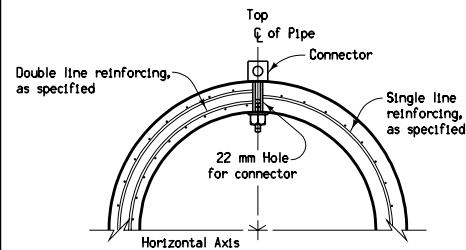
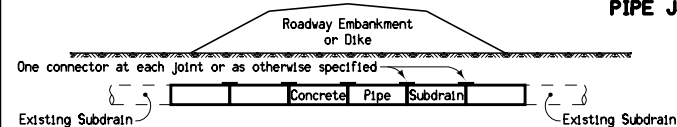


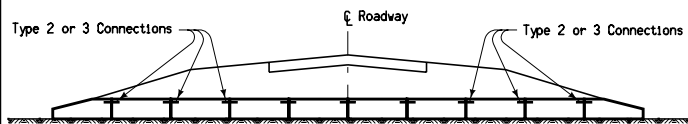
(CONCRETE PIPE TO CORRUGATED PIPE)
SECTION OF TYPICAL PIPE CONNECTOR



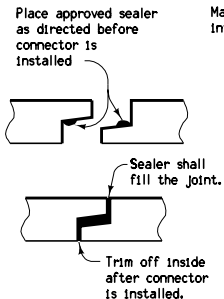
**TYPICAL SECTION
TYPE 1 CONNECTION
(Non-Sealed Joint)**



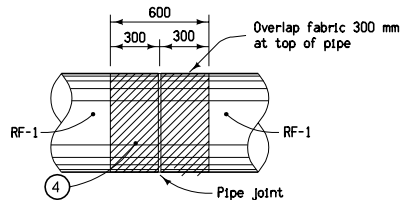
**TYPICAL INSTALLATION
TYPE 1 CONNECTIONS**



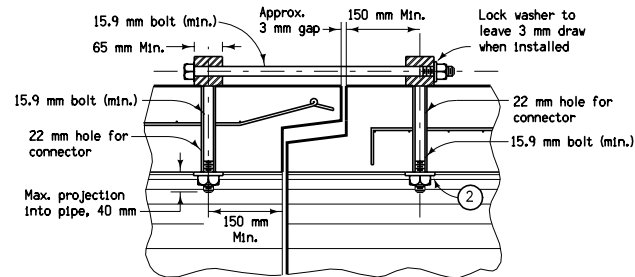
**TYPICAL INSTALLATION
NEW CONSTRUCTION - TYPE 2 or 3 CONNECTIONS**



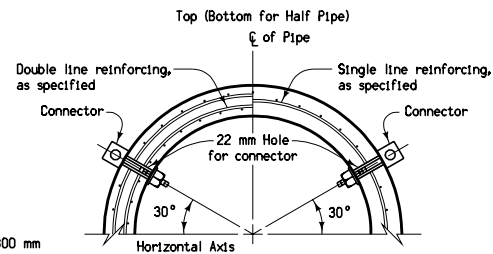
**DETAILS OF SEALED JOINT
(Type 2 Connection Only)**



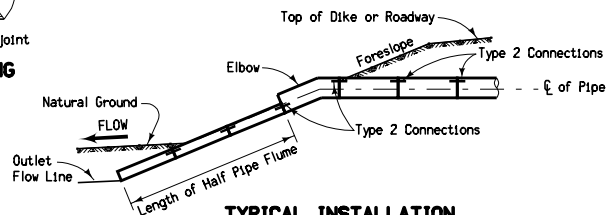
PIPE JOINT WRAPPING



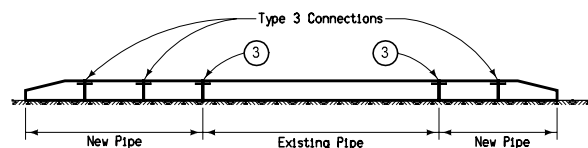
(CONCRETE PIPE TO CONCRETE PIPE)
SECTION OF TYPICAL PIPE CONNECTOR



**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 culvert pipes.

All joints on concrete roadway pipe culverts shall be wrapped.

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.

- 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.
- ④ Engineering fabric for embankment erosion control.

Tabulation: 104-3

All dimensions given in millimeters unless noted.

M	 Iowa Department of Transportation	REVISION 12 10-16-07
		RF-14
		SHEET 1 of 1
		<i>Deanna Mufsh</i> APPROVED BY DESIGN METHODS ENGINEER
METRIC VERSION	CONNECTED PIPE JOINTS	