

MASTER MUNICIPAL CONSTRUCTION DOCUMENTS
JANUARY – 1996 (REV 2000)
UNIT PRICE CONTRACT

CITY OF DAWSON CREEK
106TH AVENUE & 8TH STREET SANITARY RECONSTRUCTION





2011-27 – INVITATION TO TENDER

106TH AVENUE & 8TH STREET SANITARY RECONSTRUCTION

The City of Dawson Creek is inviting tenders for replacement of approximately 156 m of 250 mm diameter sanitary sewer main including 3 manholes and 8 services. This replacement includes 121 m of trenchless pipe bursting and restoration.

All documents are available through the City of Dawson Creek website at www.dawsoncreek.ca. The Proponent is solely responsible for ensuring any addenda are downloaded, reviewed, and included in their bid.

Inquiries regarding this Invitation to Tender may be directed to Mr. Devin Aaroe, Engineering Assistant II, at 250.784.3621, or via e-mail at daaroe@dawsoncreek.ca.

Proposals sealed in an opaque envelope, clearly marked with the supplier's name and the project name will be accepted up to **2:00 p.m. (local time), August 8, 2011** and will be received by:

Brenda Ginter, Director of Corporate Administration
City of Dawson Creek
10105 - 12A St.
P.O. Box 150
Dawson Creek, B.C. V1G 4G4

MASTER MUNICIPAL CONSTRUCTION DOCUMENTS

CONTENTS

The complete **Master Municipal Construction Documents** consist of the following parts:

1. **Project Specific Documents** (contained within this document and the Contract drawings)
 - Invitation to Tender
 - Instructions to Tenderers, Part I
 - Form of Tender
 - Appendix 1 -- Schedule of Quantities and Prices
 - Appendix 2 -- Preliminary Construction Schedule
 - Appendix 3 -- Experience of Superintendent
 - Appendix 4 -- Comparable Work Experience
 - Appendix 5 -- Subcontractors
 - Agreement
 - Schedule 1 -- Schedule of Contract Documents
 - Schedule 2 -- List of Drawings
 - Supplementary General Conditions
 - Supplementary Specifications
 - Contract Drawings

2. **Standard Complete Master Municipal Construction Documents – 2000** Not Contained Herein (available in the "MMCD 2000 – Volume II")
 - Instructions to Tender, Part II
 - General Conditions
 - Schedule 17.5.3 -- Letter Agreement with Referee
 - Flow Chart - Changes and Extra Work
 - Flow Chart - Disputes Resolution
 - Specifications
 - Standard Detail Drawings

Instructions to Tenderers - Part I

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

(TO BE READ WITH "INSTRUCTIONS TO TENDERERS - PART II"
CONTAINED IN THE EDITION OF THE PUBLICATION
"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS" SPECIFIED IN ARTICLE 2.2 BELOW)

CITY OF DAWSON CREEK 106TH AVENUE & 8TH STREET SANITARY RECONSTRUCTION

- Introduction**
- I.** These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:
- A.**
- Replacement of approximately 156m of 250mm diameter sanitary sewer main including 3 manholes and 8 services. This replacement includes 121m of trenchless pipe bursting and restoration.
- 1.2 Direct all inquiries regarding the *Contract*, to:
- City of Dawson Creek
10105 – 12A Street
Dawson Creek, BC V1G 3V7
- Attention: Devon Aaroe, Engineering Assistant II
- daaroe@dawsoncreek.ca
Phone: (250) 784-3621
Fax: (250) 782-3203
- Tender Documents**
- 2** The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled "Schedule of *Contract Documents*". Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled "List of *Contract Drawings*".
- 2.1
- 2.2 A portion of the *Contract Documents* are included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings". Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date*. All sections of this publication are by reference included in the *Contract Documents*.
- 2.3 Any additional information made available to tenderers prior to the *Tender Closing Time* by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly

included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

**Submission
of Tenders**

3
3.1

Tenders must be submitted in a sealed envelope, marked on the outside with the above *Contract* Title and Reference No., and must be received by the office of:

CITY OF DAWSON CREEK

on or before:

Tender Closing Time: 2:00:00 pm Local Time

Tender Closing Date: Monday, August 8th, 2011

At

Address:

CITY OF DAWSON CREEK

10105 -12A Street

Dawson Creek, BC V1G 3V7

Fax: (250) 782-3203

3.2

Late tenders will not be accepted or considered, and will be returned unopened.

**Additional
Instructions
to Tenderers**

4

4.1 Refer to Supplementary General Conditions

4.2 Refer to Supplementary Specifications

4.3 Tenderers must obtain their own copy of the correct edition of the MMCD, Volume II, which includes Instructions to Tenderers – Part II, General Conditions, Specifications and Standard Detail Drawings. The address is:

Support Services Unlimited

102 – 211 Columbia Street

Vancouver, BC V6A 2R5

Phone: (604) 681-0295

Fax: (604) 681-4545

4.4

CONTRACT AWARD: Bidders are advised that due to internal processes, funding for this project has not yet been approved by the Dawson Creek City Council. Award of this project is contingent upon allocation of funds for this project at a Council meeting on Monday, August 15, 2011. If funding is not approved, a *Contract* may not be awarded. In no event shall the *Owner* be liable for the tenderers cost of

preparing a tender.

- 4.5 Delete IT Part II 15.1.4 and 15.1.5 and replace with the following:

The *Owner* reserves the full right, in its sole discretion and according to its own judgement of its best interest to:

15.1.1 reject any or all tenders;

15.1.2 waive any defect or deficiency in a tender which does not materially affect the tender or the *Tender Price* relative to other tenders and accept that tender;

accept any tender, including an *Alternative Tender* which, in accordance with paragraph 6.3 of these Instructions to Tenderers – Part II, the *Owner* may accept.

- 4.7 Delete IT Part II 17.7 and replace with the following:

If the *Schedule of Quantities and Prices* includes any tender prices for *Optional Work*, as defined in GC 1.41, then *Tenderers* must complete all the unit prices for such *Optional Work*. Such tender prices shall not include any general overhead costs, or other costs, or profit, not directly related to the *Optional Work*. *Tenderers* are directed to GC 9.4.2.

UNIT PRICE CONTRACT

Form of Tender

**CITY OF DAWSON CREEK
106TH AVENUE & 8TH STREET SANITARY RECONSTRUCTION**

TO OWNER:

1 WE, THE UNDERSIGNED:

- 1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

(ADDENDA, IF ANY)

- 1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and
- 1.3 have complied with the Instructions to Tenderers; and

2 ACCORDINGLY WE HEREBY OFFER:

- 2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and
- 2.2 to achieve *Total Performance* of the *Work* on or before **September 30th, 2011**; and
- 2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *HST*.

3 WE CONFIRM:

- 3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

4 WE CONFIRM:

- 4.1 that the following appendices are attached to and form a part of this tender:
- 4.1.1 the appendices as required by paragraph 5.3 of the Instructions to Tenderers – Part II; and
 - 4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers – Part II.

5 WE AGREE:

- 5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 45 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:
- 5.1.1 within 15 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:
 - a) a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the *Contract Price*, covering the performance of the *Work* including the *Contractor's* obligations during the *Maintenance Period*, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*;
 - b) a *Construction Schedule*, as provided by GC 4.6.1;
 - c) a "clearance letter" indicating that the tenderer is in Worksafe BC compliance; and
 - d) a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place and;
 - 5.1.2 within 2 *Days* of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and
 - 5.1.3 sign the *Contract Documents* as required by GC 2.1.2.

6 WE AGREE:

- 6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:
 - 6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or
 - 6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*, then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:
 - 6.1.3 the face value of the *Bid Security*; and
 - 6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

7 OUR ADDRESS is as follows:

Phone: _____ - _____

Fax: _____ - _____

Attention: _____

This Tender is executed this ____ day of _____, 20____.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

**Form of Tender - Appendix 1
CITY OF DAWSON CREEK
106TH AVENUE & 8TH STREET SANITRAY RECONSTRUCTION**

**SCHEDULE OF QUANTITIES AND PRICES
(See paragraph 5.3.1 of the Instructions to Tenderers - Part II)**

(All prices and *Quotations* including the *Contract Price* shall include all *Taxes*, but shall not include *GST*. *GST* shall be shown separately.)

Item	MMCD Supp Spec	Brief Description See MMCD Master Municipal Specifications and Supplementary Specifications for Additional Details and Descriptions	Unit	Est. Qty.	Unit Price	Amount
REMOVALS & ADJUSTMENTS						
1		Remove and Dispose – Manholes	ea	3		
2		Remove and Dispose – VCT Sanitary pipe	lm	35		
SANITARY SEWER						
3		250 mm diameter PVC Sanitary Main (SDR – 35)	lm	36		
4		1050 mm diameter Concrete Manhole – base, lid, frame and cover	ea	3		
5		1050 mm diameter Concrete Riser	vm	11		
6		250 diameter HDPE installed using pipe bursting	lm	121		
7		Tie to existing	ea	2		
8		Service re-connections – open cut	ea	3		
9		Service reconnection – pipe burst	ea	5		
10		Video Inspection	ls			

SUBTOTAL: _____
 Contingency Allowance: \$20,000.00
Tender Price: _____
 12% HST: _____
TOTAL TENDER SUM: _____

UNIT PRICE CONTRACT

Form of Tender - Appendix 3

CITY OF DAWSON CREEK
106TH AVENUE & 8TH STREET SANITARY RECONSTRUCTION

EXPERIENCE OF SUPERINTENDENT
(See paragraph 5.3.3 of the Instructions to Tenderers - Part II)

Name: _____

Experience:

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

**Agreement
Between Owner and Contractor**

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

THIS AGREEMENT made in duplicate this ____ day of _____, 2011

**CITY OF DAWSON CREEK
106TH AVENUE & 8TH STREET SANITARY RECONSTRUCTION**

BETWEEN:

CITY OF DAWSON CREEK
10105 – 12A Street
Dawson Creek, BC V1G 3V7

(the "Owner")

AND:

(the "Contractor")

The *Owner* and the *Contractor* agree as follows:

ARTICLE 1 THE WORK - START/COMPLETION DATES

- 1.1 The *Contractor* will perform all *Work* and provide all labour, equipment and material and do all things strictly as required by the *Contract Documents*.
- 1.2 The *Contractor* will commence the *Work* in accordance with the *Notice to Proceed*. The *Contractor* will proceed with the *Work* diligently, will perform the *Work* generally in accordance with the *Construction Schedules* as required by the *Contract Documents* and will achieve *Total Performance* of the *Work* on or before **September 30th, 2011** subject to the provisions of the *Contract Documents* for adjustments to the *Contract Time*.

ARTICLE 2 CONTRACT DOCUMENTS

- 2.1 The "*Contract Documents*" consist of the documents listed or referred to in Schedule 1, entitled "*Schedule of Contract Documents*", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the *Contract Documents*. All of the *Contract Documents* shall constitute the entire *Contract* between the *Owner* and the *Contractor*.
- 2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the *Contract Documents*.

ARTICLE 3 CONTRACT PRICE

- 3.1 The price for the *Work* ("*Contract Price*") shall be the sum in Canadian dollars of the following:
- 3.1.1 the product of the actual quantities of the items of *Work* listed in the *Schedule of Quantities and Prices* which are incorporated into or made necessary by the *Work* and the unit prices listed in the *Schedule of Quantities and Prices*; plus
 - 3.1.2 all lump sums, if any, as listed in the *Schedule of Quantities and Prices*, for items relating to or incorporated into the *Work*; plus
 - 3.1.3 any adjustments, including any payments owing on account of *Changes* and agreed to *Extra Work*, approved in accordance with the provisions of the *Contract Documents*.
- 3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

ARTICLE 4 PAYMENT

- 4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.
- 4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the *Contract Documents* then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

ARTICLE 5 RIGHTS AND REMEDIES

- 5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
- 5.2 Except as specifically set out in the *Contract Documents*, no action or failure to act by the *Owner*, *Contract Administrator* or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

ARTICLE 6 NOTICES

6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by hand, or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

CITY OF DAWSON CREEK
10105 – 12A Street
Dawson Creek, BC V1G 3V7

Fax: (250) 782-3203
Attention: Brenda Ginter, Director of Corporate Administration
bginter@dawsoncreek.ca

The *Contractor*:

Fax: _____
Attention: _____

The *Contract Administrator*:

CITY OF DAWSON CREEK.
10105 – 12A Street
Dawson Creek, BC V1G 3V7

Fax: (250) 782-3203
Attention: Brenda Ginter, Director of Corporate Administration
bginter@dawsoncreek.ca

6.2 A communication or notice that is addressed as above shall be considered to have been received:

6.2.1 immediately upon delivery, if delivered by hand; or

6.2.2 immediately upon transmission if sent and received by fax; or

6.2.3 after 5 *Days* from date of posting if sent by registered mail.

6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.

- 6.4 The sender of a notice by fax assumes all risk that the fax will be received properly, and the provisions of paragraph 12.5 of the Instructions to Tenderers apply to the sender.

ARTICLE 7 GENERAL

- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall enure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Owner:

CITY OF DAWSON CREEK
(FULL LEGAL NAME OF OWNER)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

UNIT PRICE CONTRACT

Schedule 1

Schedule of *Contract Documents*

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS, SUPPLEMENTARY STANDARD DETAIL DRAWINGS)

The following is an exact and complete list of the *Contract Documents*, as referred to in Article 2.1 of the Agreement.

NOTE: The documents noted with "*" are contained in the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings", edition dated **JANUARY 1996 (REV. APRIL 2000)**. All sections of these publication are included in the *Contract Documents*.

- 1 Agreement, including all Schedules;
- 2 Supplementary General Conditions (if any);
- 3 General Conditions*;
- 4 Supplementary Specifications (if any);
- 5 Specifications*;
- 6 Supplementary Standard Detail Drawings (if any);
- 7 Standard Detail Drawings*;
- 8 Executed Form of Tender, including all Appendices;
- 9 Instructions To Tenderers - Part I;
- 10 Instructions to Tenderers - Part II*;
- 11 The following Addenda: _____

UNIT PRICE CONTRACT

Schedule 2

List of *Contract Drawings*

(Complete listing of all drawings, plans and sketches which are to form a part of this *Contract*, other than Standard Detail Drawings and Supplementary Standard Detail Drawings.)

TITLE	DRAWING NO.	DATE	REVISION DATE	REVISION NO.
106 Avenue & 8 Street Sani. Reconstruction Plan & Profile	S-233 1 of 2	18-07-2011		
106 Avenue & 8 Street Sani. Reconstruction Details	S-233 2 of 2	18-07-2011		

CITY OF DAWSON CREEK
106TH AVENUE & 8 STREET SANITARY RECONSTRUCTION

SUPPLEMENTARY GENERAL CONDITIONS

The following Supplementary General Conditions included in this section of the *Contract Documents* are modifications or additions to the General Conditions in the Master Municipal Construction Document Volume II.

Add SGC 1.65 to 1.69 as follows:

SGC 1.65 ***"Variance Threshold Percentage"*** means a variance of plus or minus 15% between the quantity of a unit price item actually constructed or provided by the time of *Total Performance* and the quantity shown on the tendered *Schedule of Quantities and Prices* for that item.

SGC 1.66 ***"Approved Equipment Rental Rate Guide"*** means the most current version of the Equipment Rental Rate Guide authorized by the Government of British Columbia, commonly known as the B.C. 'Blue Book'.

SGC 1.67 ***"Workers Compensation Act"*** means the Workers Compensation Act, R.S.B.C. 1996, c.492 as the same may be amended from time to time."

SGC 4.3.4 **PROTECTION OF WORK, PROPERTY AND THE PUBLIC**

Delete GC 4.3.4 and replace with the following: Before commencing any *Work* at the *Place of the Work*, the *Contractor* shall be responsible to locate in three dimensions all underground utilities and structures indicated on the *Contract Documents* as being at the *Place of the Work*. The *Contractor* shall also be responsible to consult with all utility corporations that provide electricity, communication, gas or other utility services in the area of the *Place of the Work*, to locate in three dimensions all underground utilities for which they have records. The *Contractor* shall also locate in three dimensions any other utilities or underground structures that are reasonably apparent in an inspection of the *Place of the Work*.

SGC 4.3.7 **PROTECTION OF WORK, PROPERTY AND THE PUBLIC**

Add SGC 4.3.7 as follows: The *Contractor* shall at the *Contractors* own cost, as part of the *Work*, provide drainage management and control during construction that will prevent the fouling or pollution of existing City infrastructure, flooding or adversely impact adjacent private or public property, or saturate and destabilize native moisture sensitive soils.

**CITY OF DAWSON CREEK
106TH AVENUE & 8 STREET SANITARY RECONSTRUCTION**

SUPPLEMENTARY GENERAL CONDITIONS

SGC 4.6 CONSTRUCTION SCHEDULE

Delete GC 4.6.1 and replace with the following: The *Contractor* shall prior to being issued the *Notice to Proceed* prepare and submit to the *Contract Administrator* a *Construction Schedule* (the "*Construction Schedule*") indicating the planned start and completion dates of the major activities of the *Work* for each project component. The *Construction Schedule* shall be in more detail than the *Preliminary Construction Schedule* and shall indicate completion of the *Work* in compliance with any specified *Milestone Dates*, including *Total Performance*.

Delete GC 4.6.2 and replace with the following: The *Contractor* shall provide, to the satisfaction of the *Contract Administrator*, a baseline *Construction Schedule* and the *Contractor* shall monitor the progress of the *Work* relative to the baseline *Construction Schedule* and shall, as necessary, provide an updated *Construction Schedule* so that it reflects any adjustments to the *Milestone Dates* or the *Contract Time* as provided by the *Contract Documents*.

Add SGC 4.6.7 as follows: No compensation will be awarded to the *Contractor* for additional costs he may incur due to mismanagement of the work site.

SGC 4.12.4 TESTS AND INSPECTIONS

Delete GC 4.12.4 and replace with the following: If the *Contractor* disagrees with the *Contract Administrator's* determination of the *Work* not meeting the Specifications based on the results of inspection or testing required in the *Contract Documents* or ordered by the *Contract Administrator*, the *Contractor* may elect to carry out such further inspection or testing which the *Contract Administrator* agrees is acceptable for the purpose of determining whether the *Work* complies with the requirements of the *Contract Documents*.

- a) If such further inspection or testing determines that the *Work* is not in accordance with the requirements of the *Contract Documents*, then the *Contractor* shall correct such *Work* and pay the costs of the inspection and testing including all costs of the correction and subsequent inspection and testing.
- b) If such further inspection or testing determines that the *Work* is in accordance with the requirements of the *Contract Documents*, then the *Owner* shall pay all costs of the inspection and testing.

CITY OF DAWSON CREEK
106TH AVENUE & 8 STREET SANITARY RECONSTRUCTION

SUPPLEMENTARY GENERAL CONDITIONS

SGC 4.12.7 TESTS AND INSPECTIONS

Remove underline under "Documents".

SGC 9.4.3 QUANTITY VARIATIONS

Delete GC 9.4.3 and replace with the following:

If the actual quantity of a unit price item varies by more than 15% from the estimated quantity for that unit price item as listed in the *Schedule of Quantities and Prices*, the *Contractor* shall not be entitled to negotiate a revised unit price

SGC 10.1.1 FORCE ACCOUNT COSTS

b) & c)

Delete GC 10.1.1 b) & c) and replace with the following:

- b) major equipment
 - i) *Contractor* Owned or Bare Rented – at the non-operated hourly rates as set out in the *Approved Equipment Rental Rate Guide* based on actual hours, in minimum increments of 0.5 hours, plus a 10% markup to cover all overhead costs and profit. If equipment is not listed in the *Approved Equipment Rental Rate Guide* then at a rate determined by the *Contract Administrator* based on local equipment rental rates; or
 - ii) Non-*Contractor* Owned and Operated - at the lower of the all-found rate in the ***Approved Equipment Rental Rate Guide*** for operated equipment, or the actual rental costs incurred by the *Contractor*, as evidenced by invoice, plus, in either case, a 10% markup to cover all overhead costs and profit;
 - iii) No separate rental for *Small Tools*;

- c) materials required by the *Work* or consumed in performing the *Work* by the *Contractor* shall be at the *Contractor's* actual cost, as evidenced by invoice, including all transportation, freight and haulage costs plus a markup of 10% on such actual cost to cover all overhead, handling, and profit;

**CITY OF DAWSON CREEK
106TH AVENUE & 8 STREET SANITARY RECONSTRUCTION**

SUPPLEMENTARY GENERAL CONDITIONS

SGC 13.2.2 DELAY BY *CONTRACTOR*

Add SGC 13.2.2 as follows:

Through the duration of construction there will likely be delays where the *Contractor* may not be able to work due to weather conditions, or site conditions resulting from the weather. These conditions are normal to Dawson Creek and the *Contractor* shall make the appropriate allowances in its project execution schedule to accommodate the impact of 'Abnormal Weather' conditions. Time extensions to the specified construction completion dates will only be considered when the *Contractor* clearly demonstrates that adverse weather conditions, beyond the normal for Dawson Creek have delayed the *Construction Schedule*.

SGC 13.8.1 LIQUIDATED DAMAGES FOR LATE COMPLETION

Delete GC 13.8.1 and replace with the following: If the *Contractor* fails to meet the *Milestone Date* set for *Total Performance* as set out in the *Form of Agreement*, as may be adjusted pursuant to the provisions of the *Contract Documents*, or the *Construction Schedule*, or the allowable construction duration for a project component, then the *Owner* may deduct from any monies owing to the *Contractor* for the *Work*:

- a) as a genuine pre-estimate of the *Owner's* increased costs for the *Contract Administrator* and the *Owner's* own staff caused by such delay an amount of \$1,500 per day or pro rata portion for each and every **Calendar Day** that;
 - i) actual *Total Performance* is achieved after the *Total Performance Milestone Date*; and
- b) all direct out-of-pocket costs, such as costs for safety, security, or equipment rental, reasonably incurred by the *Owner* as a direct result of such delay.

If the monies owing to the *Contractor* are less than the total amount owing by the *Contractor* to the *Owner* under (a) and (b) then any shortfall shall immediately, upon written notice from the *Owner*, and upon *Substantial Performance*, be due and owing by the *Contractor* to the *Owner*.

SGC 15.3.1 d) TERMINATION

Remove "warranty period" and substitute "maintenance period".

CITY OF DAWSON CREEK
106TH AVENUE & 8 STREET SANITARY RECONSTRUCTION

SUPPLEMENTARY GENERAL CONDITIONS

SGC 18.2.2 SUPPORTING DOCUMENTATION

Delete GC 18.2.2 and replace with the following: The *Contractor*, as a precondition to the issuance of the *Payment Certificate*, shall provide a sworn declaration in a form acceptable to the *Contract Administrator* that all amounts relating to the *Work*, due and owing as of the end of the month covered by the *Payment Certificate* to third parties including all *Subcontractors* and suppliers, have been paid.

SGC 18.3.1 MATERIALS AND PRODUCTS NOT INCORPORATED IN WORKS

Delete GC 18.3.1 and replace with the following: Except for items in the *Schedule of Quantities and Prices* which are identified as being "Supply Only" or items authorized under GC 10.1, payments shall not be made for materials or products purchased by the *Contractor* but not incorporated into the *Work* at the *Place of the Work*.

SGC 18.4 HOLDBACKS

Replace "Builders Lien Act" under all sub-paragraphs in GC 18 with "*Builders Lien Act*".

SGC 18.4.1 HOLDBACKS

Delete GC 18.4.1 and replace with the following: Builders Lien Holdback: The *Owner* shall hold back 10%, or other percentage as required by the *Builders Lien Act*, of any amounts due to the *Contractor* as a Builders Lien Holdback.

SGC 18.4.2 HOLDBACKS

Delete GC 18.4.2 and replace with the following: Defects and Deficiencies: In addition to other holdbacks as provided by the *Contract Documents*, when considering *Substantial Performance*, the *Owner* may hold back from payments otherwise due to the *Contractor* 200% of a reasonable estimate, as determined by the *Contract Administrator*, on account of deficient or defective *Work* already paid for. This holdback may be held, without interest, until all deficiencies or defects are remedied. The defect or deficiency amounts shall be listed separately on the *Payment Certificate*.

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SGC 18.4.5 HOLDBACKS

Delete GC 18.4.5 and replace with the following: The *Contractor* shall assist the *Owner* as the *Contract Administrator* may reasonably request to establish a holdback account pursuant to the *Builders Lien Act*, if required to be established under the *Builders Lien Act*, at a savings institution acceptable to the *Owner*, including preparing and completing any and all documents and forms as the savings institution may require. Any notice issued by the *Contractor* upon the *Owner's* failure to pay into the holdback account the amount the *Owner* is required to retain under the *Builders Lien Act* shall be given in writing to the *Contract Administrator*.

SGC 18.6.4 SUBSTANTIAL PERFORMANCE

Delete GC 18.6.4 and replace with the following: The *Contract Administrator* shall include the date of *Substantial Performance* in the Certificate of *Substantial Performance*.

SGC 18.6.5 SUBSTANTIAL PERFORMANCE

Delete GC 18.6.5 and replace with the following: The *Owner* shall pay any Builders Lien Holdback as required by the *Builders Lien Act*, or on such other date as required by law, but the *Owner* may hold back the amounts for any deficiencies or filed builders liens as provided in GC 18.4.2, GC 18.4.3, and 18.4.4.

SGC 18.6.6 SUBSTANTIAL PERFORMANCE

Delete GC 18.6.6 and replace with the following: The *Contract Administrator* shall be the payment certifier responsible for payment certification for the *Contractor* under the *Builders Lien Act*. The *Contractor* shall be the person responsible for payment certification for all subcontractors, including the *Subcontractors*, as required under the *Builders Lien Act*.

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SGC 18.9.3 WAIVER OF CLAIMS

Delete GC 18.9.3 and replace with the following: The issuance of the *Certificate of Substantial Performance* shall constitute a waiver and release by the *Owner* of all claims for set-off amounts, back charges, cost sharing for *Referees* fees, or other such amounts that are known or reasonably should be known to the *Owner* at the time of the issuance of such Certificate and that the *Owner* might claim relating to the *Contract*, except for claims made by the *Owner* in writing in accordance with the provisions of the *Contract Documents* and delivered to the *Contract Administrator* prior to the issuance of the *Certificate of Substantial Performance* and still unsettled. For certainty, nothing in this GC 18.9.3 shall be interpreted or construed to mean that the *Owner* in any way waives any warranty rights or in any way releases the *Contractor* from the *Contractor's* obligation to perform the *Work* in accordance with the *Contract Documents* and this GC 18.9.3 shall not be construed as any limitation on the *Owner's* rights to claim damages from the *Contractor* arising from any failure by the *Contractor* to have performed the *Work* as required by the *Contract Documents*.

SGC 21 WORKERS COMPENSATION REGULATIONS

Replace "Workers' Compensation Act" under all sub-paragraphs in GC 21 with "*Workers' Compensation Act*".

SGC 21.2.1 CONTRACTOR IS "PRINCIPAL CONTRACTOR"

Delete GC 21.2.1 and replace with the following: As part of the *Work* the *Contractor* shall, to the extent reasonably possible, perform on behalf of the *Owner* the obligations which the *Owner* must undertake as "Prime Contractor" by virtue of the *Workers Compensation Act* and Regulations, or other statutes.

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SGC 24.1.1 b) REQUIRED INSURANCE

Delete GC 24.1.1 b) and replace with the following:

b) Comprehensive General Bodily Injury and Property Damage Liability Insurance- Limits: Bodily Injury and Property Damage inclusive \$5,000,000

The insurance shall include *Contractor's* Contingent Liability, and Contractual Liability of sufficient scope to include the liability assumed by the *Contractor* under the terms of this *Contract*, and Completed Operations Liability. The policy shall include the *Owner* and the *Contract Administrator* as additional insureds with a cross liability clause. Any property damage deductible shall be for the account of the *Contractor* and shall not exceed \$2,500.00 for any one occurrence.

SGC 27 PUBLIC RELATIONS

Add SGC 27 Public Relations

Add SGC 27.1 as follows: The *Contractor* shall provide weekly written notices of planned construction activities and schedule to all residents, businesses and/or affected parties within the project area, and is required to advertise on the radio a "Notice of Closure or Disruption", as directed by the *Contract Administrator*.

Add SGC 27.2 as follows: The *Contractor* shall advise in writing all property owners affected by access and service disruptions and specific construction disturbance 48 hours prior to commencing the *Work*.

SGC 28 BUSINESS LICENSE

Add SGC 28 Business License

Add SGC 28.1 as follows: Any *Contractors* and *Sub-Contractors* engaged directly or indirectly by the City on this project shall obtain a City of Dawson Creek business license, a copy of which must be submitted to the *Contract Administrator* prior to issuance of the first *Payment Certificate*.

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SUPPLEMENTARY GENERAL CONDITIONS

SGC 29 PROJECT RECORD DRAWINGS

Add SGC 29 Project Record Drawings

Add SGC 29.1 as follows: At the time of *Total Performance* the *Contractor* is required to provide as-built information that meets MMCD Section 01721 as requested by the *Contract Administrator*. Should the *Contractor* fail to provide the as-built information, \$5,000 will be deducted from each section on the final *Payment Certificate*. The amount will be retained until as-built information meeting the above requirements is submitted and approved by the *Contract Administrator*, and the conditions of SGC 18.4.2 are met.

SGC 30 HOURS OF WORK

Add SGC 30 Hours of Work

Add SGC 30.1 as follows: Any *Contractor* and *Sub-Contractor* engaged directly or indirectly by the City on this project shall work only within the following hours of work:

Monday – Saturday

7am – 10 pm

Sunday and Holidays

Subject to approval by the City of Dawson Creek, Director of Infrastructure and Sustainable Development

END OF SUPPLEMENTARY GENERAL CONDITIONS

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SUPPLEMENTARY SPECIFICATIONS

The following Supplementary Specifications included in this section of the Contract Documents are modifications or additions to the Specifications in the Master Municipal Construction Document Volume II.

SS 1561 ENVIRONMENTAL PROTECTION

1.4 Site Clearing and Plant Protection

Add New Clauses 1.4.5 to 1.4.8 as follows:

- .5 Where trees are to be retained on site, protective barriers must be installed; as a minimum of 1.2 m high orange snow fence, with stakes around the existing grate perimeter.
- .6 Any excavation within the protection barrier to accommodate underground services, footings, etc. must be done by hand.
- .7 Trees inside protection zone should be cared for throughout the construction process. They must be watered sufficiently, particularly if the trees root system has been disturbed by excavation.
- .8 Root and branch pruning where necessary must be conducted in the presence of the *Contract Administrator*.

SS 1721 PROJECT RECORD DOCUMENTS

1.7 Recording Actual Site Conditions

Add New Clause 1.7.5 as follows:

- .5 The *Contractor* shall complete an as-built topographic survey, in UTM NAD 83 Zone 10 co-ordinates, of the *Work*, including horizontal and vertical locations of underground utilities and appurtenances and provide the digital information in a format acceptable to the *Contract Administrator*.

SS 2223 EXCAVATING, TRENCHING AND BACKFILLING

1.0 Measurement and Payment

Delete Clause 1.0.4 and replace with the following:

- .4 Payment for removal and disposal of all discussed pipes and manholes encountered during trench excavation shall be made on a unit base price as indicated in the *Schedule of Quantities and Unit Prices*. Payment shall include disposal to a suitable location approved by the *Contract Administrator* and shall cover all loading, transportation and tipping fees.

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SUPPLEMENTARY SPECIFICATIONS

3.3 Excavation

Delete Clause 3.3.9 and replace with the following:

- .9 The *Contractor* shall be responsible to find a suitable dumping location that is approved by the *Contract Administrator*. Price to include transportation, dumping and leveling of material. All excavated material is and will remain property of the *Owner*.

3.6 Surface Restoration

Delete Clause 3.6.3.2 and replace with the following:

- .2 Compact to a minimum density of 98% Standard Proctor Density.

Delete Clause 3.6.4.2 and replace with the following:

- .2 Compact to a minimum density of 95% Standard Proctor Density.

SS 2224 ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION

3.5 Compaction

Delete Clause 3.5.2 and replace with the following:

- .2 Compact to a minimum density of 98% Standard Proctor density.

SS 2234 GRANULAR SUBBASE

3.3 Compaction

Delete Clause 3.3.2 as follows:

- .2 Compact to density not less than 98% Standard Proctor density.

SS 2731 SANITARY SEWERS

1.6 Measurement and Payment

Delete Clause 1.6.3 and replace with the following:

- .3 Payment for service re-connections includes tee or wye to the mainline and all related fittings and components shown on *Contract Documents* and *Drawings*. Measurement for service re-connections will be for each complete service re-connected, with no regard to length of service pipe installed. Any bypass pumping necessary will be considered incidental to the *Work*.

3.12 Leakage Testing – General

Add Clause 3.12.4 as follows:

- .4 Conduct CCTV inspection for all sanitary sewer mains in accordance with Section 33 01 30.1. Submit a copy to the *Contract Administrator*.

CITY OF DAWSON CREEK
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SUPPLEMENTARY SPECIFICATIONS

Add New Section as follows:

SS 33 01 30.1 CCTV INSPECTION OF PIPELINES

1.0 GENERAL

- .1 Section 33 01 30.1 refers to those portion of the *Work* that are unique to the requirements for inspecting new and existing sanitary, storm and combined sewer pipe and pipe culverts by closed circuit television. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

1.1 Related Work

- | | | |
|----|---|----------------------|
| .1 | Traffic Control, Vehicle Access and Parking | <u>Section 01570</u> |
| .2 | Storm Sewers | <u>Section 02721</u> |
| .3 | Pipe Culverts | <u>Section 02723</u> |
| .4 | Manholes and Catchbasins | <u>Section 02725</u> |
| .5 | Sanitary Sewers | <u>Section 02731</u> |
| .6 | Sewage Forcemains | <u>Section 02732</u> |

1.2 References

- .1 The abbreviated standard specifications for testing, materials, fabrication and supply, referred to herein, are fully described in Section 02000 Reference .
- .2 Reference standards, specifications or publications.
- .1 Water Research Centre (WRC) publication MSCC Manual of Sewer Condition Classification, Third Edition, 1993 including Addendum – February 1996.

1.3 Submission of Certification

- .1 Submit copy of the CCTV operator's current NAAPI certification certificate to the *Contract Administrator* at least one week prior to the start of the CCTV inspection operations.
- .2 Submit copy of certificate for each CCTV operator working on the Contract.

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SUPPLEMENTARY SPECIFICATIONS

1.4 Work Regulations

- .1 Work to conform to all applicable regulations of WorkSafe BC (WSBC). Prior to being issued the *Notice to Proceed* the *Contractor* shall confirm training compliance in the following:
 - .1 Confined space rescue
 - .2 Confined space entry
 - .3 Ventilation
 - .4 Atmospheric monitoring
 - .5 Self-contained breathing apparatus
 - .6 Personal protective equipment
- .2 Provide written confirmation to the *Contract Administrator* that workers have knowledge of confined space entry practices and of equipment required for confined space entry.

1.5 Scheduling of Work

- .1 Schedule work to minimize interruptions to existing services.
- .2 Maintain existing flow during inspection survey unless flow reduction measures required per 3.11 of this Section.

1.6 Measurement for Payment

- .1 All units of measurement for payment will be as specified herein.
- .2 CCTV pipeline inspection will be measured as a lump sum. Payment will be made at the lump sum as indicated in the *Schedule of Quantities and Prices*.
- .3 Bypass pumping for each situation as described in the Form of Tender will be considered incidental to the completion of the Works.

2.0 PRODUCTS

2.1 Equipment

- .1 Survey Vehicle to contain a separate area for viewing, recording and controlling the CCTV operation.

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- .1 Viewing and control area to be insulated against noise and extremes in temperature. External and internal sources of light to be controlled to ensure the light does not impede the view of the monitor screen. Proper seating accommodation to be provided to enable one person in addition to the operator to clearly view the monitor screen.
 - .2 All equipment utilized within the pipeline to be stored outside the viewing, recording and control area.
 - .3 Vehicle to be equipped with a telephone for communication with the *Contract Administrator* for the duration of the *Work*.
 - .4 Electrical power for the system to be self contained. External power sources from public or private sources not permitted.
- .2 Survey Equipment to have sufficient cables to view the lengths of pipe as specified.
- .1 Survey unit to be a self-propelled crawler type with a means of transporting the CCTV camera in a stable condition through the pipeline.
 - .2 Each unit to carry sufficient numbers of guides and rollers such that, when surveying, all cables are supported away from pipe and manhole edges. All CCTV cable and lines used to measure the camera's location within the pipeline shall be maintained in a taut manner and set at right angles, where possible, to run through or over the measuring equipment.
 - .3 Each unit to interface with a data generator and appropriate software to record the alpha-numeric data associated with the pipeline condition and header reference location information.
- .3 Camera to be capable of producing high quality colour imagery and provide complete inspections and view of all laterals and deficiencies.
- .1 Camera to be "Pan & Tilt" and have the capability of panning the pipe at 360 degrees with tilt capability of 275 degrees.
 - .2 Live picture to be visible with no interference and capable of registering a minimum number of 400 lines of resolution at the periphery.
 - .3 Focus and iris adjustment to allow optimum picture quality to be achieved and to be remotely adjusted. The adjustment of focus and iris shall provide a focal range from 150mm in front of the camera's lens to infinity. The distance along the sewer in focus from the initial point of observation shall be a minimum of twice the vertical height of the sewer.

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.4 Camera to be waterproof with a self-contained lighting system capable of being remotely adjusted. Lights to provide an even distribution of light around the pipeline perimeter without the loss of contrast or flare out of picture shadowing.

.4 Digital video playback to be of MPED-2 standard

2.2 Materials

.1 Digital video data storage to be compatible with the *Owner's* Record System devices.

.2 Photographs to be colour, minimum image size 90mm x 70mm and stored as per clause 2.2.3.

.3 Digital report data storage to be CD-R.

3.0 EXECUTION

3.1 CCTV Inspection

.1 CCTV operator to be certified by NAAPI.

.2 Submit sample of inspection report, digital video on DVD-R and corresponding digital report on CD-R with the tender document for review. The review of these items will be part of the evaluation of the tender. Submission to satisfy all of the specification contained herein and the accepted report submission will be used as a benchmark for subsequent inspection report submissions.

.3 No inspection surveys to be carried out under this contract until an acceptable sample inspection report has been approved by the *Contract Administrator*.

.4 Flow in the pipeline not to exceed approximately 1/3 of the pipe diameter. Notify *Contract Administrator* of excessive flows, video using flow reduction method per 3.11 of this Section.

.5 Hemispherical head or fisheye lens type cameras are not permitted.

.6 Eliminate steaming and fogging encountered during the inspection survey by introducing forced air flow by means of fan.

.7 Camera lens to remain free of grease or other deleterious matter to ensure optimal clarity.

.8 Record all digital videos at MPEG-2 standard on DVD-R compatible with the *Owner's* Record System devices.

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- .9 Set zero chainage at face of every manhole or on entrance into pipe or start of pipe culvert.
- .10 Report and record on full length of pipeline from inside face to inside face between manhole or outlet end of pipes and from one end of pipe culvert to the other.
- .11 Note condition of pipe joints at manhole walls at the beginning and end of each pipeline.
- .12 Data generator to electronically generate and clearly display on the viewing monitor and video recording a record of data in alpha-numeric form containing the following minimum information prior to the start of each run:
 - .1 Manhole (from-to) / pipe length reference numbers.
 - .2 Pipeline dimensions
 - .3 Pipe material (ie. vitrified clay, concrete, PVC etc.)
 - .4 Type or use of pipe (ie. sanitary, storm or combined sewer)
 - .5 Date of survey (yyyy.mm.dd)
 - .6 Road name/location
 - .7 Direction of travel of survey equipment (U or D, Upstream or Downstream)
 - .8 Inspection (report) number
 - .9 Verbal description of all the above on screen information.
- .13 Data generator to continuously electronically generate and clearly display on the viewing monitor and video recording a record of data in alpha-numeric form containing the following minimum information during each run:
 - .1 Automatic update of the camera's metre reading position from adjusted zero.
 - .2 Manhole/pipe length reference numbers.
 - .3 Type or use of pipe (ie. sanitary, storm or combined sewer)
 - .4 The unique inspection/report number of the run.
 - .5 Display digital information such that it will not interfere with the video image on the screen.

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- .14 Stop camera at each defect, change of condition of pipe and service connection to record defect in accordance with WRc codes.
- .15 Add WRc code overlay to digital video at defects or connections in addition to continuously displayed data.
- .16 Pan each service connection (junction) such that the camera looks down the centerline of the service, pause for a minimum of five (5) seconds and note condition of the joint and/or pipe/service interface.
- .17 Immediately notify *Contract Administrator* of any blockage or obstruction that will not allow passage of survey equipment.
- .18 Prior to restarting survey await instruction from *Contract Administrator* on removal of obstruction. Restart inspection survey from the opposite end of pipeline or culvert when blockage or obstruction is encountered unless directed by *Contract Administrator*.

3.2 Recording Resolution

- .1 At the beginning of each DVD-R or when a substitute camera is introduced perform a recording resolution test with use of a Marconi or RETMA resolution chart.

3.3 Site Coding Sheets

- .1 Each pipeline length to be recorded according to the MSCC. Any variation from the manual to be noted in the survey report.
- .2 Standard coding form shown on page 14 of MSCC to be modified as follows:
 - .1 Line 2, field 8 (date) to be eight (8) characters in the format of yyyy.mm.dd (year, month, day).
 - .2 Condition detail number (video count) to be six (6) characters in the format of hh.mm.ss (hours, minutes, seconds).
 - .3 Note observations as to condition of service connections beyond mainline in remarks column using standard codes as per MSCC.

3.4 Camera Position

- .1 Position camera lens centrally in the pipeline with a positioning tolerance of 10% off the vertical centerline axis of the pipeline. For elliptical pipe the camera to be positioned 2/3 the height of the pipe measured from the invert.
- .2 Position camera lens looking along the longitudinal axis of pipeline except when viewing service connections or panning defects.

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3.5 Camera Travel Speed

- .1 Travelling speed of the camera in the pipeline to be as follows:
 - .1 0.1 m/s for pipeline of diameter less than 200 mm
 - .2 0.15 m/s for diameters 200 mm and larger but not exceeding 310 mm: and
 - .3 0.20 m/s for diameters exceeding 310 mm.

3.6 Camera Position Chainage Device

- .1 Use a chainage device which enables the cable length to be accurately measured to indicate the location of the camera.
 - .1 Chainage information to be transmitted electronically to control area and displayed on the monitor.
 - .2 Chainage device to be accurate to within 0.3 m up to the first 50 m and within 1% for lengths exceeding 50 m.
 - .3 Chainage tolerance to be checked at the start of *Contract* and a minimum of once every two weeks there after or every 5000 m of pipeline inspected, whichever is greater.
 - .4 Provide audit form showing dates and distances checked to meet both tolerance requirements. Chainage linear measurement to be checked by use of a cable calibration device or tape or electronic measurement between fixed points.

3.7 Photographs and/or Digital Images

- .1 Photograph all major defects as defined by condition codes: B, CC, CL, CM, CX, CXI, D, FC, FL, FM, H, IR, IG, JDL, JDM, JX, OB, OJL, RM, RT, and X
- .2 Overlay on photographs the following data in alpha-numeric form such that it will not interfere with the defect condition reported:
 - .1 Report/job number
 - .2 Metre reading position (chainage)
 - .3 Manhole/pipe length reference numbers (from-to)
 - .4 Photograph number
 - .5 WRC Condition defect code

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- .6 Date of survey (yyyy.mm.dd)
- .3 Capture photograph and alpha-numeric data as a digital image in a JPEG file format with report reference number.
- .4 Co-ordinate photographs with the written report by reference number. Do not insert the photographs into the report.

3.8 Inspection Reporting Hard Copies & Digital Format

- .1 Submit reports to *Contract Administrator* within ten (10) working days of completion of the field work on a continuous basis as the inspection area or pipeline types are finalized.
- .2 Present machine printed (hard copy) and computer generated data base reports according to the MSCC format.
 - .1 Each binder to commence with an index of all survey inspection reports contained within.
 - .2 Hard copy reports to be presented in tabular form in accordance with WRC MSCC.
 - .3 Reports to be presented in sections or drainage areas and/or by pipeline type or as specified in the Contract Documents.
 - .4 Computer database file to contain identical survey report information as the printed report exclusive of photographs.
 - .5 Digital information to be presented in format approved by *Contract Administrator*.
 - .6 Provide CD-R of digital photographs. Disk to be labeled with photo and contract numbers.
 - .7 Include *Owner* supplied, scale drawings showing highlighted inspected pipeline. Drawing to be attached to inspection condition report for each section of sewer pipeline surveyed.
- .3 Present report in 215 mm x 280 mm three ring (D type) binder. DVD-R and case will not be incorporated into the binder.
- .4 Attached computer disks in three hole plastic diskette sheet holder in back of binder.
- .5 Attach identical identification labels on the three ring binder, DVD-R and CD-R.
- .6 Provide additional copies of printed report, if required as specified in contract documents.

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- .7 All dimensions and chainages in the reports to be metric.
- .8 Each DVD-R to include a digital index of all inspection reports and observations with a digital link to the video survey.
- .9 Provide a copy or original of the digital video player software depending on what the software licensing requirements are. Attach the applicable licensing requirements if so required.

3.9 Flushing and Cleaning

- .1 Flush and Clean pipelines to Section 02731 – Sanitary Sewers, Section 3.11 – Cleaning and Flushing immediately prior to CCTV inspection survey, unless otherwise specified in the Contract Documents.

3.10 Root Cutting & Removal

- .1 Remove roots for condition codes RT and RM.

3.11 Flow Reduction

- .1 Reduce flow in pipeline to approximately 1/3 pipe diameter to allow CCTV inspection by combination of the following:
 - .2 Schedule work for off peak flow times.
 - .3 Plug or block flow at upstream manhole.
 - .1 Plug designed to either plug all flow or impede flow to the approximate 1/3 pipe diameter.
 - .2 Obtain *Contract Administrator's* approval prior to plugging or impeding any flow.
 - .3 Remove plug or blocks to slowly return flow to normal without surge or surcharging downstream pipeline.
 - .4 Temporary bypass pump flow around inspection section when required. Hoses and pumps must be of sufficient capacity to handle the peak flow. Hoses and couplings to be leak free. Flow to be pumped to downstream manhole on same system or run as inspection is to take place. Obtain *Contract Administrator's* approval prior to setting up temporary bypass pump system.

3.12 Coding Accuracy

- .1 Coding accuracy to be a function of the number of defects or construction features not recorded (omissions) and the correctness of the coding and classification recorded. Coding accuracy to satisfy the following requirements:

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- .1 header accuracy 95%
- .2 detail accuracy 85%
- .2 *Contractor* to implement a formal coding accuracy verification system at the onset of the *Work*. Coding accuracy to be verified by the *Contractor* on a random basis on a minimum of 10% of the inspection reports. *Contract Administrator* to be entitled to review the accuracy verification system and results and be present when the assessments are being conducted.
- .3 A minimum of two accuracy verification to be performed for each operator for each working week. Coding not satisfying the accuracy requirements to be re-coded and the accuracy of the inspection report immediately proceeding and following the non compliant inspection to be verified. Process to be repeated until the proceeding and subsequent inspection meet accuracy requirements.
- .4 An operator failing to meet the accuracy requirements on two occasions will not be permitted to code on the remainder of the project until they have successfully passed the NAAPI Level of Qualification for WRC Operators.

Add New Section as follows:

SS 33 05 23 TRENCHLESS SEWER PIPE BURSTING

1.0 GENERAL

- .1 Section 33 05 23 refers to those portions of the *Work* that are unique to the supply and installation of High Density Polyethylene (HDPE) gravity sewer main by-pipe bursting. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

1.1 Related Work

- .1 Traffic Control, Vehicle Access and Parking Section 01570
- .2 Environmental Protection Section 01561
- .3 Excavating, Trenching and Backfilling Section 02223
- .4 Sanitary Sewers Section 02731
- .5 Manholes and Catchbasins Section 02725
- .6 CCTV Inspection of Pipelines Section 33 01 30.1

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.7 Hot-Mix Asphalt Concrete Paving Section 02512

1.2 References

- .1 The abbreviated standard specifications for testing, materials, fabrication and supply, referred to herein, are fully described in Section 02000 – Reference.

1.3 Material Certification

- .1 All materials are to conform to this specification, to the latest edition of the appropriate specifications of the American Society for Testing and Materials (ASTM) or other standards expressly specified. All provisions in ASTM and the Plastic Pipe Institute Handbook or other specified standards pertaining to materials, workmanship, finish, inspection and rejection form part of these specifications as far as they are applicable and providing that they are not inconsistent with this specification. This specification takes precedence over the ASTM specifications in case of a discrepancy or conflict. Materials incorporated into the *Work* but not specifically covered in the specifications are to be obtained from the *Contract Administrator* prior to installation.
- .2 Material delivery and storage is to meet the requirements of the manufacturer. Materials damaged through transportation or handling are to be removed from the job site and replaced with new material at the *Contractor's* expense.

1.4 Submissions

- .1 The Contractor shall submit for approval the following information to the *Contract Administrator* for each manhole-to-manhole section prior to the *Notice to Proceed*:
- .1 Proposed sequence of construction.
 - .2 Location and dimensions of entry and exit pits including staging areas and pipe storage areas.
 - .3 Method of dewatering including disposal.
 - .4 Bypass pumping arrangement.
 - .5 Method of bursting (pneumatic or static) and description of equipment.
 - .6 Copy of certification for fusion equipment operator listing fusion training and training organization.
 - .7 HDPE pipe manufacturer's recommended fusion procedures, including point interfacial pressures and heater temperature.

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- .8 Maintenance records and pressure gauge calibration for fusion machine.
- .9 Maximum permissible tensile forces on HDPE.
- .10 Details of selected lubrication product.
- .11 Traffic management plan.
- .12 Safety procedure and certificate of satisfactory first aid training.
- .13 Sediment and lubrication control details.
- .14 Schedule of expected interruptions and reconnect time.
- .15 Method of construction and restoration of existing sewer to services and manhole connections.

1.5 Records

- .1 Provide post construction detailed record sketches, including location of pipes, bends, and appurtenances.
- .2 Provide all process information for each fusion joint and connection, including time, temperature, and pressure as an electronic file from an integral data logger, a printed file from an integral recording device or a manual recording satisfactory to the *Contract Administrator*.

1.5 Scheduling

- .1 Minimize interruptions to existing services.
- .2 Observe service interruption bylaws.
- .3 Observe noise restriction bylaws.

1.6 Measurement For Payment

- .1 Payment for pipe bursting will be at the unit price per lineal metre for mobilization, traffic control, public notification, entry and exit pit excavation, shoring, drainage, dewatering, and bypass pumping, disposal of water and surplus excavated material, installation, maintenance joining of HDPE pipe lengths, post installation testing, backfilling of excavations, surface restoration, site clean up and all materials and operation necessary to complete the installation as shown on the *Contract Drawings*.

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SUPPLEMENTARY SPECIFICATIONS

- .2 Payment for service reconnection shall be at the unit price bid for each completed service, covering all work and materials, including notification, excavation, dewatering, shoring, temporary connection, fusing service saddles or connection as specified, connection of services to the new main, backfilling, surface restoration, site cleanup and all other work and materials necessary to complete the reconnection of services as shown on the *Contract Drawings*.
- .3 Payment for connection of HDPE pipe to the manhole will be at the unit price bid for each individual connection, covering all labour, equipment and material necessary to complete the installation as shown on the *Contract Drawings*.
- .4 Payment for pre- and post-construction CCTV inspection will be made at a lump sum.
- .5 Miscellaneous fittings and appurtenances not specifically identified on the *Contract Drawings* or listed in the Form of Tender, are to be included under Section 1.7.4 of this Section.
- .6 Payment for manholes within the entry or exit pits that are removed and replaced shall be lump sum for each manhole installed per Section 02725 – Manholes and Catchbasins. This includes gravel base, concrete base, manhole risers, frame and cover, benching, installation of thrust ring or other approved restraints and all associated materials and equipment required to install the manhole. The *Contractor* shall make every effort to keep the existing manholes.

1.7 Easements

- .1 All work shall be confined to the limits of the easements as shown on the *Contract Drawings*.
- .2 *Contractor* to identify and obtain all required easement permits.

1.8 Inspection and Testing

- .1 Refer to General Conditions, Clause 4.12, Tests and Inspections.
- .2 *Contractor* to provide *Contract Administrator* 48 hours advance notice of butt fusion operation.
- .3 Make available installation and fusion procedures as per relevant standards and pipe manufacturers recommendations.
- .4 Manually record pipe installation time (HH:MM:SS) at beginning and every 5m of pipe until completion.

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SUPPLEMENTARY SPECIFICATIONS

2.0 PRODUCTS

2.1 Polyvinyl Chloride Pipe Mainline Smooth Profile

- .1 Polyvinyl chloride pipe up to 1200 mm in diameter, SDR 35. Pipe to have minimum pipe stiffness (F/Y) of 320 kPa at 5.0% deflection, ASTM D2412. Pipe to be manufactured to specification for the pipe size ranges as follows:

100 mm dia. - 375 mm dia. to ASTM D3034

450 mm dia. - 1200 mm dia. to ASTM F679

Pipes to be certified by Canadian Standards Association to standards for pipe size ranges below.

100 mm dia. - 1200 mm dia. to CSA B182.2

- .2 Joints: pipe to include integral bell and spigot ends with stiffened wall section and formed groove for a rubber gasket, gasket to ASTM F477, joints to conform to all requirements of ASTM D3212, elastomeric gaskets to conform to ASTM F477.
- .3 Normal pipe length joint to joint to be 4.0 m.
- .4 Maximum installed deflection not to exceed 7.5% of the base inside diameter.

2.2 Polyethylene (PE) Plastic Pipe

- .1 High Density Polyethylene Pipe.

HDPE pipe to conform to ASTM F714 and ASTM D3350 with a minimum Cell Classification of PE 345464C and PPI Rating of PE 3408.

- .2 All mainline DR and diameter pipes to be as indicated on accompanying drawings with an HDB of 1600 psi (11.03 MPa) at 73 °F as determined by ASTM D2837.
- .3 Remove and replace section of HDPE main with surface damage penetrating 10% or more of the pipe wall thickness.
- .4 ASTM D 3035-03 Standard Specifications for Polyethylene (PE) Plastic Pipe (DR-PR).
- .5 ASTM D3350 Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.
- .6 ASTM F714 Standard Specification for Polyethylene (PE) Plastic (SDR-PR) Based on Outside Diameter.

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SUPPLEMENTARY SPECIFICATIONS

- .7 ASTM F1055 – Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing.

2.3 HDPE Fittings

- .1 High Density Polyethylene and Associated Fittings.
- .1 Moulded fittings shall be manufactured in accordance with ASTM D3261.
- .2 Electrofusion fittings to be manufactured in accordance with ASTM F1055 and AWWA C906.

2.4 Miscellaneous

- .1 Gaskets to be of suitable neoprene compound cut to fit the joint.
- .2 Manhole/HDPE interface seals to be neoprene compound cut to fit tightly around pipe circumference to form watertight seal.
- .3 Flanged union required carbon steel backing rings as per manufacturers specifications.

2.5 Lubrication Fluids

- .1 Lubrication fluids may be used by the *Contractor* to aid in the installation of the HDPE sewer main. *Contractor* to determine lubricant type to suit assessed soil conditions.

2.6 Concrete

- .1 Concrete mixes and materials required for bedding cradles, encasement, and incidental uses: to Section 03300 – Cast-in-Place Concrete.
- .2 Concrete to be minimum 32 MPa, Type 50, Sulfate Resistant Concrete.

2.7 Granular Pipe Bedding and Surround Material

- .1 As shown on *Contract Drawings*.
- .2 Refer to Section 02226 - Aggregates and Granular Materials for material specifications.

2.8 Backfill Material

- .1 As shown on *Contract Drawings*.
- .2 Refer to Section 02226 - Aggregates and Granular Materials for material specifications.

CITY OF DAWSON CREEK
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SUPPLEMENTARY SPECIFICATIONS

3.0 EXECUTION

3.1 Excavation, Trenching and Backfilling

- .1 Do excavating, trenching and backfilling work to Section 02223 – Excavating, Trenching and Backfilling.

3.2 Pipe Bursting Tools

- .1 Pipe bursting shall use a pneumatic or static system capable of generating sufficient force to burst and compact the existing pipe sections into the surrounding soil as it progresses. All bursting tool selections shall be in strict compliance with the manufacturer's recommendations.

3.3 Winching and Hydraulic Systems

- .1 Pneumatic and static bursting tools shall be operated in accordance with the manufacturer's specified pipe size and upsizing force requirements. Any winch or hydraulic system shall provide a constant tensile force throughout the operation but in no case are the forces to exceed the limits of the pipe tensile strength.

3.4 Pre-Construction CCTV Inspection

- .1 Conduct pre-installation CCTV inspection in accordance with Section 33.01.30.1 – CCTV Inspection of Pipelines.

3.5 Bypass Pumping

- .1 Install temporary bypass pumping system around the designated sewer sections in accordance with plan approved by *Contract Administrator*.
- .2 Pumps and bypass lines shall be of adequate capacity to accommodate pre-determined flows.
- .3 Prevent spills to the environment or back-up of sewerage onto private property. In the event of a spill the *Contractor* shall undertake immediate clean-up and remediation.
- .4 The *Contractor* shall report any spills and back-ups to the *Contract Administrator* upon occurrence.

3.6 Pipe Storage and Preparation

- .1 Transport, handle and store HDPE pipe in accordance with the Plastic Pipe Institute's handbook and pipe manufacturer's recommendations.

3.7 Pit Excavations

- .1 Excavate in accordance with Section 0223 – Excavating, Trenching and Backfilling – 3.6.

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SUPPLEMENTARY SPECIFICATIONS

- .2 Restrict the excavation footprint to the minimum area possible in order to meet insertion requirement and complete the bursting work.
- .3 Insertion pit location to coincide with existing manholes in order to minimize impact of excavation. All pit location to adhere to pre-approved locations.
- .4 Pits to be of sufficient size to accommodate a minimum of 12 times the diameter of the HDPE pipe plus 2.5 times the depth of excavation for sloping in accordance with the Plastic Pipe Institute's manual section for "Pipeline Rehabilitation by Slip-lining with Polyethylene Pipe".
- .5 Excavate individual services to perform disconnections and reconnections in accordance with location identified on *Contract Drawings*.

3.8 Pipe Joining

- .1 Fuse pipe lengths together in accordance with ASTM D2657.
- .2 Maintain data log record of temperature, pressure and time of each individual butt fusion and time for electro fusion performed when joining HDPE pipe on pipe diameter over 100mm.
- .3 Fusion process to be carried out by personnel certified by an industry recognized training body and approved by *Contract Administrator*.
- .4 Allow reasonable time period between jointing procedures to permit physical inspection by *Contract Administrator*. All misaligned joints to be cut out and re-joined.
- .5 Pulling head to be attached to HDPE pipe in accordance with equipment and pipe manufacturer's recommendations. Attachment devices to be equally spaced to ensure even distribution of pulling and insertion forces.
- .6 Install mechanical connections as indicated in the *Contract Documents* and as per manufacture's installation instructions.

3.9 Pipe Installation

- .1 Install HDPE pipe diameter and DR as indicated on the *Contract Drawings*.
- .2 Provide sufficient guides and rollers at entry pits to minimize frictional forces during the insertion process.
- .3 Fused replacement pipe continuously over the entire length from manhole to manhole.
- .4 Confirm the existing grade of the sewer and identify associated misalignments, and inconsistency, at manholes and service connections.

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SUPPLEMENTARY SPECIFICATIONS

- .5 Report anticipated alignment problems to the *Contract Administrator*. Record any alignment deviations upon discovery.
- .6 Section of HDPE pipe with scrapes and gouges greater than 10% of the wall thickness either prior to insertion or post-installation to be removed and replaced.
- .7 Avoid potential conflicts with other buried underground utilities and where necessary expose conflicting utility to relieve adverse effects of soil pressure during bursting operation.
- .8 Make good any damage incurred to other utilities and reinstate any paved surfaces.
- .9 Allow minimum of 8-24 hour relaxation period as specified by the manufacturer or industry standards prior to connection or attaching any appurtenances or restraining the inserted HDPE pipe.

3.10 Service Reconnection

- .1 Reconnect all designated service connections as specified in the *Contract Documents* and in accordance with the *Contract Drawings*. All connections to be watertight and form a smooth transition from pipe to pipe free of protrusions or hydraulic restrictions. All connections to be installed in strict accordance to the manufacturer's recommendations.

3.11 Connection to Manholes

- .1 Connect HDPE pipe to manholes in accordance with the *Contract Drawings*. Pipe connection to be watertight and form a smooth transition from pipe to manhole channel free of protrusions or hydraulic restrictions. Pipe to manhole connections exhibiting sign of ground water infiltration to be repaired by *Contractor* by means of an approved urethane or acrylamide or cementations grout.
- .2 Disassemble and re-instate manholes in accordance with Section 02725 – Manholes and Catchbasins.

3.12 Pipe Surrounding

- .1 Upon completion of the bursting process and after the *Contract Administrator* has inspected all work in place, surround and cover exposed HDPE in excavation in accordance with Section 02223 – Excavating, Trenching and Backfilling.
- .2 Hand place bedding and initial backfill around HDPE pipe as Backfill requirements, including type of material and compaction requirements, as shown on *Contract Drawings*, including *Standard Detail Drawing GA*.

**CITY OF DAWSON CREEK
106TH AVENUE & 8 STREET SANITARY RECONSTRUCTION**

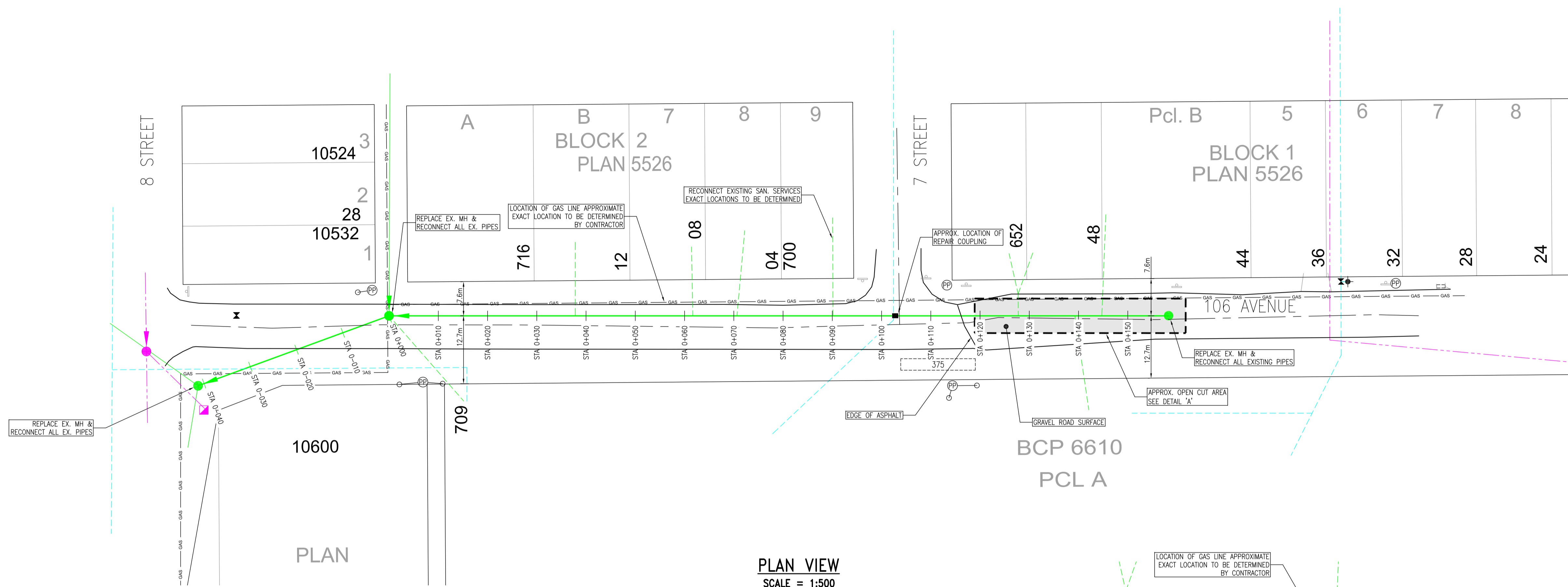
SUPPLEMENTARY SPECIFICATIONS

3.13 Flushing and CCTV Inspection

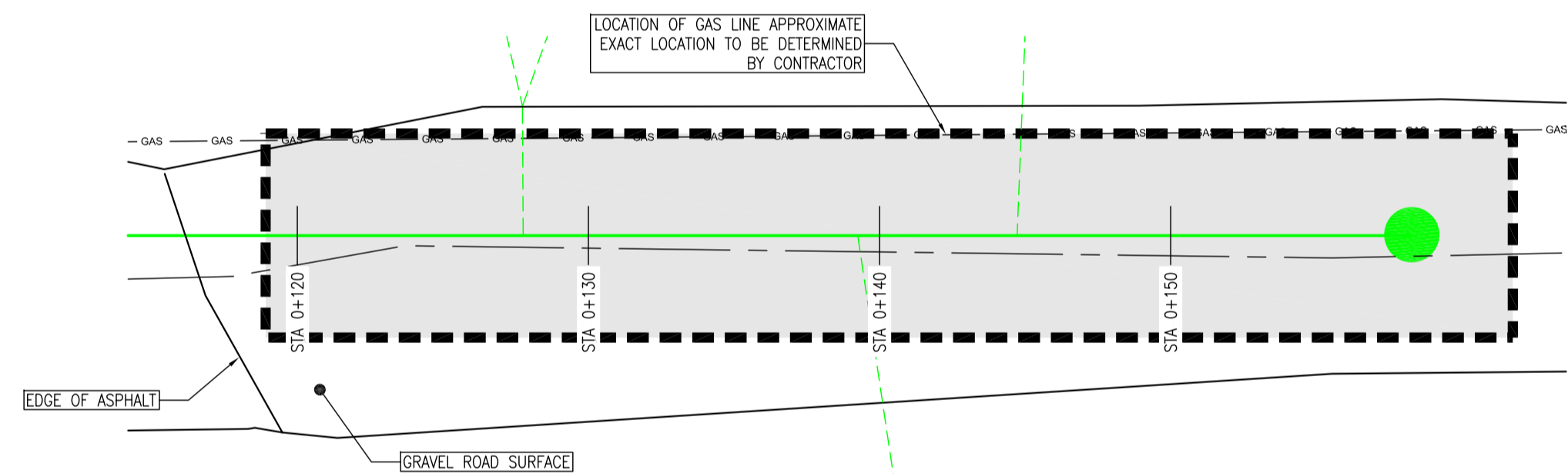
- .1 Flush and clean all HDPE pipe in accordance with Section 02731 – Sanitary Sewers.
- .2 Conduct CCTV inspection in accordance with Section 33 01 30.1 - CCTV Inspection of Sewers. Submit a copy of inspection report to *Contract Administrator*.

END OF SUPPLEMENTARY SPECIFICATIONS

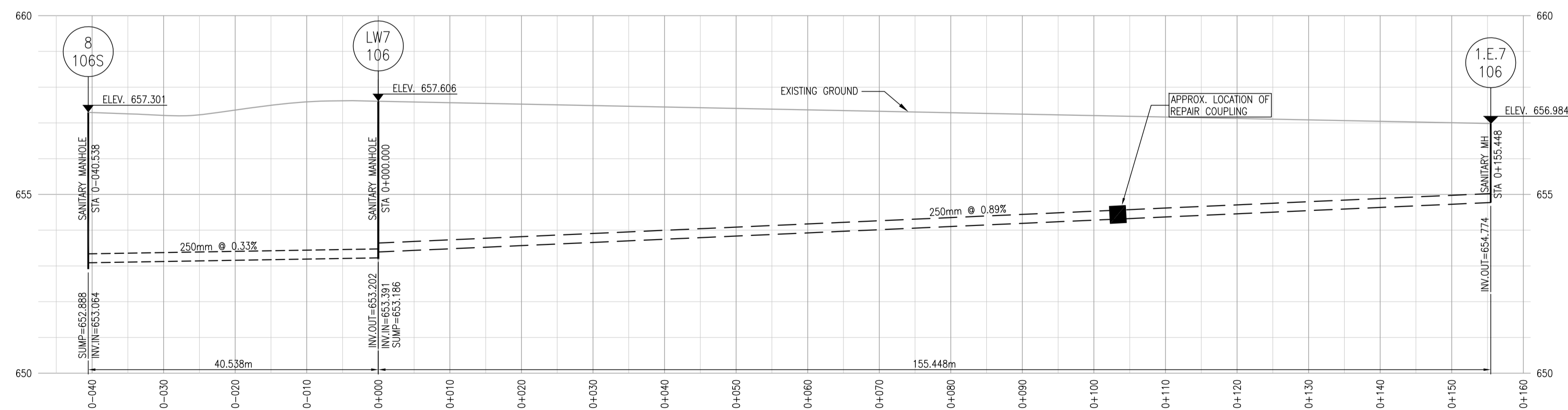
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PLAN VIEW
SCALE = 1:500



DETAIL 'A'
SCALE = 1:200



PROFILE VIEW
HORIZ. SCALE = 1:500
VERT. SCALE = 1:100

NOTES:

PIPE MATERIAL TO BE INSTALLED SHALL BE Ø250mm PVC SDR-35 OR EQUIVALENT.

EXISTING SANITARY PIPE MATERIAL IS VCT.

METHOD OF PIPE REPLACEMENT TO BE TRENCHLESS "BURSTING" UNLESS OTHERWISE NOTED

CONTRACTOR RESPONSIBLE FOR LOCATING ALL SERVICES ON SANITARY MAIN BEFORE COMMENCING REPLACEMENT OF MAIN.
EXISTING LOT SERVICE CONNECTIONS TO BE RECONNECTED TO NEW MAIN. SERVICE TRENCH TO BE REPAIRED BY CONTRACTOR.

PRIOR TO AND DURING CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UTILITIES SHOWN ON THIS PLAN (INCLUDING UNDERGROUND, SURFACE AND OVERHEAD) AS WELL AS ANY UTILITIES NOT SHOWN. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL DAMAGES TO UTILITIES.

CONTRACTOR TO RESTORE ALL INFRASTRUCTURE AFFECTED BY PROJECT TO PRIOR CONDITION AS PER CITY OF DAWSON CREEK SPECIFICATIONS.

ALL WORKS SHALL COMPLY WITH THE CITY OF DAWSON CREEK SUBDIVISION & DEVELOPMENT SERVICING BYLAW No. 2616, 1991

LEGEND

- ROAD ☐ ———
- LOT SERVICE ———
- SANITARY MAIN ———
- SANITARY MH ●
- STORM MAIN ———
- STORM MH ●
- CATCHBASIN ◻
- CULVERT [375]
- WATER MAIN ———
- FIRE HYDRANT +
- WATER VALVE ×
- HYDRO POLES ○
- SIGN □
- EDGE OF ROAD ———
- GAS LINE — GAS —

0	ISSUED FOR TENDER	15/07/2011
No.	REVISION	DATE

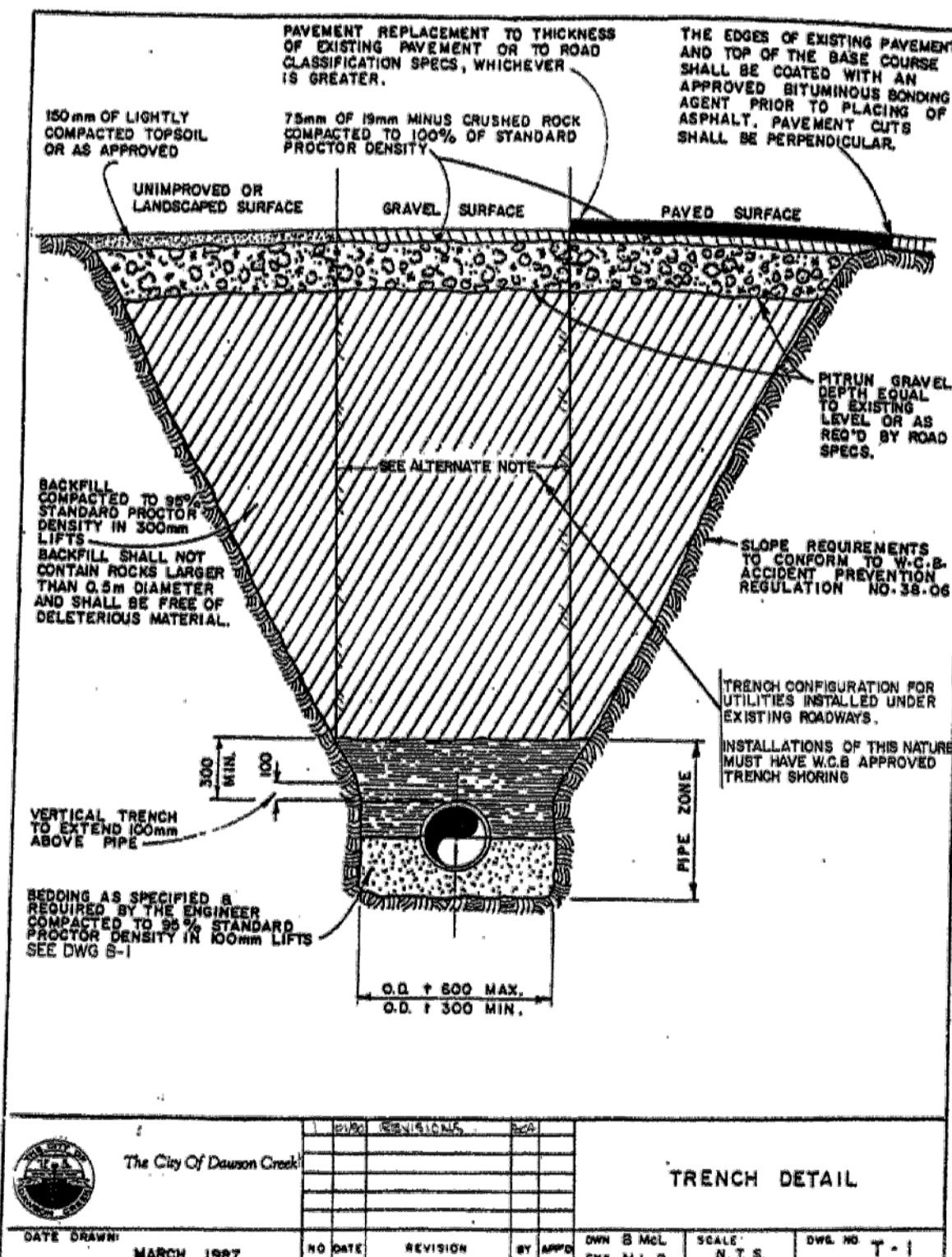
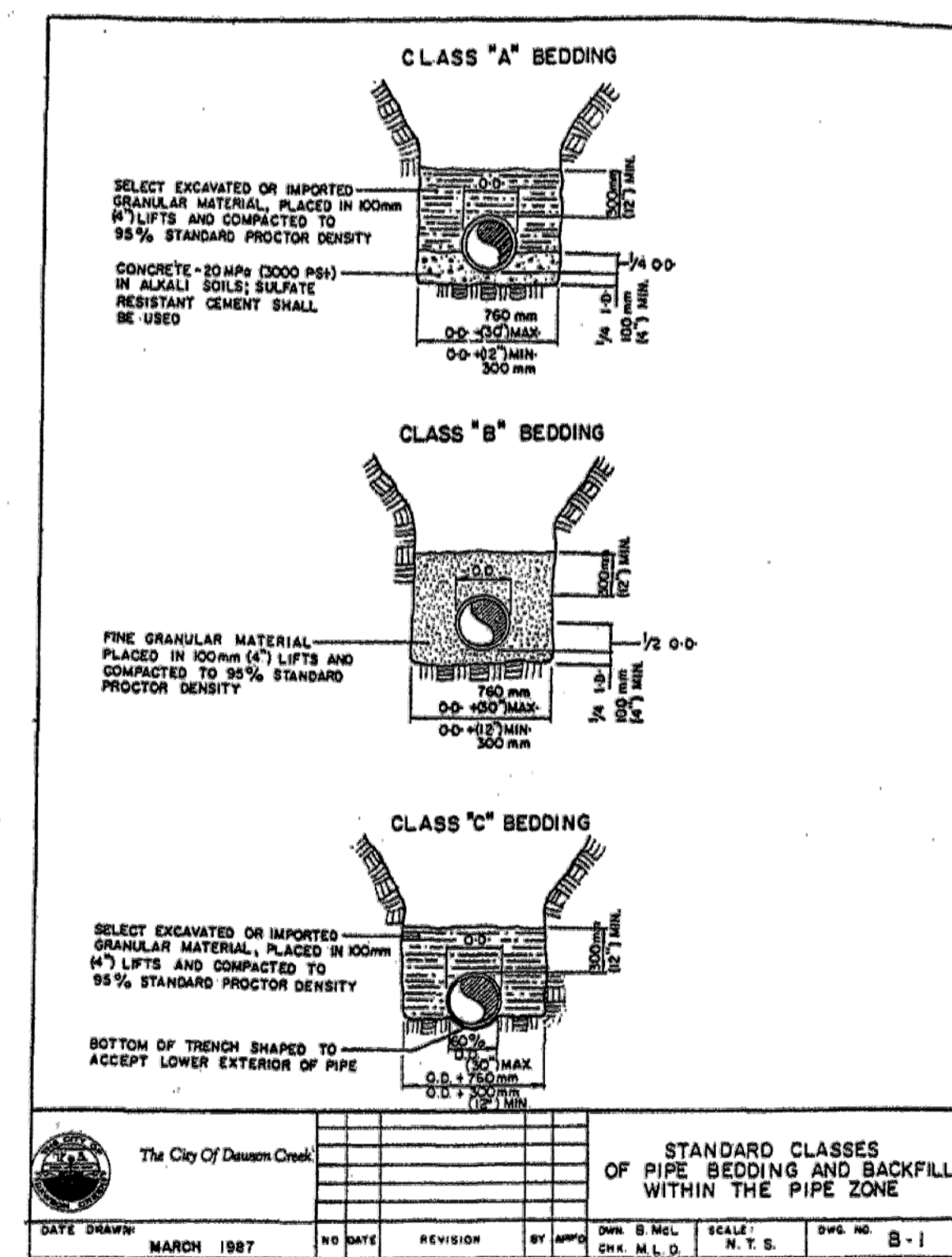
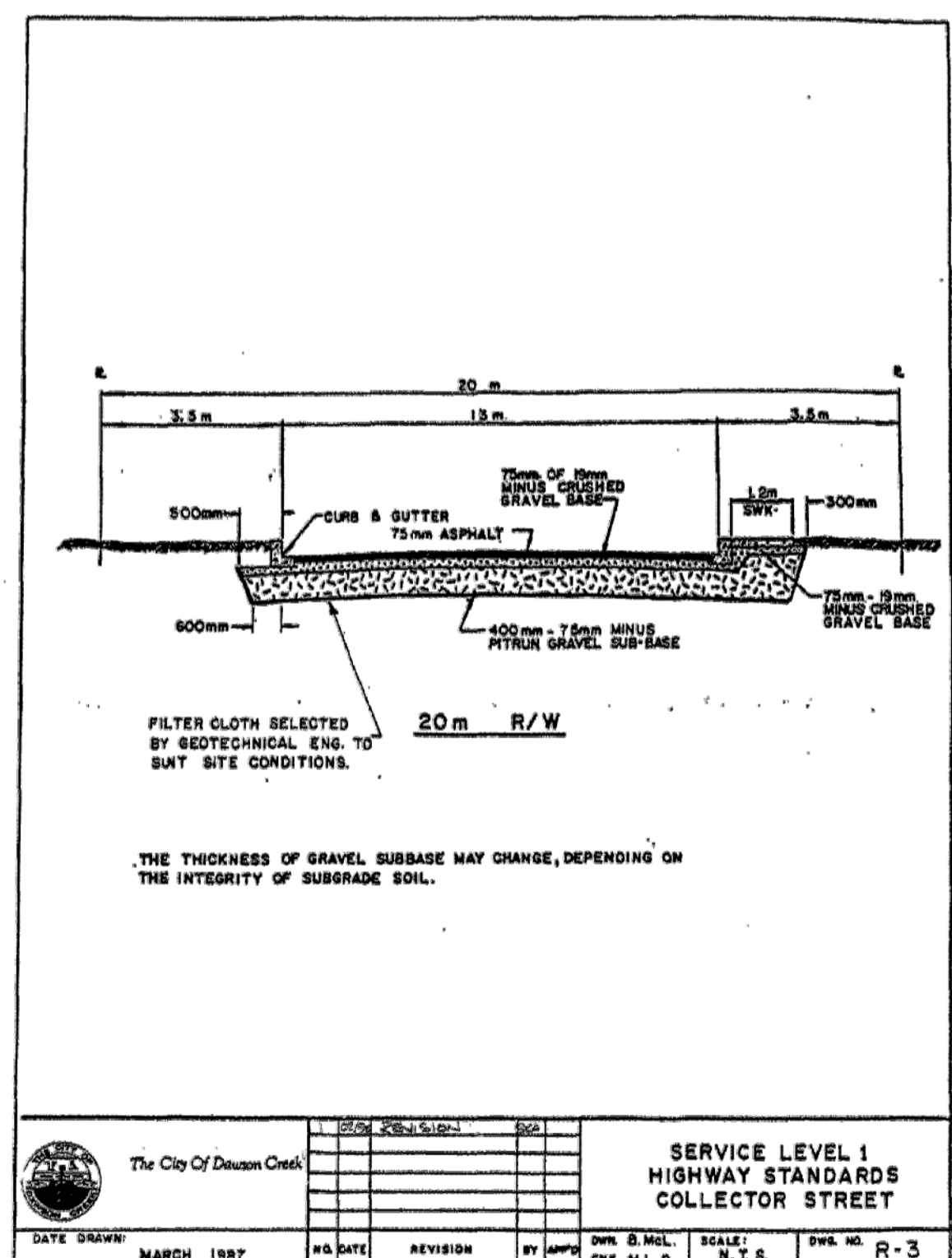
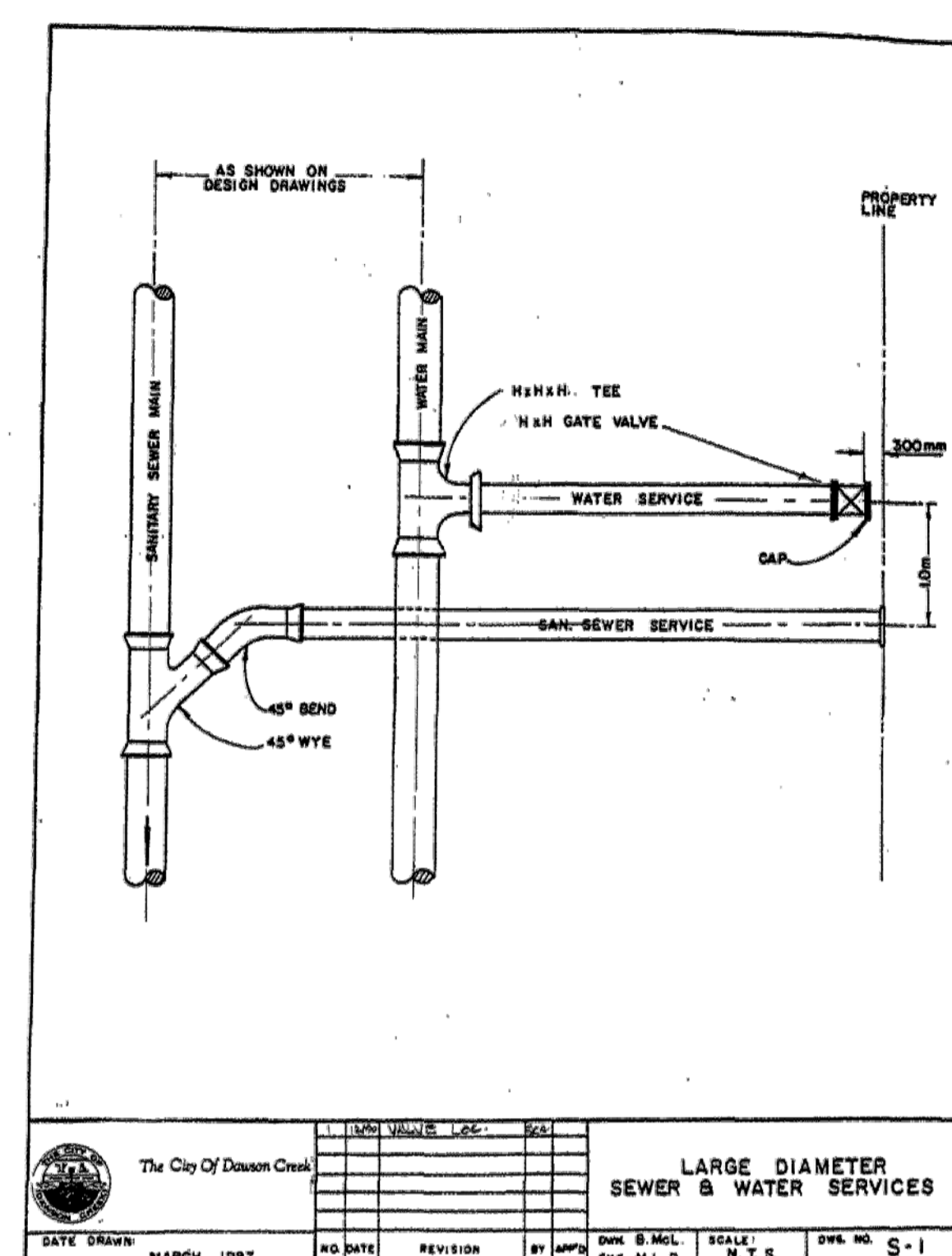
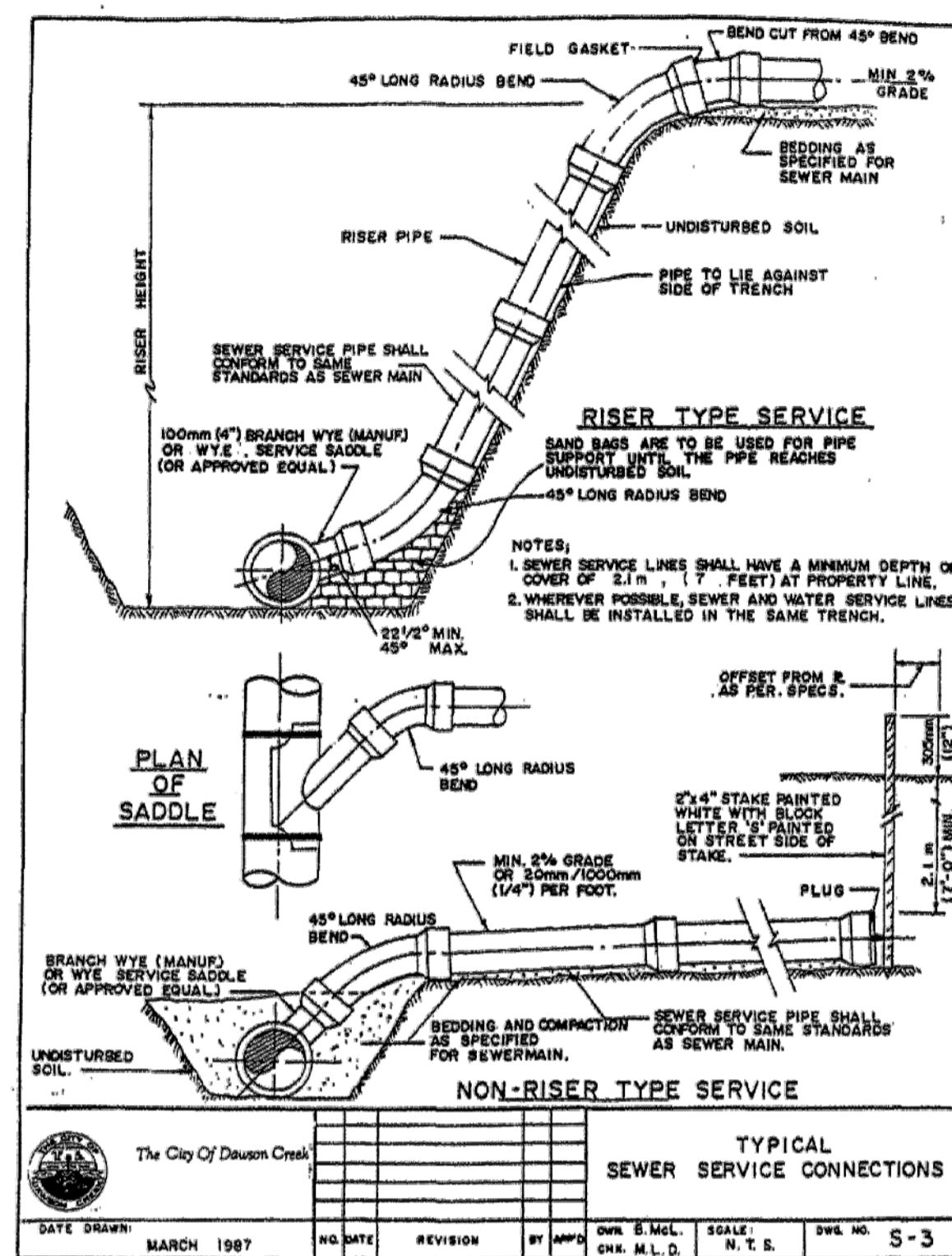
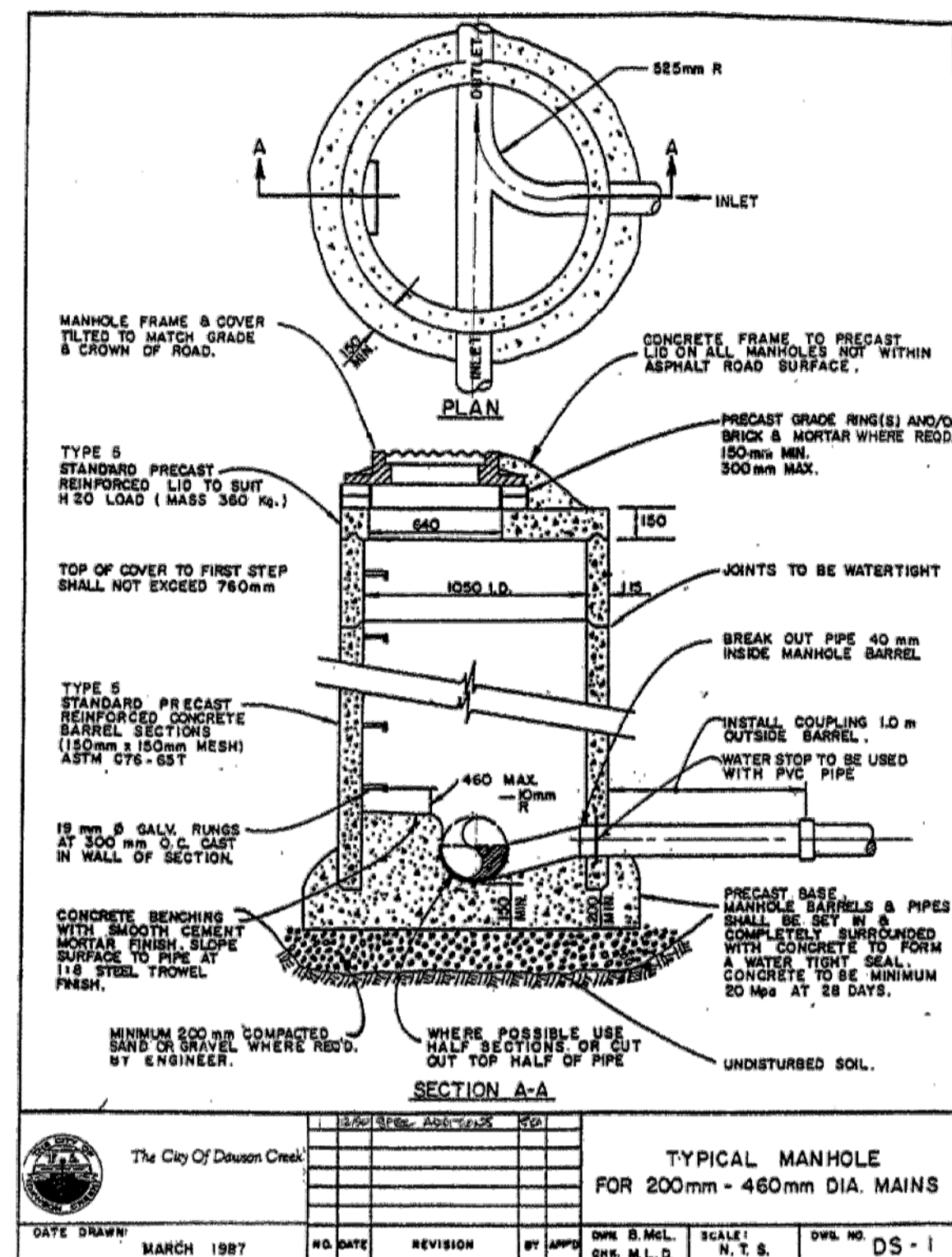
CITY OF DAWSON CREEK
 10105 12A STREET
 BOX 150
 DAWSON CREEK, BC
 V1G 4G4

DESIGN: P. PELLETIER
 DRAWING: D. AAROE
 ASBUILT:
 CHECKED: K. HENDERSON

**106 AVENUE & 8 STREET
 SANI. RECONSTRUCTION
 PLAN & PROFILE**

PROJECT No. 1109	DRAWING No. S-233
DATE 18-07-2011	SHEET No.
1 OF 2	
SCALES V - AS SHOWN H - AS SHOWN	

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LEGEND

0	ISSUED FOR TENDER	15/07/2011
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CITY OF DAWSON CREEK
 10105 12A STREET
 BOX 150
 DAWSON CREEK, BC
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 DRAWN: D. AAROE
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106 AVENUE & 8 STREET SANI. RECONSTRUCTION DETAILS

PROJECT No.	1109	DRAWING No.	S-233
DATE	18-07-2011	SHEET No.	
SCALES	V - NTS H - NTS		2 OF 2