

GENERAL NOTES:

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 ARE REFERRED TO THE CGVD28 GEODETIC DATUM. BEARINGS ARE DERIVED FROM MTM ZONE 9 (NAD-83, ORIGINAL). PRIOR TO CONSTRUCTION, THE CONTRACTOR IS TO RETAIN A SURVEYOR TO PROVIDE A LOCAL SITE BENCHMARK.
9. REFER TO GEOTECHNICAL INVESTIGATION REPORT PROPOSED RESIDENTIAL DEVELOPMENT, 1100 SPOOR STREET (COPPERWOOD - BLOCK 73), OTTAWA ONTARIO, PG4258-3, (DATED MARCH 5, 2026), PREPARED BY PATERSON GROUP 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.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
11. REFER TO THE STORMWATER MANAGEMENT REPORT No. R-2026-028, DATED **SEPTEMBER 04, 2026**, PREPARED BY NOVATECH.
12. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10 AND R29).
13. PROVIDE LINE/PARKING PAINTING.
14. 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 TIG ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.
15. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.

SEWER NOTES:

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/STORMCATCHBASIN MANHOLE (12000) | 701.010 | OPSD |
| CATCHBASIN (600/600) | 705.010 | OPSD |
| CATCHBASIN FRAME AND COVER | 400.020 | OPSD |
| STORM/SANITARY MH FRAME | S25 | CITY OF OTTAWA |
| SANITARY COVER | S24 | CITY OF OTTAWA |
| STORM COVER (CLOSED) | S24.1 | CITY OF OTTAWA |
| STORM COVER (OPEN) | S28.1 | CITY OF OTTAWA |
| SEWER TRENCH | S6 & S7 | CITY OF OTTAWA |
| STORM SEWER < 450mmØ | PVC DR 35 (UNLESS SPECIFIED OTHERWISE) | |
| STORM SEWER ≥ 450mmØ | CONC 650 (UNLESS SPECIFIED OTHERWISE) | |
| SANITARY SEWER (| PVC DR 35 | |
| CATCHBASIN LEAD | PVC DR 35 | |
| CATCHBASIN COVER | S19 | |
| WATERTIGHT FRAME & COVER | 401.030 | CITY OF OTTAWA
OPSD |
3. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 2.0m COVER WITH 50mmX1200mm HI-40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION (REFER TO DETAIL).
4. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0% (2.0% PREFERRED)
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. A MINIMUM OF 150 mm of OPSS GRANULAR A SHOULD BE PLACED FOR BEDDING FOR SEWER OR WATER PIPES WHEN PLACED ON A SOIL SUBGRADE. THE BEDDING SHOULD EXTEND TO THE SPRING LINE OF THE PIPE. COVER MATERIAL FROM THE SPRING LINE TO A MINIMUM OF 300 mm ABOVE THE OVERTOP OF THE PIPE, SHOULD CONSIST OF OPSS GRANULAR A (CONCRETE OR PSM PVC PIPES) OR SAND (CONCRETE PIPE). THE BEDDING AND COVER MATERIALS SHOULD BE PLACED IN MAXIMUM 225 mm THICK LIFTS AND COMPACTED TO 98% OF THE SPMD.
7. THE BACKFILL MATERIAL WITHIN THE FROST ZONE (ABOUT 1.8m BELOW FINISHED GRADE) SHOULD MATCH THE SOILS EXPOSED AT THE TRENCH WALLS TO REDUCE POTENTIAL FROST HEAVING. THE BACKFILL SHOULD BE PLACED IN MAXIMUM 300mm THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS SPMD. ALL COBBLES LARGER THAN 200 MM IN THEIR LONGEST DIRECTION 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. ALL STORM MANHOLES WITH PIPE SIZES LESS THAN 900mm ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
9. CONTRACTOR TO TELE-VE (CCTV) ALL PROPOSED SEWERS 200mm OR GREATER IN DIAMETER PRIOR TO BASE COURSE ASPHALT TO ENSURE 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 SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND TIG ELEVATIONS, STRUCTURE LOCATIONS AND ANY ALIGNMENT CHANGES, ETC.
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 OPS 410.07.16, 410.07.16.04 AND 407.07.22. 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.
12. ALL CATCHBASINS AND CATCHBASIN MANHOLES TO BE PROVIDED WITH MINIMUM 3 METER LONG PERFORATED SUBDRAINS EXTENDING IN TWO DIRECTIONS 300mm BELOW THE SUBGRADE LEVEL. SUBDRAIN IS TO BE PROVIDED AT THE TRANSITIONS BETWEEN DIFFERENT PAVEMENT COMPOSITIONS. THE SUBGRADE SURFACE SHOULD BE SHAPED TO PROMOTE WATER FLOW TO THE DRAINAGE LINES.
11. ALL WORKS SHALL BE PERFORMED AS APPLICABLE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD SPECIFICATIONS, AND IN PARTICULAR O.P.S.S. 407 AND 410.

PAVEMENT STRUCTURE:

- ACCESS LANES AND HEAVY-TRUCK PARKING AREAS
- 40mm WEAR COURSE - SUPERPAVE 12.5 ASPHALTIC CONCRETE
- 50mm BINDER COURSE - SUPERPAVE 19.0 ASPHALTIC CONCRETE
- 150mm BASE - OPSS GRANULAR A CRUSHED STONE
- 450mm SUBBASE - OPSS GRANULAR B TYPE II
- CAR ONLY PARKING AREAS
- 50mm WEAR COURSE - SUPERPAVE 12.5 ASPHALTIC CONCRETE
- 150mm BASE - OPSS GRAN "A" CRUSHED STONE
- 300mm SUBBASE - OPSS GRAN "B" TYPE II

NOTE:

- MINIMUM PERFORMANCE GRADED (PG) 58-34 ASPHALT CEMENT.
- SUBGRADE - EITHER FILL, IN SITU SOIL, OR OPSS GRANULAR B TYPE I OR II MATERIAL PLACED OVER IN SITU SOIL OR FILL.

REFER TO GEOTECHNICAL REPORT FOR SUBSURFACE CONDITIONS AND CONSTRUCTION RECOMMENDATIONS

WATERMAIN NOTES:

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 CROSSING BELOW SEWER | W25 | CITY OF OTTAWA |
| WATERMAIN CROSSING ABOVE SEWER | W25.2 | CITY OF OTTAWA |
| HYDRANT | WSD-24 | CITY OF OTTAWA |
| VALVE AND VALVE BOX | WSD-19 | CITY OF OTTAWA |
| WATERMAIN | PVC DR 18 | |
3. 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.
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 SEWER AND WATERMAIN NOTES AND DETAIL.
4. PROVIDE MINIMUM CLEARANCE, BETWEEN OUTSIDE OF PIPES, AT ALL CROSSINGS AS PER CITY DETAILS W25 AND W25.2. WATERMAIN MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.50m BETWEEN SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
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 WSD-39, 40, 41, 42, 43 AND 44.
8. IF WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

GRADING NOTES:

1. ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED BUILDING AND PAVED AREAS.
2. EXPOSED SUB-GRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
3. NON-SPECIFIED EXISTING FILL, ALONG WITH SITE-EXCAVATED SOIL, CAN BE USED AS GENERAL LANDSCAPING FILL WHERE SETTLEMENT OF THE GROUND SURFACE IS OF MINOR CONCERN. IN LANDSCAPED AREAS, THESE MATERIALS SHOULD BE SPREAD IN THIN LIFTS AND AT LEAST COMPACTED BY THE TRACKS OF THE SPREADING EQUIPMENT TO MINIMIZE VOIDS. IF THESE MATERIAL ARE TO BE USED TO BUILD UP THE SUBGRADE LEVEL FOR AREAS TO BE PAVED, THEY SHOULD BE COMPACTED IN THIN LIFTS TO AT LEAST 95% OF THE MATERIAL'S SPMD. NON-SPECIFIED EXISTING FILL AND SITE-EXCAVATED SOILS ARE NOT SUITABLE FOR USE AS BACKFILL AGAINST FOUNDATION WALLS UNLESS USED IN CONJUNCTION WITH A COMPOSITE DRAINAGE MEMBRANE.
4. THE PAVEMENT GRANULAR BASE AND SUBBASE SHOULD BE PLACED IN MAXIMUM 300 MM THICK LIFTS AND COMPACTED TO A MINIMUM OF 90% OF THE SPMD USING SUITABLE VIBRATORY EQUIPMENT FOR AREAS WHERE THE BEDROCK SURFACE CONFLICTS WITH THE RECOMMENDED PAVEMENT STRUCTURE. THEN THE SUBBASE LAYER CAN BE REDUCED TO 150 MM THICKNESS PROVIDED THAT THE BEDROCK SURFACE IS SUITABLE FRAGMENTED/FRACTURED. THE UPPER 300 MM OF THE BEDROCK SURFACE SHOULD BE REVIEWED AND APPROVED BY PATERSON PRIOR TO PLACING THE BASE AND SUBBASE MATERIALS.
5. BACKFILL MATERIAL BELOW SIDEWALKS AND WALKWAY SUBGRADE AREAS THROUGHOUT THE SUBJECT SITE, INCLUDING ALONG THE BUILDINGS, SHOULD BE PROVIDED WITHM THICK LAYER OF OPSS GRANULAR A OR OPSS GRANULAR B TYPE II CRUSHED STONE. THIS MATERIAL SHOULD BE PLACED IN MAXIMUM 300 MM THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 98% OF THE MATERIALS SPMD.
6. IF SOFT SPOTS DEVELOP IN THE SUBGRADE DURING COMPACTION OR DUE TO CONSTRUCTION TRAFFIC, THE AFFECTED AREAS SHOULD BE EXCAVATED AND REPLACED WITH OPSS GRANULAR B TYPE II MATERIAL. WEAK SUBGRADE CONDITIONS MAY BE EXPERIENCED OVER SERVICE TRENCH FILL MATERIALS. THIS MAY REQUIRE THE USE OF A GEOTEXTILE, SUCH AS TERRATRACK 200 OR EQUIVALENT THICKER SUBBASE OR OTHER MEASURES THAT CAN BE RECOMMENDED AT THE TIME OF CONSTRUCTION AS PART OF THE FIELD OBSERVATION PROGRAM.
7. ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED. REFER TO CITY OF OTTAWA DETAIL SC1.1.
8. GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
9. MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED
10. ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
11. REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
12. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING THE AS-BUILT ELEVATION OF EVERY DESIGN GRADE SHOWN ON THIS PLAN.
13. ASENSITIVE MARINE CLAY TO BE REMOVED AND REPLACED WITH ENGINEERING FILL AS DIRECTED GEOTECHNICAL CONSULTANT.

EROSION AND SEDIMENT CONTROL NOTES:

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE. DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

- 1) THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL. SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A HEAVY DUTY SILT FENCE BARRIER AS REQUIRED.
- 2) IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT A DETAILED CONSTRUCTION SCHEDULE AND APPROPRIATE STAGING, DEWATERING AND EROSION AND SEDIMENT CONTROL PLANS TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL PRIOR TO THE COMMENCEMENT OF WORK. A COPY OF THE CITY OF OTTAWA SPECIAL PROVISION F-1004 WILL BECOME PART OF ANY CONTRACT AND WHICH OUTLINES THE CONTRACTUAL REQUIREMENTS WHICH INCLUDES PREPARATION OF A DETAILED EROSION AND SEDIMENT CONTROL PLAN.
- 3) THE CONTRACTOR SHALL PLACE FILTER BAGS UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION, SITE DEMOBILIZATION AND REMAIN IN PLACE UNTIL SITE STABILIZATION IS ACHIEVED.
- 4) SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION. SITE DEMOBILIZATION AND REMAIN IN PLACE UNTIL SITE STABILIZATION IS ACHIEVED.
- 5) THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
- 6) PROVIDE MUD MATS AT ALL CONSTRUCTION ACCESS POINTS TO MINIMIZE SEDIMENT TRANSPORT OFFSITE.
- 7) EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.

TYPICAL SERVICING NOTES:

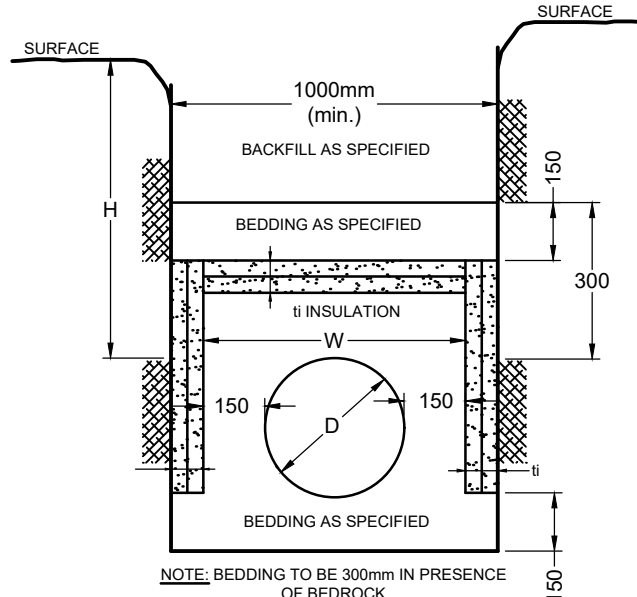
1. NO HORIZONTAL BENDS IN RIGHT-OF-WAY UNLESS OTHERWISE APPROVED BY THE CITY. MAXIMUM OF TWO 22.5° HORIZONTAL BENDS FOR SANITARY AND STORM SERVICES.
2. 1.0 % MINIMUM SANITARY AND STORM SERVICE GRADIENT WITH 2% PREFERRED.
3. SEE S7 FOR PIPE FOUNDATION, EMBEDMENT AND FINAL BACKFILL REQUIREMENTS.
4. MULTIPLE TAPS WITH SADDLES IN PVC WATERMAIN SHALL BE STAGGERED AND MINIMUM 600mm APART.
5. ELEVATION OF SERVICES VARIABLE DEPENDING ON GRADIENT AND/OR DEPTH OF COVER.
6. ALL DIMENSIONS ARE IN MILLIMETERS.
7. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.
8. GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
9. REFER TO ELECTRICAL DESIGN FOR UTILITY LOCATIONS.

PROPOSED 200mmØ WATERMAIN (1+000.0)

STATION	SURFACE ELEVATION	TWM ELEVATION	COMMENTS
1+000.0	87.00	84.60	300mmX200mm TEE
1+002.9	87.09	84.69	CROSS ABOVE 200mmØ SAN (±0.97mm CLEARANCE)
1+005.2	87.04	85.46	CROSS ABOVE 300mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (±0.50 CLEARANCE)
1+011.4	87.20	84.80	5° HORIZONTAL BEND
1+014.9	87.34	84.95	200mmØ VALVE AND VALVE BOX
1+022.9	87.25	85.02	CROSS BELOW 250mmØ CB LEAD (±0.56 CLEARANCE)
1+030.3	87.59	85.82	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+047.9	87.50	85.74	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+051.5	87.59	85.15	STANDARD 2.4m DEPTH
1+059.0	87.45	84.82	CROSS BELOW 250mmØ CB LEAD PER W25 (±0.50 CLEARANCE)
1+067.0	87.47	85.07	STANDARD 2.4m DEPTH
1+071.0	87.48	85.65	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+086.5	87.58	85.59	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+089.50	87.57	85.59	CROSS ABOVE 200mmØ STM PER W25.2 (±0.40m CLEARANCE)
1+091.7	87.59	85.59	CROSS ABOVE 200mmØ SAN PER W25.2 (±0.31m CLEARANCE)
1+091.8	87.59	85.59	45° HORIZONTAL BEND
1+093.0	87.60	85.59	200mmX150mm TEE (HYD)
1+094.3	87.62	85.59	45° HORIZONTAL BEND
1+098.0	87.63	85.53	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+102.0	87.59	85.19	STANDARD 2.4m DEPTH
1+117.0	87.45	85.05	STANDARD 2.4m DEPTH
1+119.9	87.46	85.43	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+130.3	87.49	85.49	22.5° HORIZONTAL BEND
1+135.5	87.57	85.49	CROSS ABOVE PROPOSED 135mm SANITARY SERVICE PER W25.2 (±0.50m CLEARANCE)
1+141.3	87.80	85.40	22.5° HORIZONTAL BEND (STANDARD 2.4M DEPTH)
1+147.0	87.85	85.45	DMA CHAMBER AS PER CITY OF OTTAWA STANDARD W3
1+150.6	87.75	85.35	11.25° HORIZONTAL BEND
1+157.8	87.53	85.13	CROSS ABOVE 150mmØ STM (±0.96m CLEARANCE)
1+160.0	87.55	85.15	CROSS ABOVE 375mmØ SAN (±3.42m CLEARANCE)
1+163	87.46	85.06	300mmX200mm TEE

SEWER & WATERMAIN INSULATION NOTES:

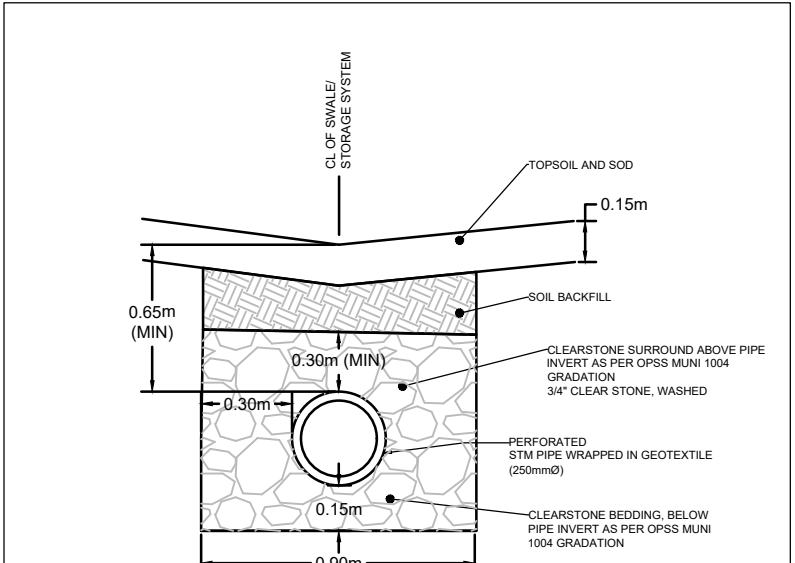
1. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 2.0m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE)
- | COVER SEWER / WATER (mm) | INSULATION THICKNESS (mm) |
|--------------------------|---------------------------|
| 2000-1700 / 2400-2100 | 50 |
| 1700-1400 / 2100-1800 | 75 |
| 1400-1100 / 1800-1500 | 100 |
- T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
W = D + 300 (1000 min.)
D = O.D OF PIPE (mm)



INSULATION DETAIL FOR SHALLOW SEWERS & WATERMAIN N.T.S

CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE
1	200mmØ SAN OBV = 83.57	200mmØ WM INV = 84.54	±0.97m
2	900mmØ STM OBV = 84.76*	200mmØ WM INV = 85.26	±0.50m
3	200mmØ WM OBV = 85.02	250mmØ CB LEAD INV = 85.58	±0.56m
4	200mmØ SAN OBV = 84.82	250mmØ CB LEAD INV = 85.32	±0.50m
5	200mmØ SAN OBV = 84.93	250mmØ CB LEAD INV = 85.29	±0.36m
6	200mmØ STM OBV = 84.33	200mmØ SAN INV = 84.62	±0.29m
7	200mmØ STM OBV = 84.35	200mmØ WM INV = 85.39	±1.04m
8	200mmØ STM OBV = 84.80	200mmØ WM INV = 85.39	±0.59m
9	1500mmØ STM OBV = 84.00*	200mmØ WM INV = 84.93	±0.93m
10	375mmØ SAN OBV = 81.53	200mmØ WM INV = 84.95	±3.42
11	1500mmØ STM OBV = 83.95	200mmØ SAN INV = 84.25	±0.30

* INV/OBV INDICATED FOR CONCRETE PIPES ARE OUTER DIAMETER



PERFERATED PIPE TRENCH DETAIL N.T.S

