

NOTES

A. GENERAL NOTES

- ALL INFORMATION TO BE VERIFIED ON SITE PRIOR TO COMMENCING ANY WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE CONSULTANT IMMEDIATELY.
- ALL UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL CONFIRM THE LOCATION ON SITE AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES.
- THE CONTRACTOR SHALL NOTE THAT SERVICES FROM THE MAIN LINES ARE NOT NECESSARILY SHOWN. THE CONTRACTOR SHALL ALSO NOTE THAT THE LOCATIONS OF SERVICES ON THE DRAWINGS ARE APPROXIMATE AND ACTUAL LOCATIONS SHALL BE VERIFIED DURING CONSTRUCTION.
- VERTICAL CONTROL SHALL BE PROVIDED BY CONSULTANT.
- THE CONTRACTOR SHALL CONFIRM ALL BENCHMARK ELEVATIONS PRIOR TO CONSTRUCTION.
- ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE NOTED.
- DRAWINGS ARE NOT TO BE SCALED.
- NO BLASTING WILL BE ALLOWED ON THIS CONTRACT.**
- AGGREGATES– CRUSHED QUARRY MATERIAL GRANULAR A AND B AS PER OPSS 1010.**
- EXISTING TREES TO BE RETAINED AND PROTECTED. NO TREES SHALL BE REMOVED WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER. ANY DAMAGED BRANCHES SHALL BE TRIMMED.
- IN THE EVENT THAT DEEPLY BURIED OR PREVIOUSLY UNDISCOVERED ARCHAEOLOGICAL DEPOSITS ARE DISCOVERED IN THE COURSE OF DEVELOPMENT OR SITE ALTERATION, ALL WORK MUST IMMEDIATELY CEASE AND THE SITE MUST BE SECURED. THE CULTURAL PROGRAM BRANCH OF THE MINISTRY OF TOURISM, CULTURE AND SPORT (416–314–7123) AND THE CITY OF KINGSTON'S PLANNING, BUILDING AND LICENSING SERVICES (613–546–4291 EXT. 3180) MUST BE IMMEDIATELY CONTACTED.
- IN THE EVENT THAT HUMAN REMAINS ARE ENCOUNTERED, ALL WORK MUST IMMEDIATELY CEASE AND THE SITE MUST BE SECURED. THE KINGSTON POLICE (613–549–4660), THE REGISTRAR OF CEMETERIES AND CREMATORIUMS REGULATION UNIT OF THE ONTARIO MINISTRY OF GOVERNMENT AND CONSUMER SERVICES (416–326–8404), THE CULTURAL PROGRAM BRANCH OF THE MINISTRY OF TOURISM, CULTURE AND SPORT (416–314–7132), AND HERITAGE STAFF AT THE CITY OF KINGSTON'S PLANNING, BUILDING AND LICENSING SERVICES (613–546–4291 EXT. 3180) MUST BE IMMEDIATELY CONTACTED.

B. CONSTRUCTION NOTES

- ALL EXISTING SIDEWALK WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED.
- ALL DISTURBED AREAS SHALL BE REINSTATED TO PRE–CONSTRUCTION CONDITIONS OR BETTER.
- CONCRETE CURB & GUTTER SHALL BE DEPRESSED AT ALL EXISTING ENTRANCES UNLESS OTHERWISE NOTED.
- ALL CONCRETE CURB AND GUTTER SHALL BE TRANSITIONED TO MATCH INTO EXISTING, ALL TRANSITIONS BETWEEN DIFFERENT CURBS SHALL BE 3m OR AS DIRECTED BY CONSULTANT.
- ALL CONCRETE CURB AND GUTTER TERMINATIONS SHALL BE AS PER OPSD 608.010.
- SIDEWALK RAMP AND TACTILE PLATES SHALL BE INSTALLED AS PER OPSD 310.033.
- EXISTING GRAVEL DRIVEWAYS SHALL BE REINSTATED TO PRE–CONSTRUCTION CONDITION OR BETTER.
- ASPHALT DRIVEWAYS AND ENTRANCES SHALL BE RETAINED, IF IT IS NOT POSSIBLE, SHALL BE SAWCUT AND REINSTATED TO PRE–CONSTRUCTION CONDITION OR BETTER.
- ALL MAILBOXES AND STREET SIGNS SHALL BE REINSTATED IN PRE–CONSTRUCTION LOCATIONS WHERE POSSIBLE. IF THE ORIGINAL LOCATION IS NOT POSSIBLE, LOCATION TO BE REVIEWED ON SITE WITH CONSULTANT.
- IF EXISTING ASPHALT THICKNESS IS GREATER OR EQUAL THAN 60mm JOINTS SHALL BE A LAP JOINT, FOR LESS THAN 60mm BUTT JOINT.
- ROAD SUBGRADE SHALL BE CONSTRUCTED AS PER THE CONTRACT DOCUMENTS.
- PROVIDE 2% CROSSFALL ON ROAD SURFACES, AND 3% CROSSFALL ON SUBGRADE, UNLESS OTHERWISE NOTED HEREIN.
- EXISTING PAVEMENT THICKNESSES TO BE MATCHED AT ALL JOINTS.
- ALL GROUND SURFACES SHALL BE GRADED TO PREVENT PONDING AND WITHOUT LOW AREAS.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR TO COMPLY WITH THE INTEGRATED ACCESSIBILITY STANDARDS SPECIFIED IN O. REG. 191/11
- ALL ASPHALT DRIVEWAYS TO BE REINSTATED TO MATCH INTO PROPOSED GRADES.
- ALL FIELD ENTRANCES AND GRAVEL DRIVEWAYS TO BE REINSTATED TO MATCH INTO EXISTING. FIELD ENTRANCES TO BE REINSTATED WITH ACCEPTABLE NATIVE MATERIAL.
- ALL SIDEWALKS SHALL BE TRANSITIONED TO MATCH INTO EXISTING, ALL TRANSITIONS SHALL BE BUILT WITH ONE PANEL OF SIDEWALK.
- ALL TREE STUMPS WITHIN THE CONSTRUCTION LIMITS TO BE GRUBBED AS DIRECTED BY THE CONSULTANT.
- MINIMUM SEPARATION OF 1.00m TO BE MAINTAINED AT ALL CROSSINGS OF UTILITY CONDUIT AND STORMWATER INFRASTRUCTURE
- ALL SITE GRADING TO ENSURE POSITIVE DRAINAGE MINIMUM 5m AWAY FROM ALL BUILDINGS
- TWIN CULVERTS TO HAVE 0.3m BETWEEN OUTER WALLS
- SITE GRADING TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL ROADS AND PARKING

C. ENVIRONMENTAL

WHILE UNDERTAKING CLEARING, DEMOLITION, EXCAVATION OR CONSTRUCTION THE OWNER AND THEIR CONTRACTORS SHALL BE VIGILANT FOR THE POTENTIAL PRESENCE OF UNDERGROUND FUEL TANKS, POTENTIALLY CONTAMINATED SOILS OR GROUNDWATER, BURIED WASTES OR ABANDONED WELLS. IF ANY OF THE ABOVE ARE ENCOUNTERED OR SUSPECTED, THE OWNER SHALL ENSURE THAT:

- ANY WASTES GENERATED BY SITE CLEAN–UPS ARE MANAGED IN ACCORDANCE WITH APPLICABLE LAWS AND STANDARDS;
- ANY ABANDONED FUEL TANKS ENCOUNTERED ARE DECOMMISSIONED IN ACCORDANCE WITH APPLICABLE LAWS AND STANDARDS;
- ANY UNUSED WATER WELLS (DRILLED OR DUG) ARE PROPERLY ABANDONED IN ACCORDANCE WITH O. REG. 903 – WELLS OR AS REVISED;
- IF IT APPEARS LIKELY THAT CONTAMINATION EXTENDS BEYOND THE BOUNDARIES OF THE SUBJECT PROPERTY, THE CONTRACTOR SHALL NOTIFY THE CONSULTANT.
- CONSTRUCTION WASTES ARE NOT TO BE BURIED WITHIN THE PROPERTY THAT IS THE SUBJECT OF THIS AGREEMENT, AND
- THAT THE OWNER AND THEIR CONTRACTORS REPORT ALL SPILLS TO THE MINISTRY OF ENVIRONMENT'S SPILLS ACTION CENTRE (1–800–268–6060) AND TO THE MUNICIPALITY FORTHWITH.
- THE CONTRACTOR TO TAKE ALL REASONABLE PRECAUTIONS TO PREVENT THE MIGRATION OF ANY CONTAMINATION.

SEDIMENT AND EROSION CONTROL TO BE INSTALLED PRIOR TO COMMENCEMENT OF ANY WORK AND TO REMAIN IN PLACE UNTIL THE SITE HAS STABILIZED.

SILT FENCES SHALL BE INSTALLED AS PER OPSD 219.110 ALONG THE EDGE OF DISTURBED GROUND WITHIN THE PROJECT LIMITS. INSPECTION OF SILT FENCE SHALL BE CARRIED OUT:
– ONCE EVERY TWO (2) WEEKS FOR DRY WEATHER PERIODS (ACTIVE AND INACTIVE CONSTRUCTION PHASES);
– AFTER EACH SIGNIFICANT STORM EVENT (A SIGNIFICANT STORM EVENT IS DEFINED AS A MINIMUM OF 25MM OF RAIN IN ANY 24–HOUR PERIOD);
– AFTER EACH SIGNIFICANT SNOWMELT EVENT;
– AFTER ANY EXTREME WEATHER EVENT

GEOTEXTILE SHALL BE INSTALLED UNDER CATCH BASIN LIDS IN THE CONSTRUCTION LIMITS DURING CONSTRUCTION.

- EROSION AND SEDIMENT CONTROL AS PER OPSS.MUNI 805

ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE CONTRACTOR COMMENCING ANY WORK ON SITE AND SHALL BE MAINTAINED UNTIL SUCH TIME AS THE CONTRACTOR HAS COMPLETED ALL WORK REQUIRED UNDER THE CONTRACT.

- ALL SEDIMENT AND EROSION CONTROL MEASURES TO STAY IN PLACE UNTIL ALL BARE SOIL HAS VEGETATION ESTABLISHED

D. SANITARY SEWERS

SANITARY MAINTENANCE HOLES

- MAINTENANCE HOLES TO BE 1200mm DIAMETER PRECAST CONCRETE AS PER OPSD 701.010 UNLESS NOTED OTHERWISE
- MAINTENANCE HOLES TO HAVE FRAME AND GRATE AS PER OPSD 401.010 UNLESS NOTED OTHERWISE
- MAINTENANCE HOLES BACKFILL AND COMPACTION AS PER OPSS.MUNI 402
- BEDDING MATERIAL SHALL BE GRANULAR A
- BACKFILL MATERIAL SHALL BE GRANULAR A
- MAINTENANCE HOLES INSTALLATION SHALL BE AS PER OPSS.MUNI 407
- MAINTENANCE HOLES ARE TO HAVE DAMP PROOFING SYSTEM BAKOR BLUESKIN SA SELF ADESSIVE WATER PROOFING USED IN CONJUNCTION WITH BLUESKIN ADHESIVE (PRIMER) OR APPROVED EQUIVALENT, AROUND EVERY JOINT A MINIMUM OF 150mm ABOVE AND BELOW THE JOINT
- ALL MAINTENANCE HOLE AND CATCH BASIN GRATE ELEVATIONS ARE APPROXIMATE AND ARE SUBJECT TO ADJUSTMENT IN THE FIELD.

SANITARY PIPES

- ALL PIPE MATERIAL TO BE CSA CERTIFIED AND CONFORM TO OPSS AS APPLICABLE.
- PIPE MATERIAL TO BE IDENTIFIED AT PRE–CONSTRUCTION MEETINGS REGARDLESS OF PIPE MATERIAL INDICATED ON PROFILE
- SANITARY PIPES SHALL HAVE TRENCHING, BACKFILL AND COMPACTION AS PER OPSS.MUNI 401
- BEDDING MATERIAL SHALL BE GRANULAR A. DEPTH SHALL BE 150mm
- COVER MATERIAL SHALL BE GRANULAR A. COVER MATERIAL SHALL EXTEND FROM THE TOP OF BEDDING TO 300mm ABOVE TOP OF PIPE.
- SANITARY PIPES INSTALLATION SHALL BE AS PER OPSS.MUNI 410
- SANITARY PIPES SHALL BE GREEN PVC
- WHERE A CLEARANCE BETWEEN A PIPE OR CONDUIT CROSSINGS OF 500mm OR LESS CANNOT BE AVOIDED, THERE SHALL BE CONCRETE ENCASEMENT OR NON–SHRINK BACKFILL OF THE CROSSING EXTENDING AT LEAST ONE METER IN EACH DIRECTION ON EACH PIPE.
- PIPES SHALL BE INSTALLED AS PER OPSS 410, AND ALL PIPE CONNECTIONS SHALL BE WATER TIGHT.

E. STORM SEWERS

STORM WATER PIPES

- ALL PIPE MATERIAL TO BE CSA CERTIFIED AND CONFORM TO OPSS AS APPLICABLE.
- PIPE MATERIAL TO BE IDENTIFIED AT PRE–CONSTRUCTION MEETINGS REGARDLESS OF PIPE MATERIAL INDICATED ON PROFILE
- STORM WATER PIPES SHALL HAVE TRENCHING, BACKFILL AND COMPACTION AS PER OPSS.MUNI 401
- BEDDING MATERIAL SHALL BE GRANULAR A. DEPTH SHALL BE 150mm
- COVER MATERIAL SHALL BE GRANULAR A. COVER MATERIAL SHALL EXTEND FROM THE TOP OF BEDDING TO 300mm ABOVE TOP OF PIPE.
- STORM WATER PIPES INSTALLATION SHALL BE AS PER OPSS.MUNI 410
- STORM WATER PIPES SHALL BE WHITE PVC
- WHERE A CLEARANCE BETWEEN A PIPE OR CONDUIT CROSSINGS OF 500mm OR LESS CANNOT BE AVOIDED, THERE SHALL BE CONCRETE ENCASEMENT OR NON–SHRINK BACKFILL OF THE CROSSING EXTENDING AT LEAST ONE METER IN EACH DIRECTION ON EACH PIPE.
- PIPES SHALL BE INSTALLED AS PER OPSS 410, AND ALL PIPE CONNECTIONS SHALL BE WATER TIGHT.

STORM WATER CULVERTS

- STORM WATER CULVERTS SHALL HAVE TRENCHING, BACKFILL AND COMPACTION AS PER OPSS.MUNI 401
- BEDDING MATERIAL SHALL BE GRANULAR A. DEPTH SHALL BE 150mm
- COVER MATERIAL SHALL BE GRANULAR A. COVER MATERIAL SHALL EXTEND FROM THE TOP OF BEDDING TO 300mm ABOVE TOP OF PIPE.
- STORM WATER CULVERTS INSTALLATION SHALL BE AS PER OPSS.MUNI 410
- STROM WATER CULVERTS SHALL BE DUEL WALL HDPE OR CSP
- WALL THICKNESS OF ALL CSP CULVERTS SHALL BE 2.8mm

F. WATER MAINS AND SERVICES

- BEDDING MATERIALS SHALL BE GRANULAR A LIMESTONE CONFORMING TO THE REQUIREMENTS OF OPSS 1010 AT A MINIMUM DEPTH OF 200 MM.
COVER MATERIAL SHALL BE GRANULAR A LIMESTONE MATERIAL CONFORMING TO THE REQUIREMENTS OF OPSS 1010 MINIMUM DEPTH OF 300 MM ABOVE CROWN OF PIPE.
- MINIMUM INSTALLATION DEPTH SHALL BE 1.8 M WITH 0.5 M VERTICAL SEPARATION BETWEEN ALL SEWER CROSSINGS.
- WATER MAINS SHALL CONFORM TO THE FOLLOWING.
PLASTIC PIPE
 - PLASTIC PIPE SHALL CONFORM TO AWWA C900–16 POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FABRICATED FITTINGS, 100MM THROUGH 1,500MM, WITH PRIOR APPROVAL FROM C.N.U. LARGER PIPE SIZES AND A LARGER SDR NUMBER MAY BE USED, HOWEVER THE MINIMUM WALL THICKNESS ALLOWED WILL BE 26MM.
 - THE PIPE SHALL BE HOMOGENEOUS THROUGHOUT, FREE FROM VOIDS, CRACKS, INCLUSIONS, AND OTHER DEFECTS.
 - THE COLOUR IS TO BE "BLUE BRUTE".
 - SERVICE CONNECTIONS SHALL BE BY STAINLESS STEEL SADDLES A MINIMUM OF 150MM WIDE SURROUNDING THE PVC MAIN OR BY FACTORY MADE PVC TEES.
 - EXTRUDED PVC FITTINGS MAY BE USED WITH PVC PIPE. NON–EXTRUDED TYPE FITTINGS ARE NOT PERMITTED.
- FIRE HYDRANTS SHALL BE AWWA C502–14 WITH MECHANICAL JOINT.
SIZE 150–MM IRON PIPE CONNECTION
 - MINIMUM COVER 1.8 METRES.
 - TYPE OF BOOT MECHANICAL JOINT
 - NUMBER OF CONNECTIONS2 – 63–MM HOSE CONNECTIONS AND "STORZ" STEAMER CONNECTION.
 - DIRECTION OF OPENING RIGHT HAND TURN
 - PORT THREADS CONNECTIONS (TO CONFORM WITH ONTARIO STANDARDS)
 - MANUFACTURE/MODEL MUELLER/CENTURY B–50–B OR CLOW/BRIGADIER M67

GATE VALVES

- VALVE BOXES SET IN ASPHALT SHALL BE MUELLER MVB VALVE BOX COMPLETE WITH CAST IRON LID (AUBV–4C), 300MM (12") DUCTILE IRON ADJUSTABLE TOP(AUBV–4D) AND MVB GUIDE PLATE (MVB875).
- VALVE BOXES PLACED IN PORTLAND CEMENT CONCRETE SHALL BE OF CAST IRON AS MANUFACTURED BY BIBBY STE CROIX OR CONCORD DAIGLE, 105–130MM AND SHALL BE OF SLIDING TYPE, WHICH CANNOT CARRY ANY SURFACE LOAD DOWN TO THE PIPE. THE COVERS SHALL BE OF A DESIGN WHICH PREVENTS UNAUTHORIZED ENTRY AND MARKED "WATER". LENGTH TO BE 140MM TO 240MM AS MANUFACTURED BY BIBBY STE CROIX AND CONCORD DAIGLE. GUIDE PLATES SUITABLE FOR THE VALVE BOX SHALL BE INSTALLED. SPECIAL ATTENTION SHALL BE PAID TO COMPACTION ADJACENT TO VALVE BOXES.
- GATE VALVES FOR PIPE SHALL BE CLOW OR EQUAL, CAST IRON BODY, RESILIENT SEATED MECHANICAL JOINT PATTERN CONFORMING TO ANSI/AWWA C509, DESIGNED FOR A WORKING PRESSURE OF NOT LESS THAN 150 PSI. VALVES SHALL OPEN WHEN TURNED IN A COUNTER CLOCKWISE DIRECTION AND SHALL BE FITTED WITH A 50–MM OPERATING NUT. THIS SHALL APPLY TO 150–MM, 200–MM, 250–MM AND 300–MM GATE VALVES. BUTTERFLY VALVES FOR SIZE 400–MM AND OVER SHALL BE EQUIPPED WITH TERRA–TORQUE OPERATORS, WHICH ARE SEALED AND LUBRICATED.
- TAPPING GATE VALVES (150MM TO 300MM) SHALL BE CAST IRON BODY, MCavity OR EQUAL, FLANGED TAPPING SLEEVES SIZED 150MM X 100MM TO 600MM X 300MM SHALL BE BOLTED STEEL STYLE 622 ROCKWELL EPOXY COATED WITH DRESSER ALLOY BOLTS OR EQUAL FOR CAST IRON PIPE.

SERVICES

- PE (BLUE) PC 160. IF NON–METALLIC WATER SERVICE TUBING IS USED TO REPLACE AN EXISTING SERVICE THE CONTRACTOR WILL ENSURE THAT THE BUILDING ELECTRIC SERVICE GROUND REMAINS INTACT.
- COUPLINGS AND ADAPTERS SHALL BE COMPRESSION FITTINGS OR COMPRESSION BY MALE OR FEMALE IRON PIPE AS MANUFACTURED BY MUELLER, FORD METER, CAMBRIDGE BRASS OR EMCO.
- CORPORATION MAIN STOPS SHALL BE COMPRESSION TYPE AND IN ACCORDANCE WITH AWWA STANDARDS.
- CURB VALVES (STOPS) SHALL BE COMPRESSION TYPE AND IN ACCORDANCE WITH AWWA STANDARDS.. WATER SERVICE BOXES SHALL BE MUELLER CAT. NO. A–726 OR EQUAL AND BE COMPLETE WITH 900MM STAINLESS STEEL RODS AND COTTER PINS AND LIDS COMPLETE WITH CENTRE BRASS NUT. FOR SERVICE LINES 38MM AND 50MM IN SIZE ORISEAL SERVICE BOXES SHALL BE USED AND ARE TO BE COMPLETE WITH 1200MM STAINLESS STEEL RODS AND COTTER PINS, MUELLER CAT. NO. A–753 OR EQUAL AS MANUFACTURED BY MUELLER CANADA, BIBBY STE CROIX AND CONCORD DAIGLE.
- HYDRANTS SHALL BE SET WHERE AND AS DIRECTED BY THE CONSULTANT. ALL HYDRANTS SHALL BE PLACED WITH NOT LESS THAN 2.0M³ OF 25MM WASHED GRAVEL AROUND THE DRAIN HOLES AS TO ENSURE DRAINAGE. SUCH GRAVEL SHALL BE TOPPED WITH A SUITABLE GEOTEXTILE TO ENSURE FINES DO NOT MIGRATE INTO THE DRAINAGE ROCK. HYDRANTS SHALL BE INSTALLED VERTICAL AND KEPT VERTICAL DURING BACKFILLING OPERATIONS.
- A 150MM VALVE AND VALVE BOX SHALL BE INSTALLED ON EACH HYDRANT LEAD.
- HYDRANTS SET IN DITCHES ON SVALES SHALL CONFORM TO OPSD 217.050. SUFFICIENT FROST PROTECTION SHALL BE PROVIDED TO ENSURE THE EQUIVALENT OF 1.8M OF COVER IS PROVIDED. THE SURFACE OF THE HYDRANT ACCESS SHALL BE PAVED UNLESS OTHERWISE DIRECTED BY THE CONSULTANT.
- HYDRANTS SHALL BE PAINTED HYDRANT YELLOW.
- NO PIPES, SPECIAL FITTINGS, VALVES, HYDRANTS OR OTHER MATERIAL SHALL BE INSTALLED WHICH ARE KNOWN OR MAY BE FOUND TO BE DEFECTIVE OR WHICH MAY HAVE BEEN DAMAGED IN TRANSIT. ALL PIPE SHALL BE CLEARLY MARKED AS TO CLASS BY THE SUPPLIER. ANY DEFECTIVE, DAMAGED, OR UNSOUND PIPE SHALL BE REJECTED.
- NO JOINT SHALL BE COVERED UNTIL IT BEEN INSPECTED BY THE CONSULTANT.

METRIC NOTE:

ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE NOTED.

** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS

No.	Date	Description	By
1	10/31/25	ISSUED FOR SITE PLAN APPROVAL	MB
2	12/22/25	REISSUED FOR SITE PLAN APPROVAL	MB
3	03/05/26	REISSUED FOR SITE PLAN APPROVAL	MB
4	03/27/26	REISSUED FOR SITE PLAN APPROVAL	MB
5	04/14/26	REISSUED FOR SITE PLAN APPROVAL	MB
6	07/13/26	ISSUED FOR TENDER, PERMIT, CONSTRUCTION	MB



COUNTY OF LENNOX
AND ADDINGTON

PARAMEDIC BASE

CONSTRUCTION
NOTES

Drawn by: M.B. Project No: 2209778.50

Designed by: M.B. Date: JULY 13 2026

Checked by: Scale – Hor: 1: 300
Vert:

Approved by: K.K. Contract No: Drawing No: C-0

SPECIFICATIONS

HOT MIX ASPHALT OPSS 310 AND 1150

The provisions of OPSS 310 shall apply except as amended hereafter;

310.05 MATERIALS

Clause 310.05 is amended by the addition of the following:

310.05.03 Asphalt Cement

Asphalt cement shall be PG 58-28 and shall conform to SHRP specifications. Supereave asphalt shall be Ontario Traffic Category B.

310.07 CONSTRUCTION

310.07.05 Sampling

Clause 310.07.05.01.01 is amended by the addition of the following:

It shall be the Contractor's responsibility to ensure samples are taken.

310.07.05.01 Asphalt Cement

310.07.05.01.02 Frequency and Location

Clause 310.07.05.01.02 is amended by the addition of the following:

One sample shall be taken for each asphalt cement used on the Contract. Samples shall be taken at the plant.

310.07.05.01.04 Delivery

Clause 310.07.05.01.04 is amended by the addition of the following:

AC Samples shall be delivered to the office of the Consultant.

310.07.05.02 Hot Mix Asphalt

310.07.05.02.02 Frequency and Location

Clause 310.07.05.02.02 is deleted and replaced by the following:

Samples to be taken as directed by the Contract Administrator and at a frequency as specified in Table 6. A minimum of three QA samples per day shall be taken for each type of asphalt used on the Contract. The samples shall be taken at random locations determined by the Contract Administrator.

Table 6 is deleted and replaced by the following:

TABLE 6

Sampling and Testing Frequency of Hot Mix Asphalt			
Quantity Per Day Per HMA Type	Minimum Frequency of Sampling and Testing	Minimum Marshall Sampling Size kg	Minimum Superpave Sampling Size (Note 1) kg
≤ 500 tonnes	Three (3) samples	10	20
> 500 and ≤ 1,500 tonnes	One sample per 500 tonnes or part thereof, minimum of three (3)		
> 1,500 tonnes	One sample per 500 tonnes (Note 2), minimum of three (3)		

Notes:

1. One additional 5 kg sample is required for SMA mixes to test for draindown.

2. The Contract Administrator may reduce the testing frequency for HMA that is consistently being produced to meet the specification requirements.

310.07.05.02.04 Cores

Clause 310.07.05.02.04 is amended by the addition of the following:

Cores samples shall not be required.

310.07.05.02.05 Delivery

Clause 310.07.05.02.05 is amended by the addition of the following:

HMA Samples shall be delivered to the office of the Consultant.

310.07.06 Placing Hot Mix Asphalt

310.07.06.01 General

Clause 310.07.06.01 is amended by the addition of the following:

Areas receiving Miscellaneous Asphalt shall be as follows:

Asphalt Driveways, Boulevards & Sidewalks shall be reinstated with 50mm SP12.5 asphalt over 150mm Granular 'A'. Driveways shall be reinstated with existing depth of asphalt if it is greater than 50mm.

Removal of asphalt driveways is to be minimized where possible.

When placing asphalt, including but not limited to placing around structures and/or appurtenances and asphalt repairs, the Contractor shall place asphalt at a minimum width as required to ensure proper compaction is achieved by mechanical compaction equipment.

310.07.07 Use of Paving Equipment

Clause 310.07.07 is amended by the addition of the following:

A Material Transfer Vehicle (Shuttle Buggy) is required to be used for the placement of Surface Course Asphalt placed in the roadway.

The paver must be capable of paving one full lane with plus paved shoulder in one pass.

310.07.11.03 Transverse Joints

Clause 310.07.11.03 is deleted and replaced by the following:

The paver shall not move more than 15 m from any transverse joint until that joint has been rolled and checked with a straight edge. If the joint is not satisfactory, it shall be corrected immediately before the paver is allowed to proceed.

Joints between HMA pavement laid under this Contract and existing HMA courses not laid under this Contract shall be constructed as follows:

Locations where existing asphalt meets new asphalt shall be milled off for a step joint for each 1M of new asphalt. This shall include the limits of the road being paved, any County Roads and paved Township Roads that intersect it. The step joints shall be at minimum, the depth of the lift of new asphalt being placed, the full width of the existing pavement and a length of 0.5m beyond the joint of the underlying asphalt. No additional compensation will be provided for the completion of step joints.

310.08 QUALITY ASSURANCE

310.08.04 Aggregate Gradation and Asphalt Cement Content Acceptance

Clause 310.08.04 is deleted and replaced by the following:

Aggregate gradation and asphalt cement content test results for HMA samples based on LS-282 and LS-292 shall meet the JMF tolerance requirements as specified in Table 7.

If the HMA is deemed borderline for aggregate gradation or asphalt cement content according to Table 7, the Contractor shall be notified in writing by the Contract Administrator and shall take immediate corrective action through process control at the HMA plant. A total of three borderline test results for the same attributes representing up to 5,000 tonnes of HMA production shall result in the work being deemed rejectable.

If the HMA is deemed rejectable according to Table 7, both the Consultant and the Contractor shall review, agree, and identify the limits of rejected HMA that has been placed. Referee samples within the limits of the affected area shall be delivered by the Contractor to a mutually agreed upon third party referee laboratory to verify aggregate gradation or asphalt cement content or both. When the results from the referee samples are deemed rejectable according to Table 7, the HMA pavement shall be removed and replaced with acceptable HMA pavement.

310.08.05 Hot Mix Asphalt Properties Acceptance

Clause 310.08.04 is deleted and replaced by the following:

Marshall test results for hot mix samples based on LS test procedures shall meet the requirements specified in Table 8. The production air voids for all HMA mixes shall be evaluated according to Table 9.

If the HMA is borderline for air voids as specified in Table 9, the Contractor shall be notified in writing by the Consultant and shall take immediate corrective action through process control at the HMA plant.

If the HMA does not meet Table 9 minimum requirements for Marshall stability or Marshall flow or is deemed rejectable for air voids according to Table 9, both the Consultant and Contractor shall review, agree, and identify the limits of rejected HMA that has been placed. Referee samples within the limits of the affected area shall be delivered by the Contractor to a mutually agreed upon third party referee laboratory to verify Marshall test or air void results or both. When the results from the referee samples do not meet Table 9 minimum requirements or are deemed rejectable according to Table 9, the HMA pavement shall be removed and replaced with acceptable HMA pavement.

310.09 MEASUREMENT FOR PAYMENT

310.09.01 Actual Measurement

310.09.01.01 Hot Mix Asphalt

Clause 310.09.01.01 is amended by the addition of the following:

Measurement of HMA shall be by Lump Sum as part of the Stipulated Bid Price.

310.09.01.03 Hot Mix Asphalt Miscellaneous

Clause 310.09.01.03 is deleted and replaced by the following:

Measurement of Miscellaneous Asphalt shall be by Lump Sum as part of the Stipulated Bid Price regardless of the number of lifts placed, and shall include all cutting, granular, grading, shaping and compaction of areas receiving Miscellaneous Asphalt.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

LIGHT DUTY SILT FENCE, STRAW BALE FLOW CHECK DAM OPSS 805

SCOPE

This specification covers the requirements for environmental protection. The provisions of OPSS 805 shall apply except as amended hereafter.

805.07 CONSTRUCTION

805.07.01 Operational Constraints

Section 805.07.01 is amended by the addition of the following:

The work of environmental protection shall include all work required to complete the protection of, but not limited to;

- Any watercourse, its water quality, and fish habitat;
- Existing Storm Sewer Systems;
- Existing or constructed slopes and/or drainage ditches;

In addition, this item shall include, but is not limited to:

- No refuelling of vehicles, equipment, etc. or storage of fuel is to take place within 30m of any watercourse;
- Stationary equipment operating within 30m of any watercourse shall have hydrocarbon spill containment measures in place;
- Disturbed areas at the construction site are to be stabilized and re-vegetated after completion of the project, using native plant species as much as possible, and the site is to be restored to a pre-construction state or better.

All sediment and erosion control measures shall be installed prior to the Contractor commencing any work on site and shall be maintained until such time as the Contractor has completed all work required under the contract. Removal of sediment and erosion control measures shall be the last item undertaken by the Contractor.

805.07.01.03 Dewatering

Section 805.07.01.03 is amended by the addition of the following:

Any discharge of water from de-watering activity is to be done away from any water course using filter bags, settling ponds, check dams, etc. to prevent silt and sediment from entering watercourses, etc. Discharge locations shall be placed a minimum of 30m from any watercourse.

805.07.01.06 Construction and Removal of Measures

Section 805.07.01.06 is amended by the addition of the following:

All environmental protection measures shall be installed prior to the Contractor starting any Work and shall be maintained until the Contractor has completed all Work for the year.

The Contractor shall remove and reinstall environmental protection measures as part of the seasonal shutdown and remobilization, if necessary.

Removal of sediment and environmental protection measures shall be the last item undertaken by the Contractor prior to demobilizing from the site.

The Contractor shall keep a light-duty silt fence barrier on site at all times during construction.

Installation, maintenance, and removal of any and all necessary mitigation measures are required including, but not limited to, the following:

- Light Duty Silt Fence Barriers as per OPSS 210.110;
- Light Duty Sediment Barriers in all ditches within the construction limits (Light Duty Straw Bale Barriers as per OPSS 210.110 or Silt Sock)
- Non-woven fabric in all existing storm sewer structures;
- Any other measure necessary to protect any existing watercourse / water body and the existing storm sewer.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

TRAFFIC CONTROL OPSS 706

The Contractor is made aware that the access to the site is to be maintained throughout construction. The Contractor is responsible for providing adequate signage and other provisions to warn and protect the travelling public from hazards or potential hazards due to construction.

The provisions of OPSS 706 shall apply except as amended hereafter;

706.07 CONSTRUCTION

706.07.01 General

Section 706.07.01 is amended by the addition of the following:

Traffic Control Person's (TCP's) used on this project shall be assigned for such duties in accordance with the requirement of section 4.4 of Book 7 of the OTM. If in the opinion of the Contractor Administrator, the Contractor's TCP's have not been adequately trained, the Contractor Administrator can immediately exclude the TCP's from the site for the remainder of work on this Contract. TCP's so excluded will be replaced with properly trained personnel.

STORAGE

Materials and equipment shall be stored so as not to interfere with visibility and / or turning movements. Stockpiles shall be kept, from the edge of the excavation, at least a horizontal distance equal to the depth of the excavation.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

CLEARING AND GRUBBING OPSS 201

The provisions of OPSS 201 shall apply except as amended hereafter;

201.07 CONSTRUCTION

201.07.01 General

Individual trees to be cleared and grubbed are identified in the Contract Documents.

The Contractor shall contact homeowners adjacent to trees being removed to determine if they would like the timber. If the homeowner wants the timber, the Contractor shall cut, limb and stack the timber at a location identified by the homeowner.

All stumps within the construction limits to be grubbed as directed by the Contract Administrator.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

EXCESS SOIL DESTINATION REPORT OPSS 180

This special provision to be read in conjunction with O.Reg. 406/19, OPSS MUNI 180, MECP document "Rules for Soil Management and Excess Soil Quality Standards", and MANAGEMENT OF EXCESS MATERIAL.

SCOPE

This specification covers the requirements for the preparation of an Excess Soil Destination Report.

DESIGN AND SUBMISSION REQUIREMENTS

For the purposes of section 13 of the regulation, an excess soil destination assessment report shall be prepared by a Qualified Person and include the following information:

- The estimated volume and quality of soil to be removed from the project area as excess soil.
- The types of processing of soil, if any, that have been conducted at the project area, a Class 2 soil management site or a local waste transfer facility, in respect of the soil that will be excess soil.
- The approximate date that excess soil will commence leaving the project area and the approximate date when all excess soil will have been removed from the project area.
- For each reuse site, Class 1 soil management site, local waste transfer facility, landfill or dump at which excess soil will be deposited, include the following information:
 - Municipal address (if applicable) or a description of the location;
 - The estimated quantity of excess soil to be deposited at the site;
 - If the site is a reuse site, based on the assessment of past uses (if applicable), sampling and analysis plan (if applicable) and the soil characterization report, the quality of the excess soil to be deposited at the site;
 - If the site is a reuse site, based on information collected from and confirmed with the reuse site owner or operator, or the reuse site qualified person or supervisor (if applicable):
 - the property use of the reuse site and the understanding for which the excess soil is required;
 - any characteristics associated with the reuse site or nearby properties that may affect the excess soil quality standards applicable to the reuse site; and
 - the generic excess soil quality standards or site-specific excess soil quality standards (if applicable) that apply to that site and confirmation that they align with the quality of excess soil to be sent to that site;
 - If the site is or will be governed by a site-specific instrument, identify the instrument, the public body responsible for issuing the instrument and any other information relevant to the receipt of excess soil at that site;
 - If the site is a landfill or dump, an indication of whether any excess soil to be taken to that site would meet Table 2.1 for residential uses (i.e. the excess soil could be used at a sensitive site); and
 - Whether a fill management plan was developed for that site.
- For each Class 2 soil management site or local waste transfer facility at which excess soil will be stored, provide the following information:
 - Municipal address (if applicable) or a description of the location;
 - Confirmation that the Class 2 soil management site or local waste transfer facility is located on a property owned by a public body or by the project leader for the project in relation to which the soil will be excavated;
 - The estimated quantity and quality of excess soil to be stored at the Class 2 soil management site or local waste transfer facility;
 - The approximate date that excess soil will be deposited at a Class 2 soil management site or local waste transfer facility and the approximate date when all the excess soil from the project area will have been removed from the Class 2 soil management site or local waste transfer facility;
 - A list of the reuse site(s) at which the excess soil is, ultimately, intended to be deposited and the date(s) when these reuse site(s) will accept the excess soil; and
 - If the site is or will be governed by a site-specific instrument, identify the instrument, the public body responsible for issuing the instrument and any other information relevant to the receipt of excess soil at that site.
- Contingency measures to be implemented in the event that the excess soil cannot be deposited at an intended reuse site, including instructions to be provided to the operator of a vehicle to ensure that excess soil is not deposited at an unplanned site and the location of an alternate site at which excess soil may be deposited if not returned to the project area, Class 2 soil management site or local waste transfer facility.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

EXCESS SOIL TRACKING SYSTEM OPSS 180

This special provision to be read in conjunction with O.Reg. 406/19, OPSS MUNI 180, MECP document "Rules for Soil Management and Excess Soil Quality Standards", and MANAGEMENT OF EXCESS MATERIAL.

SCOPE

This specification covers the requirements for the preparation of a Tracking System to track each load of Excess Soil that is removed from the Project Area.

DESIGN AND SUBMISSION REQUIREMENTS

- For the purposes of section 16 of the regulation, a tracking system must be capable of tracking the following information in respect of each load of excess soil that is removed from the project area:
 - The locations of the project area where the soil was excavated and stockpiled, if applicable, and the quality of the soil associated with those locations and stockpiles.
 - The quality of the load of excess soil being removed from the project area, unless the excess soil is to be sampled at a Class 2 soil management site or a local waste transfer facility.
 - The quantity of the load of excess soil being removed from the project area.
 - The location of the site at which the excess soil is to be deposited as communicated to the driver of the vehicle.
 - The date and time the excess soil left the project area.
 - The person from the project area responsible for overseeing the loading of the excess soil for transportation.
 - The name of the corporation, partnership or firm transporting the excess soil, the name of the driver of the vehicle and the number plates issued for the vehicle under the Highway Traffic Act.
 - The date and time the excess soil was received at the site where the excess soil has been deposited.
 - The contact information of the person who acknowledged receipt of the load of excess soil on behalf of the site where the excess soil was deposited.
 - Confirmation that the vehicle that deposited the excess soil and the volume of soil received at the site where the excess soil was deposited is the same as that which left the project area.
- If excess soil is to be managed temporarily at a Class 2 soil management site or a local waste transfer facility, all the information described in subsection 5 (1) in Section B of Part I of the Rules for Soil Management and Excess Soil Quality Standards document must be tracked by the project leader, or the operator of the Class 2 soil management site or the local waste transfer facility, in respect of each load of excess soil which has been managed at that site and "project area" shall be substituted with "Class 2 soil management site" or "local waste transfer facility", as applicable.
- The tracking system must be capable of tracking information in respect of the total number of vehicles and total volume of excess soil that has left a project area for a site at which the excess is to be deposited and confirmation that the total number of trucks and volume of excess soil received at the site is the same as that which left the project area.
- The tracking system must be able to produce reports upon request to respond to any inquiries with respect to the information of each load of excess soil to be tracked.
- The tracking system must include procedures or other methods to verify the accuracy of the information required to be tracked in respect of each load of excess soil that is to be removed from the project area.
- The tracking system must include procedures or other methods to prevent any form of fraud or other wrongdoing in the management and transportation of excess soil.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

MANAGEMENT OF EXCESS MATERIAL OPSS 180

The Contractor shall be responsible for the proper management of all material removed under the Work. As much suitable excavated material as possible shall be incorporated into the Work in accordance with the Contract Documents and as directed by the Owner.

Excess material is material that has been excavated, mainly during construction activities, that cannot or will not be reused at the site where the material was excavated and must be moved off site. In some cases, excess soil may be temporarily stored at another location before the excess soil is brought back to be used for a beneficial reuse at the site where the soil was originally excavated.

As much excess material as possible shall be managed as disposable fill.

The provisions of OPSS MUNI 180 shall apply except as amended hereafter;

180.04.01.01 Notification of Site Selection and Property Owner Release

Clause 180.04.01.01 is amended by the addition of the following:

Management of excess material as disposable fill shall be permitted in accordance with O.Reg. 406/19, the "Rules for Soil Management and Excess Soil Quality Standards" and in consideration of the recommendations of the Geotechnical Reports.

180.04.01.02 Verification of Management by Disposal as Non-Hazardous Solid Industrial or Commercial Waste

Clause 180.04.01.02 is deleted in its entirety and replaced by the following:

When excess material is managed by disposal as non-hazardous solid industrial or commercial waste, a copy of the weigh ticket or receipt provided by the disposal site operator shall be submitted to the Owner on a daily basis.

Within three weeks of the completion of all disposal activities associated with the work, a completed copy of the form OPSPF 180-5, Waste Quantity Report, shall be provided to the Owner and shall account for all excess material managed by disposal as solid non-hazardous industrial or commercial waste.

180.04.01.03 Notification of Forest Resource Licensees

Clause 180.04.01.03 is amended by the addition of the following:

No Forest Resource licensees have been identified within the project limits.

180.07.01 Conditions on Management of Excess Material - General

Clause 180.07.01 is amended by the addition of the following:

The Contractor shall provide a management of excess material plan to the Owner two (2) weeks prior to mobilizing to the site.

180.07.02 Conditions on Management by Re-Use

Clause 180.07.02 is amended by the addition of the following:

As much suitable excavated material as possible shall be incorporated into the Work in accordance with the Contract Documents. All other material shall be considered excess unless the Contractor has written authorization from the Owner to reprocess the material for another use.

If the Contractor intends to process, re-process or recycle excess material into a construction material or other useful product, he shall provide a material re-use plan for such activities two (2) weeks prior to mobilizing to the site.

180.07.04 Conditions on Management by Open Burning

Clause 180.07.04 is amended by the addition of the following:

Management of excess material by open burning is not permitted.

180.07.06 Conditions on Management by Stockpiling

Clause 180.07.06 is amended by the addition of the following:

Management of excess material by stockpiling is permitted with an OPSPF 180-1 form and written authorization from the Owner. Only suitable excavated material to be incorporated into the Work can be stockpiled.

The Contractor shall only stockpile enough material as can be reasonably foreseen as being required.

Material stockpiled within the project road rights-of-way must be incorporated into the Work by the end of the day. If the material cannot be incorporated into the Work by the end of the day, it shall be removed to the approved stockpiling location or managed as excess material as specified in the Contract Documents.

Material stockpiled at the location identified on the an approved OPSPF 180-1 must be incorporated into the Work within twenty (20) working days unless identified as being for re-use in the Contractor's material re-use plan.

Stockpiled material that cannot be incorporated into the Work within twenty (20) working days and that has not been identified as being for re-use in the Contractor's material re-use plan, shall be managed as excess material as specified in the Contractor's excess material management plan.

180.09 MEASUREMENT FOR PAYMENT

180.09.01 Disposal of Excess Material

i) Removal and disposal of excess non-contaminated material (disposable fill and waste) \$____ tonne
Note: Include in Bid Price for an allowance of 2,650 tonnes of non-contaminated excess material. The unit rate will be used to adjust contract price (extra/credit) based on actual removal quantity based on verified weigh bill slips

ii) Removal and disposal of subject waste (Contaminated Material) as per O. Reg 406/19 \$____ tonne
Note: Soils testing is currently being conducted. For bid purposes, assume there is no contaminated material on site. This item will be used to compensate the Contractor for the disposal of subject waste at a licensed facility including trucking and tipping fees.

180.10 BASIS OF PAYMENT

Clause 180.10 is amended by the addition of the following:

180.10.01 Excess material Destination report (Provisional) - Item

Payment at the Contract price for the above noted tender item shall include all costs associated with the preparation of the excess material destination report for management of all excess material.

180.10.02 Excess material Tracking System (Provisional) - Item

Payment at the Contract price for the above noted tender item shall include all costs associated with tracking and qualified person declaration including any testing required.

180.10.03 Disposal of Excess material as Non-Hazardous Waste (Provisional) - Item

Payment at the Contract price for the above noted tender item shall be full compensation for all labour, equipment, and material to dispose of excess material at an MECP licensed disposal facility.

FARTH EXCAVATION, GRADING, CUT AND FILL, EARTH DITCHING OPSS 206, 510

It is the responsibility of the Contractor to make himself aware of site conditions through whatever means necessary. The Contractor shall have no claim related to the hardness of the rock.

The Contractor shall be responsible for the proper management of all material removed under the Work. As much suitable excavated material as possible shall be incorporated into the Work in accordance with the Contract Documents and as directed by the Owner.

The provisions of OPSS 206 shall apply except as amended hereafter;

206.03 DEFINITIONS

SPECIFICATIONS

PRECAST CONCRETE 1200mm CATCH BASIN MAINTENANCE HOLE OPSS 402, 407

The provisions of OPSS 402 shall apply except as amended hereafter:

402.05.02 Backfill Material

402.05.02.01 General

Section 402.05.02.01 is amended by the addition of the following:

Bedding material shall be Granular A.

Backfill material shall be Granular A.

402.10 BASIS OF PAYMENT

402.10.01 Excavating, Backfilling, and Compacting for Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Chambers

Clause 402.10.01 is deleted in its entirety and replaced by the following:

No separate payment shall be made for excavation, backfilling and compacting. Payment at the Stipulated Bid Price for the appropriate tender items for the installation of maintenance holes, catch basins, ditch inlets, and valve chambers shall be full compensation for all labour, Equipment, and Material to do the work covered by this specification.

Any expenses for remedial work resulting from over-excavation shall be borne by the Contractor.

Shall be by Lump Sum as part of the Stipulated Bid Price

The provisions of OPSS 407 shall apply except as amended hereafter:

407.05.04 Steps and Ladders

Section 407.05.04 is amended by the addition of the following:

Maintenance hole steps shall be as per OPSD 405.010, Circular Aluminum.

407.05.05 Adjustment Units

Section 407.05.05 is amended by the addition of the following:

Only precast concrete adjustment units shall be used.

407.05.07 Frames with Covers or Grates

Section 407.05.07 is amended by the addition of the following:

Frames and grates for catch basins and catch basin maintenance holes shall be as per OPSD 400.010.

Frames and grates for maintenance holes shall be as per OPSD 701.010 Type A Closed Cover.

407.01 CONSTRUCTION

407.07.01 General

Section 407.07.01 is amended by the addition of the following:

All catch basins shall have a 600mm sump.

Maintenance holes shall be installed such that the structure access opening (frame and grate) aligns with the structure steps or ladder.

Maintenance holes shall have a 300mm sump.

Catch basin maintenance holes shall have a 300mm sump.

Any existing pump pumps/sewers or water lines shall be reconnected into new structures.

All new sanitary maintenance holes are to have damp proofing system Bakor Blueskin SA Self adhesive water proofing used in conjunction with Blueskin Adhesive (primer) or approved equivalent, around every joint a minimum of 150mm above and below the joint.

407.07.13 Installation of Inlet and Outlet Pipes into Concrete Structures

Section 407.07.13 is amended by the addition of the following:

Resilient connectors shall be used in stucture openings.

407.07.15 Installation of Adjustment Units

Section 407.07.15 is amended by the addition of the following:

Catch basins shall be installed such that adjustment rings do not extend beyond the interior face of any wall of the stucture by more than 25mm total for all adjustment units.

All concrete adjustment units shall be parged.

407.07.16 Installation of Frames and Grates or Covers

Section 407.07.16 is amended by the addition of the following:

A full bed of mortar on the concrete adjustment units shall still be used when shims are used to adjust the frame and grate or cover to finished grade. There shall be no gaps between the frame and the adjustment units.

Setting of all grates shall include a concrete collar around the outside of the frame.

Prior to placement of surface course asphalt, all structure frames within the roadway shall be raised to final grade. A concrete collar shall be poured around the frame, flush with base course asphalt, for the full area of base course asphalt that has been cut out to set the frame.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

CSP AND HDPE CULVERT OPSS 401, 403

The provisions of OPSS 401 shall apply except as amended hereafter:

The Contractor shall complete a pre-condition survey.

401.05.01 Bedding Material and Embedment Material

Section 401.05.01 is amended by the addition of the following:

Bedding material shall be Granular A. Depth shall be 150mm.

Bedding and embedment material shall be Granular A.

401.05.02 Cover Material

Section 401.05.02 is amended by the addition of the following:

Cover material shall be Granular A. Cover material shall extend from the top of the bedding to 300mm above the top of pipe.

401.05.04 Backfill Material

401.05.04.01 General

Section 401.05.02.01 is amended by the addition of the following:

Backfill shall be suitable native material or Granular B Type I.

Subbase shall be 400mm Granular B Type I

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

The provisions of OPSS 421 shall apply except as amended hereafter:

421.07.12.01 General

Section 421.07.12.01 is amended by the addition of the following:

Pipe shall be laid such that it does not deviate from the specified alignment by more than 75mm at any point along its length.

Pipe shall be laid such that it does not deviate from the specified grade by more than 10mm at any point along its length. Regardless of the tolerances permitted for the pipe grade, there shall be no low points along the pipe that cause water to pond in the pipe. Repair of such deficiencies shall be at the Contractor's expense.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

PAVEMENT MARKINGS OPSS 710

This specification covers the requirements for the application of pavement markings onto bituminous or concrete pavement. The provisions of OPSS 710 shall apply except as amended herein.

710.07 CONSTRUCTION

710.07.04 Premarking

Clause 710.07.04 is amended by the addition of the following:

The Contractor shall premark all pavement marking 48 hours in advance of completing the pavement marking for review by the Contractor Administrator. The Contractor shall provide notice when the pre-marking is complete to allow the Contractor Administrator adequate time to inspect the pre-marking.

710.07.05 Temporary Pavement Marking

Clause 710.07.05 is amended by the addition of the following:

Short term pavement markings shall be of Type D.

710.07.07 Permanent Pavement Marking

Clause 710.07.07 is amended by the addition of the following:

All pavement markings, inclusive of centreline, edge lines, skip lines, stop bars, crosswalks and symbols shall be non-durable traffic paint.

Inspection shall be present at all times during line painting.

Lane lines, continuity lines and edge lines on tangent sections of constant width shall be placed parallel to one another, maintaining their correct offset from the edge of pavement and from one another and shall be straight and true.

Markings placed to delineate changes in the number of lanes; variations in roadway width or adjustments in lane width shall be straight and true.

Markings placed on curves shall accurately follow the change in direction prescribed by the roadway. Transition from adjacent tangent sections shall occur smoothly and at a constant rate over the specified distance.

Markings shall always maintain the specified lane width.

Non-compliance with this requirement and/or failure of the test results will result in no payment being provided until all conditions of the specifications have been met.

710.07.10 Traffic Control

Clause 710.07 is amended by the addition of the following:

The provisions of OPSS 708 shall apply except as amended or extended herein. All traffic control, procedures and devices shall be provided by the Contractor and conform to the requirements of the following references:

- The Ministry of Transportation "Ontario Traffic Manual (OTM) Book 7 and 11, latest revisions.
- Canadian General Standards Board, Standard 62-GP-11M, most current revisions - Reflective Materials and Surfaces.

Any roadway pavement marking sampling and testing performed by Contract Administration staff and/or Designate shall be included in the Contractor's traffic control plan.

710.08 QUALITY ASSURANCE

710.08.01 General

Clause 710.08.01 is amended by the addition of the following:

Sampling of pavement marking material shall conform to Table A. Samples shall be taken by the Contractor in the presence of the Consultant.

Samples of traffic paints shall not be thinned or heated. The material shall be well mixed and homogeneous. The sample containers shall be filled within 5mm of the bottom of the lid rim.

The Contractor shall supply sample containers and pre-weighted steel Q-panels that are ground one side measuring 0.8mm x 152mm x 305mm as required.

If any material samples fail to conform to specification, the material may be removed and/or replaced at the Contractor's expense.

If any of the panels fail, the Contractor will be responsible to reapply the material to the deficient areas as per the specifications outlined in this Tender at the Contractor's expense. Test panels will be collected and tested by the Consultant.

Table "A" PAVEMENT MARKING MATERIAL SAMPLING				
Material	Sample Size	Container	Material	Source
Organic Solvent Based Traffic Paint	1L	Metal	Outlet Valve (not spray gun)	Upon Request of the Consultant
Water Based Traffic Paint	1L	Plastic Or Plastic Lined	Outlet Valve (not spray gun)	
Field Recoated Polymeric Material Resin*	1L (500G)	Metal or plastic	Pail	
Catalyst	250ml (50g)	Metal or plastic	Pail	
Glass Beads	500ml (200g)	Metal or plastic	Bead Gun	
Preformed Tape	1 m	Container not required	Roll	Upon Request of the Consultant
Thermoplastic Materials	10 cm x 10 cm	Steel Panel	Applicator**	

Material type and manufacturer's mixing ratio of each unmixed material should be indicated on container. An 8cm x 8cm raw sample of the thermoplastic material can be substituted for the coated panel sample.

710.08.02 Line Quality

Clause 710.08.02 is amended by the addition of the following:

The Contractor shall be responsible for the correction and cost of all errors of paint thickness, width or length or inadequate bead coverage, which should be saturated and full line width.

Markings applied in the wrong location must be permanently corrected. All corrections must be by means of soda blasting or sandblasting. The use of a rotary grinder is not acceptable on new asphalt/concrete surfaces. Blackout paint shall not be considered as an acceptable means of a permanent line obliteration method and shall only be used as a temporary measure until permanent removal is scheduled. All debris from any form of removal must be properly removed and disposed of in accordance with OPSS 180.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

TOPSOIL AND SEED OPSS 802, 803

The provisions of OPSS 802 shall apply except as amended hereafter:

802.07 CONSTRUCTION

802.07.01 Stockpiling Topsoil

Clause 802.07.01 is amended by the addition of the following:

All topsoil removed under the Work shall be managed as excess material.

802.07.02 Preparation for Topsoil

Clause 802.07.02 is amended by the addition of the following:

Areas receiving topsoil that are at the limits, adjacent to undisturbed areas, shall be excavated 150mm prior to scarifying.

802.07.04 Compaction of Topsoil

Clause 802.07.04 is amended by the addition of the following:

All topsoil shall be compacted. Topsoil shall have a compacted depth of 150mm

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

The provisions of OPSS 803 shall apply except as amended hereafter:

803.05 MATERIALS

803.05.01 Seed

Clause 803.05.01 is amended by the addition of the following:

Seed shall be Kentucky Bluegrass.

803.07 CONSTRUCTION

803.07.01 Placement of Seed

Clause 803.05.01 is amended by the addition of the following:

Seed shall be placed at all soft surfaces disturbed during completion of the Work.

803.08 QUALITY ASSURANCE

803.08.01 Performance Measure

Clause 803.08.01 is amended by the addition of the following:

After a minimum of 30 days has passed since the seed was placed, it shall be the Contractor's responsibility to arrange for an inspection of the seed with the Consultant.

Should the Contractor not arrange for inspection, the seed shall continue under warranty until an inspection is arranged by the Contractor or the warranty expires.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

AS-BUILT INFORMATION

SCOPE

This specification covers the requirements of the as-built information to be provided to the Consultant.

CONSTRUCTION

The as-built information must be provided in AutoCAD format (.dwg) in appropriate UTM coordinates to allow incorporation into existing GIS databases and a point file of as-built points including point number, northing, easting, elevation and description (PNEED). The Contractor shall also provide a description key file with the point file, if necessary.

As-built information shall include

- Road centreline elevations
- Location of all maintenance holes, catch basins, and ditch inlets
- Invert elevations and location of both ends of all culverts
- Invert elevations for all sewers
- Service locations (sanitary, water and storm, as applicable) and elevations at property lines
- All changes of direction of mains and services
- Watermain elevations and locations at changes of alignment (vertical or horizontal)

Information shall include northing, easting and elevation for each point and shall be based on the layout information provided to the Contractor.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

CULVERT AND CURB REMOVAL OPSS 180, 510

The provisions of OPSS 510 shall apply except as amended hereafter:

510.07 CONSTRUCTION

Section 510.07.01 is amended by the addition of the following:

510.07.01 General

The work shall include all cutting. Cuts shall be made square and neat.

Stockpiling of material within the project limits shall not be permitted without written authorization from the Consultant.

510.07.03 Drainage Work

510.07.03.01 General

Section 510.07.03.01 is amended by the addition of the following:

Frames with grates or covers shall be considered excess material and disposed of in accordance with the Contract Documents.

510.07.01.03 Salvage

The Contractor shall remove and salvage all paver stone walkways and retaining walls for reinstallation unless noted otherwise.

510.07.03.08 Removal of Pipes and Culverts

Section 510.07.03.08 is amended by the addition of the following:

The work shall include removal of any headwalls installed with the pipe or culvert.

510.07.03 Pavement Work

510.07.06.01 General

Section 510.07.06.01 is amended by the addition of the following:

For all roadways subject to removals:

- Temporary ramping shall be an asphalt ramp with a minimum dimension of 1.0m across the width of the asphalt prior to be opened to traffic.
- The Contractor shall maintain the temporary asphalt ramp, to the satisfaction of the Consultant, until surface course asphalt work has been completed.

510.07.06.02 Cutting Existing Pavement

Section 510.07.06.02 is amended by the addition of the following:

All pavement shall be cut the full depth of the pavement.

All cut edges with a depth greater than 60mm shall have a 1.0m lap joint. Depth of milling for the lap joints shall be 40mm for the entire width of the joint.

510.07.08 Right of Way Work

510.07.08.02 Removal of Driveways, Sidewalks, and Sundry Asphalt Pavements

Section 510.07.08.02 is amended by the addition of the following:

Collective work to remove driveways and sidewalks shall include the removal of asphalt, concrete, stone or brick driveways and sidewalks, and sundry asphalt pavements not otherwise noted in the Contract Documents.

510.07.08.03 Removal of Concrete Sidewalk

Section 510.07.08.03 is amended by the addition of the following:

Unless specified otherwise, private sidewalks are to be sawcut perpendicular to the private sidewalk alignment to avoid diagonal joints.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

ROCK EXCAVATION OPSS 403

SCOPE

This specification covers the rock excavation requirements for the installation of watermain, water services, storm sewers and structures, sanitary sewers and structures, pipe culverts and end sections in an open cut.

The provisions of OPSS MUNI 403 shall apply except as amended hereafter.

403.07.02 Use of Explosives

Section 403.07.02 is amended by the addition of the following:

Blasting shall not be permitted

403.07.03 Management of Excess Material

Section 403.07.03 is amended by the addition of the following:

All excavated rock be managed as excess material

Disposal of material removed under this item shall be off-site at an approved location provided by the Contractor at the Contractor's expense.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

SUPPLY AND INSTALL Rb-19, Wg-31, Rb-16T SIGNS

SCOPE

This specification covers the requirements for the supply and installation of new traffic warning signage. Warning signage is required at various locations within the project limits. Placement locations for signage is as specified on the construction drawings.

MATERIAL

For Warning Signage, all provisions of the Ontario Traffic Manual - Book 6 shall apply.

All other Signage shall be install in accordance with Manual of Uniform Traffic Control Devices for Canada (MUTCD).

Warning Signs shall be placed on single Steel U shaped perforated posts. The posts shall be bolted to a 1.5m section inserted into the ground to ensure replacements can be bolted to the same in-ground section when needed.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

MUD MAT

SCOPE

This specification covers the requirements for the supply and installation of temporary mud mat. Placement location for mud mat is as specified on the construction drawings.

MATERIAL

Mud Mat shall be 200mm Granular B Type I

Shall be maintained for the duration of construction.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

CONCRETE CURB AND GUTTER ALL TYPES OPSS 353

The provisions of OPSS 353 shall apply except as amended hereafter:

353.07.02 Excavation and Backfill

Clause 353.07.02 is amended by the addition of the following:

Granular Base shall be Granular A as shown in the Contract Documents and placed to ensure a minimum depth of 100mm is maintained below the curb and gutter system. Granular Base shall extend a minimum 0.3m behind the curb.

353.07.07 Joints

Section 353.07.07 is amended by the addition of the following:

Distance between contraction joints shall be no more than 4.5m.

Contraction joints shall be cut in line with both sides of all catch basin frames set in the curb line.

353.07.08 Concrete

353.07.08.01 Placement of Concrete

Section 353.07.08.01 is amended by the addition of the following:</

SPECIFICATIONS

WATER SERVICE LINE, FIRE HYDRANT, 150mm WATER MAIN OPSS 441

SCOPE

This specification covers the requirements for the installation of watermains, service connections, and associated appurtenances in open cut. The provisions of OPSS MUNI 441 shall apply except as modified herein.

MATERIALS

Bedding materials shall be Granular A Limestone conforming to the requirements of OPSS 1010 at a minimum depth of 200 mm.

Cover Material shall be Granular A Limestone material conforming to the requirements of OPSS 1010 minimum depth of 300 mm above crown of pipe.

Backfill shall be selected native material or Granular B Type I.

Minimum installation depth shall be 1.8 m with 0.5 m vertical separation between all sewer crossings.

Watermains

1) Water mains shall conform to the following.

- Plastic Pipe
- Plastic pipe shall conform to AWWA C900-16 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 100mm Through 1,500mm. With prior approval from O.N.U. larger pipe sizes and a larger SDR number may be used, however the minimum wall thickness allowed will be 28mm.
- The pipe shall be homogeneous throughout, free from voids, cracks, inclusions, and other defects.
- The colour is to be "Blue Brute".
- Service connections shall be by stainless steel saddles a minimum of 150mm wide surrounding the PVC main or by factory made PVC tees.
- Extruded PVC fittings may be used with PVC pipe. Non-extruded type fittings are not permitted.
- All materials shall conform to relevant OPSS.

Hydrant Sets

1) Fire hydrants shall be AWWA C502-14 with mechanical joint.

- Size 150-mm iron pipe connection
- Minimum cover 1.8 metres
- Type of Boot Mechanical Joint
- Number of Connections 2 - 63-mm hose connections and "STORZ" steamer connection.
- Direction of Opening Counter clockwise
- Port Threads Connections (To conform with Ontario Standards)
- Manufacture/Model Mueller/Century B-50-B or Clow/Brigdier M67

Gate Valves

- Valve boxes set in asphalt shall be Mueller MVB Valve box complete with cast iron lid (ABJV-4C), 300mm (12") Ductile Iron Adjustable top(ABJV-4D) and MVB Gate Plate (MVB87S).
- Valve boxes placed in portland cement concrete shall be of cast iron as manufactured by Bibby Ste Croix or Concord Daigle, 105-130mm and shall be of sliding type, which cannot carry any surface load down to the pipe. The covers shall be of a design which prevents unauthorized entry and marked "Water", length to be 140mm to 240mm as manufactured by Bibby Ste Croix and Concord Daigle. Gate plates suitable for the valve box shall be installed. Special attention shall be paid to compaction adjacent to valve boxes.
- Gate Valves for pipe shall be Clow or equal, cast iron body, resilient sealed mechanical joint pattern conforming to ANSI/AWWA C509, designed for a working pressure of not less than 150 PSI. Valves shall open when turned in a counter clockwise direction and shall be fitted with a 50-mm operating nut. This shall apply to 150-mm, 200-mm, 250-mm and 300-mm gate valves. Butterfly valves for size 400-mm and over shall be equipped with Terra-Torque operators, which are sealed and lubricated.
- Tapping gate valves (150mm to 300mm) shall be cast iron body, McAlvay or equal, flanged Tapping sleeves sized 150mm x 100mm to 600mm x 300mm shall be bolted steel style 622 Rockwell Epoxy Coated with Dresser Alloy Bolts or equal for cast iron pipe.

Services

- PE (Blue) PC 160. If non-metallic water service tubing is used to replace an existing service the Contractor will ensure that the building electric service ground remains intact.
- Couplings and adapters shall be compression fittings or compression by male or female iron pipe as manufactured by Mueller, Ford Meter, Cambridge Brass or Emco.
- Corporation main stops shall be compression type and in accordance with AWWA standards.
- Curb valves (stops) shall be compression type and in accordance with AWWA standards. Water service boxes shall be Mueller Cat. No. A-726 or equal and be complete with 300mm stainless steel rods and cutter pins. For service lines 30mm and 50mm in size critical service boxes shall be used and are to be complete with 1200mm stainless steel rods and cutter pins. Mueller Cat. No. A-753 or equal as manufactured by Mueller Canada, Bibby Ste Croix and Concord Daigle.

CONSTRUCTION

The Owner cannot guarantee all existing water valves can be completely closed. Should repairs be required on the existing water distribution network to allow the network to be completely closed, the Owner will be responsible for the required repairs. However, no claims shall be considered which are based on delays or inconveniences resulting from the repairs or work not being completed before the start of the Contract.

The Contractor is made aware that the 300mm watermain which the proposed fire hydrant is to be connected to services the entire Loyalist East Business Park and any service disruptions will have to be approved by Loyalist Township. It is expected that the Contractor will plan his operations to accommodate this requirement.

Hydrant locations shall be as approved by the Loyalist Township Fire Department.

All hydrants shall have a breakaway flange, and a C.I. stem guide coupling. The hydrant flanges shall be higher than the crown of the adjacent road or the top of the adjacent curb, whichever is higher. Flanges shall be placed such that connecting bolts can be easily removed. Drain plugs shall be removed unless otherwise directed by Consultant.

Hydrants shall be set where and as directed by the Consultant. All hydrants shall be placed with not less than 2.0m³ of 25mm washed gravel around the drain holes and as ensure drainage. Such gravel shall be topped with a suitable geotextile to ensure fines do not migrate into the drainage rock. Hydrants shall be installed vertical and kept vertical during backfilling operations.

A 150mm valve and valve box shall be installed on each hydrant lead.

Hydrants set in ditches on swales shall conform to OPSD 217.050. Sufficient frost protection shall be provided to ensure the equivalent of 1.8m of cover is provided. The surface of the hydrant access shall be paved unless otherwise directed by the Consultant.

Fire hydrants which are not in service shall be clearly identified as such by the Loyalist Township Fire Department.

Hydrants shall be painted Hydrant Yellow.

Valves shall be as follows:

- Three valves shall be placed on a tee intersection and four valves on a cross intersection. On straight runs isolation valves shall be not less than 150m apart or such that 20 family dwelling units or equivalent can be isolated.
- Valve boxes shall be adjusted to finished grade.

Valves shall be placed with the stem vertical at the points indicated by the Engineer. Valve boxes shall be set vertical, well centered over the valve with the top at finished grade. Valve box installation shall be verified by the Consultant.

The operation of all valves, curb stops and hydrants shall be restricted to employees of the Commission.

One (1), five and a half (5.5) kilogram Zinc anode shall be installed with each service. If the service is copper this anode should be connected directly to the service material with a grounding clamp.

If a new service is to be connected to an existing main, the existing service must be shut off at the main, cut and capped at the corporation stop outlet.

For all buildings and as directed by the Consultant, the connection from the new watermain to the existing service shall be made at the existing water metre inside the building. A new valve shall be installed just prior to the water meter. Work shall include all improvements to the existing wall penetration required to facilitate the work and watertight patching.

All work within the building envelope, including all work governed under the building code shall be performed by appropriately qualified staff under the Ontario Trade Qualifications Act. At a minimum, staff shall have a valid plumbing license and qualifications for all aspects of work. No connection is to be backfilled/covered until inspected by Loyalist Township Utilities personnel and until all testing, flushing and disinfection has been completed.

The connection from the new to the existing service pipe at the property line shall be performed by the Contractor. No connection is to be backfilled until inspection by Loyalist Township Utilities personnel and until all testing, flushing and disinfection have been completed. All costs for this connection shall be included in the respective water service appearance item.

The new water services shall be connected as directed by the Consultant.

The connection from the new to the existing service pipe shall be performed by the Contractor. The Contractor is made aware of the potential for galvanized or lead services within the project limits. Service connections shall have a corporation main stop and be "tee-to-tee" near the watermain as per the appropriate OPSS. All services shall be sized in accordance with The National Plumbing Code of Canada. The minimum size shall be 25mm unless stated otherwise. Service installations by boring or torpedos may be necessary to save tree roots or existing sidewalk where there is sufficient separation between water service and the sewer lateral. In such cases the edge of the entrance and exit pits shall be as directed by the Consultant.

Non-metallic service pipe shall have a #12 tracer wire thermo welded to the service box and weld covered with rubberized mastic. Tracer wire shall extend into the building being serviced.

Curb valve boxes shall be set 0.3m behind the back of curb. All curb valve boxes to be set as per the applicable OPSD 1104.010 or OPSD 1104.020 and the top set at finished grade.

The contractor shall ensure that all service pipe shall be disinfected prior to installation by filling with 0.5% chlorine solution for 60 minutes, then flushed with potable water. Thereafter the pipe shall be capped until immediately prior to connecting.

Separate services shall be provided to each building and each unit of a semi-detached or row house residential building.

Services of 50mm or less shall have no joints between the main stop and the curb stop and no joints between the curb stop and the building interior.

Under this item the Contractor shall remove and dispose of, off-site, the existing service and appurtenances being replaced.

The minimum pipe size for water mains shall be 200mm with the exception that dead-end mains on cul-de-sacs of 20 or less dwelling units may be 150mm.

All mains shall be bopped except those servicing cul-de-sacs with not more than 20 dwelling units.

A suitable means for flushing such as a hydrant or a blow off shall be provided on mains larger than 50mm. Such flushing devices shall not be connected to any sewer. Devices, other than hydrants, shall be approved on a case-by-case basis.

Watermains shall be generally graded and hydrants or air release valves shall be placed at high points.

The minimum depth of cover measured for the mains and services from the top of a main or a service gooseneck shall not be less than 1.80m.

Mechanical joints required for tapping valves and butterfly valves 400-mm and over, shall be a mechanical joint conforming to AWWA C111/A21.11-85.

Insulation required for water mains and services which are not buried 1.8m shall be 50mm rigid insulation approved by the Consultant. In such cases frost protection must conform to the OBC.

Laying and Jointing of Pipes

No pipes, special fittings, valves, hydrants or other material shall be installed which are known or may be found to be defective or which may have been damaged in transit. All pipe shall be clearly marked as to class by the supplier. Any defective, damaged, or unsound pipe shall be rejected.

The contractor shall take delivery of pipe, fittings, valves and hydrants as near to the work site as practical. Such material shall be stored so that it does not interfere with traffic and care shall be taken to prevent dirt and foreign material from accumulating in or on the pipes, fittings valves, etc.

Pipe bedding and cover shall conform to those set forth in OPSD 802 series for flexible or rigid pipe. Bedding and cover shall be Granular A Limestone.

The open end of pipe shall be plugged wherever workers are not actively engaged in joining pipe, to prevent entrance of foreign material.

The Contractor shall keep the trenches free of water while pipes are being laid and jointed, and during inspection.

All pipe and fittings shall be carefully aligned by digging bell holes to secure a satisfactory matching of the bell and spigot ends of the pipe or fittings. Care shall be taken so that the pipe will conform to the lines and grades indicated by the drawings or given by the Consultant. Blocking is not permitted.

Before the pipe, fittings, valves, and hydrants are installed, they shall be cleaned of all dirt, oil, grease, etc. and dried.

No joint shall be covered until it been inspected by the Consultant.

All work on water mains and services must meet or exceed the AWWA Standard for Disinfecting Water Mains, ANSI/AWWA C651 - 14. The application of this standard shall include, but is not limited to, disinfection of water mains, disposal of heavily chlorinated water, disinfection procedures when cutting into or repairing existing water mains and verification.

Pipe and Joint Restraint

1) General

- Pipe and joint restraint shall comply with OPSD 1103.010 and 1103.020 or as set out herein.
- Mechanical joint restraint may be used subject to the prior approval of the Consultant.
- The number of joints requiring mechanical thrust restraint shall be set by the Consultant.

2) Eye Bolts and Rods

Eyebolts shall be zinc coated ANSI/ASME B1.1 19mm (¾ inch). Rods shall be ANSI/ASME B1.1 19mm (¾ inch) Grade 316 stainless steel with stainless steel nuts and washers. The number of rods required will be as set out below:

Number of 19 mm Rods for Eye Bolt Restraint				
Pipe Size	Dead End, Tee, & Dead End Valve	Fitting 900 Elbow	Fitting 450 Elbow	Fitting 22.50 Elbow
150 mm	2	2	2	2
200 mm	2	2	2	2
250 mm	3	3	2	2
300 mm	4	4	2	2
400 mm	Not Permitted	Not Permitted	3	2

3) PVC Pipe Restraint

- Mechanical joint restraint devices for PVC Pipe shall incorporate a series of machined serrations (cast serrations are not permitted) on the inside diameter to provide restraint, exact fit, and 360 degree contact and support of pipe wall. Restraint devices shall be manufactured of high strength ductile iron, ASTM A 536, Grade 65-45-12. Bolts and connecting hardware shall be of high strength low alloy material in accordance with ANSI/AWWA C111A21.11.
- All joint restraint devices for PVC shall carry a water working pressure rating equivalent to the full rated pressure of the PVC pipe on which they will be installed, with a minimum factor of safety of 2:1 in any nominal pipe size. In addition, they shall meet or exceed the requirements of Uni-B-13-94, Recommended Performance Specification For Joint Restraint Devices For Use with Polyvinyl Chloride (PVC) Pipes.
- Restraint Devices shall be Uni-Flange Series 1300, 1350, 1380, 1390 or approved equal.
- Series 1300 - For restraint of PVC pipe with DI mechanical joint or DI Push-on fittings with "ear lugs".
- Series 1350 - For restraint of PVC pipe bell in spigot joints. (new installations)
- Series 1380 - For restraint of PVC pipe in PVC pressure fittings joint (AWWA C907 PVC fittings or "fabricated" PVC pressure fittings)
- Series 1390 - For restraint of PVC pipe bell and spigot joints. (new or existing installations)

Backflow Prevention

The Contractor will provide all connection material and fittings for connection of the contractor's backflow prevention connection for testing, disinfection and flushing. The backflow device shall be approved by the Consultant.

Marking of Mains and Services

All non-metallic mains and services shall have #12 tracer wire. The tracer wire shall be looped on the outside of each valve box. The loop shall have one lead thermo welded to the valve box and the top of the loop shall be extended to inside the valve box through an opening cut into the valve box 50 mm below the bottom of the bell. Joints in the tracer wire shall be made with brass connectors.

All mains and services shall be marked with a 50mm wide detectable metallic tape blue in colour with the working "Buried Water Line Below". The tape shall be SETON PRODUCT #46302 or equivalent. The tape shall be laid 30 to 450 mm above the main or service.

Corrosion Protection Of Watermains

Valves, metallic pipes, metallic fittings, tracer wire, and hydrants shall be protected as per OPSD 1109.011 and 1109.025. Other locations may be directed by the Consultant.

Cathodic protection to meet Ontario Provincial Standard Drawings and Specifications refer to OPSD 1109.011 and OPSS 442.

Anodes shall be set and thermo welded and covered with rubberized mastic to the satisfaction of the Consultant.

Test stations are not required.

Leakage Testing

Leakage testing of pipes shall conform to OPSS 441.07.24.03.

Watermains Passing Under Culverts or Drainage Course

Crowns of water mains passing under culverts or drainage courses shall clear the invert of the culvert or the bottom of the water course by a minimum of 1m and provide frost protection in accordance with OBC 7.3.5.4 to achieve 1.80m of equivalent depth.

If bends are used to pass under the culvert or a water course, such bends shall have a maximum change in direction of 22 ½ degrees. Thrust restraints shall be as set out herein.

The Unit price shall include all fittings, extra pipe, extra work and anodes. If rock is encountered it shall be paid for as rock excavation.

Flushing of Mains

The disinfection procedures shall adhere to ANSI/AWWA specification C651-14 with the following changes

Two (2) soft foam swabs shall be sent through the water main, after the main is flooded and before chlorination.

Disinfection/chlorination shall be by sodium hypochlorite. The concentration shall be at least 25 mg/L of free chlorine prior to the start of the disinfection period and 15 mg/L of free chlorine after twenty-four (24) hours. Depending on the drop in free chlorine, the Consultant, may require rechlorination.

The initial bacteriological samples shall be taken after the main is flooded with distribution water and there is a free chlorine residual equal to the adjoining distribution system.

All sampling shall be under the direct supervision of a person qualified to sample in O Reg. 170/03 using chain of custody procedures as practised by the commission. An Owner's representative must be present during all testing and verification.

Connect to Existing Watermains

The Contractor shall supply all materials and perform all work necessary to connect the new watermains to the existing watermains at the locations shown on the Contract Drawings or as directed by the Consultant.

The Consultant and the Contractor shall plan the timing and construction procedures for the required connections to existing water mains. Before any connections are commenced, the Contractor shall notify all water customers affected by the shutdown, as to the time and duration of the shutdown.

The Contractor shall prove to the Consultant that he has the proper materials on the site to make the connection in question, and that he has the manpower, and equipment, on the job to complete the connection in the time allotted. Once the work has been started on the connection, it shall be continued until the work has been completed. The Contractor shall be prepared to work overtime hours to complete the connection, if the work cannot be done during normal working hours. The Contractor will not receive any additional payment for the work of connections, if they are made in overtime working hours.

The Contractor will supply and install tapping sleeves and valves.

Connections to the existing mains shall be made only after the affected section of the waterworks has been isolated and the new main has been completed, including chlorination, testing and flushing. Extreme care shall be taken to prevent contamination of the existing watermain and new closure fittings shall be rinsed with chlorine solution prior to installation.

Miscellaneous

Water mains and services for residential development shall be designed to provide an average flow of 350 L/person/day. Sizing of services to other developments shall be agreed to prior to start of detailed design by the Commission. Peaking factors shall be by use of Design Guidelines for Drinking Water Systems Draft.

Fire flows shall be set by the fire chief. When considering fire flows the flows shall include domestic flows at the Maximum Day Factor.

Insulation

All watermain that cannot be installed at a depth of 1.80m below grade shall include frost protection in accordance with OBC 7.3.5.4 to achieve 1.80m of equivalent depth.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

SANITARY PIPE OPSS 401, 410

The provisions of OPSS 401 shall apply except as amended hereafter;

The Contractor shall complete a pre-condition survey.

401.05.01 Bedding Material and Embedment Material

Section 401.05.01 is amended by the addition of the following:

Bedding material shall be Granular A. Depth shall be 150mm.

Bedding and embedment material shall be Granular A.

401.05.02 Cover Material

Section 401.05.02 is amended by the addition of the following:

Cover material shall be Granular A. Cover material shall extend from the top of the bedding to 300mm above the top of pipe.

401.05.04 Backfill Material

401.05.04.01 General

Section 401.05.02.01 is amended by the addition of the following:

Backfill shall be suitable native material or Granular B Type I.

Subbase shall be 400mm Granular B Type I

The provisions of OPSS 410 shall apply except as amended hereafter;

410.07 CONSTRUCTION

410.07.12 Pipe Installation

410.07.12.01 General

Section 410.07.12.01 is amended by the addition of the following:

Pipe shall be laid such that it does not deviate from the specified alignment by more than 75mm at any point along its length.

Pipe shall be laid such that it does not deviate from the specified grade by more than 10mm at any point along its length. Regardless of the tolerances permitted for the pipe grade, there shall be no low points along the pipe that cause water to pond in the pipe. Repair of such deficiencies shall be at the Contractor's expense.

Pipes shall be installed flush to the inside of structures.

Pipe to pipe connections to existing storm sewers shall include a manufactured coupler and a concrete collar.

Existing pump pumps connected to the storm sewer system shall be reconnected to the storm sewer.

The Contractor shall schedule the work in a manner such that no more than 25m length of trench is open at one time.

Any pipe inlet/outlet shall be installed with a steel grate. No separate payment shall be made for the grate.

410.07.15 Breaking into Maintenance Holes, Catch Basin, Ditch Inlets, Pipe Culverts, and Pipe Sewers

Section 410.07.15 is amended by the addition of the following:

Openings for the connection of a pipe sewer or sub drain outlet to an existing structure shall be formed by coring. The pipe sewer or sub drain shall be sealed into place using non-shrink grout.

410.07.16.05 Deflection Testing of Pipe Sewers

Section 410.07.16.05 is amended by the addition of the following:

Deflection testing shall be not required on all flexible pipe prior to acceptance by the Owner.

410.07.16.06 Closed-Circuit Television (CCTV) Inspection

Section 410.07.16.06 is amended by the addition of the following:

Pipe sewers shall be inspected a minimum of 2 weeks prior to surface course asphalt. The CCTV inspection report shall be provided to the Contractor Administrator a minimum of 5 business days prior to placement of surface course asphalt. The inspection report shall be reviewed and approved by the Consultant, prior to placement of surface course asphalt.

Pipe sewers shall be inspected using CCTV equipment. CCTV inspection of pipe sewers shall be according to OPSS 409, prior to acceptance by the Owner.

The Contractor is responsible for a timely CCTV inspection of the sewers and shall have no claim for delays related to acceptance of the CCTV inspection by the Owner.

410.07.17 Cleaning and Flushing of Pipe Sewers

Section 410.07.17 is amended by the addition of the following:

All pipe sewers shall be cleaned and flushed just prior to inspection and acceptance as well as just prior to the end of the warranty period.

410.07.19 Concrete Appurtenances

Section 410.07.19 is amended by the addition of the following:

All concrete appurtenances shall be precast.

BASIS OF PAYMENT

Shall be by Lump Sum as part of the Stipulated Bid Price

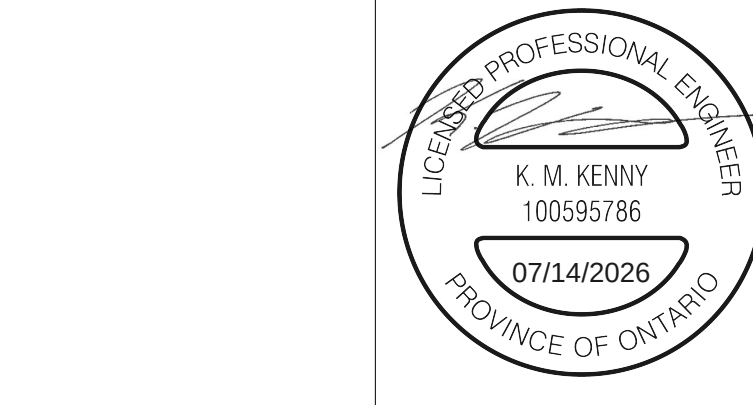
METRIC NOTE:

ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE NOTED.

** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS

No.	Date	Description	By
1	10/31/25	ISSUED FOR SITE PLAN APPROVAL	MB
2	12/22/25	REISSUED FOR SITE PLAN APPROVAL	MB
3	03/05/26	REISSUED FOR SITE PLAN APPROVAL	MB
4	03/27/26	REISSUED FOR SITE PLAN APPROVAL	MB
5	04/14/26	REISSUED FOR SITE PLAN APPROVAL	MB
6	07/13/26	ISSUED FOR TENDER, PERMIT, CONSTRUCTION	MB



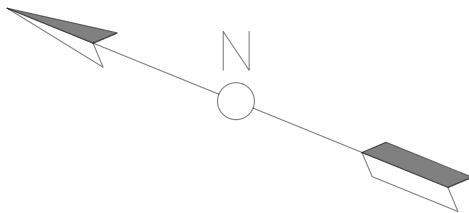
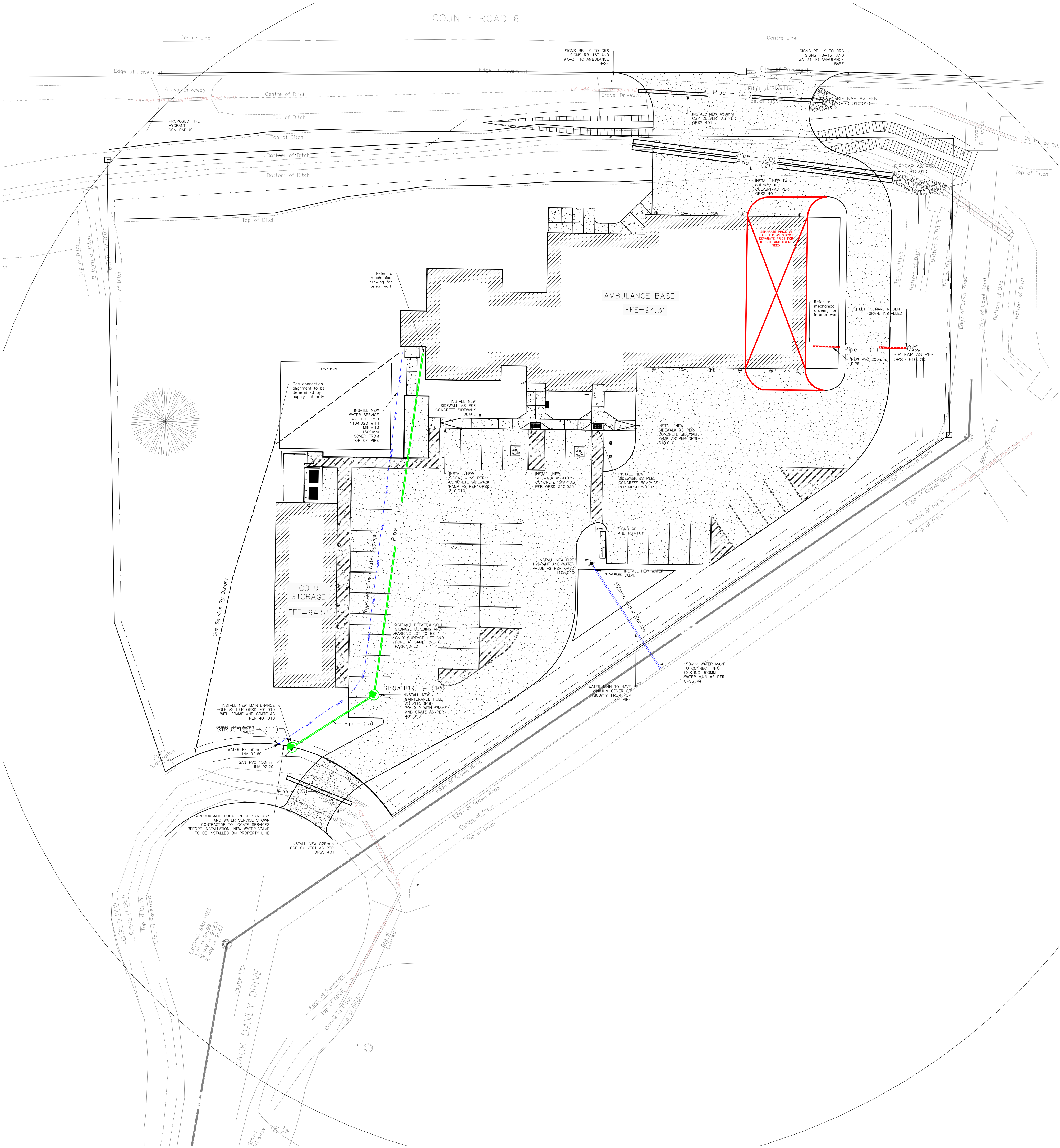
COUNTY OF LENNOX
AND ADDINGTON

PARAMEDIC BASE

CONSTRUCTION
NOTES

Drawn by: M.B.	Project No: 2209778.50
Designed by: M.B.	Date: JULY 13 2026
Checked by:	Scale – Hor: 1: 300 Vert:
Approved by: K.K	Contract No: Drawing No: C-3

AMBULANCE BASE



STORM SEWER PIPE TABLE							
NAME	DESCRIPTION	LENGTH	SLOPE	START STRUCTURE	START INVERT	END STRUCTURE	END INVERT
Pipe - (1)	200 MM PVC PIPE	13.7 m	0.88%	BUILDING	93.460	OUTLET WITH RODENT TRAP	93.340

SANITARY SEWER STRUCTURE TABLE					
STRUCTURE NAME:	OPSD	T/G	INVERTS	FRAM AND COVER	
Structure - (11)	OPSD 701.010	94.61	CONNECT TO EXISTING LOT SERVICE	OPSD 401.010 TYPE A CLOSED COVER	
Structure - (10)	OPSD 701.010	94.21	E INV = 92.550 NW INV = 92.500	OPSD 401.010 TYPE A CLOSED COVER	

SANITARY SEWER PIPE TABLE							
NAME	SIZE	LENGTH	SLOPE	START STRUCTURE	START INVERT	END STRUCTURE	END INVERT
Pipe - (12)	150mm PVC	50.4 m	1.37%	Structure - (10)	92.550	BUILDING	93.240
Pipe - (13)	150mm PVC	14.2 m	-1.48%	Structure - (10)	92.500	Structure - (11)	92.290

ROAD CULVERT TABLE						
NAME	DESCRIPTION	LENGTH	SLOPE	SOUTH INVERT	NORTH INVERT	
Pipe - (20)	600MM CORRUGATED DUEL WALL HDPE	38.3 m	0.74%	93.040	92.756	
Pipe - (21)	600MM CORRUGATED DUEL WALL HDPE	38.3 m	0.74%	93.040	92.756	
Pipe - (22)	450 MM CSP	26.9 m	1.93%	93.040	92.520	
Pipe - (23)	525 MM CSP	10.2 m	-0.87%	94.098	94.187	

CULVERT COVER TABLE			
CULVERT	NORTH END	MIDDLE	SOUTH END
Pipes 20&21	317mm	310mm	337mm
Pipe 22	230mm	270mm	350mm
Pipe 23	265mm	285mm	305mm

Pressure Pipe Table					
PRESSURE PIPE NAME	SIZE	LENGTH	MATERIAL	START ELEVATION	END ELEVATION
Pressure Pipe - (1)	150mm	18.18	DR 28 PVC	92.035m	91.842m
Pressure Pipe - (2)	50mm	63.59	PE	92.60m	92.51m

METRIC NOTE:
ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE NOTED.
** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS		
No.	Date	Description
1	10/31/25	ISSUED FOR SITE PLAN APPROVAL
2	12/22/25	REISSUED FOR SITE PLAN APPROVAL
3	03/05/26	REISSUED FOR SITE PLAN APPROVAL
4	03/27/26	REISSUED FOR SITE PLAN APPROVAL
5	04/14/26	REISSUED FOR SITE PLAN APPROVAL
6	07/13/26	ISSUED FOR TENDER, PERMIT, CONSTRUCTION

EXISTING

LEGEND

PROPOSED

UTILITY POLE

SIGN

STORM SEWER

SANITARY SEWER

CATCH BASIN

SANITARY MAINTENANCE HOLE

TREE

BUSH

FENCE

BELL BOX

IRON BAR

LIGHT POST

NATURAL GAS LINE

PROPERTY LINES

TOP OF BANK

TOP OF DITCH

TOE OF SLOPE

CENTRE OF DITCH

FIRE HYDRANT

TOP OF SWALE

BOTTOM OF SWALE

WATER VALVE

50mm WATER SERVICE

150mm WATER MAIN



COUNTY OF LENNOX
AND ADDINGTON

PARAMEDIC BASE

SITE SERVICING
PLAN

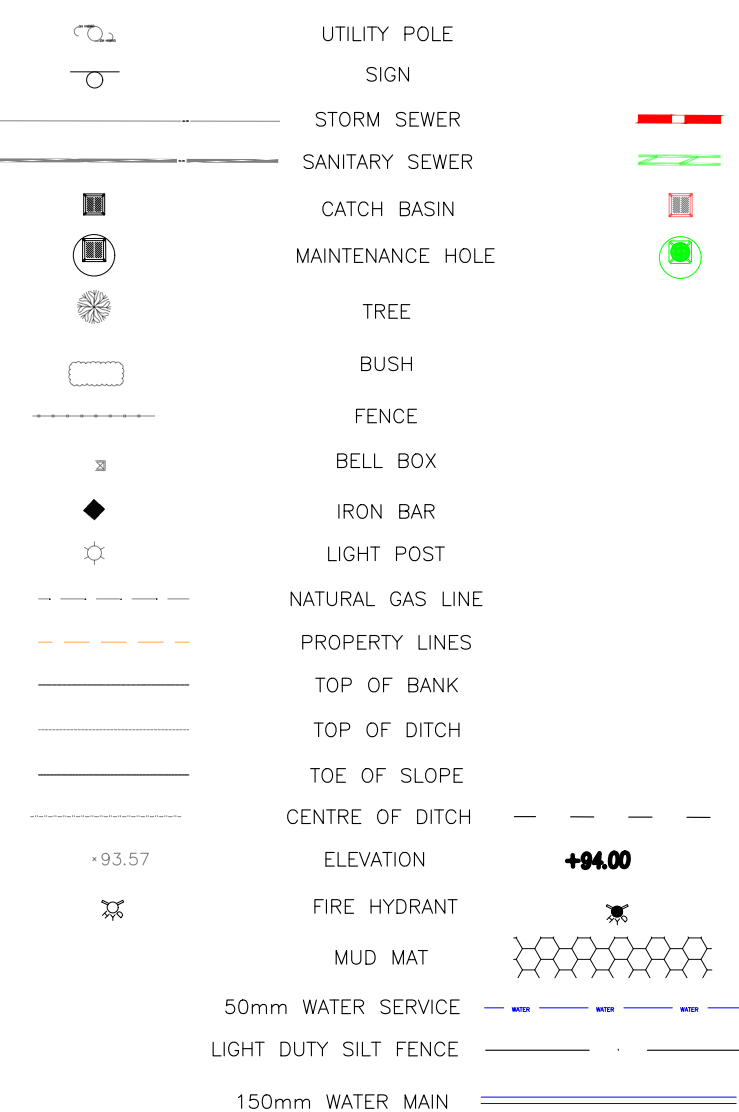
Drawn by: M.B.	Project No: 220778.50
Designed by: M.B.	Date: JULY 13 2026
Checked by:	Scale - Hor: 1:300 Vert:
Approved by: K.K.	Contract No: Drawing No: C-4

AMBULANCE BASE

**** DRAWINGS ARE NOT TO BE SCALED ****

No.	Date	Description	By
1	10/31/25	ISSUED FOR SITE PLAN APPROVAL	MB
2	12/22/25	REISSUED FOR SITE PLAN APPROVAL	MB
3	03/05/26	REISSUED FOR SITE PLAN APPROVAL	MB
4	03/27/26	REISSUED FOR SITE PLAN APPROVAL	MB
5	04/14/26	REISSUED FOR SITE PLAN APPROVAL	MB
6	07/13/26	ISSUED FOR TENDER, PERMIT, CONSTRUCTION	MB

EXISTING LEGEND PROPOSED



COUNTY OF LENNOX
AND ADDINGTON

PARAMEDIC BASE

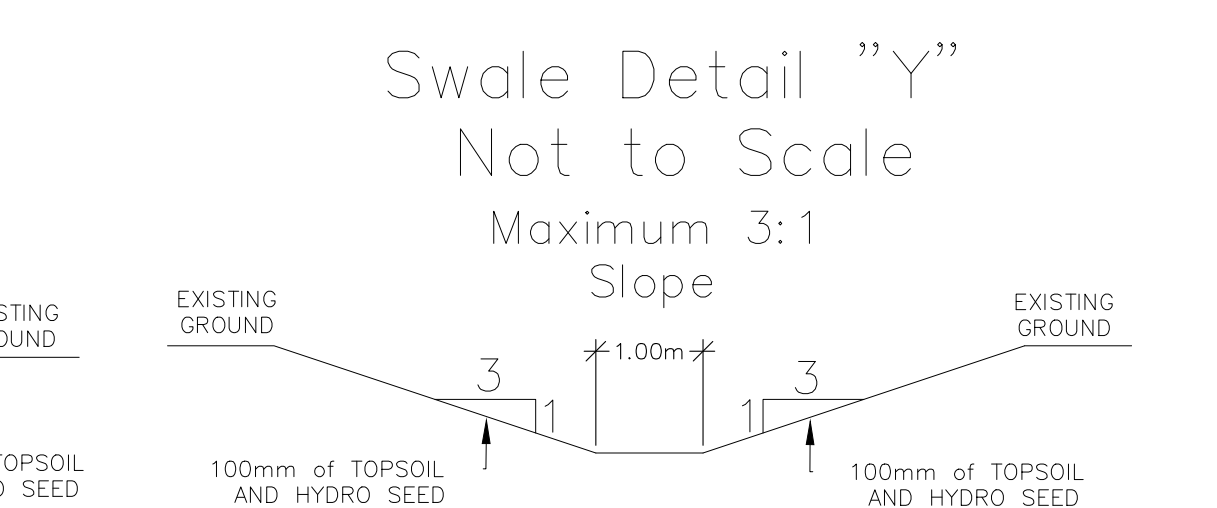
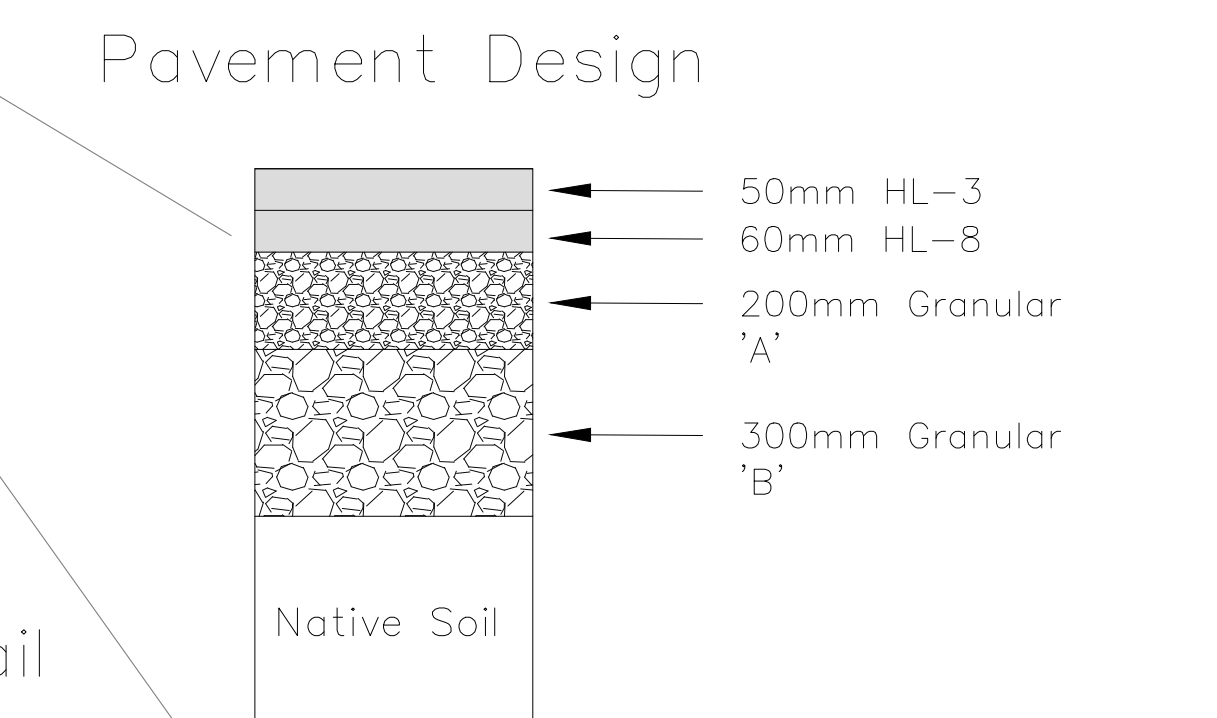
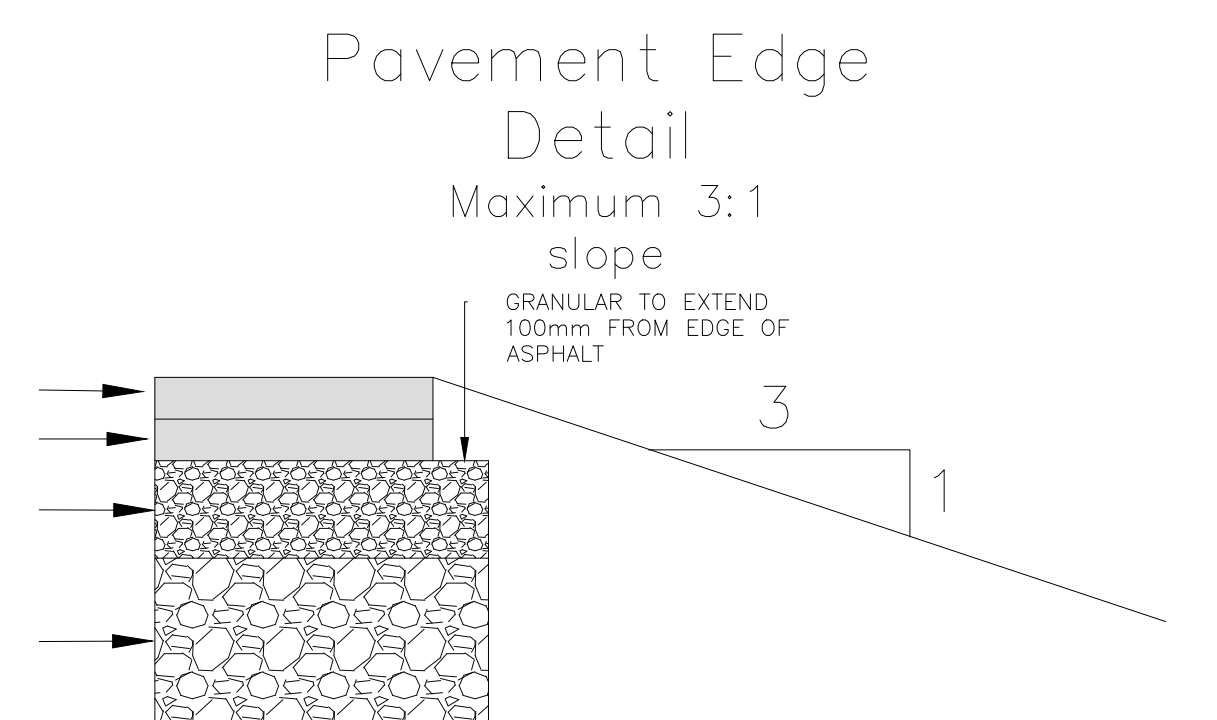
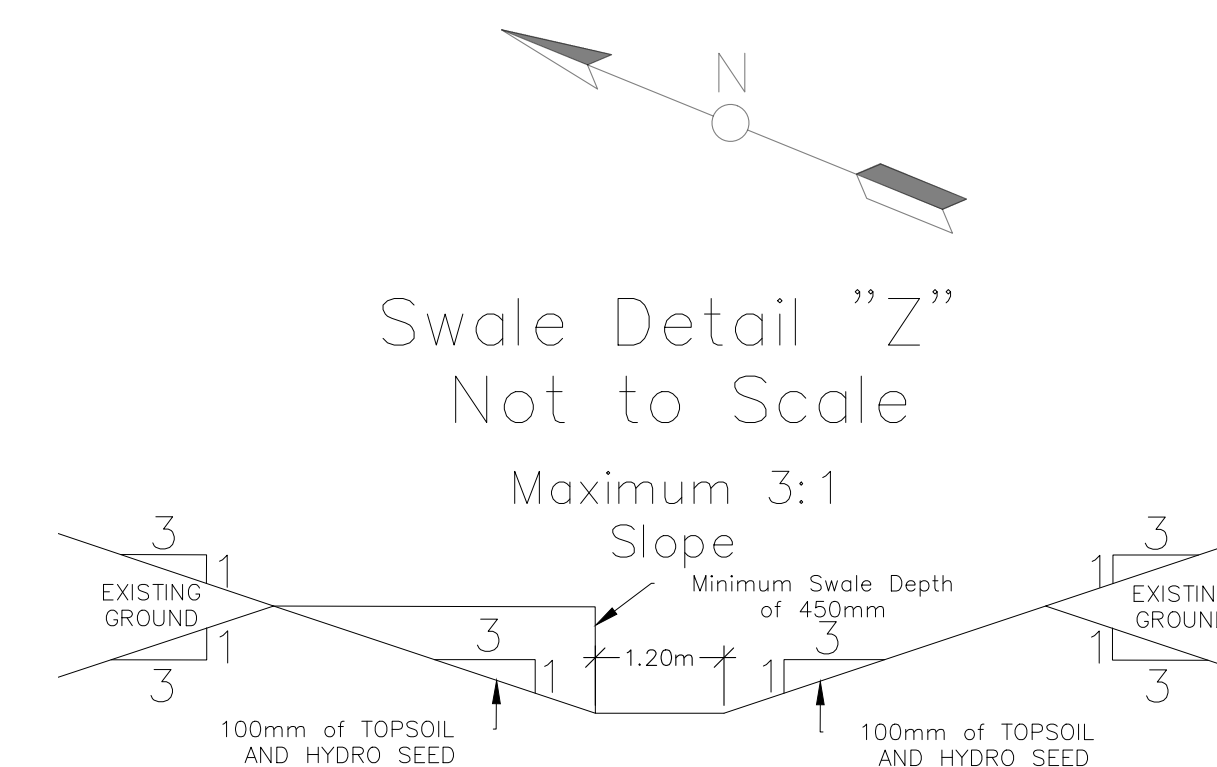
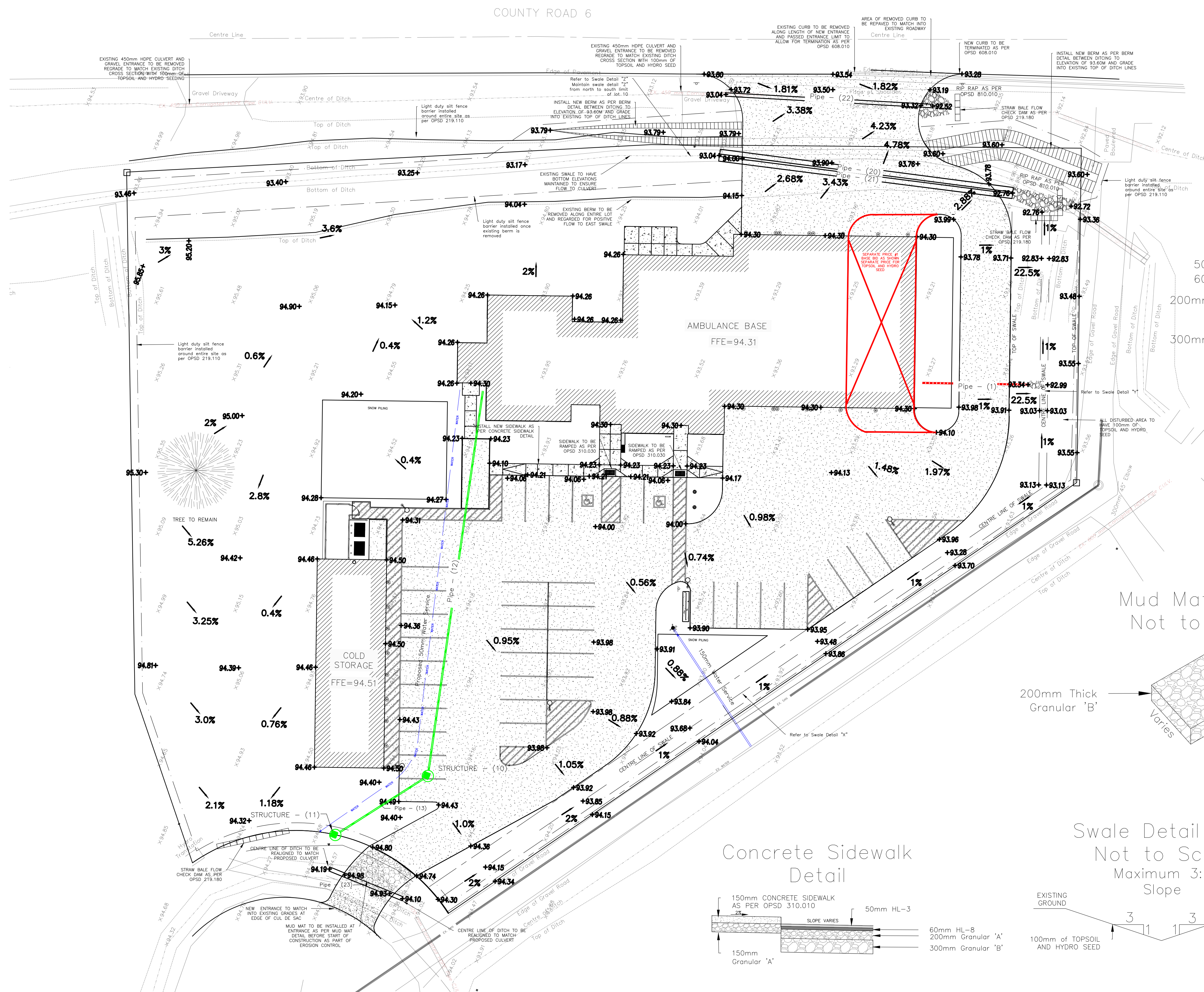
GRADING PLAN

Drawn by: M.B. Project No: 2209778.50

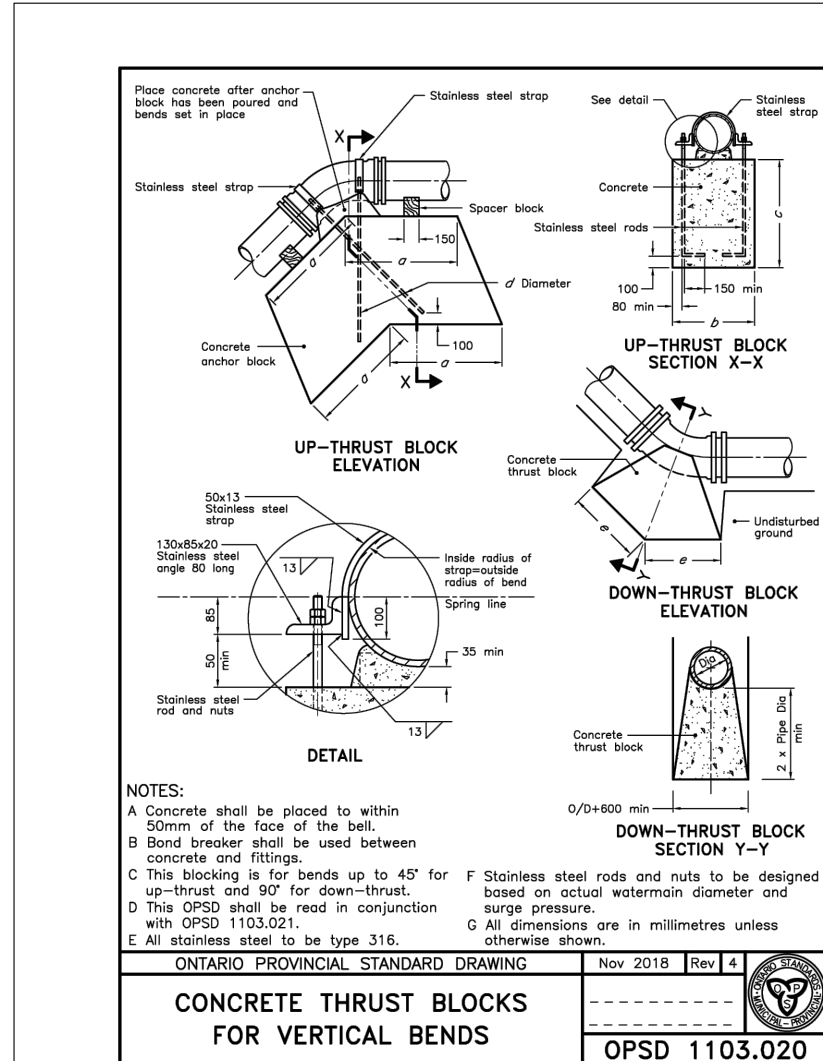
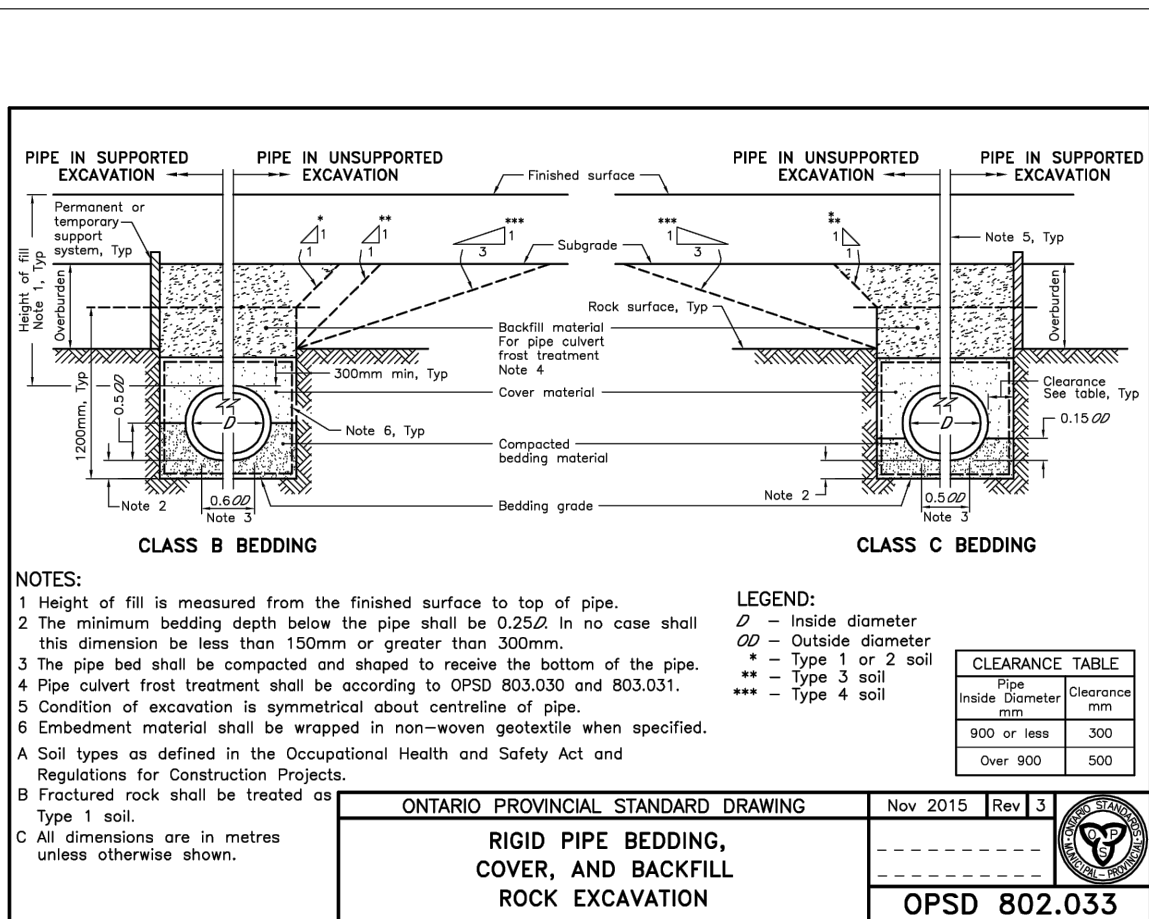
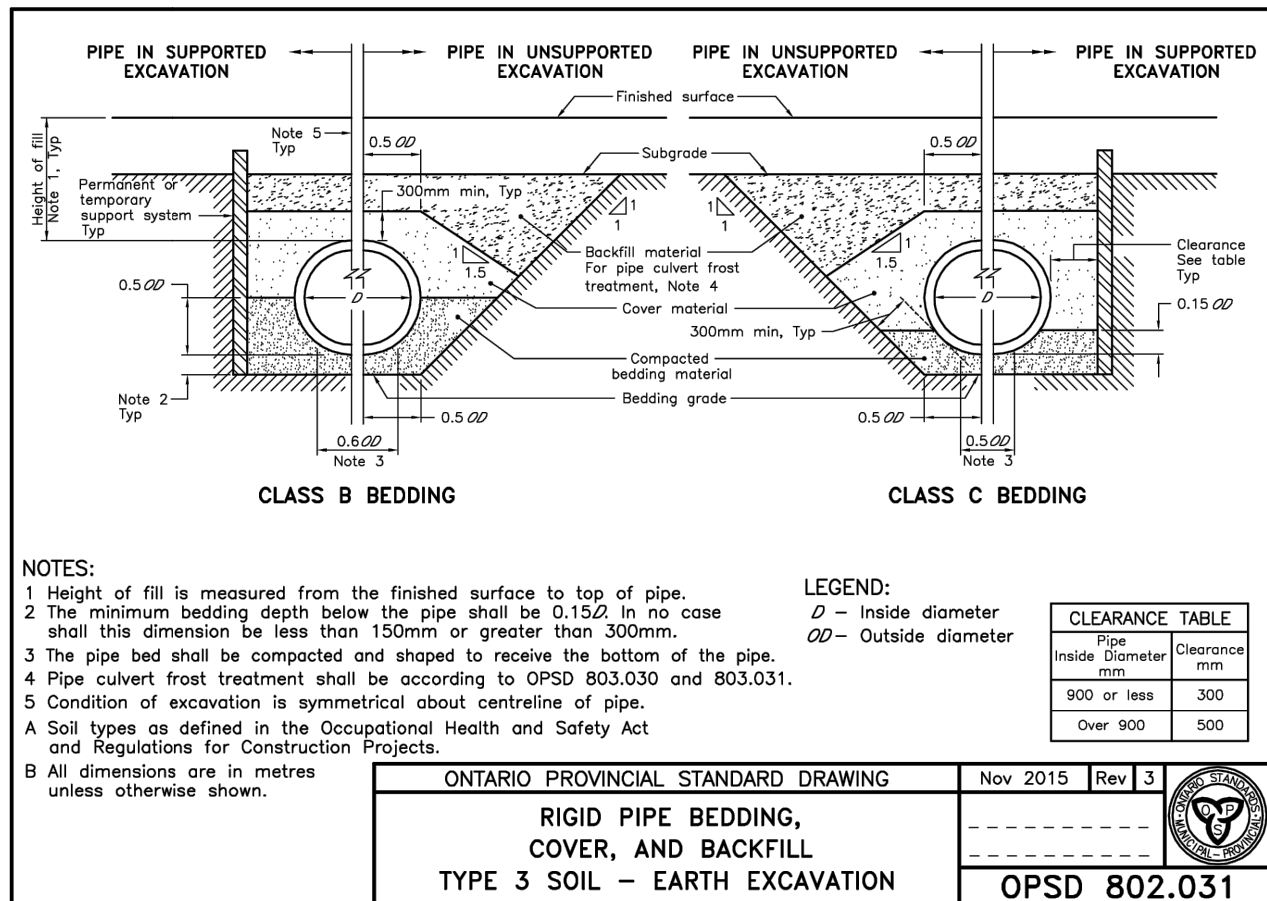
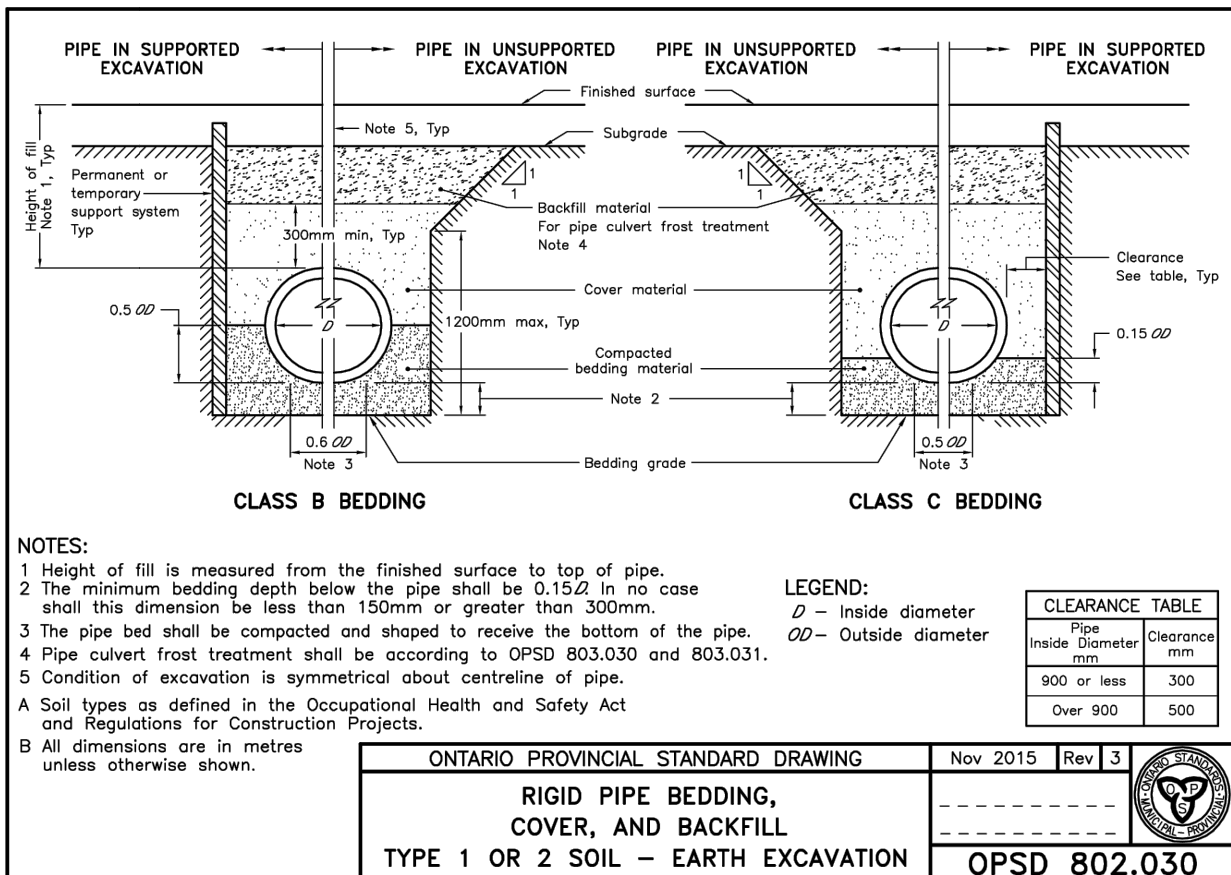
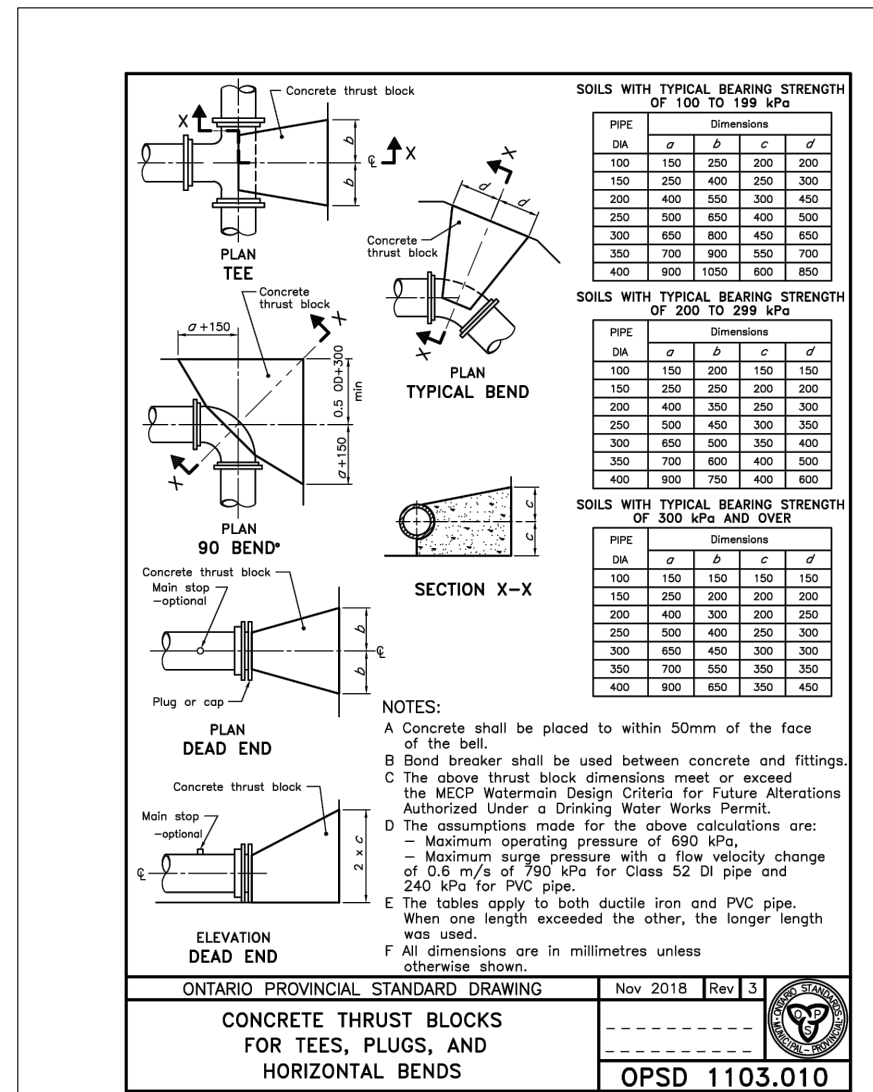
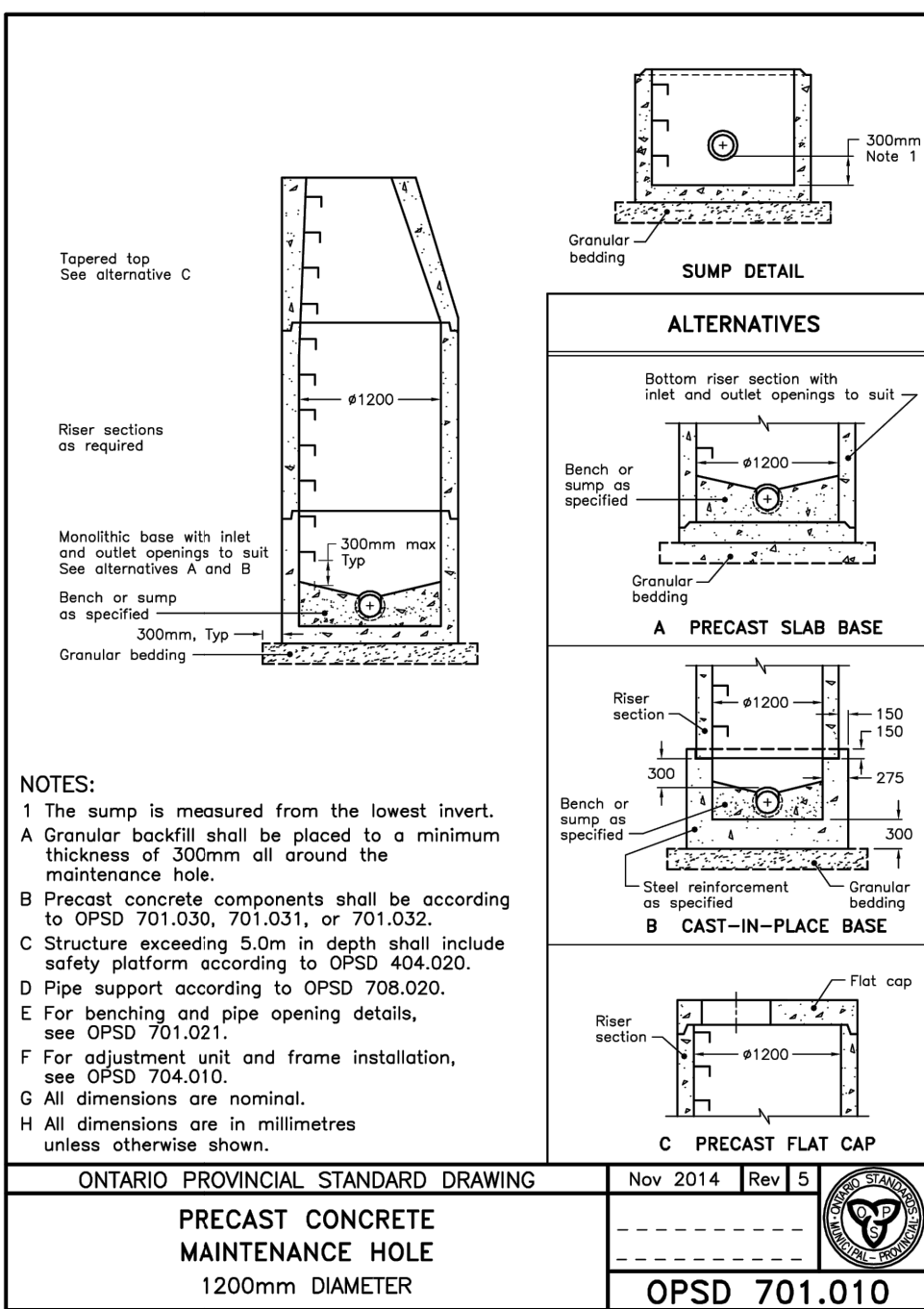
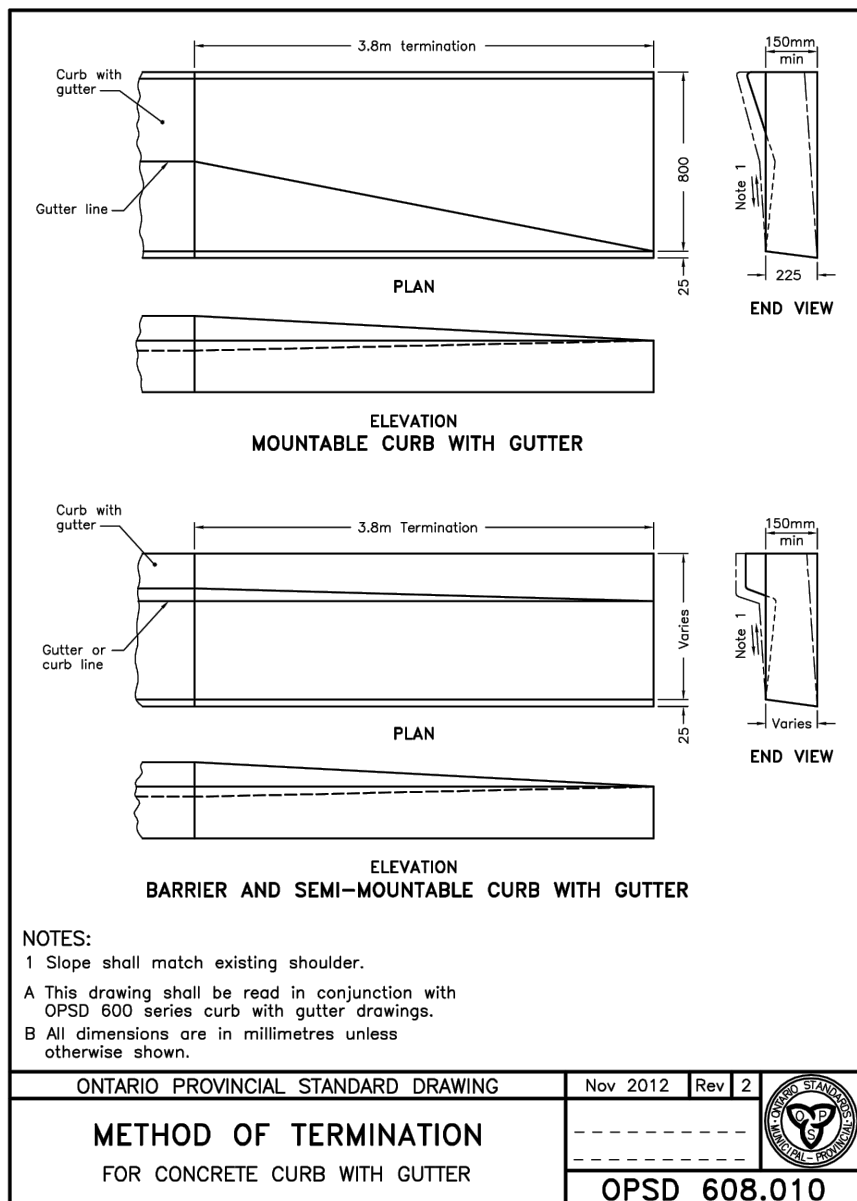
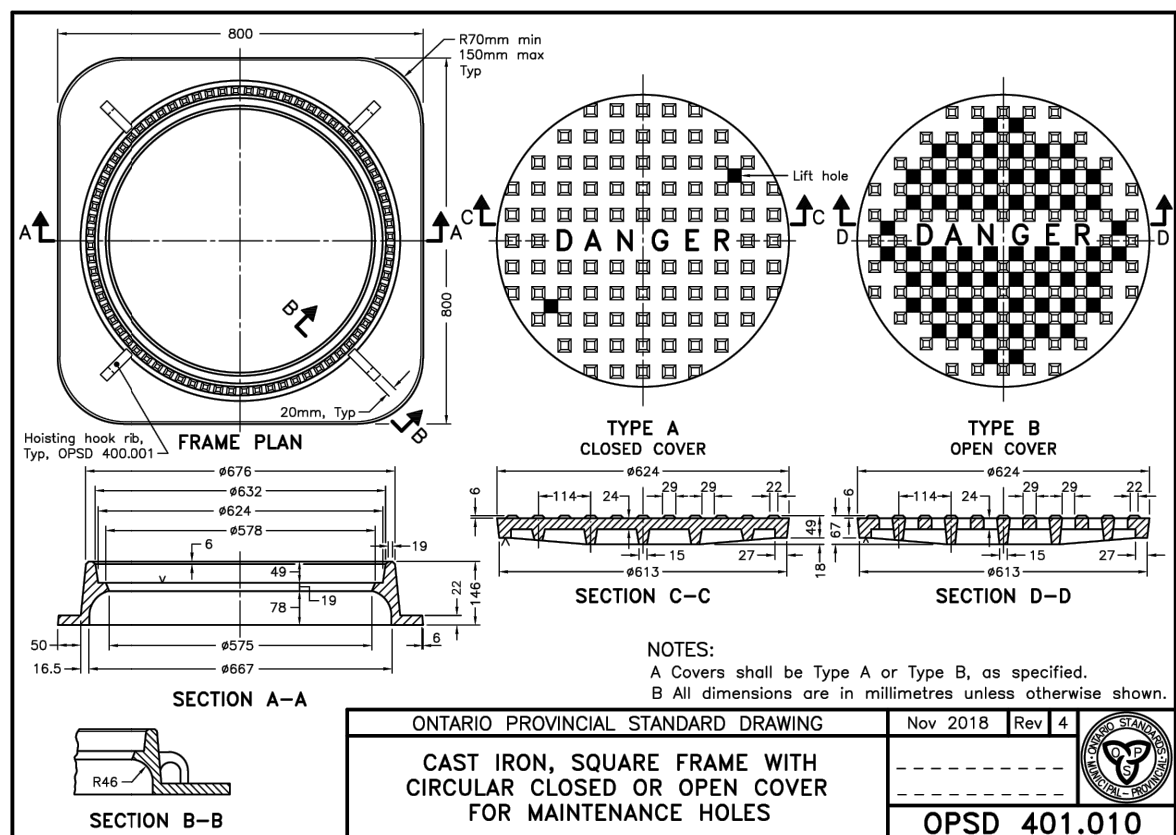
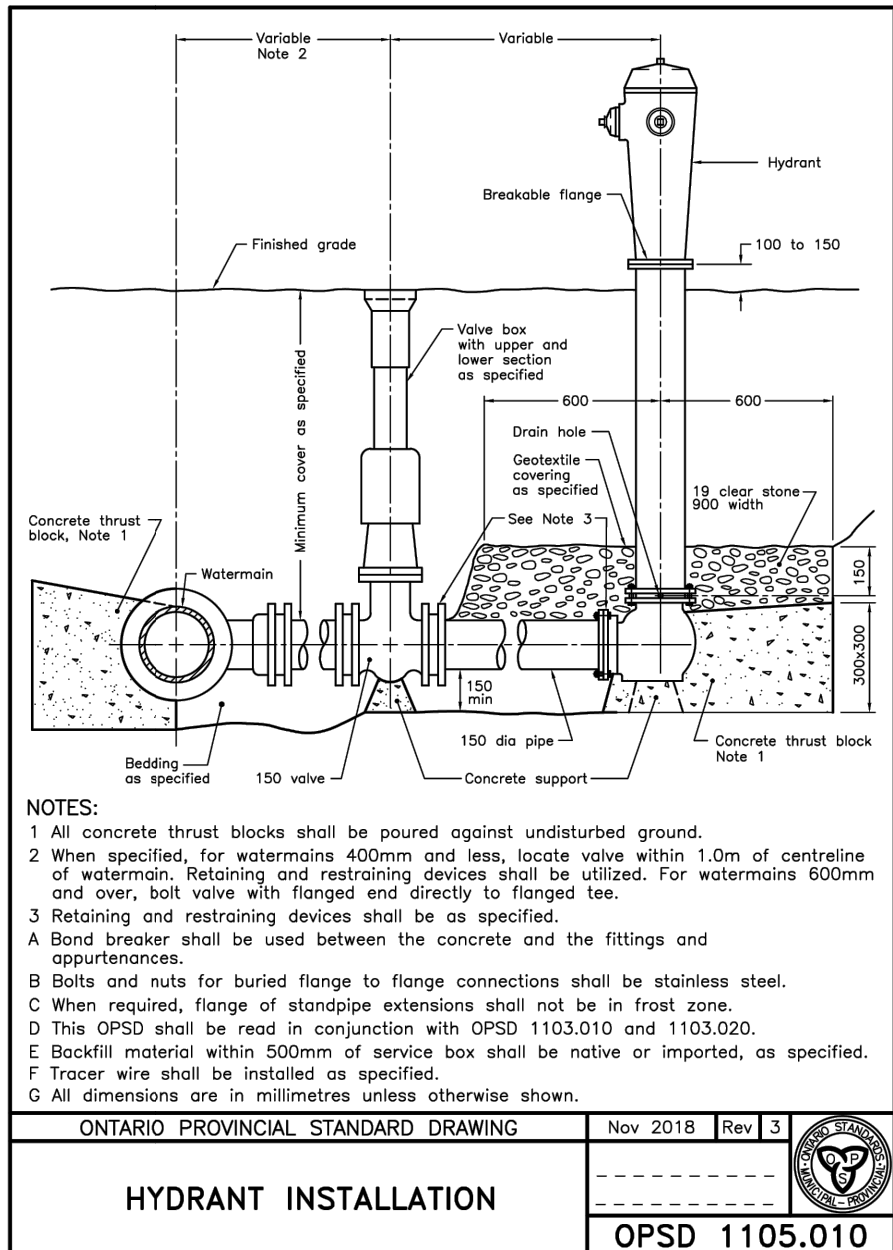
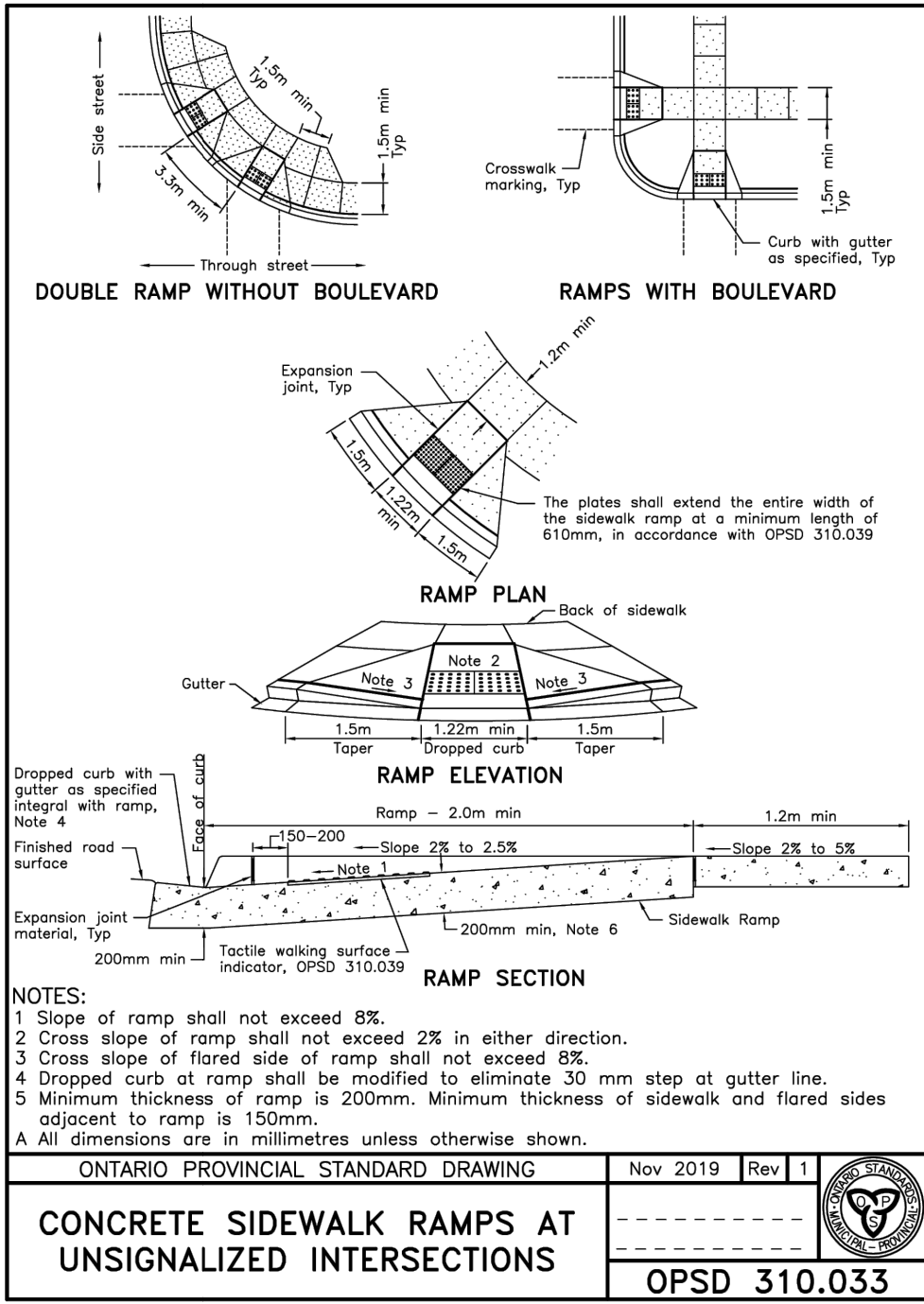
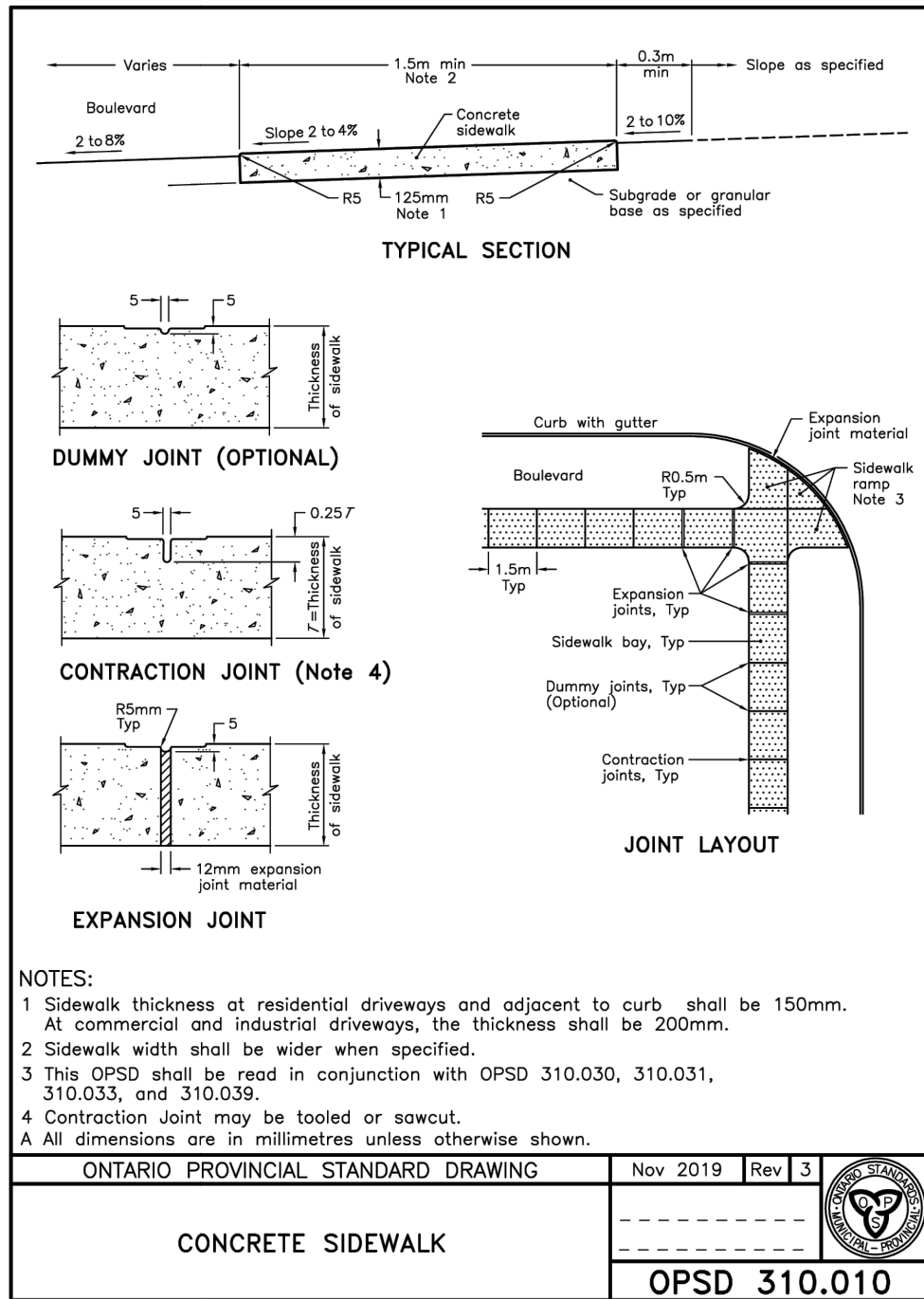
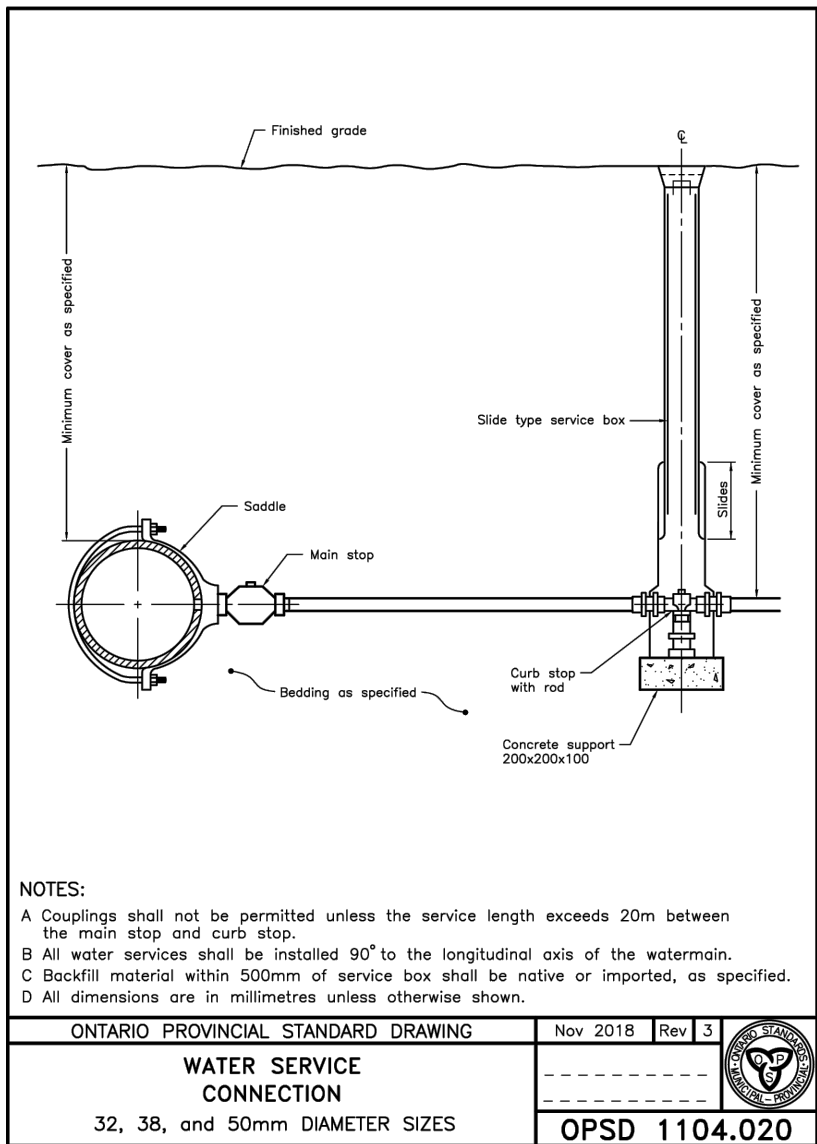
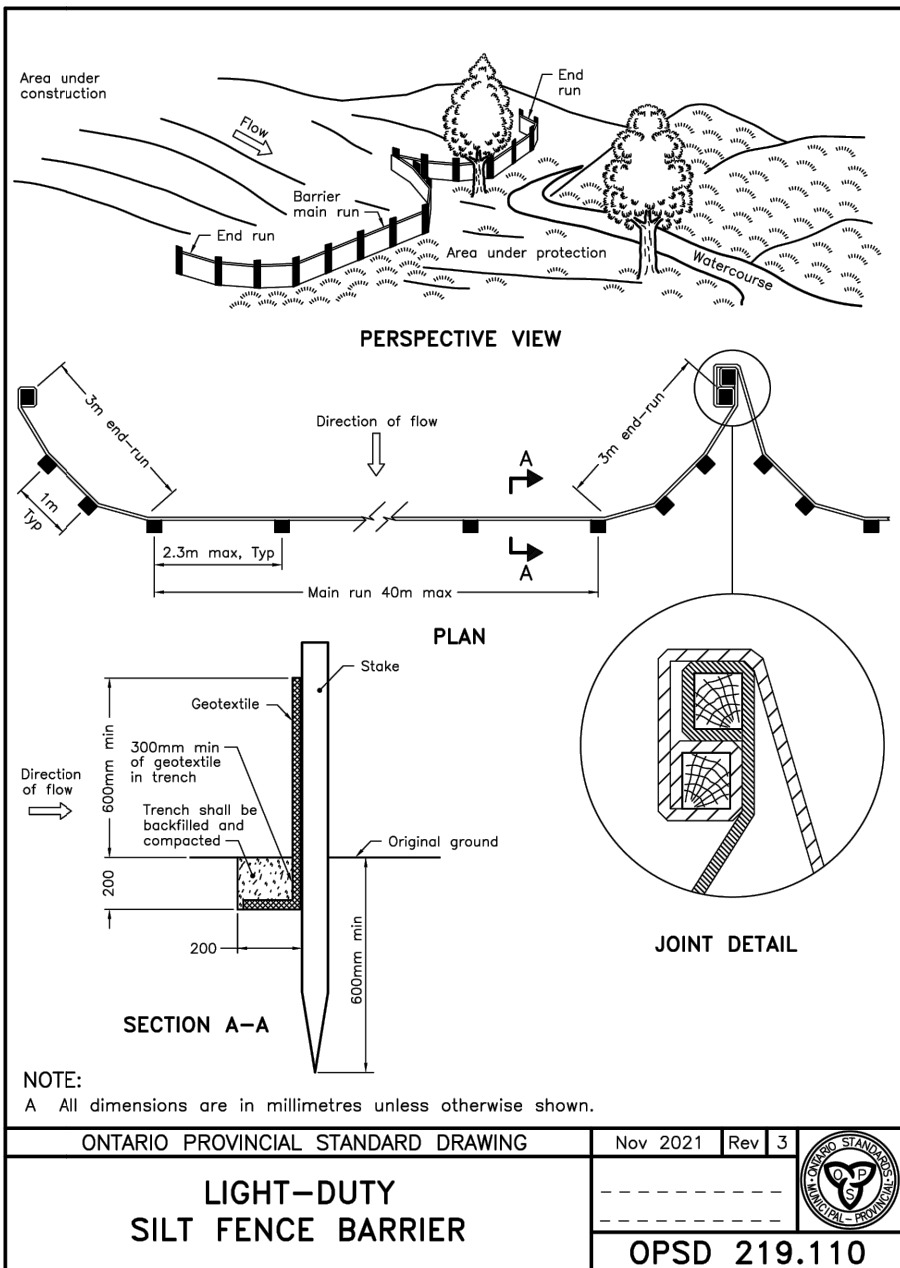
Designed by: M.B. Date: JULY 13 2026

Checked by: Scale – Hor: 1:300
Vert:

Approved by: K.K. Contract No: Drawing No: C-5



DETAILS



METRIC NOTE:
ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE NOTED.
** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS		
No.	Date	Description
1	10/31/25	ISSUED FOR SITE PLAN APPROVAL
2	12/22/25	REISSUED FOR SITE PLAN APPROVAL
3	03/05/26	REISSUED FOR SITE PLAN APPROVAL
4	03/27/26	REISSUED FOR SITE PLAN APPROVAL
5	04/14/26	REISSUED FOR SITE PLAN APPROVAL
6	07/13/26	ISSUED FOR TENDER, PERMIT, CONSTRUCTION



COUNTY OF LENNOX
AND ADDINGTON

PARAMEDIC BASE

DETAILS

Drawn by: M.B. Project No: 2209778.50

Designed by: M.B. Date: JULY 13 2026

Checked by: Scale - Hor: 1:300 Vert:

Approved by: K.K. Contract No: Drawing No: C-6