

## REQUEST FOR PROPOSAL

PROPOSAL: [ Drumheller Airport Lighting System ]

DATE: [ May 18, 2021 ]

INITIATOR: [ Libby Vant, Senior Administrative Assistant, Infrastructure Services ]

### DATE PROPOSAL REQUIRED:

YEAR: [ 2021 ] MONTH: [ June 8 ] DAY: [ 8 ] TIME: [ 2:00 PM Local Time ]

### Submit Proposal in a clearly marked and sealed envelope to the attention of:

Procurement Department:  
Town of Drumheller  
224 Centre Street  
Drumheller, Alberta T0J0Y4

“RFP - [ Drumheller Airport Lighting ]”

This Request for Proposal document is comprised of:

- RFP General Instructions
- Schedule A – Evaluation Criteria
- Schedule B – Price Sheet
- Schedule C – Technical Specifications
- Schedule D – Drawings

If you do not have all of these components the RFP package is incomplete - please contact the Initiator. **The Town of Drumheller will NOT accept electronic submissions.**

A **Mandatory Pre-Bid Meeting** will take place at 10:00 am local time on June 1, 2021 at the Drumheller Municipal Airport terminal.

Your firm is invited to submit a Proposal, pursuant to the general conditions for the scope of work as described. This Proposal shall not be considered authorization to proceed with work herein described. All Procurement processes must comply with Town of Drumheller Purchasing Policy C-09-20.

**SECTION #1 - SCOPE OF WORK:**

The Town of Drumheller invites Proposals for [ the refurbishment of the Airport Lighting System for the Drumheller Municipal Airport. ]

The supplier is required to complete all necessary sections of this Request for Proposal.

Alternative methodologies or equipment will only be evaluated if submitted by the successful Proposer, no other work alternatives will be reviewed.

A **Mandatory Pre-Bid Meeting** will take place at 10:00 am local time on June 1, 2021 at the Drumheller Municipal Airport terminal.

**SECTION #2 - PROPOSAL AMOUNT:**

All Proposals must be in Canadian Funds, excluding GST.

Total Cost \$ \_\_\_\_\_

Proposal submission price in effect for **90** days from date of acceptance from the Town of Drumheller.

**SECTION #3 - SUBMISSION REQUIREMENTS:**

The Town of Drumheller requires that all submissions shall include the following:

1. All pages of this Request for Proposal;
2. All issued Addendums;
3. Certificate of Recognition (COR) or Small Employer Certificate of Recognition (SECOR);
4. List of applicable Safe Work Procedures (SWP),
5. Table of Contents of the Corporate Safety Manual;
6. Workers Compensation Board (WCB) Coverage Letter;
7. Proof of Commercial Liability Insurance;
8. Town of Drumheller Business License – to be obtained within three (3) business days of award.

#### **SECTION #4 - INELIGIBILITY:**

The Town of Drumheller shall deem a submission to be ineligible under the following situations:

- a) Submissions that are unsigned, incomplete, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations or irregularities of any kind shall be considered ineligible.
- b) Submissions that do not include the items listed in Section #3 Submission Requirements, and;
- c) Submissions that are not received prior to the closing date and time, as determined by the time keeping of the Town of Drumheller computer system.

#### **SECTION #5 - INSURANCE AND BONDING:**

##### Insurance

The Town of Drumheller requires that all Proposals include proof of \$5,000,000.00 Commercial Liability Insurance.

##### Bid Bond

- a) Each submission must include a *Consent of Surety* and *Bid Bond* in the amount of 50% of the project cost, in a form containing equivalent obligations on the part of the surety company and the submitter, executed under seal by a surety company satisfactory to *The Town* and authorized by the laws of Alberta to issue bonds in Alberta. In lieu of a *Consent of Surety* or *Bid Bond*, *The Town* may, in its sole discretion, accept from a financial institution acceptable to *The Town*, one of the following:
  - i. a bank draft, certified cheque, irrevocable letter of credit, or guarantee, along with any additional documentation *The Town* may require; or
  - ii. a letter that a bank draft, certified cheque, irrevocable letter of credit, or guarantee, will be provided upon the request of *The Town*.
- b) Failure to include in the submission the required documentation will result in *The Town*, in its sole discretion, electing to discontinue consideration of the submission.

## Performance Security

- a) No later than five *Days* following execution of the *Agreement*, the *Contractor* must deliver to *The Town Performance Security* as specified in the *Agreement*. The *Performance Security* must be in the form required by *The Town* or in a form that is acceptable to *The Town*, and must be enforceable in the Province of Alberta.
- b) If the *Agreement* is amended or a *Change Order* is issued that increases the *Project Price*, the *Contractor* must also increase the *Performance Security* provided under the *Agreement* to an amount not less than 50% of the increased *Project Price* by obtaining and providing additional *Performance Security*, or a satisfactory rider or extension to the existing *Performance Security*, from the surety company. If the surety company declines consent or coverage for any amendment to the *Agreement* or for a *Change Order*, the *Contractor* must obtain and provide *The Town* with valid *Performance Security*, satisfactory to *The Town*, covering the *Work* specified in the amendment to the *Agreement* or in the *Change Order*. The *Contractor* will be compensated for the additional cost of such *Performance Security*.
- c) If there is a *Labour and Material Payment Bond* required by *The Town*, the *Contractor* must ensure that all *Subcontractors* have notice of the *Labour and Material Payment Bond*. The *Contractor* must post and maintain in a conspicuous location or locations on the *Project Site*, a copy of the *Labour and Material Payment Bond*. The agenda for the meetings held by the *Contractor* will include notice of the *Labour and Material Payment Bond*.

## **SECTION #6 - EVALUATION CRITERIA:**

The lowest, or any evaluated Proposal, may not necessarily be accepted. The Town of Drumheller reserves the right to reject any or all Proposals or to accept the Proposal evaluated to be in the best interest of the Town of Drumheller.

The Town's evaluator shall score each submission on the basis stated in Schedule A: Evaluation Criteria. The Town of Drumheller will have the sole and unfettered

discretion to award up to the maximum number of points for each criterion listed in Schedule A: Evaluation Criteria.

By submitting a Proposal, you acknowledge and agree to waive any right to contest through legal proceedings. The decision to award points in respect to the criteria noted below will be at the sole discretion of the Town of Drumheller.

**By submitting a Proposal, you acknowledge that you have reviewed the Ineligibility Criteria contained herein and you confirm that your Proposal meets all requirements of *the Town*.**

**SECTION #7 – REFERENCES:**

Reference #1

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Title: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

Contact Email: \_\_\_\_\_

Reference #2

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Title: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

Contact Email: \_\_\_\_\_

Reference #3

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Title: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

Contact Email: \_\_\_\_\_

**SECTION #8 - INTENT:**

The undersigned contractor hereby provides a Proposal to supply the services as described herein in its entirety for the cost as described in Section 2.

**COMPANY:** \_\_\_\_\_

Print name of authorized personnel: \_\_\_\_\_

Signature: \_\_\_\_\_ Corporate Seal: \_\_\_\_\_

Email Address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

**TOWN OF DRUMHELLER:**

Print name of authorized personnel: | \_\_\_\_\_ |

Signature: | \_\_\_\_\_ |

DATE: YEAR [ 2021 ] MONTH [                    ] DAY [            ]

Upon completion of signatures above, this document will represent a contract agreement between the contractor and the Town of Drumheller.

## SCHEDULE A – EVALUATION CRITERIA

### Section A.1 – Evaluation Criteria Breakdown:

EVALUATION BASED ON:	100%
Cost	60%
References	10%
Safety	15%
Qualifications	15%

### Section A.2 – Evaluation Criteria Definitions:

#### **Cost:**

Full scoring for cost shall be given to the lowest Total Project Cost value submission. A score of zero (0) shall be given to the highest Total Project Cost value submission. All other submissions shall be awarded a pro-rated value between these two amounts.

#### **References:**

The scoring for references shall be based on number of references and quality of references. Scoring shall be assigned as follows:

- 0 references – 0% of score;
- 1 reference – 15% of the score;
- 2 references – 20% of the score, and;
- 3 or more references – 50% of the score.

The remaining 50% of the score shall be based on the quality of the reference as determined by the evaluator(s).

#### **Safety:**

Submissions including Certificate of Recognition (COR) or Small Employer Certificate of Recognition (SECOR) issued by Alberta Government shall receive the 50% of the score. Submissions that do not include either a COR or SECOR will be deemed ineligible as per Section #5 – Ineligibility. The evaluator shall award the remaining 50% of the score for this category based on review of the supplied list of applicable Safe Work Procedures, and Table of Contents of the Corporate Safety Manual.

**Qualifications:**

The Town of Drumheller will evaluate submissions on the basis of proof to provide the work to expected industry standard levels of performance. The Town evaluator(s) shall review all submissions for qualification on the basis of:

1. Past work performance with the Town;
2. Proof of task and scope of work appropriate worker qualifications (tradespersons tickets, proof of certification from manufacturer, etc.), and;
3. Proof of work procedures and quality control and assurance programs.

**Specifications:**

The Town of Drumheller shall evaluate the submission to confirm that the Proposal represents a clear understanding of the performance and technical requirements.



## Schedule B - Schedule of Prices

2450-048-00

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1. FROM (Bidder): \_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Address)

TO: **TOWN OF DRUMHELLER**  
**224 Centre Street**  
**Drumheller, AB**  
**T0J 0Y4**

PROJECT: **MUNICIPAL AIRPORT LIGHTING**

2. This Schedule of Prices forms an integral part of the Bid for the above noted project.
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. Schedule: See next page.

**SCHEDULE B**  
**Town Of Drumheller**  
**Municipal Airport Lighting**

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. Mobilization and Demobilization	1	L.S.	N/A	\$ _____
2. Decommission and Remove Existing Equipment	1	L.S.	N/A	\$ _____
3. Lights	1	L.S.	N/A	\$ _____
4. Wind Cone	1	L.S.	N/A	\$ _____

**ITEM SUB TOTAL** \$ \_\_\_\_\_

**EXTRA WORK ALLOWANCE** \$ 20,000.00

**SUB-TOTAL** \$ \_\_\_\_\_

**G.S.T. (5%)** \$ \_\_\_\_\_

**TOTAL AMOUNT** \$ \_\_\_\_\_



**Engineering Ltd.**

## **Schedule C - Specifications**

**Town of Drumheller**

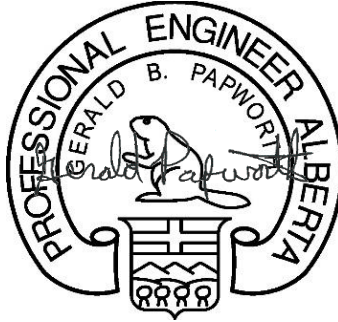
**Drumheller Airport Lighting**

**2450-048-00**

**April 2021**

*Proud of Our Past... Building the Future*

**Town of Drumheller**  
**Drumheller Airport Lighting**



Gerald Papworth, P.Eng.  
Electrical  
April 26, 2021

PERMIT TO PRACTICE MPE ENGINEERING LTD.
Signature <u>Gerald Papworth</u>
Date <u>April 26, 2021</u>
PERMIT NUMBER: P 3680
The Association of Professional Engineers and Geoscientists of Alberta

Prepared by MPE Engineering Ltd.

**CONFIDENTIALITY AND © COPYRIGHT**

These documents are for the sole use of the Engineer, and of the Owner, Contractor, Subcontractors and Suppliers having a Contract for the execution of the Work covered in the Contract Documents, in whole or in part. The Contract Documents contain proprietary and confidential information that shall not be reproduced in any manner or disclosed to or discussed with any other parties without the expressed written permission of the Engineer. Information in these documents is to be considered the intellectual property of the Engineer in accordance with Canadian copyright law.

PREAMBLE

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The format of these Specifications is based on "MasterFormat" published jointly by Construction Specifications Canada and The Construction Specifications Institute. This Table of Contents generally reflects the "MasterFormat" division and section arrangement.

Where it is indicated that a division of "MasterFormat" is "Not Used", or where a division heading is omitted entirely, this means only that the division has not been included in the Specification. It does not necessarily mean that the work normally specified in that division is not required.

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MasterFormat  
Broadscope  
Heading

Section  
Number      Section  
Title

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**DIVISION 0 – BIDDING REQUIREMENTS**

INSTRUCTION	00005	Certification Page
TO BIDDERS	00010	Table of Contents
	00250	Pre-Bid Meeting
INFORMATION AVAILABLE TO BIDDERS	00300	Information Documents

**DIVISION 0 – CONDITIONS OF CONTRACT**

DEFINITIONS	00571	Definitions and Interpretation
CERTIFICATES	00630	Payment Conditions
	00630A	Statutory Declaration Form
GENERAL CONDITIONS	00725	General Conditions
SUPPLEMENTARY CONDITIONS	00800	Supplementary Conditions

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SUMMARY OF WORK	01110	Summary of Work
MEASUREMENT AND PAYMENT	01275	Measurement Rules
	01280	Measurement and Payment Schedule
MANAGEMENT AND COORDINATION	01311	Management and Co-ordination

**2450-048-00**

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CONTRACT MEETINGS	01312	Contract Meetings
SUBMITTALS	01330	Submittals
	01340	Shop Drawings, Product Data and Samples
MANAGEMENT AND COORDINATION	01410	Regulatory Requirements
	01411	Work Site Safety
QUALITY CONTROL AND QUALITY ASSURANCE	01452	Quality Control and Quality Assurance
CONSTRUCTION FACILITIES	01510	Existing and Temporary Utilities
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PRODUCTS	01601	Products and Execution
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SITE ENGINEERING	01722	Site Surveying
CONTRACT CLOSEOUT	01742	Final Clean-Up
	01775	Contract Acceptance Procedures
	01785	Contract Record Documents
	01790	Operation and Maintenance Manuals
	01795	Spare Parts and Maintenance Materials
	01810	Start-Up and Commissioning

**DIVISION 2 – SITE WORK**

	02137	Demolition, Removal and Salvage
	02200	Stripping
	02201	Topsoil Placement
	02319	Trench Excavating and Backfilling
	02429	Directional Drilling
	02920	Grass Seeding
	02951	Restoration of Sitework

**DIVISION 16 – ELECTRICAL**

	16005	Basic Electrical Requirements
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**CONTRACT DRAWINGS – ISSUED SEPARATELY**

**END OF TABLE OF CONTENTS**

**1. PRE-BID MEETING AND SITE INSPECTION**

- .1 A pre-bid meeting and site inspection will be held at the time and place specified on the Town's RFP document.
- .2 Purpose is to provide bidders an opportunity to familiarize themselves with the Work and with existing conditions. Owner's representative(s) will be present.
- .3 This meeting will be Bidders' only opportunity to inspect the site in the presence of the Owner's Representative.
- .4 Site access is restricted.
- .5 All prime contract and major subcontract Bidders are strongly advised to attend. Others are invited to attend.
- .6 No information provided by the Owner or any of his representatives at the pre-bid meeting and site inspection shall be binding, unless such information is included in an Addendum.

**END OF SECTION**

**1. CONTRACT INFORMATION DOCUMENTS**

- .1 Contract Information Documents listed in 3.1 are incorporated into the Contract.
- .2 The Bidder is entitled to rely upon the factual information or factual data contained in Contract Information Documents, or parts thereof, which have been obtained principally for the purposes of study and design and believed to be correct, within normal limits inherent in gathering such information and data, but the Bidder shall draw its own conclusions from such factual information or factual data and shall not rely on opinions or interpretations contained therein.
- .3 Contract Information Documents shall not be considered a representation or warranty that information contained therein is complete or appropriate for construction.
- .4 Information contained in Contract Information Documents may be time sensitive and dates and times shall be considered when interpreting such information.
- .5 The Bidder is encouraged to obtain specialist advice with respect to Contract Information Documents. The Owner assumes no responsibility for such interpretations and conclusions.

**2. OTHER INFORMATION DOCUMENTS**

- .1 Other Information Documents means information documents not listed in 3.1 herein, and are not part of the Contract Documents.
- .2 The Bidder is not entitled to rely upon the factual information or factual data in any Other Information Documents, nor any opinions or interpretations contained therein. Other Information Document shall not be considered accurate, complete, or appropriate.
- .3 Other Information Documents are made available to the Bidder for the purpose of providing the Bidder with access to the information available to the Owner.

**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 "Engineer" means the person or persons named in these Contract Documents as the Owner's representative. Words importing persons shall include firms, corporations and joint ventures.
- .20 "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.
- .21 "Invention" means any new and useful practice, process, machine, device, manufacture or composition of matter, or any new and useful improvement thereof.
- .22 "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.
- .23 "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.
- .24 "Online Bidding System" means the Bids&Tenders Online Bidding System available at <https://mpe.bidsandtenders.ca/>.

- .25 "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.
- .26 "Owner" means the Owner as named elsewhere in these Contract Documents and includes a person acting for, or in place of, the Owner.
- .27 "Owner's Representative" means the employee or Engineer identified in writing by a duly authorized officer to represent the Owner under the Contract.
- .28 "Permanent Work" means any structure, Product or thing constructed, manufactured or installed in the performance of the Work, but does not include Temporary Work.
- .29 "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".
- .30 "Project" means the total construction of which the Work to be provided under the Contract may be the whole or a part.
- .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 "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.
- .41 "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.
- .42 "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.
- .43 "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.
- .44 "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. 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 7 days after the end of each monthly payment period, the Contractor shall submit to the Owner:
  - .1 Completed Statutory Declaration Form, at and after the second monthly payment period,
  - .2 Workers' Compensation Board verification that the Contractor's account is in good standing,
  - .3 Any data requested by the Owner to assist the Owner to determine the amount due and payable to the Contractor, and
  - .4 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.
- .3 The Owner shall, within 45 days after the end of each monthly payment period and subject to having received within the time specified any required information referred to in clause 4.2, pay to the Contractor the amount which the Owner determines to be due and payable to the Contractor, 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; and
- .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.
- .4 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.
- .5 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.
- .6 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 Forty-five (45) 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 Builders' Lien 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 Forty-five (45) 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 Builders' Lien 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 Owner will pay to the Contractor the unpaid balance of any monies then due under the Contract, PROVIDED THAT the Owner's Representative may 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.
- .2 If the final statement is considered by the Contractor to be incorrect, the Contractor shall submit to the Owner a notice of claim, including substantiation, notwithstanding the time provisions of clause 10 of the General Conditions.
- .3 If the Owner does not receive a notice of claim pursuant to clause 6.2 within the time specified, the final statement shall be considered correct.
- .4 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 therefore prior to or within the time specified in the Builders' Lien 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 deduct from any amount claimed by or payable to Contractor:
  - .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 Builders' Lien 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, and
  - .5 Any other amount recoverable by the Owner from the Contractor under the Contract.

**11. WITHHOLDING OF PAYMENT**

- .1 Owner may 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.

**END OF SECTION**

# 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			
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">Month</td> <td style="width: 33%; border: none;">Day</td> <td style="width: 33%; border: none;">Year</td> </tr> </table>	Month	Day	Year
Month	Day	Year	
Date of Last (Immediate Preceding) Application for Payment			
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">Month</td> <td style="width: 33%; border: none;">Day</td> <td style="width: 33%; border: none;">Year</td> </tr> </table>	Month	Day	Year
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

<p>I, the undersigned, solemnly declare that as of the date of this application for payment:</p> <ol style="list-style-type: none"> <li>.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;</li> <li>.2 all the Contractor's lawful obligations to workers, in respect to work contracted for, are fully discharged;</li> <li>.3 all assessments and payments required to be made by the Contractor under law have been made in full; and that</li> <li>.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.</li> </ol> <p>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.</p> <div style="text-align: right; margin-top: 20px;"> <p><b>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.</b></p> </div> <div style="margin-top: 20px;"> <p>_____</p> <p style="text-align: center;">Signature of declarant</p> </div>
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### 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____		
<small>City/Town and Province</small>		
_____ <small>Signature of person before whom declaration is made</small>	_____ <small>Authority to receive solemn declarations</small>	_____ <small>Expiry date</small>
_____ <small>Name (please print)</small>	<p><b>Any changes or corrections on this Statutory Declaration must be initialed by the person before whom the declaration is made.</b></p>	

<b>1.</b>	<b>OWNER AND OWNER'S REPRESENTATIVE</b>	<b>4.10</b>	Owner's Responsibilities for Safety
		<b>4.11</b>	Care of Work
		<b>4.12</b>	Responsibility to Rectify Loss or Damage
<b>1.1</b>	Owner's Duties and Authority	<b>4.13</b>	Hold Harmless Agreement
<b>1.2</b>	Owner's Representative	<b>4.14</b>	Regulatory Requirements
<b>1.3</b>	Appointment of Assistants	<b>4.15</b>	Artifacts and Fossils
<b>1.4</b>	Instructions in Writing	<b>4.16</b>	Patent Rights
<b>1.5</b>	Owner Interpreter of Contract	<b>4.17</b>	Royalties
<b>1.6</b>	Owner's Determinations	<b>4.18</b>	Other Contractors
<b>1.7</b>	Owner's Review	<b>4.19</b>	Permanent Work Designed by Contractor
<b>2.</b>	<b>ASSIGNMENT, SUBCONTRACTING AND NOMINATION</b>	<b>4.20</b>	Records and Audit
		<b>4.21</b>	Record of Labour and Construction Equipment
<b>2.1</b>	Assignment	<b>4.22</b>	Customs
<b>2.2</b>	Subcontracting	<b>4.23</b>	Urgent Remedial Work
<b>2.3</b>	Nominated Subcontractors and Suppliers		
<b>3.</b>	<b>DOCUMENTS</b>	<b>5.</b>	<b>QUALITY OF PRODUCTS AND WORK</b>
		<b>5.1</b>	Products and Workmanship
<b>3.1</b>	Property and Use of Contract Documents	<b>5.2</b>	Cost of Samples
<b>3.2</b>	Reporting of Conflicts, Errors and Discrepancies	<b>5.3</b>	Cost of Tests Provided For
<b>3.3</b>	Disruption of Progress	<b>5.4</b>	Cost of Tests Not Provided For
<b>3.4</b>	Additional Instructions	<b>5.5</b>	Inspection and Testing
<b>3.5</b>	Forms	<b>5.6</b>	Dates for Inspection and Testing
<b>4.</b>	<b>GENERAL OBLIGATIONS</b>	<b>5.7</b>	Rejection
		<b>5.8</b>	Cost for Inspection and Testing
<b>4.1</b>	Contractor's Responsibilities	<b>5.9</b>	Independent Inspection
<b>4.2</b>	Contract Security	<b>5.10</b>	Examination of Work Before Covering Up
<b>4.3</b>	Site Operations and Methods of Construction	<b>5.11</b>	Uncovering and Making Openings
<b>4.4</b>	Differing Physical Conditions or Obstructions	<b>5.12</b>	Removal of Improper Work or Products
<b>4.5</b>	Climatic and Weather Conditions		
<b>4.6</b>	Contractor's Superintendence		
<b>4.7</b>	Contractor's Employees		
<b>4.8</b>	Owner May Object		
<b>4.9</b>	Safety, Security and Protection of the Environment		

**6. COMMENCEMENT, COMPLETION, CONTRACT TIME AND DELAYS**

- 6.1 Commencement of Work
- 6.2 Possession of Site and Access to Site
- 6.3 Contract Time
- 6.4 Extension of Contract Time
- 6.5 Contractor to Provide Notification and Details
- 6.6 Interim Determination of Extension of Time
- 6.7 Rate of Progress
- 6.8 Substantial Performance of the Work
- 6.9 Substantial Performance of Part or Parts of Work
- 6.10 Total Performance of the Work
- 6.11 Warranty Performance of the Work
- 6.12 Acceleration
- 6.13 Damages for Delay
- 6.14 COVID-19 Pandemic Response and Mitigation

**7. WARRANTY**

- 7.1 Warranty Period
- 7.2 Completion of Outstanding Work
- 7.3 Remedying Defects
- 7.4 Contractor's Failure to Carry Out Instructions
- 7.5 Contractor to Search

**8. CHANGES AND VARIATIONS**

- 8.1 Changes in the Work
- 8.2 Instructions for Changes in the Work
- 8.3 Valuation of Changes in the Work
- 8.4 Impact of Changes in the Work
- 8.5 Quantity Variations

**9. CHANGES IN COST AND REGULATORY REQUIREMENTS**

- 9.1 Increase or Decrease in Cost
- 9.2 Changes in Regulatory Requirements

**10. CLAIMS**

- 10.1 Notice of Claims
- 10.2 Contemporary Records
- 10.3 Substantiation of Claims
- 10.4 Payment of Claims
- 10.5 Obligations to and Claims of Third Parties
- 10.6 Claims Against Owner Only

**11. RELEASE FROM PERFORMANCE**

- 11.1 Frustration
- 11.2 Removal of Construction Equipment on Termination
- 11.3 Payment if Contract Terminated

**12. SUSPENSION AND TERMINATION BY OWNER**

- 12.1 Suspension of Work
- 12.2 Owner's Determination Following Suspension
- 12.3 Suspension Lasting More Than 91 Days
- 12.4 Termination of Contract

**13. DEFAULT OF CONTRACTOR**

- 13.1 Default
- 13.2 Valuation at Date of Termination
- 13.3 Payment After Termination
- 13.4 Assignment of Benefit of Agreement

**14. DEFAULT OF OWNER**

- 14.1 Failure of Owner to Pay
- 14.2 Removal of Construction Equipment
- 14.3 Payment on Termination
- 14.4 Contractor May Suspend Work
- 14.5 Resumption of Work



**15. SETTLEMENT OF DISPUTES**

- 15.1 Disputes
- 15.2 Notice of Dispute
- 15.3 Negotiated Settlement
- 15.4 Mediation
- 15.5 Arbitration

**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 CONTRACT SECURITY**

- .1 The Contractor shall, if required by the Bid Documents, provide either or both contract performance security or security for payment of claims for labour and material.
- .2 Surety bonds shall be issued by a duly incorporated surety company authorized to transact business of suretyship in the Province of Alberta.
- .3 The Owner may, for reasonable cause, object to use of the surety company proposed by the Contractor, and may require the Contractor to provide a surety bond issued by another surety company acceptable to the Owner, with no change in Contract Price.

**4.3 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.

**4.4 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.

**4.5 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.

**4.6 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.

**4.7 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.

**4.8 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.

**4.9 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.

**4.10 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.

**4.11 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.

**4.12 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.

**4.13 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.



**4.14 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.

**4.15 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.

**4.16 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.

**4.17 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.

**4.18 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.

**4.19 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.

**4.20 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; and
  - .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.

**4.21 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.

**4.22 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.

**4.23 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.

### 6.14 COVID-19 PANDEMIC RESPONSE AND MITIGATION

- .1 The Contractor and the Owner acknowledge the presence of the COVID-19 virus in Canada and other jurisdictions forming part of the supply chain for materials and labour required for the Project (the "COVID-19 Pandemic").
- .2 Known Impacts – The consequences and impacts of the COVID-19 Pandemic existing as of the date of this Contract include, without restriction:
- .1 Orders, directives and recommendations of any government authority issued up to and including the date of this Contract, and respecting public health or other

requirements related to response to and prevention of infection by the COVID-19 virus;

- .2 impacts to availability of labour or materials required in order to carry out the Work, arising from the COVID-19 Pandemic;
- .3 the impacts of the Province of Alberta withdrawing or deferring the advancement of any or all portions of their committed funding to the Project;
- .4 the impacts of self-isolation/quarantine or regulated quarantine as ordered by the Province of Alberta;

(the “**Known Impacts**”), and are known to the Contractor and to the Owner, and have been accounted for by the Contractor within the construction schedule, as well as the Contract Price.

- .3 Notwithstanding anything contained within the Contract, the Contractor and the Owner covenant and agree as follows:

- .1 no extension of the Contract Time or schedule shall be made and no adjustment to the Contract Price shall be made due to any Known Impacts.

- .2 for greater clarity and without limiting the generality of clause 6.14.3.1,

- .1 the Contractor shall not be entitled to any reimbursement of any costs and expenses incurred by the Contractor necessitated by a suspension or delay under clause 12 where the suspension is due to any Known Impacts;

- .2 notwithstanding anything contained within clause 12, a suspension of the Work because of any Known Impacts whether ordered by the Owner or the Owner’s Representative or not, shall not be deemed to be a suspension of the Work within the meaning of clause 12;

- .3 notwithstanding anything contained within clause 6, no extension of the Contract Time shall be made and no adjustment in the Contract Price shall be made for any delay caused by a compliance with any order, directive or recommendation of any government authority related to the COVID-19 Pandemic, and/or caused by any other Known Impacts, whether ordered by the Owner or the Owner’s Representative or not;

- .4 notwithstanding anything contained within clause 6, no extension of Contract Time shall be made and no adjustment in the Contract Price shall be made for any delay Claim that is based on the concept of the cumulative impact of any Known Impacts;

- .5 no extension of the Contract Time shall be made and no adjustment to the Contract Price shall be made due to any requirement that an employee of the Contractor or any Subcontractor self-isolate or quarantine as a result of a diagnosis or potential diagnosis as being COVID-19 positive;

- .3 Any Claims for adjustment in the Contract Price arising from or related to the COVID-19 Pandemic shall be net of any and all compensation schemes, support programs or other financial aids made available to the Contractor by any government authority.

**7. WARRANTY**

**7.1 WARRANTY PERIOD**

- .1 In the Contract the term "warranty period" shall mean a period of one (1) year, 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 Builders' Lien 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. ALBERTA ENVIRONMENT NAME CHANGE**

- .1 Any reference to “Alberta Environment” refers to the Provincial Regulatory Agency that is responsible for the ‘Water Act’, ‘Environmental Protection and Enhancement Act’, and ‘Public Lands Act’.
- .2 The Owner has made application for the proposed work under the Alberta Environmental Protection and Enhancement Act. Do not commence work on the project until approval has been obtained by the Owner.

**3. PROJECT FUNDING**

- .1 The Owner has made funding applications for the project work. Do not commence work until funding approval has been obtained by the Owner.

**4. WARRANTY PERIOD**

- .1 The Warranty Period for all work is One (1) Year.

**5. 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, protecting, and reconnecting where necessary all existing utilities (underground and overhead) and service connections, existing trees, fences, buildings, etc.
  - .5 Working in proximity to and crossing of utilities including Alberta One-Call notification, third party locations and hydrovacating / hand exposure as required.
  - .6 Public notification program.
  - .7 Road/lane closure and traffic control, providing access to existing residences, businesses or facilities as required or to provide nearby alternate parking.

- .8 Cleaning and delivery of salvaged material removed during construction to the Owner's Public Works yard.
- .9 Working in Proximity to an Airport Runway. Keep all equipment and materials off of the runway and follow all Transport Canada Regulations.
- .10 Dust control.
- .11 Care of Water.
- .2 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.
- .3 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.
- .4 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.
- .5 Minimize damage to trees, plants and shrubs during the course of construction.
- .6 Attend to damaged trees, plants, or shrubs by qualified personnel.

**6. SITE EXAMINATION**

- .1 Examine the site of work and become familiar with all features and characteristics affecting this work before submitting tender.
- .2 No additional compensation will be given for extra work due to existing conditions which such examination should have disclosed.
- .3 Report any unsatisfactory conditions prior to tendering which may adversely affect the proper completion of this work.

**7. ELECTRICAL EQUIPMENT AVAILABILITY**

- .1 Provide all labour and material. Provide all labour and miscellaneous materials to provide a complete and operating installation.
- .2 Verify prior to bidding, that all specified items will be available in time for installation during orderly and timely progress of the Work.
- .3 In the event specified items will not be available, notify the electrical engineer prior to receipt of bids and identify appropriate substitute.



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- .4 Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, shall be back-charged as necessary and shall not be borne by the Owner.

**END OF SECTION**

**1. GENERAL**

**1.1 WORK OF THE PROJECT**

.1 Work of the Project, of which Work of this Contract is a part, comprises the following:

.1 Drumheller Airport Lighting

**1.2 WORK OF THIS CONTRACT**

.1 The main items of Work of this Contract include the following:

.1 Mobilization and Demobilization 1 L.S.

.2 Decommission and Remove Existing Equipment 1 L.S.

.3 Lights and Relocation of Wind Cone 1 L.S.

.4 ARCAL Upgrade 1 L.S.

.2 The Site of the Work of this Contract is located in the Town of Drumheller, Alberta.

**1.3 CONTRACT TIME**

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

.2 Upon receipt of the Letter of Acceptance, promptly, and without undue delay, commence work at the Site.

.3 Attain Substantial Performance of the Work by September 30, 2021.

.4 Attain Total Performance of the Work by October 31, 2021.

**1.4 WORK RESTRICTION/MILESTONE DATES**

.1 Coordinate work with Airport operator to minimize downtime of airport usage.

**1.5 USE OF THE SITE**

.1 The Site Limits are specified in the Contract Documents.

.2 Approximate locations of existing utility lines within the Site that are known to the Owner are specified in the Contract Documents.

.3 Site Limits to allow for construction access are specified in the Contract Documents.

.4 Use of the areas within the Site described below are subject to the following conditions:

.1 Maintain public access as specified in Section 01552 – Existing and Temporary Roads.

.5 Assume responsibility for the care and protection of the existing work.

**2450-048-00**

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**2. PRODUCTS – NOT USED**

**3. EXECUTION – NOT USED**

**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.

<b>Abbreviation/Symbol</b>	<b>Meaning</b>
µm	micrometre or micron
mm	millimetre
m	metre
mm <sup>2</sup> or mm2	square millimetre
m <sup>2</sup> or m2	square metre
ha	hectare
kPa	kilopascal
MPa	megapascal
m <sup>3</sup> 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:
 

<b>Quantity</b>	<b>Dimension</b>
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; and
  - .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 = ((FQUP – SQUP) x FQ)/ 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 SCHEDULE 'A' – GENERAL ITEMS**

**.1 Mobilization and Demobilization – Item 1**

- .1 Scope: Includes preparatory work and operations including those necessary to the movement of material, labour and equipment to and from the project site. The item includes all other work or costs incurred prior to beginning the Work and following the completion of the Work on various items on the project site and all related work for which payment is not included elsewhere.
- .2 Measurement: Mobilization and Demobilization will not be measured for payment.
- .3 Payment: Payment for Mobilization and Demobilization will be as follows:
- .1 When 5% of the original contract amount is earned, 25% of the lump sum bid for “Mobilization and Demobilization” will be paid.
- .3 When 25% of the original contract amount is earned, 50% of the lump sum bid for “Mobilization and Demobilization” will be paid.
- .4 When 90% of the original contract amount is earned, 75% of the lump sum bid for “Mobilization and Demobilization” will be paid.
- .5 Upon completion of all work on the Project, 100% of the lump sum bid for “Mobilization and Demobilization” will be paid.

The total payments for this item shall not exceed the original amount bid for this item regardless of the fact that the Contractor may have for any reason shut down his work on the project or moved equipment away from the project and then back again.

**.2 Decommission and Remove Existing Equipment – Item 2**

- .1 Scope: Includes but is not limited to all labour, material and equipment for decommissioning of all existing equipment, removal and disposal of existing airport lights, light supports, wind cone, etc. Removal of pull pits and their contents, cutoff and abandonment of underground cable, fill-in of pull pit voids, coordination with airport operator to minimize downtime of airport usage, and other related work for which payment is not included elsewhere.
- .2 Measurement: No separate measurement.
- .3 Payment: Lump sum payment.

**.3 Lights – Item 3**

- .1 Scope: Includes but is not limited to all labour, material and equipment to supply and install all runway, taxiway, apron lights for the airport as specified in the drawings, including power supply, controls (manual switch, photocell), pull pits, bases, conduit/wire, conduit excavation, conduit bedding/backfill, and other related work for which payment is not included elsewhere.
- .2 Measurement: No separate measurement.
- .3 Payment: Lump sum payment.

**.4 Wind Cone – Item 4**

- .1 Scope: Includes but is not limited to all labour, material and equipment to relocate the existing wind cone as specified on drawings, associated conduit/wire, internal lights, conduit excavation, conduit bedding/backfill, and other related work for which payment is not included elsewhere.
- .2 Measurement: No separate measurement.
- .3 Payment: Lump sum payment.

**END OF SECTION**

**1. GENERAL**

**1.1 CO-ORDINATION**

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

**1.2 COMMUNICATION EQUIPMENT**

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

**1.3 COMMUNICATION METHODS**

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

**1.4 CONTRACT ADMINISTRATION**

- .1 Co-ordinate scheduling and timing of administrative procedures with other construction activities to avoid delays and provide orderly progress of the Work. Administrative procedures include the following:

- .1 Preparation and monitoring of schedules.
- .2 Co-ordination of construction and removal of temporary facilities.
- .3 Co-ordination, review, and processing of submittals.
- .4 Participation in project meetings.
- .5 Following Contract acceptance procedures.
- .6 Preparation of change order proposals.

**1.5 CONTRACTOR’S ADDRESS FOR CORRESPONDENCE**

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

**1.6 OWNER’S ADDRESS FOR CORRESPONDENCE**

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

**1.7 CONTRACTOR’S REPRESENTATIVES AND SITE MANAGEMENT**

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

**1.8 OWNER’S REPRESENTATIVES AND ASSISTANTS**

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

**2. PRODUCTS – NOT USED**

**3. EXECUTION – NOT USED**

**END OF SECTION**

**1. GENERAL**

**1.1 ADMINISTRATIVE RESPONSIBILITIES**

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

**1.2 ADMINISTRATIVE REQUIREMENTS**

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

**1.3 PRE–CONSTRUCTION MEETING**

- .1 Frequency: Within 15 days after award of the Contract and prior to commencement of activities at the Site.

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

**1.4 CONSTRUCTION PROGRESS MEETINGS**

- .1 Frequency: Weekly during the course of the Work.
- .2 Purpose: To monitor construction progress, to identify problems and actions required for their solution, and to expedite the Work.

- .3 Attendees:
  - .1 Contractor’s representatives: site superintendent and, when so requested by the Owner, Subcontractors, Suppliers, and other parties involved in the Work.
  - .2 Owner’s representatives: as determined by the Owner.
- .4 Agenda may include the following:
  - .1 Review and approval of minutes of the previous meeting.
  - .2 Review of the Work progress since the previous meeting.
  - .3 Field observations, problems, and conflicts.
  - .4 Problems that impede the construction schedule.
  - .5 Off-site fabrication delivery schedules.
  - .6 Corrective measures and procedures to regain the Contract schedule.
  - .7 Revisions to the construction schedule.
  - .8 Progress and schedule for the succeeding work period.
  - .9 Submittal schedules.
  - .10 Adherence to quality standards.
  - .11 Contemplated changes effect on the construction schedule and Contract Time.
  - .12 Contentious items of the Work.
  - .13 Contract closeout issues.
  - .14 Safety and security issues.
  - .15 Environmental issues.
  - .16 Other business.

**1.5 WORKPLACE ORIENTATION MEETINGS**

- .1 Frequency: As required for all new workers prior to commencement of Work on the Site.
- .2 Purpose: To familiarize new workers with site conditions, rules, regulations, safety, and security requirements.
- .3 Attendees: All new Contractor and Owner personnel scheduled to work on the Site.
- .4 Agenda may include the following:
  - .1 Project description including areas of work and other concurrent construction contracts.



- .2 Hazardous areas including open excavations, construction equipment traffic, blasting, and chemical or explosive storage, etc.
- .3 Safety equipment to be worn by workers, including areas with special requirements.
- .4 Traffic routes on the Site.
- .5 Evacuation procedures.
- .6 First aid procedures.
- .7 Excavation or work permit procedures.
- .8 WHMIS (Workplace Hazardous Materials Information System) requirements for handling and storage of chemicals.
- .9 Fire safety rules and regulations.
- .10 Rules and regulations regarding wildlife, environmental concerns, drugs, alcohol, etc.

**1.6 SAFETY MEETINGS**

- .1 Frequency: Weekly during the course of the Work for each area of work.
- .2 Purpose: To review safety concerns and implement preventive safety measures.
- .3 Attendees: Contractor's and Owner's personnel for each area of work.
- .4 Agenda may include the following:
  - .1 Review and discussion of safety concerns, accidents, and "near misses."
  - .2 Remedial or preventive actions to be taken.

**1.7 ENVIRONMENTAL MEETINGS**

- .1 Frequency: During the course of Work, schedule environment meetings weekly or as required by the Owner to deal with issues that may arise. Dependent on the issues, the Owner may combine the agenda for environmental meetings with that of the construction progress meetings.
- .2 Purpose: To review environment issues and implement mitigative measures.
- .3 Attendees:
  - .1 Contractor's representatives: Contractor's site superintendent and when so requested by Owner, subcontractors, suppliers and other parties involved in the Work. Contractor's representatives shall be qualified and authorized to act on behalf of the party each represents.
  - .2 Owner's representatives: as determined by Owner.

- .4 Agenda to include the following:
  - .1 Review and discussion of environment concerns, accidents and “near misses”.
  - .2 Identify environmental emergency notification procedures.
  - .3 Identify remedial or preventative action to be taken.
- .5 All employees must attend environmental orientation.

2. **PRODUCTS** – **NOT USED**

3. **EXECUTION** – **NOT USED**

**END OF SECTION**

**1. GENERAL**

**1.1 DEFINITIONS**

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

**1.2 SCHEDULE OF SUBMITTALS**

- .1 Submittals required for the Contract are specified in each section of the Contract Documents.
- .2 Submittals required by this section are appended to this section.

**1.3 SUBMITTAL PREPARATION**

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

#### 1.4 SUBMITTAL REQUIREMENTS

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

#### 1.5 REVIEW OF SUBMITTALS

- .1 The Owner will review each submittal within 10 working days of receipt of the submittal unless specified otherwise in the Contract Documents.

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

**1.6 CASH FLOW FORECAST**

- .1 Submit to Owner for review, 15 days before submission of first application for payment, a forecast of approximate progress payments for the duration of the Contract.
- .2 Submit revised cash flow forecasts of progress payments as the Work progresses and as requested by Owner.

**1.7 LIST OF SUPPLIERS**

- .1 Submit a list of suppliers to Owner for review 15 days prior to commencement of activities at the Site.
- .2 Submit revised list of suppliers as the work progresses and as requested by the Owner.

**1.8 LIST OF CONSTRUCTION EQUIPMENT**

- .1 Submit a list of construction equipment to Owner for review 15 days prior to commencement of activities at the Site.
- .2 Submit revised list of construction equipment as the work progresses and as requested by the Owner.

**1.9 SCHEDULE OF WORKERS**

- .1 Not applicable.

**1.10 SITE MANAGEMENT PERSONNEL**

- .1 Submit a list of site management personnel to Owner for review 15 days prior to commencement of activities at the Site.
- .2 Submit revised site management personnel as the work progresses and as requested by the Owner.

**1.11 CONSTRUCTION NOTIFICATIONS - PUBLIC**

- .1 Seven days prior to construction, notify all affected businesses, institutions, facilities and residents informing them in writing of the nature of the work to be performed, how long the inconvenience will last, who to contact in the event of damages to the home, business or property, and what to do for access and alternative parking arrangements. The Contractor shall submit the proposed notification to the Owner's Representative for review before issuance.

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2.           **PRODUCTS**           –       **NOT USED**

3.           **EXECUTION**       –       **NOT USED**

**END OF SECTION**

**1. GENERAL**

- .1 Submit for review, shop drawings, product data and samples called for by the Contract Documents and for such other items as the Owner's Representative may reasonably request.
- .2 Until submittal is reviewed, do not proceed with work involving the relevant product.

**2. SHOP DRAWINGS**

- .1 Shop drawings means technical data specially prepared for work of this Contract; including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.
- .2 Present shop drawings in a clear and thorough manner to appropriately illustrate the work.
- .3 Identify field dimensions on drawings.
- .4 Identify shop drawings by appropriate references to sheet, detail, schedule or room numbers.
- .5 Maximum drawing size: 860 × 1120 mm.
- .6 Leave a clear space of 100 mm × 75 mm on each sheet of shop drawings for placement of Engineer's review stamp.
- .7 Submit PDFs for each required shop drawing.

**3. PRODUCT DATA**

- .1 Product data means standard printed information describing materials, products, equipment and systems; not specially prepared for work of this Contract, other than the designation of selections.
- .2 Clearly mark product data to identify products.
- .3 Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and descriptive data will be accepted in lieu of shop drawings provided that:
  - .1 Information not applicable to work of this Contract is deleted, and
  - .2 Standard information is supplemented with information specifically applicable to the work of this Contract.
- .4 Submit clear reproducible information in PDF format.

**4. SAMPLES**

- .1 Samples means cuts or containers of materials or partial sections of manufactured or fabricated components which are physically identical to products proposed for use and which establish minimum standards by which the work will be judged.
- .2 Label samples as to origin and intended use in the Work.

**5. SUBMITTAL PREPARATION**

- .1 Review, date and sign, shop drawings, product data and samples, prior to submission.
- .2 Determine and verify:
  - .1 Field measurements.
  - .2 Field construction criteria.
  - .3 Catalogue numbers and similar data.
  - .4 Conformance with Contract Documents.
- .3 Coordinate each submittal with requirements of work and Contract documents. Individual drawings will not be reviewed until all related shop drawing and product data are available.
- .4 Notify Owner's Representative, in writing, on the submittal and at the time of submission, of deviations from requirements of Contract Documents.

**6. SUBMISSION REQUIREMENTS**

- .1 Make submittals sufficiently in advance of date that reviewed submittals will be required and in such sequence as to cause no delay in the Work.
- .2 Accompany submittals with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Number of each shop drawing, product data and sample submitted.
  - .5 Other pertinent data.
- .3 Submittals shall include:
  - .1 Date and revision dates.
  - .2 Project title and number.



- .3 Name of:
  - .1 Contractor.
  - .2 Subcontractor.
  - .3 Supplier.
  - .4 Manufacturer.
  - .5 Name of detailer when details not prepared by Contractor, sub-contractor, or supplier.
- .4 Contractor's stamp, initialed or signed, certifying review of submittal, verification of field measurements, and compliance with Contract Documents.
- .4 Make corrections or changes to rejected submittals and resubmit, as specified for initial submission.

**7. RESPONSIBILITY FOR ERRORS, OMISSIONS AND DEVIATIONS**

- .1 Owner's Representative's review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents.

**8. REPRODUCTION OF SUBMITTALS**

- .1 After final review, Owner's Representative will reproduce at his expense, the number of copies he requires, and return reviewed reproducible documents. Contractor shall reproduce at his expense the number of copies required for performance of the Work.

**END OF SECTION**

**1. GENERAL**

**1.1 REGULATORY RESPONSIBILITY**

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

**1.2 VARIATIONS BETWEEN THE CONTRACT DOCUMENTS AND THE REGULATORY REQUIREMENTS**

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

**1.3 CONTRACT DOCUMENTS**

- .1 Contractor shall not be responsible for verifying that Contract Documents comply with regulatory requirements. If Contract Documents are at variance therewith, or changes which require modification to Contract Documents are made to regulatory requirements, by authorities having jurisdiction, subsequent to date of tender closing, Contractor shall notify Owner’s Representative in writing, requesting direction, immediately such variance or change becomes known to him. Owner’s Representative may make changes required to Contract Documents and any resulting change in Contract Price or Contract Time will be made in accordance with the General Conditions of Contract.
- .2 If Contractor fails to notify Owner’s Representative in writing and obtain Owner’s Representative’s direction as required in paragraph 1.3.1 and performs work knowing it to be contrary to regulatory requirements, Contractor shall be responsible for and shall correct violations thereof and shall bear costs, expenses and damages attributable to his failure to comply with provisions of such regulatory requirements.

**1.4 ALBERTA BUILDING CODE**

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

**1.5 PERMITS**

- .1 Development Permit: Owner will apply for, obtain, and pay for development permit if required.
- .2 Building Permit:
  - .1 Apply for, obtain and pay for building permit and other permits required for the Work and its various parts.
  - .2 Display the building permit and such other permits in a conspicuous location at the Place of the Work.
- .3 Occupancy Permits:
  - .1 Where required by authority having jurisdiction, apply for, obtain, and pay for occupancy permits, including partial occupancy permits.
  - .2 Where Contract Document deficiencies are required to be corrected in order to obtain occupancy permits, including partial occupancy permits, Owner's Representative will issue appropriate instructions to correct the Work.
  - .3 Turn occupancy permits over to Owner's Representative.

**1.6 LINEAR LAND RECLAMATION**

- .1 Adhere to all requirements as stipulated by Alberta Environment and Parks relative to linear land reclamation of pipeline right-of-ways.

**2. PRODUCTS - NOT USED**

**3. EXECUTION - NOT USED**

**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.

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- .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 QUALITY CONTROL**

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

**1.2 QUALITY ASSURANCE**

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

**1.3 TESTING BY CONTRACTOR**

- .1 Contractor shall furnish to Owner's Representative, upon request, test results from testing performed by Contractor.

**1.4 TESTING BY OWNER**

- .1 Owner reserves the right to employ services of independent testing agencies to establish if work complies with Contract Documents. Owner will appoint and pay for services of such testing agency.
- .2 Where tests or inspections, by Owner appointed testing agency, indicate work is not in accordance with the Contract Documents, additional tests or inspections, as Owner may require, to verify acceptability of corrected work, shall be paid for by Contractor.

**1.5 REFERENCE STANDARDS**

- .1 Within the text of these specifications, reference may be made to the following standards:
  - .1 ANSI - American National Standards Institute
  - .2 ASTM - American Society for Testing and Materials
  - .3 CGSB - Canadian General Standards Board
  - .4 CSA - Canadian Standards Association
  - .5 CAN 2 - National Standard of Canada (published by CGSB)
  - .6 FM - Factory Mutual Engineering Corporation
  - .7 ULC - Underwriters Laboratories of Canada
  - .8 CAN 3 - National Standard of Canada (published by CSA)
- .2 The testing of materials may be requested by the Owner, to prove conformance with Standards, and shall be paid for by the Contractor.
- .3 The referenced standard and any amendments in force on the day of receipt of tenders shall be applicable to the work during the duration of the Contract.

**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 Only the utility owner's personnel shall operate the utility.
- .11 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. Remove the temporary utilities from the Site upon completion of the Work unless specified otherwise.
- .2 Co-ordinate and pay for all required temporary utility work.
- .3 Temporary Power and Light:
  - .1 Provide power for the Owner's Site office.
  - .2 Arrange for connection with the appropriate Utility. Pay all costs for installation, maintenance, power consumption, and removal.
  - .3 Provide and maintain sufficient temporary power for all construction equipment required to carry out the Work.
  - .4 Provide and maintain adequate lighting to safely perform the Work. Provide white light for night construction. Avoid light pollution off the Site.
  - .5 Where failure of the normal lighting system would endanger workers, provide an emergency lighting system capable of producing sufficient dependable illumination to enable the workers to:
    - .1 Leave the worksite;
    - .2 Initiate emergency shut-down procedures; or
    - .3 Restore normal lighting.

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- .4 Temporary Heating and Ventilation:
- .1 Provide temporary heating for the Owner's Site office including maintenance and fuel consumption during the period of construction up to the date of Substantial Performance. Design the heating system for a temperature differential of 60°C and to be capable of maintaining a minimum temperature of 16°C.
  - .2 Provide temporary heating for construction as specified in the Contract Documents.
- .5 Temporary Water Supply:
- .1 Provide a continuous supply of potable water for the Owner's Site office.
  - .2 Provide a continuous supply of potable water to affected residence, institutions and businesses as required in order to execute the work expeditiously. Remove the temporary utilities from the site upon completion of the work unless specified otherwise.
  - .3 Pay all costs of providing the temporary works and the potable water used for construction purposes.
  - .4 Provide and maintain appropriate temporary fire protection equipment during the performance of the work as required.
- .6 Temporary Sanitation Facilities:
- .1 Provide and maintain temporary sanitary facilities on site for work as required by legislation.
  - .2 Provide sanitation facilities for the Owner's Site office.
  - .3 Arrange and pay all costs for installation, maintenance, and removal.
  - .4 Re-establish sanitary services to affected residences, institutions and businesses as required to execute the work as quickly as possible.
- .7 Temporary Natural Gas or Propane Supply:
- .1 Provide a continuous supply of natural gas or propane for the Owner's Site office.
  - .2 Arrange for connection with the appropriate Utility and pay all costs for installation, maintenance, and removal.
  - .3 Pay for utility charges.
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**

**1.1 REFERENCES**

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

**1.2 SUBMITTALS**

- .1 When requested by the Owner, a complete description of the procedures for installing the product.
- .2 When requested by the Owner, appropriate design calculations for the products to be installed.

**1.3 DELIVERY, STORAGE, AND HANDLING**

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

**2. PRODUCTS**

**2.1 PRODUCT QUALITY**

- .1 Provide products that conform to the Contract Documents, are new, not damaged or defective, and of the best quality (compatible with the Specifications) for the purpose intended. If requested by the Owner, furnish evidence as to the type, source, and quality of products provided.
- .2 Defective products, whenever identified prior to the completion of the Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility from the Contractor, but provides a precaution against oversight or error.
- .3 Unless otherwise indicated in the Contract Documents, maintain uniformity of manufacture for any particular or like items.
- .4 Do not place permanent labels, trademarks, or nameplates on products in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

**2.2 PRODUCT AVAILABILITY**

- .1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of Products are foreseeable, notify the Owner's Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In the event of failure to notify the Owner's Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Owner's Representative reserves the right to substitute more readily available Products of similar character, at no increase in Contract Price.

**3. EXECUTION**

**3.1 PRODUCT CONTROL**

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

**3.2 TRANSPORTATION, STORAGE, HANDLING AND PROTECTION**

- .1 Pay costs of transportation of products required in the performance of Work.
- .2 Handle and store products in a manner to prevent damage, alteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .3 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and label intact. Do not remove from packaging or bundling until required in the Work.
- .4 Store products subject to damage from weather in weatherproof enclosures.
- .5 Store cementitious products clear of earth or concrete floors, and away from structures or undrained depressions.
- .6 Store and handle miscellaneous steel products and reinforcing steel by methods such that materials are not contaminated by mud, soil, dust or other debris.
- .7 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .8 Stockpile sand, gravel or processed granular materials on a well drained prepared pad with low exposure to dust accumulation.
- .9 Store sheet materials and lumber in flat, solid supports and keep clear of ground. Slope to shed moisture.
- .10 Remove and replace damaged products at own expense and to the satisfaction of the Owner.



**3.3           INSTALLATION STANDARDS**

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

**3.4           REMEDIAL WORK**

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

**END OF SECTION**

**1. GENERAL**

**1.1 DEFINITIONS**

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

**1.2 PRODUCT OPTIONS**

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

**1.3 SUBSTITUTIONS**

- .1 Where Substitute Products are permitted; unnamed products will be authorized by the Owner, subject to the following:
  - .1 Substitute Products shall be the same types as, be capable of performing the same functions as, and meet or exceed the standards of quality and performance of the named product(s). Substitute Products shall not require revisions to the Contract Documents nor to work of Other Contractors.
- .2 Do not order or install Substitutions without the Owner’s authorization.
- .3 If, in the Owner’s opinion, a Substitution does not meet the requirements of the Contract Documents, provide a product that, in the Owner’s opinion, does meet the requirements of the Contract Documents.

**1.4 CHANGES TO AUTHORIZED PRODUCTS AND MANUFACTURERS**

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

**1.5 PRODUCT DATA**

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

**2. PRODUCTS – NOT USED**

**3. EXECUTION – NOT USED**

**END OF SECTION**

**1. GENERAL**

**1.1 SURVEY REFERENCE POINTS**

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

**1.2 CONTRACTOR'S SURVEY REQUIREMENTS**

- .1 Provide and pay all costs for qualified survey rodman to jointly survey with Owner's Representative for cross-sections, grades, elevations and field quantity measurements.
- .2 Carry horizontal and vertical surveys from primary survey points and establish secondary survey points to facilitate setting out the work. Be solely responsible for the accuracy of the secondary survey reference points and the layout, staking, and checking of the work. Any errors caused by the inaccurate surveys of these secondary points shall be corrected by the Contractor at his own cost.

**1.3 OWNER'S REPRESENTATIVE'S SURVEY REQUIREMENTS**

- .1 All work to be performed under this contract will be laid out by the Owner's Representative by means of stakes and hubs and the Contractor shall be required to make the completed work conform to the lines and grades in accordance with the Contract Drawings and Specifications. The Contractor shall verify all stakes and marks provided by the Owner's Representative. Once grade stakes are established, it is the responsibility of the Contractor to safeguard the stakes. It is the intent of the Owner's Representative, if possible, to discuss the layout of the work with the contractor prior to commencement. The Owner's Representative will provide the following surveys and information for each individual aspect of the project:
  - .1 Structures:
    - .1 Four hubs offset from the centreline of the structure. Each hub will indicate station, elevation and offset to centreline.
  - .2 Pipelines:
    - .1 Construction easement stakes - to be located on both sides of the pipeline at approximately 100-metre spacing.

- .2 Hubs on one side of the proposed pipeline at approximately 100 metre spacing. Each hub will indicate station offset to centreline and elevation.
- .3 Slope stakes for settling pond at 25-metre spacing. Each slope stake will indicate the cut or fill required.
- .4 Grade sheet showing centreline cut at 25-metre spacing and hub cuts at 100-metre spacing.
- .3 Earthworks:
  - .1 Construction easement stakes - to be located on both sides of the earthwork project at approximately 100-metre spacing.
  - .2 Hubs on one side of the earthwork project at approximately 100-metre spacing. Each hub will indicate station, offset to centreline and elevation.
  - .3 One set of slope stakes at approximately 50-metre spacing. Each slope stake will indicate station and the required cut or fill.
- .2 All elevations will be Geodetic unless otherwise noted.
- .3 Keep the Owner's Representative advised on a regular basis of construction survey requirements so that the survey work may be co-ordinated with the Contractor's sequence of operation. In any event, a minimum of 48 hours' notice will be required prior to commencement of surveys.
- .4 The Owner's Representative's stakes or other marks to be carefully preserved by the Contractor until they have served their purpose. Suspend all work at such points and for such reasonable time as the Owner's Representative may require to check the lines and grades. No additional compensation will be paid to the Contractor for required assistance in performing all on site surveys or for loss of time on account of such necessary suspension of work or otherwise on account of the requirements of this section.

#### **1.4 ELECTRONIC DESIGN DATA**

- .1 Electronic design data is available from the Owner's Representative upon request. This information is intended as an aid for construction layout. The Owner's Representative does not guarantee its accuracy. Any discrepancies between the electronic design data and the drawings must be brought to the attention of the Owner's Representative immediately. Information provided on the drawings will take precedence over electronic design data.

#### **1.5 GLOBAL POSITIONING SYSTEMS (GPS)**

- .1 If GPS controlled excavation and trimming equipment is utilized in conjunction with GPS final grade checking, the Owner may waive the requirement for final grade stakes if the accuracy and consistency of the final grade check can be demonstrated.
- .2 If the final grade stake requirement is waived, provide a surface grade sheet in electronic and hard copy of the electronic survey data in a format acceptable to the Owner.

- .3 The surface grade sheet to include the following minimum information.
  - .1 Station.
  - .2 Offset left or right of the centerline.
  - .3 Design elevation at the grade line break point.
  - .4 Actual elevation at the grade line break point.
  - .5 Deviation of the actual elevation from the design elevation.
  - .6 Indication if deviation is within specified tolerances.

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 Perform Initial Commissioning.
  - .2 Obtain and submit evidence of compliance with Regulatory Requirements.
  - .3 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.
  - .4 Correct all Contract Deficiencies that may affect operation of the canal and structures.
  - .5 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.



- .6 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.
- .7 Submit product warranties and extended warranties when specified in the Contract Documents.
- .8 Make final change-over of locks and transmit keys to the Owner.
- .9 Complete installation of architectural finish items, including all mechanical and electrical covers and trims.
- .2 Complete all work items such that the airport lighting can be used for the purpose intended. Work that does not have to be completed to obtain Substantial Performance follows:
  - .1 Final cleanup.
  - .2 Operation and maintenance manuals.
  - .3 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 Facility operation, including all systems and equipment.

- .2 Maintenance.
- .3 Security.
- .4 Property insurance.
- .5 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**

**1. GENERAL**

**1.1 DESIGNATION OF CONTRACT RECORD DOCUMENTS**

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

**1.2 MAINTENANCE OF CONTRACT RECORD DOCUMENTS**

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

**1.3 RECORDING INFORMATION ON CONTRACT RECORD DOCUMENTS**

- .1 Record information on the Contract Record Documents provided by the Owner.
- .2 Use coloured erasable pencils to record information.
- .3 Use a different colour to record information pertaining to each major system.

- .4 Record changes and variations from the Drawings concurrently with construction progress. Do not cover any work until the required information is recorded.
- .5 Legibly mark Contract Record Drawings to record actual construction, including the following:
  - .1 Measured dimensions, depths, elevations, and horizontal co-ordinates of foundation excavations and fill surfaces, including the interfaces of fill zones.
  - .2 Measured dimensions, elevations, and horizontal co-ordinates of structure components and foundations.
  - .3 Measured depths, elevations, and horizontal co-ordinates of underground utilities and appurtenances. Reference locations to permanent surface improvements.
  - .4 Measured depths, elevations, and horizontal co-ordinates of internal utilities and appurtenances covered in construction. Reference to visible and accessible features of construction.
  - .5 Measured depths, elevations, and horizontal co-ordinates of instrumentation installed in foundations and structures.
  - .6 Field changes of dimensions and details.
  - .7 Changes to equipment layout and services.
  - .8 Details not on the original Drawings.
  - .9 References to related Shop Drawings and modifications.
- .6 Legibly mark the Specifications to record actual construction including the following:
  - .1 Manufacturer trade name and catalogue number of each product actually installed, particularly optional and substitute items.
  - .2 Changes made by addenda and Change Orders.
- .7 Maintain other documents including manufacturer's certifications, inspection certifications, field test records required by individual Specification sections.

**1.4 SUBMITTALS**

- .1 Provide the following submittals.
- .2 Prepare Contract Record Drawings at least monthly throughout the course of the Work as the information becomes available or the information is received. The Owner's representative will check the Contract Record Drawings and confirm the accuracy of the information by field notes, surveys, photographs, or other field observation methods and return the Contract Record Drawings to the Contractor after review for ongoing revisions.
- .3 Completed Contract Record Documents before or with the request for inspection for Total Performance. The owner reserves the right to withhold monies until record documents are provided.

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2. PRODUCTS – NOT USED

3. EXECUTION – NOT USED

END OF SECTION

**1. GENERAL**

**1.1 DESCRIPTION OF TYPES OF OPERATION AND MAINTENANCE DATA**

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

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

**1.2 OPERATION AND MAINTENANCE MANUAL BY THE CONTRACTOR**

- .1 Prepare the operation and maintenance manual as follows:
- .2 General organization of each volume:
  - .1 Include the following in each volume:
    - .1 Title page.
    - .2 Table of contents. Identify volume number where listed information is located.
    - .3 Ten percent free space for additional data.
  - .2 Present textual information, schematics and data on 21.5 × 28 cm, 75 g/m<sup>2</sup>, white bond paper.
- .3 Manual contents organization:
  - .1 For each major equipment, system, materials or finishes area, organize operation and maintenance data as follows:
    - .1 Operation Division: include the following, as applicable:
      - .1 System Design Criteria.
      - .2 System and Controls Descriptions.
      - .3 System and Controls Schematics.
      - .4 Operating Instructions.
    - .2 Maintenance Division: include the following, as applicable:
      - .1 Maintenance Tasks and Schedules.
      - .2 Spare Parts.
      - .3 Suppliers and Contractors.
      - .4 Tags and Directories.



- .3 Contract Document Division: include the following, as applicable:
    - .1 Drawings List.
    - .2 Shop Drawings and Product Data.
    - .3 Certifications.
    - .4 Warranties and Bonds.
    - .5 Maintenance Brochures.
    - .6 Reports.
  - .4 Document Binding Methods
    - .1 Standard 21.5 × 28 cm sheets: punch sheets to fit binder.
    - .2 Sheets up to 28 × 41.5 cm: punched and neatly folded to allow use without removing from binder.
    - .3 Drawings larger than 28 × 41.5 cm: insert drawings in sturdy vinyl envelopes with reinforced binding holes, open on one side and overall folded size not exceeding 21.5 × 28 cm. Do not punch holes in drawings.
  - .5 Binders
    - .1 Commercial quality, fabric coated, hard covers attached to spine with metal piano hinges, three post, designed to accommodate 21.5 × 28 cm paper. Maximum 100 mm thick.
    - .2 Silk-screen project title and identification, in gold, on front cover and spine of binder. All binders to be forest green with gold lettering.
    - .3 Covers to read as follows:

Operation and Maintenance  
Manual

Town of Drumheller

Drumheller Airport Lighting

{Month, Year}
- Prime Consultant: MPE Engineering Ltd.  
General Contractor:  
Mechanical Contractor:  
Electrical Contractor:

The Spine to read as follows:

Operation and Maintenance  
Manual

Town of Drumheller

Drumheller Airport Lighting

{Month, Year}

- .4 Divider tabs:
- .1 Heavy-weight coloured paper, mylar laminated with tab number and title printed on tab as follows.
  - .2 Main divisions: white tabs, labelled with division name, 2 bank tab length.
  - .3 Sections of a main division: colour coded tabs, labelled with section name, 4 bank tab length.
  - .4 Subsections: same colour tabs as the section, printed label, 8 bank tab length.
  - .5 Co-ordinate tab colour codes and labelling format with the Owner.

### 1.3 SUBMITTALS

- .1 Provide the following submittals:
- .1 One draft copy of the operation and maintenance manual prior to requesting inspection for Substantial Performance.
  - .2 Three copies and one digital copy of the completed operation and maintenance manual prior to requesting inspection for Total Performance.
- .2 The Owner reserves the right to withhold any amount of payment up to a maximum of \$20,000 until the Contractor provides satisfactory copies of the O&M manuals.

2. **PRODUCTS** – **NOT USED**

3. **EXECUTION** – **NOT USED**

**END OF SECTION**

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**1. GENERAL**

**1.1 SOURCE OF SUPPLY**

- .1 Provide spare parts manufactured by original equipment manufacturer.
- .2 Provide maintenance materials identical to those installed.

**1.2 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver required items to the Place of the Work and store in temporary locations determined by Contractor or permanent locations designated by Owner.
- .2 Deliver and store items in original factory packaging or other securely packaged form.
- .3 Identify, on carton or package, name of item, colour or part number, as applicable. Identify equipment, system, area, room no., etc. for which each item is intended.
- .4 Maintain an inventory list of all items delivered. For each item, record description of item, quantity, and location where stored.
- .5 Stored items shall remain in Contractor's care, custody, and control until the completion of the Work. Protect stored items against theft or damage.
- .6 Handle items as necessary, until stored in permanent locations designated by Owner's Representative.

**1.3 ACCEPTANCE**

- .1 Prior to requesting Owner's final inspection, do the following:
  - .1 Review Contract Documents and compare with inventory list to verify that all required items have been delivered.
  - .2 Verify that items listed on inventory list are in there designated storage locations.
  - .3 Inspect items to verify that they meet specified requirements and are in serviceable condition.
  - .4 Arrange for delivery of any missing items.
  - .5 Arrange for replacement of items not meeting specified requirements or not in serviceable condition.
  - .6 Provide Owner with copy of inventory list indicating status of all required items.
- .2 Review inventory list with Owner's Representative during final inspection.

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**2. PRODUCTS – NOT USED**

**3. EXECUTION – NOT USED**

**END OF SECTION**

**1. SCHEDULE**

- .1 Present detailed Schedule of start-up, commissioning and continuous operating phases for review by Owner's Representative and Owner at least 4 weeks prior to this phase of work. Do not commence start-up and commissioning until schedule has been reviewed by the Owner's Representative.

**2. NOTICE**

- .1 Notwithstanding Clause 1.1 above, give Owner's Representative and Owner at least 48 hours prior notice before Start-up or Commissioning is due to commence. Supply at this time all documentation relating to testing of equipment, supplier's certification of satisfactory installation and Contractor's certification that all systems can be started up.

**3. SEQUENCE OF EVENTS**

- .1 Testing, Start-up and Commissioning
  - .1 Test, start-up and commission the works in an orderly fashion by "system", where "system" is defined as an integral operating entity or loop. On completion of construction of a system, test and otherwise check the system and be satisfied that it is ready for a pre start-up inspection by Owner's Representative, prior to start-up of system.
  - .2 All systems shall be satisfactorily started up by the Contractor and for all major systems. All Start-up Completion Certificates describing system equipment, start-up results, test deficiencies, start-up deficiencies and rectification procedures shall be submitted to the Owner's Representative for review prior to commencement of commissioning of the works.
  - .3 The following constraints in testing, start-up and commissioning will be taken into account:
    - .1 Cleaning, leakage testing and disinfection of all systems is required prior to start-up.
    - .2 Test individual compartments within a system individually prior to testing entire system.
    - .3 A complete "dry-run" test of every system is required to demonstrate satisfactory installation, prior to "wet-run" testing, start-up and commissioning. e.g., each pump control system shall be fully checked and tested with pump motor locked out, prior to pump start-up.

**4. DEFINITIONS AND PROCEDURES**

- .1 Testing:
  - .1 Related testing includes hydrostatic and pressure testing, disinfection, and all other pre start-up tests on equipment as described in the Contract Document.

- .2 Start-up:
  - .1 Notify the Owner's Representative in writing 48 hours prior to system start-up. Owner's Representative's approval of all supporting documentation is required prior to start-up.
  - .2 Start-up shall consist of placing individual systems into operation, re-confirming all equipment test results, performing any tests not yet carried out which may be deemed necessary by Owner's Representative to demonstrate satisfactory performance of equipment, calibration or balancing of equipment, and confirming operation of control systems and protective devices. All suppliers' representatives for equipment in the systems, and qualified electrical, control and instrument personnel shall be on site for full duration of start-up of a system.
- .3 Commissioning:
  - .1 Commence commissioning following successful start-up of all individual systems.
  - .2 Commissioning shall consist of placing all various systems of the works into simultaneous continuous operation, in an orderly manner. All suppliers' representatives and qualified electrical, control and instrumentation personnel shall be on site for the initial period of commissioning or as required until all systems are up and successfully running, simultaneously. Commissioning is deemed complete when all systems have been operating continuously without fault and all process, mechanical and electrical equipment is free of vibration, overloading or overheating, and is functioning in accordance with specified rates, methods and performance.
  - .3 The period for continuous operation for completion of commissioning shall be 80 hours, during which time the system shall operate without fault or failure as described above. Provide competent staff to oversee the operation and shall arrange for manufacturer's service personnel and subcontractors' personnel, if so required, to attend to any problems that arise. Failure of any part of the works during this period will require restart of the 80 hour period following rectification of the fault or failure.
- .4 Operator Training:
  - .1 Special training of Town staff to take place following successful start-up of all systems, during commissioning period. Co-ordinate visits of equipment suppliers' supervisors and schedule mutually agreeable times for special training periods.

**5. RESPONSIBILITY**

- .1 Be responsible for testing, start-up commissioning and continuous operation.
- .2 Coordinate equipment suppliers' representatives and all sub-trades personnel for start-up and commissioning.
- .3 Arrange for the services of the equipment manufacturer's technical representative, when equipment installation has been completed.

- .4 Equipment manufacturer's technical representative to inspect installation to ensure that equipment has been installed in accordance with manufacturer's requirements. Make adjustments in accordance with instructions of equipment manufacturer's technical representative.
- .5 Advise Owner's Representative in writing that installation has been checked, installed correctly and is in working order following satisfactory start-up.
- .6 Cost of equipment manufacturer's representative shall be borne by Contractor. Do not designate a subtrade as a representative during construction, testing, start-up, commissioning and continuous operation.
- .7 Owner's Representative will request that equipment be operated to demonstrate that it will perform as specified. Owner's Representative will note deficiencies. Correct deficiencies immediately. Advise Owner's Representative in writing when deficiencies have been corrected.
- .8 If deficiencies are of a sufficiently serious nature that manufacturers' representatives are required to make additional visits, additional costs shall be borne by Contractor.
- .9 If it is necessary to suspend start-up, or commissioning, or continuous operation due to deficiencies in any system, the full cost of interruption, call back and resumption of start-up, or commissioning, or continuous operation shall be paid by Contractor.
- .10 Commission and operate the works during continuous operating period. Operation personnel may observe and assist during commissioning and continuous operating period.

**6. SYSTEMS DEMONSTRATION**

- .1 Special training of operators shall take place following successful start-up of all systems, during the commissioning period. Co-ordinate visits of equipment suppliers' supervisors with Operations Staff and schedule mutually agreeable times for special training periods.
- .2 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times.
- .3 Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed upon times.
- .4 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.
- .5 Review contents of manual in detail to explain all aspects of operation and maintenance.
- .6 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent.
- .7 The individual providing training must be a manufacturer's certified technician with competent instructional skills and fully familiar with the detailed operation and maintenance of the provided equipment. The Owner will be the sole judge of the competence of the instructor and quality of instruction. The Owner reserves the right to

withhold any amount of payment up to a maximum of \$15,000 until the Contractor provides training to the satisfaction of the Owner.

- .8 Training to cover the following items:
  - .1 Overview of equipment;
  - .2 Review of Operations and Maintenance Manual documentation for the equipment;
  - .3 Instruction and demonstration of operation. Includes start-up, shut down, all possible equipment faults and possible rectification;
  - .4 Instruction and demonstration of maintenance to include daily, weekly, monthly, quarterly and annual preventative maintenance checks/actions as recommended by the manufacturer as well as trouble shooting summarized clearly on trouble shooting sheets for the specific model of each major piece of equipment.
- .9 All instructional training, supplemented by training and manual handouts, must be in sufficient detail to cover all Owner responsible operations and maintenance requirements to maintain manufacturers' warranties in tack. Training and documentation must highlight specific requirements that if completed or not completed may or would, void or jeopardize the equipment warranty.

**7. DOCUMENTATION**

- .1 Provide documentation for start-up, commissioning and continuous operation of the works. Provide a detailed written description of proposed procedure for start-up of each system, including methods of calibration, flow routes, tests, and personnel involved. Submit proposed procedure with detailed commissioning and operating schedule specified in clause 1.2 above to Owner and Owner's Representative at least 4 weeks prior to start-up of system.
- .2 Prepare a written procedure for commissioning and continuous operation of the works for review by Owner and Owner's Representative prior to commencing commissioning and continuous operation.

**8. START-UP**

- .1 Undertake start-up of systems of the work in an orderly manner. Coordinate start-up so that adequate staff are available and that conflicts do not occur due to multiple start-ups at the same time.

**9. COMMISSIONING**

- .1 Commission the works in accordance with written procedure for commissioning. Provide sufficient manpower for duration of commissioning period. Make necessary adjustments during commissioning to enable the works to be put into continuous operation.

**END OF SECTION**



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**1. GENERAL**

**1.1 INTENT**

- .1 Read this Section in conjunction with other Sections for the location, use and placement of “Demolition, Removal and Salvage” requirements specified herein.

**1.2 DEFINITIONS**

- .1 For the purpose of construction in this Contract, the following definitions apply:

- .1 “Salvageable” is defined as all materials having salvage value.
- .2 “Non-salvageable” is defined as all material having no salvage value.

**2. PRODUCTS**

- .1 Not Applicable.

**3. EXECUTION**

**3.1 INSPECTION**

- .1 Inspect site and verify with the Owner’s Representative items to be demolished, removed, and salvaged.

**3.2 SALVAGEABLE MATERIALS**

- .1 All materials having a salvage value will be excavated and removed in such a manner that no damage will be done to the material. Salvaged material will be removed, cleaned and stored at a location within the work area. At the completion of the project all salvage items will be transferred to the Owner’s facility for storage. There will be no separate payment for salvaging or transferring to storage of these items.

**3.3 DEMOLITION AND NON-SALVAGEABLE MATERIALS**

- .1 Unless indicated otherwise, demolition and non-salvageable materials will be excavated, transported and disposed of at a licensed landfill. Burying of demolition and non-salvageable materials will not be allowed under any circumstances.
- .2 The Contractor will bear the cost of all disposal fees.

**END OF SECTION**

**1. GENERAL**

**1.1 INTENT**

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

**1.2 DEFINITIONS**

- .1 For the purpose of construction in this Contract, the following definitions apply:
- .1 “Topsoil” is defined as the uppermost part of the soil, ordinarily moved in tillage, or its equivalent in uncultivated soils, normally ranging in depth from 50 mm to 450 mm, capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
  - .2 “Subsoil” is defined as material that lies immediately beneath the Topsoil and extending to root depth. Subsoil may be up to 1.5 m in depth.
  - .3 “Overburden” is defined as soil material that lies between the Subsoil and the material that is designated to be utilized for construction.
  - .4 “Stripping” is defined as the excavation of Topsoil, Subsoil, and Overburden, including materials in frozen condition.

**2. PRODUCTS**

- .1 Not applicable.

**3. EXECUTION**

**3.1 PROTECTION OF EXISTING FACILITIES**

- .1 Locate utility lines, fencing, survey reference points, instrumentation, culverts, and all other existing facilities before commencement of Work. Protect these items from damage.

**3.2 EXCAVATION**

- .1 Do not strip any area without prior approval of the Owner.
- .2 Stay on designated haul roads and do not disturb grassed or natural areas not part of the Work. Do not drive on undisturbed areas except for the performance of stripping operation.
- .3 In stripping areas, strip topsoil to top of subsoil levels, then strip the subsoil to top of overburden levels, then strip the overburden. Avoid mixing Topsoil, Subsoil and Overburden.

- .4 Strip and stockpile materials separately to prevent contamination.
- .5 Strip and stockpile materials from temporary construction access roads, borrow areas and waste fill areas required for performance of the Work.
- .6 Conduct the stripping operation far enough in advance of excavation to ensure that undesirable material does not become mixed with the Topsoil.
- .7 Suspend stripping operations during rain or wet ground conditions.
- .8 Suspend stripping operations during high winds greater than 80 km/hr, which may result in contamination or loss of Topsoil.
- .9 Provide proper drainage of surface water from stripped area to prevent ponding and infiltration in areas where fill is to be placed.
- .10 Use equipment with precise depth control such as a grader when stripping shallow depth topsoil.
- .11 If the stripping area soils are frozen, rip the area to a depth of 300 mm and stockpile separately.
- .12 Excavate all initial frozen material. Subsequent frost removal will not be paid.

### **3.3 STOCKPILES**

- .1 Unless otherwise designated in the Contract Documents, stockpile stripped material away from the runway. Choose stockpile locations such that they will not interfere with construction.
- .2 Stockpile topsoil separately from other materials.
- .3 Maintain a minimum separation of 1 m between stockpiles.
- .4 Stockpile frozen stripped material separately from other materials.
- .5 Adopt measures to prevent drifting of topsoil.
- .6 Keep drainage courses clear of stockpiled material.
- .7 Stockpile material at slopes lower than 2H:1V.

### **3.4 DISPOSAL OF STRIPPING MATERIAL**

- .1 The Contractor is to keep all topsoil stripped on site. Any excess material can be placed over the trench with a small mound.

**END OF SECTION**

**1. GENERAL**

**1.1 INTENT**

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

**1.2 TOPSOIL TESTING**

- .1 The Owner will perform topsoil testing on existing designated topsoil stockpiles.

**1.3 SOURCE TOPSOIL**

- .1 Use native topsoil materials from designated topsoil stockpiles provided it meets specified requirements.
- .2 If native topsoil is inadequate in quantity, quality or both, use imported topsoil meeting specified requirements for balance of topsoil required.

**2. PRODUCTS**

**2.1 TOPSOIL MATERIALS**

- .1 Topsoil materials to be a mixture of mineral particulates, microorganisms and organic matter which provides suitable medium for supporting intended plant growth.
  - .1 Soil texture to be based on the *Canadian System of Soil Classification*, to consist of 20% to 70% sand and contain 2% to 10% organic matter by weight.
  - .2 Topsoil PH value to be between 6.5 to 8.0.
  - .3 Topsoil to contain no toxic elements or growth inhibiting materials.
  - .4 Topsoil to be free from debris and stones over 50 mm diameter.
  - .5 Topsoil consistency to be friable when moist.
- .2 Major soil nutrients required for topsoil fertility to be present in following ratios:
  - .1 Nitrogen (N): 20 to 40 microgram of available N per gram of topsoil.
  - .2 Phosphorus (P): 10 to 20 micrograms of phosphate per gram of topsoil.
  - .3 Potassium (K): 80 to 120 micrograms of potash per gram of topsoil.

- .4 Calcium, magnesium, sulfur and micro-nutrients present in balanced ratios to support germination and/or establishment of intended vegetation.
- .5 Coarse vegetative material: 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.

### **3. EXECUTION**

#### **3.1 DESIGNATED TOPSOIL MATERIALS**

- .1 Control and eliminate perennial grass and noxious weeds including their root systems until stockpile topsoil is required for landscape use. Stockpile topsoil will be reasonably free of all weed growth before placement on site.
- .2 Perform weed control, when necessary, in accordance with relevant government chemical pesticide application legislation. Obtain Owner's approval for all pesticide applications.
- .3 Submit detailed pesticide applicator's log for verification after each application of approved pesticide.
- .4 Disc topsoil material and remove all rocks to the extent that the rock content is comparable to adjacent undisturbed areas. Remove all debris, sod lumps and stones over 50 mm diameter. Dispose of waste materials at a licensed landfill.

#### **3.2 PREPARATION OF SUBGRADE**

- .1 Remove debris, roots, branches, foreign material, undesirable plants, visible stones in excess of 50 mm diameter, contaminated soil and other deleterious materials. Dispose of waste materials at a licensed landfill.
- .2 Grade areas to be reclaimed to finish subgrade. Eliminate uneven areas and low spots and ensure proper drainage.
- .3 Scarify all areas designated for topsoil placement to a depth of 150 mm, except in areas where considered impractical by the Owner's Representative. Scarify entire subgrade area once in the longitudinal direction and once in the perpendicular direction. Disc area when large clay lumps are prevalent.

#### **3.3 TOPSOIL PLACEMENT**

- .1 Place and spread subsoil and topsoil materials in uniform layers not exceeding 150 mm, in dry weather on dry unfrozen subgrade.
- .2 Manually spread and rake topsoil around structures, trees, fences or other obstructions.
- .3 Spread topsoil to obtain minimum depth after settlement of:
  - 150 mm for seeded areas
  - 125 mm for sodded areas

- 450 mm for flower beds
- 600 mm for shrub beds

### **3.4 FINISH GRADING**

- .1 Remove all stones in excess of 50 mm diameter, soil lumps, roots, grass, weeds, construction materials, debris and foreign non-organic materials that may surface after preparation. Dispose of waste materials at a licensed landfill.
- .2 Thoroughly cultivate topsoil to minimum depth of 100 mm by rototilling or hand methods where compaction has occurred and to break all soil lumps.
- .3 Float until surface is smooth. Cut smooth falls to catch basin rims, finish flush.
- .4 Fine grade to eliminate rough or low areas and to ensure positive drainage on slopes and away from buildings, sidewalks and other structures. Maintain levels, profiles and contours of subgrade.
- .5 Leave surface smooth, uniform and sufficiently firm to prevent settlement or sinkage pockets when watered. Finished surface to be even and free from irregular surface changes.
- .6 Rake, chain drag and lightly roll topsoil areas, remove all ridges and fill all depressions. On larger areas, use hydraulic power box rake or similar mechanical equipment to: remove soil lumps, rocks and debris; fill and level low areas; and correct other grading deficiencies in preparation of seed or sod bed.
- .7 When topsoil will abut existing turf, cut turf to form a straight joint with the new seeded or sodded areas.
- .8 Where topsoil will be receiving sod, leave final grade 15 mm below finish grade of adjacent pavement, edging, curbs and crown of adjacent turf area.
- .9 Do not cover catch basins, manholes, valve covers, irrigation boxes or any other surface accesses.
- .10 Use water trucks and sprinklers to control all airborne dust caused by topsoil placement and grading operations when necessary.
- .11 Immediately clean up any soil or debris spilled onto roadway, walks and mulched areas.

### **3.5 TOLERANCES**

- .1 The finished topsoil surface to be even, uniformly shaped and compacted to within  $\pm 15$  mm of design grade, but not uniformly high or low, 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 “Trench Excavating and Backfilling” specified herein.
- .2 This Section is intended to be used as a reference section for excavating, backfilling of trenching required for installation of underground services which may include pipes, fittings, valves, manholes, vaults, catch basins, ducts, duct banks, conduits, cable, wire, etc.

**2. PRODUCTS**

**2.1 FILL MATERIALS**

- .1 General
  - .1 Do not use frozen fill materials.
  - .2 Remove cobble, stones and rock fragments have maximum dimension greater than 75 mm from fill material or other object other objects which could be detrimental to the pipe or the embedment materials.
- .2 Native Backfill Material
  - .1 Native backfill containing no debris; tree roots, sod or other organic materials.

**3. EXECUTION**

**3.1 EXCAVATION**

- .1 Excavate trenches to the lines, grades and elevations shown on the Contract Documents.
- .2 Remove unsuitable material from trench bottom to extent and depth necessary for proper installation.
- .3 Report if new construction conflicts with discovered obstruction.
- .4 Unless otherwise authorized, do not excavate more than 100 m of trench in advance of installation operations and do not leave more than 15 m open at end of day’s operation.
- .5 Stockpile suitable excavated materials required for trench backfill in approved location.
- .6 Obtain approval for method of installation.
- .7 Provide barricades and security measures required for open trench and pit excavations.

**3.2 MOISTURE CONTENT CONTROL OF BACKFILL MATERIAL**

- .1 Uniform moisture content of each layer of fill to be within the Optimum Moisture Content limits specified in Backfilling Schedule, as determined by ASTM D698 test procedures.
- .2 When the moisture content in the fill material is lower than that specified for placement, add water and mix with the material to achieve uniform moisture content in the material to conform to the requirements.
- .3 When the moisture content in the fill material is higher than that specified for placement, dry the material by scarifying, disking, mixing and harrowing to achieve uniform moisture content in the material that conforms to the requirements.

**3.3 PLACEMENT AND COMPACTION OF BACKFILL MATERIAL**

- .1 Backfill trenches using fill materials as specified.
- .2 Place bedding and surround material as shown on the drawings.
- .3 Place backfill material in uniform layers not exceeding 150 mm of cover in compact thickness up to sub-grade elevation on top of trench. Compact each layer before placing succeeding layer.
- .4 In landscaped areas: compact native backfill material to a minimum density of 98% Standard Proctor.
- .5 In parking/roadways areas: compact native backfill materials to a minimum density of 98% Standard Proctor.
- .6 Compact using approved mechanical tamping, devices or by hand tamping to achieve specified compaction.
- .7 provide continuous detectable tape, ThorTec or equivalent, above all buried electrical utilities.
- .8 Approved material selected from trench excavation or other resource, unfrozen and free from cinders, ashes, sods, refuse or other deleterious materials and with the natural water content of 5% of the optimum value of the Proctor compaction specified, based on the native soil which is being used for backfill.
- .9 Natural sand or crushed rock screenings for bedding material.

**END OF SECTION**



**1. GENERAL**

**1.1 INTENT**

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

**1.2 COORDINATION**

- .1 The Owner has made application for the proposed work to the appropriate regulatory authorities. Work related to this Section will not be performed until the necessary Approvals and Authorizations have been obtained.

**2. PRODUCTS**

**2.1 GENERAL**

- .1 Provide a Certificate of Compliance with the specifications to be furnished by the product pipe supplier.
- .2 The conduit to be free from visual defects.

**2.2 HIGH DENSITY POLYETHYLENE (HDPE) PRODUCT PIPE**

- .1 Conduit to comply with Canadian Electrical Code (CEC) for approval.

**3. EXECUTION**

**3.1 GENERAL**

- .1 Do not proceed with any directional drilling until approval from specific utility has been obtained by Owner.
- .2 Follow the recommendations for planning and execution of horizontal directional drilling in ASTM F1962, latest edition.
- .3 Follow accepted procedures and practices outlined in the HDD Consortium’s “Horizontal Directional Drilling Good Practices Guidelines”, latest edition as available from North American Society for Trenchless Technology, 1655 N. Ft. Meyer Dr., Suite 700, Arlington, Virginia, USA 22209, telephone (703) 351-5252, or on their web site at [www.nastt.org](http://www.nastt.org).
- .4 Abide by all stipulations and conditions included in the Approvals and Authorizations of any regulatory authorities.

**3.2 PLANNING**

- .1 Prepare directional drilling plan, outlining specific procedures and techniques that will be implemented during construction, as well as a schedule for drilling activities. Include details on drilling operations including the pilot hole drilling procedure, the reaming operation, and

the pullback procedure; specifications of equipment to be used; site layout including the location of entry and exit pits; handling of mud and cuttings; type of drilling mud to be used; past project experience of the drilling crew; annular pressure charts to confirm that the annular pressure will not exceed the overburden pressure; etc. Provide details on the installation of the “Tru Track coils” including how they are supported and the duration for which they will be deployed. Provide these plans to the Owner’s Representative at least 21 days prior to beginning any work on directional drilling. Modify as required by the Owner’s Representative.

- .2 Prepare directional drill drawings identifying proposed horizontal and vertical alignments for each directional drill. Include details on where each directional drill will daylight and how this will accommodate the fixed tie-in locations. Also identify separation between directional drills and existing gas, power and fibre optic. Provide these plans to the Owner’s Representative at least 21 days prior to beginning any work on directional drilling. Modify as required by the Owner’s Representative.
- .3 Prepare Emergency Response Plans and contingency plans for fuel and hazardous waste spills, frac-outs, sediment control, storm runoff, and floods. Provide these plans to the Owner’s Representative at least 21 days prior to beginning any work on directional drilling. Modify as required by the Owner’s Representative.
- .4 Construct utility crossing with minimum disruption.
- .5 Upon request of the Owner’s Representative, directional drill contractor will submit list of completed projects with details of type of conduit installation, size, and length of directional drill, Owner and Owner’s Representative contact names, and phone numbers.

### **3.3 CONSTRUCTION**

- .1 Advance the pilot bore along the alignment and to the grade shown on the approved directional drill Drawings, taking into account the diameter of the final bore and the diameter of the conduit pipe.
- .2 Maintain control of all drilling fluids at all times. Dispose of excess materials at a designated landfill.
- .3 Annular space will not exceed 100 mm larger than the O.D. of the product pipe for pipes of less than 200 mm diameter.
- .4 Restrict open excavation within the approved construction right-of-way to the minimum required to achieve the Work of this section.
- .5 All equipment with tracks or cleats to stay off of paved surfaces.
- .6 Backfill all access pits from bottom of excavation to pipe invert with gravel and compact to 98% of Standard Proctor Maximum Dry Density. Backfill remaining trench in accordance with typical pipeline bedding and backfill as indicated in Section 02319 – Trench Excavation and Backfilling.
- .7 Restore all disturbed areas to pre-construction conditions.

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- .8 Provide the Owner's Representative with a plot of the horizontal and vertical alignment of the pilot bore at intervals not exceeding 10.0 m.

**3.4 RECORD INFORMATION**

- .1 Provide all technical documentation, including Daily Reports with a log of boring operations and guidance system for each drill rod added or withdrawn during drilling and "as-drilled" record drawing of elevations and chainages for each bore.

**END OF SECTION**

**1. GENERAL**

**1.1 INTENT**

- .1 Read this section in conjunction with other sections for location, use and placement of “Grass Seeding” specified herein.

**1.2 DELIVERY STORAGE AND HANDLING**

- .1 Provide seed in standard containers clearly labeled with the following information:
- .1 Supplier’s name and address
  - .2 Lot Number
  - .3 Net Mass
  - .4 Names and percentages of individual seed species
- .2 Protect seed from moisture, mould and damage while in transit and storage.
- .3 Provide fertilizer in standard containers clearly labeled with the following information:
- .1 Supplier’s name and address
  - .2 Specified Composition
  - .3 Net Mass

**2. PRODUCTS**

**2.1 MATERIALS**

- .1 Provide seed mixture to the following composition:

Grass Seed Mixture

Crested Wheat Grass	40% by weight
Creeping Red Fescue	30% by weight
Annual Rye	30% by weight

- .2 Seed mix to be blended by a qualified seed processor. Contractor to provide a copy of the certification of the seed mix to the Owner.
- .3 Provide seed and seed mixture that are free of all prohibited noxious weed seeds.
- .4 All seed to be stored in a dry weatherproof storage place and to be protected from damage by heat, rodents and other causes.
- .5 Provide Canada No. 1 Grade seed in accordance with the Government of Canada Seeds Act and Seeds Regulations. Do not provide seeds which are wet, mouldy, or otherwise damaged.
- .6 Provide fertilizer in accordance with Government of Canada Fertilizer Act and Fertilizers Regulations. Fertilizer is to be compatible with the seed mixture and the soil conditions.

**3. EXECUTION**

**3.1 GENERAL**

- .1 Prepare topsoil surface for seeding as specified in Section 02201.
- .2 Apply materials during calm weather and on ground free of frost and standing water.
- .3 Measure the quantities of materials by weight.

**3.2 APPLICATION OF SEEDS**

- .1 Apply seed mixture using a “Brillion” Seeder in two (2) perpendicular directions at the total application rates of 110 kg per hectare or by a hand broadcast seeder followed by raking.
- .2 Apply seed mixture during calm weather (less than 8 km/hr wind) and on ground free of frost and standing water.
- .3 Perform seeding operations at such a time of the year when climatic conditions are suitable for establishing grass stands.
- .4 Fine grade and loosen the surface to plow depth to obtain a proper seed bed without undue loss from high winds or ordinary rainfall.
- .5 Where the work adjoins existing vegetation, blend the application at least 300 mm into adjacent vegetated areas.
- .6 Protect seeded areas against damage.
- .7 Regulate the drill so that the seed is properly placed in the soil to a depth of 20 to 32 mm.
- .8 Where seeded areas are not hydro mulched, apply 16-20-00 fertilizer uniformly at the rate of 78.5 kg per hectare using a fertilizer attachment.

**3.3 MAINTENANCE**

- .1 Watering to be carried out when the seed is first applied to prevent grass and the underlying soil from drying out.
- .2 Re-apply seed to all areas that do not show a uniform stand of grass. Perform such reapplication to allow for establishment prior to Substantial Performance of the Work. A uniform stand of grass will be considered growth that shows no bare spots greater than 0.25 square metres in size and provides a minimum of eighty percent ground cover.

**END OF SECTION**

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**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 along the runway and taxiway 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.

**END OF SECTION**

**1. REGULATORY REQUIREMENTS**

- .1 Comply with Safety Codes Act and rules and regulations made pursuant thereto, including the Canadian Electrical Code.
- .2 Unless otherwise indicated, all references to "Canadian Electrical Code" or "CEC" shall mean the edition of the Canadian Electrical Code, Part I, CSA C22.1, and the variations made thereto by Alberta regulation, which are in force on the date of bid closing for the Contract.
- .3 All electrical products shall be tested, certified and labelled in accordance with a certification program accredited by the Standards Council of Canada. Where a product is not so labelled, provide written approval by the authority having jurisdiction.
- .4 Submit to authority having jurisdiction and Utility Company, necessary number of drawings and specifications for examination and approval prior to commencement of electrical work. Pay associated fees.
- .5 Submit to Owner, copy of electrical permit obtained from authority having jurisdiction.
- .6 If authority having jurisdiction conducts an electrical inspection, submit copy of certificate of acceptance provided by authority having jurisdiction.

**2. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

- .1 Submit shop drawings, product data and samples, as specified, indicating details of construction, dimensions, capacities, weights and electrical performance characteristics of equipment and materials.

**3. OPERATION AND MAINTENANCE DATA**

- .1 Provide the following for all systems and components:
  - .1 Manufacturer's product data, including performance curves and schematic and wiring diagrams for all electrical control systems.
  - .2 Manufacturer's installation instructions.
  - .3 Manufacturer's operation instructions.
  - .4 Manufacturer's maintenance instructions, including complete parts list for all serviceable components.
- .2 Provide a comprehensive list of Subcontractors, Sub-subcontractors and suppliers who supplied and installed systems and components.
- .3 Provide copies of all inspection certification reports from authorities having jurisdiction.

**4. RECORD DRAWINGS**

- .1 Record actual locations of all pull boxes, panel boards, luminaires, feeders, electrical equipment and electrical site services.
- .2 Record any changes to circuit designations.

**5. COORDINATION**

- .1 Coordinate work specified with Operations.

**6. SOURCE OF SUPPLY**

- .1 All like materials shall be by a single manufacturer.

**7. REFERENCE STANDARDS**

- .1 Comply with standards of following organizations:
  - .1 Electrical and Electronic Equipment Manufacturers Association of Canada (EEMAC).
  - .2 Institute of Electrical and Electronic Engineers (IEEE).

**8. PRODUCT OPTIONS AND SUBSTITUTIONS**

- .1 Not applicable.

**9. TESTING**

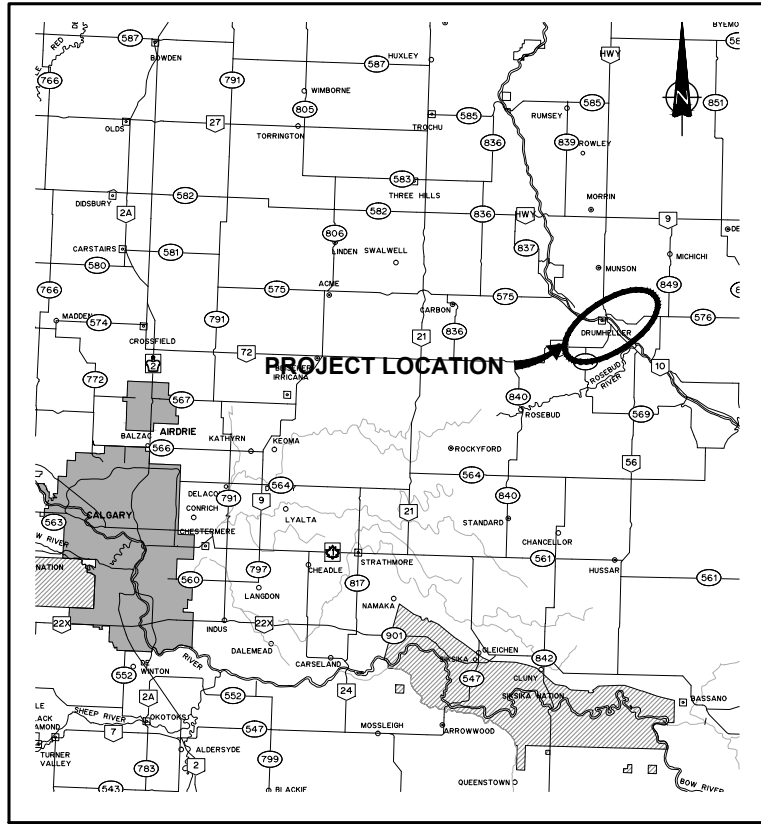
- .1 Prior to energizing any portion of the electrical system, perform megger tests on all parts of the distribution system. Results shall meet the requirements of the CEC, authority having jurisdiction and the Contract Documents.

**END OF SECTION**





***Engineering Ltd.***



LOCATION PLAN



SITE PLAN

LIST OF DRAWING:

- TITLE PAGE
- ELECTRICAL:
- E1.0E OVERALL SITE PLAN EXISTING
- E1.0 OVERALL SITE PLAN
- E1.1 SITE PLAN 1
- E1.2 SITE PLAN 2
- E1.3 SITE PLAN 3
- E1.4 MISCELLANEOUS DETAILS
- E1.5 BILL OF MATERIALS AND SPECIFICATIONS

**Schedule D - Drawings**



**TOWN OF DRUMHELLER**  
**MUNICIPAL AIRPORT LIGHTING**  
**FOR REQUEST FOR PROPOSAL REVISED**  
**2450-048-00**





**NOTES:**

1. ALL EXISTING EQUIPMENT IS TO BE REMOVED. THIS INCLUDES, WIND CONE, RUNWAY/TAXIWAY/APRON LIGHTS, LIGHT SUPPORTS, POWER SUPPLIES, CONTROLS, CABLE PULL PITS.
2. EACH EXISTING LIGHT HAS AN ELECTRICAL BOX (PULL PIT). THOSE INDICATED ON DRAWING ARE VISIBLE. THOSE WHICH ARE NOT VISIBLE (OVER GROWN) ARE TO BE LOCATED. CABLE APPARATUS WITHIN PULL PIT TO BE REMOVED AND UNDERGROUND CABLES TO BE CUTOFF AND ABANDONED PRIOR TO REMOVAL OF PULL PIT. VOID REMAINING FROM REMOVAL OF PULL PIT TO BE FILLED WITH TOPSOIL.
3. POWER/CONTROL IS LOCATED IN UTILITY ROOM IN LOWER LEVEL OF TERMINAL.
4. BEACON LOCATED ON TOP OF TERMINAL TO REMAIN.
5. EXISTING WIND CONE TO BE RELOCATED AND LIGHT FIXTURE UPGRADED TO LED.

ET = ELECTRICAL BOX  
 GW = GUY WIRE  
 PP = POWER POLE  
 LE = LIGHT EXISTING

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1	21-04-27	FOR REQUEST FOR PROPOSAL REVISED
ISSUE	YY-MM-DD	REVISION

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 Signature *Gerald Papworth*  
 Date **APR 27, 2021**  
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TOWN OF DRUMHELLER

MUNICIPAL AIRPORT LIGHTING  
 ELECTRICAL  
 OVERALL SITE PLAN EXISTING

DESIGNED	G.B.P.	JOB	2450-048-00
DRAWN	Y.F.S.	SCALE	1:5000
DATE	APRIL 2021	DRAWING	E1.0E



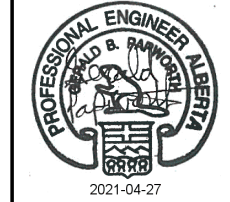
- NOTES:
1. CONDUIT NOT SHOWN.
  2. NEW LIGHTS, WIND CONE C/W LIGHTING AND LIGHTING CONTROL TO BE INSTALLED AS SHOWN. NEW CONDUIT AND WIRING TO BE INSTALLED FOR ALL LIGHTS. LIGHT BASE AND CONDUIT TO BE WATER PROOF WITH IMMERSION TO DEPTH OF BURIAL.
  3. DISTURBED GROUND TO BE RESTORED TO ORIGINAL STATE.
  4. GROUND WATER TABLE IS TYPICALLY LESS THAN 300mm BELOW GRADE AROUND APRON, TAXIWAY AND NORTH END OF RUNWAY. GROUND WATER TABLE AROUND SOUTH END OF RUNWAY WAS NOT OBSERVED BUT SHOULD BE EXPECTED TO BE SIMILAR.
  5. OWNER WILL PROVIDE SURVEY FOR LOCATIONS OF NEW LIGHTS.

- LEGEND
- ⊗<sub>C</sub> RUNWAY LED EDGE LIGHT (CLEAR) C/W PULL PIT
  - ⊗<sub>B</sub> TAXIWAY LED EDGE LIGHT (BLUE) C/W PULL PIT
  - ⊗<sub>Y</sub> APRON LED EXIT LIGHT (YELLOW) C/W PULL PIT
  - ⊗<sub>RG</sub> THRESHOLD LED LIGHT (RED/GREEN) C/W PULL PIT
  - ⊙<sub>AR</sub> ARCAL UNIT
  - ⊙<sub>CC</sub> CONSTANT CURRENT REGULATOR
  - ⊙<sub>WC</sub> WIND CONE

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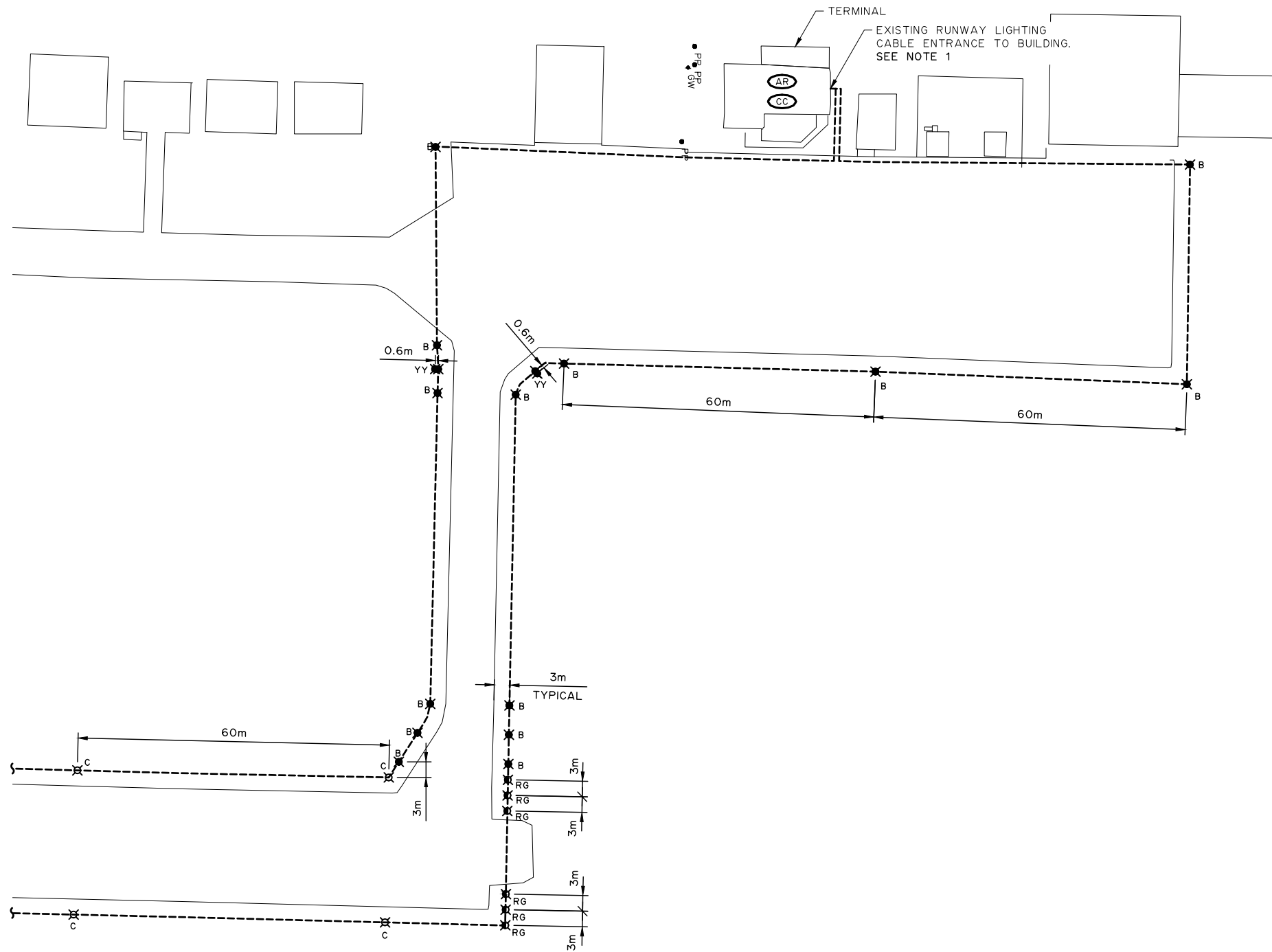
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TOWN OF DRUMHELLER

MUNICIPAL AIRPORT LIGHTING  
ELECTRICAL  
OVERALL SITE PLAN

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DATE	APRIL 2021	DRAWING	E1.0



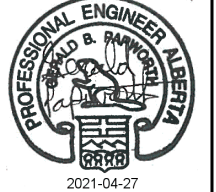
NOTES:  
1. REPLACE BROKEN CONDUIT.

- LEGEND
- ⊗<sub>C</sub> RUNWAY LED EDGE LIGHT (CLEAR) C/W PULL PIT
  - ⊗<sub>B</sub> TAXIWAY LED EDGE LIGHT (BLUE) C/W PULL PIT
  - ⊗<sub>Y</sub> APRON LED EXIT LIGHT (YELLOW) C/W PULL PIT
  - ⊗<sub>RG</sub> THRESHOLD LED LIGHT (RED/GREEN) C/W PULL PIT
  - ⊙<sub>AR</sub> ARCAL UNIT
  - ⊙<sub>CC</sub> CONSTANT CURRENT REGULATOR
  - ⊙<sub>WC</sub> WIND CONE

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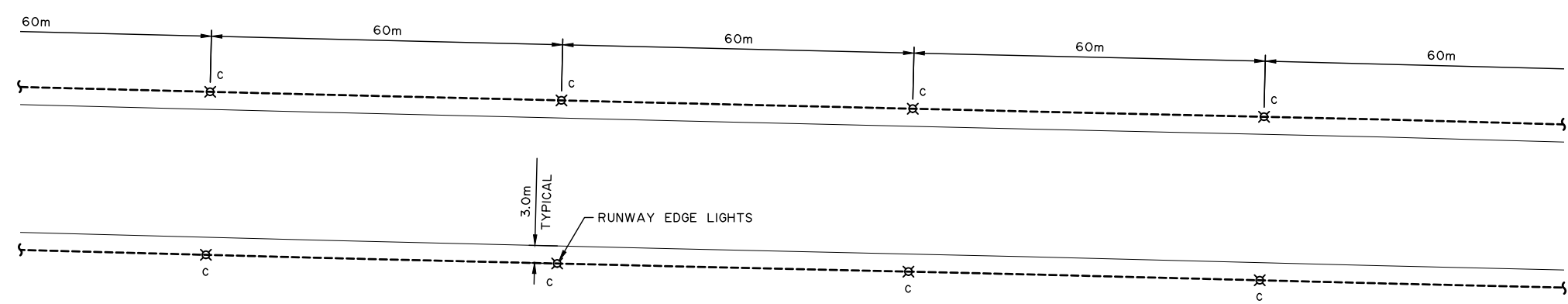
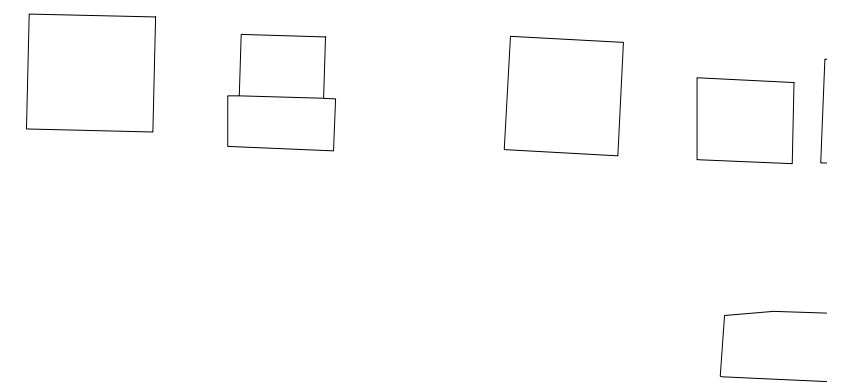


TOWN OF DRUMHELLER

MUNICIPAL AIRPORT LIGHTING  
ELECTRICAL  
SITE PLAN 1

DESIGNED	G.B.P.	JOB	2450-048-00
DRAWN	Y.F.S.	SCALE	1:1000
DATE	APRIL 2021	DRAWING	E11

1  
E1.0



2  
E1.0

NOTES:

LEGEND

- ⊗<sub>C</sub> RUNWAY LED EDGE LIGHT (CLEAR) C/W PULL PIT
- ⊗<sub>B</sub> TAXIWAY LED EDGE LIGHT (BLUE) C/W PULL PIT
- ⊗<sub>Y</sub> APRON LED EXIT LIGHT (YELLOW) C/W PULL PIT
- ⊗<sub>R<sub>G</sub></sub> THRESHOLD LED LIGHT (RED/GREEN) C/W PULL PIT
  
- (AR) ARCAL UNIT
- (CC) CONSTANT CURRENT REGULATOR
- (WC) WIND CONE

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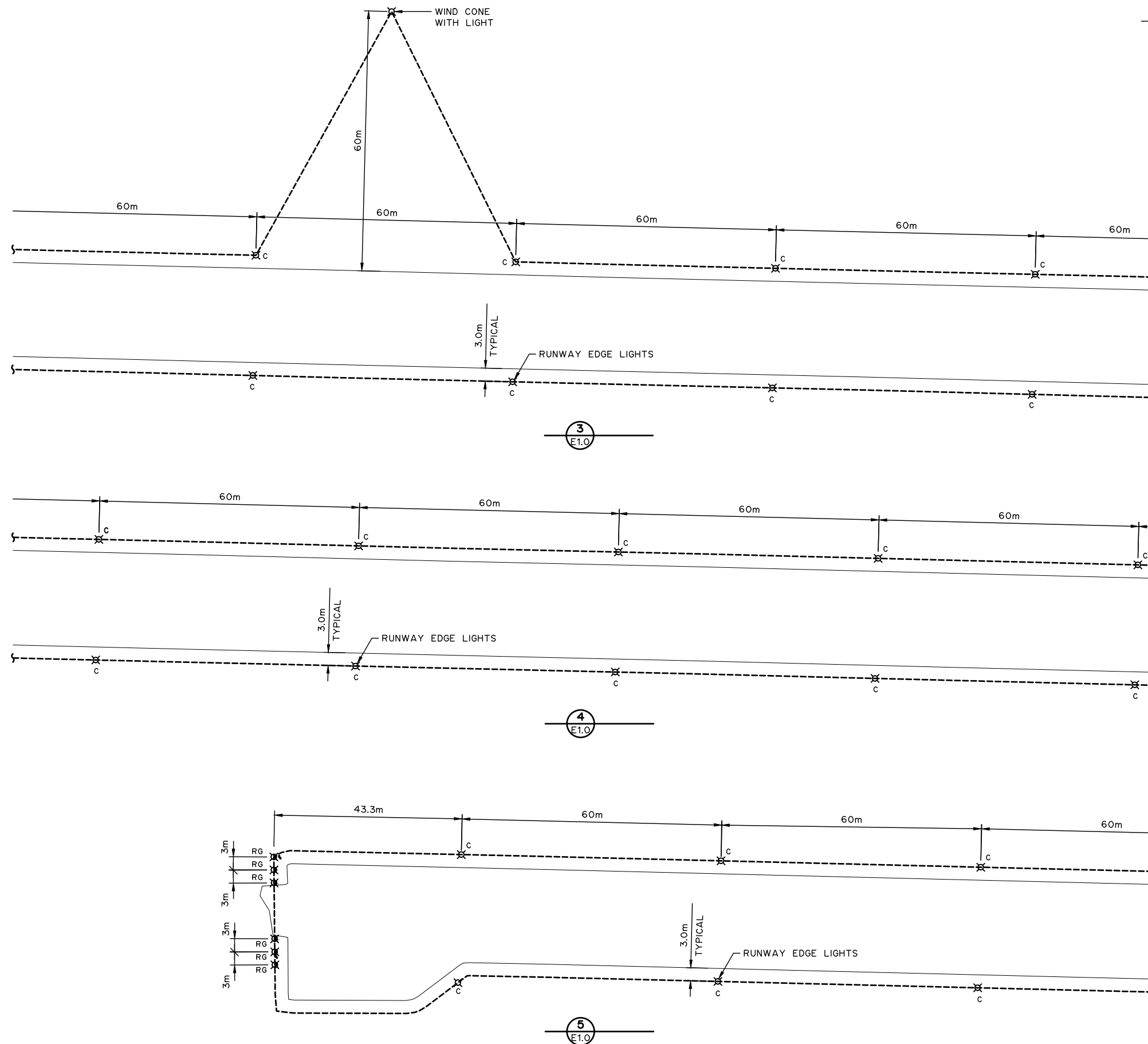
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TOWN OF DRUMHELLER

MUNICIPAL AIRPORT LIGHTING  
ELECTRICAL  
SITE PLAN 2

DESIGNED	G.B.P.	JOB	2450-048-00
DRAWN	Y.F.S.	SCALE	1:1000
DATE	APRIL 2021	DRAWING	E1.2



NOTES:

LEGEND

- ⊗<sub>C</sub> RUNWAY LED EDGE LIGHT (CLEAR) C/W PULL PIT
- ⊗<sub>B</sub> TAXIWAY LED EDGE LIGHT (BLUE) C/W PULL PIT
- ⊗<sub>Y</sub> APRON LED EXIT LIGHT (YELLOW) C/W PULL PIT
- ⊗<sub>RG</sub> THRESHOLD LED LIGHT (RED/GREEN) C/W PULL PIT

- ⊗<sub>AR</sub> ARCAL UNIT
- ⊗<sub>CC</sub> CONSTANT CURRENT REGULATOR
- ⊗<sub>WC</sub> WIND CONE

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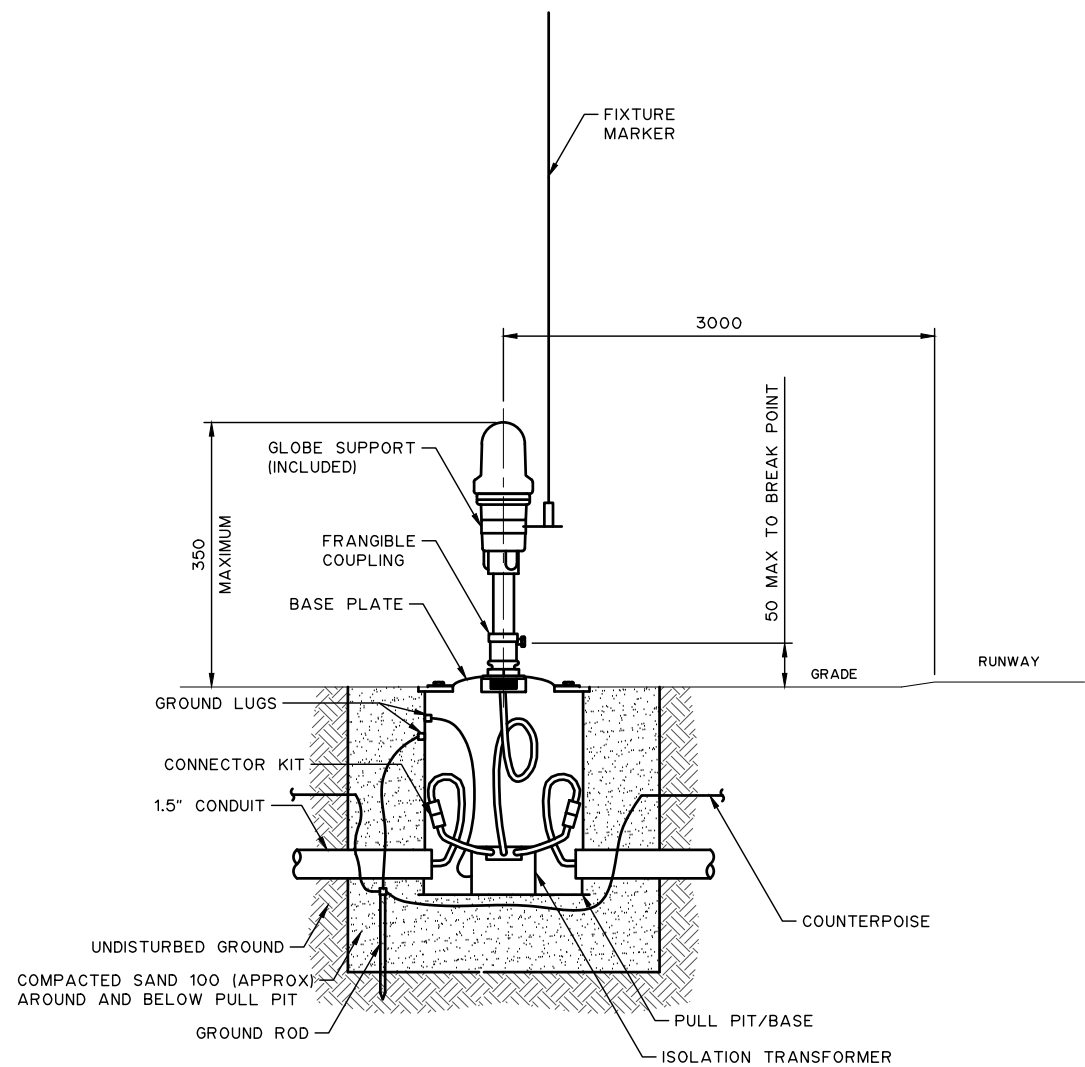
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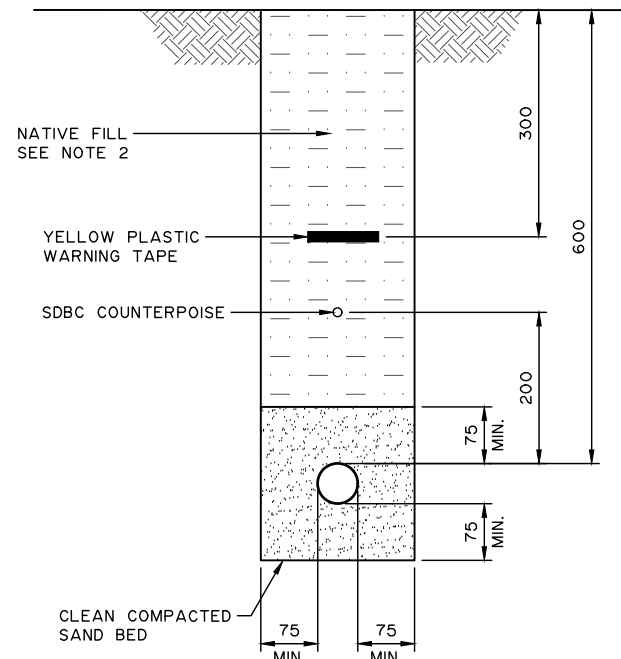
TOWN OF DRUMHELLER

MUNICIPAL AIRPORT LIGHTING  
ELECTRICAL  
SITE PLAN 3

DESIGNED	G.B.P.	JOB	2450-048-00
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**ELEVATED LIGHT DETAIL**  
SEE NOTE 3



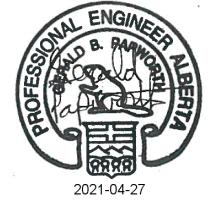
**UNDERGROUND CONDUIT DETAIL**

- NOTES:
1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.
  2. THE NATIVE FILL TO BE COMPACTED TO 98% STANDARD PROCTOR DENSITY.
  3. - SEAL CONDUITS WITH DUCT SEAL AT EACH BASE.
    - INSTALLATION SHALL PREVENT THE INGRESS OF MOISTURE AND ALSO BE SUITABLE FOR IMMERSION IN WATER INDEFINITELY IN THE EVENT WATER DOES ENTER THE ENCLOSURE.
    - FIXTURE MARKER MOUNTING ON BASE TO BE ON SIDE OPPOSITE THE RUNWAY/TAXIWAY.
    - LEAVE 75mm CONDUIT INSIDE BASE AT THE END OF EACH LONG RUN TO ALLOW FOR CONDUIT THERMAL EXPANSION/CONTRACTION.

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TOWN OF DRUMHELLER

MUNICIPAL AIRPORT LIGHTING  
ELECTRICAL  
MISCELLANEOUS DETAILS

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LIGHTING				
SYMBOL	ITEM	QTY	SPARE	TOTAL
⊙C	RUNWAY LED EDGE LIGHT CLEAR EATON CROUSE HINDS 312M-AP1-WM-2-14-0 OR EQUIV.	36	4	40
⊙B	TAXIWAY EDGE LIGHT BLUE EATON CROUSE HINDS 861T-AP1-BC-2-14-0 OR EQUIV.	14	2	16
⊙Y	APRON EXIT LIGHT YELLOW EATON CROUSE HINDS 312M-AP1-YM-2-14-0 OR EQUIV.	4	1	5
⊙RG	RUNWAY THRESHOLD/END LIGHT RED/GREEN EATON CROUSE HINDS 312E-AP1-GR-2-14-0 OR EQUIV.	12	2	14
N/A	PULL PIT/BASE L867 CLASS 1A LIGHT BASE GALVANIZED, 300 DIAMETER, 600 HEIGHT, 41# (1.5") FLEX GROMMET CONDUIT CONNECTIONS, INTERNAL AND EXTERNAL GROUND STRAPS. JAQUITH INDUSTRIES AC21246Q200301 OR EQUIV. SEE NOTE 1	67	2	69
N/A	BASE PLATE 305#, 53# NPT TAP, PAINTED STEEL, NEOPRENE GASKET, JAQUITH INDUSTRIES AP1932 OR EQUIV.	66	2	68
N/A	FIXTURE MARKER: HIGH GRADE POLYURETHANE TUBE, 36" LENGTH, SPRING BASE, RUST RESISTANT MOUNTING BRACKET ATTACHED TO LIGHT FIXTURE, REPLACEABLE REFLECTIVE SLEEVE. EATON CROUSE HINDS RELM MODEL 1200-36 OR EQUIV.	67	2	69
N/A	AIRPORT SERIES LIGHTING CABLE- (ASLC) 1C, COPPER, 8 AWG, 5KV	AS REQUIRED- USE FOR ALL NEW EDGE LIGHTING		
N/A	COUNTERPOISE- SOFT-DRAWN BARE COPPER, 8 AWG	AS REQUIRED- USE ABOVE ALL NEW ASLC		
N/A	CONDUIT FOR ASLC - 41# (1.5") POLY TUBE (HDPE)	AS REQUIRED- USE WITH ALL NEW UNDERGROUND ASLC		
N/A	GROUND ROD- 19# X 3000, COPPER CLAD, FULLY DRIVEN C/W THERMITE WELD OR CRIMP TYPE CONNECTOR TO COUNTERPOISE	AS REQUIRED- SPACING BETWEEN GROUND RODS MEASURED ALONG COUNTERPOISE NOT TO EXCEED 150M		

OTHER		
	ITEM	QTY
⊙AR	ARCAL CONTROL UNIT, TYPE K, C/W REMOTE HEAVY DUTY ANTENNA AND ANTENNA MOUNTING HARDWARE, ADB SAFEGATE RCE SERIES OR EQUIV. ①	1
⊙CC	CONSTANT CURRENT REGULATOR 7.5KW, 240VAC INPUT	1
⊙WC	WIND CONE: RELOCATE EXISTING. UPGRADE LIGHT FIXTURE TO LED. SEE NOTE 2	1

**BILL OF MATERIALS**

**SPECIFICATIONS:**

- LIGHT SYSTEM TO BE IN ACCORDANCE WITH THE LATEST EDITION OF TRANSPORT CANADA STANDARD TP312.
- LIGHT SYSTEM CONTROL TO INCLUDE ARCAL, PHOTOCELL, AND MANUAL. TYPE OF CONTROL TO BE SELECTABLE VIA SELECTOR SWITCH. SWITCH TO INCLUDE AN OFF POSITION.
- LIGHTS TO BE ELEVATED MEDIUM INTENSITY LED. LIGHTING SYSTEM TO HAVE INTENSITY VARIABILITY WITH A MINIMUM OF THREE STEPS (10%, 30%, 100%).
- LIGHT BODY AND SUPPORT TO BE CORROSION RESISTANT.
- LIGHT INSTALLATION TO HAVE NO EXPOSED WIRING ABOVE OR BELOW GRADE. BELOW GRADE WIRING TO BE IN CONDUIT. CONDUIT TO BE HDPE. ABOVE GRADE CONDUIT TO TRANSITION TO SCH40 PVC. CONDUIT SYSTEM TO PROHIBIT THE INGRESS OF MOISTURE AND DEBRIS.
- UNDERGROUND CROSSINGS OF RUNWAY AND TAXIWAY TO BE DIRECTIONALLY BORED.
- UNDERGROUND CONDUIT RUNS GREATER THAN 100 METERS IN LENGTH ARE TO HAVE UNDERGROUND PULLBOX NEAR MIDDLE OF RUN. PULLBOX TO BE SUITABLE FOR VEHICLE TRAFFIC. CONTRACTOR TO PROVIDE SHOP DRAWING FOR APPROVAL.
- RUNWAY EDGE LIGHTS AND TAXIWAY EDGE LIGHTS TO HAVE A MAXIMUM SEPARATION OF 60 METERS +/- 1 METER.
- RUNWAY EDGE LIGHTS TO BE PLACED ALONG THE FULL LENGTH OF THE RUNWAY, IN TWO (2) PARALLEL ROWS EQUIDISTANT FROM THE CENTERLINE. THE LIGHTS ON OPPOSITE SIDES OF THE RUNWAY AXIS ARE ON LINES AT RIGHT ANGLES TO THAT AXIS.
- RUNWAY END LIGHTS TO BE PLACED ON A LINE AT RIGHT ANGLES TO THE RUNWAY AXIS AS NEAR TO THE END OF THE RUNWAY AS POSSIBLE.
- THE GROUPS OF RUNWAY END LIGHTING ARE TO BE SYMMETRICALLY DISPOSED ABOUT THE RUNWAY CENTERLINE WITH THE OUTERMOST RUNWAY END LIGHTS POSITIONED TO ALIGN WITH THE RUNWAY EDGE LIGHTS AND THE REMAINDER SPACED AT INTERVALS OF 3 METERS +/- 0.1 METER.
- SITE POWER SUPPLY AVAILABLE IS 120/240VAC SINGLE PHASE 60HZ
- QUANTITY OF MATERIAL/EQUIPMENT TO INCLUDE SPARES OF EACH TYPE OF LIGHT AND MOUNTING HARDWARE AS INDICATED IN THE BILL OF MATERIALS. TURN OVER SPARE EQUIPMENT TO OWNER.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE TRAINING TO OPERATORS ON ALL NEW EQUIPMENT.
- CONTRACTOR IS TO COORDINATE DECOMMISSIONING OF EXISTING AIRPORT LIGHTS WITH AIRPORT OPERATOR TO MINIMIZE DOWNTIME OF AIRPORT USAGE.
- NEW POWER AND CONTROLS TO BE INSTALLED IN TERMINAL BUILDING UTILITY ROOM.
- ARCAL SYSTEM TO BE COMMISSIONED BY A CERTIFIED TECHNICIAN WITH A MINIMUM OF 5 YEARS AERONAUTICAL RADIO COMMUNICATIONS EXPERIENCE.
- AIRPORT SHALL REMAIN ACTIVE THROUGHOUT CONSTRUCTION. COORDINATE ALL WORK WITH THE AIRPORT MANAGER. ALL VEHICLES AND PEDESTRIANS ON OR NEAR AIRPORT MOVEMENT AREAS SHALL OBTAIN PRIOR AUTHORIZATION FROM THE AIRPORT MANAGER AND ALL AIRSIDE WORK SHALL CONFORM TO ALL AIRPORT REGULATIONS.
- RUNWAY LIGHTING SHALL BE FULLY FUNCTIONAL EACH DAY FROM DUSK TO DAWN.
- ALL LIGHTING FIXTURES TO BE PROVIDED WITH INDIVIDUAL SERIES ISOLATING TRANSFORMER C/W PRIMARY AND SECONDARY EXTENSION CABLES, CONNECTOR KITS, ETC AS REQUIRED. SUPPLY AND INSTALL NEW 5KV 8 AWG ASLC CABLE IN CONDUIT AND 8 AWG COUNTERPOISE FOR COMPLETE MEDIUM INTENSITY LIGHTING SYSTEM.
- MINOR OR INCIDENTAL ITEMS NOT SHOWN IN BILL OF MATERIALS. PROVIDE ALL MATERIALS AND LABOUR FOR A COMPLETE AND OPERATIONAL SYSTEM.
- TEST SYSTEM IN PRESENCE OF OWNER'S REPRESENTATIVE. REPAIR AND/OR REMEDY ALL DEFICIENCIES AND OBTAIN ACCEPTANCE OF AIRPORT MANAGER PRIOR TO USE BY AIRCRAFT.

**NOTES:**

- PART NUMBER PROVIDED HAS TWO CONDUIT HUBS 180 DEGREES APART. USE ALTERNATE HUB QUANTITY/POSITIONS TO BEST SUIT LOCATION. PULL PIT USED FOR WIND CONE TO HAVE BLANK COVER.
- WIND CONE TO BE INSTALLED ON MANUFACTURER RECOMMENDED BASE.

**KEY NOTES:**

- REPLACE EXISTING ANTENNA FOR ARCAL CONTROL UNIT ON EXISTING MAST SHARED WITH BEACON.

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**TOWN OF DRUMHELLER**

**MUNICIPAL AIRPORT LIGHTING  
ELECTRICAL  
BILL OF MATERIALS AND  
SPECIFICATIONS**

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DRAWN	Y.F.S.	SCALE	NTS
DATE	APRIL 2021	DRAWING	E15