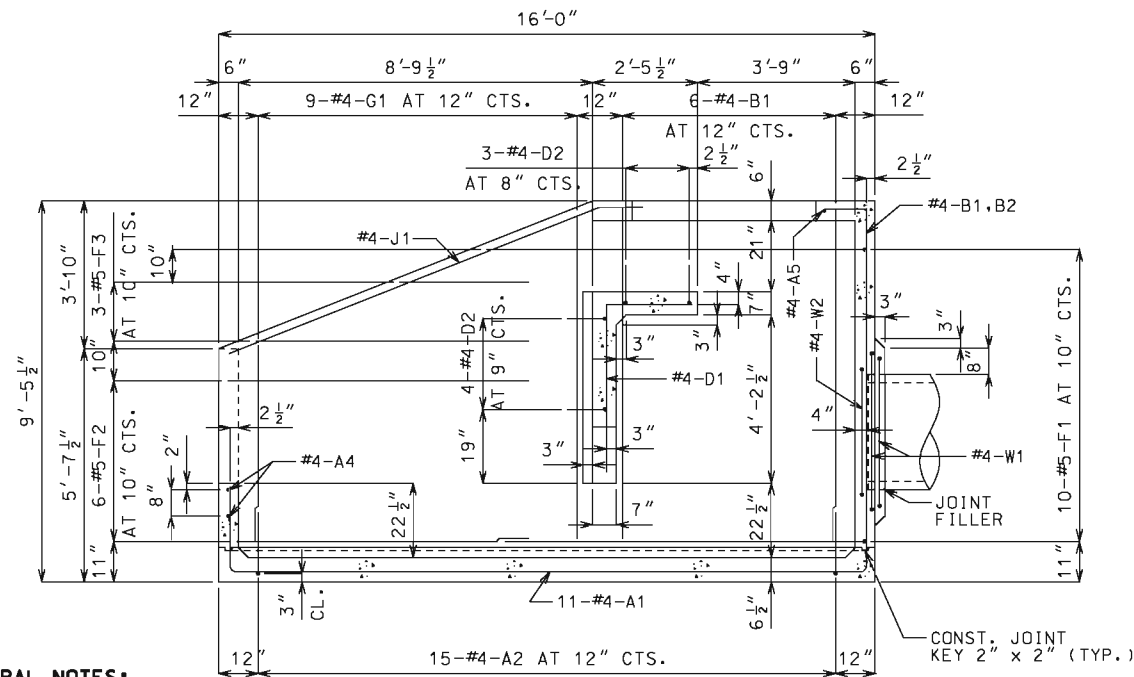
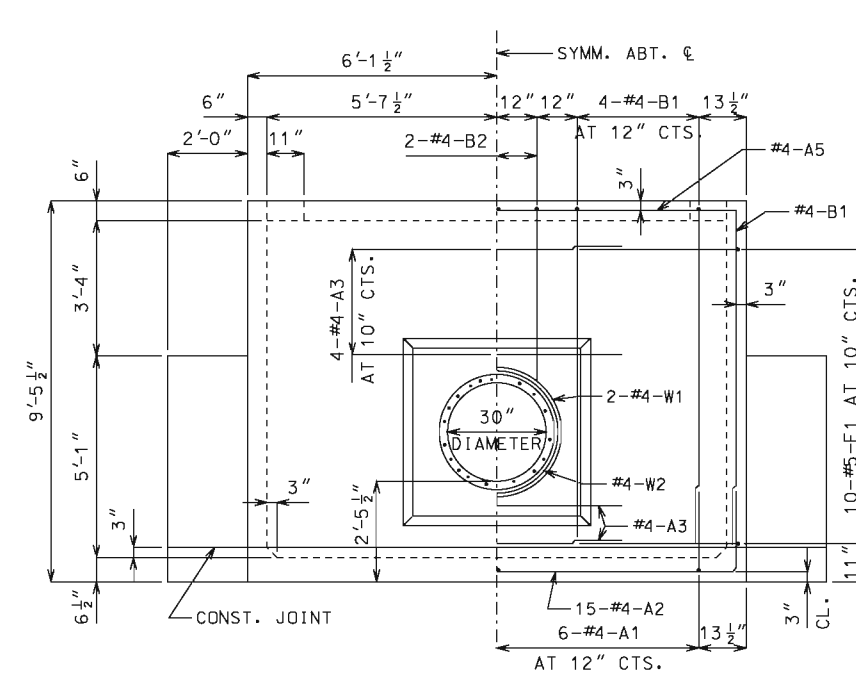


DOWNSTREAM ELEVATION

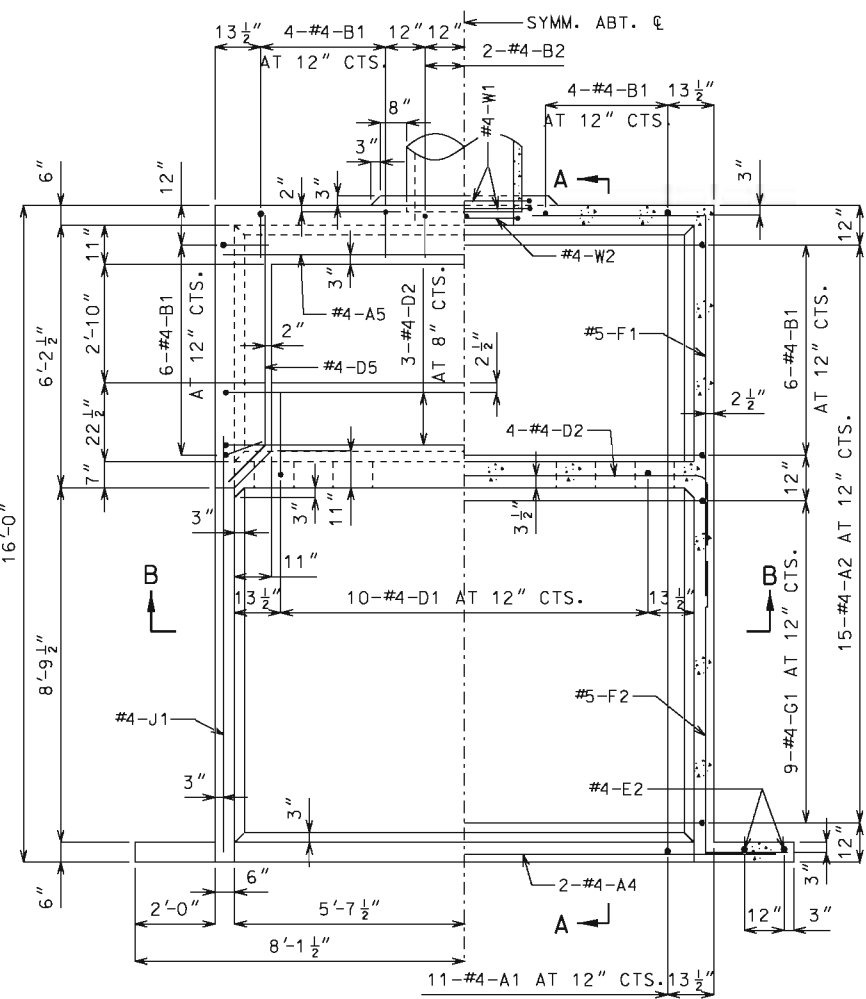


SECTION A - A



UPSTREAM ELEVATION

NOTE: BEND OR CUT A1 BARS IN FIELD TO CLEAR PIPE.



HALF PLAN HALF HORIZONTAL SECTION

GENERAL NOTES:

DESIGN UNIT STRESSES

CLASS B CONCRETE  $f'_c = 3,000$  psi  
 REINFORCING STEEL (GRADE 60)  $f_y = 60,000$  psi

REINFORCING STEEL

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE  $1\frac{1}{2}$ " UNLESS SHOWN OTHERWISE.

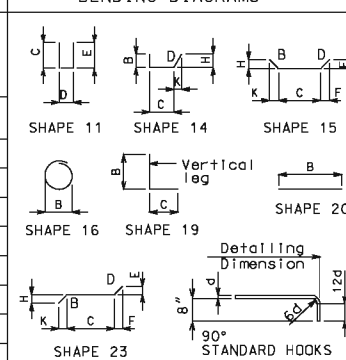
DIMENSIONS

DRAWINGS ARE NOT TO SCALE. FOLLOW DIMENSIONS.

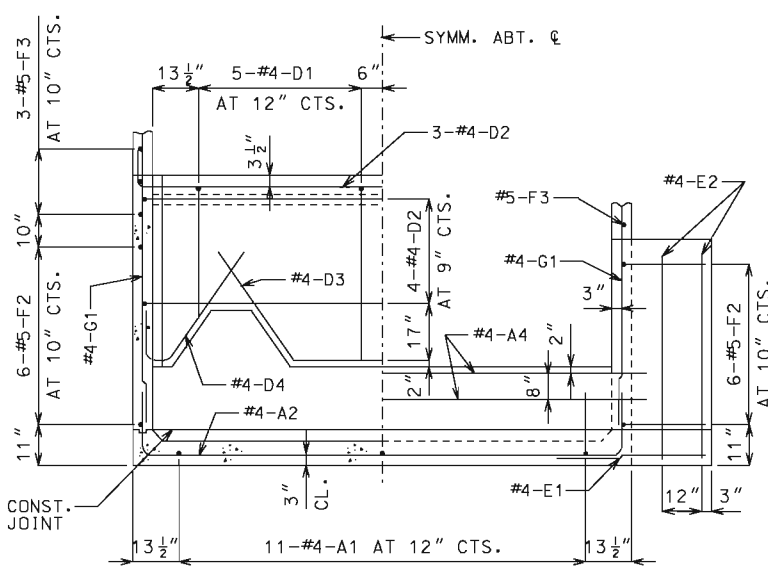
ESTIMATED QUANTITIES		
ITEM		TOTAL
CLASS B CONCRETE	CU. YD.	13.2
REINFORCING STEEL	LBS.	1,170

NO.	REQ'D	MARK NO.	SHAPE NO.	VARIES (V)	DIMENSIONS									NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
					B											
					FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.			
11	4	A1	11			2-0 1/2	15-6	0-20 1/2					19-3	19-1	140	
15	4	A2	11			0-20 1/2	11-10	0-20 1/2					15-3	15-1	151	
6	4	A3	20			5-4							5-4	5-4	21	
2	4	A4	20			13-3							13-3	13-3	18	
1	4	A5	20			11-9							11-9	11-9	8	
20	4	B1	19			8-5 1/2	0-13						9-7	9-5	126	
3	4	B2	19			4-0	0-13						5-1	5-0	10	
10	4	D1	19			4-4	2-0 1/2						6-5	6-3	42	
7	4	D2	11			0-12	11-10	0-12					13-10	13-8	64	
1	4	D3	15			2-11	4-7	2-11	2-6	0-18	2-6	0-18	10-5	10-4	7	
2	4	D4	14			0-12	0-7	3-0		2-6	0-20	4-7	4-5	6		
2	4	D5	23			0-18 3/8	5-7			0-13	0-13	7-1	7-1	9		
2	4	E1	20			3-0						3-0	3-0	4		
4	4	E2	20			5-3						5-3	5-3	14		
20	5	F1	19			8-8 3/8	4-2 1/2					12-11	12-9	266		
12	5	F2	19			2-1	8-1					10-2	10-1	126		
6	5	F3	20	V	2	3-0 7/8						3-1	3-1			
						7-0 3/8										
18	4	G1	20	V	2	5-1 3/8						7-1	7-1	32		
						8-5 3/8										
2	4	J1	20			10-11						10-11	10-11	15		
2	4	W1	16			3-6						11-10	11-10	16		
1	4	W2	16			2-11						10-0	10-0	7		

BENDING DIAGRAMS



ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STANDARD HOOKS.  
 HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.  
 NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE.  
 PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.  
 LENGTH = TOTAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.  
 V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.  
 NO.EA. = NUMBER OF BARS OF EACH LENGTH.



HALF ELEVATION OF LOWER BAFFLE AND WING

NOTE: BEND OR CUT D1 BARS IN FIELD TO CLEAR NOTCH IN BAFFLE WALL.

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

STATE OF MISSOURI  
 DENNIS W. HECKMAN  
 NUMBER PE-27141  
 PROFESSIONAL ENGINEER

**PIPE CULVERT HEADWALL ENERGY DISSIPATOR (IMPACT TYPE) FOR 30" CONCRETE PIPE**

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