

1.0 GENERAL

- 1.1 USE BAR SCALE TO CONFIRM ACTUAL PLOT SCALE. EXISTING AND NEW ELEVATIONS SHOWN ARE GEODETIC AND ARE IN METERS. ALL PIPE DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- 1.2 UNLESS OTHERWISE NOTED "ENGINEER" REFERS TO D. B. GRAY ENGINEERING INC.
- 1.3 EXISTING ELEVATIONS AND SIZES OF EXISTING SERVICES & UTILITIES ARE NOT NECESSARILY SHOWN ON PLAN AND THOSE SHOWN ARE DERIVED FROM AVAILABLE INFORMATION AND MUST BE CONFIRMED ON SITE PRIOR TO COMMENCING CONSTRUCTION. REPORT ANY DIFFERENCES TO ENGINEER. UNDERGROUND LOCATIONS (INCLUDING ONTARIO ONE CALL: 1-800-400-2255) SHALL BE CONDUCTED PRIOR TO COMMENCEMENT OF ANY EXCAVATION.
- 1.4 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
- 1.5 REFER TO ARCHITECTURAL AND LANDSCAPE SITE PLANS FOR EXACT LOCATIONS OF BUILDINGS, PAVED AREAS, SIDEWALKS, PLANTERS, ETC. LAYOUT SHALL BE COMPLETED BY THE CONTRACTOR AND SHALL BE REVIEWED BY THE OWNER'S REPRESENTATIVE / ENGINEER PRIOR TO CONSTRUCTION. AT ALL TIMES THE CONTRACTOR IS RESPONSIBLE FOR THE ACCURACY OF THE LAYOUT INCLUDING LINES AND GRADES.
- 1.6 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
- 1.7 DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SITE SERVICING STUDY & STORMWATER MANAGEMENT REPORT No. 22027 PREPARED BY D. B. GRAY ENGINEERING INC.
- 1.8 REINSTATE ADJACENT PROPERTIES TO PRE-CONSTRUCTION CONDITIONS.
- 1.9 CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
- 1.10 ONTARIO PROVINCIAL STANDARDS & SPECIFICATIONS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
- 1.11 ALL PROPOSED RETAINING WALLS SHALL BE SETBACK A MINIMUM 150 mm FROM PROPERTY LINE. ALL PROPOSED RETAINING WALLS GREATER THAN 1.0 m IN HEIGHT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO.

2.0 EROSION AND SEDIMENT CONTROL

- 2.1 THE EROSION AND SEDIMENT CONTROL PLAN IS A "LIVING DOCUMENT" AND SHALL BE REVISED IN THE EVENT THE SPECIFIED CONTROL MEASURES ARE NOT SUFFICIENT. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING SEDIMENT CAPTURE FILTER SOCKS INSERTS IN CATCH-BASINS AND MANHOLES AND INSTALLING EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSTALL THE FOLLOWING CONTROL MEASURES AND INSURE THEY ARE MAINTAINED THROUGHOUT CONSTRUCTION:
 - a. EROSION CONTROL MATS SHALL BE INSTALLED ON ALL EXPOSED EARTH SURFACES.
 - a. ALL STOCKPILED MATERIALS HAVE BEEN REMOVED.
 - a. REMOVE EROSION AND SEDIMENT CONTROL MEASURES WHEN CONSTRUCTION IS COMPLETE.
- 2.2 PRIOR TO COMMENCEMENT OF CONSTRUCTION AT ALL MUNICIPAL CATCH-BASINS ADJACENT TO THE SITE AND AT ANY CATCH-BASINS OR MANHOLES THAT WILL RECEIVE DISCHARGE FROM DRAINING OPERATIONS: INSTALL SEDIMENT CAPTURE FILTER SOCK INSERTS (TERRAEX GEOSYNTHETICS INC. SULTACK OR APPROVED EQUAL). INSPECT AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT AS RECOMMENDED BY THE MANUFACTURER. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED FILTER SOCK INSERTS. DO NOT REMOVE UNTIL CONSTRUCTION IS COMPLETE.
- 2.3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
- 2.4 CONSTRUCTION IS CONSIDERED COMPLETE WHEN THE FOLLOWING CONDITIONS HAVE BEEN MET:
 - a. ALL STRUCTURES HAVE BEEN BUILT.
 - a. ALL HARD SURFACES HAVE BEEN SODDED OR HAVE A FULL COVERAGE OF WELL ESTABLISHED TURF AND GRASS.
 - a. ALL PROPOSED GRASSED AREAS ARE EITHER SODDED OR HAVE A FULL COVERAGE OF WELL ESTABLISHED TURF AND GRASS.
 - a. ALL AREAS OF EXPOSED EARTH HAVE BEEN REVEGETATED.
 - a. ALL STOCKPILED MATERIALS HAVE BEEN REMOVED.

3.0 GRADING & DRAINAGE

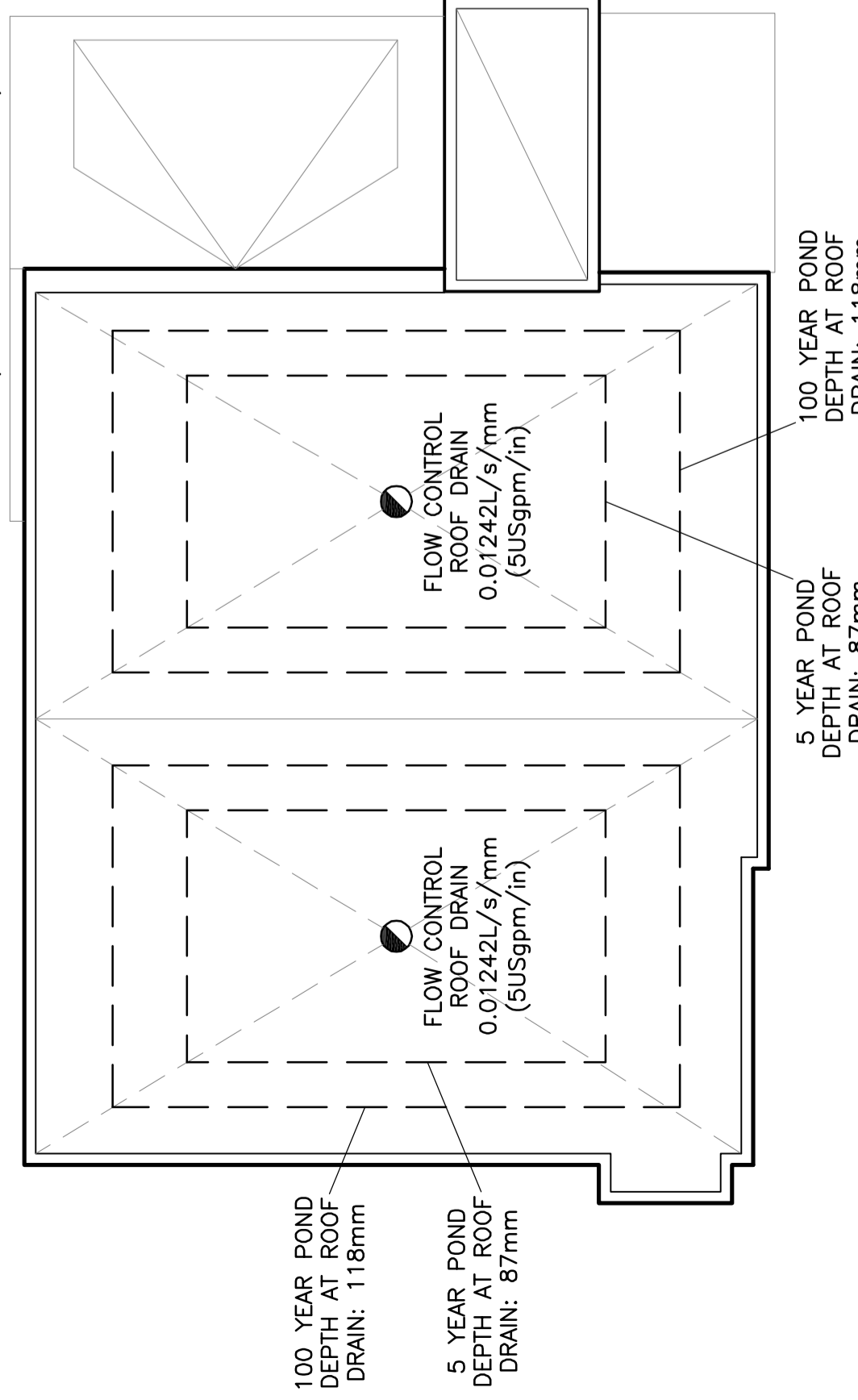
- 3.1 NEW GRADES TO MATCH EXISTING AT PROPERTY LINE. NO EXCESS DRAINAGE WILL BE DIRECTED TOWARDS THE ADJACENT PROPERTIES DURING AND AFTER CONSTRUCTION. THERE WILL BE NO ALTERATION TO EXISTING GRADE AND DRAINAGE PATTERNS ON PROPERTY LINE.
- 3.2 ALL AREAS SHALL BE GRADED TO ENSURE ADEQUATE DRAINAGE AWAY FROM BUILDINGS TO CATCH-BASINS, SWALES, DITCHES AND OTHER APPROVED DISPOSAL AREAS. GRADING SHALL BE GRADUAL BETWEEN FINISHED SPOT ELEVATIONS SHOWN ON DRAWINGS TO PREVENT PONDING (OTHER THAN PONDING REQUIRED FOR STORMWATER MANAGEMENT).
- 3.3 WHETHER RESULT OF POOR WORKMANSHIP OR DAMAGE, DEFECTIVE GRADING SHALL BE CORRECTED. PROMPTLY MAKE GOOD OTHER CONTRACTOR'S WORK DAMAGED BY SUCH CORRECTIONS.

4.0 SITE SERVICES

- 4.1 EXISTING WATER SERVICE CONNECTION TO BE DECOMMISSIONED SHALL BE BLANKED AT CITY WATERMAIN BY CITY FORCES. CONTRACTOR SHALL PROVIDE EXISTING WATER SERVICE CONNECTIONS TO BE DECOMMISSIONED AS PER CITY OF OTTAWA DWG. No. W22.
- 4.2 CONNECTION TO WATERMAIN BY CITY OF OTTAWA FORCES, CONTRACTOR SHALL PROVIDE EXCAVATION, BACKFILL AND REINSTATEMENT.
- 4.3 WATER METER SHALL BE INSTALLED AS PER CITY OF OTTAWA DWG. No. W31.
- 4.4 ALL WATER SERVICE MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS & OPSSD). WATER SERVICE MATERIALS SHALL BE COPPER ASTM B88 TYPE "K" SOFT TO INSULATE AS PER CITY OF OTTAWA DWG. No. W22.
- 4.5 WHERE LESS THAN 2.4 m CLEARANCE FROM AN OPEN STRUCTURE (EG. MANHOLES & CATCH BASINS) PLACE INSULATION INSULATE AS PER CITY OF OTTAWA DWG. No. W22.
- 4.6 AROUND WATER SERVICE CONNECTIONS INSTALLED PARALLEL TO A SEWER CONNECTION SHALL BE CONSTRUCTED OF A SINGLE RUN OF PIPE WITH NO JOINTS OR FITTINGS BETWEEN THE WATERMAIN AND CURB STOP AND BETWEEN THE CURB STOP AND THE INSIDE FACE OF THE BUILDING.
- 4.7 WATER SERVICE CONNECTIONS SHALL BE CONSTRUCTED TO A SEWER CONNECTION SHALL BE CONSTRUCTED OF A SINGLE RUN OF PIPE WITH NO JOINTS OR FITTINGS BETWEEN THE WATERMAIN AND CURB STOP AND BETWEEN THE CURB STOP AND THE INSIDE FACE OF THE BUILDING.
- 4.8 THE 300mm COPPER BARREL VERTICAL SEPARATION SHALL BE CONSTRUCTED TO A SEWER CONNECTION SHALL BE CONSTRUCTED OF A SINGLE RUN OF PIPE WITH NO JOINTS OR FITTINGS BETWEEN THE WATERMAIN AND CURB STOP AND BETWEEN THE CURB STOP AND THE INSIDE FACE OF THE BUILDING.
- 4.9 SEWER SERVICE LATERAL SHALL HAVE A MINIMUM 2.0 m OF COVER OR SHALL BE INSULATED AS PER CITY OF OTTAWA STANDARD DRAWING W22.

ROOF PLAN

INSTALL A MINIMUM OF 4 SCUPPERS EACH A MINIMUM 150mm WIDE. BOTTOM OF SCUPPERS SHALL BE 150mm ABOVE ROOF DRAINS (REFER TO ARCHITECTURAL FOR EXACT LOCATIONS AND DETAILS). ROOF SHALL BE DESIGNED TO CARRY THE LOAD OF WATER HAVING A 50mm DEPTH AT SCUPPERS OR 200mm DEPTH AT ROOF DRAINS (REFER TO STRUCTURAL).

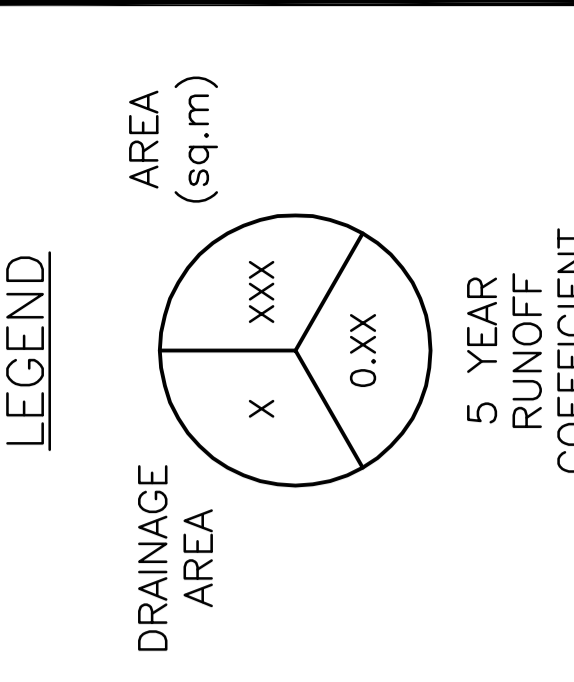


- 4.10 INSTALL CLEANOUTS ON THE STORM BUILDING DRAIN AND SANITARY BUILDING DRAIN AS CLOSE AS PRACTICAL TO WHERE THE CONNECT PROPOSED SANITARY LEVER SERVICE CONNECTION TO EXISTING MUNICIPAL SANITARY SEWER AS PER CITY OF OTTAWA DWG. No. S11 (RIGID MAIN SEWER).
- 4.12 CONNECT PROPOSED STORM SEWER SERVICE CONNECTION TO EXISTING MUNICIPAL STORM SEWER AS PER CITY OF OTTAWA DWG. No. S11 (RIGID MAIN SEWER).
- 4.13 ALL SEWER MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS & OPSSD). SEWER MATERIAL SHALL BE PVC SDR-28 FOR DIAMETERS 150mm OR LESS AND SHALL CONFORM TO CSA B182.2 AND SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS.
- 4.14 ROOF DRAINS SHALL BE FLOW CONTROL TYPE EACH INSTALLED WITH A WEIR WITH A PARABOLIC SLOT. EACH SLOT SHALL BE 5.0 USgpm/inch. OPENING AT TOP OF FLOW CONTROL WEIR SHALL BE A MINIMUM 50 mm IN DIAMETER. WEIRS SHALL BE APPROVED BY THE ENGINEER FOR APPROVAL.
- 4.15 SCUPPERS SHALL BE INSTALLED. THE BOTTOM OF EACH SCUPPER SHALL BE A MAXIMUM 150 mm ABOVE ROOF DRAINS. REFER TO ROOF PLAN AND DETAILS OF SCUPPERS. THE ROOF STRUCTURE SHALL BE DESIGNED TO CARRY THE LOAD OF WATER HAVING A 50 mm DEPTH OF WATER AT THE SCUPPER AND 200 mm DEPTH OF WATER AT THE ROOF DRAIN (REFER TO STRUCTURAL ENGINEER).
- 4.16 PANWATER LEADERS INSIDE BUILDING SHALL BE CONSTRUCTED WITH PVC PIPE WITH WELDED JOINTS AND THE CLEANOUTS SHALL BE CONSTRUCTED WITH 150mm DIA. PVC PIPE WITH WELDED JOINTS.
- 4.17 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
- 4.18 REINSTATE ADJACENT PROPERTIES TO PRE-CONSTRUCTION CONDITIONS.
- 4.19 CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
- 4.20 ONTARIO PROVINCIAL STANDARDS & SPECIFICATIONS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
- 4.21 ALL PROPOSED RETAINING WALLS SHALL BE SETBACK A MINIMUM 150 mm FROM PROPERTY LINE. ALL PROPOSED RETAINING WALLS GREATER THAN 1.0 m IN HEIGHT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO.

5.0 CONSTRUCTION

- 5.1 PRIOR TO COMMENCING WORK:
 - a. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES.
 - a. SIZE, DEPTH AND LOCATION OF EXISTING SERVICES, UTILITIES AND STRUCTURES AS INDICATED ON THE DRAWINGS. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. NOTIFY ALL APPLICABLE OWNERS, UTILITY COMPANIES AND AUTHORITIES HAVING JURISDICTION OF PROPOSED WORK AND LOCATE AND CLEARLY IDENTIFY ALL EXISTING SERVICES, UTILITIES AND STRUCTURES ON AND ADJACENT TO THE SITE. UNDERGROUND LOCATES (INCLUDING ONTARIO ONE CALL: 1-800-400-2255) SHALL BE CONDUCTED PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION. CONFIRM LOCATIONS OF BURIED SERVICES AND UTILITIES BY CAREFUL TEST EXCAVATIONS AND REPORT ANY DIFFERENCES TO THE ENGINEER.
 - a. COORDINATE AND CONFIRM EXISTING GRADE ELEVATIONS AND REPORT ANY DIFFERENCES TO THE ENGINEER. ARE NOT GUARANTEED. CONFIRM EXISTING GRADE ELEVATIONS AND REPORT ANY DIFFERENCES TO THE ENGINEER.
 - a. SCHEDULE WORK TO PROVIDE THE MINIMUM DISRUPTION TO SERVICES.
 - a. MAINTAIN AND PROTECT FROM DAMAGE, SERVICES, UTILITIES AND STRUCTURES ENCOUNTERED.
 - a. MAINTAIN EXISTING BUILDINGS, TREES AND OTHER FEATURES FROM CONSTRUCTION SERVICES. Wires, PAVEMENT, SURVEY BENCHMARKS SHALL BE PROTECTED FROM DAMAGE. ALL SERVICES, UTILITIES AND STRUCTURES SHALL BE PROTECTED FROM DAMAGE. DISTURB SOIL WITHIN BRANCH SPREAD OF TREES OR SHRUBS THAT ARE TO REMAIN.
 - a. PROVIDE TRAFFIC CONTROL AND SAFETY MEASURES INCLUDING ANY NECESSARY SIGNAGE AND BARRIERS, AS REQUIRED BY THE SUPPLY INSTALLATION, REMOVAL AND REPLACEMENT OF ALL NECESSARY SIGNAGE AND BARRIERS, AS REQUIRED BY THE AUTHORITIES. IF APPLICABLE, PROVIDE TRAFFIC MANAGEMENT PLAN AS PER CITY OF OTTAWA REQUIREMENTS.
 - a. FENCE OFF ALL OPEN EXCAVATIONS AT THE END OF EACH WORK DAY. FENCES SHALL BE INSTALLED AND MAINTAINED IN GOOD REPAIR THROUGHOUT CONSTRUCTION.
 - a. REMOVE OBSTRUCTIONS FROM AND AROUND SNOW FROM SURFACES TO BE EXCAVATED.
 - a. CUT PAVEMENT AND / OR SIDEWALK NEATLY ALONG LIMITS OF PROPOSED EXCAVATION IN ORDER THAT SURFACE MAY BREAK EVENLY AND CLEANLY.
 - a. COORDINATE AND PAY FOR GEOTECHNICAL INSPECTIONS AND COMPACTION TESTS OF SUB-GRADE, PIPE BEDDING AND EACH LAYER OF SURROUND MATERIAL, BACKFILL, SUB-BASE, BASE AND ASPHALT TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT AND ENGINEER. SUBMIT GEOTECHNICAL INSPECTIONS AND COMPACTION REPORTS TO ENGINEER FOR REVIEW.
 - a. CUT AND FILL AS NECESSARY TO ACHIEVE THE REQUIRED SUB-GRADE ELEVATION. DISPOSE OF SURPLUS AND EXCESS FILL TO AN APPROVED LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED, AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THE SURVEY PLAN AND THESE DRAWINGS.
 - a. FILL MATERIALS IN MANNEER TO PREVENT SEGREGATION AND PROTECT FROM CONTAMINATION. PLACE MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS. PROTECT WORK AREA AGAINST FLOODING AND DAMAGE DUE TO SURFACE RUN-OFF. DEWATER AS REQUIRED TO KEEP WORK AREA FREE OF WATER. DISCHARGE FROM DRAINAGE OPERATIONS SHALL BE DIRECTED TO A SEDIMENT CONTROL MEASURE AND/OR A VEGETATED DISCHARGE AREA. ENSURE THAT THE DISCHARGED WATER DOES NOT CAUSE EROSION OR OTHER DAMAGE TO ADJACENT LANDS.
 - a. EXCAVATION SHALL BE PROTECTED FROM DAMAGE AND COLLAPSE. PROTECT SLOPES AND BANKS AND PERFORM ALL WORK IN ACCORDANCE WITH SHORE AND BRACE EXCAVATIONS. PROTECT SLOPES AND BANKS AND PERFORM ALL WORK IN ACCORDANCE WITH ONTARIO REGULATION 639 UNDER THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND OTHER AUTHORITIES HAVING JURISDICTION.

- KEEP EXCAVATIONS FREE OF WATER WHILE WORK IS IN PROGRESS. PROTECT OPEN EXCAVATIONS AGAINST FLOODING AND DAMAGE DUE TO SURFACE RUN-OFF.
- EXCAVATION MUST NOT INTERFERE WITH BEARING CAPACITY OF ADJACENT FOUNDATIONS.
- DO NOT OBSTRUCT FLOW OF SURFACE DRAINAGE OR NATURAL WATERCOURSES.
- EARTH BOTTOMS OF EXCAVATIONS TO BE UNDISTURBED SOIL LEVEL, FREE FROM LOOSE, SOFT OR ORGANIC MATTER.
- ALL STRUCTURES WITHIN PAVED AREAS SHALL HAVE 4:1 FROST TAPERS FROM FROST LINE TO SUB-GRADE.
- CORRECT OVER-EXCAVATION WITH GRANULAR A COMPACTED TO NOT LESS THAN 95% OF CORRECTED MAXIMUM DRY DENSITY.
- SUB-GRADE AND AREAS TO BE BACKFILLED TO BE FREE FROM DEBRIS, SNOW, ICE, WATER AND FROZEN GROUND.
- BEDDING AND SURROUND MATERIAL FOR SEWERS SHALL BE OPSS GRANULAR A. BEDDING AND SURROUND MATERIAL FOR WATERMAIN AND WATER SERVICE CONNECTIONS SHALL BE OPSS GRANULAR A OR OPSS GRANULAR M. RE-CYCLED GRANULAR MATERIALS SHALL BE USED.
- PIPE BEDDING SHALL BE 150mm THICK. SHAPE BED TRUE TO GRADE AND TO PROVIDE CONTINUOUS, UNIFORM BEARING SURFACE FOR PIPE.
- PLACE SURROUND MATERIAL AROUND PIPES TO FULL WIDTH OF TRENCH AND TO 300mm ABOVE PIPES.
- PLACE BEDDING AND SURROUND MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS.
- PLACE FILL AND BACKFILL MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS.
- DO NOT EXCEED MAXIMUM JOINT DEFLECTION RECOMMENDED BY PIPE MANUFACTURER.
- DO NOT BACKFILL AROUND OR OVER CAST-IN-PLACE CONCRETE WITHIN 24 HOURS AFTER PLACING OF CONCRETE.
- BACKFILL MATERIALS WITHIN 1.8m OF PROPOSED GRADE SHALL MATCH THE MATERIALS EXPOSED ON THE TRENCH WALLS. BACKFILL BELOW 1.8m OF THE PROPOSED GRADE SHALL CONSIST OF EITHER ACCEPTABLE NATIVE MATERIAL; ROCK; OR IMPORTED GRANULAR MATERIAL CONFORMING TO OPSS GRANULAR B TYPE I OR II. ANY ORGANIC SOILS OR TOPSOIL, IF ENCOUNTERED, SHALL BE REMOVED FROM THE EXCAVATION. IF ROCK IS USED AS BACKFILL IT SHALL BE WELL SHATTERED AND NOT EXCEED 150mm IN MAXIMUM SIZE. PREVENT OVERSTRESS OF THE UPPER SURFACE OF THE ROCK FILL SHALL BE COVERED WITH 150mm LAYER OF COMPACTED, WELL GRADED CRUSHED STONE PLACED ON GEOTEXTILE FABRIC.
- 5.11 PIPES:
 - A. HANDLE PIPE USING METHODS APPROVED BY MANUFACTURER.
 - B. LAY, CUT AND JOIN PIPES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - C. USE ONLY FITTINGS AS RECOMMENDED BY PIPE MANUFACTURER. ENSURE BARREL OF EACH PIPE IS IN CONTACT WITH SHAPED BED THROUGHOUT ITS FULL LENGTH, FREE OF SACS OR HIGH POINTS.
 - D. DO NOT EXCEED MAXIMUM JOINT DEFLECTION RECOMMENDED BY PIPE MANUFACTURER.
 - E. WHENEVER WORK IS SUSPENDED, INSTALL REMOVABLE WATERTIGHT BULKHEAD AT OPEN END OF LAST PIPE LAID TO PREVENT ENTRY OF FOREIGN MATERIALS.
 - G. WHEN STOPPAGE OF WORK OCCURS, BLOCK PIPES TO PREVENT CREEP DURING DOWN TIME. MAKE WATERTIGHT CONNECTIONS. MANHOLES STRUCTURALLY SOUND AND WATERTIGHT.
 - I. REPAIR OR REPLACE PIPE, PIPE JOINT OR BEDDING FOUND DEFECTIVE.
- 5.12 SEWERS AND SEWER SERVICES:
 - A. CONSTRUCT SEWER TRENCHES AS PER CITY DWG S6 & S7.
 - B. RIGID STRUCTURES. INSTALL PIPE JOINTS NOT MORE THAN 1.2M FROM SIDE OF STRUCTURE.
 - C. MAINTAIN EXISTING SEWAGE FLOWS DURING CONSTRUCTION.
 - D. MAINTAIN EXISTING SEWAGE FLOWS THROUGHOUT CONSTRUCTION. MAINTAIN EXISTING SEWERS SPECIFICALLY. THE LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410. REPAIR AND RETEST SEWER LINE AS REQUIRED. REPAIR VISIBLE LEAKS REGARDLESS OF TEST RESULTS.
 - E. CONDUCT TWO CCTV INSPECTIONS OF SEWERS. FIRST INSPECTION AFTER COMPLETION OF CONSTRUCTION. SECOND INSPECTION IMMEDIATELY PRIOR TO END OF WARRANTY PERIOD. A PAN AND TILT CAMERA SHALL BE USED. REPAIR SEWER LINE AS REQUIRED. SUBMIT REPORTS AND DVDS TO ENGINEER.
 - F. CONDUCT DYE TEST OF SANITARY SEWERS AND COORDINATE WITH ENGINEER. DYE TEST SHALL BE WITNESSED BY ENGINEER.
- 5.13 MAINTAIN RECORD DRAWINGS AND RECORD ACCURATELY DEVIATIONS FROM THE ORIGINAL CONTRACT DOCUMENTS CAUSED BY SITE CONDITIONS AND CHANGES MADE BY CHANGE ORDER OR ADDITIONAL INSTRUCTIONS. UPDATE DAILY AND MAKE AVAILABLE ON-SITE FOR REVIEW THROUGHOUT THE CONSTRUCTION PERIOD. MARK CHANGES IN RED INK. RECORD DRAWINGS SHALL INCLUDE BUT NOT NECESSARILY LIMITED TO CHANGES OF DIMENSION AND DETAIL; CHANGES TO GRADE ELEVATIONS; AND HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND SERVICES, UTILITIES AND APPURTENANCES REFERENCED TO GRID COORDINATES. RECORD DRAWINGS SHALL BE PREPARED BY A SURVEYOR TO THE ENGINEER AT THE END OF CONSTRUCTION.
- 5.14 CONCRETE CURBS SHALL BE CONSTRUCTED TO CITY OF OTTAWA DRAWING No. SC1.1.
- 5.15 WHETHER RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE PRODUCTS OR DAMAGE, DEFECTIVE PORTIONS OF CURBS AND ASPHALT SHALL BE CORRECTED OR REMOVED AND REPLACED. PROMPTLY MAKE GOOD OTHER CONTRACTOR'S WORK DAMAGED BY SUCH REMOVALS OR REPLACEMENTS.
- 5.16 REINSTATE ALL AREAS DISTURBED BEFORE CONSTRUCTION. REINSTATE LANDSCAPED AREAS TO THE CONDITION AND ELEVATION WHICH EXISTED BEFORE CONSTRUCTION.
- 5.17 CLEAN AND REINSTATE AREAS AFFECTED BY THE WORK.



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