

1 ASSEMBLY - GENERAL

- 1.1 The work of this section includes the provision of all design, labour, materials, equipment and services required to fabricate and install standard foundations as required for a complete project. The work includes, but is not necessarily limited to, the items referenced herein:
- 1.1.1 Wall and column foundations.
 - 1.1.2 Foundation walls up to level top of slab on grade.
 - 1.1.3 Pile caps
 - 1.1.4 Backfill and compaction
 - 1.1.5 Footings and bases
 - 1.1.6 Perimeter insulation
 - 1.1.7 Perimeter drainage
 - 1.1.8 Anchor plates
- 1.2 Reference Standards: Design and do work in accordance with requirement of following codes and standards, latest edition and to requirements of local authority having jurisdiction:
- 1.2.1 Ontario Building Code, latest edition, errata, revisions and supplements.
 - 1.2.2 Local authorities having jurisdiction.
 - 1.2.3 CSA, CGSB, ASTM, ULC, CISC, CPCA and ACI
- 1.3 Subsurface investigation report prepared for this project is as follows:
- 1.3.1 Report No. *[number]*, dated *[date]*, on subsurface investigations for *[project description]*. Determine the adequacy of sub-surface investigation report and make additional investigations at no extra cost if required.
- 1.4 Inspections and testing: The *[Design Builder]* shall retain the services of an independent and testing company to carry out inspection and testing of the structural components of the building in accordance with all relevant standards including the following:
- 1.4.1 Inspection of all strip, spread and pile footings for allowable bearing capacity, founding elevation and reinforcement.
 - 1.4.2 Inspection of concrete reinforcement.

2 ASSEMBLY DESIGN CRITERIA

- 2.1 Provide foundations in accordance with structural and geotechnical engineer's recommendations for design loads and local soils conditions.
- 2.2 Sub-surface investigation report, is to be used as a guide only. It is left to the *[Design Builder]* to formulate own conclusions to extent of existing conditions and the adequacy of the report for the proper design and installation of the foundations.

- 2.3 Installation of foundations shall be provided under the inspection of a qualified professional geotechnical engineer licensed in the Province of Ontario.
- 2.4 Perimeter foundations to be constructed of reinforced concrete. Perimeter footings to be provided with proper soil frost protection. Interior footings, not requiring frost protection, shall be constructed such that top of footing is not less than 300 mm below top of slab on grade.
- 2.5 Requirements for site services to be co-ordinated with foundation design.
- 2.6 Provide foundation and under-slab drainage, complete with proper slopes, stable areas and proper compaction. Provide drainage as necessary and in accordance with the geotechnical reports, soils conditions and all authorities having jurisdiction.
- 2.7 Consider bridge piers and supports for precast concrete canopies as architectural concrete.
- 2.8 The foundations shall be designed to limit settlement of the structure and differential settlement of components of the structure to within acceptable structural design limitations.

3 ASSEMBLY COMPONENTS

- 3.1 Cast in-place concrete
 - 3.1.1 **General:**
 - 3.1.1.1 Submittals: Submit shop drawings to Owner for record purposes only. Each shop drawing submitted to bear the stamp and signature of Qualified Professional Engineer licensed to practice in the Province of Ontario as required by local authorities.
 - 3.1.1.2 Quality Assurance: Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test sample taken.
 - 3.1.2 **Design:**
 - 3.1.2.1 Design cast-in-place concrete in accordance with [CAN/CSA-A23.].
 - 3.1.2.2 Design and detail reinforcing to 'Reinforcing Steel Manual of Standard Practice', current edition, by Reinforcing Steel Institute of Ontario and as required.
 - 3.1.2.3 Do reinforcing work in accordance with [CAN/CSA A23.1-M90] and welding of reinforcing with [CSA W186-M1981], or where required otherwise.
 - 3.1.2.4 Patch and clean architectural exposed concrete surfaces as per [CAN/CSA-A23.1-M90]. Provide light sandblasting to architectural exposed concrete areas.
 - 3.1.3 **Materials / Finishes:**
 - 3.1.3.1 Reinforcing steel deformed bars to [CAN/CSA- G30.18].

- 3.1.3.2 Portland cement: to [CAN/CSA-A5].
- 3.1.3.3 Water: to [CAN/CSA-A23.1], [CAN3-A23.1 S2].
- 3.1.3.4 Aggregates: to [CAN/CSA-A23.1]. Course aggregates to be normal density.
- 3.1.3.5 Air entraining mixture: to [CAN3-A266.1].
- 3.1.3.6 Chemical admixtures: to [CAN3-A266.2].
- 3.1.3.7 Curing compound: to [CAN/CSA-A23.1].
- 3.1.3.8 Pre-moulded joint fillers: Bituminous impregnated fibreboard: to [ASTM-D1751].
- 3.1.3.9 Polyethylene film: to [CGSB 5 1 -GP-5 1]. Minimum thickness 0. 152 mm (6 mil).
- 3.1.3.10 Granular base and sub-base materials to meet requirements of O.P.P.S.
- 3.1.4 **Fabrication / Installation:**
 - 3.1.4.1 Do cast-in-place concrete work in accordance with [CAN/CSA-A23.1] and testing in accordance with [CAN/CSA-A23.2], except where required otherwise. Observe all hot and cold weather requirements of [CAN/CSA-A23.1].
 - 3.1.4.2 Finish concrete in accordance with [CAN/CSA-A23.1] and [CSA 0121].
 - 3.1.4.3 Concrete exposed to public view to have a smooth form finish.
 - 3.1.4.4 Ensure graded sub-grade conforms to required drainage patterns before placing filter bed material. Ensure improper slopes, unstable areas, areas requiring additional compaction or other unsatisfactory conditions are corrected. Ensure all foundation walls and damp-proofing has been inspected.

End of Section