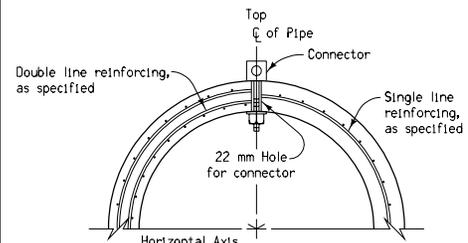
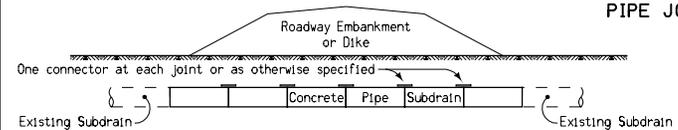


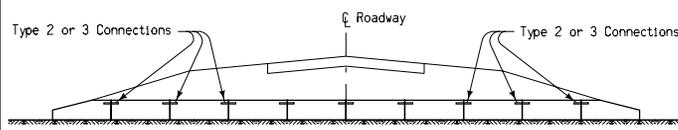
(CONCRETE PIPE TO CORRUGATED PIPE)
SECTION OF TYPICAL PIPE CONNECTOR



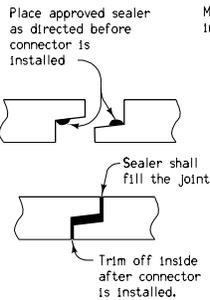
TYPICAL SECTION TYPE 1 CONNECTION (Non-Sealed Joint)



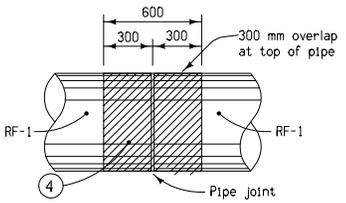
TYPICAL INSTALLATION TYPE 1 CONNECTIONS



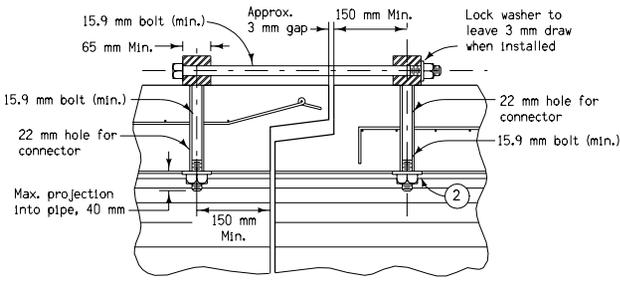
TYPICAL INSTALLATION NEW CONSTRUCTION - TYPE 2 or 3 CONNECTIONS



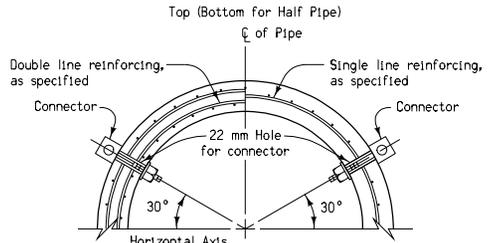
DETAILS OF SEALED JOINT (Type 2 Connection Only)



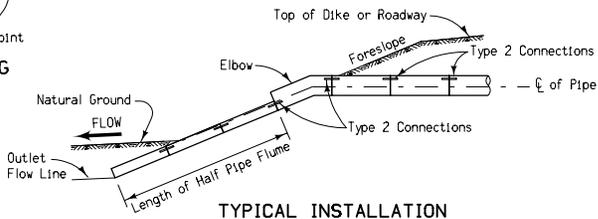
PIPE JOINT WRAPPING



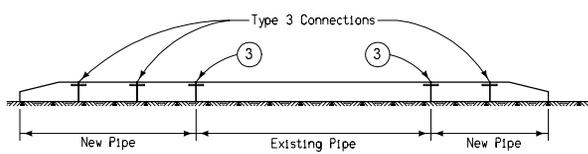
(CONCRETE PIPE TO CONCRETE PIPE)
SECTION OF TYPICAL PIPE CONNECTOR



TYPICAL SECTION TYPE 2 CONNECTION (Sealed Joint) TYPE 3 CONNECTION (Non-Sealed Joint)



TYPICAL INSTALLATION TYPE 2 CONNECTIONS



TYPICAL INSTALLATION PIPE EXTENSION - TYPE 3 CONNECTIONS

Unless otherwise specified, Type 3 Connections shall be used on all pipes.

TYPE 1

One (1) connector at the top of the pipe section. May be used with pipe class 100 D or greater.

TYPE 2

Two (2) connectors near the top of the pipe section. For details of reinforcement refer to Standard Road Plan RF-1 for the class of pipe required. The seal used shall meet the requirements of Article 4149.08 of the Standard Specifications. See Materials I.M. 491.09.

TYPE 3

Two (2) connectors near the top of the pipe section. For details of reinforcement, refer to Standard Road Plan RF-1 for the class of pipe required.

Tabulation: 104-3

- ① If holes are field drilled, place a ribbon of butyl sealant around bolts before placing 75 mm x 75 mm x 6 mm plate on bolts through corrugated metal pipe and tightening nuts.
- ② 45 mm round x 3.6 mm thick washer or 75 mm x 75 mm x 6 mm square plate (shaped to pipe radius).
- ③ On culvert extensions, all new joints shall be connected including the joint between the old and new culvert pipe, except when collars are poured. Holes may need to be drilled into existing pipes.

JOINT WRAPPING:

- All joints on concrete pipe roadway culverts shall be wrapped.
- ④ Engineering fabric for embankment erosion control.

All dimensions given in millimeters unless noted.

METRIC VERSION	M Iowa Department of Transportation Highway Division	
	STANDARD ROAD PLAN RF-14	
	REVISION: Specify Type 3 connections; add pipe joint wrapping details; change title.	REVISION NO. 11
	APPROVED BY: <i>William J. Sten</i> DESIGN METHODS ENGINEER	REVISION DATE 10-18-05
CONNECTED PIPE JOINTS		