

LEGEND

	EXISTING ELEVATION
	PROPOSED/EXISTING ELEVATIONS
	PROPOSED ELEVATION
	DRAINAGE SLOPE
	EXISTING DRAINAGE
	WATERMAIN
	STORM SEWER
	SANITARY SEWER
	TOP OF SLOPE
	PROPERTY LINE
	OVERHEAD WIRE
	STRUCTURAL RETAINING WALL [3m 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
	PROPOSED SCUPPER LOCATION
	EXISTING STORM MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING VALVE CHAMBER
	EXISTING CATCH BASIN
	PROPOSED CATCH BASIN/MANHOLE
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	PROPOSED SANITARY MANHOLE
	PROPOSED CATCH BASIN
	PROPOSED REAR-YARD CATCH BASIN
	TEMPORARY BENCHMARK
	ITEM TO BE REMOVED



1	DRAWING ADDED PER CITY COMMENTS	2020/01/08	ML	
#	REVISION ITEM / DESCRIPTION	REV. DATE	INT.	
No.	REVISION	DATE	BY	

 **Kollaard Associates**
Engineers

(613) 860-0923
info@kollaard.ca

P.O. BOX 189, 210 PRESCOTT ST.
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.

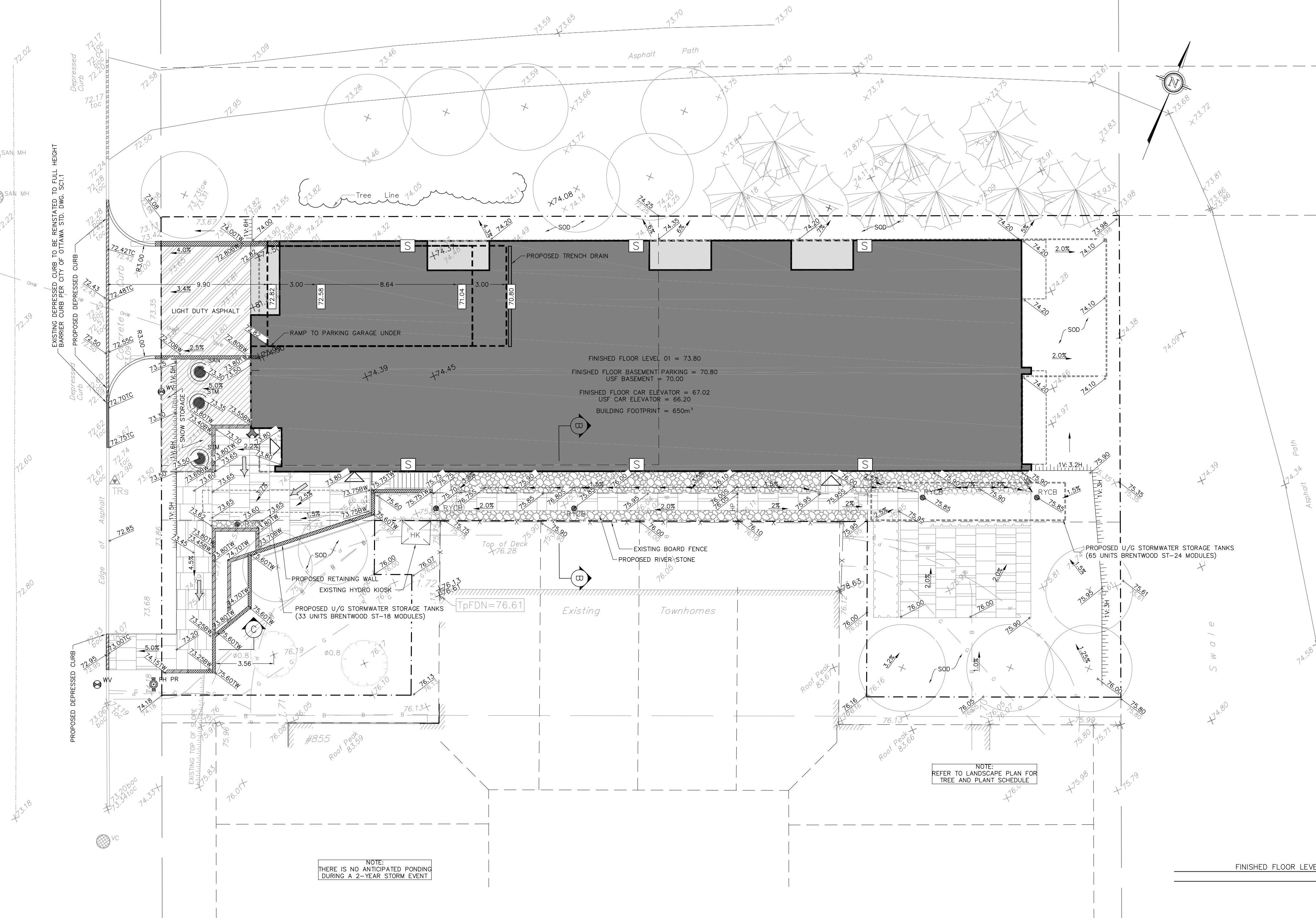
	DESIGNED BY:	CHECKED BY:
	-- --	-- --
	DRAWN BY:	APPROVED BY:
	ML	SD
DATE: DEC. 12, 2018		
SHEET SET:		

DRAWING No.:	180966-EX
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DRAWING NAME:

Local Benchmark
2 Nails on
Utility Pole
Elevation = 72.41

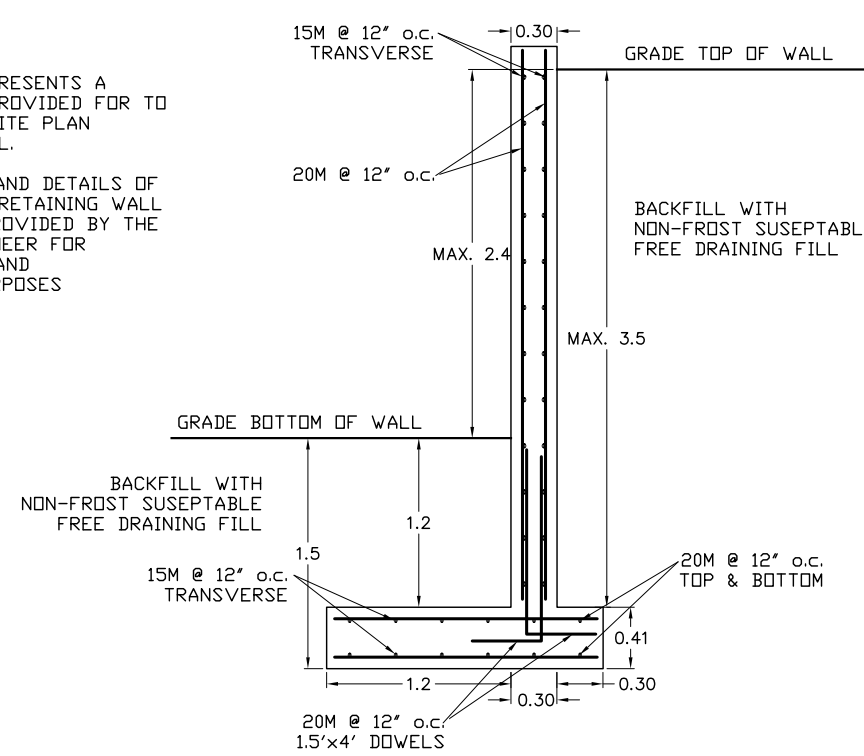
GRENON AVENUE



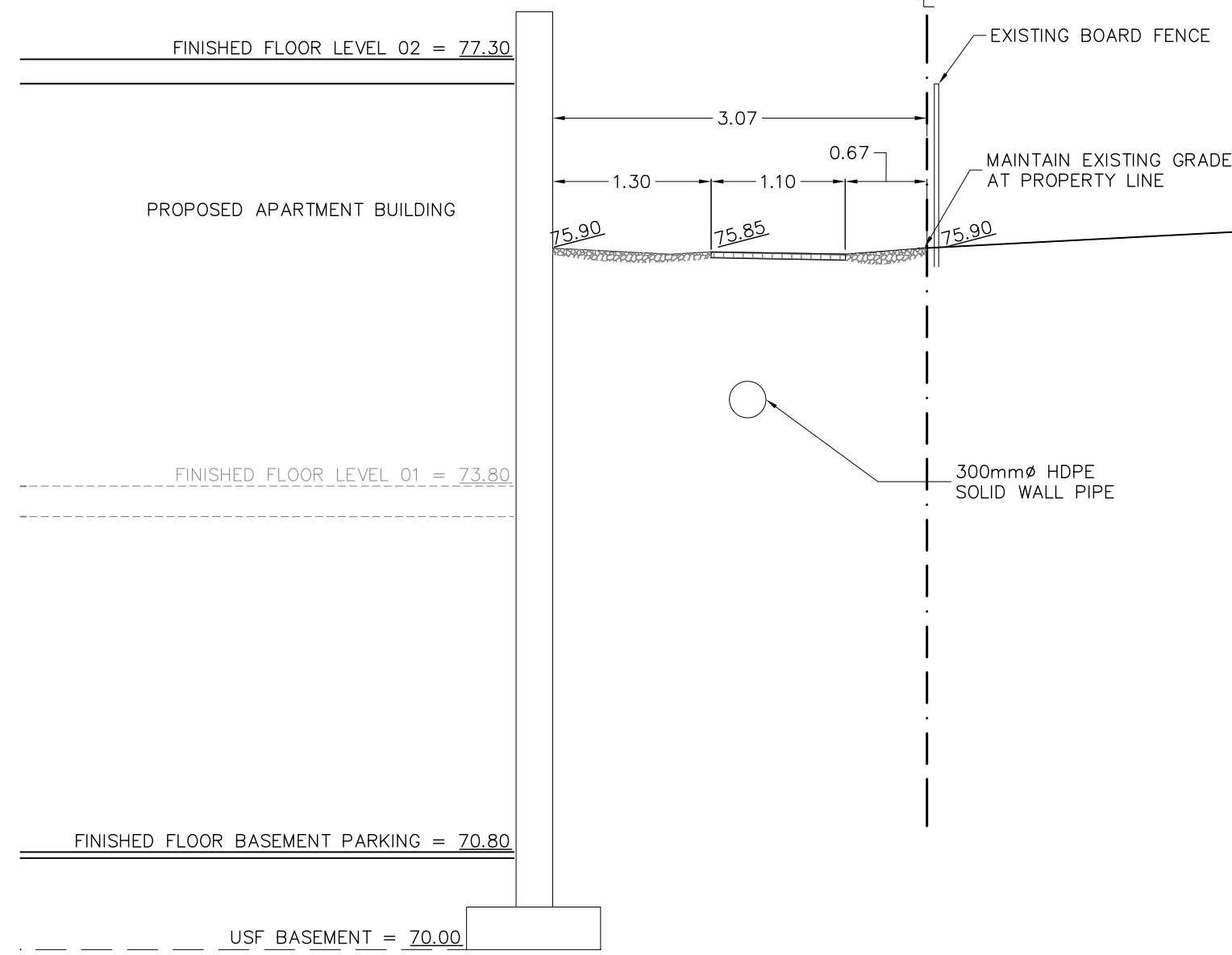
NOTE:
THERE IS NO ANTICIPATED PONDING
DURING A 2-YEAR STORM EVENT

SITE GRADING PLAN
SCALE = 1:150

THIS SECTION REPRESENTS A
TYPICAL DETAIL PROVIDED FOR TO
FACILITATE THE SITE PLAN
CONTROL APPROVAL.
SPECIFIC DESIGN AND DETAILS OF
EACH INDIVIDUAL RETAINING WALL
SECTION TO BE PROVIDED BY THE
STRUCTURAL ENGINEER FOR
BUILDING PERMIT AND
CONSTRUCTION PURPOSES



SECTION C
NOT TO SCALE

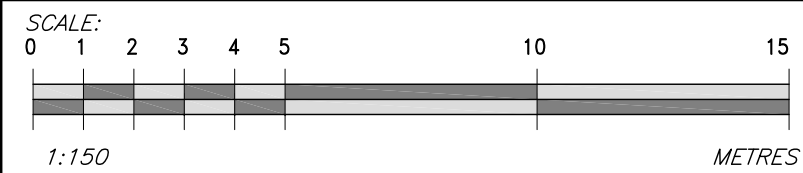


SECTION B-B
NOT TO SCALE

LEGEND

- EXISTING ELEVATION
- PROPOSED/EXISTING ELEVATIONS
- PROPOSED ELEVATION
- DRAINAGE SLOPE
- EXISTING DRAINAGE
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[21m IN HT.]
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[1m OR LESS IN HT.]
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- PROPOSED CATCH BASIN
- PROPOSED REAR-YARD CATCH BASIN
- TEMPORARY BENCHMARK
- ITEM TO BE REMOVED

DRAWING No: 180966-GRD



GENERAL NOTES:

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- Refer to Kollaard File 180966 for Stormwater Management Design and Geotechnical Report File No. 180966 (dated January 15, 2019).

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6	PER CITY REVIEW COMMENTS	2020/02/26	ML
5	PER CITY REVIEW COMMENTS	2020/01/08	ML
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.

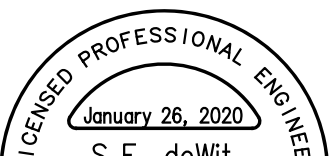
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Nick Legault, CEO
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email nlegault@BuildingInvestments.ca

PROJECT: RESIDENTIAL APARTMENT BUILDING

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

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

DRAWING No: 180966-GRD

DRAWING NAME: SITE GRADING PLAN

ADDITIONAL NOTES:

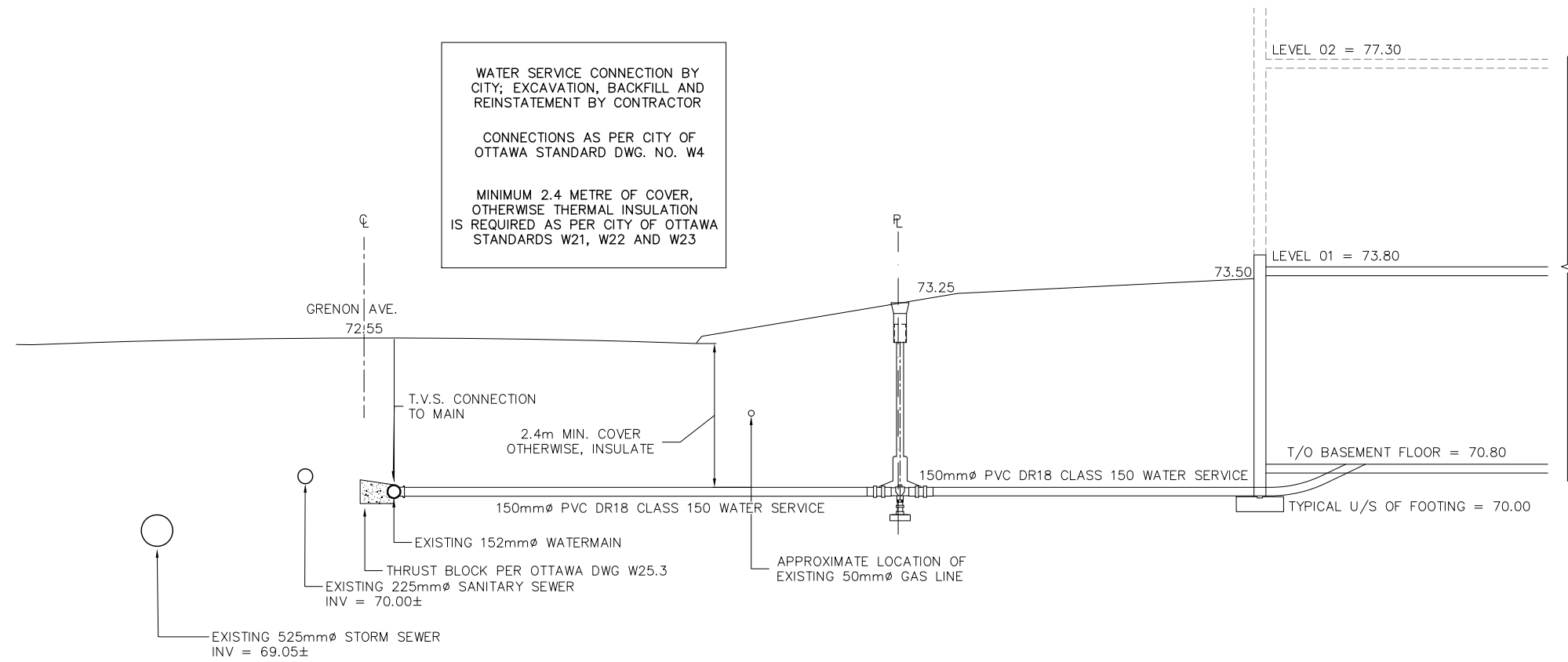
- THE FIRE FLOW DEMAND BASED ON FUS WAS CALCULATED ASSUMING THE FOLLOWING:
 - POURED CONCRETE CONSTRUCTION UP TO THE LEVEL OF THE SECOND FLOOR (SECOND FLOOR IS POURED CONCRETE)
 - EXTERIOR WALLS ARE NON-COMBUSTIBLE CONSTRUCTION
 - INTERIOR WOOD FRAME CONSTRUCTION
 - AUTOMATIC SPRINKLERS IN BUILDING
 - SEPARATION DISTANCES AS INDICATED ON DRAWING 180966-FUS

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KOLLAARD ASSOCIATES INCORPORATED

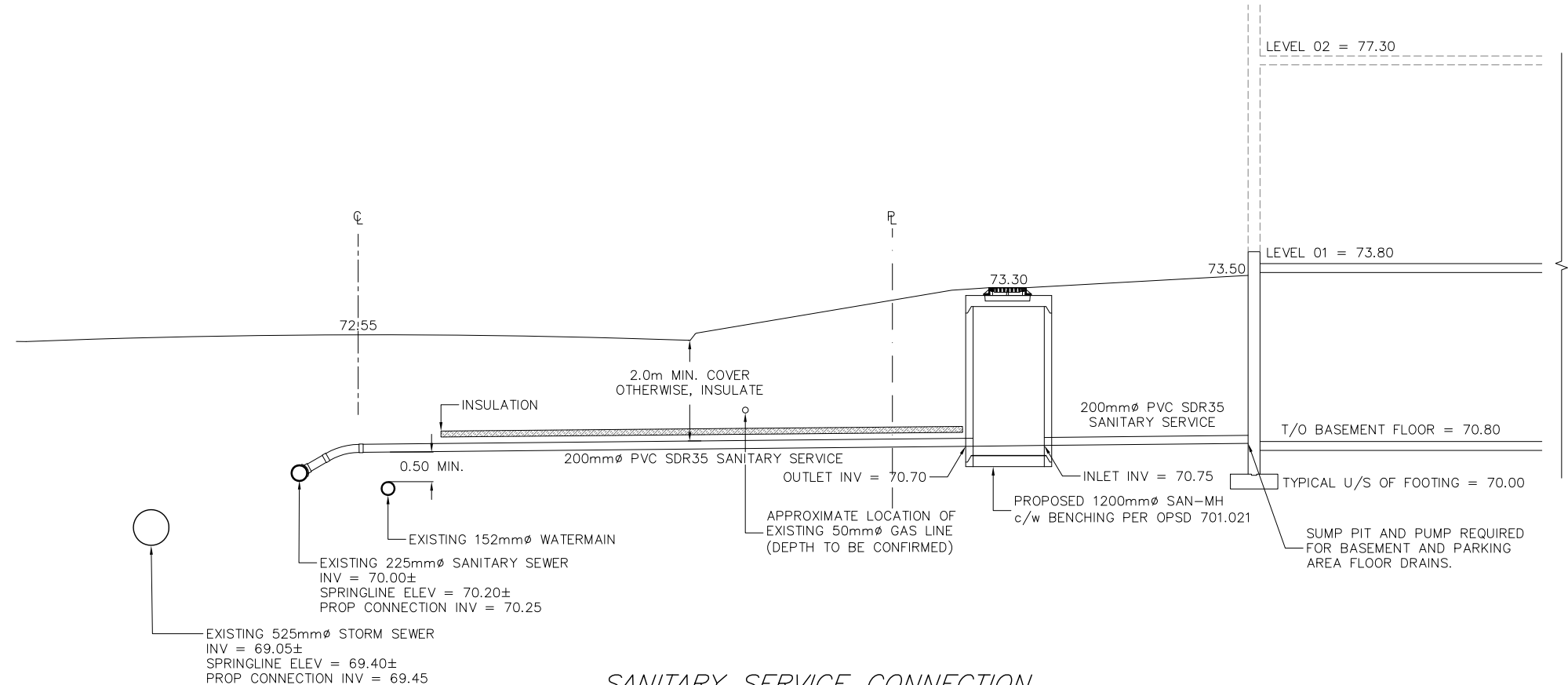
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D07-12-19-0018

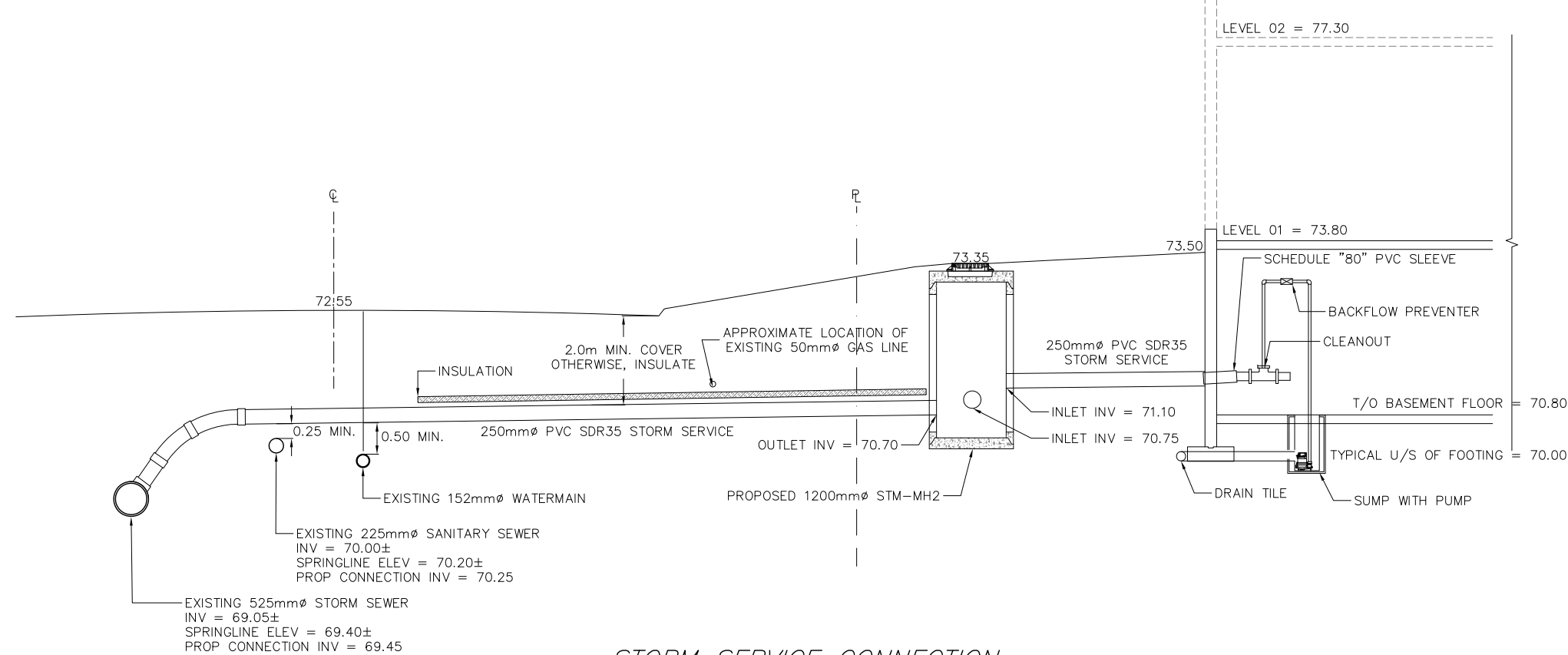
WATER TABLE [841, 845 AND 855(A) GRENON AVENUE]					
LOCATION	DISTANCE (m)	GRADE ELEV. (m)	APPROX. ELEV.	TOP OF WATER SERVICE ELEV. (m)	APPROX. VERTICAL CLEARANCE (m)
CONNECTION	0.00	72.55		70.15	
50mmø GAS	6.00	72.50	71.30	70.15	1.20
PROPERTY LINE	8.50	73.25		70.15	
BUILDING	14.50	73.50		70.15	



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:

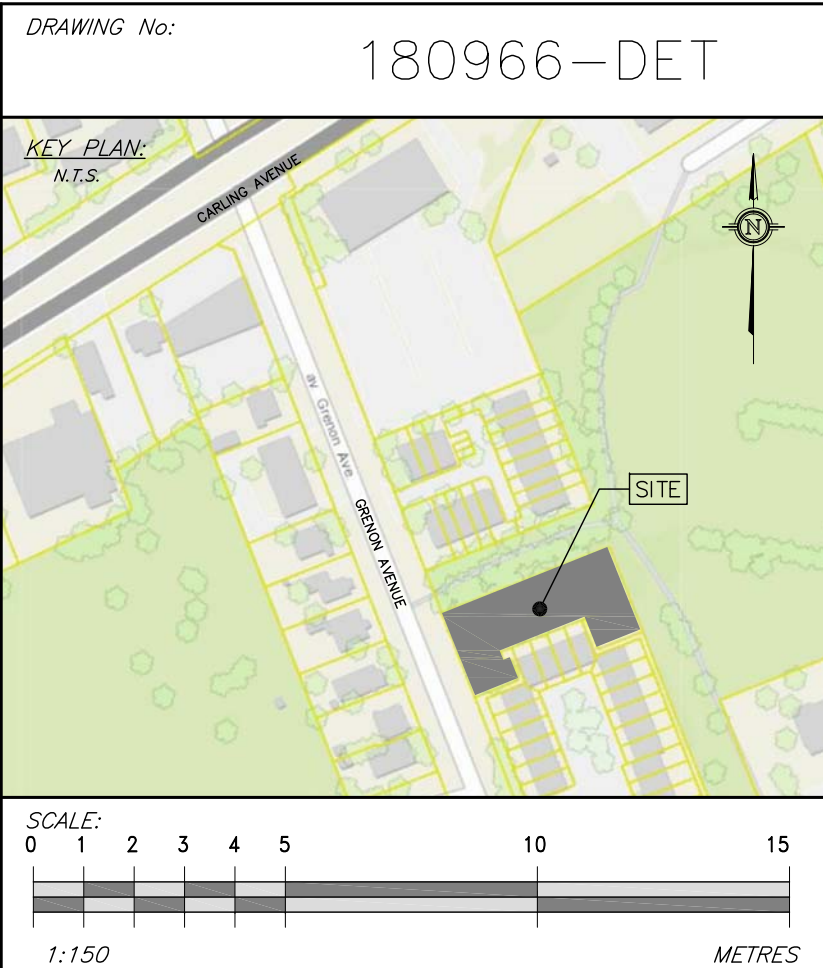
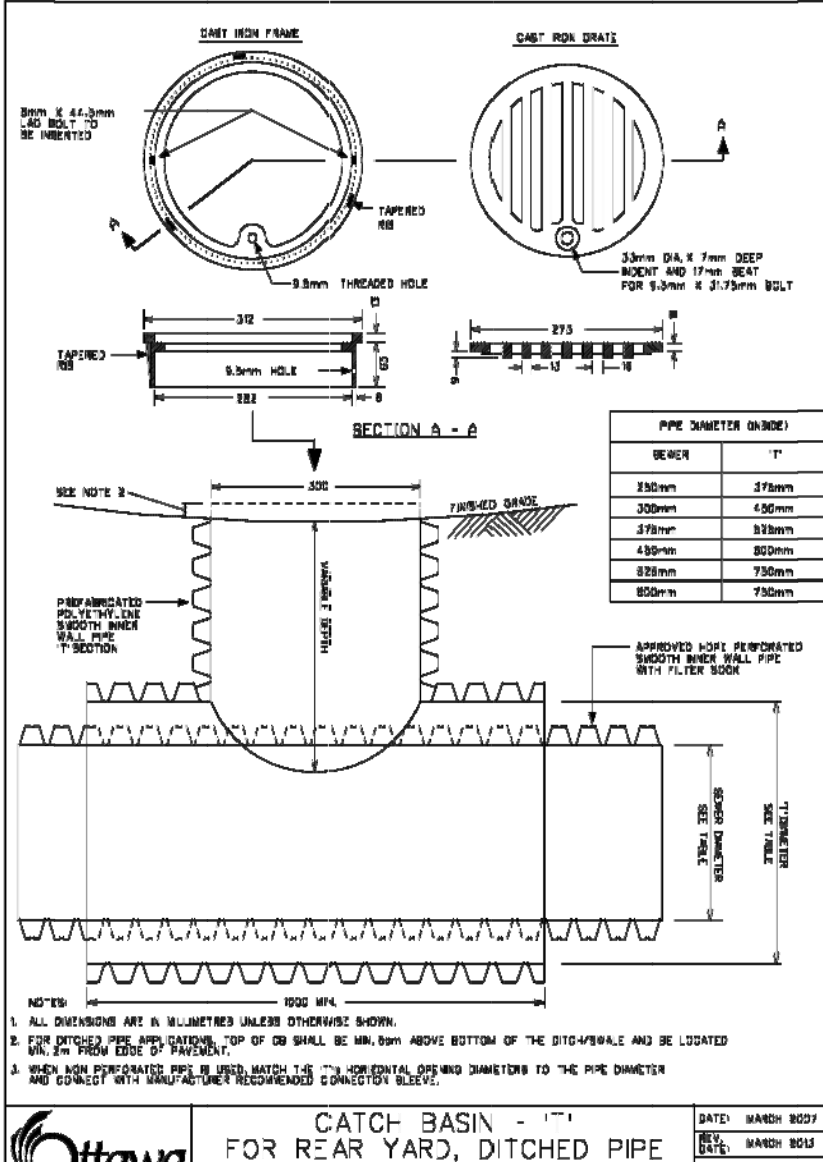
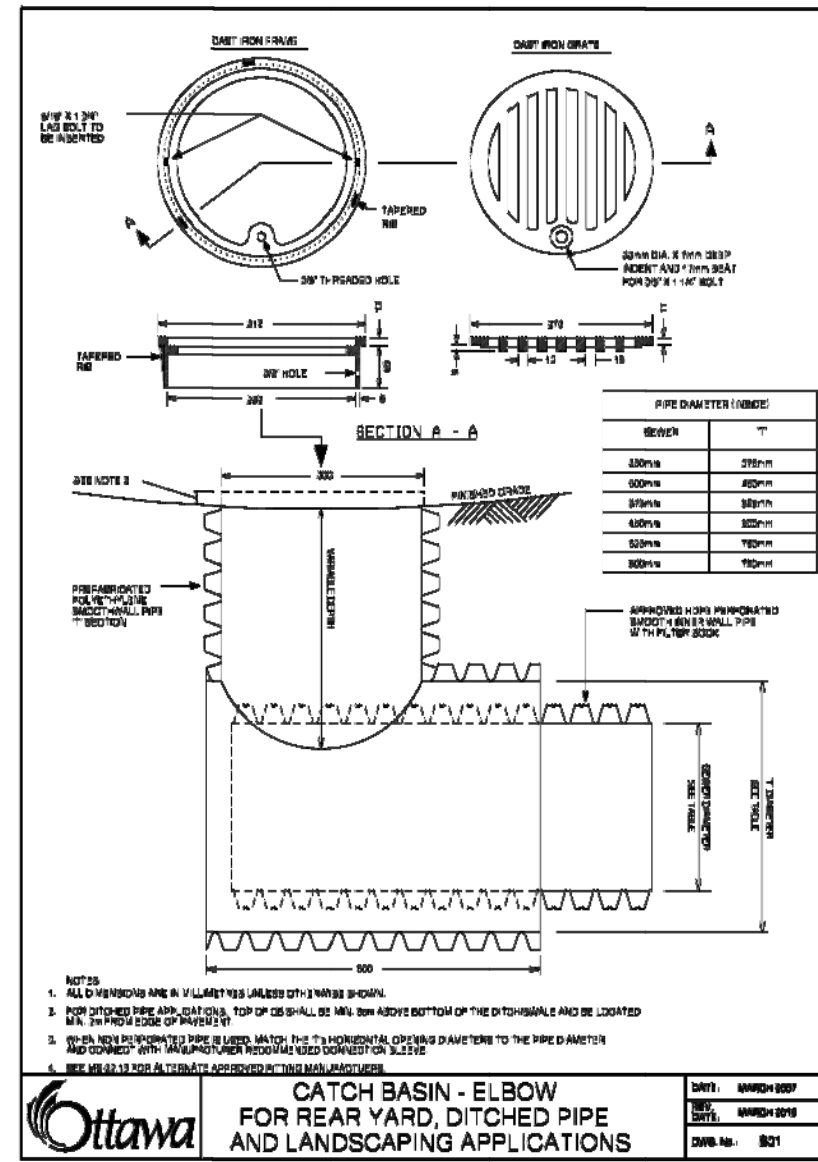
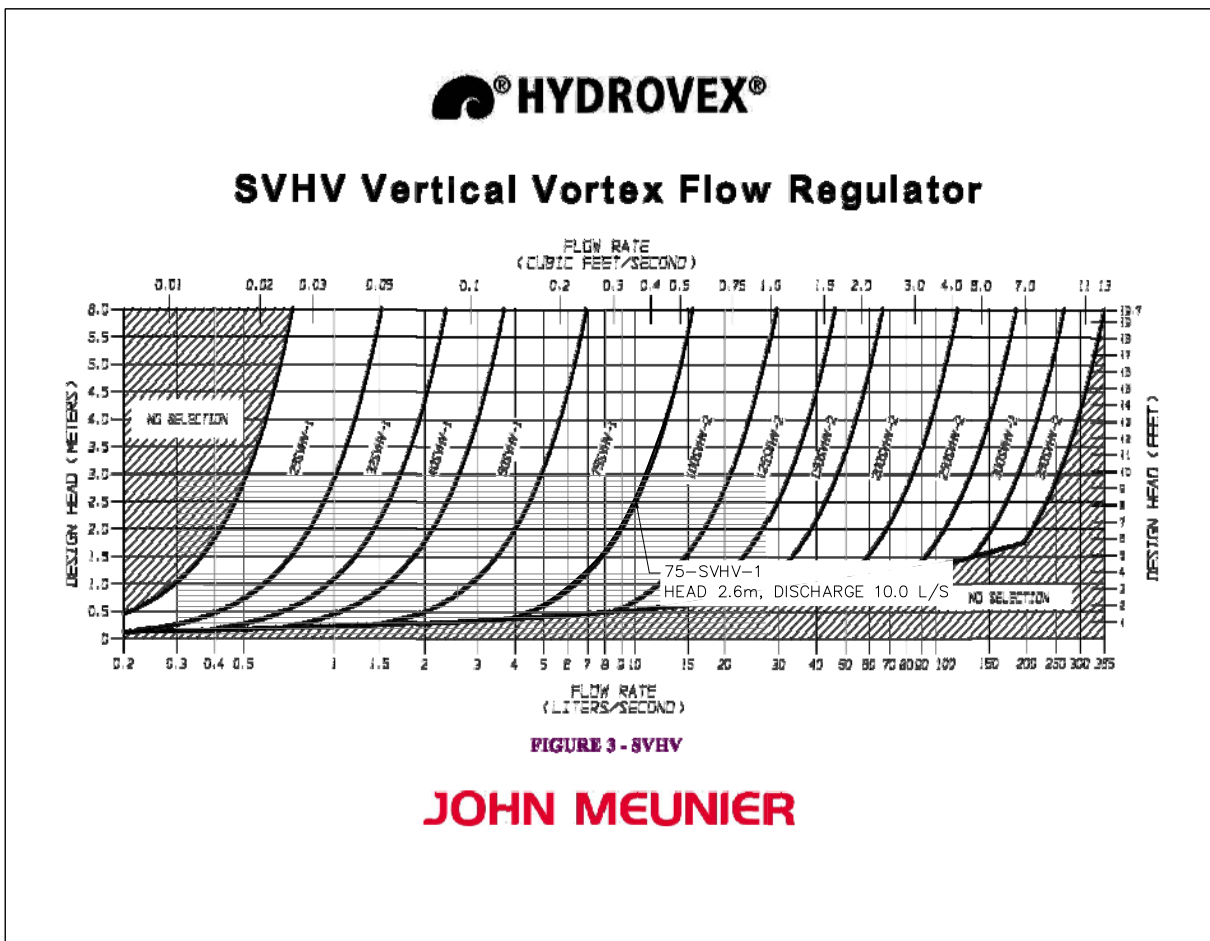
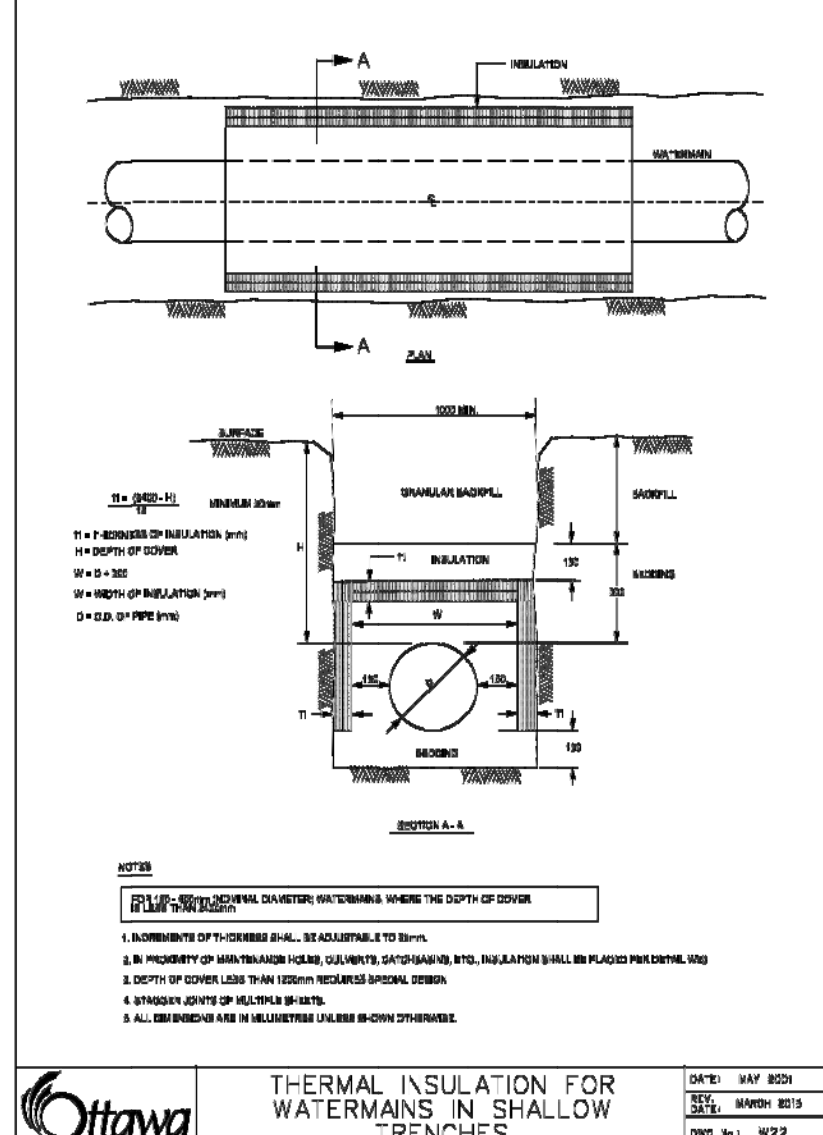
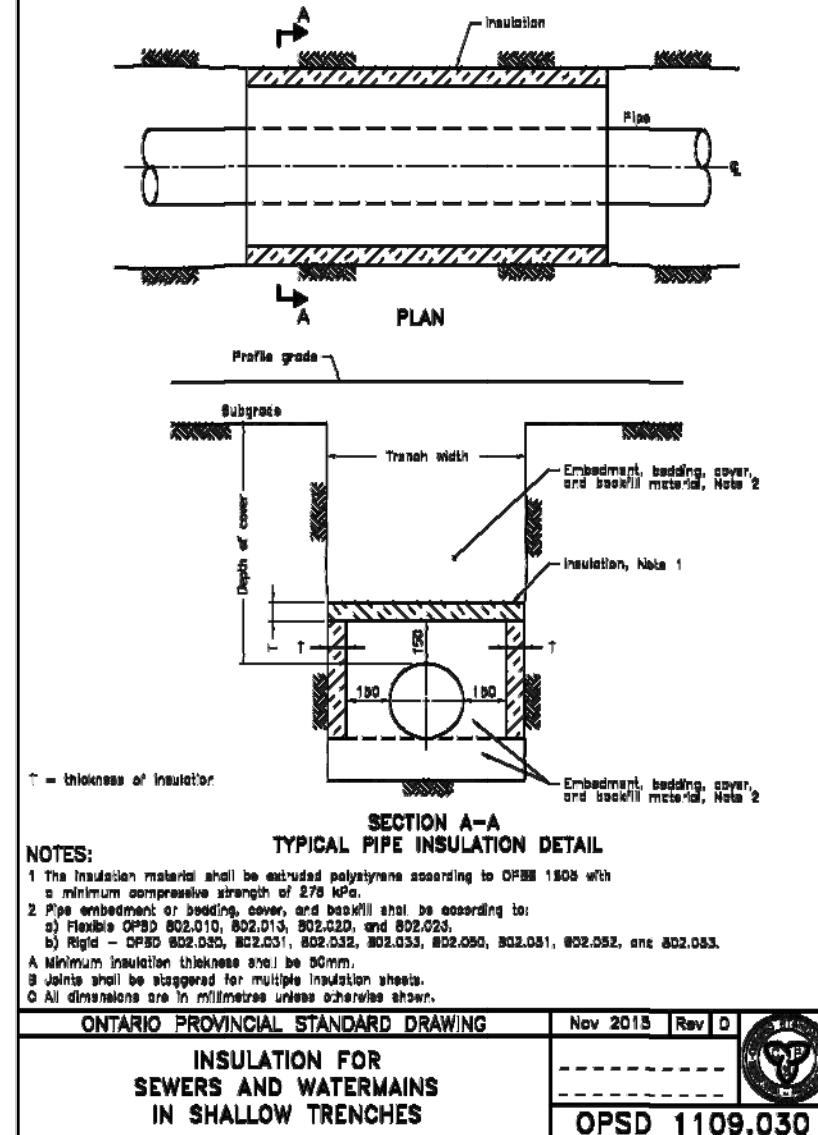
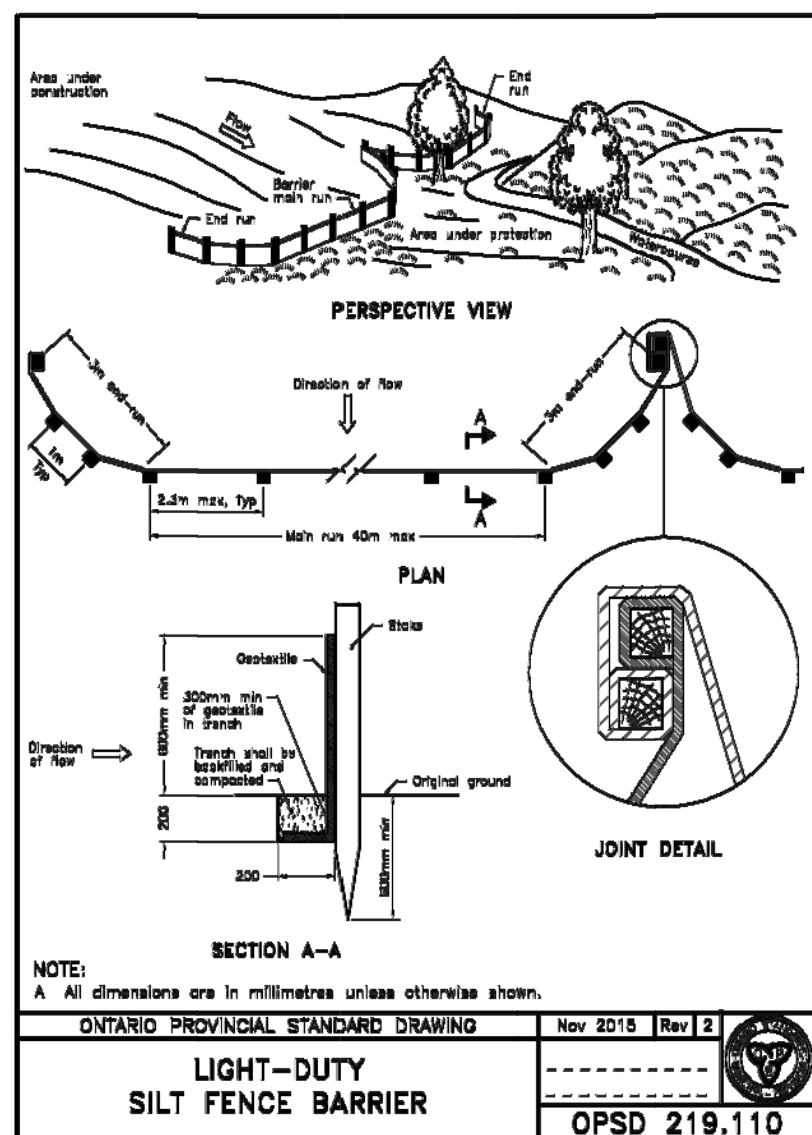
- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS FOR ROADS AND PUBLIC WORKS.
- SPECIFICATIONS:

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	OPSD 701.021	S11 & S11.1
SANITARY BENCHING	OPSD 704.010	
CATCH BASIN & MANHOLE ADJUSTMENTS	OPSD 400.020	S24.1 & S25
STORM MANHOLE FRAME & COVER	OPSD 400.020	S19, S22 & S23
CATCH BASIN FRAME & COVER	OPSD 400.020	S6 & S7
SEWER TRENCH	OPSD 401.030	S24 & S25
SANITARY MANHOLE FRAME & COVER	OPSD 401.030	S24 & S25
- 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 IS TO BE PROVIDED AS PER CITY STD. DWG. W22 (In shallow trenches), W23 (At open structures).
- 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, PSX, 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 SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. 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 WATERMAINS 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 WATERMAINS.
- 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 SHUT-OFF 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.



SCALE: 0 1 2 3 4 5 10 15 METRES

1:150

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RESIDENTIAL APARTMENT BUILDING

LOCATION:

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

LICENSED PROFESSIONAL ENGINEER January 26, 2020 S.E. deWit 100079612 PROVINCE OF ONTARIO	DESIGNED BY:	CHECKED BY:
	ML	SD
	DRAWN BY:	APPROVED BY:
	ML	SD
	DATE:	DEC. 12, 2018
	SHEET SET:	

DRAWING No:

180966-DET

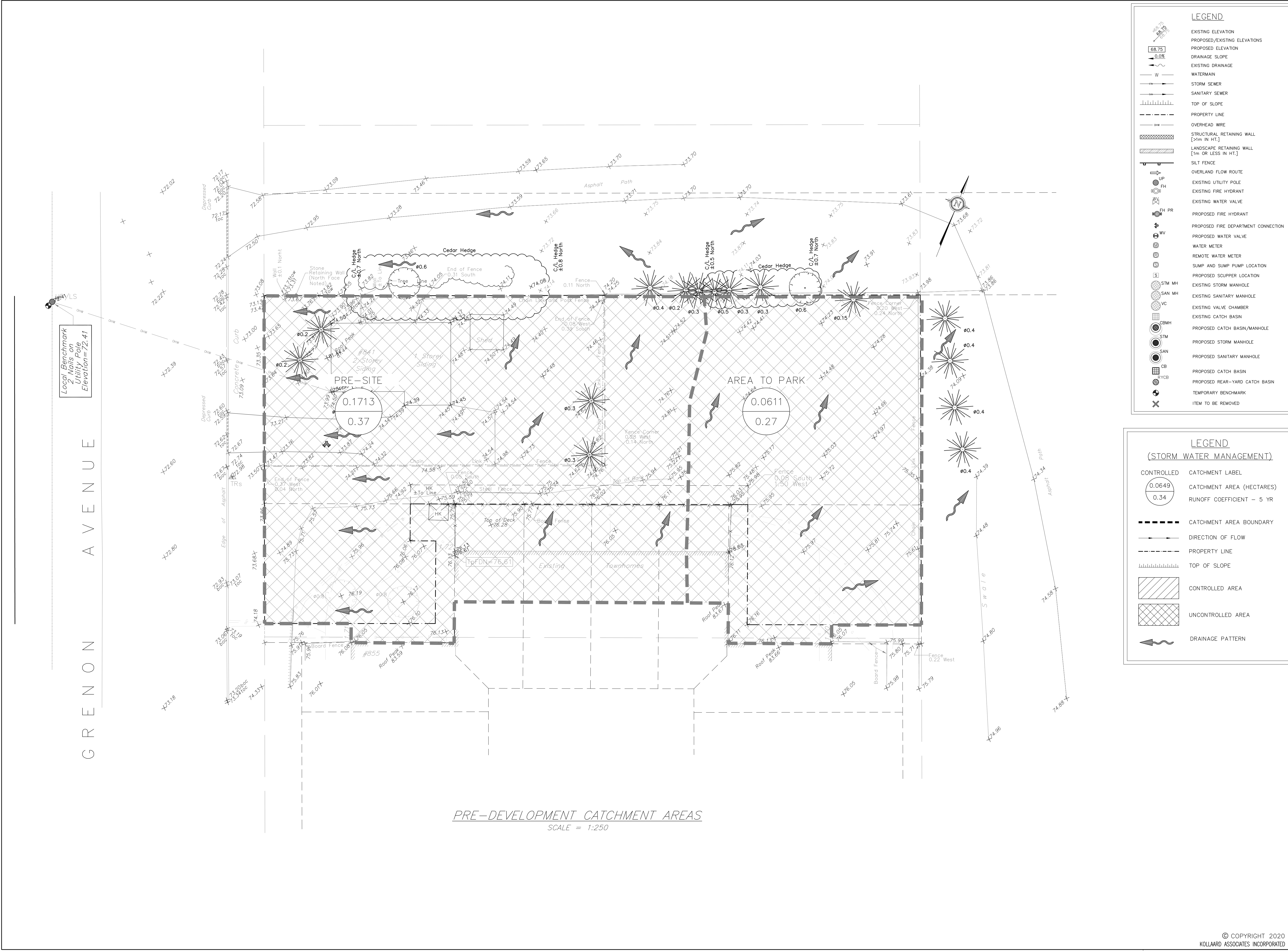
DRAWING NAME:

DETAILS

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KOLLAARD ASSOCIATES INCORPORATED

#17891

D07-12-19-0018



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LEGEND (STORM WATER MANAGEMENT)

CONTROLLED

CATCHMENT LABEL

CATCHMENT AREA (HECTARES)

RUNOFF COEFFICIENT - 5 YR

CATCHMENT AREA BOUNDARY

DIRECTION OF FLOW

PROPERTY LINE

TOP OF SLOPE

CONTROLLED AREA

UNCONTROLLED AREA

DRAINAGE PATTERN

DRAWING No: 180966-PRE

KEY PLAN:

SCALE: 1:150

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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: JAN. 18, 2019
SHEET SET:

LICENSED PROFESSIONAL ENGINEER
January 26, 2020
S.E. deWit
100079612
PROVINCE OF ONTARIO

DRAWING No: 180966-PRE

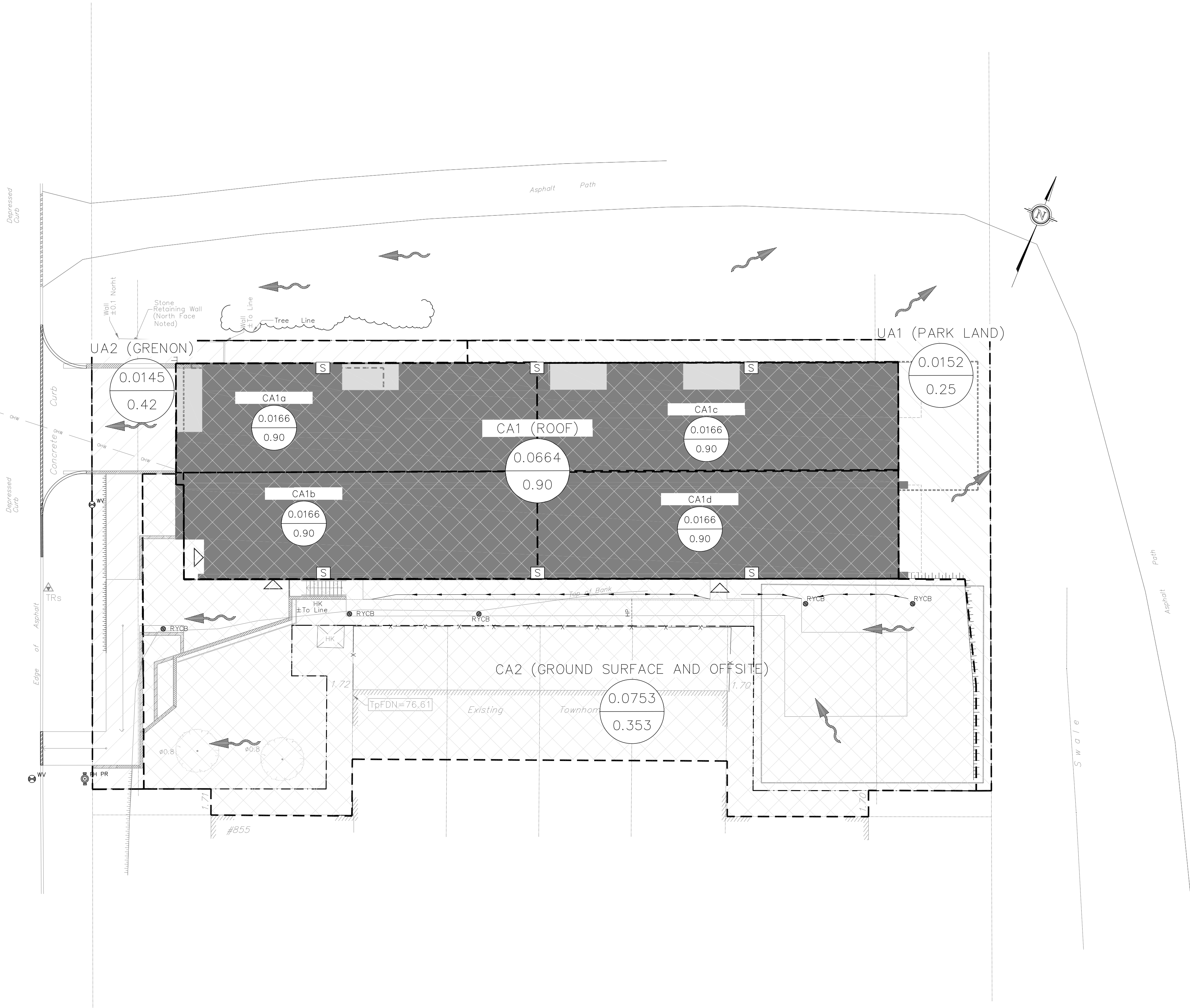
DRAWING NAME: PRE-DEVELOPMENT CATCHMENT AREAS

D07-12-19-0018

#17891

GRENON AVENUE

Local Benchmark
2 Nails on
Utility Pole
Elevation=72.41



POST-DEVELOPMENT CATCHMENT AREAS
SCALE = 1:150

LEGEND

- EXISTING ELEVATION
- PROPOSED/EXISTING ELEVATIONS
- PROPOSED ELEVATION
- DRAINAGE SLOPE
- EXISTING DRAINAGE
- WATERMAIN
- STORM SEWER
- SANITARY SEWER
- TOP OF SLOPE
- PROPERTY LINE
- OVERHEAD WIRE
- STRUCTURAL RETAINING WALL [≥1m 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
- PROPOSED SCUPPER LOCATION
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- 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
- ITEM TO BE REMOVED

LEGEND (STORM WATER MANAGEMENT)

- CONTROLLED CATCHMENT LABEL
- CATCHMENT AREA (HECTARES)
- RUNOFF COEFFICIENT - 5 YR
- CATCHMENT AREA BOUNDARY
- DIRECTION OF FLOW
- PROPERTY LINE
- TOP OF SLOPE
- CONTROLLED AREA
- UNCONTROLLED AREA
- DRAINAGE PATTERN

DRAWING No: 180966-POST

KEY PLAN:
N.T.S.

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

GENERAL NOTES:

- All dimensions are in metres; all elevations are in metres and are geodetic. TBM = 2 nails on utility pole. Elevation= 72.41
- This is not a legal survey. Boundary and topographic information were derived from FARLEY, SMITH & DENIS SURVEYING LTD. File No. 652-18.
- Contractor is responsible for location and protection of utilities.
- Existing services information shown is based on best current information. Contractor to verify exact locations of services and report any discrepancies to Kollaard Associates Inc.
- All dimensions to be verified on site by contractor prior to construction.
- Any changes made to this plan must be verified and approved by Kollaard Associates Inc.
- Client/contractor is responsible for acquiring all necessary permits. This drawing is not for construction until a building permit has been granted.
- 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.
- 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.
- Refer to Kollaard File 180966 for Stormwater Management Design and Geotechnical Report File No. 180966 (dated January 15, 2019).

No.	REVISION	DATE	BY
4	PER CITY REVIEW COMMENTS	2020/02/26	ML
3	PER CITY REVIEW COMMENTS	2020/01/08	ML
2	REVISED IN ACCORDANCE WITH REVISED SITE PLAN	2019/10/21	ML
1	PER CITY REVIEW COMMENTS	2019/08/16	ML
0	PRELIMINARY	2018/12/13	ML

Kollaard Associates Engineers
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info@kollaard.ca

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

CLIENT:
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