ROUND PIPE

CONCRETE CUTOFF WALL
(SEE DTL DWG. NO. 552-00)
CONCRETE CUTOFF WALL INLET AND OUTLET END SEE DTL DWG. NO. 552-00

SIDE ELEVATION

SECTION A-A

ARCH PIPE

CONCRETE CUTOFF WALL
(SEE DTL DWG. NO. 552-00)

SIDE ELEVATION

SECTION B-B

FRONT ELEVATION

FRONT ELEVATION MULTIPLE PIPES

NOTE:
ALL CONCRETE IS CLASS GENERAL OR EQUAL.

UNITS SHOWN IN BRACKETS ( ) ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

REFERENCE
STANDARD SPEC.
SECTION 613, 603, 552

DETAILED DRAWING

CONCRETE EDGE PROTECTION FOR METAL CULVERTS

REVISED: EFFECTIVE: SEPTEMBER 2014
JANUARY 2018
MONTANA DEPARTMENT OF TRANSPORTATION
CONCRETE CUTOFF WALL 
(SEE DTL. DWG. NO. 552-00)

1'-0" [300]
2'-0" [600]
6" [150]
8'-0" [1200]

RIPRAP AS SPECIFIED

SECTION A-A

#4 BARS
[#13 BARS]

6' x 6' x W2.9
[152.4 x 152.4 x W18.71]
WIRE MESH

7'-0" [2100]

6' x 6' x W2.9
[152.4 x 152.4 x W18.71]
WIRE MESH REINFORCING
THROUGHOUT ENTIRE STRUCTURE

FRONT ELEVATION MULTIPLE PIPES

CONCRETE CUTOFF WALL INLET
AND OUTLET END SEE DTL.
DWG. NO. 552-00 (WHEN
SPECIFIED IN PLANS)

FRONT ELEVATION MULTIPLE PIPES

NOTES:
① ALL CONCRETE IS CLASS GENERAL
CONCRETE OR EQUAL
② SEE DTL. DWG. NO. 603-08 AND 603-10
FOR RCP AND RCRA CULVERTS WITH FETS.
FOR RCP AND RCPA CULVERTS WITH SQUARE
ENDS, THE "A" DIMENSION IS 0/4 OR R/3.

UNITS SHOWN IN BRACKETS [ ] ARE
METRIC AND ARE IN MILLIMETERS (mm)
UNLESS OTHER UNITS ARE SHOWN.
CONCRETE SLOPE PROTECTION

CAST-IN-PLACE CONCRETE:
Use joint details as indicated on the plans. If construction is stopped for over two hours, create a construction joint. Use class general concrete for all cast-in-place concrete.

Use a 2 1/2" [63.5] expansion joint filler per section 707 whenever the cast-in-place concrete meets adjacent side parts of the bridge structure.

Clear the embankment slope of all debris deposits and rubble. A cushion is not required for gravel embankment slopes. Finish all slopes to the slope indicated in the bridge plans. Compact all loose fill to a smooth, uniform condition.

REINFORCING STEEL:
Use either alternate listed below:
1. #3 [10] bars at 18" [450] O.C. (vertical and horizontal spacing) or cover of 2" [50]
2. 8' [2400] x 6' [1800] x 2.9 [152.4 x 152.4 x MW18.71] wire mesh

12" [300] deep reinforcement required at construction joints for reinforcing steel and wire mesh.

NOTE:
Units shown in brackets [ ] are metric and are in millimeters unless other units are shown.
NOTES:

1. CULVERT RIPRAP IS ONLY USED IN SPECIAL CIRCUMSTANCES.
2. KEY ENDS OF RIPRAPP WALS INTO THE EMBANKMENT SLOPES A MINIMUM OF 2 FEET (600 mm) FROM OUTER FACE OF THE RIPRAPP FOR THE FULL HEIGHT OF THE RIPRAPP WALL.

UNITS SHOWN IN BRACKETS [] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.
EMBANKMENT PROTECTION

MINIMUM T FOR:
- CLASS I RIPRAP = 1.0 [300]
- CLASS II RIPRAP = 1.5 [450]
- CLASS III RIPRAP = 3.0 [900] MIN.

GEOTEXTILE PLACEMENT DETAIL

METHOD FOR PLACING PERMANENT EROSION CONTROL GEOTEXTILE FOR PROTECTION OF STREAM BANKS

NOTES:
1. INSTALL PERMANENT EROSION CONTROL GEOTEXTILE PER SECTION 622.