

PWGSC	Pipe Culverts	Section 33 42 13
Gros Morne National Park		Page 1
Highway 430 Realignment, Deep Cove		
Project NO. R.062334.001		2014-02-10

## PART 1 - GENERAL

<u>1.1 Related Sections</u>	.1	Roadway Embankments: Section 31 24 13
	.2	Rip Rap: Section 31 37 00
	.3	Granular Sub-base: Section 32 11 19
	.4	Granular Base: Section 32 11 23
	.5	Hot Mix Asphalt Concrete Paving: Section 32 12 16
<u>1.2 References</u>	.1	AASHTO M36-03(R2011), Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains.
	.2	AASHTO M274-87(R2012), Standard Specification for Steel Sheet, Aluminum Coated (Type 2) for Corrugated Steel Pipe.
	.3	ASTM A760-2010, Standard Specification for Corrugated Steel Pipe, Metallic Coated for Sewers and Drains.
	.4	ASTM A929-2007, Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe.
	.5	ASTM C14M-2011, Standard Specification for Concrete Sewer, Storm Drain and Culvert Pipe.
	.6	ATM C117-2013, Standard Test Method for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
	.7	ASTM C136-2006, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
	.8	ASTM C144-2011, Standard Specification for Aggregate for Masonry Mortar.
	.9	ASTM D698-2012, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m3).
	.10	CSA A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction.

- .11 CSA G30.18-09, Billet-Steel Bars for Concrete Reinforcement.
- .12 CSA G401-2013, Corrugated Steel Pipe Products.

### 1.3 Samples

- .1 Submit samples in accordance with Section 01 33 00- Submittal Procedures.
- .2 Inform Departmental Representative at least four (4) weeks prior to commencing work, of proposed source of bedding materials and provide access for sampling.

### 1.4 Material Certification

- .1 Submit manufacturer's test data and certification at least four (4) weeks prior to commencing work.
- .2 Mark certification on pipe.

### 1.5 Delivery, Storage and Handling

- .1 Deliver, store and handle materials in accordance with Product Requirements or TPW standards.

### 1.6 Waste Management and Disposal

- .1 Separate and recycle waste materials as indicated by Departmental Representative.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Safely seal and store emptied containers and dispose of waste materials daily.

## PART 2 - PRODUCTS

### 2.1 Pipe

- .1 Water-tight cut-off collars: as indicated.
- .2 Gasketed pipe only.
- .3 CSP to Newfoundland Specifications, 2.8mm thickness, Aluminized Type II or double zinc coated.

- |  |    |   |
|--|----|---|
| <u>2.2 Granular Bedding and Backfill</u> | .1 | Granular bedding and backfill material to 31 05 17 - Aggregates: General.       |
|  | .2 | Use sub-base bedding for pipe culvert bedding as specified in Section 32 11 19. |

- |                    |    |                      |
|--------------------|----|----------------------|
| <u>2.3 Rip-Rap</u> | .1 | To Section 31 37 00. |
|--------------------|----|----------------------|

### PART 3 - EXECUTION

- |                      |    |   |
|----------------------|----|---|
| <u>3.1 Trenching</u> | .1 | Obtain Departmental Representative's approval of trench line and depth prior to placing bedding material or pipe. |
|----------------------|----|---|

- |                    |    |  |
|--------------------|----|--|
| <u>3.2 Bedding</u> | .1 | Dewater excavation, as necessary, to allow placement of culvert bedding in the dry.  |
|                    | .2 | Place minimum thickness of 200 mm of approved granular material on bottom of excavation and compact to minimum 100% maximum density to ASTM D 698.   |
|                    | .3 | Shape bedding to fit lower segment of pipe exterior so that width of at least 25% of pipe diameter is in close contact with bedding and to camber as indicated or as directed by Departmental Representative, free from sags or high points. |
|                    | .4 | Place bedding in unfrozen condition.   |

- |  |    |  |
|--|----|--|
| <u>3.3 Laying Corrugated Steel Pipe Culverts</u> | .1 | Commence pipe placing at downstream end.   |
|  | .2 | Keep bottom of pipe is in contact with shaped bed or compacted fill throughout its length.                           |
|  | .3 | Lay pipe with outside circumferential laps facing upstream and longitudinal laps or seams at side or quarter points. |
|  | .4 | Do not allow water to flow through pipes during construction except as permitted by Departmental Representative.     |

