SAN MANHOLE TABLE

MANHOLE ID	T/G ELEV	INVERT
99	96.58	NE=94.50 NW=±93.80 SE=±93.80
101	96.68	NE=94.76 SW=94.73
103	96.73	SW=95.03 NE=95.06

STM MANHOLE TABLE

MANHOLE ID	T/G ELEV	INVERT
100	96.55	NE=94.01 NW=±93.90 SE=±93.90
102	96.64	NE=94.14 SW=94.14
104	96.70	SW=94.40 NE=94.49 SE=94.53 NW=94.55

CATCHBASIN MANHOLE TABLE

CBMH ID	SIZE (mm)	T/G ELEV (m)	INVERT (m)	ICD DIA (mm)	2yr CAPTURE RATE (L/s)
CBMH 02	1200mm Ø	96.50	NW=95.31 SE=95.26	-	-
CBMH 03	1200mm Ø	96.50	NW=95.13 SW=95.07	-	-
CBMH 04	1200mm Ø	96.50	NE=94.90 W=94.87	-	-
CBMH 05	1200mm Ø	96.45	E=94.72 NW=94.66	LMF-78	6.95
CBMH 06	1200mm Ø	96.45	SE=94.77	-	-
CBMH 07	1200mm Ø	96.45	NW=94.64 SE=94.63	83mm	16.57

CATCHBASIN TABLE

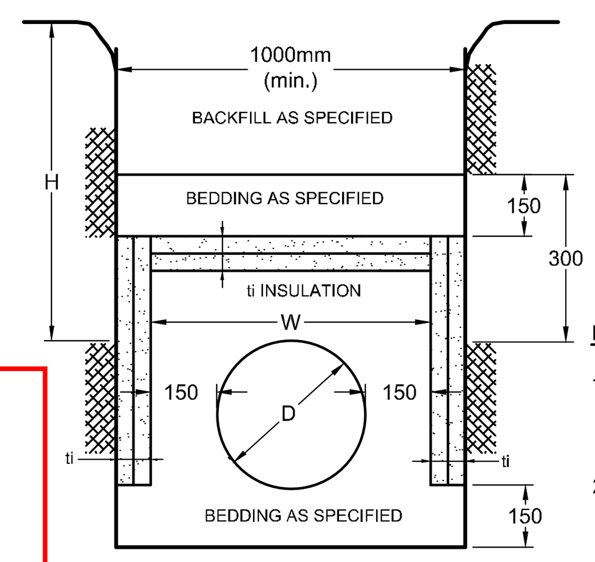
CB ID	T/G ELEV (m)	INVERT (m)	ICD DIA (mm)	2yr CAPTURE RATE (L/s)
CB 01	96.70	95.60	-	-
CB 08	96.55	95.50	LMF-94	7.85
CB 09	96.55	95.50	LMF-86	6.61
CICB-OS1	96.54	95.49	-	-

WATERMAIN TABLE

Station	F/G ELEVATION	TOP OF WATERMAIN	DESCRIPTION
0+007.19	96.59	±95.15	250 x 300 TEE
0+009.76	96.56	94.56	45° VERTICAL BEND
0+010.26	96.56	94.14	45° VERTICAL BEND
0+019.30	96.54	94.14	45° VERTICAL BEND
0+020.20	96.54	95.04	45° VERTICAL BEND
0+022.92	96.53	95.04	45° VERTICAL BEND
0+023.82	96.53	94.13	45° VERTICAL BEND
0+028.97	96.70	94.29	V&VB
0+030.14	96.71	94.29	11.25° HORIZONTAL BEND
0+091.41	96.68	94.27	250 x150 CROSS
0+094.29	96.72	94.31	250 x 150 REDUCER
0+095.35	96.72	94.32	V&VB
0+105.24	97.00	94.50	CAP

CRITICAL PIPE CROSSING TABLE

	CRITICAL PIPE CROSSING TABLE		PROPOSED SEPARATION
①	250mmØ WM INV=94.36	250mmØ SAN OBV=94.06	WM-SAN=0.30m
②	250mmØ WM INV=94.79	525mmØ STM OBV=94.54	WM-STM=0.25m
③	200mmØ SAN INV=94.63	525mmØ STM OBV=94.54	SAN-STM=0.09m
④	200mmØ STM INV=95.33	250mmØ WM OBV=94.28	STM-WM=1.05m
⑤	200mmØ STM INV=95.31	200mmØ SAN OBV=95.10	STM-SAN=0.21m
⑥	250mmØ STM INV=94.56	250mmØ WM OBV=94.29	STM-WM=0.27m
⑦	200mmØ SAN INV=95.01	250mmØ STM OBV=94.81	SAN-STM=0.20m
⑧	200mmØ SAN INV=95.00	150mmØ WM OBV=94.21	SAN-WM=0.79m
⑨	375mmØ STM INV=94.39	150mmØ WM OBV=93.89	STM-WM=0.50m



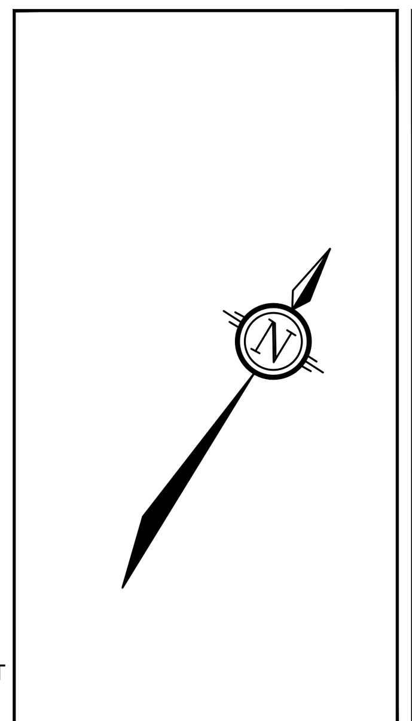
COVER (mm)	INSULATION THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125

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)

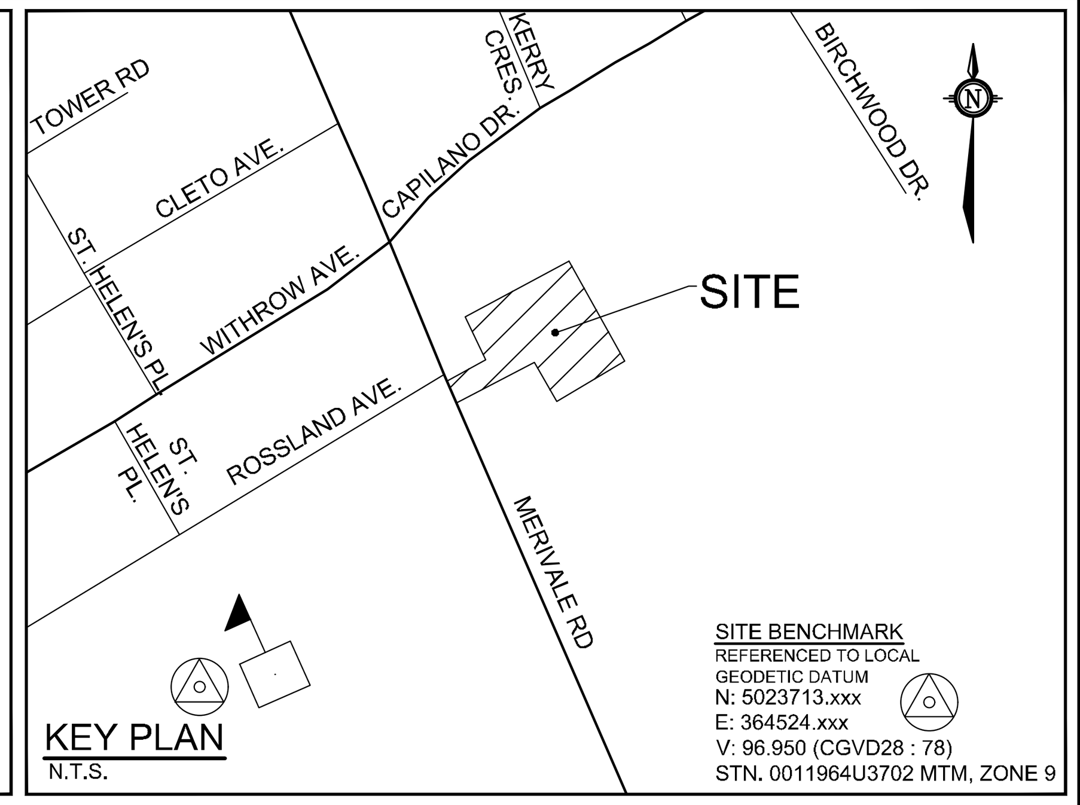
NOTES:

1. INSULATE ALL SEWER PIPES THAT ARE LESS THAN 600mmØ AND HAVE LESS THAN 1.8m COVER WITH EXPANDED POLYSTYRENE INSULATION AS SHOWN.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER (SEE TABLE)

INSULATION DETAIL FOR SHALLOW SEWERS ONLY
NOT TO SCALE



NORTH

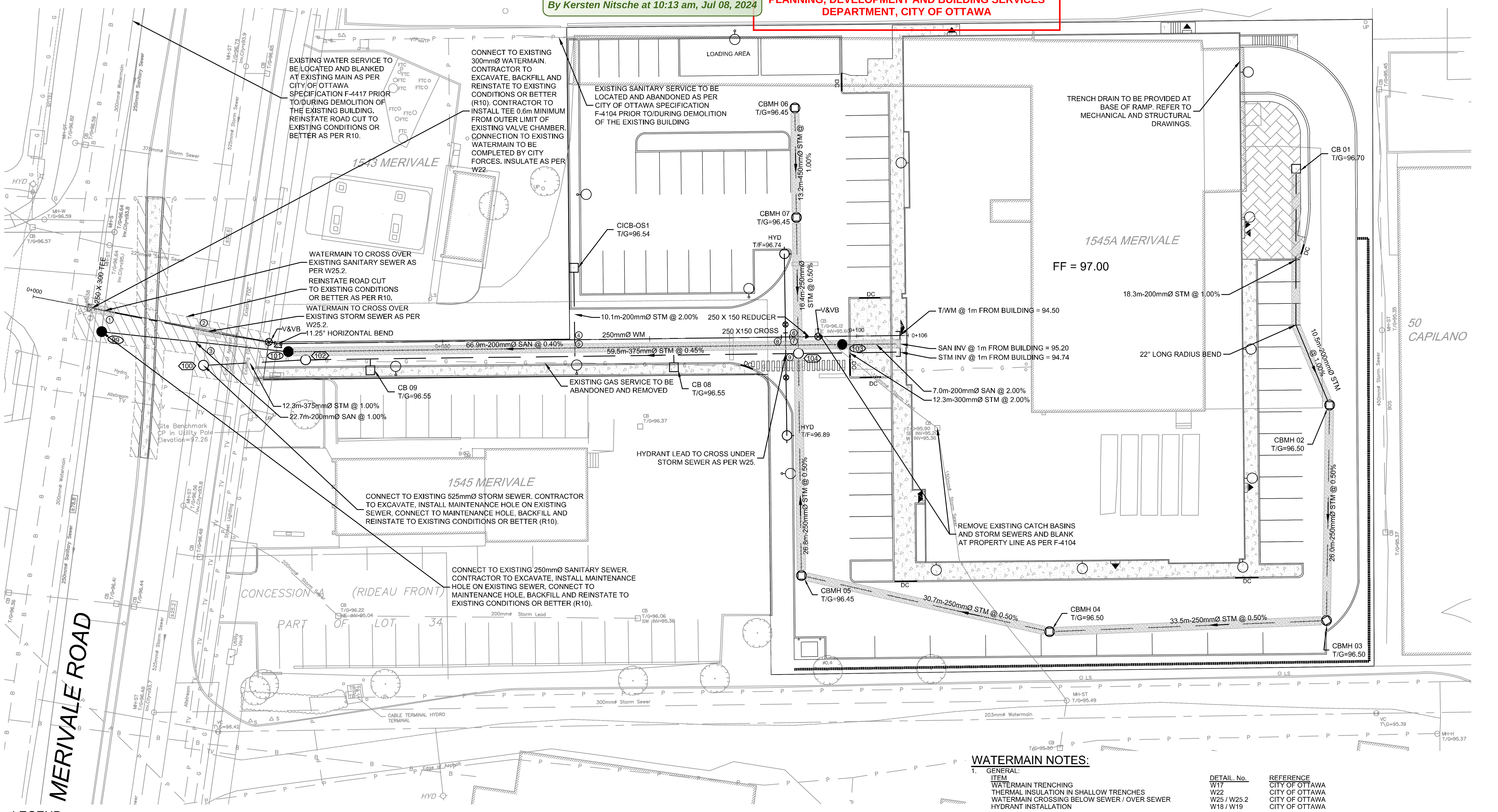


KEY PLAN
N.T.S.

SOURCE REFERENCE:
TOPOGRAPHIC PLAN OF SURVEY OF PART OF LOT 16 REGISTERED PLAN 353 AND PART OF LOT 34 CONCESSION A (RIDEAU FRONT), PREPARED BY FARLEY, SMITH & DENIS SURVEYING LTD. 2021 ON OCTOBER 1st, 2021.
TOPOGRAPHIC INFORMATION:
HORIZONTAL DATUM: NAD 83 (ORIGINAL), MTM - ZONE 9
VERTICAL DATUM: CGVD 1928-1978
1. *CITY OF OTTAWA 1:1000 MAPPING*
2. *FARLEY, SMITH & DENIS SURVEYING LTD'S TOPOGRAPHIC PLAN OF SURVEY*

APPROVED
By Kersten Nitsche at 10:13 am, Jul 08, 2024

[signature]
KERSTEN NITSCHE, MCIP RPP
MANAGER (A), DEVELOPMENT REVIEW WEST
PLANNING, DEVELOPMENT AND BUILDING SERVICES DEPARTMENT, CITY OF OTTAWA



LEGEND

- DC — DEPRESSED CURB
- PROPOSED RETAINING WALL
- PROPOSED ROAD CUT LIMITS
- PROPOSED THERMAL INSULATION
- (101) — PROPOSED SANITARY MAINTENANCE HOLE, SEWER & DIRECTION OF FLOW
- (100) — PROPOSED STORM MAINTENANCE HOLE, SEWER & DIRECTION OF FLOW
- CB — PROPOSED CATCHBASIN
- CBMH — PROPOSED CATCHBASIN MAINTENANCE HOLE
- LCB — PROPOSED LANDSCAPE TYPE CATCHBASIN
- 150mmØ WM — PROPOSED WATERMAIN AND DIAMETER
- V&VB — PROPOSED VALVE & VALVE BOX
- 250 x 150 REDUCER — PROPOSED REDUCER
- 11.25° — PROPOSED BEND AND THRUST BLOCK
- PROPOSED CAP
- HYD — PROPOSED HYDRANT C/W VALVE & 150mm DIA. LEAD (T/F= TOP OF FLANGE ELEVATION)
- MH-S T/G=96.00 INV.CITY=93.00 — *EXISTING SANITARY MANHOLE, SEWER & DIRECTION OF FLOW WITH TOP OF GRATE AND INVERT ELEVATIONS*
- MH-S T/G=96.00 INV.CITY=93.00 — *EXISTING STORM MANHOLE, SEWER & DIRECTION OF FLOW WITH TOP OF GRATE AND INVERT ELEVATIONS*
- CB T/G=96.00 — *EXISTING CATCHBASIN WITH TOP OF GRATE ELEVATION*
- 300mmø Watermain — *EXISTING WATERMAIN AND DIAMETER*
- VC T/G=96.00 — *EXISTING VALVE CHAMBER WITH TOP OF GRATE ELEVATION*
- HYD — *EXISTING HYDRANT C/W VALVE & LEAD*

GENERAL NOTES:

1. DIMENSIONS AND LAYOUT INFORMATION SHALL BE CONFIRMED PRIOR TO START OF CONSTRUCTION.
2. THE ORIGINAL TOPOGRAPHY AND GROUND ELEVATIONS, SERVICING AND SURVEY INFORMATION SHOWN ON THIS PLAN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF ALL INFORMATION OBTAINED FROM THIS PLAN. PRIOR TO COMMENCING ANY ON SITE SERVICING THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF THE EXISTING SEWERS, WATERMAINS AND UTILITIES IN THE MERIVALE ROAD RIGHT OF WAY.
3. CO-ORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
4. BEFORE COMMENCING CONSTRUCTION, PROVIDE PROOF OF COMPREHENSIVE ALL RISK AND OPERATIONAL LIABILITY INSURANCE INCLUDING BLASTING. INSURANCE POLICY TO NAME THE OWNER, ENGINEER AND THE CITY AS CO-INSURED.
5. CONNECT TO EXISTING SYSTEMS AS DETAILED, INCLUDING ALL RESTORATION WORK NECESSARY TO REINSTATE SURFACES TO EXISTING CONDITIONS OR BETTER.
6. 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 THESE DRAWINGS.
7. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS BEFORE COMMENCING CONSTRUCTION.
8. RESTORE ALL TRENCHES AND SURFACE FEATURES TO EXISTING CONDITIONS OR BETTER AND TO THE SATISFACTION OF MUNICIPAL AUTHORITIES.
9. REMOVE FROM SITE ALL DEBRIS AND EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.
10. ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS.
11. REFER TO STRUCTURAL PLANS FOR UNDERSIDE OF FOOTING AND TOP OF FOUNDATION INFORMATION.
12. REFER TO GEOTECHNICAL INVESTIGATION PG6288-1 (DATED AUGUST 3, 2022), PREPARED BY PATERSON GROUP INC. FOR SUBSURFACE CONDITIONS AND CONSTRUCTION RECOMMENDATIONS.
13. PERFORATED PIPE SUB-DRAINS TO BE PROVIDED 300mm BELOW SUBGRADE LEVEL EXTENDING FROM THE ROADSIDE CATCHBASIN FOR A DISTANCE OF 3.0m, PARALLEL TO THE CURB IN TWO DIRECTIONS AS PER CITY OF OTTAWA DETAIL R1.
14. PERFORATED PIPE SUB-DRAINS TO BE PROVIDED 300mm BELOW SUBGRADE LEVEL EXTENDING FROM ALL PARKING LOT CATCHBASIN AND CATCHBASIN MAINTENANCE HOLES FOR A DISTANCE OF 3.0m, PARALLEL AND PERPENDICULAR TO THE CURB IN FOUR DIRECTIONS. CLEAR STONE PIPE SURROUND AND GEOTEXTILE WRAP TO BE PROVIDED AS PER CITY OF OTTAWA DETAIL R1.
15. CONTRACTOR TO PROVIDE ALL LINE PAINTING AND PARKING LOT MARKINGS.
16. 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.
17. ALL WORK TO BE CONSTRUCTED TO CITY OF OTTAWA AND ONTARIO PROVINCIAL STANDARDS.

SEWER NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
CATCHBASIN MAINTENANCE HOLE (1200Ø)	701.010	OPSD
STORM / SANITARY MAINTENANCE HOLE (1200Ø)	701.010	OPSD
CURB INLET CB, FRAME & COVER	S3 & S22	CITY of OTTAWA
SURFACE INLET CB (CB 01), FRAME AND COVER	S2 & S19	CITY of OTTAWA
CBMH FRAME & COVER	S25 & S28.1	CITY of OTTAWA
STORM / SANITARY MH FRAME & COVER	S24.1 / S24 & S25	CITY of OTTAWA
STORM SEWER	PVC DR 35 OR 100-D CONC.	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	
SEWER TRENCH	S6	CITY of OTTAWA

2. ALL CATCHBASIN LEADS ARE TO BE 200mm DIA. PVC SDR 35 AT 2% SLOPE UNLESS OTHERWISE SPECIFIED ON THE DRAWING.
3. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.8m COVER AS PER THE INSULATION DETAIL FOR SHALLOW SEWERS.
4. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM BUILDING FACE AT 2.0% SLOPE (1.0% MINIMUM). SERVICES TO BE CONNECTED TO MAINLINE SEWER AS PER CITY OF OTTAWA S11.1.
5. PIPE BEDDING AND COVER ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. WHERE THE BEDDING IS LOCATED WITHIN FIRM TO SOFT GREY SILTY CLAY, THE THICKNESS OF THE BEDDING MATERIAL SHOULD BE INCREASED TO A MINIMUM OF 300mm. THE COVER MATERIAL SHALL CONSIST OF OPSS GRANULAR 'A' AND SHOULD EXTEND FROM THE SPRING LINE OF THE PIPE TO AT LEAST 300mm ABOVE THE OBVERT OF THE PIPE.
6. THE SITE SERVICING CONTRACTOR SHALL PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.16 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 THE ENGINEER.
7. STORM MAINTENANCE HOLES AND CBMHS SHALL HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
8. 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.
9. CONTRACTOR SHALL OBTAIN A VIDEO INSPECTION OF THE CITY SEWER SYSTEM WITHIN MERIVALE ROAD PRIOR TO ANY CONSTRUCTION TO DETERMINE THE CONDITION OF THE EXISTING CITY SEWER SYSTEM PRIOR TO CONSTRUCTION ON THE LANDS AND UPON COMPLETION OF CONSTRUCTION OBTAIN A VIDEO INSPECTION OF THE EXISTING CITY SEWER SYSTEM WITHIN MERIVALE ROAD TO DETERMINE IF THE CITY SEWER SYSTEM SUSTAINED ANY DAMAGES AS A RESULT OF CONSTRUCTION ON THE LANDS.
10. THE CONTRACTOR SHALL NOT CONNECT NEW STORM SEWERS TO THE EXISTING CITY STORM SEWER UNTIL:
(A) A CERTIFICATE OF CONFORMANCE AND AS-BUILT DRAWINGS HAVE BEEN SUBMITTED TO THE CITY BY A PROFESSIONAL ENGINEER, LICENSED IN THE PROVINCE OF ONTARIO, CERTIFYING THAT ALL REQUIRED INLET CONTROL DEVICES HAVE BEEN PROPERLY INSTALLED TO CITY STANDARDS OR SPECIFICATIONS, AND THAT THE STORM SEWER SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED ENGINEERING DRAWINGS FOR SITE DEVELOPMENT AND CITY SEWER DESIGN GUIDELINES. THE INLET CONTROL DEVICES SHALL BE FREE OF ANY DEBRIS; OR
(B) A FLOW LIMITING ORIFICE PLATE, DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO AND TO THE SATISFACTION OF THE CITY, HAS BEEN INSTALLED AT THE STORM WATER OUTLET PRIOR TO CONNECTING ANY UPSTREAM STORM SEWERS. SUCH ORIFICE PLATE SHALL NOT BE REMOVED UNTIL SUBSECTION (A) ABOVE HAS BEEN SATISFIED.

WATERMAIN NOTES:

1. GENERAL:

ITEM	DETAIL. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER / OVER SEWER	W25 / W25.2	CITY OF OTTAWA
HYDRANT INSTALLATION	W18 / W19	CITY OF OTTAWA

2. THE WATERMAIN SHALL BE PVC DR 18 IN ACCORDANCE WITH MATERIAL SPECIFICATION MW-18.1, UNLESS OTHERWISE INDICATED.
3. 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 AND SHUT-OFFS AT THE MAIN SHALL BE PERFORMED BY CITY OFFICIALS.
4. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. CONTRACTOR TO SUPPLY AND INSTALL INSULATION AS PER W22 FOR ALL WATERMAIN LESS THAN 2.4m BELOW GRADE.
5. PROVIDE MINIMUM CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS PER W25 (0.50m) AND W25.2 (0.25m).
6. WATER SERVICES ARE TO BE CAPPED 1.0m FROM BUILDING FACE.
7. UPON COMPLETION, CONTRACTOR TO PERFORM TESTING AND PROVIDE PRIVATE FIRE HYDRANT FLOW AND PRESSURE TEST REPORTS TO THE CONSULTANT. ALL PRIVATE HYDRANTS (ON-SITE) ARE TO BE RED. ALL PAINT SHALL BE ALKYD ENAMEL AND MEET THE MANUFACTURERS REQUIREMENTS. THE BONNET, PUMPER AND HOSE OUTLET CAPS SHALL ALL BE PAINTED BY THE CONTRACTOR ACCORDING TO THE FOLLOWING TABLE:
CAP COLOUR - MEASURED FLOW
BLUE - 1500 GPM (5700L/min)
GREEN - 1000-1499GPM (3800-5699L/min)
ORANGE - 500-999GPM (1900-3799L/min)

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.

No.	REVISION	DATE	BY
10.	REVISED PER NEW SITE PLAN	JUN 17/24	TJM
9.	RE-ISSUED FOR BUILDING PERMIT	JUN 11/24	TJM
8.	UPDATED PER SITE PLAN REVISIONS	MAR 05/24	TJM
7.	ISSUED FOR TENDER	NOV 01/23	TJM
6.	ISSUED FOR PERMIT	NOV 01/23	TJM
5.	RE-ISSUED FOR SITE PLAN APPROVAL	AUG 14/23	TJM
4.	REVISED CITY PROJECT NUMBER	JUL 14/23	TJM
3.	ISSUED FOR SITE PLAN APPROVAL - REVISED	MAY 12/23	TJM
2.	ISSUED FOR SITE PLAN APPROVAL	DEC 23/22	TJM
1.	ISSUED FOR COORDINATION	NOV 16/22	TJM

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

DESIGN JMR
CHECKED SAB
DRAWN JMR
CHECKED SAB
APPROVED TJM

LICENSED PROFESSIONAL ENGINEER
T. J. MCKAY
100195434
June 21, 2024
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
1545A MERIVALE ROAD

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 122098
REV: REV # 10
DRAWING No. C-100

D07-12-22-0190

M:\2022\122098\CAD\Civil\122098-GP.dwg, GP, Jun 11, 2024 - 3:38pm, sbennett

PLANA1.DWG - 841mmx594mm

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