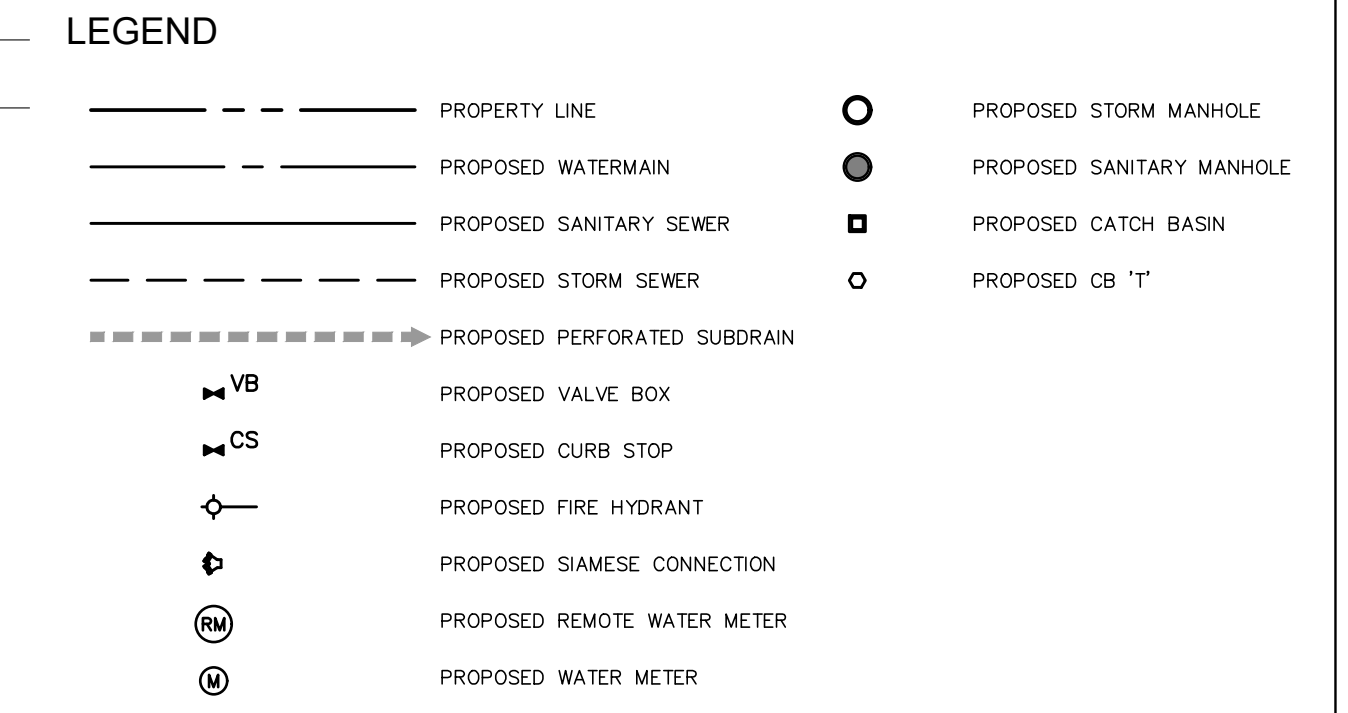
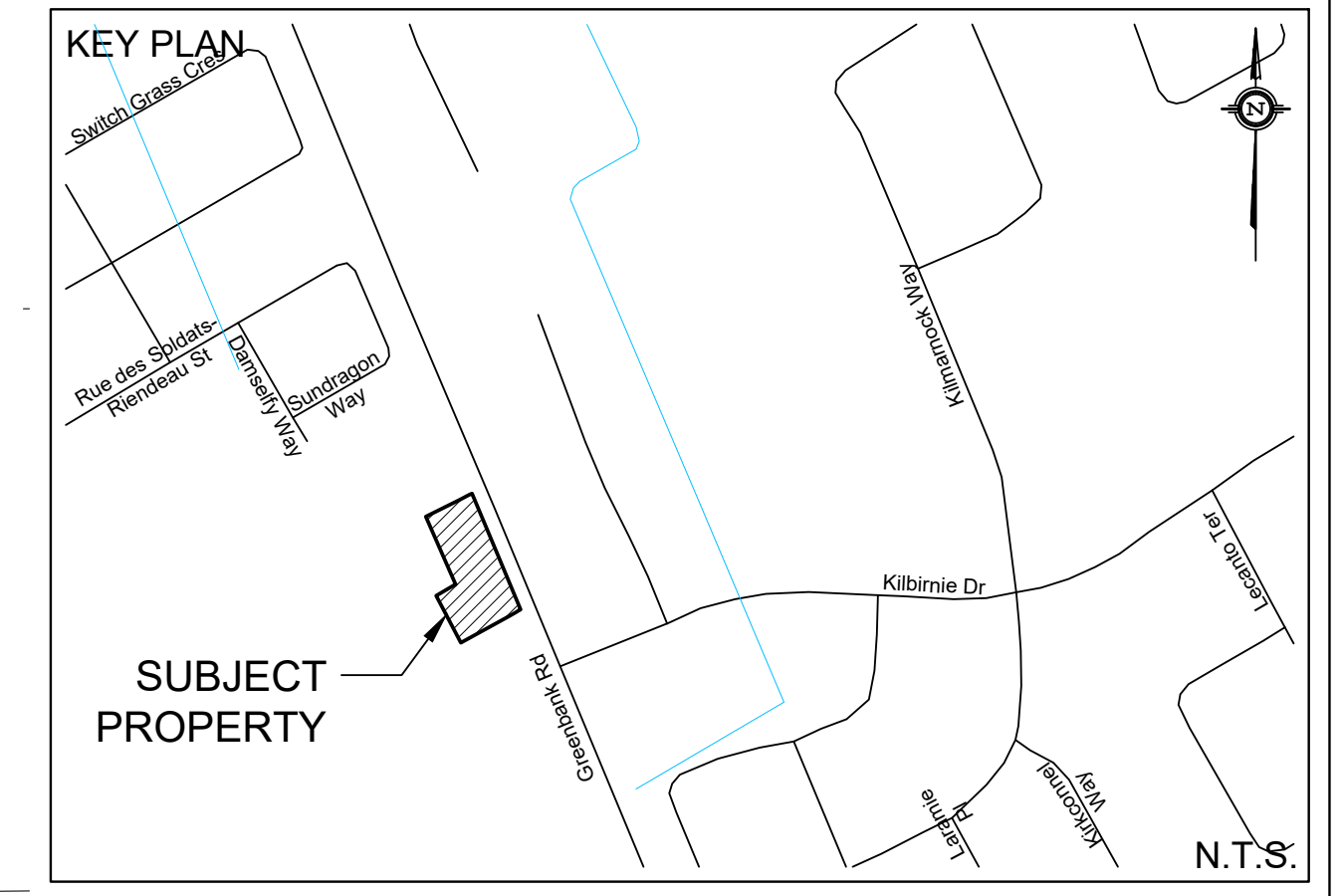
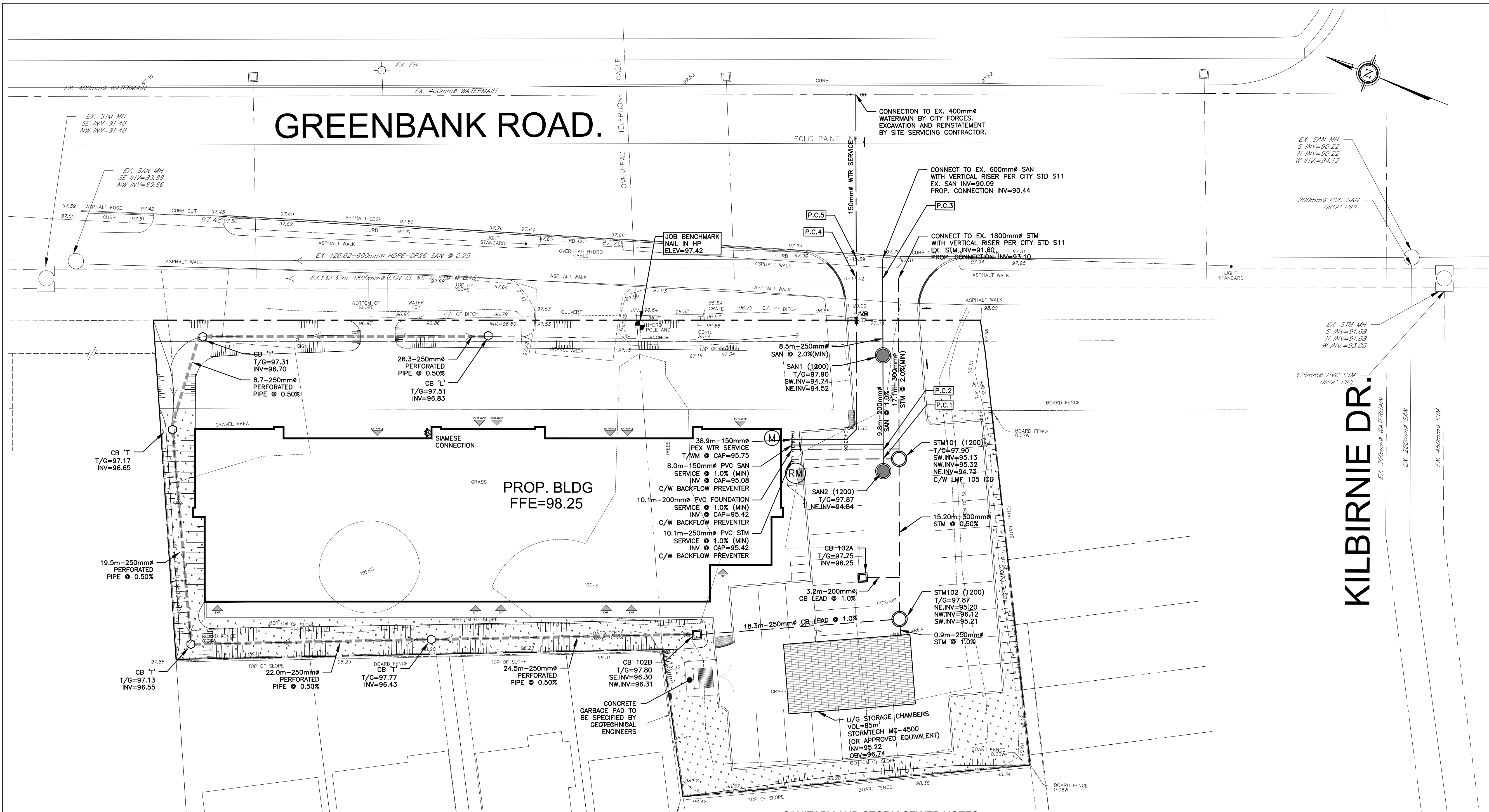


GREENBANK ROAD.



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 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 J.D. BARNES
PROJ. NO. 18-1060-057-00TOPO
DATED OCTOBER 09, 2018

SITE PLAN INFORMATION
SITE PLAN PROVIDED BY S.J. LAWRENCE ARCHITECT INCORPORATED
PROJ. NO. SL-921-18
DATED SEPTEMBER 19, 2019

GEOTECHNICAL RECOMMENDATION
GEOTECHNICAL RECOMMENDATIONS PROVIDED BY PATTERSON GROUP
DATED DECEMBER 11, 2018

SITE SERVICING AND STORMWATER MANAGEMENT STUDY
SERVICING AND STORMWATER MANAGEMENT RECOMMENDATIONS PROVIDED BY DSEL
PROJ. NO. 18-1060
DATED OCTOBER 2019

BENCH MARK
NAIL ON HP LOCATED ON WEST SIDE OF GREENBANK ROAD ADJACENT TO SUBJECT PROPERTY
ELEV=97.42

- ### 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 (SPSS), 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 EXISTING 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 "CONSTRUCTOR" AS DEFINED IN THE ACT.
 - ALL CONSTRUCTION SIGNALS MUST CONFORM TO THE MINISTRY OF TRANSPORTATION OF ONTARIO MANUAL OF UNIFORM TRAFFIC CONTROL SIGNALS FOR LATEST AMENDMENT.
 - ALL SEWERS CONSTRUCTED WITH GRADES LESS THAN 1.0% SHALL BE INSTALLED USING LASER ALIGNMENT AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
 - 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 GEOTECHNICAL REPORT.
 - FOR DETAILS RELATING TO STORMWATER MANAGEMENT AND ROOF DRAINAGE REFER TO THE SITE SERVICING AND STORMWATER MANAGEMENT REPORT PREPARED BY DSEL.
 - ALL WATERMANS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES UNLESS OTHERWISE SPECIFIED.
 - SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATELY.
 - ALL NECESSARY CLEANING 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 THE 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 (SPSS).
 - 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 SPECIFIED BY THE PROJECT GEOTECHNICAL ENGINEER.
 - ALL PVC WATERMANS SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TWJ 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 BLOTTING OF WATERMANS TO BE INSTALLED PER CITY OF OTTAWA STD. W25.3 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 2.4m.
 - 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 PIPE SHALL BE CENTERED AT THE POINT OF CROSSING TO ENSURE THAT THE JOINTS WILL BE CONSISTANT 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 0.12m ABOVE PROPOSED FINISHED GRADE AT HYDRANT. FIRE HYDRANT LOCATION AS PER STD DWG W19 UNLESS OTHERWISE NOTED.
 - BUILDING SERVICE TO BE CAPPED 1.0m OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED AND MUST BE RESTRAINED A MINIMUM OF 12m BACK FROM STUB.
 - ALL WATERMANS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES UNLESS OTHERWISE SPECIFIED. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED.
 - ALL WATERMANS SHALL BE BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES. ALL CHLORINATED WATER TO BE DISCHARGED AND PRE-TREATED TO ACCEPTABLE LEVELS PRIOR TO DISCHARGE. ALL DISCHARGED WATER MUST BE CONTROLLED AND TREATED SO AS NOT TO ADVERSELY EFFECT 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 SR. 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 FRONT LINE AND FULLY PENETRATE THE BEDDING, SUB-BEDDING, AND COVER MATERIAL. THE BARRIERS SHOULD CONSIST OF RELATIVELY DRY AND COMPACTABLE BEDDING SILTY CLAY PLACED IN MAXIMUM 250mm LIFTS AND COMPACTED TO A MINIMUM OF 98% PROCTOR. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT 60m INTERVALS 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.
 - "NOZZLE" 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 OPSD 404-02.
 - DROP STRUCTURES SHALL BE IN ACCORDANCE WITH OPSD 1003.01 AND 1003.02, IF APPLICABLE.
 - THE CONTRACTOR IS TO PROVIDE CCTV 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 NEAR 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 OPSD 410 AND OPSD 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 COMMENT AT NEAR COURSE ASPHALT.
 - FROST PROTECTION RECOMMENDATIONS FOR STORM SEWERS WITH LESS THAN 1.5m AND SANITARY SEWERS WITH LESS THAN 1.8m FROM GROUND SURFACE TO PIPE OVERTOP TO BE PROVIDED BY GEOTECHNICAL ENGINEER.
 - ALL PROPOSED SANITARY AND FOUNDATION DRAIN BACKFLOW VALVES TO BE INSTALLED PER CITY STANDARD DRAWINGS S14, S14.1, S14.2.
 - SEWER CONNECTIONS TO BE MADE ABOVE THE SPRINGLINE OF THE SEWERMAN AS PER CITY STD DWG S15 & S11.1.
- #### 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 (SPSS).
 - ALL SANITARY GRAVITY SEWER SHALL BE PVC SR 35, IPEX "RING-TITE" (OR APPROVED EQUIVALENT) PER CSA STANDARD B182.2 OR LATEST AMENDMENT, UNLESS SPECIFIED OTHERWISE.
 - EXISTING MAINTENANCE STRUCTURES TO BE RE-BENCHED WHERE A NEW CONNECTION IS MADE.
 - SANITARY GRAVITY SEWER TRENCH AND BEDDING SHALL BE PER CITY OF OTTAWA STD. S6 AND S7 CLASS "B" BEDDING, UNLESS SPECIFIED OTHERWISE.
 - SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. S24 AND S25.
 - SANITARY MAINTENANCE STRUCTURES SHALL BE BENCHMARKED PER OPSD 701.021.
- #### STORM
- ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2, OR LATEST AMENDMENT, OR LATEST AMENDMENT. PIPE SHALL BE JOINED WITH STD. RUBBER GASKETS AS PER CSA A257.3, OR LATEST AMENDMENT.
 - ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. S6 AND S7 CLASS "B" UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
 - ALL PVC STORM SEWERS ARE TO BE SR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
 - CATCH BASINS SHALL BE IN ACCORDANCE WITH OPSD 705.010.
 - CATCH BASIN LEADS SHALL BE 200MM DIA. AT 1% SLOPE (MIN) UNLESS SPECIFIED OTHERWISE.
 - ALL CATCH BASINS SHALL HAVE 600MM SLUMPS, 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 GEOTECHNICAL RECOMMENDATIONS UNLESS OTHERWISE NOTED.
 - PERFORATED SUBDRAIN FOR REAR YARD AND LANDSCAPING APPLICATIONS SHALL BE INSTALLED PER CITY STD S28, S30, AND S31, WHERE APPLICABLE.
 - RIP-RAP TREATMENT FOR SEWER AND CULVERT OUTLETS PER OPSD B10.010.
 - ALL STORM SEWERS / CULVERTS TO BE INSTALLED WITH FROST TREATMENT PER OPSD 803.031 WHERE APPLICABLE.
 - STORM MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD S25 AND S24.1, UNLESS OTHERWISE NOTED.
 - CATCH BASIN FRAME AND COVER SHALL BE PER OPSD 400.02 AND CITY STD S19.1, UNLESS OTHERWISE NOTED.

ELEVATION	HEAD (m)	RELEASE RATE (L/s)
ORIFICE INVERT	94.73	0
STORAGE PIPE	96.72	1.99
MAX PONDING	97.33	2.60

STATION	GROUND ELEVATION	TOP OF WATERMAIN	DESCRIPTION
0+00.00	97.57	95.17	CONNECTION TO EXISTING 400mm WM
0+15.59	97.78	95.38	WTR CROSSING EX STM CLEARANCE PROVIDED=1.50m
0+20.00	97.82	95.42	
0+21.37	97.79	95.39	WTR CROSSING SAN CLEARANCE PROVIDED=1.86m
0+31.65	97.93	95.53	45° HORIZONTAL BEND
0+33.06	97.93	95.53	45° HORIZONTAL BEND
0+38.21	98.15	95.75	SERVICE CAPPED

LOCATION	PIPE INV	PIPE OVB	SEPARATION
P.C.1	STM SERV INV = 95.33	SAN OVB = 95.03	0.30m
P.C.2	STM SERV INV = 95.33	SAN OVB = 95.03	0.30m
P.C.3	SAN INV = 94.39	EX STM OVB = 93.40	0.99m
P.C.4	WM INV = 95.25	EX STM OVB = 93.39	1.86m
P.C.5	WM INV = 95.23	EX SAN OVB = 95.08	4.50m

- ### EXISTING SERVICES NOTE :
- CONTRACTOR TO LOCATE EXISTING SERVICES.
 - STORM AND SANITARY SERVICES TO BE CAPPED AT PROPERTY LINE.
 - WATER SERVICES TO BE BLANKED AT MAIN BY CITY FORCES.
 - EXCAVATION, BACKFILLING, AND REINSTATEMENT BY CONTRACTOR.

- ### WATER SERVICES NOTE:
- CONNECTION TO EXISTING 400mm WATER MAIN BY CITY FORCES. EXCAVATION, BACKFILLING AND REINSTATEMENT BY CONTRACTOR.

PROJECT No18-1060

SITE SERVICING PLAN
3802/3812 GREENBANK ROAD © DSEL

JACK UPPAL Greenbank Place Unit 4-3101 Strandherd Drive
Ottawa, ON K2G 4R9
Tel. (613) 220-6006

DSEL david schaeffer engineering ltd
120 Iber 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. SHEET NO.
DESIGNED BY: B.N.C. CHECKED BY: R.D.F.
SCALE: 1:200 DATE: DECEMBER 2018 **SSP-1** 3 of 4

REVIEWED BY: _____