement Certification	--	Once per Year or for change in supplier
Aggregate Physical Properties	See 2.2.5	Once per Year or for change in source
Crushed Coarse Aggregate Gradation Analysis and Fracture Content Manufactured Sand Aggregate Gradation Natural Fine Aggregate Gradation Blend Sand Aggregate Gradation	ASTM C 136 ASTM D 5821 ASTM C 117 ASTM C 126 ASTM C 117 ASTM C 126 ASTM C 117 ASTM C 126	One for every 1000 tonne of each class of material processed into stockpile, or one analysis for each material every production day when production rate is less than 1000 tonne.
Reclaimed Asphalt Pavement (RAP) Asphalt Content and Extracted Aggregate Gradation	ASTM D 2172 ASTM C 117 ASTM C 136	One for each 500 tonne delivered to stockpile, or one for each location when delivery rate is less than 500 tonne
Penetration of asphalt cement recovered from RAP by Abson Method	ASTM D 1856 ASTM D 5	One for each 2000 tonne delivered to stockpile
Trial Mix Design by Marshall Method	ASPHALT INSTITUTE MS-2	One per mix type every 3 years, or as required for a change in asphalt cement supply, aggregate gradation or aggregate source. *
Plant Calibration	--	As required

* A laboratory/plant job mix formula verification is required each year when a trial mix design is not conducted.

- .5 Pre-Production Quality Control test data will be reported to the Owner's Representative one week prior to commencing the project, or as requested.
- .6 Post Production Quality Control Requirements are as follows:

Quality Control Requirement	Test Standard	Minimum Frequency
Hot Mix Asphalt Analysis (including Asphalt Content, Aggregate Gradation, Marshall Density and Void Properties)	ASTM D 6307 ASTM C 117 ASTM C 136 ASTM D 3203	One for every 500 tonne of each mix type supplied under this specification. *
Quality Control Charts (including 3 test running average for Binder Content, Aggregate Gradation, Marshall Density and Void Properties)	--	For each hot mix analysis. Test results and updated 3 test running average to be submitted to the Owner's Representative as they become available.
Hot Mix Asphalt Temperature	--	Minimum frequency not specified.
Cold Feed Aggregate Analysis	ASTM C117 ASTM C 136	Minimum frequency not specified.
Maximum Relative Density of Hot Mix Asphalt	ASTM D 2041	Minimum frequency not specified.
Compaction Monitoring (Core or Nuclear Density)	ASTM D 2726 ASTM D 2950	Minimum frequency not specified. **

* Where an individual test indicates non-compliance, another test shall be initiated immediately.

** Coring is subject to approval by Owner's Representative.

- .7 Post-Production Quality Control test data will be reported to the Owner's Representative daily as the work proceeds.
- .2 Quality Control Compliance:
- .1 Asphalt Content, Aggregate Gradation and Mixture Properties:
- .1 The test data derived by Post-Production Quality Control mix testing, will be compared to the tolerances set forth in the production tolerances, Section 2.4, of this specification. The Contractor will document, and make available to the Owner's Representative, any adjustments made to correct noncompliance with the specified tolerances.
- .2 The Contractor will suspend mix production when the 3 test running average for any property is outside of the specified tolerance limits for three consecutive tests. Supply will not commence again until it is demonstrated that corrective action has been taken.
- .2 Hot Mix Asphalt Temperature:
- .1 Plant mix that does not meet temperature requirements of the production tolerances, Section 2.4, at the point of plant discharge will be subject to rejection at the discretion of the Owner's Representative.

.3 Acceptance Sampling and Testing:

- .1 Within this specification, certain requirements, limits and tolerances are specified regarding supplied materials and workmanship. Compliance with these requirements will be determined from acceptance testing as described in this section.
- .2 Acceptance testing is the responsibility of the Owner's Representative.
- .3 Initial acceptance testing will be undertaken free of cost to the Contractor.
- .4 A lot is a portion of the work being considered for acceptance, and is defined as one day of plant production for each mix type. Any portion of the work may be deemed a lot by the Owner.
- .5 Acceptance Testing requirements are as follows:

Quality Acceptance Requirement	Test Standard	Minimum Frequency
Hot Mix Asphalt Analysis (including Binder Content, Aggregate Gradation, Marshall Density, Maximum Relative Density, Void Properties, Marshall Stability and Flow)	ASTM D 6307 ASTM C 117 ASTM C 136 ASTM D 2041 ASTM D 3203	For each mix type, one test for each 3500 sq.m. of placement, or three tests per lot, which ever is greater.
Compaction Testing (Core Density) and Thickness Determination	ASTM D 2726 ASTM D 3549	For each mix type, one test for each 2000 sq.m. of placement, or three tests per lot, whichever is greater.
Hot Mix Asphalt Temperature	--	No minimum frequency.

.6 Acceptance Sampling Procedures:

- .1 Loose mix samples will be acquired from the Work site in accordance with Alberta Transportation Test (ATT) procedure ATT- 37. Auger samples may be used if approved by both the Owner's Representative and the Contractor.
- .2 The timing of mix sampling will be stratified, with each sample representing a similar production quantity.
- .3 Core locations will be selected using stratified random sampling procedures. The lot will be divided into segments meeting or exceeding the minimum frequency indicated in the Acceptance Testing requirements (Section 3.11.3) and of approximately equal area. In each segment, a test site will be located using random numbers to determine the longitudinal and transverse coordinates.
- .4 Areas within 3m of transverse joints, or 0.3m of a mat edge, are excluded from compaction acceptance sampling and testing.

- .7 Reporting Protocols:
 - .1 Test reporting accuracy will be as stipulated in the referenced test procedures, including:
 - .1 Gradation to the nearest whole number, except the percent passing the 80mm sieve, which will be reported to the nearest 0.1%.
 - .2 Binder content to the nearest 0.01%.
 - .3 Air voids and compaction to the nearest 0.1%.
 - .4 Thickness to the nearest whole millimeter (mm).
 - .2 Lot averages will be reported to the same accuracy as test results.
- .4 Appeal of Acceptance Testing Results:
 - .1 General:
 - .1 The Contractor may appeal the results of acceptance testing for Compaction Standard, Asphalt Content or Air Voids for any lot subject to rejection or unit price reduction. The notice of appeal will be in writing and submitted to the Owner's Representative within 48 hours of receipt of the acceptance testing results.
 - .2 Appeals will only be considered if cause can be shown and the post-production quality control requirements have been satisfied.
 - .3 Quality Control tests initiated after the Contractor's receipt of the acceptance test results will not be considered when evaluating cause for appeal.
 - .4 Only Quality Control testing during production for the subject project will be considered when evaluating cause for appeal.
 - .2 Asphalt Content Appeal:
 - .1 A stratified random sampling plan will be developed by the Owner's Representative with the same number of segments as the original number of samples for the subject lot. Sufficient core sample will be acquired from each segment to enable asphalt content determinations.
 - .2 For asphalt content appeal testing, the Contractor will have the option for the testing to be done by the testing laboratory undertaking the project acceptance testing, or an independent testing laboratory selected by the Owner's Representative.
 - .3 The average of the appeal test results will be used for acceptance and unit price adjustment, and shall be binding on both the Owner and the Contractor.

- .4 If the average appeal test result verifies that any unit price reduction or rejection applies for that Lot, the costs of the appeal sampling and testing will be borne by the Contractor. If the results show that a penalty or rejection no longer applies, the sampling and appeal costs will be the responsibility of the Owner.
- .3 **Compaction Standard or Air Void Appeals:**
 - .1 The testing laboratory conducting the project acceptance sampling and testing will routinely retain companion samples sufficient for the determination of maximum relative density and/or Marshall density.
 - .2 For compaction standard or air void (Marshall density) appeal testing, the Contractor will have the option for the testing to be done by the testing laboratory undertaking the project acceptance testing, or an independent testing laboratory selected by the Owner's Representative.
 - .3 The average of the appeal tests will be used for acceptance and unit price adjustment, and will be binding on both the Owner and the Contractor.
 - .4 If the new compaction standard verifies that any unit price reduction or rejection applies for that Lot, the costs of the appeal sampling and testing will be borne by the Contractor. If the result shows that a unit price reduction no longer applies, the appeal testing costs will be the responsibility of the Owner.
 - .5 If the new average air void content result verifies that any unit price reduction applies for that Lot, the costs of the appeal testing will be borne by the Contractor. If the results show that a unit price reduction no longer applies, the sampling and appeal costs will be the responsibility of the Owner.
- .4 **Core Density and Thickness Appeals:**
 - .1 Core density and thickness appeals will only be considered if a case can be made that the stratified random sampling plan was biased or testing was in error.

3.13 END PRODUCT ACCEPTANCE OR REJECTION

- .1 **General:**
 - .1 The Contractor will provide an end product conforming to the quality and tolerance requirements of this specification. Where no tolerances are specified, the standard of workmanship will be in accordance with accepted industry standards.
 - .2 Acceptance of any Lot at full or increased payment will occur if there are no obvious defects and the Lot mean results for asphalt content, pavement density, air voids and thickness meet or exceed the specified tolerances.
 - .3 Unit price reductions will only be applied on the basis on full acceptance testing in accordance with the Acceptance Testing Requirements Section 3.11.3.5.

.2 Asphalt Content:

- .1 For full payment, the Lot Mean Asphalt Content must be within + 0.30% of the approved Job Mix Formula value, as specified in Section 2.4.
- .2 Payment adjustment for asphalt content is as follows:

Asphalt Content Deviation from Job Mix Formula Value (%)	Payment Adjustment Factor (PA_{AC})
+ or - 0.30 or less	1.00
+ or - 0.31 to + or - 0.50	As per Chart A
Greater than + or - 0.50	Reject *

* Subject to removal and replacement at the discretion of the Owner's Representative.

.3 Pavement Compaction:

- .1 For full or increased payment, the Lot Mean Pavement Compaction must be equal to or greater than 98% of the Lot Mean Maximum Relative Density.
- .2 Payment adjustment for pavement compaction is as follows:

Pavement Compaction % of Maximum Relative Density	Payment Adjustment Factor (PA_{COM})
97.5 to 98.0	1.00
97.0 to 97.4	0.99
96.5 to 96.9	0.96
96.0 to 96.4	0.91
95.5 to 95.9	0.84
95.0 to 95.4	0.75
94.0 to 94.9	0.00
Less than 90.0	Reject **

** Subject to removal and replacement at the discretion of the Owner's Representative.

.4 Air Void Content:

- .1 For full payment, the Lot Mean Air Voids must be within + or - 1.0% of the Job Mix Formula value, as specified in Section 2.4.
- .2 Payment adjustment for air void content is as follows:

Air Void Content % Deviation from Job Mix Formula Value	Payment Adjustment Factor (PA_{AV})
Less than 1.0	1.00
1.0 to 2.0	As per Chart C
Greater than 2.0 (Lower Lifts)	0.80
Greater than 2.0 (Upper Lifts)	0.60

.5 Thickness (New Construction and Top Lift Only):

- .1 Pavement of any type found to be deficient in thickness by more than 13.0 mm will be removed and replaced by pavement of specified thickness, at the Contractor's expense.
- .2 The Lot Mean Thickness for any Lot will be determined on the basis of the acceptance cores described in the Acceptance Testing Requirements, Section 3.11.3.4. Core thickness will be determined in accordance with ASTM D 3549.
- .3 If the deficiency of any individual core exceeds 13 mm, additional cores may be extracted in the proximity to the location of the core of excessive deficiency, to identify the extremities of the pavement area subject to be removed and replaced. The Contractor will pay for such additional coring.
- .4 For full payment, the Lot Mean Thickness must be equal to, or greater than, the specified thickness.
- .5 Payment adjustment for thickness is as follows:

Average Thickness Compared to Specified Thickness	Payment Adjustment Factor * (PA _T)	
	Total Thickness (Single or Multiple Lifts)	Top Lift Thickness (Multiple Lifts)
Compliant or Greater	1.00	1.00
1mm to 13mm Deficient	As Per Chart D	As Per Chart D
More than 13mm Deficient	Reject **	Reject **

* A single Thickness Payment Adjustment Factor shall be applied, Total Thickness or Top Lift Thickness, whichever results in the greatest adjustment.

** Subject to removal and replacement at the discretion of the Owner's Representative.

.6 Smoothness:

- .1 The completed asphalt concrete surface will be true to the dimensional and tolerance requirements of the specifications and drawings. Unless detailed otherwise in the contract documents, the tolerances in both profile and crown are:
 - .1 Base Course - 10 mm in 3 m
 - .2 Surface Course - 5 mm in 3 m
- .2 When deviations in excess of the above tolerances are found, the pavement surface will be corrected by methods satisfactory to the Owner's Representative. Correction of defects will be carried out until there.

.7 Segregation:

- .1 The finished surface will have a uniform texture and be free of segregated areas. A segregated area is defined as an area of the pavement where the texture differs visually from the texture of the surrounding pavement.
- .2 All segregation will be evaluated by the Owner's Representative to determine repair requirements.

- .3 The severity of segregation will be rated as follows:
 - .1 Slight - The matrix of asphalt cement and fine aggregate is in place between the coarse aggregate particles, however there is more stone in comparison to the surrounding acceptable mix.
 - .2 Moderate - Significantly more stone than the surrounding mix, and exhibit a lack of surrounding matrix.
 - .3 Severe - Appears as an area of very stony mix, stone against stone, with very little or no matrix.
- .4 Segregated areas will be repaired by the Contractor as directed by the Owner's Representative. The following methods of repair are identified.
 - .1 Slight - Squeegee asphalt to completely fill the surface voids.
 - .2 Moderate - slurry seal for full mat width.
 - .3 Severe - removal and replacement or overlay.
- .5 All repairs will be regular in shape and finished using good workmanship practices to provide an appearance suitable to the Owner's Representative.
- .6 Any other methods of repair proposed by the Contractor will be subject to the approval of the Owner's Representative.
- .7 Repairs will be carried out by the Contractor at their expense.

3.14 PAYMENT ADJUSTMENT FOR NON-COMPLIANCE

- .1 The Unit Price applicable to each Lot quantity of asphalt concrete will be calculated as follows:

$$\text{Adjusted Unit Bid Price} = (\text{Unit Bid Price}) \times (\text{PA}_{AC}) \times (\text{PA}_{COM}) \times (\text{PA}_{AV}) \times (\text{PA}_T)$$

Where:

PA_{AC} = Asphalt Content Payment Adjustment

PA_{COM} = Pavement Compaction Payment Adjustment

PA_{AV} = Air Void Payment Adjustment

PA_T = Thickness Payment Adjustment

END OF SECTION

CHART A ASPHALT CONTENT PAYMENT ADJUSTMENT FACTOR

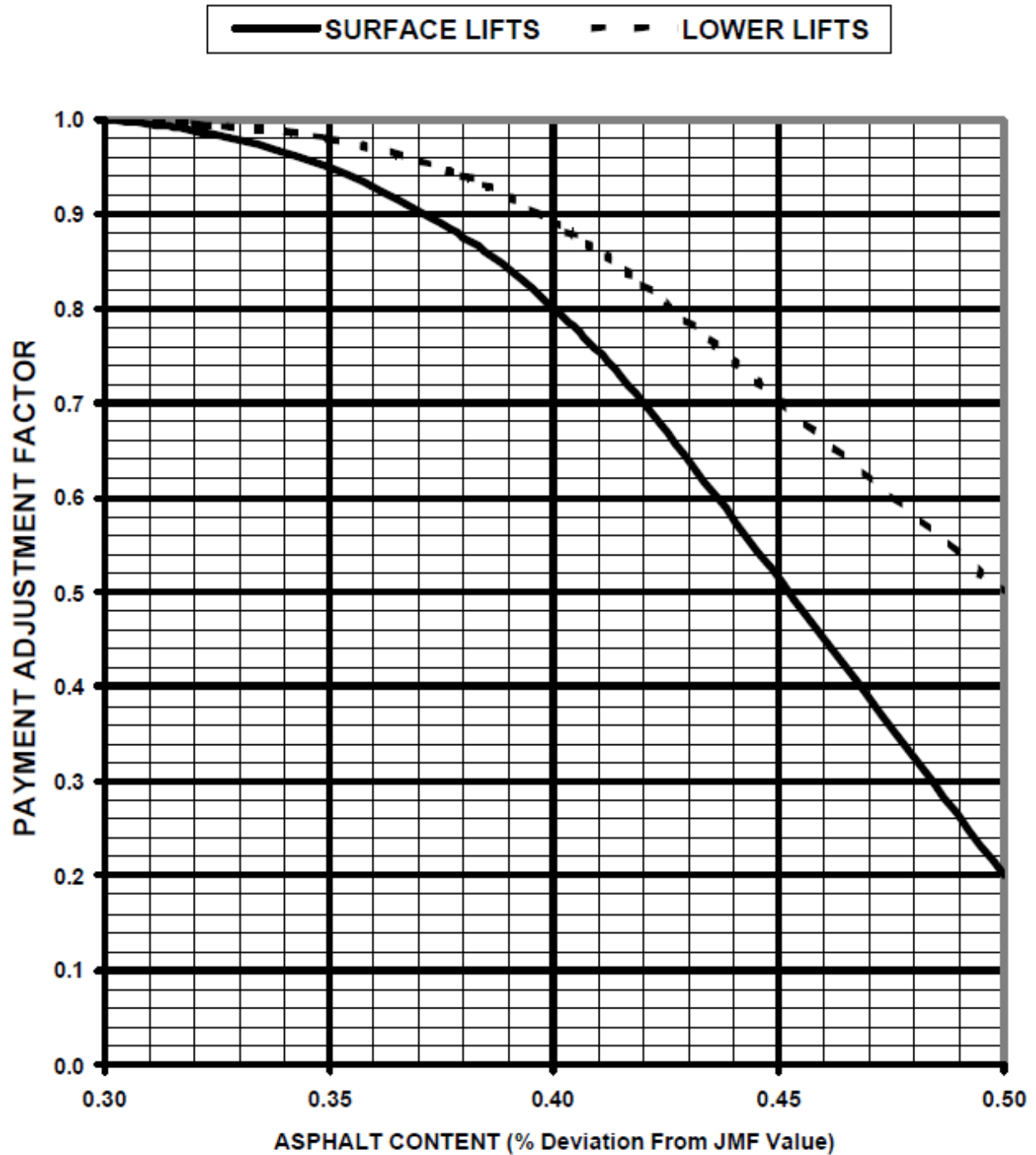


CHART B COMPACTION PAYMENT ADJUSTMENT FACTOR

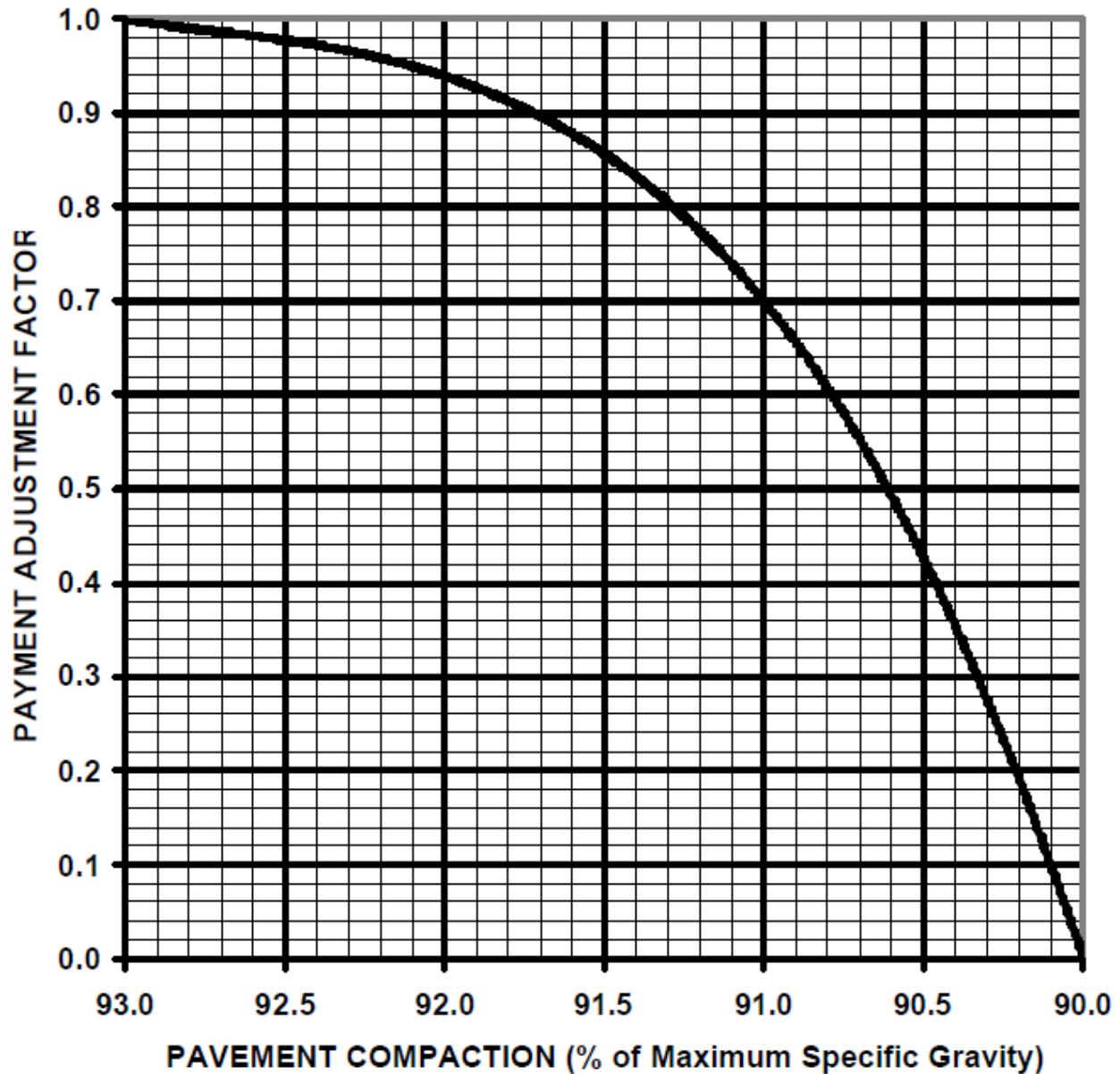


CHART C
AIR VOID CONTENT
PAYMENT ADJUSTMENT FACTOR

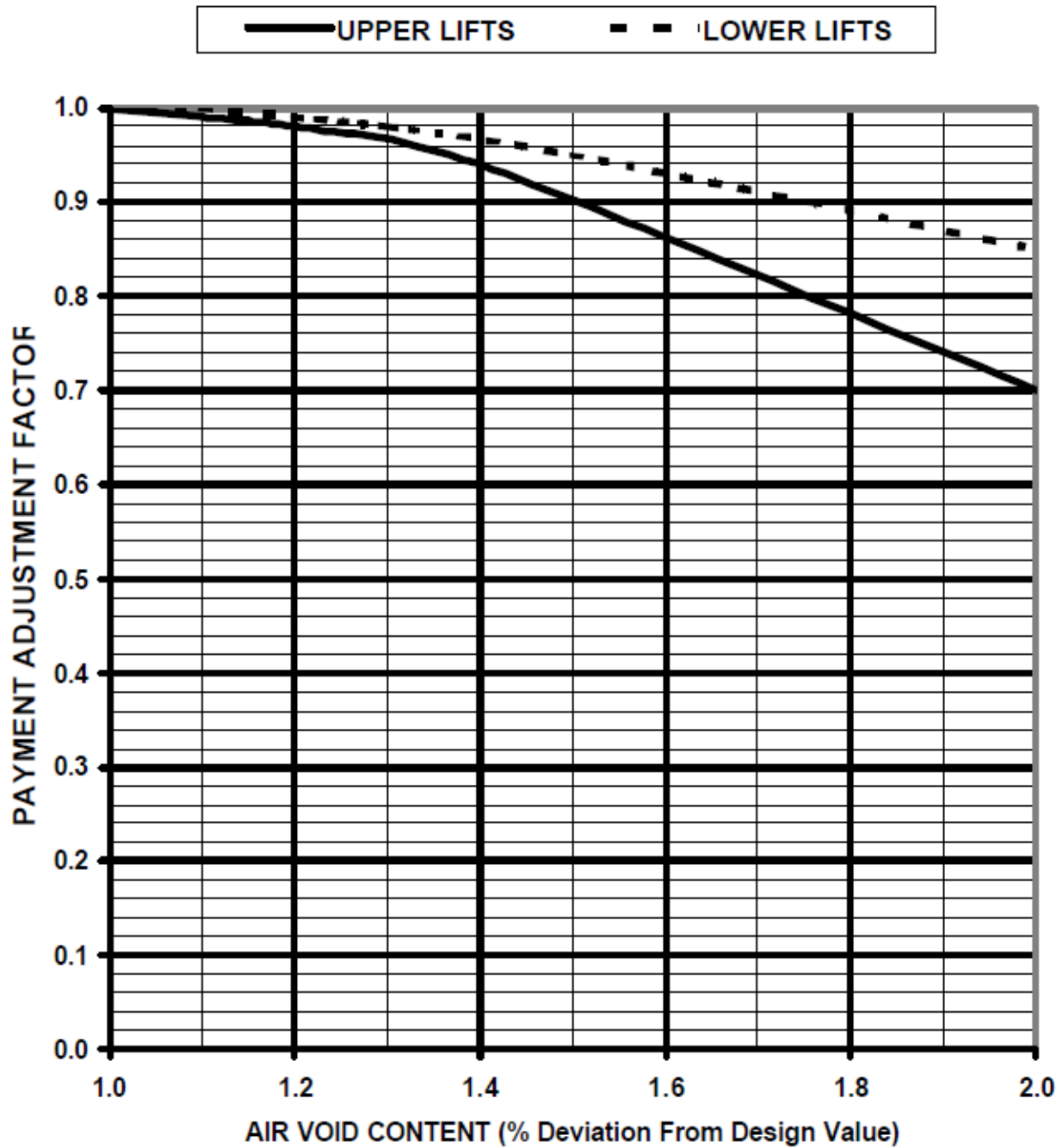
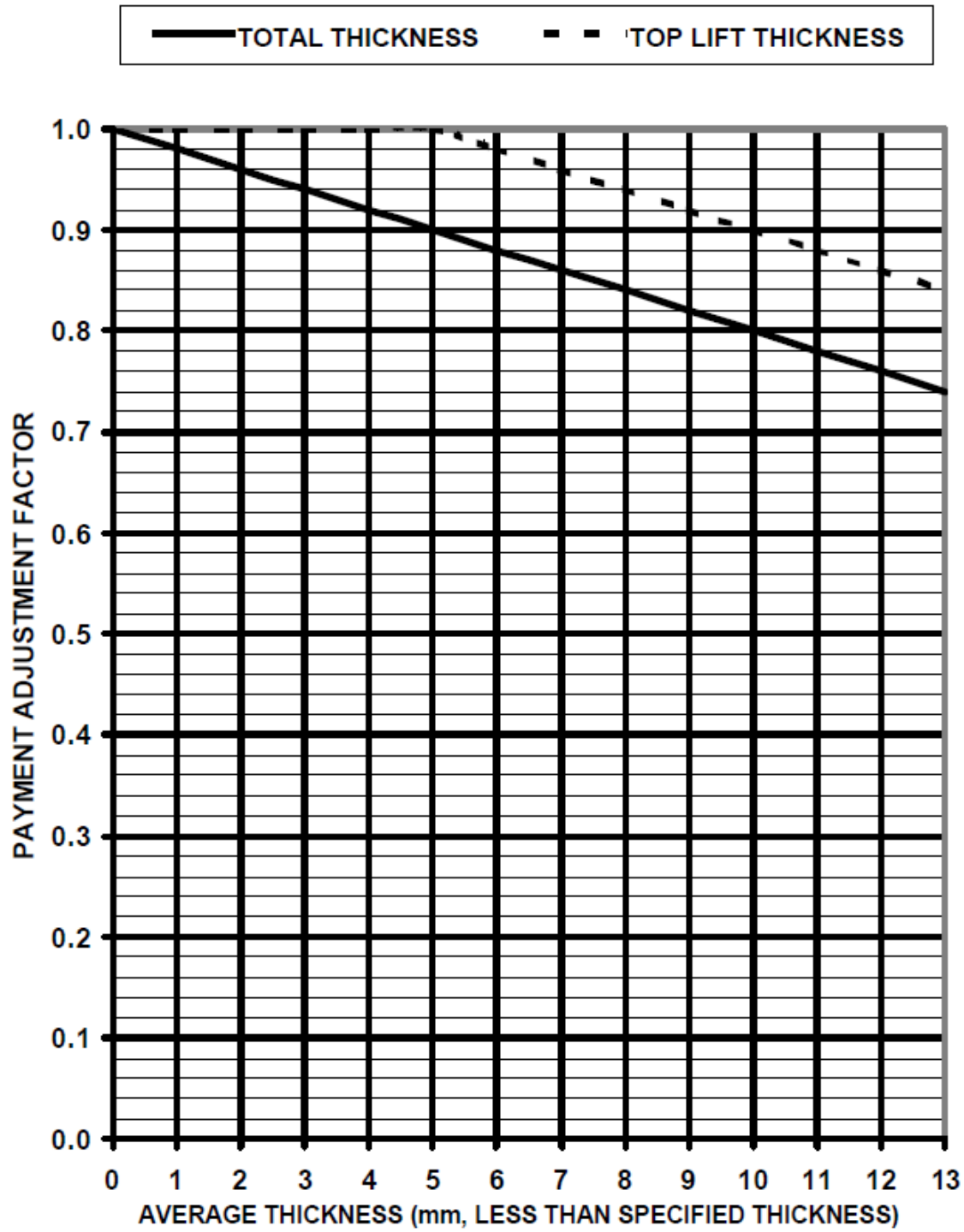


CHART D
AVERAGE THICKNESS
PAYMENT ADJUSTMENT FACTOR



1. GENERAL**1.1 INTENT**

- .1 Read this Section in conjunction with other Sections for location, use and placement of “Asphalt Concrete Pavement Repairs” specified herein.

1.2 DEFINITIONS:

- .1 “Crack Filler” is defined as a bituminous material used to fill and seal cracks in an existing pavement.
- .2 “Fog Seal” is defined as a light application of slow setting asphalt emulsion used to renew old asphalt surfaces and seal small cracks and surface voids.
- .3 “Prime Coat” is defined as an application of low viscosity liquid asphalt to prepare granular or soil cement base surface for application of asphalt concrete pavement.
- .4 “Sand Seal” is defined as an application of rapid-setting asphalt material covered with fine aggregate used to improve the skid resistance of slippery pavements.
- .5 “Slurry Seal” is defined as a mixture of a slow setting asphalt emulsion, fine aggregate, mineral filler and water used to fill cracks and seal areas of old pavements to restore a uniform surface texture and seal the surface.
- .6 “Tack Coat” is defined as a light application of a bituminous material to an existing relatively non-absorptive surface to provide a thorough bond between old and new surfacing.

1.3 SUBMITTALS

- .1 Submit product information on seal coats and crack fillers.
- .2 Submit information on proposed soil sterilant.

1.4 SEQUENCING AND SCHEDULING

- .1 Sequence and schedule work so as to provide access to buildings at all times. Arrange work so as not to interfere with normal use of premises.

2. PRODUCTS**2.1 BITUMINOUS MATERIALS**

- .1 Slurry Seal: emulsified asphalt, SS-1H
- .2 Sand Seal: emulsified asphalt, SS-1H
- .3 Crack Filler: Hydrotech 6160

2.2 AGGREGATE

- .1 Aggregate for Slurry and Sand Seals: clean natural or crushed sand, and mineral filler if required, to ASTM D1073-94.
- .2 Mineral Filler: Portland Cement, pozzolan and commercially ground stone dust conforming to properties specified in ASTM D242-95.

2.3 AGGREGATE GRADATION SCHEDULE

- .1 Gradation of aggregate will be through sieves to CAN/CGSB-8.2-M88, as follows:

Percent by Weight Passing Sieve Sizes

Nominal Sieve Opening	Mineral Filler	Slurry Seal	Sand Seal
5.0 mm			100
2.5 mm		100	15-45
1.25 mm		55-85	0-10
630 µm	100	35-60	
315 µm	95-100	20-45	0-5
160 µm		10-30	
80 µm	70-100	5-15	

2.4 SEAL AND TACK COAT MIXES

- .1 Slurry Seal Mix: mineral filler, and as follows:
 - .1 Asphalt Content: 20-25% by weight of dry aggregate.
 - .2 Water Content: 10-15% by weight of dry aggregate.
 - .3 Prepare in slurry machine conforming to ASTM D3910-96. Make sufficiently fluid to flow into cracks when applied.

3. EXECUTION

3.1 EXAMINATION AND SURFACE PREPARATION

- .1 Examine base granular material before paving. Report defects in granular material to the Owner's Representative. Do not start paving if base is frozen or otherwise unsatisfactory.
- .2 As near as practicable prior to applying seal coats and overlay:
 - .1 Clean existing pavement surface with mechanical sweeper to remove loose stones, sand and dust.
 - .2 Spray soil sterilant on clean pavement and in cracks, in accordance with manufacturer's instructions.
- .3 As near as practicable prior to crack filling, clean out cracks with a mechanical router and a high pressure jet of air to remove loose materials.

3.2 PROTECTION OF EXISTING WORK

- .1 Protect structures, buildings, sidewalks, landscaping and other surface features against damage caused by paving operations and asphalt spray.

3.3 PAVEMENT REPAIRS

- .1 Cut existing pavement using a saw or other method approved by Owner's Representative to leave a straight, vertical cut against which asphalt concrete will be placed.
- .2 Excavate broken pavement and unsuitable gravel and subgrade materials to a depth of 300 mm below design finished grade. Compact remaining gravel or subgrade to 100% of Standard Proctor Maximum Dry Density.
- .3 Place 250 mm of base granular material compacted to 100% of Standard Proctor Maximum Dry Density, to depth required to receive specified thickness of asphalt concrete at grades conforming to surrounding existing pavement.
- .4 Spray tack coat on prepared gravel base and on vertical pavement edges at a rate of 0.25 - 0.90 liters per square metre, using a pressure distributor.
- .5 Place 90 mm thickness of hot mix asphaltic concrete. Compact to minimum 98% of Marshall Density.

3.4 PAVEMENT OVERLAY

- .1 Cold mill asphalt along curb and gutters, doorways and other surface features where a smooth transition to the new pavement is required. Cold mill sufficient pavement to allow at least a 25 mm deep overlay.
- .2 Apply tack coat.
- .3 Place an average lift of 50 mm thickness of hot mix asphaltic overlay on existing pavement, laid to specified elevations and grades. Compact to minimum 98% of Maximum Relative Density.

3.5 EQUIPMENT

- .1 Do not use pneumatic-tire rollers with wobbly type wheels.
- .2 Slurry mix spreading equipment will be in accordance with ASTM D3910-96.

3.6 REPAIRS AT CATCH BASINS, MANHOLES, VALVES

- .1 Where applicable, adjust manhole and catch basin rims and valve boxes to accommodate increased pavement depth. Do not pave over manholes and water valves.
- .2 During paving operations, ensure positive surface drainage to catch basins and catch basin manholes.
- .3 Ensure that surface runoff will not drain into sanitary sewer manholes.
- .4 Clean out manholes and ensure free operation of valves after completion of paving operation.

3.7 APPLICATION OF SLURRY SEAL

- .1 Wet surface immediately before application of slurry mixture.
- .2 Apply slurry mixture with spreader to depth not exceeding 8 mm. Apply mixture evenly. Ensure penetration into scaled areas and cracks. Roll if necessary.

3.8 APPLICATION OF SAND SEAL

- .1 Apply asphalt material at rate of 0.60 litres per square metre, using pressure distributor.
- .2 Apply sand uniformly at rate of 0.004 m³ per m², using mechanical spreader.
- .3 Roll sand until smooth and thoroughly compacted surface is obtained.

3.9 CLEAN-UP

- .1 Remove loose asphalt, aggregate and excess milled asphalt from site.
- .2 Remove spillage or over-spray of liquid asphalt from pavement, sidewalks, building and other site features.

3.10 PROTECTION OF COMPLETED WORK

- .1 Keep vehicular traffic off newly paved areas until pavement surface temperature has cooled below 39° Celsius. Prohibit stationary loads on pavement repairs until 24 hours after placement.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this section in conjunction with other sections for location and use of appurtenance adjustment specified herein.

2. PRODUCT

2.1 MANHOLES, FRAMES AND COVERS

- .1 Adjusting rings (collars) to latest revision ASTM C478M. 50 mm, 75 mm, 100 mm, 150 mm and 200 mm thick collars are permitted. The total rise of adjusting rings a minimum of 50mm and a maximum of 350 mm. A maximum of two adjusting rings (collars) are permitted in any one manhole.
- .2 NF-39 Frame and Cover in landscaped areas.
- .3 NF-80 Frame and Cover in hard surface areas.
- .4 NF-90 Gasketed Frame and Cover at sags.

2.2 CATCH BASINS, FRAMES AND GRATES

- .1 Adjusting rings (collars) to latest revision ASTM C478M. 50mm, 75mm, 100mm, 150 mm and 200 mm thick collars are permitted. The total rise of adjusting rings a minimum of 50 mm and a maximum of 350 mm. A maximum of two adjusting rings (collars) are permitted in any one catch basin.
- .2 F-51 Frame and Grate at straight faced curb and gutter.
- .3 K7 or DK7 Frame and Grate at rolled curb and gutter.
- .4 F-38 Frame and Grate in laneways.
- .5 F-39 Frame and Cover in landscaped areas.

2.3 VALVES AND VALVE BOXES

- .1 All valve boxes located in roads shall be left flush with the base course asphalt or gravel. Immediately prior to the final lift of asphalt or grave, the valve boxes shall be raised so that they are flush with the final grade elevation of the road.

3. EXECUTION

3.1 GENERAL

- .1 Bring all manholes, catch basins, water valve boxes and other appurtenances to the finished grade of the road, parking lot, median strip or landscaped areas. Complete this work prior to placement of the concrete structures, sod, seed or final lift of asphalt.
- .2 Repair or replace water valves, catch basins, manholes and other appurtenances damaged as a result of construction at no cost to the Owner. No tolerance will be allowed in the shape of the finished surface in the vicinity of any utility appurtenance.

- .3 Raise or lower manhole frames and covers to grade by the addition and/or deletion of manhole components including frames, frame riser rings, manhole barrels and collars, as required. The completed manhole adjustment work will be in accordance with the precast concrete manhole standards. All work to be inspected and approved by the Owner's Representative before it will be considered complete.
- .4 Raise or lower catch basin frames and grates to grade by the addition, deletion and/or modification of catch basin components including frames, collars, slab tops and barrel, as required. The completed catch basin adjustment work will be in accordance with the precast concrete catch basin standards. All work to be inspected and approved by the Owner's Representative before it will be considered complete.
- .5 Raise or lower water valve boxes to grade by the addition, deletion and/or modification of water valve components including top box, top box riser, casing and extension spindle, as required. The completed water valve box adjustment work will be in accordance with the valve and valve box standards. All work to be inspected and approved by the Owner's Representative before it will be considered complete.
- .6 Do not proceed with paving final surface lift until all necessary manhole, catch basin, valve and other appurtenance adjustments have been completed.
- .7 Raise or lower manholes and catch basins frames using riser rings and collars a minimum of 50 mm and a maximum of 350 mm. A maximum of two adjusting rings (collars) are permitted in any one manhole.
- .8 Ramp asphalt or gravel at 40:1 slope to all projecting manholes, catch basins, valves and other appurtenances as required.
- .9 Where the top/final lift of asphalt is not placed in the same year as base lift, set manhole frames and covers; catch basin frames and grates; valve boxes; and other surface appurtenances to interim asphalt grade or graveled surface grade.

3.2 TOLLERANCES

- .1 The final manhole, catch basin, water valve box and other appurtenances will be within - 10 mm and + 10 mm of finish grade or as approved by the Owner's Representative.

END OF SECTION

1. GENERAL

1.1 INTENT

- .1 Read this Section in conjunction with other Sections for location, use and placement of “Restoration of Sitework” specified herein.

2. PRODUCTS

- .1 Not applicable.

3. EXECUTION

3.1 RESTORATION - GENERAL

- .1 Restore all existing areas and sitework damaged or disturbed due to earthwork or other work of this Contract, back to their original condition or better.

3.2 LANDSCAPE WORK

- .1 Protect the integrity of the existing landscape features by implementing construction procedures that will minimize damages.
- .2 Restore all landscape features damaged or disturbed by the work, back to their original condition or better. All costs associated with this work will be borne by the Contractor.
- .3 Maintain all trees within the work site.
- .4 Minimize damage to trees, plants and shrubs during the course of construction.
- .5 Attend to damaged trees, plants or shrubs by qualified personnel.
- .6 All grassed areas disturbed by construction activities will be restored with topsoil and dryland seed mixture.
- .7 Topsoil and sod reconstruction limits will be laid out by the Owner’s Representative when rough grading has been completed.
- .8 All landscape work will be completed to the satisfaction to the Owner.

3.3 IRRIGATION WORK

- .1 Maintain all irrigation system works, unless otherwise noted.
- .2 Restore all irrigation system components damaged or disturbed by the work, back to their original condition or better. All costs associated with this work will be borne by the Contractor.
- .3 All irrigation repair work will be completed to the satisfaction to the Owner.

3.4 CONCRETE STRUCTURE WORK

- .1 Protect the integrity of existing concrete structures. This includes utilizing suitably sized equipment and implementing construction procedures that will minimize concrete damage.
- .2 Replace any concrete structures damaged or disturbed, outside of the construction limits. All costs associated with this work will be borne by the Contractor.

3.5 ASPHALT WORK

- .1 Protect the integrity of existing road, lane and driveway structures. This includes utilizing suitably sized equipment and implementing construction procedures that will minimize pavement damage.
- .2 Replace any asphalt pavement damaged or disturbed, outside of the construction limits. All costs associated with this work will be borne by the Contractor.
- .3 All paved road restoration and reconstruction work will consist of subgrade preparation; 300 mm base granular material; prime coat; 50 mm M1 hot mix asphalt, tack coat and 50 mm M1 hot mix asphalt.
- .4 All paved lane restoration and reconstruction work will consist of subgrade preparation; 200 mm base granular material; prime coat and 80mm M1 hot mix asphalt.
- .5 All paved driveway restoration and reconstruction will consist of subgrade preparation; 200 mm base granular material; prime coat and 80 mm M1 hot mix asphalt.

3.6 GRAVEL WORK

- .1 Restore any gravel damaged or disturbed outside of the construction limits, back to their original condition or better. All costs associated with this work will be borne by the Contractor.
- .2 All gravel lane restoration and reconstruction work will consist of subgrade preparation and 300mm base granular material.
- .3 All gravel driveway restoration and reconstruction work will consist of subgrade preparation and 300mm base granular material.

3.7 RESTORATION OF COLD MIX ASPHALT

- .1 Push and windrow existing cold mix material prior to start of construction activities.
- .2 Grade cold mix to match existing lines, grades and elevations.
- .3 Ensure finished grade of cold mix material conforms to existing surface with no rises, depressions or ridges.
- .4 Use HF1000 emulsified oil at a rate of 100 litres per cubic meter of material.

END OF SECTION