Part 1 General

1.1 GENERAL CONDITIONS

.1 The General Conditions of the Contract, Supplementary General Conditions and General Requirements are hereby made part of the Section.

1.2 WORK INCLUDED

.1 Steel pipe helix screw piles as detailed.

.2 Establish and/or verify required cut-off elevations.

.3 Correct as directed all piles not meeting requirements of this specification at no expense to Owner.

.4 Leave site neat, tidy, free of plant and/or equipment and in safe condition.

1.3 RELATED WORK

.1	Concrete Reinforcement	Section 03 20 00
.2	Cast-in-Place Concrete	Section 03 30 00

1.4 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 34 00 “Shop Drawings”.

.2 Indicate applicable pile details and material grade.

Part 2 Products

2.1 MATERIALS

.1 Steel pipe: new steel pipe to ASTM A252 – 241 MPa yield strength, Standard for Welded and Seamless Steel Pipe, sizes and wall thickness as detailed.

.2 Helical plate: steel plate to CSA-G40.21-13, ASTM A36, or 44W.

Part 3 Execution

3.1 FABRICATION

.1 Submit details of planned use of pile material stock to Consultant for approval prior to start of fabrication.

.2 Repair defective welds as approved by Consultant. Repairs to CSA W59 and CSA W59S1. Unauthorized weld repairs may be rejected.

3.2 INSTALLATION

.1 Prior to installation, ensure all underground services have been located, marked and identified by the proper authorities.

.2 Using hydraulic drill head, install helical screw piles to depths, torques and positions as indicated on drawings or specifications.

.3 Provide torque monitoring device as part of the installation unit, or as a separate in-line device capable of recording torque or line pressure. Calibrated torque monitoring data should be made available for review by the Engineer. Torque should be monitored during the entire installation.

.4 All helical screw piles should have identification, finish, torque, finish depth and pile description recorded on an installation summary page.

.5 Torque head should be used that will install the piles without exceeding the maximum allowable torque of the pile shaft as indicated in the table below:

Pile Shaft Diameter (mm)	Wall Thickness (mm)	Maximum Torque (kNm/FTlbs)
140	7.0	59 (43,600)

.6 If obstructions present a problem, the obstruction must be removed or the pile relocated. Contact Engineer regarding the obstructions and pile relocations.

.7 Helical screw piles that reach maximum torque rating before reaching minimum indicated depth shall be terminated at depth with written approval of the Engineer.

.8 Minimum embedment length to be 4500 mm.

.9 Fill steel pipe with concrete using methods to limit free fall and to prevent segregation. Ensure adequate vibration to completely fill cross section of pipe.

.10 Install concrete in accordance with Section 03 30 00 “Cast-In-Place Concrete”.

.11 Set dowels in concrete in accordance with details as indicated on the drawings. Secure until concrete is set.

3.3 WELDING

.1 Weld in accordance with CSA W59 and CSA W59.1.

END OF SECTION