

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

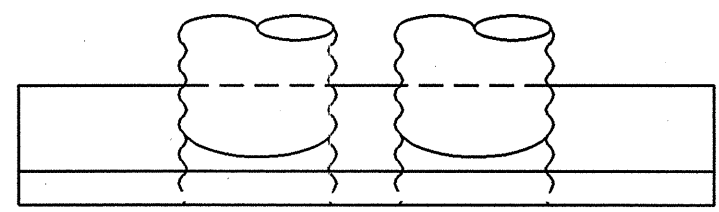
ENGLISH DETAIL DRAWING FOR
CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS
17" X 13" THRU 72" X 42" PIPE ARCH 2 2/3" X 1/2" CORRUGATIONS - 90° SKEW

SHEET 1 OF 1
838D04

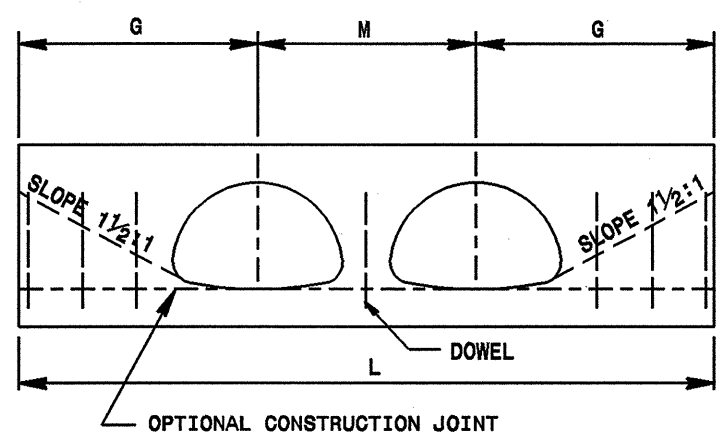
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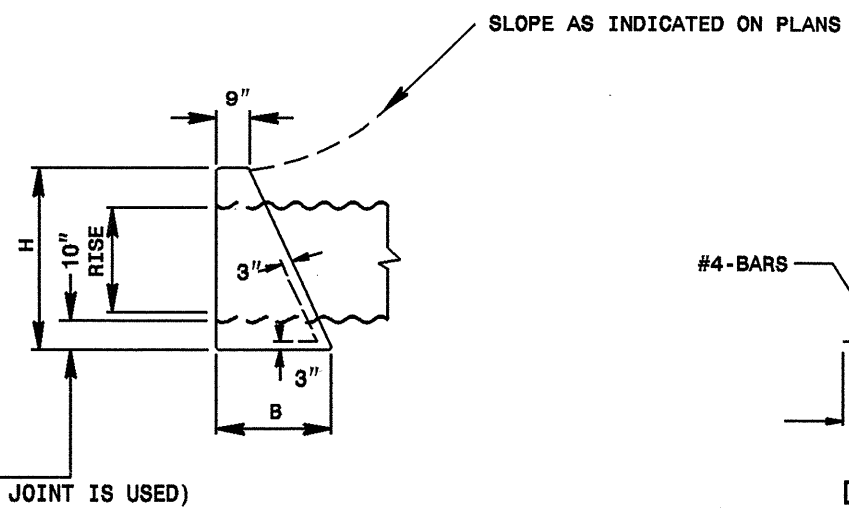
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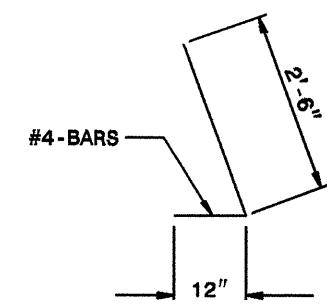
PLAN



ELEVATION



END ELEVATION



DOWEL BAR - "X"

- GENERAL NOTES:
- CHAMFER ALL CORNERS 1". USE CLASS "B" CONCRETE.
 - PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.
 - CONSTRUCT BOTTOM SLAB WITH FORMS.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.
 - DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

LOC.	PIPE DIA.	DOWELS IN ENDWALL																			
		SINGLE PIPE									DOUBLE PIPE										
		18"	22"	25"	29"	36"	43"	50"	58"	65"	72"	18"	22"	25"	29"	36"	43"	50"	58"	65"	72"
G	QTY.	2	2	2	3	3	4	4	4	5	5	2	2	2	3	3	4	4	4	5	5
M	QTY.	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2	2	2	2
G	QTY.	2	2	2	3	3	4	4	4	5	5	2	2	2	3	3	4	4	4	5	5
TOTAL LBS.		9	9	9	14	14	19	19	19	23	23	12	12	12	16	16	21	23	23	28	28

DIMENSIONS AND CONCRETE QUANTITIES										
COMMON DIMENSIONS USING C.S. PIPE ARCH							SINGLE PIPE		DOUBLE PIPE	
SPAN	RISE	THICK.	H	B	G	M	L	YD ³	L	YD ³
17"	13"	0.064	2'-9"	1'-5"	2'-7"	1'-11"	5'-2"	0.526	7'-0"	0.684
21"	15"	0.064	2'-11"	1'-6"	3'-0"	2'-4"	6'-0"	0.663	8'-4"	0.880
24"	18"	0.064	3'-2"	1'-7"	3'-5"	2'-8"	6'-10"	0.840	9'-6"	1.110
28"	20"	0.079	3'-4"	1'-8"	3'-9"	3'-1"	7'-5"	0.994	10'-6"	1.316
35"	24"	0.079	3'-8"	1'-10"	4'-6"	3'-11"	9'-0"	1.368	12'-11"	1.844
42"	29"	0.079	4'-1"	2'-1"	5'-4"	4'-8"	10'-8"	1.950	15'-4"	2.614
49"	33"	0.109	4'-5"	2'-3"	6'-0"	5'-5"	12'-0"	2.461	17'-5"	3.307
57"	38"	0.109	4'-10"	2'-6"	6'-10"	6'-4"	13'-8"	3.290	20'-0"	4.448
64"	43"	0.138	5'-3"	2'-8"	7'-8"	7'-1"	15'-4"	4.189	22'-5"	5.637
72"	42"	0.138	5'-7"	2'-10"	8'-4"	7'-11"	16'-8"	5.007	24'-7"	6.772

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NORTH CAROLINA
PROFESSIONAL
SEAL
022966
ENGINEER
JOEL S. SWANSON
11/15/04

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STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

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