GENERAL – CONSTRUCTION

1. ALL MEASUREMENTS ARE IN METRES, PIPE SIZES IN MILLIMETRES, UNLESS OTHERWISE NOTED.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS UNLESS NOTED OTHERWISE.
3. LOCATIONS OF EXISTING SERVICES ARE NOT GUARANTEED. CONTRACTOR TO CONFIRM EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
4. ALL WORK WITHIN THE ROAD ALLOWANCE IS TO BE IN ACCORDANCE WITH THE MINISTRY OF TRANSPORTATION (M.T.O.) AND/OR THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS AND ELEVATIONS ARE TO BE CHECKED AND VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER.
6. TRAFFIC CONTROLS TO CONFORM TO THE LATEST REVISION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ONTARIO TRAFFIC MANUAL TEMPORARY CONDITIONS (BOOK 7).
7. STREET AND TRAFFIC SIGNS – M.T.O. STANDARDS
8. PERFORATED PIPE SUB-DRAINS – 100mmø BIG 'O' WITH FILTER COVERING OR APPROVED EQUAL.
9. FILTER FABRIC – TERRAFIX 270R OR APPROVED EQUAL.
10. TRENCH BACKFILL (TO OPSD-802.010) 98% SPMDD TO BE SELECT NATIVE SAND OR IMPORTED SELECT SUB-GRADE.
11. PIPE COVER TO BE SELECT NATIVE SAND OR IMPORTED SELECT SUB-GRADE WITH NO AGGREGATE LARGER THAN 25mm.
12. CLEAR STONE WRAPPED FILTER FABRIC CAN BE SUBSTITUTED FOR BEDDING MATERIAL IF APPROVED BY THE ENGINEER.
13. DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS-517 AND 518 TO MAINTAIN ALL TRENCHES IN A DRY CONDITION, CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS FOR DEWATERING.
14. ALL EXISTING TREES ON-SITE ARE TO BE REMOVED (NOT INCLUDING THOSE ALONG THE SOUTH PROPERTY BOUNDARY ON THE SLOPE). REFER TO SITE PLAN FOR EXISTING TREE LOCATIONS.
15. ALL DISTURBED AREAS WITHIN EXISTING CITY RIGHT-OF-WAYS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER AS DETERMINED BY THE CITY OF OTTAWA (MIN 100mm TOPSOIL AND SEED).
16. ALL SEWER SYSTEMS INCLUDING SERVICE CONNECTIONS TO THE MANHOLES AND CATCHBASINS SHALL BE THOROUGHLY FLUSHED AND/OR CLEANED OF DEBRIS AND ALL PIPES SHALL BE TESTED IN ACCORDANCE WITH OPS AND SHALL BE INSPECTED BY AN APPROVED VIDEO CAMERA TESTING COMPANY AND THE ENGINEER SHALL BE PROVIDED A COPY OF APPROPRIATE DATA UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL APPROVAL. ANY SECTIONS OF SEWER OR SERVICE CONNECTIONS THAT FAIL TO MEET THE REQUIREMENTS SHALL BE REPAIRED OR REPLACED AT THE DIRECTION OF THE ENGINEER. ONLY CHEMICAL PRESSURE GROUTING REPAIR TECHNIQUES WILL BE CONSIDERED ACCEPTABLE.
17. THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION PREPARED BY KOLLAARD ASSOCIATES ENGINEERS DATED OCTOBER 31, 2014 GEOTECHNICAL INSPECTION TO BE PROVIDED DURING ALL SERVICING AND PARKING LOT SUB-GRADE AND PAVEMENT WORKS.
18. FOR SPECIFIC DIMENSIONS AND BUILDING INFORMATION REFER TO SITE PLAN/ARCHITECTURAL DRAWINGS PREPARED BY ADA ARCHITECT INC.

DRIVEWAY, ACCESS RAMPS AND PARKING LOT:

1. SUB-GRADE TO BE COMPACTED TO A MINIMUM DRY DENSITY OF 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) AND A MINIMUM SLOPE OF 1.0%
2. SUB-GRADE PREPARATION TO BE COMPLETED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATIONS RECOMMENDATIONS.
3. GRANULAR 'A' BASE TO BE COMPACTED TO 98% OF MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
4. BOULEVARD COMPACTION TO 95% OF MATERIAL'S SPMDD.
5. ASPHALT DRIVEWAY, ACCESS RAMPS AND PARKING SURFACES TO BE CONSTRUCTED AS SHOWN ON THE PAVEMENT CROSS-SECTIONS DETAIL ON THE SITE SERVICING DRAWING (SS).
6. ENTRANCE CONNECTIONS TO CONSIST OF GRINDING EXISTING ASPHALT AND PROVIDE 0.3m WIDE OVERLAP JOINT AS SHOWN ON THE PAVEMENT LAP JOINT DETAIL ON THIS DRAWING.
7. CONCRETE CURB ON THE PROPERTY TO BE AS PER OPSD-600.110 BARRIER CURB.
8. CONCRETE CURB AT ENTRANCES TO TAPER AS PER OPSD-350.010.
9. ALL CURBS SHALL BE DEPRESSED AT ALL WALKWAY, DRIVEWAY AND SIDEWALK LOCATIONS.
10. CONCRETE STRENGTH FOR CURB AND SIDEWALK LOCATED OUTSIDE OF THE CITY RIGHT-OF-WAY IS TO BE 30MPa AT 28 DAYS.
11. SIDEWALKS TO COMPLY WITH OPSD 310.010 AND ARE TO BE 1.5m WIDE. MINIMUM THICKNESS AS FOLLOWS:
    - –COMMERCIAL DRIVEWAY, 200mm (REINFORCEMENT AS PER OPSS IF REQUIRED)
    - –WHEN NO DRIVEWAY IS PRESENT, 125mm
12. SIDEWALKS TO BE CONSTRUCTED ON 150mm GRANULAR "A" BEDDING UNLESS OTHERWISE SPECIFIED.
13. SIDEWALK RAMPS TO COMPLY WITH OPSD 310.030.

SANITARY SEWER:

1. SANITARY MANHOLES TO BE 1200mmø PRECAST IN CONFORMANCE WITH OPSD-701.010 AND OPSD-701.030 WITH BENCHING ACCORDING TO OPSD-701.021.
2. FRAME AND GRATE TO BE IN CONFORMANCE WITH OPSD-401.010, CLOSED COVER.
3. STEPS TO OPSD-405.01
4. MANHOLE DROP STRUCTURES TO OPSD-1003.010
5. SANITARY MANHOLES TO HAVE 1 TO 3 MULTI-LOK ADJUSTMENT UNITS BELOW THE FRAME AS PER OPSD-704.010.
6. ALL 250mmø SANITARY SEWERS TO BE PVC SDR-35 (OR APPROVED EQUIVALENT).
7. ALL 100mmø AND 150mmø SANITARY SERVICES TO BE PVC SDR-28 (OR APPROVED EQUIVALENT).
8. SERVICE CONNECTIONS TO OPSD-1006.020, GRANULAR 'A' BEDDING.
9. BEDDING TO BE OPSD-802.010 GRANULAR 'A' – TYPE '3 OR 4' FOR FLEXIBLE PIPE (TO BE CONFIRMED BY GEOTECHNICAL ENGINEER).
10. BACKFILL AND BEDDING MATERIAL TO BE COMPACTED TO A DRY DENSITY OF 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
11. LONG RADIUS BENDS TO BE USED ON SANITARY SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°.
12. SANITARY SEWER COVER LESS THAN 2.0m TO PIPE OBVERT WILL REQUIRE FROST PROTECTION (INSULATION).
13. SANITARY SEWER CLEANOUTS AS REQUIRED BY THE ONTARIO BUILDING CODE TO BE CONSTRUCTED AS PER THE CITY OF OTTAWA STANDARDS.
14. ALL FORCEMAIN AND CURVED SEWER SHALL BE INSTALLED WITH TRACER WIRE.
15. ALL SANITARY MANHOLES SHALL BE COMPLETED WITH FROST STRAPS PER OPSD 701.100.
16. ALL FORCEMAIN TO BE 50mmø (2.0inø) HDPE DR11 PIPING (OR APPROVED EQUIVALENT) C/W CAUTION TAPE PLACED 300mm ABOVE THE PIPE

STORM SEWER:

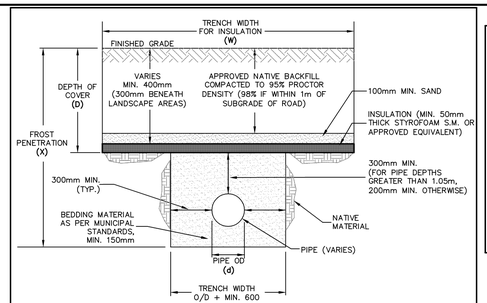
1. ALL SITE DRAINAGE POSSIBLE, INCLUDING ALL ROOF AND ASPHALT DRAINAGE, IS TO BE DIRECTED TO THE STORMWATER MANAGEMENT SYSTEM.
2. STORM SEWER
   - 450mmø OR LESS: PVC SDR35 (OR APPROVED EQUIVALENT).
   - GREATER THAN 450mmø: PVC SDR35 OR REINFORCED CONCRETE (OR APPROVED EQUIVALENT).
3. M.H.'S TO OPSD-701.010, 701.011, 701.012, 701.013, 701.014 AND 701.015.
4. C.B.'S TO OPSD-705.010 AND OPSD-705.020.
5. STEPS TO OPSD-405.01.
6. FRAMES AND GRATES TO OPSD-400.010
7. BEDDING TO OPSD-802.030 AND OPSD-802.031 CLASS B, GRANULAR 'A' FOR CIRCULAR RIGID PIPE.
8. BEDDING TO OPSD-802.010 GRANULAR 'A', FOR TYPE 3 OR 4 SOILS AND FLEXIBLE PIPES (TO BE CONFIRMED BY GEOTHECNICAL ENGINEER).
9. CATCHBASIN LEADS – 250mmø UNLESS OTHERWISE NOTED.
10. PIPE SUPPORT AT M.H.'S AND C.B.'S TO OPSD-708.020.
11. BACKFILL AND BEDDING MATERIAL TO BE COMPACTED TO A MINIMUM DRY DENSITY OF 98% OF THE MATERIALS SPMDD.
12. ALL PROPOSED STORM STRUCTURES (MANHOLES, CATCHBASIN MANHOLES & CATCHBASINS) ARE TO CONSIST OF SUMPS.
13. STORM SEWER COVER LESS THAN 1.2m TO PIPE OBVERT WILL REQUIRE FROST PROTECTION (INSULATION).
14. STORM SEWER CLEANOUTS AS REQUIRED BY THE ONTARIO BUILDING CODE TO BE CONSTRUCTED AS PER THE CITY OF OTTAWA STANDARDS
15. CATCHBASINS AND CATCHBASIN MANHOLES LOCATED WITH DEPRESSED ASPHALT AREAS ARE TO INCLUDE A MINIMUM OF THREE (3) SUBDRAIN CONNECTIONS, 10.0m IN LENGTH, PLACED AT SUB-GRADE LEVEL AND EXTENDING RADIALLY AND AT EQUAL DISTANCES FROM EACH OTHER, OUT FROM THE STRUCTURE. WHERE CATCHBASINS OR CATCHBASIN MANHOLES ARE LOCATED WITH A 5.0m DISTANCE TO A CURB, SUBDRAINS EXTENDED TOWARDS THE CURB SHALL TERMINATE AT THE FACE OF THE CURB.
    (REFER TO DETAIL ON THIS DRAWING)
16. ALL STORM MANHOLES SHALL BE COMPLETED WITH FROST STRAPS PER OPSD 701.100.

WATERMAINS:

1. ALL WATER WORKS ARE TO BE COORDINATED WITH THE ENGINEER AND COMPLETED WITH A REPRESENTATIVE FROM THE ENGINEER OFFICE PRESENT.
2. DOMESTIC WATER SERVICES (50mmø) SHALL BE IPS SERIES PRESSURE PIPE POLYVINYL CHLORIDE (PVC) CLASS 100 (SDR 41) OR APPROVED EQUIVALENT. SPRINKLER MAIN (150mmø) AND DRY HYDRANT MAIN (200mmø) SHALL BE POLYVINYL CHLORIDE (PVC) CLASS 150 (DR18) OR APPROVED EQUIVALENT. TRACER WIRE (#10 TWU) SHALL BE INSTALLED ALONG THE ENTIRE LENGTH OF PVC WATERMAIN, BROUGHT UP AT EACH VALVE BOX, CHAMBER AND HYDRANT, AND CONNECTED TO A FLANGE. TAPE IS TO BE USED TO AFFIX THE WIRE TO THE PIPE.
3. MECHANICAL JOINT FITTINGS MEETING AWWA SPECIFICATION C-907 AND CSA B137.2 MAY BE USED ON PVC WATERMAIN 150mm TO 200mm IN DIAMETER. MECHANICAL JOINTS SHALL CONFORM TO AWWA C111.
4. NO COUPLINGS WILL BE ALLOWED BETWEEN THE CURB STOP AND MAIN STOP OF THE DOMESTIC WATER SUPPLY SERVICE.
5. ALL MECHANICAL JOINT FITTINGS SHALL HAVE SACRIFICIAL ANODES "PROTECTO CAPS" INSTALLED ON EVERY BOLT.
6. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE WATERMAIN / WATER SERVICES AND THE SANITARY / STORM SEWER IS TO BE 2.5m.
7. A MINIMUM OF 0.5m VERTICAL CLEARANCE BETWEEN THE WATERMAIN / WATER SERVICES AND ALL UTILITIES MUST BE KEPT WHILE STILL MAINTAINING A MINIMUM DEPTH OF COVER AT ALL TIMES. WATERMAIN & WATER SERVICE TO BE INSULATED WITH HI-40 INSULATION WHERE 0.5m SEPARATION CANNOT BE OBTAINED.
8. WATERMAIN / WATER SERVICE COVER LESS THAN 2.2m TO PIPE OBVERT WILL REQUIRE FROST PROTECTION (INSULATION).
9. THE CONTRACTOR SHALL INFORM THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING WORK.
10. ALL FILL AREAS SHALL BE FILLED TO SUB-GRADE PRIOR TO INSTALLATION. FILL AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY PRIOR TO THE INSTALLATION OF THE WATERMAIN.
11. WHERE THE WATERMAIN ELEVATION EXCEEDS THE ELEVATION OF ANY OTHER UTILITY/SERVICE AND WHERE THE VERTICAL SEPARATION BETWEEN THE WATERMAIN AND THE OTHER SERVICE EXCEED THE HORIZONTAL SEPARATION, THE WATERMAIN SHALL BE RESTRAINED.
12. PIPE DEFLECTION SHOULD BE USED WHEREVER POSSIBLE TO MINIMIZE THE USE OF BENDS, WHEREVER IT IS NECESSARY TO DEFLECT FROM A STRAIGHT LINE, EITHER IN THE VERTICAL OR HORIZONTAL PLANE, THE AMOUNT OF DEFLECTION SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS.
13. MECHANICAL RESTRAINTS ARE TO BE UTILIZED FOR THE INSTALLATION OF ALL TEES, BENDS, HYDRANTS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER AS OPPOSED TO THRUST BLOCKS AS PER OPSD 1103.010 AND 1103.020.
14. REFER TO WF DRAWING FOR FIRE HYDRANT SPECIFICATIONS AND DETAILS.
15. HYDRANT FLANGE ELEVATIONS SHALL BE SET AT A GRADE THAT WILL GIVE A FLANGE ELEVATION OF 100mm TO 150mm ABOVE THE FINAL GRADE AS PER OPSD 1105.010.
16. HYDRANTS SHALL BE LOCATED A MINIMUM OF 1.5m FROM THE EDGE OF DRIVEWAYS, ROADWAYS, UTILITIES, OR OTHER ABOVE GRADE OBSTACLES.
17. ALL VALVES ARE TO BE RESILIENT SEAT GATE VALVES COMPLETE WITH SLIDER TYPE VALVE BOX.
18. VALVES IN EXCESS OF 1.7m IN DEPTH SHALL REQUIRE A VALVE STEM EXTENSION.
19. CONTRACTOR IS RESPONSIBLE FOR ALL TIE-INS INCLUDING MATERIALS, EXCAVATION AND BACKFILL AS REQUIRED TO FACILITATE THE SWABBING AND TESTING OF THE NEW WATERMAINS UNDER THE SUPERVISION OF THE ENGINEER.
20. THE CONTRACTOR WILL SWAB, PRESSURE TEST, CHLORINATE AND FLUSH THE NEW WATERMAINS, ANY SWABBING, PRESSURE TESTING, CHLORINATING AND FLUSHING BEYOND THE INITIAL PROCEDURE WILL BE THE CONTRACTORS' RESPONSIBILITY. PRESSURE TEST TO 10344kPa (150psi) FOR TWO HOURS, WTHOUT PRESSURE DROP. WATERMAIN TO BE SWABBED AND CHLORINATED BY THE CONTRACTOR UNDER THE SUPERVISION OF THE ENGINEER. UPON SUCCESSFUL TEST RESULTS OF THE CONTRACTORS INSTALLED SYSTEM, CHLORINATE AT 50mg/L CONCENTRATION FOR 24 HOURS. COLLECT SAMPLES FOR BACTERIOLOGICAL TESTING. SAMPLES TO BE COLLECTED BY A 'CERTIFIED OPERATOR'.
21. ALL EXISTING WELLS LOCATED ON THE PROPOSED DEVELOPMENT LANDS ARE TO BE ABANDONED AND DECOMMISSIONED IN ACCORDANCE WITH ONTARIO REGULATION 903 UPON FINAL TESTING AND APPROVAL BY THE HYDROLOGIST (WILSON & ASSOCIATES LTD).
22. ALL DOMESTIC WATER SERVICES, SPRINKLER MAINS, AND DRY HYDRANT MAINS TO BE PLACED AT A CONSTANT GRADE IN ONE DIRECTION (I.E. MINIMIZE UP/DOWN BENDS WHERE POSSIBLE) TO REDUCE THE POSSIBILITY OF AIR-LOCKING THE SYSTEM.

EROSION / SILT CONTROLS:

1. ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE, THE GRASS HAS ESTABLISHED GROWTH AND FINAL APPROVAL IS PROVIDED BY THE ENGINEER.
2. EROSION CONTROL WORKS SHALL BE INSPECTED AFTER EVERY RAINFALL AND REPAIRED/REPLACED (AS REQUIRED BY THE ENGINEER).
3. ALL DISTURBED AREAS TO BE RESTORED USING TOPSOIL AND SEED IMMEDIATELY AFTER ESTABLISHING FINAL GRADES.
4. FILTER FABRIC IS TO BE INSTALLED UNDER THE LIDS/GRADTES OF ALL ON SITE STRUCTURES UNTIL FINAL SITE GRADING AND STABILIZATION IS COMPLETE.
5. TOPSOIL TO BE STOCKPILED IN EXISTING CLEARINGS OR IN APPROVED PROPOSED CLEARINGS ONLY.
6. SILT FENCE TO BE MAINTAINED ON THE IMMEDIATE DOWNSTREAM SIDE OF ALL STOCKPILED MATERIAL AND ALONG THE PROPERTY LINE WHERE THE TOPOGRAPHY DRAINS AWAY FROM THE SITE TO ADJACENT LANDS.



IN DETERMINING THE WIDTH OF SLAB REQUIRED, THE MINISTRY RECOMMENDS THAT THE FOLLOWING FORMULA BE USED;
W=2(X-D)+d, WHERE:

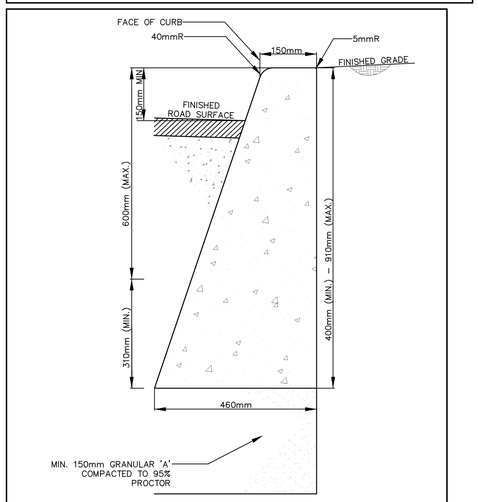
W = WIDTH OF SLAB IN METERS
X = FROST PENETRATION DEPTH IN METERS
D = DEPTH OF COVER OVER INSULATION IN METERS
d = OUTSIDE DIAMETER OF PIPE IN METERS

NOTES: –INSULATION SHALL BE PLACED WITH ENDS CLOSELY BUTTED TOGETHER. ALL JOINT ENDS SHALL BE STAGGERED WHEN MORE THAN ONE LAYER OF INSULATION IS BEING INSTALLED.

–FORMULA TAKEN FROM MOE GUIDELINES FOR SERVICING IN AREAS SUBJECT TO ADVERSE CONDITIONS DATED JANUARY 1985.

–FOR EVERY 300mm REDUCTION IN FROST COVER USE 25mm OF EXTRUDED POLYSTYRENE INSULATION.

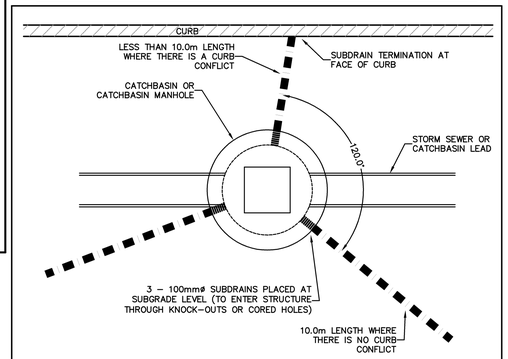
INSULATION FOR SHALLOW PIPES



NOTE: CONCRETE STRENGTH TO BE 30 MPa COMPRESSIVE AT 28 DAYS WITH 5% TO 7% AIR ENTRAINMENT.

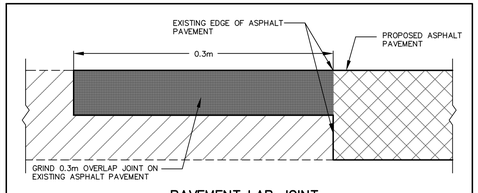
EXTENDED CONCRETE CRUB DETAIL

N.T.S.



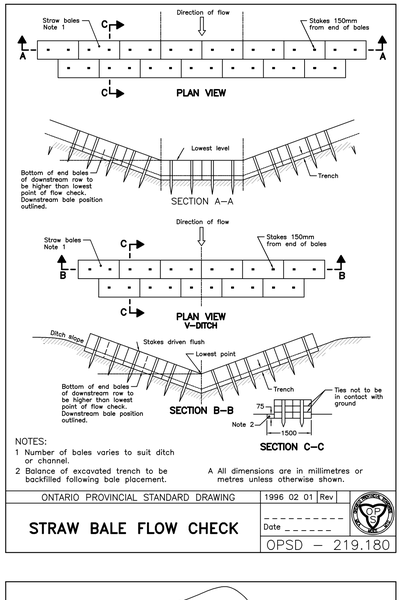
SUBDRAIN CONNECTION DETAIL

N.T.S.



PAVEMENT LAP JOINT

N.T.S.



NOTES:
1 Number of bales varies to suit ditch or channel.
2 Balance of excavated trench to be backfilled following bale placement.

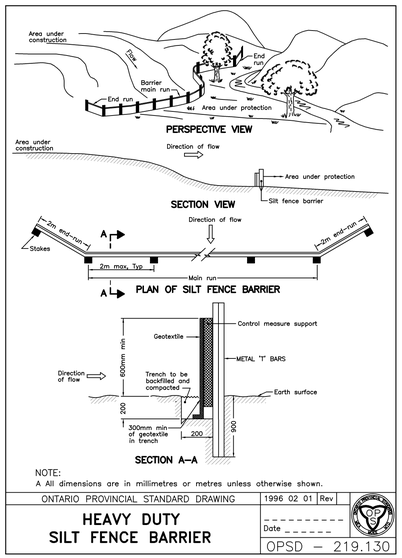
A All dimensions are in millimetres or metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | 1996 02 01 | Rev

STRAW BALE FLOW CHECK

Date _____

OPSD – 219.180



NOTE:
A All dimensions are in millimetres or metres unless otherwise shown.

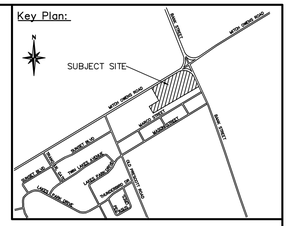
ONTARIO PROVINCIAL STANDARD DRAWING | 1996 02 01 | Rev

HEAVY DUTY SILT FENCE BARRIER

Date _____

OPSD – 219.130

Key Plan:



Legend:

EXISTING FEATURES (EX)

EX SIB, EX IB, EX UP, EX STD IRON BAR, EX IRON BAR, EX UTILITY POLE, EX BELL PED, EX WS, EX HYD, NS, SS, 123.45, EX WATER SERVICE, EX FIRE HYD., EX ST NAME SIGN, EX STOP SIGN, EX ELEVATION, EX FENCE, EX U/G GASMAIN, EX U/G BELL, EX WATERMAIN & VALVE, EX SAN @ 0.0%, EX STM @ 0.0%, EX SAN SEWER & MH, EX STM SEWER & MH

PROPOSED FEATURES (PR)

NS, SS, PR STREET NAME SIGN, PR STOP SIGN, PR FENCE, PR STREET LIGHT, PR WATER SERVICE, PR SAN SERVICE, PR HYDRO TRANSFORMER, 150 00mmø W/M, PR WATERMAIN & VALVE, PR FIRE HYDRANT, PR WATER VALVE, 0m–00mmø SAN @ 0.0%, PR SAN SEWER, MH K, PR SANITARY MANHOLE, 0m–00mmø STM @ 0.0%, PR STM SEWER, MH 4, PR CATCHBASIN MANHOLE, MH 4, PR MANHOLE, PR CATCHBASIN, 000.00, PROPOSED ELEVATION, PR SWALE, (104.90), MATCH EXISTING ELEVATIONS, (104.50)s, PR. ELEVATION OF NATIVE SOILS BELOW AREA BED

BOREHOLE INFORMATION CHART

BOREHOLE #	GROUND ELEVATION	CLAY DEPTH	DEPTH TO WATER TABLE (ESTIMATED)
1	105.53m	NO CLAY	N/A
2	105.24m	NO CLAY	N/A
3	106.00m	3.7m	N/A
4	106.38m	NO CLAY	N/A
5	105.59m	NO CLAY	N/A
6	108.25m	NO CLAY	N/A
7	105.41m	NO CLAY	N/A
8	104.76m	5.74m	2.5m
9	104.70m	NO CLAY	3.8m
10	103.78m	7.29m	1.1m
11	105.27m	NO CLAY	3.8m
12	106.11m	6.1m	N/A
13	110.68m	NO CLAY	N/A
14	110.30m	5.18m	N/A
15	104.70m	NO CLAY	N/A
16	105.00m	NO CLAY	N/A
17	105.69m	6.1m	4.6m
18	107.15m	3.15m	5.7m
19	105.37m	6.7m	6.7m
20	108.52m	3.99m	7.1m
21	107.19m	2.89m	N/A
22	104.45m	NO CLAY	N/A

NOTES:
1. ALL BOREHOLE INFORMATION WAS TAKEN FROM THE GEOTECHNICAL REPORT FROM KOLLAARD ASSOCIATES ENGINEERS DATED FEBRUARY 10, 2015.
2. FOR ALL BOREHOLE LOCATIONS REFER TO THE SEDIMENT AND EROSION CONTROL PLAN (SED).

Notes:

1. Unless noted otherwise, the measurements and distances shown on this drawing are shown in meters.
2. Do not scale drawings.
3. It is the contractor's responsibility to verify all dimensions, levels and datums on site and report any discrepancies or omissions to WMI & Associates Ltd. prior to construction.
4. This drawing is to be read and understood in conjunction with all other relevant documents applicable to this project.
5. This drawing is the exclusive property of WMI & Associates Ltd. and the reproduction of any part of this document without prior written consent is strictly prohibited.

Benchmark: 113.99

#3 CONCRETE MONUMENT (001196530377). NORTH SIDE OF MITCH OWENS ROAD APPROXIMATELY 250m WEST OF THE INTERSECTION OF MITCH OWENS ROAD AND BANK STREET.

REGISTERED PROFESSIONAL ENGINEER
J.W.LIGHTHEART
100140403
May 22, 2015
PROVINCE OF ONTARIO

No.	Issue / Revision	Date
1	1st Submisson	Feb. 4, 2014
2	1st Submisson (updated)	May 14, 2014
3	2nd Submisson	May 22, 2015

Greely Commercial Center

DETAIL SHEET 1

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Drawn By	Checked By	Drawing No.
TG	JWL	DS1
Scale N.T.S.	Project No. 11-183	