

OPSS LIST	DESCRIPTION	REVISION DATE
201	AND FIELD BOLLARDS	NOVEMBER 2011
206	CONSTRUCTION SPECIFICATION FOR CLEARING GRUBBING AND REMOVAL OF SURFACE	NOVEMBER 2014
310	CONSTRUCTION SPECIFICATION FOR HOT MIX ASPHALT	NOVEMBER 2017
314	CONSTRUCTION SPECIFICATION FOR UNTRATED GRANULAR SUB-BASE, SURFACE, SHOULDER, AND STOCK PILE	NOVEMBER 2015
351	CONSTRUCTION SPECIFICATION FOR CONCRETE SIDEWALK	NOVEMBER 2015
401	TRENCHING, BACKFILL AND COMPACTING	NOVEMBER 2015
410	PIPE SEWER INSTALLATION IN OPEN CUT	NOVEMBER 2015
441	WATER MAIN INSTALLATION IN OPEN CUT	NOVEMBER 2016
442	CORROSION PROTECTION FOR BOTH NEW AND EXISTING WATER MAIN	NOVEMBER 2016
492	CONSTRUCTION SPECIFICATION FOR SITE RESTORATION FOLLOWING INSTALLATION OF PIPELINES, UTILITIES, AND ASSOCIATED STRUCTURES	NOVEMBER 2017
501	COMPACTING	NOVEMBER 2014
532/710	PAVEMENT MARKING	NOVEMBER 2010
543/708	TRAFFIC CONTROL AND SIGNING	NOVEMBER 2016
802	TOPSOIL	APRIL 2018
803	SOODING	NOVEMBER 2015
805	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES	NOVEMBER 2015

OPSD LIST	REV.	DESCRIPTION	REVISION DATE
219.110	2	LIGHT DUTY SILT FENCE	NOVEMBER 2015
401.010	2	MAINTENANCE HOLE FRAME AND GRATE (TYPE 'A')	NOVEMBER 2015
401.081	1	CATCH BASIN FRAME AND GRATE (FISH TYPE)	NOVEMBER 2015
405.010	3	MAINTENANCE HOLE STEPS	NOVEMBER 2013
600.110 (MODIFIED)	1	CONCRETE BARRIER CURB	NOVEMBER 2012
606.010	2	CURB TRANSITION	NOVEMBER 2012
701.010	5	PRECAST CONCRETE MAINTENANCE HOLE - 1200mm	NOVEMBER 2014
701.021	4	MAINTENANCE HOLE BRACING AND PIPE SPACING ALTERNATIVES	NOVEMBER 2014
701.030	4	PRECAST CONCRETE MANHOLE COMPONENTS - 1200mm	NOVEMBER 2014
705.010	3	600/600 PRECAST CONCRETE CATCH BASIN	NOVEMBER 2014
802.010 (MODIFIED)	3	FLEXIBLE PIPE EMBEDMENT MODIFICATION AND BACKFILL	NOVEMBER 2014
809.010	3	EARTH EXCAVATION	APRIL 2015
1109.011	2	PERFORATED PIPE SUBRAIN INSTALLATION	NOVEMBER 2013
		CATHODIC PROTECTION FOR PVC WATER MAIN SYSTEMS	NOVEMBER 2015

- NOTES:**
- EROSION SEDIMENT CONTROL NOTES:**
- CONTRACTOR TO PLACE A "MUDMAT" AS PER DETAIL APPROPRIATE TO BE INSTALLED AS PER SHEET 03. IF THE CONTRACTOR UTILIZES ANY OTHER TYPE OF MAT AS A CONSTRUCTION ENTRANCE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT A MUD MAT AS PER DETAIL AT ENTRANCE AND MAINTAIN THE MUD MAT THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND CLEANING THE MUD MAT TO ENSURE NO DEBRIS IS TRACKED ONTO THE TOWN STREETS. ANY DEBRIS TRACKED ONTO TOWN STREETS SHALL BE POWER SWEEP AT THE END OF EACH DAY.
 - CONTRACTOR TO MINIMIZE THE IMPACTS ASSOCIATED WITH SEDIMENT TRANSFER BY COMPLETING THE FOLLOWING MEASURES IN ORDER:
 - PLACE SILT FENCE AT THE LOCATIONS INDICATED ON SHEET 02 - EROSION SEDIMENT CONTROL.
 - STRIP TOPSOIL FROM SITE AND STOCKPILE AWAY FROM DRAINAGE SWALES AND SURROUNDING STOCPILE WITH TEMPORARY SILT FENCE, OR REMOVE FROM SITE TO AN APPROVED DISPOSAL SITE.
 - INSPECT SILT FENCE AFTER EVERY SIGNIFICANT RAINFALL EVENT AND MAINTAIN AS REQUIRED, OR AT THE DIRECTION OF THE ENGINEER.
 - ALL CATCH BASINS SHALL HAVE FILTER FABRIC PLACED UNDER THE LID, IMMEDIATELY AFTER INSTALLATION, TO CONTROL ANY SILT THAT MAY ENTER THE STORM SEWER. REFER TO DETAIL 02. THE CONTRACTOR SHALL ENSURE THE FILTER FABRIC IS NOT "SEALED" IN PLACE DURING THE PLACEMENT OF ASPHALT. ALL FILTER FABRIC IS TO BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. REMOVE ALL FILTER FABRIC UPON COMPLETION OF THE PROJECT OR AFTER BEING NOTIFIED BY THE ENGINEER.
 - ALL TEMPORARY SILTATION CONTROL DEVICES ARE TO BE PLACED AND MAINTAINED BEFORE CONSTRUCTION STARTS. CONTROL DEVICES SHALL BE REMOVED ONCE ALL CONSTRUCTION HAS BEEN COMPLETED. ALL VEGETATION HAS BEEN ESTABLISHED, AND AT THE DIRECTIONS OF THE ENGINEER (D.M.WILLS).

- GENERAL:**
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS IS APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR THE FIELD LOCATION OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF EXISTING UTILITIES AND ANY DISCREPANCIES ARE TO REPORT TO THE ENGINEER.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND HAVING ON SITE, A COPY OF THE MOST RECENT ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS RELEVANT TO THIS CONTRACT.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS RELATED TO SERVICE CONNECTIONS INCLUDING THIRD PARTY UTILITY COSTS.
 - ALL ELEVATIONS ARE RELATIVE TO BENCHMARKS NOTED ON THE DRAWINGS AND UTILIZE METRIC UNITS.
 - PROJECT BENCH MARK - CONTRACTOR TO PROVIDE THE ENGINEER WITH SURVEY DATA TO CONFIRM SITE BENCH MARK PRIOR TO UTILIZATION.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.
 - REFER TO ARCHITECT'S SITE PLAN FOR BUILDING DIMENSIONS AND SITE LAYOUT. DIMENSIONS AND LAYOUT INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION BY THE CONTRACTOR.
 - TOWN OF COBOURG STANDARDS SHALL TAKE PRECEDENCE OVER OPSD. THE DETAILS ON THESE DRAWINGS SHALL TAKE PRECEDENCE OVER THE LATEST OPSD DETAILS WHERE APPLICABLE.
 - CONTRACTOR TO UNDERTAKE EXISTING UTILITIES WELL IN ADVANCE OF PIPE LAYING IN ORDER TO CORRECT GRADE PROBLEMS AS REQUIRED, IF REQUIRED.
 - THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS ON THE SITE AND REPORT ANY DISCREPANCY TO THE ENGINEER BEFORE PROCEEDING WITH THE WORKS.
 - THE APPROVAL OF THE PLANS DOES NOT EXEMPT THE OWNER'S CONTRACTOR FROM OBTAINING, BUT NOT LIMITED TO THE FOLLOWING PERMITS: ROAD CUT, SEWER PERMIT, RELIEF OF SERVICES, ENCROACHMENT AGREEMENTS, APPROACH PERMITS, ETC.
 - ALL CONSTRUCTION WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD. INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNS, DELINEATORS, MARKERS AND BARRIERS. ALL SIGNS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS IN THE LATEST VERSION ONTARIO TRAFFIC MANUAL, BOOK 7, TEMPORARY CONDITIONS.
 - LIMITS OF GRADING MAY VARY FROM THAT INDICATED, DEPENDING ON THE FIELD CONDITIONS OR AS DIRECTED BY THE ENGINEER.
 - TOPOGRAPHIC INFORMATION PROVIDED BY IVAN B. WALLACE DATED FEBRUARY 8, 2007 JOB NUMBER 5-7872.
 - LEGAL BOUNDARY INFORMATION PROVIDED BY IVAN B. WALLACE DATED FEBRUARY 8, 2007 JOB NUMBER 5-7872.
 - ANY HYDRO POLE OR BELL POLES OR OTHER POLES THAT ARE IN DANGER OF BEING UNDERMINED ARE TO BE BRACED. THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE POLES BRACED TO THE SATISFACTION OF THE APPROPRIATE UTILITY. ALL COSTS ASSOCIATED WITH THE BRACING OF POLES SHALL BE CARRIED BY THE CONTRACTOR.
 - ALL TREES AND ROOTS DESIGNATED FOR REMOVAL ARE TO BE COMPLETELY REMOVED AND DISPOSED OF OFF SITE.
 - GEOTECHNICAL REPORT PROVIDED BY TORONTO INSPECTION INC. DATED FEBRUARY 7, 2007 PROJECT NUMBER 1879-07-G-PE-A.

- SITE:**
- ALL MATERIALS (CONCRETE, SURPLUS FILL, ASPHALT, C&G, ETC.) THAT ARE TO BE USED MUST BE DISPOSED OF IN ACCORDANCE WITH THE LATEST WEEP GUIDELINES, LOCAL MUNICIPAL BYLAW, AND OPSD 180.
 - REFER TO MECHANICAL DRAWINGS FOR CONTINUATION OF SANITARY AND WATERMAIN SERVICES INTO BUILDING(S).
 - THE CONTRACTOR SHALL CARRY ALL COSTS ASSOCIATED WITH CONSTRUCTION WITHIN THE TOWN R.O.W. WITHIN THE TOWN OF COBOURG. THE CONTRACTOR OR HIS IS TO BE PREPARED BY PUBLIC WORKS DEPARTMENT. CONTRACTOR TO MAKE ALL NECESSARY ARRANGEMENTS FOR COORDINATION WITH THE TOWN AND/OR LOCAL UTILITY.
 - THE CONTRACTOR MUST REINSTATE ALL EXISTING SURVEY BARS (SB/IB) THAT ARE DISTURBED DURING CONSTRUCTION TO THE PROPER LOCATION. THIS PROCESS MUST BE COORDINATED WITH AN ONTARIO LAND SURVEYOR. ALL COSTS ASSOCIATED WITH THIS ARE TO BE CARRIED BY THE CONTRACTOR.
 - LANDSCAPE AREAS DISTURBED BY CONSTRUCTION SHALL HAVE 150mm TOPSOIL AND NURSERY SO UNLESS OTHERWISE NOTED. ALL SLOPES GREATER THAN 4:1 REQUIRE THE 500 TO BE STAKED.
 - ALL AREAS DISTURBED BY THE CONTRACTOR'S CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS AS INDICATED ON THE OWNER'S CONTRACT DRAWINGS AND IN ACCORDANCE WITH OPSD 492.
 - ALL SERVICES AND UTILITIES ARE TO BE SUPPORTED AS PER OPSD 491.
 - ALL BARRIER FREE WALKWAYS ARE TO BE CONSTRUCTED TO MEET THE REQUIREMENTS OF THE OBC SECTION 3.8.3.2.
 - ALL BARRIER FREE RAMPS ARE TO BE CONSTRUCTED TO MEET REQUIREMENTS OF THE OBC SECTION 3.8.3.4.
 - ALL ACCESSIBILITY SIGNS ARE TO MEET THE REQUIREMENTS OF THE OBC SECTION 3.8.3.1.
 - ALL BARRIER FREE ENTRANCES SHALL HAVE A MINIMUM 1.67m x 1.87m CLEAR AREA ADJACENT TO THE ENTRANCE AS PER THE OBC SECTION 3.8.3.2(1)(g).

WATERMAIN:

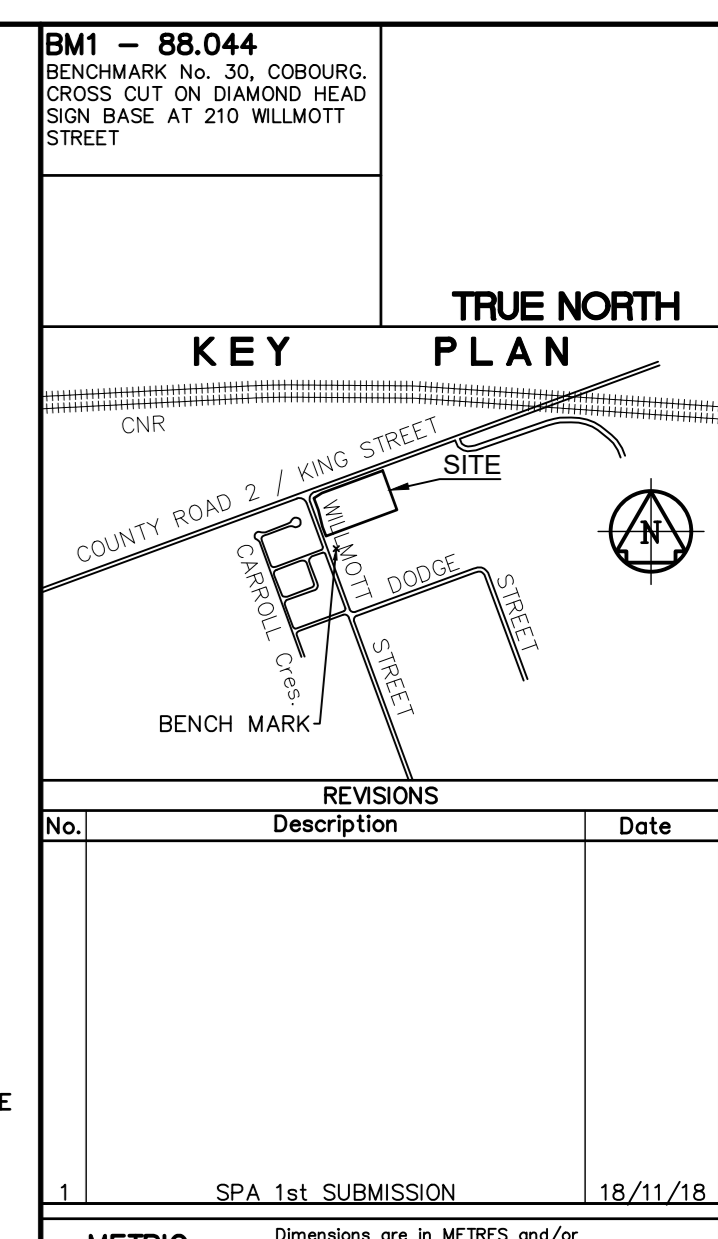
- ALL WATERMAIN AND WATER SERVICES, INCLUDING APPROPRIATE MANHOLES TO BE INSTALLED AS PER OPSD MUNI 441.
- CONTRACTOR TO INSTALL TRACER WIRE ON ALL NEW P.V.C. WATERMAIN INSTALLATIONS.
- ALL WATER SERVICE FITTINGS AND CONNECTIONS REQUIRE RETAINING CLAD RINGS WHERE THRUST BLOCKS CANNOT BE CONSTRUCTED ON SOLID GROUND.
- MINIMUM COVER ON THE WATER SERVICE SHALL BE 1.80m, PROPOSED FINISH GRADE TO THE TOP OF PIPE.
- BEDDING AND BACKFILL FOR WATER SERVICE SHALL BE AS PER OPSD 802.010 (MODIFIED).
- THE MINIMUM VERTICAL DISTANCE BETWEEN THE WATER SERVICE AND EITHER A STORM SEWER OR SANITARY SEWER IS 500mm.
- ALL WATER SERVICES REQUIRE 3.0m SEPARATION FROM SANITARY PIPES AND STRUCTURES. STORM PIPES AND STRUCTURES WHERE POSSIBLE.
- ALL WATER SERVICES SHALL BE INSTALLED AT RIGHT ANGLES TO THE WATERMAIN.
- ALL WATER SERVICES TO HAVE ANODE PROTECTION INCLUDING FITTINGS, VALVES, HYDRANTS, ETC.
- ALL WATERMAIN THAT IS CONNECTED TO A FIRE PROTECTION SPRINKLER SYSTEM SHALL MEET THE N.F.P.A. 13.
- THE WATER SERVICE SHALL TERMINATE 0.6m INSIDE THE PROPOSED BUILDING FOUNDATION WALL AND SHALL BE MARKED WITH A 2 x 4 PAINTED BLUE. THE 2 x 4 SHALL EXTEND 0.6m ABOVE FINISH GRADE AND SHALL BE CLEARLY LABELED "WATER".

SEWERS:

- LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.
- ALL BUILDING FOUNDATIONS DRAINS ARE TO BE CONNECTED TO THE PROPOSED STORM SEWER STRUCTURES.
- THE SITE SERVING CONTRACTOR IS TO TERMINATE THE SANITARY SEWER 1.0m OUTSIDE THE PROPOSED FOUNDATION WALL. THE SANITARY SEWER TO THE PROPOSED BUILDING SHALL BE MARKED WITH A 2 x 4 PAINTED GREEN. THE 2 x 4 SHALL EXTEND 0.6m ABOVE FINISHED GRADE. THE 2 x 4 SHALL BE CLEARLY LABELED "SANITARY".
- THE SITE SERVING CONTRACTOR IS TO TERMINATE THE STORM SEWER 1.0m OUTSIDE THE PROPOSED FOUNDATION WALL. THE STORM SEWER SHALL BE MARKED WITH A 2 x 4 PAINTED RED. THE 2 x 4 SHALL EXTEND 0.6m ABOVE FINISHED GRADE. THE 2 x 4 SHALL BE CLEARLY LABELED "STORM".
- BEDDING AND BACKFILL FOR STORM AND SANITARY SEWERS SHALL BE AS PER OPSD 802.010 (MODIFIED).

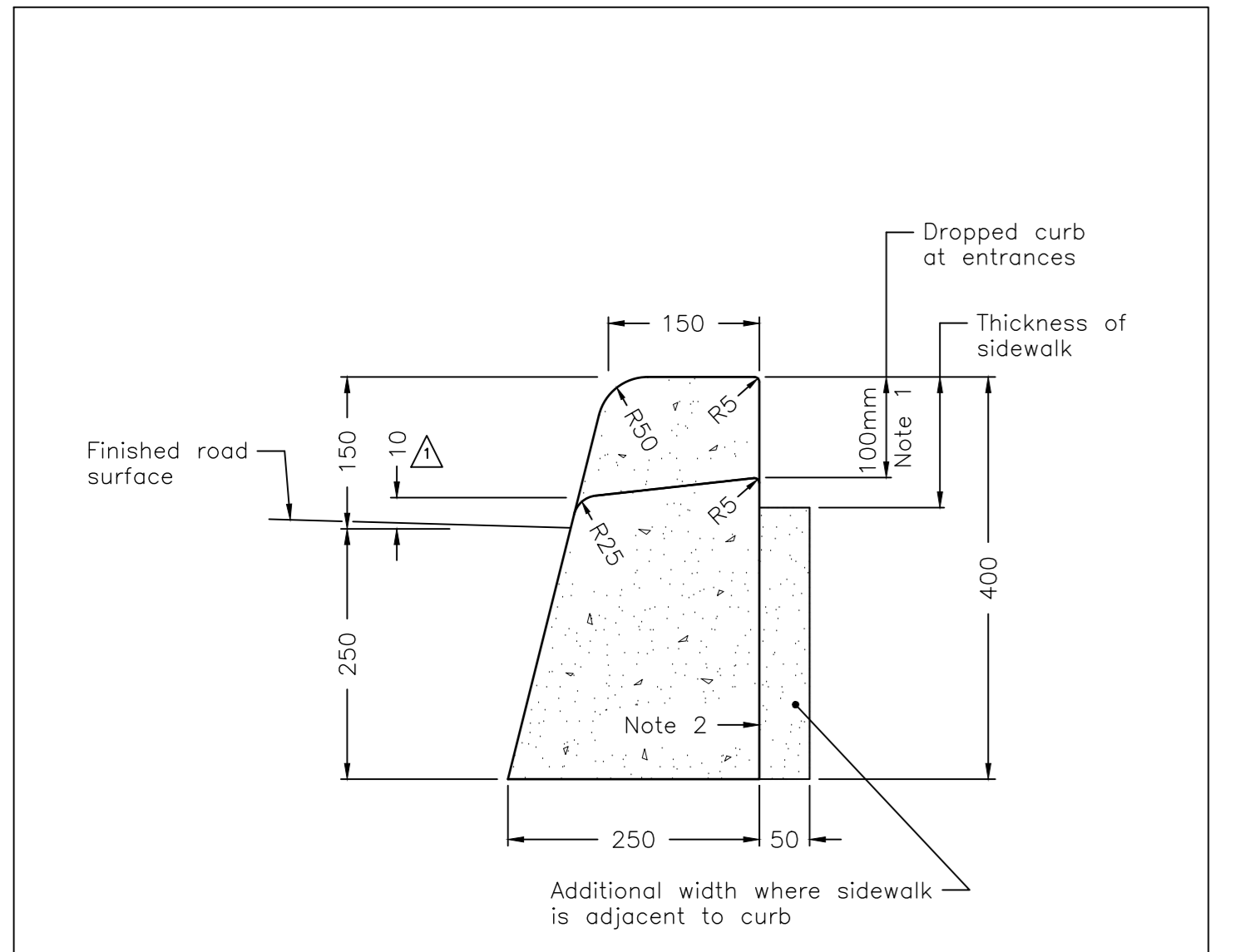
SITE (CIVIL) INSPECTION & TESTING SCHEDULE/REQUIREMENTS:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE ENGINEER A MINIMUM OF 48 HOURS (2 BUSINESS DAYS) IN ADVANCE OF THE FOLLOWING ACTIVITIES TO ARRANGE FOR THE PROPER INSPECTION OF THE RELATED CONTRACTOR WORKS. IF THE CONTRACTOR DOES NOT PROVIDE THE REQUIRED NOTICE THE CONTRACTOR MAY BE REQUIRED TO UNDERTAKE ADDITIONAL WORKS AND/OR VERIFY THAT THE WORKS HAVE BEEN PROPERLY REPLACES AT THE SOLE COST TO THE CONTRACTOR.
 - PROVIDE ADVANCE NOTIFICATION OF THE SERVING CONTRACTOR'S MOBILIZATION DATE ON SITE AND PROPOSED CONSTRUCTION SCHEDULE.
 - PROVIDE CONTACT INFORMATION FOR THE SERVING CONTRACTOR'S REPRESENTATIVE.
 - PROVIDE NOTIFICATION OF DELIVERY OF ALL SEWER PIPE MANHOLES, WATERMAIN PIPE, AND ANY OTHER SEWER OR WATERMAIN APPURTENANCES.
 - AT THE PLACEMENT OF THE FIRST STORM AND SANITARY MANHOLES.
 - PRIOR TO THE CONNECTION OF NEW WORKS TO EXISTING WORKS (STORM, SANITARY AND WATERMAIN).
 - PRIOR TO TESTING OF THE WATERMAIN / WATER SERVICE.
 - PRIOR TO CCTV OF ANY AND ALL SEWERS.
 - PRIOR TO AIR TESTING THE STORM AND SANITARY SEWERS.
 - AT THE COMPLETION OF THE PARKING LOT / DRIVEWAY SURFACING BUT PRIOR TO THE PLACEMENT OF ANY GRANULAR MATERIAL.
 - AT THE COMPLETION OF GRANULAR 'A' PLACEMENT.
 - PRIOR TO ASPHALT PLACEMENT.
 - PRIOR TO ANY CONCRETE POUR.
 - PRIOR TO THE DEMOBILIZATION OF THE SERVING CONTRACTOR FROM THE SITE.
- THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH ALL WATERMAIN TESTING AND INSPECTION REPORTS RELATED TO CONSTRUCTION / INSTALLATION OF PARKING LOTS, SIDEWALKS, STORM SEWERS, SANITARY SEWERS AND WATERMANS.
- ALL CIVIL SHOP DRAWINGS ARE TO BE SUBMITTED TO THE ENGINEER A MINIMUM OF 10 BUSINESS DAYS IN ADVANCE. IF THE CONTRACTOR IS REQUESTING A SUBSTITUTION OF A PRODUCT SPECIFIED ON THE CIVIL DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REVIEW AND APPROVAL OF THE SUBSTITUTION.
- ALL WATERMAIN TESTING INCLUDING CHLORINATION AND BACTERIOLOGICAL IS TO BE IN ACCORDANCE WITH OPSD 441. THE CONTRACTOR IS TO SUPPLY THE ENGINEER WITH TWO COPIES OF ALL TEST RESULTS. THE WATERMAIN TESTING CONTRACTOR(S) MUST BE APPROVED BY THE ENGINEER PRIOR TO THE TESTING OF THE WATERMAIN. THE SITE SERVING CONTRACTOR OR GENERAL CONTRACTOR INFORMATION FOR THE TESTING CONTRACTOR(S) A MINIMUM OF TWO WEEKS PRIOR TO TESTING.
- ALL SANITARY AND STORM SEWERS, BOTH EXISTING AND NEW, ARE TO BE FLUSHED UPON COMPLETION OF ALL SITE WORKS. ALL CATCH BASINS AND MANHOLES ARE TO BE CLEANED AND VACUUMED OUT. THE SITE SERVING CONTRACTOR OR GENERAL CONTRACTOR IS TO SUPPLY THE ENGINEER WITH A DETAILED REPORT FROM THE FLUSHING CONTRACTOR OF ALL SEWERS CLEANED.
- ALL NEW SANITARY AND STORM SEWERS SHALL BE CCTV INSPECTED. IN ADDITION WHERE THE NEW SEWERS ARE TO BE FLUSHED UPON COMPLETION OF ALL SITE WORKS, THE NEXT STRUCTURE DOWNSTREAM, OF THE EXISTING SEWER SHALL BE CCTV INSPECTED. CCTV INSPECTION SHALL BE CONDUCTED AFTER ALL MATERIAL HAS BEEN POWER CLEANED FROM THE DOWNSTREAM MANHOLE AND PRIOR TO THE PLACEMENT OF ASPHALT, CURB OR CONCRETE SIDEWALK. CCTV CONTRACTORS SHALL BE PAID \$10, OR ABOVE, CERTIFIED PER OPS MUNI 406 AND PROVIDE THREE (3) COPIES OF THE VIDEO AND REPORTS IN DIGITAL VIDEO AND PDF FORMATS TO THE ENGINEER PRIOR TO THE RELEASE OF SITE SECURITIES. ALL TYPING FEES SHALL BE CARRIED BY THE CONTRACTOR.
- UPON REVIEW OF THE CCTV REPORTS THE CONTRACTOR MAY BE REQUESTED TO PERFORM AN AIR TEST. THE AIR TEST SHALL NOT BE INITIATED WITHOUT THE ENGINEER ON SITE. THE AIR TEST PLACEMENT SHALL BE CONDUCTED PRIOR TO THE PLACEMENT OF ASPHALT, CURB OR CONCRETE SIDEWALKS AND PRIOR TO THE RELEASE OF SITE SECURITIES.
- UPON REVIEW OF THE CCTV REPORTS THE CONTRACTOR MAY BE REQUESTED TO PERFORM A DEFLECTION TEST ON THE STORM AND SANITARY SEWERS. THE DEFLECTION TEST IS TO BE IN ACCORDANCE WITH OPSD 410. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO CONDUCTING THE DEFLECTION TEST. WITHOUT THE ENGINEER ON SITE, THE CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF THE REPORTS TO THE ENGINEER.
- GENERAL CONTRACTOR TO PROVIDE AS CONSTRUCTED DRAWINGS OF ALL EXISTING AND INSTALLED WORKS INCLUDING STRUCTURE LOCATIONS, PIPE LINE DIAMETER, PIPE MATERIAL, ALL PIPE AND STRUCTURE INVERTS AND AN AS-BUILT DRAWING OF ALL PROPOSED ELEVATIONS ON THE DRAWING TO THE ENGINEER.



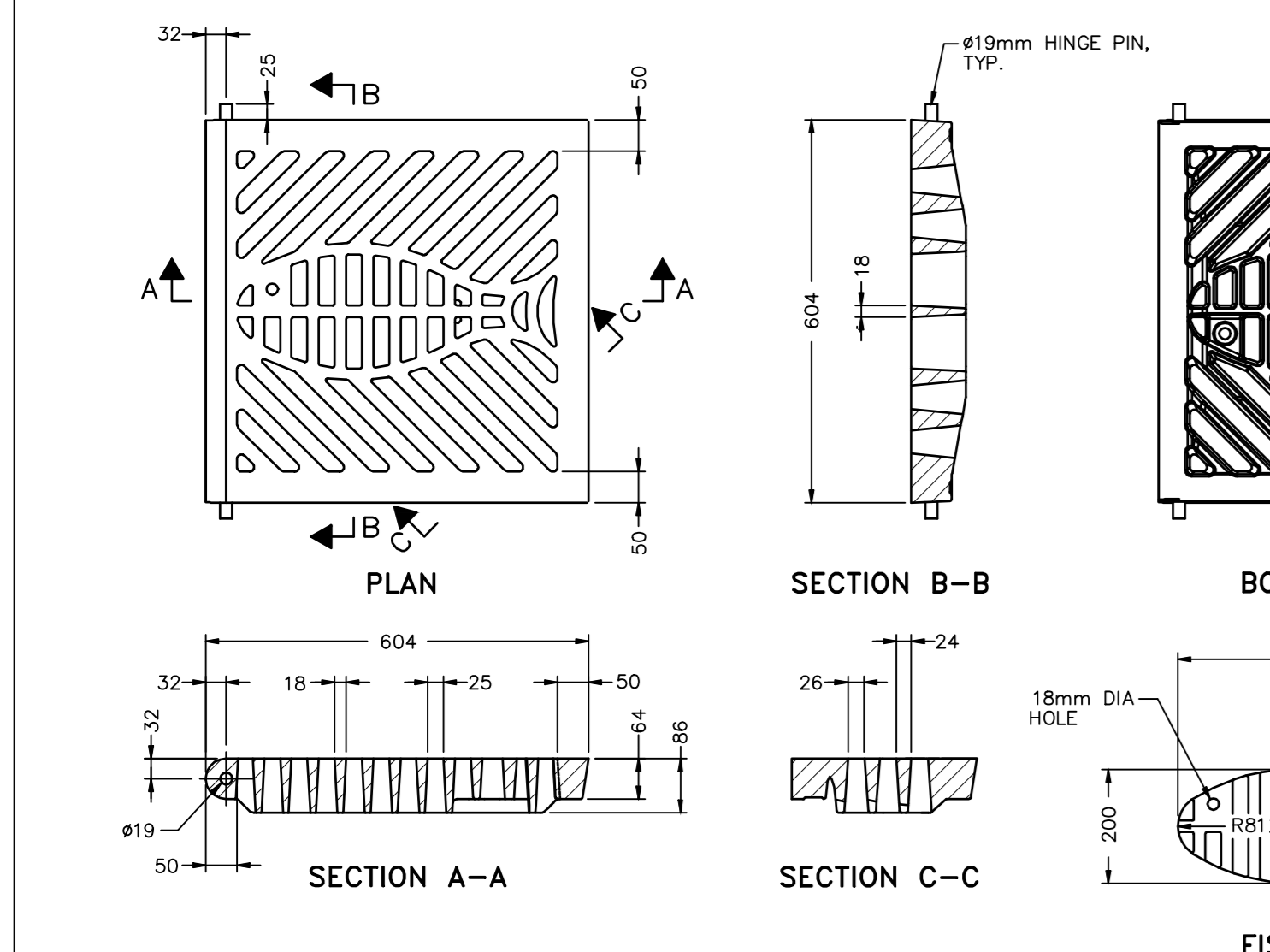
No.	Description	Date
1	SPA 1st SUBMISSION	16/11/18

METRIC Dimensions are in METRES unless otherwise stated.
LEGEND ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

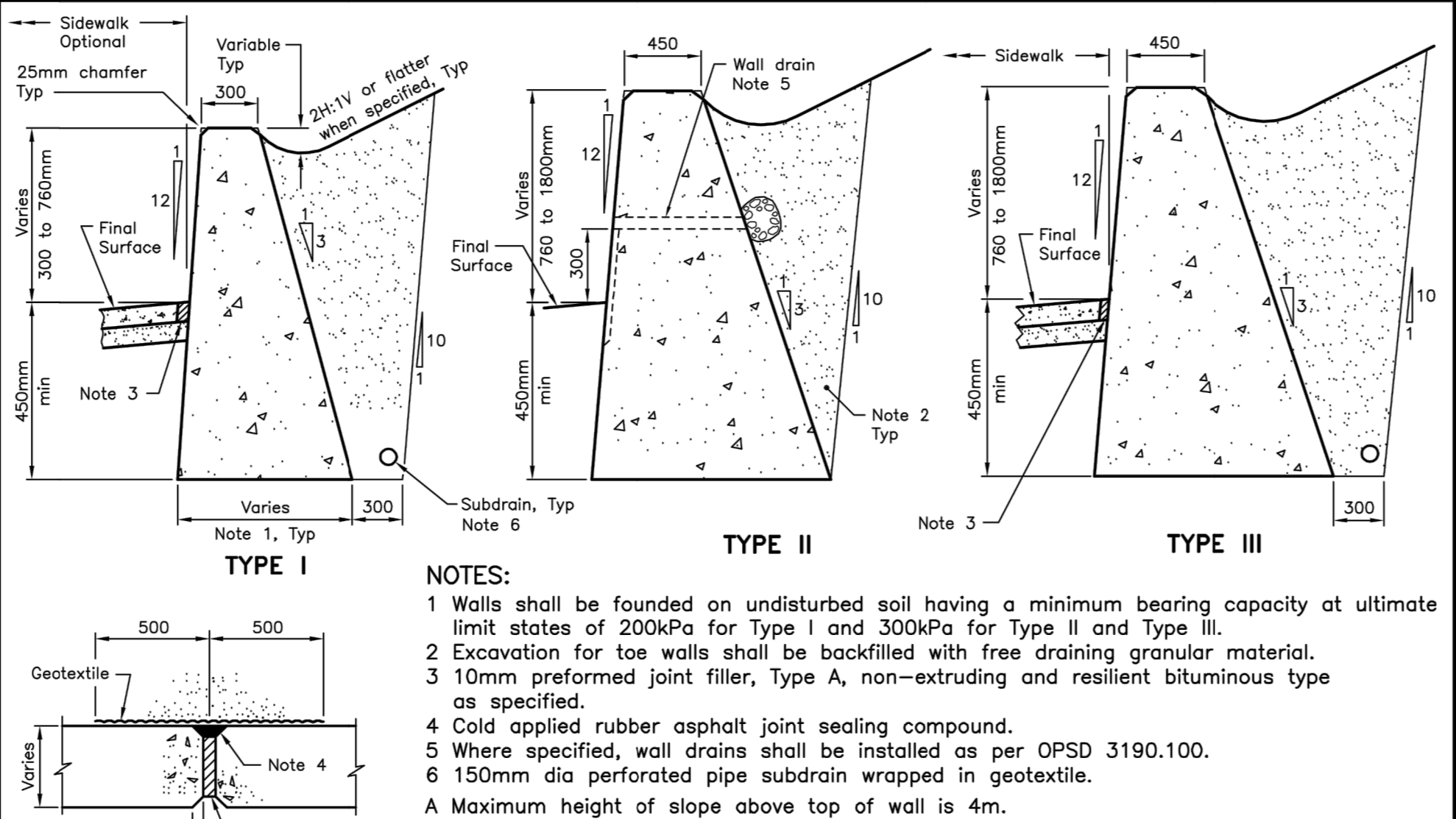


- NOTES:**
- Where sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
 - For slipform procedure, a 5% batter is acceptable.
 - Treatment of entrances shall be according to OPSD 351.010.
 - Outlet treatment shall be according to the OPSD 610 Series.
 - The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 500 Series.
 - All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2012 Rev 2
CONCRETE BARRIER CURB (PRIVATE SITES)
 OPSD 600.110



ONTARIO PROVINCIAL STANDARD DRAWING Nov 2015 Rev 1
CAST IRON, SQUARE FRAME FISH TYPE COVER
 OPSD - 401.081

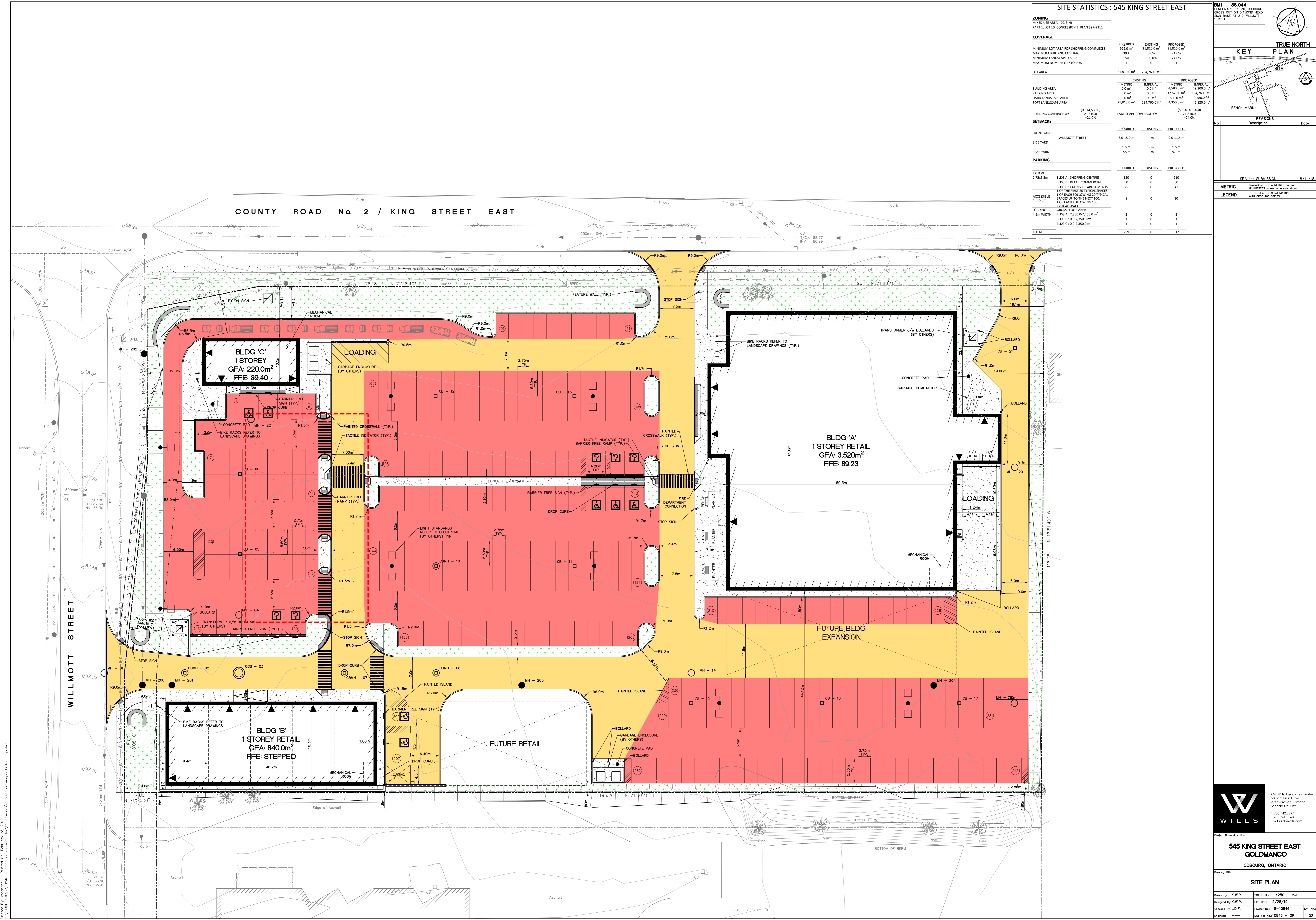


ONTARIO PROVINCIAL STANDARD DRAWING Nov 2010 Rev 2
WALLS RETAINING CONCRETE TOE WALL
 OPSD 3120.100

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545 KING STREET EAST GOLDMANCO
 COBOURG, ONTARIO
GENERAL NOTES SPECIFICATIONS AND OPSD'S

Drawn By: K.W.P. Scale: Hrs: - Ver: -
 Designed By: J.D.F. Plot Date: 2/28/19
 Checked By: J.D.F. Project No.: 18-10846
 Engineer: - - - Day File No.: 10846 - GNDT 01



SITE STATISTICS : 545 KING STREET EAST

ZONING
 MARKED USE AREA - DC 3(H)
 PART 1, LOT 10, CONCESSION B, PLAN 398-2211

COVERAGE

	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA FOR SHOPPING COMPLEXES	929.0 m²	21,810.0 m²	21,810.0 m²
MAXIMUM BUILDING COVERAGE	30%	0.0%	21.0%
MINIMUM LANDSCAPE AREA	13%	300.0%	24.0%
MAXIMUM NUMBER OF STOREYS	4	0	1
LOT AREA	21,810.0 m²	234,760.0 ft²	

BUILDING AREA

	EXISTING	PROPOSED
METRIC	0.0 m²	4,388.2 m²
IMPERIAL	0.0 ft²	49,300.0 ft²
BUILDING AREA	0.0 m²	32,520.0 m²
IMPERIAL	0.0 ft²	134,760.0 ft²
HARD LANDSCAPE AREA	0.0 m²	800.0 m²
IMPERIAL	0.0 ft²	9,580.0 ft²
SOFT LANDSCAPE AREA	21,810.0 m²	234,760.0 ft²
IMPERIAL	4,388.0 m²	46,820.0 ft²

BUILDING COVERAGE % (BLDG + 580.0) = 21.810.0 = 21.0%
LANDSCAPE COVERAGE % (890.0 + 350.0) = 21,810.0 = 24.0%

SETBACKS

	REQUIRED	EXISTING	PROPOSED
FRONT YARD	3.0-15.0 m	-m	9.0-11.5 m
SIDE YARD	1.5 m	-m	1.5 m
REAR YARD	7.5 m	-m	9.1 m

PARKING

TYPICAL	REQUIRED	EXISTING	PROPOSED
2.75x5.5m	180	0	210
BLDG A - SHOPPING CENTRES	30	0	60
BLDG B - RETAIL COMMERCIAL	25	0	42
BLDG C - EATING ESTABLISHMENTS	1	0	1
1 OF THE FIRST 20 TYPICAL SPACES	1	0	1
1 OF EACH FOLLOWING 20 TYPICAL SPACES UP TO THE NEXT 100	1	0	1
1 OF EACH FOLLOWING 100 TYPICAL SPACES	8	0	10
ACCESSIBLE 4.5x5.5m	8	0	10
LOADING 4.5m WIDTH	2	0	2
BLDG A - 2,350.0-7,450.0 m²	1	0	1
BLDG B - 0.0-2,350.0 m²	1	0	1
BLDG C - 0.0-2,350.0 m²	1	0	1
TOTAL	259	0	312

KEY PLAN

TRUE NORTH

REVISIONS

No.	Description	Date
1	SPA 1st SUBMISSION	16/11/18

METRIC Dimensions are in METRES unless otherwise shown.
LEGEND TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS.

Printed By: J. D. F. Printed On: February 28, 2019
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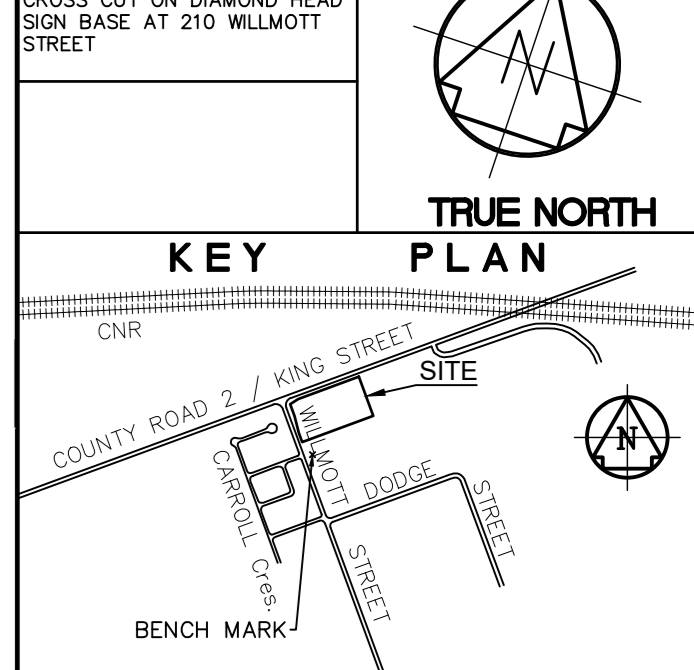
WILLS

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Project Name/Location
**545 KING STREET EAST
 GOLDMANCO**
 COBOURG, ONTARIO

Drawing Title
SITE PLAN

Drawn By: K.W.P. SCALE: HORIZ: 1:250 VERT: --
 Designed By: J.D.F. Plot Date: 2/28/19
 Checked By: J.D.F. Project No.: 18-10846 Sht. No.:
 Engineer: --- Day File No.: 10846 - GP 02

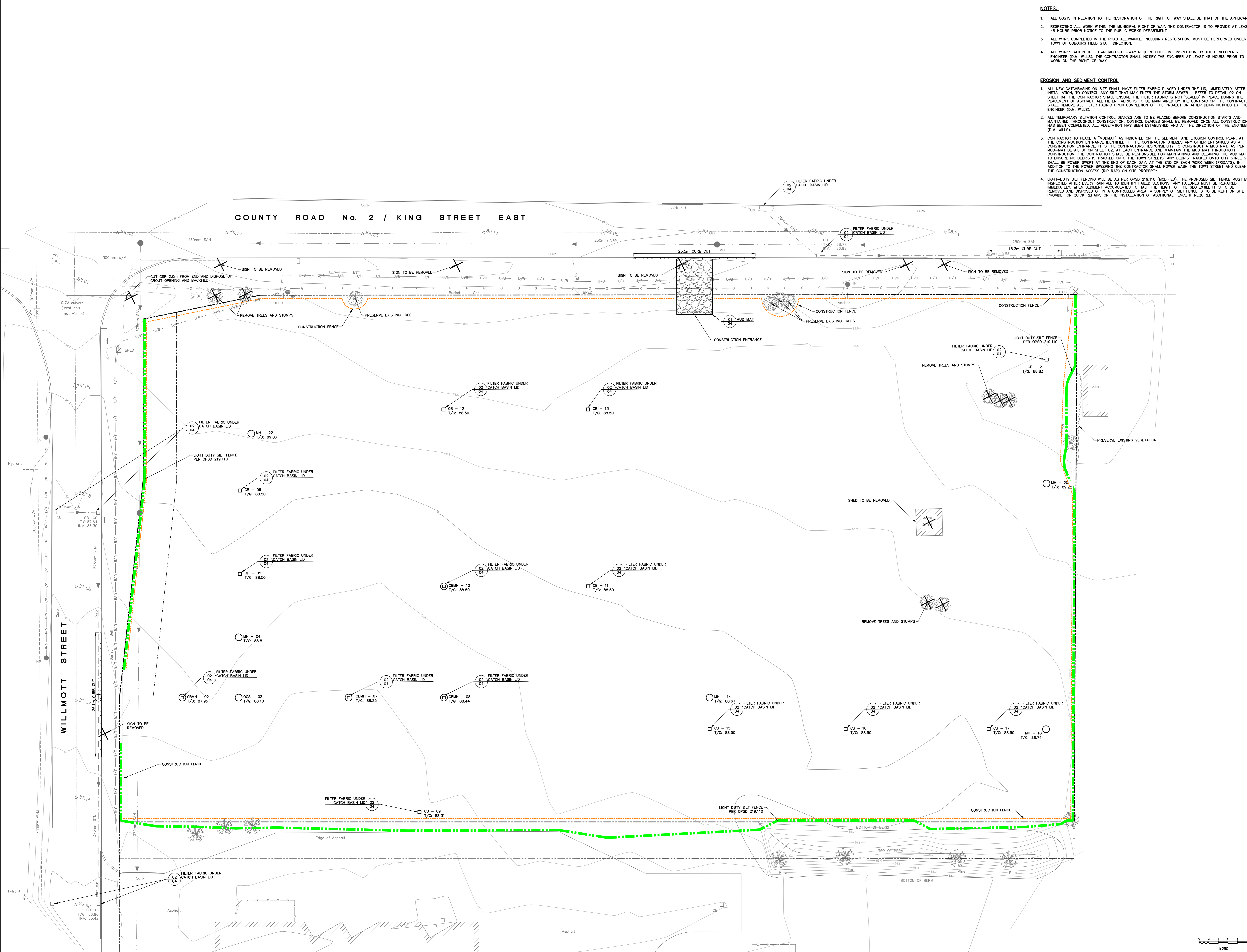


REVISIONS	
No.	Date
1	16/11/18

METRIC	
Dimensions are in METRES and/or MILLIMETRES unless otherwise shown	

LEGEND	
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- NOTES:**
1. ALL COSTS IN RELATION TO THE RESTORATION OF THE RIGHT OF WAY SHALL BE THAT OF THE APPLICANT.
 2. RESPECTING ALL WORK WITHIN THE MUNICIPAL RIGHT OF WAY, THE CONTRACTOR IS TO PROVIDE AT LEAST 48 HOURS PRIOR NOTICE TO THE PUBLIC WORKS DEPARTMENT.
 3. ALL WORK COMPLETED IN THE ROAD ALLOWANCE, INCLUDING RESTORATION, MUST BE PERFORMED UNDER TOWN OF COBourg FIELD STAFF DIRECTION.
 4. ALL WORKS WITHIN THE TOWN RIGHT-OF-WAY REQUIRE FULL TIME INSPECTION BY THE DEVELOPER'S ENGINEER (D.M. WILLS). THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO WORK ON THE RIGHT-OF-WAY.
- EROSION AND SEDIMENT CONTROL**
1. ALL NEW CATCHBASINS ON SITE SHALL HAVE FILTER FABRIC PLACED UNDER THE LID, IMMEDIATELY AFTER INSTALLATION, TO CONTROL ANY SILT THAT MAY ENTER THE STORM SEWER - REFER TO DETAIL 02 ON SHEET 04. THE CONTRACTOR SHALL ENSURE THE FILTER FABRIC IS NOT "SEALED" IN PLACE DURING THE PLACEMENT OF ASPHALT. ALL FILTER FABRIC IS TO BE MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE FILTER FABRIC UPON COMPLETION OF THE PROJECT OR AFTER BEING NOTIFIED BY THE ENGINEER (D.M. WILLS).
 2. ALL TEMPORARY SILTATION CONTROL DEVICES ARE TO BE PLACED BEFORE CONSTRUCTION STARTS AND MAINTAINED THROUGHOUT CONSTRUCTION. CONTROL DEVICES SHALL BE REMOVED ONCE ALL CONSTRUCTION HAS BEEN COMPLETED, ALL VEGETATION HAS BEEN ESTABLISHED AND AT THE DIRECTION OF THE ENGINEER (D.M. WILLS).
 3. CONTRACTOR TO PLACE A "MUDMAT" AS INDICATED ON THE SEDIMENT AND EROSION CONTROL PLAN, AT THE CONSTRUCTION ENTRANCE IDENTIFIED. IF THE CONTRACTOR UTILIZES ANY OTHER ENTRANCES AS A CONSTRUCTION ENTRANCE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT A MUD MAT, AS PER MUD-MAT DETAIL 01 ON SHEET 02. AT EACH ENTRANCE AND MAINTAIN THE MUD MAT THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND CLEANING THE MUD MAT TO ENSURE NO DEBRIS IS TRACKED ONTO THE TOWN STREETS. ANY DEBRIS TRACKED ONTO CITY STREETS SHALL BE POWER SWEEPED AT THE END OF EACH DAY, AT THE END OF EACH WORK WEEK (FRIDAYS), IN ADDITION TO THE POWER SWEEPING THE CONTRACTOR SHALL POWER WASH THE TOWN STREET AND CLEAN THE CONSTRUCTION ACCESS (RIP RAP) ON SITE PROPERTY.
 4. LIGHT-DUTY SILT FENCING WILL BE AS PER OPSD 219.110 (MODIFIED). THE PROPOSED SILT FENCE MUST BE INSPECTED AFTER EVERY RAINFALL TO IDENTIFY FAILED SECTIONS. ANY FAILURES MUST BE REPAIRED IMMEDIATELY. WHEN SEDIMENT ACCUMULATES TO HALF THE HEIGHT OF THE GEOTEXTILE IT IS TO BE REMOVED AND DISPOSED OF IN A CONTROLLED AREA. A SUPPLY OF SILT FENCE IS TO BE KEPT ON SITE TO PROVIDE FOR QUICK REPAIRS OR THE INSTALLATION OF ADDITIONAL FENCE IF REQUIRED.



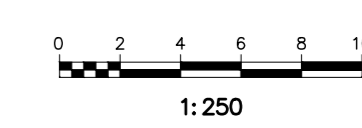
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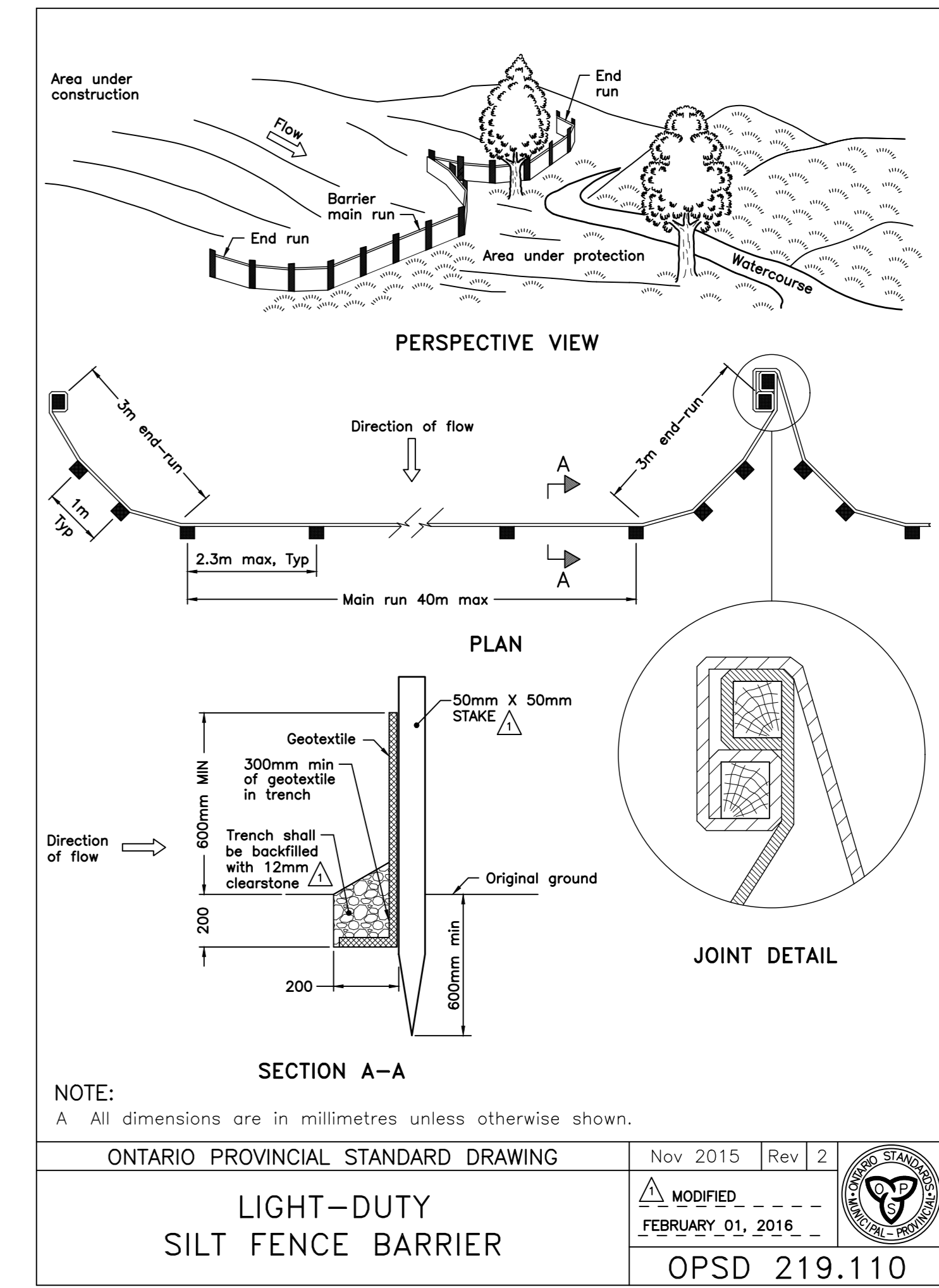
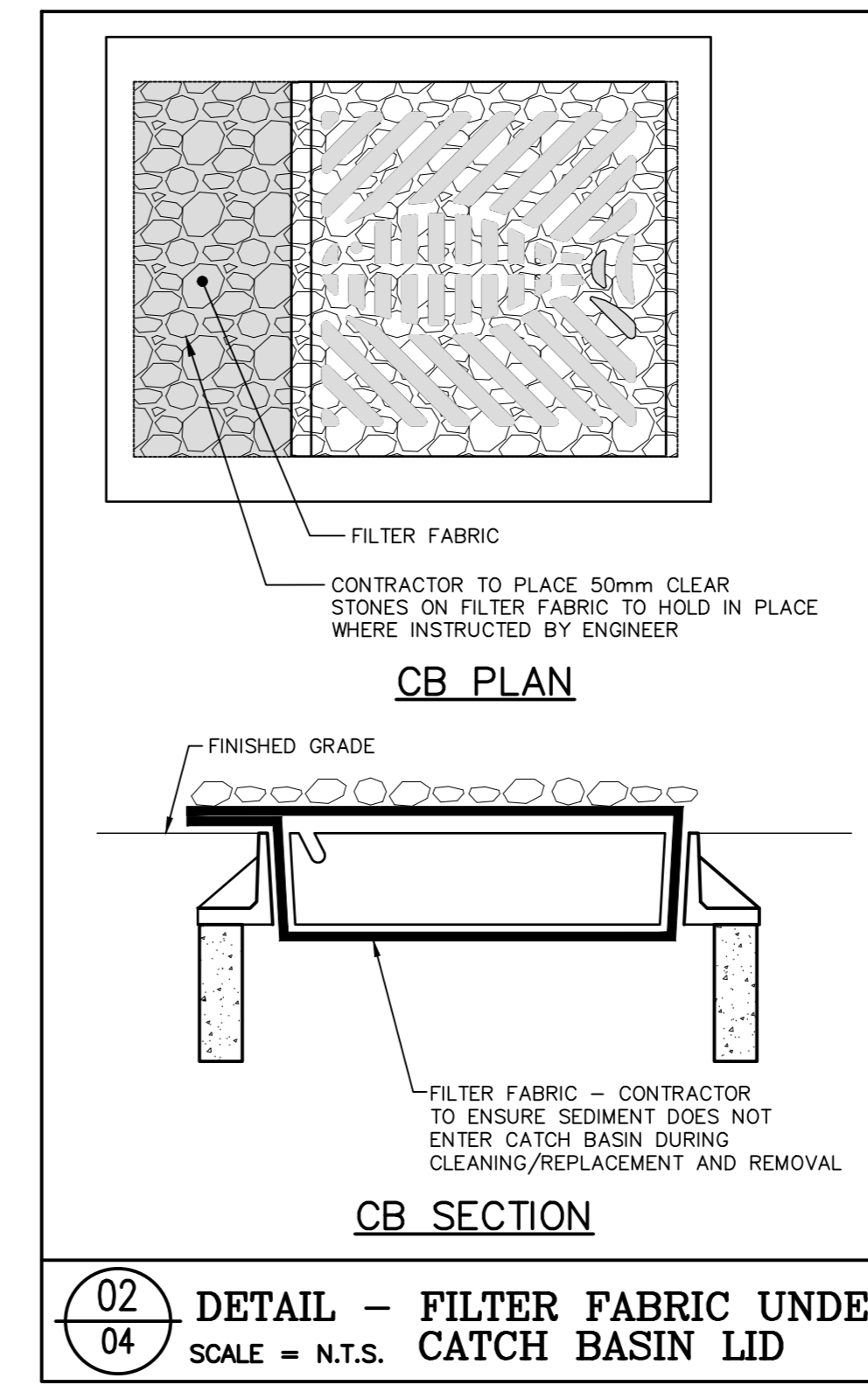
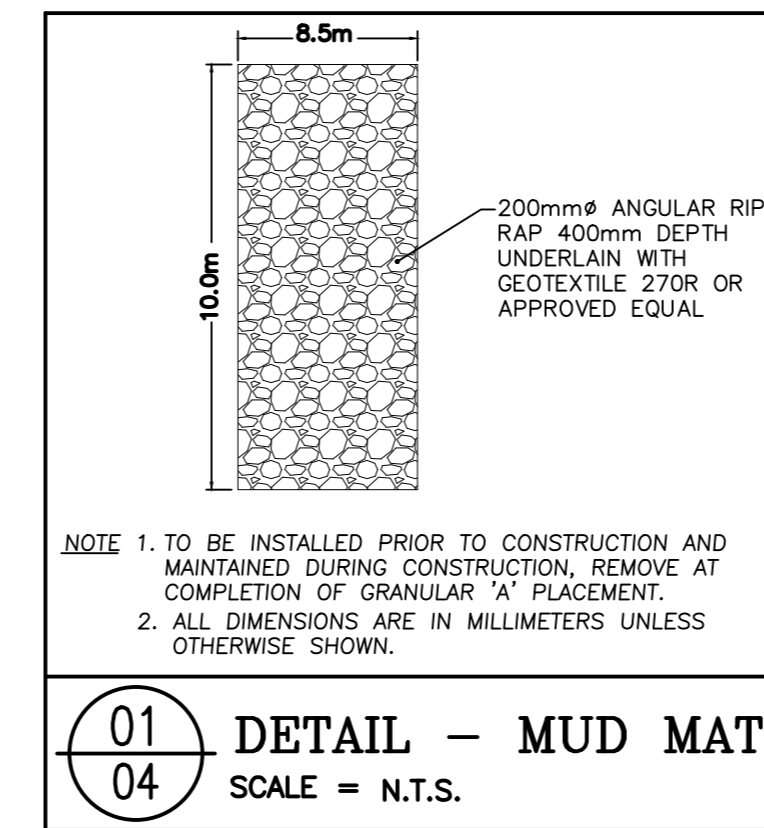
D.M. Wills Associates Limited
 150 Johnson Drive
 Peterborough, Ontario
 Canada K7J 0B9
 P: 705.742.2297
 F: 705.741.3568
 E: wills@dmwills.com

Project Name/Location
**545 KING STREET EAST
 GOLDMANCO**
 COBourg, ONTARIO

Drawing Title
**EROSION AND SEDIMENT CONTROL
 PLAN**

Drawn By: K.W.P. SCALE: HORIZ: 1:250 VERT: --
 Designed By: K.W.P. Plot Date: 2/28/19
 Checked By: J.D.F. Project No.: 18-10846 Sht. No.:
 Engineer: --- Day File No.: 10846 - EC 03





BM1 - 88.044
BENCHMARK No. 30, COBOURG, CROSS CUT ON DIAMOND HEAD SOFT BASE AT 210 WILLMOTT STREET

TRUE NORTH PLAN

KEY: COUNTY ROAD 2 / KING STREET, SITE, BENCH MARK

REVISIONS		Date
No.	Description	
1	SPA 1st SUBMISSION	18/11/18

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

LEGEND

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Project Name/Location
545 KING STREET EAST GOLDMANCO
COBOURG, ONTARIO

Drawing Title
EROSION AND SEDIMENT CONTROL DETAILS

Drawn By: K.W.P.	SCALE: Horiz. --- Vert. ---
Designed By: K.W.P.	Plot Date: ----
Checked By: J.D.F.	Project No.: 18-10846
Engineer: ---	Draw File No.: 10846 - EC

Sht. No.: 04

BM1 - 88.044
 BENCHMARK No. 301 COBURG
 CROSS CUT ON DIAMOND HEAD
 500 BASE AT 210 WILLMOTT
 STREET

KEY PLAN

REVISIONS

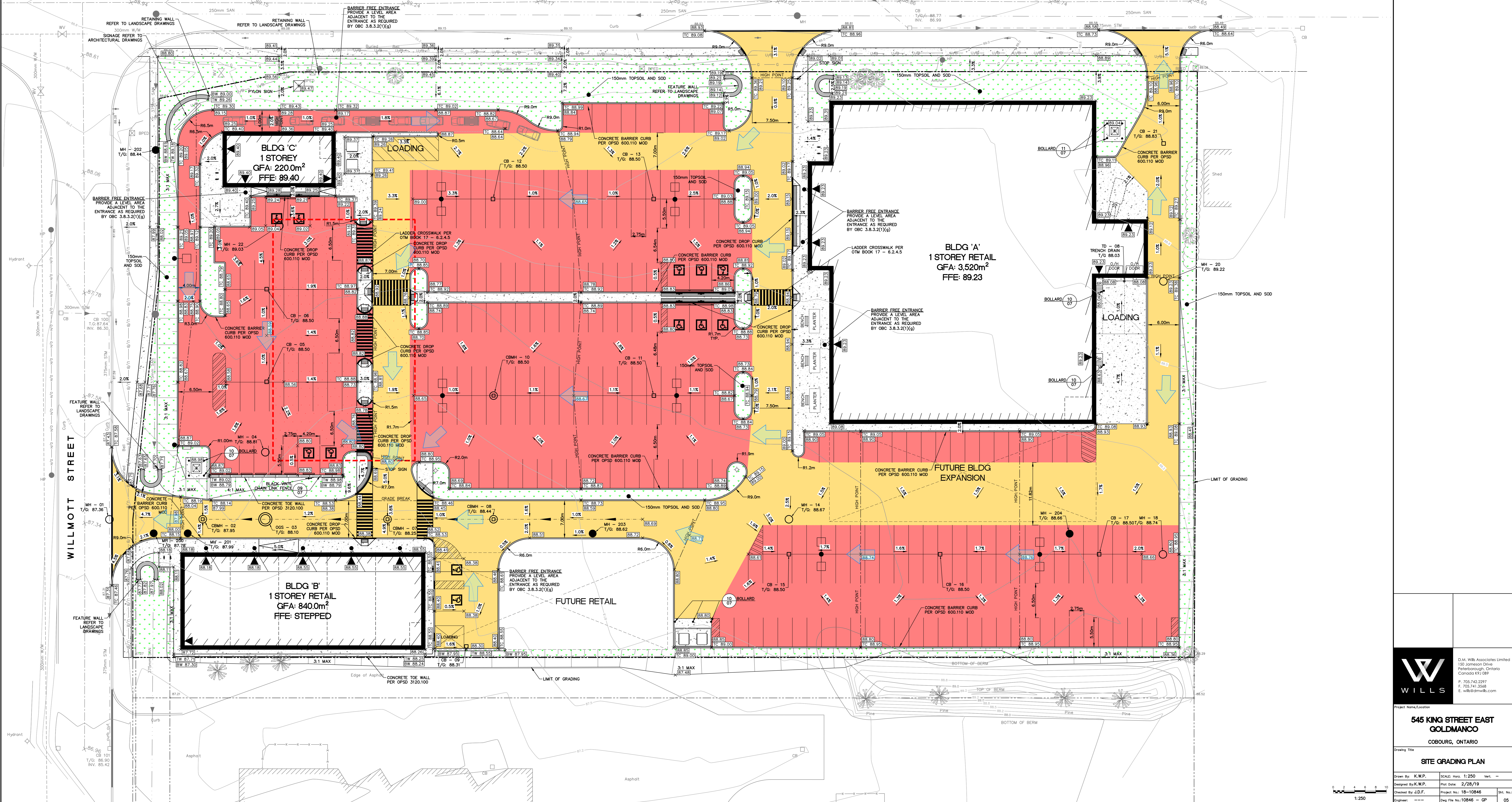
No.	Description	Date
1	SPA 1st SUBMISSION	18/11/18

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown TO BE READ IN CONJUNCTION WITH OPDS 100 SERIES

LEGEND

- NOTES:**
1. ALL COSTS IN RELATION TO THE RESTORATION OF THE RIGHT OF WAY SHALL BE THAT OF THE APPLICANT.
 2. RESPECTING ALL WORK WITHIN THE MUNICIPAL RIGHT OF WAY, THE CONTRACTOR IS TO PROVIDE AT LEAST 48 HOURS PRIOR NOTICE TO THE UTILITY SERVICES DEPARTMENT.
 3. THE CONTRACTOR MUST OBTAIN A ROAD OCCUPANCY AND/OR CUT PERMIT FOR ANY WORK BEING UNDERTAKEN IN THE MUNICIPAL ROAD ALLOWANCE.
 4. ALL WORK COMPLETED IN THE ROAD ALLOWANCE, INCLUDING RESTORATION, MUST BE PERFORMED UNDER CITY OF PETERBOROUGH FIELD STAFF DIRECTION.

COUNTY ROAD No. 2 / KING STREET EAST



Printed On: February 28, 2019
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Project Name/Location
**545 KING STREET EAST
 GOLDMANCO**
 COBURG, ONTARIO

Drawing Title
SITE GRADING PLAN

Drawn By: K.W.P. SCALE: HORIZ: 1:250 VERT: ---
 Designed By: K.W.P. Plot Date: 2/28/19
 Checked By: J.D.F. Project No: 18-10846 Sht. No:
 Engineer: --- Day File No: 10846 - GP 05

0 2 4 6 8 10
 1:250

STRUCTURE NAME	TYPE	T/G	INVERTS	OPSD #	OPSD #	COMMENT
MH - 200	SAN	87.78	INV IN = E 82.55 INV OUT = N 82.99	701.010	401.010(A)	
MH - 201	SAN	87.99	INV IN = E 86.10 INV IN = S 86.18 INV OS = E 82.70 INV OUT = S 82.68	701.011	401.010(A)	DROP STRUCTURE (DS) ON SOUTH INVERT OPSD 1003.020 1500mm MANHOLE
MH - 202	SAN	88.44	INV IN = E 87.74 INV OS = E 82.70 INV OUT = W 85.41	701.010	401.010(A)	DROP STRUCTURE (DS) ON EAST INVERT OPSD 1003.020 1500mm MANHOLE
MH - 203	SAN	88.62	INV IN = E 85.43 INV OS = E 82.70 INV OUT = W 85.41	701.010	401.010(A)	
MH - 204	SAN	88.66	INV IN = N 86.30 INV OUT = S 86.33	701.010	401.010(A)	
MH - 300	SAN	87.92	INV IN = N 82.63 INV OUT = S 82.61	-	-	

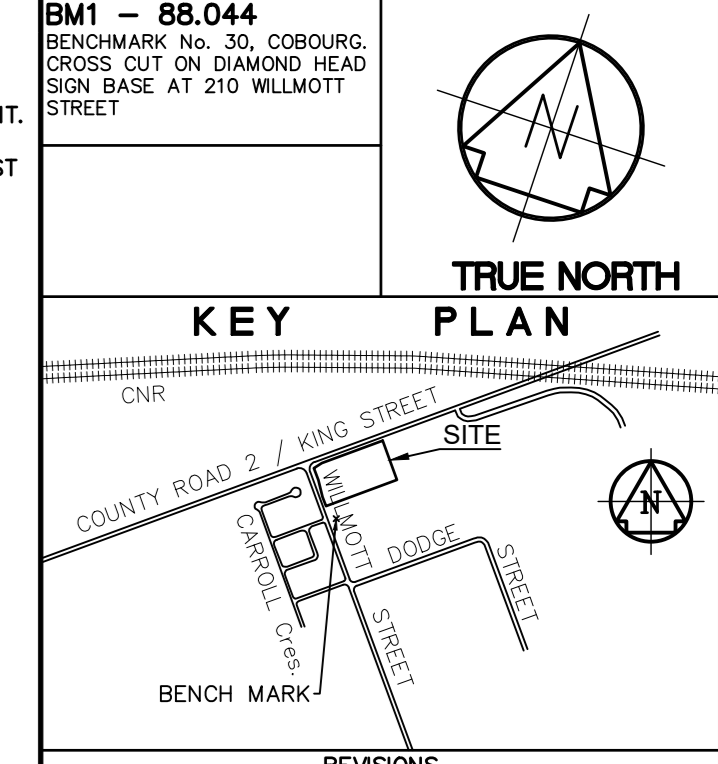
FROM	TO	SEWER TYPE	LENGTH (M)	SLOPE	DIA. (MM)	MATERIAL	CLASS	DETAIL NO. BACKFILL AND BEDDING	COMMENT
MH - 204	MH - 203	SAN	90.0	1.00%	200	PVC	DR-35	802.010 (MODIFIED)	
MH - 203	MH - 201	SAN	76.5	3.00%	200	PVC	DR-35	802.010 (MODIFIED)	
MH - 201	MH - 200	SAN	6.5	2.00%	200	PVC	DR-35	802.010 (MODIFIED)	
MH - 200	MH - 300	SAN	41.4	0.30%	200	PVC	DR-35	802.010 (MODIFIED)	
BLDG 'A'	MH - 204	SAN	21.8	1.00%	200	PVC	DR-35	802.010 (MODIFIED)	
BLDG 'B'	MH - 201	SAN	4.7	4.20%	200	PVC	DR-35	802.010 (MODIFIED)	
BLDG 'C'	MH - 202	SAN	13.2	2.00%	200	PVC	DR-35	802.010 (MODIFIED)	

CROSSING	INVERT	TYPE	OBVERT	TYPE
C-01	85.91	STM	85.40	WAT
C-02	84.42	WAT	82.70	SAN
C-03	85.99	STM	82.69	SAN
C-04	85.98	STM	85.48	WAT
C-05	86.42	WAT	82.81	SAN
C-06	86.30	STM	85.65	WAT
C-07	86.53	STM	85.90	WAT
C-08	86.29	STM	85.75	WAT
C-09	86.45	STM	85.94	WAT
C-10	86.56	STM	84.23	SAN
C-11	86.59	STM	86.00	WAT
C-12	86.54	STM	84.93	SAN
C-13	86.72	STM	85.90	WAT
C-14	86.97	WAT	85.90	SAN
C-15	86.92	STM	85.47	SAN
C-16	86.97	STM	86.04	SAN
C-17	87.08	STM	86.55	WAT

FROM	TO	SEWER TYPE	LENGTH (M)	SLOPE	DIA. (MM)	MATERIAL	CLASS	DETAIL NO. BACKFILL AND BEDDING	COMMENT
CB - 21	MH - 20	STM	26.1	0.50%	375	PVC	DR-35	802.010 (MODIFIED)	
TD - 19	MH - 20	STM	7.4	2.00%	250	PVC	DR-35	802.010 (MODIFIED)	
MH - 20	MH - 18	STM	51.6	0.50%	375	PVC	DR-35	802.010 (MODIFIED)	
MH - 18	MH - 14	STM	71.0	0.50%	375	PVC	DR-35	802.010 (MODIFIED)	
CB - 17	TEE	STM	1.2	2.00%	250	PVC	DR-35	802.010 (MODIFIED)	
CB - 16	TEE	STM	4.0	2.90%	250	PVC	DR-35	802.010 (MODIFIED)	
CB - 15	MH - 14	STM	6.6	3.20%	250	PVC	DR-35	802.010 (MODIFIED)	
BLDG 'A'	MH - 14	STM	19.9	5.00%	200	PVC	DR-35	802.010 (MODIFIED)	
MH - 14	CBMH - 08	STM	55.8	0.50%	450	PVC	DR-35	802.010 (MODIFIED)	
CB - 13	CB - 12	STM	30.4	0.50%	250	PVC	DR-35	802.010 (MODIFIED)	
CB - 12	CBMH - 10	STM	37.2	2.00%	375	PVC	DR-35	802.010 (MODIFIED)	
CB - 11	CBMH - 10	STM	30.3	3.00%	250	PVC	DR-35	802.010 (MODIFIED)	
CBMH - 10	CBMH - 08	STM	23.4	1.90%	450	PVC	DR-35	802.010 (MODIFIED)	
CB - 09	CBMH - 08	STM	24.6	0.50%	250	PVC	DR-35	802.010 (MODIFIED)	
CBMH - 08	CBMH - 07	STM	20.1	0.50%	525	CONC.	65-D	802.010 (MODIFIED)	
BLDG 'B'	CBMH - 07	STM	6.4	5.00%	200	PVC	DR-35	802.010 (MODIFIED)	
CBMH - 07	OGS - 03	STM	23.1	0.50%	525	CONC.	65-D	802.010 (MODIFIED)	
CBMH - 07	MC-3500	STM	11.1	0.00%	300	PVC	DR-35	802.010 (MODIFIED)	
CB - 06	CB - 05	STM	17.5	2.00%	250	PVC	DR-35	802.010 (MODIFIED)	
CB - 05	MH - 04	STM	13.4	1.70%	250	PVC	DR-35	802.010 (MODIFIED)	
MC - 3500	MH - 04	STM	1.5	0.00%	250	PVC	DR-35	802.010 (MODIFIED)	MC-3500 UNDERGROUND STORAGE
MH - 04	OGS - 03	STM	12.7	1.70%	450	PVC	DR-35	802.010 (MODIFIED)	
MH - 04	CBMH - 02	STM	17.4	5.00%	375	PVC	DR-35	802.010 (MODIFIED)	
OGS - 03	CBMH - 02	STM	11.9	0.50%	675	CONC.	65-D	802.010 (MODIFIED)	STORMCEPTOR STC - 6000
CBMH - 02	MH - 01	STM	17.7	1.00%	250	PVC	DR-35	802.010 (MODIFIED)	
BLDG 'C'	MH - 22	STM	8.5	2.00%	200	PVC	DR-35	802.010 (MODIFIED)	
CB - 100	MH - 01	STM	38.9	1.10%	375	CONC.	DR-35	802.010 (MODIFIED)	
MH - 01	CB - 101	STM	43.3	1.10%	375	CONC.	DR-35	802.010 (MODIFIED)	

STRUCTURE NAME	TYPE	T/G	INVERTS	OPSD #	OPSD #	COMMENT
MH - 01	STM	87.36	INV IN = N 85.88 INV OUT = S 85.88	701.010	401.010(A)	
CBMH - 02	STM	87.95	INV IN = E 86.10 INV IN = N 86.10 INV OUT = W 86.08	701.010	401.081	75mm ORIFICE ON WEST INVERT
OGS - 03	STM	88.10	INV IN = E 86.24 INV IN = N 86.24 INV OUT = W 86.15	MANUF.	401.010(A)	STC 6000
MH - 04	STM	88.81	INV IN = N 86.45 INV IN = E 86.90 INV OUT = S 86.96	701.010	401.010(A)	180mm ORIFICE ON SOUTH WEST INVERT
CB - 05	STM	88.50	INV IN = N 86.70 INV IN = S 86.68 INV OUT = W 86.68	705.030	401.081	
CB - 06	STM	88.50	INV IN = W 87.05	705.030	401.081	
CBMH - 07	STM	88.25	INV IN = E 86.37 INV IN = N 86.35 INV OUT = S 86.41	701.010	401.081	
CBMH - 08	STM	88.44	INV IN = E 86.49 INV IN = N 86.53 INV OUT = S 86.47	701.010	401.081	
CB - 09	STM	88.31	INV IN = N 86.66 INV IN = S 86.53	705.030	401.081	
CBMH - 10	STM	88.50	INV IN = N 86.15 INV IN = N 86.11 INV OUT = S 86.09	701.010	401.081	
CB - 11	STM	88.50	INV IN = N 87.05	705.030	401.081	
CB - 12	STM	88.50	INV IN = E 86.90 INV IN = S 86.84 INV OUT = W 86.84	705.030	401.081	
CB - 13	STM	88.50	INV IN = W 87.05	705.030	401.081	
MH - 14	STM	88.67	INV IN = N 86.84 INV IN = S 86.84 INV IN = E 86.79 INV OUT = W 86.77	701.010	401.010(A)	
CB - 15	STM	88.50	INV OUT = N 87.05	705.030	401.081	
CB - 16	STM	88.50	INV OUT = N 87.05	705.030	401.081	
CB - 17	STM	88.50	INV OUT = N 87.11	705.030	401.081	
MH - 18	STM	88.74	INV IN = N 87.21 INV OUT = W 87.15	701.010	401.010(A)	
TD - 19	STM	88.03	INV OUT = E 86.63	DETAIL 04	401.010(A)	
MH - 20	STM	89.22	INV IN = N 87.48 INV IN = E 87.48 INV OUT = S 87.48	701.010	401.010(A)	
CB - 21	STM	88.83	INV OUT = S 87.62	705.030	401.081	
MH - 22	STM	89.03	INV IN = N 87.83 INV OS = N 86.32 INV OUT = S 86.30	701.010	401.010(A)	DROP STRUCTURE (DS) ON INLET PIPE OPSD 1003.020 SEE SHEET 08
MC - 3500	STM	-	INV IN = N 86.23 INV IN = S 86.45 INV OUT = W 86.70	MANUF.	MANUF.	

- NOTES:**
- ALL COSTS IN RELATION TO THE RESTORATION OF THE RIGHT OF WAY SHALL BE THAT OF THE APPLICANT.
 - RESPECTING ALL WORK WITHIN THE MUNICIPAL RIGHT OF WAY, THE CONTRACTOR IS TO PROVIDE AT LEAST 48 HOURS PRIOR NOTICE TO THE UTILITY SERVICES DEPARTMENT.
 - THE CONTRACTOR MUST OBTAIN A ROAD OCCUPANCY AND/OR CUT PERMIT FOR ANY WORK BEING UNDERTAKEN IN THE MUNICIPAL ROAD ALLOWANCE.
 - ALL WORK COMPLETED IN THE ROAD ALLOWANCE, INCLUDING RESTORATION, MUST BE PERFORMED UNDER CITY OF PETERBOROUGH FIELD STAFF DIRECTION.

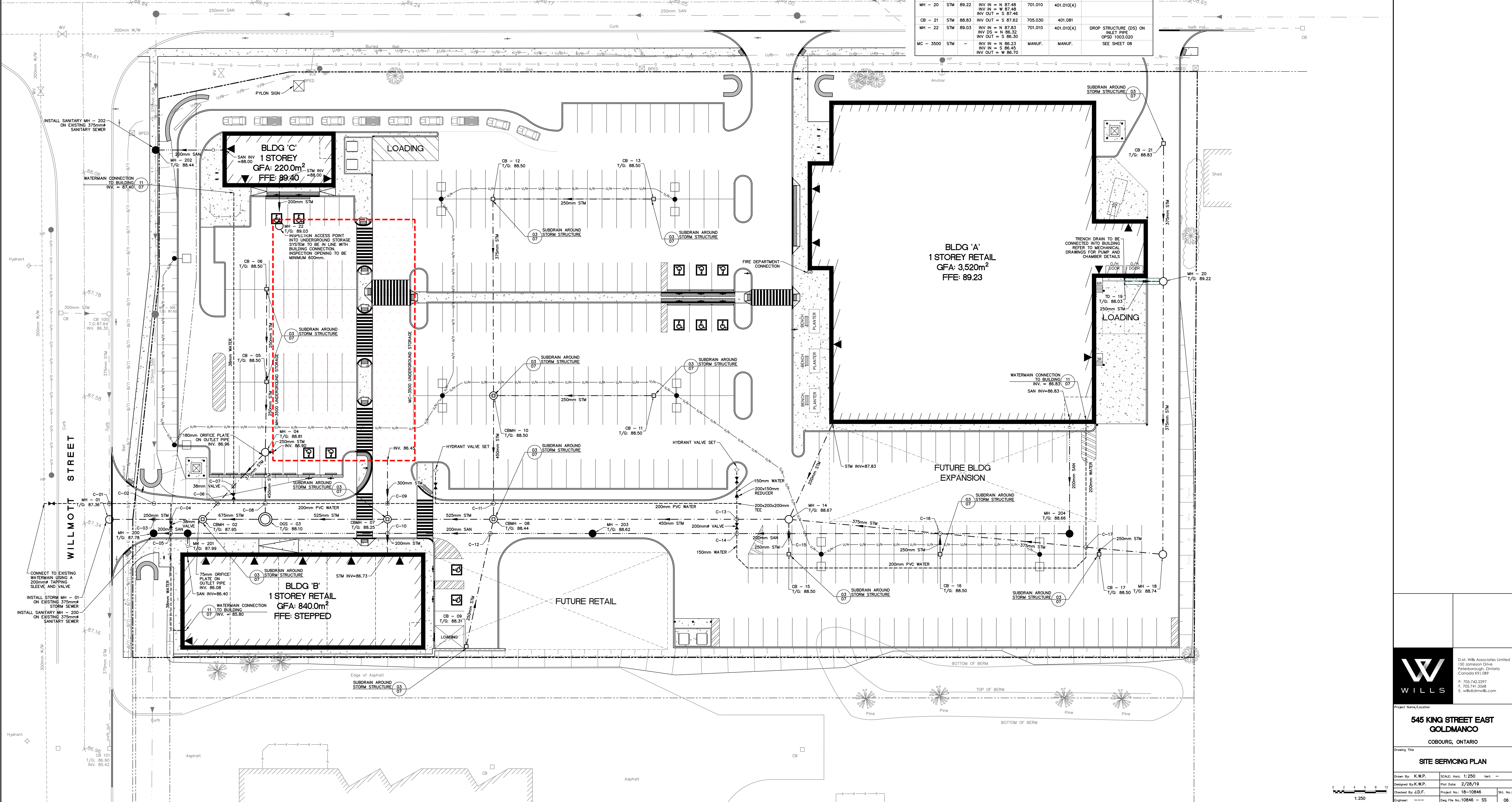


No.	Description	Date
1	SPA 1st SUBMISSION	16/11/18

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown TO BE READ IN CONSTRUCTION WITH OPSD 100 SERIES

LEGEND

COUNTY ROAD No. 2 / KING STREET EAST



Printed On: February 28, 2019
 Project Name: 545 King Street East
 Drawing Title: SITE SERVING PLAN
 Scale: 1:250
 Date: 2/28/19
 Project No: 18-10846
 Sheet No: 06

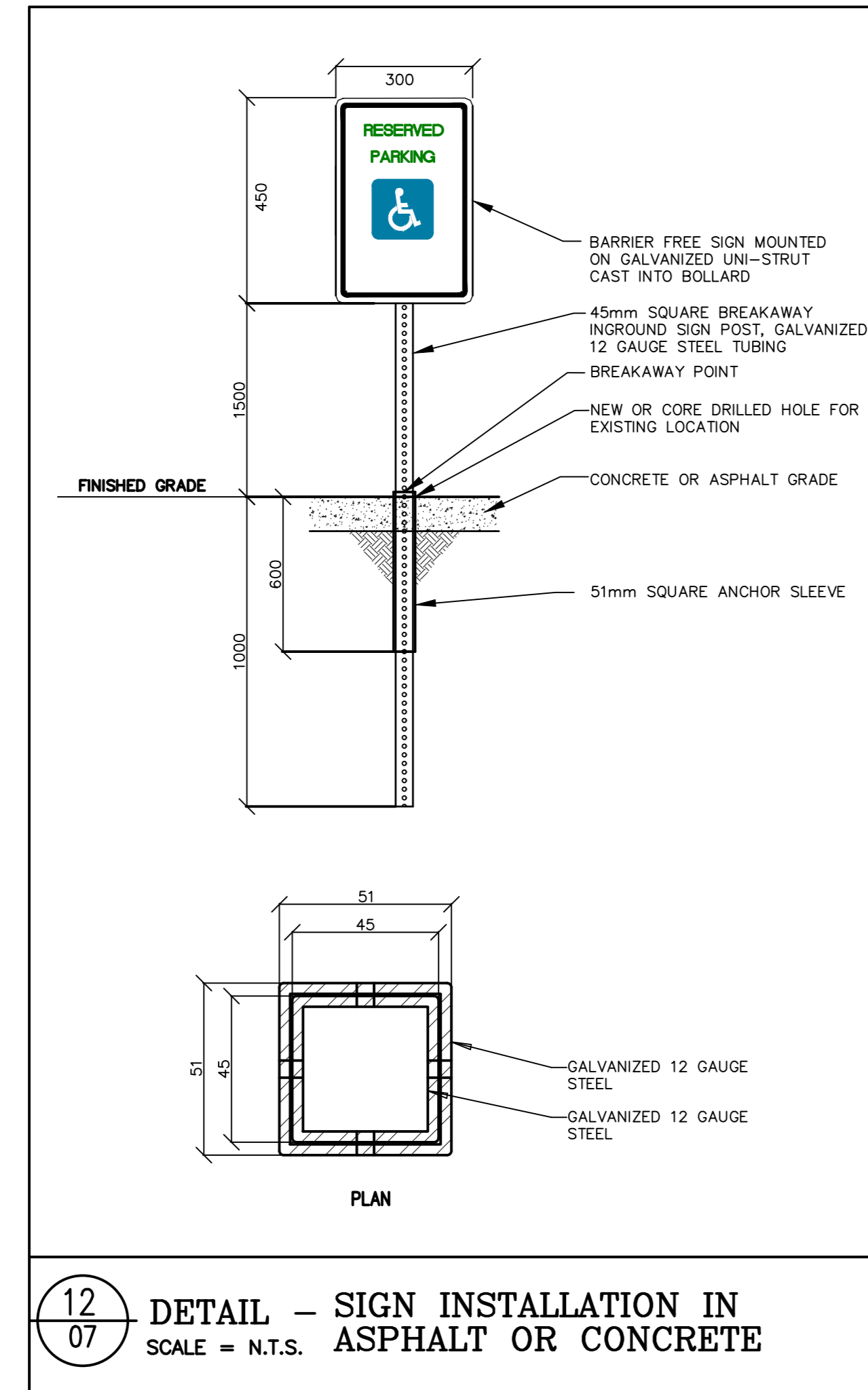
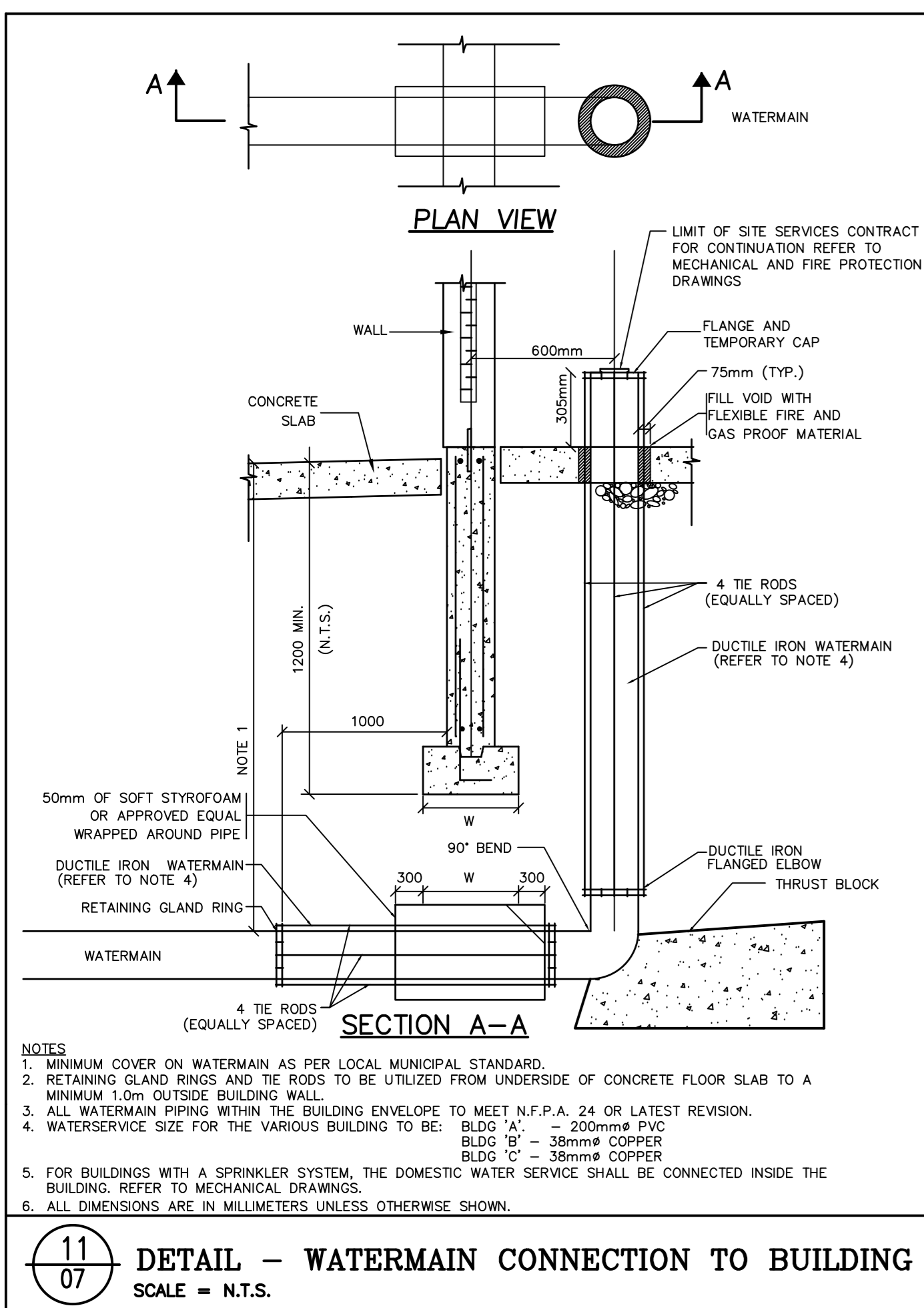
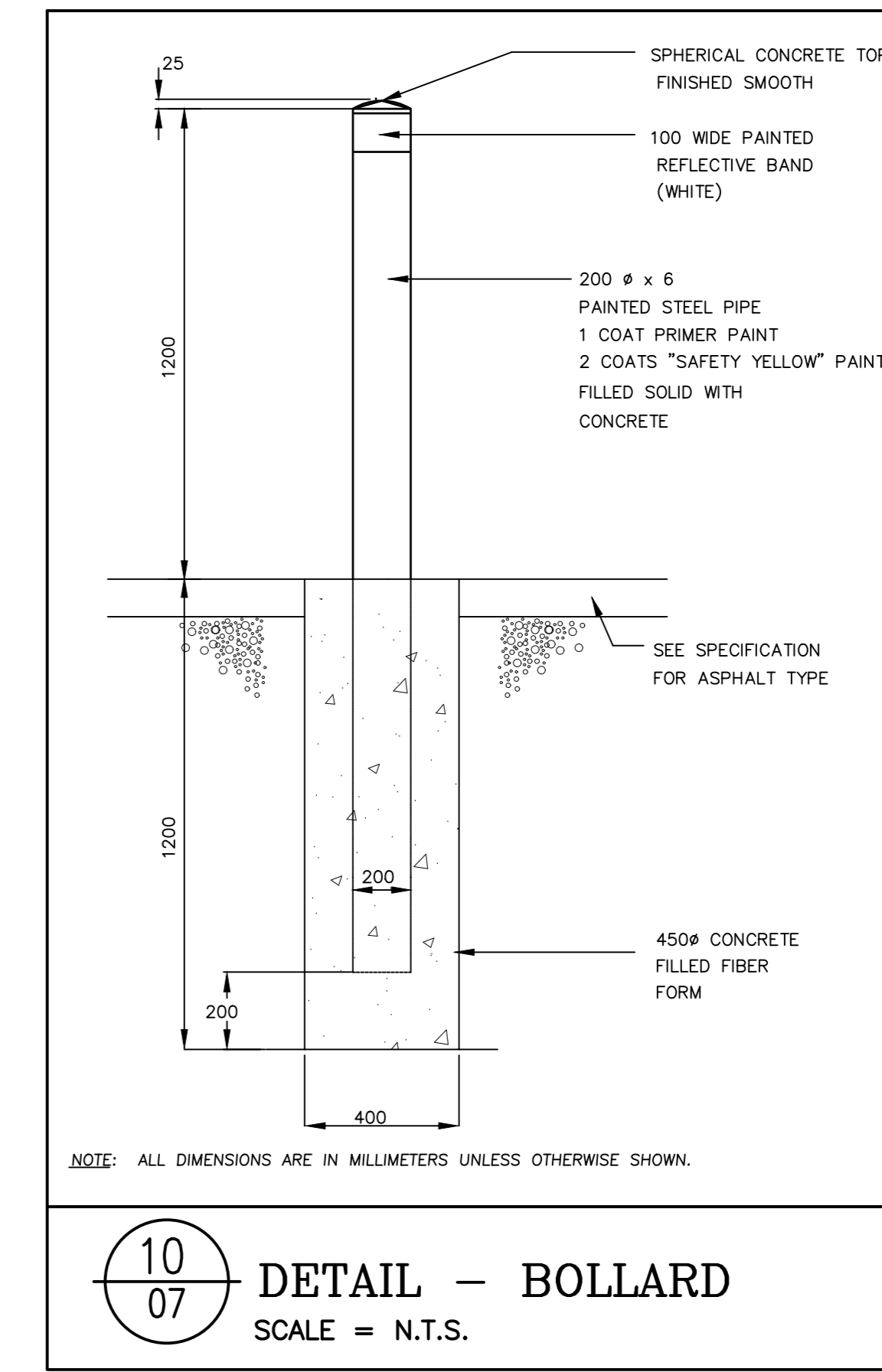
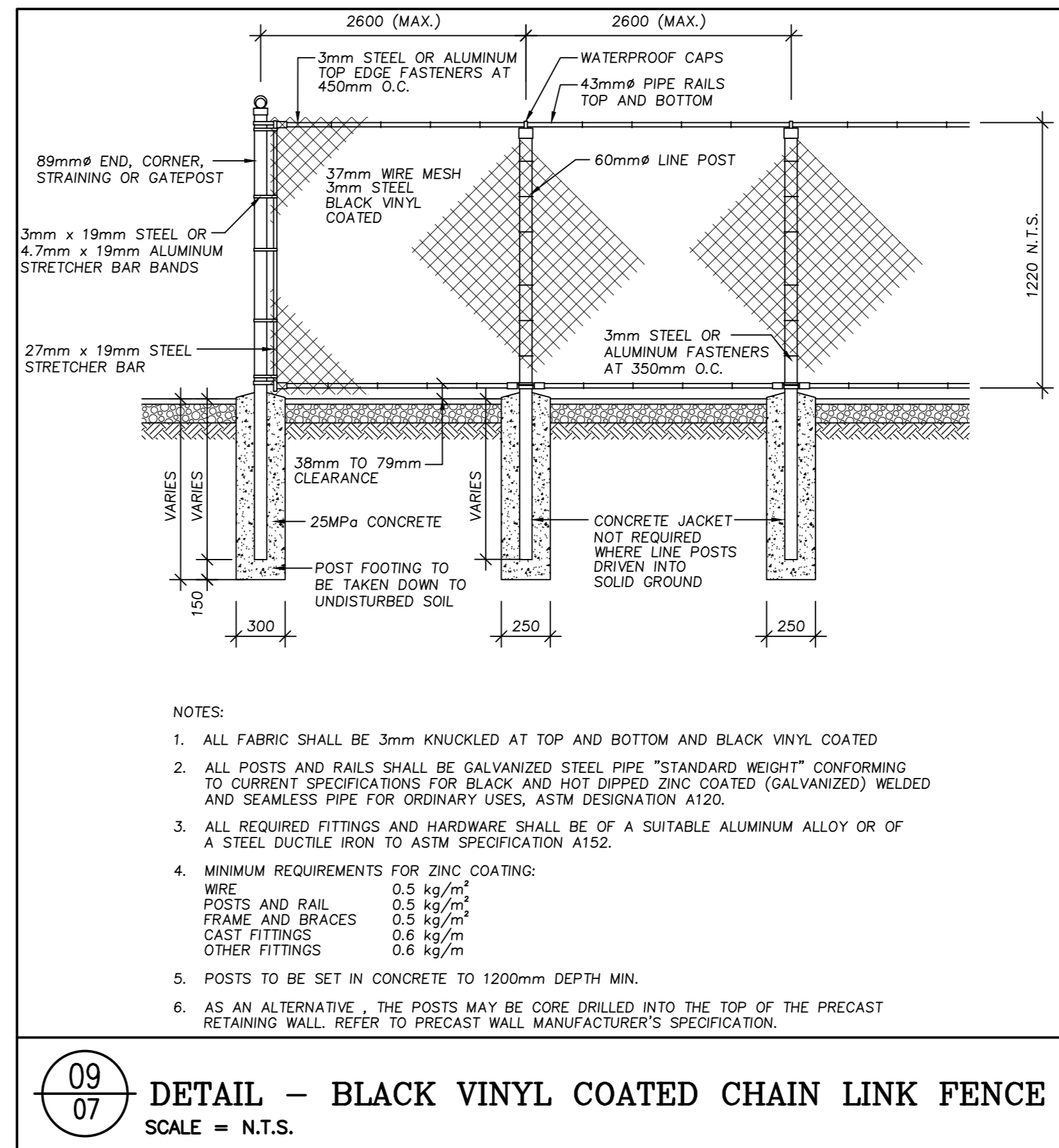
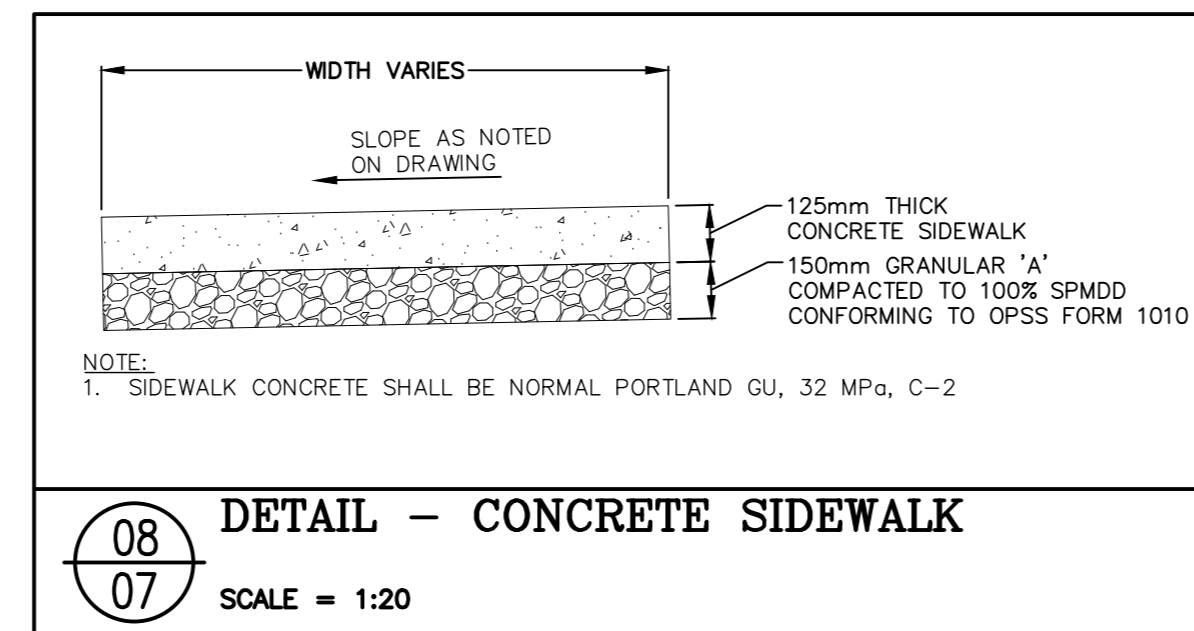
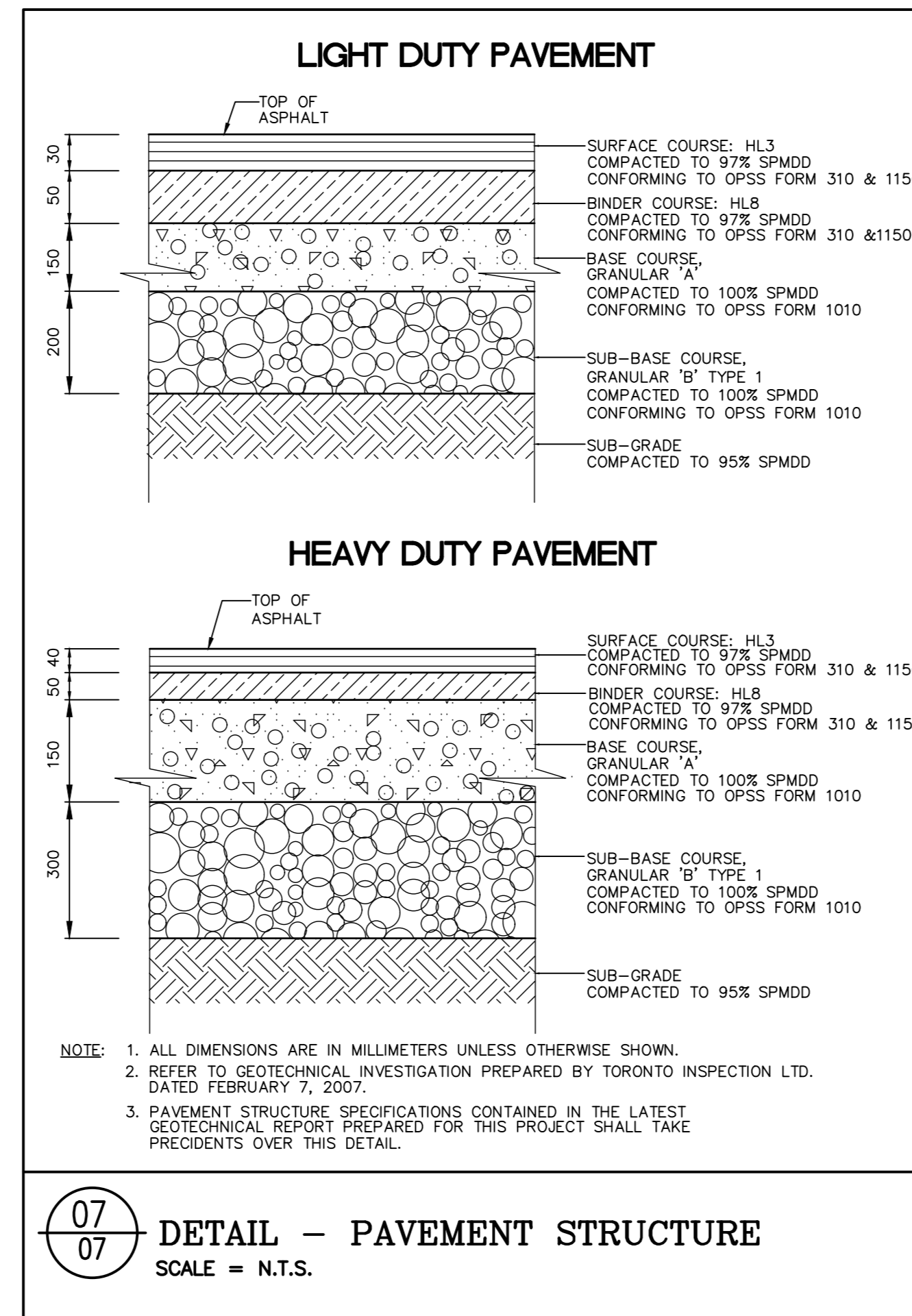
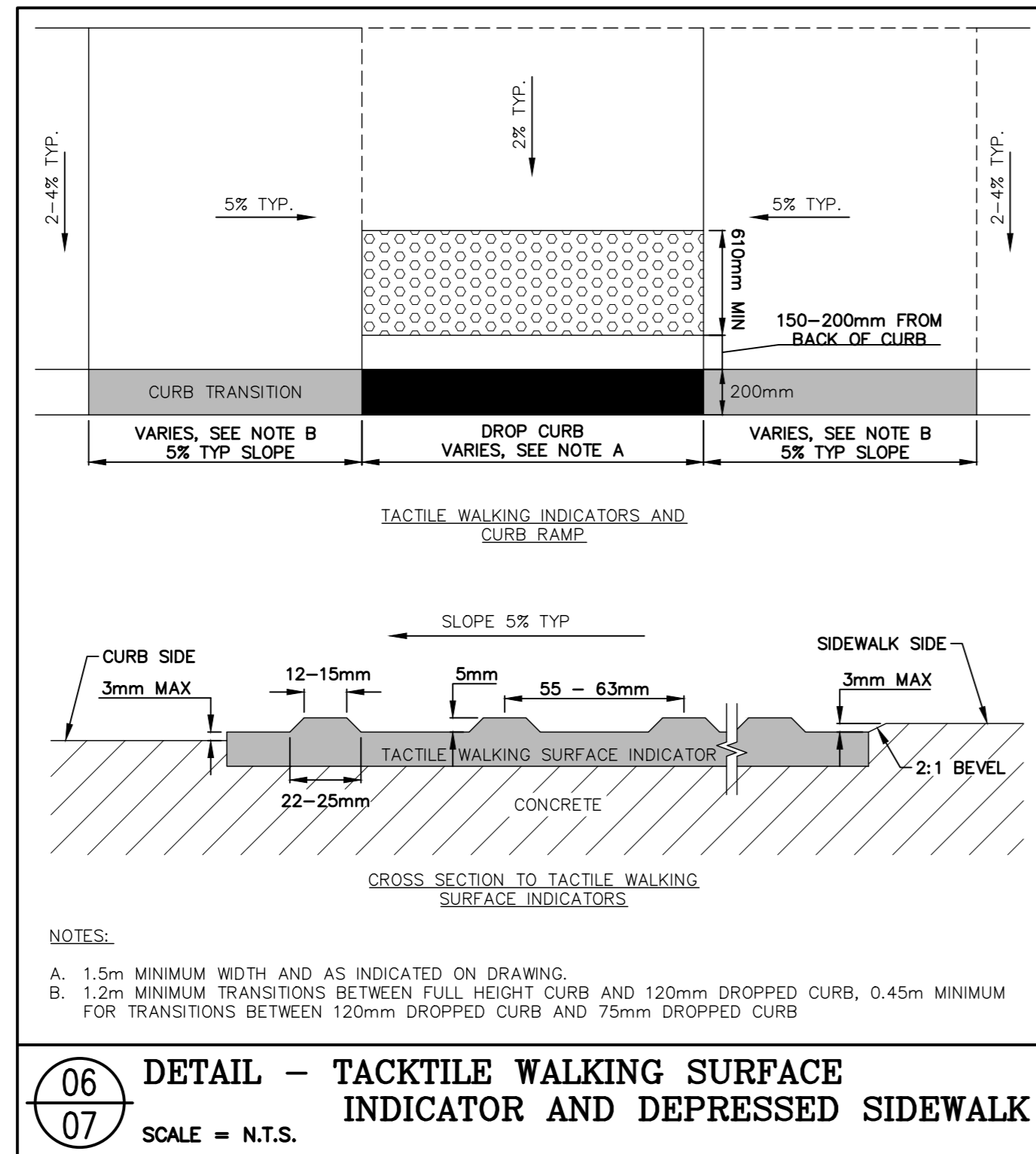
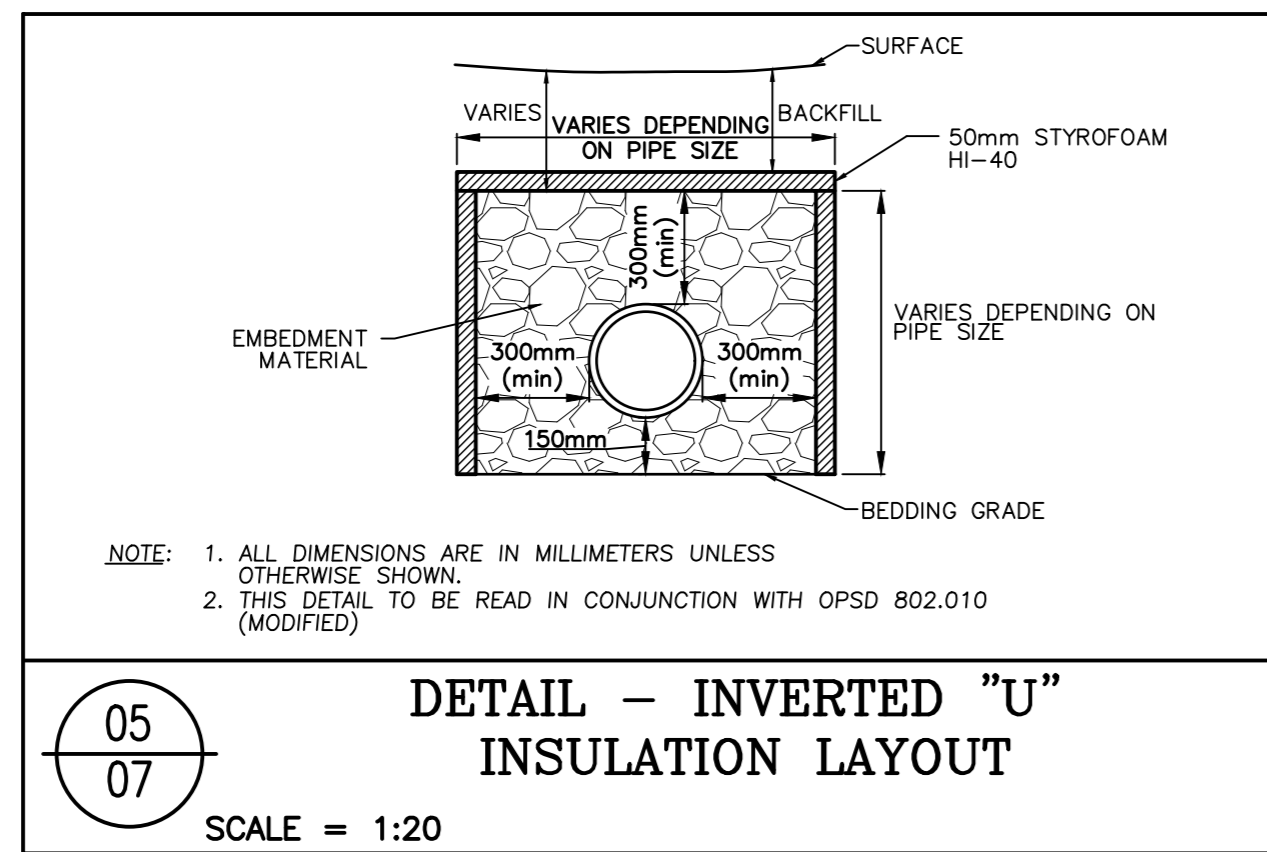
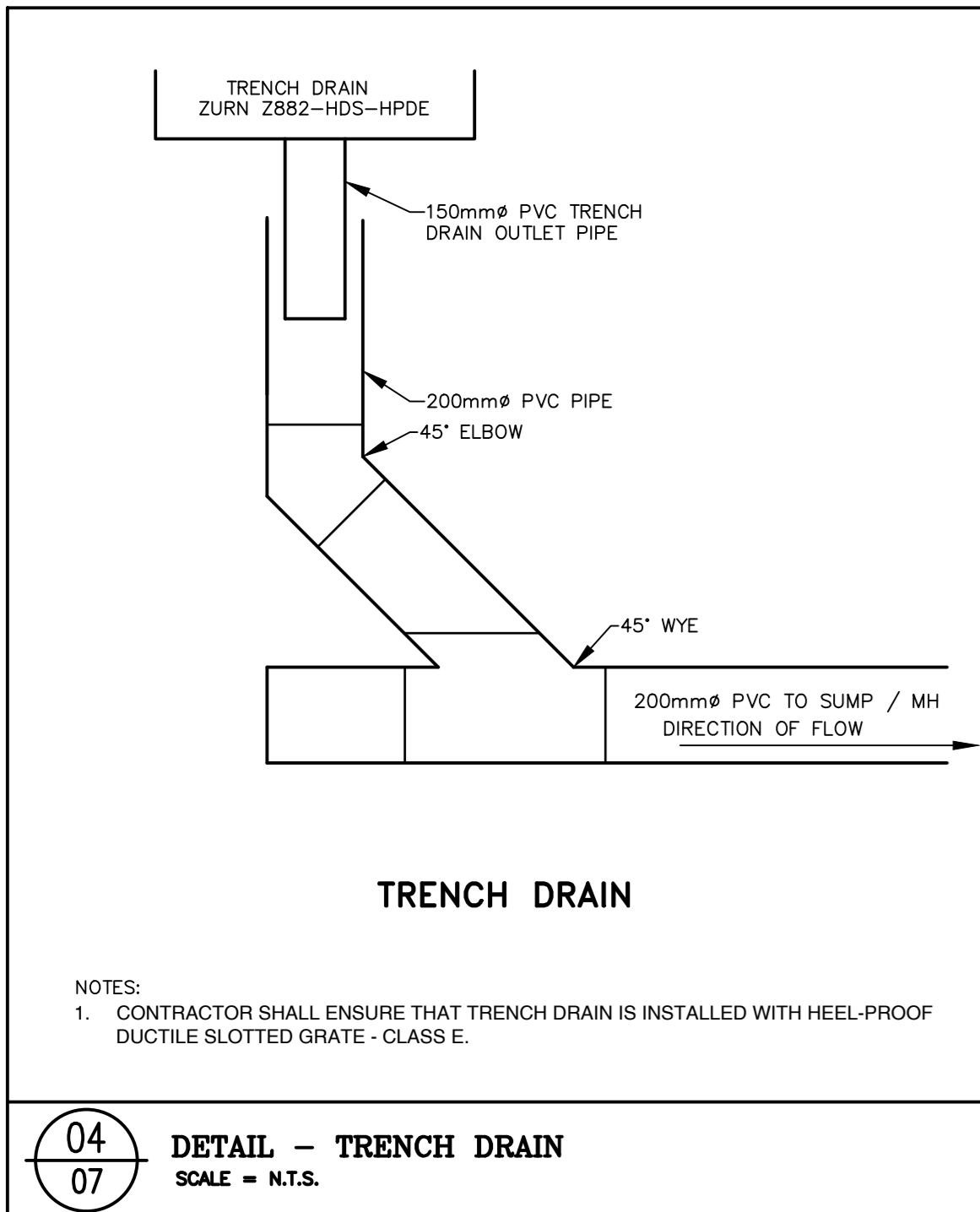
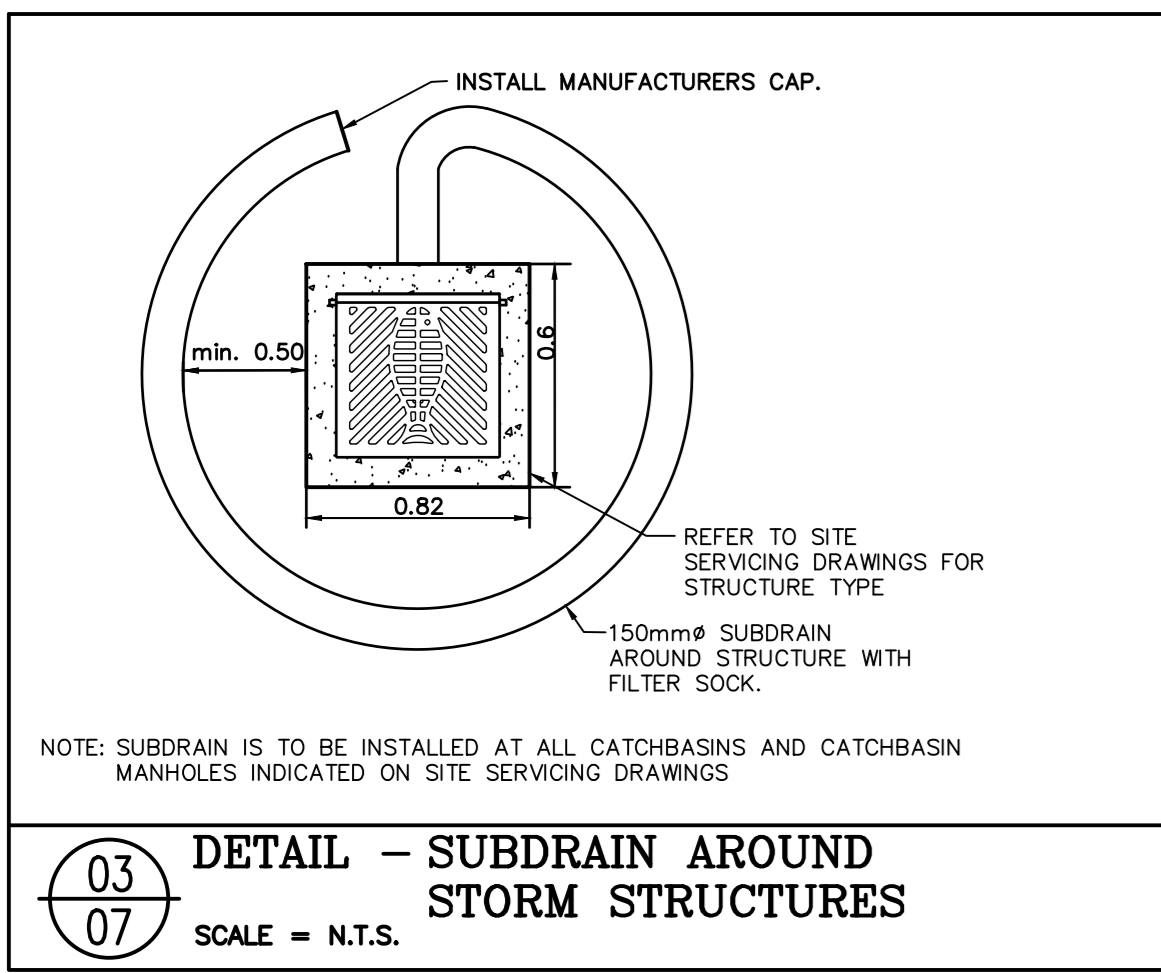
WILLS

D.M. Wills Associates Limited
 153 Johnson Drive
 Peterborough, Ontario
 Canada K9J 0B9
 P: 705.742.2297
 F: 705.741.3368
 E: wills@wills.com

Project Name/Location
**545 KING STREET EAST
 GOLDMANCO**
 COBOURG, ONTARIO

Drawing Title
SITE SERVING PLAN

Drawn By: K.W.P. Scale: 1:250 Ver: --
 Designed By: J.D.F. Plot Date: 2/28/19
 Checked By: J.D.F. Project No: 18-10846
 Engineer: --- Day File No: 10846 - SS 06



B01 - 88.044
BENCHMARK No. 50, COBourg, CROSS CUT ON DIAMOND HEAD SQ. BASE AT 210 WILLMOTT STREET

KEY
TRUE NORTH
COUNTY ROAD 2 / KING STREET
SITE
BENCH MARK

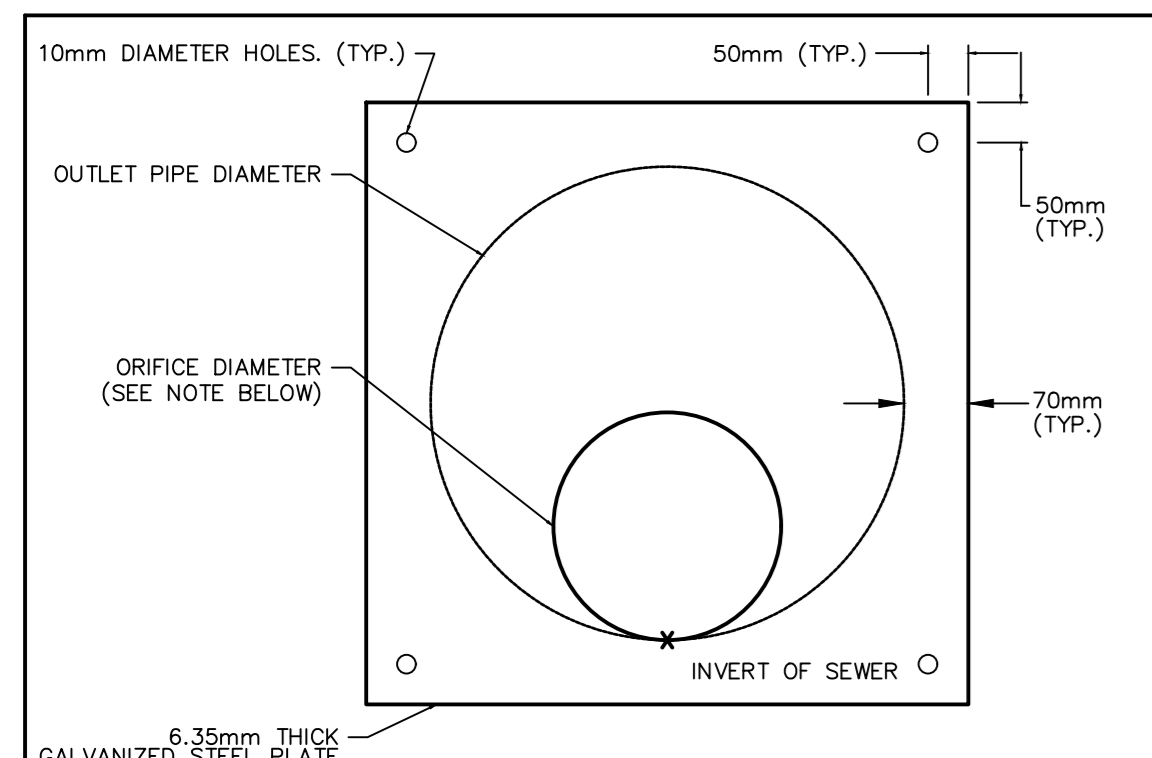
No.	Revisions	Date
1	SPA 1st SUBMISSION	16/11/18

METRIC Dimensions are in METRES unless otherwise shown.
LEGEND MILLIMETERS unless otherwise shown.
TO BE READ IN CONJUNCTION WITH OPS 100 SERIES

No.	Description	Date
1	SPA 1st SUBMISSION	16/11/18

10
07

DETAIL - BOLLARD
SCALE = N.T.S.



- NOTE**
- ORIFICE PLATE IS TO BE INSTALLED ON OUTLET (DOWNSTREAM) PIPE IN DESIGNATED STORM SEWER STRUCTURE.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
 - PROVIDE A NEOPRENE GASKET BETWEEN ORIFICE PLATE AND STRUCTURE WALL FOR A WATER TIGHT SEAL.
- CEMH - 02 - 75mm DIA. ORIFICE
MH - 04 - 180mm DIA. ORIFICE

13
08 **DETAIL - ORIFICE PLATE**
SCALE = N.T.S.

BM1 - 88.044
BENCHMARK No. 30, COBOURG, CROSS CUT ON DIAMOND HEAD BOX BASE AT 210 WILLMOTT STREET

TRUE NORTH

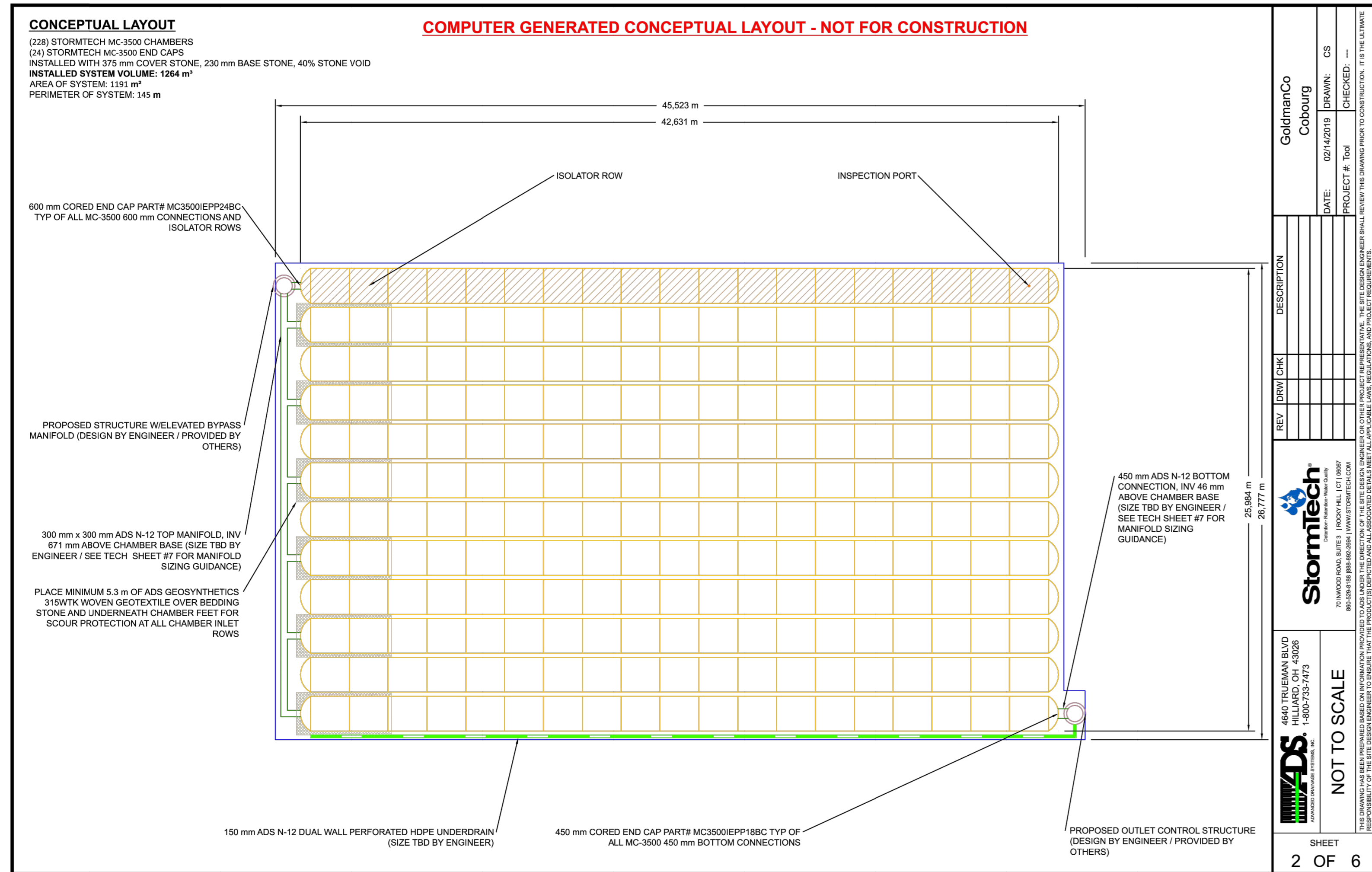
KEY PLAN

REVISIONS

No.	Description	Date
1	SPA 1st SUBMISSION	18/11/18

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown TO BE READ IN CONJUNCTION WITH SP2-100-0005

LEGEND



ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT	
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED SURFACE. ABOVE NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEERS PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	PREPARE PER SITE DESIGN ENGINEERS PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.	
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <30% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M44 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ² 3, 3S7, 4, 4F, 5, 5S, 5F, 6, 6F, 6L, 7, 7S, 8, 8L, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYER IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL, AND 90% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4" & 2" (20-50 mm).	AASHTO M43 ³ 3-4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4" & 2" (20-50 mm).	AASHTO M43 ³ 3-4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ¹

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

NOTES:

- MC-3500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEERS DISCRETION.

3 SHEET **OF** **6**

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Project Name/Location
**545 KING STREET EAST
GOLDMANCO
COBOURG, ONTARIO**

Drawing Title
**STORM WATER MANAGEMENT
DETAILS**

Drawn By: K.W.P. SCALE: Horiz. = Vert. =
Designed By: K.W.P. Plot Date: 2/28/19
Checked By: --- Project No.: 18-10846 Sht. No.:
Engineer: --- Draw File No.: 10846 - GNDT 08