

#### WATERMAIN NOTES:

- 1. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- 2. SPECIFICATIONS:

<u>ITEM</u>	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION BY OPEN STRUCTURES	W23	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATER SERVICE	PVC DR 18	

- 3. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OFFICIALS.
- 4. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
- 5. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
- 6. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND
- CAPPED, UNLESS OTHERWISE INDICATED.

### PROPOSED 300Ø/150Ø WATER SERVICE CONNECTION TABLE

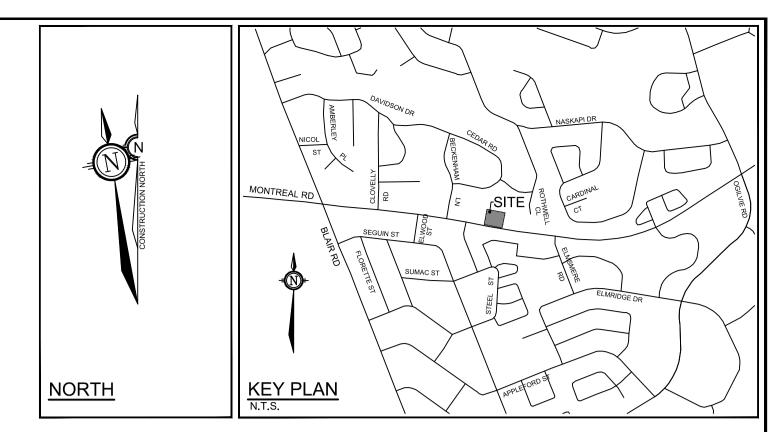
STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS	
0+00	99.75	97.35± *	T.V.S. CONNECTION TO EX. 305mmØ WM	
0+15.5	99.56	97.16	CROSS BELOW EX.305Ø STM (±0.53m CLEARANCE)	
0+21.5	99.64	97.24	CROSS BELOW EX. GAS	
0+22.4	99.75	97.35	50mmØ STANDPOST @ PROPERTY LINE	
0+24.8	99.55	97.15	300 X 300 X 300 TEE	
0+25.8	99.53	97.13	300 X 150 REDUCER	
0+27.5	99.45	97.05	150 X 150 X 150 TEE	

STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
2+02.6	99.58	97.18	150MMØ VALVE AND VALVE BOX
2+07.6	99.65	97.25 <b>* * *</b>	CROSS BELOW 250Ø STM (±0.47m CLEARANCE)
2+18.7	99.70	97.30	45° HORIZONTAL BEND
2+21.5	99.25	96.85	45° HORIZONTAL BEND
2+30.0	99.06	96.66	45° HORIZONTAL BEND
2+31.4	99.08	96.66	45° HORIZONTAL BEND
2+32.4	99.10	96.66	CAP 1.0M FROM BUILDING FACE

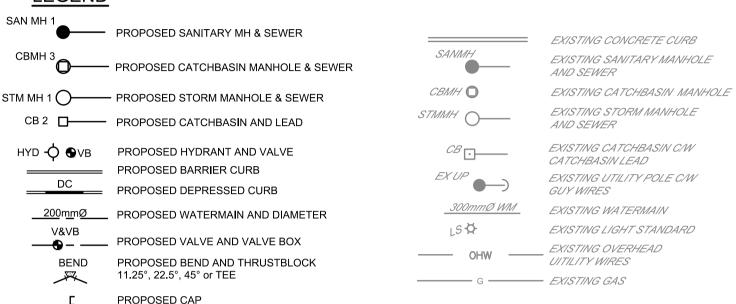
PROPOS	PROPOSED 150Ø WATER SERVICE TO OFFICE BUILDING TABLE			
STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS	
3+04.5	99.25	96.85	150MMØ VALVE AND VALVE BOX	
3+16.1	98.60	95.87 **	CROSS BELOW 250Ø STM (±0.5m CLEARANCE)	
3+18.0	98.15	95.75 **	CROSS BELOW 250Ø STM (±0.5m CLEARANCE)	
3+36.9	98.14	95.74 <b>* * *</b>	45° HORIZONTAL BEND	
3+40.4	98.23	95.83 <b>* * *</b>	45° HORIZONTAL BEND	
3+52.6	99.08	95.83	45° HORIZONTAL BEND	
3+53.6	99.09	95.83	45° HORIZONTAL BEND	
3+54.2	99.09	95.83	CAP 1.0M FROM BUILDING FACE	

- ★ 250mmØ CONNECTION TO EXISTING 305mmØ WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.
- \*\* PROVIDE WATERMAIN CROSSING BELOW BOTH STORM SEWERS AS PER CITY OF OTTAWA DETAIL W25.
- \*\*\* PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W22 AND DETAIL W23 WHERE COVER IS LESS THAN 2.4m AND/OR ADJACENT TO OPEN STRUCTURES.

	CRITICAL SEWER PIPE CROSSING TABLE				
CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE		
0	250mmØ STM OBV=96.45±	GAS = APPROX. 1M DEEP	±0.3m		
2	200mmØ SAN OBV=96.16	300mmØ STM INV = 96.66	±0.50m		
3	200mmØ SAN OBV=96.23	300mmØ STM INV= 96.71	±0.48m		
4	200mmØ SAN OBV=95.60	300mmØ STM INV= 96.75	±1.15m		
⑤	250mmØ STM OBV=96.73	250mmØ STM INV=97.13	±0.40m		



#### LEGEND



# **GENERAL NOTES:**

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.

PROPOSED INLET CONTROL DEVICE

UNCONTROLLED OVERFLOW ROOF DRAIN

CONTROLLED FLOW ROOF DRAIN

PROPOSED BUILDING ENTRANCE

PROPOSED RETAINING WALL

THERMAL INSULATION

PROPOSED LAMP POST

- 2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON
- 3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- 4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$2,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS
- 5. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE. INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF MUNICIPAL AUTHORITIES.
- INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- 7. ALL ELEVATIONS ARE GEODETIC.
- 8. REFER TO GEOTECHNICAL INVESTIGATION REPORT NO. 64504.01 (DATED SEPTEMBER 6, 2017) PREPARED BY HOULE CHEVRIER ENGINEERING LTD. FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
- 9. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND
- 10. REFER TO THE 'DEVELOPMENT SERVICING AND STORMWATER MANAGEMENT REPORT' (R-2017-179) PREPARED BY
- 11. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10 AND R25).

## SEWER NOTES:

SEWER TRENCH - BEDDING (GRANULAR 'A')

1. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.

2. SPECIFICATIONS:

SANITARY/STORM/CATCHBASIN MANHOLE (1200Ø) 701.010 STORM/CATCHBASIN MANHOLE (1800Ø) OPSD WATERTIGHT SAN / STM MH FRAME AND COVER STORM/CATCHBASIN MH FRAME AND COVER 401.010 - TYPE 'B' OPEN OPSD CATCHBASIN (600x600) 705.010 OPSD CATCHBASIN FRAME AND COVER 400.020 OPSD STORM SEWER PVC DR 35 / HDPE SANITARY SEWER PVC DR 35

COVER (GRANULAR 'A' OR GRANULAR 'B' TYPE I WITH MAXIMUM PARTICLE SIZE=25mm) 3. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTERS AS PER THE CITY

- OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
- 4. PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
- 5. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX: POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
- 6. ALL STORM MANHOLES, CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS UNLESS OTHERWISE INDICATED.
- 7. ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD's INSTALLED WITHIN THEM
- ARE TO HAVE 600mm SUMPS. 8. CONTRACTOR TO TELEVISE ALL PROPOSED SEWERS 200mm OR GREATER IN DIAMETER TO ENSURE THAT THEY ARE CLEAN AND OPERATIONAL. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES. OBTAIN APPROVAL FROM THE CITY'S SEWER OPERATIONS. PROVIDE THE
- CCTV INSPECTION AND REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL. 9. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS AND ANY ALIGNMENT CHANGES, ETC.
- 10. 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.

THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

SIMON FRIGON

PHONE: (613) 736-9222

E-MAIL: storm@redteam.ca

ISSUED FOR SITE PLAN APPLICATION MAR 9/18 ISSUED FOR COORDINATION NOV 29/17 DATE REVISION



FOR REVIEW ONLY

Suite 200, 240 Michael Cowpland Drive Ottawa, Ontario, Canada K2M 1P6

Facsimile

Website

(613) 254-9643

(613) 254-5867

www.novatech-eng.com

1795 MONTREAL ROAD OTTAWA, ONTARIO

DRAWING NAME

116151-00 **GENERAL PLAN OF SERVICES** REV#2

116151-GP