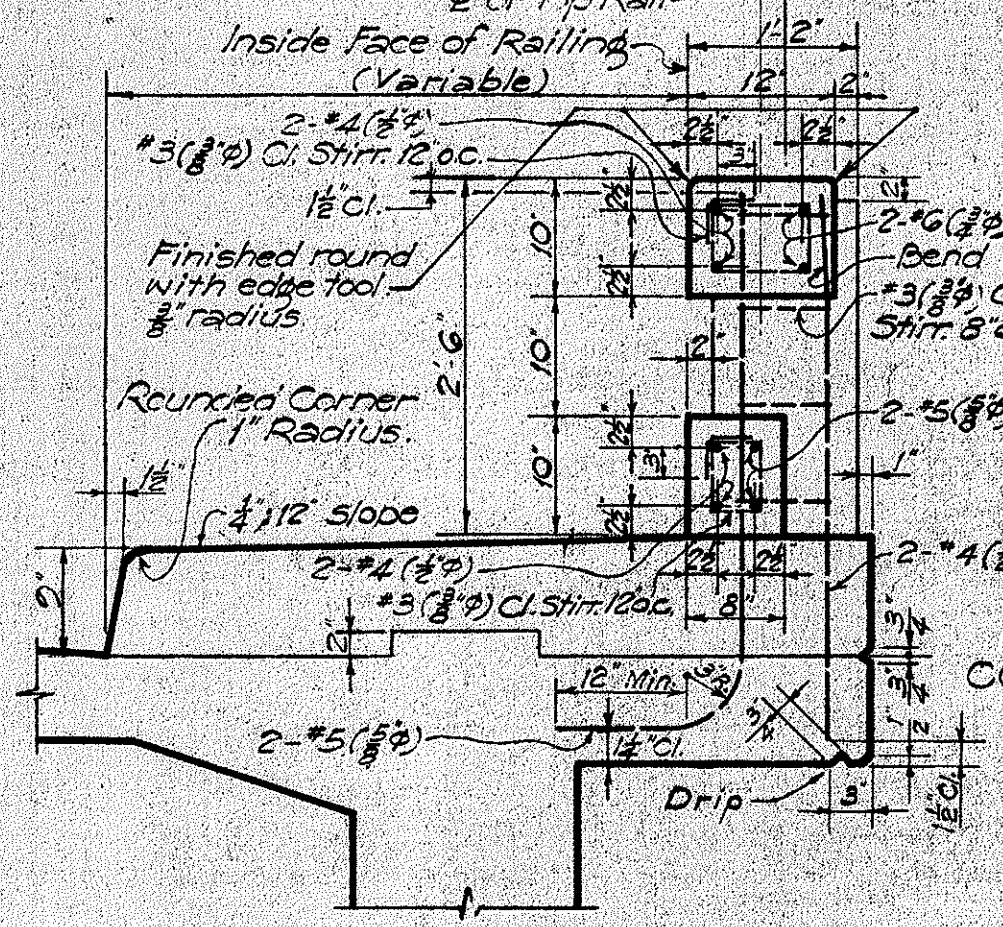
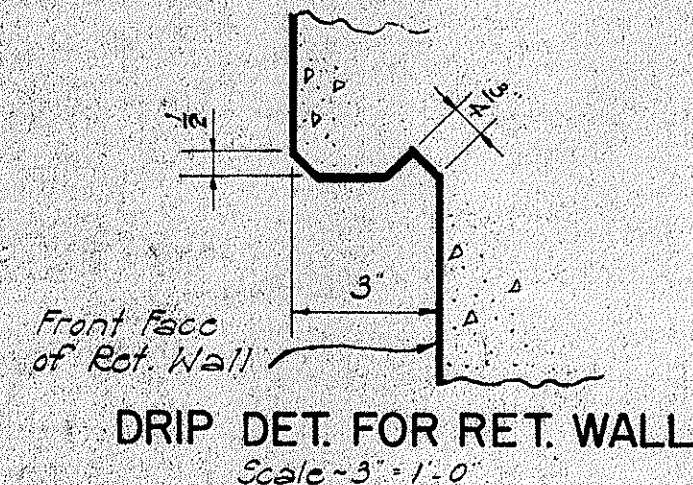


NAME DATE

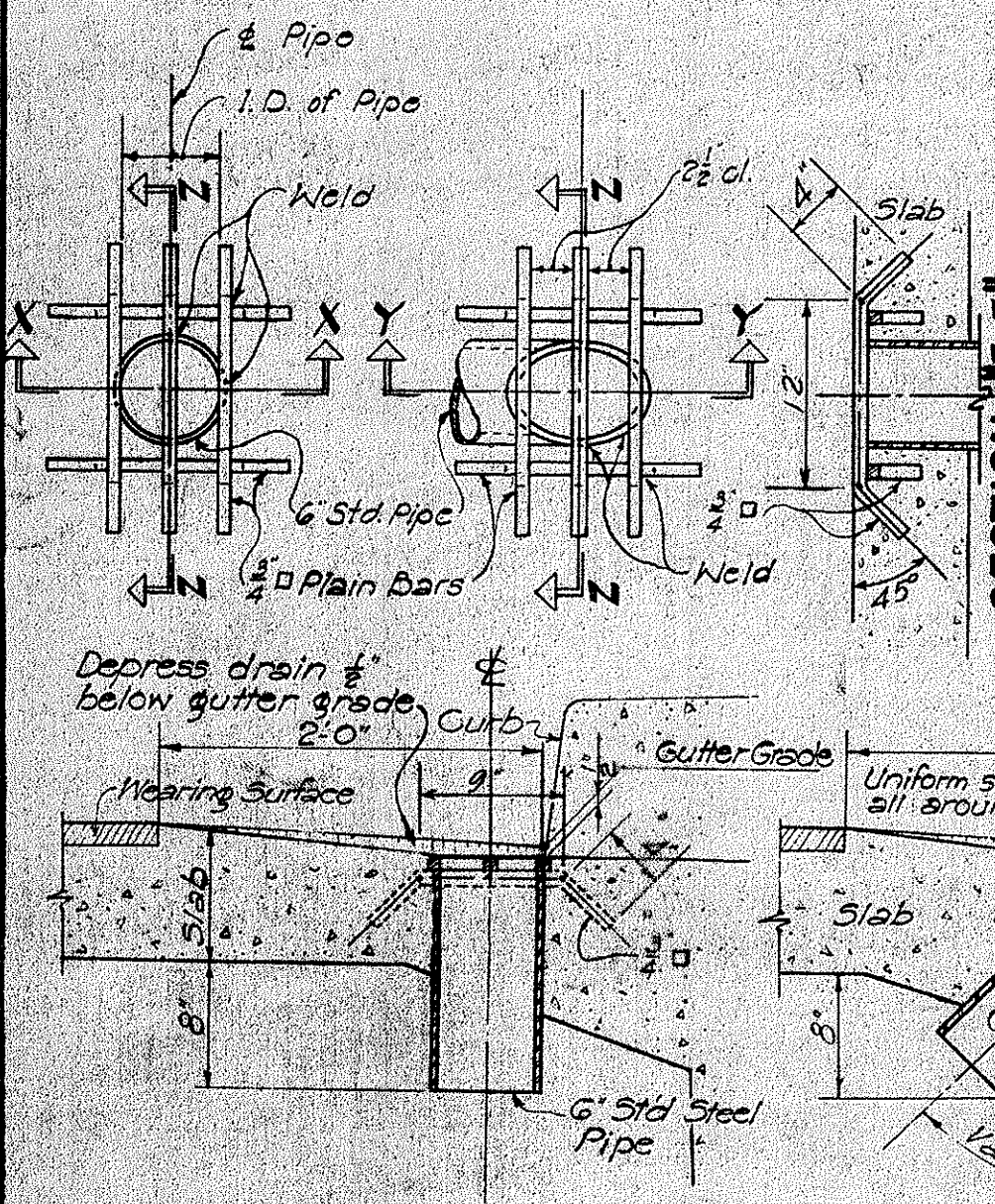
Use correct name of bridge
LEFT HAND SIDE
RIGHT HAND SIDE

DETAIL OF LETTERS AND FIGURES
AT BOTH APPROACHES

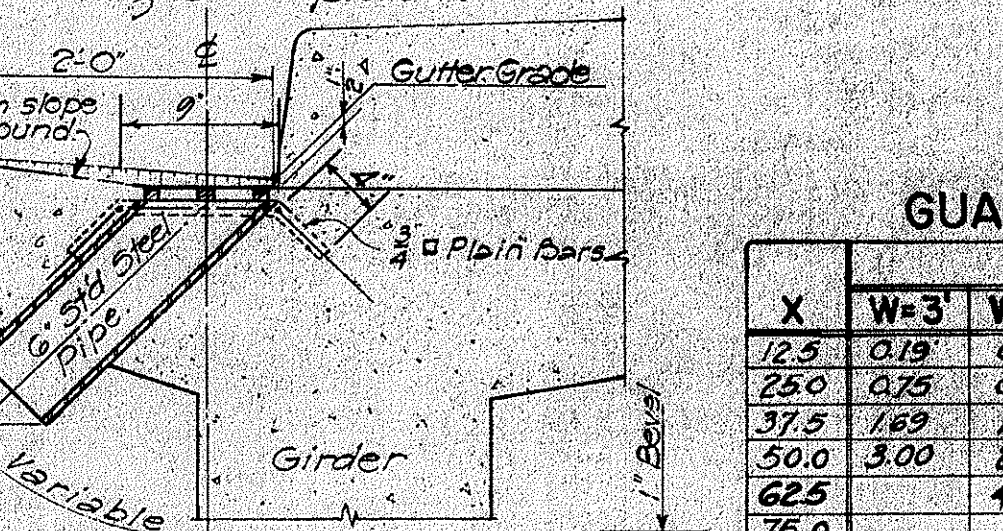
NOTE: Name of bridge to be placed in left end post panels and date in right post panels on entering bridge using modified block letters 3" in height. In case of stream crossings use name of stream for name of bridge. For all others use name as designated by the Engineer.



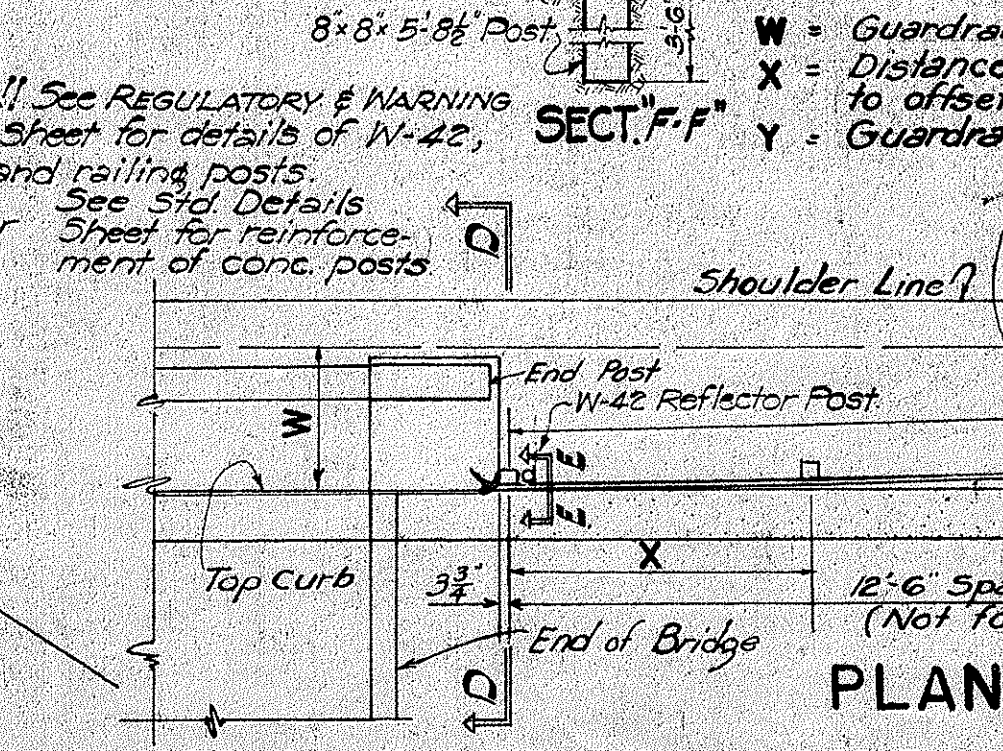
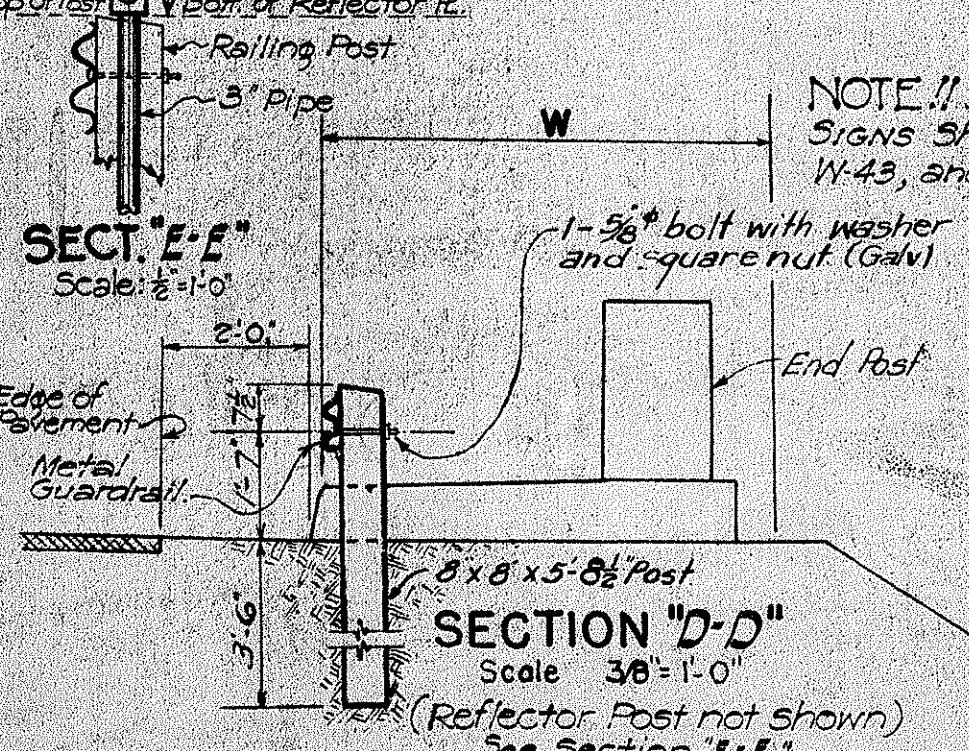
END POST GROOVE DET.
Scale: 5/8" = 1'-0"



NOTE: Sidewalk, curb and railing to be poured after release of falsework. Forms for railing and endpost to be made of plywood.
SURFACE FINISH: The surface of the concrete railings shall be given a Class 2 Rubber Finish as specified under Sub article 46.3 (1) (3) of Section 46 Concrete of the Standard Specifications.
NOTE: Metal drains shall be considered incidental to Class A-1 Concrete in both concrete and steel bridges and will not be paid for separately.
Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.



SECTION "X-X"
DRAINAGE DETAIL
Scale: 1" = 1'-0"



GENERAL NOTES

CONCRETE: Class of concrete to be used in different parts of the structure are as noted on the plans.

REINFORCING STEEL: All reinforcing steel shall be Billet Steel Bars A.S.T.M. A 15 intermediate grade.

Steel shall be made by the open-hearth process. Deformations shall conform to ASTM A 305.

Splicing of reinforcing other than in main deck slab, girder and frame bars shall be done as shown in above sketch except where shown otherwise. Splices are to be staggered. Splices in main girder and frame bars are permitted only in bars exceeding 60'-0" in length at points to be indicated by the Engineer. These splices to be electrically welded according to detail and specifications. No allowance will be made in the quantities for extra weight of steel required for splices not shown on the plans.

Minimum spacing between parallel bars shall be 1 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.

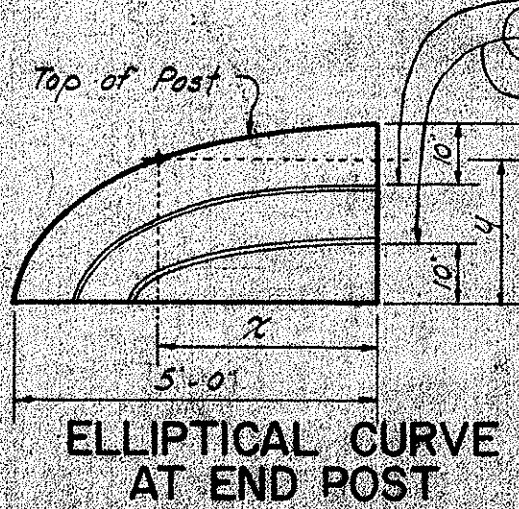
Minimum covering measured from the surface of the concrete to the face of any reinforcing bar shall be not less than 2 inches except in slabs where the minimum covering shall be 1 1/2 inch. In the footings of abutments and retaining walls and in piers the minimum covering shall be 3 inches. In work exposed to the action of sea water the minimum covering shall be 4 inches except in precast concrete piles where a minimum of 3" may be used.

All dimensions relating to reinforcing are to centers of bars unless otherwise noted.

CONSTRUCTION JOINTS: All construction joints to have surface roughened and 1:2 cement grout applied immediately before the second pour. Construction joints to be located at places indicated in the plans. See Sec. 46.3 F (3) of the Standard Specifications.

ELLIPSE COORDINATES

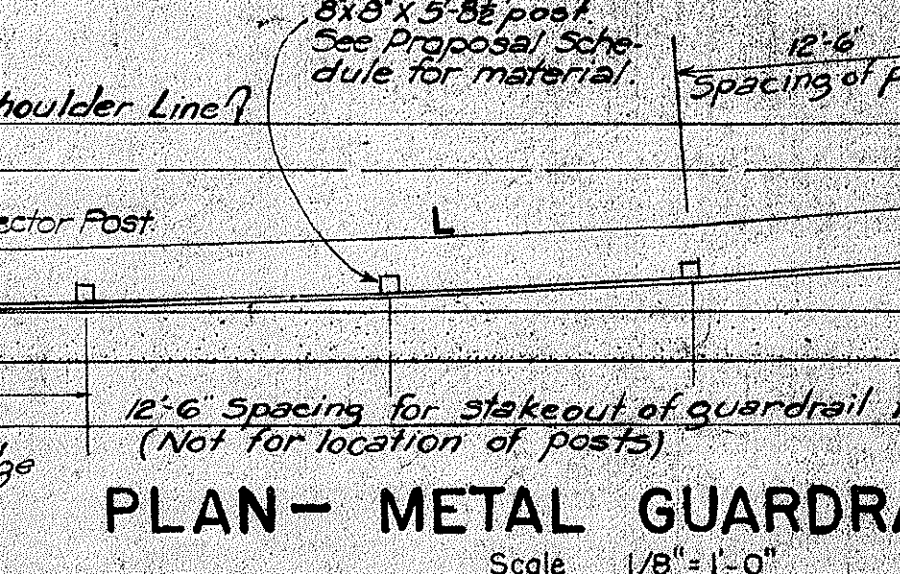
Top of Post	X	0	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
Y	0	2'-6"	2'-5 1/2"	2'-4 1/2"	2'-3 1/2"	2'-2"	2'-0"	1'-9 1/2"	1'-6"	1'-3 1/2"	1'-1 1/2"	0"	0"
Top Line of Upper Groove	X	0	6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"
Y	0	1'-8"	1'-7 1/2"	1'-7"	1'-6 1/2"	1'-5 1/2"	1'-4"	1'-1 1/2"	1'-0"	10"	8 1/2"	6 1/2"	4"
Bot. Line of Lower Groove	X	0	6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"
Y	0	10"	9 1/2"	9"	8 1/2"	8"	6 1/2"	5 1/2"	4 1/2"	3 1/2"	2 1/2"	0"	0"



GUARDRAIL OFFSET

X	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.58	1.48
62.5	4.00	3.47	3.06	2.76	2.16	2.00
75.0	5.00	4.41	3.91	3.51	2.88	2.68
87.5	6.25	5.56	5.00	4.59	3.92	3.68
100.0	7.50	6.76	6.00	5.59	4.80	4.58
112.5	8.75	7.89	7.00	6.59	5.68	5.48
125.0	10.00	9.00	8.00	7.59	6.56	6.38

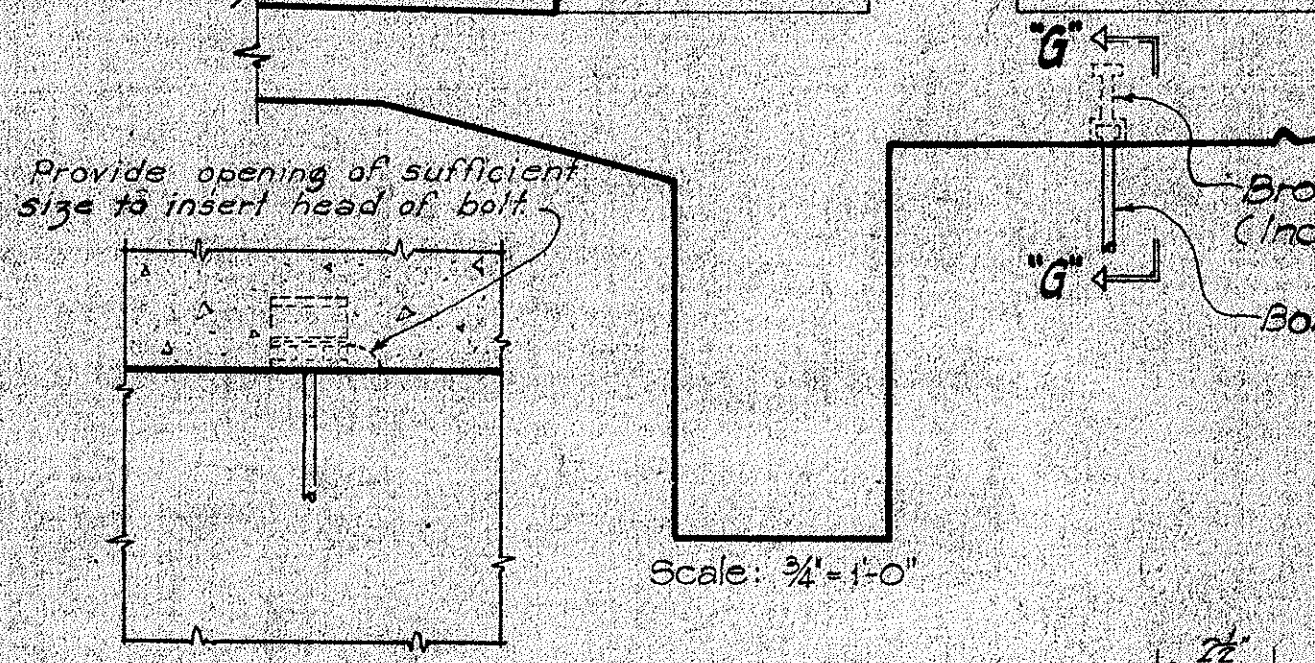
W = Guardrail flare
X = Distance from post at bridge to offset points
Y = Guardrail flare offset



PLAN - METAL GUARDRAIL FLARE
Scale: 1/8" = 1'-0"

LAP DETAIL

(In columns and walls lap bars 32 Dia)

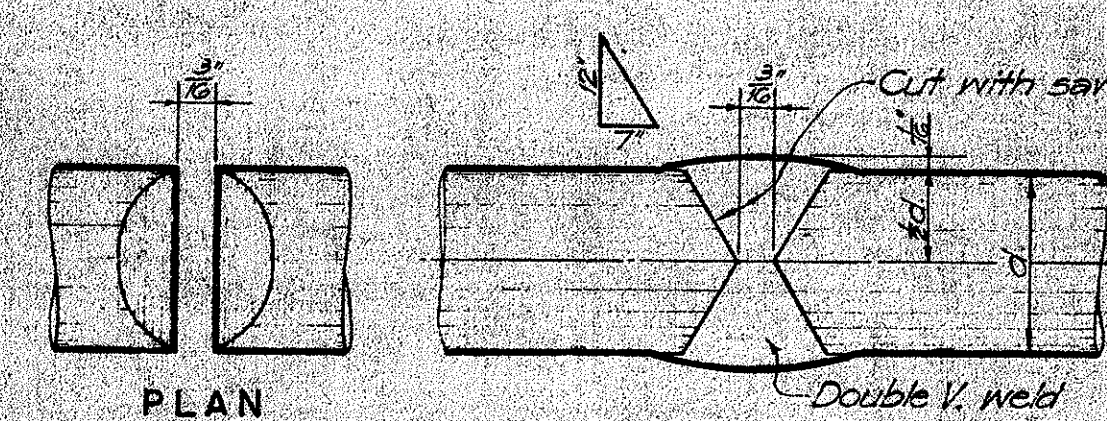


SECTION "G-G"
Scale: 3/4" = 1'-0"

JOINT FILLER: Joint filler when called for in plans, shall be incidental to concrete and will not be paid for separately.

DETAIL OF PIPE HANGERS AND INSERTS

NOTE: Inserts, bolts, plates, nuts & washers to be Bronze conforming to A.S.T.M. Designation B 22 and shall be Class D grade.

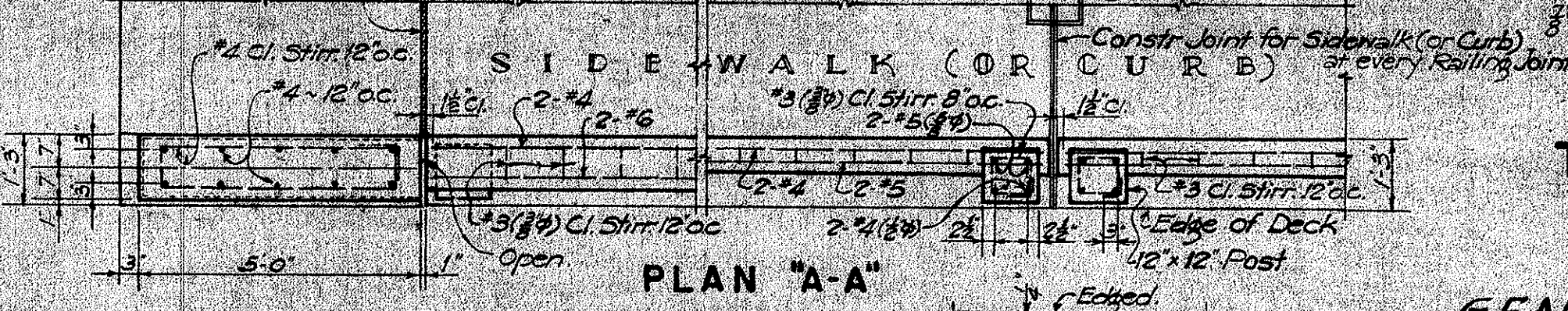


REINFORCING BAR SPLICE

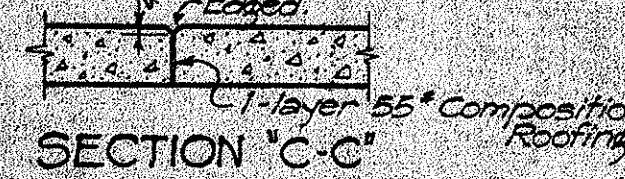
Scale: Full Size

RAILING AND END POST DETAIL

Scale: 3/8" = 1'-0"



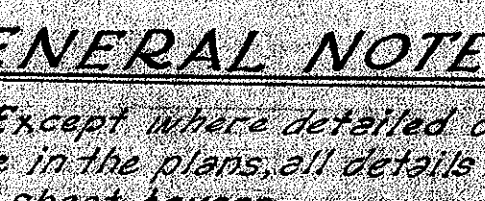
PLAN "A-A"



SECTION "C-C"

TIMBER PILE SPLICE

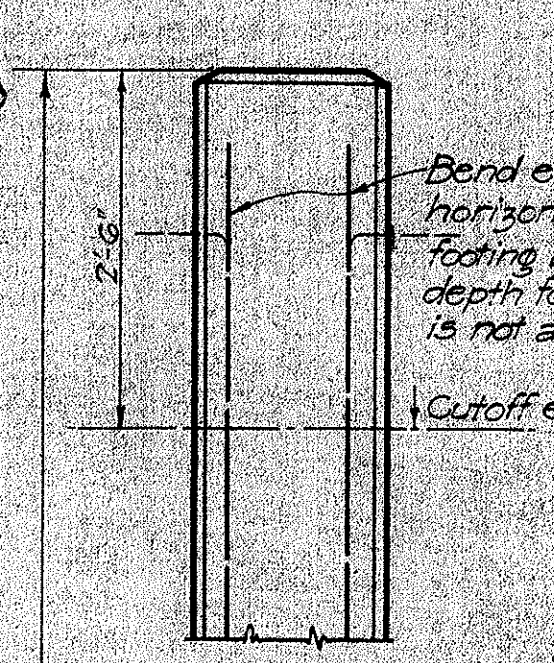
Scale: 3/4" = 1'-0"



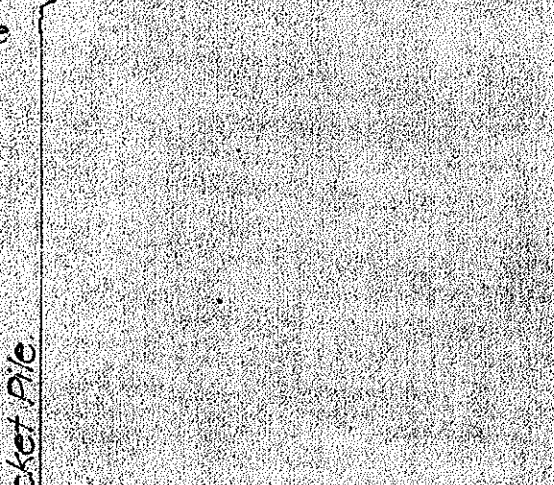
GENERAL NOTE

Except where detailed otherwise in the plans, all details on this sheet govern.

CONSTRUCTION JOINT, WATERPROOFING AND WEEPHOLES.

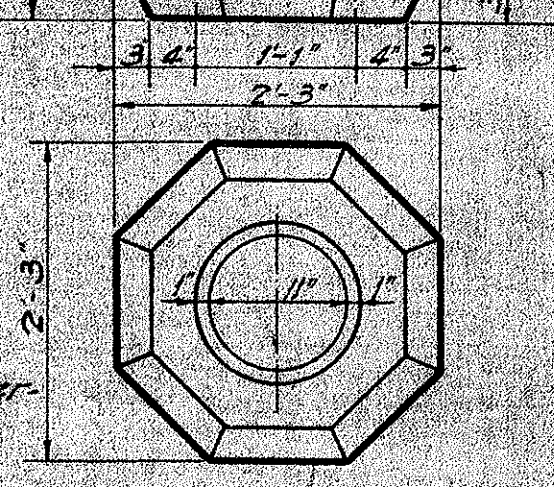


PILE CUTOFF



CONCRETE SOCKET

Scale: 3/4" = 1'-0"



DETAIL OF CONCRETE PILE

Scale: 3/4" = 1'-0"

ED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII HAIL 5-219(2)	1960	G		15	

Feb. '58
May '58
Aug. '58
Jan. '59
May '59
Sept. '59
July '60

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OF HAWAII

STANDARD BRIDGE DETAILS

Scales as noted

APPROVED BY
STATE HIGHWAY ENGINEER

DATE
AUG. 22, 1959

SHEET NO. OF SHEETS