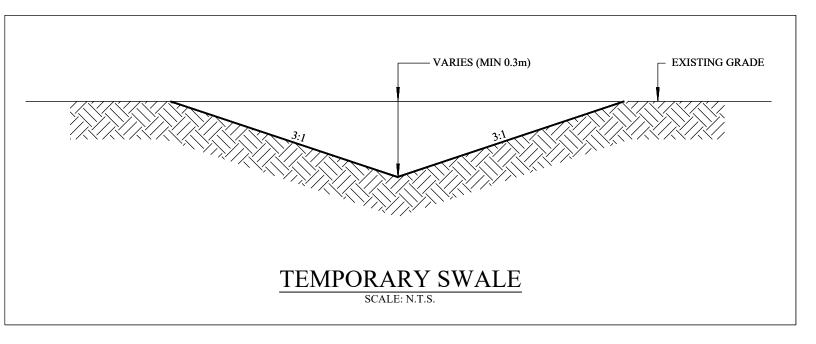
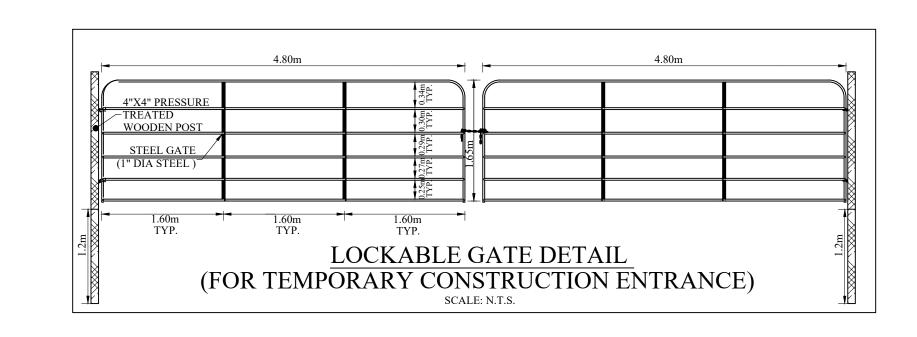
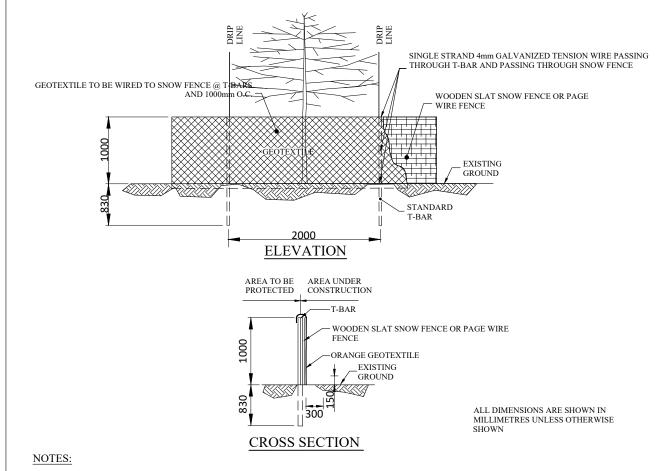


SCALE: N.T.S.





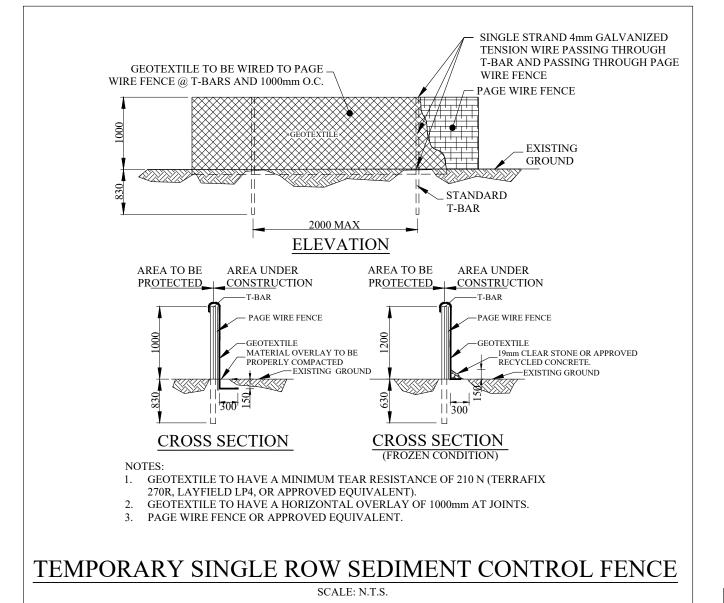


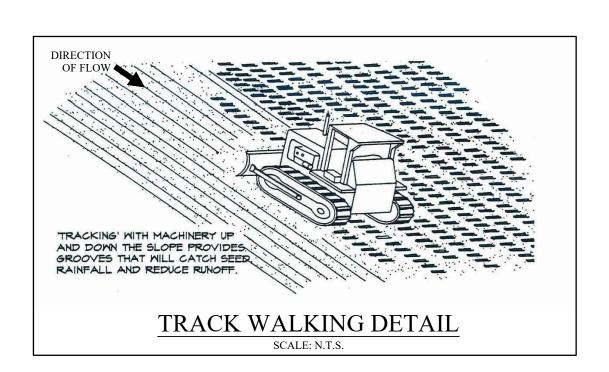
- ORANGE GEOTEXTILE TO HAVE A HORIZONTAL OVERLAY OF 1000mm AT JOINTS.
 SNOW FENCE TO BE WOODEN
- 3. ALL EXISTING TREES WHICH ARE TO REMAIN, SHALL BE FULLY PROTECTED WITH THE FENCING BEYOND THEIR "DRIP-LINE", TO THE SATISFACTION OF THE TOWN'S LANDSCAPE ARCHITECT. GROUPS OF TREES AND OTHER EXISTING PLANTINGS TO BE PROTECTED, SHALL BE DONE IN A LIKE MANNER WITH FENCING AROUND THE ENTIRE GROUPINGS.
- WITH FENCING AROUND THE ENTIRE GROUPINGS.

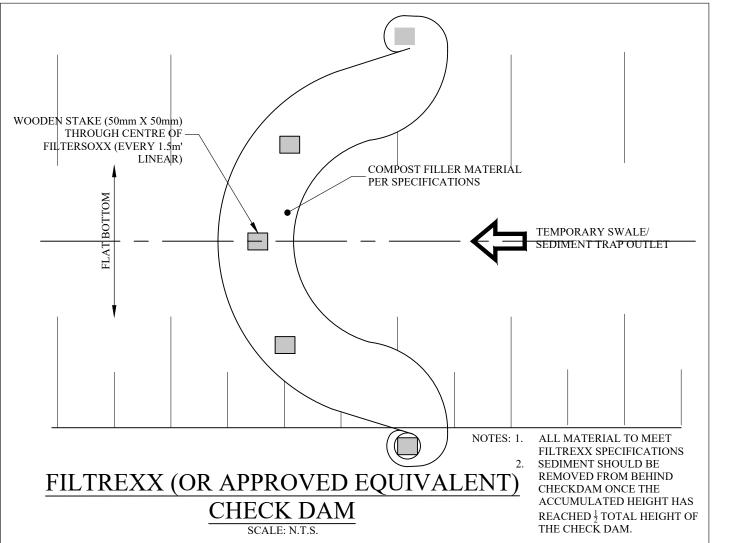
 4. THE AREA WITHIN THE PROTECTIVE FENCING SHALL REMAIN UNDISTURBED AND SURPLUS SOIL, EQUIPMENT, DEBRIS OR BUILDING MATERIALS SHALL NOT BE PLACED OVER ROOT SYSTEMS OF THE TREES WITHIN THE PROTECTIVE FENCING. NO CONTAMINENTS WILL BE DUMPED OR FLUSHED WHERE FEEDER ROOTS OF TREES EXIST.
- 5. THE DEVELOPER OR HIS AGENTS SHALL TAKE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE TO TREES OR SHRUBS TO BE RETAINED. NO RIGGING CABLES SHALL BE WRAPPED AROUND OR INSTALLED IN TREES.
- 6. WHERE ROOT SYSTEMS OF PROTECTED TREES ARE EXPOSED DIRECTLY ADJACENT TO, OR DAMAGED BY CONSTRUCTION WORK, THEY SHALL BE TRIMMED NEATLY AND THE AREA BACK-FILLED WITH ADDRODDIATE MATERIAL TO PREVENT DESIGNATION
- APPROPRIATE MATERIAL TO PREVENT DESICCATION.

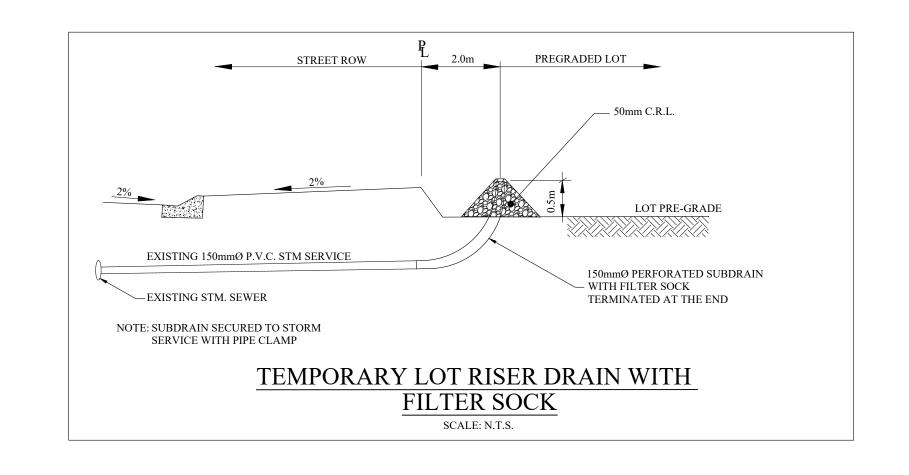
 7. WHERE LIMBS OR PORTIONS OF TREES ARE REMOVED TO ACCOMMODATE CONSTRUCTION WORK, THEY SHALL BE REMOVED CAREFULLY. EXPOSED WOOD OVER 25mm TO BE TREATED WITH AN APPROVED TREE WOUND DRESSING.
- 8. WHERE NECESSARY, THE TREES SHALL BE GIVEN AN OVERALL PRUNING TO RESTORE THE BALANCE BETWEEN ROOTS AND TOP GROWTH, OR TO RESTORE THE APPEARANCE OF THE TREE. PRUNE BRANCHES BY \(\frac{1}{3} \) IF REQUIRED TO REMOVE DAMAGED OR OBJECTIONABLE BRANCHES. DO NOT
- 9. TREES THAT HAVE DIED OR HAVE BEEN DAMAGED BEYOND REPAIR SHALL BE REPLACED BY THE DEVELOPER AT HIS OWN EXPENSE WITH TREES OF A SIZE AND SPECIES AS APPROVED BY THE TOWN'S LANDSCAPE ARCHITECT.
- 10. IF GRADES AROUND TREES TO BE PROTECTED ARE LIKELY TO CHANGE THE DEVELOPER SHALL BE REQUIRED TO TAKE SUCH PRECAUTIONS AS FRYWELLING AND ROOT-FEEDING TO THE SATISFACTION OF THE TOWN'S LANDSCAPE ARCHITECT.

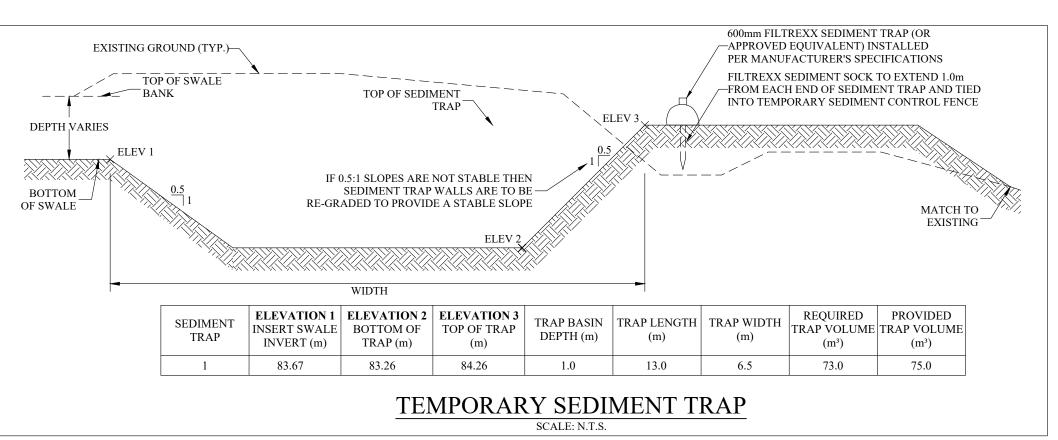
TREE PRESERVATION FENCE

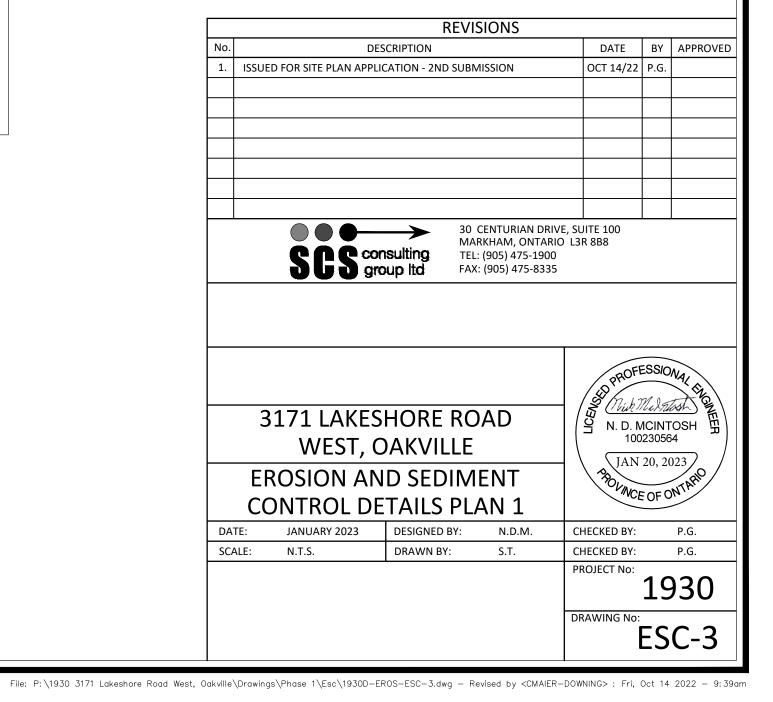












GENERAL

- PRIOR TO STARTING ANY WORKS, THE CONTRACTOR MUST ENSURE THAT ALL NECESSARY APPROVALS ARE IN PLACE FROM THE MUNICIPALITY AND OTHER EXTERNAL AGENCIES, AS REQUIRED.
- WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE APPLICABLE HEALTH AND

SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.

- 3. WORKS AND MATERIALS SHALL CONFORM TO CURRENT MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS, MUNICIPAL, REGIONAL, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. FOR ALL WORK WITHIN PRIVATE PROPERTY, WORKS AND MATERIALS SHALL CONFORM TO THE ONTARIO BUILDING CODE, OR THE ABOVE-NOTED STANDARDS, WHICHEVER IS MORE STRINGENT.
- 4. WORKS BY OTHERS (EITHER ON-SITE OR OFF-SITE) MAY BE ON-GOING DURING THE PERIOD OF THIS CONTRACT. COORDINATE CONSTRUCTION ACTIVITIES WITH ALL OTHER CONTRACTORS TO PREVENT CONSTRUCTION CONFLICTS.
- 5. VERIFY THE LOCATION, DIMENSIONS AND ELEVATION OF EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION. EXISTING INFRASTRUCTURE TO BE PROTECTED AND/OR SUPPORTED DURING CONSTRUCTION. DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.
- 6. REFER TO THE ARCHITECTURAL SITE PLAN FOR DIMENSIONS AND LAYOUT INFORMATION.

WATERMAINS

- PIPE: POLYVINYL CHLORIDE (PVC) CLASS 150 DR-18 PIPE, AWWA C900 AND CSA B137.3, LATEST AMENDMENTS.
 TYPE K COPPER, ASTM B88.
- 2. EMBEDMENT AND TRENCH DETAIL: OPSD 802.010.

300mm - R=83.0m; 400mm - R=100.0m.

- BEDDING MATERIAL: MUNICIPAL WATERMAIN BEDDING SHALL CONFORM TO MUNICIPAL STANDARDS. PRIVATE WATERMAIN BEDDING SHALL CONFORM TO GEOTECHNICAL RECOMMENDATION.
- 4. MINIMUM COVER: 1.80 m FROM PROPOSED FINISHED GRADES.
- 5. INSULATION: TO BE PROVIDED IF COVER TO OBVERT IS LESS THAN 1.20 METRES. 50mm THICK HIGH LOAD 60. WIDTH AS NOTED ON DRAWING.
- 6. MINIMUM CURVATURE OF PIPE DEFLECTION (IF REQUIRED) SHALL BE AS PER THE FOLLOWING GUIDELINES: 100mm R=30.0m; 150mm R=43.0m; 200mm R=57.0m;
- 7. HORIZONTAL SEPARATION: MINIMUM 2.5 METRES FROM SEWERS AND SEWER MANHOLES, MEASURED FROM THE NEAREST EDGES.
- 8. VERTICAL SEPARATION: MINIMUM 0.5 METRES. IF WATERMAIN MUST CROSS BELOW A SEWER, THE WATERMAIN SHALL BE INSTALLED WITH JOINTS LOCATED A MINIMUM OF 2.5 METRES FROM THE POINT OF CROSSING.
- 9. MECHANICAL RESTRAINTS: REQUIRED AT ALL CHANGES IN PIPE DIRECTION AND AT REDUCERS. RESTRAIN PIPE 12.2 METRES BACK FROM STUBS AND 6.1 METRES ON EITHER SIDE OF VALVES 100mm OR LARGER. RESTRAIN ALL JOINTS WITHIN ENGINEERED FILL AREAS. RESTRAINT RODS AND INSTALLATION SHALL CONFORM TO NFPA 24 (STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES).
- 10. THRUST BLOCKING: REQUIRED FOR ALL TEES, PLUGS AND HORIZONTAL BENDS PER OPSD 1103.010 AND ONTARIO BUILDING CODE S.7.3.4.9.
- 11. HYDRANTS: SHALL CONFORM TO MUNICIPAL SPECIFICATIONS AND STANDARDS.

 STORZ NOZZLE TO BE ORIENTED PERPENDICULAR TO THE FIRE ROUTE. HYDRANT FLANGE ELEVATION TO BE 0.15m ABOVE PROPOSED FINISHED GRADE AT THE HYDRANT. HYDRANT TO BE PAINTED PER FIRE DEPARTMENT SPECIFICATIONS.
- 12. HYDRANT ANCHOR TEES: ATTACH HYDRANT VALVE TO THE ANCHOR TEE, PROVIDED THAT THE MAXIMUM DISTANCE FROM HYDRANT TO VALVE DOES NOT EXCEED 6.1 METRES. ENSURE VALVE BOX DOES NOT CONFLICT WITH CURBS.
- 13. HYDRANT FLOW TEST: TO BE COMPLETED BY CONTRACTOR PER NFPA AND RESULTS PROVIDED TO THE ENGINEER.
- 14. PIPE FITTINGS: CAST IRON, CEMENT LINED, MECHANICAL JOINT, SHORT BODY CONFORMING TO ANSI/AWWA C110/A21.10. JOINTS: RUBBER GASKET CONFORMING
- 15. VALVE BOXES: 100mm SLIDING TYPE BOX COMPLETE WITH GUIDE PLATE. INSTALL EXTENSION STEM AS REQUIRED TO MAINTAIN A MAXIMUM DISTANCE OF 1.8m FROM TOP OF OPERATING NUT TO FINISHED GRADE.
- 16. TRACER WIRE: #12 AWG SOLID COPPER SUITABLE FOR DIRECT BURIAL.

TO ANSI/AWWA C111/A21.11.

- 17. CATHODIC PROTECTION: OPSD 1109.011 AND OPSS 702. DUCTILE IRON FITTINGS: 5.4 kg ZINC ANODE. HYDRANTS, VALVES AND TEES: 10.8 kg ZINC ANODE. WHERE NEW WATERMAIN IS CONNECTED TO EXISTING CAST IRON OR DUCTILE IRON WATERMAIN, ONE 14.5 kg MAGNESIUM ANODE SHALL BE PLACED ON EACH SIDE OF THE CONNECTION
- 18. TERMINATE SERVICES 1.0 METRE FROM THE OUTSIDE FACE OF BUILDING, UNLESS OTHERWISE NOTED ON DRAWING. TERMINATE STUBS WITH A PLUG AND 50 mm BLOW OFF.
- 19. ISOLATE NEW WATERMAIN FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATION.
- 20. PRESSURE AND BACTERIOLOGICAL TESTING: AS PER MUNICIPAL STANDARD SPECIFICATIONS; ONTARIO BUILDING CODE AND MINISTRY OF THE ENVIRONMENT. TREAT CHLORINATED WATER TO ACCEPTABLE LEVELS PRIOR TO DISCHARGE.
- 21. SUMP PUMPS: TO BE PROVIDED FOR ALL UNITS (BY BUILDER) AND DISCHARGE TO GRADE OR TO STORM SEWER LATERAL WITH GOOSNECK PER DETAIL ON THIS DRAWING.

STORM AND SANITARY SEWERS

- 1. PIPE: POLYVINYL CHLORIDE (PVC) SEWER PIPES AND FITTINGS SHALL CONFORM TO CSA-B182.2.
- 2. PVC SEWERS (375 mm DIAMETER AND SMALLER): SDR-35, CSA B182.2-LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
- 3. CONCRETE SEWERS (450 mm DIAMETER AND LARGER): CONCRETE (CLASS 65-D), CSA A257.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
- 4. PVC PIPE SEWER BEDDING: OPSD 802.010.
- 5. CONCRETE PIPE SEWER BEDDING: OPSD 802.030 CLASS 'B' FOR TYPE 1 AND 2 SOILS. OPSD 802.031 FOR TYPE 3 SOILS. SOIL TYPE TO BE CONFIRMED BY THE GEOTECHNICAL CONSULTANT DURING EXCAVATION.
- 6. TRENCH BACKFILL: PER THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
- 7. INSULATION: TO BE PROVIDED IF COVER TO OBVERT IS LESS THAN 1.20 METRES. 50mm THICK HIGH LOAD 60. WIDTH AS NOTED ON DRAWING.
- 8. MANHOLES: OPSD 701.010 TO 701.015 AND CSA A257.4.
- 9. CLEANOUTS: ZURN Z1474 OR APPROVED EQUIVALENT.
- 10. SAFETY PLATFORM: OPSD 404.020 TO OPSD 404.022. INSTALL SAFETY PLATFORM WHERE MANHOLE DEPTH EXCEEDS 5.0m.
- 11. MANHOLE FRAMES AND COVERS: OPSD 401.010 TYPE 'A'
- 12. JOINTS-PIPE AND MANHOLE: CSA A257.3.
- 13. BACKFILL: ALL MANHOLE AND CATCHBASIN EXCAVATIONS SHALL BE BACKFILLED WITH GRANULAR 'B'.
- 14. MANHOLE BENCHING: OPSD 701.021. CATCHBASIN MANHOLES TO BE BENCHED.
- 15. CATCHBASINS: SINGLE: OPSD 705.010 AND CSA A257.4; DOUBLE: OPSD 705.030 AND CSA A257.4. DITCH INLET CATCHBASINS: OPSD 705.030.

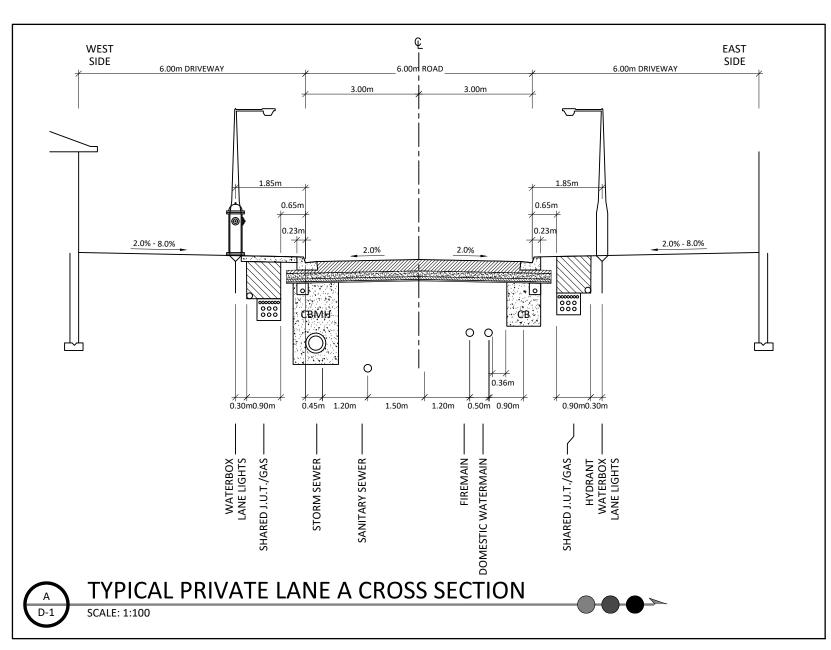
- 16. CATCHBASIN FRAMES AND COVERS: OPSD 400.020.
- 17. CATCHBASIN LEADS AND SERVICE LATERALS ON PRIVATE PROPERTY SHALL BE CONNECTED TO MAINLINE SEWER WITH WYE FITTING.
- 18. DURING CONSTRUCTION ALL CATCHBASINS SHALL BE EQUIPPED WITH TEMPORARY SEDIMENT CONTROL DEVICE. REFER TO DETAILS ON THIS DRAWING.
- 19. CONCRETE ADJUSTMENT UNITS FOR MANHOLES AND CATCHBASINS: OPSD 704.010, OPSS 407 AND CSA A257.4. MAXIMUM HEIGHT OF ADJUSTMENT UNITS SHALL BE 300mm.
- 20. PERFORATED SUB-DRAINS SHALL BE CONNECTED TO ALL CATCHBASINS AND CATCHBASIN MANHOLES AS PER DETAIL ON THIS DRAWING. PERFORATED SUB-DRAINS SHALL BE PLACED UNDER ALL CURB.
- 21. LASER ALIGNMENT AND ELEVATION CONTROL TO BE UTILIZED FOR SEWER
- 22. FLUSH AND INSPECT SEWERS VIA CCTV CAMERA. SUBMIT ONE WRITTEN REPORT AND TWO DIGITAL VIDEOS IN AN MPEG FORMAT TO THE ENGINEER FOR REVIEW.
- 23. LATERAL SEWER PIPES: SINGLE: 125mm PVC (SDR-28) CSA B181.2; DUAL: 150mm PVC
- 24. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER AN AS-CONSTRUCTED SERVICING DRAWING.

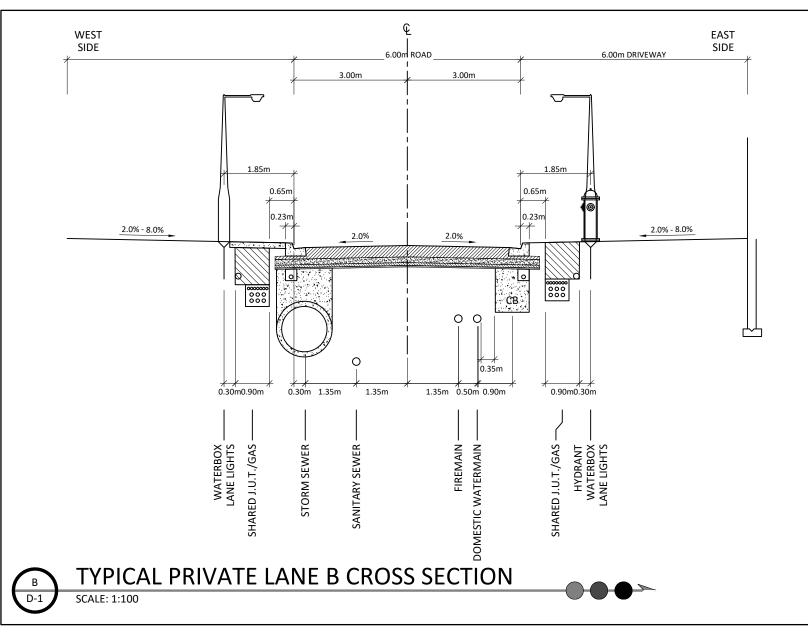
GRADING NOTES

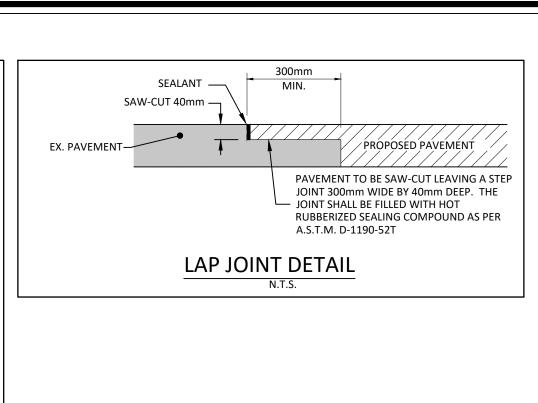
- 1. PRIOR TO COMMENCEMENT OF EARTHWORKS, SITE ALTERATION PLANS MUST BE APPROVED AND ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND OPERATIONAL. THE CONTRACTOR SHALL MAINTAIN ALL WORKS UNTIL CONSTRUCTION IS COMPLETED TO THE SATISFACTION OF THE ENGINEER.
- 2. ENGINEERED FILL SHALL CONFORM TO THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
- 3. ENGINEERED FILL SHALL BE INSPECTED AND TESTED BY THE GEOTECHNICAL CONSULTANT. PROOF ROLLING OF SUBGRADE WILL BE REQUIRED PRIOR TO PLACEMENT OF GRANULAR MATERIALS. COORDINATE INSPECTIONS WITH GEOTECHNICAL CONSULTANT.
- 4. GRANULAR COMPACTION: PER THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
- 5. PAVEMENT STRUCTURE:
 40 mm HL3 TOP COURSE ASPHALT
 60 mm HL8 BASE COURSE ASPHALT
 150 mm GRANULAR 'A'

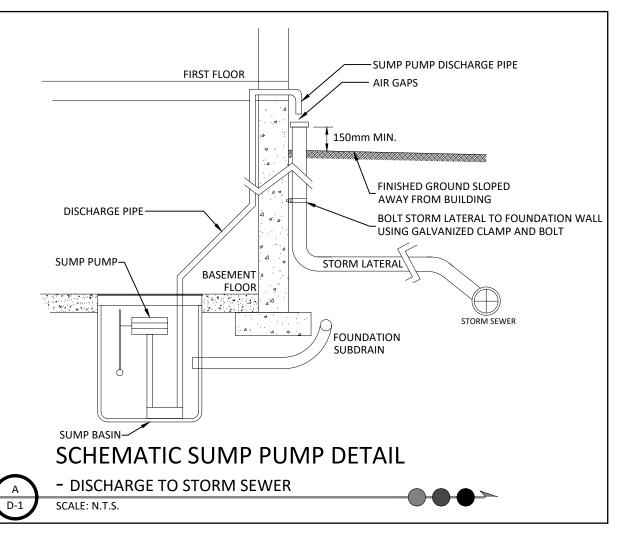
350 mm GRANULAR 'B'

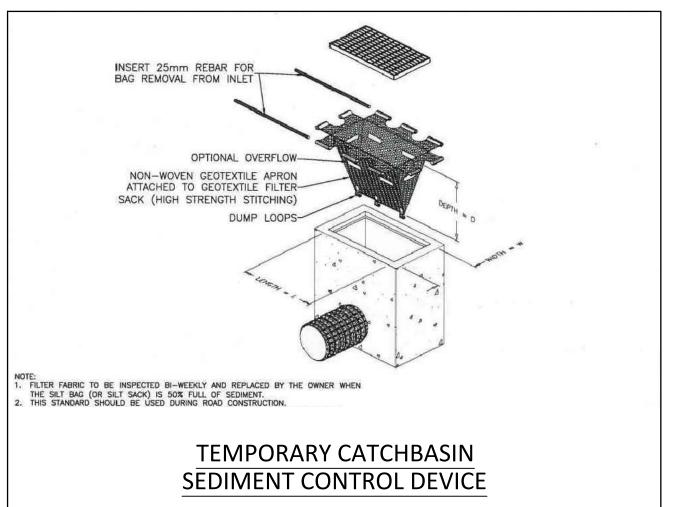
- 6. ASPHALT COMPACTION: PER THE SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL REPORT, OR LATEST AMENDMENT THEREOF.
- 7. BARRIER CURB: OPSD 600.110.
- CONCRETE BARRIER CURB AND GUTTER (TWO STAGE CONSTRUCTION) : OPSD 600.070
- 8. CONCRETE SIDEWALK: 125mm DEEP WITH 125mm GRANULAR 'A' BASE.CONCRETE SIDEWALK ACROSS RESIDENTIAL DRIVEWAY: 175mm DEEP. CONCRETE SIDEWALK ACROSS LANEWAYS, ROADS, COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL
- 9. LAP JOINTS SHALL BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT AS PER DETAIL ON THIS DRAWING.
- 10. PAVEMENT MARKINGS SHALL BE PLACED AS SHOWN ON THE ARCHITECTURAL SITE PLAN WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT BASED PAINT AS PER
- 11. INSTALL SIGNAGE AS PER THE ARCHITECTURAL SITE PLAN.
- 12. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED OFFSITE TO THE CONTRACTOR'S APPROVED DISPOSAL SITE.
- 13. EMBANKMENTS SHALL BE SLOPED AT A MAXIMUM OF 3H:1V, UNLESS OTHERWISE SPECIFIED.
- 14. DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER. THE RELOCATION OR REMOVAL OF TREES AND SHRUBS SHALL BE SUBJECT TO APPROVAL BY THE ARRORIST
- 15. REFER TO LANDSCAPE DRAWINGS FOR LOCATION AND TYPE OF ALL HARD LANDSCAPE SURFACES.
- 16. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER AN AS-CONSTRUCTED GRADING

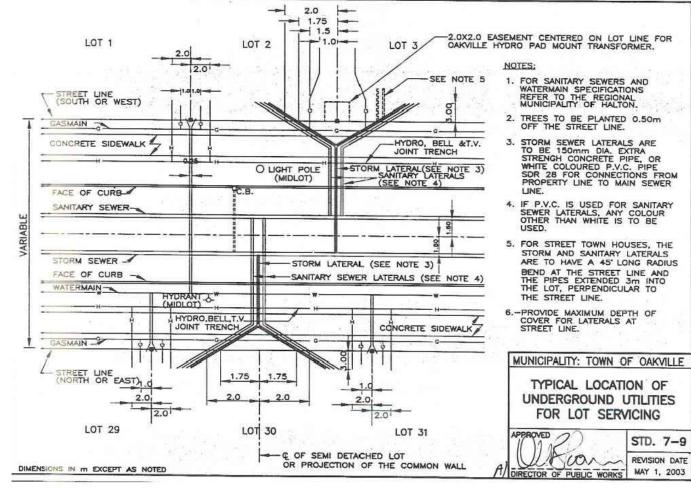


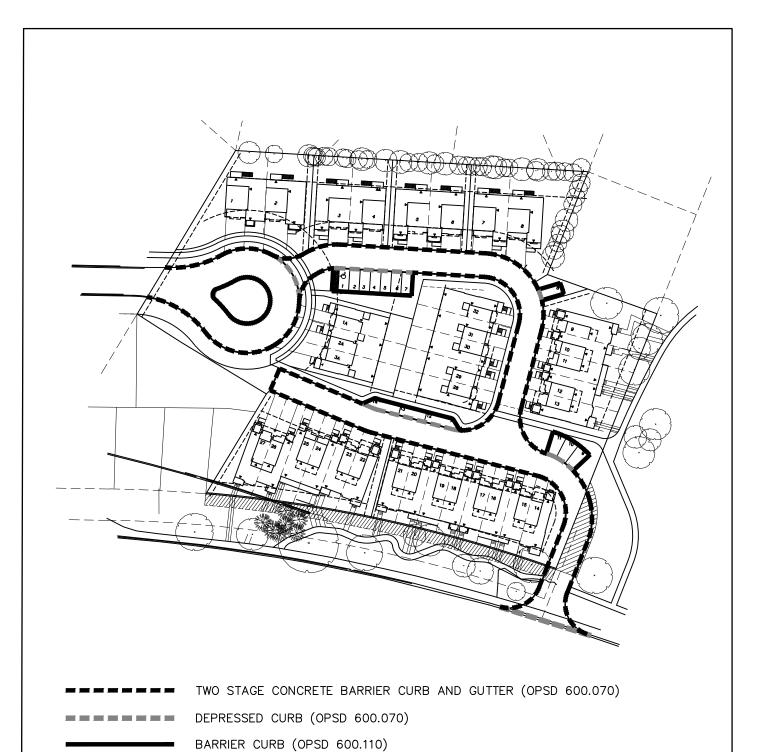




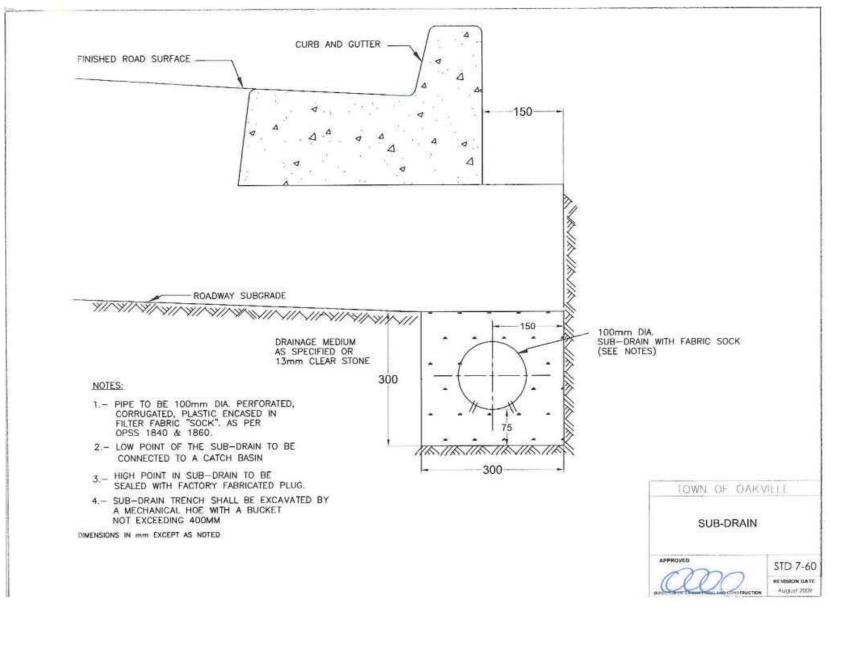


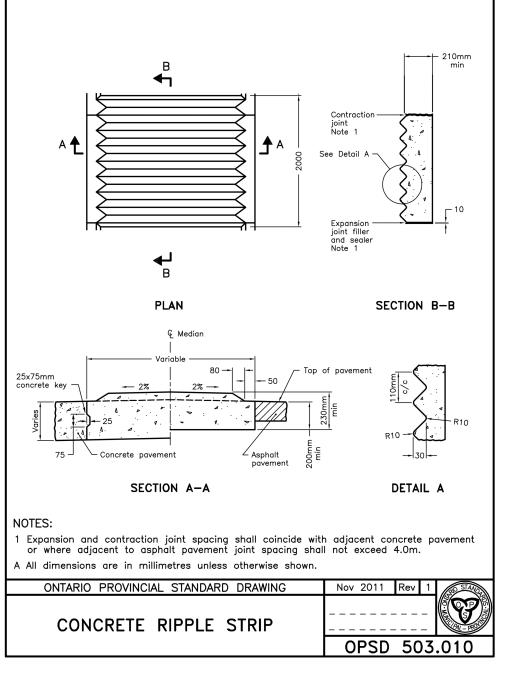


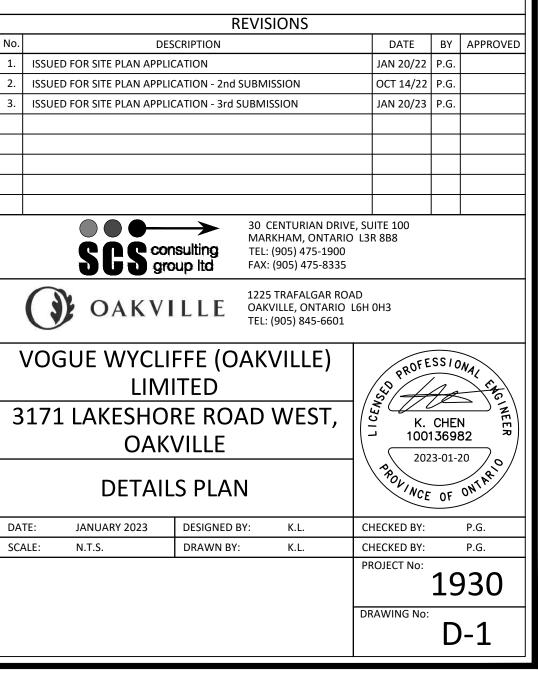


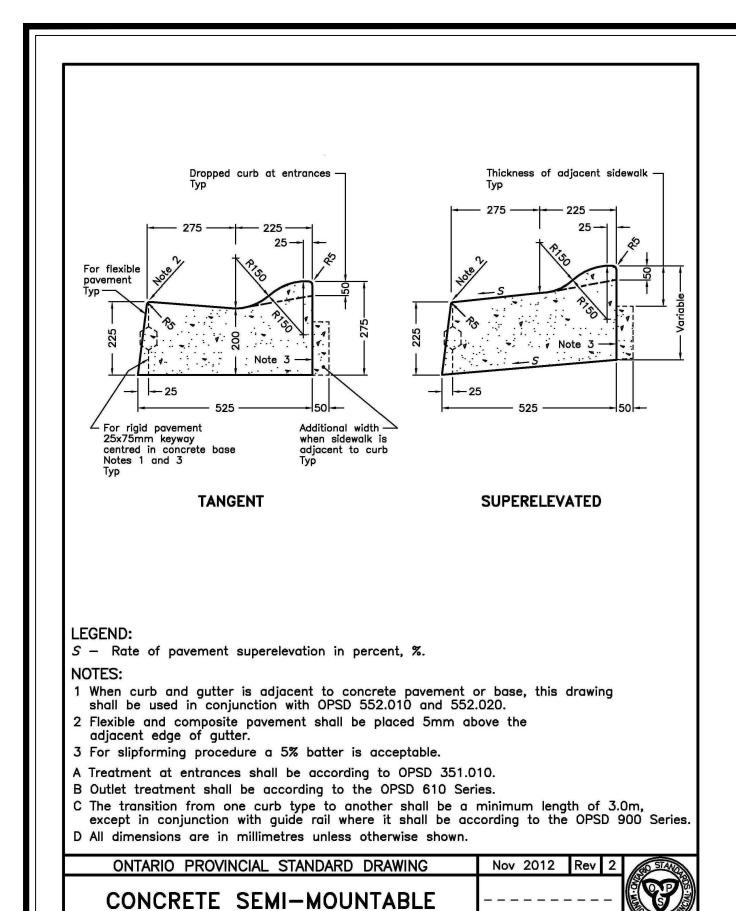


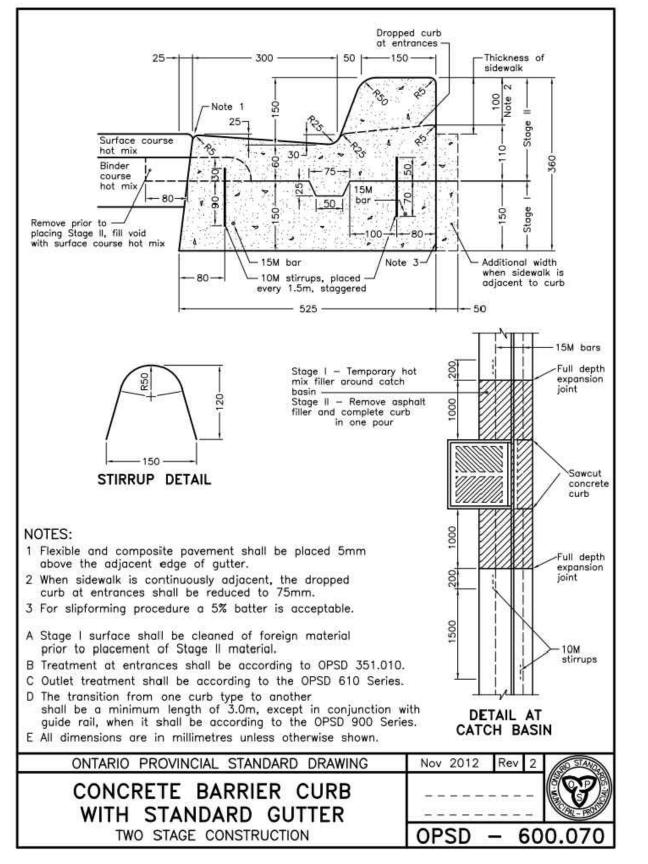
CURB KEYPLAN

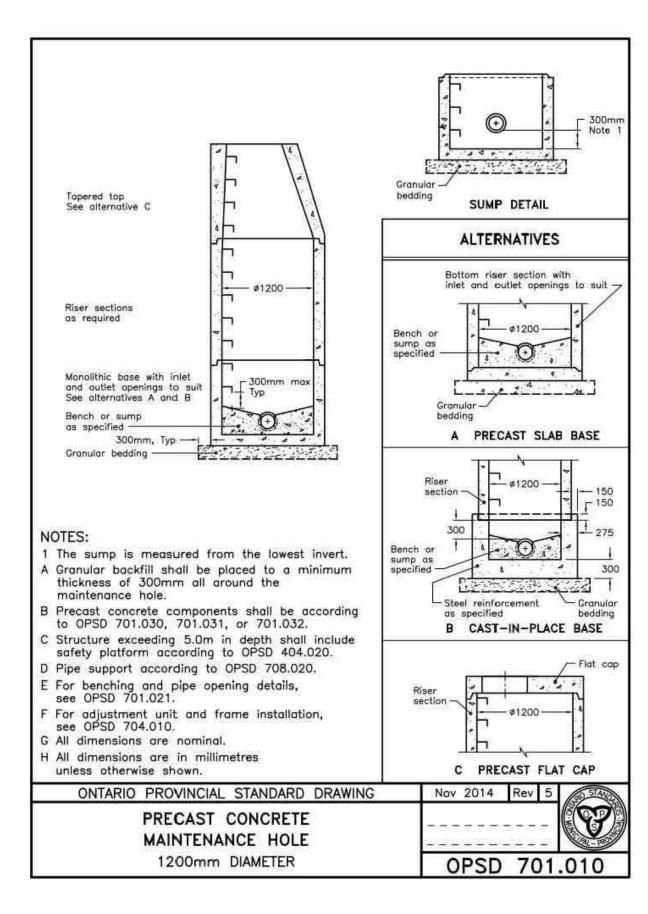


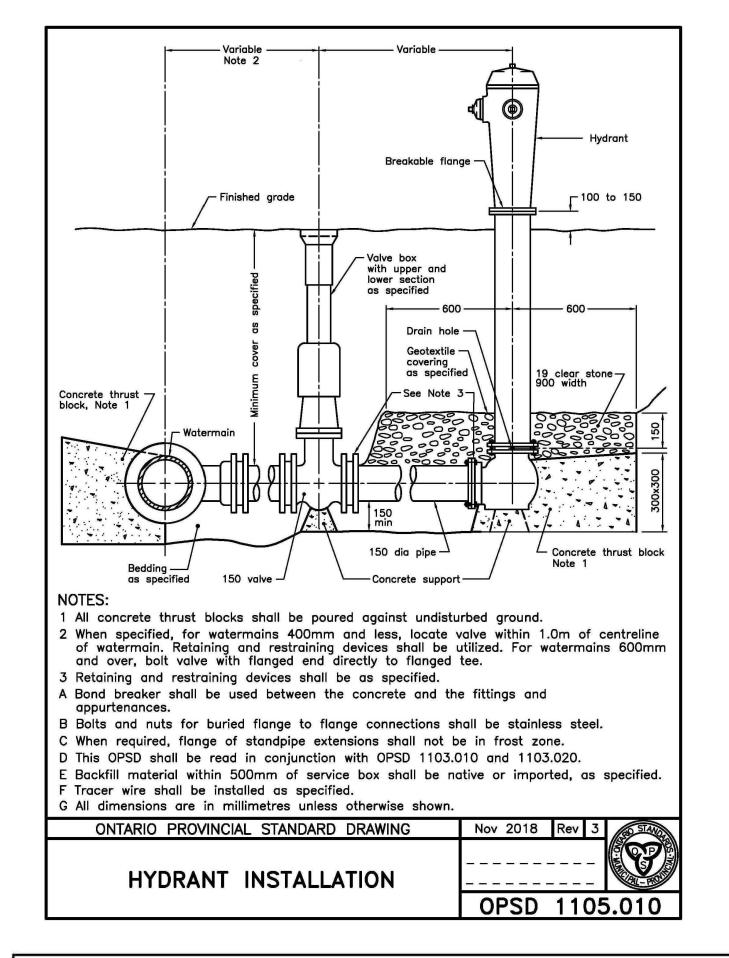


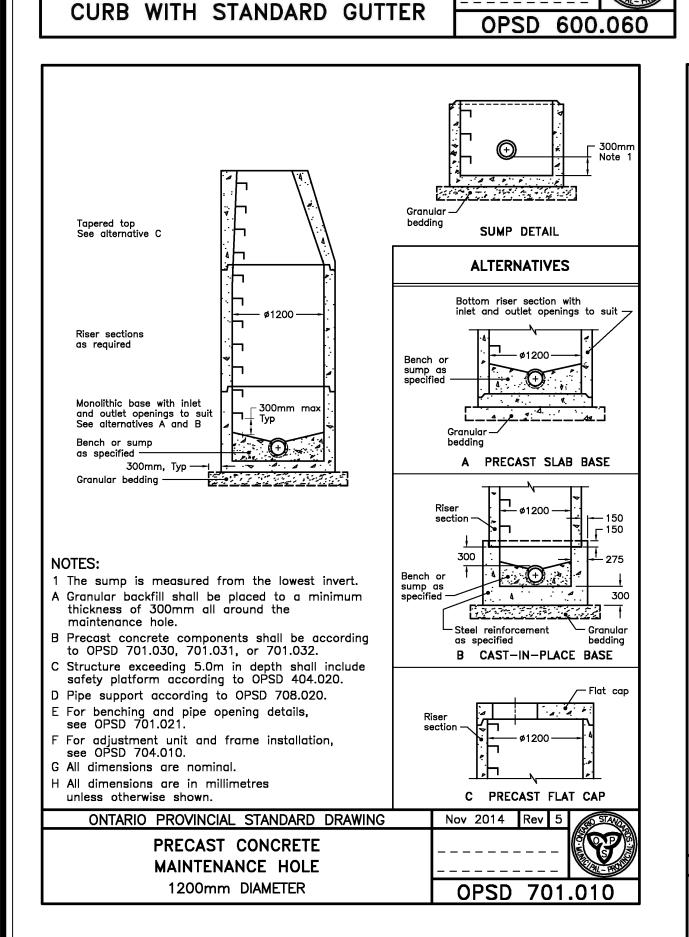


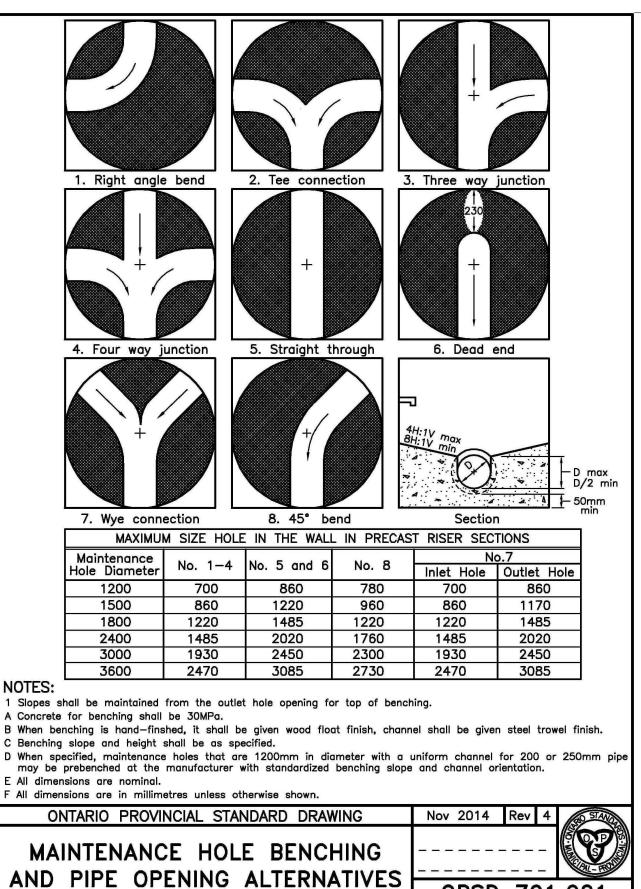












OPSD 701.021

