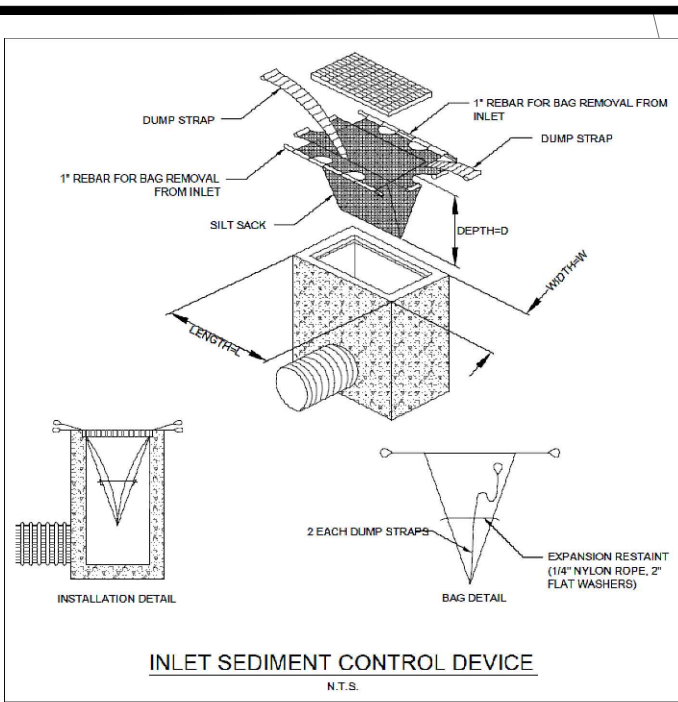




WATERMAIN NOTES

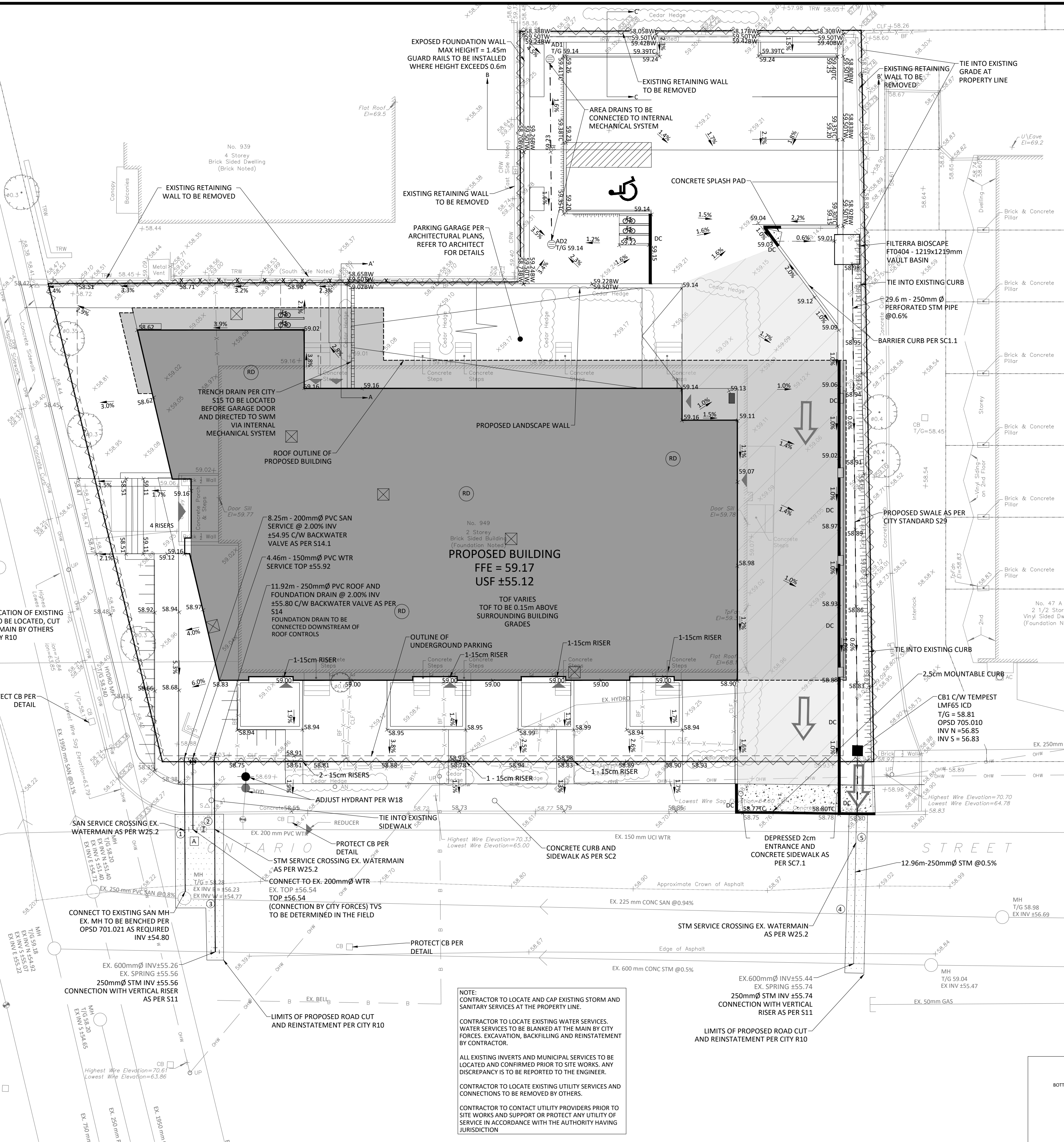
1. CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH OPSD STANDARDS AND SPECIFICATIONS, AS WELL AS CITY STANDARDS.
2. INDUSTRIAL/COMMERCIAL SERVICE CONNECTIONS TO BE 50mm COPPER PIPING AND SHALL CONFORM TO ASTM B88 TYPE 'K' SOFT.
3. WATERMAINS AND/OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 2.4m. OTHERWISE THERMAL INSULATION IS REQUIRED AS PER CITY STANDARDS. (IF AVAILABLE) OR OPSD 1109.030.
4. IF THE WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS EQUAL TO OR LESS THAN THAT WHICH IS RECOMMENDED BY THE MANUFACTURER.
5. THERMAL INSULATION OF WATERMAINS AT OPEN STRUCTURES AS PER CITY STANDARDS (IF AVAILABLE) OR OPSD 1109.030.
6. VALVES TO BE OPERATED BY CITY STAFF ONLY.
7. NO CONNECTION TO EXISTING WATER NETWORK SHALL BE COMPLETED UNTIL A WATER PERMIT IS OBTAINED FROM THE CITY. CITY TO BE PRESENT FOR WATERMAIN CONNECTION, CONNECTION, EXCAVATION, BACKFILLING AND REINSTATEMENT TO BE COMPLETED BY CONTRACTOR.
8. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ANY WATERMAIN CONNECTION(S) REQUIRED. THIS SHALL BE COMPLETED IN THE PRESENCE OF A DESIGNATED MUNICIPAL WATER OPERATOR AND THE SELECTED CONTRACTOR SHALL PROVE TO THE SATISFACTION OF THE CITY THAT THEY ARE COMPETENT TO PERFORM THE WORKS PRIOR TO INITIATING CONSTRUCTION.
9. ALL WATERMAINS SHALL BE EQUIPPED WITH BUTTERFLY AND GATE VALVES AS PER OPSD 1100.011.
10. ALL FIRE HYDRANTS, VALVE AND VALVE BOX SHALL CONFORM TO OPSD 1103.020.
11. CONCRETE THRUST BLOCKS TO CONFORM TO OPSD 1103.010 AND OPSD 1103.020.
12. ALL WATERMAIN TO BE CLASS 150 DR-18 OR APPROVED EQUIVALENT.
13. ALL WATERMAIN TO BE EQUIPPED WITH TRACER WIRE.

SEWER NOTES:

1. CONSTRUCT ALL SEWERS, CATCH BASINS, MANHOLES AND APPURTENANCES IN ACCORDANCE WITH OPSD STANDARDS AND SPECIFICATIONS, AS WELL AS CITY.
2. SEWER TRENCHING AND BEDDING SHALL CONFORM TO OPSD 802.010 AND 802.013 UNLESS NOTED OTHERWISE.
 - 2.1. BEDDING SHALL BE A MINIMUM 150mm OF GRANULAR "A", COMPACTED TO MINIMUM 95% STANDARD PROCTOR DRY DENSITY. CLEAR STONE BEDDING SHALL NOT BE PERMITTED.
 - 2.2. SUB-BEDDING, IF REQUIRED SHALL CONSIST OF 450mm OF COMPACTED GRANULAR "B" TYPE 1.
 - 2.3. BACKFILL TO AT LEAST 300mm ABOVE TOP OF PIPE WITH GRANULAR "A" OR GRANULAR "B" TYPE 1 TO MINIMIZE DIFFERENTIAL FROST HEAVING. TRENCH BACKFILL (FROM PAVEMENT SUBGRADE TO 2.0 METRES BELOW FINISHED GRADE) SHALL MATCH EXISTING SOIL CONDITIONS.
 - 2.4. SANITARY SEWERS AND CONNECTIONS 150mmØ AND SMALLER TO BE PVC SDR-28.
3. SEWERS AND CONNECTIONS 200mmØ AND LARGER TO BE PVC SDR-35. BEDDING TO BE TYPE "B" EXCEPT AT RISERS, UNLESS NOTED OTHERWISE.
5. INSULATE ALL STORM AND SANITARY SEWERS/SERVICES THAT HAVE LESS THAN 1.5m OF COVER WITH THERMAL INSULATION AS PER OPSD 1109.030.
6. SEWER CONNECTIONS ARE TO BE MADE ABOVE THE SPRINGLINE OF THE SEWERMAIN AS PER CITY OF OTTAWA STANDARD DRAWING S11, S11.1 & S11.2.
7. SUPPLY AND INSTALL ALL PIPING AND APPURTENANCES AS SHOWN AND DETAILED TO WITHIN 1.0m OF BUILDING. ALL ENDS OF SERVICES TO BE PROPERLY CAPPED AND LOCATED WITH 2"x4"x8" LONG MARKER.
8. CONTRACTOR TO TELETYPE (CCTV) ALL PROPOSED SEWERS ON SITE. OUTLET CONNECTION TO THE MAIN AND PIPES 150mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.
9. DYE TESTING IS TO BE COMPLETED ON SANITARY SERVICE TO CONFIRM PROPER CONNECTION TO SANITARY MAIN.

GENERAL NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
2. THIS PLAN IS NOT A CADASTRAL SURVEY SHOWING LEGAL PROPERTY BOUNDARIES AND EASEMENTS. THE PROPERTY BOUNDARIES SHOWN HEREON HAVE BEEN DERIVED INFORMATION SUPPLIED BY (OR SHOWN ON) FAIRLY, SMITH & DENIS SURVEYING LTD FILE #53-21 AND CANNOT BE RELIED UPON TO BE ACCURATE OR COMPLETE. THE PRECISE LOCATION OF THE CURRENT PROPERTY BOUNDARIES AND EASEMENTS SHALL BE DETERMINED BY AN UP-TO-DATE LAND TITLES SEARCH AND A SUBSEQUENT CADASTRAL SURVEY PERFORMED AND CERTIFIED BY AN ONTARIO LAND SURVEYOR.
3. THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAND.
5. THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
6. RESTORE ALL TRENCHES AND SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY AUTHORITIES.
7. EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF-SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
8. TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
9. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CODES AND STANDARDS OF APPROVALS DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION, AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS.
11. DO NOT ALTER GRADING OF THE SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER/CITY.
12. ALL ROADWAY, PARKING LOT, AND GRADING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR IS



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

ALL EXISTING INVERTS AND MUNICIPAL SERVICES TO BE LOCATED AND CONFIRMED PRIOR TO SITE WORKS. ANY DISCREPANCY IS TO BE REPORTED TO THE ENGINEER.

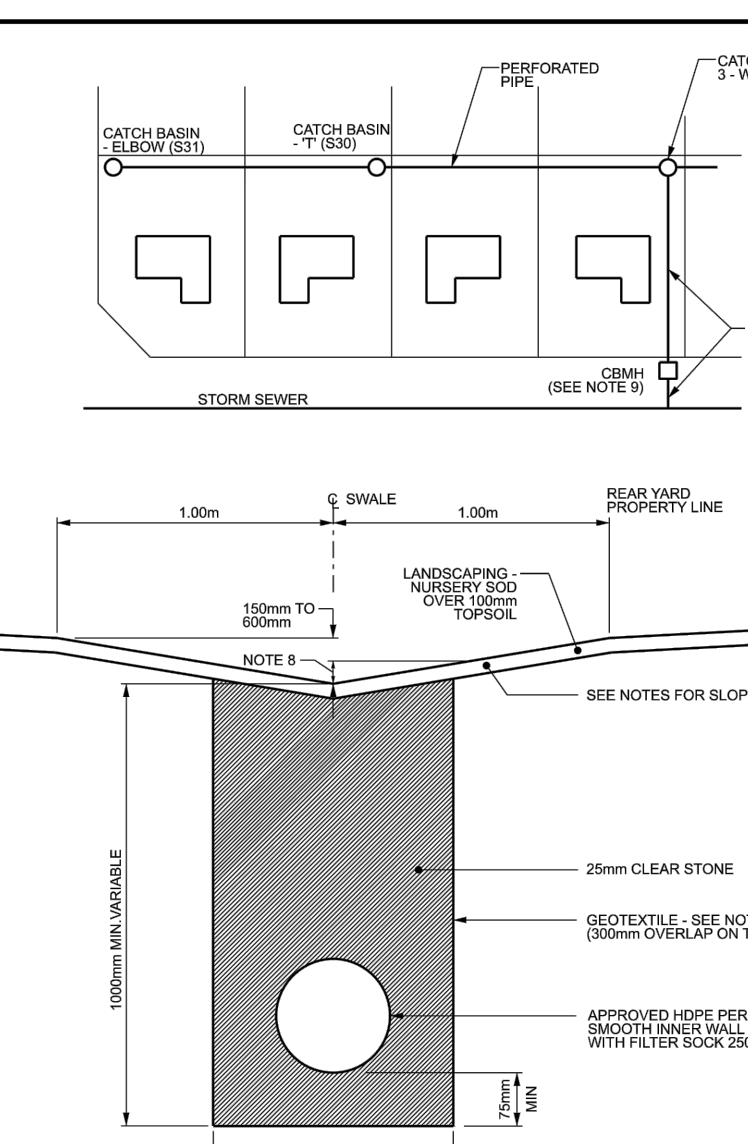
CONTRACTOR TO LOCATE EXISTING UTILITY SERVICES AND CONNECTIONS TO BE REMOVED BY OTHERS.

CONTRACTOR TO CONTACT UTILITY PROVIDERS PRIOR TO SITE WORKS AND SUPPORT OR PROTECT ANY UTILITY OF SERVICE IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

WATER COVER TABLE				
LOCATION	STATION	FINISHED GRADE	TOP OF PIPE	COVER
A - 200 X 200 TEE	0+00.00	58.94	56.54	2.40
VALVE	0+04.12	58.58	56.40	2.18
BUILDING	0+04.46	58.60	56.20	2.40

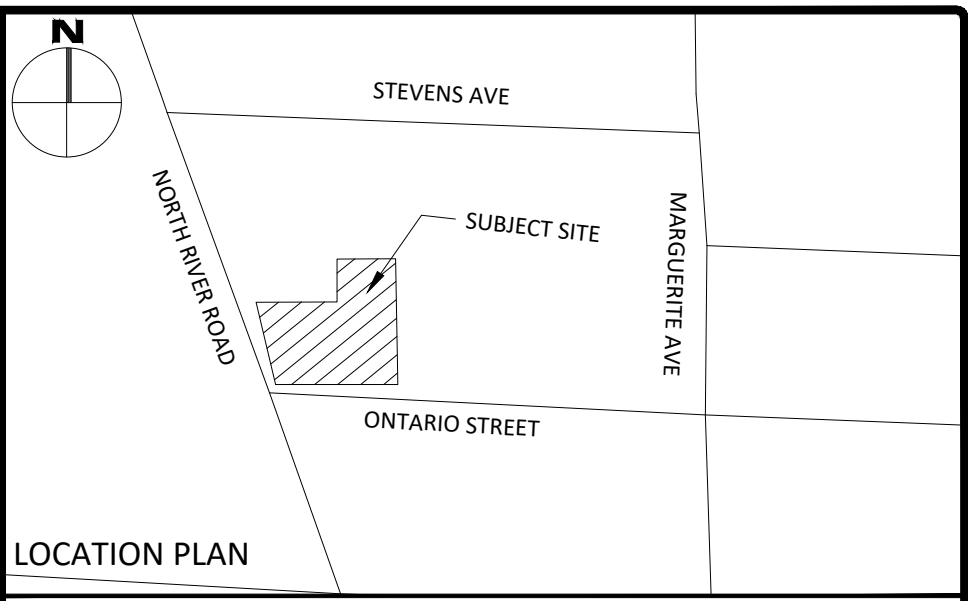
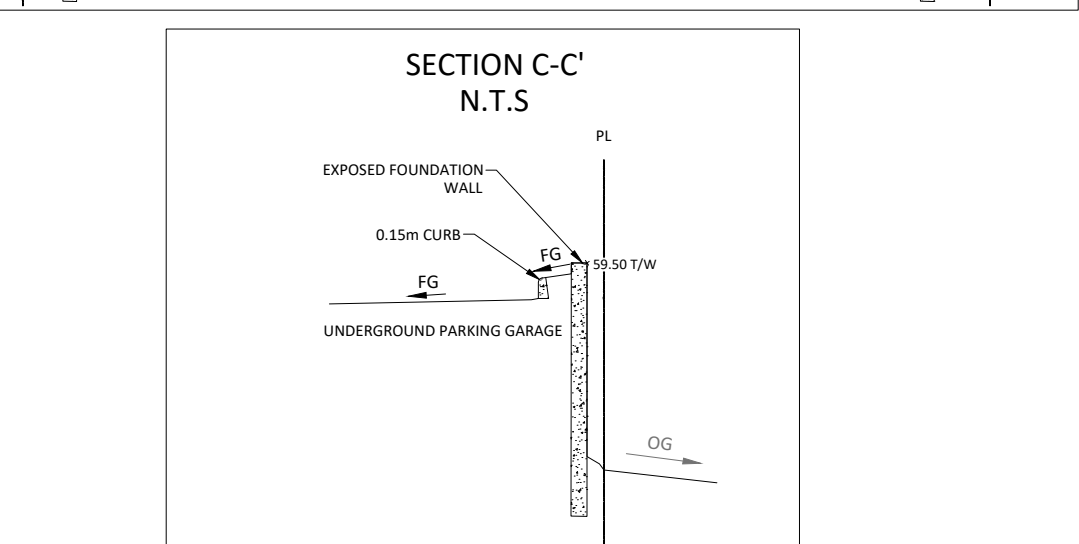
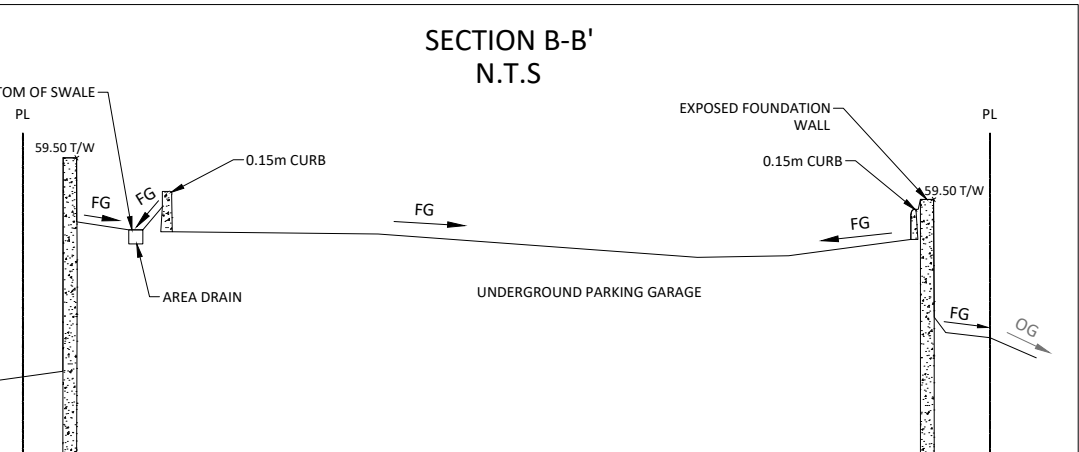
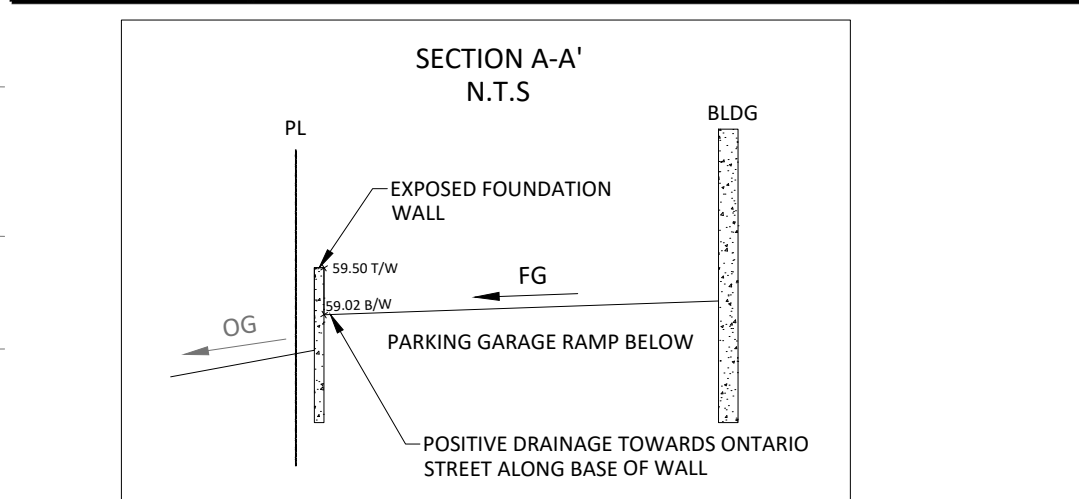
CROSSING CONFLICT TABLE		
LOCATION	DESCRIPTION	SEPARATION
1	200mmØ SAN SERVICE OBV 55.01 EX. 200mmØ WATER MAIN INV 56.34	1.33
2	250mmØ STM SERVICE OBV 55.88 EX. 200mmØ WTR MAIN INV 56.41	0.53
3	EX. 225mmØ SAN SEWER OBV 55.02 EX. 250mmØ STM SERVICE INV 56.73	0.62
4	EX. 225mmØ SAN SEWER OBV 55.33 EX. 250mmØ STM SERVICE INV 56.78	0.40
5	EX. 150mmØ WTR MAIN OBV 56.40	0.38

ROOF DRAINS (B1)	
TYPE OF CONTROL DEVICE	WATTS DRAINAGE RD-100-A-ADJ (FULLY EXPOSED)
NUMBER OF ROOF DRAINS	4
SCENARIO	5-YEAR 100-YR
ROOFTOP STORAGE (m³)	22.04 37.79
DEPTH OF FLOW (m)	0.035 0.060
FLOW PER ROOF DRAIN (L/s)	0.44 0.76
TOTAL RESTRICTED FLOW	1.76 3.04



- NOTES:
1. SIDE SLOPE OF SWALE - MIN. 1.5% MAX. 3:1.
 2. LONGITUDINAL SLOPE OF SWALE WITHOUT PERFORATED PIPE 1.5% MIN.
 3. LONGITUDINAL SLOPE OF SWALE WITH PERFORATED PIPE 0.5% MIN. WITH 1% OR GREATER PREFERRED.
 4. UNDER DRAINWAYS NON PERFORATED PIPE TO BE USED WITH 15mm BEDDING AND BACKFILL WITH APPROVED NATIVE MATERIAL.
 5. CB "T" TO BE SPACED ABOUT EVERY 20 TO 25m AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
 6. CB ELBOW TO BE AT UPPER ENDS OF PERFORATED PIPE AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
 7. GEOTEXTILE SHALL BE APPROVED NON-WOVEN CLASS 1 OR AS SPECIFIED.
 8. MAXIMUM REAR YARD WATER DEPTH IS 300mm.
 9. A STANDARD CATCHBASIN NO DEEPER THAN 3.4m OR A CATCHBASIN MAINTENANCE HOLE. STANDARD FRAMES C/W PERFORATED OR SOLID COVER AS SPECIFIED. STANDARD CURBS AS SPECIFIED.

PERFORATED PIPE INSTALLATION FOR REAR YARD AND LANDSCAPING APPLICATIONS	
DATE:	MARCH 2007
REV. DATE:	MARCH 2019
DWG. No.:	S29



- LEGEND
- CONCRETE BARRIER CURB
 - DEPRESSED CURB
 - CONCRETE CUT
 - CONCRETE WALKWAY
 - PROPOSED HEAVY DUTY ASPHALT
 - PAVER AREA
 - STORM SEWER MANHOLE
 - CATCHBASIN MANHOLE
 - CATCHBASIN
 - SANITARY SEWER MANHOLE
 - FIRE HYDRANT
 - WATER VALVE
 - AREA DRAIN
 - ROOF DRAIN LOCATION PER ARCHITECTURAL PLAN
 - ROOF SCUPPER LOCATION PER ARCHITECTURAL PLAN
 - LIMIT OF CONSTRUCTION
 - DRAINAGE SWALE
 - SLOPING AT 3:1
 - SURFACE ELEVATION
 - SWALE ELEVATION
 - TOP OF WALL ELEVATION
 - BOTTOM OF WALL ELEVATION
 - OVERLAND FLOW ROUTE
 - SILT FENCE BARRIER

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
7	ISSUED FOR REVIEW	DEC 07, 2022
6	ISSUE FOR REVIEW	MAR 04, 2022
5	ISSUED FOR REVIEW	SEPT 24, 2021
4	ISSUED FOR COORDINATION	SEPT 17, 2021
3	ISSUED FOR COORDINATION	AUG 4, 2021
2	ISSUED FOR COORDINATION	JULY 28, 2021
1	ISSUED FOR COORDINATION	JULY 15, 2021

Check and verify all dimensions before proceeding with the work Do not scale drawings

SCALE 1:150

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Stamp:

Client: **GEMSTONE DEVELOPMENTS**
252 ARGYLE AVE
OTTAWA, ON K2P 1B9

Project: **5-STORY RESIDENTIAL BUILDING**
949 NORTH RIVER ROAD

OTTAWA ON

Drawing Title: **SITE SERVICING, COMBINED GRADING AND DRAINAGE PLAN, SEDIMENT AND EROSION CONTROL PLAN**

Scale: 1:150 Project Number: CCO-21-2796
Drawn By: R.R.R.
Checked By: R.D.F.
Designed By: R.D.F.

C101