



DRYDEN

THE CITY OF DRYDEN

**Duke Street Reconstruction
Dryden, Ontario
T-2026-3**

SPECIFICATIONS

**January 2026
KGS File No. 25-1512-001**

KGS
GROUP

TENDERER'S CHECK LIST

Before submitting your tender, check the following points:

1. Has your tender been signed, sealed and witnessed? ()
2. Have you enclosed the Tender Deposit, i.e. certified check or bid bond? ()
3. Have you enclosed the Agreement to Bond, signed and sealed by your proposed Surety? ()
4. Have you completed all schedules and prices in the Tender Form? ()
5. Have you indicated and included the Contingency Allowance in the Form of Tender? ()
6. Have you indicated the number of addenda included in the tender price? ()
7. Have you listed your Sub-Contractors and major suppliers? (if applicable) ()
8. Have you listed your Experience in Similar Work? ()
9. Have you listed your Senior Staff? ()
10. Have you listed the Tenderer's Plant? (if applicable) ()
11. Have you completed Tendering Statements "A" to "H"? (if applicable) ()
12. Are the documents complete? ()

LIST OF CONTRACT DOCUMENTS

SECTION TITLE

00900	Addenda _____ to _____ inclusive
00010	Notice of Tender
00100	Information to Tenderers
00300	Tender Form
00400	Tendering Statements
	Form "A": List of Sub-Contractors and Suppliers
	Form "B": Alternatives
	Form "C": Undertaking to Comply
	Form "D": Bid Bond and Agreement to Bond
	Form "E": Fairness is a Two-Way Street
	Form "F": Identification Agreement
	Form "G": Tenderer's Experience in Similar Work
	Form "H": Tenderer's Senior Supervisory Staff
00800	Supplementary General Conditions
	OPSS MUNI General Conditions (November 2024)
01000	General Requirements
01561	Environmental Protection
02000	Sewer Specifications
02100	Watermain Specifications
02200	Roadway Specifications
02300	Asbestos Abatement Minimum Precautions

APPENDIX

- Appendix 1- City of Dryden Policy No. HR-HS-10 Contractor Safety
- Appendix 2- City of Dryden Procedure No. HR-HS- 10 Contractor Health and Safety Agreement
- Appendix 3- City of Dryden Noise By-Law
- Appendix 4- Cathodic Protection of Water Distribution Piping
- Appendix 5- Engineering Standards Drawings

LIST OF DRAWINGS

General Drawings (included separately)

No.	Description	Rev. No.
C00.00	Cover Page	0
C01.00	Civil Notes & Details	0
C01.01	Civil Details	0
C01.02	Civil Details	0
C01.03	Civil Details	0
C02.00	Demolition Plan & Profile (Sta. 3+000 to 3+280)	0
C02.01	Demolition Plan & Profile (Sta. 3+280 to 3+560)	0
C02.02	Demolition Plan & Profile (Sta. 3+560 to 3+671)	0
C03.00	New Work Plan & Profile (Sta. 3+000 to 3+280)	0
C03.01	New Work Plan & Profile (Sta. 3+280 to 3+560)	0
C03.02	New Work Plan & Profile (Sta. 3+560 to 3+671)	0
C04.00	Line Painting	0

The following represents Ontario Provincial Standard Specifications referenced within the contract documents, but is not intended to be, a complete or all-inclusive list of all standards referenced or required.

STANDARD SPECIFICATIONS

Ontario Provincial Standard Specification – OPSS

No.	Issue Date	Title
0313	Apr 2021	Hot Mix Asphalt - End Result
0803	Apr 2018	Vegetative Cover

Ontario Provincial Standard Specification Municipal Oriented - OPSS.MUNI

No.	Issue Date	Title
0100	Nov 2024	OPS General Conditions of Contract
0102	Apr 2025	Weighing of Materials
0180	Apr 2025	Management of Excess Materials
0206	Apr 2019	Grading
0310	Nov 2017	Hot Mix Asphalt
0311	Apr 2023	Asphalt Sidewalk, Driveway, and Boulevard and for Sidewalk Resurfacing
0314	Nov 2023	Untreated Sub base, Base, Surface, Shoulder, Selected Subgrade, and Stockpiling
0316	Nov 2018	Extruded Expanded Polystyrene Frost Heave Treatment
0351	Apr 2023	Concrete Sidewalk
0353	Nov 2021	Concrete Curb and Gutter Systems
0355	Nov 2020	Installation of interlocking Concrete Pavers
0401	Nov 2024	Trenching, Backfilling, and Compacting
0402	Nov 2024	Excavating, Backfilling and Compacting for Maintenance Holes, Catch Basins, Ditch Inlets and valve chambers

0403	Nov 2023	Rock Excavation For Pipelines, Utilities and Associated Structures in Open Cut
0404	Nov 2017	Support Systems (<i>Formerly OPSS 538</i>)
0405	Jul 2024	Pipe Subdrains
0407	Nov 2022	Maintenance Hole, Catch Basin, Ditch Inlet, and Valve Chamber Installation
0408	Nov 2022	Adjusting or Rebuilding Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Chambers
0409	Jul 2024	Closed-Circuit Television (CCTV) Inspection of Pipelines
0410	Nov 2018	Pipe Sewer Installation in Open Cut
0411	Nov 2022	Cleaning and Flushing of Pipe Sewers, Catch Basins, Maintenance Holes, Ditch Inlets, and Oil-Grit Separators
0441	Nov 2021	Watermain Installation in Open Cut
0442	Nov 2020	Corrosion Protection of Watermains
0493	Apr 2022	Temporary Potable Water Supply Services
0501	Nov 2017	Compacting
0506	Nov 2017	Dust Suppressants
0510	Nov 2018	Removal
0517	Nov 2021	Dewatering
0539	Nov 2021	Temporary Protection Systems
0706	Apr 2018	Temporary Traffic Control Devices
0801	Apr 2018	Protection of Trees
0802	Apr 2025	Topsoil
0804	Nov 2014	Seed and Cover
0805	Nov 2020	Temporary Erosion and Sediment Control Measures
1001	Nov 2018	Aggregates - General
1002	Nov 2013	Aggregates - Concrete
1003	Nov 2013	Aggregates - Hot Mix Asphalt
1004	Nov 2021	Aggregates - Miscellaneous
1010	Apr 2025	Aggregates - Base, Subbase, Select Subgrade, Granular Surface, Shouldering, Bedding, and Backfill Material
1101	Nov 2020	Performance Graded Asphalt Cement
1151	Apr 2018	Superpave and Stone Mastic Asphalt Mixtures
1150	Nov 2020	Hot Mix Asphalt (HMA)
1301	Nov 2024	Cementing Materials
1302	Nov 2023	Water
1303	Apr 2019	Admixtures for Concrete
1305	Apr 2019	Moisture Vapour Barriers
1306	Apr 2019	Burlap
1315	Apr 2025	White Pigmented Curing Compounds for Concrete
1350	Nov 2023	Concrete - Materials and Production
1351	Apr 2025	Precast Reinforced Concrete Components for Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Chambers
1440	Nov 2016	Steel Reinforcement for Concrete
1605	Nov 2018	Extruded Expanded Polystyrene Pavement Insulation
1801	Apr 2018	Corrugated Steel Pipe (CSP) Products
1820	Nov 2020	Circular and Elliptical Concrete Pipe
1840	Nov 2018	Non-Pressure Polyethylene Plastic Pipe Products

1841	Nov 2018	Non-Pressure Polyvinyl Chloride Pipe Products
1842	Nov 2018	Pressure Polyethylene Pipe Products
1843	Apr 2018	Non-Pressure Polypropylene (PP) Plastic Pipe Products
1850	Apr 2018	Frames, Grates, Covers, and Gratings
1860	Nov 2019	Geotextiles
2501	Jul 2023	Calcium Chloride and Calcium-Magnesium Chloride Blend

For a copy of all OPSD's and OPS specifications, please refer to the MTO Library Website at <http://www.raqsb.mto.gov.on.ca/techpubs/OPS.nsf/OPSHomepage>. This page lists the most current published version of all OPSD's and OPSS's. Previous versions of OPS drawings can be found in the OPS archives at <http://www.raqsb.mto.gov.on.ca/techpubs/opsa.nsf/ArchiveHomePage>.

City of Thunder Bay Engineering Standards Drawing

Dwg No.	Rev Date	Title
M-101	Jan 2020	Information Required on All Sewer and Water Connections
M-104-4	Jan 2014	Tree Protection Barriers
R-108	Jan 2018	Patching for Roadway Cuts
R-115	Jan 2020	Concrete Curb and Gutter Around Fixtures
S-102	Jan 2018	House Sanitary Sewer Connection Common Type
W-101	Jan 2015	Installation of Fire Hydrant with Gate Valve
W-103	Jan 2018	Installation of Gate Valve
W-104-1	Jan 2016	Water Service Connection Installation, Sizing & Tracer Cable
W-104-2	Jan 2020	Water Connection Service and Meter Sizing
W-108-1	Jan 2018	Anchorage of Watermain Tees & Crosses
W-108-2	Mar 2003	Anchorage of P.V.C. Watermain at Tees & Crosses
W-109	Jan 2018	Anchorage of Watermain Bends
W-110	Feb 2003	Method of Determining Sizes of Thrust Blocks
W-111	Jan 2018	Securing Fire Hydrant and Valve to Watermain
W-112	Jan 2011	Securing Fire Hydrant and Valve to Watermain (Mechanical Joint Pipe)
W-113	Jan 2011	Securing Watermain Tees and 90° Bends (Mechanical Joint Pipe)
W-114	Jan 2015	Lowering & Securing Required at New or Exist. Watermain Crossing of New or Exist. Sanitary Sewer
W-115	Jan 2015	Lowering & Securing of New or Existing Watermain Crossing New or Existing Culvert, Storm Sewer or Ditch
W-116	Jan 2011	Watermain Retainer Chart
W-117-1	Feb 2019	Disinfecting and Flushing Watermains
W-117-2	Jan 2009	Physical Separation Requirements for Installation of New Watermain
W-118	Jan 2009	Allowable Leakage for Watermains
W-121	Feb 2003	Watermain Crossing Sewer Main With Less Than 500 mm Vertical Separation
W-124	Feb 2003	Protection of Existing Cast Iron Watermain Over New Sanitary or Storm Sewer
W-125	Jan 2012	Bonding & Cathodic Protection of Metallic Mains & Fittings
W-126	Jan 2018	Bonding & Cathodic Protection of Hydrant & Hydrant Leads
W-127	Apr 1995	Cathodic Protection for Copper Services
W-130	Jan 2018	Non-Metallic Watermain Thaw/Tracer Cable Installation

Current editions of OPSS, MOE, AWWA, CSA and ASTM Standards referenced in the Project Specifications.

1.0 TENDERS

Electronic Bid Submissions will be received for:

DUKE STREET RECONSTRUCTION T-2026-3

The City will only accept Electronic Bid Submissions submitted via the bids and tenders document portal on the City of Dryden's website:

<https://forms.dryden.ca/Bids-and-Tenders/Bids-and-Tenders-Submissions>

At a date and time no later than **3:00 pm**, local prevailing Dryden time on:

February 25, 2026

- 1.1 Tenderers are cautioned that the timing of their bid submission is based on when the bid is received by the Bidding System, not when a bid is submitted, as bid transmission can be delayed due to file transfer size, transmission speed, etc. It is recommended that sufficient time be factored into complete and electronically submit a bid to resolve any issues that may arise
- 1.2 Late submissions will not be accepted.
- 1.3 Tender values will be made available upon request.
- 1.4 All tenders received will become the property of the Corporation of the City of Dryden and as such are subject to the Freedom of Information and Protection of Privacy Act. Tenders will be analysed by Owner after which a Contract may or may not be awarded. The lowest Tender or any Tender is not necessarily accepted. The City reserves the right to reject any or all bids, to waive irregularities and information therein, and to award the contract in the best interest of the City in its sole unfettered discretion.
- 1.5 Contract award contingent on Council approval will be on **Wednesday March 4, 2026**

2.0 SCOPE OF WORK

- 2.1 The scope of work, in general terms, involves the reconstruction of a section of Duke Street between Earl Avenue and Casimir Avenue. Work will include but not be limited to:
 - Mobilization and Demobilization
 - Place and maintain detour signage
 - Establish traffic/pedestrian control and environmental protection.

- Remove entire asphalt roadway (full depth) to limits indicated on drawings. Dispose of excess materials off-site in accordance with applicable regulations and at designated disposal areas identified by the City. All disposal areas will be within an 8km radius of the project site.
- Install new Granular 'B' subbase and Granular 'A' base material and provide one-40 mm lift of Superpave 19.0 binder course and one-40 mm lift of Superpave 12.5 surface course asphalt to roadway.
- Replace sections of storm sewer, as indicated.
- Replace catch basins, catch basin leads & catchbasin manholes, as indicated and re-establish all existing connection into structures
- Replace sections of sanitary sewer, as indicated and re-establish lateral connections.
- Replace sections of sanitary services, as indicated.
- All backfill material to be Granular 'B', unless otherwise indicated.
- Replace manholes as indicated and re-establish all existing connection into structures
- Complete asbestos abatement measures for removal and disposal of existing asbestos cement sewer pipe
- Establish temporary potable water system, including testing, as required.
- Remove existing 150mmØ watermain and appurtenances with replace with new 300mmØ watermain c/w appurtenances
- Replace existing fire hydrants and intersecting watermains to new 300mmØ watermain
- Complete watermain lowering as required
- Re-connect existing building water services c/w new corporation stops to new 300mmØ watermain
- Replace concrete curb and gutter c/w new perforated subdrain, as indicated
- Replace sections of sidewalks, as indicated
- Install new tactile walking surface indicators in new concrete sidewalk at signalized intersection, as indicated
- Reconstruct disturbed driveway approaches, walkways, etc.
- Reconstruct all surface features disturbed during construction
- All work as indicated on the Drawing and Specifications.

The description of the Work stated above is not, nor is it intended to be, a complete and all-inclusive "Description of Work".

3.0 TYPE OF CONTRACT

3.1 Unit Price Contract

4.0 TENDER PACKAGE

4.1 Complete Tender packages may be downloaded from the City of Dryden's website: [Bids and Tenders | City of Dryden](#)

5.0 PROJECT ORGANIZATION

5.1 The Owner is the City of Dryden.

5.2 The Consultant is KGS Group.

6.0 GENERAL INQUIRIES

6.1 General Inquiries may be directed to:

Kai Maunula
KGS Group

Email: kmaunula@kgsgroup.com

cc:

Alison Barrett
KGS Group

Email: abarrett@kgsgroup.com

7.0 EXAMINATION OF SITE AND SUB-SURFACE CONDITIONS

7.1 Each Tenderer must visit the site of the work before submitting its Tender and must satisfy itself by personal examination as to the local conditions to be encountered during the construction and conduct of the work. It shall make its own estimate of the surface facilities, sub-surface conditions and difficulties to be encountered.

7.2 Compare Tender documents with work in place.

7.3 The Tenderer, during the period of tender, shall make such additional examination of the soil and subsurface conditions as it may deem necessary to satisfy itself as to the conditions that may be encountered during construction.

7.4 No compensation will be made for failure to make proper site investigations or to fully understand the nature of the work and no claim at any time after submission of its Tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions.

7.5 An Optional site visit is scheduled for **February 11, 2026 at 1:00pm Local Time** to review site conditions and discuss the project. Bidders planning to attend the site visit must RSVP 48 hours in advance to the contact listed in section 6.0 – General Inquiries.

8.0 QUESTIONS DURING TENDER PERIOD

8.1 No oral interpretations shall be made to any Tenderers as to the meaning of any of the contract documents or to modify any of the provisions of the contract documents. Questions related to this tender are to be submitted in writing to the contact listed in section 6.0 – General Inquiries.

The deadline for questions will be **February 13, 2026, at 2:00pm, Local Dryden Time**

9.0 TENDER SUBMISSION

9.1 All Tenders shall include one (1) PDF document with the Contractors name and project as the title, and one (1) copy of the excel tender breakdown spreadsheet.

9.2 Tenders must be completed in ink or typed and submitted on the official Tender Form which is part of the Contract

9.3 A complete Tender submission shall consist of the following:

- i. Tender Form
- ii. Breakdown of Total Tender Price (excel document)
- iii. Supplement to Tender Forms:
 - Form A: List of Sub-Contractors and Suppliers.
 - Form B: Alternatives
 - Form C: Undertaking to Comply
 - Form D: Bid Bond and Agreement to Bond
 - Form E: Fairness is a Two-Way Street
 - Form F: Identification Agreement
 - Form G: Tenderer's Experience in Similar Work
 - Form H: Tenderer's Senior Supervisory Staff

10.0 BID DEPOSIT

10.1 Each Tender shall be accompanied with a bid deposit in the form of:

- i. A bid bond issued by a Surety Company acceptable to the Owner, in an amount of not less than 10% of the Total Tender Price. The bid bond must be signed and sealed both by the Surety Company and the Tenderer.

10.2 The bid deposit of the three lowest Bidders may be retained until either:

- i. The Contract, including any required bonds or other documents, have been executed.
- ii. The Tenders have lapsed.

11.0 CONSENT OF SURETY

11.1 The Bidder shall include with his Tender a "Consent of Surety" submitted on a form supplied by the Surety Company and acceptable to the Owner and executed under the Surety Company's

corporate seal. The Surety Company providing documentation must be the company from which the Bidder proposes to obtain any performance, labour and material payment bonds as required by the Owner.

12.0 TRAFFIC CONTROL PLAN

- 12.1 A "Traffic Control Plan" is to be submitted by the successful contractor for review and approval by the owner prior to construction. The traffic plan shall be developed in accordance with the Ontario Traffic Manual Book 7 and municipal regulations.
- 12.2 The Contractor will responsible for the supply, installation and maintenance of all detour signs, sign supports and hardware for the duration of construction.
- 12.3 The Contractor shall remove all signs upon the completion of the contract.

13.0 HEALTH & SAFETY MEETING MINUTES

- 13.1 During construction, health and safety meetings shall be conducted as required by the Occupational Health and Safety Act.

14.0 PERFORMANCE BOND

- 14.1 Prior to executing the Contract the Owner will require the successful Bidder to provide a performance bond in the amount of 100% of the bid amount. The bond shall be in the same form as CCDC Document 221, 2024 and shall be issued by a Surety Company acceptable by the Owner.
- 14.2 Include the cost of such bond as separate price as indicated on the Tender Forms.

15.0 LABOUR AND MATERIAL PAYMENT BOND

- 15.1 Prior to executing the Contract the Owner will require the successful Bidder to provide and maintain in good standing until the fulfillment of the Contract a Labour and Material Bond for 50% of the value of the bid amount. The bond shall be issued by a Surety Company acceptable to the Owner.
- 15.2 Include the cost of such bond as a separate price as indicated on the Tender Forms.

16.0 VALIDITY OF TENDER

- 16.1 The Bidder agrees that his Tender submission and prices quoted in the Tender Forms are valid and open for acceptance by the Owner and shall be irrevocable for a period of sixty (60) calendar days from the date set for opening Tenders.
- 16.2 The Bidder agrees that this Tender is subject to a formal Contract being prepared and executed.

16.3 The acceptance by the Owner of any Tender shall not release any of the three lowest Bidders from their Tender until either:

- i. The Contract, including any required bonds and other documents, have been executed.
- ii. The Tenders have lapsed.

17.0 WITHDRAWAL OR QUALIFYING TENDERS

17.1 A Bidder who has already submitted a Tender may submit a further Tender at any time up to the official closing time. The last Tender received shall supersede and invalidate all Tenders previously submitted by that Bidder for this Contract.

17.2 A Bidder may withdraw or qualify his Tender by letter, provided the notice is received on or before the official closing time. No telephone calls, telex messages, telegrams, emails or fax messages will be considered.

18.0 INFORMAL OR UNBALANCED TENDERS

18.1 Tenders which are incomplete, conditional, illegible or otherwise obscure or that contain additions not called for, reservations, erasures, alterations, (unless properly identified and clearly made and initialled by the Tender signing officer), or irregularities of any kind may be rejected as informal.

18.2 All entries in the Tender shall be made in ink or by typewriter and the company seal affixed wherever signatures are required. Entries or changes made in pencil may be considered invalid or informal.

18.3 Tenders that contain prices that appear unbalanced as likely to adversely affect the interests of the Owner may be rejected.

18.4 The Owner reserves the right to waive informalities at his discretion.

18.5 The Owner reserves the right to reject any or all Tenders. The lowest Tender may not necessarily be accepted.

19.0 DISQUALIFICATION OF TENDERS

19.1 No Tender shall be considered that:

- i. Is received after the official closing time set for receipt of Tenders.
- ii. Is not accompanied by the required bid deposit.
- iii. Is received by facsimile transmission.
- iv. Is not submitted as indicated in Section 1.0 – Information to Tenderers.

20.0 OMISSIONS, DISCREPANCIES AND INTERPRETATIONS

20.1 Should a Bidder find omissions or discrepancies in any of the Tender Documents, or should he be in doubt as to the meaning of any part of these documents, he should notify the Owner in writing not later than 5 working days before closing date for the Tender. If the Owner considers that a correction is necessary or desirable, he will issue an Addendum. No oral interpretations shall modify any provisions of the Tender Documents

21.0 APPROVAL OF EQUALS

21.1 Whenever in the specifications a material is specified by trade names, manufacturer's name or by catalogue reference, use only such items unless written approval is obtained from the Owner prior to the closing date for the Tender.

21.2 Submit to the Owner two sets of complete descriptive literature and performance data with all required scaled physical arrangement drawings, manufacturer's data and specifications and other information relating to the construction and performance of the apparatus.

21.3 The Owner will not process any application for "approved equal", status received less than 5 working days before the closing date set for Tenders.

22.0 PROPOSED ALTERNATIVES

22.1 A Bidder may submit with his Tender a proposed alternative item of equipment or material that has not been approved equal, but that the Bidder wishes the Owner to consider because of superior quality or other potential cost savings. In this event the Bidder shall include with his Tender, full descriptive literature and performance data and list in Form B: Alternatives, of the Tender Documents, the addition to or deduction from his Total Tender Price if authorised by the Owner. The price quoted shall include the cost of all revisions required to incorporate the alternative item in the original design.

22.2 Indicate "N/A", in the Alternatives Form if no alternatives are submitted at time of tendering.

23.0 MOBILIZATION AND DEMOBILIZATION

23.1 No separate payment shall be made to the contractor for mobilization and demobilization. All costs associated with the mobilization and demobilization of equipment and material shall be included within the applicable tender items.

24.0 ADDENDA

24.1 Any and all changes to the Contract Documents will be issued in the form of addendum. All addenda will be posted to the City's Bidding System.

24.2 Tenderers shall acknowledge receipt of all addenda prior to the closing time by written acknowledgement on the tender form. Tender submissions that do not contain evidence of receipt of all addenda will be deemed to be "incomplete" and will not be accepted by the City.

24.3 It is the responsibility of the Tenderer to have received all addenda that are issued on the Cities website prior to submitting their bid and up until bid closing time in the event additional addenda are issued.

24.4 Final day for addenda will be **Wednesday February 18, 2026**

25.0 PROVISIONAL ITEMS

25.1 Items identified on the tender form as provisional items may be awarded by the Owner at his sole discretion. The tendered unit prices for such work will constitute full payment for these items.

26.0 CONTINGENCY ALLOWANCE

26.1 A Contingency Allowance is not included in this project.

27.0 PRICES

27.1 Each Bidder shall state a price in Canadian funds for each item of Work identified on the Breakdown of Total Tender Price.

27.2 Harmonized Sales Tax and Company registration numbers should be clearly identified on all invoices and/or requests for payment. The amount of the harmonized sales tax shall be clearly identified.

28.0 HARMONIZED SALES TAX

28.1 The tendered unit bid prices shall not include the Harmonized Sales Tax (HST). The HST shall be shown separately on the Tender Form and on invoices submitted by the Contractor.

29.0 MATERIAL TESTING

29.1 Unless otherwise noted, the Contractor will select their own accredited third-party quality control testing agency or laboratory for tests that are required but not specified, other than tests required by bylaws, statutes and regulations applicable to the Work., and cover all incurred costs.

30.0 ACCESS TO RESIDENCES AND BUSINESSES

30.1 The successful contractor will be required to maintain pedestrian access to all residences and businesses in the work area

31.0 ADDRESS OF BIDDER

31.1 Each Bidder shall insert in the Tender Form an address to which communications can be mailed.

32.0 CORRECTIONS TO INCORRECT TENDER PRICING CLAUSE

- 32.1 Tenders that contain prices which appear to be so unbalanced as likely to adversely affect the interest of the owner may be rejected.
- 32.2 Wherever the amount tendered for an item does not agree with the extension of the tender quantity and the tendered unit price, the unit price shall govern and the amount and the Total Tender Price shall be corrected accordingly.
- 32.3 Mathematical discrepancies will be corrected by the Owner by appropriate means to arrive at the correct Total Tender Price. Where an error has been made in transferring an amount from one part of the tender to another, the amount shown before transfer shall, subject to any corrections as provided for above, be taken to be correct and the amount shown after transfer and the Total Tender Price shall be corrected accordingly.

33.0 APPROVALS

33.1 The owner reserves the right to approve or not approve all works covered under this contract.

SECTION 00300 - TENDER FORM

1.0 TENDER FOR THE CONSTRUCTION OF

**REHABILITATION OF DUKE STREET
CITY OF DRYDEN TENDER REFERENCE # T-2026-3**

1.1 SUBMISSION

The following Tender is hereby submitted to:

The City of Dryden
30 Van Horne Avenue
Dryden, Ontario P8N 2A7

Hereinafter called the "Owner"

On behalf of:

Contractor

Address

hereinafter called the "Tenderer"

1.1.1 (We), the undersigned, having fully examined the locality and Place of the Work, having fully investigated the conditions of the Work, having read and understood the Contract Documents (comprised of the tendering information, supplementary general conditions, general conditions, specifications and drawings, including all supplements, addenda and revisions to same to the date of this tender) and having secured all of the information necessary to enable the submission of this tender, hereby agree and offer to perform the totality of the Work described in the Contract Documents, in accordance with the Contract Documents, for the total Tender Price (including H.S.T.) of:

_____ (\$ _____)

2.0 CONTINGENCIES

2.1 We agree that the Tender Price includes the contingency sum as calculated and shown on section 'G' of the "Breakdown of Tender Prices" and that no part of this sum shall be expended without the written direction of the Contract Administrator, and any part not so expended shall be deducted from the Contract Price.

3.0 QUANTITIES

3.1 The Tender Price is compiled from the Schedule of Prices included hereinafter. The quantities in the schedule being approximate, we agree that the final valuation will be made on the basis of actual quantities measured during and on completion of the Work at the unit prices in the schedule.

4.0 ADDITIONS AND DEDUCTIONS

4.1 The Tenderer agrees that, if this tender is accepted by the Owner:

- (i) it will carry out any additional or extra work (including the supplying of any additional Products pertaining thereto) or will delete any work as may be required by the Contract Administrator in accordance with the Contract; and,
- (ii) the carrying out of any work referred to in paragraph (i) above or the issuance by the Contract Administrator of a Contract Change Order relating to such work or the acceptance by the Tenderer of such Contract Change Order shall not, except as expressly stated in such Contract Change Order, waive, affect or vary any of the terms of the Contract or of an Contract Change Order previously issued by the Contract Administrator or any of the rights of the Owner or of the Contract Administrator under the Contract.

4.2 The Tenderer agrees that if this tender is accepted by the Owner the prices applicable to work referred to in paragraph 4.1 above shall be determined as follows:

- (i) The Schedule of Tender Prices shall apply where applicable;
- (ii) If the above Schedule is inapplicable the prices shall be determined in accordance with the General Conditions as amended by the Supplementary General Conditions.

5.0 ADDENDA

We agree that we have received Addenda _____ to _____ inclusive, and the tender price includes for the provisions set out in such Addenda.

6.0 OBLIGATIONS

6.1 We agree to commence the Work upon award of the contract and to work continuously to complete all work as specified in the contract as follows:

6.1.1 Date of Commencement: The Contractor agrees to commence work no later than June 1, 2026.

6.1.2 Substantial Completion: The Contractor agrees to substantially perform to the best of his ability, all the work herein set forth to the entire satisfaction of the Owner by October 31, 2026.

6.1.3 Charges: If the Contractor has not substantially completed all of the Project Works by the date of completion, he will compromise his ability to obtain future work with the City of Dryden.

6.1.4 Execution: Execute a formal Contract and furnish any required performance and/or labour and material payment bonds within seven [7] days notification that this Tender has been accepted.

6.1.5 Liquidated Damages for in the sum of \$2,000.00 for each and every calendar day's delay in completing the Work until substantial completion and \$1,000.00 for each and every calendar day's delay in completing the work after substantial completion.

7.0 DECLARATIONS OF TENDERER

7.1 The Tenderer declares that no person, firm or corporation other than the Tenderer has any interest in this tender or in the proposed Contract for which this tender is made.

7.2 The Tenderer declares that this tender is made without any connection, comparison of figures or arrangement with, or knowledge of, any other corporation, firm or person making a tender for the same Work and is in all respects fair and without collusion or fraud.

7.3 The Tenderer declares that a responsible representative of his Firm visited the site of the proposed works and that the undersigned has acquainted himself with all conditions that may affect the work.

8.0 CONDITIONS OF TENDER

8.1 This tender is irrevocable from the official closing time and is unconditionally open for acceptance for sixty (60) days after the official closing time, whether any other tender has been previously accepted or not.

8.2 The Owner reserves the right to reject any, a portion of, or all Tenders; not necessarily accept the lowest Tender or to waive informalities or technicalities in any Tender which may not be in the Owner's best interests.

8.3 The Owner reserves the right to approve or not approve all works covered under this contract.

9.0 DISCLAIMER

9.1 The Tenderer agrees and acknowledges there is no representation, warranty, collateral agreement or condition, whether direct or collateral, or expressed or implied, which induced the Tenderer to submit this tender, or on which reliance is placed by the Tenderer, or which affects this tender.

10.0 BREAKDOWN OF TENDER PRICES

10.1 Refer to Form of Tender – Schedule of Prices (excel).

11.0 SIGNATURES

Offered by the Tenderer _____ this

_____ day of _____ 20_____ .

Signature of Tenderer, Title

Signature of Witness

Signature of Tenderer, Title

Signature of Witness

NOTE: In the case of a tender submitted by a Corporation, the signatory or signatories warrant as follows:

“I/We have authority to bind the Corporation.”

If the tender is submitted by an individual or partnership, it is deemed to be given under seal.”

**FORM OF TENDER
SCHEDULE OF PRICES**

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
A	GENERAL				
1	Insurance and Bonding	I.s.	1	\$	-
	Subtotal GENERAL (EXCLUSIVE OF H.S.T.)			\$	-
B	SANITARY SEWER				
1	Remove existing manhole c/w frame & cover	ea	8	\$	-
2	Supply and install precast concrete manhole c/w frame & cover				
2a	a) 1200mmØ (OPSD 401.010 Type 'A' & 701.010)	v.m	20	\$	-
2b	b) 1500Ø mm (OPSD 401.010 Type 'A' & 701.011)	v.m	11.0	\$	-
3	Remove existing 250mmØ sanitary sewer pipe and complete restoration with granular 'B' to bottom of subbase	I.m	10	\$	-
4	Remove existing 300mmØ sanitary sewer pipe and complete restoration with granular 'B' to bottom of subbase	I.m	10	\$	-
5	Remove existing sanitary sewer pipe and replace with new (SDR 35) pipe complete, including restoration to bottom of granular 'B'				
5a	a) New 150mmØ PVC (SDR 35)	I.m	11	\$	-
5b	a) New 250mmØ PVC (SDR 35)	I.m	445	\$	-
5c	b) New 300mmØ PVC (SDR 35)	I.m	130.5	\$	-
6	Remove existing sanitary sewer pipe and replace with new corrugated HDPE pipe complete, including complete restoration with granular 'B' to bottom of subbase				
6a	a) New 525mmØ corrugated HDPE pipe	I.m	22	\$	-
6b	b) New 600mmØ corrugated HDPE pipe	I.m	25	\$	-
7	Remove existing sanitary service and replace with new 150mmØ PVC (SDR 28) pipe c/w tee & coupler and complete restoration with granular 'B' to bottom of subbase	ea	35	\$	-
8	CCTV Inspection (main line)	I.m	600	\$	-
	Subtotal SANITARY SEWER (EXCLUSIVE H.S.T.)			\$	-
C	STORM SEWER				
1	Remove existing manhole or catchbasin manhole c/w frame & cover or grate & lead	ea.	12	\$	-
2	Remove existing catchbasin c/w frame, grate & lead	ea.	21	\$	-
3	Supply and install 1200mmØ precast concrete manhole c/w frame & cover (OPSD 401.010 Type 'B' & 701.010)	v.m.	1.8	\$	-
4	Supply and install precast concrete catchbasin manhole c/w frame, grate & 300 mm sump				
4a	a) 1200mmØ(OPSD 400.070 & 701.010)	v.m.	12	\$	-
4b	b) 1500mmØ(OPSD 400.070 & 701.011)	v.m.	18	\$	-
5	Supply and install concrete catchbasin (standard height) c/w frame & grate (OPSD 400.080 & 705.010)	ea.	10	\$	-
6	Supply and install concrete catchbasin inlet (COTB S-109) c/w frame & grate (OPSD 400.080)	ea.	1	\$	-
7	Remove existing storm sewer pipe and replace with new corrugated HDPE storm pipe complete, including complete restoration with granular 'B' to bottom of subbase				
7a	a) New 525mmØ corrugated HDPE pipe	I.m.	264	\$	-
7b	b) New 600mmØ corrugated HDPE pipe	I.m.	99	\$	-
7c	c) New 750mmØ corrugated HDPE pipe	I.m.	225	\$	-
8	Supply and install 250 mm catch basin lead (PVC SDR 35)	I.m.	128	\$	-
9	Supply and install 300 mm catch basin lead (PVC SDR 35)	I.m.	19	\$	-
10	CCTV Inspection (main line)	I.m.	600	\$	-
	Subtotal STORM SEWER (EXCLUSIVE H.S.T.)			\$	-
D	WATERMAIN				
1	Provide temporary potable water	I.s.	1	\$	-
2	Remove existing watermain including valves and appurtenances and supply and install new 300mmØ PVC(DR 18) watermain pipe complete, including complete restoration with granular 'B' to bottom of subbase	I.m.	648	\$	-
3	Remove existing watermain including valves and appurtenances and supply and install new 200mmØ PVC(DR 18) watermain pipe complete, including complete restoration with granular 'B' to bottom of subbase	I.m.	24	\$	-
4	Remove existing watermain including valves and appurtenances and supply and install new 150mmØ PVC(DR 18) watermain pipe complete, including complete restoration with granular 'B' to bottom of subbase	I.m.	8	\$	-
5	Supply and install 300mmØ gate valve complete	ea.	8	\$	-
6	Supply and install 200mmØ gate valve complete	ea.	2	\$	-
7	Supply and install 150mmØ gate valve complete	ea.	1	\$	-
8	Connect existing 300mmØ watermain to new 300mmØ watermain c/w coupler	ea.	1	\$	-
9	Connect existing 300mmØ watermain to new 300mmØ watermain c/w tee	ea.	1	\$	-
10	Connect existing 150mmØ watermain to new 300mmØ watermain c/w tee cross and reducers	ea.	1	\$	-
11	Connect existing 150mmØ watermain to new 150mmØ watermain c/w tee cross and reducers	ea.	1	\$	-
12	Connect existing 200mmØ watermain to new 200mmØ watermain c/w tee cross and reducers	ea.	1	\$	-
13	Remove and replace hydrant complete, including restoration to bottom of granular 'B'	ea.	4	\$	-
14	Complete watermain lowering to existing 150mmØ watermain	ea.	2	\$	-
15	Reconnect existing water service to watermain c/w new corporation stop				
15a	a) 20mm Type 'K' soft copper	ea.	37	\$	-
	Subtotal WATERMAIN (EXCLUSIVE OF H.S.T.)			\$	-
E	ROAD WORKS				
1	Common excavation	m³	6908	\$	-
2	Remove concrete sidewalk complete	m²	40	\$	-
3	Remove & dispose of interlocking pavers	m²	2750	\$	-
4	Remove curb & gutter c/w subdrain (where req'd)	I.m.	1170	\$	-

5	Supply & install 150mm granular 'A' base	tonne	3828	\$	-
6	Supply & install 500mm granular 'B' sub-base	tonne	10632	\$	-
7	Supply and install non-woven geotextile	m ²	9665	\$	-
8	Supply & install 40mm Superpave 19.0 binder course (1 lift)	m ²	9665	\$	-
9	Supply & install 40mm Superpave 12.5 surface course (1 lift) c/w tack coat between surface and binder course lifts	m ²	9665	\$	-
10	Sawcut and mill existing asphalt surface for butt joints	ea	12	\$	-
11	Supply & install concrete sidewalk c/w granular base	m ²	2750	\$	-
12	Supply & install tactile walking surface in sidewalk ramp at intersections (OPSD 310.030 & 310.039)	ea (set)	17	\$	-
13	Supply & install concrete barrier curb & gutter c/w perforated subdrain	l.m.	580	\$	-
14	Supply & install concrete barrier curb & gutter (no perforated subdrain)	l.m.	588	\$	-
15	Line Painting	l.s.	1	\$	-
Subtotal ROAD WORKS (EXCLUSIVE OF H.S.T.)					\$ -

F PROVISIONAL					
1	Complete asbestos abatement for removal and disposal of asbestos cement sanitary and storm sewer piping	l.s.	1	\$	-
2	Additional excavation	m ³	500	\$	-
3	Supply, install and compact clearstone	tonne	300	\$	-
4	Supply, install and compact granular 'A'	tonne	300	\$	-
5	Supply, install and compact granular 'B'	tonne	300	\$	-
6	Watermain lowering	l.s.	1	\$	-
7	Supply and install 50mm thick HI-40 rigid insulation	m ²	250	\$	-
8	Reconnect existing water service to watermain c/w new corporation stop				
8a	a) 50mm Type 'K' soft copper	ea.	5	\$	-
9	Supply & install new exterior hose bib and connect to the residence existing plumbing system	ea.	5	\$	-
10	Restoration of disturbed areas				
10a	a) Grassed area	m ²	100	\$	-
10b	b) Asphalt area	m ²	100	\$	-
10c	c) Concrete area	m ²	50	\$	-
10d	d) Granular area	m ²	50	\$	-
11	Adjustment to existing				
11a	a) Manhole	ea	1	\$	-
11b	b) Catchbasin	ea	2	\$	-
11c	c) Valves and boxes	ea	2	\$	-
12	Provide and maintain Contract Administrator site office trailer	l.s.	1	\$	-
Subtotal PROVISIONAL (EXCLUSIVE OF H.S.T.)					\$ -

SUMMARY OF TENDER

A. GENERAL	\$	-
B. SANITARY SEWER	\$	-
C. STORM SEWER	\$	-
D. WATERMAIN	\$	-
E. ROAD WORKS	\$	-
TOTAL TENDER PRICE EXCLUDING PROVISIONAL	\$	-
F. PROVISIONAL	\$	-
TOTAL TENDER PRICE INCLUDING PROVISIONAL (BEFORE H.S.T.)	\$	-
H.S.T.	\$	-
TOTAL TENDER PRICE INCLUDING PROVISIONAL AND H.S.T.	\$	-

Note: All work shown on drawings shall be included in the unit prices. If a specific item does not exist for a work item then that work is considered incidental to other items listed on the Tender.

TENDERING STATEMENTS

Form Title

- A Sub-Contractors and Suppliers.
- B Alternatives
- C Undertaking to Comply
- D Bid Bond and Agreement to Bond
- E Fairness is a Two-Way Street
- F Identification Agreement
- G Tenderer's Experience in Similar Work
- H Tenderer's Senior Supervisory Staff

1.0 FORM A: SUBCONTRACTORS AND SUPPLIERS

Quote the name and address of each proposed subcontractor or supplier. After the Tender has been accepted by the Owner, substitutions of subcontractors and suppliers named will not be allowed without written approval of the Contract Administrator. Use a separate sheet if the space below is not sufficient. The list is also intended for manufacturers and fabricators.

Subtrade Section or Equipment

Name and Address of Subcontractor

NOTE: Failure of the bidder to complete FORM "A" may be grounds for rejecting the Tender.

Signature of Witness

Signature of Tenderer (Seal)

2.0 FORM B: ALTERNATIVES

List any material or equipment proposed as an alternate to the material specified, together with all costs and supporting information required in accordance with the "INFORMATION TO TENDERER'S". Attach supporting description and technical data to the Tender. Use separate sheet if space below is not sufficient.

NOTE: Indicate "N/A" or "none" if no alternatives are submitted at the time of tendering.

NOTE: Failure of the bidder to complete FORM "B" may be grounds for rejecting the Tender.

Signature of Witness

Signature of Tenderer (Seal)

3.0 FORM C: UNDERTAKING TO COMPLY

Name of Contractor _____

Description of Contract _____

Name of Authorized Representative
of the Contractor _____

3.1 I / We hereby undertake:

- (a) to comply with all applicable health and safety and environmental legislation in the performance of this contract;
- (b) to maintain a safe and healthy work environment during the performance of this contract.
- (c) that a Joint Health & Safety Committee or the appointment of a Health & Safety Representative is undertaken as applies to the Occupational Health & Safety Act.

3.2 I / We hereby agree:

- (a) that compliance with all health & safety and environmental legislation is a condition of the contract and that noncompliance with same may, at the Corporation of the City of Dryden's (hereinafter the Corporation or the City) discretion, lead to the termination of this Contract;
- (b) to permit the Corporation to audit my/our health and safety and environmental records during the term of the contract and upon its conclusion and to co-operate fully with any such audit(s).

3.3 I / We understand that contractor safety deficiencies will be addressed by the Corporation in the following progressive steps:

- (a) The infraction(s) will be identified to the Contractor (site supervisor) verbally and documented as such.
- (b) The Contractor's Head Office will be contacted about the infraction(s), orally and in writing.
- (c) if the infraction(s) remain, a written notice will be presented to the Contractor's Head office and a fine of a minimum of \$100.00 up to a maximum of \$1,000.00 per infraction will be deducted from the payment due to the Contractor.
- (d) if required by law to immediately report the infraction(s), the Corporation shall report the infraction to the appropriate Ministry(ies).
- (e) If not required by law to report the infraction(s), the Corporation may report the infraction to appropriate Ministry(ies)
- (f) The Corporation may, in the Corporation's discretion, suspend or terminate the contract and/or withhold payment by the Corporation.

3.4 I / We acknowledge and agree:

- (a) depending upon the nature and/or seriousness of the deficiency, the Corporation reserves the right to bypass any or all of the steps described in section 3.3 sections (a) through (f).

3.5 I / We hereby acknowledge:

- (a) receipt of a copy of the Corporation's Contractor Safety Policy and that I/we understand and undertake to adhere to the terms of this Policy and to co-operate with the Corporation in its efforts to ensure compliance thereunder.

I / We have the authority to bind the Contractor,

_____(DATE)

SIGNED, SEALED AND DELIVERED

in the presence of

Per:

WITNESS

NAME OF CONTRACTOR

SIGNATURE

Name of Administrator of Contractors Health & Safety Program:

NOTE: Failure of the bidder to complete FORM "C" may be grounds for rejecting the Tender.

4.0 FORM D: BID BOND AND AGREEMENT TO BOND (PAGE 1 OF 2)

KNOW ALL MEN BY THESE PRESENTS THAT

(hereinafter called the "Principal") and

(hereinafter called the "Surety"), are held and firmly bound unto The City of Dryden (hereinafter called the "Obligee") in the sum of ten percent (10%) of the Total Bid Price set out in the Tender Submission hereinafter described, for the payment of which sum the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted a Bid to the Obligee dated the

_____ day of _____, 20_____ for

THE CITY OF DRYDEN
DUKE STREET RECONSTRUCTION

as more fully set out in the Tender Package.

NOW THEREFORE the condition of this obligation is such that if the Bid of the Principal is not accepted, or if said Bid is accepted and the Principal, in accordance with the terms of the Bid, enters into a Contract with the said Obligee and furnishes the required performance security for guaranteeing the faithful performance of the Contract, this obligation shall be void, but otherwise shall remain in full force and effect.

IN WITNESS WHEREOF the Principal and Surety have signed and sealed this bond the
_____ day of _____, 20_____.

SIGNED AND SEALED
in the presence of:

(Witness)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

4.0 FORM D: BID BOND AND AGREEMENT TO BOND (PAGE 2 OF 2)

AGREEMENT TO BOND

(to be attached to and to form part of Bid Bond)

The Surety on the attached Bid Bond hereby undertakes and agrees with THE CITY OF DRYDEN to become bound as Surety for the Principal,

(Name of Bidder) of

(Place)

the Bidder to you on _____, 20____ for

THE CITY OF DRYDEN
DUKE STREET RECONSTRUCTION

in an amount equal to one hundred percent (100%) of the Contract Price for the due and proper performance of the Work shown and described in the Tender Package, if our Principal's Bid is accepted by you, such Performance and Labour and Material Bonds to be maintained and continue in full force and effect until the expiration of the warranty period. The Performance Bond and Labour and Material Bonds shall be in the form specified in the Tender Package.

It is a condition that this Agreement to Bond shall become null and void if the Performance Bond Labour and Material Bonds mentioned above are not required from our Principal within sixty (60) Calendar Days following the Submission Deadline.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

SIGNED AND SEALED this _____ day of _____, 20____.

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

Note: Failure of the bidder to complete Form D may be grounds for rejecting the Tender.

5.0 FORM E: FAIRNESS IS A TWO-WAY STREET

5.1 In this Article X.0,

- (a) "Construction" includes all work in or about:
 - (i) constructing, altering, decorating, repairing, demolishing, erecting or remodeling the whole or any part of a building or structure;
 - (ii) laying pipe and conduit above or below ground level;
 - (iii) excavating, tunneling, fencing, grading, paving, land clearing and bridging;
 - (iv) building a highway, as defined in section I of the Highway Traffic Act;
 - (v) carrying out other activities prescribed by the Minister of Labour under the Fairness is a Two-Way Street Act (Construction Labour Mobility), 1999 for inclusion in the definition of Construction; and
 - (vi) providing consulting services, including architectural or engineering services, with respect to the matters set out in clauses (i) to (v).
- (b) "Contractor" means a person that enters into a contract for Construction and includes any subcontractor;
- (c) "controlled" has the same meaning as in subsection 1 (5) of the Business Corporations Act;
- (d) "Designated Jurisdiction" means a province or territory of Canada prescribed by the Lieutenant Governor in Council as a designated jurisdiction under the Fairness is a Two-Way Street Act (Construction Labour Mobility), 1999.
- (e) "person who is resident in a Designated Jurisdiction" means:
 - (i) in the case of an individual or a sole proprietor, a person who is ordinarily resident in that jurisdiction;
 - (ii) in the case of a corporation,
 - (A) a person whose head office or registered office is located in that jurisdiction; or
 - (B) a person controlled directly or indirectly by a person described in subclause (A);
 - (iii) in the case of a partnership, a partnership that includes at least one partner who is resident in that jurisdiction under clause (i) or (ii).

5.2 No ministries, municipalities, agencies/boards or commissions prescribed by the Minister of Labour under the Fairness is a Two-Way Street Act (Construction Labour Mobility), 1999, shall award a Construction contract to a Contractor who is a person resident in a Designated Jurisdiction. Such a

person is not eligible and will be disqualified from this tender.

5.3 All Bidders are required to provide the following information in respect of themselves and any sub-contractors:

- (a) in the case of an individual or sole proprietor, whether he/she is ordinarily resident within a Designated Jurisdiction;
- (b) in the case of a corporation, whether the corporation's head office or registered office(s) is/are in a Designated Jurisdiction or whether any person who controls the corporation, either directly or indirectly, is a person who is ordinarily resident in a Designated Jurisdiction;
- (c) in the case of a partnership, whether the partnership includes one partner who is resident in a Designated Jurisdiction under clause (a) or (b) above, and
- (d) whether any exemptions prescribed under the Act are applicable.

5.4 In any Construction contract awarded under this tender, if any, the Contractor will be required to:

- (a) represent and warrant that neither the Contractor nor any sub-contractors are persons who are resident in a Designated Jurisdiction;
- (b) acknowledge that any sub-contracts not identified in the bid following the award of the contract will be subject to the approval of the City of Dryden.
- (c) acknowledge that any material misrepresentation or breach of the representation and warranty in clause (a) will be grounds for termination of the contract.

FAIRNESS IS A TWO-WAY STREET

Italicized terms have the same meaning as in Article X.0 of the tender document.

I/we certify that neither the Bidder nor any proposed sub-contractor is a person who is resident in a Designated Jurisdiction in accordance with the criteria set out in Article X.0, in particular section 5.3.

Authorized Signing Officer

Date

6.0 FORM F: INDEMNIFICATION AGREEMENT

**CORPORATION OF THE CITY OF DRYDEN
INDEMNIFICATION AGREEMENT**

**In consideration of the Corporation of the City of Dryden (the City) agreeing to contract with the
undersigned _____**

(name of contractor)

hereby agrees and covenants that it/he/she shall indemnify and save harmless the City and all persons for whom it is in law responsible, from any and all claims, action suits, damages or costs arising or alleged to arise from the action, default or negligence of the undersigned, its agents or servants in its/his/her performing work or supplying materials on City property, or elsewhere at the City's request.

This indemnity shall include all administrative costs, adjusting costs and legal costs on a substantial indemnity basis.

This indemnity shall be limited in respect to work performed or services supplied between _____ and _____.

Dated _____ 20 _____. .

(name of contractor)

Per:

(signature)

7.0 FORM G: TENDERER'S EXPERIENCE IN SIMILAR WORK

8.0 FORM H: TENDERER'S SENIOR SUPERVISORY STAFF

<u>Name</u>	<u>Appointment</u>	<u>Qualification and Experience</u>

Name of Bidder

**SECTION 00800 - OPS
SUPPLEMENTAL GENERAL CONDITIONS**

The OPSS MUNI [OPS] General Conditions of Contract, November 2024, are modified as follows:

SECTION GC1 - INTERPRETATIONGC1.04 Definitions

The definitions of “Addendum”, “Controlling Operation”, and “Subcontractor” in Subsection GC1.04 are deleted and replaced by the following:

“Addendum means an addition to or a change in the Contract Documents that is issued by the Contract Administrator prior to the tender closing.

“Controlling Operation” means any component of the Work, as determined by the Contract Administrator, which, if delayed, will delay the completion of the Work.

“Subcontractor” means a person, firm or corporation undertaking the execution of a part of the Work by virtue of an agreement with the Contractor which has been approved by the Owner.

Subsection GC1.04 is amended by the addition of the following definitions:

“Corporation” means the same as the “Owner”.

“Engineer” means the Contract Administrator solely in charge of this Contract. Consulting Engineers Kontzamanis Graumann Smith MacMillan (KGS Group)

“Ministry” means the Ministry of Transportation of Ontario. Any reference to the Ministry or the Ministry of Transportation and Communications found in this Contract shall means the “Owner”.

“Project Specifications” means Ontario Provincial Standard Specifications, and Special Provisions. The OPS specification in affect when the call for tenders for this contract were advertised shall apply for the duration of the contract.

“Provide” means supply all labour, materials, equipment, handling and cartage required to complete installation of the item concerned.

GC1.06 Final Acceptance

Subsection GC1.06 is amended by the addition of the following paragraph:

- 02) In addition to all other prior requirements Final Acceptance will not occur until the Work has passed all inspections and testing requirements.

SECTION GC2 – CONTRACT DOCUMENTSGC2.01 Reliance on Contract Documents

Paragraph 01)(a) of Subsection GC2.01 is deleted and replaced by the following:

- 01)(a) The Contractor shall assume full responsibility for obtaining the exact locations of underground utilities. The Contract Administrator does not warrant the correctness of completeness of the Plans with respect to existing public utilities and services whether underground or on the surface. The Contractor shall have no claim for additional compensation, if, in uncovering and carrying out the work, it should find that the actual location of existing utilities does not correspond with the locations shown on the Plans.

SECTION GC3 - ADMINISTRATION OF THE CONTRACTGC3.05 Layout Information

Clause GC3.05 is deleted and replaced with the following:

- 01) The Contract Administrator shall provide baseline and benchmark information for the general location, alignment, and elevation of the Work.

GC3.07 Delays

Paragraph 01) of Subsection GC3.07 is deleted and replaced by the following:

- 01) If the Contractor is delayed in the performance of the Work by:
 - a) war, blockades, and civil commotions, errors in the Contract Documents;

- b) an act or omission of the Owner, Contract Administrator, other contractors, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents;
- c) a stop work order issued by a court or public authority, provided that such order was not issued as the result of an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly;
- d) the Contract Administrator giving notice under Subsection GC7.09, Suspension of Work;
- e) abnormal inclement weather; or
- f) archaeological finds in accordance with Subsection GC3.15, Archaeological Finds,

then the Contractor shall **not** be reimbursed by the Owner for any costs incurred by the Contractor as the result of such delay. Any delay in the performance of the work shall be considered for the extension of Contract Time only.

In the case of an application for an extension due to abnormal inclement weather, the Contractor shall, with the Contractor's application, submit evidence from Environment Canada in support to such application. Extension of Contract Time will be granted in accordance with Subsection GC3.06, Extension of Contract Time.

Subsection GC3.07 is amended by the addition of the following paragraph:

- 04) The Contractor shall not have any claims for compensation or damages against the Corporation for any stoppage or delay from any cause whatever, whether such stoppage or delay shall be caused by or result from the action or neglect of any other contractor, or shall be caused by or result from the work being out of the hands of the Contractor, or any other contractor, by the Corporation under the provisions of this Contract made with such other contractor.

GC3.08 Assignment of Contract

Subsection GC3.08 is amended by the addition of the following paragraph:

- 02) No assignment of this contract in whole or in part shall be valid unless it shall contain a provision that the funds to be paid to the assignee under the assignment are subject to the prior lien for

services rendered or material supplied for the performance of the work called for in the Contract in favour of persons, firms, or corporations rendering such services or supplying such materials.

GC3.10.01 Changes in the Work

Paragraph 03) of Clause GC3.10.01 is deleted and replaced by the following:

03) The valuation of additions to and deductions from the Contract shall be made as follows:

- a) The prices in the Schedule of Prices or Provisional Items shall apply where appropriate as determined by the Contract Administrator.
- b) If the prices in Clause (a) are not appropriate, valuation will be made by one of the following methods:
 - i] Contract Administrator may ask the Contractor for a Quotation for the proposed work.
 - ii] If the Quotation referred to in [i] above is not accepted by the Contract Administrator, the actual cost of the work will be determined on a Time and Material Basis in accordance with the OPS General Conditions, Supplementary General Conditions, Project Specifications and Special Provisions.
- c) Whenever extra work is being performed under Subsection (b) (ii) above, the Contractor shall submit daily reports in writing, to the Contract Administrator, indicating the total chargeable costs incurred, for the day. Valuation of the extra work being so performed will be made by the Contract Administrator on the basis of approved daily reports.

Section GC3 is amended by adding a new Subsection GC3.16, as follows;

GC3.16 City of Dryden Policy on Contractor Safety**01) Policy Statement:**

All contractors or land developers working on municipal projects are required to work in compliance to The Ontario Occupational Health and Safety Act and Regulations. All contractors working on city streets and roads will comply with the Ontario Traffic Manual – Book 7.

Failure to comply to will be considered a breach of contract and may result in work stoppage, Ministry of Labour involvement, or in termination of the contract.

02) Contractor safety deficiencies will be addressed by the City in the following progressive steps:

- a) The problem will be identified to the contractor (site supervisor).
- b) The contractor's head office will be contacted about the problem, orally and later in writing.
- c) If the problem remains unresolved then the Ministry of Labour will be notified of the violation and if necessary the work will be stopped until the problem is corrected.
- d) The contract may be terminated by the City.

SECTION GC4 - OWNER'S RESPONSIBILITIES AND RIGHTS

GC4.02 Approvals & Permits

Paragraph 02) of Subsection GC4.02 is deleted and replaced with the following:

02) The Contractor shall obtain and pay for all permits, licences and certificates solely required for project approval.

GC4.04 Construction Affecting Railway Property

Paragraph 01) of Subsection GC4.04 is deleted and replaced by the following:

01) When construction affects railway property, the Owner will pay the costs of all flagging and other traffic control measures required and provided by the railway company within the Working area unless such costs are solely a function of the Contractor's chosen method of completing the work.

GC4.06 Contractors Right to Correct a Default

Paragraphs 01), 02) and 02)(a) of Subsection GC4.06 are amended as follows:

- 01) change reference from five [5] to three [3] full working days.
- 02) change reference from five [5] to three [3] full working days.
- 02)(a) change reference from five [5] to three [3] full working days.

Section GC4 is amended by adding a new Subsection GC4.14, as follows;

GC4.14 Personnel Employed by Contractor

- 01) The Contractor shall not employ or hire any City employees who are employed in the Infrastructure & Operations Department.

SECTION GC6 - INSURANCE, PROTECTION AND DAMAGE

GC6.01 Protection of Work, Persons and Property

Subsection GC6.01 is amended by the addition of the following paragraph:

- 06) When carrying out excavation work, the Contractor may encounter such underground utilities as sewers, gas mains, telephone cables, power cables, and watermains. The Contractor shall be fully responsible for any breakage or damage to such utilities, and the Contractor shall pay the full cost of repairing such damage and making good any losses or damages which are caused as a result of his operation in carrying out this Contract.

GC6.03.02 Commercial General Liability Insurance

Paragraphs 01) and 02), of Clause GC6.03.02 are deleted and replaced with the following:

- 01) The Contractor shall obtain and maintain Comprehensive General Liability Insurance against Bodily Injury and Property Damage claims with respect to all work to be performed under this contract. Such Insurance shall:
 - a) be in the joint names of the Contractor, the Corporation of the City of Dryden, KGS Group, Her Majesty the Queen in Right of Ontario, and all sub-contractors of either employed directly or indirectly in the work to be performed;
 - b) contain a Cross Liability Clause;
 - c) include coverage for:

- i] Completed Operations, which coverage shall be maintained continuously in force for a period of not less than 24 months from the date of the Certificate of Total Performance of the Work
- ii] Blanket Contractual Liability
- iii] Contingent Employers Liability
- iv] Non-owned Automobile Liability
- v] Broad Form Property Liability
- vi] Excavation

where applicable, include coverage for:

- i] Underpinning, shoring
- ii] Demolition
- iii] Building raising or moving
- iv] Blasting or the Use of Explosives
- v] Tunnelling
- vi] Pile driving, caisson work
- vii] Use of aircraft or watercraft, owned or non-owned

- e) contain a clause stating that such Insurance shall remain in force and not be amended, cancelled or allowed to lapse without 30 days prior written notice being given to each of the named insureds;
- f) be subject to a limit of not less than \$5,000,000.00 inclusive per occurrence for Bodily Injury, Death and Damage to Property, including loss of use thereof;

02) Prior to the commencement of any work under this Contract the Contractor shall file with the City, to the attention of the City Clerk, Certificates evidencing full compliance with the above clauses, in accordance with the prescribed Certificate which is located after the "Tender Form" in the Documents.

GC6.03.03 Automobile Liability Insurance

Paragraph 01) of Clause GC6.03.03 is deleted and replaced by the following:

01) The Contractor shall insure and maintain insurance against legal liability for Bodily Injury and Property Damage caused by automobiles owned or leased by the Contractor. Such insurance shall be subject to an inclusive limit of not less than \$5,000,000.00.

GC6.03.06 Contractor's Equipment Insurance

Clause GC6.03.06 is amended by the addition of the following paragraph:

- 02) If this Contract includes the construction of or alterations to a bridge, dam, culvert or building, the Contractor shall provide Property Insurance, to insure the Work against all risks including flood and earthquake.

Subsection GC6.03 is amended by adding a new Clause GC6.03.08, as follows;

GC6.03.08 Insurance Claims

- 01) It shall be the duty of the Contractor to fully comply with the terms and conditions of the Liability Insurance coverage, including, without limiting the generality of the foregoing, the requirement to promptly report claims to the Insurer.
- 02) The Contractor shall also promptly notify the Contract Administrator of all such claims in writing.
- 03) If a claim is settled, the Contractor shall thereupon provide the Contract Administrator with a copy of the Claimant's Release.
- 04) If a claim is rejected, the Contract Administrator shall be notified at the time of rejection.
- 05) The Contract Administrator shall be provided full information as to such claims at all times as the Contract Administrator may require and in any event should 30 days elapse after the claim has been received by the Contractor and the Contractor is not able to report settlement or rejection of the claim, the Contractor will provide a full report to the Contract Administrator as to the status of and steps being taken with respect to the claim.

GC6.04 Bonding

Paragraphs 01) and 02) of Subsection GC6.04 are deleted and replaced by the following:

- 01) The Contractor, together with a Surety Company approved by the Owner and authorized by law to carry on business in the Province, shall furnish a 50% Labour and Materials Payment Bond to the Owner using CCA Document(s) 22. The Bond shall remain in effect until 12 months after the date the Contract Administrator accepts the entire work.

02) The Contractor, together with a Surety Company, approved by the Owner and authorized by law to carry on business in the Province in which the work is to be performed, shall furnish a Performance Bond to the Owner using CCA Document(s) 21 in the amount of 100% of the contract price. The Bond shall unconditionally guarantee the performance of the contract, shall be at the expense of the Contractor, and shall remain in effect until 12 months after the date of the Certificate of Total Performance of the work.

Subsection GC6.04 is amended by the addition of the following paragraph:

03) In lieu of the Bonds specified in Paragraphs 01) and 02) the Contractor may provide unconditional Irrevocable Letters of Credit, in a form acceptable to the Owner and/or a certified cheque made out to the Owner.

SECTION GC7 - CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC7.01.02 Commencement of Work

Paragraph 01) of Subsection GC7.01.02 is deleted and replaced with the following:

01) The Contractor shall commence the Work within 14 days after receiving Notice from the Contract Administrator. The Contractor will not commence the work until the contract has been officially accepted by the Corporation, the Insurance Certificates and the Performance Bonds are satisfactory to the Corporation, and the Contractor has received Notice from the Contract Administrator to commence the work.

GC7.01.03 Control and Responsibility

Subsection GC7.01.03 is amended by the addition of the following paragraphs:

06) Prior to commencement of construction, the Contractor will locate on site those property bars, control points, baselines and benchmarks which are necessary to delineate the Working Area and to lay out the Work, all as shown on the Contract Drawings.

07) The Contract Administrator will provide reference points and reference elevations for the Work. The Contractor will be fully responsible for all survey work required to facilitate the Work. The Contractor must satisfy himself before commencing any work as to the meaning and correctness of all reference points, and no claim will be entertained by the Owner for or on account of any alleged inaccuracies, unless the Contractor notified

the Contract Administrator of such inaccuracies in writing before commencing the work.

- 08) The Contractor shall assume full responsibility for alignment, elevations, and dimensions of each and all parts of the Work, regardless of whether the Contractor's layout work has been checked by the Contract Administrator.
- 09) The Contractor shall furnish the Contract Administrator or any of his assistants with all reasonable help which may be required at any time in reviewing the survey work. The Contractor will receive no additional compensation for this assistance.
- 10) To co-ordinate the work, the Contractor or a person authorized to act for the Contractor will attend regular meetings with the Contract Administrator or his representative during the period over which the work under the contract is carried out, at a time and place to be decided by the Contract Administrator
- 11) The Contractor shall install at its own expense all sheeting and shoring required to support trenches or to protect existing structures or works. The Contractor is responsible for obtaining the certificates by a Professional Engineer that all shoring will meet Ministry of Labour safety requirements. Evidence of such certification shall be provided to the Contract Administrator.
- 12) The Contractor shall provide for efficient drainage of all sections of the work during all stages of construction at his own expense. The Contractor will be responsible for all damage which may be caused through his failure to provide proper drainage facilities. The Contractor shall restore any existing drainage works which are disturbed as a result of his construction activities.
- 13) In order to assist the Corporation in inspecting the progress of the work, the Contractor shall prepare a Schedule of Work prior to starting the contract and shall revise the schedule monthly for any changes throughout the contract.
- 14) The Contractor shall designate a person to be responsible for traffic control and work zone safety. The designated person shall be a competent worker who is qualified because of knowledge, training, and experience to perform the duties, is familiar with Book 7 of the Ontario Traffic Manual, and has knowledge of all potential or actual danger to workers and motorists. Prior to the commencement of construction, the Contractor

shall notify the Contract Administrator of the name, address, position, cell phone, pager, and telephone numbers of the designated person, and update as necessary. The designated person may have other responsibilities, including other construction sites, and need not be present in the Working Area as all times.

GC7.01.04 Compliance with the Occupational Health and Safety Act

Subsection GC7.01.04 is amended by the addition of the following paragraphs:

01)(h) The Contractor shall also work in accordance with the City's Contractor Safety Policy.

GC7.01.09 Utilities

Paragraph 01) of Subsection GC7.01.09 is deleted and replaced with the following:

01) The Contractor shall arrange with the appropriate utility authorities for the stake out of all-underground utilities and service connections, which may be affected by the Work. The Contractor shall be responsible for any damage done to the underground utilities and the service connections by the Contractor's forces during construction. The Contractor shall attend such meetings with the Contract Administrator and the utility authorities for each utility affected by the Contract. The Contractor shall notify the local gas authority at least 48 hours in advance of the commencement of any work, which may affect pipes belonging to the gas utility company. The locate boundaries shall include areas required for owner layout and work activities required by the City. Provide copy of locate paperwork.

GC7.02 Monuments and Layout

Subsection GC7.02 is amended by the addition of the following paragraph:

12) The Contractor shall provide the layout for all contract work unless otherwise noted.

GC7.03 Working Area

Subsection GC7.03 is amended by the addition of the following paragraph:

- 06) The location of all temporary buildings used for construction purposes must be submitted to the Contract Administrator for approval before erection work commences. Temporary buildings must be kept clean and sanitary and must not become a hazard to health or a nuisance to the adjoining properties.
- 07) The Contractor shall ensure that during night work the site of the Work is adequately floodlit to the Contract Administrator's satisfaction for Work operations, inspections and advance warning to traffic.
- 08) Streets beyond the limits of the work and other construction areas shall be kept clean. Dusty materials shall be transported in covered haulage vehicles. Wet materials shall be transported in suitable watertight haulage vehicles.
- 04) The Contractor shall take such steps as may be required to prevent dust nuisance resulting from its operations either within the limits of the work or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a roadway through the Work.
- 05) Where the Work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the Work is being carried out.
- 06) Permitted dust control measures may include the application of calcium chloride or water. In general, the use of calcium chloride and oil shall be kept to a minimum and is restricted to vehicle rights-of-way - more frequent applications of water in close proximity to watercourses. The Contract Administrator's acceptance shall be obtained before chemicals for dust control are used.

GC7.06

Maintaining Roads and Detours

Paragraph 07) of Subsection GC7.06 is deleted and replaced by the following:

- 07) The Contractor will bear the cost of maintaining, in a satisfactory condition for traffic, a road through the working area. The road through the Work will include any detour constructed in accordance with the Contract Documents or required by the Contract Administrator. Compensation for all labour, equipment and materials to do this work and to maintain the road, shall be considered to be included in the prices bid for the various tender items and no additional payment will be made.

Subsection GC7.06 is amended by the addition of the following paragraphs:

- 12) In order to satisfy the Corporation that the Contractor has addressed concerns regarding traffic control and safety it will be required to submit a sketch indicating its proposed method of barricades and/or signage for each of the work sites included in the Contract. This information shall be available for review and approval by the Contract Administrator at the Contract pre-construction meeting.

GC7.08 Approvals and Permits

Paragraph 02) of Subsection GC7.08 is deleted and replaced by the following:

- 02) All permits, inspections and the cost required in this connection for proper performance as called for in the Contract shall be at the expense of the Contractor.

Subsection GC7.08 is amended by the addition of the following paragraph:

- 03) The Contractor will notify, obtain inspections and approvals from, and co-operate with other organizations involved or affected by the Work, such as telephone, light and power, gas, railway companies, government agencies.

GC7.09 Suspension of Work

Subsection GC7.09 is amended by the addition of the following paragraphs:

- 02) The Contract Administrator may stop any portion of the Work, if in his judgement the weather is such as to prevent the Work from being properly done. No compensation of any kind will be made for such stoppage except an extension of time for the completion of the Work as provided in Subsection GC3.06, Extension of Contract Time.
- 03) The Contractor shall, upon written notice from the Contract Administrator, discontinue or delay any or all Work of base, foundation, or paving construction on any section of any road or highway, if in the opinion of the Contract Administrator, the foundation is not sufficiently compacted or settled for surfacing of the Work in question, and the Work shall not be resumed until the Contract Administrator shall in writing so direct, and the Contractor shall not be entitled to any compensation for such stoppage or delay to the Work, other than an extension of time as provided in Subsection GC3.06, Extension of Contract Time.

GC7.11 Notices by the Contractor

Subsection GC7.11 is amended by the addition of the following paragraphs:

- 02) The Contractor shall notify the local gas authorities at least 48 hours in advance of the commencement of any work which may affect pipes belonging to the gas utility company.
- 03) Spills or discharge of pollutants or contaminants under the control of the Contractor, and spills or discharges of pollutants or contaminants that are a result of the Contractor's operations that cause or are likely to cause adverse effects shall forthwith be reported to the Contract Administrator.

Such spills or discharges and their adverse effects shall be as defined in the Environmental Protection Act R.S.O. 1990, Chapter E.19. All spills or discharges of liquid, other than accumulated rainwater from luminaires, internally illuminated signs, lamps and liquid type transformers under the control of the Contractor, and all spills or discharges from this equipment that are a result of the Contractor's operations shall, unless otherwise indicated in the Contract, be assumed to contain PCB's and shall forthwith be reported to the Contract Administrator. This reporting will not relieve the Contractor of his legal or contractual responsibilities regarding such spills or discharges.

GC7.14 Limitations of Operations

Subsection GC7.14 is amended by the addition of the following paragraph:

- 03) The Contractor will co-operate with the employees of the Corporation or other contractors working on the same or related projects. The Contractor will notify, obtain approvals from, and co-operate with other organizations involved or affected by the work, such as telephone, light and power, gas, railway companies, etc.

GC7.16 Warranty

Subsection GC7.16 is amended by the addition of the following paragraphs:

- 04) The Contractor shall be responsible for the maintenance of all trenches for a period of 2 years from the date of Substantial Completion. Any shrinkage or settlement during this period will be made good by the Contractor at his own expense. This shall also include making good any other works affected.

- 05) Deficiency defects shall be completed within 30 days of being reported except where carry over of the construction season affects schedule. In this case, all deficiencies shall be completed no later than June 30.
- 06) The Contractor shall be responsible for a two (2) year warranty on all new trees planted under the Contract. This shall include 2 full growing seasons from the date of substantial completion. Any trees found to be unhealthy over this period will be replaced by the Contractor.

Section GC7 is amended by adding a new Subsection GC7.19, as follows;

GC7.19 Accessibility for Ontarians with Disability Act, Reg. 429/07

- 01) Prior to the commencement of work under this contract, the Contractor shall also furnish evidence of compliance with requirements of the Accessibility for Customer Service Regulation 429/07, Section 6; Training for Staff. The City may, at its discretion, provide such training if the contractor is required to meet the requirements of Regulation 429/07 on and after January 1, 2012.

SECTION GC8 - MEASUREMENT AND PAYMENT

GC8.02.03 Advance Payments for Material

Clause GC8.02.03 is amended by the addition of the following paragraph:

- 03) The Corporation will not make advance payments for material under this Contract.

GC8.02.04.01 Progress Payment

Paragraph 02)(e) of Clause GC8.02.04.01, is deleted and replaced by the following:

Clause GC8.02.04.01 is amended by the addition of the following paragraphs:

- 05) Notwithstanding Paragraph 04) the Owner may withhold any or all payments to the Contractor or portion thereof in circumstances where the Contractor is considered by the Owner or Contract Administrator to be unreasonably in default of specified times for completion of the Work.
- 06) The Contractor shall furnish the Contract Administrator with satisfactory evidence in the form of a WSIB Certificate of Clearance that he has made suitable provision for meeting any liability under The Workman's Compensation Act of Ontario, prior to the release of any monthly progress payment.

07) The Contractor shall furnish the Contract Administrator with a Statutory Declaration that all liabilities incurred by the Contractor and its sub-contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract have expired or have been satisfied, discharged or provided for by payment. The Statutory Declaration shall be provided prior to all monthly progress payments except the first one.

GC8.02.04.03 Sub-contract Statutory Holdback Release Certificate and Payment

Clause GC8.02.04.03 is deleted and replaced with the following:

01) If any lien is registered or if the City receives notice of any claim for lien, then the City may hold back from the money due to the Contractor hereunder, in addition to the normal statutory lien holdback, sufficient monies to cause a discharge or vacation of the registration of any such lien or any certificate of action relating thereto and to indemnify it completely against such lien or claim for lien or proceedings arising therefrom and from all expenses and costs related thereto, including, but not limited to, legal fees and disbursements on a solicitor and client basis.

GC8.02.04.08 Interest

Clause GC8.02.04.08 is deleted and replaced with the following:

01) The Owner is not liable to pay interest on any amount which may at any time become payable to the Contractor under this Contract whether or not the payment is in default and whether or not any action or other proceeding has been commenced in respect thereof.

GC8.02.04.09 Interest for Late Payment

Clause GC8.02.04.09 is deleted.

GC8.02.04.10 Interest for Negotiations and Claims

Clause 8.02.04.10 is deleted.

GC8.02.05.06.02 Stand-by Time

Clause GC8.02.05.06.02 is deleted and replaced with the following:

01) The Owner is not liable to pay Stand-by Time for any labour or equipment rental under this Contract.

Clause GC8.02.09, Liquidated Damages, is deleted and replaced by the following:

GC8.02.09 Time for Completion and Liquidated Damages

01) Time

Time shall be strictly of the essence of this Contract.

02) Progress of the Work and Time for Completion

The Contractor shall complete this Contract in its entirety by the completion date specified in the Tender Form.

If the time limit specified is not sufficient to permit completion of the Work by the Contractor working a normal number of hours each day or week on a single daylight shift basis, it is expected that additional and/or augmented daylight shifts will be required throughout the life of the Contract to the extent deemed necessary by the Contractor to ensure that the Work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various items of Work and no additional compensation will be allowed therefore.

An Extension of Time may be granted in writing by the Contract Administrator in his or her sole discretion in the event of the Work being delayed beyond the prescribed time for completion. Such extension shall be for such time as the Contract Administrator may prescribe and the Contract Administrator shall fix the terms on which such an extension may be granted. An application for an Extension of Time shall be made in writing by the Contractor to the Owner at least 15 days prior to the date of completion fixed by the Contract. The date of expiry of all Bonds and other Surety furnished to the Owner by the Contractor shall be extended at the expense of the Contractor.

Any Extension of Time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Owner whatsoever under this Contract and all of such rights shall continue in full force and effect after the time limited in this Contract for completion of the work and whenever in this Contract, power or authority is given to the Owner or the Contract Administrator or any person to take any action consequent upon the act, default, neglect, delay, breach, non-observance or non-performance by the Contractor in respect of the Work or Contract or any portion thereof, such powers or authorities may be exercised from

time to time, and not only in the event of the happening of such contingencies before the time limited in this Contract for the completion of the Work but also in the event of the same happening after the time so limited in the case of the Contractor being permitted to proceed with the execution of the Work under an Extension of Time granted by the Owner. In the event of the Owner granting an Extension of Time, time shall continue to be deemed strictly of the essence of this Contract.

03) Liquidated Damages

It is agreed by the Parties to the Contract that in case all the Work called for under the Contract is not finished by the completion date specified in the Tender Form or as amended by the Contract Administrator, damage will be sustained by the Owner, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Owner will sustain in the event of and by reason of such delay and the Parties therefore agree that the Contractor will pay to the Owner the sum of **\$2000.00** for Liquidated Damages for each and every calendar day's delay in completing the Work up until substantial completion and **\$1000.00** for Liquidated Damages for each and every calendar day's delay in completing the Work beyond the date of substantial completion. It is agreed that amount is an estimate of actual damage to the Owner which will accrue during the period in excess of the prescribed date of completion.

The Owner may deduct any amount under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The Liquidated Damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternatives that may be available to the Owner.

The Contractor shall not be assessed with Liquidated Damages for any delay caused by Acts of God, or of the Public Enemy, Act of the Corporation, the Contract Administrator, or of any Foreign State, Fire, Epidemics, Quarantine Restrictions, Embargoes, or Delays of sub-contractors due to such causes. If the Contractor is delayed by reason of alterations or changes made under Section GC.03.10, Changes, of the General Conditions, the time of completion shall be extended as determined by the Contract Administrator in his or her sole discretion.

Subsection GC8.02 is amended by the addition of the new Clauses GC8.02.10 and GC8.02.11, as follows;

GC8.02.10 Maintenance Security Holdback

01) In addition to any other holdback required by statute or otherwise agreed by the Parties, the Owner will retain, until expiry of the warranty referred to in GC7.16, money in the amount calculated pursuant to Paragraphs 02) and 03) hereof which money may be applied by the Owner in whole or in part in order to reimburse the Owner for losses, costs incurred or funds expended by the Owner as a result of default by the Contractor respecting the warranty obligations of the Contractor set out in the Contract.

02) The said holdback for warranty obligations referred to in the preceding paragraph shall be first retained by the Owner when the Contract Administrator certifies that Work to the value of 70% of the Contract Price has been performed and shall be calculated and shown as an amount to be retained in the monthly applications for payment by the Contractor in succeeding applications, commencing when the Contractor makes his first application for payment on the basis that work to the value of 70% of the Contract Price has been performed.

04) A Maintenance Security Holdback will be calculated in accordance with the following Table:

<u>Contract Value</u>	<u>Amount of Maintenance Security Holdback</u>
less than \$ 300,000	4% of contract value
\$300,000 - 800,000	\$20,000
\$800,000 - 1,500,000	\$30,000
greater than \$1,500,000	2% of contract value

04) The Maintenance Security Holdback is in addition to any other rights or remedies of the Owner in respect to the correction of the Contractor's default of the Contractor's warranty obligations.

03) Some portions of the Work have an extended warranty. A proportionate amount of the Maintenance Security Holdback will be retained until expiry of the extended portions.

GC8.02.11 Fairness is a Two Way Street

01) The Contractor shall comply with Ontario Regulations made under "The Fairness is a Two-Way Street Act".

02) The Contractor shall:

- .1 Represent and warrant that neither the Contractor nor any subcontractor are persons who are resident in a Designated Jurisdiction
- .2 Acknowledge that any subcontractor not identified in the Tender, following award of the Contract will be subject to the approval of the Owner.
- .3 Acknowledge that any material misrepresentation or breach of the representation and warranty in Clause 01) will be grounds for termination of the Contract.



OPSS MUNI GENERAL CONDITIONS OF CONTRACT

TABLE OF CONTENTS

SECTION GC 1.0 - INTERPRETATION

GC 1.01	Captions	7
GC 1.02	Abbreviations.....	7
GC 1.03	Gender and Singular References.....	7
GC 1.04	Definitions.....	8
GC 1.05	Ontario Traffic Manual.....	13
GC 1.06	Final Acceptance.....	13
GC 1.07	Interpretation of Certain Words	13

SECTION GC 2.0 - CONTRACT DOCUMENTS

GC 2.01	Reliance on Contract Documents	14
GC 2.02	Order of Precedence	14

SECTION GC 3.0 - ADMINISTRATION OF THE CONTRACT

GC 3.01	Contract Administrator's Authority.....	16
GC 3.02	Working Drawings	17
GC 3.03	Right of the Contract Administrator to Modify Methods and Equipment	18
GC 3.04	Emergency Situations	18
GC 3.05	Layout Information.....	18
GC 3.06	Extension of Contract Time.....	18
GC 3.07	Delays	19
GC 3.08	Assignment of Contract.....	20
GC 3.09	Subcontracting by the Contractor.....	20
GC 3.10	Changes	20
GC 3.10.01	Changes in the Work.....	20
GC 3.10.02	Extra Work.....	21
GC 3.10.03	Additional Work	21
GC 3.11	Notices	21
GC 3.12	Use and Occupancy of the Work Prior to Substantial Performance	22
GC 3.13	Claims, Negotiations, Mediation.....	22
GC 3.13.01	Continuance of the Work.....	22
GC 3.13.02	Record Keeping.....	22
GC 3.13.03	Claims Procedure.....	22
GC 3.13.04	Negotiations	23
GC 3.13.05	Mediation	23
GC 3.13.06	Payment	23
GC 3.13.07	Rights of Both Parties.....	24

GC 3.14	Arbitration	24
GC 3.14.01	Conditions for Arbitration.....	24
GC 3.14.02	Arbitration Procedure	24
GC 3.14.03	Appointment of Arbitrator	24
GC 3.14.04	Costs	25
GC 3.14.05	The Decision	25
GC 3.15	Archaeological Finds	25

SECTION GC 4.0 - OWNER'S RESPONSIBILITIES AND RIGHTS

GC 4.01	Working Area.....	26
GC 4.02	Approvals and Permits	26
GC 4.03	Management and Disposition of Materials	26
GC 4.04	Construction Affecting Railway Property	27
GC 4.05	Default by the Contractor	27
GC 4.06	Contractor's Right to Correct a Default	27
GC 4.07	Owner's Right to Correct a Default	28
GC 4.08	Termination of Contractor's Right to Continue the Work	28
GC 4.09	Final Payment to Contractor	29
GC 4.10	Termination of the Contract.....	29
GC 4.11	Continuation of Contractor's Obligations.....	29
GC 4.12	Use of Performance Bond.....	29
GC 4.13	Payment Adjustment	29

SECTION GC 5.0 - MATERIAL

GC 5.01	Supply of Material.....	30
GC 5.02	Quality of Material	30
GC 5.03	Rejected Material	30
GC 5.04	Substitutions	31
GC 5.05	Owner Supplied Material.....	31
GC 5.05.01	Ordering of Excess Material.....	31
GC 5.05.02	Care of Material.....	31

SECTION GC 6.0 - INSURANCE, PROTECTION AND DAMAGE

GC 6.01	Protection of Work, Persons, and Property.....	33
GC 6.02	Indemnification	33
GC 6.03	Contractor's Insurance	34
GC 6.03.01	General.....	34
GC 6.03.02	Commercial General Liability Insurance	34
GC 6.03.03	Automobile Liability Insurance	35
GC 6.03.04	Aircraft and Watercraft Liability Insurance	35
GC 6.03.04.01	Aircraft Liability Insurance	35
GC 6.03.04.02	Watercraft Liability Insurance.....	35
GC 6.03.05	Property and Boiler Insurance.....	35
GC 6.03.05.01	Property Insurance	35
GC 6.03.05.02	Boiler Insurance	35
GC 6.03.05.03	Use and Occupancy of the Work Prior to Completion	36
GC 6.03.05.04	Payment for Loss or Damage	36

GC 6.03.06	Contractor's Equipment Insurance	36
GC 6.03.07	Insurance Requirements and Duration	37
GC 6.04	Bonding	37
GC 6.05	Workplace Safety and Insurance Board.....	37

SECTION GC 7.0 - CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC 7.01	General.....	38
GC 7.01.01	Site Visit.....	38
GC 7.01.02	Commencement of Work.....	38
GC 7.01.03	Control and Responsibility	38
GC 7.01.04	Compliance with the Occupational Health and safety Act	38
GC 7.01.05	Contractor's Representatives.....	39
GC 7.01.06	Assistance to the Contract Administrator	40
GC 7.01.07	Schedule	40
GC 7.01.08	Errors and Inconsistencies as Relating to the Contract.....	40
GC 7.01.09	Utilities	40
GC 7.02	Monuments and Layout.....	41
GC 7.03	Working Area.....	42
GC 7.04	Damage by Vehicles or Other Equipment.....	42
GC 7.05	Excess Loading of Motor Vehicles	42
GC 7.06	Maintaining Roadways and Detours	42
GC 7.07	Access to Properties Adjoining the Work and Interruption of Utility Services.....	43
GC 7.08	Approvals and Permits	44
GC 7.09	Suspension of Work	44
GC 7.10	Contractor's Right to Stop the Work or Terminate the Contract	44
GC 7.11	Notices by the Contractor.....	45
GC 7.12	Environmental Incident Management.....	45
GC 7.13	Obstructions	46
GC 7.14	Limitations of Operations	46
GC 7.15	Cleaning Up Before Acceptance	46
GC 7.16	Warranty	46
GC 7.17	Contractor's Workers.....	47
GC 7.18	Drainage	47

SECTION GC 8.0 - MEASUREMENT AND PAYMENT

GC 8.01	Measurement	48
GC 8.01.01	Quantities	48
GC 8.01.02	Variations in Tender Quantities.....	48
GC 8.02	Payment	49
GC 8.02.01	Non-Resident Contractor	49
GC 8.02.02	Price for Work.....	49
GC 8.02.03	Advance Payments for Material	49
GC 8.02.04	Certification and Payment	50
GC 8.02.04.01	Progress Payment.....	50
GC 8.02.04.02	Certification of Subcontract Completion.....	50
GC 8.02.04.03	Subcontract Statutory Holdback Release Certificate and Payment.....	51
GC 8.02.04.04	Certification of Substantial Performance	51

GC 8.02.04.05	Substantial Performance Payment and Substantial Performance Statutory Holdback Release Payment Certificates	52
GC 8.02.04.06	Certification of Completion	52
GC 8.02.04.07	Completion Payment and Completion Statutory Holdback Release Payment Certificates	52
GC 8.02.04.08	Interest	53
GC 8.02.04.09	Interest for Late Payment	53
GC 8.02.04.10	Interest for Negotiations and Claims	53
GC 8.02.04.11	Owner's Set-Off	54
GC 8.02.04.12	Delay in Payment	54
GC 8.02.05	Payment on a Time and Material Basis	54
GC 8.02.05.01	Definitions	54
GC 8.02.05.02	Daily Work Records	55
GC 8.02.05.03	Payment for Work	55
GC 8.02.05.04	Payment for Labour	55
GC 8.02.05.05	Payment for Material	56
GC 8.02.05.06	Payment for Equipment	56
GC 8.02.05.06.01	Working Time	56
GC 8.02.05.06.02	Standby Time	56
GC 8.02.05.07	Payment for Hand Tools	57
GC 8.02.05.08	Payment for Work by Subcontractors	57
GC 8.02.05.09	Submission of Invoices	57
GC 8.02.05.10	Payment Other Than on a Time and Material Basis	57
GC 8.02.05.11	Payment Inclusions	58
GC 8.02.06	Final Acceptance Certificate	58
GC 8.02.07	Records	58
GC 8.02.08	Taxes	58
GC 8.02.09	Liquidated Damages	59

SECTION GC 1.0 - INTERPRETATION

GC 1.01 **Captions**

- .01 The captions appearing in these General Conditions have been inserted as a matter of convenience and for ease of reference only and in no way define, limit, or enlarge the scope or meaning of the General Conditions or any provision hereof.
- .02 In the event of a conflict of a reference to the number and caption of a section, subsection, clause, or paragraph, reference shall be made to the caption.

GC 1.02 Abbreviations

.01 The abbreviations on the left below are commonly found in the Contract Documents and represent the organizations and phrases listed on the right:

AASHTO	- American Association of State Highway Transportation Officials
ACI	- American Concrete Institute
ANSI	- American National Standards Institute
ASTM	- ASTM International
AWG	- American Wire Gauge
AWWA	- American Water Works Association
CCIL	- Canadian Council of Independent Laboratories
CGSB	- Canadian General Standards Board
CSA	- CSA Group - formerly Canadian Standards Association
CWB	- Canadian Welding Bureau
GC	- General Conditions
ISO	- International Organization for Standardization
MECP	- Ontario Ministry of the Environment, Conservation and Parks
MTO	- Ontario Ministry of Transportation
MUTCD	- Manual of Uniform Traffic Control Devices, published by MTO
OHSA	- Ontario <i>Occupational Health and Safety Act</i>
OLS	- Ontario Land Surveyor
OPS	- Ontario Provincial Standard
OPSD	- Ontario Provincial Standard Drawing
OPSS	- Ontario Provincial Standard Specification
OTM	- Ontario Traffic Manual
PEO	- Professional Engineers Ontario
SAE	- SAE International
SCC	- Standards Council of Canada
SSPC	- The Society for Protective Coatings
UL	- Underwriters Laboratories
ULC	- Underwriters Laboratories Canada
WHMIS	- Workplace Hazardous Materials Information System
WSIB	- Workplace Safety & Insurance Board

GC 1.03 Gender and Singular References

.01 References to the masculine or singular throughout the Contract Documents shall be considered to include the feminine and the plural and vice versa, as the context requires.

GC 1.04 Definitions

.01 For the purposes of the Contract Documents the following definitions shall apply:

Abnormal Weather means an extreme climatic condition characterized by wind speed, air temperature, precipitation, or snow fall depth, that is less than or greater than 1-1/2 standard deviations from the mean determined from the weather records of the 25-year period immediately preceding the tender opening date.

Actual Measurement means the field measurement of that quantity within the approved limits of the Work.

Addenda means any additions or change in the Tender documents issued by the Owner prior to Tender closing.

Additional Work means work not provided for in the Contract Documents and not considered by the Contract Administrator to be essential to the satisfactory completion of the Contract within its intended scope.

Agreement means the agreement between the Owner and the Contractor for the performance of the Work that is included in the Contract Documents.

Base means a layer of Material of specified type and thickness placed immediately below the pavement, driving surface, finished grade, curb and gutter, or sidewalk.

Business Day means any Day except Saturdays, Sundays, and statutory holidays.

Certificate of Subcontract Completion means the certificate issued by the Contract Administrator according to clause GC 8.02.04.02, Certification of Subcontract Completion.

Certificate of Substantial Performance means the certificate issued by the Contract Administrator at Substantial Performance.

Change Directive means any written instruction signed by the Owner, or by the Contract Administrator where so authorized, directing that a Change in the Work or Extra Work be performed.

Change in the Work means the deletion, extension, increase, decrease, or alteration of lines; grades; dimensions; quantities; methods; drawings; substantial changes in geotechnical, subsurface, surface, or other conditions; changes in the character of the Work to be done; or Materials of the Work or part thereof, within the intended scope of the Contract.

Change Order means a written amendment to the Contract signed by the Contractor and the Owner, or the Contract Administrator where so authorized, covering contingencies, a Change in the Work, Extra Work, Additional Work; and establishing the basis for payment and the time allowed for the adjustment of the Contract Time.

Completion means contract completion as set out in the *Construction Act*.

Completion Certificate means the certificate issued by the Contract Administrator at Completion.

Completion Payment means the payment described more particularly in clause GC 8.02.04.07.

Construction Act means as set out in the *Construction Act*, R.S.O. 1990, c. C.30, as amended.

Constructor means, for the purposes of, and within the meaning of the *Occupational Health and Safety Act*, R.S.O. 1990, c.O.1, as amended and amendments thereto, the Contractor who executes the Contract.

Contract means the undertaking by the Owner and the Contractor to perform their respective duties, responsibilities, and obligations as prescribed in the Contract Documents.

Contract Administrator means the person, partnership, or corporation designated by the Owner to be the Owner's representative for the purposes of the Contract.

Contract Documents mean the executed Agreement between the Owner and the Contractor, Tender, General Conditions of Contract, Supplemental General Conditions of Contract, Standard Specifications, Special Provisions, Contract Drawings, Addenda incorporated in a Contract Document before the execution of the Agreement, such other documents as may be listed in the Agreement, and subsequent amendments to the Contract Documents made pursuant to the provisions of the Agreement.

Contract Drawings or Contract Plans mean drawings or plans, any Geotechnical Report, any Subsurface Report, and any other reports and information provided by the Owner for the Work, and without limiting the generality thereof, may include soil profiles, foundation investigation reports, reinforcing steel schedules, aggregate sources list, Quantity Sheets, and cross-sections.

Contract Time means the time stipulated in the Contract Documents for Substantial Performance or Completion of the Work, including any extension of time made pursuant to the Contract Documents.

Contractor means the person, partnership, or corporation undertaking the Work as identified in the Agreement.

Control Monument means any horizontal or vertical (benchmark) monument that is used to lay out the Work.

Controlling Operation means any component of the Work that, if delayed, may delay the completion of the Work.

Cut-Off Date means the date up to which payment shall be made for Work performed.

Daily Work Records mean daily Records detailing the number and categories of workers and hours worked or on standby, types and quantities of Equipment and number of hours in use or on standby, and description and quantities of Material utilized.

Day means a calendar day.

Drawings or Plans mean any Contract Drawings or Contract Plans, or any Working Drawings or Working Plans, or any reproductions of drawings or plans pertaining to the Work.

End Result Specification means specifications that require the Contractor to be responsible for supplying a product or part of the Work. The Owner accepts or rejects the final product or applies a price adjustment that is commensurate with the degree of compliance with the specification.

Engineer means a professional engineer licenced by the Professional Engineers of Ontario to practice in the Province of Ontario.

Equipment means all machinery and equipment used for preparing, fabricating, conveying or erecting the Work and normally referred to as construction machinery and equipment.

Estimate means a calculation of the quantity or cost of the Work or part of it depending on the context.

Extra Work means work not provided for in the Contract as awarded but considered by the Contract Administrator to be essential to the satisfactory completion of the Contract within its intended scope, including unanticipated Work required to comply with legislation and regulations that affect the Work.

Final Acceptance means the date on which the Contract Administrator determines that the Work has passed all inspection and testing requirements and the Contract Administrator is satisfied that the Contractor has rectified all imperfect Work and has discharged all of the Contractor's obligations under the Contract Documents.

Final Acceptance Certificate means the certificate issued by the Contract Administrator at Final Acceptance of the Work.

Final Detailed Statement means a complete evaluation prepared by the Contract Administrator showing the quantities, unit prices, and final dollar amounts of all items of Work completed under the Contract, including variations in tender items and Extra Work, all as set out in the same general form as the monthly Estimates.

Geotechnical Report means a report or other information identifying soil, rock, and ground water conditions in the area of any proposed Work.

Grade means the required elevation of that part of the Work.

Hand Tools means tools that are commonly called tools or implements of the trade and include small power tools.

Highway means a common and public highway any part of which is intended for or used by the general public for the passage of vehicles and includes the area between the lateral property lines thereof.

Inclement Weather means weather conditions or conditions resulting directly from weather conditions that prevent the Contractor from proceeding with a Controlling Operation.

Lot means a specific quantity of Material or a specific amount of construction normally from a single source and produced by the same process.

Lump Sum Item means a tender item indicating a portion of the Work for which payment will be made at a single tendered price. Payment is not based on a measured quantity, although a quantity may be given in the Contract Documents.

Major Item means any tender item that has a value, calculated based on its actual or estimated tender quantity, whichever is the larger, multiplied by its tender unit price, which is equal to or greater than the lesser of,

- a) \$100,000, or
- b) 5% of the total tender value calculated based on the total of all the estimated tender quantities and the tender unit prices.

Material means Material, machinery, equipment and fixtures forming part of the Work.

Monument means either a Property Monument or a Control Monument.

Owner means the party to the Contract for whom the Work is being performed, as identified in the Agreement, and includes, with the same meaning and import, "Authority."

Pavement means a wearing course or courses placed on the Roadway and consisting of asphaltic concrete, hydraulic cement concrete, Portland cement concrete, or plant or road mixed mulch.

Performance Bond means the type of security furnished to the Owner to guarantee completion of the Work according to the Contract and to the extent provided in the bond.

Plan Quantity means that quantity as computed from within the boundary lines of the Work as shown in the Contract Documents.

Project means the construction of the Work as contemplated by this Contract.

Proper Invoice has the meaning as set out in the *Construction Act*.

Property Monument means any property bar, concrete pillar, rock post, cut cross or other object that marks the boundary between real property ownership.

Quality Assurance (QA) means a system or series of activities carried out by the Owner to ensure that Work meets the specified requirements.

Quality Control (QC) means a system or series of activities carried out by the Contractor, Subcontractor, supplier, and manufacturer to ensure that Work meets the specified requirements.

Quantity Sheet means a list of the quantities of Work to be done.

Quarried Rock means Material removed from an open excavation made in a solid mass of rock that, prior to removal, was integral with the parent mass.

Quarry means a place where aggregate has been or is being removed from an open excavation made in a solid mass of igneous, sedimentary, or metamorphic rock or any combination of these that, prior to removal, was integral with the parent areas.

Rate of Interest means the prejudgment interest rate determined under subsection 127(2) of the *Courts of Justice Act* or, if the contract or subcontract specifies a different interest rate for the purpose, the greater of the prejudgment interest rate and the interest rate specified in the contract or subcontract.

Records mean any books, payrolls, accounts, or other information that relate to the Work or any Change in the Work, Extra Work, Additional Work or claims arising therefrom.

Roadway means that part of the Highway designed or intended for use by vehicular traffic and includes the Shoulders.

Shoulder means that portion of the Roadway between the edge of the travelled portion of the wearing surface and the top inside edge of the ditch or fill slope.

Special Provisions mean directions containing requirements specific to the Work.

Standard Drawing or Standard Specification means a standard practice required and stipulated by the Owner for performance of the Work.

Statutory Holdback means the holdbacks required under the *Construction Act*.

Subbase means a layer of Material of specified type and thickness between the Subgrade and the Base.

Subcontractor means a person, partnership or corporation undertaking the execution of a part of the Work by virtue of an agreement with the Contractor.

Subgrade means the earth or rock surface, whether in cut or fill, as prepared to support the pavement structure, consisting of Base, Subbase, and Pavement.

Substantial Performance has the meaning as set out in the *Construction Act*, R.S.O. 1990, c. C.30, as amended.

Subsurface Report means a report or other information identifying the location of Utilities, concealed and adjacent structures, and physical obstructions that fall within the influence of the Work.

Superintendent means the Contractor's authorized representative in charge of the Work and who shall be a "competent person" within the meaning of the definition contained in the *Occupational Health and Safety Act*, R.S.O. 1990, c. 0.1, as amended.

Surety means the person, partnership or corporation, other than the Contractor, licensed in Ontario to transact business under the *Insurance Act*, R.S.O. 1990, c.l.8, as amended, executing a bond provided by the Contractor.

Tender means an offer in writing from the Contractor, submitted in the format prescribed by the Owner, to complete the Work.

Time and Material means costs calculated according to clause GC 8.02.05, Payment on a Time and Material Basis.

Utility means an aboveground or underground facility maintained by a municipality, public utility authority or regulated authority and includes services such as sanitary sewer, storm sewer, water, electric, gas, oil, steam, data transmission, telephone, and cable television.

Warranty Period means the applicable time period according to clause GC 7.16.02, Warranty.

Work means the total construction and related services required by the Contract Documents.

Working Area means all the lands and easements owned or acquired by the Owner for the construction of the Work.

Working Day means any Day,

- a) except Saturdays, Sundays and statutory holidays;
- b) except a Day as determined by the Contract Administrator, on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom, from proceeding with a Controlling Operation. For the purposes of this definition, this shall be a Day during which the Contractor cannot proceed with at least 60% of the normal labour and Equipment force effectively engaged on the Controlling Operation for at least 5 hours;
- c) except a Day on which the Contractor is prevented from proceeding with a Controlling Operation, as determined by the Contract Administrator by reason of,
 - i. Any breach of the Contract by the Owner or if such prevention is due to the Owner, another contractor hired by the Owner, or an employee of any one of them, or by anyone else acting on behalf of the Owner.
 - ii. Non-delivery of Owner supplied Materials.
 - iii. Any cause beyond the reasonable control of the Contractor that can be substantiated by the Contractor to the satisfaction of the Contract Administrator.

Working Drawings or Working Plans means any Drawings or Plans prepared by the Contractor for the execution of the Work and may, without limiting the generality thereof, include formwork, falsework, and shoring plans; Roadway protection plans; shop drawings; shop plans; or erection diagrams.

GC 1.05 Ontario Traffic Manual

.01 All references in the Contract Documents to the MUTCD, including all Parts and Divisions thereof, or MTO Traffic Control Manual for Roadway Work Operations, or Traffic Control Manual for Roadway Operations Field Edition are hereby deleted and replaced by all currently available books which make up the Ontario Traffic Manual.

GC 1.06 Final Acceptance

.01 For the purposes of determining whether Final Acceptance has occurred, the Contract Administrator shall not take into account, in determining the discharge of the Contractor's obligations, any warranty obligation of the Contractor to the extent that the warranty extends beyond 12 months after Substantial Performance.

GC 1.07**Interpretation of Certain Words**

.01 The words "acceptable," "approval," "authorized," "considered necessary," "directed," "required," "satisfactory," or words of like import, shall mean approval of, directed, required, considered necessary, or authorized by and acceptable or satisfactory to the Contract Administrator, unless the context clearly indicates otherwise.

SECTION GC 2.0 - CONTRACT DOCUMENTS

GC 2.01 Reliance on Contract Documents

.01 The Owner warrants that the information furnished in the Contract Documents can be relied upon with the following limitations or exceptions:

- a) Based on available information at the time of the contract, the location of all mainline underground Utilities that may affect the Work shall be shown to a tolerance of:
 - i. 1.0 m horizontal, and
 - ii. 0.3 m vertical

.02 The Owner does not warrant or make any representation with respect to:

- a) interpretations of data or opinions expressed in any Subsurface Report available for the perusal of the Contractor, that are not included as part of the Contract Documents, and
- b) other information specifically excluded from this warranty.

GC 2.02 Order of Precedence

.01 In the event of any inconsistency or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:

- a) Agreement
- b) Addenda
- c) Special Provisions
- d) Contract Drawings
- e) Standard Specifications
- f) Standard Drawings
- g) Tender
- h) Supplemental General Conditions
- i) OPSS.MUNI 100 General Conditions of Contract
- j) Working Drawings

Later dates shall govern within each of the above categories of documents.

.02 In the event of any conflict among or inconsistency in the information shown on Drawings, the following rules shall apply:

- a) Dimensions shown in figures on a Drawing shall govern where they differ from dimensions scaled from the same Drawing;
- b) Drawings of larger scale shall govern over those of smaller scale;
- c) Detailed Drawings shall govern over general Drawings; and

- d) Drawings of a later date shall govern over those of an earlier date in the same series.
- .03 In the event of any inconsistency or conflict in the contents of Standard Specifications the following descending order of precedence shall govern:
 - a) Owner's Standard Specifications
 - b) Ontario Provincial Standard Specifications
 - c) Other standards referenced in OPSSs and OPSDs (e.g., CSA, CGSB, ASTM, and ANSI).
- .04 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all.

SECTION GC 3.0 - ADMINISTRATION OF THE CONTRACT

GC 3.01 Contract Administrator's Authority

- .01 The Contract Administrator shall be the Owner's representative during construction and until the issuance of the Completion Certificate or the issuance of the Final Acceptance Certificate, whichever is later. All instructions to the Contractor, including instructions from the Owner, shall be issued by the Contract Administrator. The Contract Administrator shall have the authority to act on behalf of the Owner only to the extent provided in the Contract Documents.
- .02 All claims, disputes and other matters in question relating to the performance and the quality of the Work or the interpretation of the Contract Documents shall be referred to the Contract Administrator in writing by the Contractor. The Contract Administrator shall give a decision in writing within a reasonable time.
- .03 The Contract Administrator may inspect the Work for its conformity with the Contract Documents, and to record the necessary data to establish payment quantities under the schedule of tender quantities and unit prices or to assess the value of the Work completed in the case of a lump sum price Contract.
- .04 The Contract Administrator shall provide an estimate of the amounts owing to the Contractor under the Contract as provided for in section GC 8.0, Measurement and Payment.
- .05 The Contract Administrator, to not cause delay in the schedule, shall, with reasonable promptness, review and take appropriate action upon the Contractor's submissions such as shop drawings, product data, and samples according to the Contract Documents. Unless specified otherwise, the Contract Administrator shall respond to submissions requiring approval according to the Contract as soon as possible but not longer than 5 Business Days, or timelines mutually agreed in writing, excluding any requests for extensions of Contract Time.
- .06 The Contract Administrator shall investigate all allegations of a Change in the Work made by the Contractor and issue appropriate instructions.
- .07 The Contract Administrator shall prepare Change Directives and Change Orders for the Owner's approval.
- .08 Upon written application by the Contractor, the Contract Administrator and the Contractor shall jointly conduct an inspection of the Work to establish the date of Substantial Performance of the Work or the date of Completion of the Work or both.
- .09 The Contract Administrator shall be, in the first instance, the interpreter of the Contract Documents and the judge of the performance thereunder by both parties to the Contract. Interpretations and decisions of the Contract Administrator shall be consistent with the intent of the Contract Documents and, in making these decisions, the Contract Administrator shall not show partiality to either party.
- .10 The Contract Administrator shall have the authority to reject any part of the Work or Material that does not conform to the Contract Documents.
- .11 In the event that the Contract Administrator determines that any part of the Work performed by the Contractor is defective, whether the result of poor workmanship the use of defective Material or damage through carelessness or other act or omission of the Contractor and whether or not incorporated in the Work or otherwise fails to conform to the Contract Documents, then the Contractor shall if directed by the Contract Administrator promptly, as directed by the Contract Administrator, remove the Work and replace, make good, or re-execute the Work at no additional cost to the Owner.
- .12 Any part of the Work destroyed or damaged by such removals, replacements, or re-executions shall be made good, promptly, at no additional cost to the Owner.

- .13 If, in the opinion of the Contract Administrator it is not expedient to correct defective Work or Work not performed according to the Contract Documents, the Owner may deduct from monies otherwise due to the Contractor the difference in value between the Work as performed and that called for by the Contract Documents amount that will be determined in the first instance by the Contract Administrator.
- .14 Notwithstanding any inspections made by the Contract Administrator or the issuance of any certificates or the making of any payment by the Owner, the failure of the Contract Administrator to reject any defective Work or Material shall not constitute acceptance of defective Work or Material.
- .15 The Contract Administrator shall have the authority to temporarily suspend the Work for such reasonable time as may be necessary:
 - a) to facilitate the checking of any portion of the Contractor's construction layout;
 - b) to facilitate the inspection of any portion of the Work; or
 - c) for the Contractor to remedy its non-compliance with any provisions of the Contract Documents.

The Contractor shall not be entitled to any compensation for suspension of the Work in these circumstances.

- .16 The Owner has the right to terminate the Contract for wilful or persistent violation by the Contractor or its workers of any applicable laws or bylaws, including but not limited to, the *Occupational Health and Safety Act* legislation and regulations, *Workplace Safety and Insurance Board Act*, and Regulation 347 of the *Environmental Protection Act*.
- .17 If the Contract Administrator determines that any worker employed on the Work is incompetent, as defined by the *Occupational Health and Safety Act*, or is disorderly, then the Contract Administrator shall provide written notice to the Contractor and the Contractor shall immediately remove the worker from the Working Area. Such worker shall not return to the Working Area without the prior written consent of the Contract Administrator.

GC 3.02 Working Drawings

- .01 The Contractor shall arrange for the preparation of clearly identified and dated Working Drawings as called for by the Contract Documents.
- .02 The Contractor, to not cause delay in the Work, shall submit Working Drawings to the Contract Administrator with reasonable promptness and in orderly sequence. If either the Contractor or the Contract Administrator so requests, they shall jointly prepare a schedule fixing the dates for submission and return of Working Drawings. Working Drawings shall be submitted in printed form. At the time of submission, the Contractor shall notify the Contract Administrator in writing of any deviations from the Contract Documents that exist in the Working Drawings.
- .03 The Contract Administrator shall review and return Working Drawings according to an agreed upon schedule, or otherwise, with reasonable promptness so as not to cause delay in any part of the Work.
- .04 The Contract Administrator's review shall be to check for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the Working Drawings or of responsibility for meeting all requirements of the Contract Documents, unless a deviation on the Working Drawings has been approved in writing by the Contract Administrator.
- .05 The Contractor shall make any changes in Working Drawings that the Contract Administrator may require to make the Working Drawings consistent with the Contract Documents and resubmit, unless otherwise directed by the Contract Administrator. When resubmitting, the Contractor shall notify the Contract Administrator in writing of any revisions other than those requested by the Contract Administrator.

- .06 Work related to the Working Drawings shall not proceed until the Working Drawings have been signed and dated by the Contract Administrator.
- .07 The Contractor shall keep one set of the reviewed Working Drawings, marked as above, at the site at all times.

GC 3.03 Right of the Contract Administrator to Modify Methods and Equipment

- .01 The Contractor shall, when requested in writing, make alterations in the method, Equipment, or work force at any time the Contract Administrator considers the Contractor's actions to be unsafe, or damaging to either the Work or existing facilities or the environment.
- .02 The Contractor shall, when requested in writing, alter the sequence of its operations on the Contract so as to avoid interference with work being performed by others.
- .03 Notwithstanding the foregoing, the Contractor shall ensure that all necessary safety precautions and protection are maintained throughout the Work.

GC 3.04 Emergency Situations

- .01 The Contract Administrator has the right to determine the existence of an emergency situation and, when such an emergency situation is deemed to exist, the Contract Administrator may instruct the Contractor to take action to remedy the situation. If the Contractor does not take timely action or, if the Contractor is not available, the Contract Administrator may direct others to remedy the situation.
- .02 If the emergency situation was the fault of the Contractor, the remedial Work shall be done at the Contractor's expense. If the emergency situation was not the fault of the Contractor, the Owner shall pay for the remedial Work.

GC 3.05 Layout Information

- .01 The Contract Administrator shall provide sufficient information, including without limitation, baseline and benchmark information, to facilitate the general location, alignment, elevation and layout of the Work.
- .02 The Contract Administrator shall provide pre and post construction inventories of all Monuments, etc. that are located within the Working Area.
- .03 The Owner shall be responsible only for the correctness of the layout information provided by the Contract Administrator.

GC 3.06 Extension of Contract Time

- .01 An application for an extension of Contract Time shall be made in writing by the Contractor to the Contract Administrator as soon as the need for such extension becomes evident and at least 15 Days prior to the expiration of the Contract Time. The application for an extension of Contract Time shall enumerate the reasons and state the length of extension required.
- .02 Circumstances suitable for consideration of an extension of Contract Time include the following:
 - a) Delays: See subsection GC 3.07, Delays.
 - b) Changes in the Work: See clause GC 3.10.01, Change in the Work.
 - c) Extra Work: See clause GC 3.10.02, Extra Work.

- d) Additional Work: See clause GC 3.10.03, Additional Work.
- .03 The Contract Administrator shall, in reviewing an application for an extension to the Contract Time, consider whether the delays, Changes in the Work, Extra Work, or Additional Work involve a Controlling Operation.
- .04 The Contract Time shall be extended for such additional time as may be recommended by the Contract Administrator and deemed fair and reasonable by the Owner.
- .05 The terms and conditions of the Contract shall continue for such extension of Contract Time.

GC 3.07 Delays

- .01 If the Contractor is delayed in the performance of the Work by:
 - a) War, blockades, and civil commotions; or
 - b) Errors in the Contract Documents; or
 - c) An act or omission of the Owner or Contract Administrator, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents; or
 - d) A stop work order issued by a court or public authority, provided that such order was not issued as the result of an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly; or
 - e) The Contract Administrator giving notice under section GC 7.0, Suspension of Work; or
 - f) Abnormal Weather provided that in the case of an application for an extension of Contract Time, due to the Abnormal Weather, the Contractor shall, with the Contractor's application, submit evidence from Environment Canada, together with detailed calculations in support of such application; or
 - g) Archaeological finds, according to subsection GC 3.15, Archaeological Finds,
 - h) The presence of species at risk as defined in the *Species at Risk Act* (S.C. 2002, c. 29) and/or the *Endangered Species Act*, S.O. 2007, c. 29 not otherwise identified in the Contract Documents, then, the Contractor shall be granted an extension of Contract Time according to subsection GC 3.06, Extension of Contract Time or Interim Completion Dates, and shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay.
- .02 If the Work is delayed by labour disputes, strikes or lock-outs, including lock-outs decreed or recommended to its members by a recognized contractor's association, of which the Contractor is a member or to which the Contractor is otherwise bound, which are beyond the Contractor's control, then the Contract Time shall be extended according to subsection GC 3.06, Extension of Contract Time.
- .03 In no case shall the extension of Contract Time be less than the time lost as the result of the event causing the delay, unless a shorter extension is agreed to by the Contractor. The Contractor shall not be entitled to payment for costs incurred as the result of such delays unless such delays are the result of actions by the Owner.
- .04 The Contractor shall not be entitled to payment for the cost of delays incurred as a result of a dispute between the Contractor and Owner. The Contractor shall execute the Work and may pursue resolution of the dispute according to subsection GC 3.13, Claims, Negotiations, Mediations.

GC 3.08**Assignment of Contract**

.01 The Contractor shall not assign the Contract, either in whole or in part, without the prior written consent of the Owner.

GC 3.09**Subcontracting by the Contractor**

.01 Subject to clause GC 3.09.03, Subcontracting by the Contractor, the Contractor may subcontract any part of the Work, according to the Contract Documents and any limitations specified therein.

.02 The Contractor shall notify the Contract Administrator in writing in 10 Days prior to the start of construction of the intention to subcontract. Such notification shall identify the part of the Work, and the Subcontractor with whom it is intended.

.03 The Contract Administrator shall, within 5 Days of receipt of such notification, accept or reject the intended Subcontractor. The rejection shall be in writing and shall include the reasons for the rejection.

.04 The Contractor shall not, without the written consent of the Owner, change a Subcontractor who has been engaged according to with this subsection.

.05 The Contractor shall preserve and protect the rights of the Owner under the Contract Documents with respect to that part of the Work to be performed under subcontract and shall:

- Enter into agreements with the intended Subcontractors to require them to perform their Work according to the Contract Documents; and
- Be as fully responsible to the Owner for acts and omissions of the Contractor's Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the Contractor.

.06 The Owner's consent to subcontracting by the Contractor shall not be construed to relieve the Contractor from any obligation under the Contract and shall not impose any liability upon the Owner. Nothing contained in the Contract Documents shall create a contractual relationship between a Subcontractor and the Owner.

GC 3.10**Changes****GC 3.10.01****Changes in the Work**

.01 The Owner, or the Contract Administrator where so authorized, may, by order in writing, make a Change in the Work without invalidating the Contract. The Contractor shall not be required to proceed with a Change in the Work until in receipt of a Change Order or Change Directive. Upon the receipt of such Change Order or Change Directive the Contractor shall proceed with the Change in the Work.

.02 The Contractor may apply for an extension of Contract Time according to the terms of clause GC 3.06, Extension of Contract Time.

.03 If the Change in the Work relates solely to quantities, payment for that part of the Work shall be made according to the conditions specified in clause GC 8.01.02, Variations in Tender Quantities. If the Change in the Work does not solely relate to quantities, then either the Owner or the Contractor may initiate negotiations upwards or downwards for the adjustment of the Contract price in respect of the Change in the Work pursuant to subsection GC 3.13, Claims, Negotiations, Mediation or payment may be made according to the conditions contained in clause GC 8.02.05, Payment on a Time and Material Basis.

GC 3.10.02 Extra Work

- .01 The Owner, or Contract Administrator where so authorized, may instruct the Contractor to perform Extra Work without invalidating the Contract. The Contractor shall not be required to proceed with the Extra Work until in receipt of a Change Order or Change Directive. Upon receipt of such Change Order or Change Directive the Contractor shall proceed with the Extra Work.
- .02 The Contractor may apply for an extension of Contract Time according to the terms of clause GC 3.06, Extension of Contract Time.
- .03 Either the Owner or Contractor may initiate negotiations upwards or downwards for the payment for the Extra Work pursuant to subsection GC 3.13, Claims, Negotiations, Mediation, or payment may be made according to the conditions contained in clause GC 8.02.05, Payment on a Time and Material Basis.

GC 3.10.03 Additional Work

- .01 The Owner, or Contract Administrator where so authorized, may request the Contractor to perform Additional Work without invalidating the Contract. If the Contractor agrees to perform Additional Work, the Contractor shall proceed with such Additional Work upon receipt of a Change Order.
- .02 The Contractor may apply for an extension of Contract Time according to the terms of subsection GC 3.06, Extension of Contract Time.
- .03 Payment for the Additional Work may be negotiated pursuant to subsection GC 3.13, Claims, Negotiations, Mediation, or payment may be made according to the conditions contained in clause GC 8.02.05, Payment on a Time and Material Basis.

GC 3.11 Notices

- .01 Any notice permitted or required to be given to the Contract Administrator or the Superintendent in respect of the Work shall be deemed to have been given to and received by the addressee on the date of delivery if delivered by hand, email, or by facsimile transmission and on the fifth Day after the date of mailing, if sent by mail.
- .02 The Contractor and the Owner shall provide each other with the mail and email addresses; cell phone, and telephone numbers for the Contract Administrator and the Superintendent at the commencement of the Work, and update as necessary.
- .03 In the event of an emergency situation or other urgent matter the Contract Administrator or the Superintendent may give a verbal notice, provided that such notice is confirmed in writing within 2 Days.
- .04 Any notice permitted or required to be given to the Owner or the Contractor shall be given according to the notice provision of the Contract.

GC 3.12 Use and Occupancy of the Work Prior to Substantial Performance

- .01 Where it is not contemplated elsewhere in the Contract Documents, the Owner may use or occupy the Work or any part thereof prior to Substantial Performance, provided that at least 30 Days written notice has been given to the Contractor.
- .02 The use or occupancy of the Work or any part thereof by the Owner prior to Substantial Performance shall not constitute an acceptance of the Work or parts so occupied. In addition, the use or occupancy of the Work shall not relieve the Contractor or the Contractor's Surety from any liability that has arisen, or may arise, from the performance of the Work according to the Contract Documents. The Owner shall be responsible for any damage that occurs because of the Owner's use or occupancy. Such use or

occupancy of any part of the Work by the Owner does not waive the Owner's right to charge the Contractor liquidated damages according to the terms of the Contract.

GC 3.13 Claims, Negotiations, Mediation

GC 3.13.01 Continuance of the Work

.01 Unless the Contract has been terminated or completed, the Contractor shall in every case, after serving or receiving any notification of a claim or dispute, verbal or written, continue to proceed with the Work with due diligence and expedition. It is understood by the parties that such action shall not jeopardize any claim it may have.

GC 3.13.02 Record Keeping

- .01 Immediately upon commencing Work that may result in a claim, the Contractor shall keep Daily Work Records during the course of the Work, sufficient to substantiate the Contractor's claim, and the Contract Administrator shall keep Daily Work Records to be used in assessing the Contractor's claim, all according to clause GC 8.02.07, Records.
- .02 The Contractor and the Contract Administrator shall attempt to reconcile their respective Daily Work Records on a daily basis, to simplify review of the claim, when submitted. If the Contractor and the Contract Administrator fail to reconcile their respective Daily Work Records, then the Contractor shall submit its Daily Work Records as part of its claim, whereby the resolution of the dispute about the Daily Work Records shall not be resolved until there is a resolution of the claim.
- .03 The keeping of Daily Work Records by the Contract Administrator or the reconciling of such Daily Work Records with those of the Contractor shall not be construed to be acceptance of the claim.

GC 3.13.03 Claims Procedure

- .01 The Contractor shall give verbal notice of any situation that may lead to a claim for additional payment immediately upon becoming aware of the situation.
- .02 The Contractor shall provide written notice within 7 Days of the commencement of any part of the Work that may be affected by the situation.
- .03 The Contractor shall submit detailed claims as soon as reasonably possible and in any event no later than 30 Days or such time as mutually agreed after completion of the Work affected by the situation. The detailed claim shall:
 - a) Identify the item or items in respect of which the claim arises;
 - b) State the grounds, contractual or otherwise, upon which the claim is made; and
 - c) Include the Records maintained by the Contractor supporting such claim.
- .04 Within 30 Days of the receipt of the Contractor's detailed claim, the Contract Administrator may request the Contractor to submit any further and other particulars as the Contract Administrator considers necessary to assess the claim. The Contractor shall submit the requested information within 30 Days of receipt of such request.
- .05 Within 90 Days of receipt of the detailed claim, the Contract Administrator shall advise the Contractor, in writing, of the Contract Administrator's opinion regarding the validity of the claim.

GC 3.13.04**Negotiations**

- .01 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, open and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- .02 Should the Contractor disagree with the opinion given in clause GC 3.13.03.05, with respect to any part of the claim, the Contract Administrator shall enter into negotiations with the Contractor to resolve the matters in dispute. Where a negotiated settlement cannot be reached and it is agreed that payment cannot be made on a Time and Material basis according to clause GC 8.02.05, Payment on a Time and Material Basis, the parties shall proceed according to clause GC 3.13.05, Mediation, or subsection GC 3.14, Arbitration.
- .03 Prior to the expiry of 30 Business Days from the date of receipt of the Contractors claim, the Contract Administrator shall provide a written response to the Contractor stating the Contract Administrator's final price for the Change Order and an explanation of the rationale and basis of the Contract Administrator's position which shall be deemed to be the initial site response.

GC 3.13.05**Mediation**

- .01 If a claim is not resolved satisfactorily through the negotiation stage noted in clause GC 3.13.04, Negotiations, within a period of 30 Days following the opinion given in clause GC 3.13.03.05, and the Contractor wishes to pursue the issue further, the parties may, upon mutual agreement, utilize the services of an independent third-party mediator.
- .02 The mediator shall be mutually agreed upon by the Owner and Contractor.
- .03 The mediator shall be knowledgeable regarding the area of the disputed issue. The mediator shall meet with the parties together or separately, as necessary, to review all aspects of the issue. In a final attempt to assist the parties in resolving the issue themselves prior to proceeding to arbitration the mediator shall provide, without prejudice, a non-binding recommendation for settlement.
- .04 The review by the mediator shall be completed within 90 Days following the opinion given in clause GC 3.13.03.05.
- .05 Each party is responsible for its own costs related to the use of the mediation process. The cost of the third-party mediator shall be equally shared by the Owner and Contractor.

GC 3.13.06**Payment**

- .01 Payment of the claim shall be made no later than 28 Days after the date of resolution of the claim or dispute. Such payment shall be made according to the terms of section GC 8.0, Measurement and Payment.

GC 3.13.07**Rights of Both Parties**

- .01 It is agreed that no action taken under subsection GC 3.13, Claims, Negotiations, Mediation, by either party shall be construed as a renunciation or waiver of any of the rights or recourse available to the parties, provided that the requirements set out in this subsection are fulfilled.
- .02 It is further agreed that the parties may at any time resort to the adjudication procedure contained in the *Construction Act*.

GC 3.14 Arbitration**GC 3.14.01 Conditions of Arbitration**

- .01 If a claim is not resolved satisfactorily through the negotiation stage noted in clause GC 3.13.04, Negotiations, or the mediation stage noted in clause GC 3.13.05, Mediation, either party may invoke the provisions of subsection GC 3.14, Arbitration, by giving written notice to the other party.
- .02 Notification that arbitration shall be implemented to resolve the issue shall be communicated in writing as soon as possible and no later than 60 Days following the opinion given in clause GC 3.13.03.05. Where the use of a third-party mediator was implemented, notification shall be within 120 Days of the opinion given in clause GC 3.13.03.05.
- .03 The parties shall be bound by the decision of the arbitrator.
- .04 The rules and procedures of the *Arbitration Act*, 1991, S.O. 1991, c.17, as amended, shall apply to any arbitration conducted hereunder except to the extent that they are modified by the express provisions of subsection GC 3.14, Arbitration.

GC 3.14.02 Arbitration Procedure

- .01 The following provisions are to be included in the agreement to arbitrate and are subject only to such right of appeal as exist where the arbitrator has exceeded their jurisdiction or have otherwise disqualified themselves:
 - a) All existing actions in respect of the matters under arbitration shall be stayed pending arbitration;
 - b) All outstanding claims and matters to be settled are to be set out in a schedule to the agreement. Only such claims and matters as are in the schedule shall be arbitrated; and
 - c) Before proceeding with the arbitration, the Contractor shall confirm that all matters in dispute are set out in the schedule.

GC 3.14.03 Appointment of Arbitrator

- .01 The arbitrator shall be mutually agreed upon by the Owner and Contractor to adjudicate the dispute.
- .02 Where the Owner and Contractor cannot agree on a sole arbitrator within 30 Days of the notification of arbitration noted in clause GC 3.14.01.02, the Owner and the Contractor shall each choose an appointee within 37 Days of the notice of arbitration.
- .03 The appointees shall mutually agree upon an arbitrator to adjudicate the dispute within 15 Days after the last appointee was chosen or they shall refer the matter to the ADR Institute of Ontario (ADARIO), which may select an arbitrator to adjudicate the dispute within 7 Days of being requested to do so.
- .04 The arbitrator shall not be interested financially in the Contract nor in either party's business and shall not be employed by either party.
- .05 The arbitrator may appoint independent experts and any other persons to assist them.
- .06 The arbitrator is not bound by the rules of evidence that govern the trial of cases in court but may hear and consider any evidence that the arbitrator considers relevant.
- .07 The hearing shall commence within 90 Days of the appointment of the arbitrator.

GC 3.14.04 Costs

- .01 The arbitrator's fee shall be equally shared by the Owner and the Contractor.
- .02 The fees of any independent experts and any other persons appointed to assist the arbitrator shall be shared equally by the Owner and the Contractor.
- .03 The arbitration hearing shall be held in a place mutually agreed upon by both parties or in the event the parties do not agree, a site shall be chosen by the arbitrator. The cost of obtaining appropriate facilities shall be shared equally by the Owner and the Contractor.
- .04 The arbitrator may, in their discretion, award reasonable costs, related to the arbitration.

GC 3.14.05 The Decision

- .01 The reasoned decision shall be made in writing within 90 Days of the conclusion of the hearing. An extension of time to make a decision may be granted with consent of both parties. Payment shall be made according to clause GC 3.13.06, Payment.

GC 3.15 Archaeological Finds

- .01 If the Contractor's operations expose any items that may indicate an archaeological find, such as but not limited to building remains, hardware, accumulations of bones, pottery, or arrowheads, the Contractor shall immediately notify the Contract Administrator and suspend operations within the area identified by the Contract Administrator. Notification may be verbal provided that such notice is confirmed in writing within 2 Days. Work shall remain suspended within that area until otherwise directed by the Contract Administrator in writing, according to subsection GC 7.09, Suspension of Work.
- .02 Any delay in the completion of the Contract that is caused by such a suspension of Work shall be considered to be beyond the Contractor's control according to clause GC 3.07.01.
- .03 Any Work directed or authorized in connection with an archaeological find shall be considered as Extra Work according to clause GC 3.10.02, Extra Work.
- .04 The Contractor shall take all reasonable action to minimize additional costs that may accrue as a result of any work stoppage.

SECTION GC 4.0 - OWNER'S RESPONSIBILITIES AND RIGHTS

GC 4.01 Working Area

.01 The Owner shall acquire all property rights that are deemed necessary by the Owner for the construction of the Work, including temporary working easements, and shall indicate the full extent of the Working Area on the Contract Drawings.

GC 4.02 Approvals and Permits

- .01 The Owner shall pay for all plumbing and building permits.
- .02 The Owner shall obtain and pay for all permits, licences, and certificates solely required for the design of the Work.

GC 4.03 Management and Disposition of Materials

- .01 The Owner shall identify in the Contract Documents the Materials to be moved within or removed from the Working Area and any characteristics of those Materials that necessitates special Materials management and disposition.
- .02 According to regulations under the *Occupational Health and Safety Act*, R.S.O. 1990, c.O.1, as amended, the Owner advises that:
 - a) The designated substances silica, lead, and arsenic are generally present throughout the Working Area occurring naturally or as a result of vehicle emissions;
 - b) The designated substance asbestos may be present in cement products, asphalt, and conduits for Utilities;
 - c) The following hazardous materials are ordinarily present in construction activities: limestone, gypsum, marble, mica, and Portland cement; and
 - d) Exposure to these substances may occur as a result of activities by the Contractor such as sweeping, grinding, crushing, drilling, blasting, cutting, and abrasive blasting.
- .03 The Owner shall identify in the Contract Documents any designated substances or hazardous materials other than those identified above and their location in the Working Area.
- .04 If the Owner or Contractor discovers or is advised of the presence of designated substances or hazardous Materials that are in addition to those listed in clause GC 4.03.02, or not clearly identified in the Contract Documents according to clause GC 4.03.03, then verbal notice shall be provided to the other party immediately with written confirmation within 2 Days. The Contractor shall stop Work in the area immediately and shall determine the necessary steps required to complete the Work according to applicable legislation and regulations.
- .05 The Owner shall be responsible for any reasonable additional costs of removing, managing and disposing of any Material not identified in the Contract Documents, or where conditions exist that could not have been reasonably foreseen at the time of tendering. All work under this paragraph shall be deemed to be Extra Work.
- .06 Prior to commencement of the Work, the Owner shall provide to the Contractor a list of those products controlled under the Workplace Hazardous Materials Information System (WHMIS), that the Owner may supply or use on the Contract, together with copies of the Safety Data Sheets for these products. All containers used in the application of products controlled under WHMIS shall be labelled. The Owner shall notify the Contractor in writing of changes to the list and provide relevant Safety Data Sheets.

- .07 Unless expressly permitted in the Contract Documents, the Contractor shall not bring onto the Work Area any designated substance or hazardous Material per OHSA without the prior written authorization of the Contract Administrator.
- .08 The Contractor shall use all reasonable care to avoid spilling or disturbing any designated substances or hazardous Material per OHSA.

GC 4.04 Construction Affecting Railway Property

- .01 The Owner shall pay the costs of all flagging and other traffic control measures required and provided by the railway company unless such costs are solely a function of the Contractor's chosen method of completing the Work.
- .02 Every precaution shall be taken by the Contractor to protect all railway property at track crossings; or otherwise, on which construction operations are to take place according to the terms of this Contract.
- .03 The Contractor shall be required to conduct the construction operations in such a manner as to avoid a possibility of damaging any railway property in the vicinity of the Works. Every reasonable precaution shall be taken by the Contractor to ensure the safety of the workers, Subcontractors, and Equipment, as well as railway property throughout the duration of the Contract.

GC 4.05 Default by the Contractor

- .01 If the Contractor fails to commence the Work within 14 Days of a formal order to commence Work signed by the Contract Administrator or, upon commencement of the Work, should neglect to prosecute the Work properly or otherwise fails to comply with the requirements of the Contract and, if the Contract Administrator has given a written statement to the Owner and Contractor that sufficient cause exists to justify such action, the Owner may, without prejudice to any other right or remedy the Owner may have, notify the Contractor in writing that the Contractor is in default of the Contractor's contractual obligations and instruct the Contractor to correct the default in the 5 Working Days immediately following the receipt of such notice.
- .02 If the Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the Contractor's insolvency or if a receiver is appointed because of the Contractor's insolvency, the Owner may, without prejudice to any other right or remedy the Owner may have, by giving the Contractor or receiver or trustee in bankruptcy notice in writing, terminate the Contract.

GC 4.06 Contractor's Right to Correct a Default

- .01 The Contractor shall have the right within the 5 Working Days following the receipt of a notice of default to correct the default and provide the Owner with satisfactory proof that appropriate corrective measures have been taken.
- .02 If the Owner determines that the correction of the default cannot be completed within the 5 Working Days following receipt of the notice, the Contractor shall not be in default if the Contractor:
 - a) Commences the correction of the default within the 5 Working Days following receipt of the notice;
 - b) Provides the Owner with a schedule acceptable to the Owner for the progress of such correction; and
 - c) Completes the correction according to such schedule.

GC 4.07**Owner's Right to Correct Default**

.01 If the Contractor fails to correct the default within the time specified in subsection GC 4.06, Contractor's Right to Correct a Default, or subsequently agreed upon, the Owner, without prejudice to any other right or remedy the Owner may have, may correct such default and deduct the cost thereof, as certified by the Contract Administrator, from any payment then or thereafter due to the Contractor.

GC 4.08**Termination of Contractor's Right to Continue the Work**

.01 Where the Contractor fails to correct a default within the time specified in subsection GC 4.06, Contractor's Right to Correct a Default, or subsequently agreed upon, the Owner, without prejudice to any other right or remedy the Owner may have, may terminate the Contractor's right to continue the Work in whole or in part by giving written notice to the Contractor.

.02 If the Owner terminates the Contractor's right to continue with the Work in whole or in part, the Owner shall be entitled to:

- a) Take possession of the Working Area or that portion of the Working Area devoted to that part of the Work terminated;
- b) Utilize any Material within the Working Area;
- c) Withhold further payments to the Contractor with respect to the Work or the portion of the Work withdrawn from the Contractor until the Work or portion thereof withdrawn is completed;
- d) Charge the Contractor the additional cost over the Contract price of completing the Work or portion thereof withdrawn from the Contractor, as certified by the Contract Administrator and any additional compensation paid to the Contract Administrator for such additional service arising from the correction of the default;
- e) Charge the Contractor a reasonable allowance, as determined by the Contract Administrator, to cover correction to the Work performed by the Contractor that may be required under subsection GC 7.16, Warranty;
- f) Charge the Contractor for any damages the Owner sustained as a result of the default; and
- g) Charge the Contractor the amount by which the cost of corrections to the Work under subsection GC 7.16, Warranty, exceeds the allowance provided for such corrections.

GC 4.09**Final Payment to Contractor**

.01 If the Owner's cost to correct and complete the Work in whole or in part is less than the amount withheld from the Contractor under subsection GC 4.08, Termination of Contractor's Right to Continue the Work, the Owner shall pay the balance to the Contractor as soon as the final accounting for the Contract is complete.

GC 4.10**Termination of the Contract**

.01 Where the Contractor is in default of the Contract the Owner shall, without prejudice to any other right or remedy the Owner may have, terminate the Contract by giving written notice of termination to the Contractor, the Surety, and any trustee or receiver acting on behalf of the Contractor's estate or creditors.

.02 If the Owner elects to terminate the Contract, the Owner shall provide the Contractor and the trustee or receiver with a complete accounting to the date of termination.

GC 4.11**Continuation of Contractor's Obligations**

.01 The Contractor's obligation under the Contract as to quality, correction, and warranty of the Work performed prior to the time of termination of the Contract or termination of the Contractor's right to continue with the Work in whole or in part shall continue to be in force after such termination.

GC 4.12**Use of Performance Bond**

.01 If the Contractor is in default of the Contract and the Contractor has provided a Performance Bond, the provisions of section GC 4.0, Owner's Responsibilities and Rights, shall be exercised according to the conditions of the Performance Bond.

GC 4.13**Payment Adjustment**

.01 If any situation should occur in the performance of the Work that would result in a Change in the Work, the Owner shall be entitled to an adjustment and those adjustments shall be managed according to clause GC 3.10.01, Changes in the Work.

SECTION GC 5.0 - MATERIAL

GC 5.01 Supply of Material

.01 All Material necessary for the proper completion of the Work, except that listed as being supplied by the Owner, shall be supplied by the Contractor. The Contract price for the appropriate tender items shall be deemed to include full compensation for the supply and delivery of such Material.

GC 5.02 Quality of Material

.01 All Material supplied by the Contractor shall be new, unless otherwise specified in the Contract Documents.

.02 Material supplied by the Contractor shall conform to the requirements of the Contract.

.03 As specified in the Contract Documents or as requested by the Contract Administrator, the Contractor shall make available, for inspection or testing, a sample of any Material to be supplied by the Contractor.

.04 The Contractor shall obtain for the Contract Administrator the right to enter onto the premises of the Material manufacturer or supplier to carry out such inspection, sampling, and testing as specified in the Contract Documents or as requested by the Contract Administrator.

.05 The Contractor shall notify the Contract Administrator of the sources of supply sufficiently in advance of the Material shipping dates to enable the Contract Administrator to perform the required inspection, sampling, and testing.

.06 The Owner shall not be responsible for any delays to the Contractor's operations where the Contractor fails to give sufficient advance notice to the Contract Administrator to enable the Contract Administrator to carry out the required inspection, sampling, and testing before the scheduled shipping date.

.07 The Contractor shall not change the source of supply of any Material without the written authorization of the Contract Administrator.

.08 Material that is not specified shall be of a quality best suited to the purpose required, and the use of such Material shall be subject to the approval of the Contract Administrator.

.09 All Material inspection, sampling, and testing shall be carried out on random basis according to the standard inspection or testing methods required for the Material. Any approval given by the Contract Administrator for the Materials to be used in the Work based upon the random method shall not relieve the Contractor from the responsibility of incorporating Material that conforms to the Contract Documents into the Work or properly performing the Contract and of any liability arising from the failure to properly perform as specified in the Contract Documents.

GC 5.03 Rejected Material

.01 Rejected Material shall be removed from the Working Area expeditiously after the notification to that effect from the Contract Administrator. Where the Contractor fails to comply with such notice, the Contract Administrator may cause the rejected Material to be removed from the Working Area and disposed of, in what the Contract Administrator considers to be the most appropriate manner, and the Contractor shall pay the costs of disposal and the appropriate overhead charges.

GC 5.04 Substitutions

.01 Where the Contract Documents require the Contractor to supply a Material designated by a trade or other name, the Tender shall be based only upon supply of the Material so designated, that shall be regarded as the standard of quality required by the Contract Documents. After the acceptance of the Tender, the

Contractor may apply to the Contract Administrator to substitute another Material identified by a different trade or other name for the Material designated as aforesaid. The application shall be in writing and shall state the price for the proposed substitute Material designated as aforesaid, and such other information as the Contract Administrator may require.

- .02 Rulings on a proposed substitution shall not be made prior to the acceptance of the Tender. Substitutions shall not be made without the prior approval of the Contract Administrator. The approval or rejection of a proposed substitution shall be at the discretion of the Contract Administrator.
- .03 If the proposed substitution is approved by the Contract Administrator, the Contractor shall be entitled to the first \$1,000 of the aggregate saving in cost by reason of such substitution and to 50% of any additional saving in cost in excess of such \$1,000. Each such approval shall be conveyed to the Contractor in writing or by issuance of a Certificate of Equality on the Owner's standard form of "Certification of Equality" and, if any adjustment to the Contract price is made by reason of such substitution, a Change Order shall be issued as well.

GC 5.05 Owner Supplied Material

GC 5.05.01 Ordering of Excess Material

.01 Where Material is supplied by the Owner and where this Material is ordered by the Contractor in excess of the amount specified to complete the Work, such excess Material shall become the property of the Contractor on completion of the Work and shall be charged to the Contractor at cost plus applicable overheads.

GC 5.05.02 Care of Material

- .01 The Contractor shall, in advance of receipt of shipments of Material supplied by the Owner, provide adequate and proper storage facilities acceptable to the Contract Administrator, and on the receipt of such Material shall promptly place it in storage except where it is to be incorporated forthwith into the Work.
- .02 The Contractor shall be responsible for acceptance of Material supplied by the Owner, at the specified delivery point and for its safe handling and storage. If such Material is damaged while under the control of the Contractor, it shall be replaced or repaired by the Contractor at no expense to the Owner, and to the satisfaction of the Contract Administrator. If such Material is rejected by the Contract Administrator for reasons that are not the fault of the Contractor, it shall remain in the care and at the risk of the Contractor until its disposition has been determined by the Contract Administrator.
- .03 Where Material supplied by the Owner arrives at the delivery point in a damaged condition or where there are discrepancies between the quantities received and the quantities shown on the bills of lading, the Contractor shall immediately report such damage or discrepancies to the Contract Administrator who shall arrange for an immediate inspection of the shipment and provide the Contractor with a written release from responsibility for such damage or deficiencies. Where damage or deficiencies are not so reported, it shall be assumed that the shipment arrived in good condition and order, and any damage or deficiencies reported thereafter shall be made good by the Contractor at no extra cost to the Owner.
- .04 The full amount of Material supplied by the Owner in each shipment shall be accounted for by the Contractor and such Material shall be at the risk of the Contractor after taking delivery. Such Material shall not, except with the written permission of the Contract Administrator, be used by the Contractor for purposes other than the performance of the Work under the Contract.
- .05 Empty reels, crates, containers, and other type of packaging from Material supplied by the Owner shall become the property of the Contractor when they are no longer required for their original purpose and shall be disposed of by the Contractor at the Contractor's expense unless otherwise specified in the Contract Documents.

- .06 Immediately upon receipt of each shipment, the Contractor shall provide the Contract Administrator copies of bills of lading, or such other documentation the Contract Administrator may require to substantiate and reconcile the quantities of Material received.
- .07 Where Material supplied by the Owner is ordered and stockpiled prior to the award of the Contract, the Contractor shall, at no extra cost to the Owner, immediately upon commencement of operations, check the Material, report any damage or deficiencies to the Contract Administrator and take charge of the Material at the stockpile site. Where damage or deficiencies are not so recorded by the Contractor, it shall be assumed that the stockpile was in good condition and order when the Contractor took charge of it, and any damage or deficiencies reported thereafter shall be made good by the Contractor at no extra cost to the Owner.

SECTION GC 6.0 - INSURANCE, PROTECTION AND DAMAGE

GC 6.01 Protection of Work, Persons and Property

- .01 The Contractor, the Contractor's agents, and all workers employed by or under the control of the Contractor, including Subcontractors, shall protect the Work, persons, and property from damage or injury. The Contractor shall be responsible for all losses and damage that may arise as the result of the Contractor's operations under the Contract, unless indicated to the contrary below.
- .02 The Contractor is responsible for the full cost of any necessary temporary protective Work and the restoration of all damage where the Contractor damages the Work or property in the performance of the Contract. If the Contractor is not responsible for the damage that occurs to the Work or property, the Contractor shall restore such damage, and such Work and payment shall be administered according to these General Conditions.
- .03 The Contractor shall immediately inform the Contract Administrator of all damage and injuries that occur during the term of the Contract. The Contractor shall then investigate and report back to the Contract Administrator within 15 Days of occurrence of incident, or as soon as possible. The Contract Administrator may conduct its own investigation and the Contractor shall provide all assistance to the Contract Administrator as may be necessary for that purpose.
- .04 The Contractor shall not be responsible for loss and damage that occurs as a result of:
 - a) War;
 - b) Blockades and civil commotions;
 - c) Errors in the Contract Documents; or
 - d) Acts or omissions of the Owner, the Contract Administrator, their agents and employees, or others not under the control of the Contractor, but within the Working Area with the Owner's permission.
- .05 The Contractor and the Contractor's Surety shall not be released from any term or provision of any responsibility, obligation, or liability under the Contract or waive or impair any of the rights of the Owner, except by a release duly executed by the Owner.

GC 6.02 Indemnification

- .01 The Contractor shall indemnify and hold harmless the Owner and the Contract Administrator, their elected officials, agents, officers, and employees from and against all claims, demands, losses, expenses, costs, damages, actions, suits, or proceedings by third parties, hereinafter called "claims", directly or indirectly arising or alleged to arise out of the performance of or the failure to perform the Work, provided such claims are:
 - a) Attributable to bodily injury, sickness, disease, or death or to damage to or destruction of tangible property;
 - b) Caused by negligent acts or omissions of the Contractor or anyone for whose acts the Contractor may be liable; and
 - c) Made in writing within a period of 6 years from the date of Substantial Performance of the Work as set out in the Certificate of Substantial Performance of the Work or, where so specified in the Contract Documents, from the date of certification of Final Acceptance.

- .02 The Contractor shall indemnify and hold harmless the Owner from all and every claim for damages, royalties or fees for the infringement of any patented invention or copyright occasioned by the Contractor in connection with the Work performed or Material furnished by the Contractor under the Contract.
- .03 The Owner expressly waives the right to indemnity for claims other than those stated in clauses GC 6.02.01 and GC 6.02.02.
- .04 The Owner shall indemnify and hold harmless the Contractor, their elected officials, agents, officers, and employees from and against all claims, demands, losses, expenses, costs, damages, actions, suits, or proceedings arising out of the Contractor's performance of the Contract that are attributable to a lack of or defect in title or an alleged lack of or defect in title to the Working Area.
- .05 The Contractor expressly waives the right to indemnity for claims other than those stated in clause GC 6.02.04.

GC 6.03 Contractor's Insurance

GC 6.03.01 General

- .01 Without restricting the generality of subsection GC 6.02, Indemnification, the Contractor shall provide, maintain, and pay for the insurance coverages listed under clauses GC 6.03.02 and GC 6.03.03. Insurance coverage in clauses GC 6.03.04, GC 6.03.05, and GC 6.03.06 shall only apply when so specified in the Contract Documents.
- .02 The Contractor shall provide the Contract Administrator with an original Certificate of Insurance for each type of insurance coverage that is required by the Contract Documents. The Contractor shall ensure that the Contract Administrator is, at all times in receipt of a valid Certificate of Insurance for each type of insurance coverage, in such amounts as specified in the Contract Documents. The Contractor will not be permitted to commence Work until the Contract Administrator is in receipt of such proof of insurance. The Contract Administrator may withhold payments of monies due to the Contractor until the Contractor has provided the Contract Administrator with original valid Certificates of Insurance as required by the provisions of the Contract Documents.

GC 6.03.02 Commercial General Liability Insurance

- .01 Commercial General Liability Insurance shall be in the name of the Contractor, with the Owner and the Contract Administrator named as additional insureds, with limits of not less than \$5,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof. The insurance shall be provided in a form acceptable to the Owner.
- .02 Approval of this insurance shall be conditional upon the Contractor obtaining the services of an insurer licensed to underwrite insurance in the Province of Ontario and obtaining the insurer's certificate of equivalency to the required insurance.
- .03 The Contractor shall submit annually to the Owner, proof of continuation of the completed operations coverage and, if the Contractor fails to do so, the limitation period for claiming indemnity described in clause GC 6.02.01 c), shall not be binding on the Owner.
- .04 Should the Contractor decide not to employ Subcontractors for operations requiring the use of explosives for blasting, pile driving or caisson work, removal or weakening of support of property building or land, the Commercial General Liability Insurance shall include the appropriate endorsements.
- .05 The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, termination, or material change.
- .06 "Claims Made" insurance policies shall not be permitted.

GC 6.03.03

Automobile Liability Insurance

.01 Automobile liability insurance in respect of licensed vehicles shall have limits of not less than \$5,000,000 inclusive per occurrence for bodily injury, death and damage to property, in the following forms endorsed to provide the Owner with not less than 30 Days written notice in advance of any cancellation, termination, or material change:

- a) Standard non-owned automobile policy including standard contractual liability endorsement, and
- b) Standard owner's form automobile policy providing third party liability and accident benefits insurance and covering licensed vehicles owned or operated by the Contractor.

GC 6.03.04

Aircraft and Watercraft Liability Insurance

GC 6.03.04.01

Aircraft Liability Insurance

.01 Aircraft liability insurance with respect to owned or non-owned aircraft used directly or indirectly in the performance of the Work, including use of additional premises, shall be subject to limits of not less than \$5,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof, and limits of not less than \$5,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the Owner. The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, change, or amendment restricting coverage.

GC 6.03.04.02

Watercraft Liability Insurance

.01 Watercraft liability insurance with respect to owned or non-owned watercraft used directly or indirectly in the performance of the Work, including use of additional premises, shall be subject to limits of not less than \$5,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof. Such insurance shall be in a form acceptable to the Owner. The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, change, or amendment restricting coverage.

GC 6.03.05

Property and Boiler Insurance

GC 6.03.05.01

Property Insurance

.01 All risks property insurance shall be in the name of the Contractor, with the Owner and the Contract Administrator named as additional insureds, insuring not less than the sum of the amount of the Contract price and the full value, as may be stated in the Contract Documents, of Material that is specified to be provided by the Owner for incorporation into the Work.

GC 6.03.05.02

Boiler Insurance

.01 Boiler insurance insuring the interests of the Contractor, the Owner and the Contract Administrator for not less than the replacement value of boilers and pressure vessels forming part of the Work, shall be in a form acceptable to the Owner.

GC 6.03.05.03

Use and Occupancy of the Work Prior to Completion

.01 Should the Owner wish to use or occupy part or all of the Work prior to Substantial Performance, the Owner shall give 30 Days written notice to the Contractor of the intended purpose and extent of such use or occupancy. Prior to such use or occupancy, the Contractor shall notify the Owner in writing of the additional premium cost, if any, to maintain property and boiler insurance, which shall be at the Owner's expense. If because of such use or occupancy the Contractor is unable to provide coverage, the Owner upon written notice from the Contractor and prior to such use or occupancy shall provide, maintain, and

pay for property and boiler insurance insuring the full value of the Work, including coverage for such use or occupancy, and shall provide the Contractor with proof of such insurance. The Contractor shall refund to the Owner the unearned premiums applicable to the Contractor's policies upon termination of coverage.

.02 The policies shall provide that in the event of a loss or damage, payment shall be made to the Owner and the Contractor as their respective interests may appear. The Contractor shall act on behalf of both the Owner and the Contractor for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the Contractor shall proceed to restore the Work. Loss or damage shall not affect the rights and obligations of either party under the Contract, except that the Contractor shall be entitled to such reasonable extension of Contract Time relative to the extent of the loss or damage as the Contract Administrator may decide in consultation with the Contractor.

GC 6.03.05.04 Payment for Loss or Damage

.01 The Contractor shall be entitled to receive from the Owner, in addition to the amount due under the Contract, the amount at which the Owner's interest in restoration of the Work has been appraised, such amount to be paid as the restoration of the Work proceeds, and according to the requirements of section GC 8.0, Measurement and Payment. In addition, the Contractor shall be entitled to receive from the payments made by the insurers the amount of the Contractor's interest in the restoration of the Work.

.02 The Contractor shall be responsible for deductible amounts under the policies, except where such amounts may be excluded from the Contractor's responsibility by the terms of this Contract.

.03 In the event of a loss or damage to the Work arising from the action or omission of the Owner or others, the Owner shall pay the Contractor the cost of restoring the Work as the restoration of the Work proceeds and according to the requirements of section GC 8.0, Measurement and Payment.

GC 6.03.06 Contractor's Equipment Insurance

.01 All risks Contractor's Equipment insurance covering construction equipment used by the Contractor for the performance of the Work, including boiler insurance on temporary boilers and pressure vessels, shall be in a form acceptable to the Owner and shall not allow subrogation claims by the insurer against the Owner. The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, change, or amendment restricting coverage. Subject to satisfactory proof of financial capability by the Contractor for self-insurance of the Contractor's Equipment, the Owner agrees to waive the equipment insurance requirement, and for the purpose of this Contract, the Contractor shall be deemed to be insured. This policy shall be amended to provide permission for the Contractor to grant prior releases with respect to damage to the Contractor's Equipment.

GC 6.03.07 Insurance Requirements and Duration

.01 Each insurance policy as noted in the Contract Documents shall be in effect from the date of commencement of the Work until 10 Days after the date of Final Acceptance of the Work, as set out in the Final Acceptance Certificate.

.02 The Contractor shall provide the Owner, on a form acceptable to the Owner, proof of insurance prior to commencement of the Work and signed by an officer of the Contractor and either the underwriter or the broker.

.03 The Contractor shall, on request, promptly provide the Owner with a certified true copy of each insurance policy exclusive of information pertaining to premium or premium bases used by the insurer to determine the cost of the insurance. The certified true copy shall include the signature by an officer of the Contractor and in addition, a signature by an officer of the insurer or the under writer or the broker.

- .04 Where a policy is renewed, the Contractor shall provide the Owner, on a form acceptable to the Owner, renewed proof of insurance immediately following completion of renewal.
- .05 Unless specified otherwise, the Contractor shall be responsible for the payment of deductible amounts under the policies.
- .06 If the Contractor fails to provide or maintain insurance as required in subsection GC 6.03, Contractor's Insurance, or elsewhere in the Contract Documents, then the Owner shall have the right to provide and maintain such insurance and give evidence thereof to the Contractor. The Owner's cost thereof shall be payable by the Contractor to the Owner on demand.
- .07 If the Contractor fails to pay the cost of the insurance placed by the Owner within 28 Days of the date on which the Owner made a formal demand for reimbursement of such costs, the Owner may deduct the costs thereof from monies which are due or may become due to the Contractor.

GC 6.04 Bonding

- .01 The Contractor shall provide the Owner with the surety bonds in the amount required by the Contract Documents.
- .02 Such bonds shall be issued by a duly licensed surety company authorized to transact a business of suretyship in the Province of Ontario and shall be to the satisfaction of the Owner. The bonds shall be maintained in good standing until the Final Acceptance.

GC 6.05 Workplace Safety and Insurance Board

.01 The Contractor shall provide the Contract Administrator with a copy of a Certificate of Clearance indicating the Contractor's good standing with the Workplace Safety and Insurance Board, as follows:

- a) Immediately prior to the Contract Administrator authorizing the Contractor to commence Work.
- b) Prior to issue of the Certificate of Substantial Performance.
- c) Prior to expiration of the Warranty Period.
- d) At any other time when requested by the Contract Administrator.

SECTION GC 7.0 - CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC 7.01 General

GC 7.01.01 Site Visit

.01 The Contractor warrants that the site of the Work has been visited during the preparation of the Tender and the character of the Work and all local conditions that may affect the performance of the Work are known.

GC 7.01.02 Commencement of Work

.01 The Contractor shall not commence the Work nor deliver anything to the Working Area until the Contractor has received a written order to commence the work from the Contract Administrator.

GC 7.01.03 Control and Responsibility

.01 The Contractor shall have complete control of the Work and shall effectively direct and supervise the Work so as to ensure conformity with the Contract Documents. The Contractor shall be responsible for construction means, methods, techniques, sequences, and procedures and for coordinating the various parts of the Work.

.02 The Contractor shall provide adequate labour, Equipment, and Material to ensure the completion of the Contract according to the Contract Documents. The Work shall be performed as vigorously and as continuously as weather conditions or other interferences may permit.

.03 The Contractor shall have the sole responsibility for the design, erection, operation, maintenance, and removal of temporary structures and other temporary facilities and the design and execution of construction methods required in their use.

.04 Notwithstanding clause GC 7.01.03, where the Contract Documents include designs for temporary structures and other temporary facilities or specify a method of construction in whole or part, such facilities and methods shall be considered to be part of the design of the Work, and the Contractor shall not be held responsible for that part of the design or the specified method of construction. The Contractor shall, however, be responsible for the execution of such design or specified method of construction in the same manner that the Contractor is responsible for the execution of the Work.

.05 The Contractor shall comply with and conform to all statutes, laws, by-laws, regulations, requirements, ordinances, notices, rulings, orders, directives and policies of the municipal, provincial and federal governments and any other lawful authority and all court orders, judgments and declarations of a court of competent jurisdiction (collectively referred to as the "Laws"), applicable to the Work to be provided by, and the undertakings and obligations of, the Contractor under this Contract.

GC 7.01.04 Compliance with the Occupational Health and Safety Act

.01 The Contractor shall execute the terms of the Contract in strict compliance with the requirements of the *Occupational Health and Safety Act*, R.S.O. 1990, c.O.1, as amended, (the "Act") and Ontario Regulation 213/91, as amended, (that regulates Construction Projects) and any other regulations as amended under the Act (the "Regulations") that may affect the performance of the Work, as the "Constructor" or "employer," as defined by the Act, as the case may be. The Contractor shall ensure that:

- Worker safety is given priority in planning, pricing, and performing the Work;
- The Contractor's officers and supervisory employees have a working knowledge of the duties of a "Constructor" and "employer" as defined by the Act and the provisions of the Regulations applicable to the Work, and a personal commitment to comply with them;

- c) A copy of the most current version of *the Act* and the Regulations are available at the Contractor's office within the Working Area, or, in the absence of an office, in the possession of the supervisor responsible for the performance of the Work;
- d) Workers employed to carry out the Work possess the knowledge, skills, and protective devices required by law or recommended for use by a recognized industry association to allow them to work in safety;
- e) The Contractor's supervisory employees are "Competent Persons" as defined in the OHSA, and carry out their duties in a diligent and responsible manner with due consideration for the health and safety of the workers;
- f) All Subcontractors and their workers are properly protected from injury while they are at the Working Area; and
- g) Following execution of the Contract and prior to the issuance of the order to commence by the Owner, upon request the Contractor submits to the Contract Administrator a copy of the Notice of Project issued to the Ministry of Labour.

.02 When requested, the Contractor shall provide the Owner with a copy of its health and safety policy and program at the pre-start meeting and shall respond promptly to requests from the Owner for confirmation that its methods and procedures for carrying out the Work comply with *the Act* and Regulations. The Contractor shall cooperate with representatives of the Owner and the inspectors appointed to enforce *the Act* and the Regulations in any investigations of worker health and safety in the performance of the Work. The Contractor shall indemnify and save the Owner harmless from any additional expense that the Owner may incur to have the Work performed as a result of the Contractor's failure to comply with the requirements of *the Act* and the Regulations.

.03 Prior to commencement of the Work, the Contractor shall provide to the Contract Administrator a list of those products controlled under the Workplace Hazardous Materials Information System "WHMIS", which the Contractor expects to use on the Contract. Related Safety Data Sheets shall accompany the submission. All containers used in the application of products controlled under "WHMIS" shall be labelled. The Contractor shall notify the Contractor Administrator in writing of changes in the products to be used and provide relevant Safety Data Sheets.

.04 During the course of the Work, the Contractor shall furnish forthwith to the Contract Administrator a copy of all correspondence, reports, orders or charges respecting occupational health and safety, including under *the Act*, *Technical Standards and Safety Act*, 2000, S.O. 2000, c.16 as amended, and the Criminal Code, R.S.C., 1985, c. C-46 as amended, which are received by, or which come to the notice of, the Contractor that apply or are relevant to any of the Work or activities conducted under the terms of the Contract.

.05 Nothing in this Contract shall be construed as requiring the Owner to monitor or approve the workplace health and safety practices of the Contractor.

GC 7.01.05 Contractor's Representatives

- .01 The Contractor shall have an authorized representative on the site while any Work is being performed, to supervise the Work and act for or on the Contractor's behalf. Prior to commencement of construction, the Contractor shall notify the Contract Administrator of the names, addresses, positions, and cell phone, and telephone numbers of the Contractor's representatives who can be contacted at any time to deal with matters relating to the Contract, and update as necessary.
- .02 The Contractor shall designate a person to be responsible for traffic control and work zone safety. The designated person shall be a competent worker who is qualified because of:

- a) Knowledge, training, and experience to perform the duties;
- b) Is familiar with Book 7 of the Ontario Traffic Manual; and
- c) Has knowledge of all potential or actual danger to workers and motorists.

Prior to the commencement of construction, the Contractor shall notify the Contract Administrator of the name; address; position; cell phone, and telephone numbers of the designated person, and update as necessary. The designated person may have other responsibilities, including other construction sites, and need not be present in the Working Area at all times.

GC 7.01.06 Assistance to the Contract Administrator

- .01 The Contractor shall, at no additional cost to the Owner, furnish all reasonable aid, facilities, and assistance required by the Contract Administrator for the proper inspection and examination of the Work or the taking of measurements for the purpose of payment.

GC 7.01.07 Schedule

- .01 The Contractor shall prepare and update, as required, a construction schedule of operations, indicating the proposed methods of construction and sequence of Work and the time the Contractor proposes to complete the various items of Work within the time specified in the Contract Documents. The schedule shall be submitted to the Contract Administrator within 14 Days from the Contract award. If the Contractor's schedule is materially affected by changes in the work, the Contractor shall submit an updated construction schedule, if requested by the Contract Administrator, within 7 Days of the request. This updated schedule shall show how the Contractor proposes to perform the balance of the Work, to complete the Work within the time specified in the Contract Documents.
- .02 For Contracts with a specified number of Working Days, the construction time shown on the initial schedule shall not exceed the specified number of Working Days. The activities on the critical path shall assist the Contract Administrator in determining the Controlling Operation for the purpose of the charging of Working Days. The construction schedule shall include all non-working periods and appropriate allowances for Inclement Weather.
- .03 For Contracts which specify a Contract Time, the construction time shown on the initial construction schedule shall not extend beyond the specified Contract Time. The construction schedule shall include all non-working periods and appropriate allowances for Inclement Weather.

GC 7.01.08 Errors and Inconsistencies Relating to the Contract

- .01 Where the Contractor finds any error, inconsistency, or omission relating to the Contract, the Contractor shall promptly report it to the Contract Administrator and shall not proceed with the activity affected until receiving direction from the Contract Administrator.
- .02 The Contractor shall promptly notify the Contract Administrator in writing if the subsurface conditions observed in the Working Area differ materially from those indicated in the Contract Documents.

GC 7.01.09 Utilities

- .01 The Contractor shall arrange with the appropriate Utility authorities for the stake out of all underground Utilities and service connections that may be affected by the Work. The Contractor shall observe the location of the stake outs prior to commencing the Work and if there is a discrepancy between the location of the stake outs and the locations shown on the Contract Documents, that may affect the Work, the Contractor shall immediately notify the Contract Administrator and the affected Utility companies, in order to resolve the discrepancy. The Contractor shall be responsible for any damage done to the underground

Utilities and service connections by the Contractor's forces during construction if the stake out locations are within the tolerances given in clause GC 2.01.01 (a).

.02 In the case of damage to or interference with any Utilities, pole lines, pipe lines, conduits, farm tiles, or other public or privately-owned works or property, the Contractor shall immediately notify the Owner, Contract Administrator, and the owner of the works of the location and details of such damage or interference.

GC 7.02 Monuments and Layout

.01 Prior to commencement of construction, the Contract Administrator and the Contractor shall locate on site those Monuments that delineate the Working Area and may be used to lay out the Work, all as shown on the Contract Drawings. Property Monuments shall be inventoried in the report format required by the Owner.

.02 These Monuments shall be protected by highly visible T-bars or 1.0 metre tall stakes with survey ribbon set within 0.3 metres of the Monument.

.03 The Contractor shall be responsible for the preservation of all Property Monuments while the Work is in progress, except those Property Monuments that must be removed to facilitate the Work as identified and agreed by the Contractor and Contract Administrator. Monuments removed to facilitate the Work shall be replaced at the Owner's expense, and all others shall be replaced at the Contractor's expense.

.04 All Monuments disturbed, damaged, or removed by the Contractor's operations shall be documented in the inventory report and replaced under the supervision of an Ontario Land Surveyor.

.05 The Monument inventory report referred to in clauses GC 7.02.01 and GC 7.02.04 shall include as a minimum:

- a) Contract number, Contract name, Contract Administrator's name;
- b) Project/site construction limits;
- c) Rough location, type, identification number, and condition of each Monument before and after construction;
- d) The solutions for protection of the Monuments that may be impacted by construction;
- e) Reference ties;
- f) A summary of those Monuments affected by the Work and how they were reset or replaced, and by what type of Monument.

.06 At no extra cost to the Owner, the Contractor shall provide the Contract Administrator with such materials and devices as may be necessary to lay out the baseline and benchmarks, and as may be necessary for the inspection of the Work.

.07 The Contractor shall provide qualified personnel to lay out and establish all lines and grades necessary for construction. The Contractor shall notify the Contract Administrator of any layout work carried out, so that the same may be checked by the Contract Administrator.

.08 The Contractor shall install and maintain substantial alignment markers and secondary benchmarks as may be required for the proper execution of the Work. The Contractor shall supply one copy of all alignment and grade sheets to the Contract Administrator.

- .09 The Contractor shall assume full responsibility for alignment, elevations, and dimensions of each and all parts of the Work, regardless of whether the Contractor's layout work has been checked by the Contract Administrator.
- .10 All stakes, marks, and reference points shall be carefully preserved by the Contractor. In the case of their destruction or removal, for any reason, before the end of the Contract Time such stakes, marks, and reference points shall be replaced, unless otherwise mutually agreed between the Contractor and the Contract Administrator, at the Contractor's expense.
- .11 Benchmarks and survey monuments identified in the Contract Documents shall be protected by the Contractor. In the case of their destruction or removal, such benchmarks and survey monuments shall be replaced by the Owner at the Contractor's expense.

GC 7.03 Working Area

- .01 The Contractor shall maintain the Working Area in a tidy condition and free from the accumulation of debris and prevent dust nuisance, mud, and ponding water, other than that caused by the Owner or others.
- .02 The Contractor's sheds, site offices, toilets, other temporary structures, and storage areas for Material and Equipment shall be grouped in a compact manner, maintained in a neat and orderly condition at all times and removed upon completion of the Work.
- .03 The Contractor shall confine the construction operations to the Working Area. Should the Contractor require additional space, the Contractor shall obtain such space at no additional cost to the Owner.
- .04 The Contractor shall not enter upon or occupy any private property for any purpose, unless the Contractor has received prior written permission from the property owner.
- .05 Upon completion of the Contract, the Working Area used by the Contractor shall be restored to its original condition or better unless otherwise specified in the Contract Documents including the removal of all excavated and stockpiled materials at the Contractor's expense.

.01 If at any time, in the opinion of the Contract Administrator, damage is being done or is likely to be done to any Roadway or any improvement thereon, outside the Working Area, by the Contractor's vehicles or other Equipment, whether licensed or unlicensed Equipment, the Contractor shall, on the direction of the Contract Administrator, and at no extra cost to the Owner, make changes or substitutions for such vehicles or Equipment, and shall alter loadings, or in some other manner, remove the cause of such damage to the satisfaction of the Contract Administrator.

GC 7.05 Excess Loading of Motor Vehicles

.01 Where a vehicle is hauling Material for use on the Work, in whole or in part; upon a Highway; and where motor vehicle registration is required for such vehicle, the Contractor shall not cause or permit such vehicle to be loaded beyond the legal limit specified in the *Highway Traffic Act*, R.S.O. 1990, c.H.8, as amended, whether such vehicle is registered in the name of the Contractor or otherwise, except where there are designated areas within the Working Area where overloading is permitted. The Contractor shall bear the onus of weighing disputed loads.

GC 7.06 Maintaining Roads and Detours

.01 Unless otherwise specified in the Contract Documents, if an existing Roadway is affected by construction, it shall be kept open to both vehicular and pedestrian traffic.

- .02 Subject to the approval of the Contract Administrator, the Contractor shall, at no additional cost to the Owner, be responsible for providing and maintaining for the duration of the Work an alternative route for both pedestrian and vehicular traffic through the Working Area according to the OTM, whether along the existing Highway under construction or on a detour road beside or adjacent to the Highway under construction.
- .03 Subject to the approval of the Contract Administrator, the Contractor may block traffic for short periods of time to facilitate construction of the Work according to the OTM. Any temporary lane closures shall be kept to a minimum.
- .04 The Contractor shall not be required to maintain a road through the Working Area until such time as the Contractor has commenced operations or during seasonal shut down or on any part of the Contract that has been accepted according to these General Conditions. The Contractor shall not be required to apply de-icing chemicals or abrasives or carry out snowplowing.
- .05 Where only localized and separated sections of the Highway are affected by the Contractor's operations, the Contractor shall not be required to maintain intervening sections of the Highway until such times as these sections are located within the limits of the Highway affected by the Contractor's general operations under the Contract.
- .06 Where the Contract Documents provide for or the Contract Administrator requires detours at specific locations, payment for the construction of the detours and, if required, for the subsequent removal of the detours, shall be made at the Contract prices appropriate to such Work.
- .07 Compensation for all labour, Equipment, and Materials to do this Work shall be at the Contract prices appropriate to the Work and, where there are no such prices, at negotiated prices. Notwithstanding the foregoing, the cost of blading required to maintain the surface of such roads and detours shall be deemed to be included in the prices bid for the various tender items and no additional payment shall be made.
- .08 Where Work under the Contract is discontinued for any extended period, including seasonal shutdown, the Contractor shall, when directed by the Contract Administrator, open and place the Roadway and detours in a passable, safe, and satisfactory condition for public travel.
- .09 Where the Contractor constructs a detour that is not specifically provided for in the Contract Documents or required by the Contract Administrator, the construction of the detour and, if required, the subsequent removal shall be performed at the Contractor's expense. The detour shall be constructed and maintained to structural and geometric standards approved by the Contract Administrator. Removal and site restoration shall be performed as directed by the Contract Administrator.
- .10 Where, with the prior written approval of the Contract Administrator, the Highway is closed and the traffic diverted entirely off the Highway to any other Highway, the Contractor shall, at no extra cost to the Owner, supply, erect, and maintain traffic control devices according to the OTM.
- .11 Compliance with the foregoing provisions shall in no way relieve the Contractor of its obligations under subsection GC 6.01, Protection of Work, Persons, and Property, dealing with the Contractor's responsibility for damage claims, except for claims arising on sections of Highway within the Working Area that are being maintained by others.

GC 7.07 Access to Properties Adjoining the Work and Interruption of Utility Services

- .01 The Contractor shall provide at all times and at no extra cost to the Owner:
 - a) Safe and adequate pedestrian and vehicular access;
 - b) Continuity of Utility services; and

- c) Access for emergency response services;

to properties adjoining the Working Area.

.02 The Contractor shall provide at all times and at no extra cost to the Owner access to fire hydrants, water and gas valves, and all other Utilities located in the Working Area.

.03 Where any interruptions in the supply of Utility services are required and are authorized by the Contract Administrator, the Contractor shall give the affected property owners notice according to subsection GC 7.11, Notices by the Contractor, and shall arrange such interruptions so as to create a minimum of interference to those affected.

GC 7.08 Approvals and Permits

- .01 Except as specified in subsection GC 4.02, Approval and Permits, the Contractor shall obtain and pay for any permits, licences, and certificates, which at the date of tender closing, are required for the performance of the Work.
- .02 The Contractor shall arrange for all necessary inspections required by the approvals and permits specified in clause GC 7.08.01, Approvals and Permit.

GC 7.09 Suspension of Work

- .01 The Contractor shall, upon written notice from the Contract Administrator, discontinue or delay any or all of the Work and Work shall not be resumed until the Contract Administrator so directs in writing. Delays, in these circumstances, shall be administered according to subsection GC 3.07, Delays.

GC 7.10 Contractor's Right to Stop the Work or Terminate the Contract

- .01 If the Owner is adjudged bankrupt or makes a general assignment for the benefit of creditors because of insolvency or if a receiver is appointed because of insolvency, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the Owner or receiver or trustee in bankruptcy written notice, terminate the Contract.
- .02 If the Work is stopped or otherwise delayed for a period of 30 Days or more under an order of a court or other public authority and provided that such order was not issued as the result of an act or fault of the Contractor or of anyone directly employed or engaged by the Contractor, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the Owner written notice, terminate the Contract.
- .03 The Contractor may notify the Owner in writing, with a copy to the Contract Administrator, that the Owner is in default of contractual obligations if:
 - a) The Contract Administrator fails to issue certificates according to the provisions of section GC 8.0, Measurement and Payment;
 - b) The Owner fails to pay the Contractor, within 28 Days of the due dates identified in clause GC 8.02.04, Certification and Payment, the amounts certified by the Contract Administrator or within 28 Days of an award by an arbitrator or court; or
 - c) The Owner fails to comply with the requirements of the Contract.
- .04 The Contractor's written notice to the Owner shall advise that if the default is not corrected in the 7 Days immediately following receipt of the written notice, the Contractor may, without prejudice to any other right or remedy the Contractor may have, stop the Work or terminate the Contract.

.05 If the Contractor terminates the Contract under the conditions set out in subsection GC 7.10, Contractor's Right to Stop the Work or Terminate the Contract, the Contractor shall be entitled to be paid for all Work performed according to the Contract Documents and for any losses or damage as the Contractor may sustain as a result of the termination of the Contract.

GC 7.11

Notices by the Contractor

.01 Before any Work is carried out that may affect the property or operations of any Ministry or agency of government or any person; company; partnership; or corporation, including a municipal corporation or any board or commission thereof, and in addition to such notices of the commencement of specified operations as are prescribed elsewhere in the Contract Documents, the Contractor shall give at least 48 hours advance written notice of the date of commencement of such Work to the person, company, partnership, corporation, board, or commission so affected.

GC 7.12

Environmental Incident Management under Legislation Protecting the Environment and Natural Resources

.01 The Contractor shall be in strict compliance with the requirements of the following legislation, as amended, regarding environmental incidents under the control of the Contractor or that are a result of the Contractor's operations:

- a) *Environmental Protection Act*, R.S.O. 1990, c. E.19
- b) *Fisheries Act*, R.S.C. 1985, c. F-14
- c) *Technical Standards and Safety Act*, 2000, S.O. 2000, c. 16
- d) *Pesticides Act*, R.S.O. 1990, c. P.11
- e) *Ontario Water Resources Act*, R.S.O. 1990, c. O.40
- f) *Transportation of Dangerous Goods Act*, 1992, S.C.1992, c. 34

.02 The requirements of the legislation listed in clause GC 7.12.01 include but are not restricted to:

- a) Immediate containment of the material, pollutant, contaminant, deleterious substance, or dangerous good;
- b) Immediate notification of the environmental incident to the proper authority; and
- c) Clean up and restoration of the environment to preconditions.

.03 The Contractor shall possess a plan demonstrating that environmental incidents shall be managed to satisfy the requirements of clauses GC 7.12.01 and GC 7.12.02.

.04 The Contractor shall provide a copy of the environmental incident plan to the Contract Administrator when required and shall inform the Contract Administrator immediately of:

- a) An environmental incident when it occurs; and
- b) Any actions taken or intended to be taken by the Contractor regarding the environmental incident.

.05 The Contractor shall indemnify and save the Owner harmless from any additional expense that the Owner may incur to have the Work performed as a result of the Contractor's failure to comply with the requirements of the legislation listed in clause GC 7.12.01.

GC 7.13**Obstructions**

- .01 Except as otherwise noted in these General Conditions, the Contractor assumes all the risks and responsibilities arising out of any obstruction encountered in the performance of the Work and any traffic conditions, including traffic conditions on any Highway or road giving access to the Working Area caused by such obstructions, and the Contractor shall not make any claim against the Owner for any loss, damage, or expense occasioned thereby.
- .02 Where the obstruction is an underground Utility or other human-made object, the Contractor shall not be required to assume the risks and responsibilities arising out of such obstruction, unless the location of the obstruction is shown on the Plans or described in the Contract Documents and the location so shown is within the tolerance specified in clause GC 2.01.01 a), or unless the presence and location of the obstruction has otherwise been made known to the Contractor or could have been determined by the visual site investigation made by the Contractor according to these General Conditions.
- .03 During the course of the Contract, it is the Contractor's responsibility to consult with Utility companies or other appropriate authorities for further information in regard to the exact location of these Utilities, to exercise the necessary care in construction operations, and to take such other precautions as are necessary to safeguard the Utilities from damage.

GC 7.14**Limitations of Operations**

- .01 Except for such Work as may be required by the Contract Administrator to maintain the Work in a safe and satisfactory condition, the Contractor shall not carry out operations under the Contract on Saturdays, Sundays, and any holidays recognized by the Owner without permission in writing from the Contract Administrator.
- .02 The Contractor shall cooperate and coordinate the Work with other Contractors, Utility companies, and the Owner and they shall be allowed access to their Work or plant at all reasonable times.

GC 7.15**Cleaning Up Before Acceptance**

- .01 Upon attaining Substantial Performance of the Work, the Contractor shall remove surplus materials, tools, and Equipment not required for the performance of the remaining Work. The Contractor shall also remove all temporary works and debris other than that caused by the Owner or others and leave the Work and Working Area clean and suitable for occupancy by the Owner, unless otherwise specified.
- .02 The Work shall not be deemed to have reached Completion until the Contractor has removed surplus materials, tools, and Equipment. The Contractor shall also have removed debris, other than that caused by the Owner, or others.

GC 7.16**Warranty**

- .01 Unless otherwise specified in the Contract Documents for certain Materials or components of the Work, the Contractor shall be responsible for the proper performance of the Work only to the extent that the design and standards permit such performance.
- .02 Subject to the previous paragraph the Contractor shall correct promptly, at no additional cost to the Owner, defects or deficiencies in the Work that appear:
 - a) Prior to and during the period of 12 months from the date of Substantial Performance of the Work, as set out in the Certificate of Substantial Performance of the Work,
 - b) Where there is no Certificate of Substantial Performance, 12 months from the date of Completion of the Work as set out in the Completion Certificate, or

- c) Such longer periods as may be specified in the Contract Documents for certain Materials or some of the Work.

The Contract Administrator shall promptly give the Contractor written notice of observed defects or deficiencies.

- .03 The Contractor shall correct or pay for damage resulting from corrections made under the requirements of clause GC 7.16.02.

GC 7.17 Contractor's Workers

- .01 The Contractor shall only employ orderly, competent, and skillful workers to do the Work and whenever the Contract Administrator shall inform the Contractor in writing that any worker or workers involved in the Work are, in the opinion of the Contract Administrator, incompetent, or disorderly such worker or workers shall be removed from the Work and shall not be employed on the Work again without the consent in writing of the Contract Administrator.

GC 7.18 Drainage

- .01 During construction and until the Work is completed, the Contractor shall make all reasonable efforts to keep all portions of the Work properly and efficiently drained, to at least the same degree as that of the existing drainage conditions.

SECTION GC 8.0 - MEASUREMENT AND PAYMENT

GC 8.01 Measurement

GC 8.01.01 Quantities

- .01 The Contract Administrator shall make an Estimate in writing once a month, unless otherwise specified in the Contract Documents, of the quantity of Work performed and provide such Estimate to the Contractor within 10 Days of the Cut-Off Date.
- .02 Quantities for progress payments shall be construed and held to be approximate. The final quantities for the issuance of the Completion Payment shall be based on the measurement of Work completed.
- .03 Measurement of the quantities of the Work performed may be either by Actual Measurement or by Plan Quantity principles as indicated in the Contract Documents. Adjustments to Plan Quantity measurements shall normally be made using Plan Quantity principles but may, where appropriate, be made using Actual Measurements. Those items identified on the Tender by the notation (P) in the unit column shall be paid according to the Plan Quantity. Items where the notation (P) does not occur shall be paid according to Actual Measurement or lump sum.

GC 8.01.02 Variations in Tender Quantities

- .01 Where it appears that the quantity of work to be done or Material to be supplied or both by the Contractor under a unit price tender item may exceed or be less than the tender quantity, the Contractor shall proceed to do the work or supply the Material or both required to complete the tender item and payment shall be made for the actual amount of work done or Material supplied or both at the unit prices stated in the Tender except as provided below:
 - a) In the case of a Major Item where the quantity of work performed or Material supplied or both by the Contractor exceeds the tender quantity by more than 15%, either party to the Contract may make a written request to the other party to negotiate a revised unit price for that portion of the work performed or Material supplied or both which exceeds 115% of the tender quantity. The negotiation shall be carried out as soon as reasonably possible. Any revision of the unit price shall be based on the actual cost of doing the work or supplying the Material or both under the tender item plus a reasonable allowance for profit and applicable overhead.
 - b) In the case of a Major Item where the quantity of work performed or Material supplied or both by the Contractor is less than 85% of the tender quantity, the Contractor may make a written request to negotiate for the portion of the actual overheads and fixed costs applicable to the amount of the underrun in excess of 15% of the tender quantity. For purposes of the negotiation, the overheads and fixed costs applicable to the item are deemed to have been prorated uniformly over 100% of the tender quantity for the item. Overhead costs shall be confirmed by a statement certified by the Contractor's senior financial officer or auditor and may be audited by the Owner. Alternatively, where both parties agree, an allowance equal to 10% of the unit price on the amount of the underrun in excess of 15% of the tender quantity shall be paid.

Written requests for compensation must be received no later than 60 Days after the issuance of the Completion Payment.

GC 8.02 Payment

GC 8.02.01 Non-Resident Contractor

- .01 If the Contractor is not a registered entity in Ontario, the Contractor shall obtain all necessary approvals, consents, permits, licences, certificates, registrations, and other authorizations prior to execution of the Contract.

.02 The Contractor shall ensure that all Subcontractors the Contractor proposes to use for carrying out any of the Work required by the Contract and who are not a registered entity in Ontario have obtained all necessary approvals, consents, permits, certificates, registrations, and other authorizations prior to execution of the subcontract.

GC 8.02.02 Price for Work

- .01 Prices for the Work shall be full compensation for all labour, Equipment and Material required to do the work. The term "all labour, Equipment, and Material" shall include Hand Tools, supplies, and other incidentals.
- .02 Payment, for Work which is identified in the Contract Documents but not specifically detailed as part of any one item shall be deemed to be included in the items with which it is associated.

GC 8.02.03 Advance Payments for Material

.01 The Owner shall make advance payments for Material intended for incorporation in the Work upon the written request of the Contractor and according to the following terms and conditions:

- a) The Contractor shall deliver the Material to a site approved by the Contract Administrator and the Contractor shall, in advance of receipt of the shipment of the Material, arrange for adequate and proper storage facilities.
- b) The value of aggregates, processed and stockpiled, shall be assessed by the following procedure:
 - i. Sources Other Than Commercial
 - (A) Granular A, B, BI, BII, BIII, M, and O shall be assessed at the rate of 60% of the Contract price.
 - (B) Coarse and fine aggregates for hot mix asphaltic concrete, surface treatment and cement concrete shall be assessed at the rate of 25% of the Contract price for each aggregate stockpiled.
 - ii. Commercial Sources
 - (A) Payment for separated coarse and fine aggregates shall be considered at the above rate when such Materials are stockpiled at a commercial source where further processing is to be carried out before incorporating such Materials into a final product. Advance payments for other Materials located at a commercial source shall not be made.
- c) Payment for all other Materials, unless otherwise specified elsewhere in the Contract Documents, shall be based on the invoice price, and the Contractor shall submit proof of cost to the Contract Administrator before payment can be made by the Owner.
- d) The payment for all Materials shall be prorated against the appropriate tender item by paying for sufficient units of the item to cover the value of the Material. Such payment shall not exceed 80% of the Contract price for the item.
- e) All Materials for which the Contractor wishes to receive advance payment shall be placed in the designated storage location immediately upon receipt of the Material and shall thenceforth be held by the Contractor in trust for the Owner as collateral security for any monies advanced by the Owner and for the due completion of the Work. The Contractor shall not exercise any act of ownership inconsistent with such security, or remove any Material from the storage locations, except for inclusion in the Work, without the consent, in writing, of the Contract Administrator.
- f) Such materials shall remain at the risk of the Contractor who shall be responsible for any loss, damage, theft, improper use, or destruction of the Material however so caused.

.02 Where the Owner makes advance payments subject to the conditions listed in clause GC 8.02.03.01, such payment shall not constitute acceptance of the Material by the Owner. Acceptance shall only be determined when the Material meets the requirements of the appropriate specification.

GC 8.02.04 Certification and Payment

GC 8.02.04.01 Progress Payment

- .01 The Contractor shall submit a Proper Invoice for progress payments monthly or at intervals specified in the Contract Documents after starting the Work on this Contract. The Contractor shall submit the Proper Invoice to the Contract Administrator and to the Owner. This Proper Invoice shall be for work completed at the agreed to Cut-Off Date.
- .02 A Proper Invoice shall include;
 - a) the requirements as set out in section 6.1 of the *Construction Act*;
 - b) the quantities of Work performed;
 - c) the value of Work performed;
 - d) any advanced payment for Material;
 - e) the amount of Statutory Holdback, liens, Owner's set-off;
 - f) the amount of any applicable taxes;
 - g) the amount due to the Contractor; and
 - h) any other information that may be prescribed in the Contract Documents.
- .03 Payment shall be made within 28 Days of the submission of the Proper Invoice unless a notice of non-payment has been issued according to the *Construction Act*.
- .04 The Owner shall retain the Statutory Holdback in the form and amount as required under the *Construction Act*.

GC 8.02.04.02 Certification of Subcontract Completion

- .01 Before the Work has reached the stage of Substantial Performance, the Contractor may notify the Contract Administrator, in writing that a subcontract is completed satisfactorily and ask that the Contract Administrator certify the completion of such subcontract.
- .02 The Contract Administrator shall issue a Certificate of Subcontract Completion, if the subcontract has been completed in a form satisfactory to the Contract Administrator, and all required inspection and testing of the works covered by the subcontract have been carried out and the results are satisfactory to the Contract Administrator.
- .03 The Contract Administrator shall set out in the Certificate of Subcontract Completion the date on which the subcontract was completed and, within 7 Days of the date the subcontract is certified complete, the Contract Administrator shall give a copy of the certificate to the Contractor and to the Subcontractor concerned.

GC 8.02.04.03**Subcontract Statutory Holdback Release Certificate and Payment**

- .01 Following receipt of the Certificate of Subcontract Completion, the Owner shall release and pay the Contractor the Statutory Holdback retained in respect of the subcontract. Such release shall be made 61 Days after the date the subcontract was certified complete and providing the Contractor submits the following to the Contract Administrator:
 - a) A document satisfactory to the Contract Administrator that shall release the Owner from all further claims relating to the subcontract, qualified by stated exceptions such as holdback monies;
 - b) Evidence satisfactory to the Contract Administrator that the Subcontractor has discharged all liabilities incurred in carrying out the subcontract;
 - c) A satisfactory clearance certificate or letter from the Workplace Safety and Insurance Board relating to the subcontract; and
 - d) A copy of the contract between the Contractor and the Subcontractor and a satisfactory statement showing the total amount due the Subcontractor from the Contractor.
- .02 Clause GC 8.02.04.03.01 (d), shall only apply to Lump Sum Items and then only when the Contract Administrator specifically requests it.
- .03 Upon receipt of the Statutory Holdback, the Contractor shall forthwith give the Subcontractor the payment due under the subcontract.
- .04 Release of Statutory Holdback by the Owner in respect of a subcontract shall not relieve the Contractor, or the Contractor's Surety, of any of their responsibilities.

GC 8.02.04.04**Substantial Performance of Work**

- .01 The Contractor, as part of the application for Substantial Performance, shall submit an itemized list of the outstanding work.
- .02 Upon application by the Contractor and when the Contract Administrator has verified that the Contract has been substantially performed, the Contract Administrator shall issue a Certificate of Substantial Performance.
- .03 The Contract Administrator shall set out in the Certificate of Substantial Performance the date on which the Contract was substantially performed and, within 7 Days after signing the said certificate, and shall provide a copy to the Contractor.
- .04 Upon receipt of a copy of the Certificate of Substantial Performance, the Contractor shall forthwith, as required by Section 32(1) Paragraph 5 of the *Construction Act*, as amended, publish a copy of the certificate in the manner set out in the regulations.
- .05 Where the Contractor fails to publish a copy of the Certificate of Substantial Performance as required above within 7 Days after receiving a copy of the certificate signed by the Contract Administrator, the Owner may publish a copy of the certificate at the Contractor's expense.
- .06 Except as otherwise provided for in Section 31 of the *Construction Act*, the 60 Day lien period prior to the release of holdback as referred to in clause GC 8.02.04.05, Substantial Performance Payment and Statutory Holdback Release Payment Certificates, shall commence from the date of publication of the Certificate of Substantial Performance as provided for above.

GC 8.02.04.05 Substantial Performance Payment and Substantial Performance Statutory Holdback Release Payment Certificates

- .01 Prior to the Contract Administrator issuing the Certificate of Substantial Performance, the Contractor shall submit a Proper Invoice for the Work completed. In addition to the requirements specified under section 8.02.04.01.02, the Proper Invoice shall include:
 - a) The value of Work performed to the date of Substantial Performance;
 - b) The value of outstanding or incomplete Work;
 - c) The amount of the Statutory Holdback, allowing for any previous releases of Statutory Holdback to the Contractor in respect of completed subcontracts and deliveries of pre-selected Equipment; and
 - d) The amount due to the Contractor.
- .02 Payment shall be made within 28 Days of the date of submission of the Proper Invoice.
- .03 The Substantial Performance Statutory Holdback Release Payment Certificate shall be a payment certificate releasing to the Contractor the Statutory Holdback due in respect of Work performed up to the date of Substantial Performance. Payment of such Statutory Holdback shall be due 61 Days after the date of publication of the Certificate of Substantial Performance but subject to the provisions of the *Construction Act* and the submission by the Contractor of the following documents:
 - a) A satisfactory Certificate of Clearance from the Workplace Safety and Insurance Board; and
 - b) Proof of publication of the Certificate of Substantial Performance.
- .04 Any amount of security retained shall be identified on the Substantial Performance Payment Certificate.

GC 8.02.04.06 Certification of Completion

- .01 Upon application by the Contractor and when the Contract Administrator has verified that the Contract has reached Completion, the Contract Administrator shall issue a Completion Certificate.
- .02 The Contract Administrator shall set out in the Completion Certificate the date on which the Work was completed and, within 7 Days of signing the said certificate, the Contract Administrator shall provide a copy to the Contractor.

GC 8.02.04.07 Completion Payment and Completion Statutory Holdback Release Payment Certificates

.01 Prior to the Contract Administrator issuing the Completion Certificate, the Contractor shall submit a Proper Invoice for the Work completed. In addition to the requirements noted under section 8.02.04.01.02, the Proper Invoice shall include:

- a) Measurement and value of Work at Completion;
- b) The amount of the further Statutory Holdback based on the value of further Work completed over and above the value of Work completed shown in the Substantial Performance Payment Certificate referred to above; and
- c) The amount due to the Contractor.

.02 The Completion Statutory Holdback Release Payment Certificate shall be a payment certificate releasing to the Contractor the further Statutory Holdback. Subject to any outstanding liens and permissible set-offs

and upon submission of a satisfactory Certificate of Clearance from the Workplace Safety and Insurance Board, the Owner shall pay the remaining holdback on the Work done, within 28 Days after the expiration of the 60-Day lien period.

.03 Any amount of security retained shall be identified on the Completion Payment Certificate.

GC 8.02.04.08 Interest

.01 Interest due to the Contractor shall be based on simple interest and calculated using the applicable Rate of Interest. Interest shall begin to accrue on an amount that is not paid when it is due to be paid under Part-I of the *Construction Act*, at the prejudgment interest rate determined under subsection 127 (2) of the *Courts of Justice Act* or, if the Contract specifies a different interest rate for this purpose, the greater of the prejudgment interest rate and the interest rate specified in the Contract.

GC 8.02.04.09 Interest for Late Payment

.01 Provided the Contractor has complied with the requirements of the Contract, including all documentation requirements, when payment by the Owner to the Contractor for Work performed, or for release of Statutory Holdback, is delayed by the Owner, then the Contractor shall be entitled to receive interest on the outstanding payment at the Rate of Interest, if payment is not received on the dates set out below:

- a) Progress Payment: 28 Days after submission of Proper Invoice;
- b) Subcontract Statutory Holdback Release Payment: 89 Days after the date on which the subcontract was completed;
- c) Substantial Performance Payment: 28 Days after the date of issuance of the certificate;
- d) Substantial Performance Statutory Holdback Release Payment: 89 Days after publication of the Payment Certificate of Substantial Performance;
- e) Completion Payment: 28 Days after the date certified as the date on which the Contract reached Completion; and
- f) Completion Statutory Holdback Release Payment: 89 Days after the date certified as the date that the Work was completed.

.02 If the Contractor has not complied with the requirements of the Contract, including all documentation requirements, prior to expiration of the time periods described in clause GC 8.02.04.09.01, interest shall only begin to accrue when the Contractor has completed those requirements.

GC 8.02.04.10 Interest for Negotiations and Claims

.01 Except as hereinafter provided, where a notice of negotiation, notice of intent to claim and the subsequent claims are submitted according to the time limits or procedure or both described by subsection GC 3.13, Claims, Negotiations, Mediation, the Owner shall pay the Contractor the Rate of Interest on the amount of the negotiated price for that part of the Work or on the amount of the settled claim. Such interest shall not commence until 30 Days after the satisfactory completion of that part of the Work.

.02 Where the Contractor fails to give notice of a claim within the time limit prescribed by subsection GC 3.13, Claims, Negotiations, Mediation, interest shall not be paid.

.03 Where a Contractor fails to comply with the 30 Day time limit and the procedures prescribed in clause GC 3.13.03.03 for submission of claims, interest shall not be paid for the delay period.

GC 8.02.04.11 Owner's Set-Off

- .01 Pursuant to the *Construction Act*, the Owner may retain from monies owing to the Contractor under this Contract an amount sufficient to cover any outstanding or disputed liabilities, including the cost to remedy deficiencies, the reduction in value of substandard portions of the Work, claims for damages by third parties that have not been determined in writing by the Contractor's insurer, undetermined claims by the Owner, and any assessment due the Workplace Safety and Insurance Board.
- .02 Under these circumstances the Owner will give the Contractor appropriate notice of such action.

GC 8.02.04.12 Delay in Payment

.01 The Owner shall not be deemed to be in default of the Contract provided any delay in payment does not exceed the due dates as defined in clause GC 8.02.04.09.01.

GC 8.02.05 Payment on a Time and Material Basis

GC 8.02.05.01 Definitions

.01 For the purpose of clause GC 8.02.05 the following definitions apply:

Cost of Labour means the amount of wages, salary, travel, travel time, food, lodging, or similar items and Payroll Burden paid or incurred directly by the Contractor to or in respect of labour and supervision actively and necessarily engaged on the Work based on the recorded time and hourly rates of pay for such labour and supervision but shall not include any payment or costs incurred for general supervision, administration, and management time spent on the entire Work or any wages, salary, or Payroll Burden for which the Contractor is compensated by any payment made by the Owner for Equipment.

Cost of Material means the cost of Material purchased or supplied from stock and valued at current market prices for the purpose of carrying out Extra Work by the Contractor or by others, when such arrangements have been made by the Contractor for completing the Work, as shown by itemized invoices.

Operated Rented Equipment means Rented Equipment for which an operator is provided by the supplier of the Equipment and for which the rent or lease includes the cost of the operator.

Payroll Burden means the payments in respect of workplace insurance, vacation pay, employment insurance, public liability and property damage insurance, sickness and accident insurance, pension fund, and such other welfare and benefit payments forming part of the Contractor's normal labour costs.

Rented Equipment means Equipment that is rented or leased for the special purpose of Work on a Time and Material Basis from a person, firm, or corporation that is not an associate of the lessee as the word "associate" is defined by the *Securities Act*, R.S.O. 1990, c.S.5, as amended, and is approved by the Contract Administrator.

Road Work means the preparation, construction, finishing, and construction maintenance of roads, streets, Highways, and parking lots and includes all work incidentals thereto other than Work on structures.

Sewer and Watermain Work means the preparation, construction, finishing, and construction maintenance of sewer systems and watermain systems, and includes all work incidental thereto other than Work on structures.

Standby Time means any period of time that is not considered Working Time and which together with the Working Time does not exceed 10 hours in any one Working Day and during which time a unit of Equipment cannot practically be used on other Work but must remain on the site in order to continue with its assigned task and during which time the unit is in fully operable condition.

Structure Work means the construction, reconstruction, repair, alteration, remodelling, renovation, or demolition of any bridge, building, tunnel, or retaining wall and includes the preparation for and the laying of the foundation of any bridge, building, tunnel, or retaining wall and the installation of Equipment and appurtenances incidental thereto.

The 127 Rate means the rate for a unit of Equipment as listed in OPSS.PROV 127, Schedule of Rental Rates for Construction Equipment, Including Model and Specification Reference, that is current at the time the work is carried out or for Equipment that is not so listed, the rate that has been calculated by the Owner, using the same principles as used in determining The 127 Rate.

Work on a Time and Material Basis means Changes in the Work, Extra Work, and Additional Work approved by the Contract Administrator for payment on a Time and Material basis. The Work on a Time and Material Basis shall be subject to all the terms, conditions, Standard Specifications and provisions of the Contract.

Working Time means each period of time during which a unit of Equipment is actively and of necessity engaged on a specific operation and the first 2 hours of each immediately following period during which the unit is not so engaged but during which the operation is otherwise proceeding and during which time the unit cannot practically be transferred to other Work but must remain on the site in order to continue with its assigned tasks and during which time the unit is in a fully operable condition.

GC 8.02.05.02 Daily Work Records

.01 Daily Work Records, prepared as the case may be by either the Contractor's representative or the Contract Administrator reporting the labour and Equipment employed and the Material used on each Time and Material project, should be reconciled and signed each Day by both the Contractor's representative and the Contract Administrator. If it is not possible to reconcile the Daily Work Records, then the Contractor shall submit the un-reconciled Daily Work Records with its claim, whereby the resolution of the dispute about the Daily Work Records shall not be resolved until there is a resolution of the claim.

GC 8.02.05.03 Payment for Work

.01 Payment as herein provided shall be full compensation for all labour, Equipment, and Material to do the Work on a Time and Material Basis except where there is agreement to the contrary prior to the commencement of the Work on a Time and Material Basis. The payment adjustments on a Time and Material basis shall apply to each individual Change Order authorized by the Contract Administrator.

GC 8.02.05.04 Payment for Labour

.01 The Owner shall pay the Contractor for labour employed on each Time and Material project at 135% of the Cost of Labour up to \$3,500, then at 120% of any portion of the Cost of Labour in excess of \$3,500.

.02 The Owner shall make payment in respect of Payroll Burden for Work on a Time and Material Basis at the Contractor's actual cost of Payroll Burden.

.03 At the Owner's discretion, an audit may be conducted in which case the actual Payroll Burden so determined shall be applied to all Time and Material work on the Contract.

GC 8.02.05.05 Payment for Material

.01 The Owner shall pay the Contractor for Material used on each Time and Material project at 120% of the Cost of the Material up to \$3,500, then at 115% of any portion of the Cost of Material in excess of \$3,500.

GC 8.02.05.06 Payment for Equipment

GC 8.02.05.06.01 Working Time

- .01 The Owner shall pay the Contractor for the Working Time of all Equipment, other than Rented Equipment and Operated Rented Equipment, used on the Work on a Time and Material basis at the 127 Rate.
- .02 The Owner shall pay the Contractor for the Working Time of Rented Equipment used on the Work on a Time and Material Basis at 110% of the invoice price approved by the Contract Administrator up to a maximum of 110% of the 127 Rate. This constraint shall be waived when the Contract Administrator approves the invoice price prior to the use of the Rented Equipment.
- .03 The Owner shall pay the Contractor for the Working Time of Operated Rented Equipment used on the Work on a Time and Material Basis at 110% of the Operated Rented Equipment invoice price approved by the Contract Administrator prior to the use of the Equipment on the Work on a Time and Material Basis.

GC 8.02.05.06.02 Standby Time

- .01 The Owner shall pay the Contractor for Standby Time of Equipment at 35% of The 127 Rate or 35% of the invoice price whichever is appropriate. The Owner shall pay reasonable costs for Rented Equipment where this is necessarily retained in the Working Area for extended periods agreed to by the Contract Administrator. This shall include Rented Equipment intended for use on other work, but has been idled due to the circumstances giving rise to the Work on a Time and Material Basis.
- .02 In addition, the Owner shall include the Cost of Labour of operators or associated labourers who cannot be otherwise employed during the Standby Time or during the period of idleness caused by the circumstances giving rise to the Work on a Time and Material Basis.
- .03 The Contract Administrator may require Rented Equipment idled by the circumstances giving rise to the Work on Time and Material Basis to be returned to the lessor until the Work requiring the Equipment can be resumed. The Owner shall pay such costs as a result from such return.
- .04 When Equipment is transported, solely for the purpose of the Work on a Time and Material Basis, to or from the Working Area on a Time and Material basis, payment shall be made by the Owner only in respect of the transporting units. When Equipment is moved under its own power it shall be deemed to be working. The method of moving Equipment and the rates shall be subject to the approval of the Contract Administrator.

GC 8.02.05.07 Payment for Hand Tools

- .01 Notwithstanding any other provision of this Section, no payment shall be made to the Contractor for or in respect of Hand Tools or Equipment that are tools of the trade.

GC 8.02.05.08 Payment for Work by Subcontractors

- .01 Where the Contractor arranges for Work on a Time and Material Basis, or a part of it, to be performed by Subcontractors on a Time and Material basis and has received approval prior to the commencement of such Work, according to the requirements of subsection GC 3.09, Subcontracting by the Contractor, the Owner shall pay the cost of Work on a Time and Material Basis by the Subcontractor calculated as if the Contractor had done the Work on a Time and Material Basis, plus a markup calculated on the following basis:
 - a) 20% of the first \$3,500; plus
 - b) 15% of the amount from \$3,500 to \$12,000; plus

- c) 5% of the amount in excess of \$12,000.
- .02 No further markup shall be applied regardless of the extent to which the work is assigned or sublet to others. If Work on a Time and Material Basis is assigned or sublet to a related entity or associated corporation with common ownership to the Contractor as defined by the *Securities Act*, RSO 1990, c.S.5, then the Contractor markup is not permitted.

GC 8.02.05.09 Submission of Invoices

- .01 At the start of the Work on a Time and Material Basis, the Contractor shall provide the applicable labour and Equipment rates not already submitted to the Contract Administrator during the course of such Work.
- .02 Separate summaries shall be completed by the Contractor. Each summary shall include the Change Directive or Change Order number and covering dates of the Work and shall itemize separately the labour, Materials, and Equipment. Invoices for Materials, Rented Equipment, and other charges incurred by the Contractor on the Work on a Time and Material Basis shall be included with each summary.
- .03 Each month the Contract Administrator shall include with the monthly progress payment, the costs of the Work on a Time and Material Basis incurred during the preceding month all according to the Contract administrative procedures and the Contractor's invoice of the Work on a Time and Material Basis.
- .04 The final summary as per clause 8.02.05.09.02 shall be submitted by the Contractor within 60 Days after the completion of the Work on a Time and Material Basis.

GC 8.02.05.10 Payment Other Than on a Time and Material Basis

- .01 Clause GC 8.02.05 does not preclude the option of the Contract Administrator and the Contractor negotiating a Lump Sum Item or unit price payment for Change in the Work, Extra Work, and Additional Work.

GC 8.02.05.11 Payment Inclusions

- .01 Except where there is agreement in writing to the contrary, the compensation, as herein provided, shall be accepted by the Contractor as compensation in full for profit and all costs and expenses arising out of the Work on a Time and Material Basis, including all cost of general supervision, administration, and management time spent on the Work on a Time and Material Basis, and no other payment or allowance shall be made in respect of such Work on a Time and Material Basis.

GC 8.02.06 Final Acceptance Certificate

- .01 After the acceptance of the Work or, where applicable, after the Warranty Period has expired, the Contract Administrator shall issue the Final Acceptance Certificate. The Final Acceptance Certificate shall not be issued until all known deficiencies have been adjusted or corrected, as the case may be, and the Contractor has discharged all obligations under the Contract.
- .02 Any remaining amount of security shall be released upon Final Acceptance of the Contract.

GC 8.02.07 Records

- .01 The Contractor shall maintain and keep accurate Records relating to the Work, Changes in the Work, Extra Work, Additional Work and claims arising therefrom. Such Records shall be of sufficient detail to support the total cost of the Work, Changes in the Work, Extra Work, Additional Work and claims arising therefrom. The Contractor shall preserve all such original Records until 12 months after the Final Acceptance Certificate is issued or until all claims have been settled, whichever is longer. The Contractor shall require that Subcontractors employed by the Contractor preserve all original Records pertaining to

the Work, Changes in the Work, Extra Work, Additional Work and claims arising therefrom for a similar period of time.

.02 The Owner may inspect and audit the Contractor's Records relating to the Work, Changes in the Work, Extra Work, and Additional Work at any time during the period of the Contract. The Contractor shall supply certified copies of any part of its Records required, whenever requested by the Owner.

GC 8.02.08 Taxes

Taxes

- .01 Where a change in Canadian Federal or Provincial taxes occurs after the date of tender closing for this Contract, and this change could not have been anticipated at the time of Tender, the Owner shall increase or decrease Contract payments to account for the exact amount of tax change involved.
- .02 Claims for compensation for additional tax cost shall be submitted by the Contractor to the Contract Administrator on forms provided by the Contract Administrator to the Contractor. Such claims for additional tax costs shall be submitted not less than 30 Days after the date of Final Acceptance.
- .03 Where the Contractor benefits from a change in Canadian Federal or Provincial taxes, the Contractor shall submit to the Contract Administrator on forms provided by the Contract Administrator, a statement of such benefits. This statement shall be submitted not later than 30 Days after Final Acceptance.
- .04 Changes in Canadian Federal or Provincial taxes that impact upon commodities, which when left in place form part of the finished Work, or the provision of services, where such services form part of the Work and where the manufacture or supply of such commodities or the provision of such services is carried out by the Contractor or a Subcontractor, are subject to a claim or benefit as detailed above. Services in the latter context means the supply and operation of Equipment, the provision of labour, and the supply of commodities that do not form part of the Work.
- .05 The Contractor shall add the Harmonized Sales Tax (HST) to all invoices.

GC 8.02.09 Liquidated Damages

Liquidated Damages

.01 When liquidated damages are specified in the Contract and the Contractor fails to complete the Work according to the Contract, the Contractor shall pay such amounts as are specified in the Contract Documents.

TECHNICAL SPECIFICATIONS



1. GENERAL

1.1 DESCRIPTION OF WORK

1.1.1 The scope of work, in general terms, involves the reconstruction of a section of Duke Street between Earl Avenue and Casimir Avenue. Work will include but be not limited to:

- Mobilization and Demobilization
- Place and maintain detour signage
- Establish traffic/pedestrian control and environmental protection.
- Remove entire asphalt roadway (full depth) to limits indicated on drawings. Dispose of excess materials off-site in accordance with applicable regulations and at designated disposal areas identified by the City. All disposal areas will be within an 8km radius of the project site.
- Install new Granular 'B' subbase and Granular 'A' base material and provide one-40 mm lift of Superpave 19.0 binder course and one-40 mm lift of Superpave 12.5 surface course asphalt to roadway.
- Replace sections of storm sewer, as indicated.
- Replace catch basins, catch basin leads & catchbasin manholes, as indicated and re-establish all existing connection into structures
- Replace sections of sanitary sewer, as indicated and re-establish lateral connections.
- Replace sections of sanitary services, as indicated.
- All backfill material to be Granular 'B', unless otherwise indicated.
- Replace manholes as indicated and re-establish all existing connection into structures
- Complete asbestos abatement measures for removal and disposal of existing asbestos cement sewer pipe
- Establish temporary potable water system, including testing, as required.
- Remove existing 150mmØ watermain and appurtenances with replace with new 300mmØ watermain c/w appurtenances
- Replace existing fire hydrants and intersecting watermains to new 300mmØ watermain
- Complete watermain lowering as required
- Re-connect existing building water services c/w new corporation stops to new 300mmØ watermain
- Replace concrete curb and gutter c/w new perforated subdrain, as indicated
- Replace sections of sidewalks, as indicated
- Install new tactile walking surface indicators in new concrete sidewalk at signalized intersection, as indicated
- Reconstruct disturbed driveway approaches, walkways, etc.
- Reconstruct all surface features disturbed during construction
- All work as indicated on the Drawing and Specifications.

The description of the Work stated above is not, nor is it intended to be, a complete and all-inclusive "Description of Work".

1.2 LIMITS OF CONTRACT

.1 The limits of the Contract are the limits of the property and/or road allowances in which the work is to be performed or is otherwise shown on the drawings.

1.3 PRECONSTRUCTION MEETING

.1 Following award of the Contract and the instruction to commence the Work, the Contract Administrator will convene a preconstruction meeting with the Owner's representative, the Contract Administrator and the Contractor.

.2 The meeting agenda will include:

- i. the appointment and notification of official representatives of participants in the Work;
- ii. requirements for temporary facilities, site signs, offices, storage sheds, utilities, hoarding, site access and use;
- iii. Health and Safety issues;
- iv. site security;
- v. the Work schedule, including the Products delivery schedule;
- vi. a schedule for submission of shop drawings, samples and similar documents;
- vii. a schedule for site meetings;
- viii. a review of administrative procedures, including change notices, change orders, site instructions, record drawings, maintenance manuals, take-over procedures, progress claims;
- ix. the appointment of inspection and testing agencies or firms
- x. traffic control and detour plans;
- xi. notices to residents; and
- xii. other items as arise at the meeting.

.3 The Contract Administrator will arrange space and facilities for the meeting, and document the responsibilities and necessary activities of the participants during construction as discussed, and prepare and distribute minutes of the meeting to each attendee.

1.4 SITE MEETINGS

- .1 Contractor to provide suitable accommodation in which to hold site meetings.
- .2 Site meetings will be held on a regular schedule agreed to at the preconstruction meeting. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of City of Dryden and one representative of the Contractor. Each representation shall be a responsible person capable of expressing the position of the Contractor, Contract Administrator and City of Dryden respectively on any matter discussed at the meeting. The progress of the Work will be reviewed at each of these meetings, so the Contractor representative must be capable of discussing the Schedule and making any necessary revisions. In addition to reviewing the progress of the Work, other related matters will be discussed including but not limited to:
 - i. review and acceptance of previous meeting minutes;
 - ii. field observations and any problems or conflicts;
 - iii. any problem that may impede Work progress and the construction schedule and corrective measures required;
 - iv. revisions to the construction schedule and the Products delivery schedule; and,
 - v. review of submittal schedules.
- .3 The City reserves the right to cancel any meeting or call additional meetings on a 48 hour notice.

1.5 SITE PROGRESS RECORDS

- .1 Maintain at the site a permanent written and photographic record of progress of the Work. Make the record available to the Contract Administrator upon request and provide him with a copy if requested. Include in the record each day:
 - i. the weather conditions with maximum and minimum temperatures;
 - ii. the conditions encountered during excavation;
 - iii. the commencement and the completion dates of the Work of each trade in each area of the Contract;
 - iv. the erection and removal dates of formwork in each area of the Contract;
 - v. the dates, the quantities, and the particulars of each concrete pour;

- vi. the numbers and classifications of the Contractor's and the Subcontractor's tradesmen working at the site and the numbers and classifications of construction machinery and equipment and the number of hours each is operated;
- vii. the visits to the site by the Owner, the Consultant, the regulatory authorities, the testing companies, the subcontractors and the suppliers.

.2 Photographs to be taken of sufficient quantity and view points to clearly show the general progress and extent of the Work.

.3 Title each photograph at the bottom so no pertinent detail is obscured. Include in the title, the Contract name, the Contractor's name, the direction of view and the date when taken.

1.6 SITE WORKING AREAS

- .1 Confine operations to limits of the site working area shown on Contract Drawings or as directed by the Contract Administrator.
- .2 Provide access roads to the site working area and on the site in locations shown or otherwise acceptable to the Contract Administrator.
- .3 The Contractor will maintain access to affected residential or business properties to the satisfaction of the Owner and/or Contract Administrator.
- .4 The Contractor will provide or maintain general and off-street access to affected business during construction to the satisfaction of the Owner and/or Contract Administrator.

1.7 CONSTRUCTION TRAFFIC

- .1 Workforce parking will be limited to the areas designated for such or as otherwise directed by the Owner and/or Contract Administrator.

1.8 CONTRACTOR LAY DOWN AREA

- .1 A designated area within a 5km radius of the project site will be provided to the Contractor for the temporary storage of equipment, and materials. Prior to total performance of the work, area(s) to be left in a neat and finished appearance and/or restored to their original condition or better to the satisfaction of the Owner and/or Contract Administrator

1.9 WORK ADJACENT TO PUBLIC OR PRIVATE PROPERTY

- .1 Pay all charges made by municipal authorities for the rent of all street and sidewalk space.
- .2 Obtain written consent from the owner of adjacent property before proceeding with a part of the Work that necessitates entry onto such property or where overswing of cranes may occur. Such written consent will not limit the Contractor's responsibility for property damage or personal injury.

1.10 LINES AND GRADES

- .1 The Contractor shall provide all layout and set-out based on supplied benchmarks and control points as provided by the Contract Administrator at no cost to the Contract.
- .2 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .3 The Contractor shall construct the work in accordance with the lines and grades shown on the drawings or as modified by the Contract Administrator.
- .4 The Contract Administer will provide the Contractor with a digital file (XML format) for use in the layout of the new roadway's centerline alignment.
- .5 Claims shall not be entertained for work installed incorrectly due to survey error.
- .6 The Contractor is responsible for the timely removal of all obstructions and impediments to the work of the survey crews at no cost to the Contract. If required, the Contractor shall provide one experienced and qualified person, for all quantity measurements and/or checking of the work at no cost to the Contract.
- .7 The Contractor shall exercise care in the preservation of benchmarks, property pins and reference points or base lines set up for his use. The Contractor shall pay for re-establishment if any are displaced or removed.
- .8 The Contractor's method of setting lines and grades to be done by either total station or GPS methods unless otherwise approved by the Contract Administrator.
- .9 Maintain a complete, accurate log of control and survey work as it progresses.
- .10 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .11 Record locations of maintained, re-routed and abandoned service lines.

1.11 TRAFFIC CONTROL AND STAGING PLAN

- .1 The Contractor shall submit a Traffic Control and Staging Plan to the Contract Administrator for review and approval a minimum of ten (10) days prior to commencement of construction activities. Include both a narrative description and a neat sketch showing the typical layout of traffic control measures in each stage of the work. The Traffic Control Plan shall consider the movement of both vehicular and pedestrian traffic and the impacts on abutting properties and businesses.
- .2 The City of Dryden anticipates the requirement to close sections of the roadways during construction activities, however; staging of construction should be completed in a manner to minimize the disruption to the impacted areas.

- .3 The Contractor shall coordinate the precise dates for shut down with the City of Dryden a minimum of seven (7) days in advance of the proposed shutdown date.
- .4 The City of Dryden will be responsible for appropriate advertisement of any pending closure and notifications to the businesses and general public.
- .5 The Contractor shall provide adequate signage, barriers and hoarding at the limits of construction to prevent vehicular traffic from using closed sections of roadways during construction.
- .6 The Contractor shall maintain uninterrupted pedestrian traffic movement along all roadways (sidewalk) for the duration of construction.
- .7 If any temporary deviation from the accepted Traffic Control or Staging Plans is required, the contractor must receive approval from the Contract Administrator and City of Dryden. The Contract Administrator and the City must receive a minimum of three (3) working days notice prior to the Contractor's proposed temporary deviation.
- .8 When public thoroughfares are to be closed, or traffic restricted, the City will notify the road authority, the fire department, the police department, and the transit authority and ambulance service, contractor must ensure the City can give at least seven days notice of the closing or restriction.
- .9 Traffic control shall be in accordance with Book 7 of the Ontario Traffic Manual (OTM).
- .10 Provide and maintain temporary service roads for the Work to ensure safe, convenient and adequate access. Provide access for emergency vehicles at all times. Provide and maintain sidewalk crossings, ramps, and construction runways as required for access to the Work.
- .11 Close thoroughfares or restrict normal traffic flow only with the consent of the authorities having jurisdiction, and in accordance with their requirements.

1.12 TEMPORARY CONSTRUCTION FACILITIES, SERVICES AND CONTROLS

- .1 Provide temporary facilities, services and controls required as construction aids or by regulatory authorities.

1.13 SANITATION FACILITIES

- .1 No existing washroom facilities will be available. Provide temporary sanitary facilities in accordance with the Occupational Health and Safety Act.

1.14 ELECTRICAL POWER

- .1 Provide temporary electric power for all construction needs. Locate receptacles so power is available to any part of the work within reach of a 30 m extension cord. Provide power at temporary storage sheds and field offices. Provide Extension cords as required.

1.15 PROJECT SIGN

- .1 Provide a project sign within three weeks of signing the Contract and erect it where directed.
- .2 Indicate on the sign the Project title, the name of the Owner, the Consultant (and subconsultants), and the Contractor in a design style selected by the Contract Administrator.
- .3 Maintain the sign in good condition for the duration of Contract. Clean periodically. Remove the sign when the Work is complete.
- .4 Unless otherwise agreed, no other signs or advertisements, other than direction and warning signs, may be erected or displayed on the site.

1.16 TESTING AND QUALITY CONTROL

- .1 Unless otherwise noted, the Contractor will select their own third-party accredited quality control testing agency or laboratory for tests that are required but not specified, other than tests required by bylaws, statutes and regulations applicable to the Work, and cover all incurred costs.
- .2 Remove and replace Products indicated in inspection and test reports as failing to comply with the Contract Documents.
- .3 Correct improper installation procedures reported in the inspection and test reports.
- .4 Pay the costs for the re-inspection and testing of replaced work.
- .5 It is not the responsibility of the inspection and testing agents to supervise, instruct in current methods or accept or reject a part of the Work, but only to inspect, test and to report conditions.
- .6 Notify the Contract Administrator and the appropriate inspection and testing agent not less than forty-eight hours prior to the commencement of the part of the Work to be inspected and tested.
- .7 Ensure the presence of the authorized inspection and testing agent at the commencement of the part of the Work specified to be inspected or tested.
- .8 Co-operate with and provide facilities for the inspection and testing agents to perform their duties.

- .9 Provide proper facilities for the storage of concrete specimens at correct temperature, free from vibration or damage in accordance with the instruction of the inspection and testing agent and the governing standard
- .10 Furnish to the Contract Administrator, when requested and consistent with progress of the Work, test results and mix designs specified in the Contract Documents or required by bylaws, statutes and regulations relating to the Work and the preservation of public health.
 - i. Two weeks prior to commencement of paving operations submit proposed asphalt cement Job Mix Formula (JMF) in accordance with OPSS 1150 & OPSS 1151.
- .11 Asphalt cement quality assurance testing procedures to be conducted by a certified independent consultant in accordance with OPSS 310.08 & OPSS 313.08.
- .12 Correct defective work within the Contract Time; the performing of such work is not a cause for an extension of the Contract Time.
- .13 Minimum granular compaction throughout project to be 98% Standard Proctor, unless noted otherwise.

1.17 CONTRACT ADMINISTRATOR'S SITE OFFICE (Provisional)

- .1 Provide an air-conditioned insulated field office at the site for the exclusive use of the Contract Administrator. The office to include the following:
 - i. a minimum floor area of 18.5 m²;
 - ii. vinyl floor tile;
 - iii. four opening windows with insect screens;
 - iv. a lockable door and screen door assembly;
 - v. a plan table;
 - vi. a desk and chair;
 - vii. benches or chairs to seat a minimum of six persons;
 - viii. a notice board;
 - ix. a bottled water fixture that dispenses cold water and keep it supplied with bottled water;
 - x. a first-aid box as required by the Workers' Compensation Board for six to fifteen workers;
 - xi. light the site office with fluorescent fixtures to a 650 lux (60 foot candle level);
 - xii. automatically maintain a temperature between 21 and 25 degrees Celsius; and,
 - xiii. temporary sanitary facilities in accordance with the Occupational Health and Safety Act.
- .2 Provide a parking area immediately adjacent to the Contract Administrator's site office to accommodate a minimum of three vehicles for exclusive use of the Owner and the Contract Administrator's staff. Provide a minimum of 150 mm of crushed stone and maintain the area in satisfactory condition. Provide adequate sign(s) to indicate the parking space is for the Contract Administrator's staff only.

- .3 Service, maintain and carry insurance on the site office and contents. Provide evidence of insurance to the Contract Administrator before Work commences.
- .4 Provide weekly cleaning service.
- .5 Supply and pay the cost of Internet service.
- .6 Provide power at field offices.

1.18 CODES AND STANDARDS

- .1 In the case of a conflict or discrepancy between the Contract Documents and the governing standards, the more stringent requirements apply.
- .2 Unless the edition number and date are specified, the reference to the manufacturer's and published codes, standards, and specifications are to the latest edition published by the issuing authority, current at the date of tender closing.
- .3 Reference standards and specifications are quoted in this Specification to establish minimum standards. Work in quality exceeding these minimum standards conforms with the Contract.
- .4 Where reference is made to a manufacturer's direction, instruction, or specification it is deemed to include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the Products pertinent to their use and their relationship to the Products with which they are incorporated.
- .5 Where reference is made to regulatory authorities, it includes all authorities who have, within their constituted powers, the right to enforce the laws of the Place of Work.

1.19 LABOUR, PRODUCTS AND WORKMANSHIP

- .1 All material shall be new unless otherwise specified and approved by the Contract Administrator. All materials shall be installed, erected, or applied in accordance with the best standard practice and to meet the exact requirements of the manufacturer. Where the expression "equal" is used, and alternative materials are proposed, submission shall be made by the Contractor to the Contract Administrator for approval of such alternative materials.
- .2 Products named in the Specifications or on the Drawings by manufacturer's name and model number establish the size, quality and performance standards for the Work. In most cases, alternate manufacturers' Products are listed as acceptable for the named manufacturer's Product. Base the Tender Price on the named manufacturer's Product or the Product of an alternate manufacturer. If no alternate manufacturers are listed, base the tender price on the named manufacturer's Product.

- .3 The Work has been designed on the basis of the named manufacturer's Product. If the tender price is based on an alternate, acceptable, manufacturer's Product, ensure the alternate, acceptable manufacturer's Product is equivalent in size, quality and performance to the named manufacturer's Product. Include in the tender price for any modifications to the Work necessary to accommodate the alternate, acceptable manufacturer's Product and submit for the Contract Administrator's review a dimensioned layout of the space into which such Product is to be installed.
- .4 All materials to be incorporated in the work shall be stored under suitable conditions to prevent damage, deterioration, etc. No materials to be incorporated in the work shall be temporarily used or installed as a facility for construction purposes except with the expressed approval of the Contract Administrator.

1.20 SUBMITTALS

- .1 Unless otherwise noted, make submittals to the Contract Administrator for review.
- .2 Make submittals with reasonable promptness and in an orderly sequence to avoid any delay in the Work. Failure to submit in ample time is not considered cause for an extension of Contract Time, and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with Work affected by submittals until review is complete.
- .4 The Contractor's responsibility for errors and omissions, for providing the specified Products and for the construction of the Work in accordance with the Contract Documents is not relieved or diminished in any way by the Contract Administrator's review of submittals.

1.21 SCHEDULES

- .1 Within one (1) month of the written notification of tender acceptance, submit for the Contract Administrator's review, the following schedules:
 - xiv. a construction schedule;
 - xv. a submittal schedule for shop drawings and Product data sheets;
 - xvi. a submittal schedule for samples;
 - xvii. a Product delivery schedule; and,
 - xviii. a cash flow schedule.

- .2 Prepare each schedule in the form of a horizontal bar chart, with a separate bar for each trade or operation, and a time scale identifying the first work day of each week.
 - i. the construction time shown on the initial schedule shall not extend beyond the specified Contract completion date. The construction schedule shall include all non-working periods and appropriate allowances for inclement weather.
 - ii. the Contractor shall select the activities so that the work is identifiable and the progress of each activity can be determined. At a minimum, each trade and operation shall be identified on the schedule. The City reserves the right to limit or increase the number of activities on the diagram.
 - iii. each activity in the initial and updated construction schedules shall include a description of the operation and the number of days allocated or actually used for it. When the duration of an activity is dependent on weather conditions, the number of days allocated shall include an allowance for normal frequency of inclement weather. When the activity has an associated tender item quantity, the approximate quantity shall also be shown.
 - iv. the construction schedule shall show the sequence and interdependence of all activities required to complete the work under the Contract. All network connections used to create a logical schedule and the corresponding durations shall be shown. The time scale of the Construction schedule may be divided into days or weeks.
- .3 Consult with the Contract Administrator during preparation of the schedules, make any corrections agreed to during the review period, and issue final copies to the Contract Administrator.
- .4 Monthly update each schedule during the course of construction or as directed by the Contractor Administrator and issue revised copies.
- .5 If the progress of any part of the construction falls behind schedule, immediately notify the Contract Administrator in writing giving the reason for the delay and the action to be taken to regain the construction schedule to complete the Work at the Contract Time.
- .6 The Contractor shall not be permitted to start work until a construction schedule, in conformance with the contract, is received by the Contract Administrator.
- .7 If, for any reason, the Contractor cannot produce an acceptable construction schedule within 30 business days of initial submission of the construction schedule, the Contractor shall be in default of the contract.

1.22 SHOP DRAWINGS AND PRODUCT DATA

- .1 Submit the shop drawings and Product data sheets as specified in sections of the Specification.
- .2 Show on the shop drawings the Products, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for proper performance of the Work. Where Products attach or connect to other Products, indicate that such items have been coordinated, regardless of the Section under which the various products have been specified. Identify by cross-reference to design drawings and Specifications.
- .3 Product data sheets are defined as manufacturer's catalogue sheets, brochures, literature, technical data, performance charts and diagrams and similar data used to illustrate quality, characteristics, capacity and performance of the specified, manufactured Products.
- .4 Submit two (2) white print copies of each shop drawing.
- .5 Submit a minimum of two (2) copies of Product data sheets for each item.
- .6 The Contract Administrator will review the shop drawings and Product data sheets and will indicate his review status by stamping shop drawings and product data sheets copies as follows:
 - i. "Reviewed" or "Reviewed as Noted" – If the Contract Administrator's review of a shop drawing or Product data sheet is final, the Consultant will stamp the shop drawing or Product data sheet "Reviewed" or "Reviewed as Noted" (appropriately marked) and keep his own required number of copies. The sepia or AutoCAD disk and one white print will be returned to the Contractor.
 - ii. "Revise and Resubmit" – If the Contract Administrator's review of a shop drawing or Product data sheet is not final, the Contract Administrator will stamp the shop drawing or Product data sheet "Revise and Resubmit", mark the submission with his comments, keep one copy for his records, and return the sepia and a marked print to the Contractor. Revise the shop drawing or Product data sheet in accordance with the Contract Administrator's notations and resubmit.
- .7 The shop drawings and the Product data sheet reviews do not authorize changes in cost or time. Changes involving cost or time are authorized only by a signed change order.
- .8 It is understood that the following is to be read in conjunction with the wording on the Contract Administrator's shop drawing review stamp applied to each and every data sheet or drawing submitted:
 - i. "This review by the Contract Administrator is for the sole purpose of ascertaining general conformance with the Contract design concept. This review does not

mean that the Contract Administrator approves the detail design inherent in the shop drawings, responsibility for which remains with the Contractor, and such review does not relieve the Contractor of the responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. Be responsible for confirming and correlating dimensions at the Place of the Work, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all subtrades.”

1.23 SAMPLES

- .1 Submit, in duplicate unless otherwise noted, samples as specified in Specification sections. Label samples as to origin and intended use in the Work.
- .2 Deliver samples prepared to the Contract Administrator’s business address or testing company as directed.
- .3 Notify the Contract Administrator in writing, at the time of submission, of any deviations in samples from requirements of the Contract Documents, and state the reason for such deviations.
- .4 Adjustments made on samples by the Contract Administrator are not intended to change the Contract Price. If adjustments affect the value of the Work, state such in writing to the Contract Administrator prior to proceeding with the Work.
- .5 Make changes in samples which the Contract Administrator may require, consistent with the Contract Documents.
- .6 Where changes or modifications of the Products for which samples are submitted are required, re-submit samples embodying the required changes or modifications.
- .7 Where colour, pattern or texture is a criterion, submit a full range of samples.
- .8 Reviewed samples will become the standard of workmanship and material against which the performed Work will be verified and accepted.

1.24 RECORD DRAWINGS

- .1 When work begins at the site, obtain from the Contract Administrator a whiteprint set of the Contract Drawings.
- .2 Record on the white prints on a daily basis, work constructed differently than shown on the Contract Documents. Record all changes in the Work caused by site conditions, or originated by the City, the Contract Administrator, the Contractor, or a Subcontractor and by addenda, supplemental drawings, site instructions, supplementary instructions, change orders, correspondence, and directions of regulatory authorities. Accurately record the

location of concealed mechanical services and electrical main feeders, junction boxes and pull boxes. Do not conceal critical Work until its location has been recorded. Do not use these drawings for daily working purposes and make the set available for periodic inspection by the Contract Administrator.

- .3 Make records in a neat and legibly printed manner with a non-smudging medium.
- .4 Dimension the installed locations of concealed service lines on the site or within the structure by reference from the centre line of the service to structure column lines or other main finished faces or other structural points easily identified and located in the finished Work.
- .5 At the completion of the project submit two (2) copies of the record drawings to the Contract Administrator for review.
- .6 Failure to comply will result in the holdback of payment.

1.25 MEASUREMENTS FOR PAYMENT

- .1 Notify the Consultant sufficiently in advance of operations to allow required measurements for payment. Unless otherwise specified, measurements will be taken in the horizontal plane, and in accordance with the contract documents.

1.26 UNIT PRICES

- .1 Unit prices included in the Agreement and submitted as part of the tender are to be based on units of measurement specified in the bidding documents and are to include for labour, materials, preparation of shop drawings, delivery, handling, disposal of surplus material, overhead and profit, and any other direct or indirect expenditures of such work measured complete in place, and as further specified in the Contract Documents.
- .2 Unit prices for specified units of measurement are to apply to all work that can be measured in the said units regardless of the variations in productivity and job conditions, or the time when instructions to perform such work are issued.

1.27 EXISTING UTILITIES

- .1 Contact the various utility companies prior to commencing Work and become informed of the exact location of utilities and protect them during construction and assume liability for damage to utilities.
- .2 Utilities that require relocation will be the responsibility of the Utility Company concerned. Cooperate with the utility companies concerned and always provide them free access to their plant.
- .3 Support existing pipes, ducts, or other underground services that intersect the pipe trench, or support the pipe trench in a manner acceptable to the Contract Administrator and the Utility Company.

- .4 Where existing overhead pole lines are adjacent to the excavation, temporarily support them to the satisfaction of the Contract Administrator and the Utility Company concerned.
- .5 Mechanical equipment must not be used closer than 0.3 m and the last 0.3 m must be dug by hand.

1.28 CUTTING AND PATCHING

- .1 Remove and replace defective and non-conforming work.
- .2 Where new work connects with existing work and where existing work is altered, cut, patch and make good to match existing work.
- .3 Do all cutting with power saws or core drilling equipment. Do not use pneumatic or impact tools. Make all cuts with clean, true, smooth edges.
- .4 Do not cut, bore or sleeve any load bearing structure without the written consent of the Contract Administrator, unless specifically detailed on the Drawings. Submit details with each request for consent.
- .5 Provide openings in non-structural elements of the Work for penetrations of mechanical and electrical work. Coordinate size and location of such openings with the trade involved.
- .6 Fit construction tightly to ducts, pipes, conduits and similar Products to stop air movement completely. Where such work penetrates a fire separation element or wall of the building, pack the penetration around the duct, pipe, conduit or similar for the length of the openings with ULC listed fire stopping packing Product as part of the Work specified.
- .7 Prepare the surfaces to receive patching and finishing.
- .8 Refinish the surfaces to match the adjacent finishes. For continuous surfaces refinish to the nearest intersection, and for an assembly, refinish the entire unit.

1.29 TEMPORARY ACCESS

- .1 Where necessary for access, provide and maintain suitable safe, temporary roads, walkways and bridges. Remove temporary access facilities and restore disturbed areas, after the Work of the Contract has been completed.

1.30 SIDEWALK ACCESSIBILITY

- .1 Provide signage and barricades at locations of sidewalk removal (traffic cones not acceptable).

- .2 Signage to advise of sidewalk closure and direct pedestrians to other side.
- .3 Provide temporary asphalt ramps at locations of curb ramps when top lift paving is deferred more than one week after base.

1.31 HOURS OF WORK

- .1 All work shall be scheduled and carried out in compliance with Section 1.32-6 of the City of Dryden noise by-law unless otherwise approved by the Contract Administrator.
- .2 No work on Sundays or Statutory Holidays unless specifically approved by the Contractor Administrator.

1.32 DUST AND MUD CONTROL

- .1 The Contractor shall ensure that his dust and mud control procedures are effective, sufficient, in force, and to the satisfaction of the Owner and/or Contract Administrator. As the work progresses, the Contractor shall clean up the streets and again at the completion of the construction works. All streets on which work has been done, or materials hauled, shall be left 'clean'. The Contractor shall be responsible for regularly cleaning all asphalt surfaces that have been muddied, or littered with debris, during the construction operations.
- .2 The Owner reserves the right, without prior notice to the Contractor, to provide additional dust control measures, or street clean-up, or grading, as may be required, as a result of these construction works, and to deduct the cost of such works from the payment due to the Contractor.

1.33 CLEAN-UP AND TIDY CONDITIONS

- .1 On a daily basis, as the Work progresses, and on completion of the Work, clean up and remove the rubbish and debris from the site. Remove excess material that is not required to be left on the site by the conditions of the Contract.
- .2 Keep the site and the Work as tidy as practicable at all times.

1.34 WARRANTY INSPECTION

- .1 The Contract Administrator will arrange and conduct with the City and the Contractor a warranty inspection at the site prior to expiration of the one-year warranty period.

1.35 TRENCH SAFETY

- .1 Trench work and safety to comply with the requirements of the Ministry of Labour and Occupational Health and Safety Act.

1.36 PROTECTION OF PROPERTY AND STRUCTURES

- .1 The Contractor shall, at his own cost and expense, and in a manner approve by the Contract Administrator, sustain in their places and protect from damage, all water or gas mains, public or private sewers or drains, conduits, telephone and hydro ducts and cables, service pipes, sidewalks, curbs, property bars and all other structures of property in the vicinity of this work, whether over or underground, or which appear within the trench, and he shall assume all costs and expenses for damage which may be occasioned by damage to any of them. He shall at all times have a sufficient quantity of timber and plank, chains, etc., on the ground, and shall use the same as required for sheeting or sheet-piling and bracing the sides and ends of excavations, and for sustaining or supporting any and all structures that are endangered.
- .2 The Contractor shall protect all sewer and watermains as well as services pipes from freezing. Should he fail to do so, the Contract Administrator may protect such mains and service pipes, or in the event of their having suffered damage, may immediately replace or repair them charging the cost thereof to the Contractor.

1.37 RESTORATION OF WORK SITE

- .1 Meet interval milestones on cleanup of work sites as follows:
 - i. Sidewalk Projects
 - (i) Restore driveway access 72 - 96 hours after pouring of concrete.
 - (ii) Complete landscaping within three (3) weeks of final concrete pour.
 - ii. Paving Projects
 - (i) Apply top lift paving within three (3) weeks of asphalt milling operations.
 - (ii) Apply base paving within two (2) weeks of final grading (subject to any curb and gutter work).
 - iii. Sewer and Water Projects
 - (i) Provide suitable backfill and grading to allow property access within one (1) week after pipe installations.
 - (ii) No more than two (2) successive blocks under construction without curbing or final grading work underway.
 - iv. Street Lighting
 - (i) Existing residential streets should not be left in darkness for more than two (2) weeks without suitable provisions for temporary lights or new lights erected.
 - (ii) Existing commercial areas will require lights at all times. Some fixtures may be temporarily decommissioned while work is underway but critical locations shall remain on via any temporary wiring.

.2 Regulatory Signs

- i. At no point will open streets be left without proper regulatory signs (ie stop signs) in place.
- .3 Failure to meet interim cleanup schedules will result in the City stopping the work flow to other sites/blocks or otherwise calling a default on the work progress.

1.0 GENERAL SPECIFICATIONS

1.1 INTENT

- .1 The Section covers the work for environmental protection, including the management and disposal of excess materials, control of water in dewatering, and temporary erosion control measures
- 1.2 WORK TO BE COMPLETED IN ACCORDANCE WITH THE FOLLOWING ACTS, REGULATIONS, AND BY-LAWS WHICH APPLY TO THE WORK.

A. FEDERAL

- i. Impact Assessment Act c. 28
- ii. Transportation of Dangerous Goods Act and Regulations c.34

B. PROVINCIAL

- i. Environment Protection Act
- ii. Dangerous Goods Transportation Act
- iii. Ontario Heritage Act
- iv. Fire Prevention and Protection Act
- v. Occupational Health and Safety Act
- vi. And current applicable associated regulations.

C. MUNICIPAL

- i. Any applicable Acts, Regulations, and By-Laws.

1.3 THE CONTRACTOR WILL FOLLOW THE ENVIRONMENTAL PROTECTION MEASURES AS PRESENTED BELOW.

A. Materials Handling and Storage

- i. Storage of construction materials will be confined to the defined laydown areas as directed by the Contract Administrator.

B. Fuel Handling and Storage

- i. The Contractor will obtain all necessary permits for the handling and storage of fuel products and will provide copies to the Owner and/or Consultant.
- ii. All fuel handling and storage facilities will comply with appropriate Provincial Acts and Regulations and any local land use permits.
- iii. Fuels, lubricants, and other potentially hazardous materials will be stored and handled within the approved storage areas.
- iv. The Contractor will ensure that all fuel storage containers are inspected daily for leaks and spillage.

- v. Products transferred from the fuel storage area(s) to specific work sites will not exceed the daily usage requirement.
- vi. When servicing requires the drainage or pumping of fuels, lubricating oils or other fluids from equipment, a groundsheets of suitable material (such as HDPE) and size will be spread on the ground to catch the fluid in the event of a leak or spill.
- vii. The area around storage sites and fuel lines will be distinctly marked and kept clear of snow and debris to allow for routine inspection and leak detection.
- viii. A sufficient supply of materials, such as absorbent material and plastic oil booms, to clean up minor spills will be stored nearby on-site. The Contractor will ensure that additional material can be made available on short notice.

C. Waste Handling and Disposal

- i. The construction area will be kept clean and orderly at all times during and at completion of construction.
- ii. At no time during construction will personal or construction waste be permitted to accumulate for more than one day at any location on the construction site, other than at a dedicated storage area as may be approved by the Owner and/or Contract Administrator.
- iii. All resulting debris will be deposited at a Provincially certified landfill. Exceptions are liquid industrial and hazardous wastes that may require special disposal methods.
- iv. Indiscriminate dumping, littering, or abandonment will not take place.
- v. No on-site burning of waste will be permitted.
- vi. Waste storage areas will be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Owner and/or Contract Administrator.

D. Dangerous Goods/Hazardous Waste Handling and Disposal

- i. Dangerous goods/hazardous wastes are identified by, and will be handled according to, The Dangerous Goods Transportation Act and Regulations.
- ii. The Contractor will be familiar with The Dangerous Goods Transportation Act and Regulations.
- iii. The Contractor will have on site staff that is trained and certified in the handling of the dangerous/hazardous goods, when said dangerous/hazardous goods are being utilized on site for the performance of the Work.
- iv. Different waste streams will not be mixed.
- v. Disposal of dangerous goods/hazardous wastes will be at approved hazardous waste facilities.

- vi. Liquid hydrocarbons will not be stored or disposed of in earthen pits on site.
- vii. Used oils will be stored in appropriate drums, or tankage until shipment to waste oil recycling centres, incinerators, or secure disposal facilities approved for such wastes.
- viii. Used oil filters will be drained, placed in suitable storage containers, and buried or incinerated at approved hazardous waste treatment and disposal facilities.
- vii. Dangerous goods/hazardous waste storage areas will be in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Owner and/or Contract Administrator.

2.0 EXECUTION

2.1 MANAGEMENT AND DISPOSAL OF EXCESS MATERIALS

- .1 Manage excess soils in accordance with O.Reg 406/19 and OPSS.MUNI 180. Stockpile and complete all necessary testing.

2.2 ENVIRONMENTAL PROTECTION FOR CONSTRUCTION IN WATERBODIES AND ON WATERBODY BANKS

- .1 Environmental protection for construction in waterbodies and on waterbody banks to conform to OPSS.MUNI 182

2.3 DEWATERING OF PIPELINE, UTILITY AND ASSOCIATED STRUCTURE EXCAVATION

- .1 Dewatering of pipeline, utility and associated structure excavation to conform to OPSS.MUNI 517
- .2 Prior to doing any work on the shoreline or in the water body the Contractor must first apply for and receive a work permit from the Ministry of Natural Resources.

2.4 CONTROL OF WATER FROM DEWATERING OPERATIONS

- .1 Control of water from dewatering operations to conform to OPSS.MUNI 517

2.5 TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

- .1 Temporary erosion and sediment control measures to conform to OPSS 805, except that payment for these works shall be included in the tendered prices for items in the contract which require the temporary works.

2.6 USE OF EXPLOSIVES

- .1 Use of explosives to conform to OPSS.MUNI 120.

2.7 REFUELING

- .1 Carry out all equipment maintenance and refuelling out so as to prevent the entry of petroleum products into the ground or watercourses at all times.

2.8 NOISE EMISSIONS

- .1 Control noise emission from equipment and plant to local authorities' noise emission requirements.
- .2 Night work and/or work on Sundays or Statutory Holidays outside the time limit permitted in accordance with the contract documents and the City of Dryden By-Laws will not be allowed throughout the duration of the project without prior consent from the City of Dryden.
- .3 The Contractor will request approval from the Owner at least thirty (30) working days in advance of any Contract Work to be undertaken on outside the time limits as permitted by the contract documents and the City of Dryden By-Laws. It will be the Contractor's responsibility to schedule work activities to minimize potential problems and/or to employ noise-reduction measure to lower noise to an acceptable level.

2.9 DUST CONTROL

- .1 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .2 Dust control practices implemented by the Contractor to be completed for the duration of the contract to the satisfaction of the Owner and/or Contract Administrator.
- .3 Dust control practices will include regular street cleaning and dampening of construction access roads and work areas with water or approved chemicals at an adequate frequency to prevent the creation of dust.
- .4 Only water or chemicals approved by the Contract Administrator will be used for dust control. Waste petroleum or petroleum by-products not be used.
- .5 The Contractor will ensure that trucks which are used to haul materials to and from the work site utilize tarpaulin covers during transport to prevent material from falling onto the street and creating dust.

2.10 ARCHAEOLOGY

- .1 During the performance of the work, have regard to the requirements of the Ontario Heritage Act, RSO 1980, Chapter 59, and the Cemeteries Act; RSO 1980, Chapter 337.
- .2 If any archaeological and historical resources are discovered during the performance of the work, the performance of the work in the area of the discovery is to halt. Notify the Ministry of Citizenship, Culture and Recreation, Archaeology & Heritage Planning Branch, for an assessment of the discovery. Do not resume work in the area of the discovery until cleared to do so by the Ministry.

2.11 SITE RESTORATION

- .1 In general, restore the site to conditions equal to or, if specified elsewhere, to a condition better than existing conditions.
- .2 Restore lands outside of the limits of the Work which are disturbed by the Work to their original condition.

2.12 SPILLS REPORTING

- .1 In the event of a spill or other emission of a pollutant into the natural environment, every person responsible for the emission of who causes or permits it must forthwith notify:
 - a) the Ministry of Environment (Tel. 1-800-268-6060);
 - b) the municipality or the regional municipality within the boundaries of which the spill occurred;
 - c) the owner of the pollutant, if known;
 - d) the person having control of the pollutant, if known; and
 - e) the Contract Administrator of the spill, of the circumstances thereof, and of the action taken or intended to be taken with respect thereto.

2.13 CONTINGENCY PLAN

- .1 Prior to commencing construction, prepare a contingency plan for the control and clean up of a spill. Submit for the Contract Administrator's review and the review of other responsible Parties a copy of the Contingency Plan and make appropriate changes to it based on review comments received. The plans shall be reviewed at the pre-construction meeting. The contingency plan shall include:

- a) the names and the telephone numbers of the persons in the local municipalities to be notified forthwith of a spill;
- b) the names and the telephone numbers of the representatives of the fire, the police and the health departments of the local municipalities who are responsible to respond to emergency situations;
- c) the names and the telephone numbers of the companies experienced in the control and cleanup of hazardous materials that would be called upon in an emergency involving a spill;
- d) the Contractor's proposal for the immediate containment and control of the spill, the cleanup procedures to be initiated immediately and any other action to be taken to mitigate the potential environmental damage while awaiting additional assistance; and
- e) the name and the office and home telephone number of the Contractor's representative responsible for preparing, implementing, directing and supervising the contingency plan.

2.14 VEGETATION

- .1 Areas where vegetation is removed during clearing, construction, and decommissioning activities, will be re-vegetated as soon as possible.

2.15 PROTECTION OF TREES

- .1 The Tree Protection Zone shall be the area within the drip zone of any trees within or adjacent to the limits of the Contract, not designated for removal under the Contract.
- .2 The minimum Tree Protection Zone will be the area within a 3.0 in radius of the centre of a tree.
- .3 Protection required with Tree Protection Zones includes:
 - a) Protect tree zone with snow fence or approved equal as per City of Thunder Bay Drawing Standard M104-4.
 - b) In designated areas, install snow fence along the limits of the Protection Area.
 - c) Operate equipment to prevent damage to trees; do not permit heavy equipment to travel over Protection Areas.
 - d) Do not locate stockpiles, surplus excavated material, or construction materials within Protection Areas.

- e) Where construction operations must impact Protection Areas, prune the trees in advance. Cut roots with clean severances.
- .4 Excavations within Protection Areas shall be carried out using low impact methods such as vacuum excavation or directional drilling, unless otherwise specifically authorized by the Contract Administrator.

2.16 DAMAGED TREES

- .1 Notify the Contract Administrator of any damage to trees.
- .2 Provide remedial action to damaged trees using a qualified tree service
- .3 Submit the remedial program recommended by the tree service to the Contract Administrator, for approval, before carrying out the work.
- .4 If a tree is damaged beyond repair, replace the tree with two trees. The species of the replacement trees will be determined by the Contract Administrator.
- .5 Deciduous trees shall have a minimum diameter of 40 mm measured at a point 30 cm above the root ball or finished grade and be a minimum of 2 m in height.
- .6 Coniferous trees shall be balled or wrapped in burlap and be a minimum of 1.8 m in height measured from the top of the root ball.

2.17 SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties.
- .2 Protect roots of trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .3 Minimize stripping of topsoil and vegetation.
- .4 Restrict tree removal to areas indicated or designated by Contract Administrator.

1.0 GENERAL SPECIFICATIONS

1.1 SEWER CONSTRUCTION

- .1 The Construction methods for pipe sewer construction shall conform to the latest version of OPSS.MUNI 410. Related work references of the OPSS shall also apply.
- .2 Removals to be completed as specified and in accordance to OPSS.MUNI 510.

1.2 SALVAGE

- .1 Where existing manhole and catch basin frames and covers to be replaced are in such a condition as to be reusable, contractor to exercise reasonable care in removing them for salvage. Salvaged components to be delivered by the contractor to a designated area within a 5km radius of the project site and identified by the Contract Administrator. No additional payment shall be made for the removal or delivery of the salvaged components and costs to be included within the contract unit price per for removal of the specific item.

1.3 ADDITIONAL INFORMATION

- .1 There is a possibility of services not shown on drawings may be located in the area. Contractor to verify prior to commencement of construction.

2.0 MATERIALS SPECIFICATIONS

2.1 SEWER PIPE

- .1 PVC sewer pipe specified in this Contract shall be “push-on” joint polyvinyl chloride sewer pipe of the follow Class:
- .2 Pipe sizes up to and including 375 mm diameter pipe – SDR 35, in accordance with OPSS 1841, CSA B182.2 and ASTM D3034.
- .3 Pipe sizes larger than 375 mm diameter and up to and including 900mm diameter pipe, unless otherwise noted - Open profile HDPE pipe (corrugated exterior with a smooth interior wall) ADS SaniTite HP Pipe or approved equal (CSA B182.13).
- .4 HDPE minimum pipe stiffness shall be 320 kPa and pipe joints shall typically be type 3 (external split coupler) with the exception where water tight gaskets are specified for certain applications.
- .5 Pipe sizes greater than 900 mm diameter – Concrete Class 100-D, in accordance with OPSS.MUNI 1820 and CSA A257.2 – M1982 strength classification (reinforced pipe).
- .6 100 mm to 150 mm diameter service pipe (private drains and laterals) – SDR 28, in accordance with OPSS 1841, ASTM F 679 and AASHTO M278.

2.2 MANHOLES

- .1 Manholes specified in this Contract shall be precast reinforced concrete manholes risers and tops, in accordance with the material and fabrication requirements of OPSS 407, OPSD 701.010, 701.011, 701.012, 701.013, A.S.T.M. C-478 and frost straps as per OPSD 701.100. Contractor is to submit shop drawings to Contract Administrator for approval.
- .2 Unless otherwise noted, catchbasin manholes to include a 300mm deep sump as per OPSD 701.010

2.3 FRAMES AND COVERS

- .1 Manholes frames and covers in this Contract shall be in accordance with ASTM A48 and OPSS 1850. Contractor is to submit shop drawings to Contract Administrator for approval.
 - i. Sanitary manhole covers as per OPSD 401.010 Type 'A'
 - ii. Storm manhole covers as per OPSD 401.010 Type 'B'
 - iii. Storm catchbasin manhole grates as per OPSD 400.070

2.4 CATCH BASINS

- .1 Catch basins specified in this Contract shall be precast units, in accordance with the material and fabrication requirements of OPSS 407, OPSS 1351 and CSA A257.4 and unless otherwise noted, OPSD 705.010 (standard height).
- .2 Catch basin inlet units specified in this Contract shall be as per City of Thunder Bay Engineering Standards drawing S-109.
- .3 Catch basin frames and covers in this Contract shall be in accordance with ASTM A48, OPSS 1850 and OPSD 400.010. Contractor is to submit shop drawings to Contract Administrator for approval.
- .4 Contractor is to submit shop drawings to Contract Administrator for approval

2.5 CATCH BASIN LEADS

- .1 PVC catch basin lead pipe specified in this Contract shall be "push-on" joint polyvinyl chloride sewer pipe of the following Class:
 - i. 250 mm to 375 mm diameter pipe – SDR 35, in accordance with OPSS 1841, CSA B182.2 and ASTM D3034.

2.6 SUBDRAIN

.1 Perforated subdrain material specified in this contract shall be in accordance with OPSS 1840, CSA B182.6, CSA B182.8 or ASTM F894: 150 mm diameter polyethylene wrapped in filter cloth.

2.7 GEOTEXTILE

.1 Geotextile specified in this contract for sewer applications shall be a biaxial woven permeable synthetic textile material, in accordance with the material and fabrication requirements of OPSS 1860.

.2 'Geotextile shall be: Propex Geotex 2x2 HF biaxially loadable woven geotextile or approved equivalent.

2.8 INSULATION

.1 Insulation specified in this contract for sewer applications shall be extruded polystyrene (XPS) to CAN/ULC-S701, Type 4 Highload 40 in accordance with OPSS 1605.

2.9 BEDDING AND BACKFILL MATERIAL

.1 Bedding and material shall be: Granular "A" in accordance with OPSS.MUNI 1010. Clear stone may be accepted in wet conditions to the discretion of the contract administrator. Clear stone properties shall conform to OPSS.MUNI 1010 (Granular "O") and be such size that 100% will pass a 25 mm sieve and 100% will be retained on a No. 4 sieve.

.2 Backfill material shall be: Granular "B" type 1, in accordance with OPSS.MUNI 1010.

.3 The type of bedding for concrete pipe shall be Class C. The method of bedding for all other pipes shall be Class B in accordance to OPSD 802.031.

3.0 EXECUTION

3.1 REMOVAL OF EXISTING MANHOLE & CATCHBASIN MANHOLE

.1 This tender item shall include the full removal of an existing manhole structure including but not limited to; frame and cover, adjustment rings, reducers, riser, barrel section and base. This item also includes the temporary disconnection and plugging (as required) of all existing sewers, sewer services and any inlet piping connected to the manhole.

.2 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, and equipment required to complete the work.

3.2 REMOVAL OF EXISTING CATCH BASIN

- .1 This tender item shall include the removal of an existing catch basin structure complete with frame and cover. This item also includes the removal of the catch basin leads up to the outlet and the temporary disconnection of all existing inlet piping connected to the catchbasin.
- .2 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, and equipment required to complete the work.

3.3 REMOVAL OF EXISTING SEWERS INCLUDING ASBESTOS CEMENT PIPING

- .1 This tender item shall include the excavation, removal and disposal of existing sewer pipe as shown on the contract drawings or as directed by the Contract Administrator and also includes the temporary disconnection and plugging (as required) of all existing sewer services.
- .2 Identification of existing sewer pipe material, as shown on the contract drawings, is intended for general information purpose only and is based solely upon best available information. No assurance of material type, location or extent to be encountered during construction is intended or implied.
- .3 Removal, handling and disposal of asbestos cement piping to be in accordance to Ontario regulatory guidelines for Designated Substances and Section 02300 “Asbestos Abatement Minimum Precautions” of the contract documents.
- .4 Disposal of asbestos and asbestos containing products will be accepted at the City of Dryden’s Landfill Site in adherence to the regulatory guidelines for Asbestos Waste Handling and Disposal Procedures. Asbestos waste improperly prepared and in non-compliance with regulatory guidelines will not be accepted.
- .5 The waste hauler will notify the Public Works Department 24 hours prior to delivery of asbestos waste. The Public Works Director, Operations Manager or Public Works Supervisor must communicate directly with the waste hauler for details of quantity and establish a pre-determined time for arrival of the waste asbestos.
- .6 The landfill will prepare an access vehicle path for the waste hauler to dump the waste.
- .7 The waste hauler shall report their arrival to the landfill site attendant and inform the attendant of the nature of the load they are to dispose of.
- .8 The landfill operators will excavate an area to contain the incoming asbestos waste. The size and depth of the excavation will depend on the volume of the load(s) of asbestos being disposed of.
- .9 The Landfill Site Attendant will report the arrival of the waste hauler to the site to all landfill employees and the waste hauler shall await the approval before proceeding with the unloading of the material at the designated location.

- .10 In the event the waste hauler delivery vehicle is not equipped to mechanically unload and the material is to be dropped into the excavation site by hand, it will be the responsibility of the waste hauler to handle this task. **City of Dryden employees will not assist.** The waste hauler will be required to ensure persons conducting such a task are equipped with appropriate personal protective equipment.
- .11 The City of Dryden will be responsible for covering the deposited asbestos waste material "forthwith" to meet applicable regulatory guidelines.
- .12 In the event that a load of asbestos cannot be received due to equipment breakdowns, operational failures, incidents of legislative non-compliance and/or the arrival of asbestos waste does not align with the predetermined schedule, the hauler may be directed to bring the load back when the issues have been resolved or at another time/date when the load can be accommodated. No additional payment or compensation will be made in this event.
- .13 Payment for sewer pipe removal and temporary disconnection and plugging (as required) of all existing sewer services shall be included in the contract unit price for new sewer pipe installation in the tender form and include for labour, material and equipment required to complete the work.
- .14 In areas where no replacement sewer pipe is to be installed, payment for sewer pipe removal to be completed at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work and shall include the cost of restoration and backfilling to the bottom of granular 'B'.
- .15 Payment for completing asbestos abatement shall be additional and at the contract lump sum price for this item in the tender form for the labour, material and equipment required to complete the removal, handling and disposal of all asbestos cement piping. The City of Dryden to incur all associated costs with the excavation, acceptance and covering of the asbestos material at the landfill site and no additional fees will be charged to the Contractor by the City for the disposal of the Asbestos Waste material.

3.4 SEWER PIPE INSTALLATION

- .1 The interior of all pipe shall be kept clean and free from undesirable material at all times and installed in accordance with OPSS.MUNI 410, OPSD 802.010 (flexible pipe) or OPSD 802.032 (rigid pipe), as required.
- .2 Bedding and backfill operations shall be completed in accordance with OPSS.MUNI 401, OPSD 802.031 and as detailed in the Contract Drawings. New Granular Bedding Material (required for all piping) shall be compactable granular "A" material.
- .3 Proceed only when work to be backfilled has been inspected and approved, and approval to backfill has been obtained. Place backfill in loose lifts of material not exceeding 300 mm depth. Compact each loose lift to 98% SPMDD before placing the next loose lift of material. Maintain backfill material at optimum moisture content to achieve required densities.

- .4 Unless otherwise noted or approved by the Contract Administrator, catch basin leads shall be 250mm diameter SDR 35 (PVC) pipe and laid at a positive grade of 2% (minimum). For catch basins connection in series, the downstream catch basin lead shall be increased to 300mm diameter.
- .5 The connection of the catch basin leads into each manhole/catchbasin manhole shall be made so that the flow from the catch basin does not oppose the flow in the sewer.
- .6 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work and shall include the cost of reconnecting to existing sewers, breaking into or connecting to existing/new structures or concrete appurtenances, restoration and backfilling to the bottom of granular 'B'. This item also includes for existing sewer pipe removal and temporary disconnection and plugging (as required) of all existing sewer services for labour, material and equipment required to complete the work.
- .7 Payment for catchbasin leads will be made separately at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work and shall include the cost of breaking into or connecting to existing/new structures or concrete appurtenances, restoration and backfilling to the bottom of granular 'B'.
- .8 Payment for completing asbestos abatement shall be at the contract lump sum price for this item in the tender form for the labour, material and equipment required to complete the removal and disposal of the asbestos cement piping.
- .9 Payment for sanitary service reconnections shall be at the contract unit price for this item in the tender form for the labour, equipment and materials required to complete the work.

3.5 SANITARY SERVICE RECONNECTIONS

- .1 Materials shall be PVC SDR 28 pipe. Typical sizes are 100 and 150 mm diameter for sanitary connections. Multi-unit buildings and commercial/industrial properties may require larger sizes. Larger sizes may also be required for tie-ins to older existing piping. Installation to be done in accordance with OPSD 1006.010.
- .2 Service pipes are to match the slope of the existing pipe, and ideally maintain a minimum grade of 2%. Connect to existing piping using approved couplers.
- .3 The Contractor to examine condition of existing service piping prior to connection and ensure connection is completed at suitable location with no damage.
- .4 Service caps shall be used where required.
- .5 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and materials required to complete the work including the connections to the existing service pipe and sewer main, restoration and backfilling to the bottom of granular 'B'

.6 No additional payment will be made for existing water connections that have to be raised or lowered to suit sewer construction.

3.6 RELAYING OF SANITARY SERVICE

.1 Where an existing service connection conflicts in grade with new work, the Contract Administrator may instruct the contractor to relay a portion of the existing sanitary service as required to resolve the conflict.

.2 Materials shall be PVC SDR 28 pipe. Typical sizes are 100 and 150 mm diameter for sanitary connections. Multi-unit buildings and commercial/industrial properties may require larger sizes. Larger sizes may also be required for tie-ins to older existing piping. Installation to be done in accordance with OPSD 1006.010.

.3 All re-laid sanitary service to set at a consistent grade acceptable to the Contract Administrator.

.4 Connect to existing piping using approved couplers.

.5 Service caps shall be used where required.

.6 Measurement for payment shall be taken from the end limits of the new pipe as installed and may include areas between the trench and existing sewer pipe.

.7 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and materials required to complete the work including cut into and to re-lay the new service, connections to the existing service pipe and sewer main, restoration and backfilling to the bottom of granular 'B' and shall include the costs to install and maintain temporary service works and all work to service.

.8 No additional payment will be made for existing water connections that have to be raised or lowered to suit sewer construction.

.9 If in the opinion of the Contract Administrator, replacement is required due to neglect of the contractor, no additional payment or will be made above the contract unit price for a Sanitary Service Reconnection.

3.7 MANHOLE INSTALLATION

.1 This tender item shall include the supply and installation of manholes which consists of a manhole base, barrel and riser sections in accordance with OPSD 701.010, 701.011, 701.012 & 701.013 complete with Manhole frame and cover in accordance with OPSD 401.010 Type 'A' (Sanitary) & Type 'B' (Storm) and hollow rectangular ladder rungs in accordance with OPSD 405.010

.2 This tender item shall include all labour, material and equipment required for the excavation, granular base preparation and installation of the manhole structure in

accordance with OPSS.MUNI 402 and OPSS 407, including one adjustment to final asphalt elevations or as directed by the Contract Administrator. Manhole adjustments shall be completed in accordance with OPSS 408. This item also includes the reconnection of all existing sewers, sewer services and any inlet piping connected to the original manhole and temporarily disconnected for its removal and backfilling to bottom of granular 'B'.

- .3 Manholes to include the installation of frost straps in accordance with OPSD 701.100. All manholes shall be wrapped in 6 mm polyethylene and benched in accordance with OPSS 407 and OPSD 701.021.
- .4 Payment for this item shall be at the contract unit price per vertical metre for this item in the tender form for the labour, equipment and material required to complete the work. Measurements will be based on the height between the top of the frame or cover and the lowest pipe invert

3.8 CATCHBASIN MANHOLE INSTALLATION

- .1 This tender item shall include the supply and installation of manholes which consists of a manhole base, barrel and riser sections in accordance with OPSD 701.010, 701.011, 701.012 & 701.013 complete with catchbasin frame and cover in accordance with OPSD 400.070 and hollow rectangular ladder rungs in accordance with OPSD 405.010
- .2 This tender item shall include all labour, material and equipment required for the excavation, granular base preparation and installation of the catchbasin manhole structure in accordance with OPSS.MUNI 402 and OPSS 407, including one adjustment to final asphalt elevations or as directed by the Contract Administrator. Catchbasin manhole adjustments shall be completed in accordance with OPSS 408. This item also includes the reconnection of all existing sewers, sewer services and any inlet piping as required. Connection of subdrain to be in accordance to OPSS 405 & OPSD 216.021 and backfilling to bottom of granular 'B'.
- .3 Catchbasin manholes to include the installation of frost straps in accordance with OPSD 701.100. All catchbasin manholes shall be wrapped in 6 mm polyethylene and to have a 300mm deep sump in accordance with OPSD 701.01, unless otherwise noted.
- .4 Payment for this item shall be at the contract unit price per vertical metre for this item in the tender form for the labour, equipment and material required to complete the work. Measurements will be based on the height between the top of the frame or cover and the bottom of sump (where included) or the lowest pipe invert.

3.9 CATCHBASIN INSTALLATION

- .1 This tender item shall include the supply and installation of catchbasins in accordance with OPSD 705.010 & City of Thunder Bay Engineering Standards Drawing S-109 (catch basin inlet) complete with catchbasin frame and cover in accordance with OPSD 400.080.

- .2 This tender item shall include all labour, material and equipment required for the excavation, granular base preparation and installation of the catchbasin structure in accordance with OPSS.MUNI 402 and OPSS 407, including one adjustment to final asphalt elevations or as directed by the Contract Administrator. Catchbasin adjustments shall be completed in accordance with OPSS 408. This item also includes the reconnection of all existing inlet piping and backfilling to bottom of granular 'B'. Connection of subdrain to be in accordance to OPSS 405 & OPSD 216.021
- .3 If the installation or resetting of a catchbasin requires the removal and replacement of an existing curb or curb and gutter, the cost of removal and replacement, to a maximum length of 3.0 metres, shall be included in the payment for the catchbasin. This shall not apply for areas identified in the contract documents or directed by the Contract Administrator where replacement of existing curbs is to be completed.
- .4 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.
- .5 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.
- .6 Payment for resetting an existing catcbasin (complete) shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.

3.10 TRENCH BACKFILLING

- .1 All materials to be used for backfilling of the sewer trench are to be approved by the contract administrator prior to commencement of backfilling operations and shall be in accordance with OPSS.MUNI 401.
- .2 It is expected that native material will not be suitable for backfill, unless otherwise directed by the Contract Administrator. Backfilling shall be performed to the grade shown on the contact drawings, in lifts not exceeding 150 mm thickness. The contractor shall be responsible for the supplying and placing of new granular 'B' material.
- .3 Excavate with suitable machinery or by hand as may be necessary, to the depths and to the dimensions shown or required.
- .4 Cut and trim the sides of trenches evenly and as near vertical as possible, shore as required to prevent cave-ins.
- .5 Keep the bottoms of trenches clean, clear of loose material, frost free and free of water. Slope or grade trenches as required. Hand-trim at least last 150 mm of trench excavations to ensure a minimum disturbance of the load bearing surface of the trench bottom and to ensure a minimum negative impact on the load bearing value of the trench bottom.

.6 No separate payment will be made in the tender form. Costs to be included within the contract unit price applicable to the tender item for which the work is required.

3.11 TRENCHING

.1 OPSS MUNI. 401.07.09 is amended by the deletion of the third paragraph and replacement with: No more than 50 m of trench shall be open in advance of the completed pipe system.

.2 The Contract Administrator may stop the excavation and any portion of the work and require the Contractor to complete the pipe laying and backfilling up so such point as he may direct, before excavation proceeds further. The Contractor shall not be entitled to receive any allowance or compensation, other than an extension of the time of completion for as many days as the Contract Administrator may determine.

.3 If work is stopped on the whole, or any part of a trench, and the trench is left open for any unreasonable length of time in advance of the construction of the sewer, the Contractor shall, when directed by the Contract Administrator, refill such trench or part thereof, and temporarily repave over the same, at his own cost and expense, and shall not again open such trench, or part thereof, until he is ready to proceed with the construction of the sewer. If the Contractor refuses to completely refill such trench and temporarily repave over same within 48 hours after the receipt of Notice in writing to do so, the Contract Administrator may refill and temporarily repave such trench, and the cost and expense thereof shall be charged to the Contractor.

.4 No separate payment will be made in the tender form. Costs to be included within the contract unit price applicable to the tender item for which the work is required.

3.12 DE-WATERING

.1 De-watering shall conform to the latest revision of OPSS 517. The Contract shall at all times have sufficient pumping equipment ready for immediate use in order to keep the excavation dry. The drainage of the trench shall be so affected as not to allow water to run through the newly laid pipe.

.2 The Contractor shall not hold the Owner liable for leakage from existing services or services under construction. This shall also apply to existing water valves.

.3 No separate payment will be made in the tender form. Costs to be included within unit cost of sewer installation.

3.13 MAINTAINING FLOW IN DRAINS

.1 The Contractor shall, at his own cost and expense, provide for and maintain the flow, where required, of all sewers, drains ditches and gutters, house or inlet connections, and all watercourses that may be met with during the progress of the work.

- .2 The Contractor shall not allow the contents of any sewer, drain, house or inlet connection or watercourse to flow into the trench or the sewers to be constructed under this Contract, except where permission is given by the Contract Administrator, and shall at his own cost and expense immediately remove all offensive matter from the proximity of the work, using such precaution in so doing as may be directed by the Contract Administrator.
- .3 The Contractor is responsible for temporary bypass pumping and re-direction of sewage flows as required during sanitary sewer replacement and repairs to avoid interruption of sewer services to the residents.
- .4 No separate payment will be made in the tender form. Costs to be included within the contract unit price applicable to the tender item for which the work is required.

3.14 ADDITIONAL CLEAR STONE BEDDING

- .1 Where the trench bottom is unstable or unsuitable for bedding the pipe, crushed stone may be used as directed and at the sole discretion of the Contract Administrator.
- .2 Clear stone material shall be measured in tonnes, and shall conform to OPSS.MUNI 1010 for "Granular O" material and shall be such size that 100% will pass a 25 mm sieve and 100% will be retained on a No. 4 sieve.
- .3 No payment will be made for crushed stone used to aid in de-watering.
- .4 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work. Contractor to submit weigh bills to inspector on a daily basis. The density used for unit conversions is 1.85 tonnes/m³.

3.15 STYROFOAM INSULATION

- .1 This tender item shall include the supply and installation of extruded polystyrene (XPS) to CAN/ULC-S701, Type 4 Highload 40 insulation in accordance with OPSS & the manufacturer specifications, where, directed by the Contract Administrator or as shown on the contract drawings.
- .2 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work. Measurements will be taken of the area of Styrofoam insulation placed.

3.16 CONFLICTS WITH OTHER SERVICES

- .1 This tender item shall include the installation of vertical bends to lower/raise watermains (UFR 400-S8 or approved equivalent) at locations where there is conflict with main sewer lines services or utilities and at the approval of the Contract Administrator. Construction to be in accordance to City of Thunder Bay Standards Drawing W-114 or W-115.

.2 Where conflicts are encountered , watermains will be raised or lowered:

- i. Watermain invert to be 0.15 m above sewer obvert.
- ii. Watermain obvert to be 0.5 m below sewer invert.

.3 Payment for this item shall be at the lump sum price for each crossing for this item in the tender form for the labour, equipment and material required to complete the work.

3.17 CCTV INSPECTION OF SEWER MAINLINES

- .1 New sewer mains installed under this Contract shall be inspected by closed circuit sewer inspection. The inspection shall be carried out in accordance with OPSS 409
- .2 The Contractor shall be responsible for the rectification of any defect encountered.
- .3 The inspection shall be scheduled prior to final paving of the street.
- .4 The Contract Administrator shall receive two copies of the CCTV report in a format approved by the Owner and Contract Administrator.
- .5 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work

1.0 GENERAL SPECIFICATIONS

1.1 WATERMAIN CONSTRUCTION

- .1 The Construction methods for watermains shall conform to the latest version of the OPSS.MUNI 441. Related work references of the OPSS shall also apply.

1.2 ADDITIONAL INFORMATION

- .1 Watermain pipe is typically installed 2.4 m (minimum) below grade (unless otherwise noted on contract drawings).
- .2 Where less than 2.4m cover exists, the watermain is to be insulated as per the contract documents.
- .3 There is a possibility of services not shown on drawings may be located in the area. Contractor to verify prior to commencement of construction.

2.0 MATERIALS SPECIFICATIONS

2.1 WATERMAIN INSTALLATION

- .1 PVC watermain pipe specified in this Contract shall be “push-on” joint polyvinyl chloride watermain pipe of the follow Class: Pipe materials for watermain with diameter up to and including 300 mm shall conform to the requirements of AWWA C-900 DR 18 “Polyvinyl Chloride” (PVC) Pressure Pipe (100 mm – 300 mm) for potable water, class 150.
- .2 All PVC pipe materials shall be certified to CAN/CSA B173.3 – M90 Rigid Polyvinyl Chloride (PVC) Pipe for Pressure Applications. PVC pipe shall have bell and spigot ends and all pipe fittings shall be supplied with elastomeric gaskets and integral with the wall thickened bell ends.

2.2 FITTINGS AND SPECIALS

- .1 PVC AWWA C-907, CAN/CSA B137.3-M-90, 200 mm and under.
- .2 D.I. AWWA C-110 or C-153, 250 mm and greater
- .3 All non-stainless or uncoated fittings to be wrapped in denso tape or approved equal.

2.3 JOINTS

- .1 Connection
 - PVC - push on joint
 - Ductile - mechanical joint.
 - Polyethylene - Thermal Butt Fusion or Electro-fusion couplings.

2.4 COUPLINGS, RESTRAINTS AND RETAINERS

- .1 For 100 mm to 300 mm watermains, all couplings shall be Romac Alpha restrained joint couplings.
- .2 Restraints: Tie-Rod method or Mechanical Joint Restraints (Mueller Filed Lok 350, Romac Gripper Ring or Star 3500 Restraint Grip Rings) as per City of Thunder Bay Engineering Drawings W-111, W-112 & W-113. All non-stainless or uncoated fittings to be wrapped in denso tape or approved equal after assembly.
- .3 Retainer Clamp Assembly as per City of Thunder Bay Engineering Drawings W-116. For PVC pipe use Star 1000 series or Ford 1300 Series Restrainers. All non-stainless or uncoated fittings to be wrapped in denso tape or approved equal after assembly.

2.5 TAPPING SADDLES

- .1 Stainless steel saddles for service connections greater than 20 mm in diameter.

2.6 GATE VALVES AND BOXES

- .1 Valves specified in this Contract shall be resilient seat mechanical joint gate valve with "O" ring deals and 50 mm square operating nut, and shall conform to AWWA C509.
- .2 Screw type valve box with No. 6 base, conforming to AWWA M44 as manufactured by WD Industrial and stated in City of Thunder Bay Standard Drawing W-103.
- .3 Cover - 5-C-S; Upper - 5SC-U; Extension - 5SC-24E (600 mm); Lower - 5SC-L30 (750 mm); 5SC-L40 (1016 mm); Base - 5-6B; Complete Box - 5SC-30 (750 mm); 5SC-40 (1016 mm).
- .4 Valve Opening: Valves shall open left (counter-clockwise)
- .5 All valves shall be Mueller Co. Manufactured.
- .6 Contractor to submit product specifications for approval. Contractor to provide one (1) valve key to Owner.

2.7 SERVICE CONNECTIONS

- .1 Water services specified in this Contract shall be as follows (as outlined in City of Thunder Bay Standard Drawing W-104-1):
 - (i) 20mm type 'K' copper piping
 - (ii) Corporation Stops: Mueller No. H-15008 (20 mm and 25 mm)

(iii) Curb Stops: Mueller Mark II Oriseal No. H15209

(iv) Curb Boxes: Mueller No. A726 with a 300 mm adjustable telescopic box with Mueller No. A800 ribbed cover and a Mueller stainless steel rod (304SS) of a length to place the top of the rod 1 metre below the finished grade OR Canada Brass Eclipse pattern Series 161 with a minimum 300 mm adjustable telescopic rod, Series 163 ribbed cover, a bronze pentagon cover plug and a stainless steel rod of a length to place the top of the rod 1 metre below finished grade.

(v) Curb Boxes: Supplied with stainless steel rods, Type 304 18-8 composition. The crimp at the top of the rod shall be designed to centre position the rod in the curb box standpipe and allow for easy rod rotation.

- .2 Certify by the manufacturer, that the weld holding the bottom clip can withstand turning torques. The bottom clip to accommodate the approved curb stops.
- .3 The cotter pin shall be bronze, conforming to B62 Specifications.
- .4 All brass fittings shall be no lead type.
- .5 Water connection replacement shall only use compression type corporation stops and curb stops. Compression type couplers will require a jumper connection as per COTB DWG W-130. Approved couplers include Mueller No. A319 & H15403.
- .6 Contractor to supply one (1) valve key to the Owner.

2.8 HYDRANTS

- .1 Fire hydrants specified in this Contract shall be as follows (as outlined in City of Thunder Bay Standard Drawing W-101):

Model M67b Hydrant as manufactured by McAvity Division of Crane Canada
- .2 Fire Hydrants shall be conforming to AWWA Specification C502 supplied complete with a gate valve on the branch and valve box extensions. The hydrants shall be suitable for 1000 KPa (150 psi) operation.
- .3 Hydrant Barrels shall be wrapped with 50 mm thick DOW HI – 35 styrofoam held in place by steel bands.
- .4 Minimum depth of bury for hydrants shall be 2.4m. All hydrants installed shall be red in colour. Hydrant drains shall be plugged with the appropriate plug recommended by the manufacturer.

.5 Hydrant threaded hose and pumper nozzles to match City of Dryden standards.

2.9 TRACER WIRE

.1 The tracer wire specified in this Contract shall be a minimum 14 gauge TWH solid copper light coloured plastic coated tracer wire attached.

2.10 CATHODIC PROTECTION

.1 The cathodic protection specified in this Contract shall be applied to metallic water mains, fittings, hydrants, and service connections and shall comply with the National Association of Corrosion Engineers (NACE), standard RPO169-92 and section 8.0 of the City of Thunder Bay Engineering Standards (Cathodic Protection of Water Distribution Piping) included in **Appendix 4** of the contract documents.

.2 Valves and fittings shall be installed with a minimum of one packaged 10.9 kg zinc anode.

.3 Hydrants shall be installed with a minimum of one packaged 10.9 kg zone anode as hydrant lead and meet the spacing requirement outlined 8.1.1.1a in the City of Thunder Bay Engineering Standards.

.4 Copper services shall have one packaged 10.9 kg zinc anode per every 20 m of service line.

2.11 THRUST BLOCKS

.1 Thrust blocks to conform to City of Thunder Bay Engineering Standards drawing W-108-1 and W-109 (horizontal) and OPSD 1103.020 (vertical) and shall be type 10 cement unless otherwise noted.

2.12 STYROFOAM

.1 Insulation specified for water main applications shall be extruded polystyrene (XPS) to CAN/ULC-S701, Type 4 Highload 40

3.0 EXECUTION

3.1 WATERMAIN PIPE

.1 This tender item includes the labour, material and equipment required for the removal of sections of the existing 150mm diameter watermain, valves & appurtenance and the supply and installation of new watermain pipe, appurtenances (including bends, tees, plugs, thrust blocks, tracer wire, etc.) and backfilling to bottom of granular 'B'.

- .2 The interior of all pipes shall be kept clean and free from undesirable material at all times and installed in accordance with OPSS.MUNI 441 & City of Thunder Bay Engineering Standards Drawing W-100 (Class "B"). Contractor to ensure all pipes remain capped until used.
- .3 Bedding and backfill operations shall be completed in accordance with OPSS.MUNI 401 and as detailed in the Contract Drawings. New Granular Bedding Material (required for all piping) shall be sand bedding: 150 mm bedding under the pipe and backfill up to 300 mm above the pipe obvert. Granular "B" type 1 shall be used for backfill material above the sand bedding and up to the bottom of the road subgrade.
- .4 Proceed only when work to be backfilled has been inspected and approved, and approval to backfill has been obtained. Place backfill in loose lifts of material not exceeding 300 mm depth. Compact each loose lift to 98% SPMDD before placing the next loose lift of material. Maintain backfill material at optimum moisture content to achieve required densities.
- .5 This item will also include the supply and installation of tracer wire as outlined in City of Thunder Bay Engineering Standards Drawing W-130.
 - (i) Secure wire to pipeline with electrical tape at 3 metre intervals.
 - (ii) Cadweld wire to hydrant boots.
 - (iii) Loop wire around hydrants and valves, leaving slack in the cables to permit future removal of the fitting.
 - (iv) Test for conductivity following backfill of trenches.
- .6 This item will include the cost to complete the pressure test and chlorination.
- .7 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.

3.2 INSTALLATION OF TEMPORARY BY-PASS PIPING FOR NEW WATERMAIN INSTALLATION

- .1 The Contractor shall provide and maintain temporary water services to houses and businesses that are disconnected or isolated from the watermain during the watermain construction. The temporary water connections shall conform to OPSS 493 and be provided for any houses/businesses that will experience a loss of water supply for duration of 8 hours or longer.
- .2 For duration of less than 8 hours, the Contractor shall schedule and notify the affected properties. If there are extreme circumstances that will not tolerate a water shut-down, then a temporary connection shall be provided.
- .3 The contractor shall submit his proposed method of temporary water supply to the Contract Administrator for approval prior to starting the work. Also, see Flushing and Disinfecting Watermains section for requirements prior to commissioning by-pass piping. All supply piping or hoses shall be CSA approved for potable water use and shall be

disinfected, flushed and tested prior to use. The Contractor is responsible for the maintenance of leaks on the temporary system.

- .4 Provide for continuous bleeding of temporary water supplies to maintain water quality.
- .5 Connect the temporary water supply to the City system using approved backflow preventors at the source and at the connection to the customer. Obtain certification of backflow prevention device prior to use.
- .6 Notify the Public Health Inspector with the Northwestern Health Unit, 24 hrs prior if temporary water impacts restaurant/food business establishments.
- .7 Flush the water service connection prior to returning the service to normal operation
- .8 Contractor is responsible for ensuring appropriate size of temporary water service and all associated appurtenances.
- .9 Payment for this item shall be at the lump sum price for this item (including supply, installation, testing, disinfection, maintenance and removal) in the tender form.
- .10 Connection to the private plumbing system of all residential units is assumed to be available to the contractor at an existing exterior location (outside tap). If no connection is available, contractor to install suitable exterior hose bib at location approved by the home owner and contract administrator and connect to the residence existing plumbing system. Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.

3.3 GATE VALVES AND BOXES

- .1 This tender item includes the labour, material and equipment required for the supply and installation of mainline tee, gate valves and boxes in the locations shown on the contract drawings and in accordance with City of Thunder Bay Engineering Standards Drawing W-103 and OPSS.MUNI 441.
- .2 Backfill with clear stone or coarse sand for 300 mm around the valve box.
- .3 This item shall also include the supply and installation of cathodic protection as outlined in City of Thunder Bay Engineering Standards Drawing W-125.
- .4 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.

3.4 HYDRANTS

- .1 This tender item includes the labour, material and equipment required for the supply and installation of 3-way hydrant complete with hydrant mainline tee, 150mmØ C900 hydrant lead, valve and box, and insulation in the locations shown on the contract drawings and in accordance with City of Thunder Bay Engineering Standards Drawing W-101.

- .2 All hydrants shall stand plumb and shall have their nozzles parallel with the curb. Hydrants shall be set to the established finished grade with nozzles at least 500 mm above the ground, with the break-away bolts 130 mm above finished grade.
- .3 Each hydrant shall be connected to the main with a 150 mm PVC tee and connection controlled by an independent 150 mm gate valve located 1 m from the hydrant. The hydrant shall rest on a concrete pad and be properly braced to prevent movement.
- .4 All hydrants installed in clay or hardpan soil shall have 600 mm of 20 mm dia. Crushed stone placed around the hydrant boot and gravel shall extend out to the main to help prevent freezing.
- .5 The boot of each hydrant shall be well braced against unexcavated earth at the end of the trench using poured concrete thrust blocks and shall be tied with mechanical restraints approved by the Contract Administrator to the tee on the main.
- .6 Minimum depth of bury for hydrants shall be 2.4m. All hydrants installed shall be red in colour. Hydrant drains shall be plugged with the appropriate plug recommended by the manufacturer.
- .7 This item also includes the supply and installation of cathodic protection as outlined in City of Thunder Bay Engineering Standards Drawing W-126.
- .8 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work including backfilling to bottom of granular 'B'.

3.5 REPLACEMENT OF EXISTING WATER SERVICE

- .1 This tender item includes the labour, material and equipment required for the supply and installation of the replacement water services to the locations shown on the contract drawings or as directed by the Contract Administrator, in accordance with OPSS.MUNI 441. Water services to be 20mm type 'K' copper piping and installed in accordance with City of Thunder Bay Engineering Standards Drawing W-104-1. This item includes the connection to the watermain and the supply and installation of a new corporation stop, curb stop, box and rod. Cathodic protection and Tracer wire will be included in this item and will be in accordance with City of Thunder Bay Engineering Standards Drawings W-104-1 & W-127
- .2 All water service connections shall be installed in accordance with the requirements of the latest revision of the Ontario Building Code Act - Part 7 as amended.
- .3 Water services lines to be installed at a minimum depth of 2.15 m of cover and shall not exceed a depth of cover over 2.5 m. Services are to be insulated where less than 2.4 m of cover exists.

- .4 One (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on the first 6.0m of every water service. Copper water services longer than 6.0 m in length shall receive one (1) additional anode for each 6.0 m of additional length or fraction
- .5 The tie-in of new water service to the existing building's water services to be located within private property boundaries. Final location to be determined in the field at a location least disruptive to the individual property and to the approval of the Contract Administrator.
- .6 New curb stops to be installed along the existing property line at a location to suit field conditions and as approved by the Contract Administrator.
- .7 This item will also include the excavation and exposure of the existing water services, joining the new service line to existing with approved coupler, removal of existing curb stop and boxes and restoration of all disturbed areas to existing conditions or better.
- .8 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.

3.6 RECONNECTION OF EXISTING WATER SERVICES

- .1 This tender item includes the reconnection of existing water service connections to new or replacement pipe including new corporation stop. The Contractor shall determine the size and type of pipe (min 20mm diameter). The Contractor shall provide up to 3 metres of new service connection piping and appropriate fittings to connect to the existing line.
- .2 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work.

3.7 REPLACEMENT OF EXISTING LEAD WATER SERVICES (CITY PROPERTY)

- .1 If existing lead/alloy water service are encountered for reconnection, the contractor will replace the entire connection between the main and property line with new 20mm Type "K" soft copper complete with new curb stop, at the direction of the Contract Administrator.
- .2 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to replace each connection.

3.8 EXISTING LEAD WATER CONNECTIONS (PRIVATE PROPERTY)

- .1 The replacement of lead water service connections on private property are not considered the responsibility of the City of Dryden.
- .2 The Contract Administrator will advise private homeowners of their lead service and recommend they contact the Contractor involved for a quote to replace the existing service within their property.

3.9 STYROFOAM INSULATION

- .1 This tender item shall include the supply and installation of extruded polystyrene (XPS) to CAN/ULC-S701, Type 4 Highload 40 insulation in accordance with OPSS & the manufacturer specifications, where, directed by the Contract Administrator or as shown on the contract drawings.
- .2 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work. Measurements will be taken of the area of Styrofoam insulation placed.

3.10 CONNECTING TO EXISTING WATERMAIN

- .1 This tender item includes the labour, material and equipment required to connect to the existing watermain system using a reducer, coupler, tee or bend as indicated on the contract drawings.
- .2 Prior to connecting to existing pressurized watermains, the Contractor will make arrangements with the operating authority to temporarily reduce or shut-off pressure where there is risk of thrust movement or blow out due to the pressure. This may involve shutting other valves upstream of the connection location. For some connections complete pressure shut-down and draining of the lines will be required.
- .3 Tapping sleeves and valves shall be used where specified. Contractor to confirm O.D. required. Otherwise connections to existing mains shall be made with a cut in tee or coupler and required fittings.
- .4 Connections to concrete pressure pipe shall follow manufacturer's recommendations.
- .5 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete each connection.

3.11 NOTIFICATION OF SHUT OFFS

- .1 The Contract Administrator, City and property owners must be given a minimum of 48 hours notification in writing and in person of any water interruption.
- .2 Costs associated with notifications to be included in the tender price of the related item.
- .3 The operation of all water valves and curb stops, in connection with the watermain work, shall be conducted by the operating authority. The Contractor shall give a minimum of 48 hours notice.
- .4 If there are extenuating circumstances that prohibit a water shut-down, the Contractor is responsible to arrange re-scheduling of the shut-down or provision of temporary water.
- .5 No separate payment will be made for this item.

3.12 FLUSHING AND CHLORINATING WATERMAIN

- .1 Work shall be done in accordance with OPSS.MUNI 441 and City of Thunder Bay Engineering Standards Drawing W-117-1 & W-117-2.
- .2 The following shall apply, in addition to other criteria:
 - (i) The watermain being installed shall be swabbed with a hydraulically propelled foam pig or an alternate method approved by the Contract Administrator.
 - (ii) Disinfecting watermains shall be completed in accordance with AWWA C651-99. Where this standard contradicts the contract specifications, the more stringent standard shall apply.
 - (iii) Flush the main prior to chlorination with sufficient volumes to produce scouring velocities in the mains. Operate all valves and hydrants during this flushing only by the operating authority.
 - (iv) Introduce the solution at one end of the system being sterilized until water taken off at the remote end(s) tests at a level of minimum 25 mg/litre.
 - (v) Allow the chlorinous solution to remain in the mains for 24 hr. The Contractor will take further samples and test them to ensure there is not less than 10 mg/litre of chlorine residual throughout the system. If less than 10 mg/litre exists in the system after 24 hr. reflush the entire system and repeat the sterilization procedure.
 - (vi) Clean the section of watermain to be tested by flushing at scouring velocities of 1.5 to 2.0 m/s prior to testing. Operate valves and hydrants only by the operating authority.
 - (vii) Notify the Contract Administrator at least 4 days ahead of the date when the disinfecting of the system is to start so arrangements may be made for the Owner to take samples and test the chlorine residual and bacteria. The Contractor will be responsible for costs related to taking and testing of samples.
 - (viii) The results from bacteriological test will typically require 72 hours to obtain results after flushing and sampling.
 - (ix) All temporary watermains must have one set of clear tests before use and all permanent (new or repaired) watermains must have two clear samples before use as drinking water (Ont Reg. 170/03).
 - (x) The Contractor shall be responsible for satisfactory disposal of all water used in flushing. Flushed material will not be disposed of in the sanitary sewer. Flushing and disinfecting shall apply to both new and temporary watermains.
- .3 All costs in connection with chlorination, flushing, cleaning and pressure testing of watermains shall be borne by the Contractor.

.4 No separate payment will be made for this item. Costs to be included within unit cost of watermain installation.

3.13 PRESSURE TESTING WATERMAIN

- .1 Work shall be done in accordance with OPSS.MUNI 441.07 and with City of Thunder Bay Engineering Standards Drawing W-118.
- .2 Subject the section of pipe under test to a continuous pressure of 1035 kPa (150 psi), in accordance with OPSS.MUNI 441.07. By means of pumping out of a suitable container of known volume maintain the pressure at 1035 kPa for two continuous hours and record the amount of water used in this period.
- .3 Determine the allowable leakage from with City of Thunder Bay Engineering Standards Drawing W-118. Where the measured leakage exceeds the allowable leakage, locate the leaks and repair. Retest the main. Repeat this process until such time as the measured leakage is equal to or less than the allowable leakage.
- .4 Pressure testing will be recorded by the Contract Administrator.
- .5 No separate payment will be made for this item. Costs to be included within unit cost of watermain installation.

3.14 DEWATERING

- .1 De-watering shall conform to the latest revision of OPSS.MUNI 517.
- .2 The Contractor shall at all times have sufficient pumping equipment ready for immediate use in order to keep the excavation dry. The drainage of the trench shall be so affected as to not allow water to run through the newly laid pump.
- .3 The Contractor shall not hold the Owner liable for leakage from existing services or services under construction. This shall also apply to existing water valves.
- .4 No separate payment will be made for this item. Costs to be included within the contract unit price applicable to the tender item for which the work is required

1.0 GENERAL SPECIFICATIONS

1.1 ROADWAY CONSTRUCTION AND ASSOCIATED WORKS

- .1 The Construction methods shall conform to the latest version of OPSS.
- .2 Removals to be completed in accordance to OPSS.MUNI 510.
- .3 Compaction and sample testing to be done by third party consultant and in accordance to Section 01000 “General Requirements” Sub- section 1.15 “Testing and Quality Control” of the contract documents.
- .4 Maintain access to all businesses where they abut the work area.
- .5 All water required for compaction or dust control shall be incidental and deemed included within the applicable tender item for work being performed.
- .6 Where existing street signs, stop signs, traffic signs, etc. are to be relocated, remove the signs and, except for stop signs, place the signs on the boulevards out of the way of work so that they will not be damaged. Any stop sign, which has to be removed in order to carry out construction, shall be relocated in an alternate position by the Contractor as directed by the Contract Administrator. Such relocation of stop signs shall be done so as not to confuse or mislead motorists. The Contractor will be back charged for the cost of any missing or damaged signs upon completion of the work
- .7 Temporary removal, relocation and re-installation of parking meters, mailboxes and/or signs where required, shall be incidental and deemed included within the applicable tender item for work being performed.
- .8 Tree pruning, if required prior to construction, will be carried out by the Owner.
- .9 For disturbed or reconstructed boulevard areas, slope boulevards to provide a uniform rising grade (preferable 2% minimum), between the top of the curb and the property line.

2.0 MATERIALS SPECIFICATIONS

2.1 GRANULAR MATERIAL

- .1 Granular ‘A’ Physical properties shall conform to OPSS.MUNI 1010.05.02, and Table 1. Granular ‘B’ Type I physical properties shall conform to OPSS.MUNI 1010.05.03 and Table 2. Clear stone properties shall conform to OPSS.MUNI 1010 (Granular “O”) and be such size that 100% will pass a 25 mm sieve and 100% will be retained on a No. 4 sieve.
- .2 Gradation properties for Granular A and B shall conform to OPSS.MUNI 1010, Table 2. Granular B for sub base shall meet the gradation requirement for Type I.

- .3 Blending of all granular material shall be done with the use of a screening plant. Aggregates that have become mixed with foreign matter of any kind, or aggregates that have become mixed with each other shall not be used and shall be removed from the stockpile immediately.
- .4 Contractor to provide samples of all granular materials to the Contract Administrator, unless otherwise directed, for testing and approval thirty (30) days in advance of commencing placing of these materials.
- .5 When a change in the material type occurs or when the performance of material that meet the requirements of this specification is found to be unsatisfactory, the use of the materials shall be discontinued until the Contractor, with the approval of the Contract Administrator, proves the source to be satisfactory.
- .6 The Contractor shall not change material source locations without the written approval of the Contractor Administrator. Quality Control and Quality Assurance Testing for source location changes shall be completed at the Contractor's expense.

2.2 PORTLAND CEMENT CONCRETE

- .1 Concrete aggregates shall conform to OPSS 1001, and OPSS.MUNI 1002. Coarse aggregate shall have nominal maximum size of 19mm, with corresponding gradation requirements as given in OPSS.MUNI 1002, Tables 3 and 4.
- .2 Chemical admixtures shall conform to the requirements of OPSS.MUNI 1303. Hydraulic cementing materials shall conform to the requirements of OPSS 1301. Unless otherwise specified, type 10 Normal Portland cement shall be used for all above grade concrete.
- .3 Curing of concrete surfaces shall be undertaken by using one of four alternatives:
 - i. White waterproof paper, white opaque polyethylene film, or white burlap polyethylene sheeting which conforms to OPSS 1305.
 - ii. Burlap as specified in OPSS 1306.
 - iii. White pigmented membrane curing compound as specified in OPSS 1315 – Sealtight 1220 by W.R. Meadows, or approved equal.
 - iv. Concrete Retarders: Pozzolith 100XR or approved equal may be accepted. Contractor to supply engineer with mix design / specifications for approval.

2.3 HOT MIX ASPHALT/SUPERPAVE AND STONE MASTIC ASPHALT MIXTURES

- .1 This specification covers hot mix asphalt/ superpave and stone mastic asphalt to be used for the construction of roads, laneways, islands and parking lots, etc. Unless otherwise amended herein, materials, production, and placement of hot mix asphalt shall conform to

OPSS 1150 AND 1151. Asphalt aggregate physical properties shall conform to OPSS 1001, 1150, 1151 AND OPSS.MUNI 1003.

.2 Job-Mix Formula (JMF) shall be submitted to the Contract Administrator a minimum of fourteen (14) days prior to commencement of pavement operations and shall conform to OPSS 1150 AND 1151. The Contract Administrator shall review the formula and provide written approval for the use of the JMF.

2.4 TACK COAT

.1 Tack coat shall consist of an emulsified asphalt diluted with an equal volume of water in accordance with OPSS.PROV 308.

2.5 SUBDRAIN

.1 Perforated subdrain material specified in this contract shall be in accordance with OPSS 1840, CSA B182.6, CSA B182.8 or ASTM F894: 150 mm diameter polyethylene wrapped in filter cloth.

2.6 GEOTEXTILE

.1 Geotextile specified in this contract for roadway applications shall be a non-woven permeable synthetic geotextile material, in accordance with the material and fabrication requirements of OPSS 1860.

.2 Geotextile shall be: Terrafix 270R non-woven geotextile or approved equivalent.

2.7 TRAFFIC SIGNS

.1 Traffic control signage whether new or temporary shall conform to M.U.T.C.D. standards.

2.8 TOPSOIL

.1 Topsoil material shall conform to OPSS.MUNI 802

2.9 SEED

.1 Grass Seed: Certified Canada No. 1 Grade to Government of Canada Seeds Regulations, conforming to OPSS.MUNI 804 and having minimum germination of 95% and minimum purity of 97%.

2.10 SEDIMENT CONTROL

.1 All sediment control materials shall be in conformance with OPSS 805

2.11 INSULATION

.1 Insulation to be extruded polystyrene (XPS) to CAN/ULC-S701, Type 4 Highload 40.

2.12 STEEL REINFORCING MESH FOR DRIVEWAYS

.1 Reinforcing mesh to be M.W.13.3 / M.W.13.3, 152 m x 152 m openings.

2.13 TACTILE WALKING SURFACE INDICATOR PLATES

.1 Gray cast iron tactile walking surface indicator plates in according to ASTM A 48M, Class 35B, and shall be bare and not coated with paint or other coatings or substances. Castings shall be sound, free from pouring faults, cracks, blowholes, and other defects.

.2 The surface of each new cast iron plate on both the tops of the truncated domes and the field between the truncated domes shall have a minimum wet and dry static coefficient of friction of 0.8 according to ASTM C 1028.

.3 The initials or trademark of the manufacturer, year of manufacture, and country of manufacture shall be distinctly cast and legible in raised letters on the top side of each plate.

2.14 CALCIUM CHLORIDE

.1 Calcium Chloride shall conform to OPSS 2501

3.0 EXECUTION

3.1 COMMON EXCAVATION

.1 This tender item shall include the excavation of material encountered within the limits of construction, as required to achieve the grades indicated on the contract design drawings, after the removal of surface material. This shall include the on-site placement or stockpiling of suitable site material, and the satisfactory disposal of unsuitable site material such as frost-heaving clays, rock, rubble, rubbish, and any surplus suitable site material, unless otherwise shown in the Specification of Work, or as directed by the Contract Administrator.

.2 Excavation shall include top soil, organic silt, peat, muskeg, clay, shale, hardpan, and all vegetation, debris, junk, brick, gravel, concrete, asphalt pavement, loose or disintegrated rock, stone or boulders 1 cubic metre or less in volume and other material encountered within the excavated limits.

.3 Clear and grub the surface wherever necessary. Remove all surplus material of whatever nature or kind. Separate the excavated material so that no broken pavement, curbs, sidewalk, boulders or other objectionable material is present in the material to be as backfill. Dispose of all excess materials including objectionable materials.

.4 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required completing the work.

3.2 ADDITIONAL EXCAVATION

.1 This tender item includes the labour, material and equipment required to excavate beyond the original scope of work as a result of soft-subgrade or unsuitable material. The extent of additional excavation to be directed by the Contract Administrator.

.2 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required to complete the work.

3.3 DISPOSAL OF EXCAVATED MATERIAL

.1 Disposal of excavated material shall be in accordance to OPSS.MUNI 180. Where possible, do not place excavated material on the travelled portion of streets, access to lots, lawns, walks, driveways, etc. Cast material to one side of the trench only, unless otherwise directed. Dispose of any excess material remaining after backfilling of trenches.

.2 Manage excess soils in accordance with O.Reg 406/19 and OPSS.MUNI 180. Stockpile and complete all necessary testing.

.3 The Contract Administrator shall be the sole judge as to the amount of excavated material, which can be stockpiled alongside the trench, and may order any or all of the excavated material removed and stockpiled.

.4 Excavated material shall be taken to a designated area identified by the Contract Administrator and located within a 10km radius of the project site.

.5 No separate payment will be made for this item and costs to be included within the applicable tender unit cost for the work being performed.

3.4 DE-WATERING

.1 De-watering shall conform to the latest revision of OPSS 517. The Contract shall at all times have sufficient pumping equipment ready for immediate use in order to keep the excavation dry. The drainage of the trench shall be so affected as not to allow water to run through the newly laid pipe.

.2 The Contractor shall not hold the Owner liable for leakage from existing utilities, services or services under construction.

.3 No separate payment will be made for this item. Costs to be included within the contract unit price applicable to the tender item for which the work is required

3.5 REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)

- .1 This tender item shall include the full depth removal of existing asphalt road and island surface material as outlined on the contract drawings. The asphalt pavement removed shall remain the property of the Owner and shall be hauled and disposed of at a designated area identified by the Contract Administrator and located within a 10km radius of the project site.
- .2 The estimated approximate thickness of asphalt is 80 mm.
- .3 Traffic loop detectors may be encountered at signalized intersections where asphalt is to be removed. Arrange with the City of Dryden to adjust the traffic signals so that the loops can be disconnected prior to disturbance and replaced following base paving and prior to top course paving.
- .4 Provide ramping using sand mix asphalt at the locations of manholes, catch basins, water valves, ect., for traffic movement and safety. Remove ramping prior to paving. No ramping is required if Granular 'A' base, cleaning and re-paving operations are carried out in a continuous process.
- .5 No separate payment will be made unless specifically indicated in the Tender Form. Costs to be included within unit cost of common excavation or additional excavation.

3.6 REMOVAL OF EXISTING CONCRETE SIDEWALKS

- .1 This tender item includes the labour, material and equipment required to remove, and dispose of existing concrete sidewalks to the limits shown on the Contract Drawings, or as directed or approved by the Contract Administrator. Disposal of material to be at a designated area identified by the Contract Administrator and located within a 10km radius of the project site.
- .2 Saw cut the limits of the work prior to commencing the removal.
- .3 Remove sidewalk foundation walls, if encountered. Ensure no damage to tree root system.
- .4 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required to complete the work. The unit price bid shall apply both to spot removals or removals of lengthy sections, based on those sections designated to be removed on the contract documents or directed or approved by the Contract Administrator.
- .5 No additional payment shall be made for the removal of foundation walls, if found beneath existing sidewalks.

3.7 REMOVAL AND DISPOSAL OF EXISTING INTERLOCKING PAVERS

- .1 This tender item shall cover the removal and disposal of existing interlocking pavers as required, to complete work shown on the Contract Drawings, or as directed or approved

by the Contract Administrator. Work to include various areas including but not limited to; sidewalks, driveways and walkways.

- .2 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required to complete the work, including transporting and stockpiling any excess material at a designated area identified by the Contract Administrator and located within a 10km radius of the project site.
- .3 Payment shall be based upon square meters of paving stones removed as measured prior to removal.

3.8 REMOVAL OF CONCRETE CURB AND GUTTER

- .1 This tender item shall include all work required for the removal and disposal of existing concrete curb and gutter sections. This shall include removal of any handicap accessible drop curb and driveway curb cut sections encountered within the limits shown on the contract drawings or directed or approved by the Contract Administrator and the removal of existing subdrain as identified on the contract drawings or as directed by the Contract Administrator. Material to be disposed of at a designated area identified by the Contract Administrator and located within a 10km radius of the project site.
- .2 Saw cut the limits of the work prior to commencing the removal.
- .3 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required to complete the work. The unit price bid shall apply both to spot removals or removals of lengthy sections, based on those sections designated to be removed on the contract documents or directed or approved by the Contract Administrator.

3.9 REMOVAL OF DRIVEWAY APPAROACHES

- .1 This tender item includes the labour, material and equipment required to remove and dispose of existing driveway approaches of various material types encountered within the limits shown on the contract drawings. Material to be disposed of at a designated area identified by the Contract Administrator and located within a 10km radius of the project site.
- .2 Saw cut the limits of the work prior to commencing the removal. Saw cutting of existing asphalt or concrete driveways should be done after the sidewalk is poured to determine proper grade. The Contractor shall cut driveways initially for rough grade for excavation and a second cut is required for final matching to grade.
- .3 No separate payment will be made unless specifically indicated in the Tender Form. Costs to be included within unit cost of “Common Excavation”.

3.10 CLEAR STONE

- .1 Clear stone shall be used to replace excavated unsuitable subgrade material. The extents of the removal of unsuitable material and placement of clear stone shall be at the discretion and direction of the Contract Administrator.
- .2 This tender includes all labour, material and equipment required to supply, place, and compact clear stone, as required. Clear stone material shall be measured in tonnes, and shall conform to OPSS.MUNI 1010 for “Granular O” material.
- .3 No payment will be made for crushed stone used to aid in de-watering.
- .4 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work. Contractor to submit weigh bills to inspector on a daily basis. The density used for unit conversions is 1.85 tonnes/m³.

3.11 GEOTEXTILE

- .1 This tender includes all labour, material and equipment required to supply and install the non-woven geotextile, and shall be installed in accordance with OPSS 1860. The geotextile shall be installed in accordance with manufacturer recommendations and shall be pinned to the excavation wall with either sod staples or 300 mm long nails (with washers on heads). The geotextile shall be overlapped 0.6 m along the width of the roadway and 1.0 m along the length of the roadway excavation and 0.3 m vertically along the excavation.
- .2 Ensure the surface below the geotextile is prepared in advanced to achieve a smooth, even surface, clear of any aggregates or debris, and constructed to completely wrap around the granular “B” layer.
- .3 If the geotextile is damaged, torn or punctured during installation or placement of the fill material, the damaged section shall be repaired at no extra cost to the owner. The damaged section shall be exposed and a patch of geotextile placed over the damaged section. Where the patch is now sewn it shall be large enough to overlap 1 m onto the undamaged geotextile. Any fill material on the damaged area shall be replaced and compacted to the required standard.
- .4 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required completing the work. Note: The estimated tender quantity does not take into account the horizontal overlap described above; it only accounts for the vertical pinning. There will be no additional payment for the horizontal overlap.

3.12 GRANULAR ‘B’ (TYPE 1) SUB-BASE COURSE

- .1 This tender includes all labour, material and equipment required to supply, place, and compact Granular ‘B’ (Type 1) sub-base course material. Sub-base material shall be measured in tonnes, and shall conform to OPSS.MUNI 1010 for “Granular B” material.

- .2 Fill required to raise sub-grade up to the underside of specified fill, shall be Granular 'B' (Type 1) sub-base course material and shall be compacted to minimum 98% S.P.M.D.D.
- .3 The installation shall be completed and trimmed during each phase, so as to conform to the proper grades and lines with tolerances of ± 20 mm vertically and ± 100 mm horizontally. The average level of the finished grade shall neither be consistently high or low from design grade.
- .4 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work. **Contractor to submit weigh bills to inspector on a daily basis.** Tickets presented to the contract administrator, after trucks have left the site, or from previous working days will not be accepted. The density used for unit conversions is 2.0 tonnes/m³.

3.13 GRANULAR 'A' BASE COURSE

- .1 This tender item shall include all labour, material and equipment required to supply, place, and compact Granular 'A' base course material, as shown on the contract drawings or as directed by the Contract Administrator.
- .2 Base Course material shall be measured in tonnes, and shall conform to OPSS.MUNI 1010 for "Granular A" material. The material shall be compacted to minimum 98% S.P.M.D.D
- .3 The surface of the granular base shall be such that when tested with a 3 m straight edge placed on the surface of the roadway, the maximum deviation of the surface from the edge of the straight edge shall nowhere exceed 10 mm.
- .4 The final moisture content of the base course mixture in each layer just before compaction shall be not more than optimum moisture in order to obtain maximum compaction. The optimum moisture for the Granular "A" course shall be determined by the soils consultant.
- .5 If traffic is permitted over the Granular "A" course, the contractor shall maintain and repair the layer with regards to cross-section and compaction, and pay special attention to final grades prior to the commencement of paving operations. The contractor shall provide all necessary protection of works and safety to the public at no extra cost to the owner.
- .6 The installation shall be completed and trimmed during each phase, so as to conform to the proper grades and lines with tolerances of ± 10 mm vertically and ± 100 mm horizontally. The average level of the finished grade shall neither be consistently high or low from design grade.
- .7 Payment for this item shall be at the contract unit price for this item in the tender form for the labour, equipment and material required to complete the work. **Contractor to submit weigh bills to inspector on a daily basis.** Tickets presented to the contract administrator,

after trucks have left the site, or from previous working days will not be accepted. The density used for unit conversions is 2.4 tonnes/m³.

3.14 HOT MIX ASPHALT

.1 General

- i. This tender item shall include all labour, equipment and material required to supply, place and compact hot mix asphalt in accordance to OPSS PROV.313
 - .1 Roadway Binder Course – 40mm (1 lift) Superpave 19mm Nominal Maximum Aggregate Size – Traffic Category C.
 - .2 Roadway Surface Course – 40mm (1 lift) Superpave 12.5mm Nominal Maximum Aggregate Size – Traffic Category C.
- ii. Liquid Anti-Stripping Additive shall be used in the amount required to meet the Superpave Moisture sensitivity requirements, or 0.5% by mass of asphalt binder, whichever is more. Hydrated lime will not be accepted as an anti-strip additive.
- iii. The area to be paved shall be true to line and grade, having a smooth dry, compacted surface prior to the commencement of paving operations. The area to be paved shall be free from all loose asphalt and foreign material.
- iv. Existing or newly paved surfaces shall be cleaned of loose material by sweeping with a power broom. Supplemented by hand sweeping, if determined necessary by the Contract Administrator.
- v. Butt joints on previously placed cooled pavement shall be saw cut and tack coated prior to continuing the paving operation.
- vi. Contractor shall not pave against recently placed concrete curb, sidewalk or any other concrete structure, until curing has occurred for a minimum of five (5) days. For the purpose of paving operation only, concrete curing time may be reduced upon receipt of contractor's written certification that high early strength additives were used, properly placed and appropriate curing compounds were applied to concrete.
- vii. Where paving is to be completed adjacent to manholes, catch basin frames and covers and valve boxes, contractor to paint all frames, covers and valve boxes with fuel oil prior to paving to prevent asphalt from bonding with metal surfaces.
- viii. Sufficient rollers must be maintained on job site to insure full compaction of asphalt mix before temperature of mix falls below 95°C.
- ix. The asphaltic finished surface shall be true to the required profile and cross-section, with a tolerance of \pm 5 mm from the required elevations. The finished grade shall neither be consistently high or low from the design grade. The surface

shall show no depressions or bumps exceeding ± 5 mm under a straight edge ± 3 m (minimum) long, placed parallel to the road centre line.

x. Where water valve boxes or manholes are rebuilt, constructed, raised or lowered and/or adjusted in conjunction with surface construction or renewal, adjust the appurtenances such that the top surface of the appurtenance is flush with the finished grade of the pavement, sidewalk, or boulevard.

xi. After placing, rolling and compacting the asphalt, depressions or bumps measured centerline to the top of the appurtenance under a straight edge a minimum of 3 m long placed parallel to the road are not to exceed the values in the following table:

xii.

appurtenance	depression	Bump
Water valve boxes	10 mm	5 mm
Floating manholes	5 mm	5 mm
Solid manholes	10 mm	5 mm

xiii. Bumps exceeding 5 mm are not acceptable.

xiv. Any uplifting or settlement of water valve boxes and/or manhole frames shall be corrected to conform to this specification, at no cost to the owner.

xv. The average asphalt concrete thickness must meet or exceed the required thickness and in no case shall any individual core thickness be thinner than 5 mm of the required thickness.

xvi. When deviations in excess of the above tolerances are found the pavement surface shall be corrected by methods satisfactory to the Contract Administrator.

xvii. No traffic shall be allowed on the finished surface until it has cooled to 60°C or until permitted by the Contract Administrator.

.2 Quality Control

i. Contractor shall be responsible for the placement of asphaltic concrete meeting the requirements of these specifications.

.3 Temperature

i. Asphalt shall not be placed when it is raining or when rain is imminent, on a saturated surface, on an unstable/yielding roadbed, when the base is frozen, or when weather conditions prevent proper handling or finishing of the asphalt.

ii. Binder course asphalt shall not be placed, unless the air temperature at the surface of the road is a minimum of 2°C and rising. Surface (final) course asphalt shall not be placed, unless the air temperature at the surface of the road is at least 7°C and rising.

- iii. The temperature of the asphalt immediately after leaving the spreader and being placed and prior to initial rolling shall not be greater than 160°C or less than 120°C. Inspect quality of asphalt in trucks whose travel time plus idling time on site exceeds 4 hours. It is the contractor's responsibility to monitor asphalt temperature and rejection of loads under 120°C (at no cost to the Owner) and/or containing too many large chunks or if material becomes too hard to place.
- iv. The delivery and laying of asphalt shall be timed such the development of cold joints and asphalt sprawling will be minimized. If this is not achievable and the performance of asphalt is compromised, the Contractor shall repair cold joints at no extra cost to the Owner. Cold joints and asphalt cracking will be repaired to the satisfaction of the Contract Administrator.
- v. The asphalt temperature shall be measured directly behind the paver screed at the time of placement.

.4 Tack Coat

- i. Tack coat shall be applied between asphalt lifts and on all abutting concrete and asphalt surfaces prior to paving. The supply and application of tack coat will be paid out as part of the hot mix asphalt placement item. No separate payment will be made for this item. Tack coat will be applied to dry surfaces and will be given sufficient time to set, prior to commencing paving operations.
- ii. Tack coat shall not be applied during cold weather, after sunset, or to a wet surface.

.5 Weigh Tickets

- i. The contractor shall submit weigh tickets to the contract administrator at the end of each day for **reference purpose only**. Tickets presented to the contract administrator, after trucks have left the site, or from previous paving days will not be accepted.
- ii. As outlined in OPSS 310.09.01.01.01 "The truck weigh ticket shall be printed by an electronic printer interfaced with the truck scale readout and capable of recording the tare mass, gross mass and net mass. The tare mass of the truck shall be taken at least once per shift."

.6 Compaction Requirements

- i. As outlined in A.S.T.M. D698-70 and OPSS 310.08.06, compaction testing shall meet the requirements specified in Table 10 and a nuclear density test gauge results shall be used to assess in-place compaction
- ii. Maintain the optimum moisture content for all fill materials during backfilling and compaction operations, to achieve required compaction density. Deposit fill

in layers of 150 mm loose thickness so that equipment being used for compacting can produce the specified compaction density.

- iii. Puddling or flooding with water for the purpose of consolidating granular fill, will not be permitted. The addition of water is only permitted to the extent required to provide the optimum moisture level of fill material.
- iv. During and immediately after levelling, thoroughly compact each layer of fill by use of compaction equipment of size and of a type to achieve the required degree of compaction without causing lateral forces that may result in the displacement of foundation structures, retaining walls or curbs. Exercise caution in this regard to avoid movement of such structures.
- v. After a period adequate to reveal settlement has passed, place any required additional fill and compact in place to specification requirements so as to eliminate all depressions. Make good any subsequent settlement of any fill without extra cost to the Owner.
- vi. In the event that there the required compaction is not achieved (minimum 92.0%) with the use of the Nuclear Density Gauge, a core sampling program will be completed in order to verify compaction. Penalties for not achieving the required compaction requirements are outlined in the table for "**Payment Adjustments for Compaction**".

Payment Adjustment for Compaction		
Percent of Marshall Density	Payment Adjustment - Dollars per Tonne	
	Design Lift Thickness	
Lot Mean	35 mm or Greater Binder Lifts	35 mm or Greater Surface Lift
94.0	0.00	-4.00
93.9	-0.20	-4.40
93.8	-0.40	-4.80
93.7	-0.60	-5.20
93.6	-0.80	-5.60
93.5	-1.00	-6.00
93.4	-1.20	-6.40
93.3	-1.40	-6.80
93.2	-1.60	-7.20
93.1	-1.80	-7.60
93.0	-2.00	-8.00
92.9	-2.20	-8.40
92.8	-2.40	-8.80
92.5	-3.00	-10.00
92.4	-3.20	-10.40
92.3	-3.40	-10.80
92.2	-3.60	-11.20

Payment Adjustment for Compaction		
Percent of Marshall Density	Payment Adjustment - Dollars per Tonne	
	Design Lift Thickness	
92.1	-3.80	-11.60
92.0	-4.00	-12.00
91.9	-4.40	-12.40
91.8	-4.80	-12.80
91.7	-5.20	-13.20
91.6	-5.60	-13.60
91.5	-6.00	-14.00
91.4	-6.40	-14.40
91.3	-6.80	-14.80
91.2	-7.20	-15.20
91.1	-7.60	-15.60
91.0	-8.00	-16.00
90.9	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.8	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.7	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.6	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.5	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.4	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.3	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.2	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.1	-8.00 and 5 year warranty	-16.00 and 5 year warranty
90.0	-8.00 and 5 year warranty	-16.00 and 5 year warranty
89.9	Remove & Replace	Overlay or Rm. & Rp.
89.8	Remove & Replace	Overlay or Rm. & Rp.
89.7	Remove & Replace	Overlay or Rm. & Rp.
89.6	Remove & Replace	Overlay or Rm. & Rp.
89.5	Remove & Replace	Overlay or Rm. & Rp.
89.4	Remove & Replace	Overlay or Rm. & Rp.
89.3	Remove & Replace	Overlay or Rm. & Rp.
89.2	Remove & Replace	Overlay or Rm. & Rp.
89.1	Remove & Replace	Overlay or Rm. & Rp.
89.0	Remove & Replace	Overlay or Rm. & Rp.
88.9	Remove & Replace	Overlay or Rm. & Rp.
88.8	Remove & Replace	Overlay or Rm. & Rp.
88.7	Remove & Replace	Overlay or Rm. & Rp.
88.6	Remove & Replace	Overlay or Rm. & Rp.
88.5	Remove & Replace	Overlay or Rm. & Rp.
88.4	Remove & Replace	Overlay or Rm. & Rp.
88.3	Remove & Replace	Overlay or Rm. & Rp.
88.2	Remove & Replace	Overlay or Rm. & Rp.
88.1	Remove & Replace	Overlay or Rm. & Rp.
88.0	Remove & Replace	Overlay or Rm. & Rp.

Payment Adjustment for Compaction		
Percent of Marshall Density	Payment Adjustment - Dollars per Tonne	
Design Lift Thickness		
<u><87.9</u>	Remove & Replace	Overlay or Rm. & Rp.

.6 Payment

- i. Payment for this item shall be at the contract unit price (square meters) for this item in the tender form for the labour, equipment and material required to complete the work. Include the cost of ramping at manhole covers and valve boxes and the cost of coating of frames, covers, grates and valve boxes with diesel fuel in the unit price for this item.
- ii. In the event, that a dispute arises regarding the placement of an excess thickness of hot mix asphalt, the Owner shall not be liable for the cost incurred for the additional material placed in excess of 10% over the estimated quantities.

3.15 CONCRETE SIDEWALK

- .1 This tender item shall include the supply and installation of concrete sidewalks to the limits shown on the Contract Drawings, or as directed or approved by the Contract Administrator, in accordance with sections OPSS 351 and OPSD 310.010, 310.020, 310.030, 310.033, 310.040, 310.050 & 310.060. Work to include the reconstruction of existing or required sidewalk drops at intersections and driveway or laneway entrances, excavation and installation of granular base material.
- .2 Preparation of granular base to include the supply and placement of 150mm of **new** Granular 'A' (minimum) material conforming to OPSS.MUNI 1010 and compacted to minimum 95% S.P.M.D.D. Base material to be completed to the satisfaction of the Contract Administrator prior to placement of concrete.
- .3 Replacement of any section of sidewalk, to be constructed to match existing sidewalk lines, grades and dimensions and aligned to match backside edge (private property side) of existing sidewalk.
- .4 Cut sidewalk neatly along limits of proposed removal in order that surface may break evenly and cleanly.
- .5 Schedule the placement of the concrete in such a manner that it follows very closely behind the excavation and backfilling procedure.
- .6 Apply curing compound in accordance with the manufacturer's recommendations.
- .7 Dummy joints to be installed at 1.5m intervals

- .8 Expansion joints to be of 12mm pre-moulded bituminous material and placed at the intersection with other sidewalks or where sidewalks meet the curb.
- .9 Sidewalk to be reinforced at all driveways and lane crossings with M.W. 13.3/M.W. 13.3 wire, 152 mm x 152 mm, opening wire mesh. Reconstruction of private concrete sidewalks shall include the construction of steps, if required by the Contract Administrator.
- .10 Trim or support hedges, bushes or other plants, which may be affected by the construction, as directed by the Contract Administrator. Cover any exposed roots with suitable fill immediately following excavation and/or provide root curtain.
- .11 Replace any sections damaged by rain, traffic or other causes, prior to final acceptance of the work.
- .12 Payment at the contract unit price for the above tender item is limited to the areas specified in the Contract Drawings, or as directed or approved by the Contract Administrator and shall be full compensation for all labour, equipment and material required to complete the work and shall also include excavation and disposal of excess material and preparation of granular base. The unit price bid shall include all costs of constructing or reconstructing sidewalk drops.

3.16 TACTILE WALKING SURFACE INDICATOR

- .1 This tender item shall include the supply and installation of tactile walking surface indicator plates in new concrete sidewalk ramps as indicated on the Contract Drawings, or as directed or approved by the Contract Administrator, in accordance with OPSS 351 and OPSD 310.030 & 310.039.
- .2 A set of two cast iron tactile walking surface indicator plates shall be set into wet prepared concrete at each concrete sidewalk ramp as specified in the Contract Documents and according to the plate manufacturer's installation instructions.
- .3 Tactile walking surface indicators shall be set and pressed into wet concrete to final elevation according to manufacturer's recommendations. Remove any wet concrete that may spill onto tactile walking surface indicator. Radius plates to be used as required to follow curb radius.
- .4 The corner radius at the intersections varies from location to location. The City shall neither provide corner locations in advance nor will it supply any radius measurements to the Contractor. It shall be the sole responsibility of the Contractor to conduct survey and make assessment to retrofit corners with appropriate rectangular or radial tactile walking surface indicator plates or both. The Contractor shall provide shop drawings and installation layout details (radius and tangent plate layout) to the contract administrator for each radius.
- .5 Tactile walking surface indicator plates shall be cut to fit around utility maintenance hole covers, hand wells and other appurtenances at no extra cost to the City.

- .6 Tactile walking surface indicators plates shall be positioned as close to the back of curb as possible; however, in order to accommodate corner radii, a maximum gap of 100 mm between the back of curb and the plates is acceptable.
- .7 Plates shall be cleaned after installation.
- .8 Payment at the contract unit price for the above tender item shall be full compensation for all labour, equipment and material required to complete the work including the supply and placing of formwork, the supply, placing, consolidating and finishing of the concrete, and the supply and placing of tactile walking surface indicators. Payment shall be made for each set of tactile walking surface indicator plates installed at each concrete sidewalk ramp. A set shall consist of two tactile walking surface indicator plates.

3.17 CONCRETE CURB AND GUTTER

- .1 This tender item shall include the supply and installation of concrete curb and standard gutter to the limits shown on the Contract Drawings, or as directed or approved by the Contract Administrator, in accordance with OPSS 353 and the OPSD 600.040. Work to include the reconstruction of existing or required drop curbs at intersections and driveway or laneway entrances in accordance to OPSD 350.010 & 351.010.
- .2 This item shall also include the supply and installation of a perforated polyethylene or polyvinyl chloride pipe, pre-wrapped in a geotextile-knitted sock and encased in a 19mm clear stone trench, as indicated on the contract drawings or directed by the contract administrator and in accordance to OPSS 405 and OPSD 216.021.
- .3 When concrete curb and gutter is placed by the extrusion method, form contraction joints by saw cutting the hardened concrete within a sufficient time of placing of the curb and gutter to prevent uncontrolled cracking. Contraction joints may also be formed by the use of a “guillotine” knife in the wet concrete.
- .4 The width of the joint shall be 3 mm to 5 mm and the depth 65 mm minimum, at 6.0 metre maximum spacing.
- .5 When installing new catchbasin frames and covers in new sections of concrete curb and gutters, set the catchbasin frame in place at the same time the curb and gutter is placed. There will be no additional payment for resetting the catchbasin frame, if such is required.
- .6 Payment at the contract unit price for the above tender item shall be full compensation for all labour, equipment and material required to complete the work and shall also include the preparation of the granular base.
- .7 The unit price bid for curb and gutter shall include all costs of constructing or reconstructing curb drops.

3.18 RECONSTRUCTION OF CONCRETE DRIVEWAYS AND PRIVATE SIDEWALKS

- .1 Reconstruct portions of the existing driveways and private sidewalks as shown on the Contract Drawings or as directed by the Contract Administrator and in accordance to OPSS 351 and applicable OPSD. Reconstruction shall include excavation for and providing 150 mm of new Granular 'A' base course material, and shall include the construction of steps for private sidewalks, if required.
- .2 Provide a sidewalk or driveway equal to or better than the original construction except that in no case shall the thickness be less than 125 mm and reinforced with M.W. 13.3/M.W. 13.3 wire, 152 mm x 152 mm, opening wire mesh where applicable.
- .3 Construction to match existing lines, grades and limits to the satisfaction of the Contract Administrator.
- .4 Payment at the contract unit price for the above tender item shall be full compensation for all labour, equipment and material required to complete the work.

3.19 RECONSTRUCTION OF ASPHALT DRIVEWAYS

- .1 Reconstruct asphalt driveways as shown on the Contract Drawings or as directed by the Contract Administrator in accordance with OPSS 311 and as directed by the Contract Administrator. Reconstruction shall be equal to or better than the original construction and shall include excavation for and providing a minimum of 150 mm of new Granular 'A' base course material and at least a 50 mm course of HL 4 asphalt concrete. Where the existing driveways have driveway sealer, the Contractor shall supply and install one (1) coat of coal tar epoxy driveway sealer.
- .2 Construction to match existing lines, grades and limits to the satisfaction of the Contract Administrator.
- .3 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required completing the work

3.20 CONCRETE WORK IN COLD WEATHER

- .1 The Contractor shall be responsible for taking all necessary measures to protect freshly laid concrete from adverse weather conditions, including hot weather, wind, rain, sleet, snow and cold weather, to the satisfaction of the Contract Administrator.
- .2 Concrete shall be adequately protected from freezing for a minimum of five (5) days after completion of placing operations. A minimum requirement for protection shall be provided as follows when the air temperature as forecast by Environment Canada is:
 - .3 When the air temperature is below 4.5°C, concrete shall be kept at a temperature of not less than 10°C or more than 27°C, while being mixed and placed, and maintained at a temperature of not less than 10°C for 72 hours after placing and no frozen material shall be used in the mix.

- .4 0°C to -3°C the concrete shall be covered with polyethylene film. Below -3°C two sheets of polyethylene film covering separated by 300 mm of dry straw.
- .5 Concrete damaged as a result of inadequate protection against weather conditions shall be removed and replaced by the Contractor at his own expense.
- .6 No separate payment will be made unless specifically indicated in the Tender Form.

3.21 DUST CONTROL

- .1 The Contractor shall ensure that his dust and mud control procedures are effective, sufficient, in force, and to the satisfaction of the Owner and/or Contract Administrator. Dust Suppression to be in accordance to OPSS 506 and the contract documents Section 01000 "General Requirements" Sub-section 1.30 & 01561 "Environmental Protection" Sub-section 2.9).
- .2 The Owner reserves the right, without prior notice to the Contractor, to provide additional dust control measures, or street clean-up, or grading, as may be required, as a result of these construction works, and to deduct the cost of such works from the payment due to the Contractor.
- .3 Dust control shall be incidental and deemed included within the contract unit price applicable to the tender item for which the work is required. No additional payment or compensation will be made for this item.

3.22 RESTORATION FOR DISTURBED AREAS

- .1 This tender item includes the restoration of areas disturbed by construction. The Contractor shall complete restoration work to equivalent or better condition than pre-construction conditions. The restoration work shall be completed up to the property line. Restoration items will be completed to the following **minimum** requirements:
 - i. Grassed Areas: 100mm topsoil (after compaction) and seed and mulch
 - ii. Asphalt Areas: 150mm Granular 'A' – 50mm HL4 c/w coal tar epoxy seal if existing driveway is sealed
 - iii. Concrete Areas: Match Existing
 - iv. Granular Areas: 150mm Granular 'A'
- .2 Areas that have materials other than have been noted will be restored to match existing conditions.
- .3 Restoration to match existing lines, grades and limits to the satisfaction of the Contract Administrator.
- .4 Payment at the contract unit price for the tender items shall be full compensation for all labour, equipment and material required to complete the work within the contract limits.

.5 No payment shall be made for restoration considered outside of the contract work areas, considered to be unnecessary by the Contract Administrator or resulting from contractor error or neglect, unless approved by the Contract Administrator.

3.23 TRAFFIC CONTROL SIGNAGE

.1 This tender item includes the supply, locating, erecting, operating and maintaining of construction signs for the duration of the project, in accordance with OPSS.MUNI 706.

.2 Traffic control shall be incidental and deemed included within the contract unit price applicable to the tender item for which the work is required. No additional payment or compensation will be made for this item.

3.24 SEDIMENT CONTROL

.1 This tender item includes the supply, installation and regular maintenance of sedimentation control devices for the duration of the project, in accordance with OPSS.MUNI 805.

.2 Sediment control shall be incidental and deemed included within the contract unit price applicable to the tender item for which the work is required. No additional payment or compensation will be made for this item.

3.25 LINE PAINTING

.1 This tender item shall include all labour, material and equipment required for the completion of the following in accordance with OPSS 710, OTM Book 11 and the contract drawings;

- i. Provide 150mm wide continuous yellow waterborne traffic paint (single line) at centre line of new roadway
- ii. Provide 150mm wide dashed white water borne traffic paint lines for turning lanes
- iii. Provide white water borne traffic paint for pavement marking arrows
- iv. Provide 30cm wide white water borne stop lines
- v. Provide 150mm wide continuous white waterborne traffic paint for pedestrian crosswalks

.2 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required completing the work.

3.26 ADJUSTMENTS TO EXISTING MANHOLES, CATCHBASINS AND VALVES & BOXES

.3 This tender item shall include all labour, material and equipment required for removal of all existing rings, brickwork and mortar from the top of the existing structure, in accordance with OPSS 408. A minimum of one to a maximum of three adjustment units

shall be installed on the top of the structure, in accordance with OPSS 408.07.08. If more than three adjustment units are required, the installation of a precast riser section will be required.

- .4 When there are adjustment units on an existing structure, adjustment units shall be added or removed as required so when the adjustment is completed there is a minimum of one to a maximum of three adjustment units on the top of the structure prior to placing the frame with grate or cover.
- .5 Extension stems and boxes shall be adjusted to the grades specified in the Contract Documents. Caps for valve boxes shall be installed flush with the final grade.
- .6 Payment for this item shall be at the contract unit price for this item in Tender Form, for labour, equipment and material required completing the work.

3.27 COMPACTION

- .1 This tender item shall include all labour, material and equipment required to achieve appropriate compaction in accordance to OPSS.MUNI 501. Compaction requirements as noted on drawings.
- .2 The density of fill, in place, shall be in accordance with latest revision of A.S.T.M. D698-70. Minimum 98% Standard Proctor Maximum Dry Density shall be the compaction requirements for all fill unless specifically noted or specified otherwise.
- .3 Maintain the optimum moisture content for all fill materials during backfilling and compaction operations, to achieve required compaction density. Deposit fill in layers of 300 mm loose thickness so that equipment being used for compacting can produce the specified compaction density.
- .4 Puddling or flooding with water for the purpose of consolidating granular fill, will not be permitted. The addition of water is only permitted to the extent required to provide the optimum moisture level of fill material.
- .5 During and immediately after levelling, thoroughly compact each layer of fill by use of compaction equipment of size and of a type to achieve the required degree of compaction without causing lateral forces which may result in the displacement of foundation structures, retaining walls or curbs. Exercise caution in this regard to avoid movement of such structures.
- .6 After a period adequate to reveal settlement has passed, place any required additional fill and compact in place to specification requirements so as to eliminate all depressions. Make good any subsequent settlement of any fill without extra cost to the Owner.
- .7 No separate payment will be made unless specifically indicated in the Tender Form. Costs to be included within the contract unit price applicable to the tender item for which the work is required.

1.0 GENERAL

1.1 SUMMARY

.1 Comply with requirements of this Section when performing following work:

- i. Break, cut, grind, sand, drill, scrape, vibrate or abrade non-friable asbestos containing materials using non-powered hand-held tools, and the material is wetted to control the spread of dust or fibres.

1.2 REFERENCES

- .1 Department of Justice Canada (Jus)
 - i. Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Transport Canada (TC)
 - i. Transportation of Dangerous Goods Act, 1992 (TDGA).

1.3 DEFINITIONS

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Amended Water: water with nonionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.
- .3 Asbestos-Containing Materials (ACMs): materials that contain 0.5 per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.
- .5 Authorized Visitors: Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .6 Competent worker: in relation to specific work, means a worker who:
 - i. Is qualified because of knowledge, training and experience to perform the work.
 - ii. Is familiar with the provincial and federal laws and with the provisions of the regulations that apply to the work.
 - iii. Has knowledge of all potential or actual danger to health or safety in the work.

- .7 Friable material: means material that:
 - i. When dry, can be crumbled, pulverized or powdered by hand pressure, or
 - ii. is crumbled, pulverized or powdered.
- .8 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure
- .9 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.
- .10 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for work.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01000 “General Requirements”.
- .2 Submit proof satisfactory to Contract Administrator that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .3 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.
- .4 Submit proof of Contractor's Asbestos Liability Insurance.
- .5 Submit to Contract Administrator necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .6 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .7 Submit proof satisfactory to Contract Administrator that employees have respirator fitting and testing as required. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to asbestos, provided that in case of conflict among these

requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.

.2 Health and Safety:

- i. Perform construction occupational health and safety in accordance with The Corporation of The City of Dryden Health and Safety Agreement, Ontario Occupational Health and Safety Act, the Canada Labour Code Part II, and Environmental Legislation
- ii. Safety Requirements: Protective equipment and clothing to be worn by workers while in Asbestos Work Area include
 - (i) Air purifying half-maskrespirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
 - (ii) Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn.
- iii. Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- iv. Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos

waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.

- v. Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.
- vi. Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing are to be co-ordinated with Owner.
- vii. Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Place materials defined as hazardous or toxic in designated containers.
- .3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .4 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 mils bags or leak proof drums. Label containers with appropriate warning labels.

1.7 EXISTING CONDITIONS

- .1 Notify Contract Administrator of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Contract Administrator.

1.8 PERSONNEL TRAINING

- .1 Before beginning Work, provide Contract Administrator satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, following minimum requirements:
 - i. Fitting of equipment.
 - ii. Inspection and maintenance of equipment.
 - iii. Disinfecting of equipment.
 - iv. Limitations of equipment.
- .3 Instruction and training must be provided by a competent, qualified person.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Drop Sheets:
 - i. Polyethylene: 0.15 mm thick.
 - ii. FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - i. Inner container: 0.15 mm thick sealable polyethylene waste bag.
 - ii. Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - iii. Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .5 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

3.0 EXECUTION

3.1 PROCEDURES

- .1 Do construction occupational health and safety in accordance with the Corporation of The City of Dryden Health and Safety Agreement, Ontario Occupational Health and Safety Act, the Canada Labour Code Part II, and Environmental Legislation
- .2 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.
 - i. Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work.

- ii. Use HEPA vacuum or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate.
- iii. Do not use compressed air to clean up or remove dust from any surface.
- iv. Power tools should not be used for pipe removal. Instead use snap-cutters, carbine tipped blade cutters (or equivalent), manual field lathes, or wet tapping AC pressure pipe.

.3 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.

- i. Use FR polyethylene drop sheets beneath Asbestos Work Area where dust and contamination cannot otherwise be safely contained. Drop sheets are not to be reused.

.4 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.

- i. Use garden reservoir type low - velocity fine - mist sprayer.
- ii. Perform Work to reduce dust creation to lowest levels practicable.
- iii. Work will be subject to visual inspection and air monitoring.
- iv. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

.5 Frequently and at regular intervals during Work and immediately on completion of work:

- i. Dust and waste to be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in a waste container, and
- ii. Drop sheets to be wetted and placed in a waste container as soon as practicable.

.6 Cleanup:

- i. Place dust and asbestos containing waste in sealed dust-tight waste bags. Alternate waste bags must be approved by Engineer. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.
- ii. Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.

- iii. Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal Authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that the appropriate guidelines and regulations for asbestos disposal are followed.
- iv. Perform final thorough clean-up of Work areas and adjacent areas affected by Work using HEPA vacuum.

3.2 PAYMENT

- .1 Payment for asbestos abatement shall be at the contract lump sum price for this item in the tender form for the labour, material and equipment required to complete the removal transporting and disposal of materials

APPENDIX 1

CITY OF DRYDEN POLICY NO. HR-HS-10 CONTRACTOR SAFETY



CITY POLICY & PROCEDURE

SECTION: HUMAN RESOURCES

NO: HR – HS - 10

REFERENCE: HEALTH AND SAFETY

Date: October 21, 2020

**Next Review Date:
October 2022**

TITLE: CONTRACTOR SAFETY

POLICY STATEMENT

The Corporation of The City of Dryden shall require all Contractors, Consultants, and Subcontractors to comply with the Ontario Occupational Health and Safety Act, the Canada Labour Code Part II, Environmental Legislation and any other applicable legislation.

1. 0 CONTRACT LANGUAGE

- 1.1 All contracts should contain clauses to ensure that the Contractors, Consultants and its Subcontractors perform the contract in compliance with all applicable health and safety and environmental legislation.
- 1.2 Project Administrator - A City of Dryden manager, supervisor or delegate who is responsible for arranging, approving or supervising work performed at the City of Dryden.
- 1.2 Contractor Health and Safety Responsibility Agreement

All Contractors shall be required to sign a "Contractor Health and Safety Responsibility Agreement" form ([Appendix A](#)) that acknowledges their awareness and responsibilities under the Occupational Health & Safety Act, Canada Labour Code and other legislation. It also confirms the procedure the Corporation will follow in cases of non-compliance by the Contractor. This form should be completed in duplicate with one completed copy to the Project Administrator and one kept by contractor. All Contractors must also review and sign the City of Dryden policy HR-HS-55 Infection and Disease Control Policy – Ontario. It is the Contractors duty to ensure all safety policies of the contractor have been communicated to all contractor employees and subcontractors.

1.3 Contract Termination

Contracts entered into between the Corporation and a Contractor shall contain a provision which gives the Corporation the right to terminate a contract for non-compliance with health and safety or environmental legislation on the part of a Contractor, Consultant, Subcontractor, or the workers of either.

1.4 Indemnification

The contracts shall include a clause that holds the Corporation harmless from any and all costs associated with any charges or actions resulting from the Contractors' work, which the Corporation must defend against. This includes proof of current liability insurance coverage with no less than \$2 million per occurrence of public and property liability.

1.5 Sub-Contractors

The contract between the Corporation and the Contractor shall include a provision which requires the Contractor to:

- (a) be diligent in ensuring that its Sub-contractors comply with all health and safety and environmental legislation;
- (b) take appropriate disciplinary action against Sub-contractors who contravene health and safety or environmental legislation which includes but is not limited to the suspending of the work performed by the subcontractors, where appropriate, before allowing them to continue to work on the site; and,
- (c) be vigilant in following up on Ministry of Labour directives where safety violations are noted.

2. 0 TENDERING / SELECTION

- 2.1 As part of the tendering and/or pre-qualification process, the Project Administrator will include a brief description of its policies and procedures relating to the employment of contractors and the bidders will be advised that compliance with Health and Safety and Environmental Legislation will be a condition of any contract.

The Project Administrator may also request the following information to assist in evaluating the tenders and will require all the following information from the successful bidder. These documents will be submitted to the Health and Safety Coordinator five business days before the project start date:

- (a) Provide current Workplace Safety and Insurance Board (WSIB) clearance certificate;
- (b) Proof of current liability insurance coverage with no less than \$2 million per occurrence of public and property liability;
- (c) The name of the person responsible for administering the Contractor's Health and Safety Program;
- (d) Proof of equipment certification where required; i.e., trench boxes, boom cranes, etc.;
- (e) Utilize qualified workers with proof of appropriate staff training where required; i.e., Transportation of Dangerous Goods (TDG) card, MOL Safety Awareness training, Workplace Hazardous Materials Information System (WHMIS/WHMIS 2015), etc.;
- (f) Copy of the Contractor's Health and Safety Policy and work procedures; and,
- (g) Particulars of any convictions or orders imposed under Health and Safety or Environmental Legislation.

2.2 When considering tenders, reference will be made to previous audits conducted by the Corporation. If unsatisfactory performance has been identified, this may affect the awarding of the contract.

2.3 In the event of unplanned emergency work, the Program Administrator will notify the Health and Safety Coordinator, as soon as possible, the name of the contractor and the start date. The Program Administrator is still responsible for ensuring the appropriate documentation is collected and forwarded to the Health and Safety Coordinator as soon as possible.

3. 0 PREPARING FOR WORK (FOR CONSTRUCTION PROJECTS ONLY)

3.1 Before the Contractor can begin work, the following activities must be completed:

- (a) The contractor is responsible for filing the "Notice of Project" with the Ministry of Labour and to provide a completed copy to the Corporation. The contractor is responsible for convening a meeting with the Ministry of Labour before work commences if required.
- (b) Where the work of the Contractor comes into contact with Corporation employees, the Contractor will provide the Corporation with a list of all biological or physical agents produced at the workplace. This includes Safety Data Sheets (SDS) for the Workplace Hazardous Materials Information System (WHMIS).

- (c) The Contractor will establish a Joint Occupational Health and Safety Committee or appoint a Health & Safety Representative to meet requirements as outlined in the Occupational Health & Safety Act.
- (d) The Contractor will provide all documentation requested in Section 2.0 Tendering and Selection five business days before the project start date.
- (e) A completed and signed "Contractor Health and Safety Agreement Checklist" form (Appendix A), along with all the appropriate documentation, will be submitted to the Health and Safety Coordinator five business days before the project start date.
- (f) The following items shall be discussed in the Pre-Start meeting and recorded in the meeting minutes:
 - (i) Corporate/Department Specific safety procedures;
 - (ii) The name and telephone number of the Contractor's Health and Safety Coordinator or Rep;
 - (iii) The area of the building or property to which the Contractor and its workers have access and the building's fire plan (where applicable);
 - (iv) What to do in case of an occupational injury or illness;
 - (v) The Contractor's obligation to maintain good housekeeping;
 - (vi) The Contractor's obligation to meet with affected utilities in the work zone to ensure all safety precautions are taken when working in the vicinity of these utilities (where applicable);
 - (vii) Emergency Contact Numbers and after-hours list including contractor, corporation, emergency services, and environmental agencies numbers;
 - (viii) Contractor shall ensure all safety policies of the contractor have been communicated to all contractor employees and subcontractors;
 - (ix) Contractor shall ensure all safety policies of the corporation have communicated to all contractor employees and subcontractors;
 - (x) Contractor shall ensure all work is performed in accordance with governing legislation/regulation and industry standards;
 - (xi) Contractor shall be responsible for the safety and training of every person granted access to the worksite including visitors and delivery personnel; and
 - (xii) Ensure "Contractor Health and Safety Agreement Checklist" form (Appendix A) is signed.

4. 0 ON THE PROJECT SITE (FOR CONSTRUCTION PROJECTS ONLY)

- 4.1 Meetings will be scheduled on a regular basis after the start of the contract to discuss and review the Health & Safety components on site with the Project Administrator (i.e., signage, barricades, personal protective equipment, etc.).
- 4.2 Reporting of hazards: Where a Corporate employee observes an act or condition which the employee believes may endanger the well being of a person on the project site, the employee will notify the Contractor of the hazard. Corporate employees should not attempt to correct the hazard themselves unless there is immediate danger. Employees should not place themselves at risk under any circumstances.
- 4.3 Corporate employees should exercise caution in ensuring that they do not become involved in the direction of the work taking place at the project. Rather, Health and Safety concerns should be brought to the attention of the Contractor who should assume responsibility for directing the rectification of the problem.

Where the Contractor fails to take corrective action upon being notified of the conditions, the Corporation's employee shall inform their Supervisor, who will ensure that the appropriate action is taken.

The Project Administrator will then investigate the report and take the action it deems appropriate in order to ensure that the workplace is safe for corporate employees, other workers, and members of the public.

The Project Administrator shall document all reports of Contractor and Subcontractor non-compliance, as well as all actions which were taken to investigate and correct all hazards and potential hazards resulting from non-compliance in accordance with established departmental procedures (refer to steps noted on Appendix A - "Contractor Health and Safety Responsibility Agreement".)

5. 0 CONTRACTOR EVALUATION

- 5.1 The Corporation reserves the right to audit Contractors and their Subcontractor's Health and Safety performances during the term of the contract and upon its conclusion.
- 5.2 Evaluation of performance will be based upon incident/injury data and adherence to Corporate Health and Safety policies, and applicable legislation, periodic inspections and reports from Corporate employees. Information may be used for future reference.

5.3 This evaluation shall be kept in a database and be shared with the Health and Safety Committee, Health and Safety Coordinator, Department Managers, and Corporation Project Administrators.

6. 0 COVID-19 SCREENING TOOL (FOR ALL CONTRACTORS)

6.1 Every worker, including contractors, shall complete a COVID-19 Screening Tool at the start of each shift. This screening tool can be completed before or when a worker enters the workplace and can be completed by hand or digitally. If a worker does not pass the screening tool, they must self-isolate and refer to policy HR-HS-54, Preventing COVID-19 in the Workplace.

6.2 The contractor can utilize their own company COVID-19 Screening Tool and will provide a copy of the screening tool to the Program Administrator as part of the required documentation before the project start date. The contractor does not need to provide a completed copy of the COVID-19 Screening Tool, provided the Contractor is maintaining their own records.

ATTACHMENTS:

Appendix A - Contractor Health and Safety Responsibility Agreement and Checklist

History			
Approval Date:	January 1, 2003	Approved by:	Council Resolution
Amendment Date:	May 16, 2011	Approved by:	By-law 3876-2011
Review/Amendment Date:	Jan 5, 2016	Approved by:	H & S Coordinator
Review/Amendment Date:	Mar 20, 2017	Approved by:	CAO, E. Remillard
Review/Amendment Date:	June 22, 2020	Approved by:	Bylaw 4745-2020
Review/Amendment Date:	September 15, 2020	Approved by:	R. Nesbitt
Review/Amendment Date:	October 8, 2020	Approved by:	R. Nesbitt
Review/Amendment Date:	October 21, 2020	Approved by:	R. Nesbitt
Review/Amendment Date:		Approved by:	

**Appendix A****CORPORATION OF THE CITY OF DRYDEN
CONTRACTOR HEALTH and SAFETY RESPONSIBILITY AGREEMENT**

THIS AGREEMENT made the _____ day of _____, 20____, between _____ (the "Contractor"), having an office at _____ and THE CITY OF DRYDEN (the "Corporation").

IN CONSIDERATION of the sum of two (\$2.00) dollars paid by each of the parties to the other (the receipt of which is acknowledged by each party) the parties covenant and agree as follows:

1. The Contractor shall employ only orderly, trained, competent and skillful people to do the work and the Contractor's employees shall be fully covered under the Workplace Safety and Insurance Act by the Contractor and shall provide an up-to-date Clearance Certificate from the Workplace Safety and Insurance Board. All subcontractors must be approved in writing by the Corporation before commencing any work and the Contractor is responsible for ensuring that their employees comply with the terms of this Agreement.
2. The Contractor acknowledges and accepts all risk arising or pertaining to the ownership, possession, use or operation of its equipment in completing its services, whether in whole or in part, whether directly or indirectly, by an act or omission or negligence of the Contractor, or for those whom it is in law responsible.
3. The Contractor shall indemnify and save harmless the Corporation from any and all claims, demands, actions, losses or property damage arising directly or indirectly from the ownership, possession, use or operation of its equipment in completing its services, whether in whole or in part, whether directly or indirectly, by an act or omission or negligence of the Contractor, or for those whom it is in law responsible. Contractor shall protect and hold Corporation harmless and shall pay all costs, expenses and reasonable legal fees incurred or paid by Corporation in connection with such litigation. The indemnities contained in this Agreement shall not be prejudiced by and shall survive the termination of this Agreement.
4. Contractor shall, during any time in which it is providing services to the Corporation, take out and keep in full force and effect property damage and public liability insurance in which the limits of public liability and property liability shall not be less than two million (\$2,000,000) dollars per occurrence, the whole at the Contractor's sole cost and expense. All policies shall be written with insurance companies qualified to do business in the Province of Ontario and shall name the Corporation as an additional insured and a certificate acknowledging same must be provided to the Corporation.

5. The Contractor shall abide by and shall ensure that each of the Contractor's employees and sub-contractor's employees (if applicable) abide by the Corporation's Health and Safety rules and regulations. The Contractor will also be able and willing at such times as recommended by the Corporation to provide additional precautions as deemed necessary by the Corporation for safe-guarding employees and equipment. The Contractor further acknowledges and agrees that any violation of Safety rules or regulations is justification for the immediate termination of its Contract with the Corporation, without any further obligation on the part of the Corporation. See attached checklist.
6. The Contractor shall, at its own expense, obtain and maintain in good standing all permits and licenses required by any authorities having jurisdiction over the business of the Contractor. The Contractor shall also comply with all federal, provincial and municipal governmental laws and regulations which are applicable to its business, and in particular, those affecting health and safety, workers' compensation and environmental matters.
7. This Agreement shall be construed and enforced in accordance with the laws of the Province of Ontario and the parties agree to attorn to the jurisdiction of the Courts of that Province.
8. This Agreement embodies the entire agreement of the parties with regard to the matter herein, and no other agreement shall be deemed to exist, except as entered into in writing by both parties to this Agreement.
9. The Contractor shall not assign this Agreement or any part of it and may not employ or retain anyone as a subcontractor or otherwise, to perform any part of its obligations under this Agreement without the prior written consent of the Corporation.
10. No contracted work offers will be granted by the Corporation unless this Agreement terms and conditions are fully accepted and agreed upon by the parties to the satisfaction of the Corporation.
11. The Contractor shall abide by Ontario Regulation 364/20 s. 2 (1-6). The Contractor accepts the responsibility for ensuring that the Contractor's employees and sub-contractor's (if applicable) employees will complete a COVID-19 Screening tool at the start of each shift. Copies of the completed screening tool do not need to be provided to the Program Administrator provided the Contractor is maintaining their own records.

Accepted this _____ day of _____ 20____.

CONTRACTOR

by: _____
(authorized signing officer)

Print Name: _____

Print Title: _____

CORPORATION

by: _____

Print Name: _____

Print Title: _____



HR-HS- 10

APPENDIX A
THE CORPORATION OF THE CITY OF DRYDEN
CONTRACTOR HEALTH and SAFETY AGREEMENT CHECKLIST

Contractor Name: _____

Contractor's Rep.: _____ Phone and Fax: _____

Check as Reviewed/Received	Review	Miscellaneous Notes
	Signed "Contractor Health and Safety Responsibility Agreement".	
	Received signed copy of "HR-HS-55 Infection and Disease Control Policy – Ontario"	
	Received "Notice of Project" filed with Ministry of Labour if required.	
	Received WSIB Clearance Certificate	
	Received proof of current liability insurance coverage with no less than \$2 million per occurrence.	
	Received the name and telephone number of the person responsible for administering the Contractor's Health and Safety Program	
	Received proof of equipment certification where required; i.e., trench boxes, boom cranes, etc	
	Received proof of Qualified Workers with proof of appropriate staff training, certifications and licenses where required.	
	Reviewed a copy of the Contractor's Health and Safety Policy and work procedures.	
	Received particulars of any convictions or orders imposed under Health and Safety or Environmental Legislation.	

**This procedure is subject to any specific provisions of the Municipal Act,
or other relevant legislation or Union agreement.**

Check as Reviewed/Received	Review	Miscellaneous Notes
	Contractor provided the Corporation with a list of all biological or physical agents produced or present at the workplace, including Safety Data Sheets.	
	City of Dryden and Department Specific safety procedures provided to contractor.	
	Advised Contractor all injuries that occur on the project must be reported immediately.	
	Reviewed the area of the building or property to which the Contractor and its workers have access and fire plan (if applicable).	
	Reviewed the Contractor's obligation to maintain good housekeeping.	
	Reviewed the obligation of the Contractor to meet with affected utilities in the work zone to ensure all safety precautions are taken when working in the vicinity of these utilities (where applicable).	
	Emergency Contact Numbers and after hours list exchanged including contractor, corporation, emergency services, and environmental numbers.	
	The contractor shall ensure all safety policies of the contractor have been communicated to all contractor employees and subcontractors.	
	The contractor shall ensure all safety policies of the Corporation have communicated to all contractor employees and subcontractors	
	The contractor shall ensure all work is performed in accordance with governing legislation/regulation and industry standards.	
	The contractor shall be responsible for the safety and training of every person granted access to the	

**This procedure is subject to any specific provisions of the Municipal Act,
or other relevant legislation or Union agreement.**

Check as Reviewed/Received	Review	Miscellaneous Notes
	worksite including visitors and delivery personnel.	
	Received a copy of the Contractor's COVID-19 Screening Tool. The contractor shall ensure that the COVID-19 Screening Tool is completed at the start of each day, for the duration of the project.	
	Received a signed "Contractor Health and Safety Agreement Checklist".	

City of Dryden's Project Administrator Initials: _____ Date: _____

Contractor's Rep Initials: _____

Filing information:

cc. Health and Safety Coordinator
Health and Safety Committee(s)
Department Manager(s)
Corporation Project Administrator(s)

APPENDIX 2

CITY OF DRYDEN PROCEDURE NO. HR-HS- 10 CONTRACTOR HEALTH AND SAFETY AGREEMENT

**Appendix A****CORPORATION OF THE CITY OF DRYDEN
CONTRACTOR HEALTH and SAFETY RESPONSIBILITY AGREEMENT**

THIS AGREEMENT made the _____ day of _____, 20____, between _____ (the "Contractor"), having an office at _____ and THE CITY OF DRYDEN (the "Corporation").

IN CONSIDERATION of the sum of two (\$2.00) dollars paid by each of the parties to the other (the receipt of which is acknowledged by each party) the parties covenant and agree as follows:

1. The Contractor shall employ only orderly, trained, competent and skillful people to do the work and the Contractor's employees shall be fully covered under the Workplace Safety and Insurance Act by the Contractor and shall provide an up-to-date Clearance Certificate from the Workplace Safety and Insurance Board. All subcontractors must be approved in writing by the Corporation before commencing any work and the Contractor is responsible for ensuring that their employees comply with the terms of this Agreement.
2. The Contractor acknowledges and accepts all risk arising or pertaining to the ownership, possession, use or operation of its equipment in completing its services, whether in whole or in part, whether directly or indirectly, by an act or omission or negligence of the Contractor, or for those whom it is in law responsible.
3. The Contractor shall indemnify and save harmless the Corporation from any and all claims, demands, actions, losses or property damage arising directly or indirectly from the ownership, possession, use or operation of its equipment in completing its services, whether in whole or in part, whether directly or indirectly, by an act or omission or negligence of the Contractor, or for those whom it is in law responsible. Contractor shall protect and hold Corporation harmless and shall pay all costs, expenses and reasonable legal fees incurred or paid by Corporation in connection with such litigation. The indemnities contained in this Agreement shall not be prejudiced by and shall survive the termination of this Agreement.
4. Contractor shall, during any time in which it is providing services to the Corporation, take out and keep in full force and effect property damage and public liability insurance in which the limits of public liability and property liability shall not be less than two million (\$2,000,000) dollars per occurrence, the whole at the Contractor's sole cost and expense. All policies shall be written with insurance companies qualified to do business in the Province of Ontario and shall name the Corporation as an additional insured and a certificate acknowledging same must be provided to the Corporation.

5. The Contractor shall abide by and shall ensure that each of the Contractor's employees and sub-contractor's employees (if applicable) abide by the Corporation's Health and Safety rules and regulations. The Contractor will also be able and willing at such times as recommended by the Corporation to provide additional precautions as deemed necessary by the Corporation for safe-guarding employees and equipment. The Contractor further acknowledges and agrees that any violation of Safety rules or regulations is justification for the immediate termination of its Contract with the Corporation, without any further obligation on the part of the Corporation. See attached checklist.
6. The Contractor shall, at its own expense, obtain and maintain in good standing all permits and licenses required by any authorities having jurisdiction over the business of the Contractor. The Contractor shall also comply with all federal, provincial and municipal governmental laws and regulations which are applicable to its business, and in particular, those affecting health and safety, workers' compensation and environmental matters.
7. This Agreement shall be construed and enforced in accordance with the laws of the Province of Ontario and the parties agree to attorn to the jurisdiction of the Courts of that Province.
8. This Agreement embodies the entire agreement of the parties with regard to the matter herein, and no other agreement shall be deemed to exist, except as entered into in writing by both parties to this Agreement.
9. The Contractor shall not assign this Agreement or any part of it and may not employ or retain anyone as a subcontractor or otherwise, to perform any part of its obligations under this Agreement without the prior written consent of the Corporation.
10. No contracted work offers will be granted by the Corporation unless this Agreement terms and conditions are fully accepted and agreed upon by the parties to the satisfaction of the Corporation.
11. The Contractor shall abide by Ontario Regulation 364/20 s. 2 (1-6). The Contractor accepts the responsibility for ensuring that the Contractor's employees and sub-contractor's (if applicable) employees will complete a COVID-19 Screening tool at the start of each shift. Copies of the completed screening tool do not need to be provided to the Program Administrator provided the Contractor is maintaining their own records.

Accepted this _____ day of _____ 20____.

CONTRACTOR

by: _____
(authorized signing officer)

Print Name: _____

Print Title: _____

CORPORATION

by: _____

Print Name: _____

Print Title: _____

APPENDIX 2

CITY OF DRYDEN PROCEDURE NO. HR-HS- 10 CONTRACTOR HEALTH AND SAFETY CHECKLIST



HR-HS- 10

APPENDIX A
THE CORPORATION OF THE CITY OF DRYDEN
CONTRACTOR HEALTH and SAFETY AGREEMENT CHECKLIST

Contractor Name: _____

Contractor's Rep.: _____ Phone and Fax: _____

Check as Reviewed/Received	Review	Miscellaneous Notes
	Signed "Contractor Health and Safety Responsibility Agreement".	
	Received signed copy of "HR-HS-55 Infection and Disease Control Policy – Ontario"	
	Received "Notice of Project" filed with Ministry of Labour if required.	
	Received WSIB Clearance Certificate	
	Received proof of current liability insurance coverage with no less than \$2 million per occurrence.	
	Received the name and telephone number of the person responsible for administering the Contractor's Health and Safety Program	
	Received proof of equipment certification where required; i.e., trench boxes, boom cranes, etc	
	Received proof of Qualified Workers with proof of appropriate staff training, certifications and licenses where required.	
	Reviewed a copy of the Contractor's Health and Safety Policy and work procedures.	
	Received particulars of any convictions or orders imposed under Health and Safety or Environmental Legislation.	

**This procedure is subject to any specific provisions of the Municipal Act,
or other relevant legislation or Union agreement.**

Check as Reviewed/Received	Review	Miscellaneous Notes
	Contractor provided the Corporation with a list of all biological or physical agents produced or present at the workplace, including Safety Data Sheets.	
	City of Dryden and Department Specific safety procedures provided to contractor.	
	Advised Contractor all injuries that occur on the project must be reported immediately.	
	Reviewed the area of the building or property to which the Contractor and its workers have access and fire plan (if applicable).	
	Reviewed the Contractor's obligation to maintain good housekeeping.	
	Reviewed the obligation of the Contractor to meet with affected utilities in the work zone to ensure all safety precautions are taken when working in the vicinity of these utilities (where applicable).	
	Emergency Contact Numbers and after hours list exchanged including contractor, corporation, emergency services, and environmental numbers.	
	The contractor shall ensure all safety policies of the contractor have been communicated to all contractor employees and subcontractors.	
	The contractor shall ensure all safety policies of the Corporation have communicated to all contractor employees and subcontractors	
	The contractor shall ensure all work is performed in accordance with governing legislation/regulation and industry standards.	
	The contractor shall be responsible for the safety and training of every person granted access to the	

**This procedure is subject to any specific provisions of the Municipal Act,
or other relevant legislation or Union agreement.**

Check as Reviewed/Received	Review	Miscellaneous Notes
	worksite including visitors and delivery personnel.	
	Received a copy of the Contractor's COVID-19 Screening Tool. The contractor shall ensure that the COVID-19 Screening Tool is completed at the start of each day, for the duration of the project.	
	Received a signed "Contractor Health and Safety Agreement Checklist".	

City of Dryden's Project Administrator Initials: _____ Date: _____

Contractor's Rep Initials: _____

Filing information:

- cc. Health and Safety Coordinator
- Health and Safety Committee(s)
- Department Manager(s)
- Corporation Project Administrator(s)

APPENDIX 3
CITY OF DRYDEN NOISE BY-LAW

Chapter 132 – Noise

Article I – Engine Compression, Exhaust and Brakes

132-1. Definitions.

As used in this article, the following terms shall have the meanings indicated:

ENGINE COMPRESSION EXHAUST STYLE BRAKE – A system by which vehicle braking is achieved by using the engine compression stroke to slow the vehicle drive wheels and is accomplished by opening an exhaust valve at or near the end of the compression stroke thereby turning the power-producing engine into a power-absorbing air compressor.

132-2. Use of engine compression exhaust style brakes restricted.

No person shall at any time apply an engine compression exhaust style brake on any highway under the jurisdiction of the Corporation of the City of Dryden where driving a vehicle at a greater rate of speed than 70 kilometres per hour is prohibited.

132-3. Offences.

Any person who contravenes any provision of this article is guilty of an offence and, upon conviction, is liable to a penalty as provided in the Provincial Offences Act.

Article II – Noise Reductions

132-4. Interpretation.

A. For the purpose of this By-law, the following terms shall have the meanings indicated:

CONSTRUCTION – Includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, moving, land clearing, earth moving, grading, excavating, the laying of pipe and conduit whether above or below ground level, street and highway building, concreting, equipment installation and alteration and the structural installation of construction components and materials in any form or for any purpose, and includes any work in connection therewith.

CONSTRUCTION EQUIPMENT – Any equipment or device designed and intended for use in construction or material handling, including but not limited to air compressors, pile drivers, pneumatic or hydraulic tools, chainsaws, bulldozers, tractors, excavators, trenchers, cranes, derricks, loaders, scrapers, pavers, generators, off-highway haulers

or trucks, ditchers, compactors and rollers, pumps, concrete mixers, graders or other material handling equipment.

CONVEYANCE – Includes a vehicle and any other device employed to transport a person or persons or goods from place to place but does not include any such device or vehicle if operated only within the premises of a person.

COUNCIL – The Council of the Corporation of the City of Dryden;

HIGHWAY – Includes a common and public highway, street, avenue, parkway, driveway, square, place, bridge, viaduct or trestle designed and intended for, or used by, the general public for the passage of vehicles.

MOTORIZED CONVEYANCE – A conveyance propelled or driven otherwise than by muscular, gravitational or wind power.

MOTOR VEHICLE – Includes an automobile, motorcycle and any other vehicle propelled or driven otherwise than by muscular power; but does not include the cars of electric or steam railways, or other motor vehicles running only upon rails, or a motorized snow vehicle, traction engine, farm tractor, self-propelled implement of husbandry or road-building machine within the meaning of the Highway Traffic Act.

MUNICIPALITY – The land within the geographic limits of the City of Dryden.

NOISE – Unwanted sound.

POINT OF RECEPTION – Any point on the premises of a person where sound or vibration originating from other than those premises is received.

RESIDENTIAL AREA – Those areas of the municipality designated as a residential zone as shown in the schedules of the City of Dryden Comprehensive Zoning By-law, and any amendments thereto; or, any by-law enacted in substitution, therefore.

132-5. General prohibitions.

No person shall emit or cause or permit the emission of sound resulting from an act listed herein, and which sound is clearly audible at a point of reception:

- A. Racing of any motorized conveyance other than in a racing event regulated by law.
- B. The operation of a motor vehicle in such a way that the tires squeal.
- C. The operation of any combustion engine or pneumatic device without an effective exhaust or intake muffling device in good working order and in constant operation.
- D. The operation of a vehicle or a vehicle with a trailer resulting in banging, clanking, squealing or other like sounds due to improperly secured load or equipment or inadequate maintenance.

- E. The operation of an engine or motor in, or on, any motor vehicle or item of attached auxiliary equipment for a continuous period exceeding five minutes while such vehicle is stationary in a residential area unless:
 - (1) The original equipment manufacturer specifically recommends a longer idling period for normal and efficient operation of the motor vehicle, in which case such recommended period shall not be exceeded; or
 - (2) Operation of such engine or motor is essential to a basic function of the vehicle or equipment, including but not limited to operation of ready-mixed concrete trucks, lift platforms and refuse compactors; or
 - (3) Weather conditions justify the use of heating or refrigerating systems powered by the motor or engine for the safety and welfare of the operator, passengers or animals, or the preservation of perishable cargo, and the vehicle is stationary for purposes of delivery or loading; or
 - (4) Prevailing low temperatures make longer idling periods necessary immediately after starting the motor or engine and limiting the idling period to one hour; or
 - (5) The idling is for the purpose of cleaning and flushing the radiator and associated circulation system for seasonal change of antifreeze, cleaning of the fuel system, carburetor or the like, when such work is performed other than for profit.
- F. The operation of a motor vehicle horn or other warning device except where required or authorized by law or in accordance with good safety practices.
- G. Operation of any item of construction equipment in a residential area without effective muffling devices in good working order and in constant operation.
- H. The operation of or amplification of sound by electronic means from a motor vehicle.

132-6. Prohibitions by time and place.

No person shall emit or cause or permit the emission of sound resulting from any act listed in the table attached hereto as Schedule A if clearly audible at a point of reception located in a residential area of the municipality within a prohibited time shown.

132-7. Exemptions.

- A. Public safety. Notwithstanding any other provision of this By-law, it shall be lawful to emit or cause or permit the emission of sound or vibration in connection with emergency measures undertaken:

- (1) For the immediate health, safety or welfare of the inhabitants or any of them; or
- (2) For the preservation or restoration of property*.

NOTE:

* Unless such sound or vibration is clearly of a longer duration or nature, more disturbing than is reasonably necessary for the accomplishment of such emergency purpose.

132-8. Grant of exemption by Council.

- A. Application to Council. Notwithstanding anything contained in this By-law, any person may make application in writing to Council to be granted an exemption from any of the provisions of this By-law with respect to any source of sound or vibration for which the applicant might be prosecuted, and Council may refuse to grant any exemption or, by resolution, may grant the exemption applied for or any exemption of lesser effect, and any exemption granted shall specify the time period, not in excess of six months, during which it is effective and may contain such terms and conditions as Council sees fit.
- B. Decision. In deciding whether to grant the exemption, Council shall give the applicant and any person opposed to the application an opportunity to be heard and may consider such other matters as it sees fit.
- C. Breach. Breach by the applicant of any of the terms or conditions of any exemption granted by Council shall render the exemption null and void.

132-9. Exemption of traditional, festive or religious activities.

Notwithstanding any other provision of this By-law, this By-law does not apply to a person who emits or causes or permits the emission of sound or vibration in connection with any of the following listed traditional, festive and religious activities:

- A. Ringing of church bells.
- B. A fireworks display set off pursuant to the provisions of the current by-law and all amendments thereto.
- C. A parade for which a permit has been issued under the provisions of the current by-law and all amendments thereto.
- D. An event held in conjunction with any civic function (Annual Fall Fair, Canada Day Festivities, Pow Wows, etc.).

132-10. Severability.

If a court of competent jurisdiction should declare any section or part of a section of this By-law to be invalid, such section or part of a section shall not be construed as having persuaded or influenced Council to pass the remainder of the By-law, and it is hereby declared that the remainder of the By-law shall be valid and shall remain in force.

132-11. Offences.

Every person who contravenes any of the provisions of this By-law is guilty of an offence and, on conviction, is liable to a fine as provided in the Provincial Offences Act.

132-12. Repealer.

By-law No. 1854-88 of the former Corporation of the Town of Dryden and By-law No. 2652-99 and any amendments thereto are hereby rescinded.

Schedule A

Prohibited Period of Time	Residential Area
At all times	<p>The operation of a combustion engine which:</p> <ul style="list-style-type: none"> (a) is, or (b) is used in, or (c) is intended for use in a toy or a model or replica of any device, which model or replica has no function other than amusement and which is not a conveyance. <p>Persistent barking, calling or whining or other similar persistent noise making by any domestic pet or any other animal kept or used for any purpose other than agriculture.</p>
7:00 p.m. one day to 7:00 a.m. next day	<p>The operation of any auditory signaling device, including but not limited to the ringing of bells or gongs and the blowing of horns or sirens or whistles, or the production, reproduction or amplification of any similar sounds by electronic means except where required or authorized by law or in accordance with good safety practices. The operation of a power-assisted hang glider or parafoil. All selling or advertising by shouting or outcry or amplified sound. Loading, unloading, delivering, packing, unpacking or otherwise handling any containers, products, materials or refuse whatsoever, unless necessary for the maintenance of essential services or the moving of private household effects. The operation of any equipment in connection with construction. The operation of any electronic device or group of connected electronic devices incorporating one or more loudspeakers or other electro-mechanical transducers and intended for the production, reproduction or amplification of sound. The operation of any powered rail car, including but not limited to refrigeration cars, locomotives or self-propelled passenger cars, while stationary on property not owned or controlled by a railway governed by the Canada Railway Act.</p> <p>The operation of any motorized conveyance other than on a highway or other place intended for its operation. The operation of solid waste bulk lifts or refuse compacting equipment.</p>
9:00 p.m. one day to 7:00 a.m. next day	The operation or use of any tool for domestic purposes other than snow removal.
11:00 p.m. one day to 7:00 a.m. next day	The venting, release or pressure relief of air, steam or other gaseous material, product or compound from any autoclave, boiler, pressure vessel, pipe, valve, machine, device or system. Yelling, shouting, hooting, whistling or singing.

APPENDIX 4

CATHODIC PROTECTION OF WATER DISTRIBUTION PIPING

8.0 CATHODIC PROTECTION OF WATER DISTRIBUTION PIPING

8.1 DESIGN SPECIFICATIONS

The following shall be used as the minimum standard for the design of cathodic protection systems for use in preventing external corrosion of metallic watermains, metallic fittings, hydrants, and service connections.

Use of materials and procedures other than those specified shall not be permitted unless they are proven to be equivalent or superior. Such substitutions require the prior approval of the Contract Administrator.

Criteria for protection shall be as per the National Association of Corrosion Engineers (NACE), standard RP0169-92.

The Standard Drawings are an integral part of this specification. Should there be a discrepancy between this specification and the Standard Drawings, then the specifications shall be taken as correct.

8.1.1 New Ductile Iron Watermains

All new ductile watermains shall be cathodically protected with sacrificial anodes designed for a minimum life of 20 years.

**8.1.1.1 Zinc Anode Requirements
(soil resistivities less than 2000 ohm-cm)**

Where soil resistivities are less than 2000 ohm-cm packaged zinc anodes shall be used on all metallic fittings, hydrants and metallic service connections.

a) Piping

Packaged 10.9 Kg (24 lb.) zinc anodes shall be installed on all new ductile iron watermains. Anode spacing shall be determined according to pipe diameter as follows:

**8.1.1.1 Zinc Anode Requirements Cont'd
(soil resistivities less than 2000 ohm-cm)**

Zinc Anodes (Soil Resistivity <2000 ohm-cm)

<u>Pipe Diameter (mm)</u>	<u>Anode Spacing (m)</u>
100	12
150	8
200	6
250	5
300	4
400	3
600	2

b) Valves & Fittings

One (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on each metallic fitting. Multiple fittings (up to 4 maximum) can be protected by a single anode if they are all located within 3.0m of each other. Valves and fittings that are manufactured with a coating that protects against corrosion do not require an anode.

c) Hydrants

At least one (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on each hydrant lateral. Additional anodes shall be installed to maintain the anode spacing requirements in 8.1.1.1.a.

d) Copper Services

One (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on the first 6.0m of every water service. Copper water services longer than 6.0 m in length shall receive one (1) additional anode for each 6.0 m of additional length or fraction thereof.

When replacing a watermain, one (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on all exposed copper services.

**8.1.1.2 Magnesium Anode Requirements
(soil resistivities greater than 2000 ohm-cm)**

Where soil resistivities are greater than 2000 ohm-cm packaged magnesium anodes shall be used on all metallic fittings, hydrants and metallic service connections.

a) Piping

Packaged 14.5 Kg (32 lb.) magnesium anodes shall be installed on all new ductile iron watermains. Anode spacing shall be determined according to pipe diameter as follows:

Magnesium Anodes (Soils>2000 ohm-cm)

<u>Pipe Diameter (mm)</u>	<u>Anode Spacing (m)</u>
100	23.0
150	15.0
200	11.0
250	9.0
300	8.0
350	7.0
400	6.0
600	5.0

b) Valves & Fittings

One (1) packaged 14.5 Kg (32 lb.) magnesium anode shall be installed on each metallic fitting. Multiple fittings (up to 4 maximum) can be protected by a single anode if they are all located within 3.0m of each other. Valves and fittings that are manufactured with a coating that protects against corrosion do not require an anode.

c) Hydrants

At least one (1) packaged 14.5 Kg (32 lb.) magnesium anode shall be installed on each hydrant. Additional anodes shall be installed to maintain anode spacing requirements in 8.1.1.2.a.

d) Copper Services

One (1) packaged 14.5 Kg (32 lb.) magnesium anode shall be installed on the first 6.0m of every water service. Copper water services longer than 20 m in length shall receive one (1) additional anode for each 6.0 m of additional length or fraction thereof.

8.1.1.2 Magnesium Anode Requirements Cont'd
(soil resistivities greater than 2000 ohm-cm)

When replacing a watermain, one (1) packaged 14.5 Kg (32 lb.) magnesium anode shall be installed on all exposed copper services.

8.1.1.3 Test Stations

- a) Test stations shall be installed for the purpose of monitoring the effectiveness of the cathodic protection.
- b) Test station type may be either flush-mount or post-mount, as specified by the Contract Administrator. Typically, test stations shall be of the post-mount type in residential areas and flush-mount in downtown areas.
- c) Test stations shall be located within 30 metres of each end of the watermain, and at maximum intervals of 300 meters along the watermain route, with no less than one test station per subdivision block.
- d) Test stations shall be located along the hydrant line, at a distance of 2.0 metres from the hydrant.
- e) Post-mount test stations shall be installed where they will not interfere with and/or be a hazard to pedestrian or vehicular traffic.
- f) Test stations shall not be located in asphalt or driveways.

8.1.2 New PVC Watermains

All metallic structures associated with new PVC watermains shall be cathodically protected using packaged zinc anodes.

8.1.2.1 Valves & Fittings

One (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on each metallic fitting. Multiple fittings (up to 4 maximum) can be protected by a single anode if they are all located within 3.0m of each other. Valves and fittings that are manufactured with a coating that protects against corrosion do not require an anode.

8.1.2.2 Hydrants

At least one (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on each hydrant lateral. Additional anodes shall be installed to maintain the anode spacing requirements in 8.1.1.1.a.

8.1.2.3 Copper Services

- a) One (1) prepackaged 10.9 Kg (24 lb.) zinc anode shall be installed on the first 6.0m of every water service.
- b) Copper water services longer than 6.0 m in length shall receive one (1) additional anode for each 6.0 m of additional length or fraction thereof.
- c) When replacing a watermain, one (1) packaged 10.9 Kg (24 lb.) zinc anode shall be installed on all exposed copper services

8.1.3 Existing Watermains

Whenever an existing metallic structure associated with the watermain system is being serviced, repaired or replaced, cathodic protection must be employed.

8.1.3.1 Ductile and Grey Cast Iron Watermains

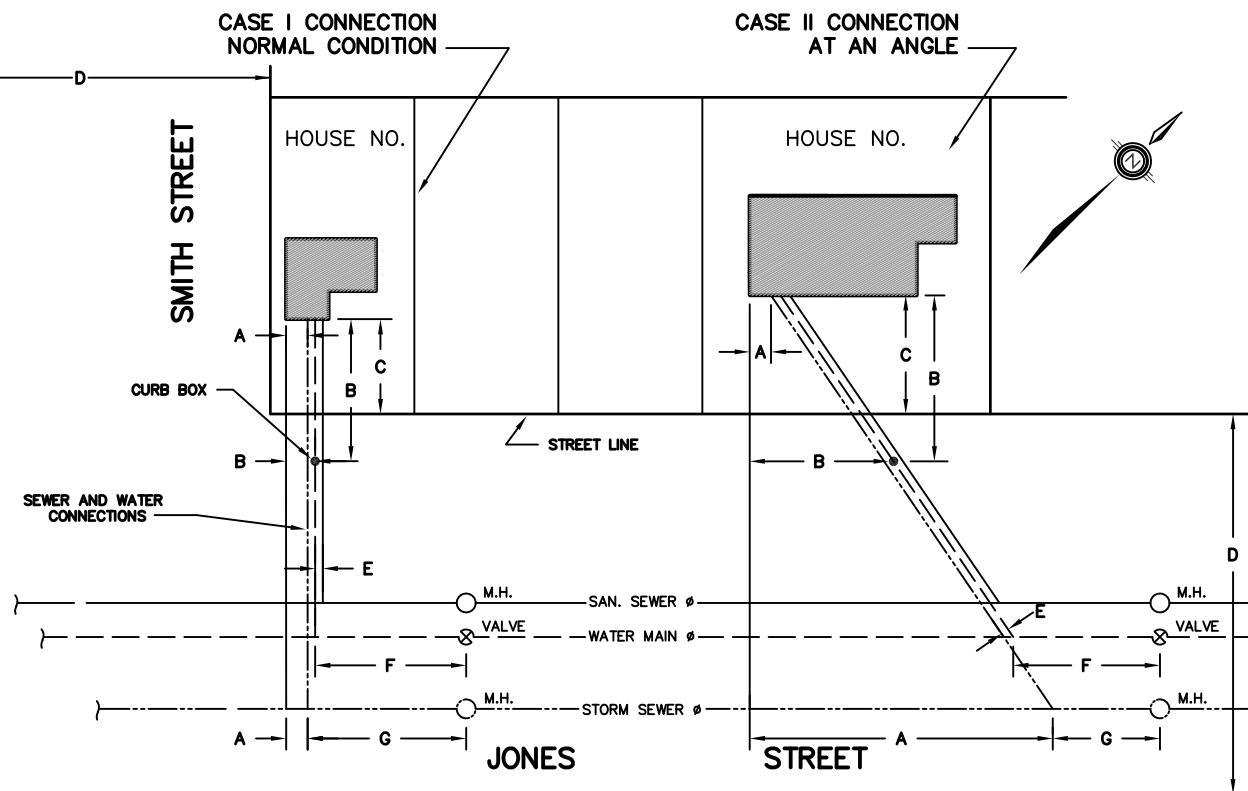
- a) One (1) packaged 14.5 Kg (32 lb.) magnesium anode shall be installed at any excavation on existing ductile and cast iron piping systems, including repair/replacement sites of mains, services, valves, and hydrants, and at crossings with new pipes. Additional anodes shall be installed if the exposed section of pipe exceeds the anode spacing requirements specified in 8.1.1.2.a.
- b) All exposed sections of metallic pipe and couplings must be bonded.

8.1.3.2 PVC Watermains

- a) Packaged zinc anodes shall be installed at all excavations of previously unprotected metallic components of PVC watermains, according to the requirements of 8.1.2

APPENDIX 5
ENGINEERING STANDARDS DRAWINGS

INFORMATION REQUIRED ON DRAWING



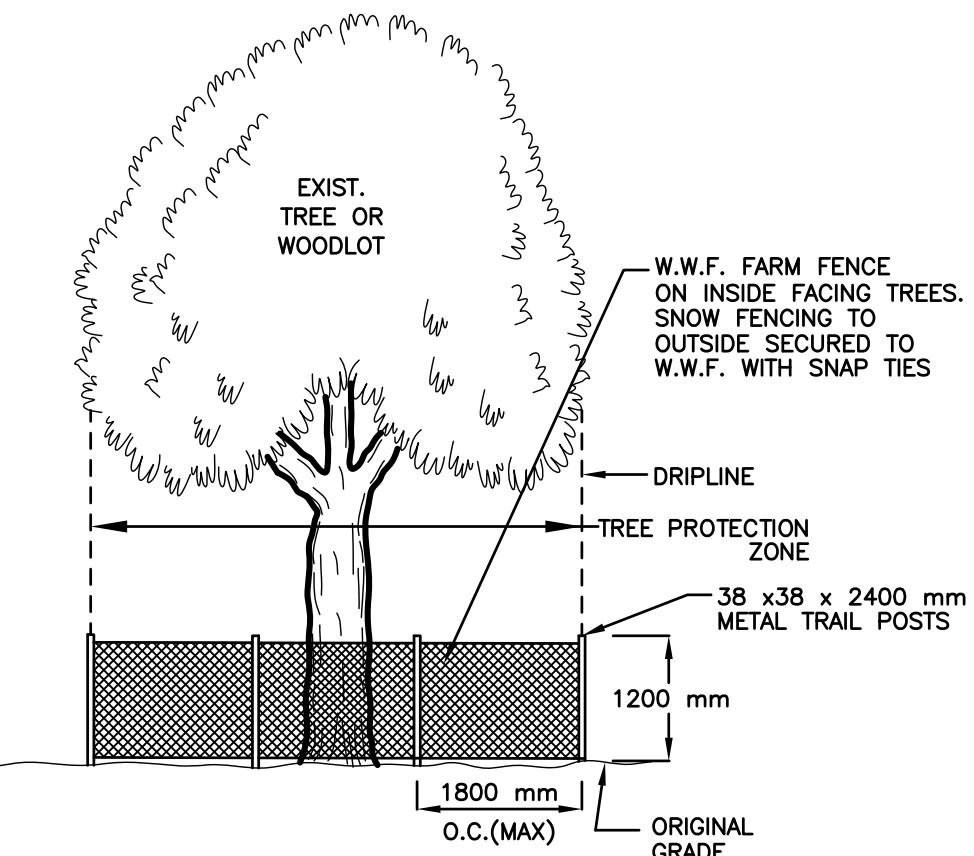
DIMENSIONS REQUIRED (ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED)

- (A) DISTANCE FROM CORNER OF BUILDING TO POINT WHERE CONNECTION ENTERS BUILDING AND FROM CORNER OF BUILDING TO POINT WHERE CONNECTION ENTERS MAIN.
- (B) DISTANCE FROM CORNER OF BUILDING TO CURB BOX.
- (C) DISTANCE TO BUILDING SET BACK FROM STREET LINE.
- (D) STREET ALLOWANCE.
- (E) DISTANCE BETWEEN CONNECTION PIPES.
- (F) DISTANCE FROM WATER VALVES.
- (G) DISTANCE FROM MANHOLES.

SCALE OF DRAWING TO BE NO LESS THAN 1:500

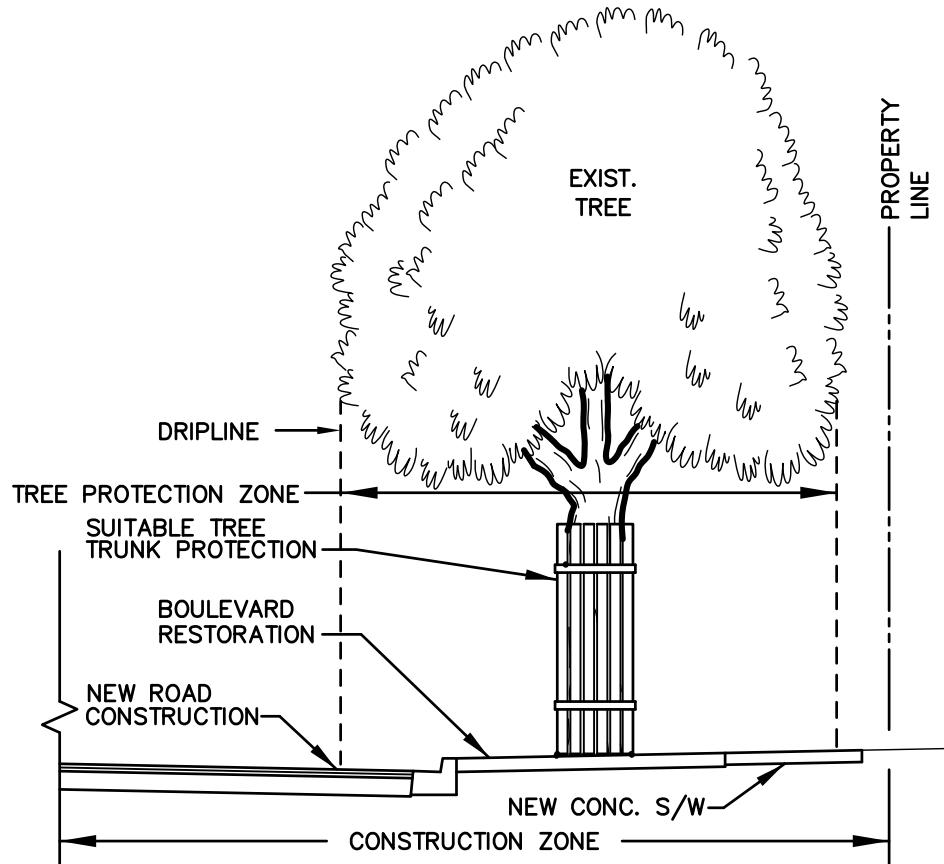
SIZE OF DRAWING TO BE 215 mm X 280 mm.

		ENGINEERING STANDARDS	
TITLE			
INFORMATION REQUIRED ON ALL SEWER AND WATER CONNECTIONS			
DWG. NO. W.T.H./S.K.H.	DATE JAN. 1973	 MANAGER, ENGINEERING DIVISION	
REVISED: JAN. 2020		SCALE N. T. S.	
Z:\ENG\Standard Drawings\Std_Dwgs\M-101.dwg			
M-101			



TREE PROTECTION FENCING

-REQUIRED FOR ALL TREES.



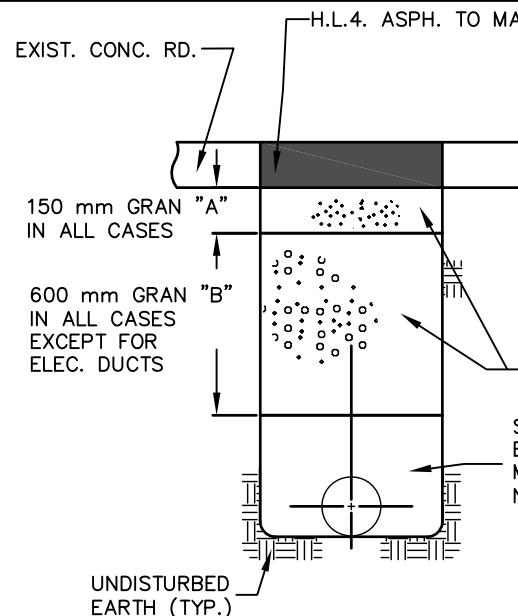
TREE TRUNK PROTECTION

- ALTERNATE PROTECTION METHOD WHEN WORK INSIDE DRIP LINE IS REQUIRED.
REQUIRES CITY FORESTER APPROVAL.

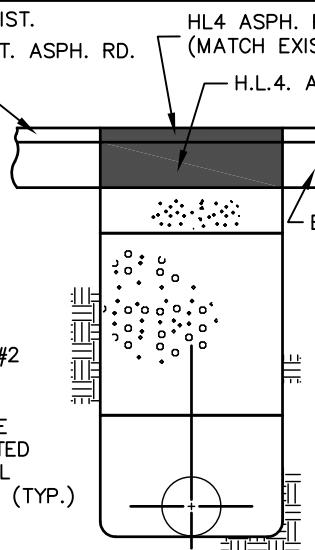
NOTE: THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING THE FOLLOWING SPECIFICATIONS IN ORDER TO ENSURE PROTECTION OF EXISTING TREES WITHIN OR ADJACENT TO THE CONSTRUCTION ZONE.

1. THE TREE PROTECTION ZONE IS DEFINED AS AN AREA ON THE GROUND CORRESPONDING TO THE 'DRIP LINE' OF THE TREE OR MINIMUM RADIUS OF 3.0 METRES, WHICHEVER IS LARGER.
2. FINAL LAYOUT OF TREE PROTECTION FENCING TO BE FIELD VERIFIED WITH CITY FORESTER PRIOR TO CONSTRUCTION.
3. WHERE APPROVED, TREE TRUNK PROTECTION SHALL CONSIST OF STRAPPING OR A DOUBLE WRAP OF WOOD SLAT SNOW FENCING, POLYETHYLENE DRUMS OR OTHER SUITABLE WOOD PLANKS STRAPPED TO THE TREE TRUNK TO COMPLETELY PROTECT THE TREE TRUNK FROM IMPACT DAMAGE. THE MINIMUM SIZE OF STRAPPING WILL BE 25 X 150 X 2400 mm.
4. FOR STANDARD TREE PROTECTION NOTES SEE SECTION 3 OF PARKS DIVISION STANDARDS & SPECIFICATIONS.

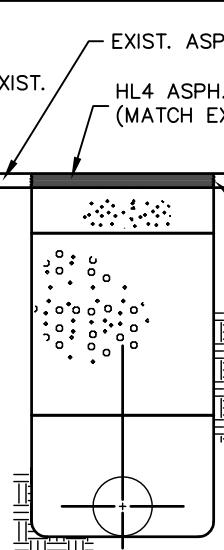
CITY OF Thunder Bay <i>Superior by Nature</i>		ENGINEERING STANDARDS	
		TITLE	
TREE PROTECTION BARRIERS			
DWN.	DATE	FEB./02	
M.D.		<i>J. Mauro</i>	
REVISED: JAN. 2014		MANAGER, ENGINEERING DIVISION	
SCALE	N. T. S.		
DWG. NO.			
Z:\ENG\STANDARD DRAWINGS\STD DWGS\M-104-4			
M-104-4			



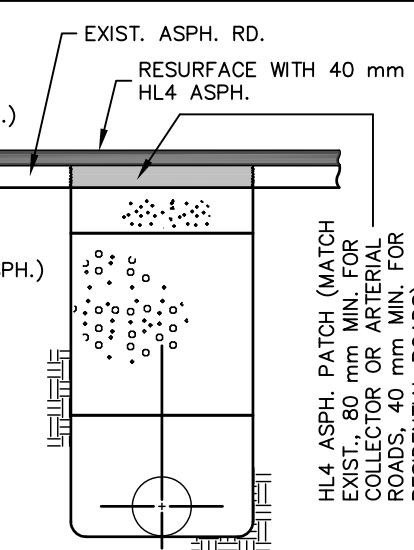
PATCH FOR CONCRETE ROADWAY



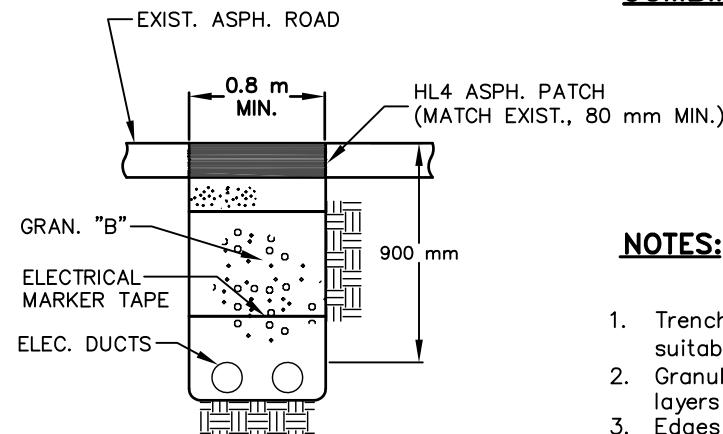
PATCH FOR ASPHALT AND CONCRETE COMBINATION ROADWAY



PATCH FOR ASPHALT ROADWAY



PATCH FOR ASPHALT ROADWAY THAT IS TO BE RESURFACED



PATCH IN ASPHALT ROADWAY OVER TRENCH RESTORATION REQUIRED FOR ELECTRICAL DUCT INSTALLATION

NOTES:

1. Trenches are to be backfilled with compacted, suitable excavated material, up to the granular "B".
2. Granular "A" and "B" to be placed in 150 mm layers and compacted to 100% density.
3. Edges of old asphalt to be mopped with hot liquid asphalt.
4. Where specified by the Engineer, non-shrink backfill shall be used in lieu of excavated and granular materials.

ALL DIMENSIONS ARE IN MILLIMETERS OR METERS



ENGINEERING
STANDARDS

TITLE

PATCHING FOR ROADWAY CUTS

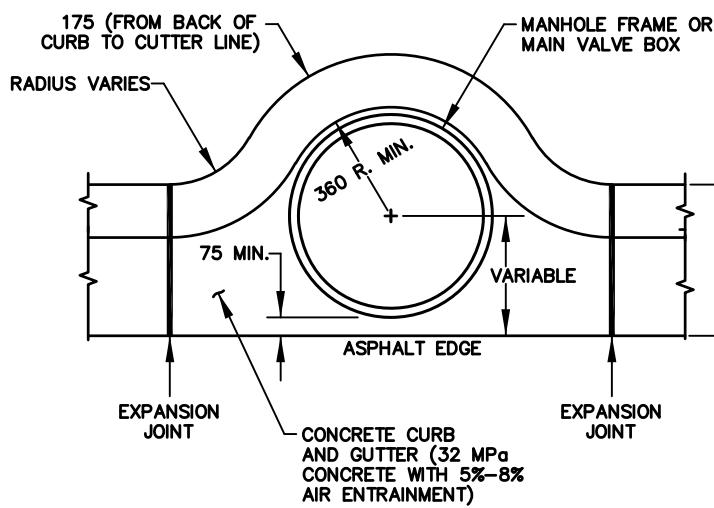
DWN. R.V.G./S.K.H. DATE AUG. 83

REVISED: JAN. 2018

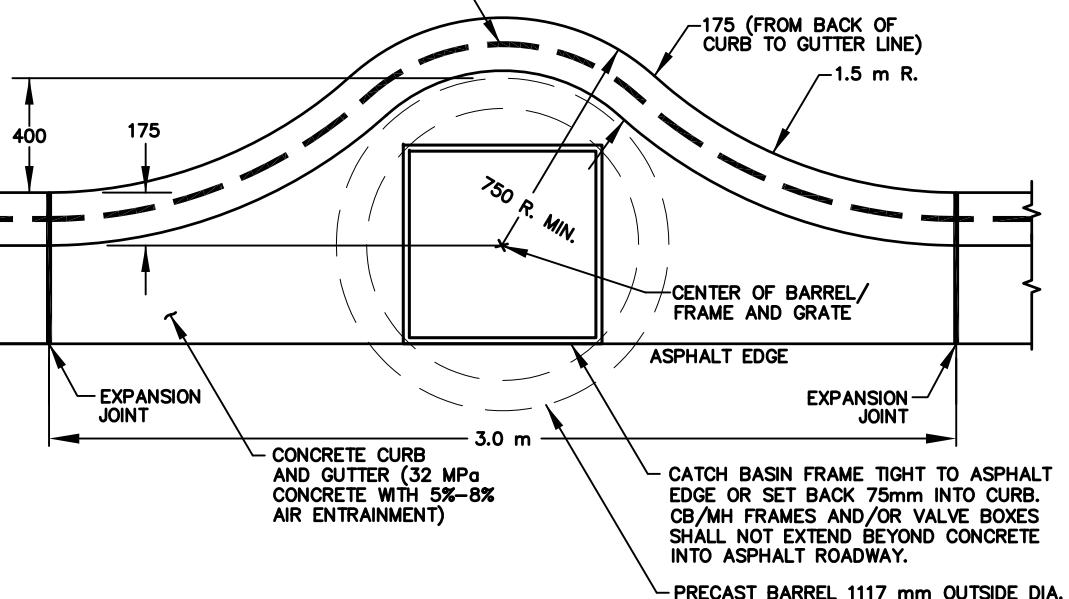
SCALE N. T. S.

Z: \ENG\STANDARD DRAWINGS\STD DWGS\R-108

Ryan Dip
CITY ENGINEER
DWG. NO. R-108



CATCH BASIN ONLY
2 - 15 M BARS - 6 m LONG PLACED AS SHOWN CENTERED ON FIXTURE AND BENT IN FIELD. ALSO SEE STANDARD DRAWINGS S-107 AND S-108.



TYPICAL CONSTRUCTION OF CURB AND GUTTER AROUND A MANHOLE FRAME OR MAIN VALVE BOX

NOTES:

- ALSO SEE STANDARD DRAWING R-109-1

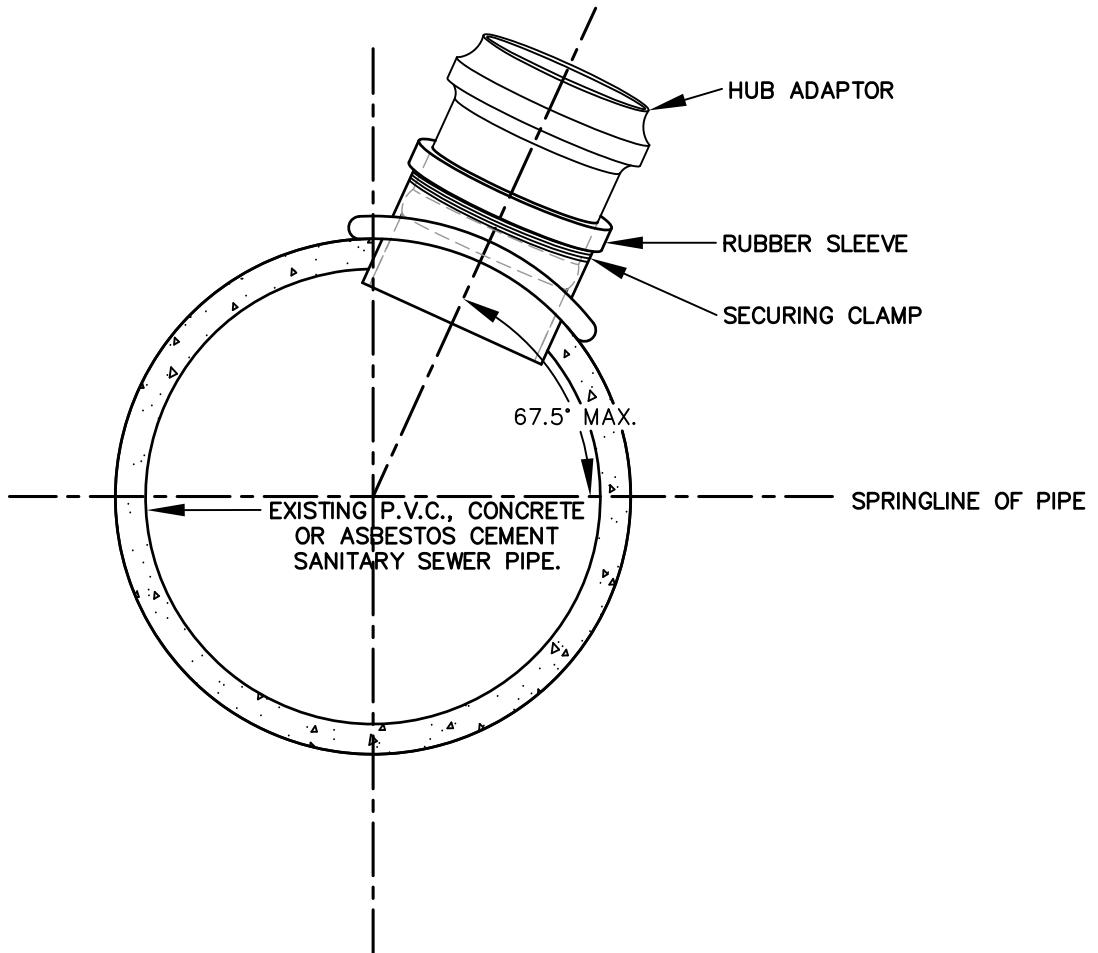
TYPICAL CONSTRUCTION OF CURB AND GUTTER AROUND A CATCH BASIN

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

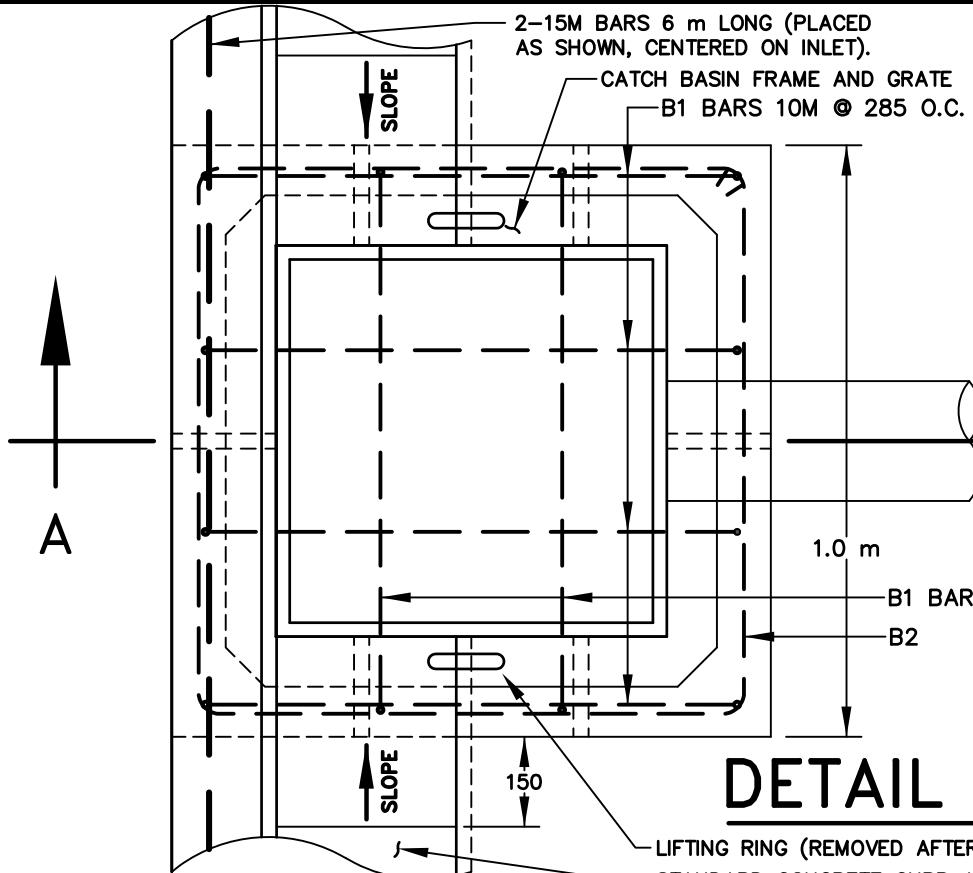
		ENGINEERING STANDARDS	
DW. S.G.	DATE	OCT. /73	
REVISED:		JAN. 2020	
SCALE		N. T. S.	
Z:\ENG\STANDARD DRAWINGS\STD DWGS\R-115			
DWG. NO.		R-115	

NOTES:

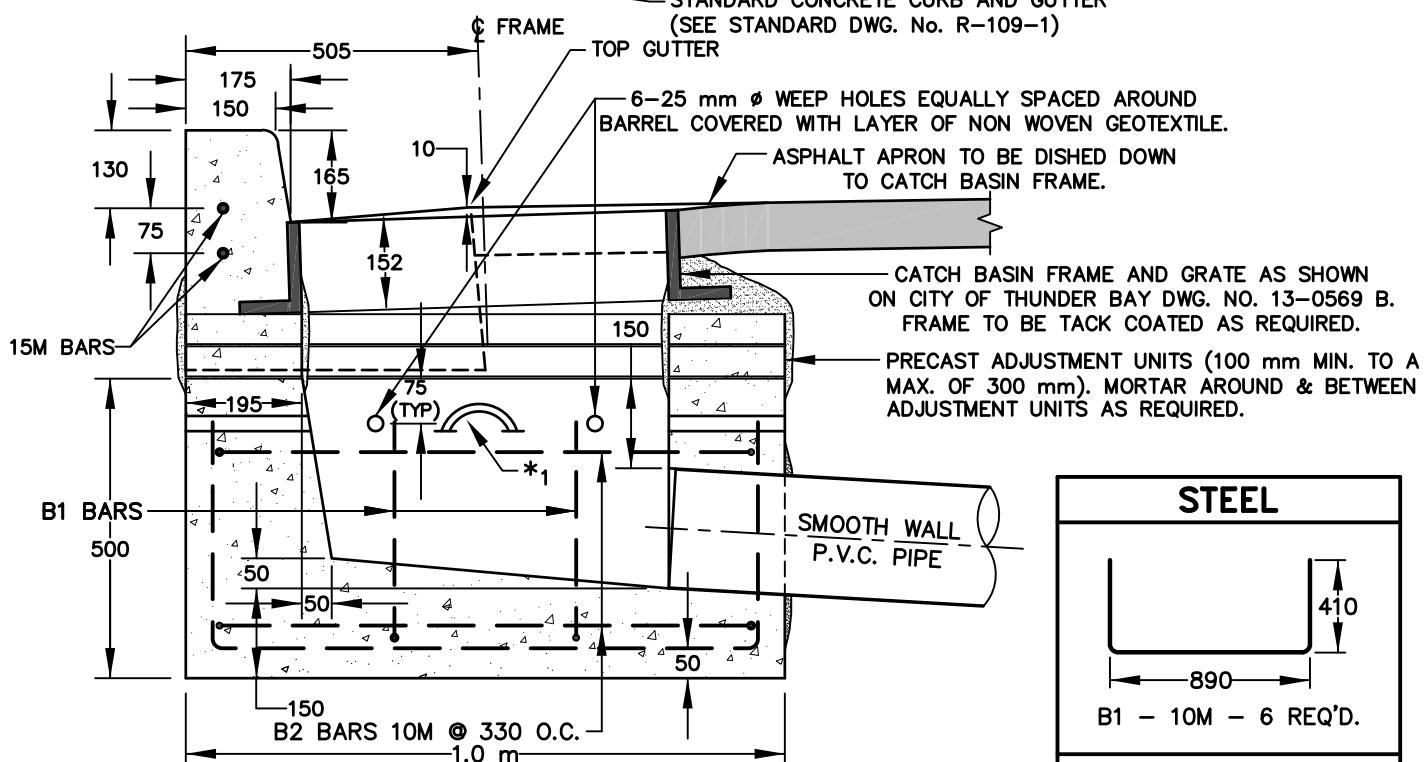
- 1) All single family residential sanitary sewer connection pipe shall be minimum 135 mm diameter S.D.R. 28 P.V.C.. Non residential sanitary sewer connection pipe shall be minimum 150 mm diameter S.D.R. 28 P.V.C..
- 2) Manufactured tee to connect P.V.C. house sanitary sewer connection pipe to existing asbestos cement, concrete or P.V.C. sanitary sewer mains. Use a manufactured tee at connection when constructing a new P.V.C. sanitary sewer main.
- 3) All house sanitary sewer connection holes provided in asbestos cement or P.V.C. sanitary sewer mains shall to be machine cut. Use diamond core bits for concrete sewer main.
- 4) The open end shall be properly capped where connection is not in immediate use and marked with a wire or stake to surface.
- 5) For connection to a trunk sewer, see OPSD-1006.010
- 6) For house storm sewer connection see drawings S-103-1 & 103-2.
- 7) Use manufactured sweeps or radius pipe sections at all times when deflecting sanitary connections.



		ENGINEERING STANDARDS	
TITLE			
HOUSE SANITARY SEWER CONNECTION COMMON TYPE			
DWN.	DATE		
D.W.	SEPT 85		
REVISED:		JAN. 2018	
SCALE		N. T. S.	
Z:\ENG\STANDARD DRAWINGS\STD DWGS\S-102			
		MANAGER, ENGINEERING DIVISION	
DWG. NO.			
S-102			



DETAIL 'C'



NOTES:

SECTION A-A

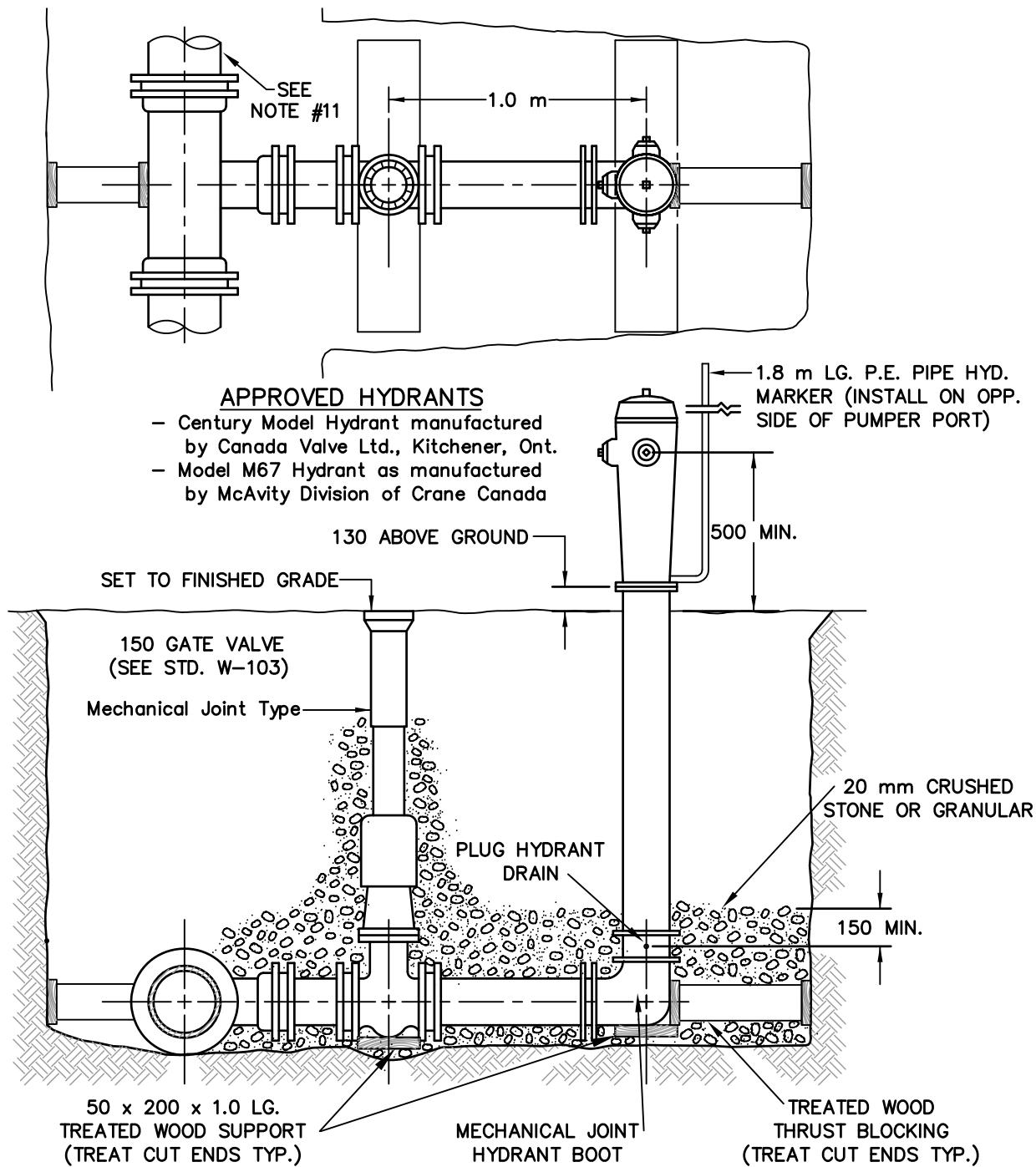
1. STEEL TO BE PLACED AS SHOWN, USE 32 MPa CONCRETE.
2. BOTTOM OF INLET TO BE SLOPED TOWARDS OUTLET PIPE.
3. CATCH BASIN INLET CAN BE PRECAST OR POURED IN PLACE.
4. ALL CATCH BASINS TO BE BACK FILLED WITH GRANULAR 'B' TO 300 mm FROM BARREL.
5. PLACE PRECAST ADJUSTMENT UNITS ON BED OF MORTAR AND APPLY MASTIC AS PER MANUFACTURER'S SPECIFICATIONS.
6. WHEN INSTALLING MID BLOCK ON FOUR LANE ARTERIAL ROADS USE TYPICAL CONSTRUCTION OF CURB AND GUTTER AROUND A CATCH BASIN, CITY OF THUNDER BAY STANDARD R-115.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

ENGINEERING STANDARDS
 CITY OF Thunder Bay Superior by Nature

CATCH BASIN INLET (FOR GUTTER INSTALLATION)

DWG. NO.	S-109	
DATE	AUG. /81	REvised: JAN. 2018
MANAGER	N. T. S.	SCALE
ENGINEERING DIVISION		Z:\ENG\Standard Drawings\Std Drawgs\DWG\dwg\dwg



NOTES:

- 1) HYDRANT SPACING AND COVERAGE
 - Residential Areas – 15,000 m per hydrant or approximately 150 m spacing.
 - Mercantile Areas – 10,000 m per hydrant or approximately 90 m spacing.
- 2) Where thrust blocks are not against undisturbed rock, hydrants shall be tie rodded in accordance with W-111 and W-112.
- 3) Valve and hydrant to be set plumb and braced with backfilling.
- 4) All underground exterior surfaces to be painted with tar pitch varnish.
- 5) Hydrant to be installed 0.7 m off street line unless otherwise stated.
- 6) All hydrants barrels shall be wrapped with 50 mm thick DOW HI – 35 Styrofoam held in place by steel bands, to satisfaction of City Engineer.
- 7) For Bonding and Cathodic protection see W-126.
- 8) Like materials to be used for hydrant lead piping.
- 9) Hydrant ports to be parallel to street with pumper port facing the street.
- 10) Any hydrant extensions shall be installed at the hydrant boot.
- 11) Like materials to be used for watermain tie in. Where existing watermain is metallic use ductile iron pipe for the tie in.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED



ENGINEERING
STANDARDS

TITLE
**INSTALLATION OF FIRE HYDRANT
WITH GATE VALVE**

DWN.	M.D.	DATE	OCT./57	<i>Rick James</i> MANAGER ENGINEERING DIVISION
REVISED:	JAN. 2015			
SCALE	N. T. S.			
Z:\ENG\Standard Drawings\Std Dwgs\W-101.dwg	DWG. NO.			

W-101

VALVE BOX COVER, BIBBY FOUNDRY LTD.
NO. VB 825 OR EQUAL

FINISHED GRADE OR
SURFACE OF PAVEMENT

RUN TRACE/THAW CABLE UP
INSIDE OF VALVE BOX
TO SURFACE

VALVE BOX UPPER, BIBBY
FOUNDRY LTD. NO. VB 650
OR EQUAL

VALVE BOX EXTENSION,
BIBBY FOUNDRY LTD. NO.
VB 755 (450 mm); NO. VB 750
(300 mm); OR EQUAL

BACKFILL WITH GRAVEL OR COARSE
SAND FOR 300 mm AROUND VALVE BOX

VALVE EXTENSION STEM
(THUNDER BAY SOUTH AS NEEDED)
INSTALL TO 500 mm
BELOW FINISHED GRADE

VALVE BOX BASE, BIBBY FOUNDRY
LTD. NO. VB 900, NO. 6 OR EQUAL
(FOR VALVES UP TO 300 mm)

SUPPORT VALVE BOX ASSEMBLY WITH
TIMBERS SO THAT NO WEIGHT IS
EXERTED ON VALVE

WHEN INSTALLING ON EXISTING
WATERMAINS USE LIKE PIPE
MATERIAL. IF METALLIC USE
DUCTILE IRON PIPE.

50 X 200 X 1.0 LG. TREATED
WOOD SUPPORT. TREAT CUT ENDS (TYP.)

NOTE:

Valves Open LEFT - All Wards

COMPLETE ASSEMBLIES

ASS'Y NO.	'L' LENGTH IN METRES	
	NOMINAL	RANGE
VB 3000	1.52	1.22 - 1.68
VB 3100	1.83	1.52 - 1.95
VB 3200	2.13	2.08 - 2.23
VB 3300	2.44	2.13 - 2.44
VB 3400	2.74	2.59 - 2.90
VB 3500	3.05	2.90 - 3.20
VB 3600	3.35	3.20 - 3.50
VB 3700	3.66	3.50 - 3.81

ALL 133 mm SCREW VALVE BOXES

VALVE BOX TO BE ADEQUATELY
BRACED WHILE BACKFILLING AND
MUST REMAIN PLUMB

VALVE BOX LOWER, BIBBY FOUNDRY LTD.
NO. VB 550 (600 mm) LONG OR
NO. VB 555 (860 mm) LONG OR EQUAL

COMBINATION STONE DISC
AND OPERATING NUT
DUCTILE IRON TO A.S.T.M. A536
GR 65-45-12

25 mm M.S. SQUARE
STRUCTURAL STEEL TO CSA G40.21

PIN OR WELD

50 mm OPERATING SOCKET

A.W.W.A. C509 RESILIENT SEAT,
MECH. JOINT OR PUSH-ON GATE
VALVE WITH 'O' RING SEALS AND
50 mm SQUARE OPERATING NUT.

SEE STD. DWG. W-116
FOR CLAMP DETAILS

WATERMAIN

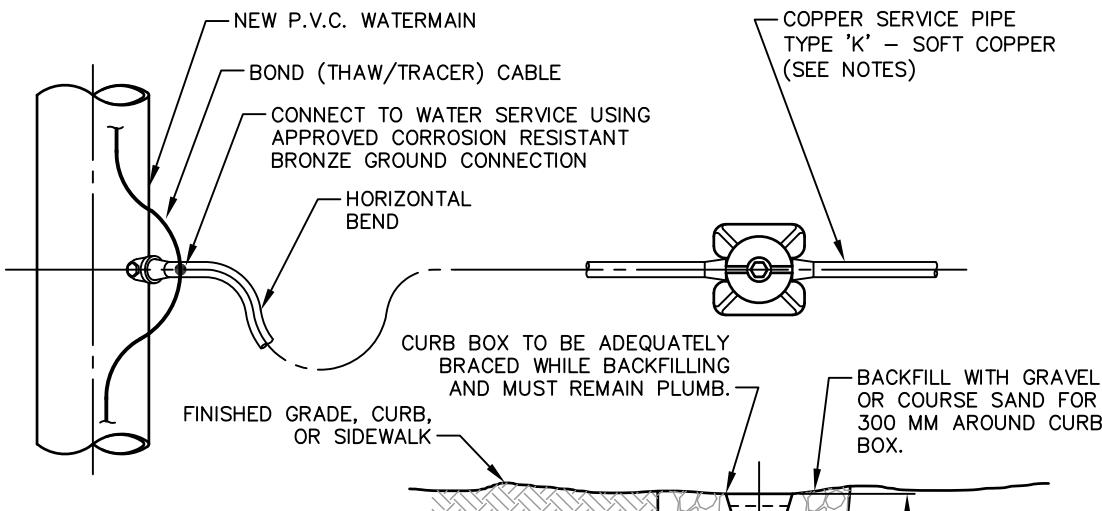
NOTE: - Valves on dead end mains or branches
to be tie rodded back two lengths of
pipe
- Denso tape shall be applied to all
non-stainless fittings.

ENGINEERING
STANDARDS
MANAGER, ENGINEERING DIVISION
DWG. NO.
W-103

REDRAWN
S.G. DATE Mar. / 97
REVISED: JAN. 2018
SCALE N. T. S.

z:\ENG\Standard Drawings\Std Dwg\W-103.dwg

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

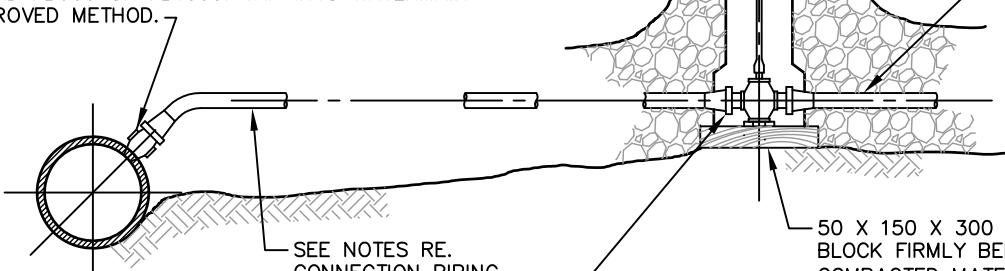


FOR 20 mm AND 25 mm USE: MUELLER No. A726 WITH 300 mm ADJ. TELESCOPIC BOX AND MUELLER No. A800 RIBBED COVER AND MUELLER STATIONARY ROD "OR" CANADA BRASS ECLIPSE PATTERN SERIES 161 AND MIN. 300 mm ADJ. TELESCOPIC BOX AND SERIES 163 RIBBED COVER WITH BRONZE PENTAGON COVER PLUG AND STATIONARY ROD OF APPROPRIATE LENGTH.

ALL STATIONARY RODS TO END 1 M BELOW FINISHED GRADE.

NOTE: USE STAINLESS STEEL STATIONARY RODS

CORPORATION STOPS - MUELLER B-25000 OR H-15008 (20 mm AND 25 mm), B-25008 (40 mm AND 50 mm), CAMBRIDGE 301NL AND FORD FB600 OR FB1000. TAP INTO WATERMAIN BY APPROVED METHOD.



CURB STOPS MUELLER MARK II ORISEAL NO. H15204 OR H15209, CAMBRIDGE 202NL AND FORD B22-NL OR B44-NL.

NOTES:

- 1) ALL WATER SERVICE CONNECTIONS ON PRIVATE PROPERTY SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST REVISIONS OF ONTARIO BUILDING CODE AS AMENDED, PART 7.
- 2) ALL WATER SERVICE CONNECTIONS SHALL BE INSTALLED IN CONTINUOUS LENGTHS BETWEEN THE CORPORATION STOP, CURB STOP, AND WATER METER WITHOUT THE USE OF COUPLERS UNLESS APPROVED BY THE CITY ENGINEER.
- 3) ALL BRASS FITTINGS SHALL BE NO LEAD TYPE.
- 4) WATER CONNECTION REPLACEMENTS SHALL ONLY USE FLARE TYPE BRASS CORPORATION/MAIN STOPS AND CURB STOPS. COMPRESSION TYPE COUPLERS MAY BE USED BUT WILL REQUIRE A JUMPER CONNECTION AS PER W-130. APPROVED COUPLERS INCLUDE: MUELLER A319 AND H15403, CAMBRIDGE 118NL AND FORD C22-NL, C44-Q-NL, C24(LEAD TO COPPER) AND C34(LEAD TO COPPER)
- 5) WATER CONNECTIONS IN NEW SUBDIVISIONS/DEVELOPMENT MAY USE COMPRESSION TYPE OR FLARE TYPE BRASS FITTINGS.

FOR 40 MM AND 50 MM USE: MUELLER NO. A728 WITH 300 MM ADJ. TELESCOPIC BOX AND MUELLER NO. A800 RIBBED COVER AND MUELLER STATIONARY ROD "OR" CANADA BRASS ECLIPSE PATTERN SERIES 161-1 AND MIN 300 MM ADJ. TELESCOPIC BOX AND SERIES 163 RIBBED COVER WITH BRONZE PENTAGON COVER PLUG AND STATIONARY ROD OF APPROPRIATE LENGTH.

ALL BUILDING SERVICES SHALL BE INSTALLED MIN. 2.15m AND MAX. 2.5m DEPTH

SEE STD. DWG. W-130 FOR THAW/TRACER CABLE INSTALLATION
SEE STD. DWG. W-127 FOR CATHODIC PROTECTION
SEE STD. DWG. W-104-2, 3, & 4 FOR CONNECTION SIZING

ALL DIMENSIONS ARE IN MILLIMETERS.

		ENGINEERING STANDARDS
TITLE WATER CONNECTION INSTALLATION & SIZING & THAW/TRACER CABLE INSTALLATION FOR P.V.C. WATERMAIN		
DRAWN S.G.	DATE JULY 1981	 MANAGER, ENGINEERING DIVISION DWG. NO. W-104-1
REVISED: JAN. 2016		
SCALE N. T. S.		
Z:\ENG\STANDARD DRAWINGS\STD DWGS\W-104-1		

W-104-1

WATER SERVICE SIZING

Min. size service for single family residential is 20 mm.
Min. size service for all other development is 25 mm.

Water services 2" and smaller shall be sized using section 7.6 of the O.B.C. – see table 7631A and section 7634 (1-6b).

Water services over 2" in size shall be calculated using a revised version of the "Fixture Unit Method" as laid out in the AWWA Manual M22. Standard Drawings W-104-2, W-104-3, and W-104-4 shall be used to determine the probable demand and service pipe size. Other acceptable design procedures which may be used are defined in section A-7.6.1.1.(1) of the OBC.

The design criteria used in sizing water services is:

- 1) Pressure at peak flow at meter outlet must not drop below 240 Kpa (35psi).
- 2) Velocity of water at peak flow must not exceed 4.5 L/s (15 fps).

To calculate the required pipe size for a building by the revised AWWA Method:

- 1) List all plumbing fixtures in the building.
- 2) Assign a fixture value, from chart, to each fixture.
- 3) Total up fixture units.
- 4) Using a total fixture unit value, find probable peak demand for building from graph.
- 5) Find L/S (G.P.M.) demand for any other fixtures, or machines that either draw large amounts or continuous amounts of water (ie. irrigation systems, or production machinery, etc.).
- 6) Add up the total L/S (G.P.M.) demand for water.
- 7) Using the total L/S (G.P.M.) demand, and from the probable demand vs. pipe size graph select the appropriate pipe size for the building.
- 8) If it appears that the service pipe length or change in elevation or low available system pressure will result in inadequate pressure at the meter, then the service pipe size should be increased accordingly.

WATER METER SIZING

Min. size meter for single family residential is 18 mm.
Min. size meter for all other development is 20 mm.

Water meter size shall be determined by the City of Thunder Bay.

Refer to Standard Drawing W-104-7 for general meter arrangements (Meters exceeding 25 mm).

Refer to APPENDIX A – Volume 2 Table A – 7.6.3.1

Refer to DIVISION B – Part 7, Sentences 7.6.3.4.(1) to (6)

PLUMBING FIXTURE VALUE

AWWA MANUAL M22

(SIZING FOR OLDER EXISTING FIXTURES GREATER THAN LOW FLOW REQUIREMENTS)

Fixture Type Fixture Unit Value

Bathtub	8
Bedpan Washers	10
Combination Sink and Tray	3
Dental Unit	1
Dental Lavatory	2
Drinking Fountain (Cooler)	1
Drinking Fountain (Public)	2
Kitchen Sink	3
– 12 mm (½") connection	7
– 20 mm (¾") connection	
Laundry Tray	2
– 12 mm (½") connection	4
– 20 mm (¾") connection	
Lavatory	3
– 10 mm (¾") Connection	7
– 12 mm (½") Connection	
Shower Stall (Shower only)	4
Service Sink	3
– 12 mm (½") Connection	7
– 20 mm (¾") Connection	
Urinal Pedestal Flush Valve	35
Wall or Stall	12
Trough per 600 mm (2') of Length	2
Wash Sink (Each set of faucets)	4
Water Closet	35
Flush Valve	3
Flush Tank	
Dishwasher	4
– 12 mm (½") connection	10
– 20 mm (¾") connection	
Washing Machine	5
– 12 mm (½") connection	12
– 20 mm (¾") connection	
– 25 mm (1") connection	25
Hose Connections (Wash Down)	
– 12 mm (½") connection	6
– 20 mm (¾") connection	10
Hose 15 m (50 foot) length	
– 12 mm (½") connection	6
– 16 mm (¾") connection	9
– 20 mm (¾") connection	12

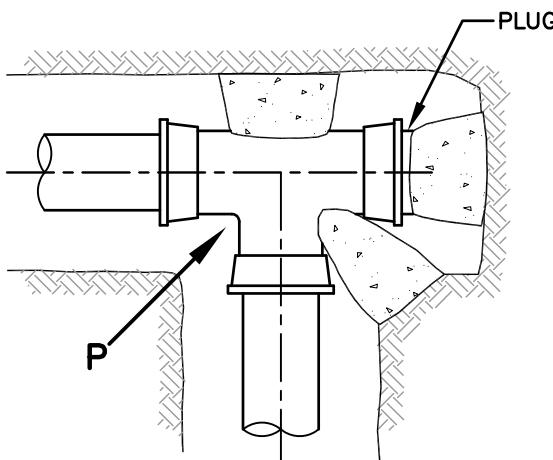
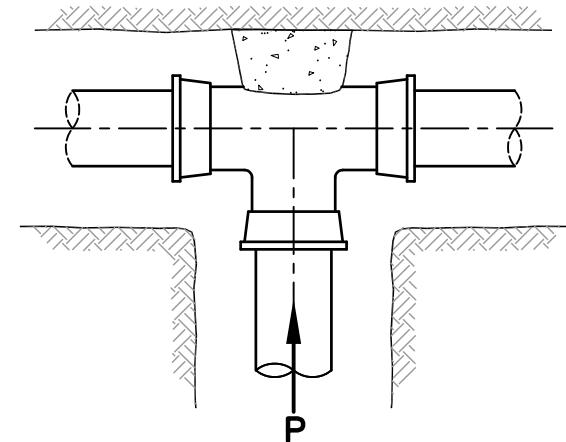
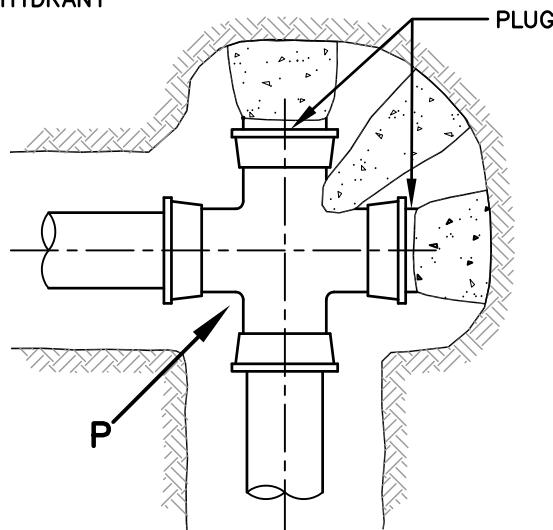
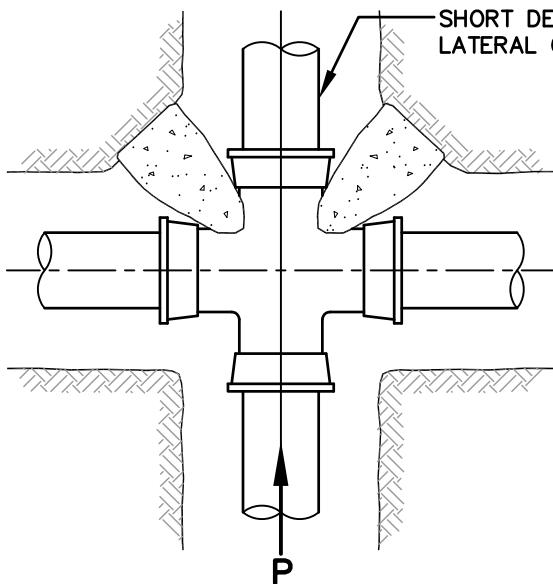
NOTE:

These plumbing fixture values to be used when assessing existing developments. For new developments or for existing developments that are replacing their existing services, refer to Table 7.6.3.2.A of the O.B.C. (current edition).



ENGINEERING STANDARDS

TITLE		WATER CONNECTION SERVICE AND METER SIZING	
DWN.	BM	DATE	SEPT. /84
REVISED:		JAN 2020	
SCALE		N. T. S.	
DWG. NO.			
W-104-2			
Z:\ENG\Standard Drawings\Std Dwgs\W-104-2.dwg			



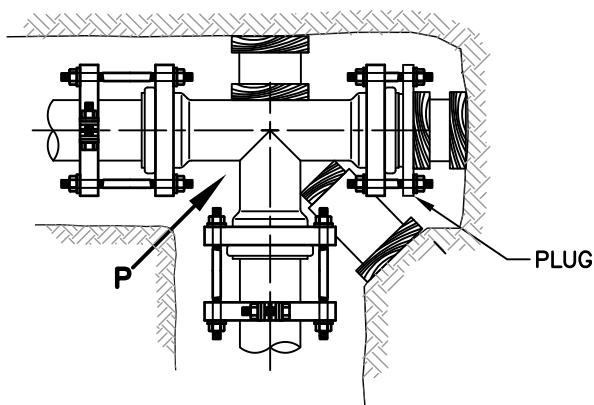
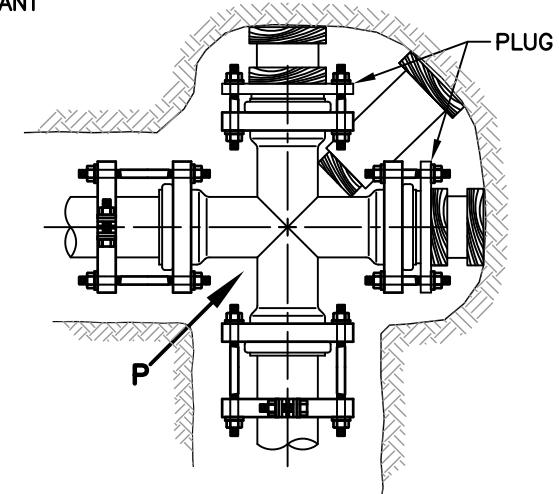
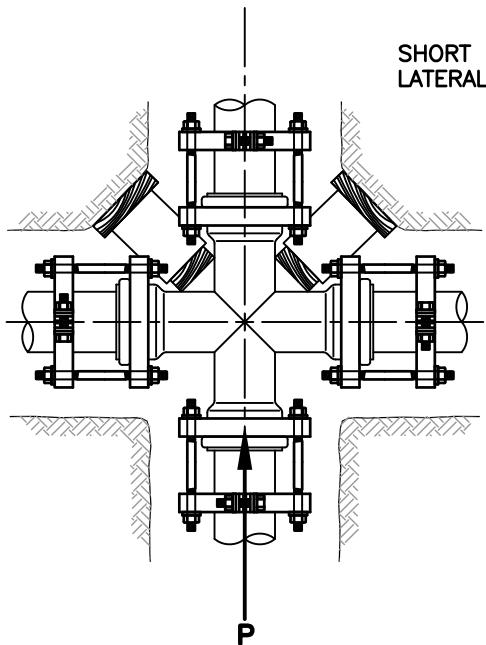
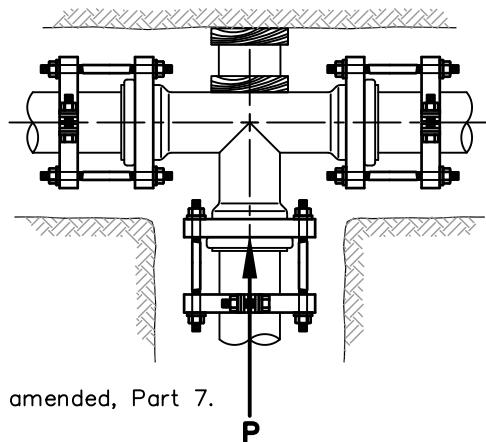
NOTES:

- All watermain bends to be securely braced against unexcavated trench in direction of thrust. For soil conditions other than undisturbed rock also secure watermain using tie rods and clamps. For concrete thrust block sizing see standard drawing W-110, and for tie rods and clamps or grip rings see standard drawings W-111, W-112, W-113, and W-116.
- Concrete to be 32 MPa minimum.
- Blocks to contain 0.20 m^3 minimum.
- Bond breaker to be used between concrete and fittings.
- Concrete shall be placed to within 50 mm of the face of the bell.
- "P" denotes direction of thrust.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

CITY OF Thunder Bay <i>Superior by Nature</i>		ENGINEERING STANDARDS	
TITLE ANCHORAGE OF WATERMAIN TEES & CROSSES			
DWN.	D.W.	DATE	MAY/02
REVISED: JAN. 2018			
SCALE	N. T. S.		
<small>Z:\ENG\Standard Drawings\Std Dwg\W-108-1.dwg</small>			
DWG. NO.	W-108-1		

- ALL BENDS, TEES, CROSSES, PLUGS, ETC. SHALL BE PROPERLY ANCHORED WHERE REQUIRED USING Poured IN PLACE CONCRETE OR USING TIE RODS AND CLAMPS



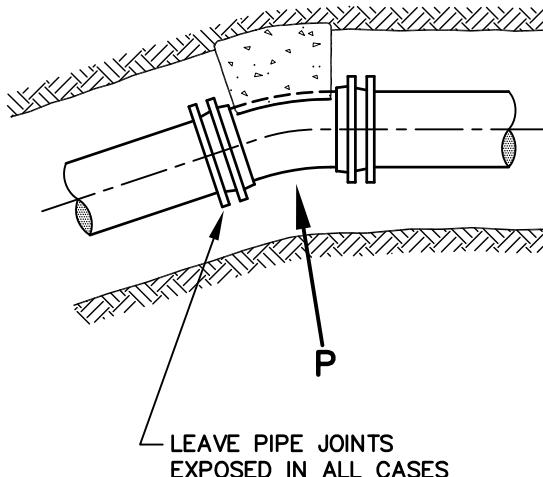
NOTES:

- All watermain tees & crosses at conditions shown to be securely braced against unexcavated trench in direction of thrust with treated wood blocking to solid ground and secured using tie rods and clamps. For tie rodding and clamps see standard drawings W-111, W-112, W-113 and W-116.
- Thrust blocking to be CSA treated lumber, cut ends to be treated (TYP.)
- For cathodic protection see standard drawing W-130.
- "P" Denotes direction of thrust.

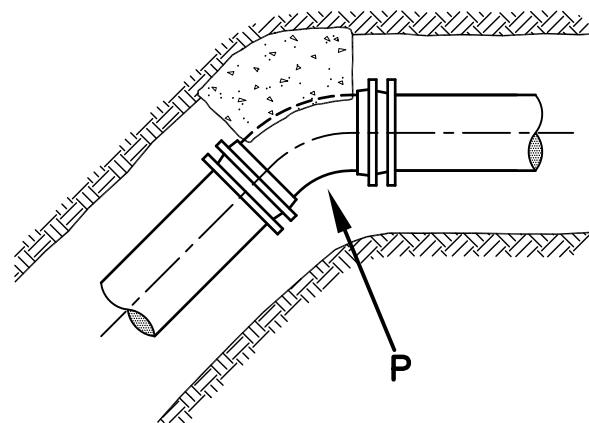
ALL BENDS, TEES, CROSSES, PLUGS, ETC. SHALL BE PROPERLY ANCHORED WHERE REQUIRED USING TIE RODS AND CLAMPS AND TREATED WOOD BLOCKING

ALL DIMENSIONS ARE IN MILLIMETERS OR METERS	
CITY OF Thunder Bay Superior by Nature	
ENGINEERING STANDARDS	
TITLE ANCHORAGE OF WATERMAIN	
AT TEES & CROSSES FOR P.V.C. PIPE	
DWN. L.T.G.	DATE MAY/02
REVISED: MAR/03	
SCALE N. T. S.	
PATH E:\ENG\STD\W-108-2.DWG	
DWG. NO. <i>D. Scott</i> CITY ENGINEER	
W-108-2	

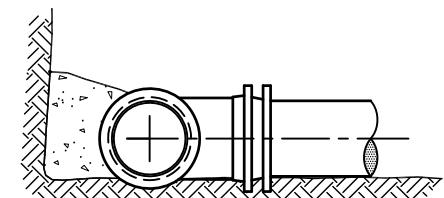
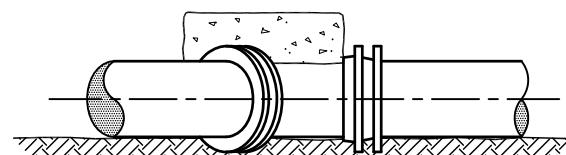
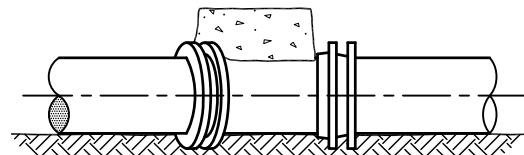
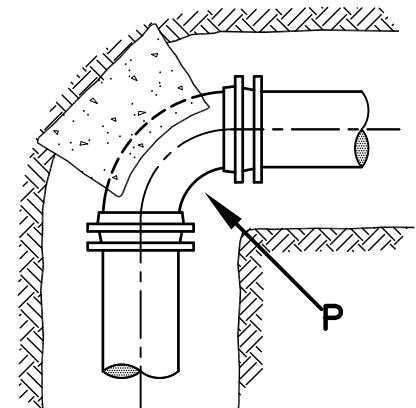
0°-22½° BEND



22½°-45° BEND



45°-90° BEND



NOTES:

- All watermain bends to be securely braced against unexcavated trench in direction of thrust. For soil conditions other than undisturbed rock also secure watermain using tie rods and clamps. For concrete thrust block sizing see standard drawing W-110, and for tie rods and clamps see standard drawings W-111, W-112, W-113, and W-116.
- Concrete to be 32 MPa.
- Blocks to contain 0.20 m³ concrete minimum.
- Bond breaker to be used between concrete and fittings.
- Concrete shall be placed to within 50 mm of the face of the bell.
- For horizontal turns only.
- "P" Denotes direction of thrust.

ALL DIMENSIONS ARE IN MILLIMETERS OR METERS

CITY OF
Thunder Bay
Superior by Nature

ENGINEERING
STANDARDS

TITLE

ANCHORAGE OF
WATERMAIN BENDS

D.W.

D.W.

DATE

MAY/02

Ryan Dip
MANAGER, ENGINEERING DIVISION

REVISED: JAN. 2018

SCALE N. T. S.

Z:\ENG\Standard Drawings\Std Dwgs\W-109.dwg

DWG. NO.

W-109

CHART 'A'
(SAFE BEARING PRESSURE OF SOILS)

SOIL (ROCK ONLY)	SAFE BEARING tonnes/m ²
Rock, hard thick layers	1953.0
Rock, equal good masonry	244.13
Rock, equal best brick	146.48
Rock, equal poor brick	48.83

	ENGINEERING STANDARDS	
	CITY ENGINEER <i>[Signature]</i>	DWG. NO. W - 110
METHOD OF DETERMINING SIZES OF THRUST BLOCKS		
TITLE DWN. K.S. \ L.T.G. DATE <i>[Signature]</i> Aug. 1981	REVISED: JAN. 2018 <i>[Signature]</i>	SCALE N. T. S. PATH: \ENG\STD\DWGS\W-110.dwg

CHART 'B'

(RESULTANT THRUST AT FITTINGS AT 1102 kPa WATER PRESSURE)

Nom. Pipe Dia. (mm)	Branch of Tee or Dead End	90° Bend	45° Bend	22½° Bend	11¼° Bend
150	2.71	3.83	2.08	1.06	0.54
200	4.67	6.60	3.57	1.82	0.92
300	9.93	14.04	7.60	3.87	1.95
400	17.25	24.40	13.21	6.73	3.38
600	37.94	53.66	29.04	14.81	7.44
900	83.62	118.24	64.00	32.62	16.40

EXAMPLE:

To find the size of thrust block required for a 90° bend in a 400 MM diameter watermain laid in Rock, equal to poor brick.

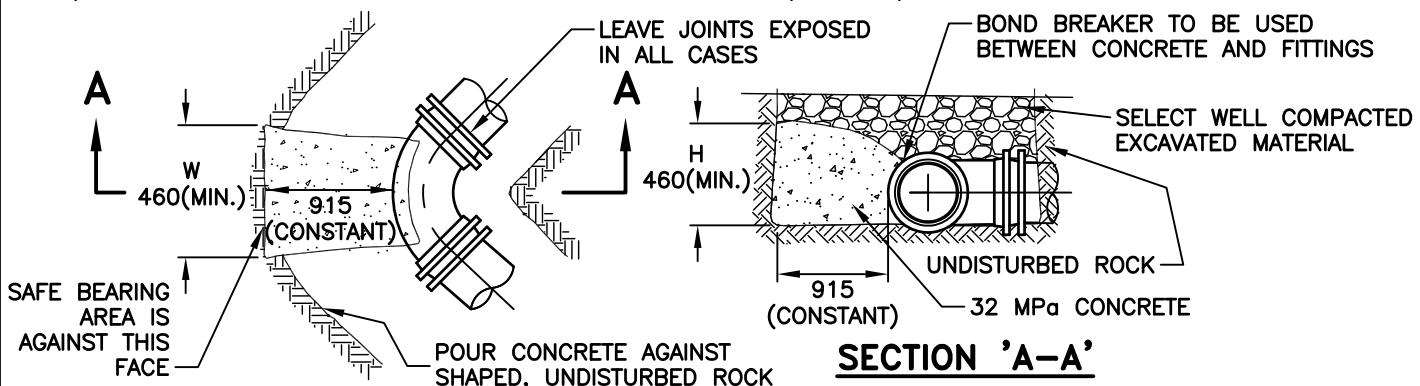
- 1) From Chart 'A' – the safe bearing tonnes/m² for Rock, equal best brick is 48.83
- 2) From Chart 'B' – the total tonnes thrust for a 90° bend is 24.40

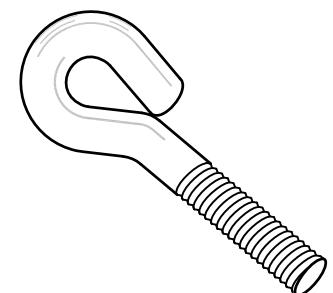
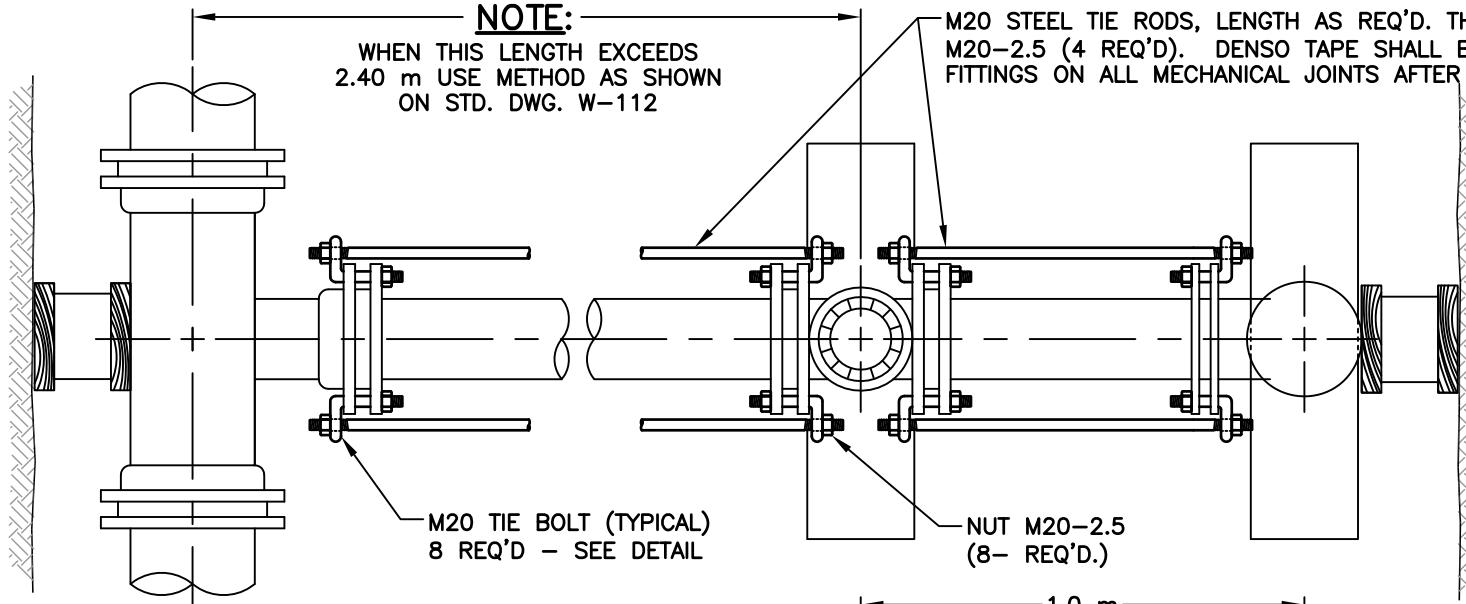
$$3) \text{Safe bearing area required} = \frac{24.40}{48.83} = 0.50 \text{ m}^2$$

- 4) This thrust block's safe bearing area can be 0.83 m ('W') x 0.60 m ('H') = 0.50 m².
The actual shape of this area is determined in the field by existing conditions.

NOTE:

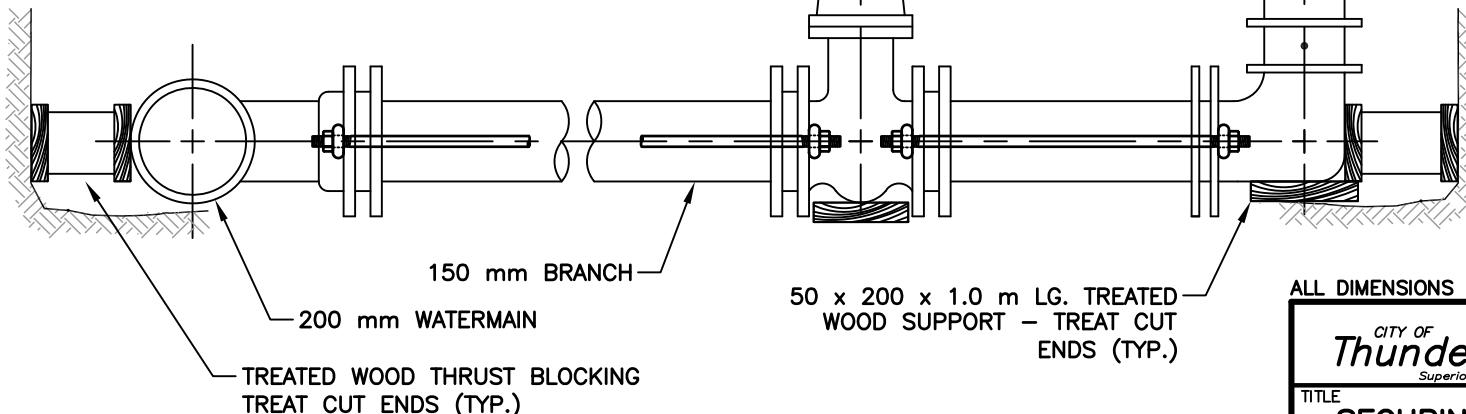
- 1) Thrust blocks to contain 0.20 cubic metres of concrete (minimum).





NOTE:

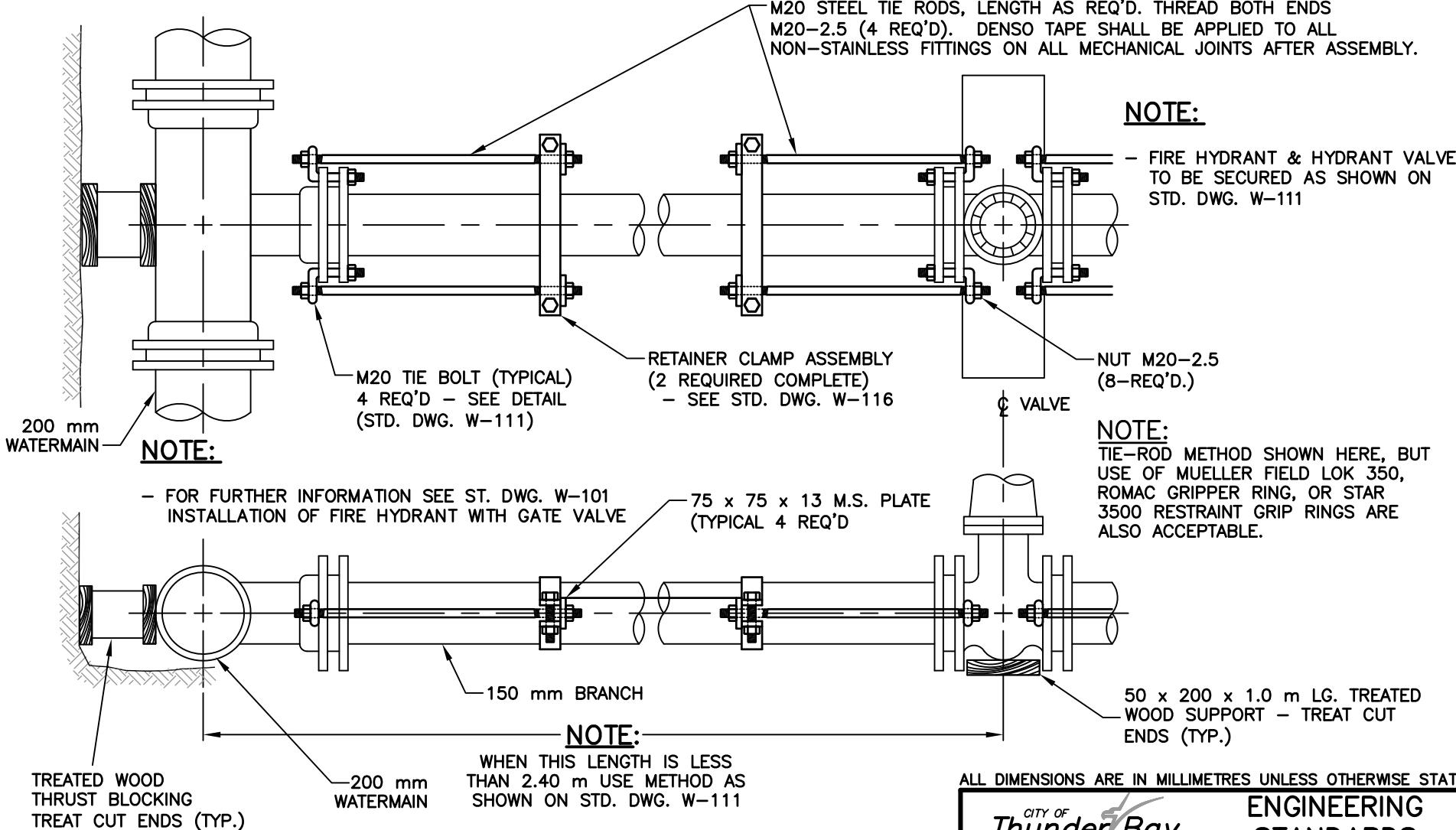
- FOR FURTHER INFORMATION SEE ST. DWG. W-101
INSTALLATION OF FIRE HYDRANT WITH GATE VALVE



NOTES:

- 1) This method to be used in all ground conditions except rock.
- 2) See Std. Dwg. W-126 for cathodic protection.

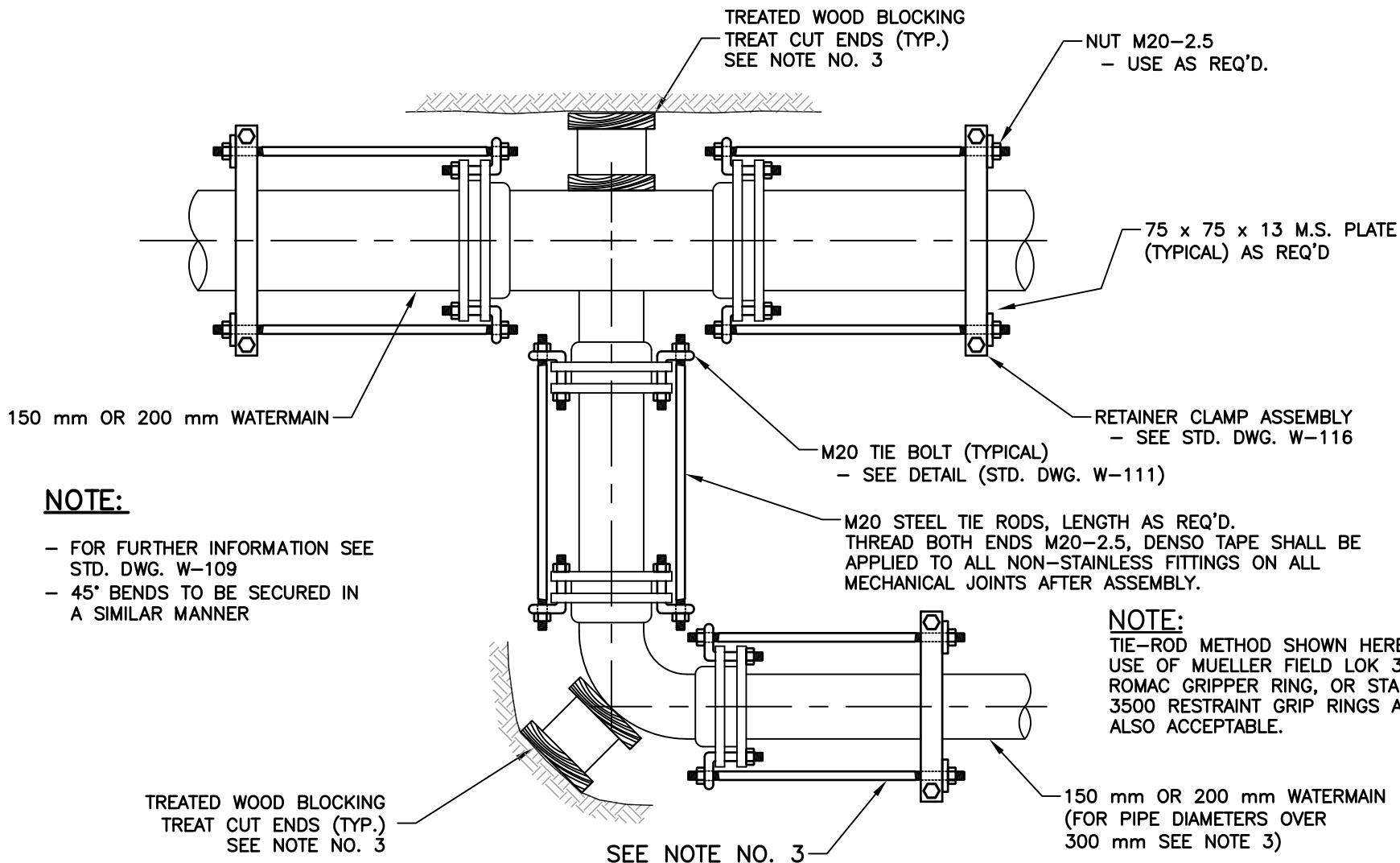
CITY OF <i>Thunder Bay</i> Superior by Nature		ENGINEERING STANDARDS
TITLE		
SECURING FIRE HYDRANT AND VALVE TO WATERMAIN (MECHANICAL JOINT PIPE)		
DRAWN L.S./L.T.G.	DATE	JUNE/72
REVISED: JAN. 2011		
SCALE N. T. S.		
Z:\ENG\Standard Drawings\Std Dwg\W-111.dwg		
DWG. NO. <i>Mauro</i> MANAGER, ENGINEERING DIVISION		
W-111		



NOTES:

- 1) This method to be used in all ground conditions except rock.
- 2) See Std. Dwg. W-126 for cathodic protection.

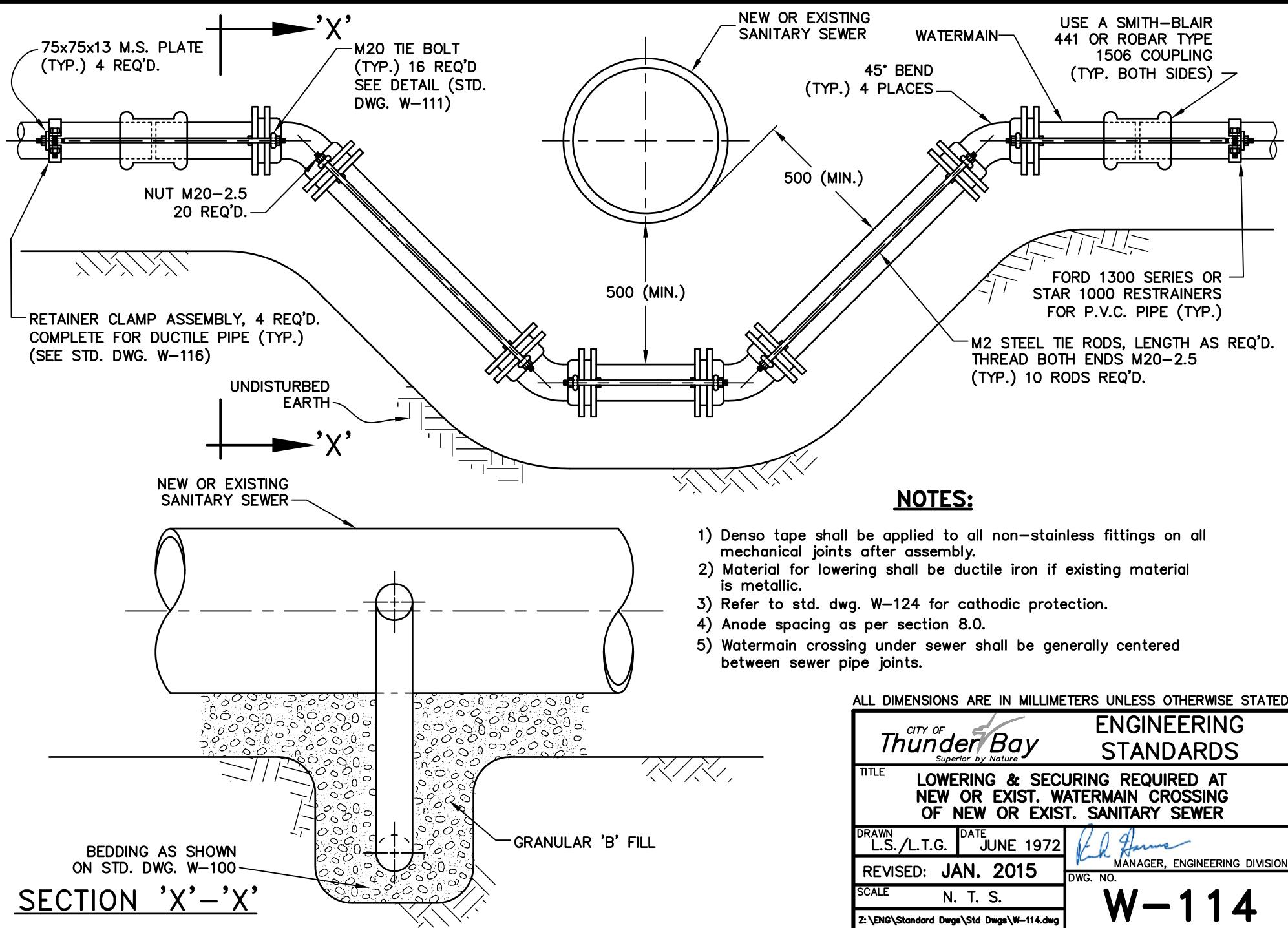
CITY OF		Thunder Bay	Superior by Nature	ENGINEERING STANDARDS
TITLE		SECURING FIRE HYDRANT AND VALVE TO WATERMAIN (MECHANICAL JOINT PIPE)		
DRAWN	L.S./L.T.G.	DATE	JUNE 1972	
		REVISED:	JAN. 2011	
		SCALE	N. T. S.	
		Z:\ENG\Standard Drawings\Std Dwg\W-112.dwg		
		DWG. NO. W-112		

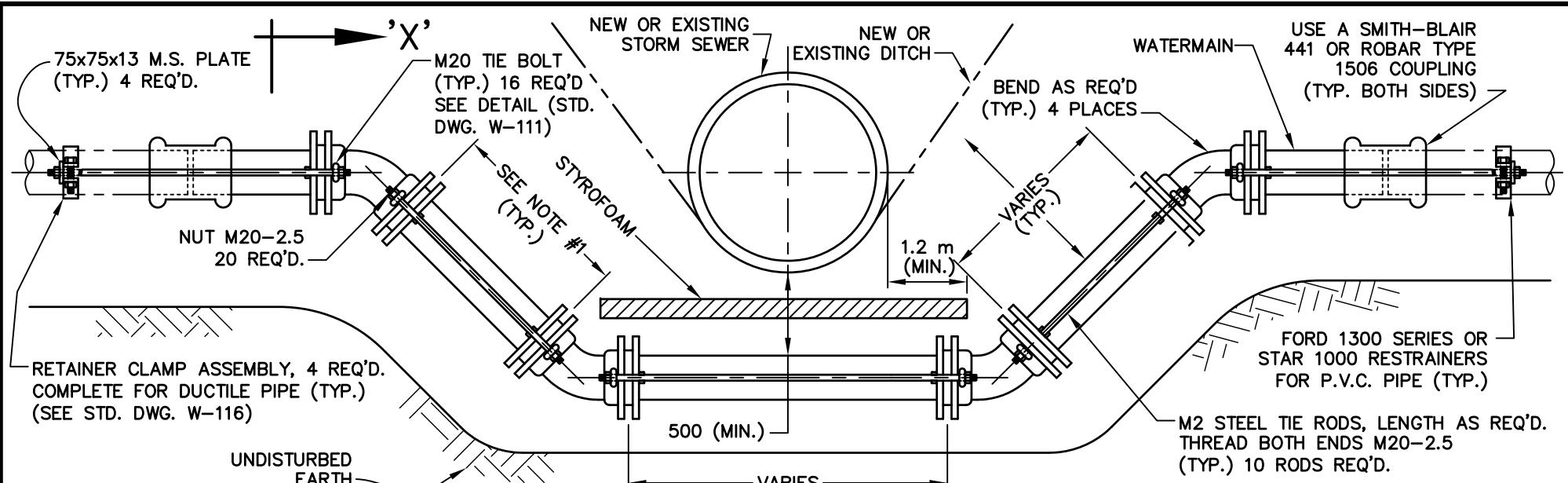


NOTES:

- 1) THIS METHOD TO BE USED IN ALL GROUND CONDITIONS.
- 2) ALL DIMENSIONS ARE IN METRES OR MILLIMETRES.
- 3) ALL WATERMAIN BENDS, TEES & CROSSES SHALL BE BRACED AGAINST THE UNEXCAVATED TRENCH IN THE DIRECTION OF THRUST (SEE STD. DWGS. W-108-2 & W-109-2) WITH TREATED WOOD BLOCKING.
- 4) FOR PIPE DIAMETERS 300 mm AND OVER USE 4 TIE RODS PER JOINT.
- 5) SEE STD. DWG. W-126 FOR CATHODIC PROTECTION.

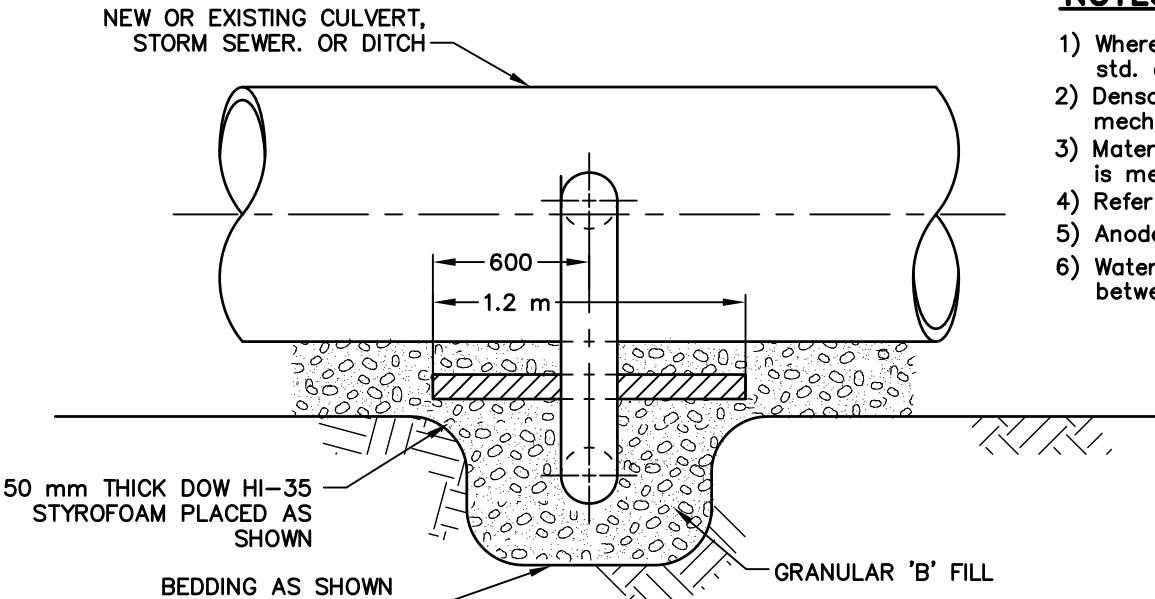
		ENGINEERING STANDARDS	
DRAWN L.S./L.T.G.		DATE JUNE 1972	
REVISED: JAN. 2011		 MANAGER, ENGINEERING DIVISION	
SCALE N. T. S.		DWG. NO. W-113	
Z:\ENG\Standard Drawings\Std Dwgs\W-113.dwg			





NOTES:

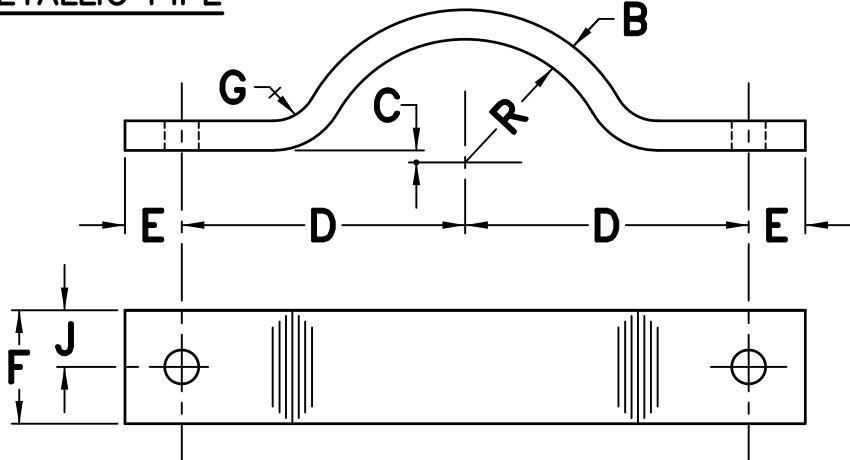
- 1) Where this length exceeds 2.4 m, use method as shown on std. dwg. W-112.
- 2) Denso tape shall be applied to all non-stainless fittings on all mechanical joints after assembly.
- 3) Material for lowering shall be ductile iron if existing material is metallic.
- 4) Refer to std. dwg. W-124 for cathodic protection.
- 5) Anode spacing as per section 8.0.
- 6) Watermain crossing under sewer shall be generally centered between sewer pipe joints.



SECTION 'X'-'X'

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED	
 ENGINEERING STANDARDS	
TITLE LOWERING & SECURING OF NEW OR EXISTING WATERMAIN CROSSING NEW OR EXISTING CULVERT, STORM SEWER OR DITCH	
DRAWN J.L./L.T.G.	DATE JAN. 1976
REVISED: JAN. 2015	
SCALE N. T. S.	 MANAGER, ENGINEERING DIVISION
DWG. NO. W-115	
Z:\ENG\Standard Drawings\Std Dwg\W-115.dwg	

METALLIC PIPE



NOTES:

- 1) One shown only, two required for a set.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

ENGINEERING STANDARDS

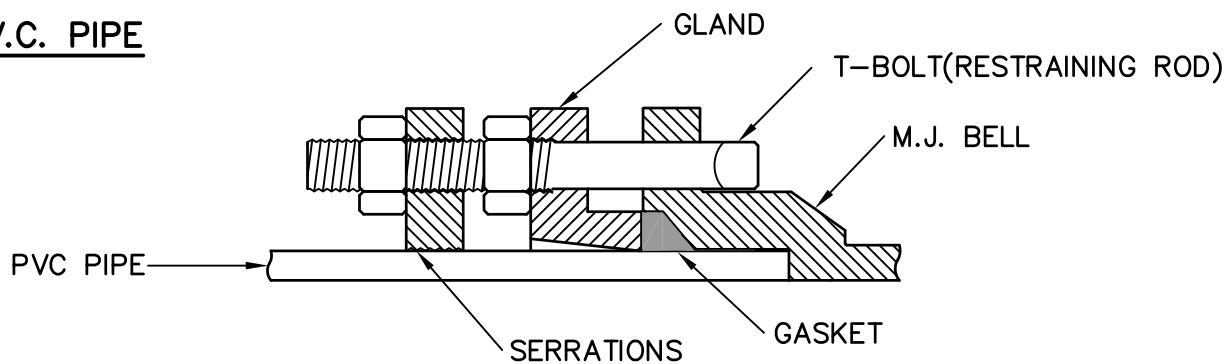
CITY OF
Thunder Bay
Superior by Nature

WATERMAIN RETAINER CHART

DWG. NO.	W-116
MANAGER, ENGINEERING DIVISION	<i>[Signature]</i>
DWG. NO.	
DATE	JAN. 2003
REVISED:	JAN. 2011
SCALE	N. T. S.
Z:\ENG\Standard Drawings\Std Dwg\W-116.dwg	

Ductile Iron Water Pipe			All Watermain Pipe and Clamp Sizes are in Millimetres										
Clamp No.	Nom. Dia.	Pipe O.D.	R	B	C	D	E	F	G	H. Dia.	J	Clamping Bolts	
1	100	121.92	65	13	16	125	25	50	20	15	25	m 12 x 1.75 x 90 lg.	
2	150	175.26	90	13	16	175	25	50	20	18	25	m 16 x 2.0 x 90 lg.	
3	200	229.87	120	13	16	210	25	50	20	18	25	m 16 x 2.0 x 90 lg.	
4	250	281.94	145	13	16	235	25	50	20	18	25	m 16 x 2.0 x 90 lg.	
5	300	335.28	170	13	16	260	25	50	20	18	25	m 16 x 2.0 x 90 lg.	
6	350	388.62	200	13	16	295	25	50	20	18	25	m 16 x 2.0 x 90 lg.	
7	400	441.96	225	13	16	325	25	50	20	18	25	m 16 x 2.0 x 90 lg.	

P.V.C. PIPE



NOTE:

4"-12" SIZES

- 1) For PVC pipe use Star 1000 Series or Ford 1300 Series Restrainers.
- 2) Denso tape shall be applied to all non-stainless fittings on all mechanical joints after assembly.

FLUSHING

TABLE 1
REQUIRED FLOW AND OPENINGS TO FLUSH PIPELINES

DIAMETER OF PIPE (mm)	FLOW REQUIRED TO PRODUCE 0.91 m/s (APPROX.) VELOCITY IN MAIN @ 40 PSI (L/s)	SIZE OF TAP, (mm) 25 (1") 38 (1-1/2") 51 (2") NUMBER OF TAPS ON PIPE	NUMBER OF HYDRANT OUTLETS (mm) 64 (2-1/2") 115 (4-1/2")
100	7.4	1 - -	1 1
150	16.7	- 1 -	1 1
200	29.7	- 2 -	1 1
250	46.3	- 3 2	1 1
300	66.7	- - 3	2 1
400	118.6	- - 5	2 1

NOTE:

1. H.T.H. IS AN OLIN MATIESON TRADEMARK FOR HIGH TEST HYPOCHLORITE.
2. FLUSHING AND CHLORINATION METHOD TO FOLLOW AWWA C651 STANDARDS AND MECP WATERMAIN DISINFECTION PROCEDURE.
3. FIELD DE-CHLORINATION METHOD TO FOLLOW AWWA C655 STANDARDS.
4. ALL PRIVATE FIRE LINES SHALL HAVE ONE (1) SWAB INSTALLED IN THE SYSTEM FOR FLUSHING PURPOSES.
5. NEW WATERMAIN WORK SHALL BE PHYSICALLY SEPARATED FROM THE EXISTING DISTRIBUTION SYSTEM UNTIL AFTER DISINFECTION IS SUCCESSFULLY COMPLETED. REFER TO STANDARD DRAWING W-117-2.
6. ONCE THE NEW WATERMAIN HAS PASSED BACTERIAL TESTING IT MUST BE CONNECTED TO THE EXISTING DISTRIBUTION SYSTEM WITHIN 15 DAYS. IF NOT CONNECTED WITHIN 15 DAYS THE NEW WATERMAIN SHALL BE FLUSHED AND BACTERIAL TESTING MUST BE PASSED AGAIN PRIOR TO CONNECTION TO THE EXISTING DISTRIBUTION SYSTEM. IF BACTERIAL TESTING DOES NOT PASS THE NEW WATERMAIN WILL REQUIRE CHLORINATION.
7. ALL DISINFECTION AND FLUSHING PROCEDURES SHALL APPLY TO TEMPORARY WATERMAIN AS WELL.
8. REFER ALSO TO CITY OF THUNDER BAY DRINKING WATER WORKS PERMIT NO. 024-201.

* AT LEVELS OVER 10 MILLIGRAMS PER LITRE, A MEASUREMENT OF COMBINED CHLORINE SHALL BE DEEMED TO BE EQUIVALENT TO A MEASUREMENT OF FREE CHLORINE. REFER TO MECP WATERMAIN DISINFECTION PROCEDURE, SECTION 1.

CHLORINATION

POWDER METHOD

SODIUM HYPOCHLORITE SOLUTION (H.T.H.) FED INTO THE MAIN BEING DISINFECTED SHALL BE ANSI/NSF60 CERTIFIED. CONCENTRATION OF DISINFECTANT AND CONTACT TIMES SHALL BE AS PER TABLE 1. ONCE DISINFECTION IS ACHIEVED FLUSH THE LINE AND TAKE BACTERIA SAMPLES.

TABLE 2
CHLORINE CONCENTRATIONS AND CONTACT TIMES FOR NEW WATERMAINS*

DISINFECTION METHOD	MINIMUM CONTACT TIME	INITIAL CHLORINE CONCENTRATION	MAX. ALLOWABLE DECREASE IN CHLORINE CONCENTRATION
TABLET OR CONTINUOUS FEED	24 HOURS	≥ 25 mg/L	40% OF THE INITIAL CHLORINE CONCENTRATION TO A MAXIMUM OF 50 mg/L
SLUG	3 HOURS	≥ 100 mg/L	25 mg/L
SPRAY	30 MINUTES	≥ 200 mg/L	NO MEASUREMENT REQ.

TABLE 3
RECOMMENDED KILOGRAMS OF H.T.H. POWDER (70%) IN SOLUTION, PER 300m OF PIPE TO OBTAIN MIN. CHLORINE DOSAGE OF 25 mg/L

PIPE DIAMETER (mm)	kg OF H.T.H. POWDER
150	0.20
200	0.35
300	0.78
400	1.39
600	3.13
900	7.04

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED



ENGINEERING
STANDARDS

TITLE

DISINFECTING AND FLUSHING WATERMAINS

D.W. NO.

S.G.

DATE
AUG. 1981

REVISED:

FEB. 2019

SCALE

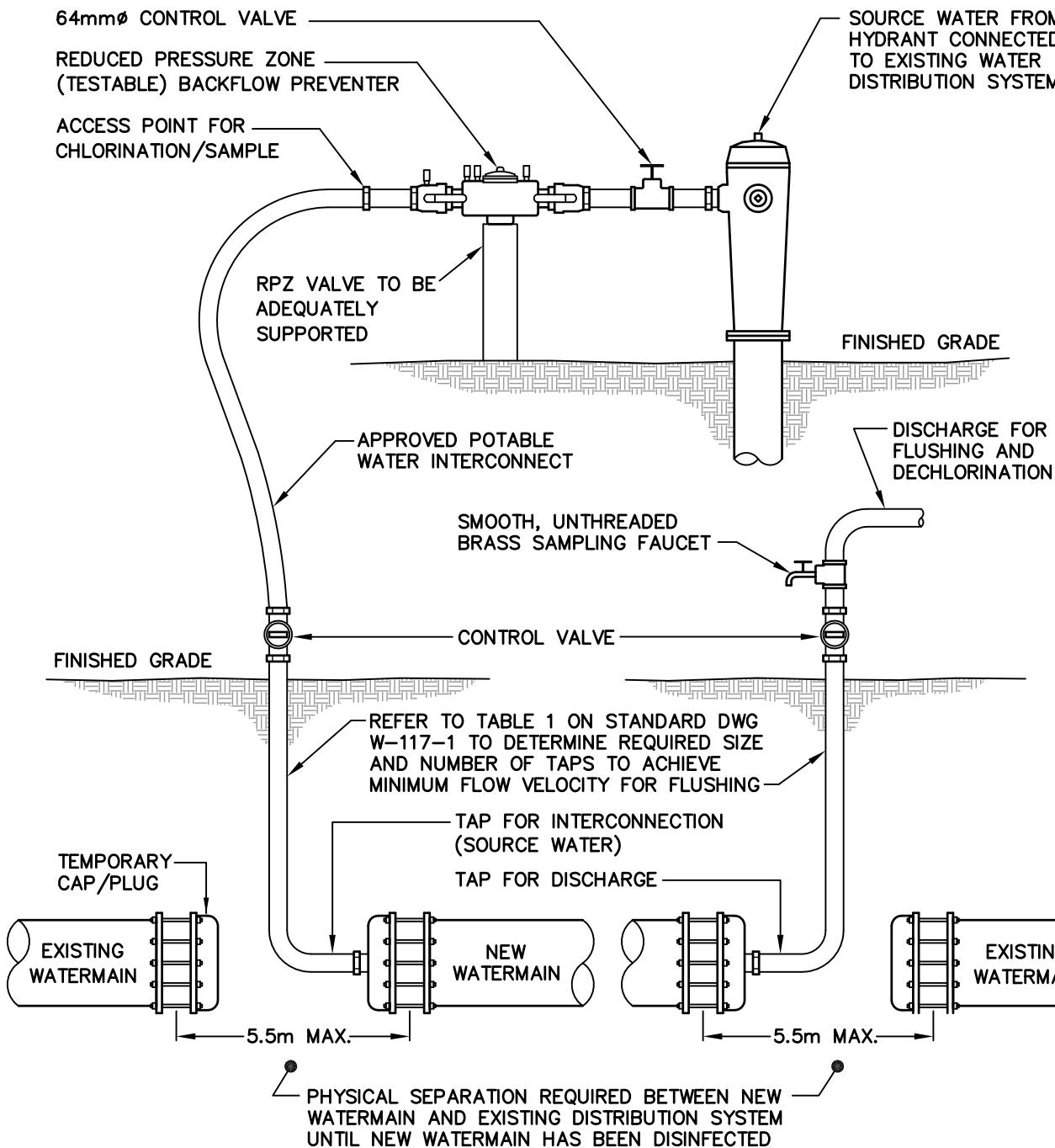
N. T. S.

Z:\ENG\STANDARD DRAWINGS\STD DWGS\W-117-1

MANAGER, ENGINEERING DIVISION

DWG. NO.

W-117-1



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING SUBJECT TO CITY APPROVAL.
2. ONLY CITY STAFF SHALL OPERATE CITY OWNED VALVES.
3. BACK FLOW PREVENTER SHALL BE TESTED AS PER CSA-B64-10. TESTING LOGS MUST BE AVAILABLE ON SITE FOR REVIEW AT ANY TIME.
4. ALL TEMPORARY CAPS TO BE EITHER RESTRAINED OR APPROVED ALTERNATE. ALL RESTRAINED JOINTS AS PER PIPE MANUFACTURER'S SPECIFICATION.
5. FLUSHING/SAMPLING TAP POINTS MUST BE LOCATED WITHIN 3m OF THE END OF EACH BRANCH OR STUB WITHIN THE NEW WATERMAIN SYSTEM. HYDRANT LEADS MAY BE USED AS FLUSHING/SAMPLING POINTS.
6. HYDROSTATIC PRESSURE TESTS SHALL NOT BE COMPLETED AGAINST THE BACK FLOW PREVENTER.
7. CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE CITY PRIOR TO COMPLETING THE FINAL CONNECTIONS TO THE EXISTING DISTRIBUTION SYSTEM.
8. ALL NEW PIPING AND APPURTENANCES PLACED IN THE CONNECTION SHALL BE THOROUGHLY DISINFECTED WITH A 1-5% SOLUTION OF SODIUM HYPOCHLORITE JUST PRIOR TO INSTALLATION.
9. THE NEW WATERMAIN SHALL BE CUT BACK TO REMOVE ALL TAPPING POINTS USED AT BRANCH/STUB ENDS.
10. EXISTING SERVICE CONNECTIONS MAY BE RECONNECTED AND REMAIN CLOSED OFF TO THE NEW MAIN AS REQUIRED DURING CONSTRUCTION.

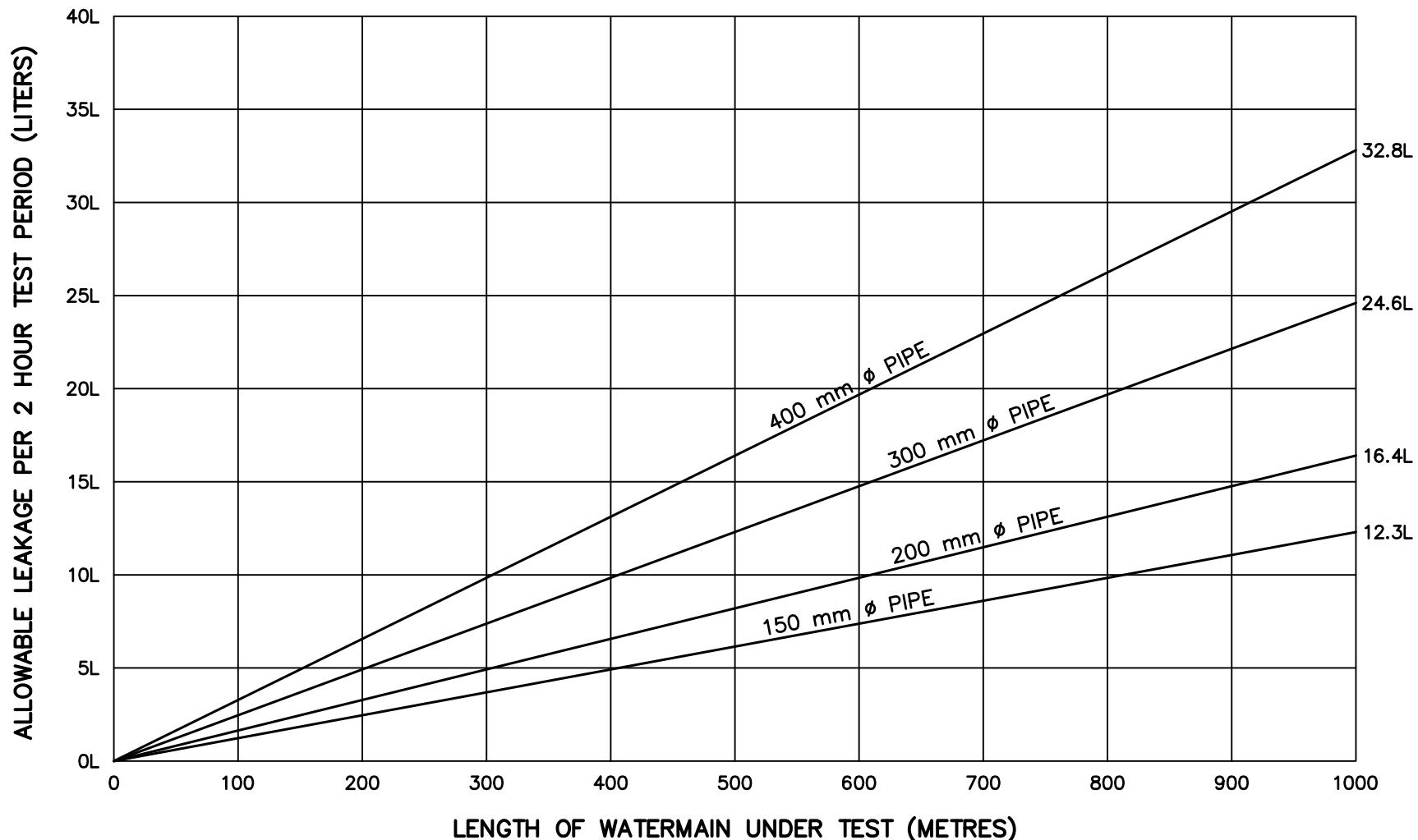
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

 ENGINEERING STANDARDS	
TITLE	
PHYSICAL SEPARATION REQUIREMENTS FOR INSTALLATION OF NEW WATERMAINS	
DWN. S.G.	DATE JAN./15
REVISED:	
SCALE N. T. S.	
DWG. NO.	

[Signature]
MANAGER ENGINEERING DIVISION

Z:\ENG\Standard Drawings\Std Dwgs\W-117-2.dwg

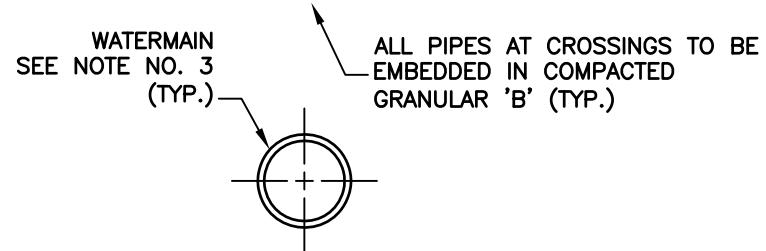
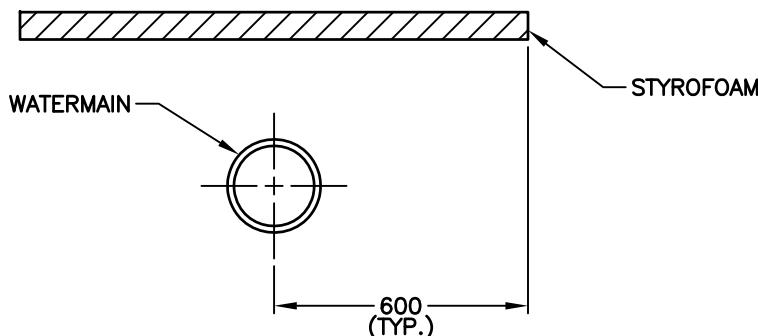
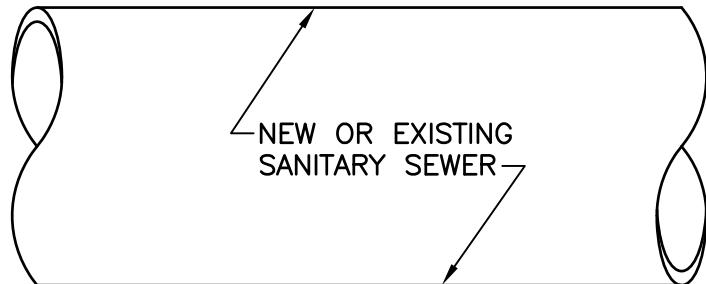
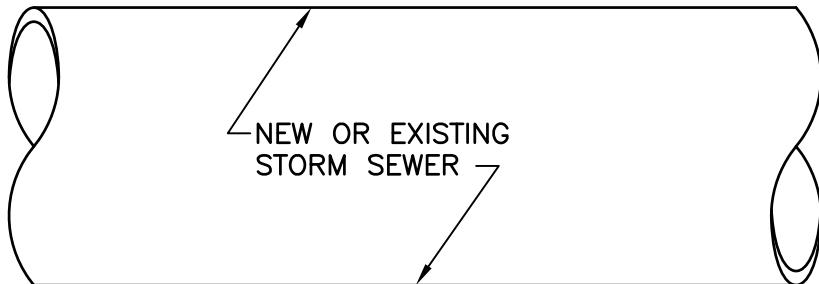
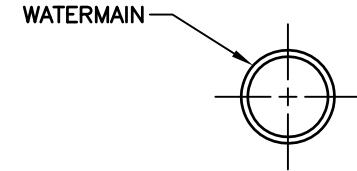
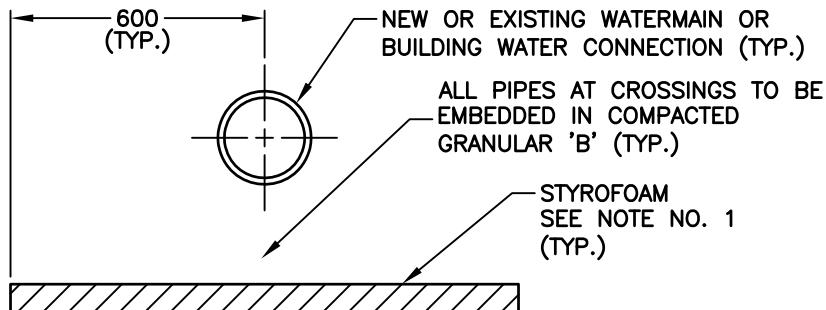
W-117-2



NOTES:

1. This graph is derived from OPSS 701 watermain specifications and is based on an allowable leakage of 0.082 liters per millimeter of pipe diameter per kilometer of pipe for the 2 hour test period at a static pressure of 1035 kPa.
2. Flushing and air bleeding shall be completed prior to start of test.
3. The minimum duration of test shall be 2 hours.
4. The test pressure shall not fall below 1000 kPa during the test. If the pressure falls, the test pump shall be used to maintain a test pressure of 1035 kPa and the measured leakage recorded.
5. Hydrant leads and barrels shall be included within the test section.

CITY OF Thunder Bay <i>Superior by Nature</i>		ENGINEERING STANDARDS	
DWNO. D.R.		DATE AUG. / 81	
REVISED: DEC. 2009		 MANAGER, ENGINEERING DIVISION	
SCALE N. T. S.		DWG. NO. W-118	
<small>Z:\ENG\Standard Drawings\Std Dwgs\W-118.dwg</small>			



ALL DIMENSIONS ARE IN MILLIMETRES OR METRES.



ENGINEERING
STANDARDS

TITLE WATERMAIN CROSSING SEWER MAIN
WITH LESS THAN 500 mm VERTICAL SEPARATION

DRAWN L.S./L.T.G. DATE OCT. 1993

REVISED: FEB. 2003

SCALE N. T. S.

PATH E:\ENG\STD\W-121

 CITY ENGINEER

DWG. NO.

W-121

NOTES:

- 1) STYROFOAM TO BE 50 mm THICK "H.I. BRAND", PLACED TO WIDTH OF SEWER TRENCH (O.D. + 600 mm MIN.).
- 2) WHEN INSTALLING NEW WATERMAINS, JOINTS ARE TO BE 2.45 m (MIN.) FROM Q SEWER. JOINTS SHALL BE MADE USING SMITH-BLAIR TYPE 441 OR ROBAR TYPE 1406 COUPLINGS.
- 3) ALL GRANULAR MATERIAL COMPACTION SHALL BE TO 100% PROCTOR DENSITY.

CATHODIC PROTECTION

- 1) REFER TO STD. DWG. W-125 FOR TYPICAL CATHODIC PROTECTION DETAILS
- 2) ANODE SPACING TO BE MAINTAINED AS PER SECTION 8.0

NOTE

FOR USE ON CAST WATERMANS 100 TO 300 mm DIAMETER.

(STANDARD MAY BE APPLIED TO LARGER CAST IRON WATERMAINS
WATERMAINS UP TO 600 mm DIA. AT THE DISCRETION OF THE
CITY ENGINEER.)

ALL DIMENSIONS ARE IN MILLIMETRES OR METRES.



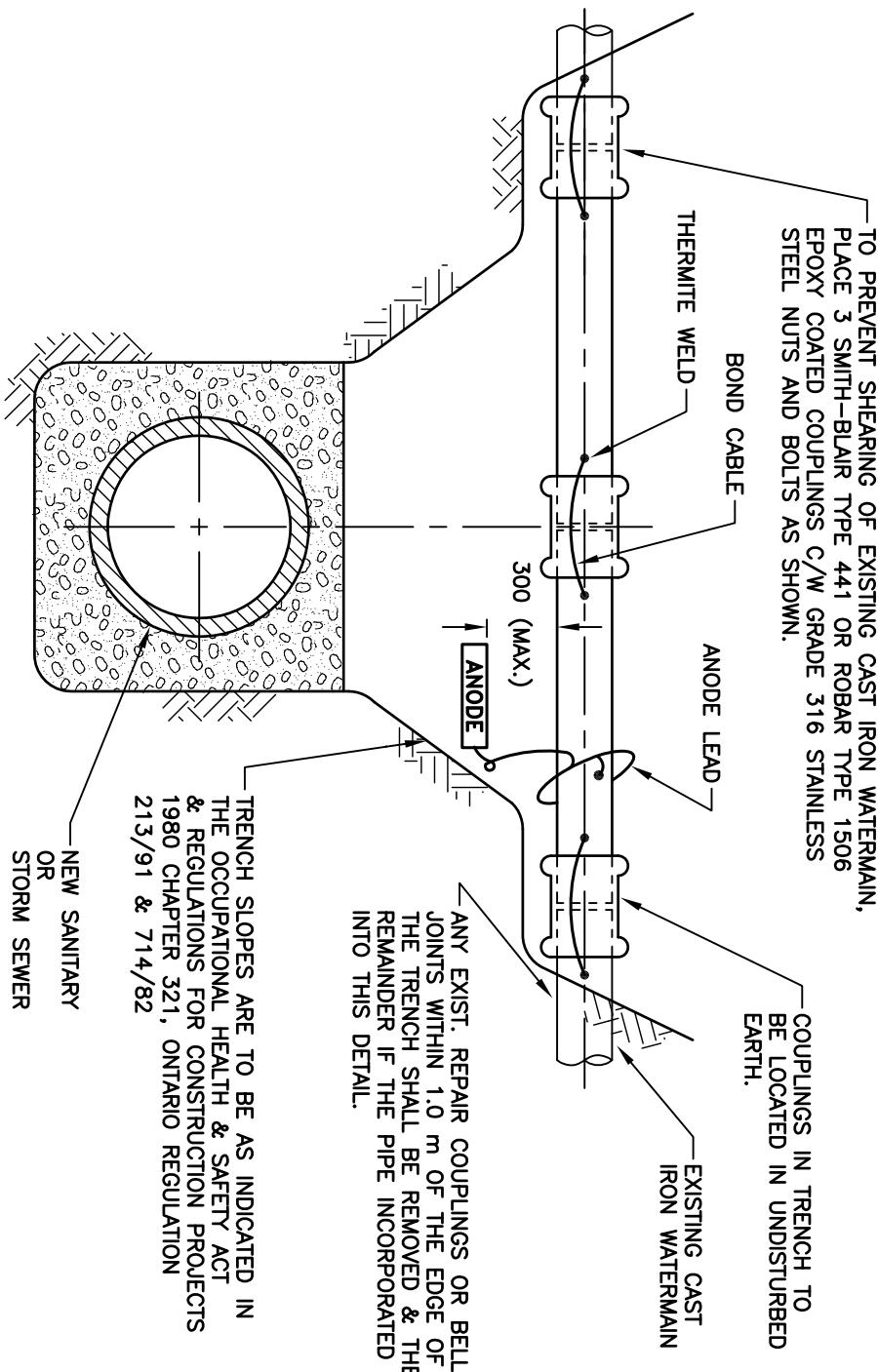
ENGINEERING STANDARDS

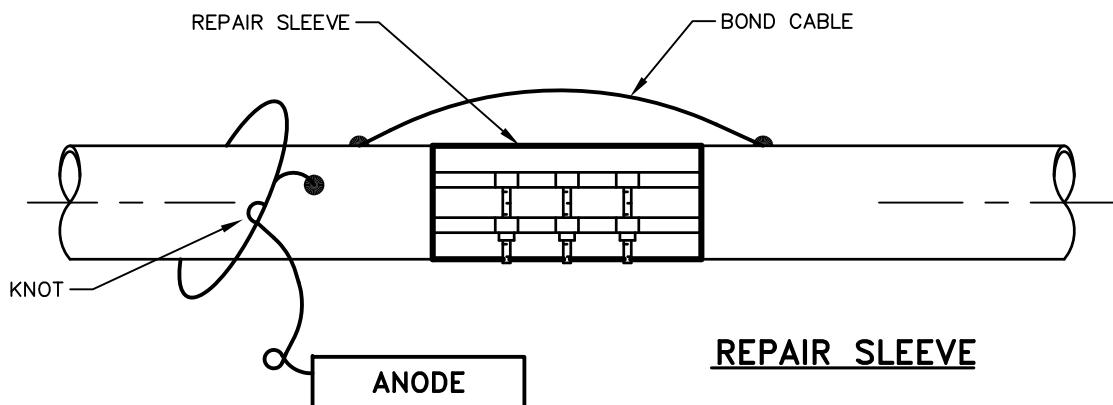
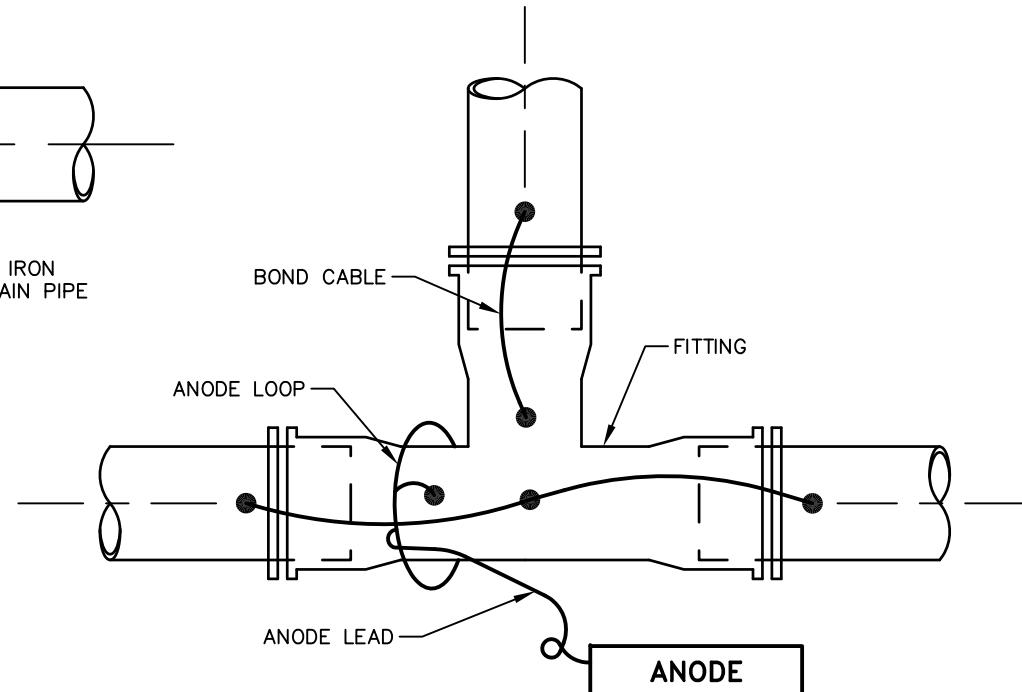
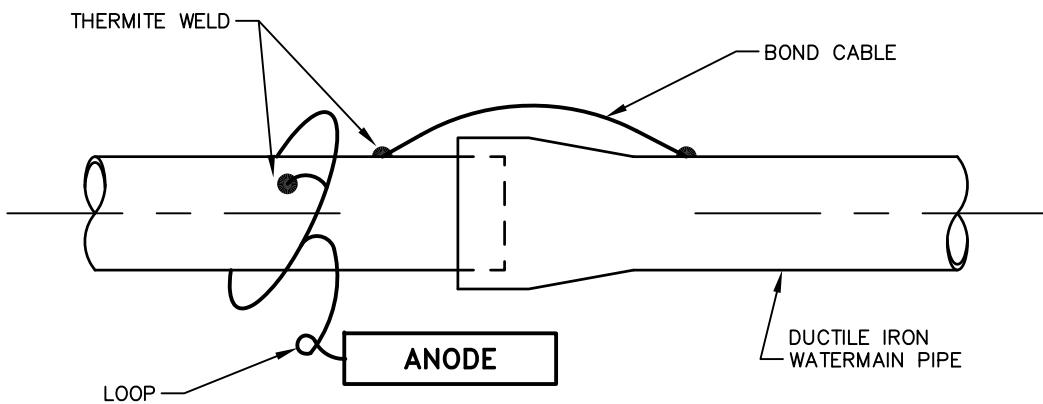
**PROTECTION OF EXISTING CAST
IRON WATERMAIN OVER NEW SANITARY
OR STORM SEWER**

DRAWN L.S./L.T.G.	DATE AUG. 1992
REVISED: FEB. 2003	
SCALE	N. T. S.
PATH	E:\ENG\STD\W-124

 CITY ENGINEER

W-124

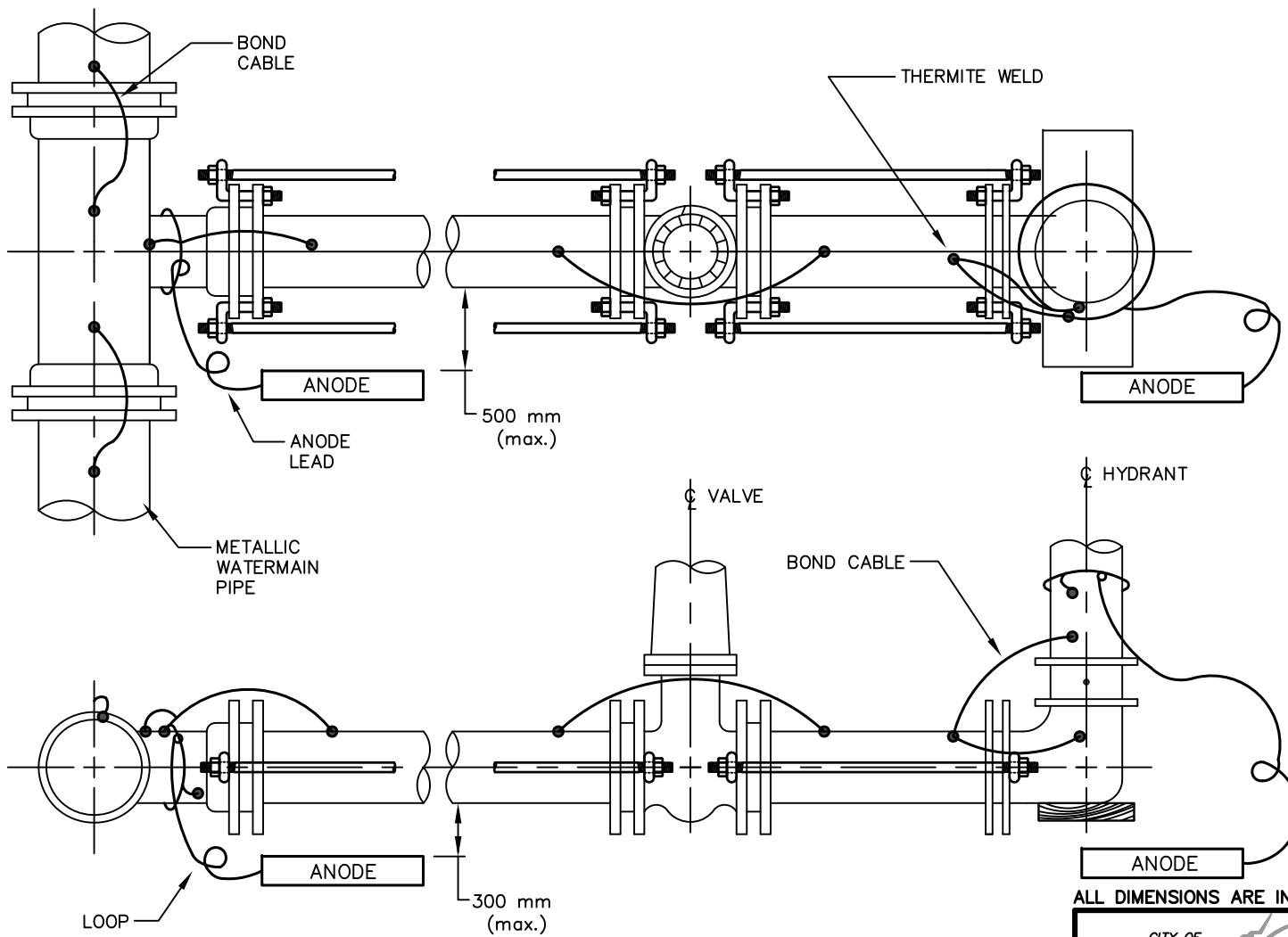




NOTES:

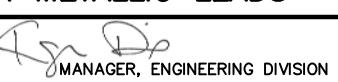
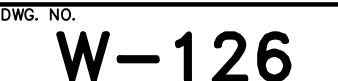
- 1) REFER TO SECTION 8.0 OF THE CITY OF THUNDER BAY ENGINEERING AND DEVELOPMENT STANDARDS FOR CORROSION PROTECTION REQUIREMENTS
- 2) MULTIPLE FITTINGS (UP TO 4 MAX.) CAN BE PROTECTED BY A SINGLE ANODE IF THEY ARE ALL LOCATED WITHIN 3 m OF EACH OTHER

CITY OF <i>Thunder Bay</i> Superior by Nature		ENGINEERING STANDARDS	
		TITLE BONDING & CATHODIC PROTECTION OF METALLIC MAINS & FITTINGS	
DWN.	M.P.	DATE	APR. 1995
REVISED: JAN. 2012			
SCALE	N. T. S.		
Z:\ENG\STANDARD DRAWINGS\STD DWGS\W-125			
DWG. NO.		<i>J. Munro</i> MANAGER, ENGINEERING DIVISION	
W-125			



NOTES:

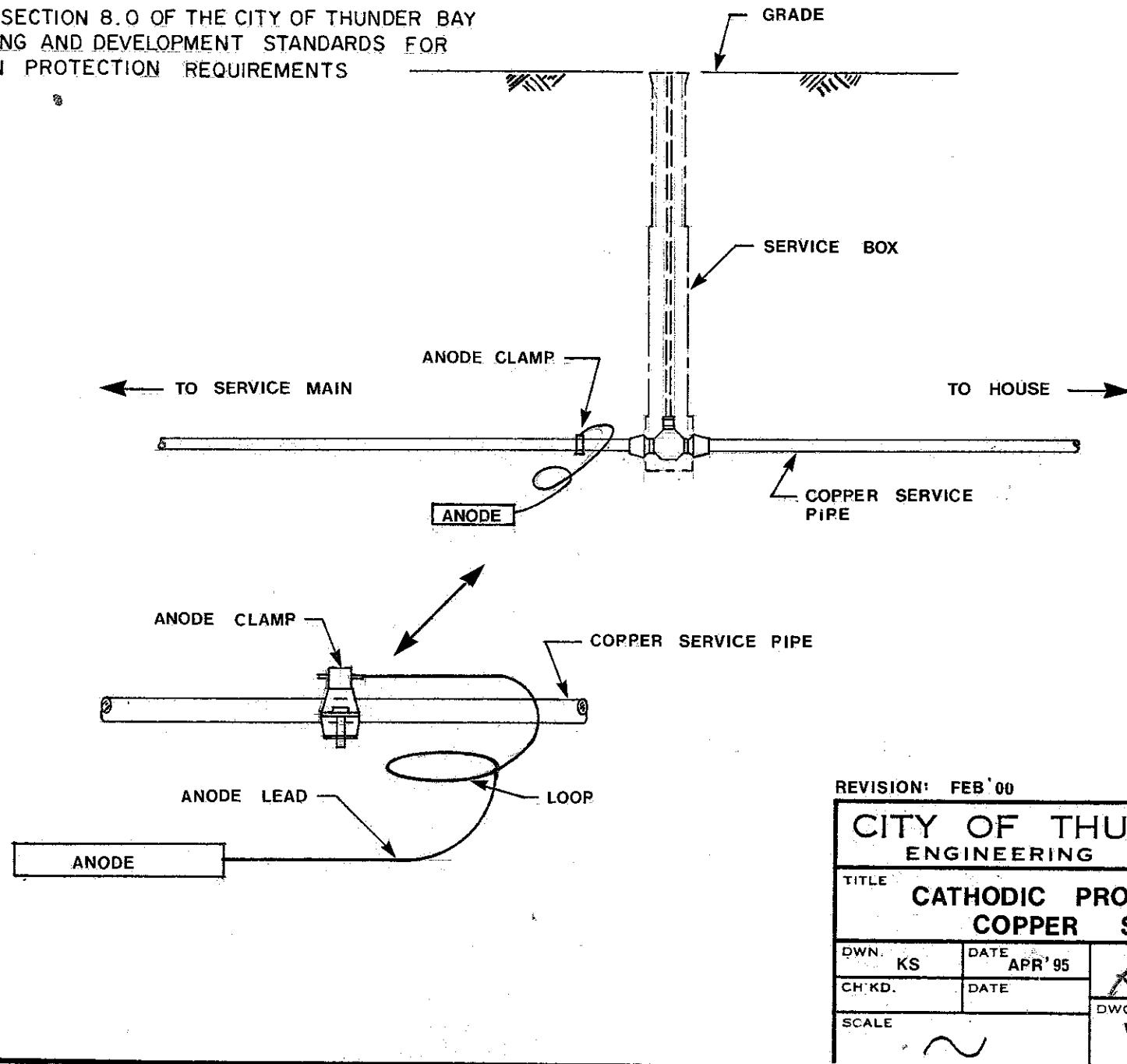
REFER TO SECTION 8.0 OF THE CITY OF THUNDER BAY ENGINEERING AND DEVELOPMENT STANDARDS FOR CORROSION PROTECTION REQUIREMENTS.

CITY OF Thunder Bay <i>Superior by Nature</i>		ENGINEERING STANDARDS	
TITLE BONDING & CATHODIC PROTECTION OF HYDRANT WITH METALLIC LEADS			
DRAWN K.S./S.K.H.	DATE APRIL 1995	 MANAGER, ENGINEERING DIVISION	
REVISED: JAN 2018		 DWG. NO.	
SCALE N. T. S.			
Z:\ENG\Standard Drawings\Std Dwg\W-126.dwg			

W-126

NOTE:

- REFER TO SECTION 8.0 OF THE CITY OF THUNDER BAY
ENGINEERING AND DEVELOPMENT STANDARDS FOR
CORROSION PROTECTION REQUIREMENTS



REVISION: FEB '00

**CITY OF THUNDER BAY
ENGINEERING STANDARDS**

TITLE

**CATHODIC PROTECTION FOR
COPPER SERVICES**

OWN.

KS

DATE

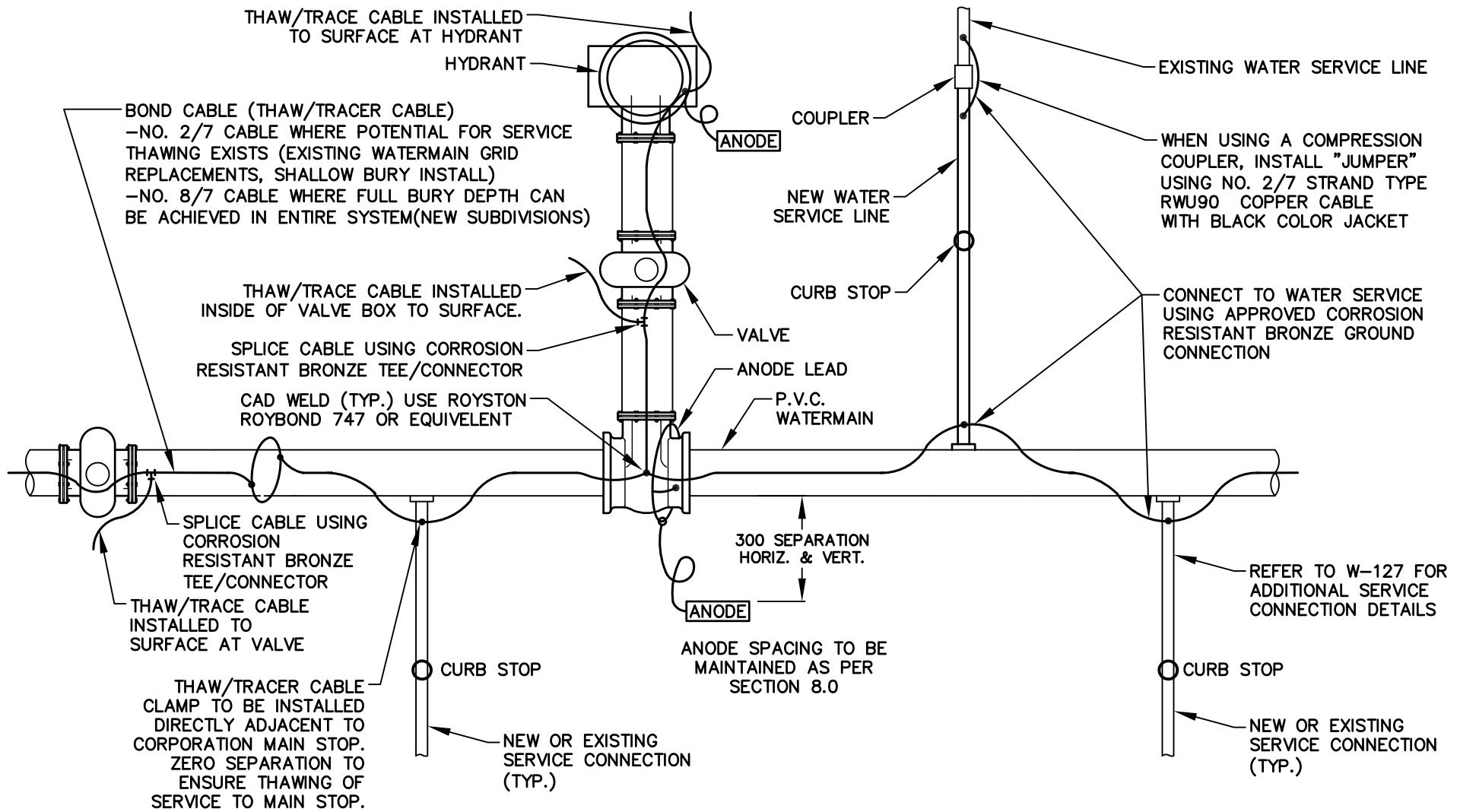
APR '95

CH'KD.

DATE

DWG. NO.

R. H. B. /
W-127



NOTES:

1. REFER TO SECTION 8.0 OF THE CITY OF THUNDER BAY ENGINEERING AND DEVELOPMENT STANDARDS FOR CORROSION PROTECTION REQUIREMENTS.
2. THAW/TRACER CABLE AS PER CITY OF THUNDER BAY MASTER PROJECT SPECIFICATION 02580 – WATERMAINS, SECTION 2.3.

CITY OF <i>Thunder Bay</i> Superior by Nature		ENGINEERING STANDARDS
TITLE		
NON-METALLIC WATERMAIN THAW/TRACER CABLE INSTALLATION		
DWN.	DATE	
S.G.	MAR./00	<i>[Signature]</i> MANAGER, ENGINEERING DIVISION
REVISED: JAN. 2018		
SCALE	N. T. S.	
Z:\ENG\Standard Drawings\Std Dwg\W-130.dwg		
DWG. NO. W-130		