

WATERMAIN NOTES

- CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH OPSD STANDARDS AND SPECIFICATIONS, AS WELL AS CITY STANDARDS.
- INDUSTRIAL/COMMERCIAL SERVICE CONNECTIONS TO BE 50mm COPPER PIPING AND SHALL CONFORM TO ASTM B88 TYPE "K" SPT.
- 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.
- 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.
- THERMAL INSULATION OF WATERMAINS AT OPEN STRUCTURES AS PER CITY STANDARDS (IF AVAILABLE) OR OPSD 1109.030.
- VALVES TO BE OPERATED BY CITY STAFF ONLY.
- 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.
- 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.
- ALL WATERMAINS SHALL BE EQUIPPED WITH BUTTERFLY AND GATE VALVES AS PER OPSD 1100.111.
- ALL FIRE HYDRANTS, VALVE AND VALVE BOX SHALL CONFORM TO OPSD 1103.020.
- CONCRETE THRUST BLOCKS TO CONFORM TO OPSD 1103.010 AND OPSD 1103.020.
- ALL WATERMAIN TO BE CLASS 150 DR OR APPROVED EQUIVALENT.
- ALL WATERMAIN TO BE EQUIPPED WITH TRACER WIRE.

SEWER NOTES:

- CONSTRUCT ALL SEWERS, CATCH BASINS, MANHOLES AND APPURTENANCES WITH OPSD STANDARDS AND SPECIFICATIONS, AS WELL AS CITY.
- SEWER TRENCHING AND BEDDING SHALL CONFORM TO OPSD 802.010 AND 802.013 UNLESS NOTED OTHERWISE.
 - BEDDING SHALL BE A MINIMUM 150mm OF GRANULAR "A", COMPACTED TO MINIMUM 95% STANDARD PROCTOR DRY DENSITY. CLEAR STONE BEDDING SHALL NOT BE PERMITTED.
 - SUB-BEDDING, IF REQUIRED SHALL CONSIST OF 450mm OF COMPACTED GRANULAR "B" TYPE 1.
 - 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 SURFACE TO 2.0 METRES BELOW FINISHED GRADE) SHALL MATCH EXISTING SOIL CONDITIONS.
- SANITARY SEWERS AND CONNECTIONS 150mmØ AND SMALLER TO BE PVC SDR-28.
- SEWERS AND CONNECTIONS 200mmØ AND LARGER TO BE PVC SDR-35. BEDDING TO BE TYPE "B" EXCEPT AT RISERS, UNLESS NOTED OTHERWISE.
- INSULATE ALL STORM AND SANITARY SEWERS/SERVICES THAT HAVE LESS THAN 1.5m OF COVER WITH THERMAL INSULATION AS PER OPSD 1109.030.
- SEWER CONNECTIONS ARE TO BE MADE ABOVE THE SPRINGLINE OF THE SEWERMAIN AS PER CITY OF OTTAWA STANDARD DRAWING S11, S11.1 & S11.2.
- 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.
- CONTRACTOR TO TELEPHONE (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.
- DEVE TESTING IS TO BE COMPLETED ON SANITARY SERVICE TO CONFIRM PROPER CONNECTION TO SANITARY SEWER MAIN.

GENERAL NOTES

- THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SURVEY DATA FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
- 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 #53-23 AND CANNOT BE RELIED UPON TO ACCURATE OR COMPLETE. THE PRECISE LOCATION OF THE CURRENT PROPERTY BOUNDARIES AND EASEMENTS CAN ONLY BE DETERMINED BY AN UP-TO-DATE LAND TITLES SEARCH AND A SUBSEQUENT CADASTRAL SURVEY PERFORMED BY A LICENSED CADASTRAL SURVEYOR.
- THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
- 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.
- 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.
- EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
- TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REHABILITATION, CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ELECTRICAL, GAS, TELEPHONE AND TELEVISION SERVICE LOCATIONS ARE SUBJECT TO THE INDIVIDUAL AGENCY:
 - ELECTRICAL SERVICE - HYDRO ONE
 - GAS SERVICE - ENBRIDGE
 - TELEPHONE SERVICE - BELL CANADA
 - TELEVISION SERVICE - ROGERS
- CONTRACTOR TO ENSURE ALL APPLICABLE OPS SPECIFICATIONS ARE FOLLOWED DURING CONSTRUCTION.
- ALL PROPOSED CURBS TO BE CONCRETE BARRIER CURB UNLESS OTHERWISE SPECIFIED.

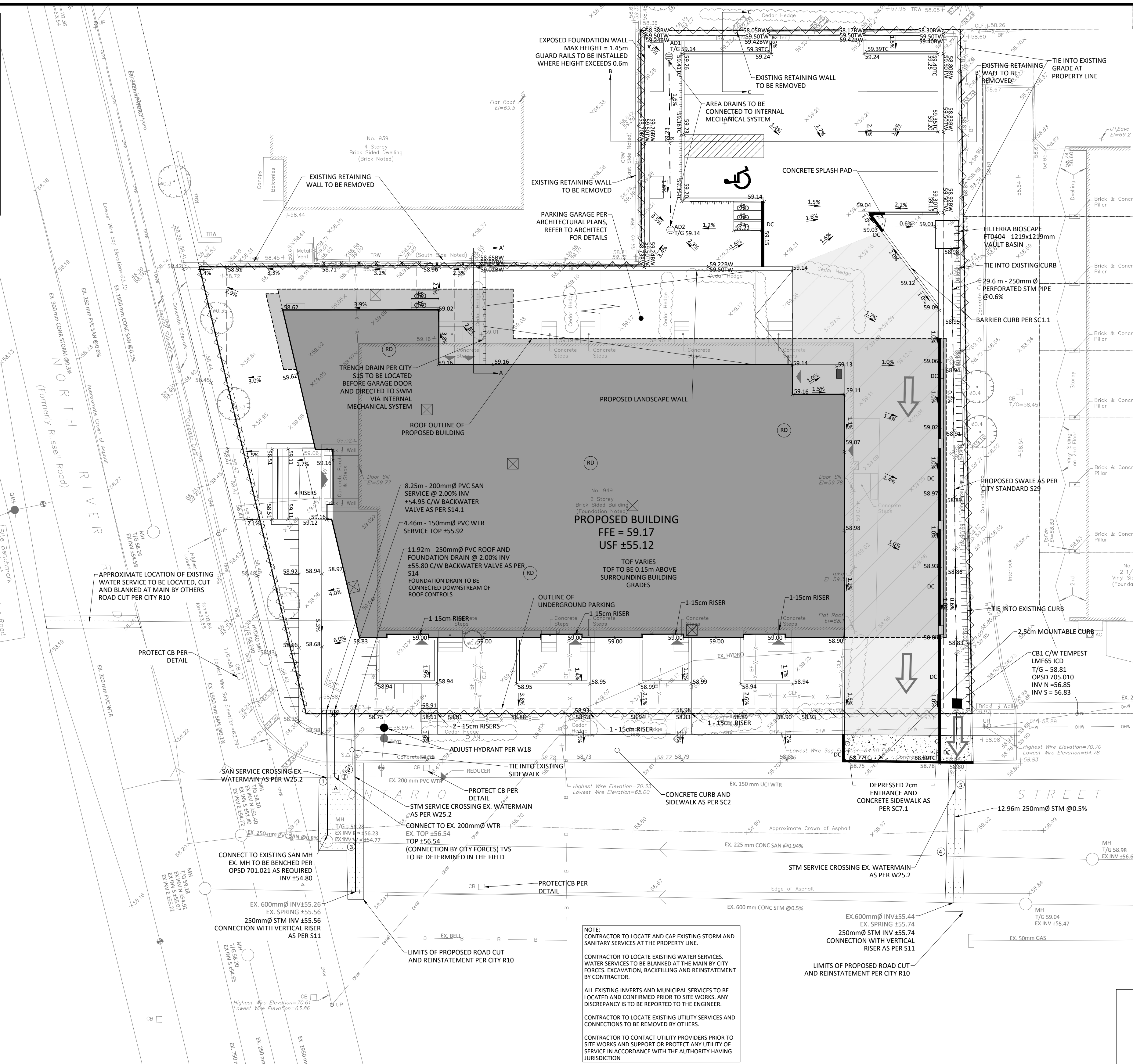
- CONTRACT THE CITY FOR INSPECTION OF ROUGH GRADING OF PARKING LOTS, ROADWAYS AND LANDSCAPED AREAS PRIOR TO PLACEMENT OF ASPHALT AND TOPSOIL. ALL DEFICIENCIES NOTED SHALL BE RECTIFIED TO THE CITY'S SATISFACTION PRIOR TO PLACEMENT OF ANY ASPHALT, TOPSOIL, SEED & MULCH AND/OR SOD.
- ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
- FOR SILT FENCE BARRIER, USE OPSD 219.110. GEOTEXTILE FOR SILT FENCE AS PER OPSD 1860, TABLE 3.
- EXCEPT AS PROVIDED IN PARAGRAPHS 4.1., AND 4.2. BELOW, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS FEASIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED.
 - WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS FEASIBLE.
 - WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.
- ALL GREEN AREAS TO BE TREATED WITH 150mm TOPSOIL AND HYDROSEEDING AS SOON AS FEASIBLE, AS PER OPSD 570.
- TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL RELEASE ANY STRANDED FISH TO THE OPEN PORTION OF THE WATERCOURSE WITHOUT HARM.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO OPSD 577.
- WHERE DEWATERING IS REQUIRED, THE DISCHARGED WATER SHALL BE CONTROLLED IN ACCORDANCE WITH OPSD 518.
- ALL SETTLING/FILTRATION BASINS SHALL BE EQUIPPED WITH TERAFIX 270R GEOTEXTILE OR APPROXIMATE EQUIVALENT AND SHALL BE CLEANED AND REPLACED AS REQUIRED.

- 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.

EROSION AND SEDIMENT CONTROL

- THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECT CONTROL MEASURES SHALL BE REMOVED IN A MANNER THAT AVOIDS ESCAPE OF THE SEDIMENT TO THE DOWNSTREAM SIDE OF THE CONTROL MEASURE AND AVOIDS DAMAGE TO THE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED TO THE LEVEL OF THE GRADE EXISTING AT THE TIME THE CONTROL MEASURE WAS CONSTRUCTED AND BE ACCORDING TO THE FOLLOWING:
 - FOR LIGHT-DUTY SEDIMENT BARRIERS, ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE IT REACHES THE LESSER OF THE FOLLOWING:
 - A DEPTH OF ONE-HALF THE EFFECTIVE HEIGHT OF THE CONTROL MEASURE.
 - A DEPTH OF 300 MM IMMEDIATELY UPSTREAM OF THE CONTROL MEASURE.
 - FOR ALL CONTROL MEASURES, ACCUMULATED SEDIMENT SHALL BE REMOVED AS NECESSARY TO PERFORM MAINTENANCE REPAIRS.
 - ACCUMULATED SEDIMENT SHALL BE REMOVED PRIOR TO THE REMOVAL OF THE CONTROL MEASURE.
 - ACCUMULATED SEDIMENT IS TO BE REMOVED AND DISPOSED OF AS PER OPSD 180.
 - ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MONITORED TO ENSURE THEY ARE IN EFFECTIVE WORKING ORDER. THE CONDITION OF THE CONTROL MEASURES SHALL BE MONITORED PRIOR TO ANY FORECAST STORM EVENT AND FOLLOWING A STORM EVENT.
 - DUST CONTROL MEASURES SHOULD BE CONSIDERED PRIOR TO CLEARING AND GRADING. THE USE OF WATER, CALCIUM CHLORIDE FLAKES/SOLUTION OR MAGNESIUM CHLORIDE FLAKES/SOLUTION SHALL BE USED AS DUST SUPPRESSANTS PER OPSD 506. THIS IS TO LIMIT WIND EROSION OF SOILS WHICH MAY TRANSPORT SEDIMENTS OFFSITE, WHERE THEY MAY BE WASHED INTO THE RECEIVING WATER BY THE NEXT RAINSTORM.

- ALL GREEN AREAS TO BE TREATED WITH 150mm TOPSOIL AND HYDROSEEDING AS SOON AS FEASIBLE, AS PER OPSD 570.
- TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL RELEASE ANY STRANDED FISH TO THE OPEN PORTION OF THE WATERCOURSE WITHOUT HARM.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO OPSD 577.
- WHERE DEWATERING IS REQUIRED, THE DISCHARGED WATER SHALL BE CONTROLLED IN ACCORDANCE WITH OPSD 518.
- ALL SETTLING/FILTRATION BASINS SHALL BE EQUIPPED WITH TERAFIX 270R GEOTEXTILE OR APPROXIMATE EQUIVALENT AND SHALL BE CLEANED AND REPLACED AS REQUIRED.



WATER COVER TABLE

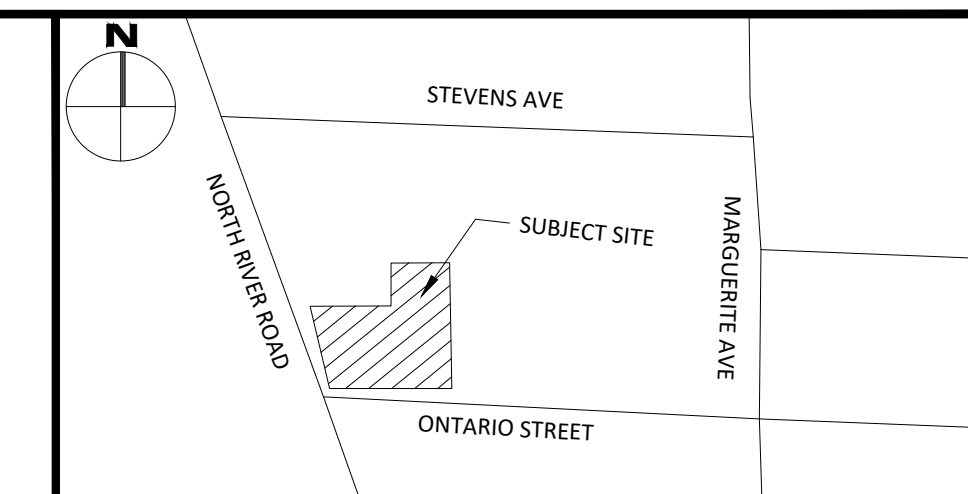
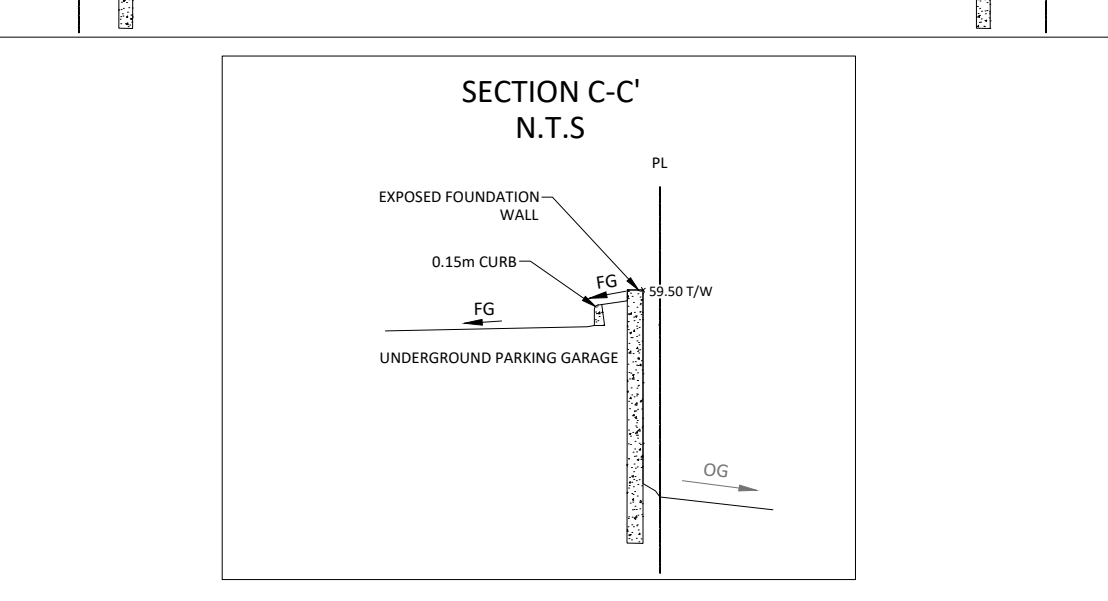
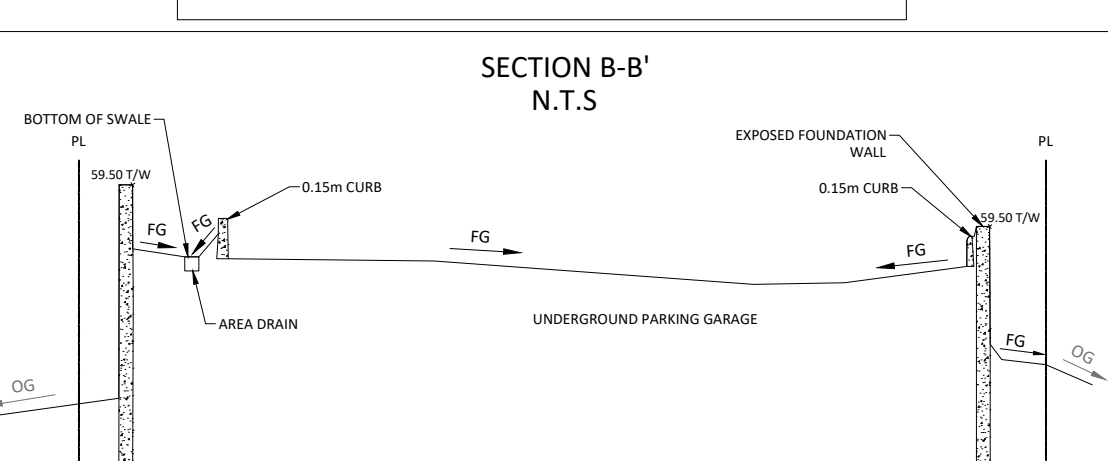
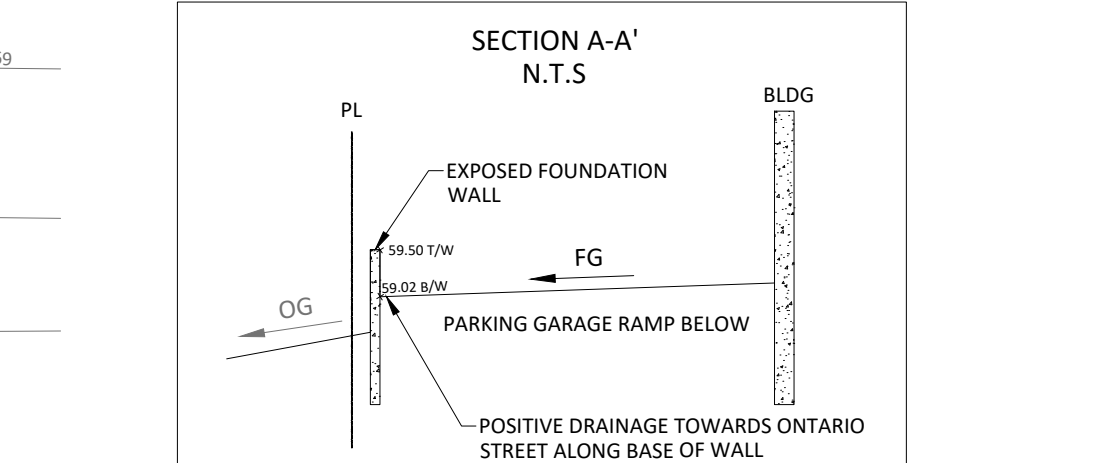
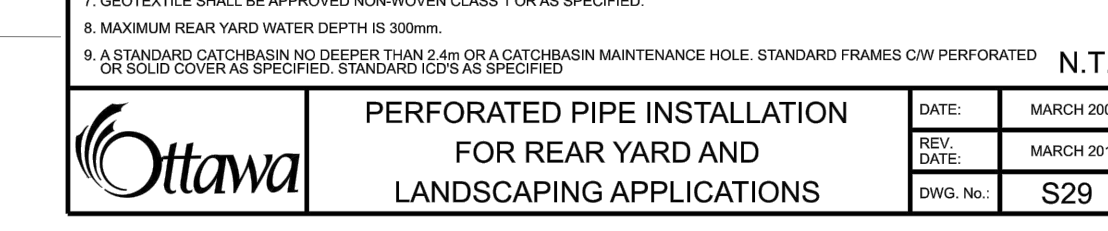
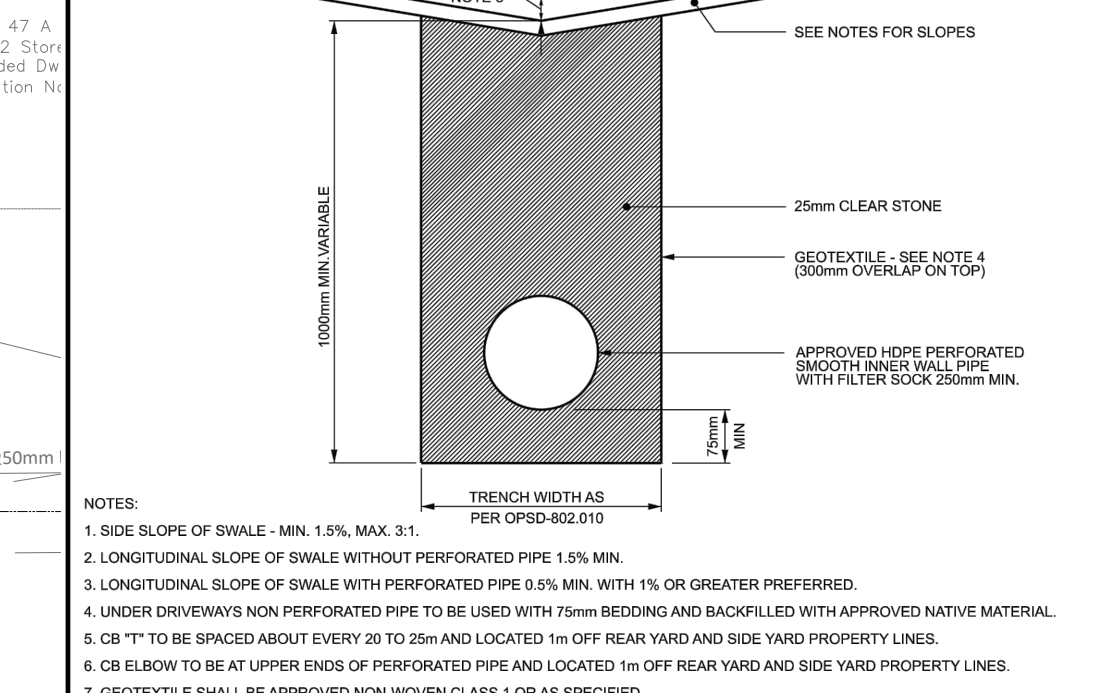
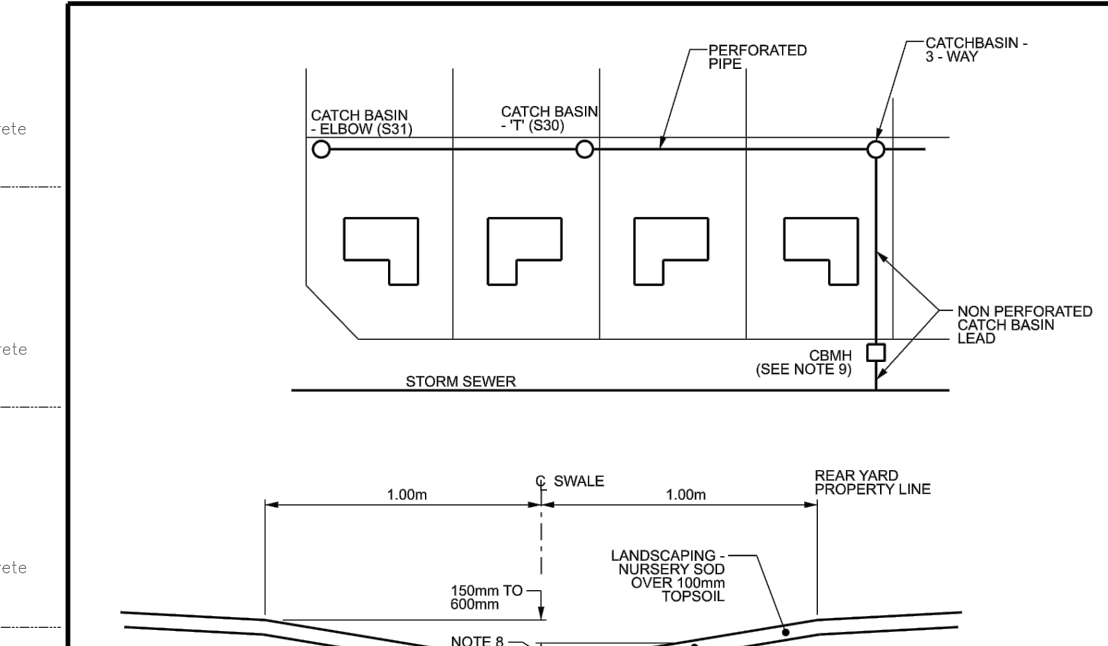
LOCATION	STATION	FINISHED GRADE	TOP OF PIPE	COVER
A - 200 x 200 TEE	0+00.00	58.94	56.54	2.40
VALVE	0+04.12	58.47	56.47	1.99
BUILDING	0+04.46	58.60	56.20	2.40

CROSSING CONFLICT TABLE

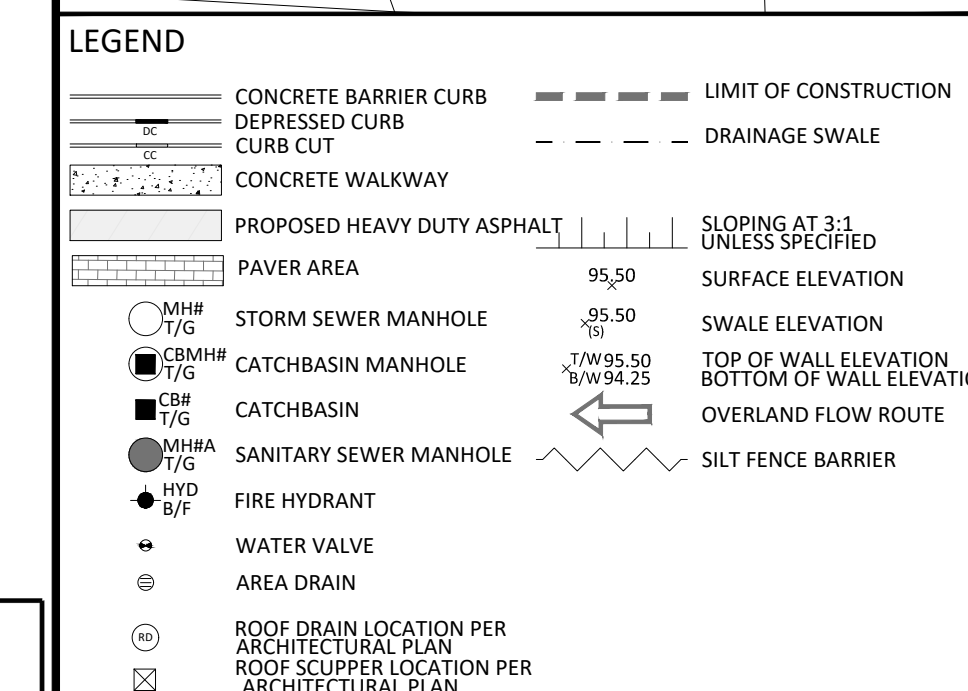
LOCATION	DESCRIPTION	SEPARATION
1	200mmØ SAN SERVICE OBY 55.01 EX. 200mmØ WATER MAIN INV 56.34	1.33
2	250mmØ STM SERVICE OBY 55.88 EX. 200mmØ WTR MAIN INV 56.41	0.53
3	EX. 225mmØ SAN SERVICE OBY 55.02	0.62
4	250mmØ STM SERVICE INV 56.73 EX. 225mmØ SAN SERVICE OBY 56.33	0.40
5	250mmØ STM SERVICE INV 56.78 EX. 150mmØ WTR MAIN OBY 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



LEGEND



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

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A 1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

Stamp: R. D. FRIEL 10763197 2022-12-09

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. Drawing Number: C101

Designed By: R.D.F.

DRAWING: C:\Users\jrd\OneDrive - Project - Proposals\2021\106\CCO-21-2796\Drawings\CCO-21-2796_P\106\106-0101.dwg
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 USER: jrd
 PLOT DATE: 2022-12-09 10:00:00 AM
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