

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXIST LOCATION, SIZE, MATERIAL, AND LOCATION 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 \$2,000,000.00. 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 MUNICIPAL AUTHORITIES.
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 REPOSED OF AT A LICENSED LANDFILL FACILITY.
7. ALL ELEVATIONS ARE GEODETIC.
8. REFER TO GEOTECHNICAL INVESTIGATION REPORT NO. P02789-R (DATED NOVEMBER 1, 2012) PREPARED BY PATERSON GEO AND SUBSEQUENT SUBMITTAL CONDITIONS, CONSTRUCTION RECOMMENDATIONS AND EXCAVATION 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 ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
10. REFER TO THE STORMWATER MANAGEMENT REPORT NO. R-2020-044, DATED APRIL 06, 2020 PREPARED BY NOVATECH.
11. SAW CUT AND KEYWEARD ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS

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
SANITARY STORM CATCH BASIN MANHOLE (12000)	70.1010	OFSD
STORM MANHOLE (15000)	70.1011	OFSD
STORM MANHOLE (18000)	70.1012	OFSD
STORM MANHOLE (24000)	70.1013	OFSD
STORM MANHOLE (30000)	70.1014	OFSD
CATCH BASIN (60x600)	705.010	OFSD
CATCH BASIN FRAME AND COVER	400.000	OFSD
COVER/SANITARY MH FRAME	S25	CITY OF OTTAWA
SEWANTY COVER	S24	CITY OF OTTAWA
STORM COVER (CLOSED)	S24.1	CITY OF OTTAWA
STORM COVER (OPEN)	S28.1	CITY OF OTTAWA
SEWER TRENCH	56 AS2	CITY OF OTTAWA
STORM SEWER <450mm>	PVC DR 36(UNLESS SPECIFIED OTHERWISE)	
STORM SEWER >= 450mm	CONC 450 (UNLESS SPECIFIED OTHERWISE)	
SANITARY SEWER	PVC DR 35	CITY OF OTTAWA

4. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM THE FACE OF BUILDING AT A MINIMUM SLOPE OF 10%.
5. ALL STORM AND SANITARY LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
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-SALE, PSX, POSITIVE SEAL AND DURASEAL) THE CONCRETE GRADE FOR THE PIPE CAN BE ELIMINATED.
8. ALL STORM MANHOLES MANHOLES WITH PIPE SIZES LESS THAN 900mm ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL STORM MANHOLES WITH PIPE SIZES 900mm AND LARGER ARE TO BE BENCHED.
9. CONTRACTOR TO TELEVIEW (CCTV) ALL PROPOSED SEWERS 200mm OR GREATER IN DIAMETER PRIOR TO BASE COURSE ASPHALT TO ENSURE THAT THEY ARE CLEAN AND OPERATIONAL. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS, APPURTENANCES AND RE CCTV PRIOR TO ACCEPTANCE. OBTAIN APPROVAL FROM THE CITY'S SEWER OPERATIONS. PROVIDE THE CCTV INSPECTION AND REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL.
10. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE SERVING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS AND MANHOLE LOCATIONS.
11. 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 OPS98 4107.1, 4107.02, 4107.04 AND 4107.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SEWERS TO CONFIRM PROPER CONNECTION TO THE SEWER MAINS AND MANHOLE LOCATIONS. THE DYE TEST SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
12. INSULATE ALL STORM SEWERS THAT HAVE LESS THAN 1.5m COVER PER INSULATION DETAIL FOR SHALLOW SEWERS, PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.

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

2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION BY OPEN STRUCTURES	W23	CITY OF OTTAWA
WATERMAIN	PVC DR 18	

3. SUPPLY AND CONSTRUCT ALL WATERMANS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARD 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 CITY OFFICIALS.
4. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
5. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
6. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

WATERMAIN NOTES ARE APPLICABLE FOR DOMESTIC SERVICES ONLY. REFER TO NOTES AND SPECIFICATIONS PREPARED BY CIVELEC CONSULTANTS INC. FOR FIRE PROTECTION WATERMAIN REQUIREMENTS.

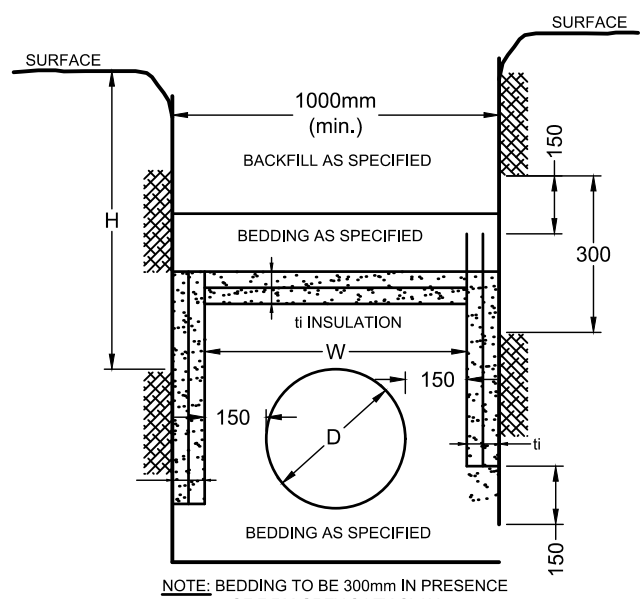
1. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 1.5m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.

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)

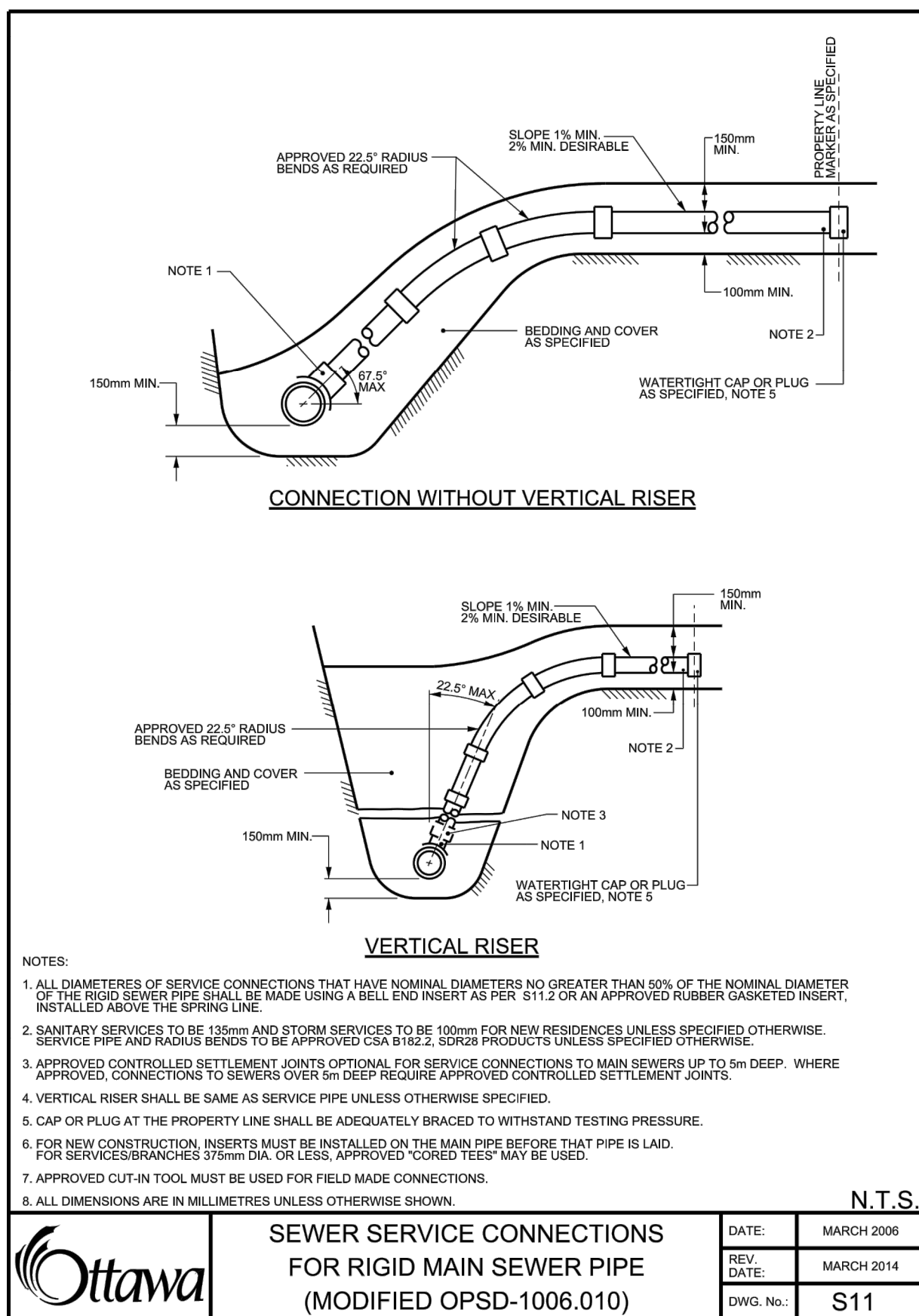
T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
W = D + 300 (1000 min.)
D = O.D OF PIPE (mm)

SURFACE

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
1500-1200 / 2400-2100	50
1200-900 / 2100-1800	75
900-600 / 1800-1500	100



INSULATION DETAIL FOR SHALLOW SEWERS & WATERMAIN



PROPOSED WATERMAIN (250mmØ PRIVATE ROAD TABLE)			
STATION	SURFACE ELEVATION	T/W M ELEVATION	COMMENTS TO EXISTING
1+000.0	98.10	95.64	CROSS BELOW 200mmØ 5TM AS PER CITY OF OTTAWA STANDARD W25 (±0.79 CLEARANCE)
1+013.7	97.92	95.59	CROSS BELOW 200mmØ 5TM AS PER CITY OF OTTAWA STANDARD W25 (±0.79 CLEARANCE)
1+024.9	98.59	96.19	22.5' HORIZONTAL BEND
1+030.9	98.91	96.51	11.25' HORIZONTAL BEND
1+058.8	99.71	97.37	CROSS BELOW 200mmØ 5TM AS PER CITY OF OTTAWA STANDARD W25 (±0.86 CLEARANCE)
1+099.0	100.70	98.30	22.5' HORIZONTAL BEND
1+114.4	100.86	98.46	22.5' HORIZONTAL BEND
1+166.6	100.35	97.95	CROSS BELOW 200mmØ 5TM AS PER CITY OF OTTAWA STANDARD W25 (±0.86 CLEARANCE)
1+213.4	100.18	97.78	250mmØ VALVE AND VALVE BOX
1+219.4	100.20	97.80	CAP

PROPOSED WATERMAIN (250mmØ DIRECT SERVICE) TABLE			
STATION	SURFACE ELEVATION	TWM ELEVATION	COMMENTS
2+000.0	97.84	95.50	TEE CONNECTION TO 250mmØ WATERMAIN
2+003.0	97.93	95.28	CROSS ABOVE 300mmØ SAN AS PER CITY OF OTTAWA STANDARD W25.2 (+2.10 CLEARANCE)
2+006.0	97.84	93.61	CROSS BELOW 1800mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
2+006.5	97.82	93.61	11.25" HORIZONTAL BEND
2+016.1	98.07	95.67	250mmØ VALVE AND VALVE BOX
2+019.0	99.33	96.53	45.0" HORIZONTAL BEND
2+021.5	99.15	96.53	250mm x 250mm x 250mm TEE
3+000.0	97.86	95.50	TEE CONNECTION TO 250mmØ WATERMAIN
3+003.0	97.95	95.55	CROSS ABOVE 300mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (+2.10 CLEARANCE)
3+006.0	97.86	93.60	CROSS BELOW 1800mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
3+006.03	97.86	93.60	11.25" HORIZONTAL BEND
3+016.2	98.09	95.69	250mmØ VALVE AND VALVE BOX
3+018.2	98.93	96.53	45.0" HORIZONTAL BEND
3+020.7	99.15	96.53	250mm x 250mm x 250mm TEE
4+000.0	99.15	96.53	250mm x 250mm x 250mm TEE
4+001.9	99.95	96.53	1500mm x 1800mm WATER METRE CHAMBER
4+028.3	100.75	98.35	CROSS ABOVE 600mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+2.10 CLEARANCE)
4+104.9	102.07	99.67	CROSS ABOVE 250mmØ SAN AS PER CITY OF OTTAWA STANDARD W25.2 (+1.85 CLEARANCE)
4+107.5	102.07	99.67	CROSS ABOVE 1200mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (+1.69 CLEARANCE)
4+110.7	102.05	99.65	22.5" HORIZONTAL BEND
4+132.9	101.77	99.37	250mm x 250mm x 100mm x TEE
4+134.1	101.77	99.37	250mmØ VALVE AND VALVE BOX
4+142.9	101.89	99.49	22.5" HORIZONTAL BEND
4+148.9	101.81	98.93	CROSS BELOW 200mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
4+159.07	101.64	98.93	CROSS ABOVE 1050mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
4+177.4	101.42	98.97	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
4+212.8	101.42	98.97	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
4+243.7	101.42	98.97	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
4+276.4	101.45	98.97	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)
4+283.8	101.55	99.07	45.0" HORIZONTAL BEND
4+285.9	101.62	99.12	250mmØ (F.P) WM CROSSING (+0.50 CLEARANCE)
4+288.0	101.65	99.25	45.0" HORIZONTAL BEND
4+289.5	101.67	99.59	CROSS ABOVE 1200mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (+0.50 CLEARANCE)
4+317.7	101.97	99.57	HYDRANT CONNECTION
4+320.1	101.99	99.59	HYDRANT CONNECTION
4+322.1	102.02	99.30	CAP 1.0m FROM BUILDING FACE

PROPOSED WATERMAIN (250mmØ FIRE PROTECTION) TABLE				
STATION	SURFACE ELEVATION	T/WMM ELEVATION	COMMENTS	
5+010.7	101.92	99.52	250mm x 250mm x 250mm TEE	
5+011.5	101.91	99.51	250mm VALVE AND VALVE BOX	
5+012.7	101.90	99.50	250mm x 250mm x 250mm TEE	
5+014.4	101.89	99.13	45° HORIZONTAL BEND	
5+015.1	101.89	99.13	CROSS BELOW 100mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+022.6	101.54	97.18	CROSS BELOW 120mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+026.8	101.42	99.02	45° HORIZONTAL BEND	
5+027.2	101.42	99.00	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+066.7	101.41	99.01	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+098.1	101.41	99.01	HYDRANT CONNECTION	
5+106.9	101.41	99.01	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+147.1	101.41	99.01	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+187.4	101.41	99.01	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+223.4	101.41	99.01	45° HORIZONTAL BEND	
5+227.6	101.51	98.09	CROSS BELOW 900mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+235.7	101.63	99.23	45° HORIZONTAL BEND	
5+237.7	101.63	99.23	250mm x 250mm x 200mm TEE	
5+240.3	101.63	99.23	250mm VALVE AND VALVE BOX	
5+242.6	101.63	99.23	250mm x 250mm x 200mm TEE	
5+244.7	101.63	99.23	45° HORIZONTAL BEND	
5+252.8	101.57	98.18	CROSS BELOW 900mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+257.1	101.53	99.13	45° HORIZONTAL BEND	
5+275.7	101.41	99.01	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+311.1	101.82	99.42	45° HORIZONTAL BEND	
5+315.3	101.86	98.38	CROSS BELOW 900mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+328.9	101.79	99.28	CROSS BELOW 250mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+356.7	102.25	98.85	45° HORIZONTAL BEND	
5+369.9	101.79	99.14	CROSS BELOW 300mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+372.6	101.77	99.37	HYDRANT CONNECTION	
5+388.8	101.52	99.12	CROSS BELOW 200mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+445.8	102.16	99.43	CROSS BELOW 250mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+452.5	102.10	99.70	HYDRANT CONNECTION	
5+471.2	101.99	99.09	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+499.0	102.06	99.66	45° HORIZONTAL BEND	
5+503.2	102.23	99.88	CROSS ABOVE 200mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+509.1	102.40	100.00	45° HORIZONTAL BEND	
5+510.5	102.38	99.98	250mm x 250mm x 200mm TEE	
5+511.9	102.34	99.94	250mm VALVE AND VALVE BOX	
5+513.3	102.30	99.90	250mm x 250mm x 200mm TEE	
5+514.7	102.25	99.67	CROSS BELOW 150mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+516.1	102.25	99.67	CROSS BELOW 100mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+536.2	102.42	100.20	CROSS ABOVE 750mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (+0.83 CLEARANCE)	
5+540.2	102.27	99.87	45° HORIZONTAL BEND	
5+553.5	102.06	98.65	CROSS BELOW 250mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+556.0	102.01	99.61	CROSS ABOVE 750mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.75 CLEARANCE)	
5+580.9	101.39	99.11	45° HORIZONTAL BEND	
5+584.4	101.51	99.99	HYDRANT CONNECTION	
5+703.4	102.65	100.25	HYDRANT CONNECTION	
5+803.6	102.30	99.90	45° HORIZONTAL BEND	
5+814.9	102.62	100.22	45° HORIZONTAL BEND	
5+816.9	102.60	100.20	250mm x 250mm x 200mm TEE	
5+817.8	102.60	100.20	250mm VALVE AND VALVE BOX	
5+818.5	102.60	100.20	250mm x 250mm x 200mm TEE	
5+845.3	102.30	99.90	HYDRANT CONNECTION	
5+851.43	102.05	99.65	45° HORIZONTAL BEND	
5+906.8	102.15	99.75	CROSS ABOVE 250mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+908.3	102.20	99.80	CROSS ABOVE 600mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (+1.08 CLEARANCE)	
5+921.1	102.35	99.95	CROSS ABOVE 1200mmØ STM AS PER CITY OF OTTAWA STANDARD W25.1 (+1.37 CLEARANCE)	
5+925.3	102.22	99.82	45° HORIZONTAL BEND	
5+929.3	102.13	99.73	CROSS ABOVE 100mmØ (DS) WATERMAIN (+0.50m CLEARANCE)	
5+948.7	101.90	99.90	CROSS BELOW 200mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+958.9	101.68	99.29	CROSS BELOW 100mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (+0.50 CLEARANCE)	
5+972.2	101.46	98.95	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+012.6	101.46	98.95	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.57 CLEARANCE)	
5+028.2	101.55	99.15	HYDRANT CONNECTION	
5+043.5	101.46	98.95	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+076.2	101.49	98.95	CROSS BELOW 375mmØ STM AS PER CITY OF OTTAWA STANDARD W25 (+0.50 CLEARANCE)	
5+085.1	101.52	98.37	CROSS BELOW 250mmØ (DS) WATERMAIN (+0.50m CLEARANCE)	
5+103.8	101.50	99.10	45° HORIZONTAL BEND	
5+108.1	101.58	99.65	CROSS ABOVE 1200mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (+0.50 CLEARANCE)	
5+129.6	102.01	99.17	45° HORIZONTAL BEND	

PIPE CROSSING TABLE			
CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE
250mm WM (F) INV = 98.65	200mmd SAN INV = 99.15		0.50m
750mmd STM OVB = +98.61	250mmd WM (F) INV = 99.36		0.75m
750mmd STM INV = 98.64	200mmd SAN INV = 99.14		0.50m
250mmd SAN OVB = 99.07	200mmd STM INV = 99.59		0.50m
750mmd STM OVB = 98.94	200mm WM (F) INV = 99.77		0.83m
250mmd WM (F) INV = 99.67	150mmd STM INV = 100.17		0.50m
250mmd WM (F) OVB = 99.67	150mmd STM INV = 100.17		0.50m
750mmd STM OVB = 99.67	200mmd STM INV = 99.63		0.50m
HYDRANT SERVICE OVB = 98.65	525mmd STM INV = 99.15		0.50m
250mmd WM (F) INV = 98.14	300mmd STM INV = 99.64		0.50m
250mmd WM (F) INV = 98.36	300mmd STM INV = 98.86		0.50m
250mmd WM (F) OVB = 98.36	300mmd STM INV = 98.86		0.50m
250mmd WM (F) INV = 98.09	300mmd STM INV = 98.59		0.50m
250mmd SAN OVB = 98.10	200mm WM (F) INV = 99.95		1.85m
250mmd SAN INV = 98.09	200mm WM (F) INV = 99.93		1.84m
600mmd STM OVB = 98.74	200mm WM (F) INV = 99.56		0.80m
600mmd STM OVB = 98.72	200mm WM (F) INV = 99.96		1.21m
600mmd STM OVB = 98.45	150mmd SAN = 98.95		0.50m
250mmd SAN INV = 97.85	250mm WM (D.S) INV = 99.50		1.65m
250mmd STM INV = 97.19	250mm WM (D.S) INV = 99.55		0.35m
1200mmd STM OVB = 97.73	250mm WM (D.S) INV = 99.42		1.69m
250mmd SAN INV = 97.74	250mm WM (D.S) INV = 99.42		1.68m
1200mmd STM OVB = 98.75	250mmd SAN INV = 97.29		0.54m
600mmd STM INV = 97.19	250mm WM (D.S) INV = 99.10		0.90m
300mmd SAN INV = 93.18	250mm WM (D.S) INV = 99.28		22.10m
300mmd SAN INV = 93.17	250mm WM (D.S) INV = 99.30		22.13m
250mmd WM (D.S) OVB = 93.61	1800mmd STM INV = 94.11		
250mmd WM (D.S) OVB = 93.60	1800mmd STM INV = 94.10		
1200mmd STM INV = 98.33	250mm WM (F) INV = 99.70		1.37m
1200mmd STM INV = 98.36	100mm WM (D.S) INV = 99.64		1.28m
100mmd WM (D.S) OVB = 98.98	200mm WM (F) INV = 99.48		
105mmd STM INV = 98.54	250mm WM (F) INV = 99.48		0.94m
195mmd STM INV = 98.58	250mm WM (D.S) INV = 99.08		0.50m
1200mmd STM INV = 98.66	HYD. SERVICE INV = 98.63		
1200mmd STM INV = 98.84	250mm WM (D.S) INV = 99.34		0.50m
250mmd WM (F) INV = 98.37	250mm WM (F) INV = 98.87		0.50m
250mmd WM (F) OVB = 98.37	250mm WM (F) INV = 98.87		0.50m
1200mmd STM INV = 98.93	250mm WM (F) INV = 100.43		1.50m
1200mmd STM INV = 98.90	250mm WM (F) INV = 99.40		0.50m
250mmd WM (F) INV = 99.13	100mmd STM INV = 99.64		0.50m
250mmd WM (F) INV = 97.19	1200mmd STM INV = 97.68		0.50m
HYDRANT SERVICE OVB = 98.67	250mmd STM INV = 98.07		
250mmd WM INV = 95.59	200mmd STM INV = 98.36		0.73m
250mmd SAN INV = 94.04	200mmd STM INV = 96.35		22.31m
250mmd WM INV = 97.37	200mmd STM INV = 98.23		0.86m
250mmd SAN INV = 94.07	200mmd STM INV = 98.20		0.43m
250mmd WM INV = 97.95	200mmd STM INV = 98.81		0.86m
250mmd SAN INV = 94.63	200mmd STM INV = 98.78		0.415m
250mmd SAN INV = 99.11	250mmd STM INV = 100.58		1.47m
250mmd SAN INV = 99.17	250mmd STM INV = 100.63		1.53m
250mmd WM (F) INV = 99.05	375mmd STM INV = 99.55		0.50m
250mmd WM (F) INV = 99.09	375mmd STM INV = 99.59		0.50m
250mmd WM (F) INV = 99.43	250mmd STM INV = 99.93		0.50m
250mmd WM (F) OVB = 99.42	200mmd STM INV = 100.02		0.50m
250mmd SAN OVB = 101.72	200mmd STM INV = 102.27		0.50m
250mmd WM (F) INV = 98.78	250mmd STM INV = 99.78		0.50m
250mmd WM (F) INV = 99.01	375mmd STM INV = 99.58		0.57m
250mmd WM (F) INV = 99.01	375mmd STM INV = 99.58		0.57m
250mmd WM (F) INV = 99.01	375mmd STM INV = 99.58		0.57m
250mmd SAN INV = 98.06	200mmd STM INV = 100.60		22.54m
250mmd SAN OVB = 97.96	200mmd STM INV = 100.55		22.59m
250mmd SAN INV = 97.83	200mmd STM INV = 100.20		22.73m
250mmd SAN OVB = 97.89	200mmd STM INV = 99.87		22.78m
250mmd SAN INV = 96.95	200mmd STM INV = 97.82		0.67m
250mmd SAN OVB = 96.67	200mmd STM INV = 98.13		1.146m
250mmd SAN INV = 96.08	200mmd STM INV = 97.46		1.38m
250mmd SAN OVB = 96.07	200mmd STM INV = 98.04		1.39m
250mmd WM (F) INV = 98.91	200mmd STM INV = 99.41		0.50m
250mmd WM (D.S) OVB = 98.93	200mmd STM INV = 99.43		0.50m
250mmd WM (F) INV = 98.95	375mmd STM INV = 99.45		0.50m
250mmd WM (D.S) OVB = 98.97	375mmd STM INV = 99.47		0.50m
250mmd WM (F) INV = 98.95	375mmd STM INV = 99.45		0.50m
250mmd WM (D.S) OVB = 98.97	375mmd STM INV = 99.47		0.50m
250mmd WM (F) INV = 98.95	375mmd STM INV = 99.45		0.50m
250mmd WM (D.S) OVB = 98.97	375mmd STM INV = 99.47		0.50m
250mmd WM (F) INV = 99.02	375mmd STM INV = 99.58		0.56m
250mmd WM (D.S) OVB = 99.04	375mmd STM INV = 99.60		0.58m
250mmd WM (F) INV = 99.01	375mmd STM INV = 99.58		0.57m

*INVERTS/OVERTS ON CONCRETE PIPES ARE OUTSIDE DIAMETER

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

[illegible]