

#### GENERAL - CONSTRUCTION

- 1. ALL MEASUREMENTS ARE IN METRES, PIPE SIZES IN MILLIMETRES, UNLESS OTHERWISE NOTED.
- 2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF GREATER SUDBURY LATEST VERSION OF THE ENGINEERING DESIGN SPECIFICATION MANUAL AND THE CURRENT ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS (IN THAT ORDER UNLESS NOTED OTHERWISE). IF A DISCREPANCY ARISES THE GREATER SUDBURY STANDARDS ARE TO GOVERN.
- 3. LOCATIONS OF EXISTING SERVICES ARE NOT GUARANTEED. CONTRACTOR TO CONFIRM EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- STANDARDS AND SPECIFICATIONS. 5. ALL DIMENSIONS AND ELEVATIONS ARE TO BE CHECKED AND VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER.
- 6. TRAFFIC CONTROLS TO CONFORM TO THE LATEST REVISION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ONTARIO TRAFFIC MANUAL TEMPORARY CONDITIONS (BOOK 7).
- 7. STREET AND TRAFFIC SIGNS M.T.O. STANDARDS
- 8. PERFORATED PIPE SUB-DRAINS 100mmø BIG 'O' WITH FILTER COVERING OR APPROVED EQUAL
- 9. FILTER FABRIC TERRAFIX 360R OR APPROVED EQUAL

GREATER SUDBURY (MIN 100mm TOPSOIL AND SOD).

- 10. DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS-517, 518 AND DEWATERING ASSESSMENT COMPLETED BY CAMBIUM INC. DATED MAY 12TH, 2022 TO MAINTAIN ALL TRENCHES IN A DRY CONDITION, CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS FOR DEWATERING.
- 11. ALL DISTURBED AREAS WITHIN EXISTING RIGHT-OF-WAYS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER AS DETERMINED BY THE CITY OF
- 12. ALL SEWER SYSTEMS INCLUDING SERVICE CONNECTIONS TO THE MANHOLES AND CATCHBASINS SHALL BE THOROUGHLY FLUSHED AND/OR CLEANED OF DEBRIS AND ALL PIPES SHALL BE TESTED IN ACCORDANCE WITH OPS AND SHALL BE INSPECTED BY AN APPROVED VIDEO CAMERA TESTING COMPANY AND THE ENGINEER SHALL BE PROVIDED A COPY OF APPROPRIATE DATA UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL APPROVAL. ANY SECTIONS OF SEWER OR SERVICE CONNECTIONS THAT FAIL TO MEET THE REQUIREMENTS SHALL BE REPAIRED OR REPLACED AT THE DIRECTION OF THE ENGINEER. ONLY CHEMICAL PRESSURE GROUTING REPAIR TECHNIQUES WILL BE CONSIDERED ACCEPTABLE.
- 13. THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE LATEST VERSION OF THE GEOTECHNICAL INVESTIGATION PREPARED BY CAMBIUM INC. GEOTECHNICAL INSPECTION TO BE PROVIDED DURING ALL SERVICING AND PARKING LOT SUB-GRADE AND PAVEMENT WORKS.
- 14. FOR SPECIFIC DIMENSIONS AND BUILDING INFORMATION REFER TO SITE PLAN/ARCHITECTURAL DRAWINGS.
- 15. THE CONTRACTOR SHALL INFORM THE CITY AND ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSPECTION FOR ALL CIVIL WORKS WITH THE ENGINEER IN ORDER TO PROVIDE SUFFICIENT CERTIFICATION AS REQUIRED BY THE CITY OF GREATER SUDBURY.
- 16. PIPE DEFLECTION SHOULD BE USED WHEREVER POSSIBLE TO MINIMIZE THE USE OF BENDS, WHEREVER IT IS NECESSARY TO DEFLECT FROM A STRAIGHT LINE, EITHER IN THE VERTICAL OR HORIZONTAL PLANE, THE AMOUNT OF DEFLECTION SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS.
- 17. SILTATION CONTROL SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ON THE PROPERTY HAVE BEEN STABILIZED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED DAILY TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY AND ARE MAINTAINED AND/OR UPDATED AS REQUIRED. IF THE SEDIMENT AND EROSION CONTROL MEASURES ARE NOT FUNCTIONING PROPERLY, NO FURTHER WORK SHALL OCCUR UNTIL THE SEDIMENT AND/OR EROSION ISSUE
- 18. ALL WORKS PROPOSED ALONG THE PROPERTY LINE, WHICH MAY REQUIRE EXCAVATION, BLASTING OR RE-GRADING OF ADJACENT PROPERTY, SHALL BE BROUGHT TO THE ATTENTION OF THE ADJACENT PROPERTY OWNER AND MAY PROCEED ONLY WITH THE ADJACENT PROPERTY OWNERS CONSENT.
- 19. THE ENGINEER'S CERTIFICATION SUBMISSION FOR ALL WORK COMPLETED IN THE MUNICIPAL RIGHT OF WAY AND ALL PIPE WORK CONSTRUCTED ON PRIVATE PROPERTY SHALL BE IN CONFORMANCE WITH THE CITY'S CERTIFICATION REQUIREMENTS.
- 20. PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT OF WAY, THE CONTRACTOR OR DEVELOPER WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS, AND SERVICE CONNECTION PERMITS FROM THE CITY'S ENGINEERING SERVICES.
- 21. ALL WORK WITHIN THE CITY RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF GREATER SUDBURY DESIGN STANDARDS AND SPECIFICATION, OR THE ONTARIO PROVINCIAL STANDARDS MAY, SUBJECT TO THE APPROVAL OF THE CITY OF GREATER SUDBURY, BE USED WHERE NO STANDARDOR SPECIFICATION IS NOTED.
- 22. ALL DISTURBED AREAS WITHIN THE MUNICIPAL RIGHT-OF-WAY SHALL BE RECTIFIED TO THE ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE GENERAL MANAGER OF GROWTH AND INFRASTRUCTURE.

### DRIVEWAY, ACCESS RAMPS AND PARKING LOT:

- 1. SUB-GRADE PREPARATION TO BE COMPLETED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATIONS RECOMMENDATIONS.
- 2. ASPHALT SURFACES TO BE CONSTRUCTED AS SHOWN ON THE PAVEMENT CROSS-SECTIONS DETAIL ON DRAWING DS1.
- 3. ENTRANCE CONNECTIONS TO CONSIST OF GRINDING EXISTING ASPHALT AND PROVIDING LAP JOINTS AS SHOWN ON THE PAVEMENT LAP JOINT DETAIL ON THIS DRAWING.
- 4. CONCRETE CURB INTERNAL TO THE PROPERTY TO BE AS PER BARRIER CURB OPSD-600.110. EXTERNAL CURB ALONG KITCHENER AVE TO BE CURB AND GUTTER AS PER OPSD 600.040.
- 5. SIDEWALKS TO BE CONSTRUCTED ON 150mm GRANULAR "A" BEDDING UNLESS OTHERWISE SPECIFIED.
- 6. CONCRETE STRENGTH FOR CURB AND SIDEWALK IS TO BE 30MPa AT 28 DAYS.

## SANITARY SEWER:

- 1. SANITARY MANHOLES TO BE 1200mmø PRECAST IN CONFORMANCE AS PER OPSD 701.010 WITH BENCHING ACCORDING TO OPSD-701.021
- 2. ALL 200mmø SANITARY SEWERS TO BE PVC SDR-35 (OR APPROVED EQUIVALENT)
- 3. SERVICE CONNECTIONS TO GSSD 1006.020, WITH BEDDING PER GSSD 1227.010.
- 4. SANITARY SEWER COVER LESS THAN 2.0m TO PIPE OBVERT WILL REQUIRE FROST PROTECTION (INSULATION). SEE DETAIL ON DRAWING DS1.
- 5. SANITARY SEWER CLEANOUTS AS REQUIRED BY THE ONTARIO BUILDING CODE TO BE CONSTRUCTED AS PER THE CITY OF GREATER SUDBURY STANDARDS.
- 6. ALL SANITARY MANHOLES SHALL BE COMPLETED WITH FROST STRAPS PER AND INSULATION AS GSSD 1229.010 AND OPSD 701.100.
- 7. TESTING INCLUDING BUT NOT LIMITED TO DEFLECTION AND CCTV ARE TO BE COMPLETED AS PER MUNICIPAL STANDARDS AND OPSS.

## **WATERMAINS:**

- 1. ALL WATER WORKS ARE TO BE COORDINATED WITH THE ENGINEER AND COMPLETED WITH A REPRESENTATIVE FROM THE ENGINEER'S OFFICE PRESENT.
- 2. DOMESTIC WATER SERVICES (50mmø) SHALL BE IPS SERIES PRESSURE PIPE POLYVINYL CHLORIDE (PVC) CLASS 100 (SDR 41) OR APPROVED EQUIVALENT. TRACER WIRE (#10 TWÚ) SHALL BE INSTALLED ALONG THE ENTIRE LENGTH OF PVC WATERMAIN. BROUGHT UP AT EACH VALVE BOX, CHAMBER AND HYDRANT, AND CONNECTED TO A FLANGE. TAPE IS TO BE USED TO AFFIX THE WIRE TO THE PIPE.
- 3. SERVICE CONNECTION SHALL BE SPECIFIED IN ACCORDANCE WITH GSSD 1104.010 AND GSSD 1104.020.
- 4. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE WATERMAIN / WATER SERVICES AND THE SANITARY / STORM SEWER IS TO BE 2.5m.
- 5. A MINIMUM OF 0.5m VERTICAL CLEARANCE BETWEEN THE WATERMAIN / WATER SERVICES AND ALL UTILITIES MUST BE KEPT WHILE STILL MAINTAINING A MINIMUM DEPTH OF COVER AT ALL TIMES. WATERMAIN & WATER SERVICE TO BE INSULATED WITH HI-40 INSULATION WHERE 0.5m SEPARATION CANNOT BE OBTAINED.
- 6. WATERMAIN / WATER SERVICE COVER LESS THAN 2.0m TO PIPE OBVERT WILL REQUIRE FROST PROTECTION INSULATION. (SEE DETAIL ON DRAWING DS1).
- 7. THE CONTRACTOR SHALL INFORM THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING WORK.
- 8. HYDRANT FLANGE ELEVATIONS SHALL BE SET AT A GRADE THAT WILL GIVE A FLANGE ELEVATION OF 100mm TO 150mm ABOVE THE FINAL GRADE AS PER OPSD 1105.010.
- 9. ALL VALVES ARE TO BE RESILIENT SEAT GATE VALVES COMPLETE WITH SLIDER TYPE VALVE BOX.
- 10. VALVES IN EXCESS OF 1.7m IN DEPTH SHALL REQUIRE A VALVE STEM EXTENSION TO A MINIMUM OF 2.0m.
- 11. VALVE, VALVE BOXES AND CHAMBERS SHALL BE INSTALLED INACCORDANCE WITH GSSD 1100.012, 1100.013, 1100.014, 1100.015, 1100.016, 1100.017, 1100.018 AND 1101.020.
- 12. CONTRACTOR IS RESPONSIBLE FOR ALL TIE-INS INCLUDING MATERIALS, EXCAVATION AND BACKFILL AS REQUIRED TO FACILITATE THE SWABBING
- AND TESTING OF THE NEW WATERMAINS UNDER THE SUPERVISION OF THE ENGINEER AND CITY. 13. THE CONTRACTOR WILL SWAB, PRESSURE TEST, CHLORINATE AND FLUSH THE NEW WATERMAINS, ANY SWABBING, PRESSURE TESTING, CHLORINATING AND FLUSHING BEYOND THE INITIAL PROCEDURE WILL BE THE CONTRACTORS' RESPONSIBILITY. PRESSURE TEST TO 1034kPa (150psi) FOR TWO HOURS, WITHOUT PRESSURE DROP. WATERMAIN TO BE SWABBED AND CHLORINATED BY THE CONTRACTOR UNDER THE

SUPERVISION OF THE ENGINEER. UPON SUCCESSFUL TEST RESULTS OF THE CONTRACTORS INSTALLED SYSTEM, CHLORINATE AT 50mg/L

- CONCENTRATION FOR 24 HOURS. COLLECT SAMPLES FOR BACTERIOLOGICAL TESTING. SAMPLES TO BE COLLECTED BY A 'CERTIFIED OPERATOR'. 14. OPERATION OF FIRE HYDRANTS AND VALVES ON POTABLE WATER BY OTHER THAN CITY WATER WORKS DEPARTMENT IS PROHIBITED.
- 15. CORROSION PROTECTION WITHIN THE RIGHT-OF-WAY TO BE IN CONFORMANCE WITH GSSS 442 (DENSO TAPE WRAPPED AROUND ALL METAL PIPES AND APPURTENANCES, WATER SERVICES AND FITTINGS, EXCLUDING COPPER SERVICES, AS PER MANUFACTURERS SPECIFICATIONS.)

#### 0.3 0.3 0.3 BLVD(SEE DETAIL) -- FILTER CLOTH GRANULAR " CONCRETE CURB & GUTTER AS SPECIFIED SUBDRAIN (SEE DETAIL) FILL SECTION CUT SECTION SEE NOTE #4 NOTES: ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE INDICATED. 2. DIMENSIONS SHOWN ARE TO BE USED UNLESS OTHERWISE SPECIFIED 3. SLOPES : FOR HEIGHTS OF FILL OR ASPHALT OR SOD BLVD CONCRET USE A 3 : 1 SLOPE. FOR HEIGHTS OF FILL OR DEPTHS OF CUT OVER 1 m, USE A 2 : 1 SLOPE. SLOPES TO BE SURFACE DRESSED AS SPECIFIED IN THE CONTRACT. 4. ALL TOPSOIL IS TO BE STRIPPED PRIOR TO GRANULAR MATERIAL BEING PLACED, IF DEPTH IS LESS THAN 1 m. GRANULAR "A" & "B" CONNECTED TO BOTH SIDES OF STRUCTURES & MORTARED IN PLACE 5. UTILITY LOCATIONS TO BE APPROVED BY SIDEWALK AND BOULEVARD THE CITY ENGINEER. DETAILS AT DRIVEWAYS SEE GSSD-225.030 FOR TYPICAL SERVICE LOCATIONS. SUBDRAIN DETAIL CLAIMER OF WARRANTY a data is provided "as—is", without warranty of any kind eith RAWN BY: WK/SS/RF/BK REV No: 1 ssed or implied. Any and all liabilities for damage, direct **STANDARD** TE: 2003-03-03 DATE: OCT 2016 Sudbury ROAD SECTION rights are reserved. No part of the supplied data may be oduced, or transmitted to others, in any form or by any ins, without the written permission of the OF GREATER SUDBURY. URBAN A1924-1 (1 OF PP'D: PETER CHI GSSD-225.010

Number of bales varies and shall suit ditch.

2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to

Fill and compact gaps with loose straw.

through barrier

the sides of the ditch to prevent water flow compacted

All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

STRAW BALE FLOW CHECK DAM

PRIMARY ARTERIAL 30 m MINIMUM ROAD ALLOWANCE

SECONDARY ARTERIAL 26 m MINIMUM ROAD ALLOWANCE

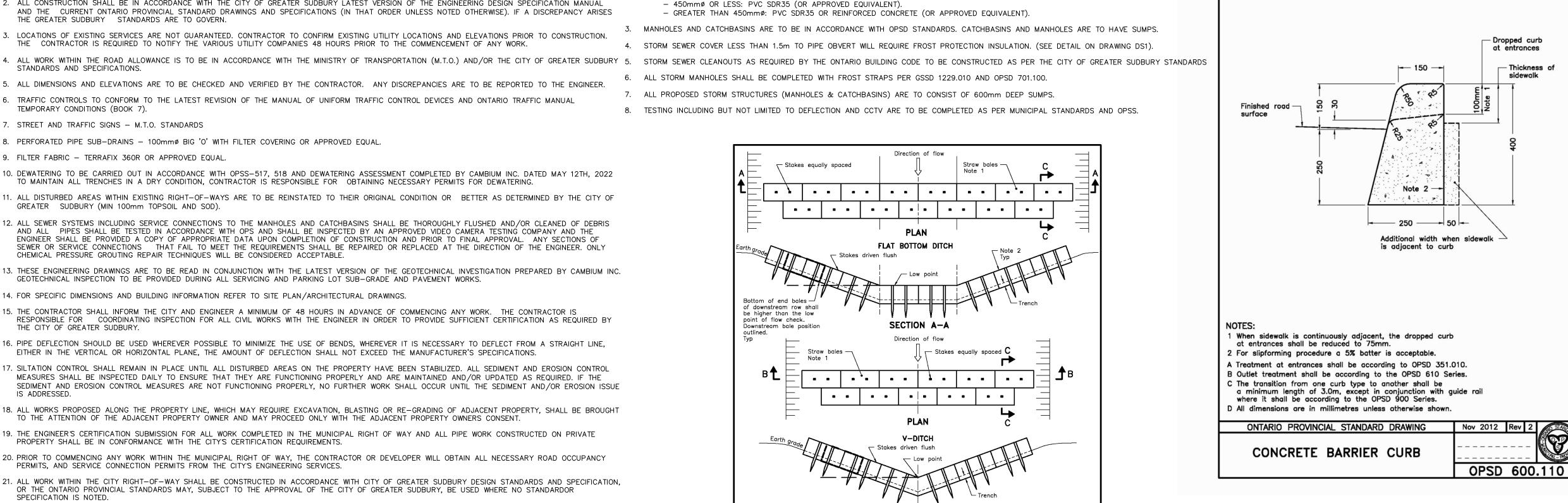
OCAL & COLLECTOR 20 m MINIMUM ROAD ALLOWANCE

10 m COLLECTOR ROAD

18.3 m PRIMARY ARTERIAL ROAD 11 m SECONDARY ARTERIAL ROAD

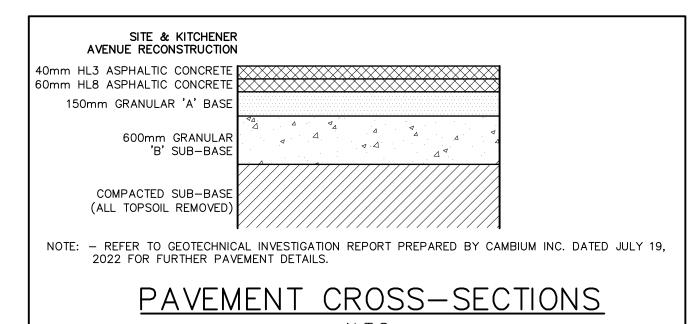
9 m LOCAL ROAD

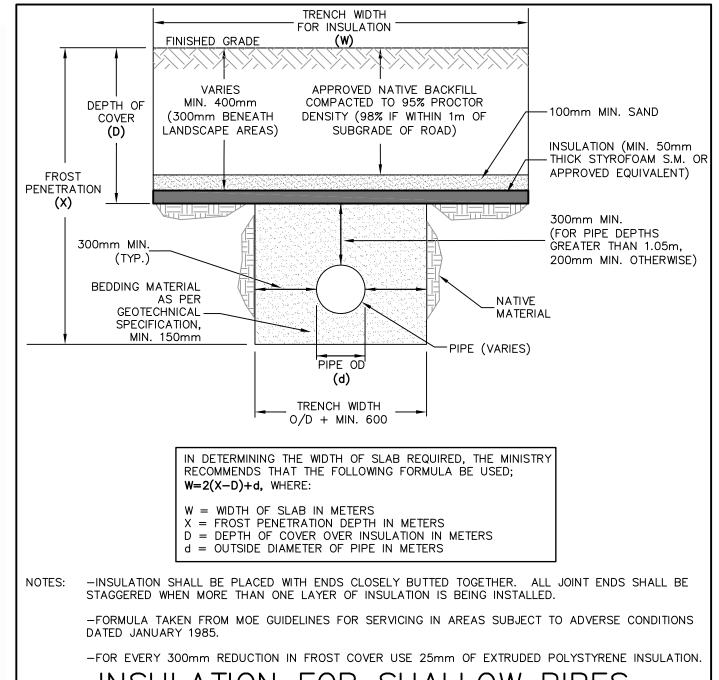
backfilled and

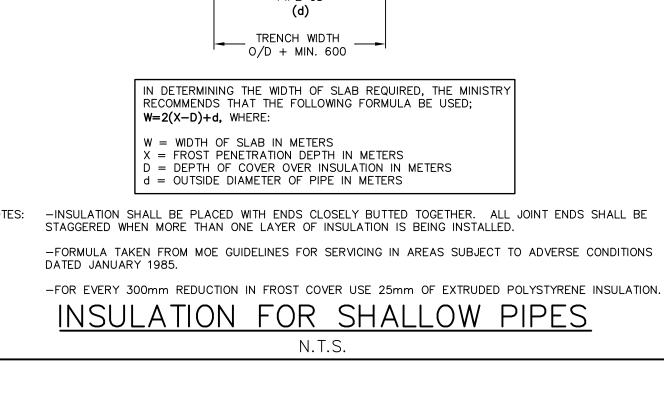


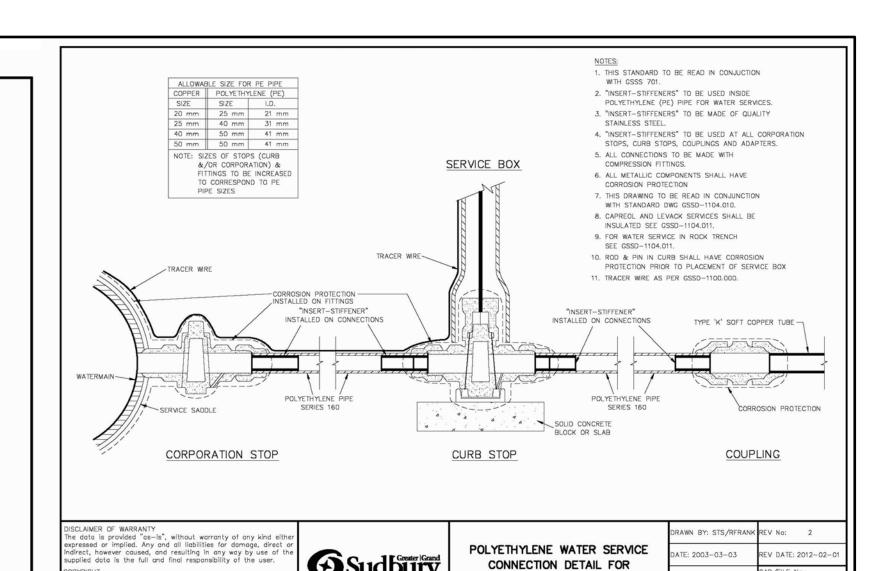
be in contact

OPSD 219.180







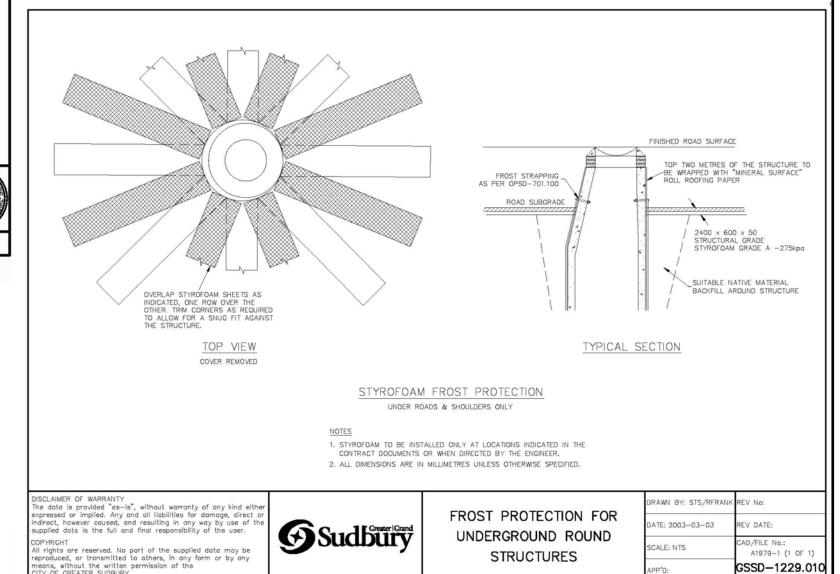


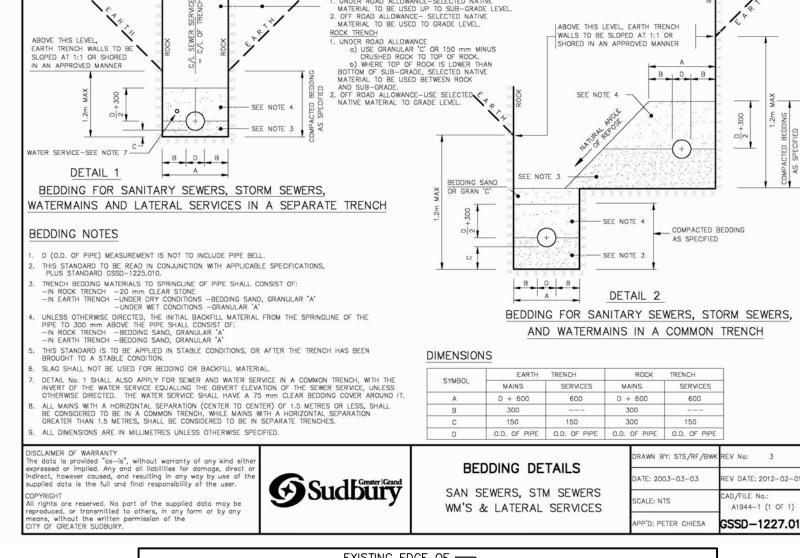
oduced, or transmitted to others, in any form or by any is, without the written permission of the OF GREATER SUDBURY.

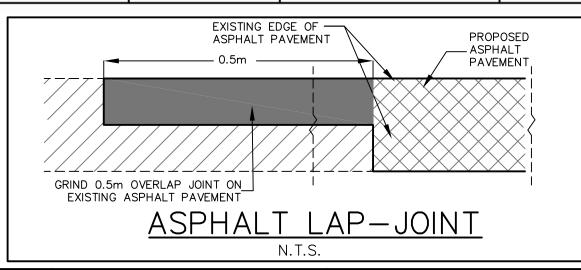
25 mm TO 50 mm DIAMETER SIZES

A1970-1 (1 OF

GSSD-1104.020



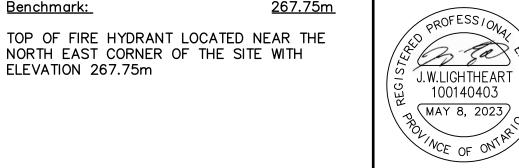




# <u>Notes:</u> 1. Unless noted otherwise, the measurements and distances shown on this drawing are shown in meters. 2. Do not scale drawings.

3. It is the contractor's responsibility to verify all dimensions, levels and datums on site and report any discrepancies or omissions to WMI & Associates Ltd. prior to construction.

4. This drawing is to be read and understood in conjunction with all other relevant documents applicable to this project. 5. This drawing is the exclusive property of WMI & Associates Ltd. and the reproduction of any part of this document without prior written consent is strictly prohibited.



Benchmark:

STORM SEWER:

outlined.

1. ALL SITE DRAINAGE POSSIBLE, INCLUDING ALL ROOF AND ASPHALT DRAINAGE, IS TO BE DIRECTED TO THE INTERNAL STORM SEWER SYSTEM.

	No.	Issue / Revision	Date
	1	1ST SUBMISSION	AUG. 26, 2022
	2	2ND SUBMISSION	MAY 8, 2023

**KINGSWAY GAS STATION DETAIL SHEET 1** 

<u> Client:</u> Bluerock Developments 507 Peel Street Whitby, Ontario L1N 3Y7



www.wmiengineering.ca Orawing No Drawn By Checked By DS<sub>1</sub> Project No. 20-643 N.T.S.