

PART 1 - GENERAL

1.1 REFERENCES

- .1 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m³).
- .2 CAN/ULC S701-11, Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.2 SHORING, BRACING AND UNDERPINNING

- .1 Protect existing building structures and services.
- .2 Engage services of qualified professional Engineer who is registered or licensed in province of Nova Scotia, in which work is to be carried out to design and inspect shoring, bracing and underpinning required for work.
- .3 Submit design and supporting data at least 2 weeks prior to commencing work.
- .4 Design and supporting data submitted to bear stamp and signature of qualified professional Engineer registered or licensed in province of Nova Scotia.

1.3 SUPPORT OF EXCAVATION

- .1 Suitably slope or properly shore sides of excavations according to site conditions, all in accordance with the Nova Scotia Occupational Health and Safety Act.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Where ever possible make use of crush aggregate which has been salvaged.
- .2 Contractor to separate and recycle waste materials in accordance with Section 01 74 19 Waste Management and Disposal and project Construction Waste Management Plan.
 - .1 A Waste Trip Log Form must be completed and submitted for all waste material removed from site.
 - .2 Weigh bills from receiving facilities, which support the Waste Trip Log Form, must also be submitted.

1.5 ON-SITE GEOTECHNICAL ENGINEER

- .1 The Departmental Representative will provide an on-site Geotechnical Engineer who will monitor the earthwork for the project and oversee the excavating, trenching and backfilling.
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PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Foundation material: crushed stone, which will pass a 75 mm sieve but will be retained on a 50 mm sieve.
- .2 Clear stone: well graded, clear stone conforming to concrete aggregate as follows:

Sieve Size	% Passing
25 mm	100
19 mm	90-100
10 mm	20-55
No. 4	0-10
No. 8	0-5
- .3 Gravel: Type 1 and Type 2 as specified in Newfoundland and Labrador of Transportation and Public Works, Standard Specification.

PART 3 - EXECUTION

3.1 BUILDING PROPER EXCAVATION

- .1 Excavate for the perimeter foundation / footings, pad footings, pits within building, including elevator, sump and radon pits.
- .2 Excavate all unsuitable soil, as per the Geotechnical Investigation Report and the on-site Geotechnical Site Engineer's recommendations.
- .3 Suitable subgrades will be confirmed by the Engineer.

3.2 TRENCH EXCAVATION

- .1 Trenches for piping, conduit, and related excavations shall be of sufficient width and depth at all points to allow pipes to be laid, joints to be formed, and appurtenant structures to be built in a workmanlike manner, and when needed, to allow for sheeting and shoring, pumping, draining, and for removing and replacing all materials unsuitable for foundations.
 - .2 Excavate trenches so pipe can be laid to the alignment and depth required. Excavation length to be not more than pipe length that can be laid and backfilled in one day. Brace and drain trench so workers may work safely and efficiently.
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3.3 BEDDING & SURROUND

- .1 Place bedding materials in uniform layers not exceeding 150 mm compacted thickness to depth as indicated.
- .2 Shape bed true to grade to provide continuous uniform bearing surface for pipe. Do not use blocks when bedding pipe.
- .3 After pipe installation, place and compact bedding to haunch line of pipe. Place and compact bedding material from haunch line of pipe to top of pipe in maximum 200 mm layers. Place remaining bedding material to 305 mm above top of pipe before further compaction. Compact to 70% Relative Density to ASTM D4254 or 95% maximum corrected dry density (Standard Proctor) as applicable.

3.4 BACKFILLING- GENERAL

- .1 Do not proceed with backfilling operation until on site geotechnical representative has inspected and approved installations.
- .2 After pipelines, and structures have been built, backfill trenches and other excavated areas with materials shown on Drawings or as specified. Remove timber and debris from excavation before backfilling is commenced. Do not cover up or put out of view any work until it has been examined, measured and approved by the Departmental Representative. If any work is covered without approval of the Departmental Representative, it must, if required, be uncovered for examination.
- .3 Do not backfill around or over cast-in- place concrete within 24 hours after placing.
- .4 Where temporary unbalanced earth pressures are liable to develop on walls or other structures, permit concrete to cure minimum 14 days or until it has sufficient strength to withstand earth and compaction pressure.

3.5 UNDERSLAB FILL

- .1 Provide structural fill up to the underside of bedding material as per the documents.
- .2 All structural fill placed within the building stress of influence, compacted to a minimum of 100% of standard Proctor maximum dry density.
- .3 Provide 150 mm of clear stone, in accordance with the Geotechnical Investigation Report, over the compacted structural fill to depth as noted on the documents.

3.6 BACKFILLING TRENCHES

- .1 Backfill trench from top of bedding to top of subgrade using materials shown on Drawings.
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- .2 Place backfill in 300 mm layers and compact to 98% standard dry density. Thoroughly compact each layer before placing next layer.
- .3 During backfilling, keep trenches free of water at all times and controlled so as to prevent surface water running into excavated areas. Remove silty materials, which become wetted and subsequently liquid or extremely plastic.
- .4 Leave surface of backfill initially high and repair settlement of trench backfilling.
- .5 Backfill trenches within the building with structural fill to 100% Standard dry Density.

END
