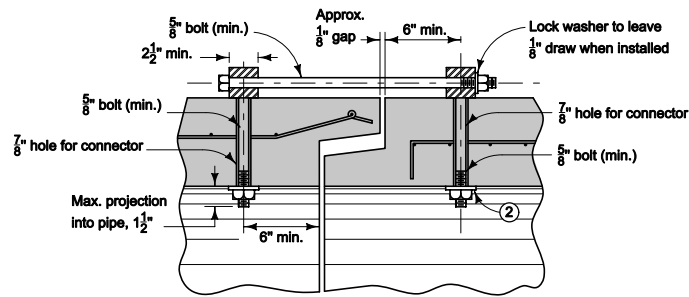
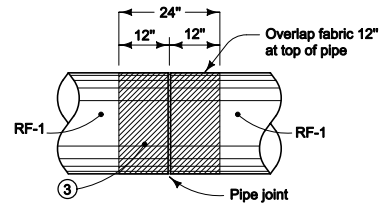


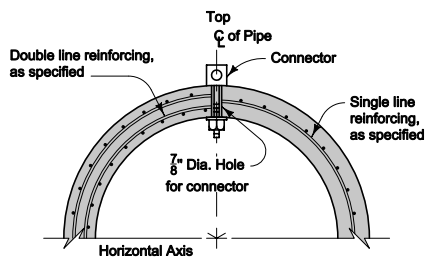
**SECTION OF PIPE CONNECTOR
(Concrete Pipe to Corrugated Pipe)**



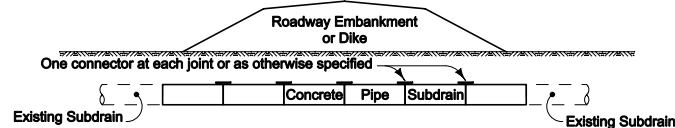
**SECTION OF PIPE CONNECTOR
(Concrete Pipe to Concrete Pipe)**



PIPE JOINT WRAPPING



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



**TYPICAL INSTALLATION
TYPE 1 CONNECTIONS**

TYPE 1 CONNECTION

Wrap all joints on concrete roadway pipe culverts.

Use type 3 Connections on all culvert pipes, unless otherwise specified.

TYPE 1

One connector at the top of the pipe section.

TYPE 2

Two connectors near the top of the pipe section. For details of reinforcement, refer to RF-1 for the class of pipe required. Refer to Materials I.M. 491.09 for seal requirements.

TYPE 3

Two connectors near the top of the pipe section. For details of reinforcement, refer to RF-1 for the class of pipe required.

- ① If holes are field drilled, place a ribbon of butyl sealant around bolts before placing 3 in. x 3 in. x 1/4 in. plate on bolts through corrugated metal pipe and tightening nuts.
- ② 1 1/4 inch round x 9/64 inch thick washer or 3 in. x 3 in. x 1/4 in. square plate (shaped to pipe radius).
- ③ Engineering fabric for embankment erosion control.

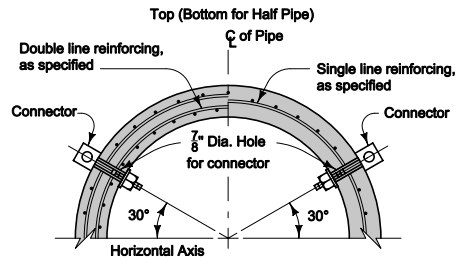
Possible Tabulation:
104-3

 Iowa Department of Transportation	REVISION	
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STANDARD ROAD PLAN		SHEET 1 of 2

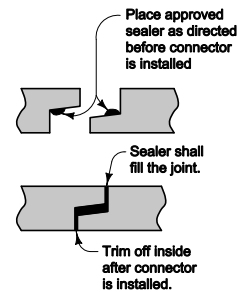
REVISIONS: Updated Materials I.M. reference in general notes. Added sheet 2.

Deanna McFalls
APPROVED BY DESIGN METHODS ENGINEER

CONNECTED PIPE JOINTS

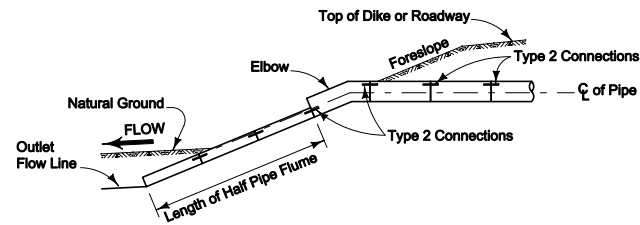


**TYPICAL SECTION
TYPE 2 CONNECTION (Sealed Joint)
TYPE 3 CONNECTION (Non-Sealed Joint)**

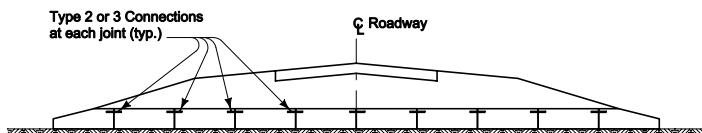


**SEALED JOINT
TYPE 2 CONNECTION**

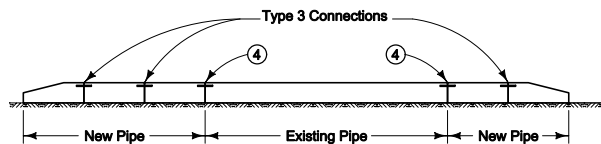
④ On culvert extensions, all new joints shall be connected including the joint between the old and new culvert pipe. Holes may need to be drilled into existing pipes.



**TYPICAL INSTALLATION
TYPE 2 CONNECTION**



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



**TYPICAL INSTALLATION
PIPE EXTENSION - TYPE 3 CONNECTION**

TYPE 2 AND TYPE 3 CONNECTIONS

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	SHEET 2 of 2		

REVISIONS: Updated Materials I.M. reference in general notes. Added sheet 2.

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CONNECTED PIPE JOINTS