

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 DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
8. ALL ELEVATIONS ARE GEODETIC AND THE SITE REFERENCES TO THE CVD025 GEODETIC DATUM. BARE MAPPING IS REFERENCED TO THE MTH 1985 DATUM. THE ORIGIN POINT OF THE SITE BENCHMARKS ARE AT THE TOP OF THE SINGLE FIRE HYDRANT. SITE BENCHMARK #1 IS OUTSIDE THE SOUTH-EAST (GEORGE STREET) CORNER OF THE SITE FIRE HYDRANT SPINDLE TID#62.03. SITE BENCHMARK #2 IS OUTSIDE THE NORTH-EAST (YORK STREET) CORNER OF THE SITE FIRE HYDRANT SPINDLE TID#60.07.
9. REFER TO GEOTECHNICAL REPORT (P267333-REV.5, DATED OCTOBER 20 2024) PREPARED BY PATERSON GROUP FOR SUBSURFACE CONDITIONS AND RECOMMENDATIONS, AND GEOTECHNICAL AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSCAPE AREAS AND DIMENSIONS.
11. REFER TO SERVING AND STORMWATER MANAGEMENT REPORT (R-2023-103) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD. DATED JUNE 23, 2025.
12. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
13. PROVIDE LINE/PARKING PAINTING.
14. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND TIG LOCATIONS, CONSTRUCTION LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWIN ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.
15. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. ONTARIO PROVINCIAL STANDARDS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
16. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.

ITEMS:	SPEC. NO.	REFERENCE
SEWER TRENCH	SB & 57	CITY OF OTTAWA
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	
INSULATION FOR SHALLOW SEWERS	S35	CITY OF OTTAWA
2. INSULATE ALL PIPES (SANSTM) THAT HAVE LESS THAN 2 cm COVER WITH 50mmx1200mm H=40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION (REFER TO DETAIL).		
3. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0% (2.0% IS PREFERRED).		
4. SEWER SERVICE CONNECTIONS PER CITY OF OTTAWA DETAILS S11 AND S11.1.		
5. A MINIMUM OF 150 mm PSX GRANULAR A SHALL BE PLACED FOR BEDDING FOR SEWER OR WATER PIPES WHEN PLACED ON A SUBGRADE. THE BEDDING SHOULD EXTEND TO THE SPRING LINE OF THE PIPE. COVER COVER MATERIAL SHALL BE PLACED TO A MINIMUM OF 300 mm ABOVE THE COVERT OF THE PIPE. SHOULD CONSIST OF PSX GRANULAT A (CONCRETE OR PSX PVP PIPES) OR SAND (CONCRETE PIPE). THE BEDDING AND COVER MATERIALS SHOULD BE PLACED IN MINIMUM 225 mm THICK LIFTS ABOVE THE BEDDING.		
6. WHERE HAD SURFACE AREAS ARE CONSIDERED ABOVE THE TRENCH BACKFILL, THE TRENCH BACKFILL MATERIAL WITHIN THE FROST ZONE (ABOUT 1.8 M BELOW FINISHED GRADE) AND ABOVE THE COVER MATERIAL SHOULD MATCH THE SOILS EXPOSED AT THE TRENCH WALLS TO MINIMIZE DIFFERENTIAL. FROST HEAVING, THE TRENCH BACKFILL SHOULD BE PLACED IN MINIMUM 225 mm THICK LIFTS. ALL COBLES AND STONE SHALL BE 100% OF THE MATERIAL SIZE. ALL COBBLES LARGER THAN 200 MM IN THE TRENCH WALLS SHOULD BE SEGREGATED FROM RE-USE AS TRENCH BACKFILL.		
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 SURVEYING CONTRACTOR PERFORM FIELD TESTS FOR LEAKAGE OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED ACCORDANCE WITH OPSX 410.07, 16, 410.07, 16.04 AND 410.07 24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SEWERS TO CONFIRM FLOW 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 RESULT.		
9. STORM MANHOLES AND CBHMS ARE TO HAVE 300mm SLUPS UNLESS OTHERWISE INDICATED.		
10. CONTRACTOR TO TELEVIEW (CCTV) ALL PROPOSED SEWERS, 100mm OR GREATER PRIOR TO BASE COURSE ASPHALT, UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.		

SPECIFICATIONS:		<u>ITEM</u>	<u>SPEC. No.</u>	<u>REFERENCE</u>
1.	WATERMAIN TRENCHING	W17	CITY OF OTTAWA	
	THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA	
	WATERMAIN CROSSING BELOW SEWER/ABOVE SEWER	W25 / W25.2	CITY OF OTTAWA	
	WATERMAIN	PVC DR 18		
	VALVE AND VALVE BOX	W24	CITY OF OTTAWA	
2.	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 AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OFFICIALS.			
3.	WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. ANY WATERMAIN WITH LESS THAN 2.4m COVER TO BE INSULATED PER THE SHOWN DETAIL.			
4.	PROVIDE MINIMUM 0.25m ABOVE, 0.5m IF BELOW, CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS PER CITY OF OTTAWA STANDARDS W25/W25.2			
5.	WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.			
6.	CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS CITY OF OTTAWA STANDARD DETAILS W-39, 40, 41, 42, 43, 44 AND 45.			
7.	PROVIDE THERMAL INSULATION FOR WATERMAIN AT OPEN STRUCTURES PER CITY OF OTTAWA STANDARD DETAIL W-23.			
<p>IF WATERMAIN SHALL BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.</p>				

1. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 2.0m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.

2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE)

T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
D = D \times 300 (1000 min.)
D = O D OF PIPE (mm)

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
2000-1700 / 2400-2100	50
1700-1400 / 2100-1800	75
1400-1100 / 1800-1500	100



PROPOSED WATER SERVICE (2+000.0)			
STATION	SURFACE ELEVATION	T/W/1 ELEVATION	COMMENTS
2+000.0	61.73	59.33*	TEE CONNECTION TO EXISTING 300mmØ WATERMAIN
2+002.7	61.55	60.32	CROSS ABOVE 900mm STM AS PER CITY OF OTTAWA DETAIL W25.2 (CLEARANCE ≈0.31m)
2+008.0	61.31	60.27	CROSS ABOVE 1.9m SAN AS PER CITY OF OTTAWA DETAIL W25.2 (CLEARANCE ≈0.31m)
2+024.2	61.48	59.08	VALVE AND VALVE BOX
2+024.5	61.49	59.09	CAP SERVICE 1.0m FROM THE FOUNDATION WALL

PROPOSED WATER SERVICE (3+000.0)			
STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
3+000.0	60.90	58.50*	CONNECTION TO EXISTING 200mmØ SERVICE
3+004.9	60.65	58.80	CROSS ABOVE 1200mm S&W AS PER CITY OF OTTAWA DETAIL W25.2 (CLEARANCE = 0.30m)
3+007.8	60.70	59.23	CROSS ABOVE 675mm STM AS PER CITY OF OTTAWA DETAIL W25.2 (CLEARANCE = 0.30m)
3+023.0	60.16	57.76	V&B
3+024.0	61.26	58.54	CAP SERVICE 1.0m FROM THE FOUNDATION WALL

PROPOSED WATER SERVICE (4+000.0)			
STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
4+000.0	60.90	58.50*	CONNECTION TO EXISTING 200mmØ SERVICE
4+004.8	60.65	58.77	CROSS ABOVE 1200mm SAN AS PER CITY OF OTTAWA DETAIL W25.2 (CLEARANCE =0.30m)
4+007.8	60.70	59.21	CROSS ABOVE 675mm STM AS PER CITY OF OTTAWA DETAIL W25.2 (CLEARANCE =0.30m)
4+023.0	60.15	57.75	V&B
4+024.0	61.26	58.54	CAP SERVICE 1.0m FROM THE FOUNDATION WALL

[illegible]

SCALE		DESIGN
AS SHOWN	CHECKED	ARM/CJF
	DRAWN	ARM
		ARM/CJF
	CHECKED	ARM
	APPROVED	GJM

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 137, 141 GEORGE ST., 110, 116 YORK ST. AND 321, 325 DALHOUSIE ST	
DRAWING NAME NOTES AND DETAILS (GEORGE)	PROJECT No. 112142
	REV REV #13
	DRAWING No. 112142-ND

#19325