

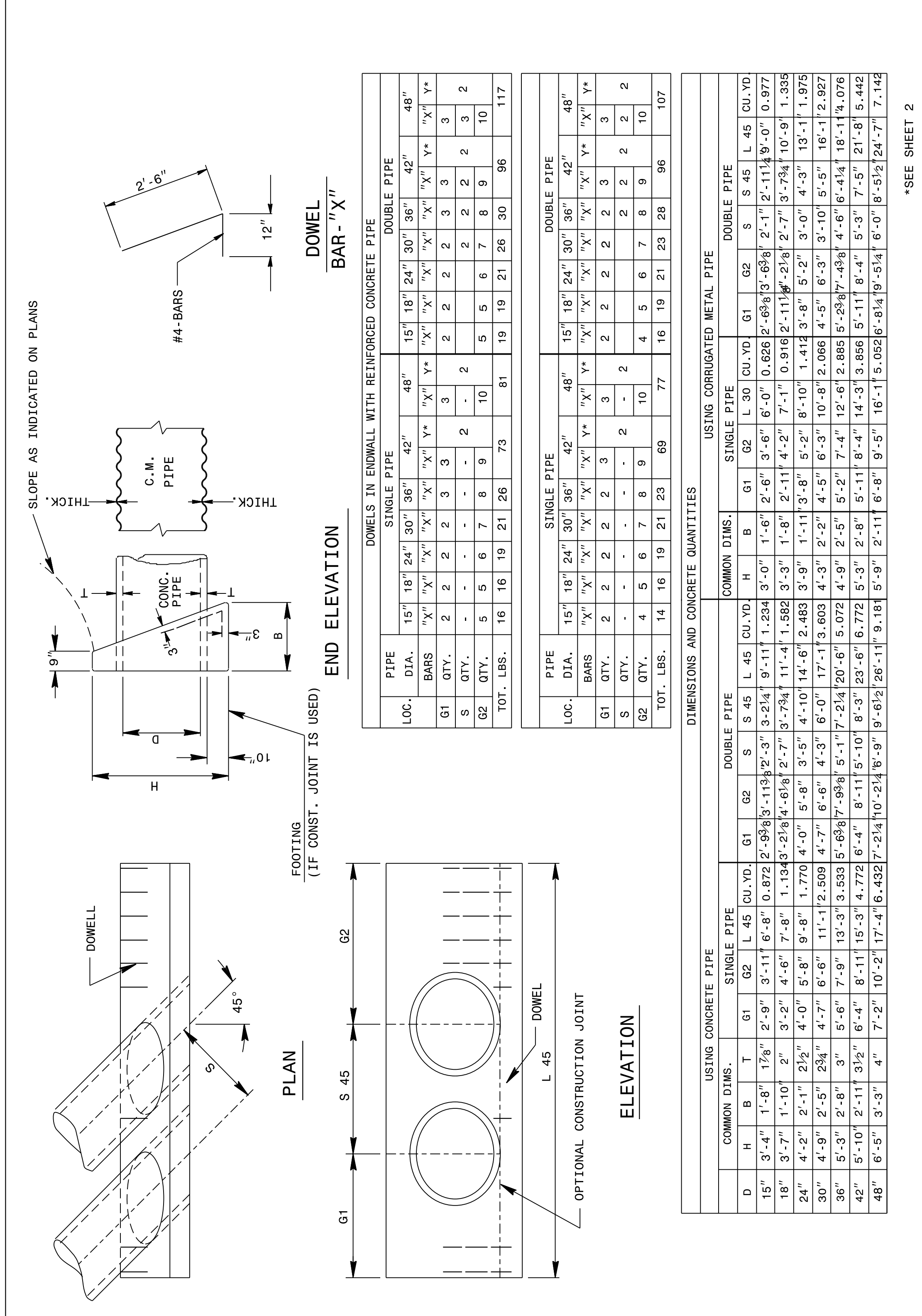
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
 ENGLISH DETAIL DRAWING FOR DOUBLE PIPE CULVERTS 15" THRU 48" PIPE
 SHEET 2 OF 2
838D03

GENERAL NOTES:
 ALL CORNERS TO BE CHAMFERED 1".
 * THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" 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 12" 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 6" 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.

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 15" THRU 48" PIPE
 SHEET 2 OF 2
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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 15" THRU 48" PIPE 45° OR 135° SKEW
 SHEET 1 OF 2
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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 15" THRU 48" PIPE 45° OR 135° SKEW
 SHEET 1 OF 2
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PIPE DIA.	SINGLE PIPE										DOUBLE PIPE														
	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"				
LOC.	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"			
G1	2	2	2	2	3	3	3	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	3	3
S	QTY.	-	-	-	-	-	2	-	-	-	-	2	-	2	2	2	2	4	5	6	7	8	9	10	10
G2	QTY.	5	5	6	7	8	9	10	10	10	10	10	10	10	10	10	10	4	5	6	7	8	9	10	10
TOT. LBS.	16	16	19	21	26	73	81	19	19	19	21	26	30	96	117	117	117	16	19	21	23	28	30	96	107

PIPE DIA.	SINGLE PIPE										DOUBLE PIPE														
	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"				
LOC.	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"			
G1	2	2	2	2	2	3	3	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2
S	QTY.	-	-	-	-	-	2	-	-	-	-	2	-	2	2	2	2	4	5	6	7	8	9	10	10
G2	QTY.	4	5	6	7	8	9	10	10	10	10	10	10	10	10	10	10	4	5	6	7	8	9	10	10
TOT. LBS.	14	16	19	21	23	69	77	16	19	21	23	28	30	96	107	107	107	16	19	21	23	28	30	96	107

DIMENSIONS AND CONCRETE QUANTITIES

COMMON DIMS.	USING CONCRETE PIPE										USING CORRUGATED METAL PIPE																
	D	H	B	T	G1	G2	S	L	45	62	D	H	B	T	G1	G2	S	L	45	62							
15"	3'-4"	1'-8"	1'-8"	1'-8"	1'-8"	2'-9"	3'-11"	6'-8"	0.872	2'-9 3/8	3'-11 3/8	2'-3"	3'-2 1/4	9'-11"	1.234	3'-0"	1'-6"	2'-6"	3'-6"	6'-0"	0.626	2'-6 3/8	3'-6 3/8	2'-1"	2'-11 1/4	9'-0"	0.977
18"	3'-7"	1'-10"	2"	3'-2"	4'-6"	7'-8"	1.184	3'-2 3/8	4'-6 3/8	2'-7"	3'-7 3/4	11'-4"	1.582	3'-3"	1'-8"	2'-11"	4'-2"	7'-1"	0.916	2'-11 3/8	4'-2 3/8	2'-7"	3'-7 3/4	10'-9"	1.335	1.975	
24"	4'-2"	2'-1"	2 1/2"	4'-0"	5'-8"	9'-8"	1.770	4'-0"	5'-8"	4'-10"	14'-6"	2.483	3'-9"	1'-11"	3'-8"	5'-2"	8'-10"	1.412	3'-8"	5'-2"	3'-0"	4'-3"	13'-1"	1.975	1.975		
30"	4'-9"	2'-5"	2 3/4"	4'-7"	6'-6"	11'-1"	2.509	4'-7"	6'-6"	4'-3"	17'-1"	3.603	4'-3"	2'-2"	4'-5"	6'-3"	10'-8"	2.066	4'-5"	6'-3"	3'-10"	5'-5"	16'-1"	2.927	2.927		
36"	5'-3"	2'-8"	3"	5'-6"	7'-9"	13'-3"	3.533	5'-6"	7'-9"	5'-1"	17'-2 1/4	20'-6"	5.072	4'-9"	2'-5"	5'-2"	7'-4"	12'-6"	2.885	5'-2 3/8	7'-4 3/8	4'-6"	6'-4 1/4	18'-1 1/4	4.076	4.076	
42"	5'-10"	2'-11"	3 1/2"	6'-4"	8'-11"	15'-3"	4.772	6'-4"	8'-11"	8'-3"	23'-6"	6.772	5'-3"	2'-8"	5'-11"	8'-4"	14'-3"	3.856	5'-11"	8'-4"	5'-3"	7'-5"	21'-8"	5.442	5.442		
48"	6'-5"	3'-3"	4"	7'-2"	10'-2"	17'-4"	6.432	7'-2 1/4	10'-2 1/4	8'-9"	9'-6 1/2	26'-11"	9.181	5'-9"	2'-11"	6'-8"	9'-5"	16'-1"	5.052	6'-8 1/4	9'-5 1/4	6'-0"	8'-5 1/2	24'-7"	7.142	7.142	

*SEE SHEET 2

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CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

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