PART 1 - GENERAL

1.1 REFERENCES

.1 Section 31 09 16.01 – Pile Driving Template.

.2 Section 31 63 19.13 – Rock Sockets for Piles.

.3 Section 31 61 13 – Pile Foundation, General Requirements.

.4 Section 05 50 00 – Metal Fabrications.

1.2 SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

.2 Product data: submit manufacturer's printed product literature, specifications and datasheet.

.3 Submit shop drawings and indicate: tip reinforcement. Each drawing stamped and signed by professional engineer registered or licensed in Province of Newfoundland and Labrador, Canada.

.4 Quality Assurance: test reports: Prior to fabrication, and, if requested, provide Departmental Representative with two copies of steel producer's certificates in accordance with ASTM A252. Provide one Charpy V-notch test required per heat and results reported to Departmental Representative by manufacturer.

.5 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.3 MEASUREMENT FOR PAYMENT

.1 Steel piles (socketed) bearing: Measurement of the socketed bearing steel pipe piles will be by the linear metre (LM) of piling

installed. Include all labour, plant and equipment (casings, grouting, reinforcing steel, clean-out, drilling, camera inspection, etc.). Supply length (as indicated on the drawings) not installed will be paid at the supply cost of materials only.

.2 Steel piles (socketed) batter: Measurement of the socketed batter steel pipe piles will be by the linear metre (LM) of piling installed. Include all labour, plant and equipment (casings, grouting, reinforcing steel, clean-out, drilling, camera inspection, etc.). Supply length (as indicated on the drawings) not installed will be paid at the supply cost of materials only.

.3 Sockets measured under Section 31 63 19.13 – Rock Sockets for Piles

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Steel pipe: rolled and welded of sizes and wall thicknesses indicated, machine cut ends to API SPEC 5L, A572 Grade 50.

.2 Pipe material to have following minimum properties:
- .1 Yield strength: 345 MPa.
- .2 Weldable steel: to ASTM A106/ASTM A106M carbon equivalent less than 0.55%.

.3 Pipe chemical composition: to ASTM A252.

.4 Pipe allowable tolerances:
- .1 Deviation from straight line, specified diameter, wall thickness and out-of-roundness on body of pipe and at pipe ends to conform to API SPEC 5L.
- .2 Pipe to be checked for deviations before leaving mill.

.5 Pile tip reinforcement: to CSAG40.20/G40.21, Grade 300W.

.6 Splices: to CSA-G40.20/G40.21, Grade 300W.

.7 Steel wales: to CSAG40.20/G40.21, Grade 300W.
.8 Welding electrodes: to CSA W48 series.
.9 Concrete: in accordance with Section 03 30 00 - Cast-in-Place Concrete.
.10 Reinforcing steel: in accordance with Section 03 20 00 – Concrete Reinforcing, sizes and details as indicated.

PART 3 - EXECUTION

3.1 FABRICATION

.1 Fabricate full length piles to eliminate splicing during installation wherever possible.
.2 Submit details of planned use of pile material stock to Departmental Representative for approval prior to start of fabrication.
.3 Allowable tolerance on axial alignment to be 0.25% as measured by 3 m straight edge.
.4 Allowable deviation from straight line over total length of fabricated pile to be 20 mm.
.5 Install pile tip reinforcement as indicated.
.6 Repair defective welds as approved by Departmental Representative.
.1 Repairs: to CSA W59.
.2 Unauthorized weld repairs may be rejected.

3.2 GENERAL

.1 Perform internal visual inspection of steel pipe, joints and base prior to placing of concrete.
.2 Ensure pipe inside is free from foreign matter.
.3 Clean out pipe pile to bedrock before placing of reinforcement or concrete.
.4 Assemble and install reinforcement cages as indicated.
.5 Install concrete in accordance with Section 03 30 00 - Cast-in-Place Concrete and Section 03 37 26 – Underwater Placed Concrete.
.6 Fill steel pipe pile with concrete or grout using methods to limit free fall and to prevent segregation. Ensure adequate vibration to completely fill cross section of pipe.