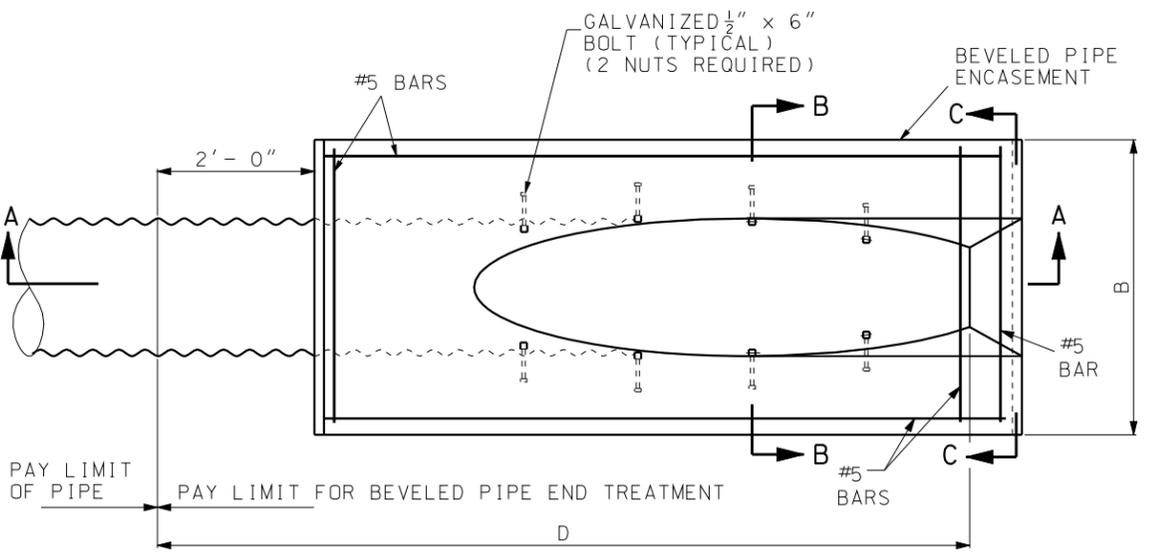
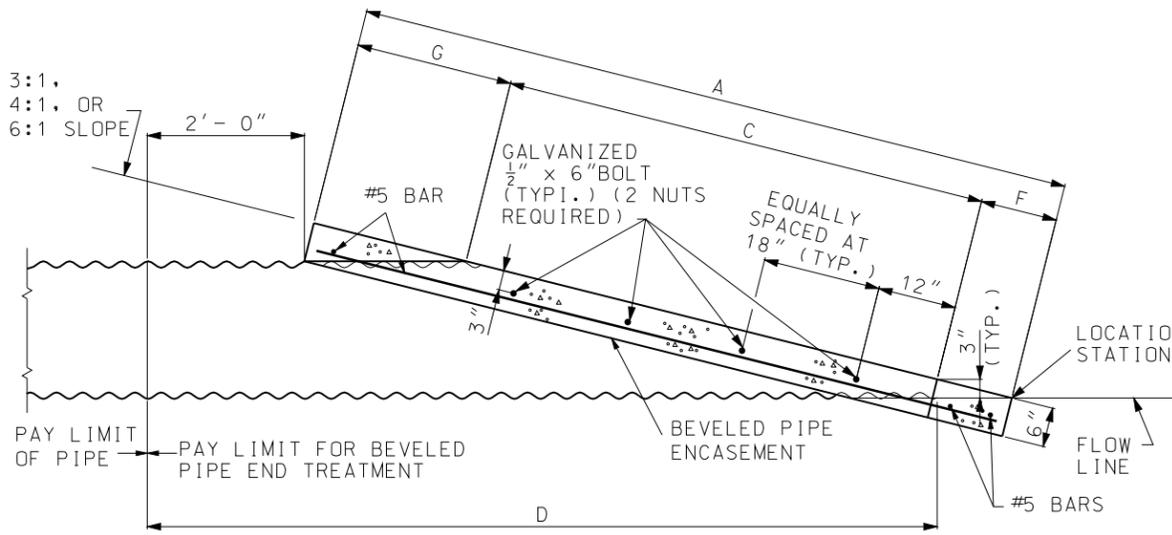


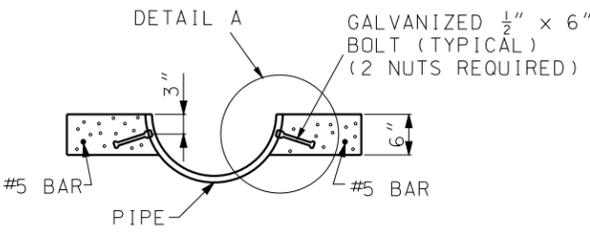
BEVELED PIPE ENCASEMENT DETAILS								
PIPE DIAMETER	SLOPE	A	B	C	D	E	F	G
15"	3:1	5'-5 1/2"	3'-3"	3'-2"	6'-7"	1	9 1/2"	18"
	4:1	7'-2"		4'-1 1/2"	8'-1 1/4"	2	12 1/2"	24"
	6:1	10'-7 1/4"		6'-1"	11'-1 1/2"	3	18 1/4"	36"
18"	3:1	6'-3"	3'-6"	3'-11 1/2"	7'-4"	2	9 1/2"	18"
	4:1	8'-2 1/4"		5'-1 3/4"	9'-1"	3	12 1/2"	24"
	6:1	12'-1 1/2"		7'-7 1/4"	12'-7 1/2"	4	18 1/4"	36"
21"	3:1	7'-2 1/2"	3'-9"	4'-9"	8'-1"	3	9 1/2"	18"
	4:1	9'-2 3/4"		6'-2 1/4"	10'-1 1/4"	3	12 1/2"	24"
	6:1	13'-7 3/4"		9'-1 1/2"	14'-1 1/2"	5	18 1/4"	36"
24"	3:1	7'-10"	4'-0"	5'-6 1/2"	8'-10"	3	9 1/2"	18"
	4:1	10'-3"		7'-2 1/2"	11'-1"	4	12 1/2"	24"
	6:1	15'-2"		10'-7 3/4"	15'-7 1/2"	6	18 1/4"	36"
27"	3:1	8'-7 1/2"	4'-3"	6'-4"	9'-7"	4	9 1/2"	18"
	4:1	11'-3 1/2"		8'-3"	12'-1 1/4"	5	12 1/2"	24"
	6:1	16'-8 1/4"		12'-2"	17'-1 1/2"	7	18 1/4"	36"
30"	3:1	9'-5"	4'-6"	7'-1 1/2"	10'-4"	4	9 1/2"	18"
	4:1	12'-3 3/4"		9'-3 3/4"	13'-1"	6	12 1/2"	24"
	6:1	18'-2 1/2"		13'-8 1/4"	18'-7 1/2"	8	18 1/4"	36"
33"	3:1	10'-2 1/4"	4'-9"	7'-10 3/4"	11'-3 1/4"	5	9 1/2"	18"
	4:1	13'-4 1/4"		10'-3 3/4"	14'-1 1/4"	6	12 1/2"	24"
	6:1	19'-8 3/4"		15'-2 1/2"	20'-1 1/2"	9	18 1/4"	36"
36"	3:1	10'-11 3/4"	5'-0"	8'-8 1/4"	11'-10"	5	9 1/2"	18"
	4:1	14'-4 1/2"		11'-4"	15'-1"	7	12 1/2"	24"
	6:1	21'-3"		16'-8 3/4"	21'-7 1/2"	10	18 1/4"	36"
42"	3:1	12'-6 3/4"	5'-6"	10'-3 1/4"	13'-4"	6	9 1/2"	18"
	4:1	16'-5 1/4"		13'-4 3/4"	17'-1 1/4"	8	12 1/2"	24"
	6:1	24'-3 1/2"		19'-9 1/4"	24'-7 1/2"	13	18 1/4"	36"
48"	3:1	14'-1 3/4"	6'-0"	11'-10 1/4"	14'-10"	7	9 1/2"	18"
	4:1	18'-6"		15'-5 1/2"	19'-1 1/4"	10	12 1/2"	24"
	6:1	27'-4"		22'-9 3/4"	27'-7 1/2"	15	18 1/4"	36"
54"	3:1	15'-8 3/4"	6'-6"	13'-5 1/4"	16'-4"	8	9 1/2"	18"
	4:1	20'-6 3/4"		17'-6 1/4"	21'-1 1/4"	11	12 1/2"	24"
	6:1	30'-4 1/2"		25'-10 1/4"	30'-7 1/2"	17	18 1/4"	36"
60"	3:1	17'-3 3/4"	7'-0"	15'-1 1/4"	17'-10"	9	9 1/2"	18"
	4:1	22'-7 1/2"		19'-7"	23'-1 1/4"	12	12 1/2"	24"
	6:1	33'-5"		28'-10 3/4"	33'-7 1/2"	19	18 1/4"	36"



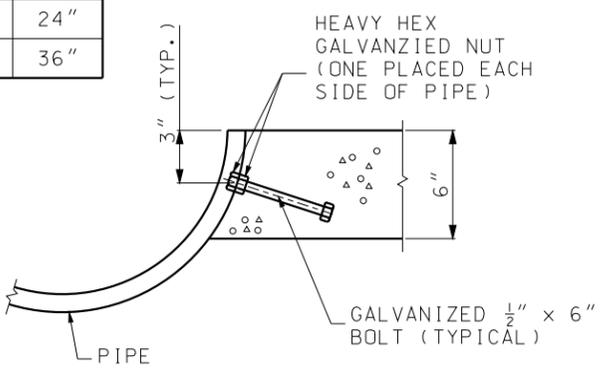
PLAN VIEW FOR HIGHWAYS



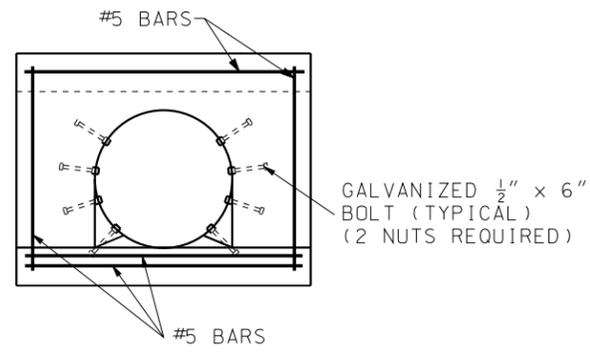
SECTION A-A



SECTION B-B



DETAIL A



SECTION C-C

GENERAL NOTES:

CONCRETE USED IN CONSTRUCTION OF THE BEVELED PIPE ENCASEMENT SHALL BE CLASS B CONCRETE OR AN APPROVED COMMERCIAL MIX MEETING REQUIREMENTS OF SECTION 501 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL USED IN CONSTRUCTION OF THE BEVELED PIPE ENCASEMENT SHALL MEET THE REQUIREMENTS OF SECTION 1036 OF THE STANDARD SPECIFICATIONS.

BEVELED PIPE ENCASEMENT MAY BE USED WITH EITHER POLYETHYLENE OR CORRUGATED METALLIC COATED STEEL PIPE.

THE PRICE BID PER EACH FOR "BEVELED PIPE END TREATMENT" SHALL BE CONSIDERED FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND INSTALLATION OF THE BEVELED PIPE SECTION AND BEVELED PIPE ENCASEMENT AS SHOWN OR AS DIRECTED BY THE ENGINEER.

THE 1/2" x 6" BOLT AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 (ASTM A153) SPECIFICATIONS. LOW CARBON STEEL ANCHOR BOLTS SHALL MEET ASTM A307.

BEVELED PIPE SHALL BE DRILLED AT LOCATIONS SHOWN ON PLANS FOR PLACEMENT OF 1/2" x 6" GALVANIZED BOLTS. THE 1/2" x 6" GALVANIZED BOLTS SHALL BE "DOUBLE NUTTED" AS SHOWN AND PLACED IN THE VALLEY OF PIPE CORRUGATIONS.

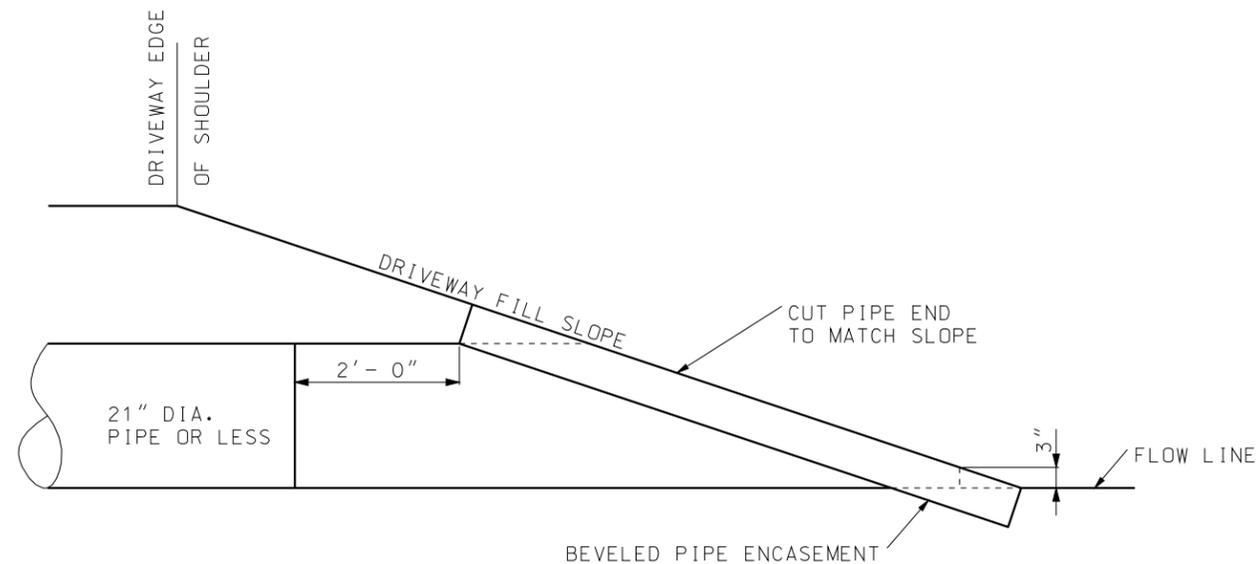
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
 KATHRYN PHILLIPS HARVEY
 NUMBER PE-23751
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

BEVELED PIPE END TREATMENT FOR HIGHWAYS

DATE EFFECTIVE: 07/01/2004	732.05C	SHEET NO. 1 OF 2
DATE PREPARED: 12/16/2008		

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PIPE END DETAILS FOR PARALLEL DRAINAGE STRUCTURES FOR DRIVEWAYS

(SINGLE PIPE INSTALLATION)

NOTE:

FOR MULTIPLE PIPE INSTALLATIONS, END SECTIONS WITH SAFETY BARS SYSTEM OR OPTIONAL BAR GATE SYSTEM SHALL BE PROVIDED. SEE STANDARD PLAN 732.10.

SEE DRIVEWAY STANDARD PLANS FOR BEVELED END SECTION REQUIREMENTS.

GENERAL NOTES:

CONCRETE USED IN CONSTRUCTION OF THE BEVELED PIPE ENCASUREMENT SHALL BE CLASS B CONCRETE OR AN APPROVED COMMERCIAL MIX MEETING REQUIREMENTS OF SECTION 501 OF THE STANDARD SPECIFICATIONS.

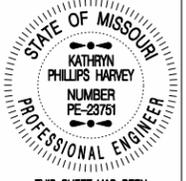
REINFORCING STEEL USED IN CONSTRUCTION OF THE BEVELED PIPE ENCASUREMENT SHALL MEET THE REQUIREMENTS OF SECTION 1036 OF THE STANDARD SPECIFICATIONS.

BEVELED PIPE ENCASUREMENT MAY BE USED WITH EITHER POLYETHYLENE OR CORRUGATED METALLIC COATED STEEL PIPE.

THE PRICE BID PER EACH FOR "BEVELED PIPE END TREATMENT" SHALL BE CONSIDERED FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND INSTALLATION OF THE BEVELED PIPE SECTION AND BEVELED PIPE ENCASUREMENT AS SHOWN OR AS DIRECTED BY THE ENGINEER.

THE $\frac{1}{2}$ " x 6" BOLT AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 (ASTM A123) SPECIFICATIONS. LOW CARBON STEEL ANCHOR BOLTS SHALL MET ASTM A307.

BEVELED PIPE SHALL BE DRILLED AT LOCATIONS SHOWN ON PLANS FOR PLACEMENT OF $\frac{1}{2}$ " x 6" GALVANIZED BOLTS. THE $\frac{1}{2}$ " x 6" GALVANIZED BOLTS SHALL BE "DOUBLE NUTTED" AS SHOWN AND PLACED IN THE VALLEY OF PIPE CORRUGATIONS.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>STATE OF MISSOURI KATHRYN PHILLIPS HARVEY NUMBER PE-23751 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p align="center">BEVELED PIPE END TREATMENT FOR DRIVEWAYS</p>
DATE EFFECTIVE: 07/01/2004 DATE PREPARED: 12/16/2008	<p align="center">732.05C</p>
SHEET NO. <p align="center">2 OF 2</p>	