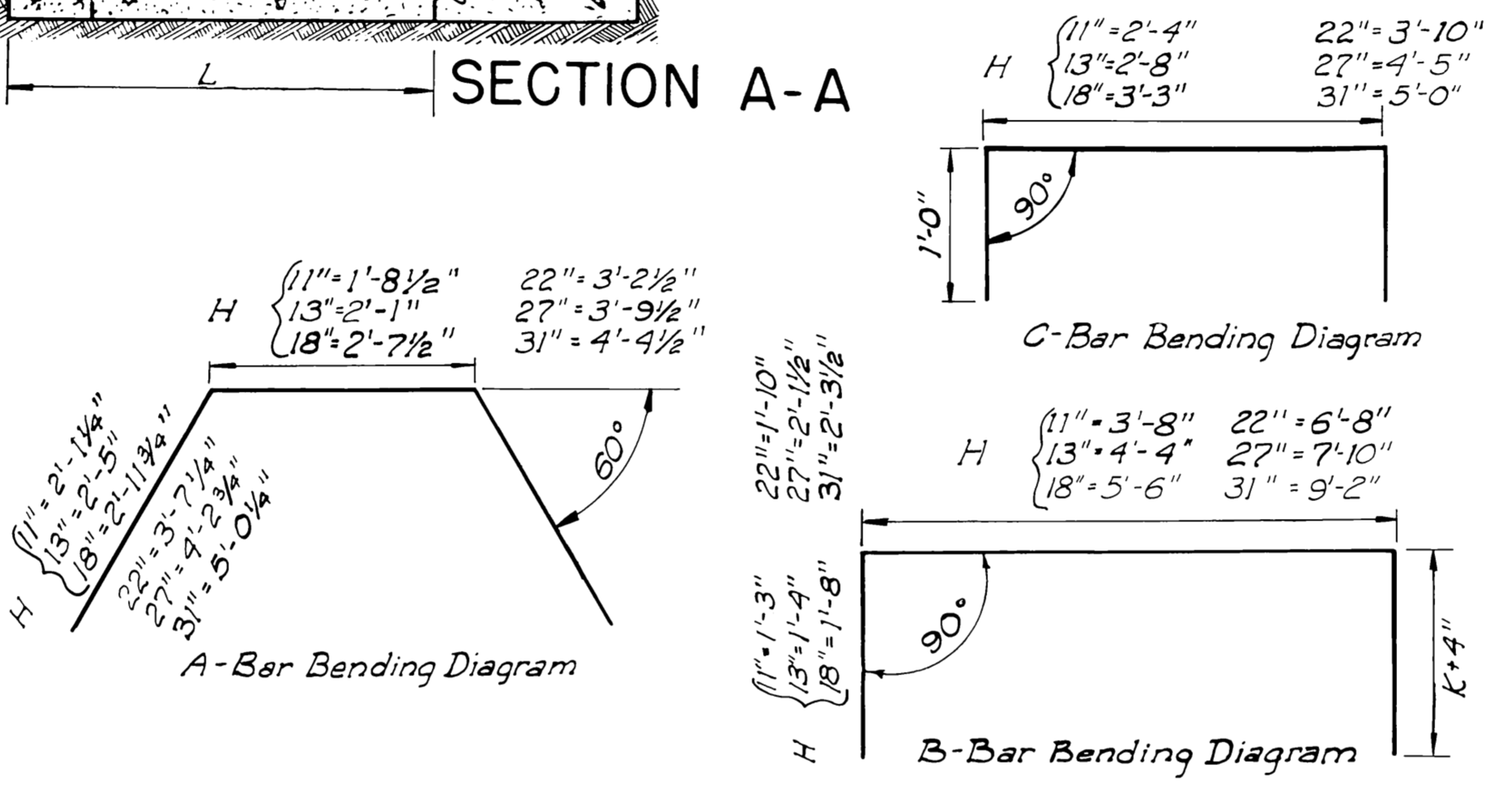
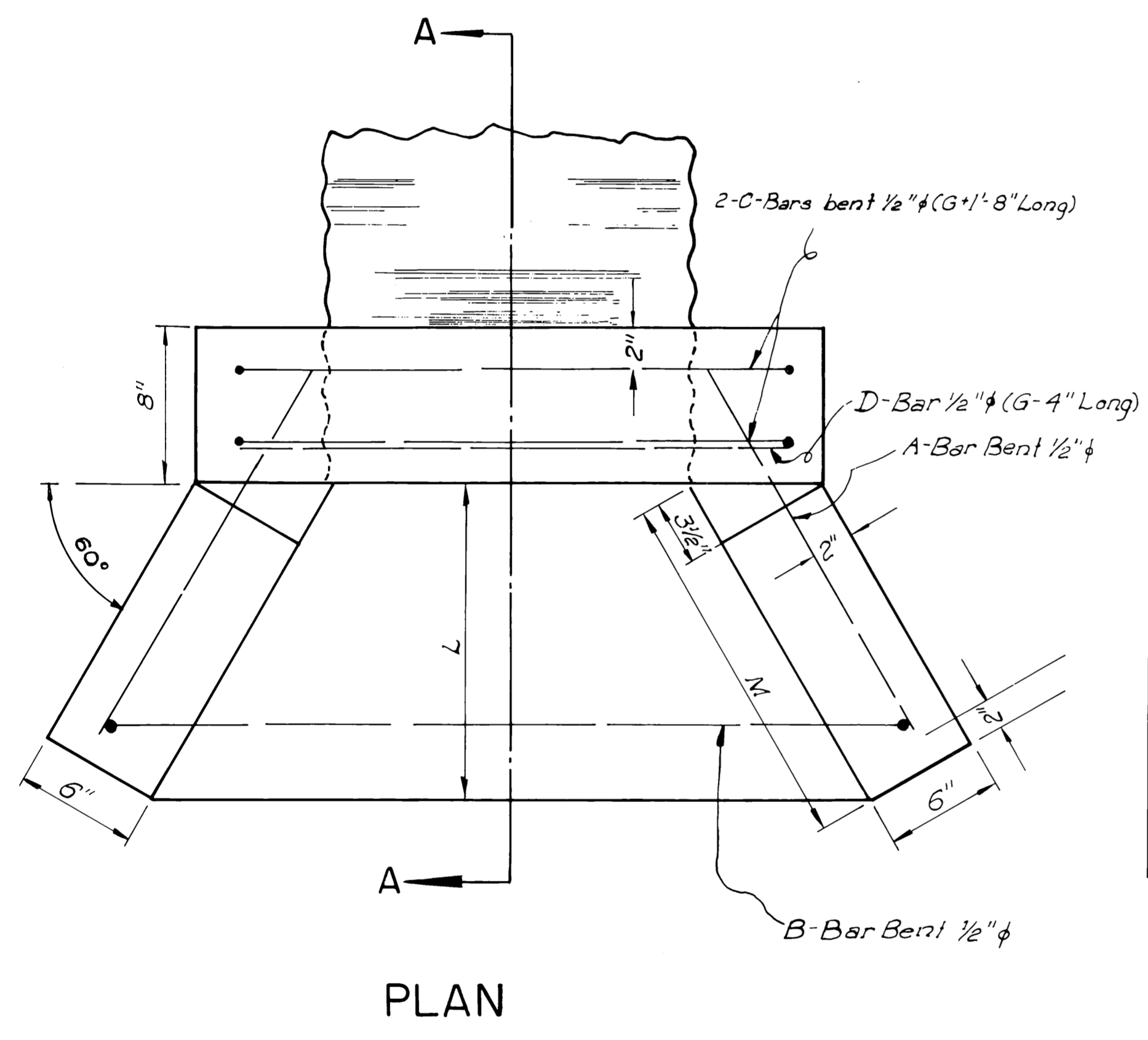
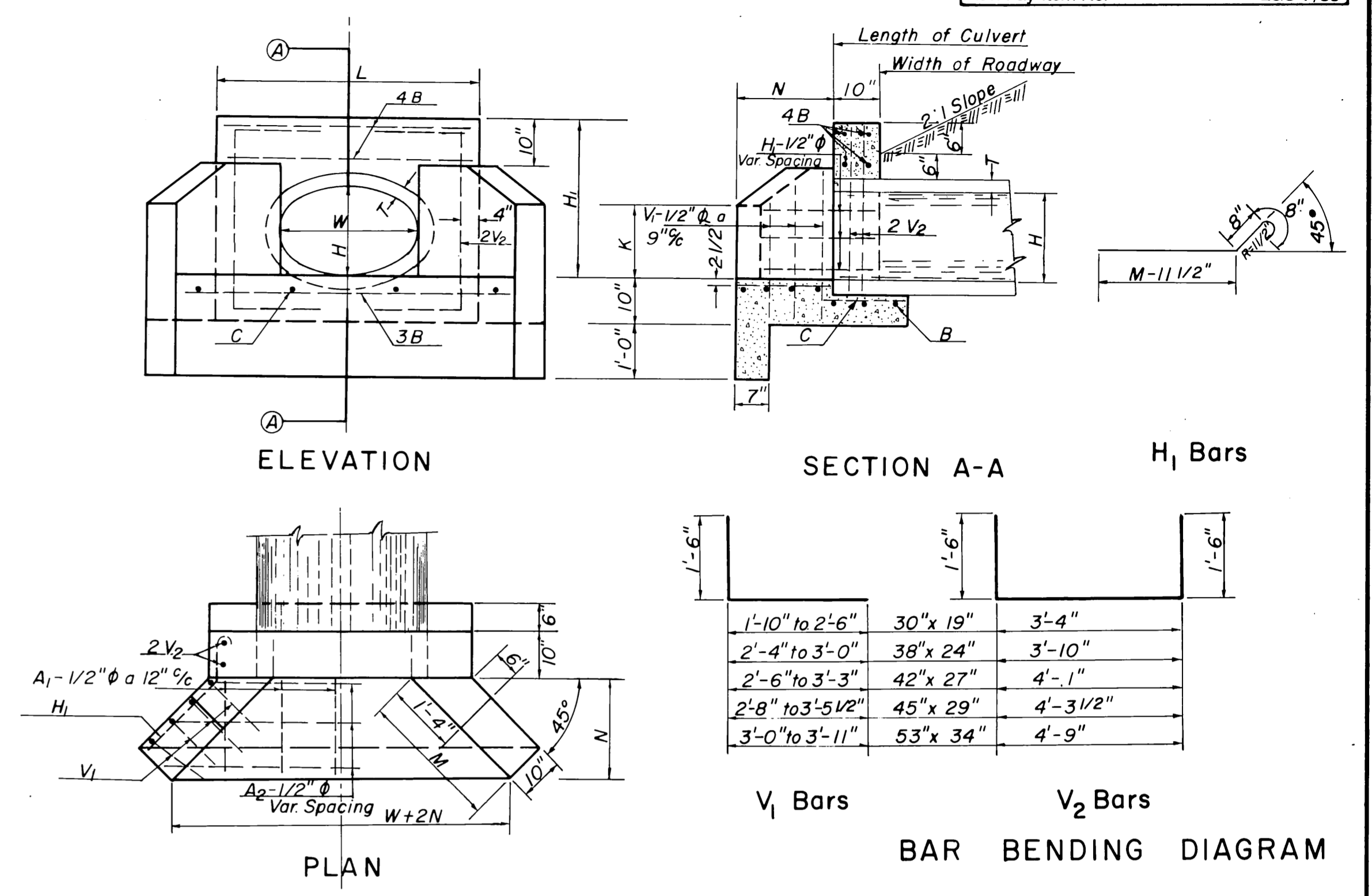
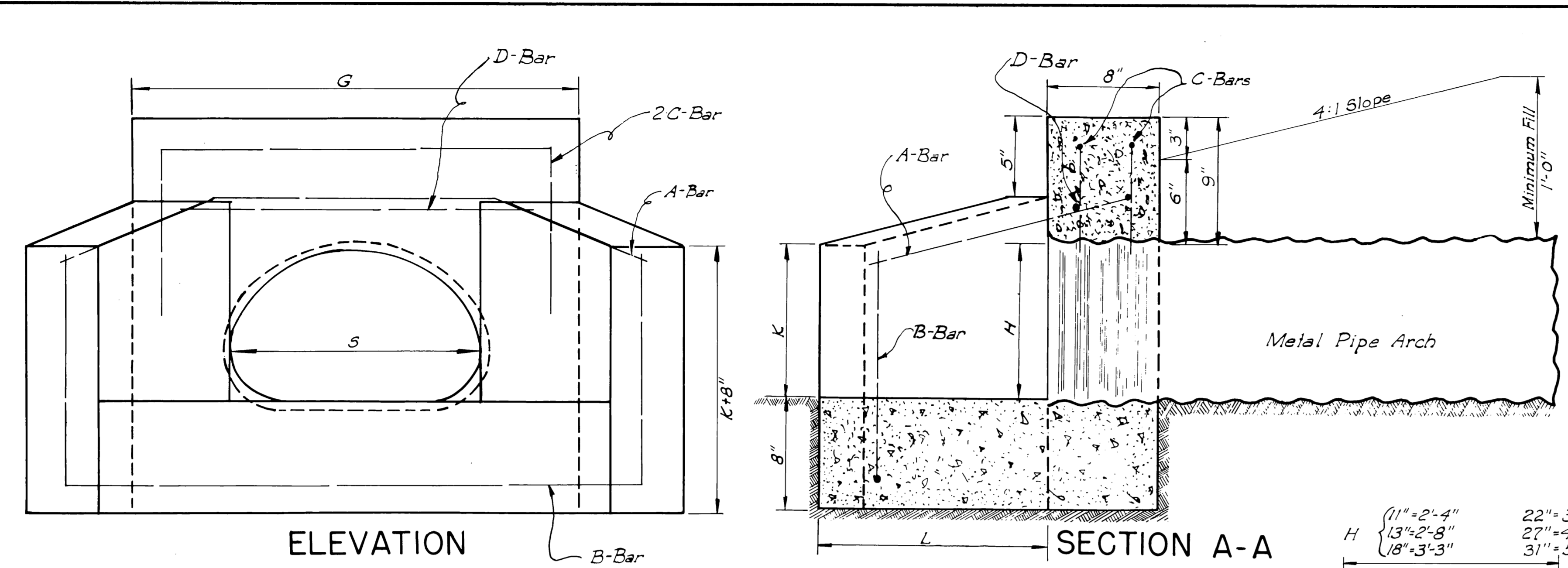


DESCRIPTION	REVISIONS	DATE
RE-ISSUE		
Rev. Pay Item No.		LGC 7/89



S	H	A-BARS				B-BARS				C-BARS				D-BARS			
		FORM	NO	SIZE	LENGTH	FORM	NO	SIZE	LENGTH	FORM	NO	SIZE	LENGTH	FORM	NO	SIZE	LENGTH
18"	11"	Bent	1	1/2φ	5'-11"	Bent	1	1/2φ	6'-2"	Bent	2	1/2φ	4'-4"	Str.	1	1/2φ	2'-4"
22"	13"	Bent	1	1/2φ	6'-11"	Bent	1	1/2φ	7'-0"	Bent	2	1/2φ	4'-8"	Str.	1	1/2φ	2'-8"
29"	18"	Bent	1	1/2φ	8'-7"	Bent	1	1/2φ	8'-10"	Bent	2	1/2φ	5'-3"	Str.	1	1/2φ	3'-3"
36"	22"	Bent	1	1/2φ	10'-5"	Bent	1	1/2φ	10'-4"	Bent	2	1/2φ	5'-10"	Str.	1	1/2φ	3'-10"
43"	27"	Bent	1	1/2φ	12'-3"	Bent	1	1/2φ	12'-1"	Bent	2	1/2φ	6'-5"	Str.	1	1/2φ	4'-5"
50"	31"	Bent	1	1/2φ	14'-5"	Bent	1	1/2φ	13'-9"	Bent	2	1/2φ	7'-0"	Str.	1	1/2φ	5'-0"

DIMENSIONS		REINFORCING STEEL								QUANTITIES														
W	H	Area Sq Ft	T	H <sub>1</sub>	K	L	M	N	A <sub>1</sub> -1/2"φ	A <sub>2</sub> -1/2"φ	B-1/2"φ	C-1/2"φ	H <sub>1</sub> -1/2"φ	V <sub>1</sub> -1/2"φ	V <sub>2</sub> -1/2"φ	Class A Conc. Cu. Yd.	Reinf. Steel Lbs.							
30"	19"	3.3	3/4"	2'-10 1/4"	1'-4"	4'-10 1/4"	2'-6"	1'-9"	5	1'-5"	3	5'-8"AVG	7	4'-6 1/4"	4	1'-6"	8	2'-10 1/2"	12	3'-8"AVG	4	6'-4"	1.27	104.
38"	24"	5.1	3 3/4"	3'-3 3/4"	1'-10"	5'-6 1/4"	3'-1"	2'-11 1/2"	6	1'-10"	3	6'-9"AVG	7	5'-1 1/4"	4	1'-6"	12	3'-5 1/2"	16	4'-2"AVG	4	6'-10"	1.87	140.
42"	27"	6.3	3 3/4"	3'-6 3/4"	2'-0"	5'-10 1/4"	3'-5"	2'-4 1/2"	6	2'-1"	3	7'-1"AVG	7	5'-6 1/4"	4	1'-6"	12	3'-9 1/2"	16	4'-4 1/2"AVG	4	7'-1"	2.09	149.
45"	29"	7.4	4 1/2"	3'-9 1/2"	2'-2"	6'-1 1/4"	3'-8"	2'-7 1/2"	7	2'-3"	4	7'-9"AVG	7	5'-9 1/4"	4	1'-6"	12	4'-0 1/2"	16	4'-6 1/4"AVG	4	7'-3"	2.38	163.
53"	34"	10.2	5"	4'-3"	2'-6"	6'-9 1/4"	4'-3"	3'-0"	7	2'-8"	4	8'-8"AVG	7	6'-5 1/4"	5	1'-6"	12	4'-7 1/2"	20	4'-11 1/2"AVG	4	7'-9"	3.01	195.

**GENERAL NOTES**  
 ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.  
 ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.

ITEM NO.	ITEM	UNIT
509.06(C)	CLASS A CONCRETE FOR SMALL STRUCTURES	C. Y.
511.06(A)	REINFORCING STEEL	LB.

▲ FOR QUANTITIES OF CLASS A CONC. LESS THAN 10.0 C. Y.

### METAL PIPE ARCH

S	H	Area In Sq. Ft.	K	G	L	M
18"	11"	1.2	11"	2'-8"	1'-7"	1'-10"
22"	13"	1.8	1'-0"	3'-0"	1'-10"	2'-1 1/2"
29"	18"	3.1	1'-4"	3'-7"	2'-4"	2'-8 1/2"
36"	22"	4.9	1'-6"	4'-2"	2'-10"	3'-3 1/2"
43"	27"	7.1	1'-9 1/2"	4'-9"	3'-4 1/2"	3'-11"
50"	31"	9.6	1'-11 1/2"	5'-4"	4'-0 1/2"	4'-8"

H	Class A Concrete C.Y.	Reinforcing Steel Lbs.
11"	0.66	31.
13"	0.82	35.
18"	1.23	42.
22"	1.66	49.
27"	2.23	56.
31"	2.92	63.

APPROVED BY

RURAL DES. ENGR.	URBAN DES. ENGR.	BRIDGE ENGINEER	CONST. ENGINEER	ASS'T. DIR. / DES.
<i>Eng. Charles J. ...</i>	<i>Eng. Taylor ...</i>	<i>Eng. ...</i>	<i>Eng. ...</i>	<i>R. B. ...</i>
DATE 12-9-88	DATE 12-8-88	DATE 12-5-88	DATE 12-2-88	DATE 12-17-88

DESIGN: \_\_\_\_\_  
 DRAWN: \_\_\_\_\_  
 CHECKED: LGC 9/88  
 SQUAD: ENGR. SUPRT. BRANCH  
 RURAL/URBAN DESIGN  
 1988 SPECIFICATIONS

OKLAHOMA DEPT. OF TRANSPORTATION  
 STANDARD  
 HEADWALLS FOR ELLIPTICAL OR ARCH PIPE  
**OBSOLETE**

HEAP-1-3  
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