

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

METRIC DETAIL DRAWING FOR  
**CONCRETE ENDWALL FOR SINGLE AND  
 DOUBLE PIPE CULVERTS**  
 375mm THRU 1200mm PIPE

SHEET 2 OF 2  
**838d03s1**

**GENERAL NOTES:**

- \* ALL CORNERS TO BE CHAMFERED 25mm.
- \* THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #19 BARS "y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 1050mm AND OVER WITH A MINIMUM OF 75mm COVER AND A LENGTH OF 150mm LESS THAN ENDWALL.
- \* FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
- \* WALL THICKNESS (T) SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
- \* IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (DOWELS SHALL BE PLACED IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 300mm CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
- \* WHEN CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE AND POURS BASE SEPARATELY, THE TOP BASE SHALL BE LEFT ROUGH.
- \* WHEN SKEW ANGLE OF PIPE IS OVER 45° USE G-1 DIMENSION FOR 45° PLUS 152mm FOR EACH 5° OVER 45°. G2 DIMENSION WILL BE THE NEW DIMENSION DIVIDED BY THE COSINE OF THE ANGLE OF PIPE SKEW.
- \* CLASS "B" CONCRETE SHALL BE USED.

**Note:**  
 This drawing is dimensioned in  
 millimeters unless otherwise  
 depicted within the drawing.

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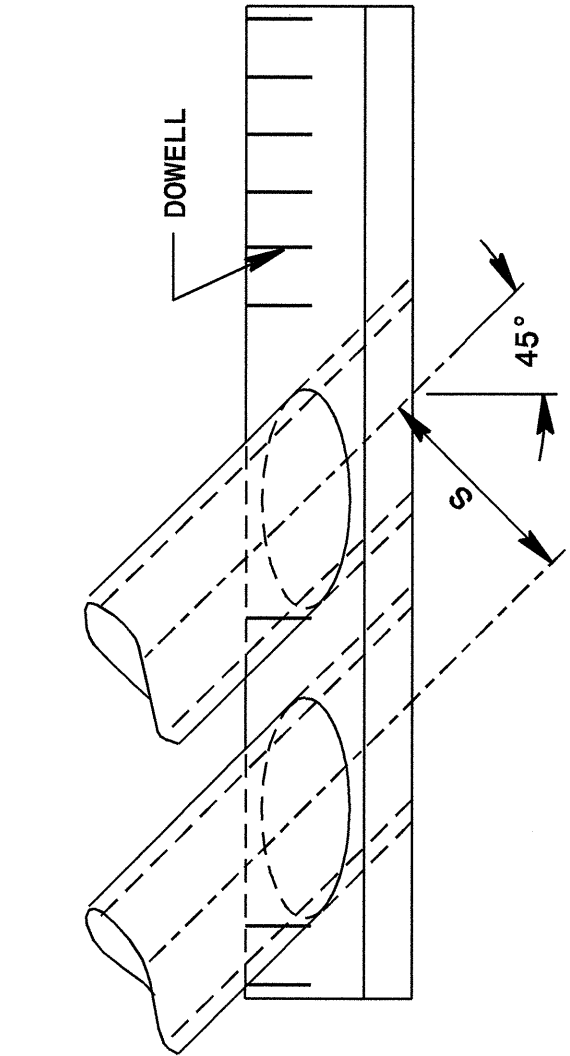
METRIC DETAIL DRAWING FOR  
**DOUBLE PIPE CULVERTS**  
 375mm THRU 1200mm PIPE

SHEET 2 OF 2  
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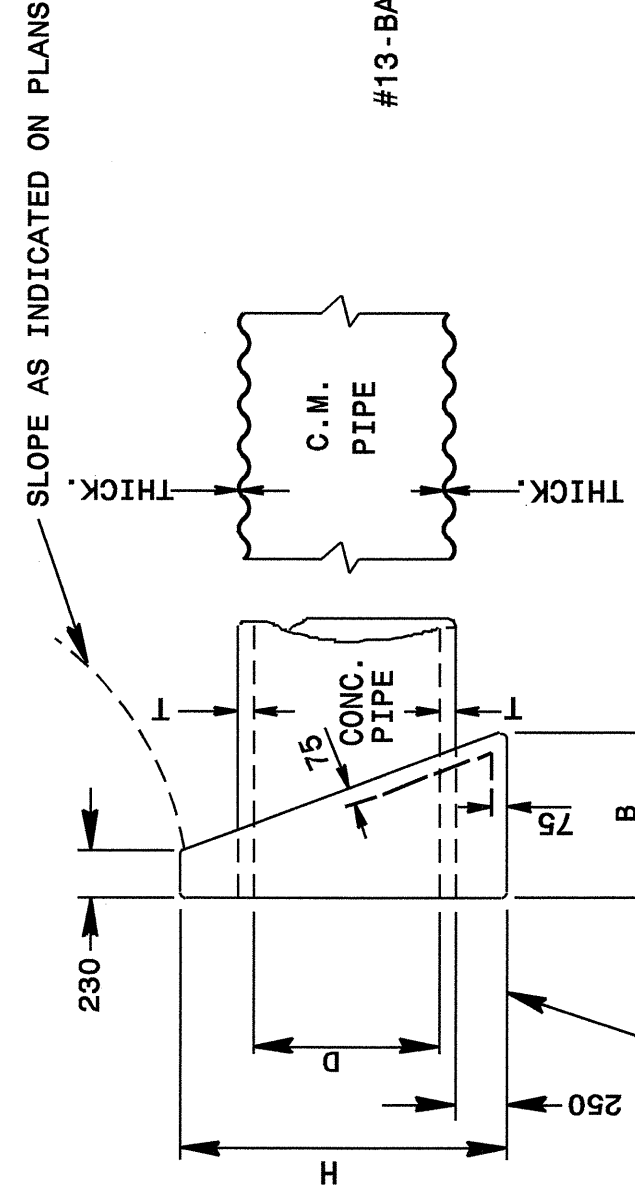
METRIC DETAIL DRAWING FOR  
**CONCRETE ENDWALL FOR SINGLE AND  
 DOUBLE PIPE CULVERTS**  
 375mm THRU 1200mm PIPE 45° OR 135° SKEW

SHEET 1 OF 2  
**838d03s1**



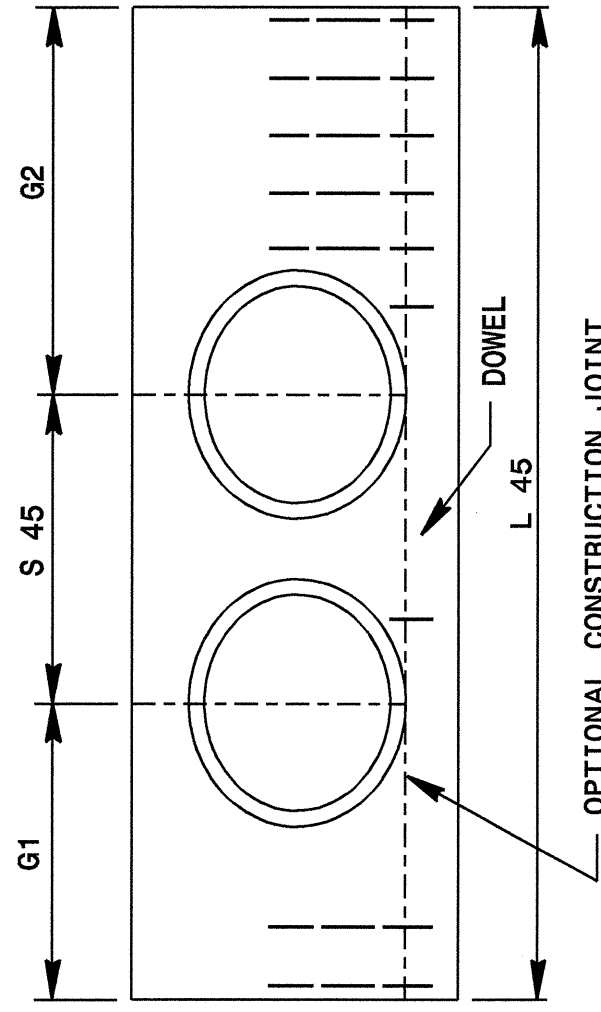
**PLAN**

FOOTING  
 (IF CONST. JOINT IS USED)



**END ELEVATION**

DOWEL  
 BAR - "X"



**ELEVATION**

**DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE**

PIPE DIA.	SINGLE PIPE			DOUBLE PIPE				
	LOC.	375	450	600	750	900	1050	1200
BARS	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"
G1	QTY.	2	2	2	2	2	2	2
S	QTY.	-	-	-	-	-	-	-
G2	QTY.	5	5	6	7	8	9	10
TOT.	kgs.	7.4	7.4	8.4	9.5	11.6	13.7	16.1

**DOWELS IN ENDWALL WITH CORRUGATED STEEL PIPE**

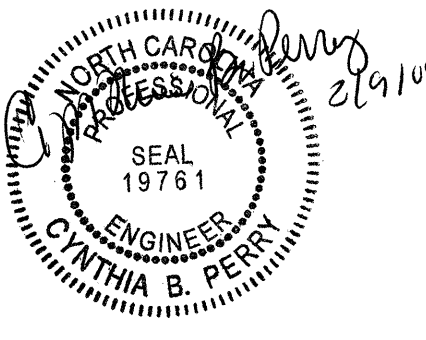
PIPE DIA.	SINGLE PIPE			DOUBLE PIPE				
	LOC.	400	450	600	800	900	1000	1200
BARS	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"
G1	QTY.	2	2	2	2	2	2	2
S	QTY.	-	-	-	-	-	-	-
G2	QTY.	4	5	6	7	8	9	10
TOT.	kgs.	6.3	7.4	8.4	9.5	10.5	11.6	12.6

**DIMENSIONS AND CONCRETE QUANTITIES**

COMMON DIMS.	SINGLE PIPE			DOUBLE PIPE			USING CONCRETE PIPE			USING CORRUGATED METAL PIPE		
	D	H	B	D	H	B	G1	G2	L	G1	G2	L
375	1016	508	48	838	1194	2032	0.666	848	1203	686	972	3023
450	1092	559	51	965	1372	2337	0.866	968	1375	787	1111	3454
600	1270	635	63	1219	1727	2948	1.352	1219	1727	1041	1473	4420
750	1448	737	70	1397	1981	3378	1.917	1397	1981	1285	1829	5207
900	1600	813	76	1678	2362	4039	2.700	1666	2372	1549	2191	6248
1050	1778	889	89	1930	2718	4648	3.646	1930	2718	1778	2515	7169
1200	1956	991	102	2184	3099	5283	4.915	2191	3105	2057	2908	8204

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\*SEE SHEET 2



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