

**LEGEND**

	EXISTING ELEVATION
	PROPOSED/EXISTING ELEVATIONS
	DRAINAGE SLOPE
	EXISTING DRAINAGE
	WATERMAIN
	STORM SEWER
	SANITARY SEWER
	CENTRELINE OF ROAD
	EXISTING FENCE
	TOP OF SLOPE
	PROPERTY LINE
	SILT FENCE
	OVERHEAD WIRE
	TEMPORARY BENCHMARK
	EXISTING UTILITY POLE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	PROPOSED FIRE DEPARTMENT CONNECTION
	WATER METER
	REMOTE WATER METER
	PROPOSED WATER VALVE
	EXISTING STORM MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING CATCH BASIN
	PROPOSED STORM MANHOLE
	PROPOSED SANITARY MANHOLE
	PROPOSED CATCH BASIN
	PROPOSED SCUPPER LOCATION
	PROPOSED WEIR CONTROL ROOF DRAIN

**WATERMAIN NOTES:**

- CITY TO SUPPLY, INSTALL & DISINFECT THE WATER SERVICE. CONTRACTOR TO EXCAVATE, BACKFILL, AND REINSTATE THE ROADWAY AS PER STD DWG R10.
- SPECIFICATIONS:
 

ITEM	SPEC. No.	City Std. Dwg. No.
WATERMAIN BEDDING AND BACKFILL	OPSD 802.010/802.031	W17
CATHODIC PROTECTION	OPSD 1109.010	W40
PRESSURE TESTING	AWWA C-605-5	
CHLORINATION	AWWA C-651-05	
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. WHERE LESS THAN 2.4m COVER, THERMAL INSULATION IS TO BE PROVIDED AS PER CITY STD DWG W22 (In shallow trenches, W23 (At open structures).
- A MINIMUM OF 0.5m VERTICAL CLEARANCE IS REQUIRED BETWEEN THE WATERMANS AND ALL UTILITIES AND SEWERS. IN LOCATIONS WHERE THIS IS NOT ACHIEVABLE, MUST FOLLOW PROCEDURE F-4-1 SEC. 5.2 OF THE ONTARIO DRINKING WATER RESOURCES ACT.
- METALLIC WARNING TAPE SHALL BE USED OVER ALL WATERMANS.
- INSTALL AND TEST TRACER WIRE FOR ALL PROPOSED WATERMAIN IN ACCORDANCE WITH THE CITY OF OTTAWA DESIGN STANDARDS AS SPECIFIED IN SECTION 8.28.
- EXISTING WATERMAIN INFORMATION SHOWN IS BASED ON BEST CURRENT INFORMATION. CONTRACTOR TO VERIFY EXACT LOCATION OF WATERMAIN AND REPORT ANY DISCREPANCIES TO KOLLAARD ASSOCIATES INC.
- CONNECTIONS AT ELBOWS AND TEES IN WATER MAINS SHOULD BE MADE WITH THE USE OF JOINT RESTRAINERS DESIGNED FOR WATERMAIN APPLICATION. JOINT AND PIPE RESTRAINERS SHOULD MEET THE REQUIREMENTS OF AWWA C900, C905 AND C907 AND ASTM F1674-11. JOINT RESTRAINERS SHOULD BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
- ALL CONNECTORS, RODS AND VALVE BOLTS SHALL BE STAINLESS STEEL.
- VALVES ARE TO BE OPERATED BY CITY OF OTTAWA STAFF ONLY.
- NO CONNECTION TO EXISTING WATER NETWORK SHALL BE COMPLETED UNTIL A WATER PERMIT IS OBTAINED FROM THE CITY OF OTTAWA AND CITY OF OTTAWA FORCES ARE ON HAND TO MAKE THE CONNECTION.

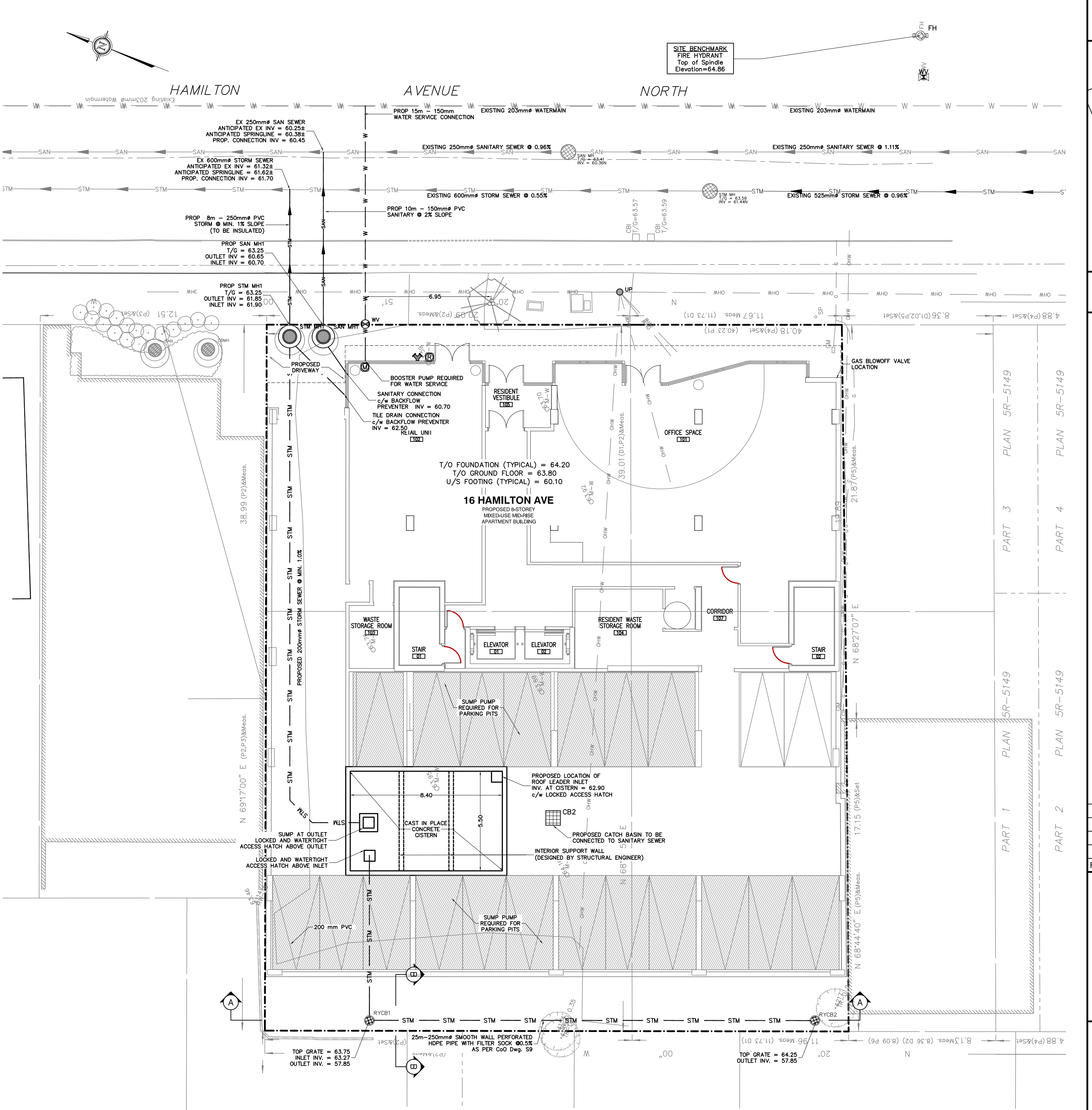
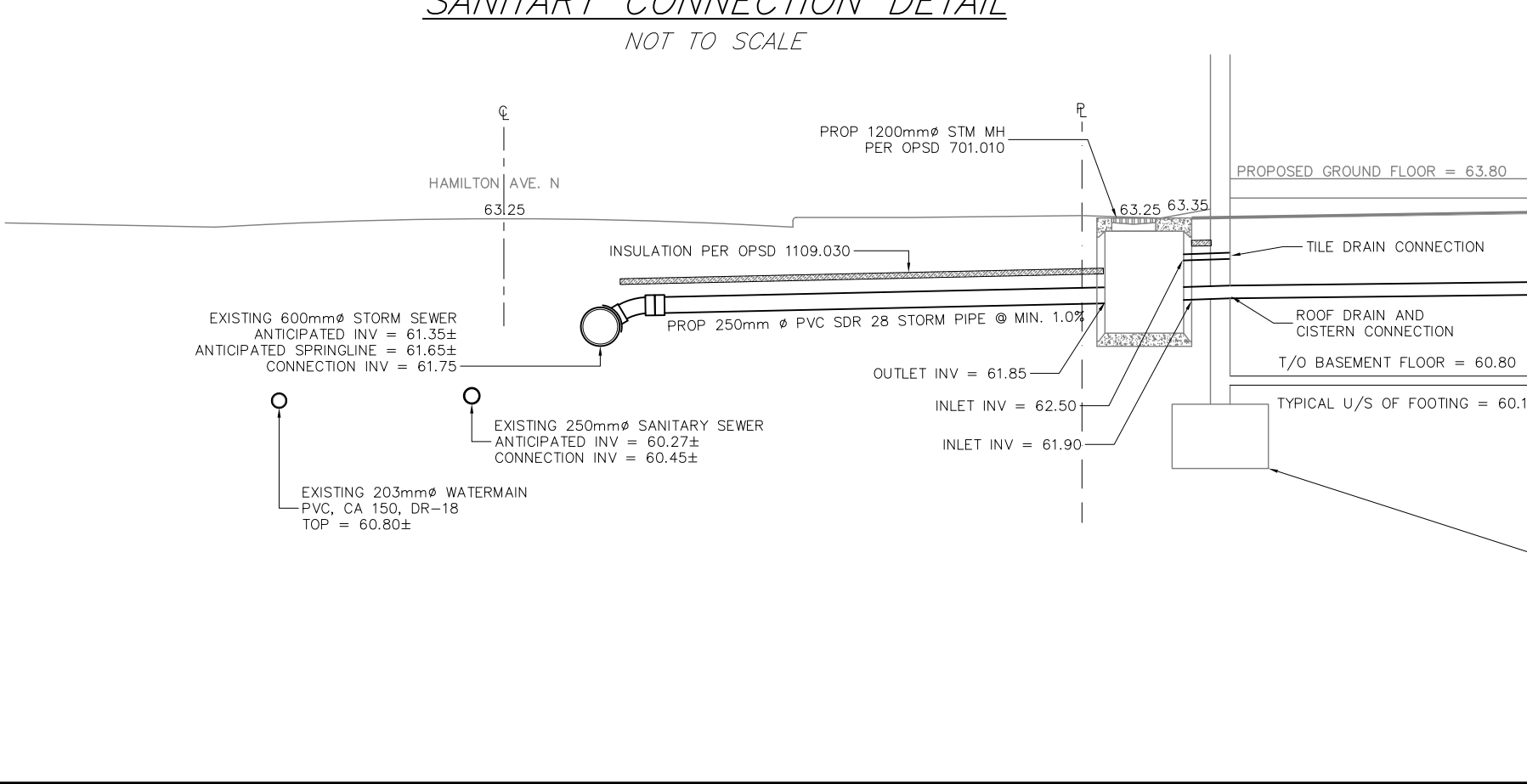
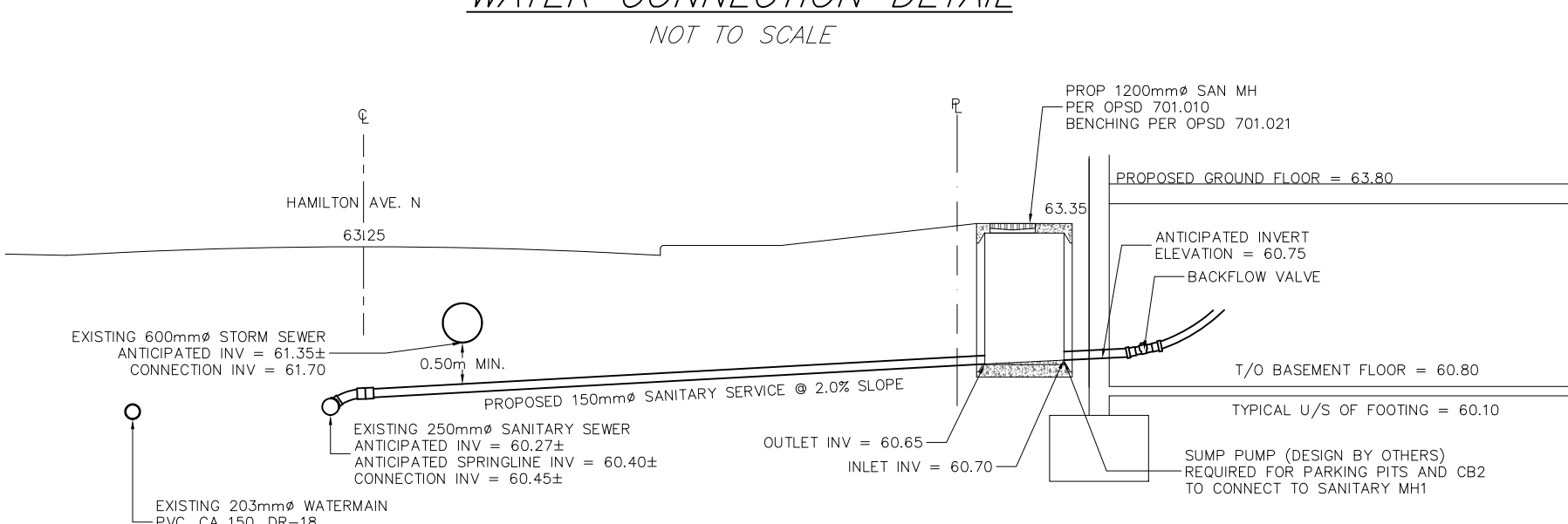
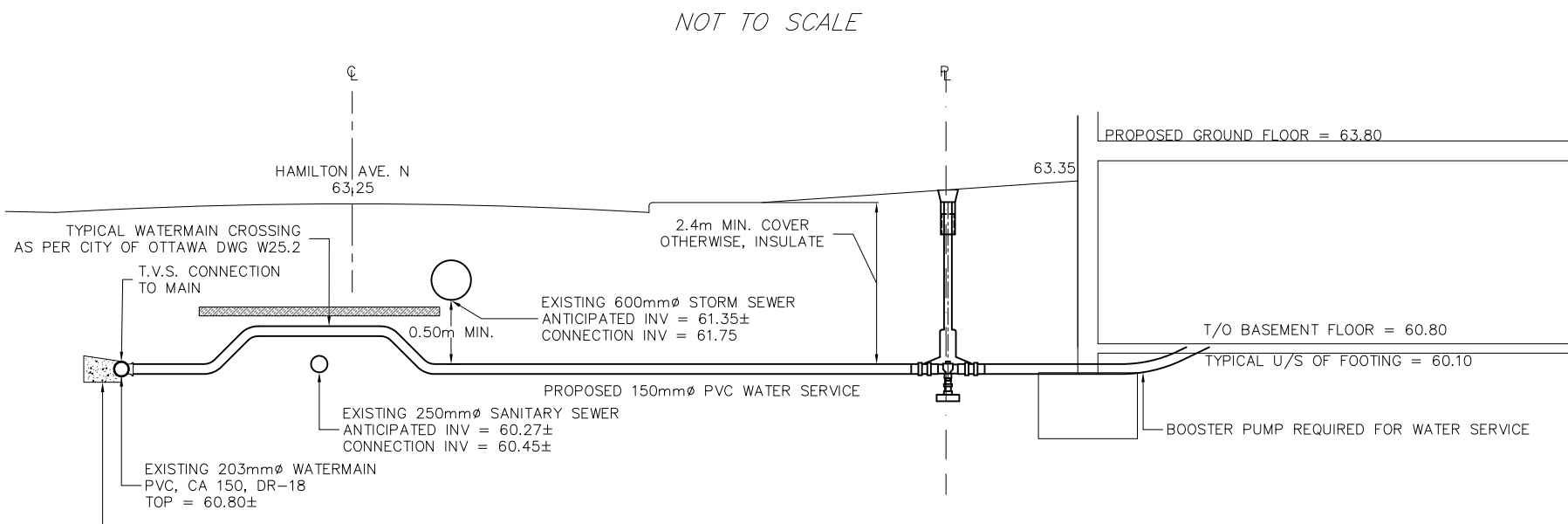
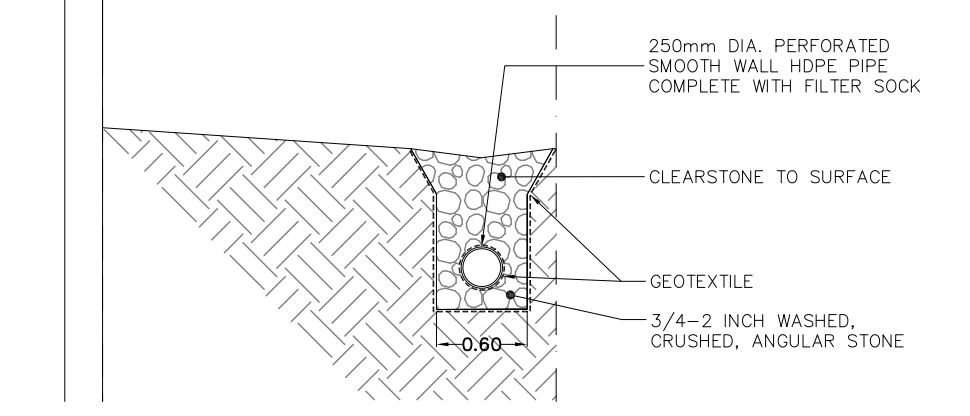
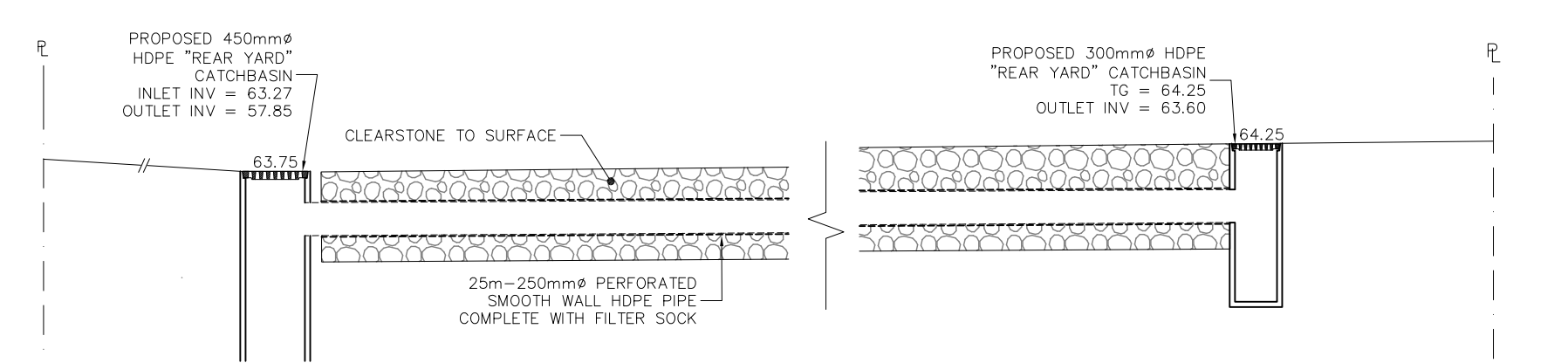
**SERVICING NOTES:**

- A 0.3-METRE CLEARANCE BETWEEN WATERMAIN AND THE SANITARY AND STORM LATERALS IS TO BE PROVIDED.
- ALL SERVICES ARE TO BE INSTALLED AT CURRENT CITY OF OTTAWA STANDARDS.
- SERVICE LATERALS ARE TO HAVE A MINIMUM CLEARANCE OF 2 METRES FROM EXISTING UTILITIES POLES.
- ALL BENDS IN THE SERVICE LATERALS ARE TO BE A MAXIMUM OF 2 @ 22.5° AND WITHIN THE PROPERTY.
- ELEVATIONS AND STATUS OF EXISTING LATERALS ARE ANTICIPATED. IF SERVICE LATERALS ARE TO BE RE-USED, IT IS RECOMMENDED THAT THEY BE EXCAVATED AND INSPECTED PRIOR TO BUILDING EXCAVATION. IF NOT BEING RE-USED, EXISTING SEWER SERVICES ARE TO BE CAPPED AT THE PROPERTY LINE TO THE SATISFACTION OF THE CITY'S SEWER OPERATIONS. WATERMANS TO BE TO BE BLANKED AT THE MAIN TO THE SATISFACTION OF CITY'S WATER WORKERS.

**SEWER NOTES:**

- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS FOR ROADS AND PUBLIC WORKS.
- SPECIFICATIONS:
 

ITEM	SPEC. NO.	CITY STD DWG. No.
SEWER SERVICE CONNECTION	S11 & S11.1	56 & 57
SEWER TRENCH	OPSD 701.021	
SANITARY BENCHING	OPSD 1109.030	
- INSULATE SEWER SERVICE CONNECTIONS THAT HAVE LESS THAN 2m COVER WITH THERMAL INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
- PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY.
- FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTION PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PVC; POSITIVE SEAL AND DURASEAL). SANITARY RUBBER GASKET TYPE JOINTS SHALL CONFORM TO CSA (B-182.2.3.4).
- THE OWNER SHALL REQUIRE THAT THE SITE SERVING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSD 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
- CONTRACTOR TO TELEVISION (CCTV) ALL PROPOSED SEWERS, 200mm OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES TO MUNICIPAL SATISFACTION.
- WHERE THE SANITARY SEWER CROSSES ABOVE THE WATERMAIN, THE CONTRACTOR IS TO PROVIDE A MINIMUM OF 0.5m VERTICAL SEPARATION, ADEQUATE STRUCTURAL SUPPORT OF THE SEWER TO PREVENT SETTLING AND EXCESSIVE JOINT DEFLECTION AND ENSURE THAT THE LENGTH OF THE WATER PIPE BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.



**GENERAL NOTES:**

- All dimensions are in metres; all elevations are in metres and are geoidic.
- Top of spindle of existing fire hydrant. Elevation=64.86.
- This is not a legal survey. Boundary and topographic information was derived from FARLEY, SMITH & DENIS SURVEYING LTD. File No. J1205.
- Client is responsible for acquiring all necessary permits. This drawing is not for construction until a building permit has been granted.
- Contractor is responsible for location and protection of utilities.
- All dimensions to be verified on site by contractor prior to construction.
- Existing watermain and sewer information shown is based on best available information. Contractor to verify exact location of mains and report any discrepancies to Kollaard Associates.
- Any changes made to this plan must be verified and approved by Kollaard Associates Inc.
- The proposed grades have been set and verified for site grading control only. The grade raise at the building location should be verified with regard to subsurface conditions by qualified geotechnical personnel after completion of the excavation.
- The underside of footing elevation has been set based on the information available and may not have accounted for actual ground water conditions at the exact building location and should be verified by qualified geotechnical personnel upon completion of the excavation.
- A geotechnical engineer should be retained to provide recommendations with respect to the sub-grade conditions prior to footing installation.
- The owner agrees to prepare and implement an erosion and sediment control plan to the satisfaction of the City of Ottawa, appropriate to the site conditions, prior to undertaking any site alterations (filling, grading, removal of vegetation, etc.) and during all phases of site preparation and construction in accordance with the current Best Management Practices for Erosion and Sediment Control such as, and not limited to, installing filter cloths across manhole/catchbasin lids to prevent sediments from entering structures and install and maintain a light duty silt fence barrier as required.
- All materials and construction to be in accordance with City of Ottawa standards and Ontario Provincial Standards and Specifications; sewer and watermain material types, disinfection, provide minimum 2.4 metres of cover for water services, cathodic protection, City of Ottawa insulation specifications for watermain, pipe bedding, reinstatement of disturbed areas and leakage testing.
- This drawing is part of Kollaard Associates File No. 180711.
- Shop drawings for items such as (but not limited to) storm catch basins and underground storm water storage chambers to be reviewed and approved by Kollaard Associates Inc. prior to fabrication.

REV	BY	DATE	DESCRIPTION
3	ML/SD	2019/05/21	REVISIONS TO MATCH SITE PLAN
2	ML/SD	2019/02/28	REVISIONS PER CITY REVIEW COMMENTS
1	ML	2018/10/24	ISSUED FOR SPA SUBMISSION
0	ML	2018/10/23	ISSUED FOR CLIENT REVIEW

**Kollaard Associates Engineers**

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 K0G 1J0 FAX (613) 258-0475  
 http://www.kollaard.ca

**CONSULTANTS:**

DESIGNED BY: ML/SD  
 CHECKED BY: SD  
 DRAWN BY: ML  
 APPROVED BY: SD

**CLIENT:**

INDEPENDENT DEVELOPMENT GROUP  
 88 SPADINA AVENUE  
 OTTAWA, ON K1Y 2C1

**PROJECT:**

PROPOSED MIXED-USE BUILDING

**LOCATION:**

16-20 HAMILTON AVENUE N  
 OTTAWA ON K1Y 1B6

DESIGNED BY: ML/SD  
 CHECKED BY: SD  
 DATE: OCTOBER 01, 2018  
 SCALE: AS SHOWN  
 PROJECT NUMBER: 180711

**PROFESSIONAL ENGINEER**  
 MAY 21, 2019  
 S.E. deWit  
 100079612  
 PROVINCE OF ONTARIO

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D01-01-18-0012 & D02-02-18-0108