PATERSON GROUP

memorandum

re: **Site Servicing Plan Review**
Proposed Residential Development
3288 Greenbank Road – Ottawa, Ontario

to: Mattamy Homes. – **Lina Ramirez** – Lina.Ramirez@mattamycorp.com
date: April 10, 2024
file: PG5608-MEMO.02

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to document our review of the site servicing plan, and to provide associated recommendations from a geotechnical perspective. This memorandum should be read in conjunction with Paterson Report PG5608-1 Revision 2 dated September 12, 2023.

Background Information

Based on the above noted geotechnical investigation, the subsurface profile across the subject site consists of topsoil underlain by a very stiff to stiff brown silty clay layer which transitions to a stiff grey silty clay at an approximate depth of 3.1 m below the existing ground surface. A glacial till deposit, consisting of grey clayey silt with sand, gravel, cobbles and boulders was encountered below the silty clay layer at approximate depths ranging from 1.7 to 6.3 m below the existing ground surface.

Site Servicing Plan Review

Paterson reviewed the following conceptual site servicing plan prepared by Stantec Consulting Ltd. regarding the aforementioned development:

- ❑ Site Servicing Plan – SNTC Lands Block 3 – Project No. 160401845 – Drawing No. SSP-1 - Revision 2 – dated March 19, 2024.

Based on our review of the above-noted site service plan, sufficient frost protection has been provided to the majority of the services across the subject site.

However, insufficient frost protection was noted to have been provided to the storm sewer between STM 108 and STM 107 located within the northwest corner of the site. This section of the storm services will be founded within the frost zone (i.e. approximately 2.1 m below the finished grade). Reference should be made to Figure 1 – Services Requiring Frost Protection, attached to the current memorandum, which illustrates the approximate location. Frost protection of the site servicing is recommended where insufficient frost cover has been provided.

Geotechnical Recommendations

Any portion of the site services installed at a depth of 2.1 m below finished grade or deeper is considered to have sufficient soil cover for frost protection. Where insufficient soil cover is present above the invert of storm sewer pipe, the following frost protection criteria should be followed:

Table 1 - Rigid Insulation Recommendations for Sanitary and Storm Sewer Pipes with Reduced Soil Cover

Thermal Condition	Soil Cover Provided (mm)	Insulation Dimensions	
		Thickness (mm)	Extension (mm)
Unheated	600 to 900	125	Extend 1200 mm horizontally beyond edge face of the pipe
	900 to 1200	100	Extend 1200 mm horizontally beyond edge face of the pipe
	1200 to 1500	75	Extend 900 mm horizontally beyond edge face of the pipe
	1500 to 1800	50	Extend 600 mm horizontally beyond edge face of the pipe
	1800 to <2100	25	Extend 300 mm horizontally beyond edge face of the pipe
Notes: All designs are based on a freezing index of 1000°C-days			

All rigid insulation should consist of either Dow Chemical High-Load 40 (HI-40), Styro Rail SR.P400, or equivalent approved by Paterson. The placement of all insulation within the service trenches must be reviewed and approved by Paterson personnel at the time of construction. Reference should be made to Figure 2 - Typical Frost Insulation Detail, attached to this memorandum.

We trust that this information satisfies your requirements.

Paterson Group Inc.

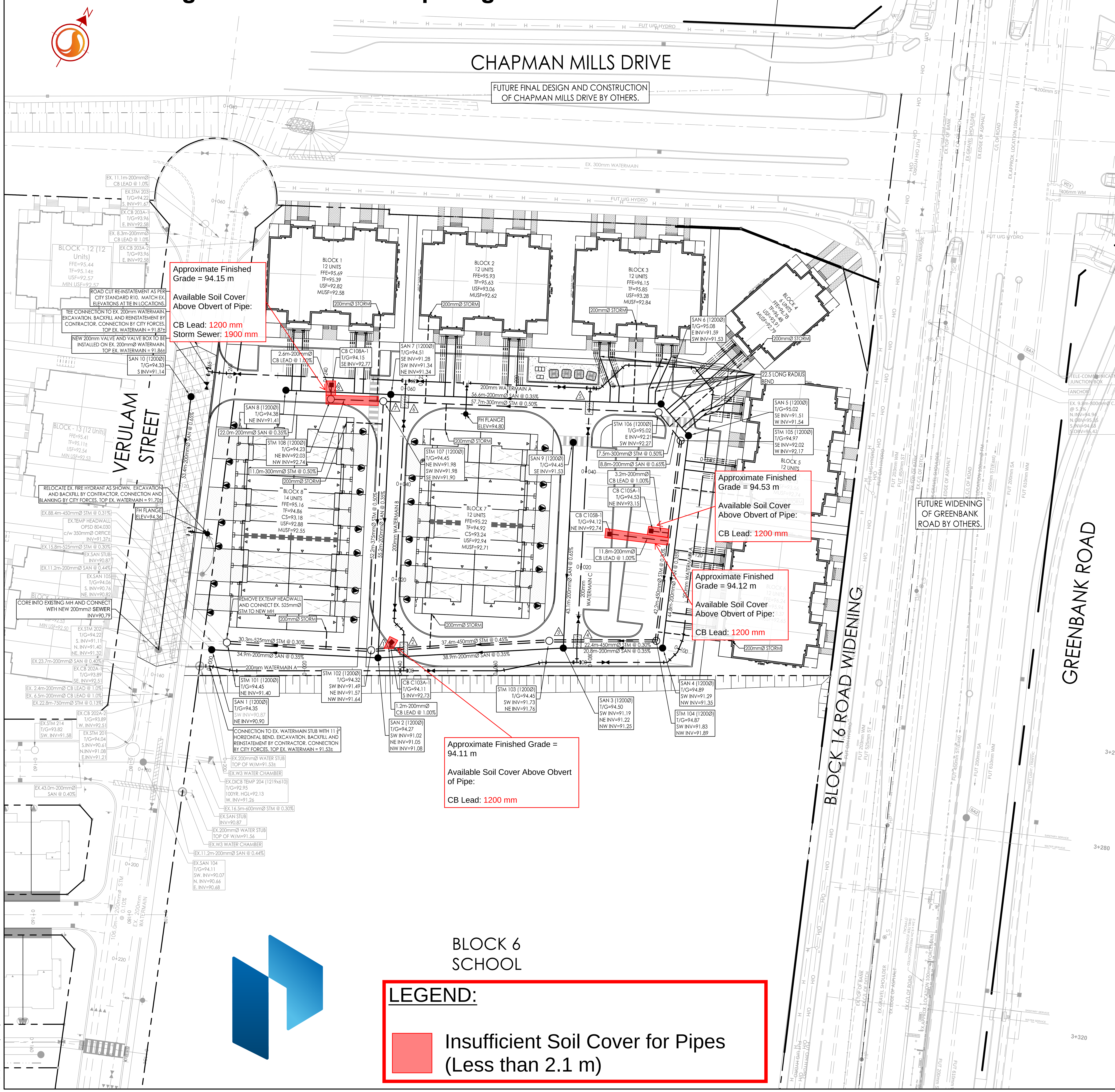
Zubaida Al-Moselly, P.Eng.

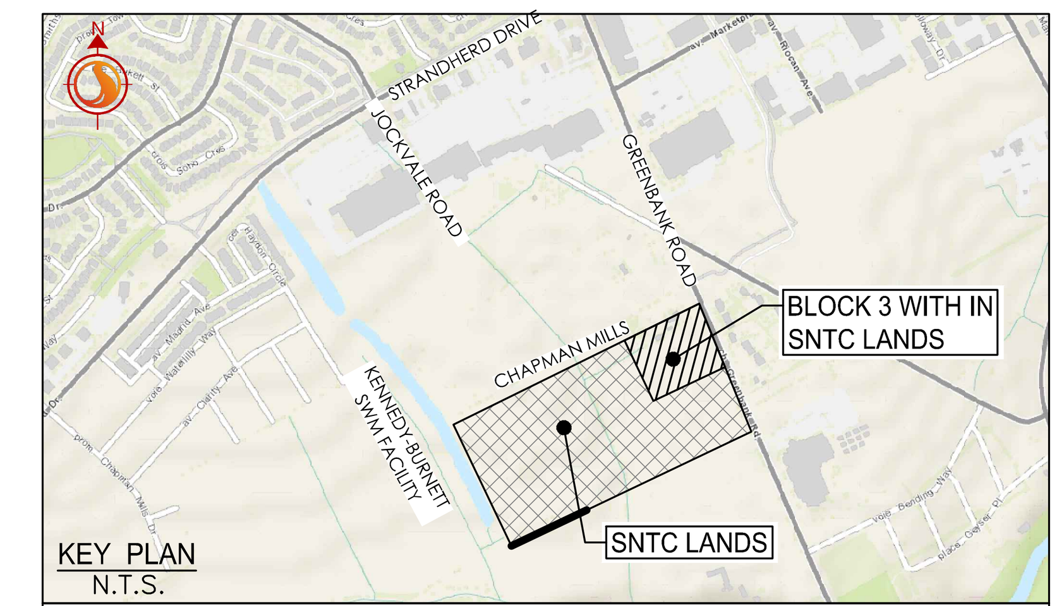
Kevin Pickard, P.Eng.

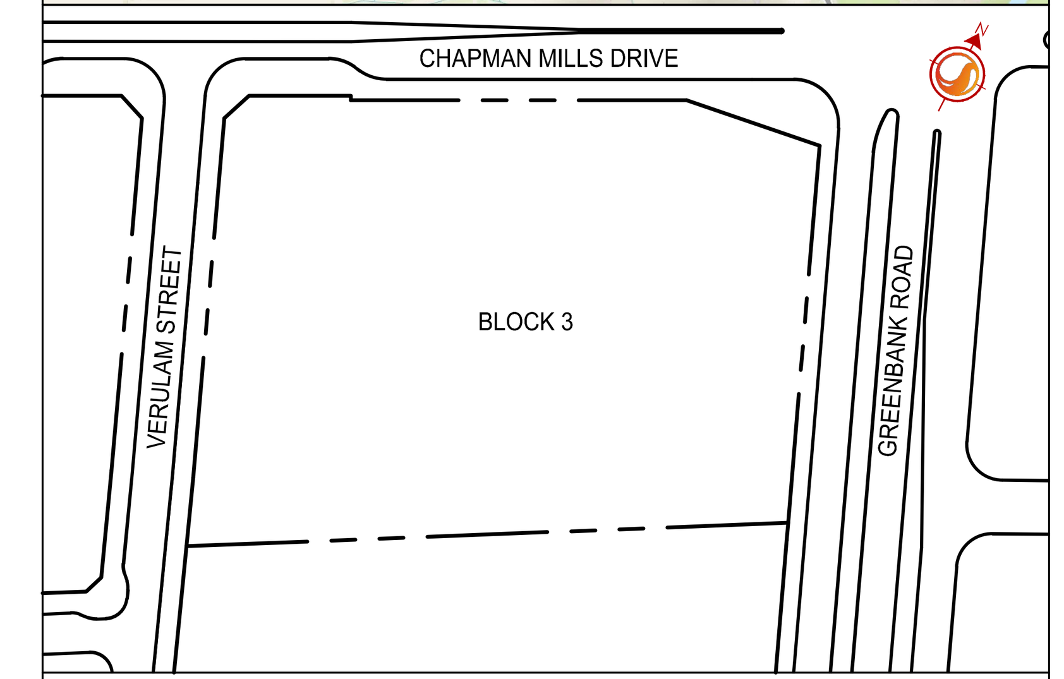
Attachments:

- ❑ Figure 1 – Services Requiring Frost Protection.
- ❑ Figure 2 – Typical Frost Insulation Detail.

Figure 1 - Services Requiring Frost Protection







STREET NAMES KEY PLAN
N.T.S.

200mmØ WATERMAIN A			
STATION	FINISHED GRADE	TOP W/M	ITEM
0+000	94.18	91.53±	CONNECT TO EX. 200mmØ WATER STUB WITH 11 1/4° BEND
0+005.1	94.21	91.810	11 1/4° HORIZONTAL BEND
0+020	94.28	91.880	TOP OF WATERMAIN
0+040.8	94.35	91.950	200mm x 200mm TEE
0+046.5	94.36	91.960	200mm VALVE AND VALVE BOX
0+061.1	94.61	92.210	11 1/4° HORIZONTAL BEND
0+070	94.43	92.030	11 1/4° HORIZONTAL BEND
0+077.2	94.56	92.160	200mm x 200mm TEE
0+083.2	94.66	92.260	200mm VALVE AND VALVE BOX
0+096.2	94.90	92.500	45° HORIZONTAL BEND
0+099.2	94.95	92.550	22 1/2° HORIZONTAL BEND
0+102.2	94.94	92.540	11 1/4° HORIZONTAL BEND
0+120	94.85	92.450	TOP OF WATERMAIN
0+140	95.03	92.630	TOP OF WATERMAIN
0+154.4	95.44	93.040	45° HORIZONTAL BEND
0+160.6	95.42	93.020	45° HORIZONTAL BEND
0+175.2	95.16	92.760	45° HORIZONTAL BEND
0+182.5	94.99	92.590	45° HORIZONTAL BEND
0+184.5	94.95	92.550	200mm x 200mm TEE
0+190.5	94.81	92.410	200mm VALVE AND VALVE BOX
0+210.3	94.69	92.290	FIRE HYDRANT TEE
0+220.2	94.67	92.270	200mm VALVE AND VALVE BOX
0+223.2	94.62	92.220	200mm x 200mm TEE
0+240	94.21	91.810	TOP OF WATERMAIN
0+258.5	94.31	91.910	200mm VALVE AND VALVE BOX
0+261.5	94.28	91.880	5° HORIZONTAL BEND
0+264.5	94.27	91.87±	CONNECT TO EX. WATERMAIN 200mm X 200mm TEE

200mmØ WATERMAIN B			
STATION	FINISHED GRADE	TOP W/M	ITEM
0+000	94.35	91.950	200mm x 200mm TEE
0+002.3	94.28	91.880	45° VERTICAL BEND
0+003.3	94.25	92.820	45° VERTICAL BEND
0+006	94.14	92.820	45° VERTICAL BEND
0+007	94.14	91.740	45° VERTICAL BEND
0+008.3	94.14	91.740	45° HORIZONTAL BEND
0+011.1	94.16	91.760	45° HORIZONTAL BEND
0+014.1	94.19	91.790	200mm VALVE AND VALVE BOX
0+020	94.25	91.850	TOP OF WATERMAIN
0+040	94.45	92.050	TOP OF WATERMAIN
0+052.7	94.50	92.100	200mm VALVE AND VALVE BOX
0+054.9	94.50	92.100	45° VERTICAL BEND
0+055.9	94.51	93.010	45° VERTICAL BEND
0+058.7	94.56	93.010	45° VERTICAL BEND
0+059.7	94.58	92.180	45° VERTICAL BEND
0+061.7	94.62	92.220	200mm x 200mm TEE

200mmØ WATERMAIN C			
STATION	FINISHED GRADE	TOP W/M	ITEM
0+000	94.56	92.160	200mm x 200mm TEE
0+002	94.57	92.170	45° VERTICAL BEND
0+003	95.56	93.000	45° VERTICAL BEND
0+005.8	94.55	93.000	45° VERTICAL BEND
0+006.8	94.55	92.150	45° VERTICAL BEND
0+009	94.54	92.140	200mm VALVE AND VALVE BOX
0+020	94.38	91.980	TOP OF WATERMAIN
0+040	94.47	92.070	TOP OF WATERMAIN
0+048.5	94.65	92.250	200mm VALVE AND VALVE BOX
0+051	94.74	92.340	45° VERTICAL BEND
0+052	94.78	93.200	45° VERTICAL BEND
0+054.7	94.88	93.200	45° VERTICAL BEND
0+055.7	94.92	92.520	45° VERTICAL BEND
0+057.5	94.95	92.550	200mm x 200mm TEE

ICD TABLE						
STRUCTURE ID	TRIBUTARY AREA ID	ICD TYPE	2YR HEAD (m)	100YR HEAD (m)	2YR FLOW (L/s)	100YR FLOW (L/s)
CB C103A-1	C103A	127mm ORIFICE	1.41	1.58	37.29	39.59
CB C105A-1	C105A	121mm ORIFICE	1.42	1.62	33.92	36.36
CB C105B-1	C105B	152mm ORIFICE	1.28	1.62	50.40	57.16
CB C108A-1	C108A	121mm ORIFICE	0.71	1.58	23.52	35.98

SEWER AND WATERMAIN CROSSING TABLE								
CROSSING	STM INV	STM OBV	SAN INV	SAN OBV	WTR TOP	WTR BTM	CB INV	CB OBV
1	91.57(91.50)	92.02(92.09)	91.09	91.26				
2	91.60(91.53)	92.05(92.12)			92.82	92.62		
3	91.77(91.70)	92.22(92.29)	91.26	91.46				
4	91.78(91.71)	92.23(92.30)	91.23	91.43	93.00	92.80		
5	92.20	92.50	91.49	91.69	93.20	93.00		
6	92.01	92.31	91.35	91.55	93.01	92.81		
7	91.99	92.29	91.27	91.47				
8			91.39	91.59			92.76	92.96

* BRACKETS DENOTE ADJUSTED VALUE WITH CONCRETE PIPE THICKNESS

Stantec

Stantec Consulting Ltd.
400 - 1331 Clyde Avenue
Ottawa ON
Tel. 613.722.4420
www.stantec.com

Legend

- PROPOSED WATERMAIN
- PROPOSED W3 CHAMBER
- PROPOSED VALVE AND VALVE BOX
- PROPOSED VALVE CHAMBER
- PROPOSED REDUCER
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- EXISTING WATERMAIN
- EXISTING W3 CHAMBER
- EXISTING VALVE AND VALVE BOX
- EXISTING VALVE CHAMBER
- EXISTING REDUCER
- EXISTING FIRE HYDRANT
- EXISTING COMBINED SEWER
- EXISTING STORM SEWER
- EXISTING CATCHBASIN MANHOLE
- EXISTING CATCHBASIN
- THERMAL INSULATION ON STORM SEWER WHERE COVER IS LESS THAN 2.0m. THERMAL INSULATION ON WATERMAIN WHERE COVER IS LESS THAN 2.4m AS PER W22.
- PROPOSED 2Hr RATED FIRE WALL LOCATION (BLOCKS 7 AND 8)
- BACK TO BACK TERRACE HOME SERVICES
  200mm STORM SERVICE PVC SDR 28 @ 1% MIN (1 PER BLOCK)
  150mm SANITARY SERVICE PVC SDR 28 @ 1% MIN (PER STACK)
  19mm PEX TUBING WATER SERVICE C/W CURB STOP AND SERVICE POST (PER UNIT)
- VILLAGE TOWN HOME SERVICES(CRAWL SPACE)
  200mm STORM SERVICE PVC SDR 28 @ 1% MIN (2 PER BLOCK)
  135mm SANITARY SERVICE PVC SDR 28 @ 1% MIN (PER UNIT)
  19mm PEX TUBING WATER SERVICE C/W CURB STOP AND SERVICE POST, METER AND REMOTE METER. (PER UNIT)
  STANDPOST ON PRIVATE SIDE TO BE LOCATED 0.9m BEHIND FACE OF CURB OR BACK OF SIDEWALK. STANDPOST ON PUBLIC SIDE TO BE ON PROPERTY LINE
- ROAD CUT RE-INSTATEMENT AS PER CITY STANDARD R10.

Notes

1. FINAL SERVICE LATERAL SIZES TO BE CONFIRMED BY MECHANICAL CONSULTANT.
2. PRESSURE REDUCING VALVES (PRV'S) ON ALL UNITS TO BE INSTALLED AS PER ONTARIO PLUMBING CODE.
3. MAINTENANCE HOLES LOCATED IN PONDING AREAS SHALL HAVE WATER TIGHT FRAME AND COVERS AS PER CITY STANDARD S24, S24.1 AND S25. (STM MH's 102 AND 108. SAN MH's 2 AND 8)
4. HALF OF BLOCK 8 UNITS WILL BE SERVICED THROUGH SNTC LANDS SUBDIVISION EXISTING SANITARY SEWER AND WATERMAIN IN VERULAM STREET.
5. BLOCKS 1 TO 6 HAVE FULL BASEMENTS, BLOCKS 7 TO 8 HAVE A CRAWL SPACE.
6. ALL STORM AND SANITARY SERVICES TO BE EQUIPPED WITH APPROVED BACKWATER VALVES AS PER CITY STANDARD (S14, S14.1, AND S14.2).

Revision		By	Appd.	YY.MM.DD
2	REVISED AS PER SITE PLAN	MJS	KS	24.03.19
1	ISSUED FOR SPA	WAJ	KS	23.09.08

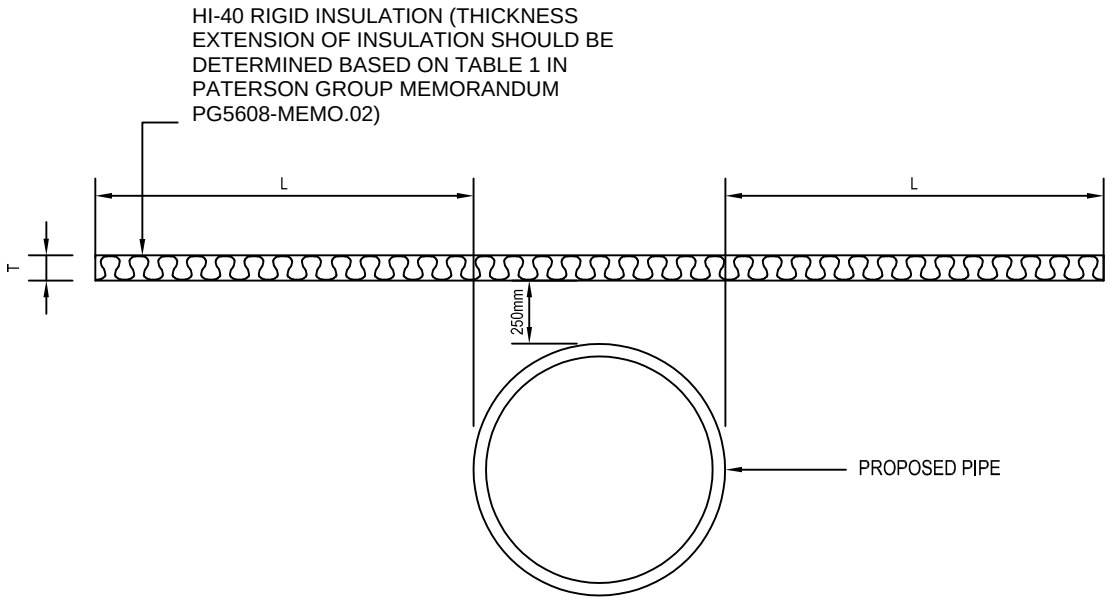
File Name: 160401845 BLK3 DB.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	MJS	KS	MJS	23.06.08

Permit-Seal

Client/Project
NEPEAN TOWN CENTRE DEVELOPMENT CORPORATION
2934 BASELINE ROAD, SUITE 302, OTTAWA, ON, K2H 1B2
PH: (613) 518-1864
SNTC LANDS
BLOCK 3
OTTAWA, ON

Title
SITE SERVCING PLAN

Project No. 160401845
Scale 1:400 (0 4 12 20m)
Drawing No. SSP-1
Sheet 3 of 7
Revision 2



PATERSON GROUP

SOLUTION ORIENTED ENGINEERING

TYPICAL FROST INSULATION DETAIL

Scale: N.T.S	Date: 04/2024
Drawn by: MPG	Report No.: PG5608-MEMO.02
Checked by: ZA	Drawing No.: FIG.2
Approved by: KP	Revision No.:

8-1/2x11