Part 1 General

1.1 Description of work

.1 The work included in this section includes the supply and installation on a concrete culvert pipe as a road drain at Effies Brook Bridge as shown on Drawing 3.

1.2 MEASUREMENT AND PAYMENT

.1 Measure supply of pipe culvert in metres for each location

1.3 REFERENCES

.1 ASTM International

.1 ASTM C14M-07(2012), Standard Specification for Nonreinforced Concrete Sewer, Storm Drain and Culvert Pipe (Metric).

.2 ASTM C76M-10a, Standard Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe (Metric).

.2 CSA International

.1 CSA A3000-08, Cementitious Materials Compendium.

.2 CSA A257 Series-09, Standards for Concrete Pipe and Manhole Sections.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit manufacturer's instructions, printed product literature and data sheets for pipes and backfill and include product characteristics, performance criteria, physical size, finish and limitations.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Store materials in accordance with manufacturer's recommendations.

.2 Store and protect pipes from damage.

.3 Replace defective or damaged materials with new.

Part 2 Products

2.1 CONCRETE PIPE

.1 Reinforced concrete pipe: to CSA A257 600 mm diameter, strength classification 3.

.2 Cement mortar joint filler:

.3 Portland cement: to CSA A3000 Ype 10.

.4 Sand: to ASTM C144.

.5 Mortar: one part by volume of cement to two parts of clean, sharp sand mixed dry. Add sufficient water after mixing to give optimum consistency for hand application.

2.2 GRANULAR BEDDING

.1 Granular bedding and backfill material to N.S.T.I.R Division 3 Section 2 - type 3 gravel

.2 Gravel to be used for bedding and outfall.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for pipe culvert installation in accordance with manufacturer's written instructions.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

3.2 PREPARATION

.1 Temporary Erosion and Sedimentation Control:

.2 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff into brook

.3 Remove erosion and sedimentation controls after disturbed areas have been stabilized

3.3 BEDDING

.1 Dewater excavation, as necessary, to allow placement of culvert bedding in dry condition.

.2 Place 200 mm minimum thickness of approved granular material on bottom of excavation and compact to 95% minimum of maximum density to ASTM D698.

.3 Shape bedding to fit lower segment of pipe exterior so that width of at least 50% of pipe diameter is in close contact with bedding and to camber as indicated free from sags or high points.

3.4 LAYING CONCRETE PIPE CULVERTS

.1 Begin at downstream end of culvert with flanged end of first pipe section facing upstream.

.2 Ensure barrel of each pipe is in contact with shaped bed throughout its length.

.3 Allow water to flow through pipes during construction only as permitted by Departmental Representative.

3.5 JOINTS: CONCRETE PIPE CULVERTS

.1 Joints may be made with rubber gaskets, bituminous jointing compound or Portland cement mortar.

.2 Bituminous filled joint:

.1 Make joint with excess of filler to form continuous bead around outside of pipe and finish smooth on inside.

.2 Place mortar in lower half of flanged end of pipe section in place.

3.6 BACKFILLING

.1 Backfill around pipe to level as shown on dwg 3

END OF SECTION