

**1.0 GENERAL**

- 1.1 USE BAR SCALE TO CONFIRM ACTUAL PLOT SCALE. EXISTING AND NEW ELEVATIONS ARE GEODETIC IN METERS. PIPE DIMENSIONS ARE NOMINAL IN MILLIMETERS UNLESS OTHERWISE NOTED.
- 1.2 "ENGINEER" REFERS TO D.B. GRAY ENGINEERING INC. UNLESS OTHERWISE NOTED.
- 1.3 SITE BOUNDARIES, EXISTING GRADE ELEVATIONS AND OTHER EXISTING FEATURES ARE DERIVED FROM TOPOGRAPHICAL PLAN PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. JOB No. E-1106-21. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED AND THAT THEIR RELATIVE ELEVATIONS AND DESCRIPTIONS AGREE WITH THE INFORMATION INDICATED ON THE DRAWINGS.
- 1.4 REFER TO ARCHITECTURAL SITE PLAN AND LANDSCAPE PLAN FOR EXACT LOCATION OF PROPOSED BUILDING, DRIVEWAYS, PARKING AREAS, CURBS, SIDEWALKS, WALKWAYS, ETC. LAYOUT SHALL BE COMPLETED BY THE CONTRACTOR AND REVIEWED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- 1.5 DRAWINGS SHALL BE READ IN CONJUNCTION WITH SITE SERVICING STUDY & STORMWATER MANAGEMENT REPORT No. 21025 PREPARED BY D.B. GRAY ENGINEERING INC.
- 1.6 REFERENCE THE LATEST REVISION OF THE GEOTECHNICAL INVESTIGATION PREPARED BY FISHER ENGINEERING PROJECT No. FE-P 22-12469. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- 1.7 CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND CURRENT CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS.
- 1.8 ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS SHALL APPLY WHERE NO CITY OF OTTAWA STANDARD SPECIFICATIONS OR DRAWINGS ARE AVAILABLE.
- 1.9 REINSTATE AREAS DISTURBED BY CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS.

**2.0 SITE SERVICING PLAN**

- 2.1 WATERMAIN, WATER SERVICE, APPURTENANCES AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CURRENT CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS. ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS SHALL APPLY WHERE NO CITY OF OTTAWA STANDARD SPECIFICATIONS OR DRAWINGS ARE AVAILABLE.
- 2.2 WATERMAIN AND WATER SERVICE MATERIAL SHALL BE PVC SDR-18, IN ACCORDANCE WITH CURRENT CITY OF OTTAWA STANDARD SPECIFICATIONS.
- 2.3 CONNECTION TO MUNICIPAL WATERMAIN SHALL BE PERFORMED BY CITY OF OTTAWA FORCES. CONTRACTOR SHALL PERFORM EXCAVATION, BACKFILL AND REINSTATEMENT.
- 2.4 PROVIDE A MINIMUM 2.4m COVER OVER WATERMAIN AND WATER SERVICE. WHERE THE MINIMUM COVER IS NOT POSSIBLE NOTIFY THE ENGINEER AND INSULATE AS PER DETAIL.
- 2.5 WATERMAIN AND WATER SERVICE INSTALLED PARALLEL TO A SEWER OR SEWER SERVICE SHALL BE INSTALLED IN A SEPARATE TRENCH WITH A MINIMUM 2.5m BARREL TO BARREL HORIZONTAL SEPARATION IN ACCORDANCE WITH MOE PROCEDURE F-6-1.
- 2.6 WATER SERVICE SHALL CROSS BELOW THE STORM SEWERS AND SANITARY SEWER SERVICE WITH A MINIMUM 500mm BARREL TO BARREL VERTICAL SEPARATION IN ACCORDANCE WITH MOE PROCEDURE F-6-1 AND CITY OF OTTAWA DRAWING No. W25. WATER SERVICE PIPE SEGMENTS SHALL BE CENTERED AT POINTS OF CROSSING SO JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE STORM SEWERS AND SANITARY SEWER SERVICE.
- 2.7 WATER METER SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. W32.
- 2.8 FIRE DEPARTMENT CONNECTION SHALL BE IN ACCORDANCE WITH OBC 3.2.5.16.
- 2.9 SEWERS, SEWER SERVICES, APPURTENANCES AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CURRENT CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS. ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS SHALL APPLY WHERE NO CITY OF OTTAWA STANDARD SPECIFICATIONS OR DRAWINGS ARE AVAILABLE.
- 2.10 SEWER AND SEWER SERVICE MATERIALS SHALL BE PVC SDR-35 FOR DIAMETERS >150mm AND SDR-28 FOR DIAMETERS ≤150mm.
- 2.11 CONNECT PROPOSED SANITARY SEWER TO EXISTING MUNICIPAL SANITARY SEWER IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S11.
- 2.12 CONNECT PROPOSED STORM SEWER TO EXISTING MUNICIPAL STORM SEWER IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S11.
- 2.13 PROVIDE A MINIMUM 2m COVER OVER SEWERS AND SEWER SERVICES. WHERE THE MINIMUM COVER IS NOT POSSIBLE NOTIFY THE ENGINEER AND INSULATE AS PER DETAIL.
- 2.14 SEWERS AND SEWER SERVICES INSTALLED PARALLEL TO A WATERMAIN OR WATER SERVICE SHALL BE INSTALLED IN A SEPARATE TRENCH WITH A MINIMUM 2.5m BARREL TO BARREL HORIZONTAL SEPARATION IN ACCORDANCE WITH MOE PROCEDURE F-6-1.
- 2.15 SEWERS AND SEWER SERVICES SHALL CROSS ABOVE THE WATERMAIN AND WATER SERVICE WITH A MINIMUM 500mm BARREL TO BARREL VERTICAL SEPARATION IN ACCORDANCE WITH MOE PROCEDURE F-6-1. SEWER AND SEWER SERVICE PIPE SEGMENTS SHALL BE CENTERED AT POINTS OF CROSSING SO JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATERMAIN AND WATER SERVICE.
- 2.16 SANITARY BUILDING DRAIN SHALL BE INSTALLED WITH NORMALLY OPEN BACKWATER VALVE IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S14.1 OR S14.2.
- 2.17 STORM BUILDING DRAIN SHALL BE INSTALLED WITH NORMALLY CLOSED BACKWATER VALVE IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S14.
- 2.18 CATCH BASINS AND MANHOLES:
  - A. PRECAST CONCRETE CATCH BASINS SHALL BE IN ACCORDANCE WITH OPSD 705.010.
  - B. PRECAST CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH OPSD 701.010.
  - C. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH OPSD 405.010.
  - D. PRECAST CONCRETE ADJUSTMENT UNITS SHALL BE IN ACCORDANCE WITH OPSD 704.010.
  - E. ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE POLYETHYLENE ANCHOR INSULATING SLEEVES.
  - F. FRAMES AND COVERS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA DRAWINGS OR ONTARIO PROVINCIAL STANDARD DRAWINGS. REFER TO CATCH BASIN & MANHOLE SCHEDULE. FRAMES AND COVERS SHALL BE PAINTED WITH ONE SHOP COAT OF ASPHALT OR TAR BASE BLACK. ALL JOINTS AND CREVICES SHALL BE THOROUGHLY COATED.
- 2.19 THE INLET CONTROL DEVICE LOCATED IN THE OUTLET PIPE OF CATCH BASIN MANHOLE CBMH-15 SHALL BE A PLUG STYLE WITH A ROUND ORIFICE LOCATED AT THE BOTTOM OF THE PLUG MANUFACTURED BY PEDRO PLASTICS OR APPROVED EQUIVALENT SIZED BY THE MANUFACTURER FOR THE RELEASE RATE INDICATED ON THE DRAWINGS. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO THE ENGINEER FOR APPROVAL.
- 2.20 RAINWATER LEADERS INSIDE BUILDING SHALL BE CONSTRUCTED TO WITHSTAND THE PRESSURE FROM A WATER COLUMN THE HEIGHT OF THE RAINWATER LEADER. PERFORM PRESSURE TESTS ON THE SYSTEMS IN ACCORDANCE WITH THE MECHANICAL ENGINEER'S INSTRUCTIONS.

**3.0 GRADING PLAN**

- 3.1 NEW GRADES SHALL MATCH EXISTING GRADES ON PROPERTY LINES. NO EXCESS DRAINAGE SHALL BE DIRECTED TOWARDS ADJACENT PROPERTIES DURING OR AFTER CONSTRUCTION. THERE SHALL BE NO ALTERATION TO EXISTING GRADES OR DRAINAGE PATTERNS ON PROPERTY LINES.
- 3.2 ENSURE ADEQUATE DRAINAGE AWAY FROM BUILDING TO CATCH BASINS. GRADING SHALL BE GRADUAL BETWEEN PROPOSED GRADE ELEVATIONS INDICATED ON THE DRAWINGS.
- 3.3 RETAINING WALLS SHALL BE SETBACK A MINIMUM 150mm FROM PROPERTY LINES. RETAINING WALLS GREATER THAN 600mm IN HEIGHT REQUIRE A GUARD. REFER TO ARCHITECTURAL SITE PLAN AND/OR LANDSCAPE PLAN.
- 3.4 WHETHER A RESULT OF POOR WORKMANSHIP OR DAMAGE DEFECTIVE GRADING SHALL BE CORRECTED.

**4.0 EROSION & SEDIMENT CONTROL PLAN**

- 4.1 THE EROSION & 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 DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO LIMITING THE AMOUNT OF EXPOSED SOIL, USING SEDIMENT CAPTURE FILTER SOCK INSERTS IN CATCH-BASINS AND CATCH-BASIN/MANHOLES AND INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY. AT MINIMUM THE CONTRACTOR SHALL INSTALL, MAINTAIN AND REMOVE THE FOLLOWING CONTROL MEASURES IN ACCORDANCE WITH NOTES 4.2 TO 4.10. PRIOR TO COMMENCING CONSTRUCTION INSTALL TERRAFIX GEOSYNTHETICS INC. SILTSACK OR APPROVED EQUIVALENT SEDIMENT CAPTURE FILTER SOCK INSERTS IN ALL EXISTING MUNICIPAL CATCH BASINS AND CATCH BASIN MANHOLES ADJACENT TO THE SITE.
- 4.3 INSTALL TERRAFIX GEOSYNTHETICS INC. SILTSACK OR APPROVED EQUIVALENT SEDIMENT CAPTURE FILTER SOCK INSERTS IN ALL NEW CATCH BASINS AND CATCH BASIN MANHOLES AS THEY ARE INSTALLED.
- 4.4 INSPECT SEDIMENT CAPTURE FILTER SOCK INSERTS AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. REPAIR OR REPLACE DAMAGED SEDIMENT CAPTURE FILTER SOCK INSERTS.
- 4.5 PRIOR TO COMMENCING CONSTRUCTION INSTALL SILT FENCE BARRIERS AS INDICATED ON THE DRAWINGS.
- 4.6 INSTALL SILT FENCE BARRIERS AROUND STOCKPILED SEDIMENT OR SOIL.
- 4.7 INSPECT SILT FENCE BARRIERS AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. REPAIR OR REPLACE DAMAGED SILT FENCE BARRIERS.
- 4.8 REMOVE ANY MATERIAL DEPOSITED ON THE PUBLIC ROAD BY SHOVELING AND SWEEPING OR VACUUMING AND DISPOSING IN A CONTROLLED AREA. DO NOT SHOVEL, SWEEP OR DISPOSE ANY MATERIAL INTO ANY STORMWATER CONVEYANCE SYSTEM.
- 4.9 REMOVE EROSION AND SEDIMENT CONTROL MEASURES WHEN CONSTRUCTION IS COMPLETE.
- 4.10 CONSTRUCTION IS CONSIDERED TO BE COMPLETE WHEN THE FOLLOWING CONDITIONS HAVE BEEN MET:
  - A. ALL STRUCTURES AND HARD SURFACES HAVE BEEN CONSTRUCTED.
  - B. ALL STOCKPILED MATERIALS HAVE BEEN REMOVED.
  - C. ALL PROPOSED GRASSED AREAS ARE EITHER SODDED OR HAVE FULL COVERAGE OF WELL ESTABLISHED TURF AND HAVE HAD A MINIMUM OF ONE FULL GROWING SEASON (MAY 15<sup>TH</sup> TO SEPTEMBER 15<sup>TH</sup>).
  - D. THERE ARE NO AREAS OF EXPOSED EARTH.

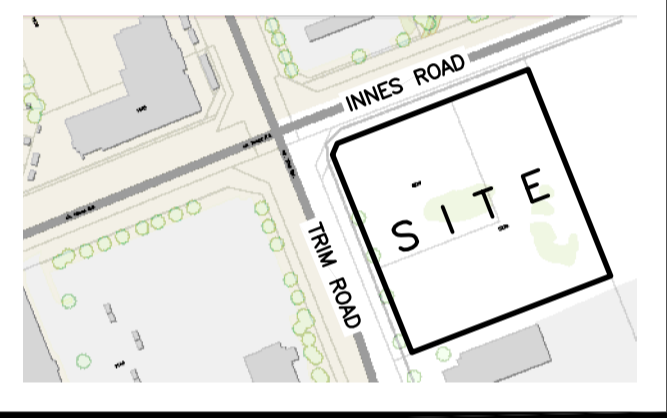
**5.0 ROOF DRAINAGE PLAN**

- 5.1 FLOW CONTROL ROOF DRAINS:
  - A. ROOF DRAINS SHALL BE INSTALLED WITH A SINGLE-PARABOLIC SLOTTED WEIR AND RELEASE 0.01242L/s/min (5USgpm/in).
  - B. ROOF DRAINS SHALL BE WATTS WITH AN ACCUTROL WEIR RD-100-A1 OR APPROVED EQUIVALENT.
  - C. OPENING AT THE TOP OF THE FLOW CONTROL WEIR SHALL BE A MINIMUM 50mm IN DIAMETER.
  - D. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO THE ENGINEER FOR APPROVAL.
- 5.2 SCUPPERS:
  - A. MINIMUM NUMBER AND WIDTH OF SCUPPERS SHALL BE AS INDICATED ON THE DRAWINGS. BOTTOM OF SCUPPERS SHALL BE 150mm ABOVE ROOF DRAINS. REFER TO ARCHITECTURAL FOR EXACT LOCATIONS AND DETAILS.
  - B. ROOF SHALL BE DESIGNED TO CARRY THE LOAD OF WATER HAVING A 50mm DEPTH AT SCUPPERS (i.e. 200mm DEPTH AT ROOF DRAINS). REFER TO STRUCTURAL.

**6.0 CONSTRUCTION**

- 6.1 PRIOR TO COMMENCING CONSTRUCTION:
  - A. OBTAIN AND BEAR THE COST OF ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
  - B. LOCATIONS, DEPTHS AND SIZES OF EXISTING INFRASTRUCTURE INDICATED ON THE DRAWINGS ARE FOR GUIDANCE ONLY. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. ALL EXISTING INFRASTRUCTURE IS NOT NECESSARILY INDICATED ON THE DRAWINGS. THOSE SHOWN ARE DERIVED FROM AVAILABLE INFORMATION AND MUST BE CONFIRMED ON SITE.
  - C. NOTIFY THE AUTHORITIES HAVING JURISDICTION.
  - D. UNDERGROUND LOCATES INCLUDING BUT NOT LIMITED TO ONTARIO ONE CALL 1-800-400-2255 SHALL BE PERFORMED. CONFIRM LOCATIONS, DEPTHS AND SIZES OF EXISTING INFRASTRUCTURE BY CAREFUL TEST EXCAVATIONS AND REPORT ANY DIFFERENCES TO THE ENGINEER. FAILURE TO DO SO WILL BE AT THE CONTRACTOR'S EXPENSE.
  - E. COORDINATE AND SCHEDULE CONSTRUCTION TO PROVIDE MINIMUM DISRUPTION TO SERVICES.
- 6.2 PROVIDE TRAFFIC CONTROL AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
- 6.3 EXCAVATION AND BACKFILL:
  - A. PROTECT EXISTING BUILDINGS, INFRASTRUCTURE, ETC. FROM DAMAGE.
  - B. SAWCUT PAVEMENT, CURBS AND SIDEWALKS NEATLY ALONG LIMITS OF PROPOSED EXCAVATIONS.
  - C. EXCAVATIONS SHALL NOT INTERFERE WITH BEARING CAPACITY OF ADJACENT FOUNDATIONS.
  - D. SUBGRADE, BEDDING, SURROUND MATERIAL AND BACKFILL SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
  - E. COORDINATE AND PAY FOR GEOTECHNICAL INSPECTIONS AND COMPACTION TESTS OF SUBGRADE AND EACH LIFT OF BEDDING, SURROUND MATERIAL AND BACKFILL. SUBMIT GEOTECHNICAL INSPECTIONS AND COMPACTION REPORTS TO THE ENGINEER.
- 6.4 PIPES AND FITTINGS:
  - A. HANDLE, CUT AND ASSEMBLE PIPES AND FITTINGS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION GUIDE.
  - B. WHETHER A RESULT OF POOR WORKMANSHIP OR DAMAGE DEFECTIVE PIPES AND FITTINGS SHALL BE REPAIRED OR REPLACED.
- 6.5 COORDINATE AND PERFORM LEAKAGE TESTS ON THE SANITARY MANHOLE, SEWER AND SEWER SERVICE IN ACCORDANCE WITH OPSS 407 AND OPSS 410 WITH THE PRESENCE OF THE ENGINEER.
- 6.6 COORDINATE AND PERFORM A DYE TEST ON THE SANITARY SEWER SERVICE WITH THE PRESENCE OF THE ENGINEER.
- 6.7 PERFORM TWO CCTV INSPECTIONS ON SEWERS AND SEWER SERVICES. FIRST INSPECTION SHALL BE WHEN CONSTRUCTION IS COMPLETE. SECOND INSPECTION SHALL BE IMMEDIATELY PRIOR TO THE END OF THE WARRANTY PERIOD. SUBMIT REPORTS AND VIDEOS TO THE ENGINEER FOR APPROVAL. REPAIR OR REPLACE DEFECTIVE SEWERS AND SEWER SERVICES.
- 6.8 CURBS AND SIDEWALKS:
  - A. CONCRETE BARRIER CURBS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. SC1.1.
  - B. WHETHER A RESULT OF POOR WORKMANSHIP OR DAMAGE DEFECTIVE CURBS AND SIDEWALKS SHALL BE REPAIRED OR REPLACED.
- 6.9 PAVEMENT STRUCTURE:
  - A. MEDIUM DUTY PAVEMENT STRUCTURE
    - 40mm HL3 ASPHALTIC CONCRETE
    - 50mm HL8 ASPHALTIC CONCRETE
    - 150mm 19 mm CRUSHED LIMESTONE
    - 200mm GRANULAR B SUBBASE
  - B. HEAVY DUTY PAVEMENT STRUCTURE
    - 40mm HL3 ASPHALTIC CONCRETE
    - 65mm HL8 ASPHALTIC CONCRETE
    - 150mm 19 mm CRUSHED LIMESTONE
    - 350mm GRANULAR B SUBBASE
  - C. COORDINATE AND PAY FOR GEOTECHNICAL INSPECTIONS AND COMPACTION TESTS OF EACH LIFT OF SUBBASE, BASE AND ASPHALTIC CONCRETE. SUBMIT GEOTECHNICAL INSPECTIONS AND COMPACTION REPORTS TO THE ENGINEER.
  - D. WHETHER A RESULT OF POOR WORKMANSHIP OR DAMAGE DEFECTIVE PAVEMENT SHALL BE REPAIRED OR REPLACED.
- 6.10 MAINTAIN AS-BUILT DRAWINGS AND RECORD DEVIATIONS INCLUDING BUT NOT LIMITED TO CHANGES OF LOCATIONS, ELEVATIONS AND SIZES FROM THE ORIGINAL CONTRACT DOCUMENTS. UPDATE DAILY AND MAKE AVAILABLE THROUGHOUT CONSTRUCTION. SUBMIT AS-BUILT DRAWINGS <PREPARED BY AN ONTARIO LAND SURVEYOR> TO THE ENGINEER WHEN CONSTRUCTION IS COMPLETE.

**KEY PLAN**



No.	DATE	REVISION
2	DEC 21-22	ISSUED FOR APPROVAL
1	DEC 19-22	ISSUED FOR COORDINATION

**D. B. GRAY ENGINEERING INC.**  
*Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermain*  
 700 Long Point Circle 613-425-8044  
 Ottawa, Ontario d.gray@dbgrayengineering.com

Project  
**PROPOSED 3-STOREY  
 DYMON STORAGE BUILDING**  
 5210 INNES ROAD  
 OTTAWA, ONTARIO

**NOTES**

NOT VALID UNLESS  
SIGNED & DATED

Engineer's Seal

Drawn D.B.G.  
 H. Scale  
 V. Scale  
 Date DEC 19-22  
 Job No. 21025

Drawing No.  
**C-4**  
 of 7