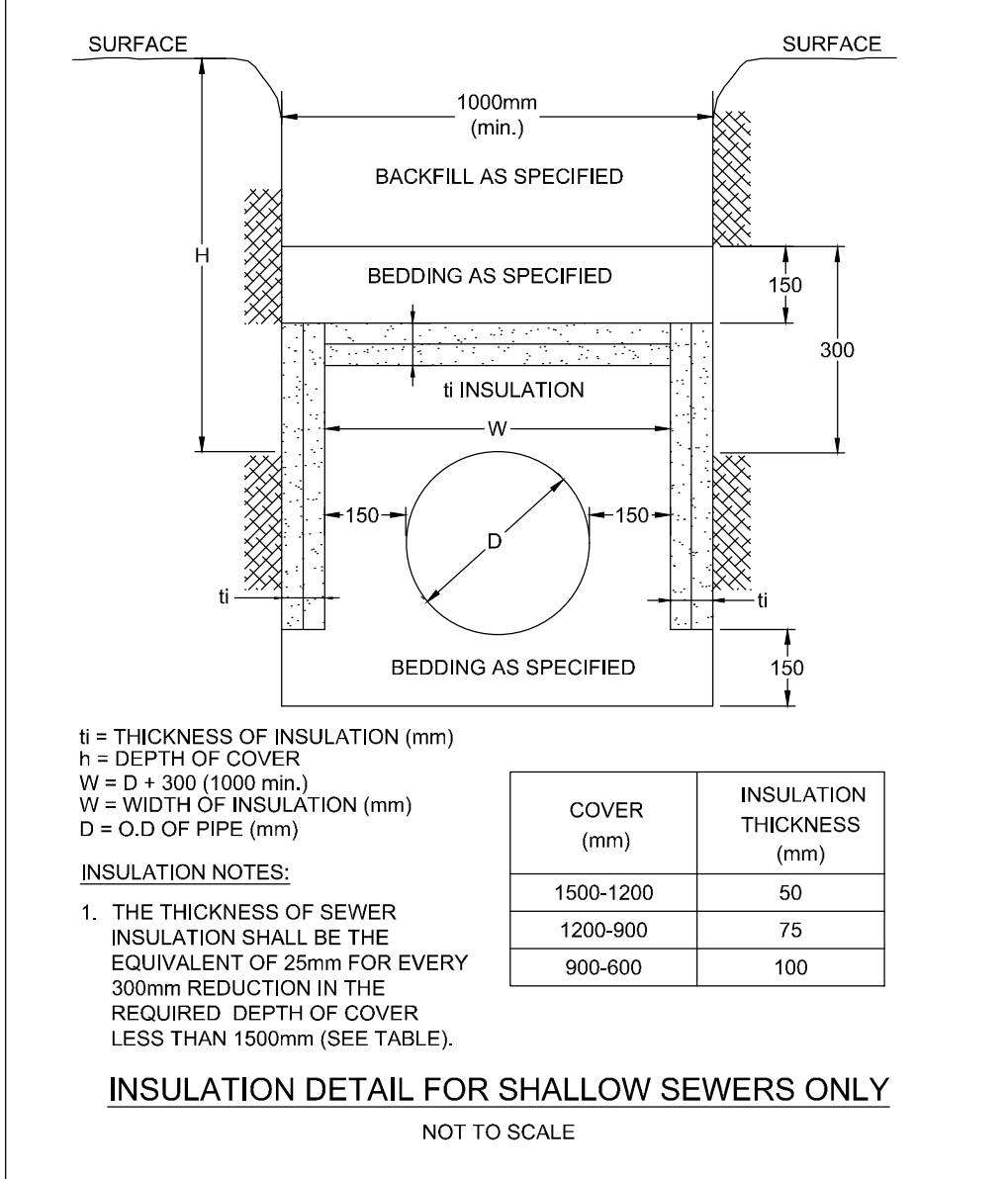
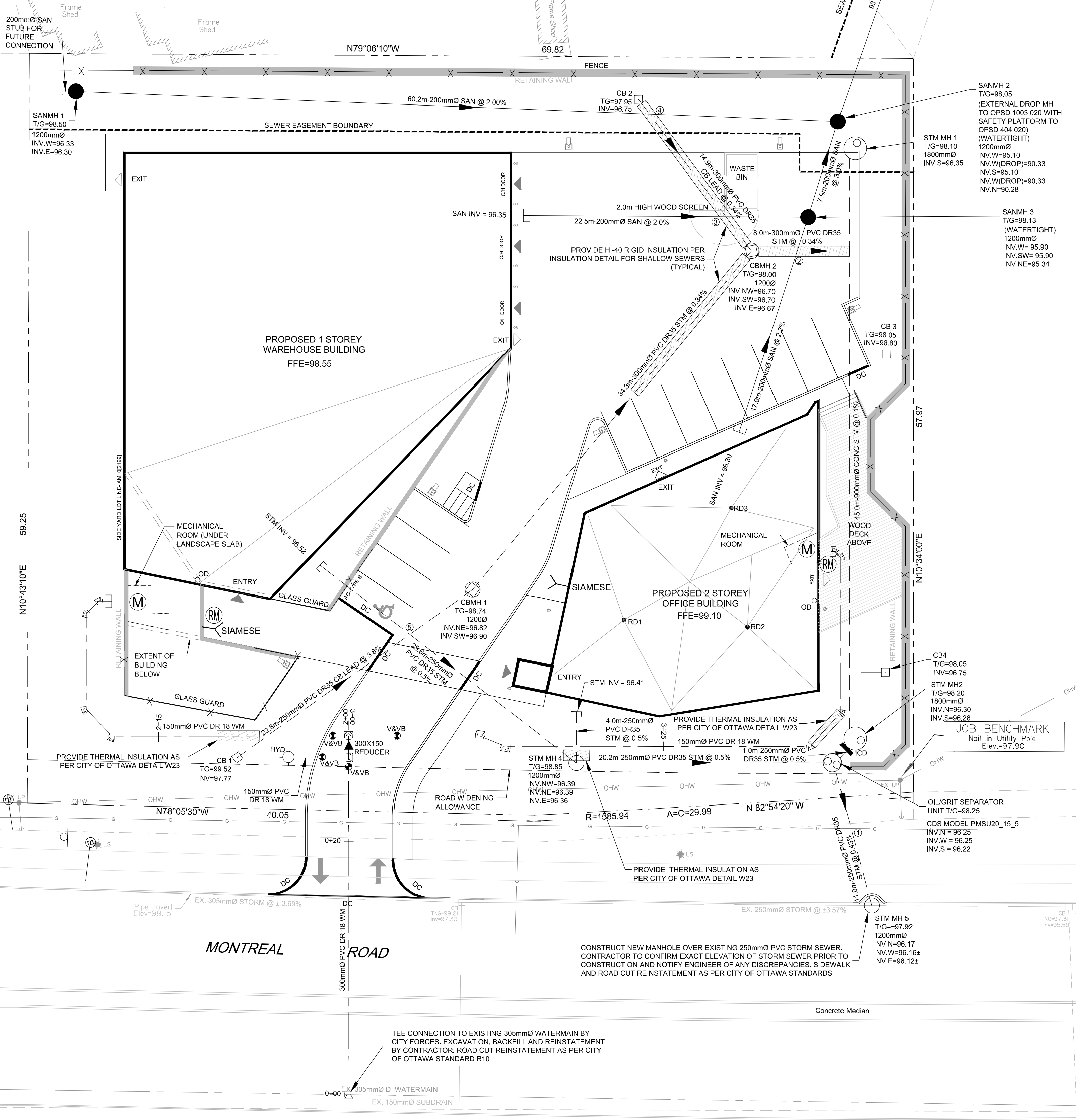


| INLET CONTROL DEVICE DATA - STM MH 2 | | | | | |
|--------------------------------------|----------------------|-------------------------|-------------|-------------|-----------------|
| DESIGN EVENT | CIRCULAR ORIFICE ICD | DIAMETER OF OUTLET PIPE | DESIGN FLOW | DESIGN HEAD | WATER ELEVATION |
| 15 YR | 83mm PLUG | 250mm Ø | 17.8 L/s | 1.43m | 97.65m |
| 1:100 YR | 83mm PLUG | 250mm Ø | 21.0 L/s | 2.02m | 98.24m |

| ROOF DRAIN TABLE - AREA R-1 (ROOF DRAINS 1 to 3) | | | | | | |
|--|------------------------------|----------------------------|-----------------------|----------------------------|-------------------------|------------------------------|
| AREA ID | ROOF DRAIN No. (WATTS MODEL) | ROOF DRAIN OPENING SETTING | 1:5 YEAR RELEASE RATE | APPROX. 5 YR PONDING DEPTH | 1:100 YEAR RELEASE RATE | APPROX. 100 YR PONDING DEPTH |
| R-1 | RD 1 (RD-100-A-ADJ) | 1/4 EXPOSED | 0.79 L/s | 10 cm | 0.87 L/s | 13 cm |
| R-1 | RD 2 (RD-100-A-ADJ) | 1/4 EXPOSED | 0.71 L/s | 8 cm | 0.87 L/s | 13 cm |
| R-1 | RD 3 (RD-100-A-ADJ) | 1/4 EXPOSED | 0.71 L/s | 8 cm | 0.87 L/s | 13 cm |

* REFER TO THE 'DEVELOPMENT SERVICING AND STORMWATER MANAGEMENT REPORT' (R-2017-179) PREPARED BY NOVATECH FOR DRAINAGE AREA IDENTIFIERS AND STORMWATER MANAGEMENT DETAILS.
 **ALL CONTROLLED FLOW ROOF DRAINS FOR THE PROPOSED BUILDING TO BE WATTS ADJUSTABLE ACCUTROL ROOF DRAINS.



WATERMAIN NOTES:

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

| ITEM | 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 | |
- 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.
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
- PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

| 3000/1500 WATERMAIN CONNECTION TABLE | | | | |
|--------------------------------------|-------------------|----------------|--|--|
| STATION | SURFACE ELEVATION | T/WM ELEVATION | COMMENTS | |
| 0+00 | 99.75 | 97.35 ± * | T.V.S. CONNECTION TO EX. 305mm Ø WM | |
| 0+15.5 | 99.56 | 97.16 | CROSS BELOW EX. 305 Ø STM (±0.53m CLEARANCE) | |
| 0+21.5 | 99.64 | 97.24 | CROSS BELOW EX. GAS | |
| 0+25.9 | 99.58 | 97.18 | 50mm Ø STANDPOST @ PROPERTY LINE | |
| 0+26.7 | 99.55 | 97.15 | 300 X 150 X 300 TEE | |
| 0+27.5 | 99.53 | 97.13 | 300 X 150 REDUCER | |
| 0+28.3 | 99.45 | 97.05 | 150 X 150 X 150 TEE | |

| 1500 WATER SERVICE TO WAREHOUSE BUILDING TABLE | | | | |
|--|-------------------|----------------|--|--|
| STATION | SURFACE ELEVATION | T/WM ELEVATION | COMMENTS | |
| 2+01.3 | 99.50 | 97.10 | 150mm Ø VALVE AND VALVE BOX | |
| 2+06.4 | 99.60 | 97.16 ± ** | CROSS BELOW 2500 STM (±0.5m CLEARANCE) | |
| 2+18.7 | 99.70 | 97.30 | 45° HORIZONTAL BEND | |
| 2+21.6 | 99.25 | 96.85 | 45° HORIZONTAL BEND | |
| 2+29.2 | 99.06 | 96.66 | 45° HORIZONTAL BEND | |
| 2+30.6 | 99.08 | 96.66 | 45° HORIZONTAL BEND | |
| 2+31.6 | 99.10 | 96.66 | CAP 1.0M FROM BUILDING FACE | |

| 1500 WATER SERVICE TO OFFICE BUILDING TABLE | | | | |
|---|-------------------|----------------|--|--|
| STATION | SURFACE ELEVATION | T/WM ELEVATION | COMMENTS | |
| 3+03.8 | 99.25 | 96.85 | 150mm Ø VALVE AND VALVE BOX | |
| 3+10.4 | 98.80 | 96.40 | 22.5° HORIZONTAL BEND | |
| 3+12.6 | 98.75 | 96.35 | 22.5° HORIZONTAL BEND | |
| 3+16.5 | 98.57 | 95.87 ± * | CROSS BELOW 2500 STM (±0.5m CLEARANCE) | |
| 3+18.2 | 98.55 | 95.75 ± * | CROSS BELOW 2500 STM (±0.5m CLEARANCE) | |
| 3+36.6 | 98.14 | 95.74 ± ** | 45° HORIZONTAL BEND | |
| 3+40.2 | 98.30 | 95.90 ± ** | 45° HORIZONTAL BEND | |
| 3+52.5 | 98.45 | 96.05 | 45° HORIZONTAL BEND | |
| 3+53.2 | 98.45 | 96.05 | 45° HORIZONTAL BEND | |
| 3+53.3 | 98.50 | 96.10 | CAP 1.0M FROM BUILDING FACE | |

* 250mm Ø CONNECTION TO EXISTING 305mm Ø 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 |
| ① | 250mm Ø STM OBV=96.45 ± | GAS = APPROX. 1M DEEP | ±0.3m |
| ② | 200mm Ø SAN OBV=96.16 | 300mm Ø STM INV = 96.66 | ±0.50m |
| ③ | 200mm Ø SAN OBV=96.23 | 300mm Ø STM INV= 96.71 | ±0.48m |
| ④ | 200mm Ø SAN OBV=95.60 | 300mm Ø STM INV= 96.75 | ±1.15m |
| ⑤ | 250mm Ø STM OBV=96.73 | 250mm Ø STM INV=97.13 | ±0.40m |

NORTH

KEY PLAN
N.T.S.

LEGEND

SAN MH 1 ● PROPOSED SANITARY MH & SEWER

CBMH 3 ● PROPOSED CATCHBASIN MANHOLE & SEWER

STM MH 1 ○ PROPOSED STORM MANHOLE & SEWER

CB 2 □ PROPOSED CATCHBASIN AND LEAD

HYD ○ V&B PROPOSED HYDRANT AND VALVE

DC PROPOSED DEPRESSIONED CURB

200mm Ø V&B PROPOSED WATERMAIN AND DIAMETER

BEND PROPOSED VALVE AND VALVE BOX

15 B PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE

PROPOSED CAP

ICD PROPOSED INLET CONTROL DEVICE

RD ○ CONTROLLED FLOW ROOF DRAIN

OD ○ UNCONTROLLED OVERFLOW ROOF DRAIN

PROPOSED INSULATION

PROPOSED BUILDING ENTRANCE

PROPOSED RETAINING WALL

PROPOSED LAMP POST

APPROVED
By Jeff McEwen at 9:20 am, Mar 05, 2019

JEFF MCEWEN P.ENG.
MANAGER, DEVELOPMENT REVIEW EAST BRANCH
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

GENERAL NOTES:

- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- 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 THIS DRAWING.
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- 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 CO-INSURED.
- 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.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- ALL ELEVATIONS ARE GEODETIC.
- 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.
- REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
- REFER TO THE 'DEVELOPMENT SERVICING AND STORMWATER MANAGEMENT REPORT' (R-2017-179) PREPARED BY NOVATECH.
- 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:

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

| ITEM | SPEC. No. | REFERENCE |
|---|---|-----------|
| SANITARY/STORM/CATCHBASIN MANHOLE (12000) | 701.010 | OPSD |
| STORM/CATCHBASIN MANHOLE (18000) | 701.012 | OPSD |
| SANITARY/STORM MH FRAME AND COVER | 401.020 | OPSD |
| WATERTIGHT SAN/STM MH FRAME AND COVER | 401.030 | OPSD |
| 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 / CONC CLASS 650 | |
| SANITARY SEWER | PVC DR 35 | |
| SEWER TRENCH | COVER (GRANULAR 'A' OR GRANULAR 'B' TYPE 1) WITH MAXIMUM PARTICLE SIZE=25mm | |
- 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.
- 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.
- 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.
- ALL STORM MANHOLES, CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS UNLESS OTHERWISE INDICATED.
- ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
- CONTRACTOR TO TELEVIEW 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.
- 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.
- 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 OPS 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.

NOTE:
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.

OWNER INFORMATION
CDRG+REDTEAM
1084 KENASTON ST UNIT #5
OTTAWA, ONTARIO, K1B 3P5

SIMON FRIGON
PHONE: (613) 736-9222
E-MAIL: storm@redteam.ca

| No. | REVISION | DATE | BY |
|-----|----------------------------------|-----------|-----|
| 5. | REVISED PER CITY COMMENTS | DEC 4/18 | MS |
| 4. | REVISED PER CITY COMMENTS | OCT 26/18 | MS |
| 3. | REVISED PER CITY COMMENTS | OCT 18/18 | MS |
| 2. | ISSUED FOR SITE PLAN APPLICATION | MAR 9/18 | MS |
| 1. | ISSUED FOR COORDINATION | NOV 29/17 | LGB |

SCALE

1:200

0 2 4 6 8

| DESIGN | LGB |
|----------|-----|
| CHECKED | MS |
| DRAWN | LGB |
| CHECKED | MS |
| APPROVED | MS |

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
M. SAVIC
100102651
DEC 4/18
PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

| | | | |
|---|--|--------------------------|-----------|
| LOCATION 1795 MONTREAL ROAD OTTAWA, ONTARIO | | PROJECT No. 116151-00 | |
| DRAWING NAME GENERAL PLAN OF SERVICES | | REV | REV # 5 |
| | | DRAWING No. | 116151-GP |

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