

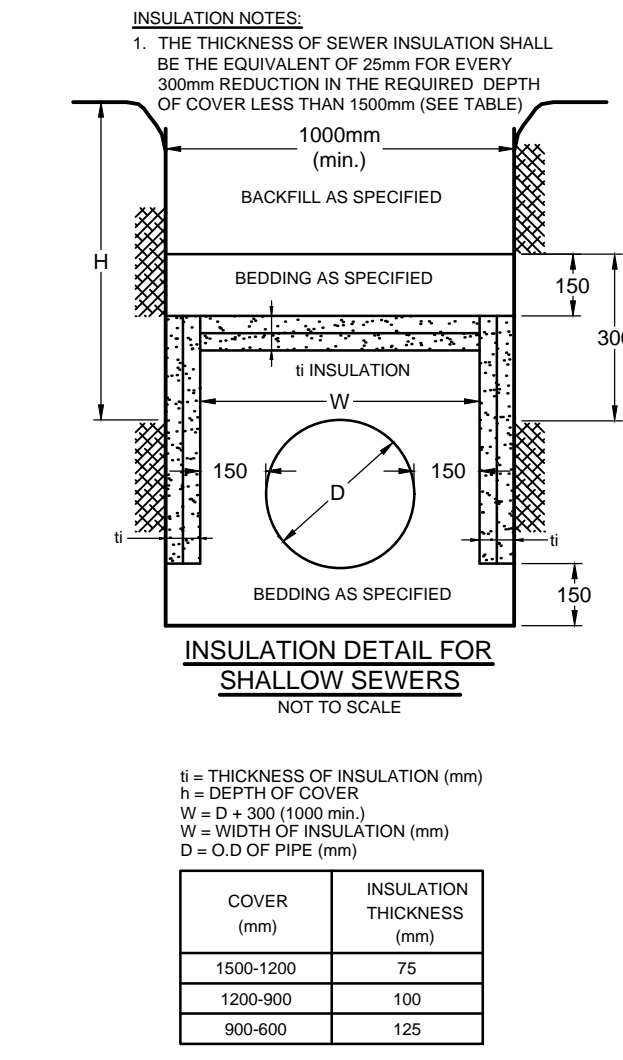
PROPOSED WATER SERVICE TABLE			
STATION	SURFACE ELEVATION	TWM ELEVATION	COMMENTS
0+000	95.35	92.35	TEE CONNECTION TO EX. 300mm Ø WM
0+001	95.32	92.35	200mm Ø VALVE AND VALVE BOX
0+004.7	95.23	92.53	CROSS ABOVE EX. 4500 SAN (±0.85m CLEARANCE)
0+006	95.20	92.53	11.25° HORIZONTAL BEND
0+022	94.93	92.53	CROSS BELOW 250mm Ø STM (±0.63m CLEARANCE)
0+025	95.00	92.53	
0+050	94.98	92.53	
0+058.2	94.93	92.53	CROSS BELOW 300mm Ø STM (±0.75m CLEARANCE)
0+075	95.14	92.53	
0+092.7	94.93	92.53	22.5° HORIZONTAL BEND
0+094.4	94.92	92.52	CROSS BELOW 375mm Ø STM (±0.77m CLEARANCE)
0+098.1	94.90	92.50	22.5° HORIZONTAL BEND
0+100.9	94.87	92.57	200 x 200 x 150 HYDRANT TEE
0+102.9	94.98	92.58	200 x 150 REDUCER
0+103.9	94.99	92.59	45° HORIZONTAL BEND
0+106.0	95.01	92.61	150mm Ø VALVE AND VALVE BOX
0+105.2	95.10	92.70	45° HORIZONTAL BEND
0+119.5	95.33	92.75	CAP 1.0m FROM BUILDING FACE
1+000	94.97	92.57	200 x 200 x 150 HYDRANT TEE
1+005	94.97	92.57	150mm Ø VALVE AND VALVE BOX
1+007.5	95.15	92.57	FIRE HYDRANT

300mm x 300mm x 200mm TEE CONNECTION TO EXISTING 300mm Ø WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.

WATERMAIN NOTES:

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

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN	PVC DR 18	CITY OF OTTAWA
- 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.

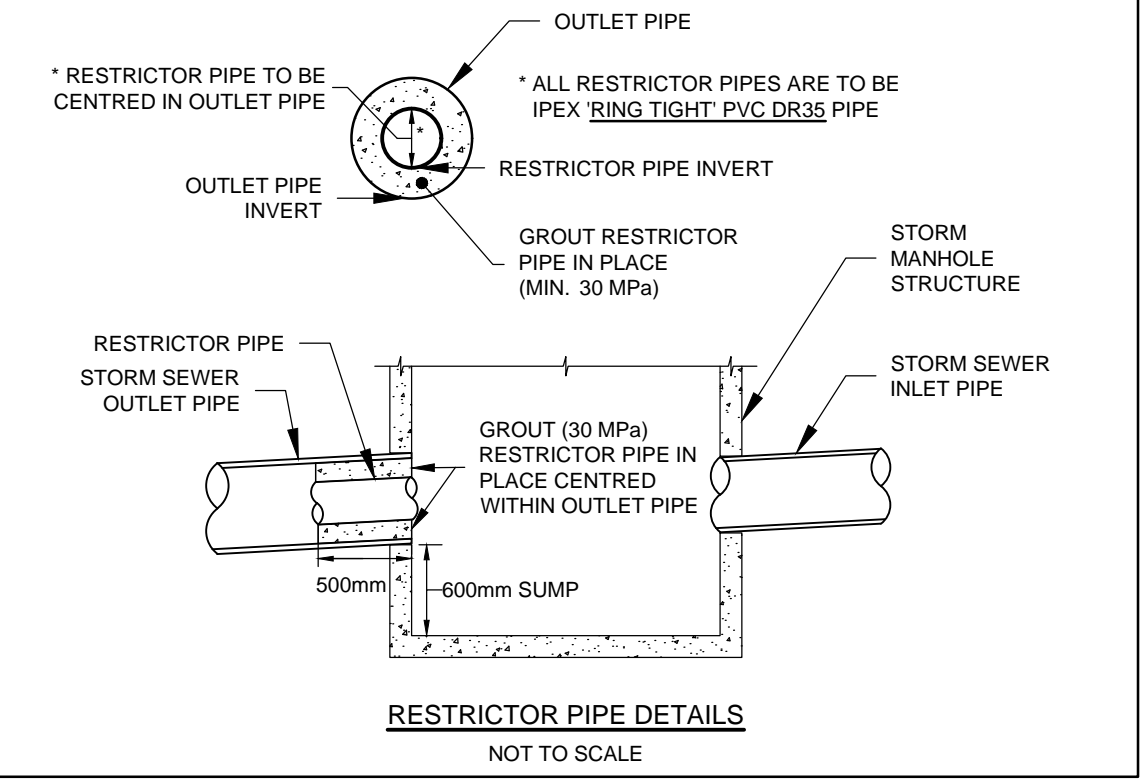


CAMP MART SITE FLOWS & STORMWATER MANAGEMENT TABLE						
DESIGN EVENT	PRE-DEVELOPMENT CONDITIONS			POST-DEVELOPMENT CONDITIONS		
	UNCONTROLLED FLOW (L/s)	ALLOWABLE RELEASE RATE (L/s)	A-0 FLOW (L/s)	A-1 FLOW (L/s)	A-2 FLOW (L/s)	TOTAL FLOW (L/s)
1.5 YR	115.3	99.5	6.1	30.3	50.6	87.0
1:100 YR	247.0	99.5	12.4	31.1	52.9	96.4

* REDUCED FLOW COMPARED TO PRE-DEVELOPMENT UNCONTROLLED CONDITIONS

AREA A-1: RESTRICTOR PIPE DATA - CBMH 1						
DESIGN EVENT	DIAMETER OF RESTRICTOR PIPE (mm)	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER ELEVATION (m)	VOLUME (m³)
1.5 YR	101mm Ø RINGTIGHT	375	30.3	1.96	94.89	167.2
1:100 YR	101mm Ø RINGTIGHT	375	31.1	2.07	95.00	399.9

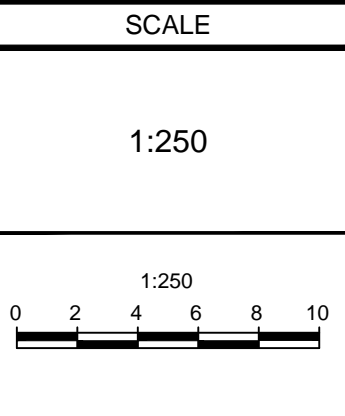
AREA A-2: RESTRICTOR PIPE DATA - CBMH 12						
DESIGN EVENT	DIAMETER OF RESTRICTOR PIPE (mm)	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER DEPTH (m)	VOLUME (m³)
1.5 YR	135mm Ø RINGTIGHT	375	53.6	1.71	94.91	59.2
1:100 YR	135mm Ø RINGTIGHT	375	52.9	1.87	95.07	165.3



NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, 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
20 FRANK NIGHBOR INC.
11266 FIFTH LINE
HALTON HILLS, ON, L7G 4S6
SUNNY BAINS
PHONE: 1-877-401-3423
sbains35@gmail.com

No.	REVISION	DATE	BY
8	REVISED PER MTO COMMENTS	AUG 19/18	FST
7	REVISED PER CITY COMMENTS	JUL 27/18	FST
6	REVISED PER MTO COMMENTS	JUN 29/18	FST
5	ISSUED FOR TENDER	JUN 1/18	FST
4	ISSUED FOR BUILDING PERMIT	JUN 1/18	FST
3	REVISED PER CITY COMMENTS	MAY 24/18	FST
2	REVISED PER CITY COMMENTS	APR 23/18	FST
1	ISSUED FOR SITE PLAN APPROVAL	FEB 9/18	FST



FOR REVIEW ONLY

DESIGN: SM / FST
CHECKED: FST
DRAWN: SM
CHECKED: SM / FST
APPROVED: FST

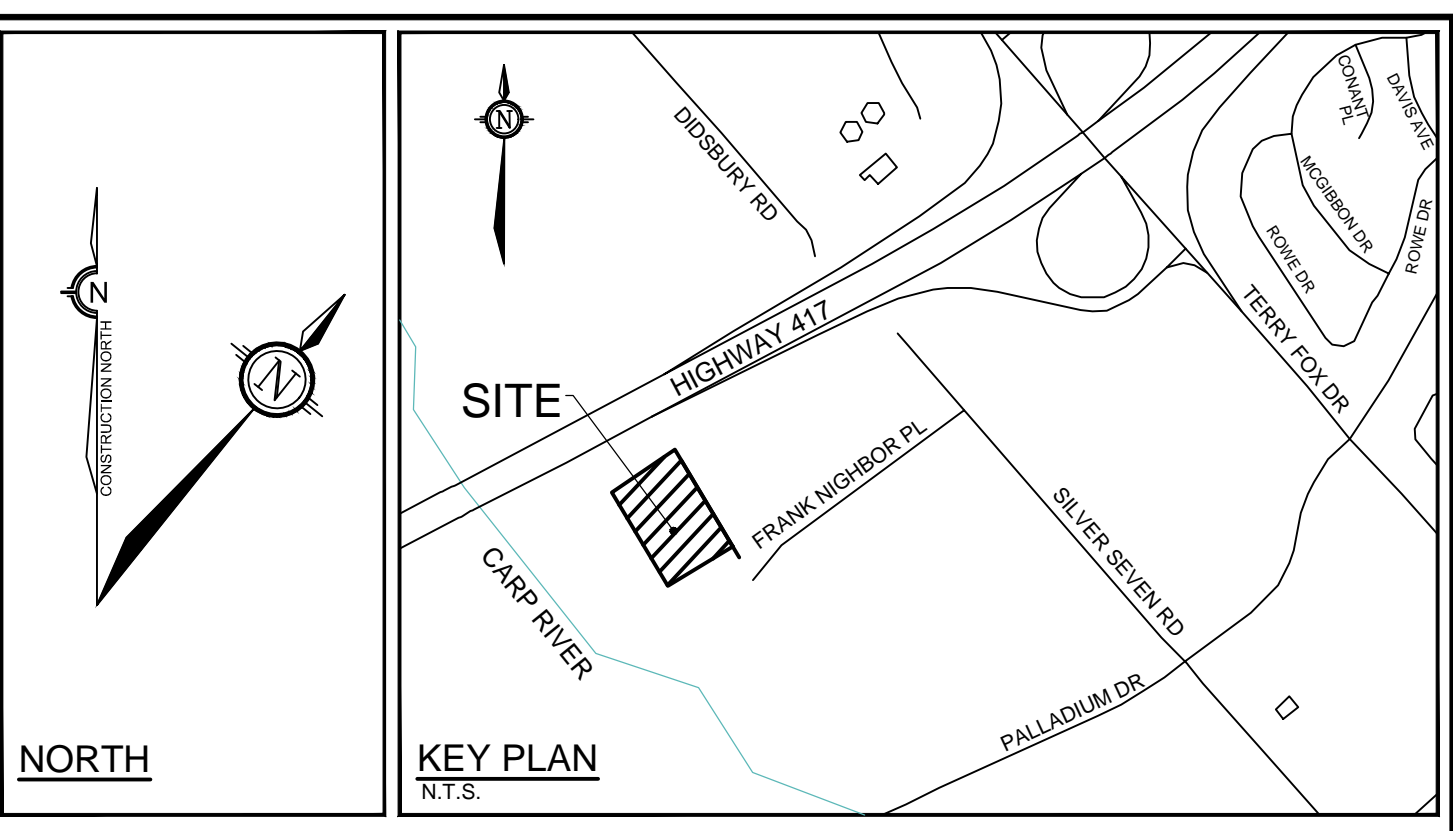
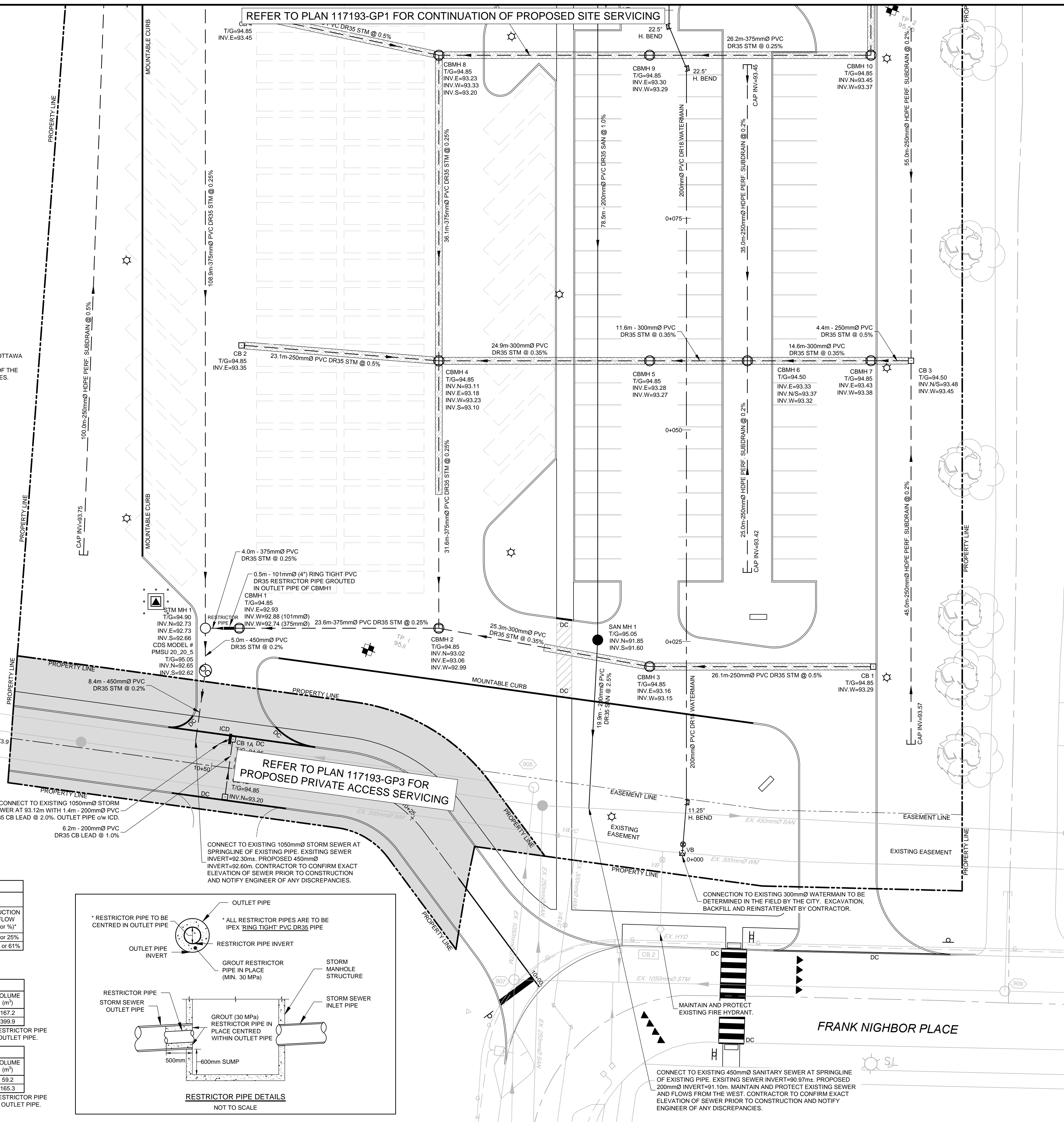
PROFESSIONAL ENGINEER
F.S. THAUVELLE
100041899
ANG 19, 2018
PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
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Telephone: (613) 254-9643
Facsimile: (613) 254-5867
Website: www.novatech-eng.com

LOCATION: CITY OF OTTAWA
20 FRANK NIGHBOR PLACE - CAMP MART SITE

DRAWING NAME: GENERAL PLAN OF SERVICES

PROJECT No.: 117193
REV: REV # 8
DRAWING No.: 117193-GP2



LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
SAN MH 1	PROPOSED SANITARY MH & SEWER	PROPERTY LINE	PROPERTY LINE
CBMH 3	PROPOSED CATCH-BASIN MANHOLE c/w 3.0m RADIAL SUBDRAINS PER GETOTEC & SEWER	EXISTING CONCRETE CURB	EXISTING CONCRETE CURB
STM MH 1	PROPOSED STORM MANHOLE & SEWER	EXISTING SANITARY MANHOLE AND SEWER	EXISTING SANITARY MANHOLE AND SEWER
CB 2	PROPOSED CATCH-BASIN c/w 3.0m RADIAL SUBDRAINS PER GETOTEC AND LEAD	EXISTING CATCH-BASIN MANHOLE	EXISTING CATCH-BASIN MANHOLE
HYD	PROPOSED HYDRANT AND VALVE	EXISTING STORM MANHOLE AND SEWER	EXISTING STORM MANHOLE AND SEWER
DC	PROPOSED DEPRESSED CURB	EXISTING CATCH-BASIN C/W CATCH-BASIN LEAD	EXISTING CATCH-BASIN C/W CATCH-BASIN LEAD
200mm Ø	PROPOSED WATERMAIN AND DIAMETER	EXISTING HYDRANT	EXISTING HYDRANT
VB	PROPOSED VALVE AND VALVEBOX	EXISTING UTILITY POLE C/W GUY WIRES	EXISTING UTILITY POLE C/W GUY WIRES
BEND	PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE	EXISTING WATERMAIN	EXISTING WATERMAIN
C	PROPOSED CAP	EXISTING HYDRANT C/W VALVE & LEAD	EXISTING HYDRANT C/W VALVE & LEAD
ICD	PROPOSED INLET CONTROL DEVICE	EXISTING LIGHT STANDARD	EXISTING LIGHT STANDARD
RD	ROOF DRAIN	EXISTING FENCE	EXISTING FENCE
TH	THERMAL INSULATION FOR SHALLOW SEWERS	EXISTING OVERHEAD UTILITY WIRES	EXISTING OVERHEAD UTILITY WIRES
CB	PROPOSED BUILDING ENTRANCE	PROPOSED WATER METER AND REMOTE METER	PROPOSED WATER METER AND REMOTE METER
C.S.	PROPOSED CLAY SEAL SEEPAGE BARRIER (PER GEOTECHNICAL REPORT)	PROPOSED LIGHT STANDARD	PROPOSED LIGHT STANDARD
RET	PROPOSED RETAINING WALL	PROPOSED TRANSFORMER	PROPOSED TRANSFORMER

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 \$5,000,000.00. 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 THE CITY OF OTTAWA AND ENGINEER.
- 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 REPORT (NO. PG4409-1, DATED FEBRUARY 9, 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.
- REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDWARE AREAS AND DIMENSIONS.
- REFER TO DSS & SWM REPORT (R-2018-011) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
- SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
- PROVIDE LINE/PARKING PAINTING.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICES AS BUILT INFORMATION SHOWN ON THIS PLAN, AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND TIG ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

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
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200mm Ø)	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
- 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.
- 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.
- SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
- 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.
- 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 SERVICE 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.
- ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SLUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SLUMPS UNLESS OTHERWISE INDICATED.
- ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SLUMPS.
- ALL WEEPING TILE CONNECTIONS ARE TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
- CONTRACTOR TO TELEPHONE (CITY) ALL PROPOSED SEWERS, 200mm Ø OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.

D07-12-18-0016