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 — VB — PROPOSED HYDRANT AND VALVE
- PROPOSED BARRIER CURB
- DC — PROPOSED DEPRESSED CURB
- 200mmØ — PROPOSED WATERMAIN AND DIAMETER
- SP — PROPOSED STANDPOST
- BEND — PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE
- PROPOSED CAP
- ICD — PROPOSED INLET CONTROL DEVICE
- RD — CONTROLLED FLOW ROOF DRAIN
- DD — MECHANICAL DECK DRAIN / UNCONTROLLED ROOF DRAIN
- THERMAL INSULATION FOR SHALLOW SEWERS
- PROPOSED BUILDING ENTRANCE
- C.S. — PROPOSED CLAY SEAL SEEPAGE BARRIER (PER GEOTECHNICAL REPORT)
- PROPOSED STRUCTURAL RETAINING WALL

- SANMH — EXISTING SANITARY MANHOLE AND SEWER
- CBMH — EXISTING CATCHBASIN MANHOLE
- STMMH — EXISTING STORM MANHOLE AND SEWER
- CB — EXISTING CATCHBASIN C/W CATCHBASIN LEAD
- HYD — EXISTING HYDRANT
- EX UP — EXISTING UTILITY POLE C/W GUY WIRES
- 300mmØ WM — EXISTING WATERMAIN
- HYD — EXISTING HYDRANT C/W VALVE & LEAD
- LS — EXISTING LIGHT STANDARD
- EXISTING CONCRETE CURB
- EXISTING FENCE
- OHW — OHW — EXISTING OVERHEAD UTILITY WIRES
- PROPOSED WATER METER AND REMOTE METER
- PROPOSED GAS METER

GENERAL NOTES:

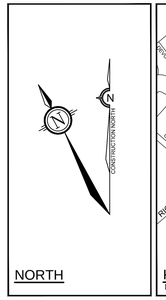
1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00. 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 THE CITY OF OTTAWA AND ENGINEER.
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. PG4564-1_REVISION 1, DATED NOVEMBER 7, 2018), PREPARED BY PATERSON GROUP INC., 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 ARCHITECTS DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.
10. REFER TO STORMWATER MANAGEMENT REPORT(R-2018-158) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
11. SAW CUT AND KEY GRIND 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:

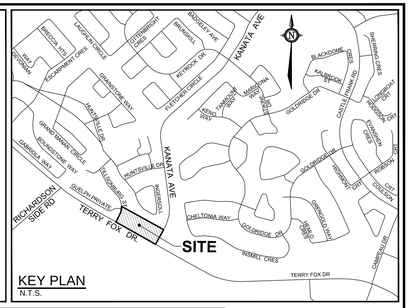
1. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200mmØ)	701.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME & COVER	401.010	OPSD
WATERTIGHT MH FRAME AND COVER	401.030	OPSD
SEWER TRENCH	S6	CITY OF OTTAWA
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	

3. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
4. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.5m COVER WITH HI-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
5. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
6. 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.
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. 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.
9. ALL STORM MANHOLES AND 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. ALL WEEPING TILE CONNECTIONS TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
9. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.



NORTH



KEY PLAN
N.T.S.

INLET CONTROL DEVICE - DATA TABLE

CB I.D.	ICD TYPE	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s) 2-YEAR	DESIGN FLOW (L/s) 100-YEAR	DESIGN HEAD (m) 2-YEAR	DESIGN HEAD (m) 100-YEAR
CB 1	TEMPEST LMF (Vortex 90)	300	6.7	9.3	0.91	1.61
CB 2	TEMPEST MHF (126mmØ)	300	32.0	39.0	1.06	1.54
CB 3	TEMPEST MHF (162mmØ)	300	30.0	59.4	0.39	1.29

ROOF DRAIN TABLE: AREA R-1 (ROOF DRAINS 1 to 10)

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)	1/2 EXPOSED	0.79 L/s	9 cm	1.10 L/s	13 cm
R-1	RD 2 (RD-100-A-ADJ)	1/2 EXPOSED	0.79 L/s	6 cm	0.95 L/s	10 cm
R-1	RD 3 (RD-100-A-ADJ)	1/2 EXPOSED	0.79 L/s	9 cm	1.10 L/s	13 cm
R-1	RD 4 (RD-100-A-ADJ)	1/2 EXPOSED	0.79 L/s	9 cm	1.10 L/s	13 cm
R-1	RD 5 (RD-100-A-ADJ)	3/4 EXPOSED	1.10 L/s	11 cm	1.58 L/s	15 cm
R-1	RD 6 (RD-100-A-ADJ)	3/4 EXPOSED	1.10 L/s	11 cm	1.58 L/s	15 cm
R-1	RD 7 (RD-100-A-ADJ)	3/4 EXPOSED	1.10 L/s	11 cm	1.58 L/s	15 cm
R-1	RD 8 (RD-100-A-ADJ)	3/4 EXPOSED	1.10 L/s	11 cm	1.58 L/s	15 cm
R-1	RD 9 (RD-100-A-ADJ)	1/2 EXPOSED	0.95 L/s	10 cm	1.26 L/s	14 cm
R-1 (CANOPY)	RD 10 (UN-CONTROLLED)	- - -	0.42 L/s	- - -	0.79 L/s	- - -

* REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2018-158) 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.

INSULATION DETAIL FOR SHALLOW SEWERS
NOT TO SCALE

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)

COVER (mm)	INSULATION THICKNESS (mm)
1500-1200	75
1200-900	100
900-600	125

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

PROPOSED 100mmØ - 200mmØ WATERMAIN TABLE

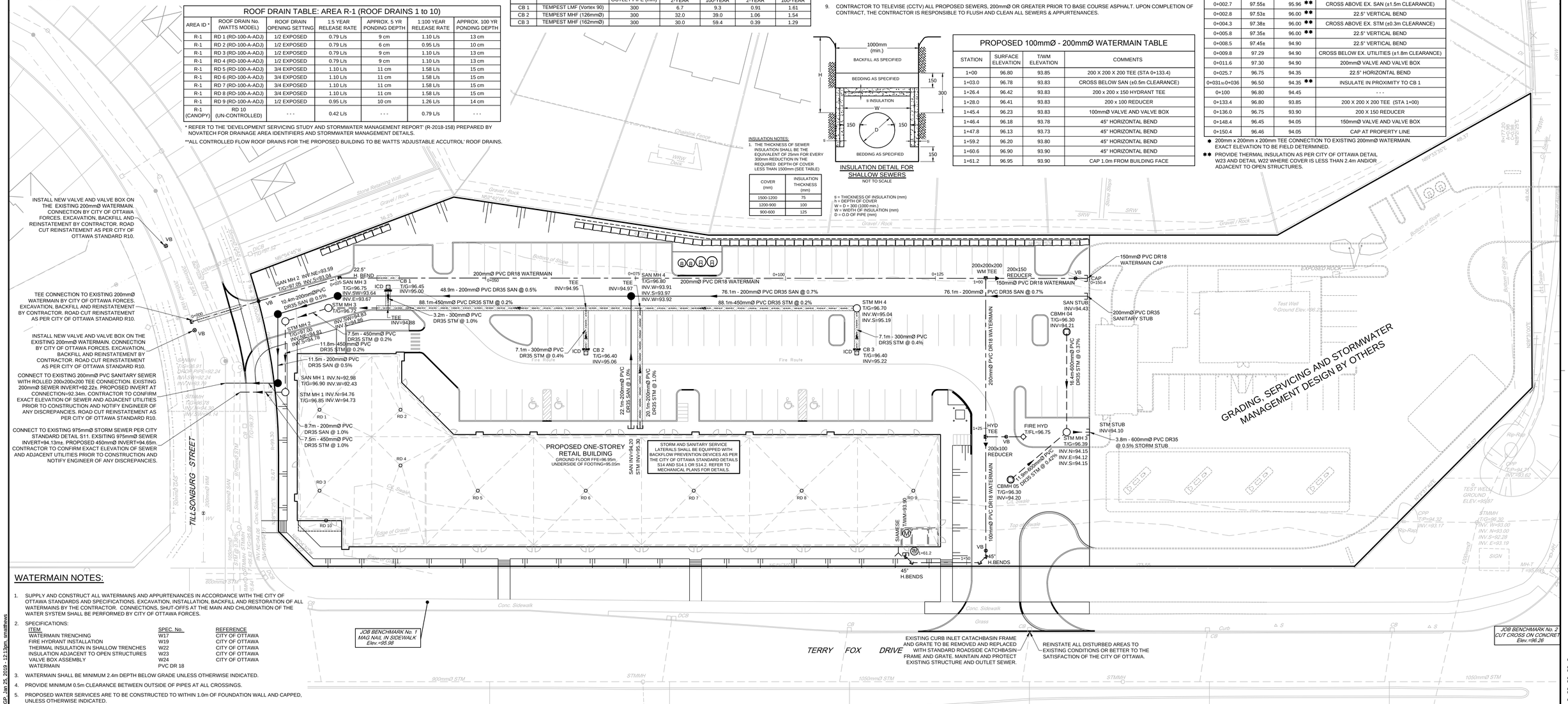
STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
1+00	96.80	93.85	200 X 200 X 200 TEE (STA 0+133.4)
1+03.0	96.78	93.83	CROSS BELOW SAN (±0.5m CLEARANCE)
1+26.4	96.42	93.83	200 x 200 x 150 HYDRANT TEE
1+28.0	96.41	93.83	200 x 100 REDUCER
1+45.4	96.23	93.83	100mmØ VALVE AND VALVE BOX
1+46.4	96.18	93.78	45° HORIZONTAL BEND
1+47.8	96.13	93.73	45° HORIZONTAL BEND
1+59.2	96.20	93.80	45° HORIZONTAL BEND
1+60.6	96.90	93.90	45° HORIZONTAL BEND
1+61.2	96.95	93.90	CAP 1.0m FROM BUILDING FACE

PROPOSED 200mmØ WATERMAIN TABLE

STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
0+000	97.71±	94.98± *	TEE CONNECTION TO EX. 200mmØ WM
0+000.3	97.73±	94.98	22.5° VERTICAL BEND
0+002.7	97.55±	95.96 **	CROSS ABOVE EX. SAN (±1.5m CLEARANCE)
0+002.8	97.53±	96.00 **	22.5° VERTICAL BEND
0+004.3	97.38±	96.00 **	CROSS ABOVE EX. STM (±0.3m CLEARANCE)
0+005.8	97.35±	96.00 **	22.5° VERTICAL BEND
0+008.5	97.45±	94.90	22.5° VERTICAL BEND
0+009.8	97.29	94.90	CROSS BELOW EX. UTILITIES (±1.8m CLEARANCE)
0+011.6	97.30	94.90	200mmØ VALVE AND VALVE BOX
0+025.7	96.75	94.35	22.5° HORIZONTAL BEND
0+031±0+036	96.50	94.35 **	INSULATE IN PROXIMITY TO CB 1
0+100	96.80	94.45	- - -
0+133.4	96.80	93.85	200 X 200 X 200 TEE (STA 1+00)
0+136.0	96.75	93.90	200 X 150 REDUCER
0+148.4	96.45	94.05	150mmØ VALVE AND VALVE BOX
0+150.4	96.46	94.05	CAP AT PROPERTY LINE

* 200mm x 200mm x 200mm TEE CONNECTION TO EXISTING 200mmØ WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.

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



WATERMAIN NOTES:

1. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS, SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OF OTTAWA FORCES.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
FIRE HYDRANT INSTALLATION	W19	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
INSULATION ADJACENT TO OPEN STRUCTURES	W23	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
WATERMAIN	PVC DR 18	

3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
4. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
5. PROPOSED WATER SERVICES ARE TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

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.

NOT FOR CONSTRUCTION

OWNER INFORMATION
7873794 CANADA INC.
43 AURIGA DRIVE, 2ND FLOOR,
NEPEAN, ONTARIO, K2E 7Y8
DENNIS LAURIN
PHONE: (613) 656-0672
dennis.laurin@laurin.ca

No.	REVISION	DATE	BY
2	ISSUED FOR SITE PLAN APPROVAL	JAN 25/19	MS
1	ISSUED FOR DESIGN COORDINATION	JAN 17/19	MS

SCALE
1:300
1:300
0 3 6 9 12

DESIGN SM / MS
CHECKED MS
DRAWN SM
CHECKED SM / MS
APPROVED MS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M. SAVIC 100102651 Jan 25/19 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
CITY OF OTTAWA - 471 TERRY FOX DRIVE
HERITAGE HILLS RETAIL PLAZA

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 118133
REV REV # 2
DRAWING No. 118133-GP

D07-12-18-XXXX
XXXXX

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PLAN24x36.DWG - 914.4mmx609.6mm