NOTE:
1. Furnish metal pipe culvert, elbows, and coupling bands according to Section 602.
2. Furnish riprap for protective apron according to Section 251 & Detail C251-50.
3. Furnish hardware galvanized according to AASHO M1104.
4. Furnish geotextile filter type conforming to subsection 714.01(a). See summary tables for class and type.
5. Place pipe anchor assemblies at approximately 20' intervals along rundown portion of drain pipe.
6. Other suitable pipe anchor assemblies may be used upon approval in writing by the CO.
7. The use of the hugger band is restricted to welded spiral pipe with annular and corrugations or riveted annularly corrugated pipe.
8. Metal pipe shown is typical. Steel, aluminum, and concrete pipes as indicated on the drainage summary sheet, may be used. See note 2.
9. Join concrete pipe according to Section 602 or other methods approved by the CO.
10. Use alternate A anchor assembly only with annular corrugations. May be placed on annular or preformed end coupling band if securely fastened on downstream side of joint. Alternate B anchor assembly to be fastened to pipe sections and not to band coupler used to join sections.
11. Use gaskets on all joints along the rundown portion of drain pipe.
12. Pipe anchor assemblies will be paid for under Section 606.

PIECE MATERIALS
- 24" Pipe Culvert
- 24" pipe elbow to fit field conditions
- 24" pipe elbow to fit field conditions
- Protective apron
- Geotextile filter
- See note 2
- See note 4
- Metal pipe culvert, elbows, and coupling bands according to Section 602
- Machine bolts carriage or)
- Pipe stake (typical)
- Cable clamp
- Collar for 2" pipe
- 24" Annular coupling band
- Two piece integral flange die formed band for culvert
- 1/4" Bar
- Flatten or point
- 1 1/4" x 1/2 Bar
- Material to be 1/4" plate galvanized after fabrication
- See plate detail
- See plate detail
- Variable lengths to fit field conditions
- 20' (min.)
- 24" Annular coupling band
- Helical coupling band
- Normal CDP of Pipe
- Fill slope as staked
- Coupling bands
- Coupling band
- Pipe anchor assembly
- Pipe anchor assembly
- 6" removed portion of drain pipe.
- Furnish geotextile filter type conforming to subsection 714.01(a).
- Use alternate A anchor assembly only with annular corrugations.
- Join concrete pipe according to Section 602 or other methods approved by the CO.
- Use gaskets on all joints along the rundown portion of drain pipe.
- Pipe anchor assemblies will be paid for under Section 606.

PLATE DETAIL
- NO SCALE
- 24" RUN DOWN AND PIPE ANCHOR ASSEMBLY
- ALTERNATE A
- ALTERNATE B
- 2" x 72" Pipe stake (typical)
- 2 1/2" x 1 3/2" Bar
- Flattened or point
- 1 1/4" x 1/2 Bar
- 20' (min.)
- Variable lengths to fit field conditions
- 24" Pipe Culvert
- 1/4" Cable
- 24" End section
- Protective apron
- Geotextile filter
- See note 2
- See note 4
- Metal pipe culvert, elbows, and coupling bands according to Section 602
- Machine bolts carriage or)
- Pipe stake (typical)
- Cable clamp
- Collar for 2" pipe
- 24" Annular coupling band
- Two piece integral flange die formed band for culvert
- 1/4" Bar
- Flatten or point
- 1 1/4" x 1/2 Bar
- Material to be 1/4" plate galvanized after fabrication
- See plate detail
- See plate detail
- Variable lengths to fit field conditions
- 20' (min.)
- 24" Annular coupling band
- Helical coupling band
- Normal CDP of Pipe
- Fill slope as staked
- Coupling bands
- Coupling band
- Pipe anchor assembly
- Pipe anchor assembly
- 6" removed portion of drain pipe.
- Furnish geotextile filter type conforming to subsection 714.01(a).
- Use alternate A anchor assembly only with annular corrugations.
- Join concrete pipe according to Section 602 or other methods approved by the CO.
- Use gaskets on all joints along the rundown portion of drain pipe.
- Pipe anchor assemblies will be paid for under Section 606.

PLATE DETAIL
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- 24" Pipe Culvert
- 1/4" Cable
- 24" End section
- Protective apron
- Geotextile filter
- See note 2
- See note 4
- Metal pipe culvert, elbows, and coupling bands according to Section 602
- Machine bolts carriage or)
- Pipe stake (typical)
- Cable clamp
- Collar for 2" pipe
- 24" Annular coupling band
- Two piece integral flange die formed band for culvert
- 1/4" Bar
- Flatten or point
- 1 1/4" x 1/2 Bar
- Material to be 1/4" plate galvanized after fabrication
- See plate detail
- See plate detail
- Variable lengths to fit field conditions
- 20' (min.)
- 24" Annular coupling band
- Helical coupling band
- Normal CDP of Pipe
- Fill slope as staked
- Coupling bands
- Coupling band
- Pipe anchor assembly
- Pipe anchor assembly
- 6" removed portion of drain pipe.
- Furnish geotextile filter type conforming to subsection 714.01(a).
- Use alternate A anchor assembly only with annular corrugations.
- Join concrete pipe according to Section 602 or other methods approved by the CO.
- Use gaskets on all joints along the rundown portion of drain pipe.
- Pipe anchor assemblies will be paid for under Section 606.

PLATE DETAIL
- NO SCALE
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- Collar for 2" pipe
- 24" Annular coupling band
- Two piece integral flange die formed band for culvert
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- Flatten or point
- 1 1/4" x 1/2 Bar
- Material to be 1/4" plate galvanized after fabrication
- See plate detail
- See plate detail
- Variable lengths to fit field conditions
- 20' (min.)
- 24" Annular coupling band
- Helical coupling band
- Normal CDP of Pipe
- Fill slope as staked
- Coupling bands
- Coupling band
- Pipe anchor assembly
- Pipe anchor assembly
- 6" removed portion of drain pipe.
- Furnish geotextile filter type conforming to subsection 714.01(a).
- Use alternate A anchor assembly only with annular corrugations.
- Join concrete pipe according to Section 602 or other methods approved by the CO.
- Use gaskets on all joints along the rundown portion of drain pipe.
- Pipe anchor assemblies will be paid for under Section 606.
NOTES TO THE DESIGNER
Last Updated: August 2020

General Information
N/A

Applicable SCRs
1. None

Typical Pay Items Used
- 25101-2200 Placed riprap, method B, class 2 and/or
- 25101-2300 Placed riprap, method B, class 3 and/or
- 25101-2400 Placed riprap, method B, class 4
- 60201-0800 24-inch pipe culvert
- 60210-0800 End section for 24-inch pipe culvert
- 60212-0800 Elbow, 24-inch
- 60602-0700 Pipe anchor assembly, 24-inch
- Geotextile quantity is shown for information only

Updates
October 16, 2000
- Updated border to FLH Standard

February 28, 2005
- Updated to MicroStation V8

March 2009
- Revised Note 2 to refer to 251 detail for riprap apron
- Minor drafting edits

August 2014
- Updated for FP-14
- Updated border

August 2020
- Updated geotextile reference