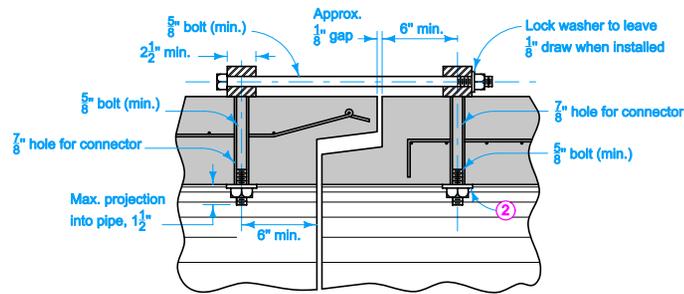
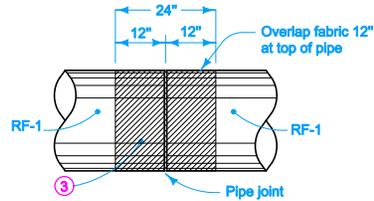


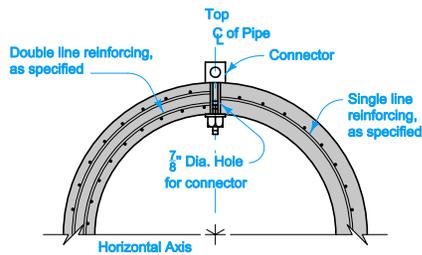
**SECTION OF PIPE CONNECTOR
(Concrete Pipe to Corrugated Pipe)**



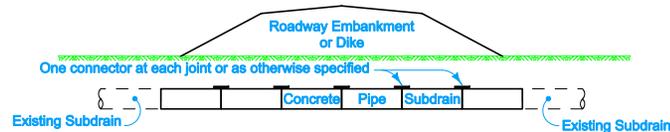
**SECTION OF PIPE CONNECTOR
(Concrete Pipe to Concrete Pipe)**



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.

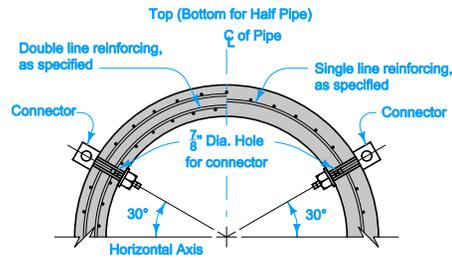
Possible Tabulation:
104-3

 Iowa Department of Transportation	REVISION	
	14	04-19-11
STANDARD ROAD PLAN	RF-14	
	SHEET 1 of 2	

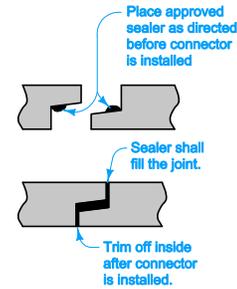
REVISIONS: Added sentence to circle note 4.

Deanna McFalls
APPROVED BY DESIGN METHODS ENGINEER

CONNECTED PIPE JOINTS

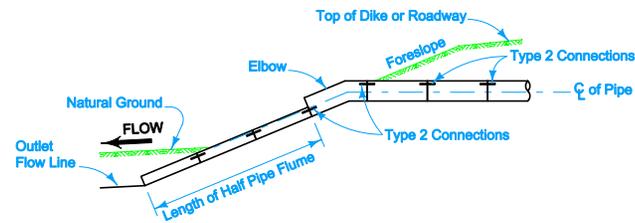


**TYPICAL SECTION
TYPE 2 CONNECTION (Sealed Joint)
TYPE 3 CONNECTION (Non-Sealed Joint)**

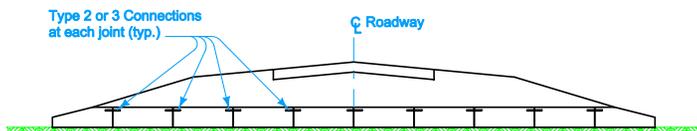


**SEALED JOINT
TYPE 2 CONNECTION**

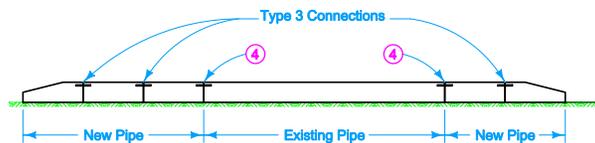
④ On culvert extensions, all new joints shall be connected including the joint between the old and new culvert pipe. Holes may need to be drilled into existing pipes. Drilling of holes will not be paid for separately.



**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

 Iowa Department of Transportation	REVISION	
	14	04-19-11
STANDARD ROAD PLAN	RF-14	
REVISIONS: Added sentence to circle note 4.		
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CONNECTED PIPE JOINTS		