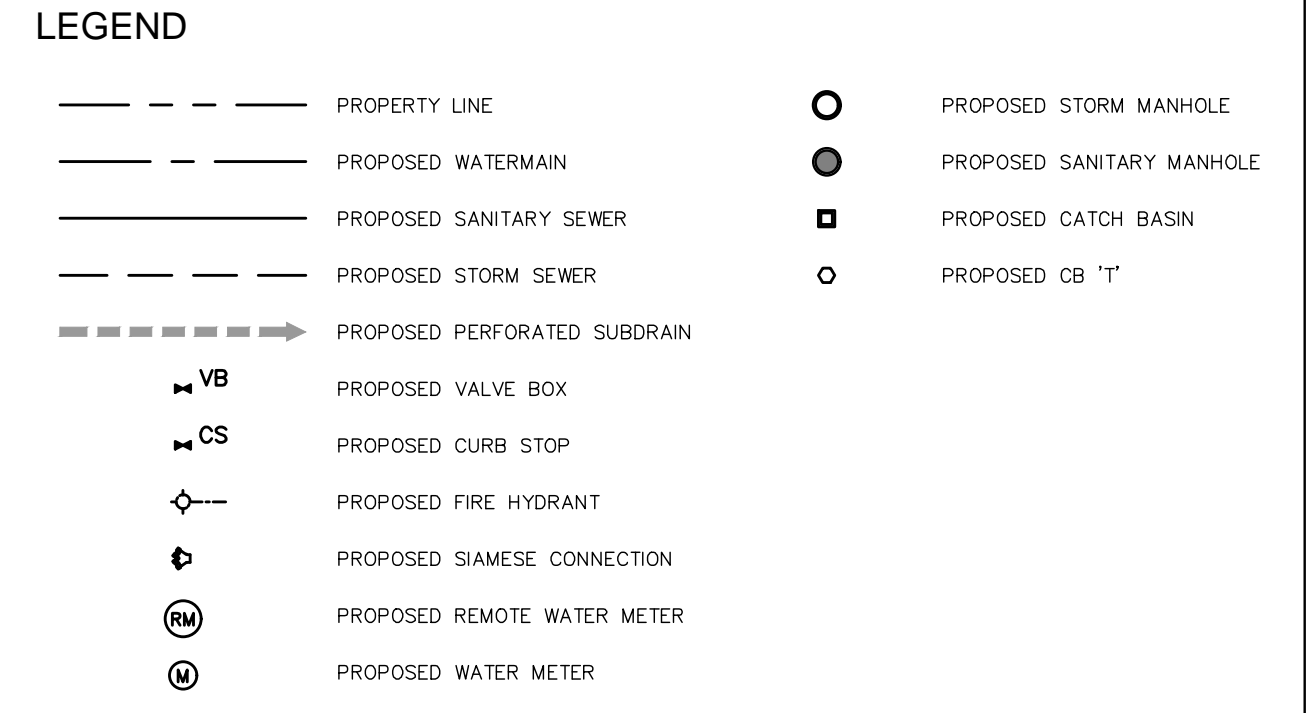
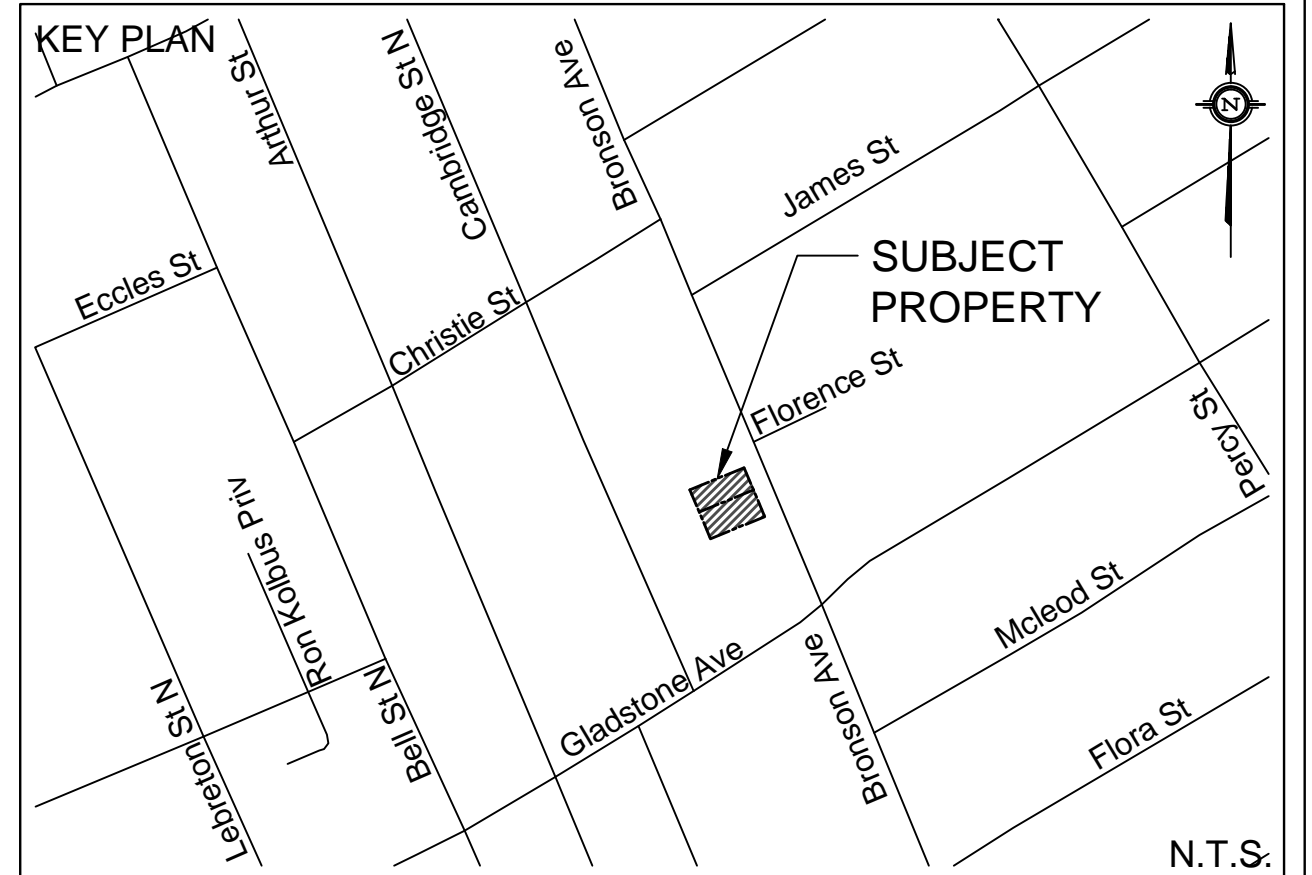


PIPE CROSSING #	PIPE INVERT	PIPE OBVERT	SEPARATION (m)
1	WTR INV=66.43	EX. COMBINED SEWER OBV=66.13	0.30
2	WTR INV=66.77	EX. WTR OBV=66.47	0.30
3	SAN INV=66.97	EX. WTR OBV=66.47	0.50
4	STM INV=66.92	EX. WTR OBV=66.42	0.50



EXISTING UNDERGROUND SERVICES AND UTILITY LOCATIONS DERIVED FROM THE BEST AVAILABLE DATA, AS-CONSTRUCTED DRAWINGS, UTILITY DRAWINGS AND INFRASTRUCTURE MAPPING PROVIDED BY THE CITY OF OTTAWA.

CONTRACTOR TO CONFIRM ELEVATIONS AND LOCATIONS OF EXISTING UNDERGROUND SERVICES AND UTILITIES WITHIN THE RIGHT OF WAY PRIOR TO INSTALLATION OF SITE SERVICING INFRASTRUCTURE.

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT THE FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION
TOPOGRAPHIC INFORMATION PROVIDED BY ANNIS O'SULLIVAN, VOLLEBECK LTD.
PROJ. NO. 19675-17
DATED OCTOBER 31, 2017

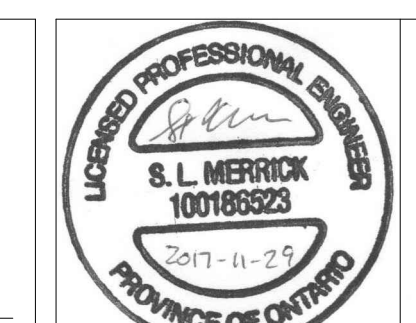
SITE PLAN INFORMATION
SITE PLAN PROVIDED BY PROJECT STUDIO
PROJ. NO. 1723
DATED NOVEMBER 15, 2017

GEOTECHNICAL STUDY
GEOTECHNICAL RECOMMENDATIONS PROVIDED BY PATERSON GROUP
PROJ. NO. PG4303-1
DATED NOVEMBER 24, 2017

SITE SERVICING AND STORMWATER MANAGEMENT STUDY
SERVICING AND STORMWATER MANAGEMENT RECOMMENDATIONS PROVIDED BY DSEL
PROJ. NO. 17-968
DATED NOVEMBER 2017

BENCH MARK
SITE BENCHMARK LOCATED AT TOP OF SPINDLE
ELEV=70.51m

No.	H/J/P	DATE	DESCRIPTION
1	HJP	17.11.29	ISSUED FOR MUNICIPAL REVIEW
	BY	YYMM.DD	DESCRIPTION



PROJECT No. 17-968

SITE SERVICING PLAN
440-444 BRONSON AVENUE

© DSEL

TC UNITED GROUP 800 Industrial Avenue, Unit 9
Ottawa, Ontario, K1G 4B8
Tel. (613) 265-6584

DSEL 120 Ibor Road Unit 103
Stittsville, Ontario, K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

DRAWN BY: A.W.T.	CHECKED BY: S.L.M.	DRAWING NO. SSP-1	SHEET NO. 3 of 4
DESIGNED BY: B.N.C.	CHECKED BY: A.D.F.		
SCALE: 1:150	DATE: NOVEMBER 2017		

GENERAL NOTES

- ALL WORKS AND MATERIALS SHALL CONFORM TO THE LATEST REVISION OF THE STANDARDS AND SPECIFICATIONS FOR THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), WHERE APPLICABLE. LOCAL UTILITY STANDARDS AND MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY WHERE REQUIRED.
- THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTOR TO CONFIRM UTILITY LOCATIONS AND NOTIFY ENGINEER OF POSSIBLE CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT THE CONTRACTOR'S EXPENSE.
- ANY AREAS BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE.
- RELOCATION OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER AT THE EXPENSE OF THE DEVELOPER.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE "CONTRACTOR" AS DEFINED IN THE ACT.
- ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE MINISTRY OF TRANSPORTATION OF ONTARIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PER LATEST AMENDMENT.
- THE CONTRACTOR IS ADVISED THAT WORKS BY OTHERS MAY BE ONGOING DURING THE PERIOD OF THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES TO PREVENT CONFLICTS.
- ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE.
- THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS PRIOR WRITTEN APPROVAL IS RECEIVED FROM THE ENGINEER.
- ALL CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOLOGICAL REPORT.
- FOR DETAILS RELATING TO STORMWATER MANAGEMENT AND ROOF DRAINAGE REFER TO THE SITE SERVICING AND STORMWATER MANAGEMENT REPORT PREPARED BY DSEL.
- ALL SEWERS CONSTRUCTED WITH GRADES LESS THAN 1.0% SHALL BE INSTALLED USING LASER ALIGNMENT AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED AND TO BEAR THE COST OF THE SAME.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL BEDDING, OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH AS SPECIFIED BY OPSS IS EXCEEDED.
- ALL PIPE / CULVERT SECTION SIZES REFER TO INSIDE DIMENSIONS.
- SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE CITY OF OTTAWA MUST BE NOTIFIED IMMEDIATELY.
- ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REVIEW WITH CONTRACT ADMINISTRATOR AND THE CITY OF OTTAWA PRIOR TO ANY TREE CUTTING / REMOVAL.
- DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL SITE PLAN.
- THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER ONE SET OF AS CONSTRUCTED SITE SERVICING AND GRADING DRAWINGS.
- BENCHMARKS: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE SITE BENCHMARK(S) HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION DERIVED ON THIS PLAN.

WATERMAIN NOTES

- ALL WATERMAIN INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
- ALL PVC WATERMANS SHALL BE AWMA C-900 CLASS 150, SDR 18 OR APPROVED EQUIVALENT.
- WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17. UNLESS SPECIFIED OTHERWISE, BEDDING AND COVER MATERIAL SHALL BE AS SPECIFIED BY PROJECT GEOLOGICAL ENGINEER.
- ALL PVC WATERMANS SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TYPY OR RWJ TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STD. W-36.
- CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS PER CITY OF OTTAWA STD. W40 AND W42.
- VALVE BOXES SHALL BE INSTALLED PER CITY OF OTTAWA STD W24.
- WATERMAIN IN FILL AREAS TO BE INSTALLED WITH RESTRAINED JOINTS PER CITY OF OTTAWA STD. W25.5 AND W25.6.
- THRUST BLOCKING OF WATERMANS TO BE INSTALLED PER CITY OF OTTAWA STD. W25.1 AND W25.4.
- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS, BLOW-OFFS, AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN.
- WATERMAIN CROSSING OVER AND BELOW SEWERS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. W25.2 AND W25, RESPECTIVELY.
- WATER SERVICES ARE TO BE INSULATED PER CITY STD. W23 WHERE SEPARATION BETWEEN SERVICES AND MAINTENANCE HOLES ARE LESS THAN 24m.
- THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER / UTILITY IS 0.50m PER MOE GUIDELINES. FOR CROSSING UNDER SEWERS, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER MAIN PIPE SHALL BE MAINTAINED AT THE FRONT OF CROSSING TO ENSURE THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.
- ALL WATERMANS SHALL HAVE A MINIMUM COVER OR 2.4m, OTHERWISE THERMAL INSULATION IS REQUIRED AS PER STD DWG W22.
- GENERAL WATER PLANT TO UTILITY CLEARANCE AS PER STD DWG R20.
- FIRE HYDRANT INSTALLATION AS PER STD DWG W19. ALL BOTTOM OF HYDRANT FLANGE ELEVATIONS TO BE INSTALLED 0.10m ABOVE PROPOSED FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
- BUILDING SERVICE TO BE INSTALLED 1.0m OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED AND MUST BE RESTRAINED A MINIMUM OF 12m BACK FROM THE FRONT.
- ALL WATERMANS SHALL BE ELECTROSTATICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES UNLESS OTHERWISE DIRECTED. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED.
- ALL WATERMANS SHALL BE DISINFECTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES. ALL CHLORINATED WATER TO BE DISCHARGED AND PRETREATED TO DISCHARGE TO THE RECEIVING WATERCOURSE. DISCHARGED WATER MUST BE CONTROLLED TO ENSURE IT DOES NOT ADVERSELY AFFECT THE ENVIRONMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL MUNICIPAL AND/OR PROVINCIAL REQUIREMENTS ARE FOLLOWED.
- ALL WATERMAIN STUBS SHALL BE TERMINATED WITH A PLUG AND 50mm BLOW OFF UNLESS OTHERWISE NOTED.

SANITARY AND STORM SEWER NOTES

- GENERAL**
- LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.
 - CLAY SEALS TO BE INSTALLED AS PER CITY STANDARD DRAWING SB. THE SEALS SHOULD BE AT LEAST 1.5m LONG (IN THE TRENCH DIRECTION) AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. THE SEALS SHOULD EXTEND FROM THE FROST LINE AND FULLY PENETRATE THE BEDDING, SUB-BEDDING, AND COVER MATERIAL. THE BARBERS SHOULD COVER AND COMPACTED TO 95% AND COMPACTED BROWN SILTY CLAY PLACED IN MAXIMUM 25mm LIFTS AND COMPACTED TO A MINIMUM OF 95% SPMDD. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT 80m INTERVALS IN THE SERVICE TRENCHES IN THE SERVICE TRENCHES.
 - SERVICES TO BUILDINGS TO BE TERMINATED 1.0m FROM THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
 - ALL MAINTENANCE STRUCTURE AND CATCH BASIN EXCAVATIONS TO BE BACKFILLED WITH GRANULAR MATERIAL COMPACTED TO 98% STANDARD PROCTOR DENSITY, A MINIMUM OF 300mm AROUND STRUCTURES.
 - "MODULOC" OR APPROVED PRE-CAST MAINTENANCE STRUCTURE AND CATCH BASIN ADJUSTERS TO BE USED IN LIEU OF BRICKING. PARGE ADJUSTING UNITS ON THE OUTSIDE ONLY.
 - SAFETY PLATFORMS SHALL BE PER OPSS 404.02.
 - DROP STRUCTURES SHALL BE IN ACCORDANCE WITH OPSS 1003.01 AND 1003.02, IF APPLICABLE.
 - THE CONTRACTOR IS TO PROVIDE CITY CAMERA INSPECTIONS OF ALL SEWERS, INCLUDING PICTORIAL REPORT, ONE (1) CD COPY AND TWO (2) VIDEO RECORDINGS IN A FORMAT ACCEPTABLE TO THE ENGINEER. ALL SEWERS ARE TO BE FLUSHED PRIOR TO CAMERA INSPECTION. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS AND NECESSARY REPAIRS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER.
 - CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSS 410 AND OPSS 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF WEAR COURSE ASPHALT.
 - FROST PROTECTION STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. 56 AND 57, CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE.
 - SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. 56 AND 57, CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE.
 - SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. 524 AND 525.
 - SANITARY MAINTENANCE STRUCTURES SHALL BE BENCHMARKED PER OPSS 701.021.
- SANITARY**
- ALL SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
 - ALL SANITARY GRAVITY SEWER SHALL BE PVC 305 OR IPX "RING-TITE" (OR APPROVED EQUIVALENT) PER CSA STANDARD B182.2 OR LATEST AMENDMENT, UNLESS SPECIFIED OTHERWISE.
 - EXISTING MAINTENANCE STRUCTURES TO BE RE-BENCHMARKED WHERE A NEW CONNECTION IS MADE.
 - SANITARY GRAVITY SEWER TRENCH AND BEDDING SHALL BE PER CITY OF OTTAWA STD. 56 AND 57, CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE.
 - SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. 56 AND 57, CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE.
 - SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. 524 AND 525.
- STORM**
- REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2, OR LATEST AMENDMENT. ALL NON-REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.1, OR LATEST AMENDMENT. PIPE SHALL BE JOINED WITH STD. RUBBER GASKETS AS PER CSA A257.2, OR LATEST AMENDMENT.
 - ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. 56 AND 57 CLASS 'B' UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOLOGICAL ENGINEER.
 - ALL PVC STORM SEWERS ARE TO BE GOR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT UNLESS OTHERWISE SPECIFIED.
 - CATCH BASINS SHALL BE IN ACCORDANCE WITH OPSS 705.010.
 - CATCH BASIN LEADS SHALL BE 2000m DIA. AT 1% SLOPE (MIN) UNLESS SPECIFIED OTHERWISE.
 - ALL CATCH BASINS SHALL HAVE 600mm SAMPS, UNLESS SPECIFIED OTHERWISE.
 - ALL CATCH BASIN LEAD INVERTS TO BE 1.5m BELOW FINISHED GRADE UNLESS SPECIFIED OTHERWISE.
 - THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR IS REQUIRED TO PROVIDE AND SHALL BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
 - PERFORATED SUBDRAIN FOR ROAD AND PARKING LOT CATCH BASIN SHALL BE INSTALLED PER CITY STD R1 AND GEOLOGICAL RECOMMENDATIONS UNLESS OTHERWISE NOTED.
 - PERFORATED SUBDRAIN FOR REAR YARD AND LANDSCAPING APPLICATIONS SHALL BE INSTALLED PER CITY STD S29, S30, AND S31, WHERE APPLICABLE.
 - RP-RAP TREATMENT FOR SEWER AND CULVERT OUTLETS PER OPSS 810.010.
 - ALL STORM SEWERS / CULVERTS TO BE INSTALLED WITH FROST TREATMENT PER OPSS 803.031 WHERE APPLICABLE.
 - STORM MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD 529 AND 524.1, UNLESS OTHERWISE NOTED.
 - CATCH BASIN FRAME AND COVER SHALL BE PER OPSS 400.02 AND CITY STD S19.1, UNLESS OTHERWISE NOTED.