

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 \$2,000,000.00, 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 MUNICIPAL AUTHORITIES.
- 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 INVESTIGATION REPORT NO. PG4366-1 (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 HARD SURFACE AREAS AND DIMENSIONS.
- REFER TO THE STORMWATER MANAGEMENT REPORT (R-2018-034) PREPARED BY NOVATECH.
- SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10 AND R25).

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
SANITARY/STORM/CATCHBASIN MANHOLE (12000)	701.010	OPSD
STORM MANHOLE (15000)	701.011	OPSD
STORM MANHOLE (18000)	701.012	OPSD
STORM MANHOLE (24000)	701.013	OPSD
STORM/CATCHBASIN MH FRAME AND COVER	401.010 - TYPE 'B' OPEN	OPSD
CATCHBASIN (600x600)	705.010	OPSD
CATCHBASIN FRAME AND COVER	400.020	OPSD
STORM SEWER (375mmØ)	PVC DR 35	
STORM SEWER (750mmØ)	PVC DR 35	
STORM SEWER (864mm x 1346mm)	CONC. CLASS HE-II	
STORM SEWER (865mm x 1524mm)	CONC. CLASS HE-II	
SANITARY SEWER	PVC DR 35	
SEWER TRENCH - BEDDING (GRANULAR 'A') COVER (GRANULAR 'A')		
- 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.
- 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.
- CONTRACTOR TO TELEVIEW ALL PROPOSED SEWERS 200mm OR GREATER IN DIAMETER TO ENSURE THAT THEY ARE CLEAN AND OPERATIONAL. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES. OBTAIN APPROVAL FROM THE CITY'S SEWER OPERATIONS, PROVIDE THE CCTV INSPECTION AND REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE 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 AND ANY ALIGNMENT CHANGES, ETC.
- 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 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 RESULTS.
- INSULATE ALL STORM SEWERS WITH 100mm THICK LAYER OF HL-40 RIGID INSULATION EXTENDING HORIZONTALLY MINIMUM 1.2m BEYOND THE OUTSIDE FACE OF THE PIPE.

WATERMAIN NOTES:

- SUPPLY AND CONSTRUCT ALL WATERMAIN AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- 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
75mmØ WATER SERVICE	HDPE DR17	
32mmØ WATER SERVICE	TYPE 'K' COPPER	
50mmØ WATER SERVICE	TYPE 'K' COPPER	
- SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARD 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.
- 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.

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

CRITICAL SEWER PIPE CROSSING TABLE			
CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE
Ø	150mmØ SAN OBV=74.22	750mmØ STM INV =74.76	±0.5m
Ø	150mmØ SAN OBV=74.22	750mmØ STM INV =74.68	±0.5m
Ø	150mmØ SAN OBV=74.22	864x1346mmØ STM INV =74.31*	±0.1m
Ø	250mmØ SAN OBV=72.39	965x1524mmØ STM INV =74.27*	±1.9m
Ø	150mmØ SAN OBV=74.21	750mmØ STM INV =74.59	±0.4m
Ø	150mmØ SAN OBV=74.21	864x1346mmØ STM INV =74.31*	±0.1m
Ø	250mmØ SAN OBV=72.82	965x1524mmØ STM INV =74.26*	±1.4m

*INVERTS ON CONCRETE PIPES ARE OUTSIDE DIAMETER

APPROVED
By Adam Brown at 4:14 pm, Aug 07, 2018

Adam Brown

ADAM BROWN
MANAGER, DEVELOPMENT REVIEW - RURAL
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

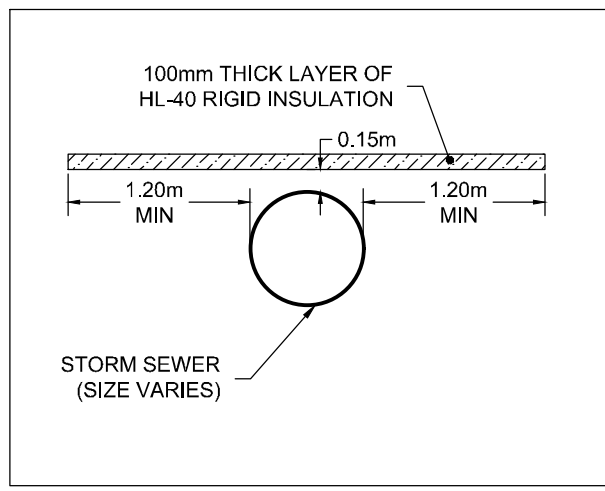
OWNER/APPLICANT INFORMATION:
BOUNDARY ROAD DEVELOPMENT INC.
16765 TRANSCANADIENNE, SUITE 500
KIRKLAND, QUÉBEC H9H 4M7

PROPOSED WATERMAIN (250mmØ FIRE PROTECTION) TABLE			
STATION	SURFACE ELEVATION	T/W M ELEVATION	COMMENTS
0+000.0	76.54	73.77	45° HORIZONTAL BEND
0+028.9	76.54	73.66	CROSS BELOW 100mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+050.0	76.39	73.77	-
0+066.3	76.39	73.77	HYDRANT CONNECTION
0+067.3	76.39	73.77	250mm x 250mm x 250mm TEE
0+068.4	76.39	73.77	PIV
0+069.4	76.39	73.77	250mm x 250mm x 250mm TEE
0+100.0	76.39	73.77	-
0+130.8	76.39	73.53	CROSS BELOW 100mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+150.0	76.39	73.77	-
0+175.6	76.39	73.77	250mm x 250mm x 250mm TEE
0+176.7	76.39	73.77	PIV
0+177.7	76.39	73.77	250mm x 250mm x 250mm TEE
0+179.6	76.39	73.77	HYDRANT CONNECTION
0+200.0	76.53	73.77	-
0+250.0	76.55	73.77	-
0+263.1	76.55	73.53	CROSS BELOW 150mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+300.0	76.55	73.77	-
0+322.4	76.55	73.53	CROSS BELOW 150mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+343.3	76.55	73.77	CROSS ABOVE 75mmØ WM (±0.30m CLEARANCE)
0+350.0	76.55	73.77	-
0+377.1	76.39	73.77	250mm x 250mm x 250mm TEE
0+378.2	76.39	73.77	PIV
0+379.2	76.39	73.77	250mm x 250mm x 250mm TEE
0+380.2	76.39	73.77	HYDRANT CONNECTION
0+400.0	76.39	73.77	-
0+421.2	76.39	73.53	CROSS BELOW 100mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+450.0	76.39	73.77	-
0+493.3	76.39	73.77	250mm x 250mm x 250mm TEE
0+494.4	76.39	73.77	PIV
0+495.4	76.39	73.77	250mm x 250mm x 250mm TEE
0+496.4	76.39	73.77	HYDRANT CONNECTION
0+532.9	76.39	73.77	CROSS ABOVE 50mmØ WM (±0.3m CLEARANCE)
0+549.6	76.55	73.53	CROSS BELOW 150mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+564.5	76.39	73.77	45° HORIZONTAL BEND
0+569.3	76.43	73.77	CROSS ABOVE 250mmØ SAN (±1.11m CLEARANCE)
0+573.5	76.45	73.77	45° HORIZONTAL BEND
0+580.7	76.52	73.90	CROSS BELOW 956mm x 1524mm STM (±0.50m CLEARANCE)
0+600.0	76.66	74.26	-
0+650.0	76.80	74.40	-
0+689.2	76.72	74.32	250mm x 250mm x 250mm TEE
0+690.2	76.72	74.32	CROSS ABOVE 100mmØ SAN (±0.50m CLEARANCE)
0+692.0	76.76	74.36	HYDRANT CONNECTION
0+693.9	76.81	74.41	PIV
0+698.5	76.73	74.33	250mm x 250mm x 250mm TEE
0+743.9	76.58	73.90	CROSS BELOW 956mm x 1524mm STM AS PER CITY OF OTTAWA STANDARD W25 (±0.50m CLEARANCE)
0+757.8	76.45	74.05	45° HORIZONTAL BEND
0+762.1	76.38	73.90	45° HORIZONTAL BEND
0+780.7	76.13	73.73	250mm x 250mm x 250mm TEE
0+800.0	76.13	73.73	-
0+839.4	76.13	73.73	CROSS ABOVE 200mmØ SAN AS PER CITY OF OTTAWA STANDARD W25.2 (±0.50m CLEARANCE)
0+852.5	76.13	73.73	250mm x 250mm x 250mm TEE
0+853.6	76.13	73.73	PIV
0+854.6	76.13	73.73	250mm x 250mm x 250mm TEE
0+873.0	76.13	73.73	CROSS ABOVE 32mmØ WM (±0.30m CLEARANCE)
0+968.7	76.13	73.73	250mm x 250mm x 250mm TEE
0+969.8	76.13	73.73	PIV
0+970.8	76.13	73.73	250mm x 250mm x 250mm TEE
1+000.0	76.13	73.73	-
1+050.0	76.28	73.73	-
1+100.0	76.13	73.73	-
1+136.7	76.13	73.73	250mm x 250mm x 250mm TEE
1+137.7	76.13	73.06	PIV
1+138.8	76.13	73.73	250mm x 250mm x 250mm TEE
1+121.3	76.13	73.73	PIV
1+122.3	76.13	73.73	250mm x 250mm x 250mm TEE
1+150.0	76.13	73.73	-
1+200.0	76.13	73.73	-
1+250.0	76.13	73.73	-
1+252.1	76.13	73.73	250mm x 250mm x 250mm TEE
1+253.2	76.13	73.73	PIV
1+254.2	76.13	73.73	250mm x 250mm x 250mm TEE
1+300.0	76.13	73.73	-
1+329.9	76.94	74.38	45° HORIZONTAL BEND
1+334.2	76.78	74.38	45° HORIZONTAL BEND
1+350.0	76.84	74.44	-
1+400.0	76.75	74.35	-
1+450.0	76.91	74.51	-
1+500.0	76.87	74.27	-
1+521.9	76.53	73.88	45° HORIZONTAL BEND

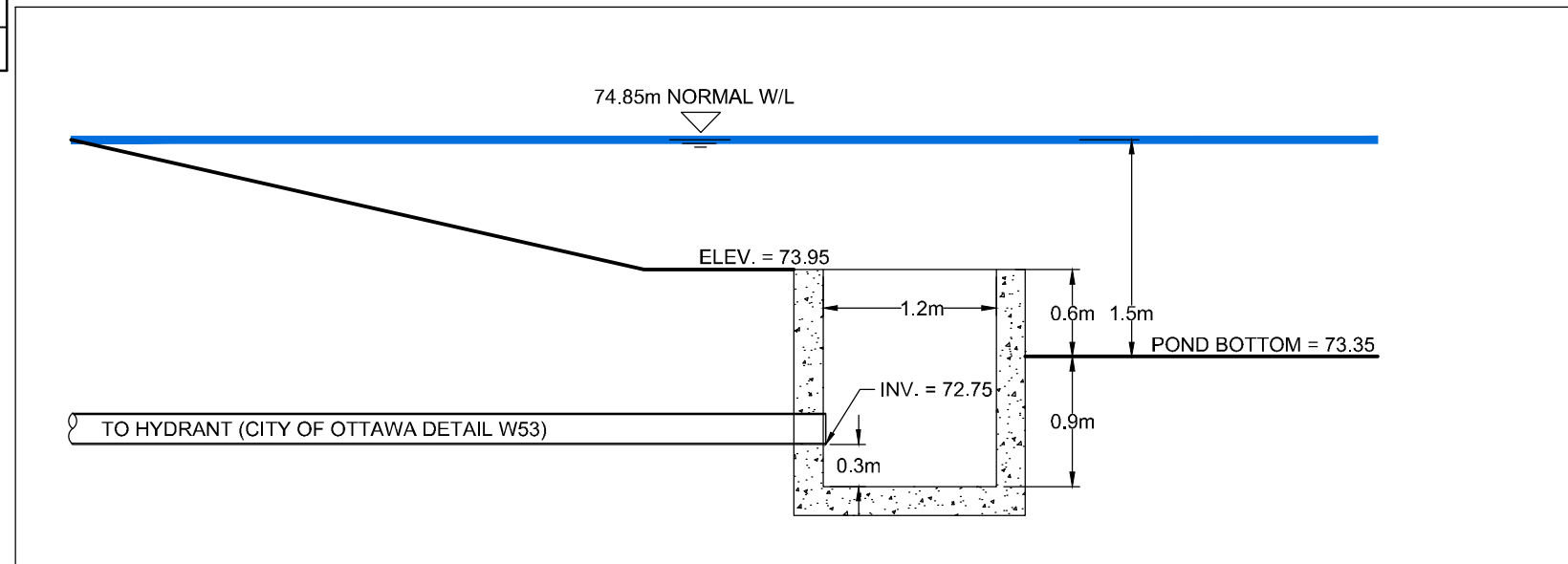
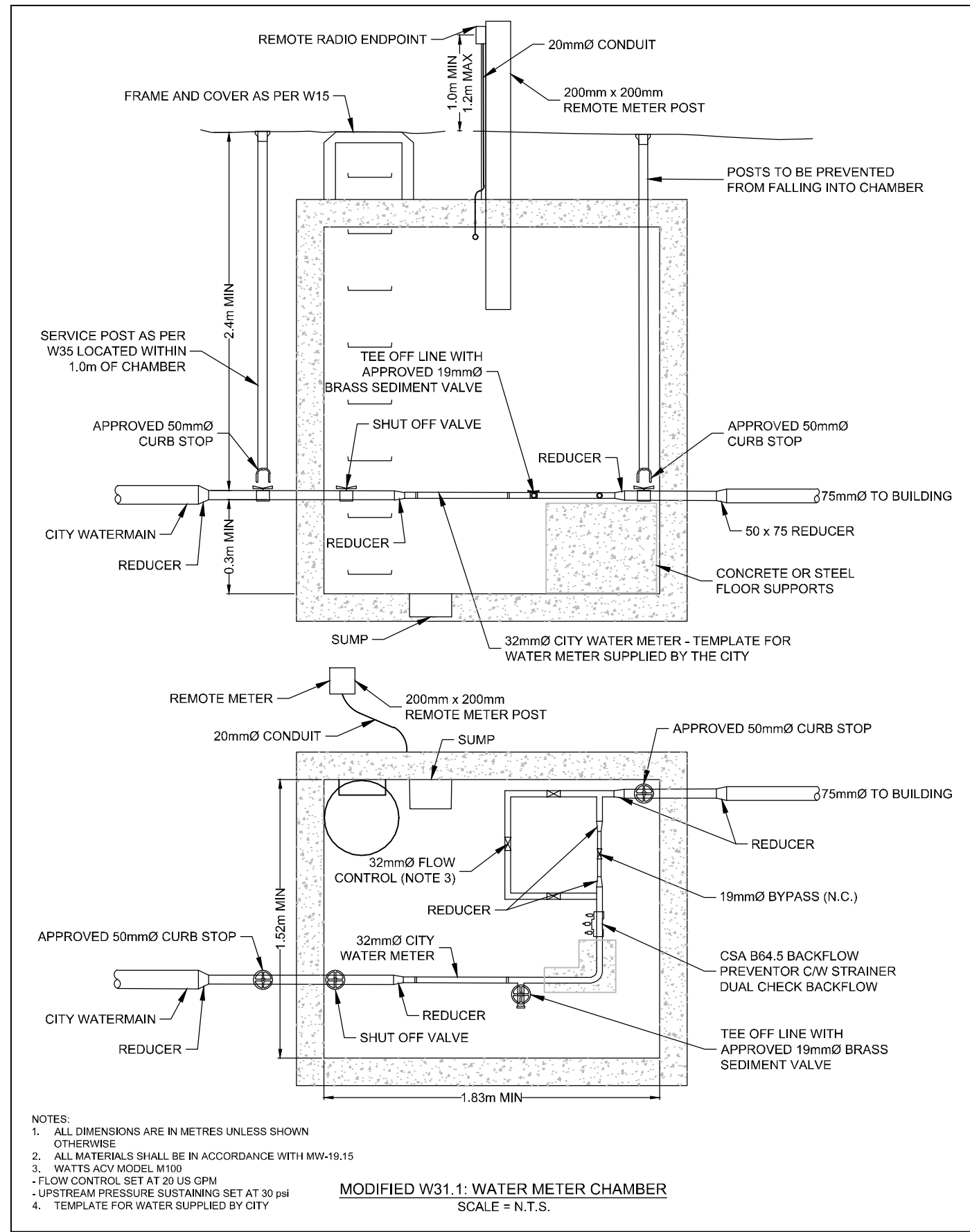
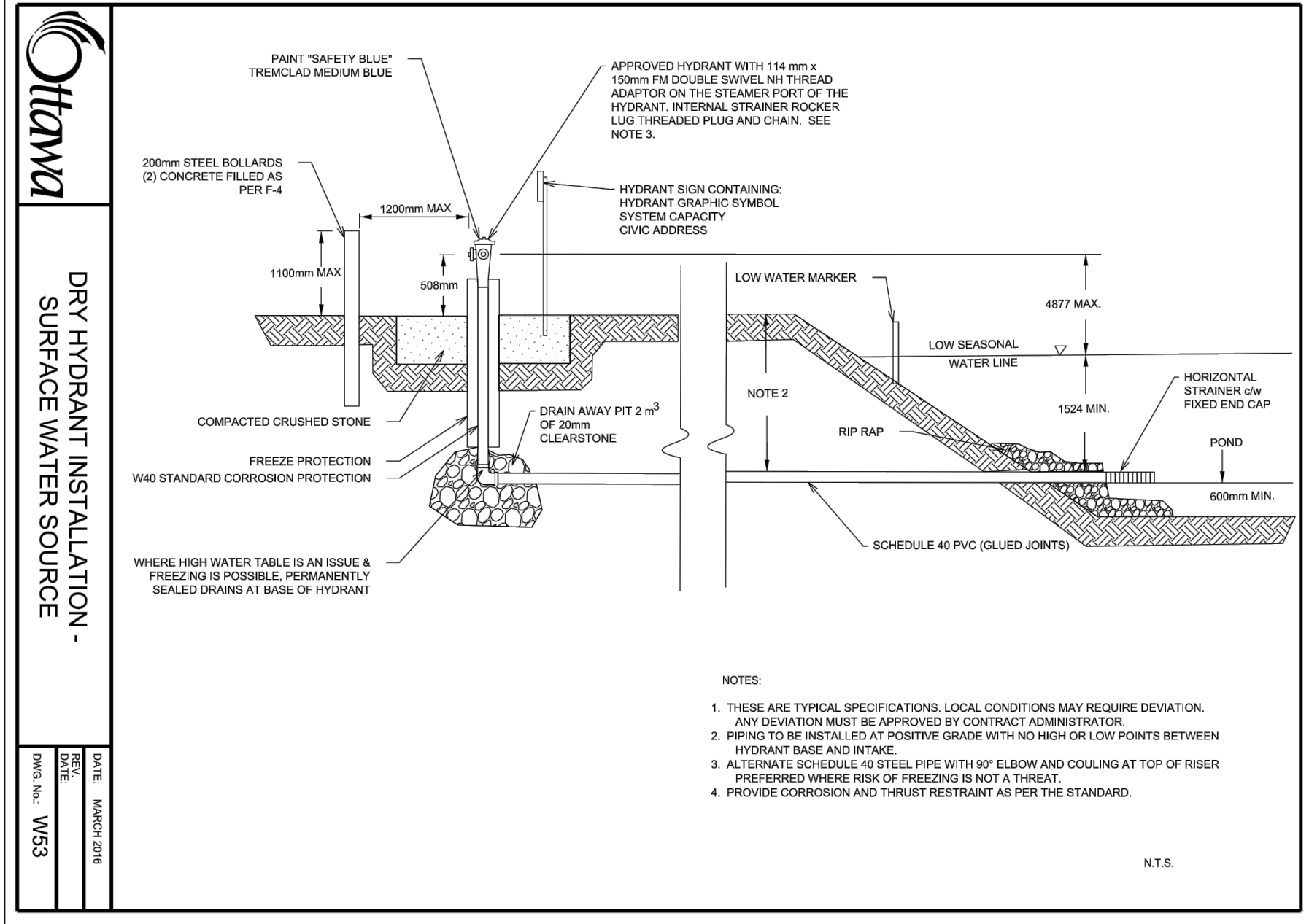
PROPOSED WATERMAIN (75mmØ DOMESTIC) TABLE			
STATION	SURFACE ELEVATION	T/W M ELEVATION	COMMENTS
2+000.0	77.55	75.15	TEE CONNECTION TO EX. 100mmØ WM
2+019.0	77.35	74.95	1500mm x 1800mm WATER CHAMBER
2+050.0	77.70	74.75	-
2+077.5	75.38	74.20	CROSS BELOW BOX CULVERT (±0.50m CLEARANCE), INSULATE PER CITY OF OTTAWA STANDARD W21
2+087.7	77.16	74.76	11.25° HORIZONTAL BEND
2+090.6	77.21	74.81	45° HORIZONTAL BEND
2+100.0	77.15	74.75	-
2+125.0	76.90	74.50	-
2+150.0	76.82	74.42	-
2+175.0	76.88	74.48	-
2+200.0	76.79	74.39	-
2+225.0	76.73	74.33	-
2+250.0	76.89	74.49	-
2+275.0	76.78	74.38	-
2+300.0	76.71	74.31	-
2+325.0	76.56	74.16	-
2+333.6	76.50	74.10	45° HORIZONTAL BEND
2+343.2	76.34	73.71	45° HORIZONTAL BEND
2+375.0	76.33	73.71	-
2+400.0	76.33	73.71	-
2+425.0	76.33	73.71	-
2+450.0	76.33	73.71	-
2+475.0	76.33	73.71	-
2+500.0	76.33	73.71	-
2+525.0	76.33	73.71	-
2+550.0	76.33	73.71	-
2+575.0	76.33	73.71	-
2+600.0	76.33	73.71	-
2+625.0	76.33	73.71	-
2+650.0	76.33	73.71	-
2+675.0	76.33	73.71	-
2+683.4	76.33	73.71	45° HORIZONTAL BEND
2+685.4	76.35	73.73	45° HORIZONTAL BEND
2+687.0	76.36	73.73	CROSS ABOVE 250mmØ SAN (±0.65m CLEARANCE)
2+690.0	76.56	73.22	CROSS BELOW 250mmØ WM (±0.30m CLEARANCE)
2+694.0	76.57	73.81	CROSS BELOW 864mm x 1346mm STM (±0.64m CLEARANCE)
2+696.0	77.44	73.84	CAP 1.0m FROM BUILDING FACE

PROPOSED WATERMAIN (32mmØ DOMESTIC) TABLE			
STATION	SURFACE ELEVATION	T/W M ELEVATION	COMMENTS
3+001.0	76.24	73.84	CAP 1.0m FROM BUILDING FACE
3+005.0	76.20	73.80	CROSS BELOW 864mm x 1346mm STM (±0.50m CLEARANCE)
3+009.0	76.16	73.76	CROSS ABOVE 250mmØ SAN (±0.50m CLEARANCE)
3+012.0	76.13	73.15	CROSS BELOW 250mmØ WM (±0.30m CLEARANCE)
3+025.0	76.00	73.60	-
3+050.0	75.75	73.35	-
3+068.7	74.98	72.58	CROSS BELOW 250mmØ SWALE SUBDRAIN (±1.7m CLEARANCE)
3+075.0	77.00	74.60	-
3+087.3	75.08	72.68	CROSS BELOW 250mmØ SWALE SUBDRAIN (±1.9m CLEARANCE)
3+100.0	77.03	74.63	-
3+102.0	77.20	74.80	CAP 1.0m FROM BUILDING FACE

PROPOSED WATERMAIN (50mmØ DOMESTIC) TABLE			
STATION	SURFACE ELEVATION	T/W M ELEVATION	COMMENTS
4+000.0	76.46	73.86	CAP 1.0m FROM BUILDING FACE
4+001.6	76.57	73.84	CROSS BELOW 864mm x 1346mm STM (±0.61m CLEARANCE)
4+005.6	76.55	73.22	CROSS BELOW 250mmØ WM (±0.30m CLEARANCE)
4+008.6	76.34	73.56	CROSS ABOVE 250mmØ SAN (±0.50m CLEARANCE)
4+025.0	76.34	73.84	-
4+050.0	76.34	73.84	-
4+065.0	74.83	72.43	CROSS BELOW 250mmØ SWALE SUBDRAIN (±1.7m CLEARANCE)
4+075.0	76.90	74.50	-
4+100.0	76.95	74.55	-
4+125.0	76.95	74.55	-
4+150.0	76.95	74.55	-
4+175.0	76.95	74.55	-
4+182.6	76.95	74.55	CAP 1.0m FROM BUILDING FACE



TYPICAL INSULATION DETAIL (STORM SEWERS ONLY)
SCALE 1:50



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