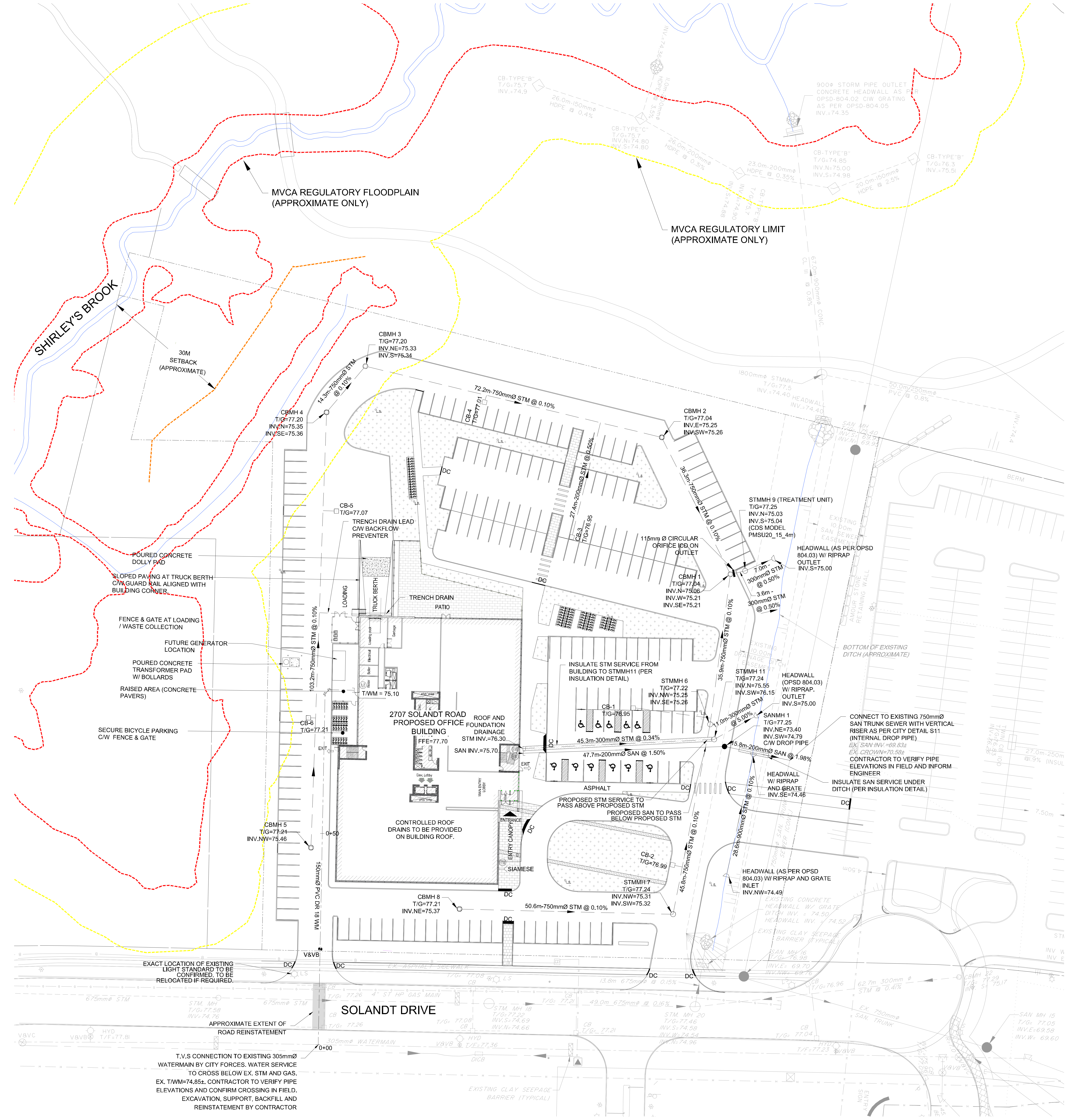


GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
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 THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA AND MVCA 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 CO-INSURED.
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.
6. 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.
7. ALL ELEVATIONS ARE GEODETIC.
8. REFER TO GEOTECHNICAL REPORT (No. 18111016, DATED SEPTEMBER, 2019), PREPARED BY GOLDER 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 HARDSURFACE AREAS AND DIMENSIONS.
10. REFER TO THE 'SITE SERVICING AND STORMWATER MANAGEMENT REPORT' (R-2019-157) PREPARED BY NOVATECH.
11. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE-IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
12. PROVIDE LINE/PARKING PAINTING.
13. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL 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, VALVE AND HYDRANT LOCATIONS, T/WM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

SEWER NOTES:

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

ITEM	SPEC. No.	REFERENCE
STORM / SANITARY MANHOLE (1200Ø/1500Ø)	701.010	OPSD
CATCHBASIN MANHOLE (1200Ø/1500Ø)	701.011	OPSD
STORM / CBMH FRAME AND COVER	401.010	OPSD
WATERTIGHT SANITARY MH FRAME AND COVER	401.030	OPSD
CATCHBASIN (600x600)	705.010	OPSD
CATCHBASIN FRAME AND COVER	400.020	OPSD
CONCRETE HEADWALL	804.030	OPSD
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	
SUBDRAIN	HDPE PERF./NON-PERF. PIPE	
SEWER TRENCH	S6	CITY OF OTTAWA

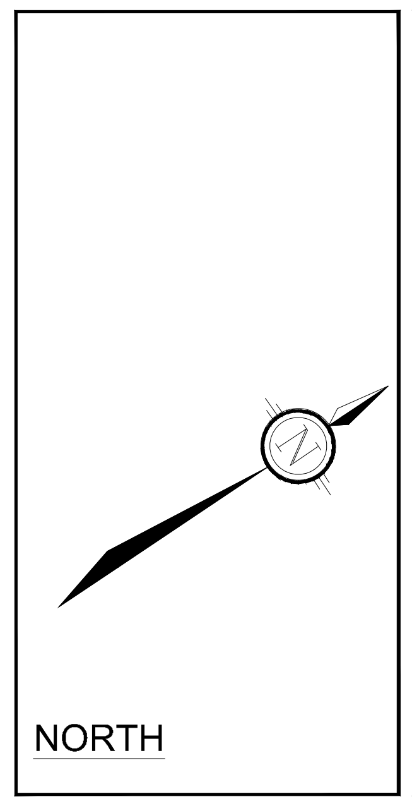
3. ALL SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
4. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTERS AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
5. PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED 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.
6. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 1.5m COVER WITH HI-40 RIGID INSULATION AS PER INSULATION DETAIL.
7. 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.
8. ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED, AND CATCHBASINS TO HAVE 600mm SUMPS.
9. CATCHBASIN MANHOLE WITH ICD TO BE INSTALLED (CBMH1) IS TO HAVE A 600mm SUMP UNLESS OTHERWISE SPECIFIED.
10. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT 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.
11. 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 ACCORDNCE 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.

WATERMAIN NOTES:

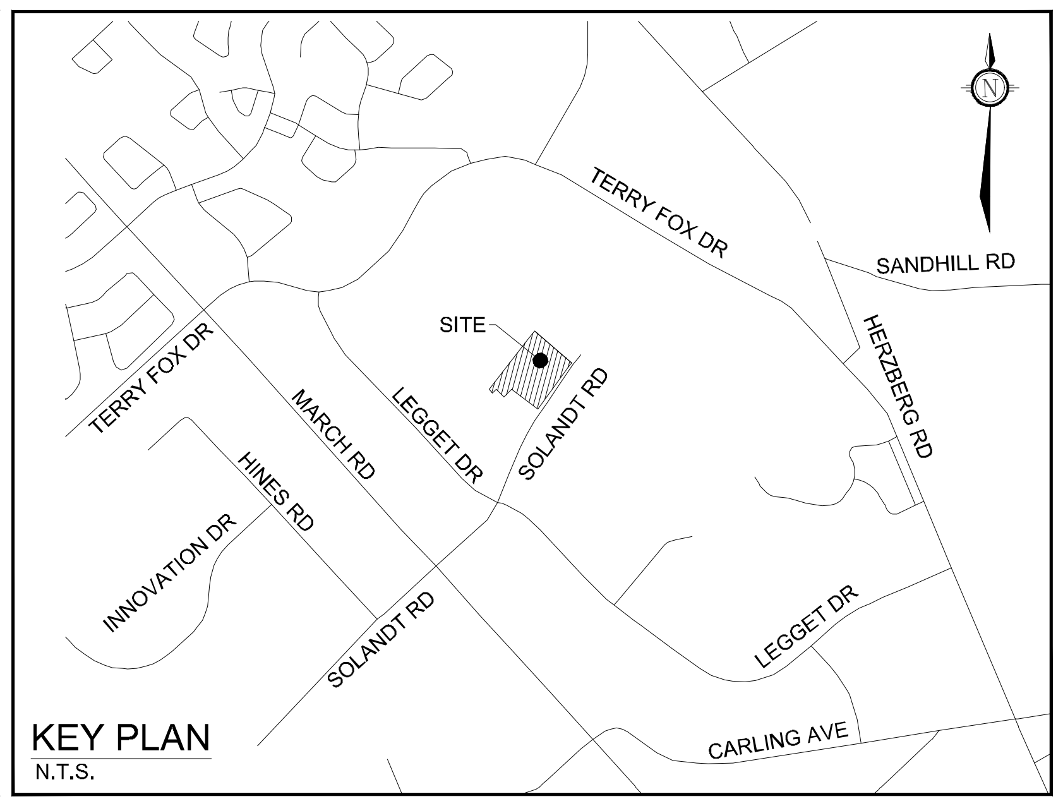
1. SUPPLY AND CONSTRUCT ALL WATERMAIN AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
2. SPECIFICATIONS:

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 SEWERS	W25	CITY OF OTTAWA
WATERMAIN	PVC DR 18	

2. 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. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION BY THE CONTRACTOR.
3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. OTHERWISE, THERMAL INSULATION IS REQUIRED AS PER STD DRAWING W22.
4. PROVIDE MINIMUM 0.50m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS WHEN WATERMAIN IS BELOW AND MINIMUM 0.25mm CLEARANCE WHEN WATERMAIN IS ABOVE.
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.



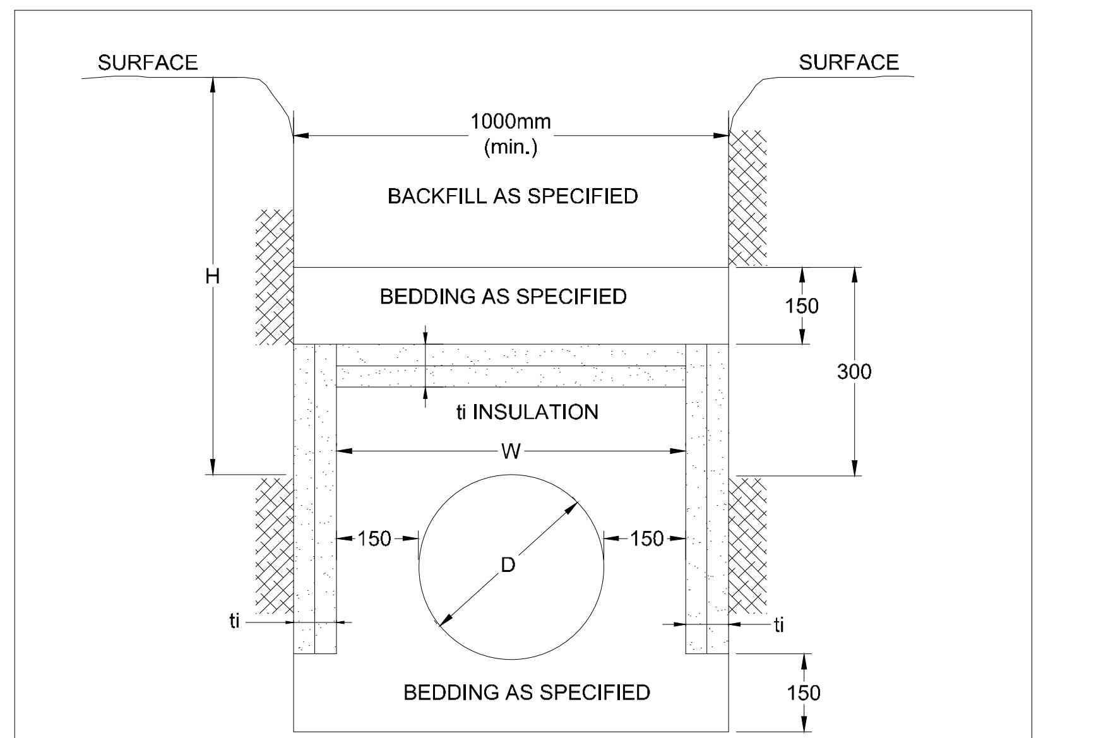
NORTH



KEY PLAN
N.T.S.

LEGEND

— - - — - - —	PROPERTY LINE
═══	PROPOSED CURB
DC	PROPOSED DEPRESSED CURB
150mmØ	PROPOSED WATERMAIN
V&VB ⊗	PROPOSED VALVE & VALVE BOX
11.25°	PROPOSED BEND & THRUSTBLOCK
Ⓜ ®M	PROPOSED WATER METER / REMOTE METER
Y	PROPOSED SIAMESE CONNECTION
[	PROPOSED CAP
SANMH 1 ●	PROPOSED SANITARY MANHOLE & SEWER
CBMH 2	PROPOSED CATCHBASIN MANHOLE & SEWER
STMMH 1 ○	PROPOSED STORMWATER MANHOLE
CB □	PROPOSED CATCHBASIN
▼	PROPOSED BUILDING ENTRANCE
▨	THERMAL INSULATION
ICD ▌	PROPOSED INLET CONTROL DEVICE
RD ○	PROPOSED ROOF DRAIN
FFE=77.70	PROPOSED FINISHED FLOOR ELEVATION
L.S. ○	PROPOSED LIGHT STANDARD
GM	EXISTING GAS METER
═══	EXISTING CURB
300mmØ WM	EXISTING WATERMAIN
V&VB ⊗	EXISTING VALVE & VALVE BOX
HYD	EXISTING FIRE HYDRANT
SAN MH ●	EXISTING SANITARY MH & SEWER
STM MH ○	EXISTING STORM MH & SEWER
CB □	EXISTING CATCHBASIN C/W CB LEAD
CBMH	EXISTING CATCHBASIN MH
—×—×—×—	EXISTING FENCE
LS ☼	EXISTING LIGHT STANDARD
🟥	MVCA REGULATORY FLOODPLAN (APPROXIMATE)
🟨	MVCA REGULATORY LIMIT (APPROXIMATE)



ti = THICKNESS OF INSULATION (mm)
h = DEPTH OF COVER
W = D + 300 (1000 min.)
W = WIDTH OF INSULATION (mm)
D = O.D OF PIPE (mm)

COVER (mm)	INSULATION THICKNESS (mm)
1500-1200	50
1200-900	75
900-600	100

INSULATION NOTES:

1. THE THICKNESS OF SEWER INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER LESS THAN 1500mm (SEE TABLE).

INSULATION DETAIL FOR SHALLOW SEWERS ONLY

NOT TO SCALE

INLET CONTROL DEVICE DATA - STM MH1

DESIGN EVENT	CIRCULAR ORIFICE ICD	DIAMETER OF OUTLET PIPE	DESIGN FLOW	DESIGN HEAD	WATER ELEVATION
1:5 YR	115mm PLUG	300mm Ø	37.5 L/s	1.73m	76.94m
1:100 YR	115mm PLUG	300mm Ø	39.9 L/s	1.96m	77.17m

150mmØ WATERMAIN TABLE

STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
0+00	77.40±	75.00± *	TEE CONNECTION TO EXISTING 305mmØ WM
0+10.59	77.25±	74.43± **	CROSS UNDER EXISTING STM SEWER
0+13.08	77.25±	74.85±	CROSS UNDER EXISTING GAS
0+22.62	77.54±	75.14±	150mm V&VB @ PROPERTY LINE
0+83.12	77.41±	75.01±	45° HORIZONTAL BEND
0+84.50	77.40±	75.00±	45° HORIZONTAL BEND
0+90.46	77.59±	75.19±	CAP 1.0m FROM BUILDING FACE

* 150mmØ TEE CONNECTION TO EXISTING 305mmØ WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.

** PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W23 ADJACENT TO OPEN STRUCTURES AND DETAIL W22 WHERE COVER IS LESS THAN 2.4m.

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.

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No.	REVISION	DATE	BY
1.	ISSUED FOR SITE PLAN APPROVAL	OCT 09/2019	GJM

SCALE
1:500
1:500
0 5 10 15 20

DESIGN	LGB/JAG
CHECKED	GJM
DRAWN	LGB
CHECKED	JAG
APPROVED	GJM

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
L. G. BOLAM
100523457
Oct-09-2019
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
G.J. MacDONALD
Oct. 9, 2019
PROVINCE OF ONTARIO

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LOCATION
CITY OF OTTAWA
2707 SOLANDT ROAD

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 119110-00
REV REV # 1
DRAWING No. 119110-GP