

LEGEND

W = Width of Opening
H = Height of Opening
Tt = Thickness of Top Slab
Tb = Thickness of Bottom Slab
Ts = Thickness of Side Wall

INDEX OF CULVERT SHEETS-

Sheet No. 1 - General Drawing, Quantities and Notes
Sheet No. 2 - Details of Standard Plate No.'s 460.02 and 560.01
Sheet No. 3 - Details of Standard Plate No.'s 560.10 and 560.11
Sheet No. 4 - Details of Standard Plate No. 620.16

SPECIFICATIONS

Use South Dakota Standard Specifications for Roads and Bridges, 2004 Edition and required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

GENERAL NOTES

Design shall be in accordance with Section 560 of the South Dakota Standard Specifications with the following criteria:

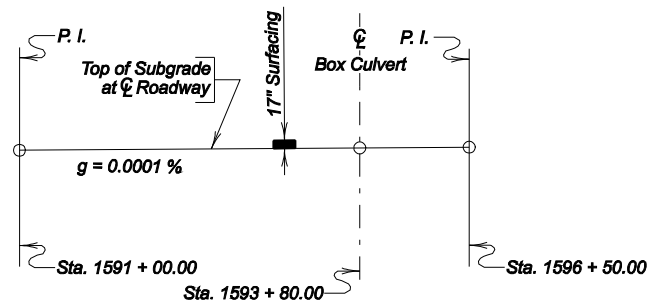
- Box culvert and box culvert end section design shall conform to the AASHTO LRFD Bridge Design Specifications, 2010 Edition.
- Design Live Load: HL-93 and construction loading consisting of one 7' - 6" gage axle gross weight = 95,850 lbs. The construction load shall not be applied until a minimum of 3 ft. of fill has been placed over the Box Culvert. If other construction loads in excess of legal load are anticipated by the Contractor, the Contractor shall submit a design analysis for the anticipated construction loading, through the proper channels to the Office of Bridge Design for approval.
- The design of the barrel sections shall be based on a minimum fill height of 1 foot and include all subsequent fill heights up to and including the maximum fill height of 13 ft. over the box culvert.
- Minimum inside corner fillet shall be 6 in.
- Minimum precast barrel section length shall be 4 ft.
- The Fabricator shall imprint on the structure the date of construction as specified and detailed on Standard Plate No. 460.02.
- Alternate end section details will be allowed, subject to the approval of the Bridge Construction Engineer. No additional payment will be made for any change in the barrel/end section configuration.
- Installation of the precast sections shall be in accordance with the final approved shop plans.

DESIGN MIX OF CONCRETE

- Mix shall be as per fabricator's design, however minimum compressive strength shall not be less than 4500 p.s.i. at 28 days.
- Type II cement is required.
- Class F Modified Fly Ash shall be substituted for 20 percent of the cement in accordance with Section 605.

P. I. = Sta. 1591 + 00.00
Elev. = 1380.00 (Subgr.)

P. I. = Sta. 1596 + 50.00
Elev. = 1380.00 (Subgr.)



GRADELINE DATA

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
14' X 14' Precast Concrete Box Culvert, Furnish	Ft.	124
14' X 14' Precast Box Culvert End Section, Furnish	Each	2

GENERAL DRAWING, QUANTITIES AND NOTES FOR

14' X 14' BOX CULVERT (PRECAST)
OVER PONTOON CREEK
STA. 1593 + 80.00
STR. NO. 43-502-265
PCN 033B

5° SKEW R.H.F.
SEC. I7-TIO4N-R7IW
P 090L(06)262
HL-93

LYMAN COUNTY
S. D. DEPT. OF TRANSPORTATION
JANUARY 2011

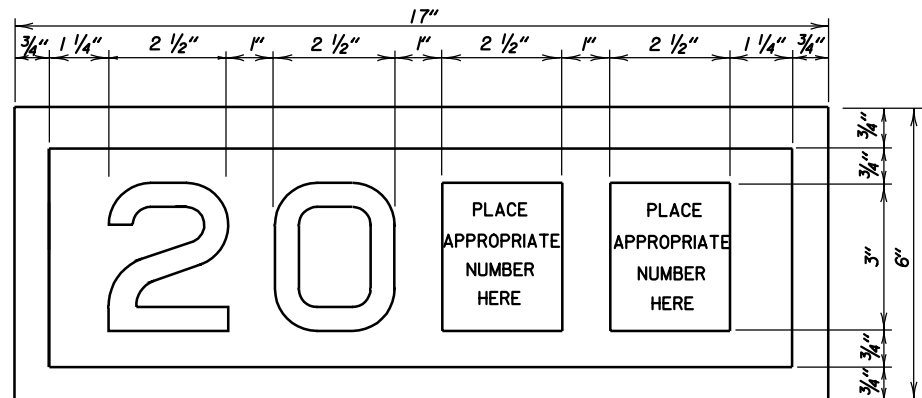
1 OF 4

SHOP PLANS

The fabricator shall initially submit 3 copies of the shop plans to the Office of Bridge Design for review. One reviewed copy will be sent back to the fabricator who will then make changes, if any, and then send the Office of Bridge Design 7 final approved copies for distribution. Include design and check design, if applicable, with initial submittal.

PLANS BY:
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

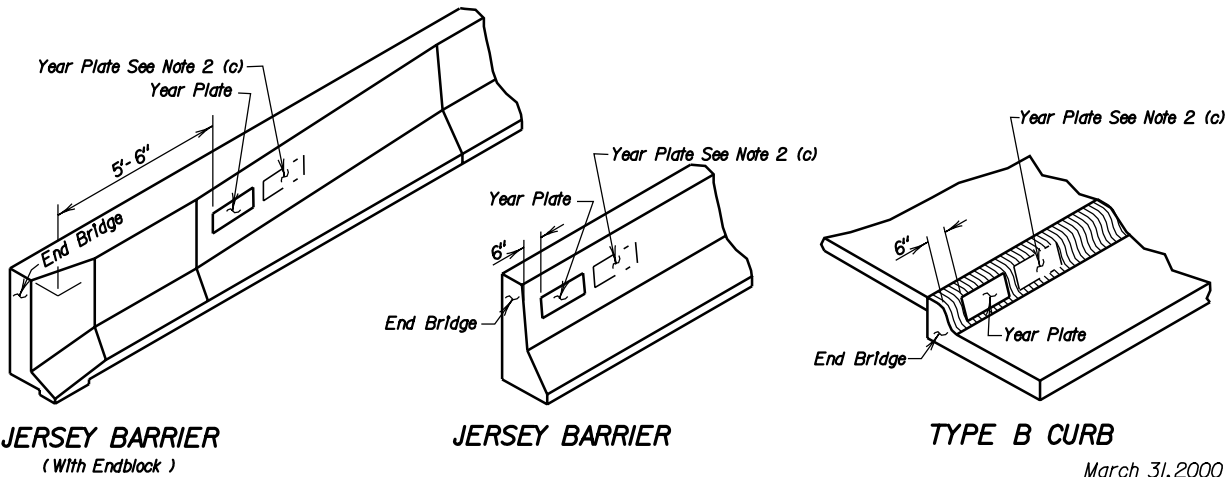
DESIGNED BY DO/BAF LYMN033B	DRAWN BY GW 033BWA01	CHECKED BY BAF/DO	Kevin N. Goeden BRIDGE ENGINEER
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YEAR PLATE DETAILS

NOTES:

- Year plates of the general dimensions shown shall be constructed on all box culverts and bridges. The year plates shall be constructed in reverse and attached to the forms in such a manner that the finished imprint in the concrete does not exceed one-half (1/2) inch in depth.
- Year plates shall be located on structure (s) as follows:
 - On cast-in-place box culverts the year plates shall be four and one-half (4 1/2) inches below the top of the upstream parapet wall and centered laterally on the upstream face. On precast box culverts the year plate shall be centered laterally on the upstream face of the top slab. Where an extended interior wall interferes with this location, the year plate shall be centered in an adjacent barrel.
 - On bridges with six (6) inch curbs or "Jersey" shaped barriers with no endblocks, the year plate shall be centered vertically on the curb face approximately six (6) inches from the end of the bridge, or as designated by the Engineer. On bridges with "Jersey" shaped barrier endblocks, the year plate shall be centered on the upper sloped portion of the barrier approximately 5'-6" from the end of the bridge, or as designated by the Engineer. There shall be one year plate at each end of the bridge on opposite sides.
 - When the plans specify that both the original date of construction and the date of reconstruction are to be shown, one date shall be placed as listed above and the other located adjacent to it. Both year plates shall be shown at each end of the bridge on opposite sides.
- There will be no separate measurement or payment made for year plates on box culverts and bridges. All costs for this work shall be incidental to the other contract items.



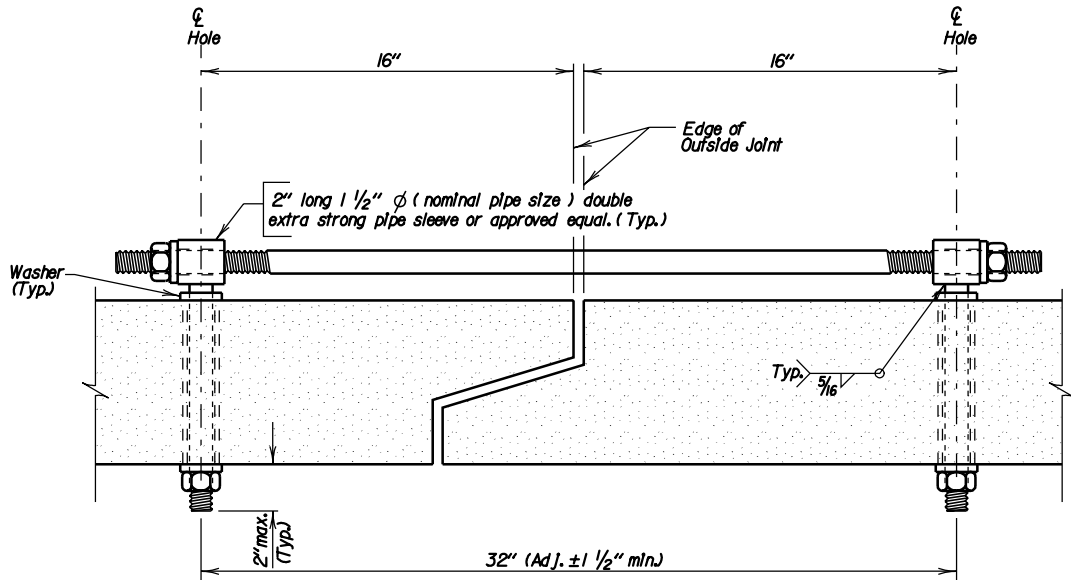
JERSEY BARRIER
(With Endblock)

JERSEY BARRIER

TYPE B CURB

March 31, 2000

Published Date: 1st Qtr. 2011	S D D O T	YEAR PLATE DETAILS	PLATE NUMBER 460.02
			Sheet 1 of 1



TIE BOLT ASSEMBLY

GENERAL NOTES:

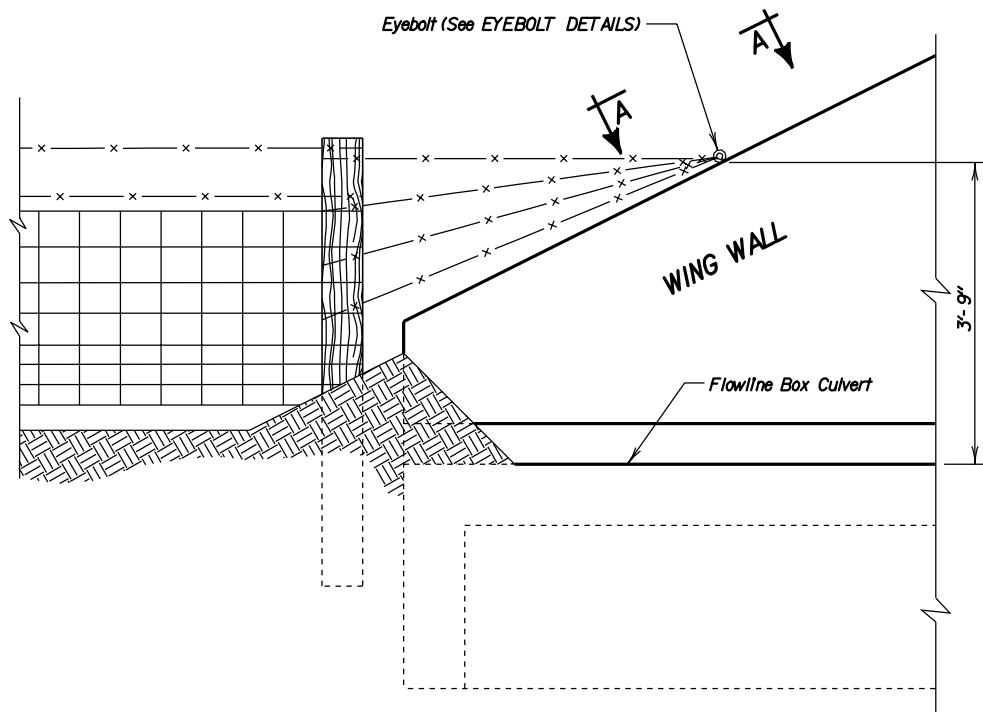
- All holes for tie bolts shall be cast-in-place, 16 in. from outside edge of joint. Cast in inserts or sleeves, if used, shall be made of a corrosion resistant material.
- Ties shall be 1" diameter and conform to the requirements of ASTM A36. Nuts shall be heavy hex in conformance with ASTM A563. Washers shall conform to ASTM F436, Type I. The welded pipe sleeve shall conform to ASTM A53, Grade B.
- Welding and weld inspection shall be in conformance with the current edition of the AWS D1.1 Structural Steel Welding Code.
- Tie Bolt Assembly shall be galvanized in accordance with ASTM A153.
- Tie Bolt Assembly details may vary from that shown, but alternate tie bolt assemblies are subject to testing to demonstrate equal strength. Submit details, through proper channels, to the Office of Bridge Design for approval.
- All costs for furnishing and installing the precast box culvert tie bolt assembly shall be incidental to the contract unit price per foot for the corresponding "Precast Concrete Box Culvert, Furnish bld item.

Published Date: 1st Qtr. 2011	S D D O T	PRECAST BOX CULVERT TIE BOLT ASSEMBLY DETAILS	PLATE NUMBER 560.01
			Sheet 1 of 1

14' X 14' BOX CULVERT (PRECAST)
STR. NO. 43-502-265

JANUARY 2011

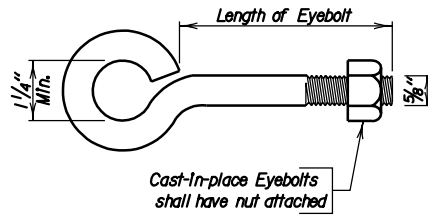
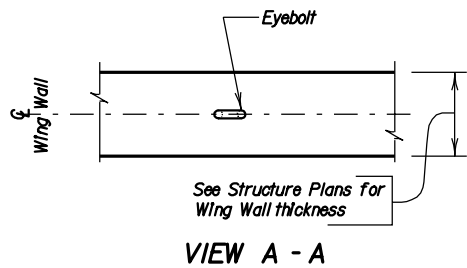
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DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

1. The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
2. Eyebolts shall be placed on all of the box culvert wing walls.
3. Eyebolts shall be $\frac{5}{8}$ " dia. and shall conform to ASTM A307.
4. Eyebolts, nuts, and concrete inserts shall be galvanized in accordance with AASHTO M232 (ASTM A153). Concrete inserts of corrosion resistant material need not be galvanized.
5. Cast-in-place eyebolts shall have a nut attached, be $4\frac{1}{2}$ " (Min.) in length and shall be embedded such that the eye of the bolt is flush with the concrete surface. (See Eyebolt Details.) As an alternate, cast-in-place concrete inserts, capable of developing the full strength of the $\frac{5}{8}$ " diameter threaded eyebolt, may be used and shall be set in the concrete in accordance with the manufacturer's recommendations. The eyebolt shall be of sufficient length to develop its full strength. The eye of the eyebolt shall be flush with the concrete surface.
6. The cost for furnishing and installing eyebolts and/or concrete inserts shall be incidental to the contract unit price per pound for "Reinforcing Steel" or shall be incidental to the contract unit price per each for the corresponding "Precast Box Culvert End Section, Furnish" bid item.



EYEBOLT DETAILS

April 25, 2006

Published Date: 1st Qtr. 2011

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FENCE ANCHORS FOR
BOX CULVERT WING WALLS

PLATE NUMBER
620.16

Sheet 1 of 1

14' X 14' BOX CULVERT (PRECAST)
STR. NO. 43-502-265

JANUARY 2011

LYMN033B 033BWA04