

1.1. USE BAR SCALE TO CONFIRM ACTUAL PLOT SCALE. EXISTING AND NEW ELEVATIONS AND INVERTS SHOWN ARE GEODETIC AND ARE IN METERS. ALL PIPE DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

1.2. UNLESS OTHERWISE STATED "ENGINEER" REFERS TO D. B. GRAY ENGINEERING INC.

1.3. EXISTING ELEVATIONS AND LOCATIONS, INVERTS AND SIZES OF EXISTING SERVICES AND UTILITIES ARE NOT NECESSARILY SHOWN ON PLAN AND THOSE SHOWN ARE DERIVED FROM AVAILABLE INFORMATION AND MUST BE CONFIRMED ON SITE BEFORE COMMENCING CONSTRUCTION. REPORT ANY DIFFERENCES TO THE ENGINEER. UNDERGROUND LOCATES (INCLUDING ONTARIO ONE CALL: 1-800-400-2255) SHALL BE CONDUCTED PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION.

1.6 REFERENCE THE LATEST REVISION AND ALL ADDENDUMS OF THE GEOTECHNICAL INVESTIGATION BY PATERSON GROUP INC. REPORT NO. P05364-1. SITE PREPARATION INCLUDING BUILDING SUB-GRADE PREPARATION AND CONSTRUCTION OF THE PAVEMENT STRUCTURE AND
1.7 DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SERVING BRIEF & STORM WATER MANAGEMENT REPORTS Nos. 20045A, 20045B AND 20045C PREPARED BY D. B. GRAY ENGINEERING INC.

2. EROSION AND SEDIMENT CONTROL PLAN

c. all proposed grassed areas are either sodded or have a full coverage of well established turf and have had a minimum of one full growing season (may 15th to september 15th).

3. GRADING & DRAINAGE

4. SITE SERVICES

4.4.4 PROVIDE A MINIMUM 2.4 m COVER OVER WATER SERVICE CONNECTIONS, WHERE THE MINIMUM COVER IS NOT POSSIBLE INSULATE AS PER CITY OF

4.7. 50mm water service connections installed parallel to a sewer shall be laid with a minimum 2.5m barrel to barrel horizontal separation from the sewer. Sewer connections installed parallel to a sewer connection within 2.5 m horizontal distance of a sewer 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.

THE VALVE.
4.8 SEWER SERVICE LATERAL SHALL HAVE A MINIMUM 2.0m OF COVER OR SHALL BE INSULATED AS PER DETAIL.
4.9 INSTALL CLEANOUTS ON THE STORM BUILDING DRAIN AND SANITARY BUILDING DRAIN AS CLOSE AS PRACTICAL TO THE WHERE THE SANITARY AND STORM DRAINS LEAVE THE BUILDING.

SEWER, S111.1 (FLEXIBLE MAIN SEWER).
4.12 ALL SEWER MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS & OPSD). SEWER MATERIAL SHALL BE PVC OR REINFORCED CONCRETE. PVC SEWERS SHALL BE SDP-35 (SDP-28 FOR DIAMETERS 150mm OR LESS) AND SHALL CONFORM TO CSA B182.2 AND SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS. REINFORCED CONCRETE SEWERS SHALL CONFORM TO CSA A272.2. SOILD WITH RUBBER GASKETS TO CSA A271.3.
CSA A272.2 26mm SUBSTANCES THAT CAN CAUSE INTERIOR SURFACE TO BE UNDERMINED SMOOTH WALLED WITH EITHER SOCK POCE 2000 OR EQUIV
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A. PRECAST MANHOLE UNITS: TO OPSS 1351 AND OPSD 701.010 WITH BASE SLAB OR MONOLITHIC BASE. TOP SECTIONS ECCENTRIC CONE OR FLAT LAB TOP TYPE WITH OPENING OFFSET FOR VERTICAL LADDER INSTALLATION.

D. PRECAST CONCRETE BASIN SECTIONS: 10' UP-33' 1/2".
E. JOINTS: SHALL BE MADE WATERTIGHT USING BUTYL-BASED, FLEXIBLE WATERSTOP/JOINT SEALANT MATERIAL.
F. SANITARY SEWERS: BENCH TO PROVIDE A SMOOTH U-SHAPED CHANNEL PER OPD 701.021. SLOPE INVERT TO ESTABLISH SEWER GRADE.
G. SPECIAL CONCRETE: CONCRETE SHALL BE 3000 PSI COMPRESSIVE STRENGTH, 100% AIR ENTRAINMENT, 5% CHLORIDE, AND 100% CEMENTATION.

I. GRANULAR BEDDING AND BACKFILL: OPSS GRANULAR A. RE-CYCLED GRANULAR MATERIALS ARE NOT PERMITTED.

4.17 RAINWATER LEADERS INSIDE BUILDING SHALL BE CONSTRUCTED WITH PVC PIPE WITH WELDED JOINTS AND THE CLEANOUTS SHALL HAVE WATERTIGHT GASKETS. THE SYSTEM SHALL BE CONSTRUCTED TO WITHSTAND THE PRESSURE FROM A WATER COLUMN APPROXIMATELY 12.5m HIGH.

4.18 ALL INLET CONTROL DEVICES (ICDs) SHALL BE PLUG STYLE WITH A ROUND ORIFICE (WITH THE ORIFICE LOCATED AT THE BOTTOM OF THE PLUG) MANUFACTURED BY PEDRO PLASTICS (OR APPROVED EQUAL) AND SIZED BY THE MANUFACTURER FOR A DISCHARGE RATE AS INDICATED ON PLAN. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO ENGINEER FOR APPROVAL.

5.1 PRIOR TO COMMENCING WORK:

- OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES.
- SIZE, DEPTH AND LOCATION OF EXISTING SERVICES, UTILITIES AND STRUCTURES AS INDICATED ON THE DRAWINGS ARE FOR GUIDANCE ONLY. ALL EXISTING SERVICES, UTILITIES AND STRUCTURES SHALL BE IDENTIFIED BY THE ENGINEER. THE ENGINEER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES.
- 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 SURVEY. EXCAVATIONS AND REPORT ANY DIFFERENCES TO THE ENGINEER.
- EXISTING GRADE ELEVATIONS INDICATED ON THE DRAWINGS ARE FOR GUIDANCE ONLY. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. CONFIRM EXISTING GRADE ELEVATIONS AND LOCATIONS OF SERVICES AND UTILITIES PRIOR TO EXCAVATION.
- CONDUCT ALL EXCAVATIONS AND SERVICES UNDER THE CLOSE SUPERVISION OF THE ENGINEER.
- COORDINATE AND SCHEDULE WORK WITH THE AUTHORITIES TO AVOID MINIMUM DISRUPTION TO SERVICES.
- SCHEDULE WORK TO PROVIDE THE MINIMUM DISRUPTION TO SERVICES.

5.7 CUT Pavement and / or Sidewalk Neatly Along Limits of Proposed Excavation in Order that Surface may Break Evenly and Cleanly.
5.8 Coordinate and Pay for Geotechnical Inspections and Compaction Tests of Sub-Grade, Pipe Bedding and Each Layer of Surrounding Material, Backfill, Sub-Bottom, Base, and Spall to the Satisfaction of the Geotechnical Consultant and Engineer. Submit Geotechnical Report to the Consultant.
5.9 Cut and Fill as Necessary to Achieve the Required Sub-Grade Elevation. Dispose of Surplus and Unsuitable Excavated Material Off Site. Fill Material and the Placement and Compaction of the Fill Material as per the Geotechnical Report and to the Satisfaction of the Geotechnical Consultant. Stockpile Granular and Fill Materials in Manner to Prevent Segregation and Protect from Contamination.

- C. EXCAVATION MUST NOT INTERFERE WITH BEARING CAPACITY OF ADJACENT FOUNDATIONS.
- D. DO NOT OBSTRUCT FLOW OF SURFACE DRAINAGE OR NATURAL WATERCOURSES.
- E. EXCAVATE TO LINES, GRADES, ELEVATIONS AND DIMENSIONS AS INDICATED.
- F. EARTH BOTTOMS OF EXCAVATIONS TO BE UNDISTURBED SOIL, LEVEL, FREE FROM LOOSE, SOFT OR ORGANIC MATTER.
- G. ALL STRUCTURES WITHIN PAVED AREAS SHALL HAVE 4:1 FROST TAPERS FROM FROST LINE TO SUB-GRADE.
- H. CORRECT OVER-EXCAVATION WITH GRANULAR A COMPACTED TO NOT LESS THAN 95% OF CORRECTED MAXIMUM DRY DENSITY.

DO NOT USE BEDDING, SURROUND OR BACKFILL MATERIAL WHICH IS FROZEN OR CONTAINS ICE, SNOW OR DEBRIS.
 L. THE BEDDING SHALL BE SLOPED TRUE TO GRADE AND TO PROVIDE A UNIFORM BEARING SURFACE FOR PIPE.
 M. PIPE BEDDING SHALL BE SLOPED TRUE TO GRADE AND TO PROVIDE A UNIFORM BEARING SURFACE FOR PIPE.
 N. 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.

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.

H. JOINTS SHALL BE STRUCTURALLY SOUND AND WATERTIGHT.
I. REPAIR OR REPLACE PIPE, PIPE JOINT OR BEDDING FOUND DEFECTIVE.

D. PERFORM LEAK TESTS FOR QUALITY CONTROL OF ALL SANITARY 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 REPAIR DVDS TO ENGINEER.

D. MAKE EACH JOINT WATERTIGHT WITH RUBBER RING GASKETS.
E. PLACE GRANULAR BACKFILL MATERIALS IN A UNIFORM LAYERS TO COMPACTED THICKNESS OF 150mm, COMPACT TO 95% CORRECTED MAXIMUM DRY DENSITY.

5.14 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 THE ORIGINAL CONTRACT SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL. THE ARCHITECT'S REVIEW SHALL BE LIMITED TO THE SURFACE STRUCTURE. SUBMIT DRAWINGS TO ENGINEER AT THE END OF EACH CONSTRUCTION PHASE. THE ENGINEER SHALL REVIEW AND APPROVE THE SURFACE STRUCTURE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE DESIGN OF THE SUBSTRUCTURE. THE SUBSTRUCTURE SHALL BE DESIGNED BY THE ARCHITECT AND SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL. THE ARCHITECT'S REVIEW SHALL BE LIMITED TO THE SURFACE STRUCTURE. SUBMIT DRAWINGS TO ENGINEER AT THE END OF EACH CONSTRUCTION PHASE. THE ENGINEER SHALL REVIEW AND APPROVE THE SURFACE STRUCTURE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE DESIGN OF THE SUBSTRUCTURE. THE SUBSTRUCTURE SHALL BE DESIGNED BY THE ARCHITECT AND SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL. THE ARCHITECT'S REVIEW SHALL BE LIMITED TO THE SURFACE STRUCTURE.

6. PAVEMENT

OPSS GRANULAR A BASE
150mm
OPSS GRANULAR B TYPE II SUB-BASE
300mm
RE-CYCLED GRANULAR MATERIALS ARE NOT PERMITTED.

OPSS GRANULAR A BASE
150mm
OPSS GRANULAR B TYPE II SUB-BASE
450mm
ASPHALT WALKWAYS:
HL-3 FINE
50mm

ASPHALTIC CONCRETE SHALL BE PERFORMANCE GRADE PG58-34.

- 6.3 ALL EXISTING MATERIAL TO BE REMOVED SHALL BE HAULED TO A FACILITY APPROVED FOR ACCEPTING SUCH MATERIALS. REMOVE ALL MATERIALS TO THE DEPTH OF THE SUB-BASE TO THE UNDISTURBED UNDERLYING FROZEN AND THAWED SOILS. THE DISTANCE OF THE GEOLOGICAL ENGINEER'S SUPERVISOR TO BE FREE FROM SNOW, WATER, AND FROZEN GRASS COMPACT SUB-GRADE 95%.
- 6.4 CONSTRUCT GRANULAR BASE AND SUB-BASE TO DEPTH AND GRADE IN AREAS INDICATED CONSTRUCT A 3H:1V FROST TAPER IN SUB-GRADE SURFACE AS A TRANSITION BETWEEN DIFFERING PAVEMENT STRUCTURES AND BETWEEN PAVEMENT AND CURBS AND SIDEWALKS.

6.8 IN AREAS NOT ACCESSIBLE TO ROLLING EQUIPMENT, COMPACT TO SPECIFIED DENSITY WITH MECHANICAL TAMPERS.

TO BE TACK COATED SHALL BE FREE OF STANDING WATER AND CONTAMINATION SUCH AS MUD, LOOSE AGGREGATE OR DEBRIS AND SHALL BE DRY AND CLEAN WHEN THE TACK COAT IS APPLIED. TACK COAT SHALL BE PLACED SUFFICIENTLY AHEAD OF THE PAVING OPERATION TO ALLOW FOR CURING. PAVING AND CONSTRUCTION EQUIPMENT SHALL NOT BE PERMITTED ONTO THE TACK COAT UNTIL IT HAS SET. TACK COAT MATERIAL SHALL CONSIST OF SS-1 EMULSIFIED ASPHALT OILTED WITH AN EQUAL VOLUME OF WATER. THE INCLUDED MATERIAL SHALL BE ACCORDING TO CRS-1103.

INACCESSIBLE TO A ROLLER. BEVEL EDGES ADJACENT TO GRANULAR SURFACES.

6.16 DIVERT TRAFFIC AND WASTE ASPHALT TO A FACILITY APPROVED FOR ACCEPTING SUCH MATERIALS.
6.17 APPLY TRAFFIC PAINT AS IDENTIFIED ON PLAN. TRAFFIC PAINT: NON-DARKENING, HOMOGENEOUS, UNIFORM AND SMOOTH, FREE FROM SKIN, DIRT AND OTHER FOREIGN PARTICLES. APPLY TO DRY PAVEMENT SURFACE FREE FROM FROST, ICE, DUST, OIL, GREASE AND OTHER FOREIGN MATERIALS. PROTECT PAVEMENT MARKINGS UNTIL DRY.

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Drawing Title

Drawn	D.B.G
Hor. Scale	
Vert. Scale	
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