

**LEGEND**

- EXISTING ELEVATION
- PROPOSED/EXISTING ELEVATIONS
- PROPOSED SLOPE
- EXISTING DRAINAGE
- WATERMAIN
- STORM SEWER
- SANITARY SEWER
- TOP OF SLOPE
- PROPERTY LINE
- OVERHEAD WIRE
- STRUCTURAL RETAINING WALL [1m OR LESS IN HT.]
- LANDSCAPE RETAINING WALL [1m OR LESS IN HT.]
- SILT FENCE
- OVERLAND FLOW ROUTE
- EXISTING UTILITY POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED FIRE DEPARTMENT CONNECTION
- PROPOSED WATER VALVE
- WATER METER
- REMOTE WATER METER
- SUMP AND SUMP PUMP LOCATION
- EXISTING STORM MANHOLE
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- EXISTING VALVE CHAMBER
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN/MANHOLE
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED REAR-YARD CATCH BASIN
- TEMPORARY BENCHMARK

DRAWING No: 180966-SER

**KEY PLAN:**  
N.T.S.

SCALE:  
0 1 2 3 4 5 10 15  
1:150 METRES

- GENERAL NOTES:**
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No.	REVISION	DATE	BY
4	REVISED IN ACCORDANCE WITH REVISED SITE PLAN	2019/10/21	ML
3	PER REVIEW COMMENTS/SITE PLAN REVISIONS	2019/08/16	ML
2	ISSUED SPA SUBMISSION	2019/01/25	ML
1	ISSUED FOR CLIENT REVIEW	2019/01/24	ML
0	PRELIMINARY	2018/12/13	ML
#	REVISION ITEM / DESCRIPTION	REV. DATE	INT.

**Kollaard Associates Engineers**  
(613) 860-0923  
info@kollaard.ca

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

**CLIENT:**  
BUILDING INVESTMENTS INC.  
Nick Legault, CEO  
205-1320 Carling Ave  
Ottawa, ON, K1Z7K8  
Tel 613-853-4833  
email nlegault@BuildingInvestments.ca

**PROJECT:**  
RESIDENTIAL APARTMENT BUILDING

**LOCATION:**  
841, 845 and 855(A) GRENON AVENUE,  
CITY OF OTTAWA, ON.

**DESIGNED BY:** S.E. deWit  
**CHECKED BY:** SD  
**DRAWN BY:** ML  
**APPROVED BY:** SD  
**DATE:** DEC. 12, 2018  
**SHEET SET:**

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

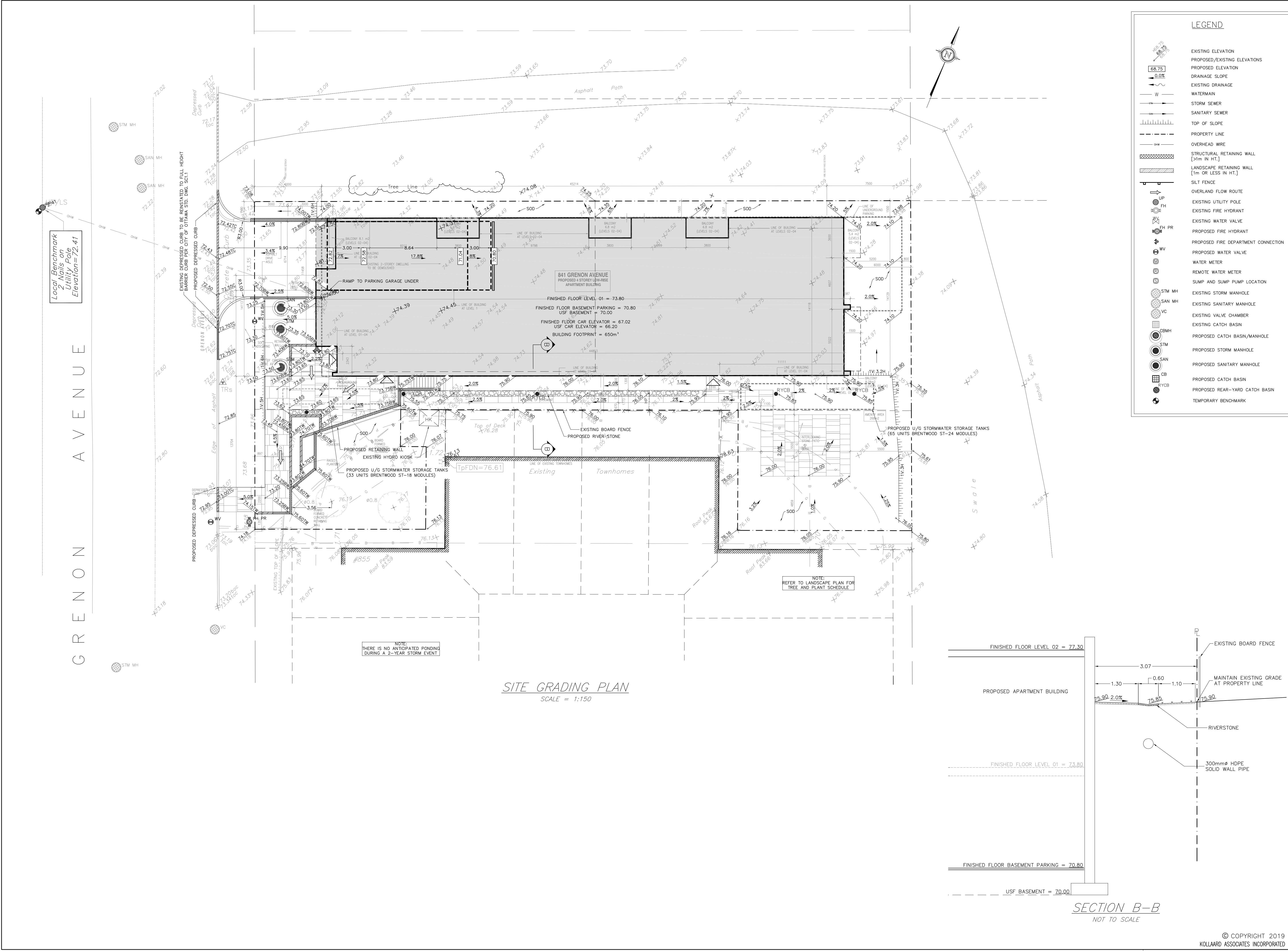
DRAWING No: 180966-SER  
DRAWING NAME: SITE SERVICING PLAN

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D07-12-19-0018

#17891





**LEGEND**

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DRAWING No: 180966-GRD

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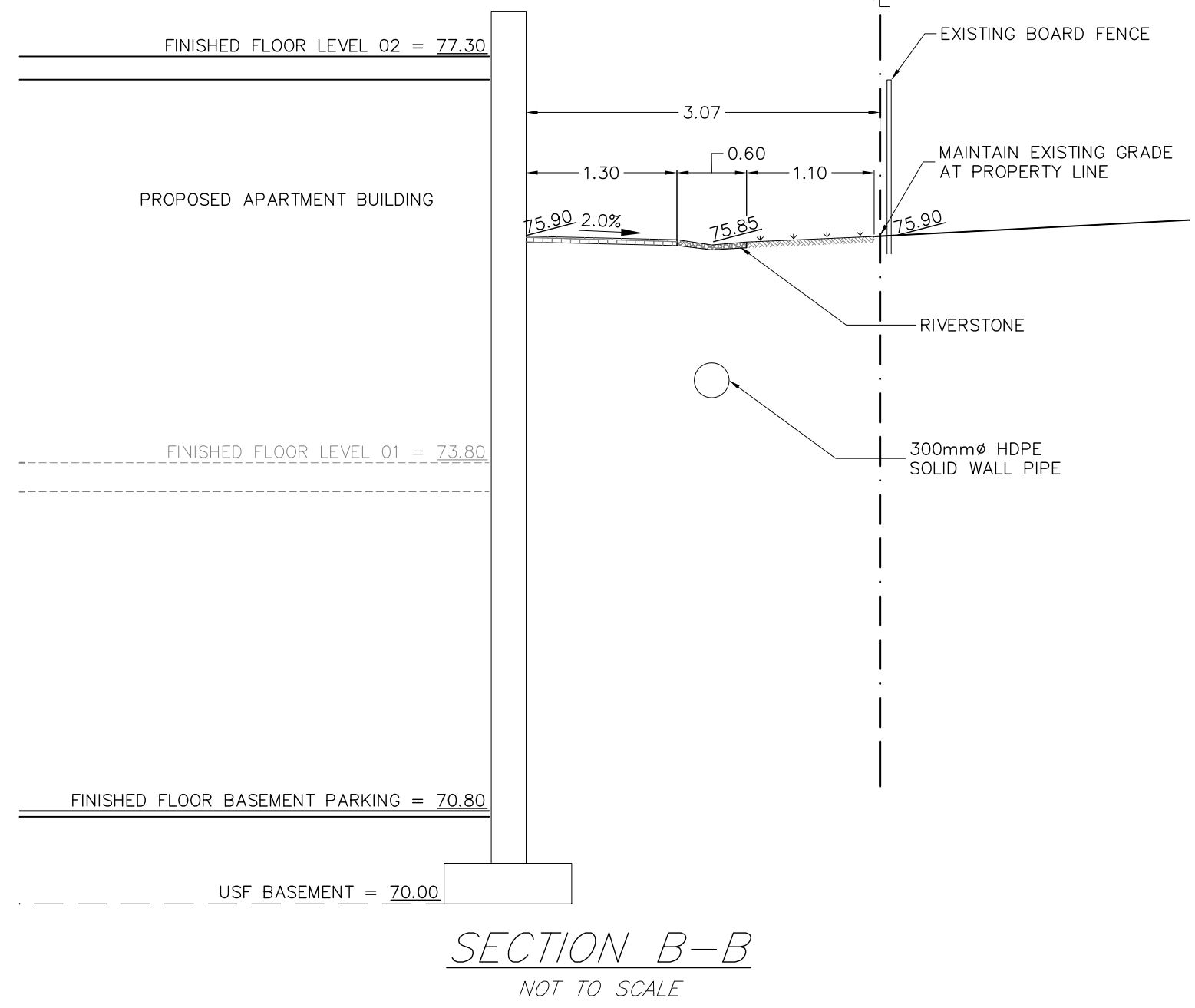
**LOCATION:**

841, 845 and 855(A) GRENON AVENUE,  
CITY OF OTTAWA, ON.

DESIGNED BY: SD	CHECKED BY:
DRAWN BY: ML	APPROVED BY: SD
DATE: DEC. 12, 2018	
SHEET SET:	

DRAWING No: 180966-GRD

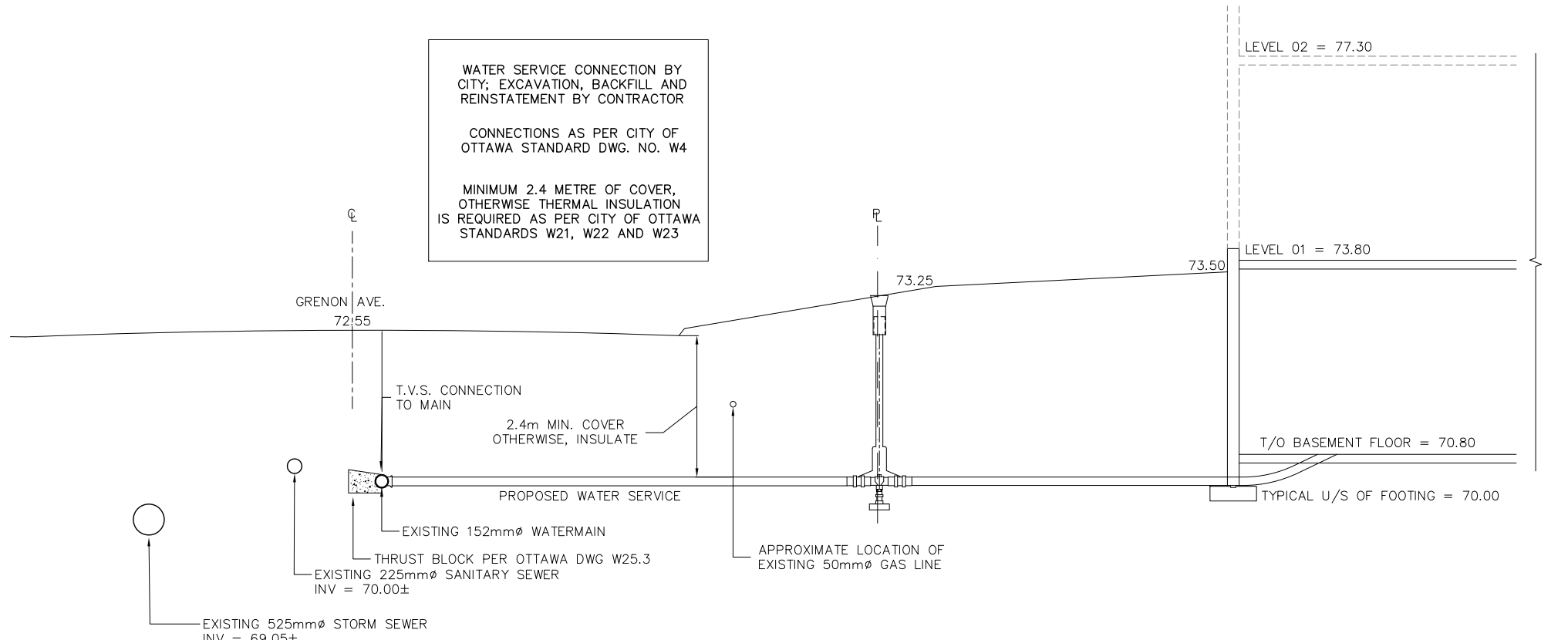
DRAWING NAME: SITE GRADING PLAN



D07-12-19-0018

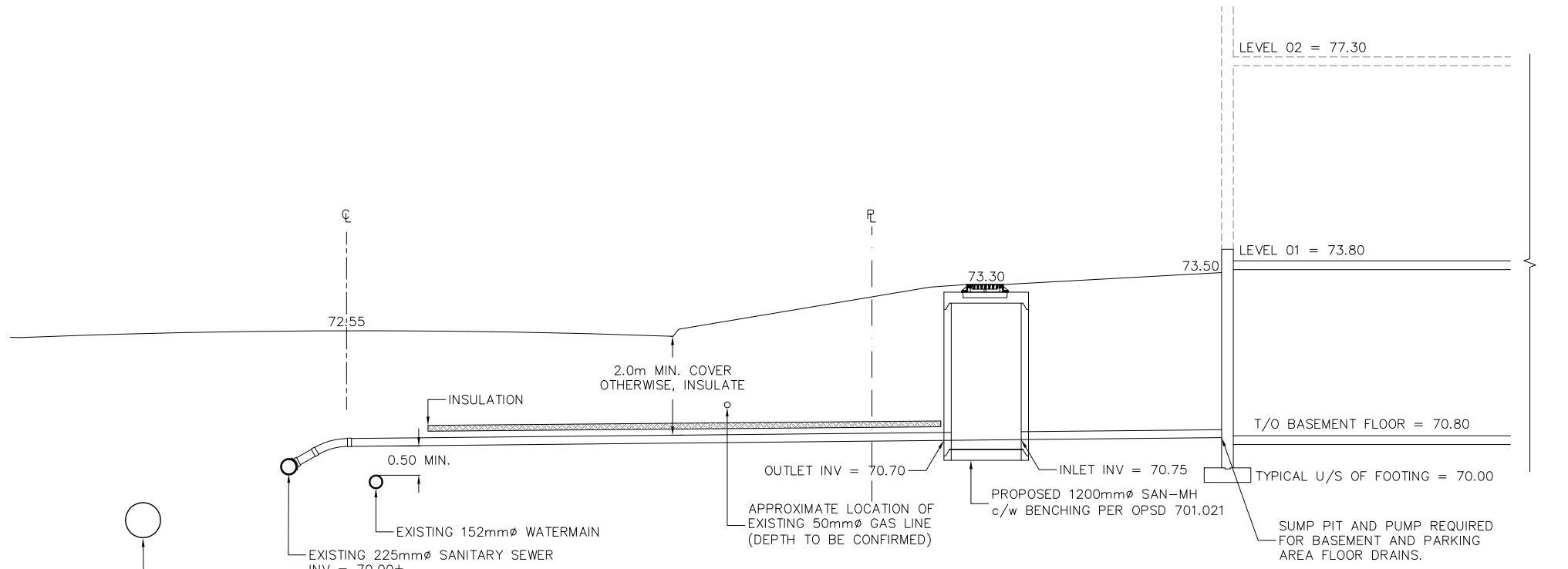


WATER TABLE [841, 845 AND 855(A) GRENON AVENUE]					
LOCATION	DISTANCE (m)	GRADE ELEV. (m)	APPROX. ELEV.	TOP OF WATER SERVICE ELEV. (m)	APPROX. VERTICAL CLEARANCE (m)
CONNECTION	0.00	72.55		70.15	
50mmØ GAS	6.00	72.50	71.30	70.15	1.20
PROPERTY LINE	8.50	73.25		70.15	
BUILDING	14.50	73.50		70.15	



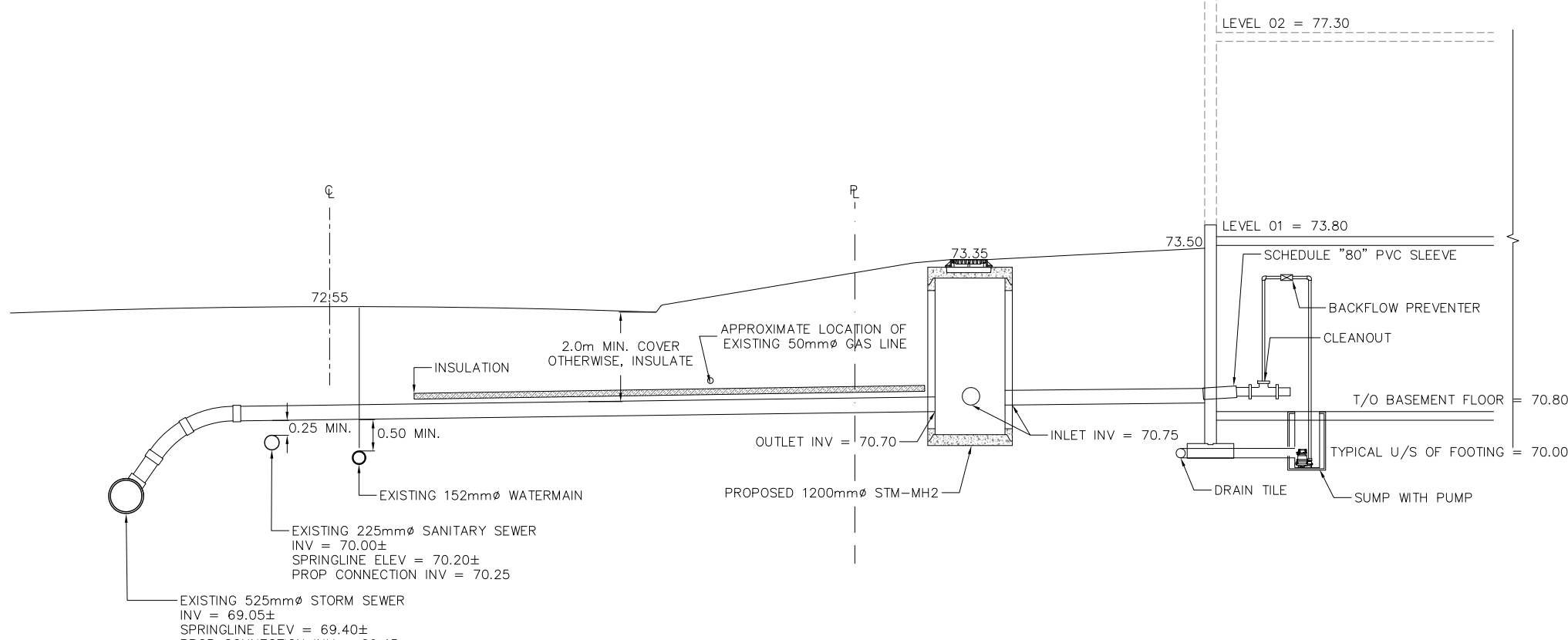
WATER SERVICE CONNECTION

NOT TO SCALE = 1:150



SANITARY SERVICE CONNECTION

NOT TO SCALE = 1:150



STORM SERVICE CONNECTION

NOT TO SCALE = 1:150

#### SEWER NOTES:

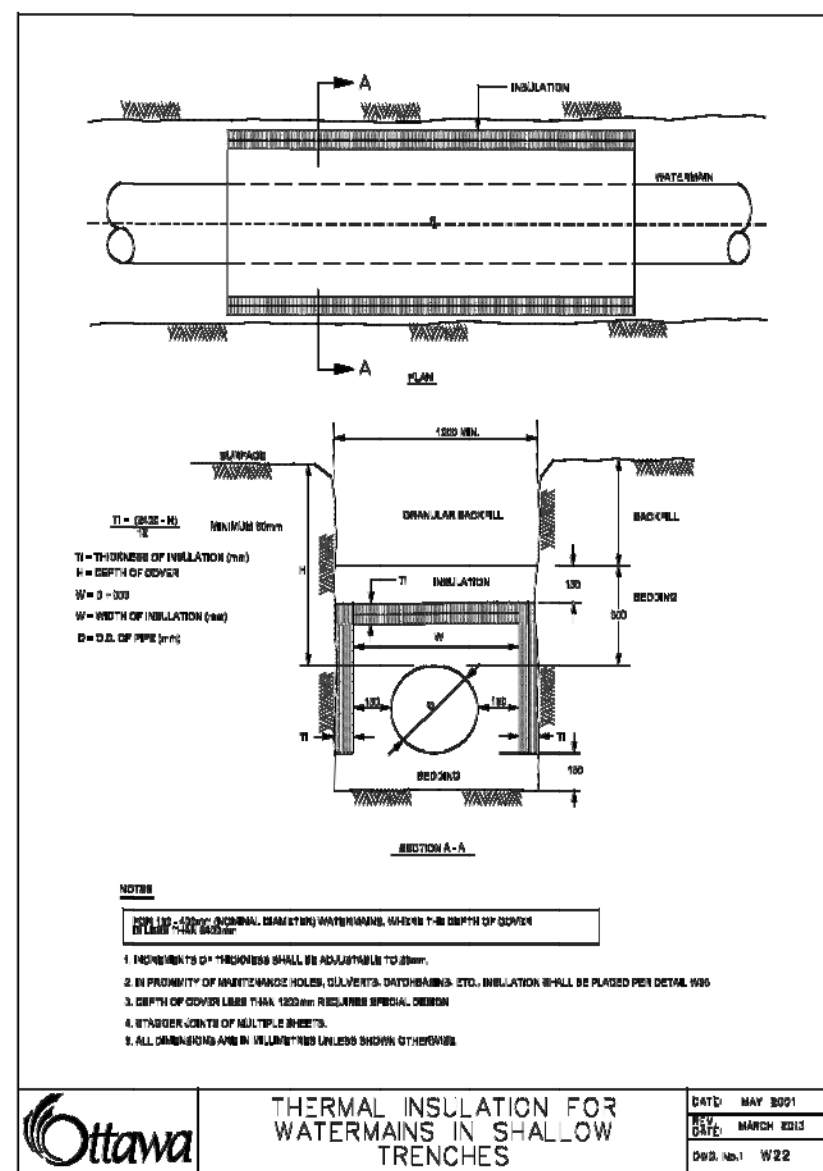
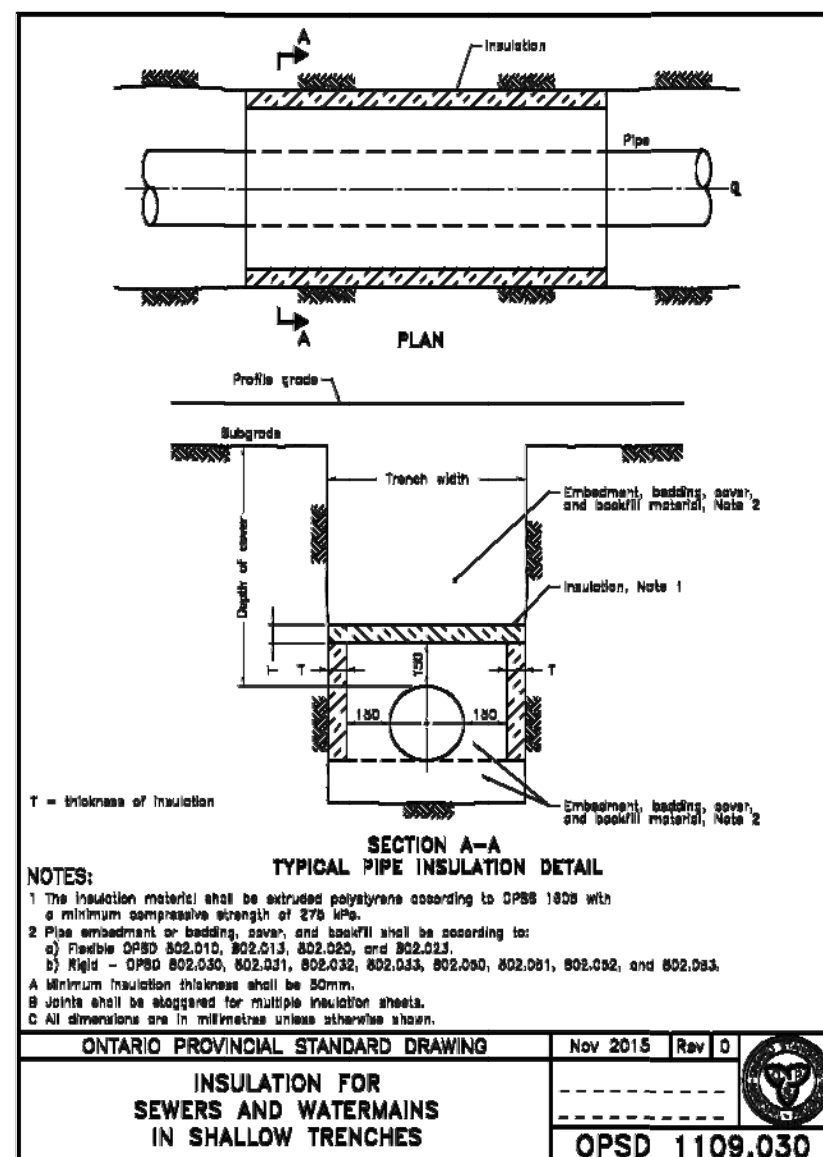
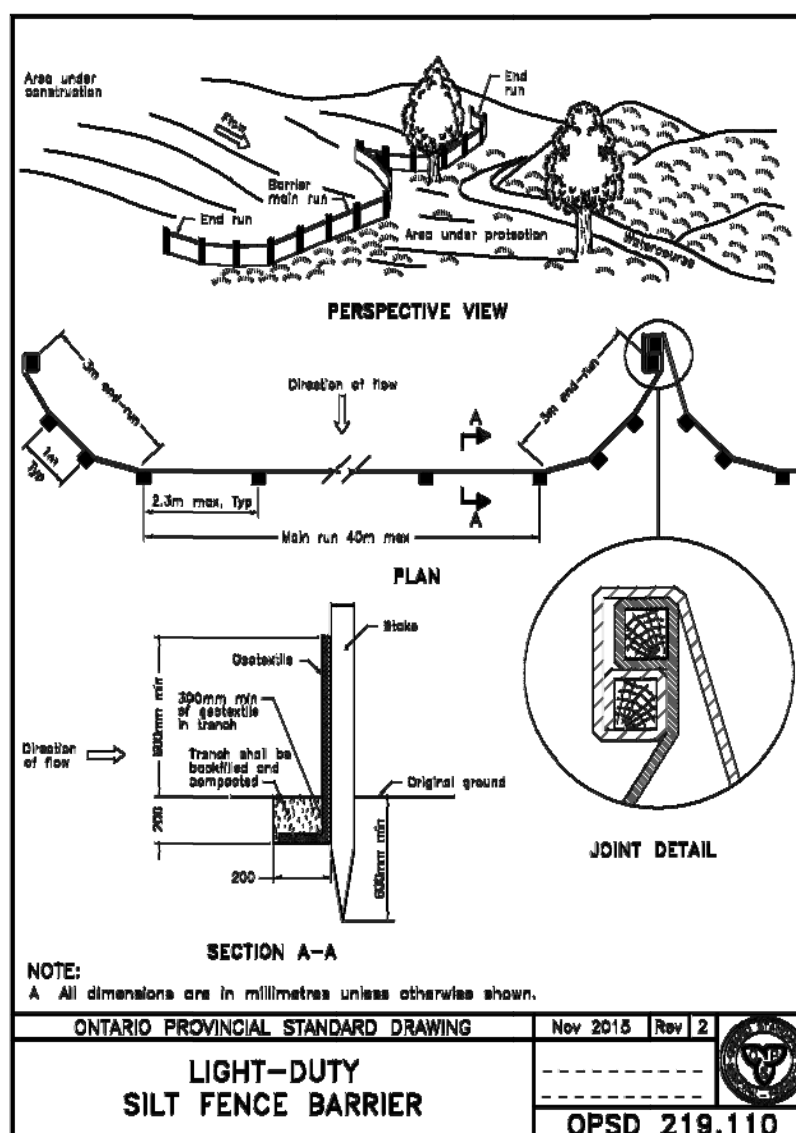
- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS FOR ROADS AND PUBLIC WORKS.
- SPECIFICATIONS:
 

ITEM	SPEC. No.	CITY STD. DWG. No.
CATCH BASIN (600mm x 600mm)	OPSD 705.010	S2
STORM/SANITARY MANHOLE (1200Ø)	OPSD 701.010	
STORM/SANITARY MANHOLE (1500Ø)	OPSD 701.011	
STORM/SANITARY MANHOLE (1800Ø)	OPSD 701.012	
SEWER SERVICE CONNECTION		S11 & S11.1
SANITARY BENCHING	OPSD 701.021	
CATCH BASIN & MANHOLE ADJUSTMENTS	OPSD 704.010	S24.1 & S25
STORM MANHOLE FRAME & COVER	OPSD 401.010	S19, S22 & S23
CATCH BASIN FRAME & COVER	OPSD 400.020	S6 & S7
SEWER TRENCH		S24 & S25
SANITARY MANHOLE FRAME & COVER	OPSD 401.030	
- SEWER TRENCH: SITE SERVICES EXCAVATION, BEDDING & BACKFILL AS PER THE RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION PREPARED BY KOLLAARD ASSOCIATES INC.
- INSULATE ALL STORM PIPES THAT HAVE LESS THAN 1.5m COVER AND ALL SANITARY PIPES THAT HAVE LESS THAN 2.1m COVER WITH THERMAL INSULATION PER O.P.S.D. 1109.030. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
- PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY.
- FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTION PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSK, 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 SERVICES. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 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.
- STORM MANHOLES AND CBMHs ARE TO HAVE 300mm SUMPS (AS PER SUMP DETAIL ON OPSD 701.010), UNLESS OTHERWISE INDICATED.
- BUILDING CONTRACTOR TO PROVIDE TEMPORARY ADDITIONAL GRANULAR BACKFILL ABOVE SHALLOW CULVERTS AND STORM SEWERS TO SUPPORT HEAVY CONSTRUCTION EQUIPMENT.
- CONTRACTOR TO TELEVIEW (CCTV) ALL PROPOSED SEWERS, 200mmØ 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 0.50m 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.

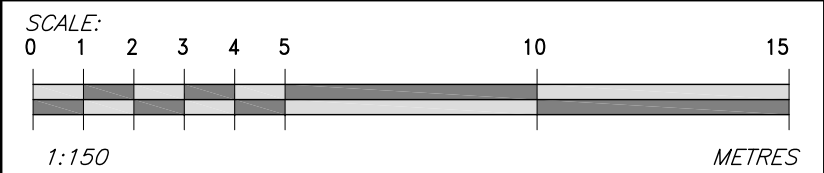
#### WATERMAIN NOTES:

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

ITEM REFERENCE	SPEC. No.	CITY STD. DWG. No.
WATERMAIN BEDDING AND BACKFILL	802.010/802.031	W17 (TRENCH DETAIL)
CATHODIC PROTECTION	1109.010	W40
PRESSURE TESTING	C-605-5	
CHLORINATION	C-651-05	
WATERMAIN MATERIAL	PVC DR18 (CLASS 150)	
- 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-6-1 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.
- WATER SHUTOFF VALVE AND VALVE BOX TO BE WITHIN THE ROAD ALLOWANCE AND LOCATED A MINIMUM OF 1.0 METRES FROM THE BUILDING FOUNDATION. TYPICAL PRIVATE SERVICE AS PER STD. DWG. W50 (WITH THE EXCEPTION THAT THE V&VB ARE TO BE LOCATED 1.0 M MINIMUM FROM THE FOUNDATION WALL); VALVE BOX ASSEMBLY AS PER STD. DWG. W24.
- 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.



DRAWING No: 180966-DET



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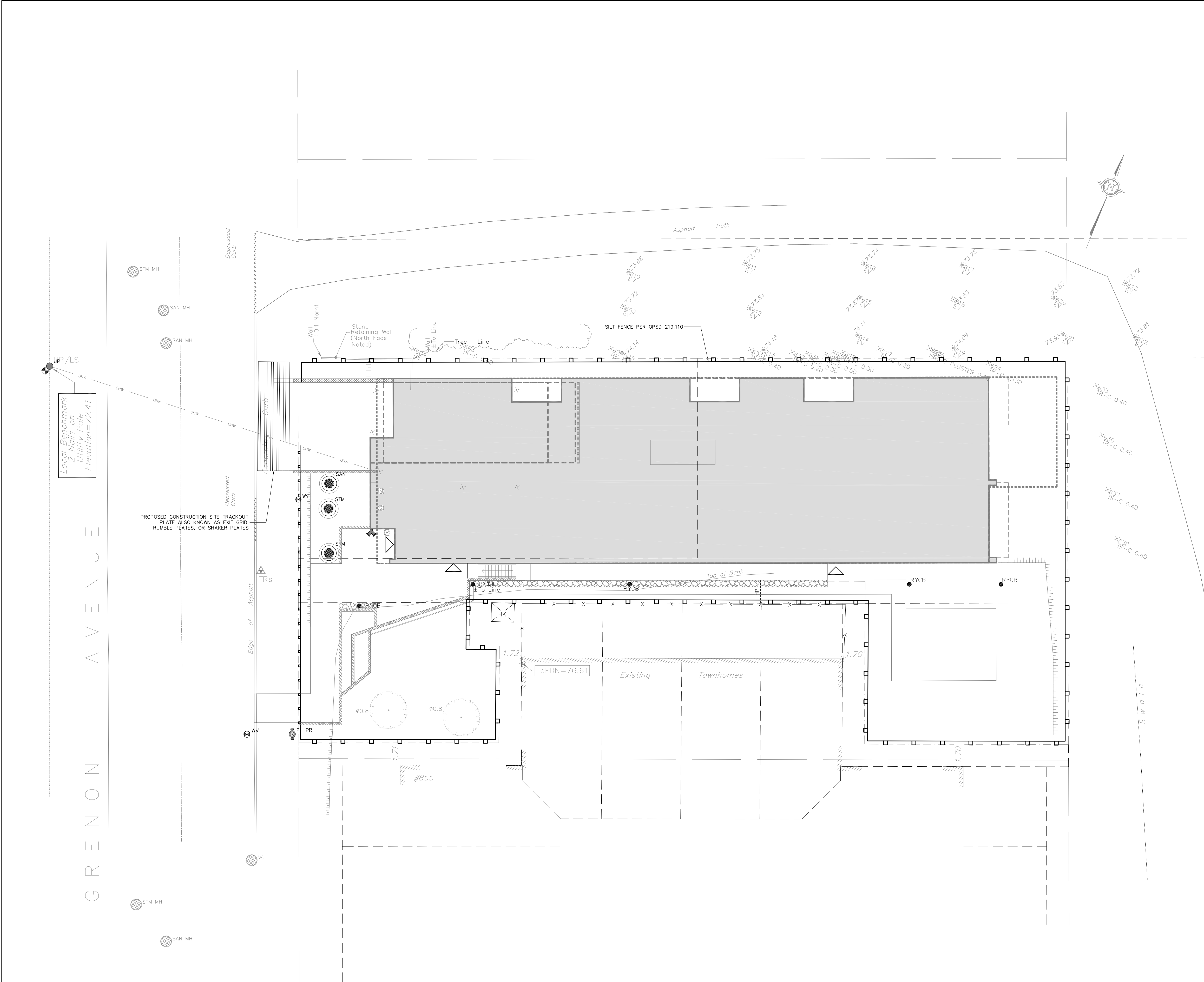
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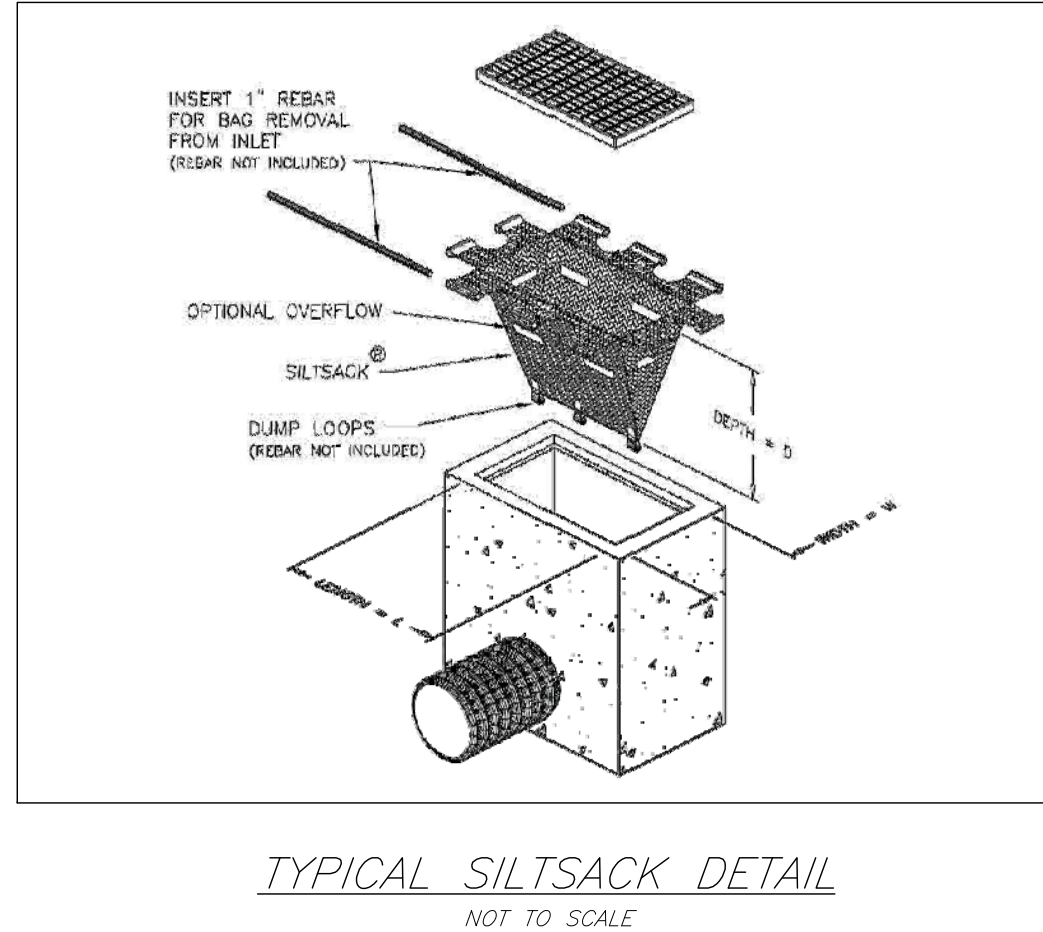


EROSION AND SEDIMENT CONTROL PLAN  
SCALE = 1:150

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- EROSION AND SEDIMENT CONTROL NOTES:**
1. 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 FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
  2. THE OWNER (AND/OR CONTRACTOR) AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN AT LEAST EQUAL TO THE STATED MINIMUM REQUIREMENTS AND 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.
  3. THE CONTRACTOR IS TO ENSURE THAT THE SITE ACCESS POINTS AND ADJACENT STREETS TO THE ACCESS POINTS ARE MAINTAINED AND KEPT CLEAN OF CONSTRUCTION MATERIALS SUCH AS, BUT NOT LIMITED TO MUD, DIRT, CLAY AND GRANULARS ON A DAILY BASIS OR AS NECESSARY, TO THE SATISFACTION OF THE CITY OF OTTAWA.
  4. EVERY EFFORT WILL BE MADE TO ENSURE THAT ALL DISTURBED AREAS ARE TOPSOILED AND SEEDED AS SOON AS REASONABLY POSSIBLE.
  5. THE SEDIMENT AND EROSION CONTROL PLAN IS A LIVING DOCUMENT WHICH MAY BE AMENDED BY ONSITE REQUIREMENTS AT THE APPROVAL OF THE MUNICIPALITY AND THE CONSERVATION AUTHORITY.
- MINIMUM EROSION AND SEDIMENT CONTROL PLAN REQUIREMENTS:**
- TIME THE DEMOLITION AND EXCAVATION ACTIVITIES SO THAT THEY OCCUR NO SOONER THAN IS NECESSARY FOR SUBSEQUENT CONSTRUCTION ACTIVITIES.
  - LANDSCAPE THE SITE AS SOON AS PRACTICALLY POSSIBLE.
  - USE SILT FENCES AROUND ANY STOCKPILES OF SOIL.
  - PRIOR TO CONSTRUCTION, SILT FENCE BARRIERS (OPSD 219.110) WILL BE PLACED ALONG THE PROPERTY LINES AS ON THE DRAWING.
  - THE SILT FENCE SHOULD BE REMOVED ONLY WHEN THE SITE IS STABILIZED.
  - INSTALL SEDIMENT CAPTURE DEVICES SUCH AS SILTSACK BY TERRAFIX (OR EQUIVALENT) WITHIN ALL EXISTING AND PROPOSED CATCH BASINS AND CATCH BASIN MANHOLES PRIOR TO CONSTRUCTION.



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11. 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.
12. A geotechnical engineer should be retained to provide recommendations with respect to the sub-grade conditions prior to footing installation.
13. 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.
14. 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.
15. Refer to Kollaard File 180966 for Stormwater Management Design and Geotechnical Report File No. 180966 (dated January 15, 2019).

No.	REVISION	DATE	BY
4	REVISED IN ACCORDANCE WITH REVISED SITE PLAN	2019/10/21	ML
3	PER REVIEW COMMENTS/SITE PLAN REVISIONS	2019/08/16	ML
2	ISSUED SPA SUBMISSION	2019/01/25	ML
1	ISSUED FOR CLIENT REVIEW	2019/01/24	ML
0	PRELIMINARY	2018/12/13	ML
#	REVISION ITEM / DESCRIPTION	REV. DATE	INT.

**No. REVISION DATE BY**

**Kollaard Associates Engineers**  
(613) 860-0923  
info@kollaard.ca

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KEMPVILLE, ONTARIO  
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**CLIENT:**  
BUILDING INVESTMENTS INC.  
Nick Legault, CEO  
205-1320 Carling Ave  
Ottawa, ON, K1Z7K8  
Tel 613-853-4833  
email nlegault@BuildingInvestments.ca

**PROJECT:**  
RESIDENTIAL APARTMENT BUILDING

**LOCATION:**  
841, 845 and 855(A) GRENON AVENUE,  
CITY OF OTTAWA, ON.

**DESIGNED BY:** SD  
**CHECKED BY:** SD  
**DRAWN BY:** ML  
**APPROVED BY:** SD  
**DATE:** DEC. 12, 2018  
**SHEET SET:**

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

DRAWING No: 180966-ECP  
DRAWING NAME: EROSION AND SEDIMENT CONTROL PLAN

D07-12-19-0018

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