



**Structural
Environmental
Services**

ADEQUACEY OF PUBLIC SERVICING REPORT

3996 Innes Road, Ottawa

Prepared by

EAU Structural & Environmental Services

Ottawa, Ontario, K1Y 4P9
Phone: 613 869 0523
Email: derrick.r.clark@rogers.com

Revision 2
March , 2023

1 Project Description:

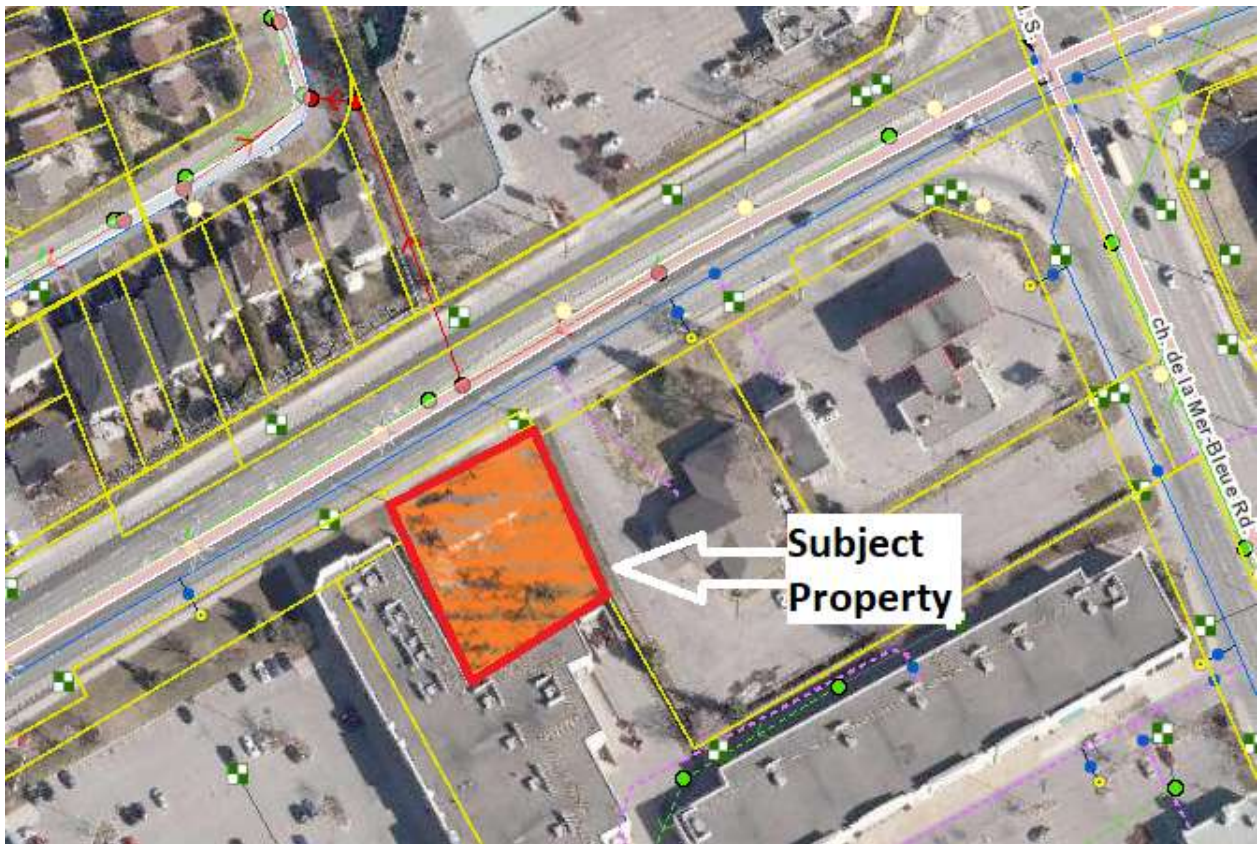
1.1. Introduction:

The property at 3996 Innes Road is located close to intersection of Mer Bleue Road and Innes Rd. The existing lot is 0.15 hectare, currently, contains a one story buildings built in circa 1970. It is proposed that the existing building to be demolished and a new 5-storey commercial/residential building be constructed. Property at 3996 Innes Road is currently zoned as AM (Arterial Mainstreet Zoning) which suits for the purpose of proposed development.

This report will address the servicing requirements associated with the proposed development located at 3996 Innes Road within the City of Ottawa. This report is prepared in response to the request from City of Ottawa Planning department.

1.2. Existing Conditions:

The property measures a total area of approximately 0.15 hectare. The site is fronting 610mm diameter DI water main, 250mm diameter PVC sanitary main and 600mm diameter concrete storm main.



2 Guidelines, Previous Studies, And Reports

The following studies were utilized in the preparation of this report:

- Ottawa Sewer Design Guidelines,
City of Ottawa, SDG002, October 2012.
(City Standards)
 - Technical Bulletin ISTB-2018-01
City of Ottawa, March 21, 2018.
(ISTB-2018-01)
 - Technical Bulletin ISTB-2018-04
City of Ottawa, June 27, 2018.
(ISTB-2018-04)

- Ottawa Design Guidelines Water Distribution
City of Ottawa, July 2010.
(Water Supply Guidelines)
 - Technical Bulletin ISD-2010-2
City of Ottawa, December 15, 2010.
(ISD-2010-2)
 - Technical Bulletin ISDTB-2014-02
City of Ottawa, May 27, 2014.
(ISDTB-2014-02)
 - Technical Bulletin ISTB-2018-02
City of Ottawa, March 21, 2018.
(ISTB-2018-02)

- Design Guidelines for Sewage Works,
Ministry of the Environment, 2008.
(MOE Design Guidelines)

- Stormwater Planning and Design Manual,
Ministry of the Environment, March 2003.
(SWMP Design Manual)

- Ontario Building Code Compendium
Ministry of Municipal Affairs and Housing Building Development Branch,
January 1, 2012 Update. (OBC)

- Geotechnical Report
Prepared by Paterson Group
Report Number: PG5925-1
Dated, November 17, 2021

3 Water Supply

Residential Water Demand:

The water demand is calculated based on the City of Ottawa Water Distribution Design Guidelines as follows:

Demand Type	Amount	Units
Commercial and Institutional		
- Shopping Centres	2500	L/(1000m ² /d)
- Hospitals	900	L/(bed/day)
- Schools	70	L/(Student/d)
- Trailer Parks no Hook-Ups	340	L/(space/d)
- Trailer Parks with Hook-Ups	800	L/(space/d)
- Campgrounds	225	L/(campsite/d)
- Mobile Home Parks	1000	L/(Space/d)
- Motels	150	L/(bed-space/d)
- Hotels	225	L/(bed-space/d)
- Tourist Commercial	28,000	L/gross ha/d
- Other Commercial	28,000	L/gross ha/d
Maximum Daily Demand		
Residential	2.5 x avg. day	L/c/d
Industrial	1.5 x avg. day	L/gross ha/d
Commercial	1.5 x avg. day	L/gross ha/d
Institutional	1.5 x avg. day	L/gross ha/d
Maximum Hour Demand		
Residential	2.2 x avg. day	L/c/d
Industrial	1.8 x avg. day	L/gross ha/d
Commercial	1.8 x avg. day	L/gross ha/d
Institutional	1.8 x avg. day	L/gross ha/d

- Residential occupancy :
1.4 persons per 18 bedroom apartment
2.1 persons per 2 bedroom apartment

□ $18 \times 1.4 + 2 \times 2.1 = 29.4$

Total Residential Occupancy = 29.4 persons rounded up to 30 persons

Residential Average Daily Demand = 280 L/c/d.

□ Average daily demand of 280 L/c/day x 30 persons = 8400 Liters/day

- Commercial occupancy :

□ $28000 \times 0.15 = 4200 \text{ L/d}$

Total Demand : $8400 + 4200 = 12,600 \text{ L/d}$ or 0.15 L/s

- Maximum daily demand (factor of 2.5) is $0.15 \text{ L/s} \times 2.5 = 0.375 \text{ L/s}$
- Peak hourly demand (factor of 2.2) = $0.375 \text{ L/s} \times 2.2 = 0.825 \text{ L/s}$

Fire Fighting Requirement
Based on Fire Underwriter Survey Method

Fire flow protection requirements were calculated as per the Fire Underwriter's Survey (FUS). Please see next page.

Based on calculation, 145 L/S required duration 2.5 hours. In fact, any fire hydrant in the City of Ottawa has minimum of 150L/S capacity. Knowing the fact that the closest fire hydrant is 30m from the frontage property lines, we can assure that there is enough capacity for the proposed development. The boundary condition is requested and here is the result:

Demand Scenario	Head (m)	Pressure ¹ (psi)	KPa
Maximum HGL	130.3	56.5	390
Peak Hour	127.0	51.8	358
Max Day plus Fire #1	128.5	53.9	372
Max Day plus Fire #2	127.6	52.7	363

1. Consult proposed connection to the 610mm transmission main with Drinking Water Services

Analyzing results:

- ❖ Ground Elevation = 90.50 m

Floor Elevation	Head (m)	Pressure (KPa) at Each Floor
Ground Floor EL. = 90.50m	127	358
Second Floor EL. = 92.90m	124.6	334
Third Floor EL. = 95.30m	122.2	311
Fourth Floor EL. = 97.70m	119.8	287
Fifth Floor EL. = 100.10m	117.4	264

Based on City of Ottawa Design Guidelines – Water Distribution, minimum water pressure of 275KPa is required for domestic use. From the above table, the fifth floor water pressure is slightly less than the minimum requirement. Note that due to the presence of the sprinkler, the size of water later is proposed to be 100mm diameter connecting to existing 610mm diameter DI water main on Innes road. Due to a large lateral connect for this size of the building, the water supply would be adequate for the entire development.

Fire Flow Calculations as per Fire Underwriter's Survey Guidelines			
F=220C√A		Address:	
where		File No.:	
F=	Required fire flow in L/min		
C=	Coefficient related to the type of construction		
A=	Total floor area in m ²		
C	Coefficient Related to Type of Construction		C-Value
	• Wood Frame Construction	<input type="checkbox"/>	1.5
	• Ordinary Construction	<input checked="" type="checkbox"/>	1.0
	• Non-Combustible Construction	<input type="checkbox"/>	0.8
	• Fire-Resistive Construction	<input type="checkbox"/>	0.6
C =			1.0
A	Total Floor Area (m²)		
	32095.5 ft ²	▶◀	2981.77 m ²
F	Required Fire Flow (L/min)		
	= 220·C·√A		
	= 12013 L/min		
Occupancy Reductions or Surcharges			
	• Non-Combustible	<input checked="" type="checkbox"/>	-25%
	• Limited Combustible	<input type="checkbox"/>	-15%
	• Combustible	<input type="checkbox"/>	0%
	• Free Burning	<input type="checkbox"/>	15%
	• Rapid Burning	<input type="checkbox"/>	25%
			-25%
			9010 L/min
Sprinkler Reduction			
	• Adequately Designed System	<input checked="" type="checkbox"/>	-30%
	• Water Supply is Standard	<input type="checkbox"/>	-10%
	• Fully Supervised System	<input type="checkbox"/>	-10%
			-30%
Reduction:		9010 L/min	
Fire Flow:		2703 L/min	
		6307 L/min	
Exposure Surcharge			
	Distance	Charge	# of Sides
	• 0 to 3m	25%	
	• 3.1 to 10m	20%	1
	• 10.1 to 20m	15%	20%
	• 20.1 to 30m	10%	1
	• 30.1 to 45m	5%	10%
			10%
			40%
Surcharge:		6307 L/min	
Fire Flow:		2523 L/min	
		8830 L/min	
REQUIRED FIRE FLOW			
Cannot exceed 45,000 L/min nor be less than 2,000 L/min			
			8830 L/min
			or 147 L/s
			or 1942 IGPM

4 Sanitary Sewage

Sanitary Sewage Calculation

Design Flows

- Residential occupancy :
1.4 persons per 18 bedroom apartment
2.1 persons per 2 bedroom apartment

$$\square 18 \times 1.4 + 2 \times 2.1 = 29.4$$

Total Residential Occupancy = 29.4 persons rounded up to 30 persons

Residential Average Daily Demand = 280 L/c/d.

$$\square \text{Average daily demand of } 280 \text{ L/c/day} \times 30 \text{ persons} = 8400 \text{ Liters/day}$$

- Commercial occupancy :

$$\square 28000 \times 0.15 = 4200 \text{ L/d}$$

Total: $8400 + 4200 = 12,600 \text{ L/d}$ or 0.15 L/s

Peaking Factor = $1 + 14 / (4 + (7 / 1000)^{0.5}) * 0.8 = 3.54$ *use 4 maximum

Q Peak Domestic = $0.15 \text{ L/sec} \times 4.0 = 0.6 \text{ L/sec}$

Infiltration

Q Infiltration = $0.33 \text{ L/S/Gross hectare} \times 0.15 \text{ ha} = 0.05 \text{ L/sec}$

Total Peak Sanitary Flow = 0.6 + 0.05 = 0.65 L/sec

The Ontario Building Code specifies minimum pipe size and maximum hydraulic loading for sanitary sewer pipe. OBC 7.4.10.8 (2) states "Horizontal sanitary drainage pipe shall be designed to carry no more than 65% of its full capacity." A 200mm diameter sanitary service with a minimum slope of 1.0% has a capacity of 65.0 Litres per second. The maximum peak sanitary flows for the site is 0.65 L/s. Since 0.65 L/s is much less than $0.65 \times 65.0 = 42.3 \text{ L/s}$, therefore, 200mm diameter PVC pipe will be satisfactory.

Sewage discharges will be domestic in type and in compliance with the Ontario Building Code. The proposed service connection from the proposed building will be made to the existing sanitary sewer on Innes Road. The proposed service will be a 200mm diameter PVC pipe installed at a minimum slope of 1%.

The peak sanitary flow from the proposed development is less than 10 percent of the capacity of the existing sanitary. As such the proposed increase in sanitary flow as a result of the construction of the proposed building is negligible and there is sufficient available capacity for the proposed development.

5 Geotechnical Report Recommendation

The Geotechnical report, prepared by Patersongroup Inc., recommends that a perimeter foundation drainage system be provided for the proposed structures. The system should consist of a 100 to 150 mm diameter perforated, corrugated plastic pipe which is surrounded on all sides by 150 mm of 19 mm clear crushed stone and is placed at the footing level around the exterior perimeter of the structure. All other Geotechnical recommendation shall be implemented on its entire context.

6 Conclusions

This report addresses the storm water management of the proposed site. The following list below itemizes the conclusions of this report.

- The allowable release rate for the site and required storage volume for 5year and 100year storm event calculated.
- Runoff from the roof and parking area will be retained in the parking and driveway area then discharged to the City storm system via an ICD
- During all construction activities, erosion and sedimentation shall be controlled be techniques outlined in this report.

Should you have any question, do not hesitate to let us know.



Yours truly,
Derrick R. Clark, P. Eng.

APPENDIX A:

GeoOttawa Map



APPENDIX B:

Correspondents

Boundary Conditions 3996 Innes Road

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	9	0.15
Maximum Daily Demand	22.5	0.375
Peak Hour	49.5	0.825
Fire Flow Demand #1	8700	145
Fire Flow Demand #2	12000	200

Location



Results

Connection 1 – Innes Road

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	130.3	56.5
Peak Hour	127.0	51.8
Max Day plus Fire #1	128.5	53.9
Max Day plus Fire #2	127.6	52.7

Ground Elevation = 90.5 m

Results

1. Consult proposed connection to the 610mm transmission main with Drinking Water Services

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

APPENDIX C:
Engineering Drawings



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No	DATE	ISSUED FOR	App.
1	2022/09/14	SITE PLAN CONTROL	D.K.
2	2022/12/31	PER CITY REVIEW	D.K.
3	2023/04/01	PER CITY REVIEW	D.R.C.
4			
5			

GENERAL NOTES & LEGEND:

- PROPERTY LINE
- SILT FENCE PER OPSD 219.130
- [Symbol] PROPOSED BUILDING ENVELOPE
- [Symbol] EXISTING FIRE HYDRANT
- [Symbol] PROPOSED CONCRETE CURB WITH DEPRESSION
- [Symbol] EXISTING HYDRO POLE
- [Symbol] EXISTING GROUND ELEVATION
- [Symbol] PROPOSED ELEVATION
- [Symbol] PROPOSED DOOR ENTRANCE
- [Symbol] DIRECTION AND SLOPE OF SURFACE WATER FLOW
- [Symbol] PROPOSED FINISHED FLOOR ELEVATION
- [Symbol] PROPOSED UNDERSIDE OF FOOTING ELEVATION
- [Symbol] SITE BENCHMARK SITE BENCHMARK 2 NAILS IN UTILITY POLE ELEVATION=91.06
- [Symbol] TORW PROPOSED TOP OF RETAINING WALL
- [Symbol] BORW PROPOSED BOTTOM OF RETAINING WALL
- 100 YR STORM PONDING LIMIT CONTOUR LINE
- 100 YR + 20% STORM PONDING LIMIT CONTOUR LINE
- [Symbol] ASPHALT
- [Symbol] CONCRETE
- [Symbol] GRASS
- [Symbol] TREE

NOTES FOR SERVICING

- ALL SERVICES, MATERIALS, CONSTRUCTION METHODS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND REGULATIONS FOR THE CITY OF OTTAWA STANDARD SPECIFICATION AND DRAWINGS, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), UNLESS OTHERWISE SPECIFIED, TO THE SATISFACTION OF THE CITY AND THE CONSULTANT.
- THE POSITION OF EXISTING POLE LINES, CONDUITS, WATER MAINS SEWERS AND OTHER UNDERGROUND AND ABOVEGROUND UTILITIES, STRUCTURES AND APPURTENANCES OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SATISFY HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME LIABILITY FOR DAMAGE TO THEM DURING THE COURSE OF CONSTRUCTION. ANY RELOCATION OF EXISTING UTILITIES REQUIRED BY THE DEVELOPMENT OF SUBJECT LANDS IS TO BE UNDERTAKEN AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR MUST NOTIFY ALL EXISTING UTILITY COMPANY OFFICIALS FIVE (5) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION AND HAVE ALL EXISTING UTILITIES AND SERVICES LOCATED IN THE FIELD OR EXPOSED PRIOR TO THE START OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO HYDRO, BELL, CABLE, TV, AND CONSUMERS GAS LINES.
- ALL TRENCHING AND EXCAVATIONS ARE TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
- REFER TO ARCHITECT PLANS FOR BUILDING DIMENSIONS LAYOUT AND REMOVALS. REFER TO LANDSCAPE PLAN FOR LANDSCAPED DETAILS AND OTHER RELEVANT INFORMATION. THE INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- TOPOGRAPHIC SURVEY COMPLETED ON THE 8TH DAY OF JANUARY 2021 AND PROVIDED BY FARLEY, SMITH & DENIS SURVEYING LTD. CONSTRUCTION TO VERIFY IN THE FIELD PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE LOCATION OF UNDERGROUND SERVICES IS BASED ON THE SURVEY PROVIDED WITH THE INFORMATION FROM THE CITY OF OTTAWA. HOWEVER, THE CONTRACTOR MUST ENSURE THAT THIS INFORMATION IS VERIFIED PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
- ALL ELEVATIONS ARE GEODETIC AND UTILIZED METRIC UNITS.
- AS INDICATED ON THE DRAWINGS.
- ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT APPROVED SWALE OR CATCH BASIN OUTLETS ARE PROVIDED.
- ALL EDGES OF THE DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500MM WIDTH MINIMUM.
- ALL DISTURBED AREAS OUTSIDE PROPOSED GRADING LIMITS ARE TO BE RESTORED TO ORIGINAL ELEVATIONS AND CONDITIONS UNLESS OTHERWISE SPECIFIED. ALL RESTORATION SHALL BE COMPLETED WITH THE GEOTECHNICAL REQUIREMENTS FOR BACKFILL AND COMPACTION.
- ALL MATERIAL SUPPLIED AND PLACED FOR PARKING LOT AND ACCESS ROAD CONSTRUCTION SHALL BE TO OPSD STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED. CONSTRUCTION TO OPSD 206.310 & 314. MATERIAL TO OPSD 1001, 1003 & 1010.
- ABUTTING PROPERTY GRADES TO BE MATCHED.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
- MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
- REMOVE FROM THE SITE ALL EXCESS EXCAVATED MATERIAL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
- ALL PROPOSED UTILITIES CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
- SERVICE TRENCHES ON MUNICIPAL RIGHT OF WAY ARE TO BE REINSTATED AS PER CITY OF OTTAWA DETAIL R10.
- PRIOR TO CONSTRUCTION, A GEOTECHNICAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO IS TO INSPECT ALL SUB-SURFACES FOR FOOTINGS, SERVICES AND PAVEMENT STRUCTURES. FOR ANY SOILS RELATED INFORMATION, REFER TO THE GEOTECHNICAL INVESTIGATION REPORT.
- CONTRACTOR TO REINSTATE PAVER STONES IN CITY ROW.
- PAVEMENT STRUCTURE SHALL CONSIST OF:

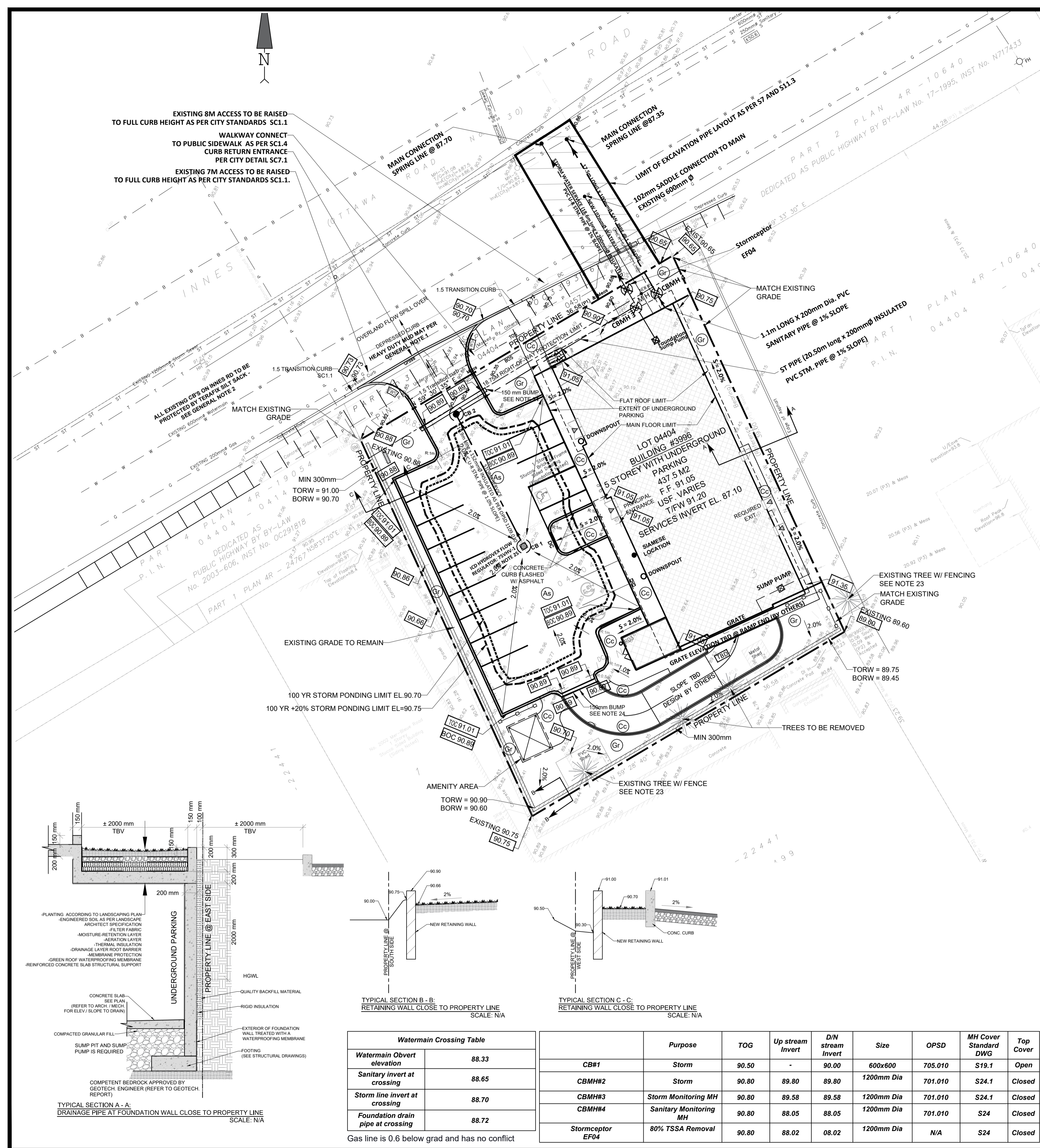
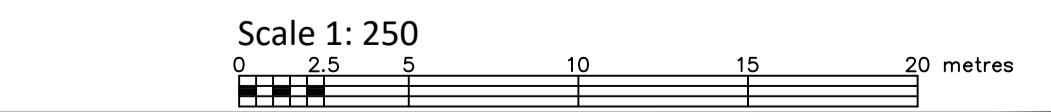
Thickness (mm)	Material Description
40	Wear Course - HL-3 or Superpave 12.5 Asphaltic Concrete
50	Wear Course - HL-8 or Superpave 19 Asphaltic Concrete
150	Base - OPSD Granular A Crushed Stone
450	Subbase - OPSD Granular B Type II

NOTES FOR WATER MAIN

- ALL WATER MAIN AND WATER MAIN APPURTENANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND THE MINISTRY OF ENVIRONMENTAL STANDARDS AND SPECIFICATIONS.
- ALL WATER MAIN 300MM DIAMETER AND SMALLER TO BE POLYVINYL CHLORIDE (PVC) CLASS 150 OR 18 MEETINGS AWWA SPECIFICATION C900. STANDARD LATERAL MATERIAL SERVICES UP TO 300MM IS COPPER TYPE "K".
- ALL WATER MAINS ARE TO BE INSTALLED AT A MINIMUM COVER OF 2.4M BELOW THE FINISHED GRADE, WHERE WATER MAINS CROSS OVER OTHER UTILITIES. A MINIMUM 0.30M CLEARANCE FROM UTILITIES OVERHEAD SHALL BE MAINTAINED. WHERE WATER MAINS CROSS UNDER OTHER UTILITIES, A MINIMUM OF 0.50M, CLEARANCE SHALL BE MAINTAINED. WHERE THE MINIMUM SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN SHALL BE INSTALLED AS PER THE CITY OF OTTAWA STANDARDS W25 AND W25.2. WHERE A 2.4M MINIMUM DEPTH CANNOT BE ACHIEVED, THERMAL INSULATION SHALL BE PROVIDED AS PER THE CITY OF OTTAWA STANDARD W22.
- WATER MAIN BEDDING TO BE AS PER CITY OF OTTAWA STANDARD W17.
- VALVE BOX TO BE AS PER CITY OF OTTAWA STANDARD W24.
- CONCRETE THRUST BLOCKS AND MECHANICAL RESTRAINTS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, REDUCERS, END OF MAINS AND CONNECTIONS 100MM AND LARGER, IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARD W25 AND W25.4.
- CATHODIC PROTECTION IS REQUIRED FOR ALL IRON FITTING AS PER THE CITY OF OTTAWA STANDARDS W40 & W42.
- FIRE HYDRANTS TO BE AS PER CITY OF OTTAWA STANDARD W19. (NOT REQUIRED).
- IF THE WATER MAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER. TYPICAL WATER SERVICE LINE AS PER W20 (FOR 100MM & 250MM DIAM WATER SERVICES), AND TO BE INSTALLED AT 1M FROM THE FOUNDATION WALLS.

NOTES: SEWER AND MANHOLES

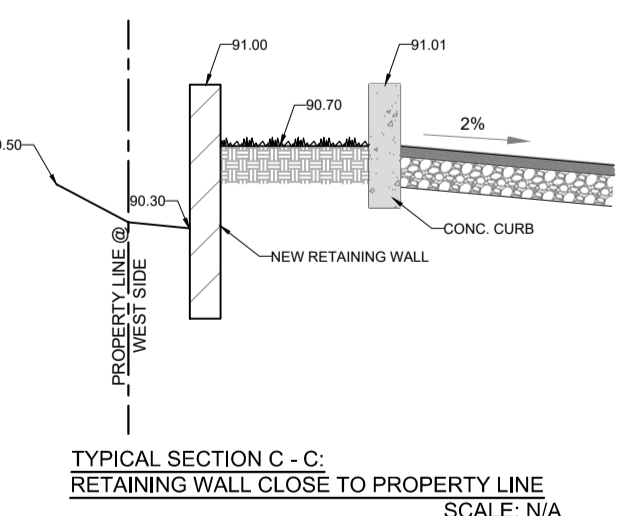
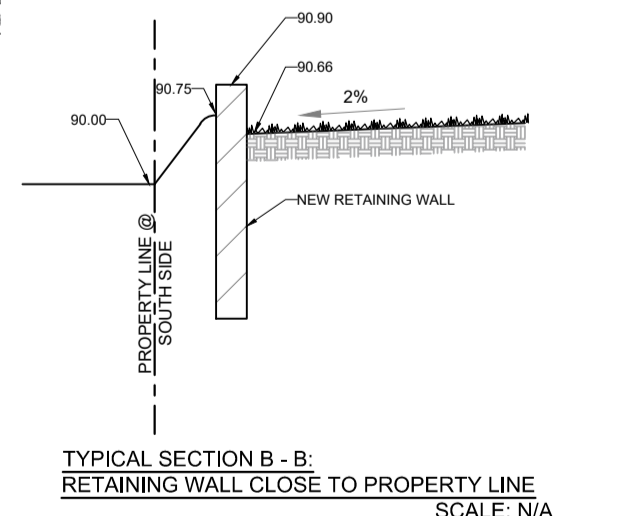
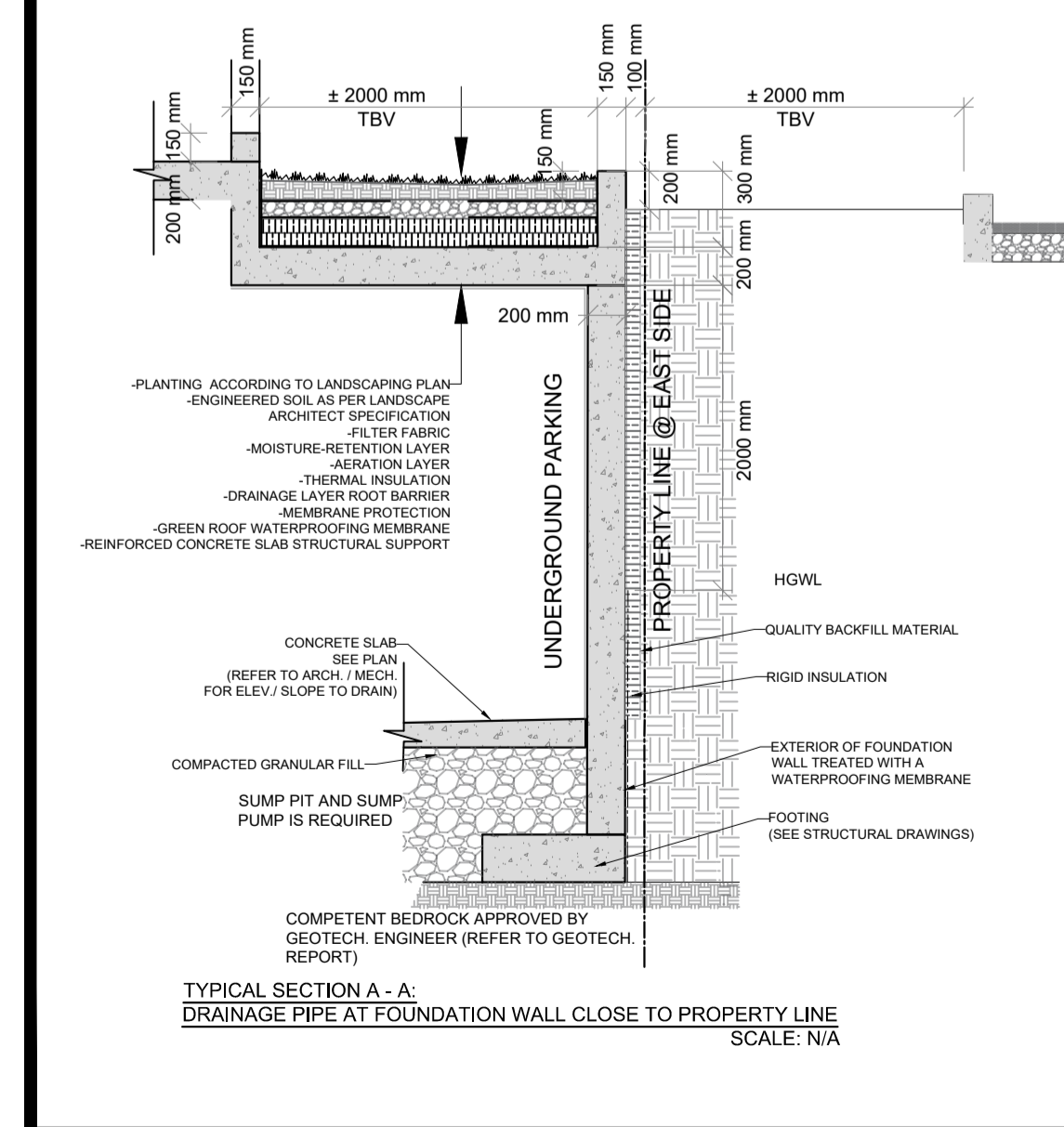
- ALL SANITARY SEWER, SANITARY SEWER APPURTENANCE AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- SEWER BEDDING SHALL BE AS PER CITY OF OTTAWA DETAIL S6.
- SEWER SHALL BE PERFORMED AS APPLICABLE IN ACCORDANCE WITH OPSD 407 AND 410.
- ALL SANITARY MANHOLES 1200mm IN DIAMETER TO BE AS PER OPSD 701.01, FRAME AND COVER TO BE AS PER STANDARD S25 AND S25.4.
- SANITARY BACKWATER VALVES ARE TO BE PROVIDED FOR EACH BUILDING CLOSE TO THE FOUNDATION WALL NEAR SERVICES ENTRY AS PER CITY OF OTTAWA STD S14.1 OR S14.2.
- STORM BACKWATER VALVES ARE TO BE PROVIDED CLOSE TO THE FOUNDATION WALL NEAR SERVICES ENTRY AS PER THE CITY OF OTTAWA STD S14.
- ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- Gas main shall be 1.0m of separation from watermain as per P20.



Watermain Crossing Table

Watermain Obvert elevation	88.33
Sanitary invert at crossing	88.65
Storm line invert at crossing	88.70
Foundation drain pipe at crossing	88.72

	Purpose	TOG	Up stream Invert	D/N stream Invert	Size	OPSD	MH Cover Standard DWG	Top Cover
CB#1	Storm	90.50	-	90.00	600x600	705.010	S19.1	Open
CBMH#2	Storm	90.80	89.80	89.80	1200mm Dia	701.010	S24.1	Closed
CBMH#3	Storm Monitoring MH	90.80	89.58	89.58	1200mm Dia	701.010	S24.1	Closed
CBMH#4	Sanitary Monitoring MH	90.80	88.05	88.05	1200mm Dia	701.010	S24	Closed
Stormceptor EF04	80% TSSA Removal	90.80	88.02	08.02	1200mm Dia	N/A	S24	Closed



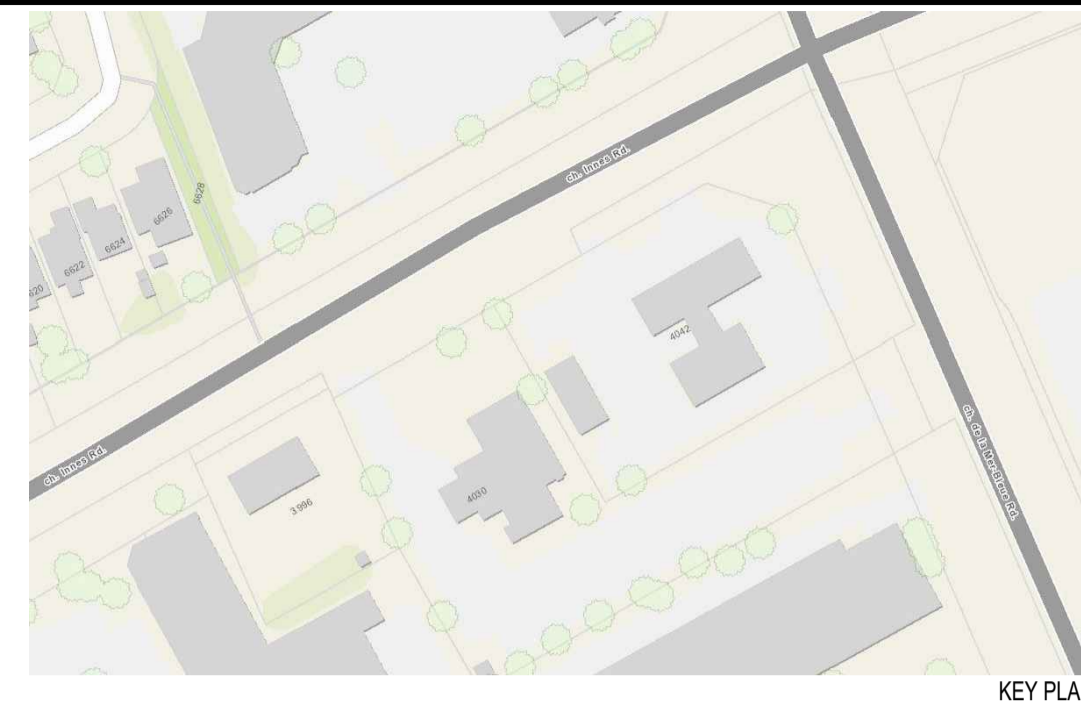
Stamp: D. R. CLARK, PROFESSIONAL ENGINEER, PROVINCE OF ONTARIO

Project: ORLEANS RESIDENTIAL & MEDICAL FACILITY, 3996 Innes Road, Ottawa, ON.

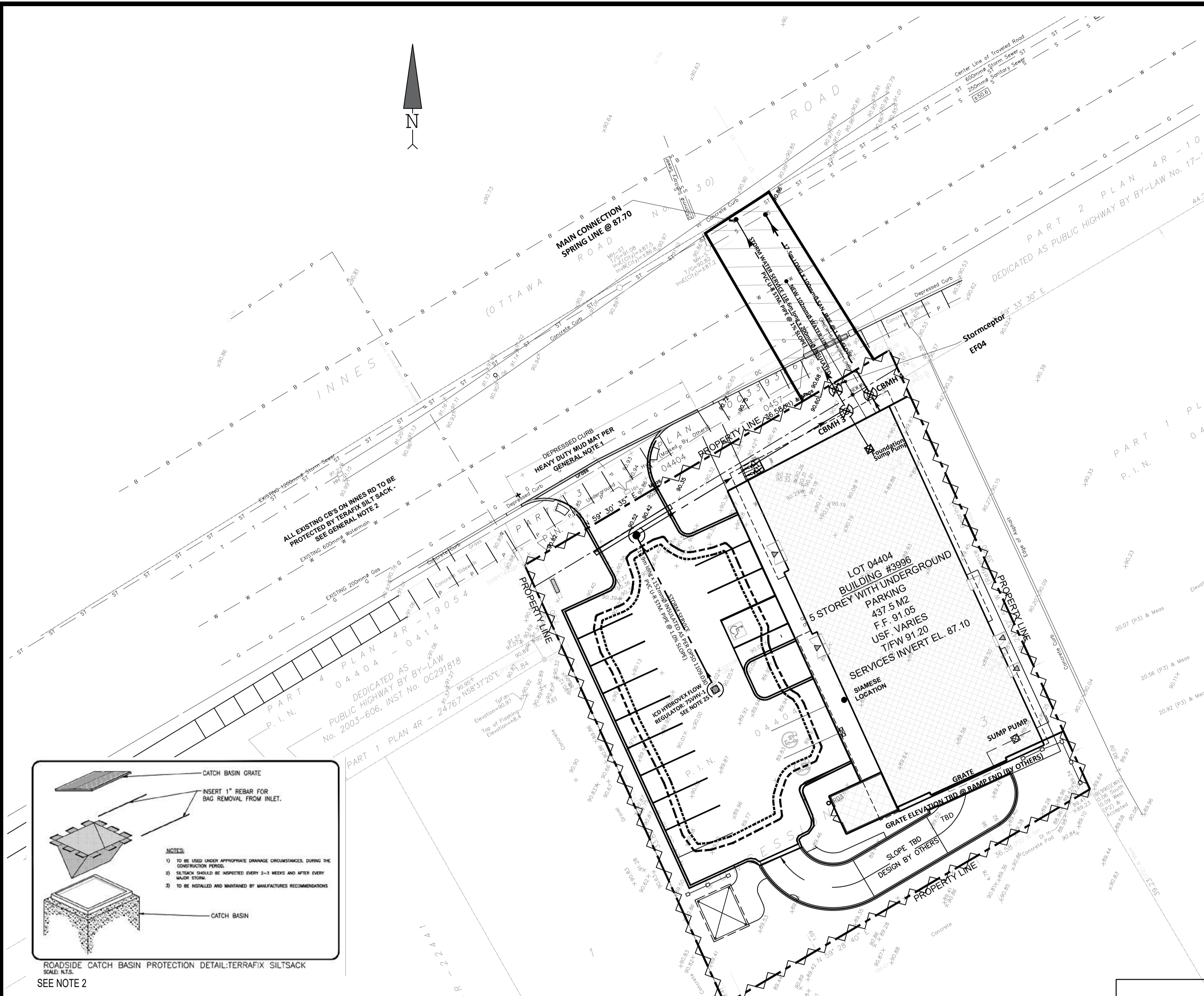
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Date: 2023/04/01, Revision: 1, Drawing #: SS & GR

CITY PLAN #18675, FILE #D07-12-4-0209



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



GENERAL NOTES & LEGEND:

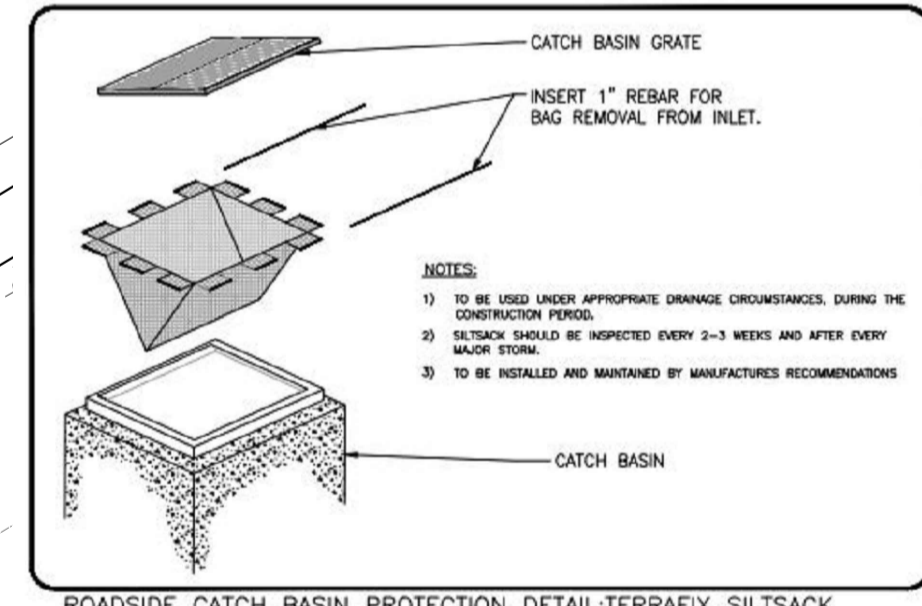
- PROPERTY LINE
- ~ SILT FENCE PER OPSD 219.130
- [Symbol] PROPOSED BUILDING ENVELOPE
- [Symbol] EXISTING FIRE HYDRANT
- [Symbol] DC PROPOSED CONCRETE CURB WITH DEPRESSION
- [Symbol] HP EXISTING HYDRO POLE
- [Symbol] EXISTING GROUND ELEVATION
- [Symbol] PROPOSED ELEVATION
- [Symbol] PROPOSED DOOR ENTRANCE
- [Symbol] DIRECTION AND SLOPE OF SURFACE WATER FLOW
- [Symbol] F.F. PROPOSED FINISHED FLOOR ELEVATION
- [Symbol] USF PROPOSED UNDERSIDE OF FOOTING ELEVATION
- [Symbol] BM SITE BENCHMARK SITE BENCHMARK 2 NAILS IN UTILITY POLE ELEVATION=91.06
- [Symbol] TORW PROPOSED TOP OF RETAINING WALL
- [Symbol] BORW PROPOSED BOTTOM OF RETAINING WALL
- 100 YEAR STORM PONDING LIMIT CONTOUR LINE
- 100 YEAR + 20% STORM PONDING LIMIT CONTOUR LINE
- [Symbol] As ASPHALT
- [Symbol] Co CONCRETE
- [Symbol] Gr GRASS
- [Symbol] TREE

1. HEAVY DUTY MUD MAT IS REQUIRED AT SITE ENTRANCE
2. ALL CB TO BE PROTECTED WITH TERAFIX SILT SACK
3. CONCRETE BARRIER CURB PER OPSD 600.110
4. SEWER/STORM LATERAL CONNECTIONS PER OPSD 1006.020
5. THE CONTRACTOR IS REQUIRED TO GET WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNERS FOR WORK OUTSIDE THE PROPERTY LINE
6. HEAVY DUTY SILT FENCE PER OPSD 219.136
7. THE FOLLOWING DOCUMENTS HAVE BEEN REVIEWED - CITY OF OTTAWA STANDARD TENDER DOCUMENTS FOR UNIT PRICE (DO-006F 1004&F1005) - GUIDELINES ON EROSION & SEDIMENT CONTROL FOR URBAN SITES, MAY 1987 - ENVIRONMENTAL GUIDELINES FOR ACCESS ROADS & WATER CROSSINGS BY O.M.N.R.

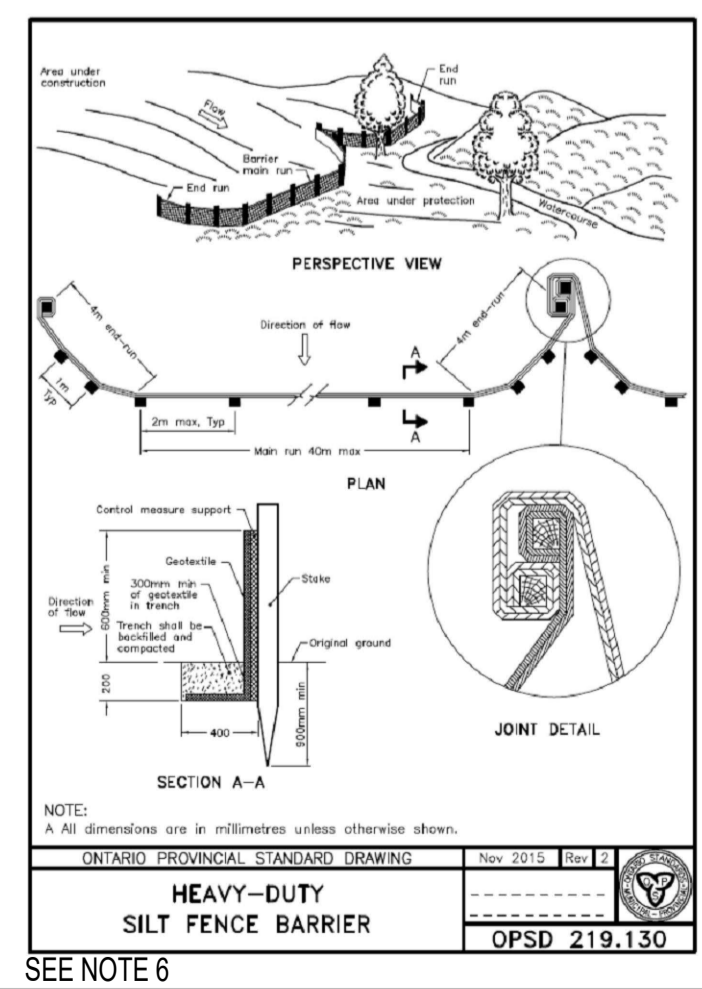
Stamp
C2

Project
ORLEANS RESIDENTIAL & MEDICAL FACILITY
3996 Innes Road, Ottawa, ON.

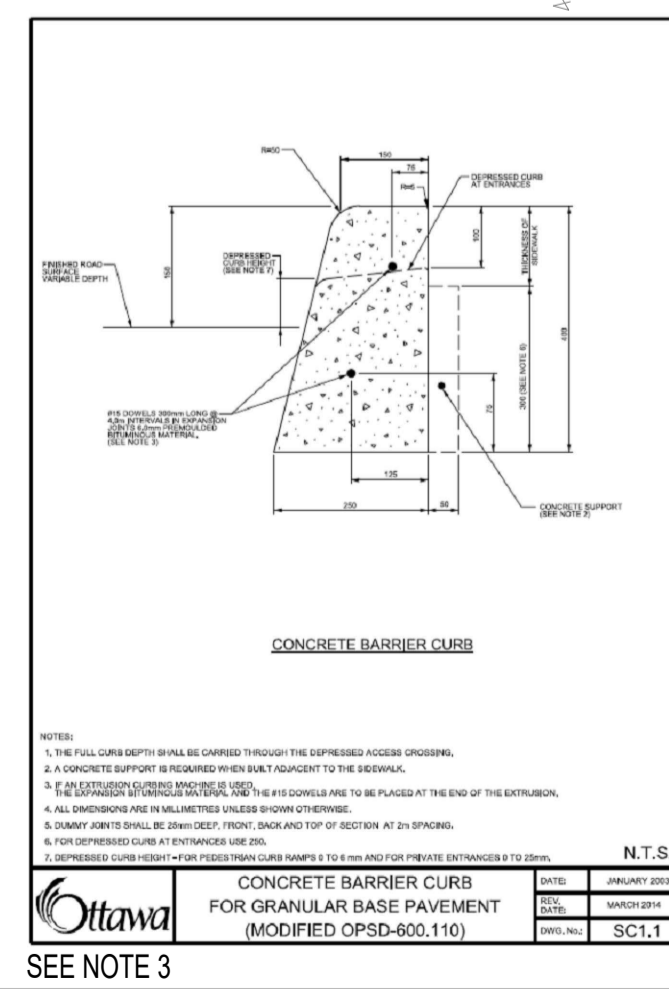
Title: EROSION & SEDIMENT CONTROL PLAN	Drawn / A.F. / Verif. / D.K.	Scale: 1:250
Date: 2023/03/30	Revision: 1	Drawing #: ES



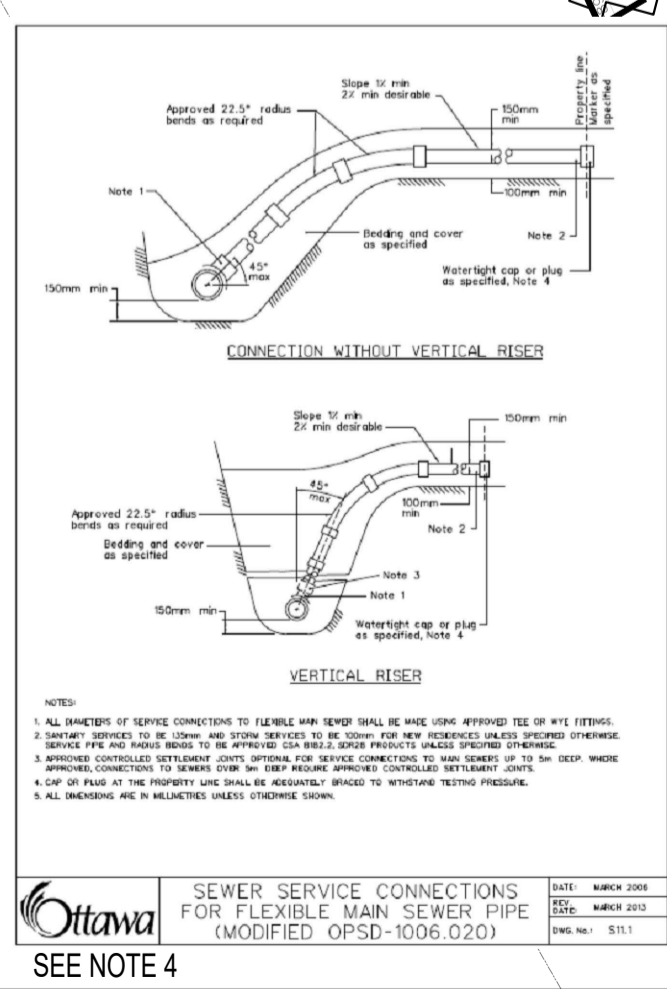
SEE NOTE 2



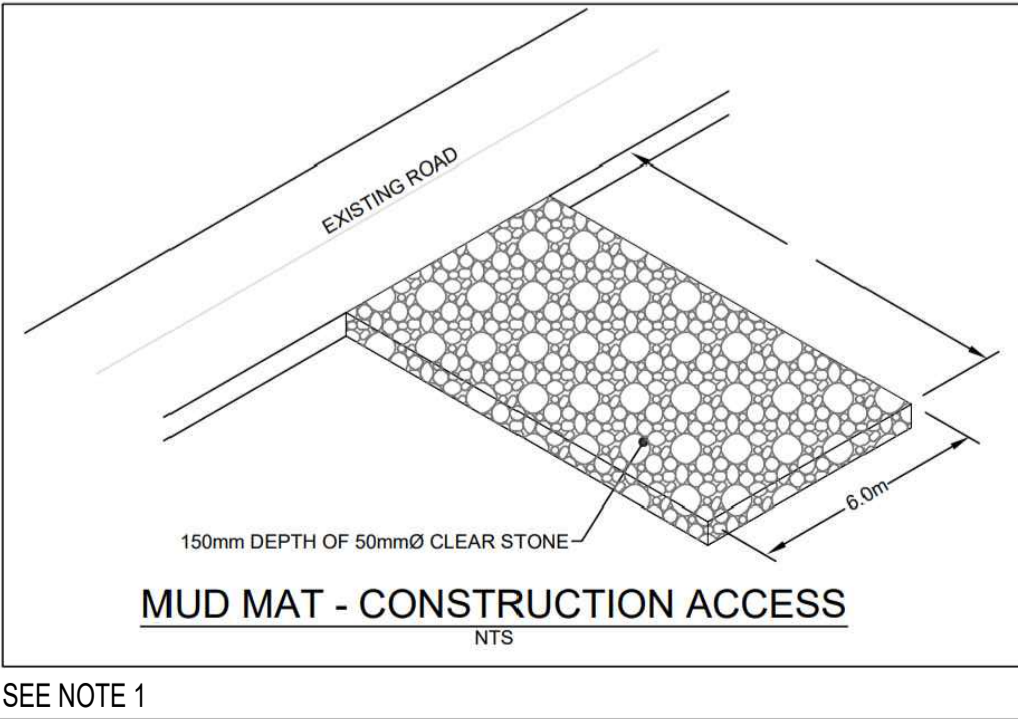
SEE NOTE 6



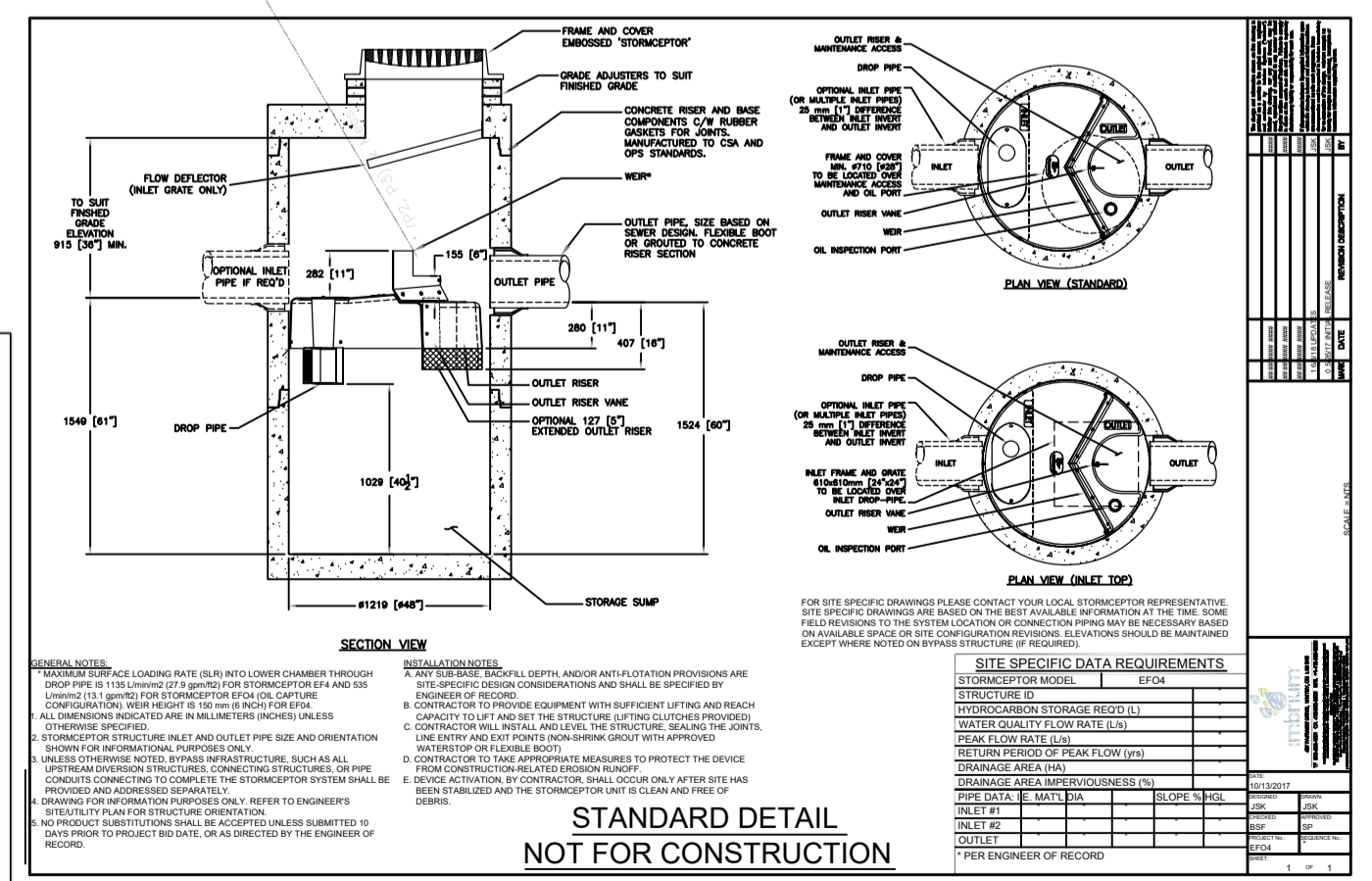
SEE NOTE 3



SEE NOTE 4



SEE NOTE 1



Scale 1: 250
0 2.5 5 10 15 20 metres