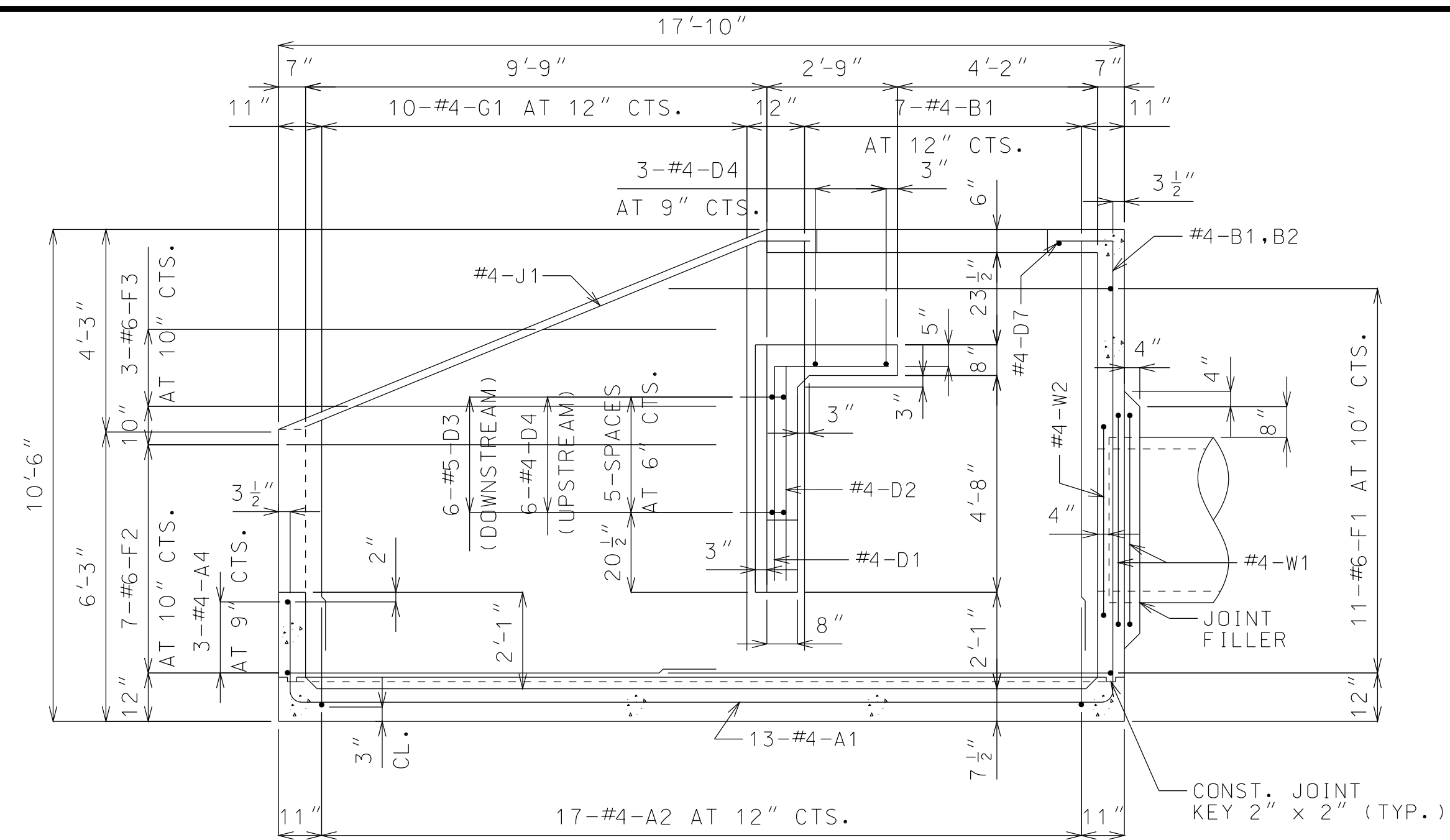
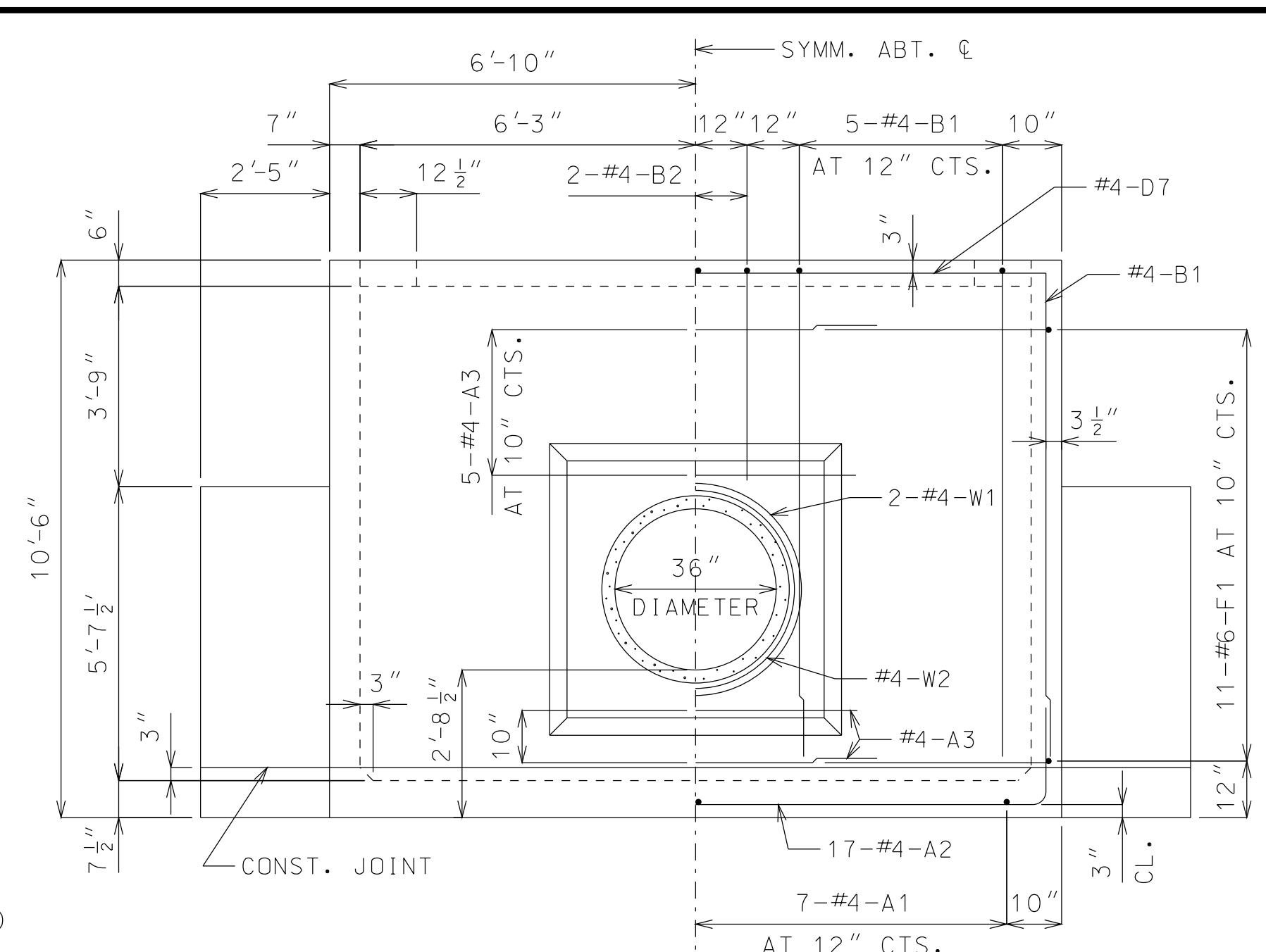


DOWNSTREAM ELEVATION



SECTION A - A



UPSTREAM ELEVATION

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.

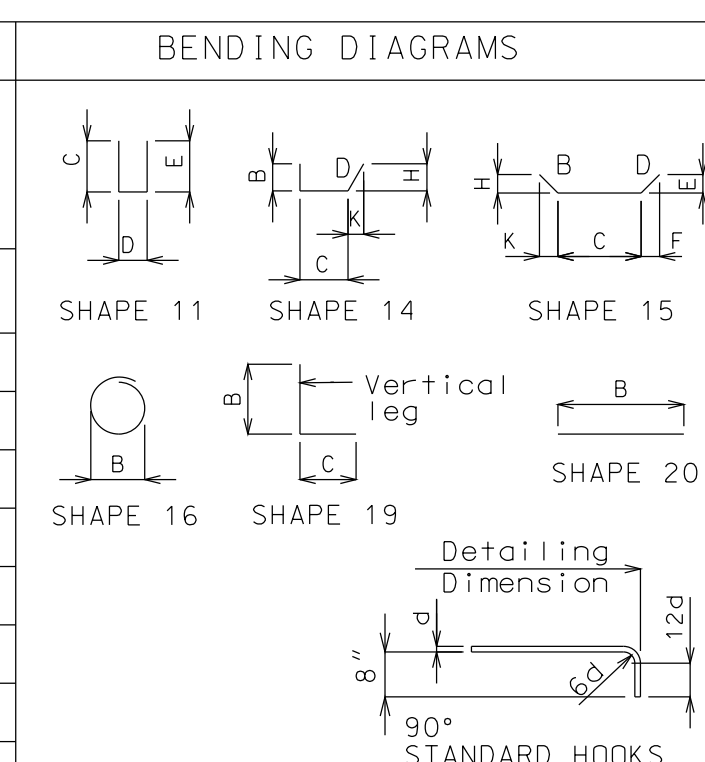
DIMENSIONS

DRAWINGS ARE NOT TO SCALE. FOLLOW DIMENSIONS.

SECTION A - A

ESTIMATED QUANTITIES		
ITEM		TOTAL
CLASS B CONCRETE	CU. YD.	19.0
REINFORCING STEEL	LBS.	1,870

NO.	REQ'D	MARK NO.	SHAPE NO.	VARIES (V)	DIMENSIONS										NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT			
					NO. EACH															
					B	C	D	E	F	H	K	FT. IN.	FT. IN.	FT. IN.				FT. IN.	FT. IN.	FT. IN.
13	4	A1	11															22-0	21-10	190
17	4	A2	11															17-9	17-7	200
7	4	A3	20		5-11													5-11	5-11	28
3	4	A4	20		15-2													15-2	15-2	30
24	4	B1	19		8-7 $\frac{1}{2}$	0-15												9-11	9-9	156
3	4	B2	19		4-2 $\frac{1}{2}$	0-15												5-6	5-4	11
13	4	D1	19		4-11	2-5 $\frac{1}{2}$												7-5	7-3	63
13	4	D2	20		4-11													4-11	4-11	43
6	5	D3	20		13-5													13-5	13-5	84
9	4	D4	11			0-12	13-2	0-12										15-2	15-0	90
4	4	D5	14		0-12	0-8 $\frac{3}{4}$	3-0			2-6	0-20							4-9	4-7	12
2	4	D6	15		3-0	5-4 $\frac{1}{2}$	3-0	2-6	0-20	2-6	0-20							11-5	11-4	15
1	4	D7	20		13-5													13-5	13-5	9
6	4	E1	20		6-0													6-0	6-0	24
2	4	E2	15		0-22 $\frac{3}{8}$	6-0				0-16	0-16							7-11	7-10	10
2	4	E3	20		3-7													3-7	3-7	5
22	6	F1	19		9-10 $\frac{1}{2}$	4-7 $\frac{1}{2}$												14-6	14-4	474
14	6	F2	19		9-2 $\frac{1}{2}$	2-6 $\frac{1}{2}$												11-9	11-7	244
6	6	F3	20	V	2	3-6												3-6	3-6	6
						7-6				(INCREMENT = 24 INCHES)								7-6	7-6	50
20	4	G1	20	V	2	4-9												4-9	4-9	8
						8-5 $\frac{1}{2}$				(INCREMENT = 5 INCHES)								8-6	8-6	89
2	4	J1	20		12-0													12-0	12-0	16
2	4	W1	16		4-0 $\frac{1}{2}$													13-7	13-7	18
1	4	W2	16		3-4 $\frac{1}{2}$													11-6	11-6	8



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.

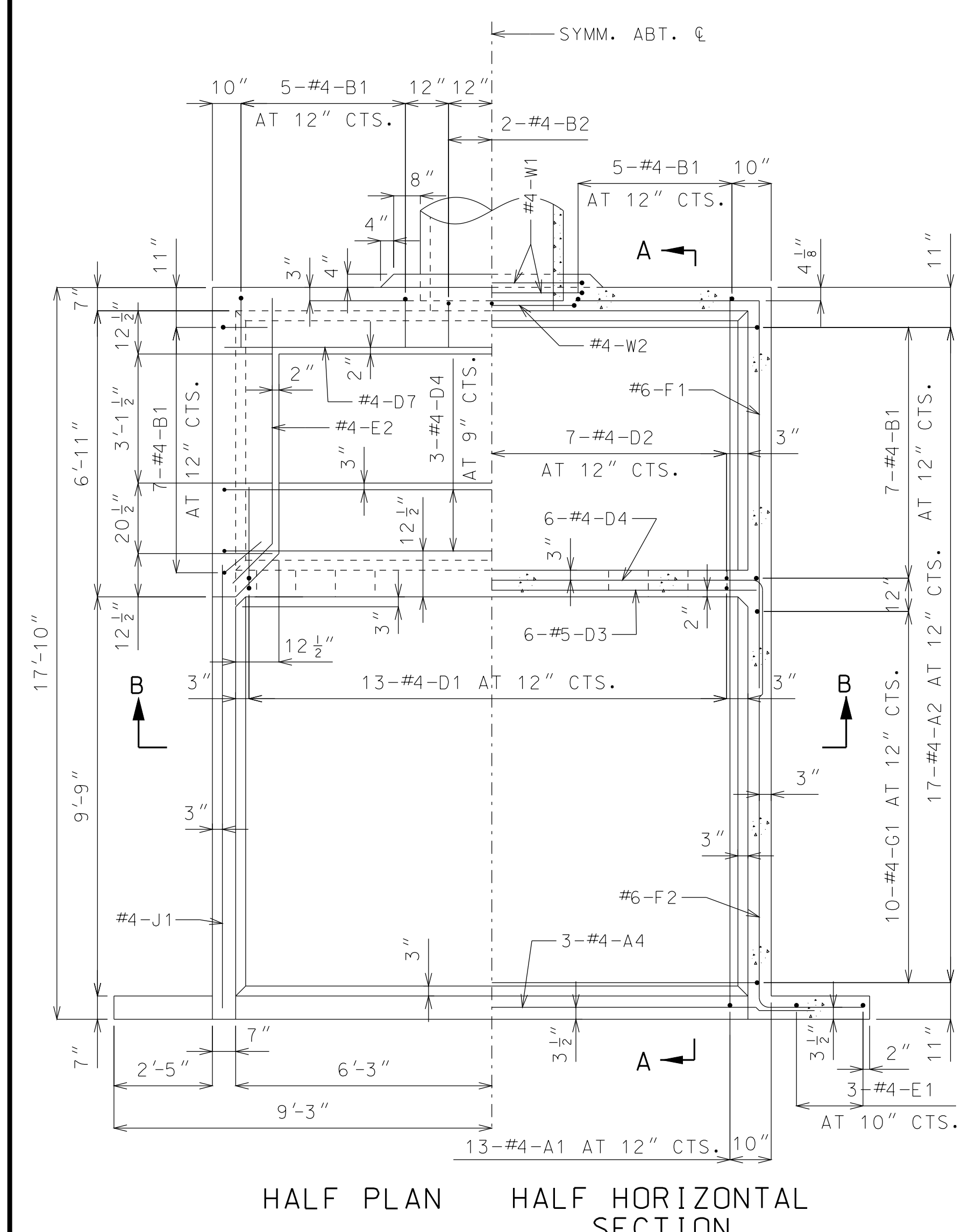
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

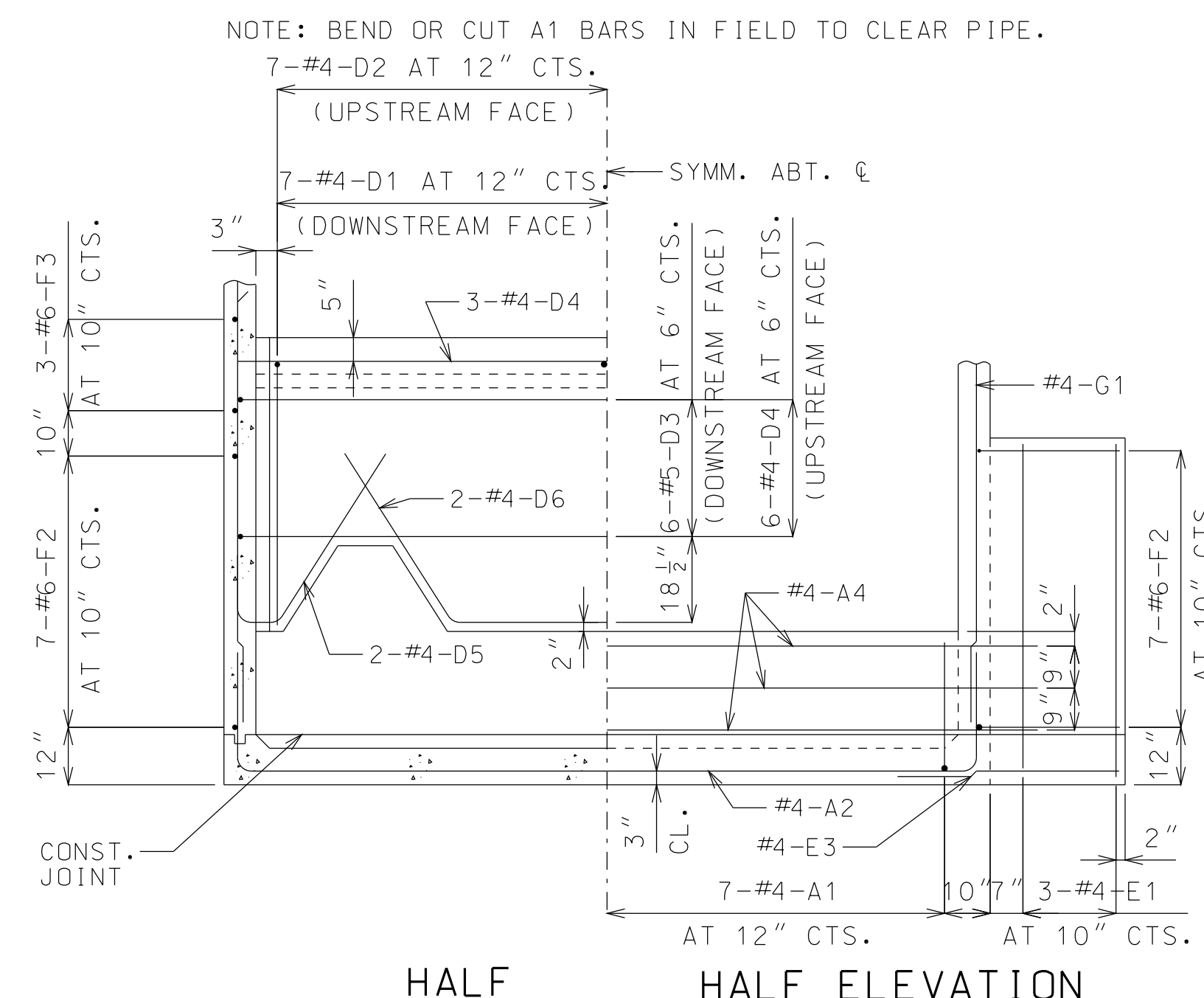
LENGTH = TOTAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

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 PLAN HALF HORIZONTAL SECTION



HALF SECTION B-B HALF ELEVATION OF LOWER BAFFLE AND WING

NOTE: BEND OR CUT D1 AND D2 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)

PIPE CULVERT HEADWALL
 ENERGY DISSIPATOR (IMPACT TYPE)
 FOR 36" CONCRETE PIPE

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

604.13E

SHEET NO.
1 OF 1

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