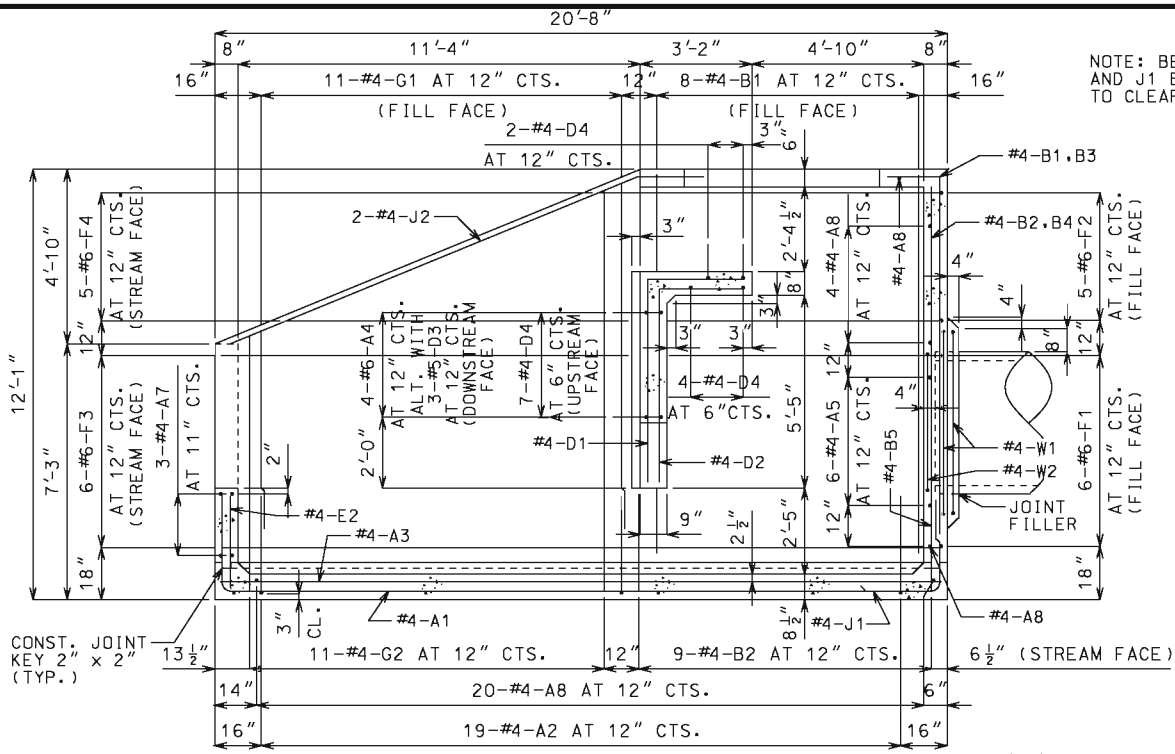
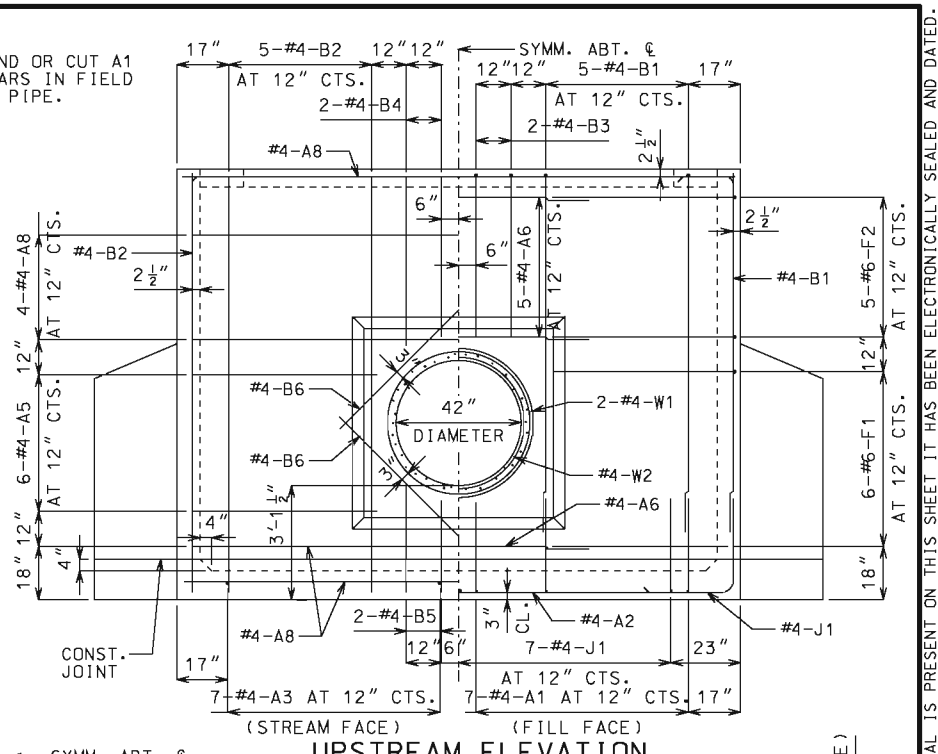


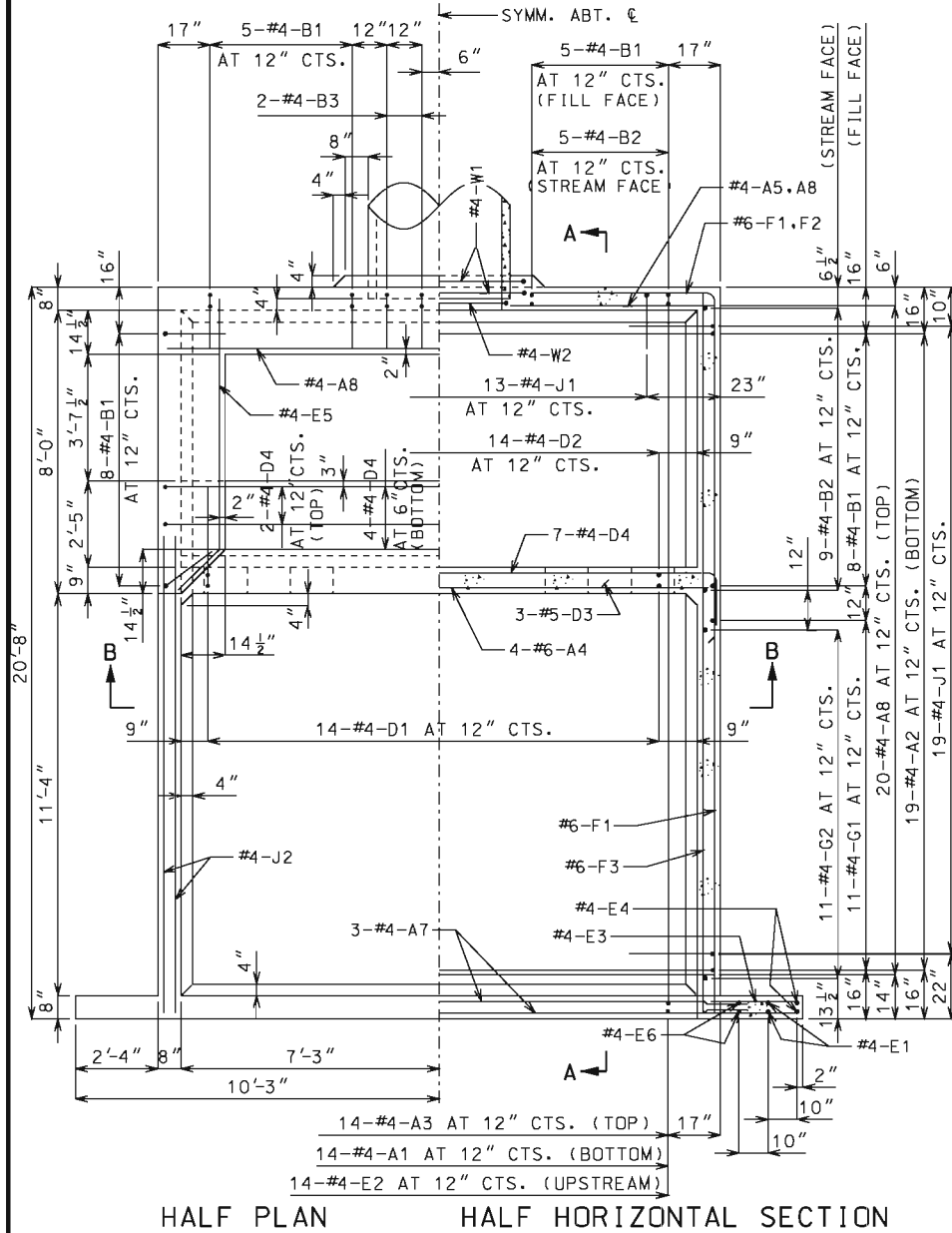
DOWNSTREAM ELEVATION



SECTION A - A

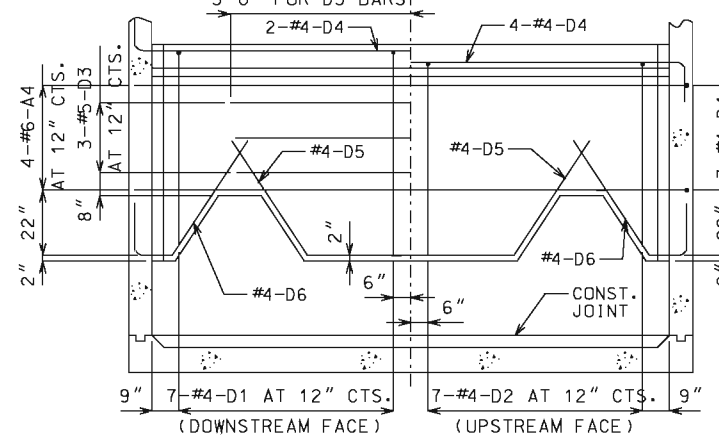


UPSTREAM ELEVATION

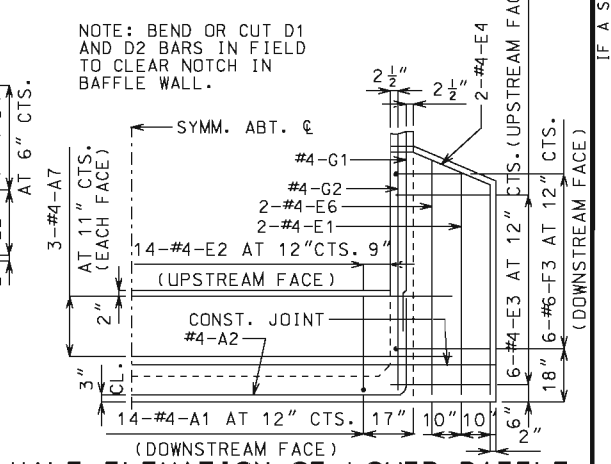


HALF PLAN HALF HORIZONTAL SECTION

COMPLETE BILL OF REINFORCING STEEL																	
NO.	RECD	MARK NO.	SHAPE NO.	VARIES (V)	NO. EACH	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
						B	C	D	E	F	H	K					
						FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.		
14	4	A1	11				2-9	20-4	2-9				25-10	25-8	240		
19	4	A2	11				2-10	15-7	2-10				21-3	21-1	268		
14	4	A3	20				20-4						20-4	20-4	190		
4	6	A4	20				15-7						15-7	15-7	94		
12	4	A5	20				5-7						5-7	5-7	45		
6	4	A6	20				6-5						6-5	6-5	26		
6	4	A7	20				16-9						16-9	16-9	67		
26	4	A8	20				15-7						15-7	15-7	271		
26	4	B1	19				9-11 1/2	0-19					11-7	11-5	198		
28	4	B2	20				11-10						11-10	11-10	221		
4	4	B3	19				4-10	0-19					6-5	6-4	17		
4	4	B4	20				4-10						4-10	4-10	13		
4	4	B5	20				2-6						2-6	2-6	7		
4	4	B6	20				5-0						5-0	5-0	13		
14	4	D1	19				5-9 1/2	2-10 1/2					8-8	8-7	80		
14	4	D2	19				5-5 1/2	2-6					8-0	7-10	73		
3	5	D3	20				10-0						10-0	10-0	31		
13	4	D4	11				0-12	15-7	0-12				17-7	17-5	151		
2	4	D5	15				3-7 3/8	5-10	3-7 3/8	3-0 1/2	2-0	3-0 1/2	2-0	13-1	13-0	17	
4	4	D6	14				0-12	0-13 1/2	3-7 3/8				3-0 1/2	2-0	5-9	5-7	15
4	4	E1	20				6-5						6-5	6-5	17		
14	4	E2	20				2-10						2-10	2-10	26		
12	4	E3	20				2-9						2-9	2-9	22		
4	4	E4	25				6-0	2-5	0-6 1/2			0-11 1/2	2-2 1/2	8-11	8-10	24	
2	4	E5	15				2-2 1/2	7-3 1/2				0-19	0-19	9-6	9-6	13	
4	4	E6	20				6-9						6-9	6-9	18		
12	6	F1	19				20-5	5-5 1/2					25-11	25-9	464		
10	6	F2	19	V 2			9-8	5-5 1/2					15-2	15-0			
							19-6	5-5 1/2					25-0	24-10	299		
12	6	F3	19				20-5	2-9					23-2	23-0	415		
10	6	F4	20	V 2			9-8						9-8	9-8			
							19-6						19-6	19-6	219		
22	4	G1	20	V 2			5-7						5-7	5-7			
							9-6						9-6	9-6	111		
22	4	G2	20	V 2			7-7						7-7	7-7			
							11-6						11-6	11-6	140		
51	4	J1	19				3-3	3-3					6-6	6-5	219		
4	4	J2	20				13-10						13-10	13-10	37		
2	4	W1	16				4-7 1/2						15-5	15-5	21		
1	4	W2	16				3-10 1/2						13-1	13-1	9		



SECTION B - B

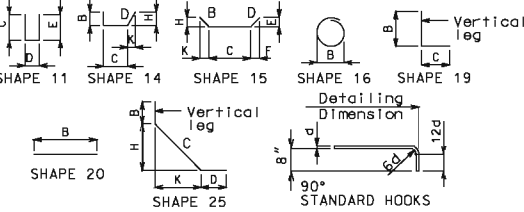


HALF ELEVATION OF LOWER BAFFLE AND WING

ESTIMATED QUANTITIES


ITEM	TOTAL
CLASS B CONCRETE	CU. YD. 28.2
REINFORCING STEEL	LBS. 4,090

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.

GENERAL NOTES:
DESIGN UNIT STRESSES
 CLASS B CONCRETE $f'c = 3,000$ psi
 REINFORCING STEEL (GRADE 60) $fy = 60,000$ psi
REINFORCING STEEL
 MINIMUM CLEARANCE TO REINFORCING STEEL
DIMENSIONS
 DRAWINGS ARE NOT TO SCALE. FOLLOW DIMENSIONS.



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 42" CONCRETE PIPE

SHEET NO.
604.14E
1 OF 1

DATE EFFECTIVE: 07/01/2001
DATE PREPARED: 9/3/2009

DATE EFFECTIVE: 07/01/2001
DATE PREPARED: 9/3/2009

SHEET NO.
604.14E
1 OF 1

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