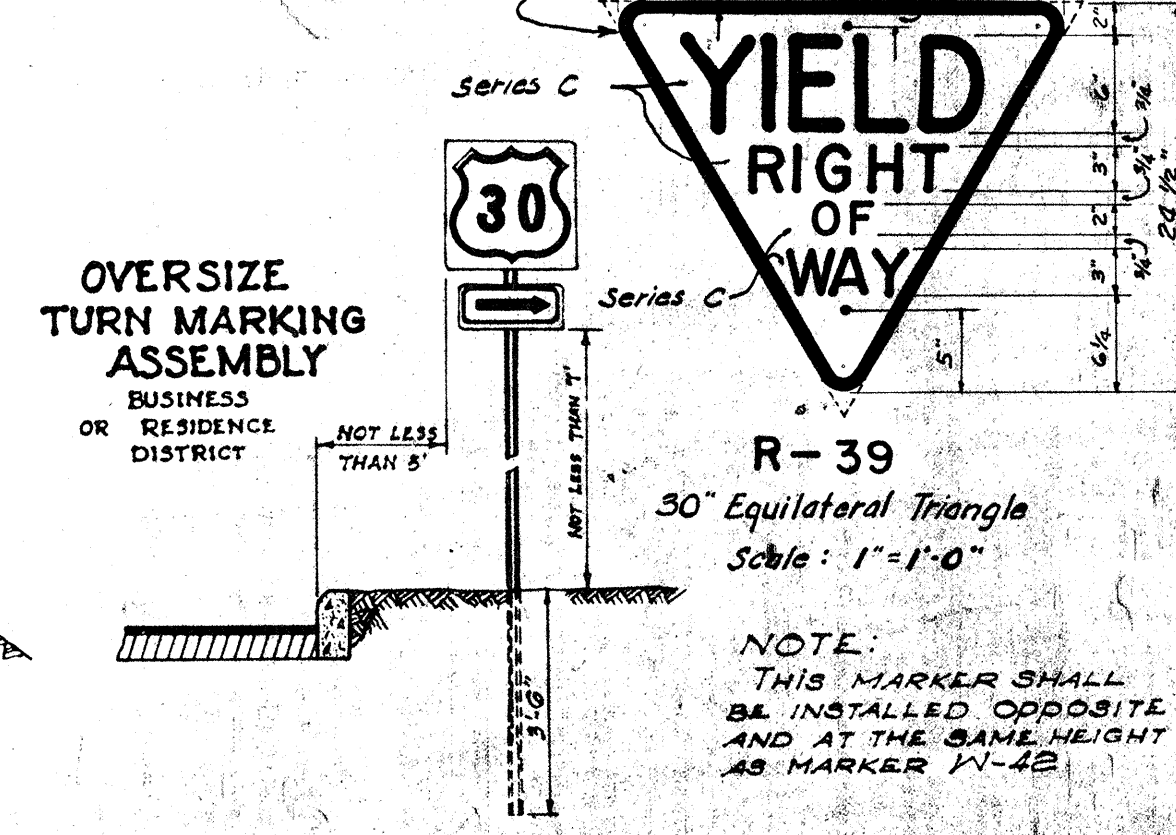
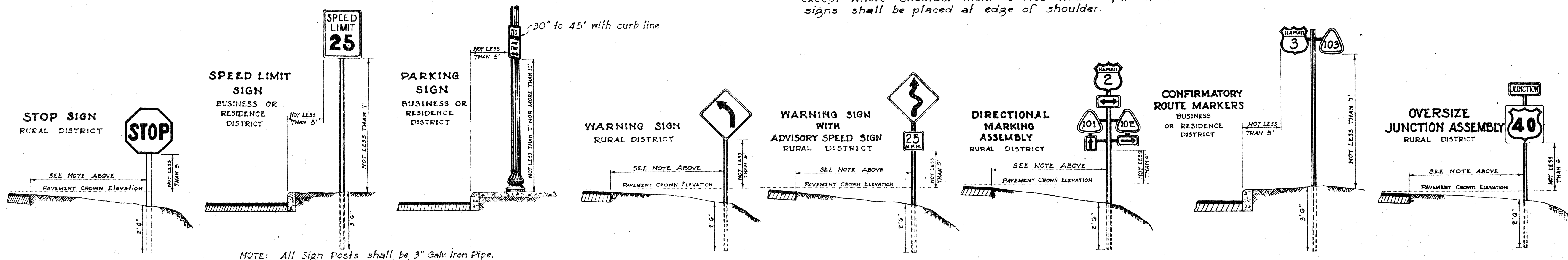
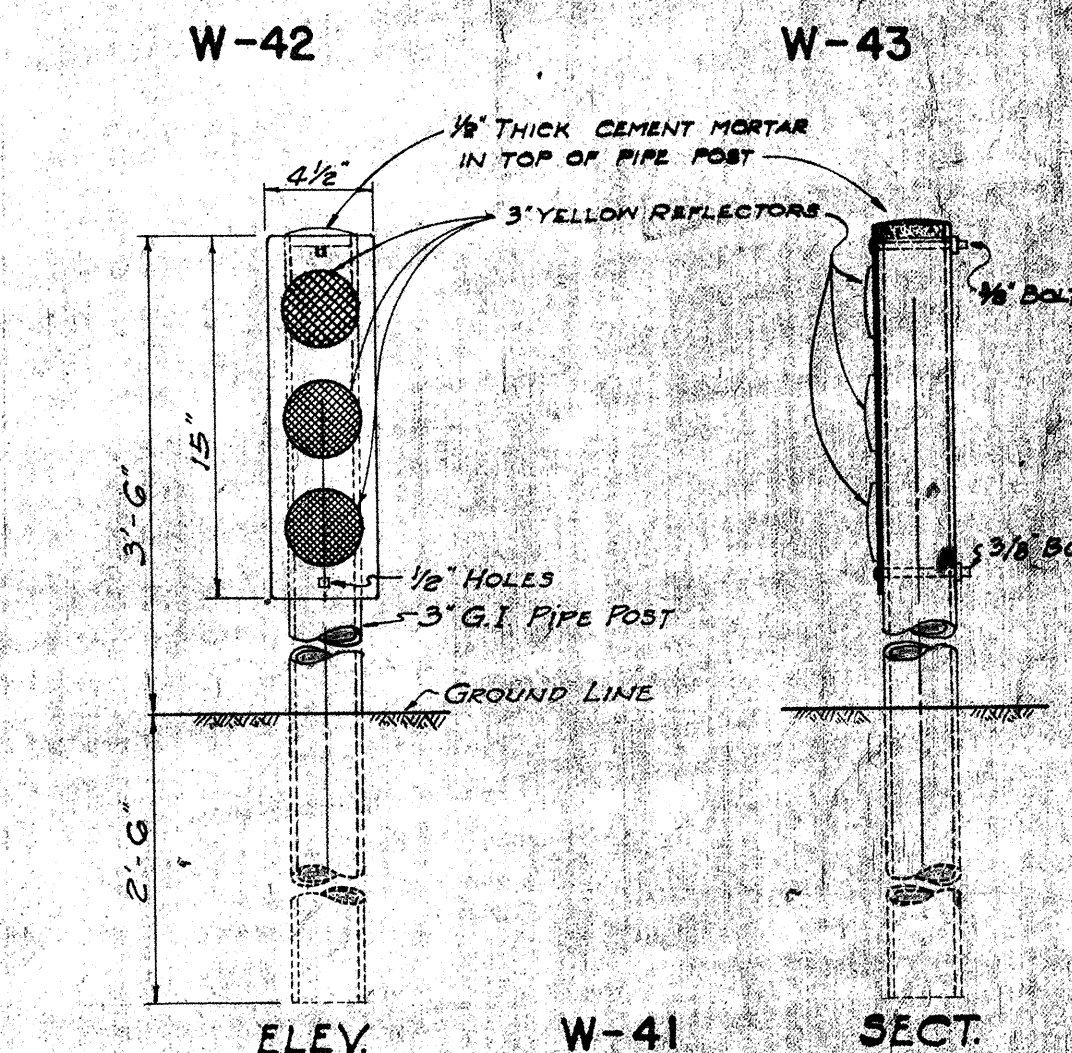
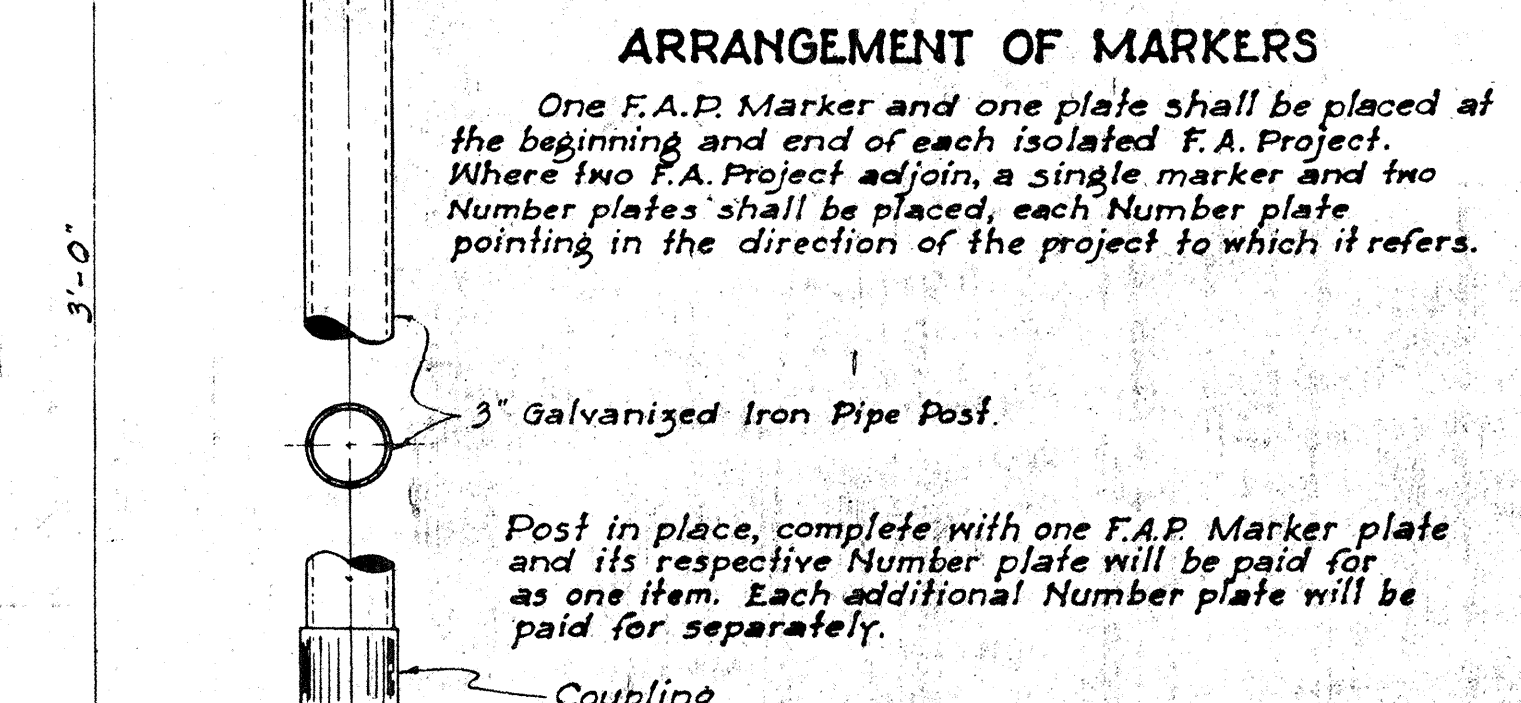
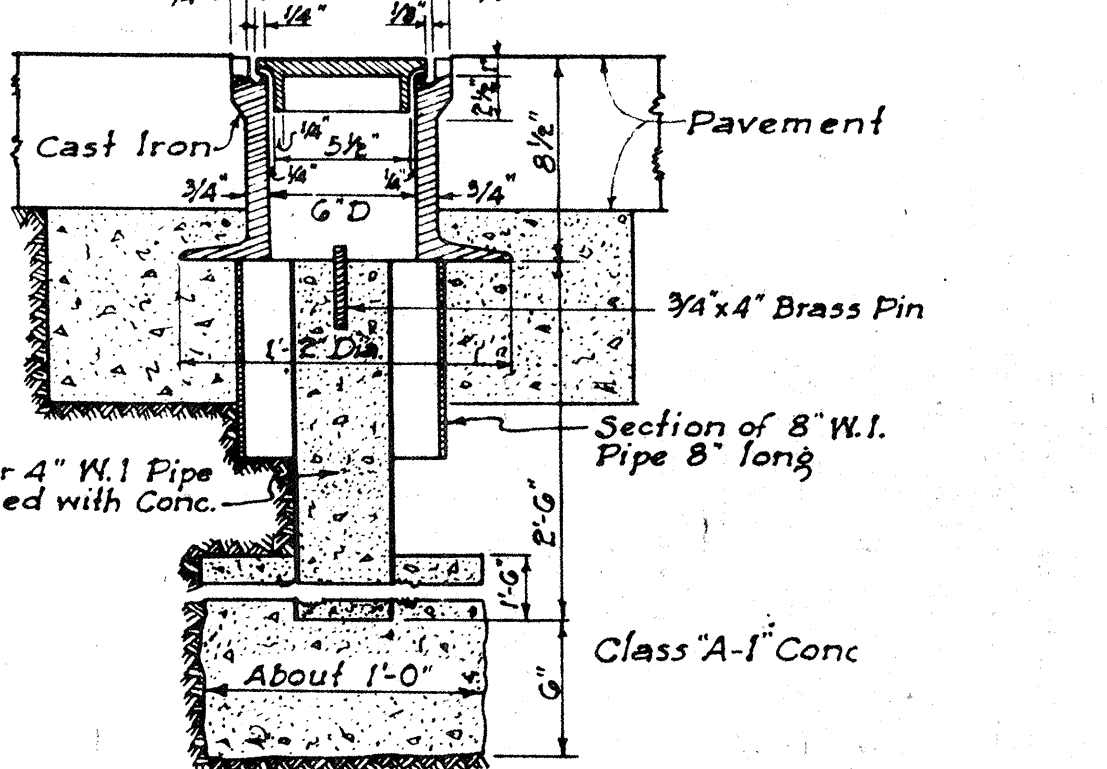
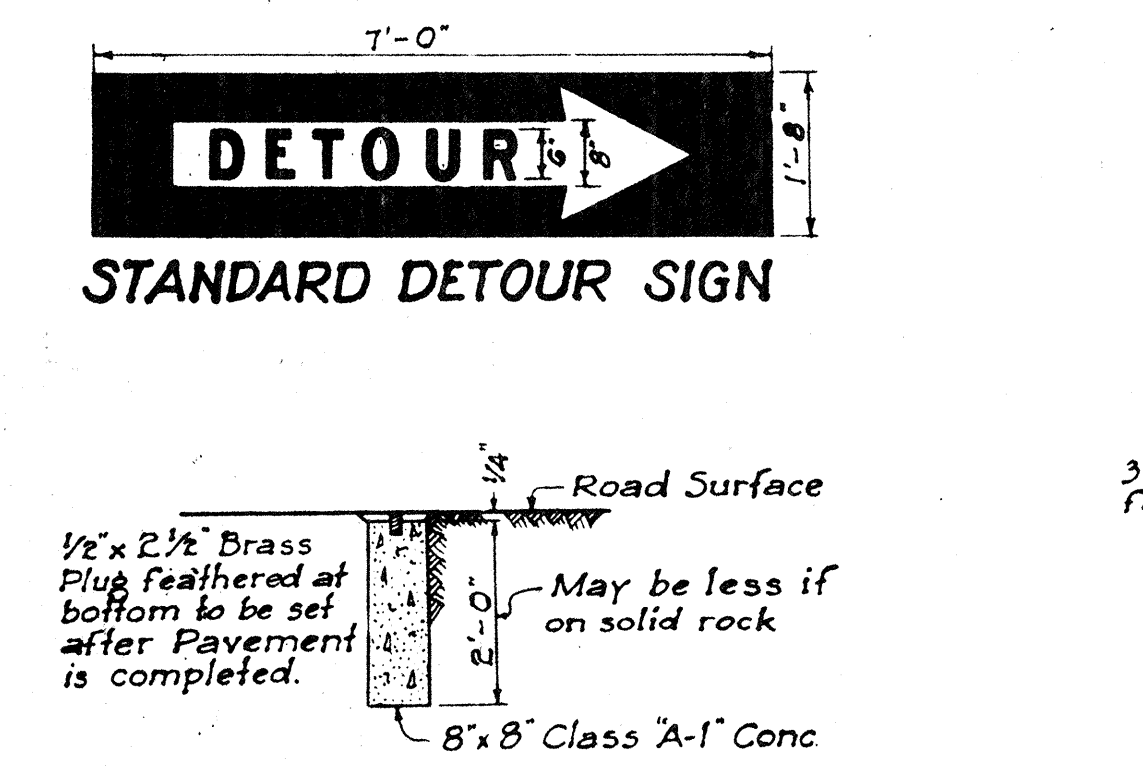
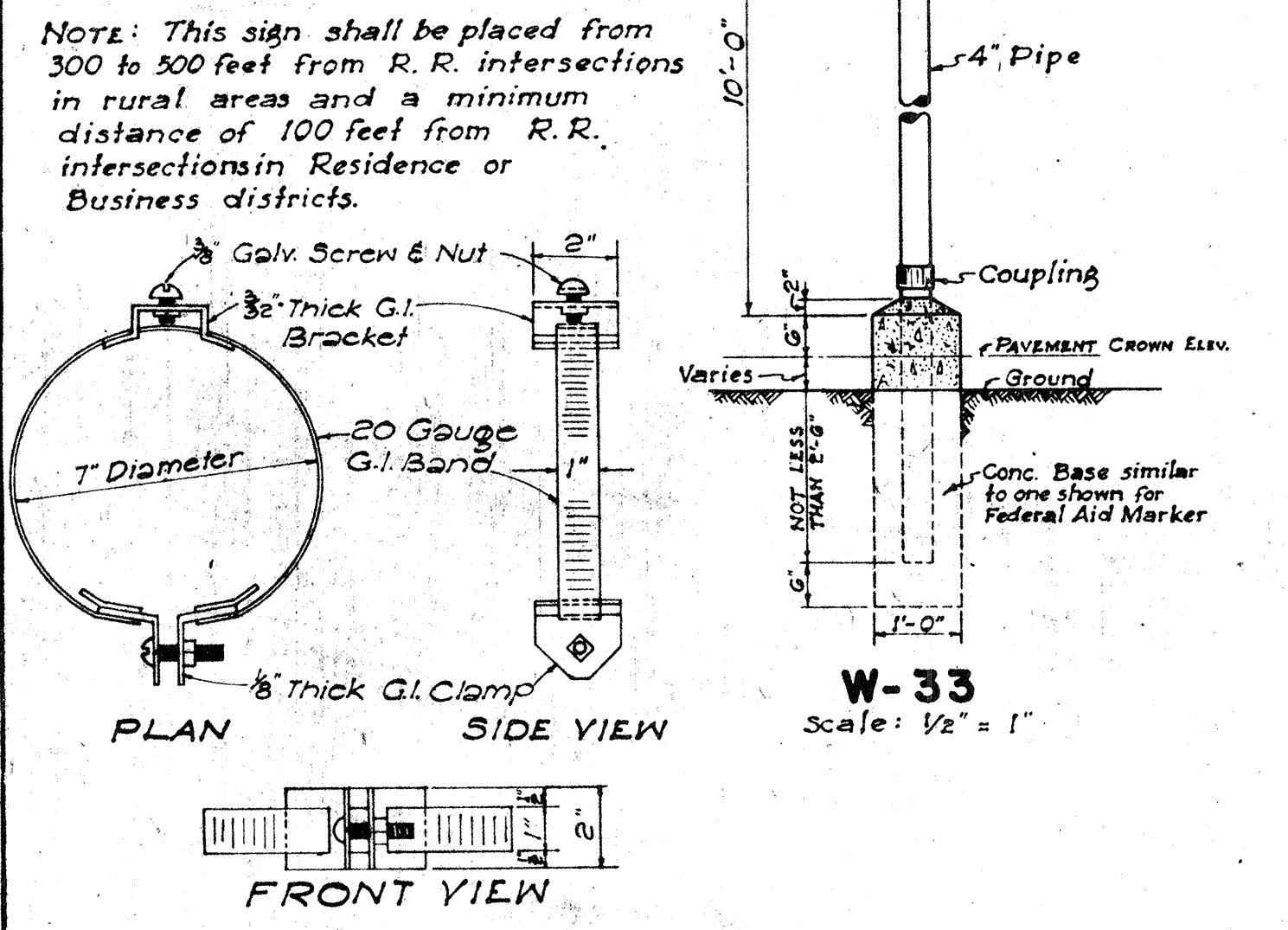
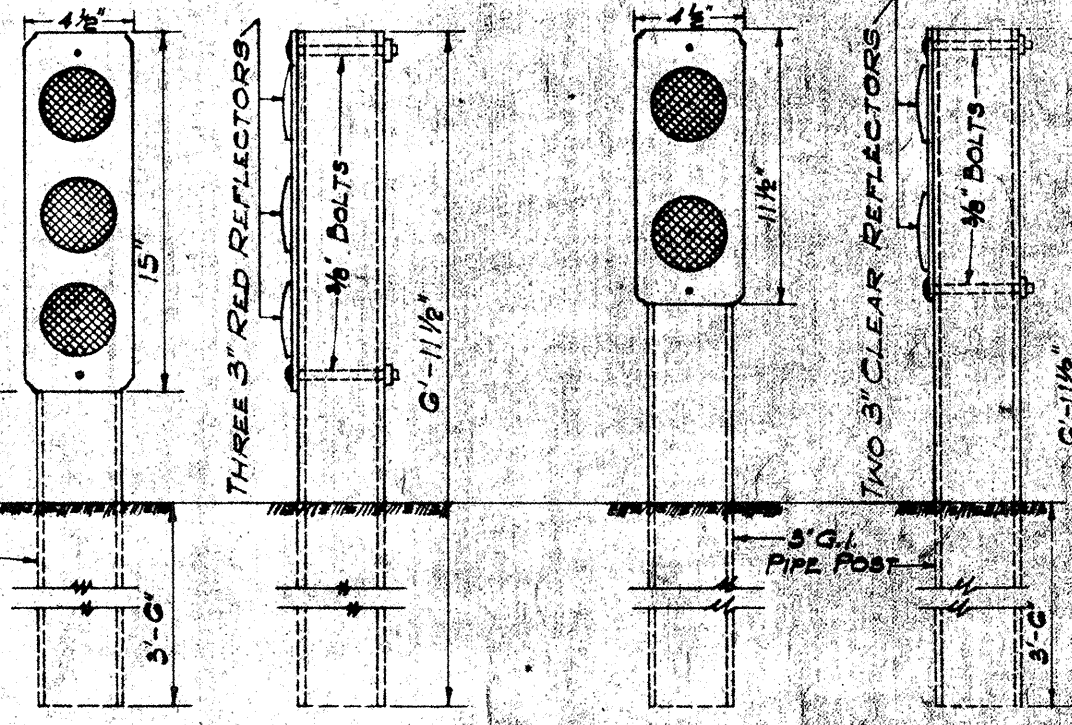
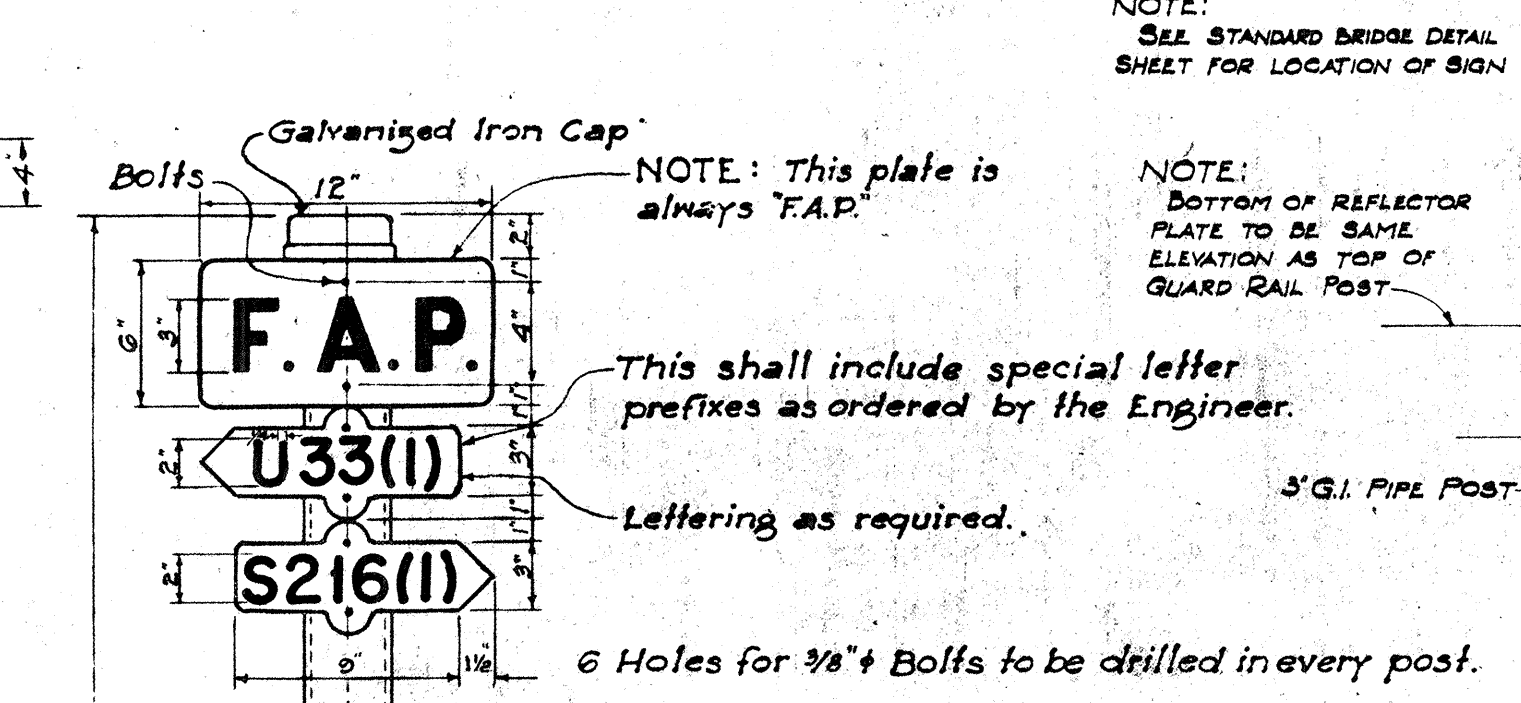
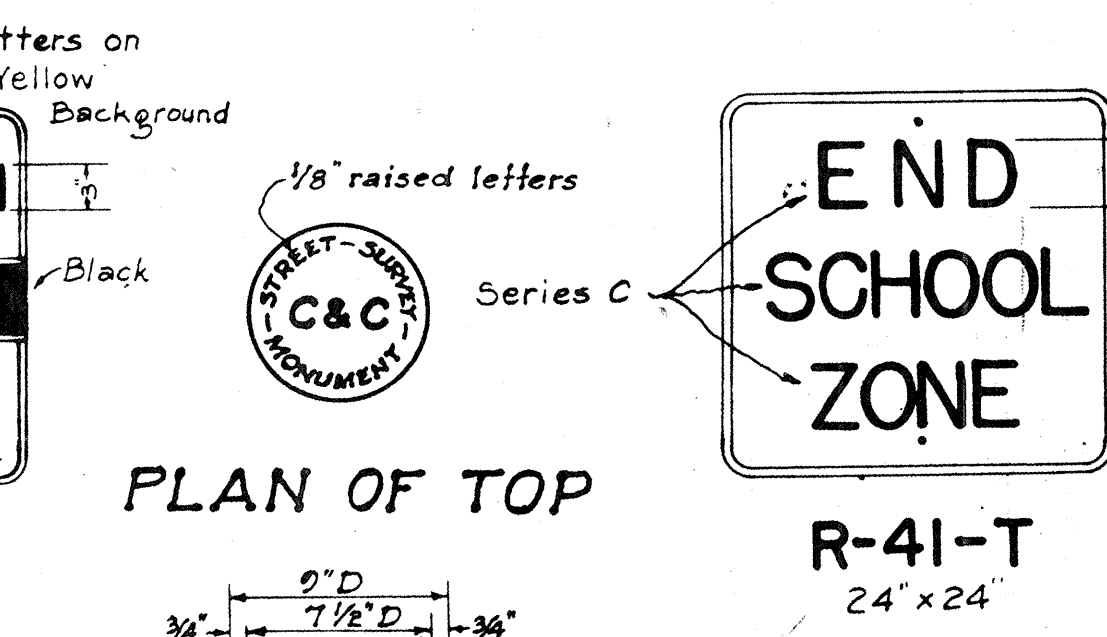
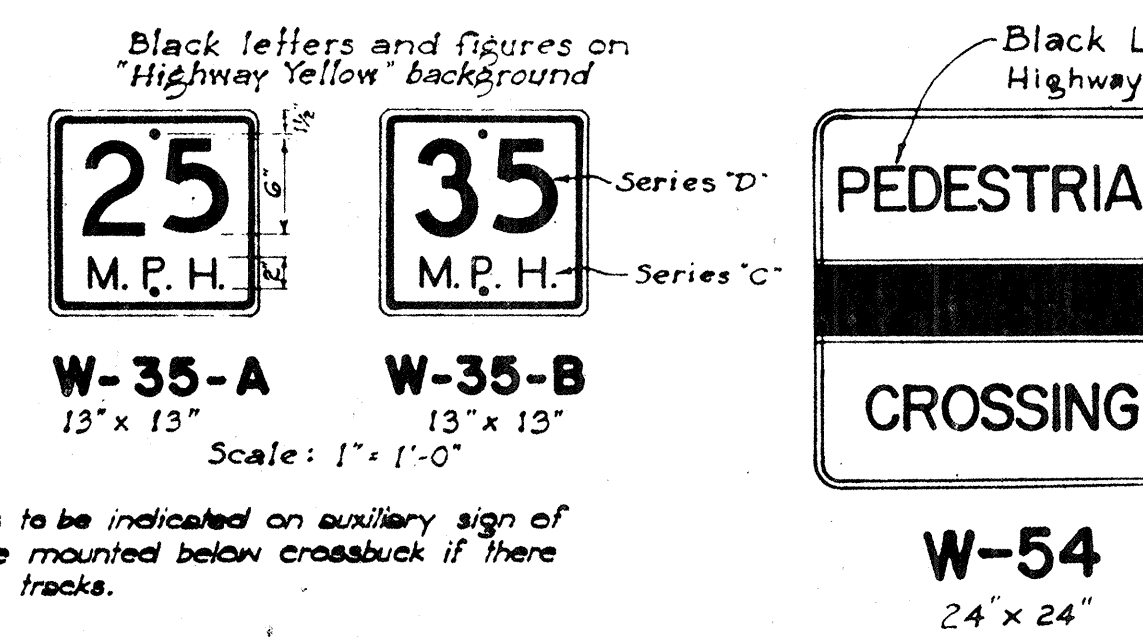
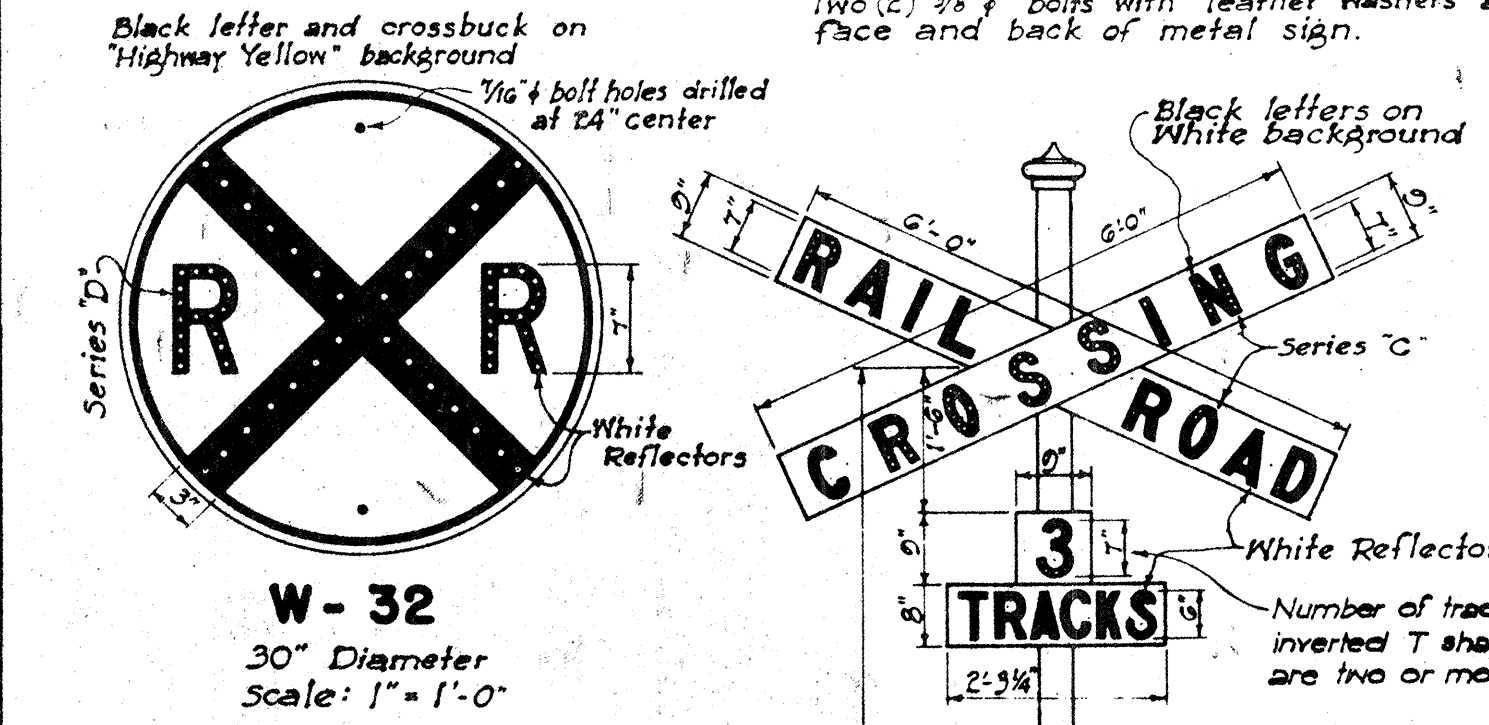


Note: All signs shall be placed 10' from edge of pavement except where shoulder width is less than 10', in which case signs shall be placed at edge of shoulder.

Note: For R-39, Black Border and Letters on Yellow Background.



HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS
Scale: 1" = 3'-0"



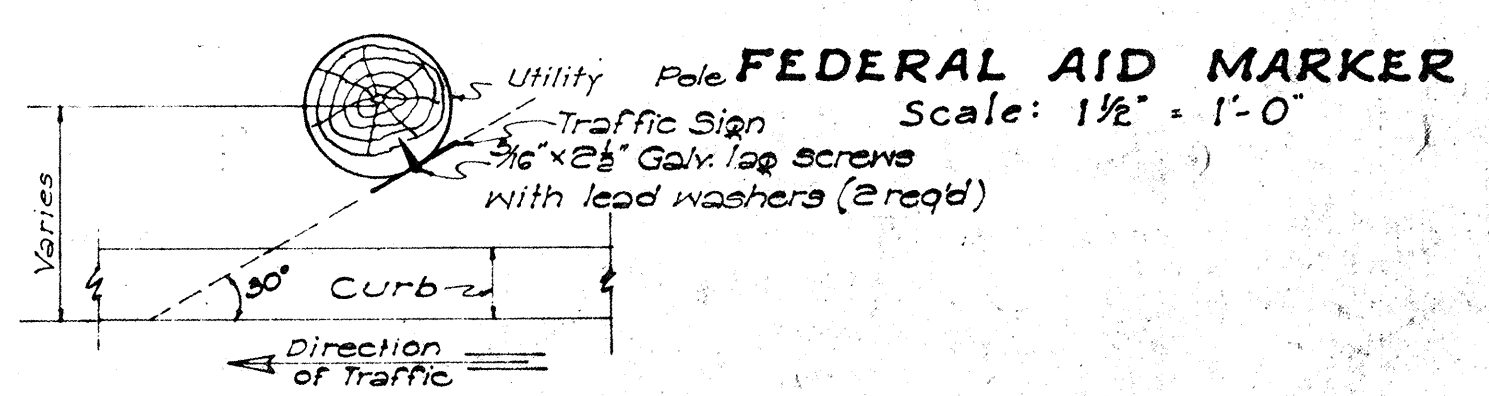
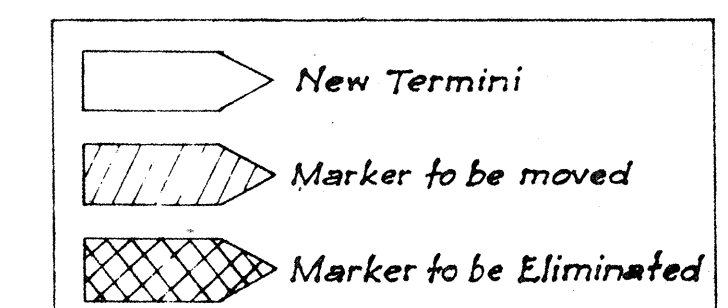
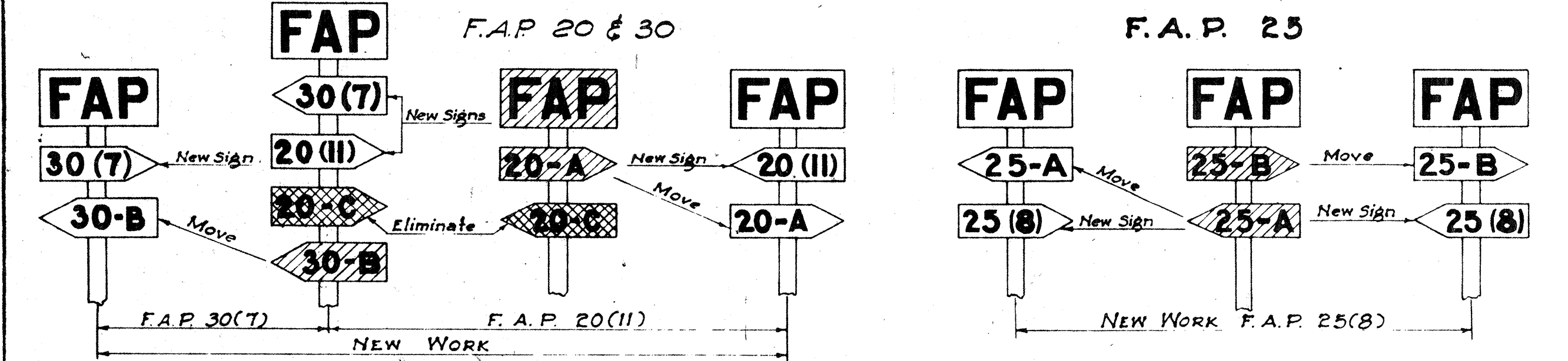
ADJUSTABLE BAND BRACKET FOR SUPPORTING TRAFFIC SIGNS ON MONOTUBE LIGHTING STANDARDS
Scale: 3" = 1'-0"

CENTER LINE MONUMENT
Scale: 1/2" = 1'-0"

STANDARD C & C STREET SURVEY MONUMENT

ARRANGEMENT OF MARKERS
One F.A.P. Marker and one plate shall be placed at the beginning and end of each isolated F.A. Project. Where two F.A. Projects adjoin, a single marker and two Number plates shall be placed, each Number plate pointing in the direction of the project to which it refers.

DETAIL OF SIGNS
SCALE: 1 1/2" = 1'-0"



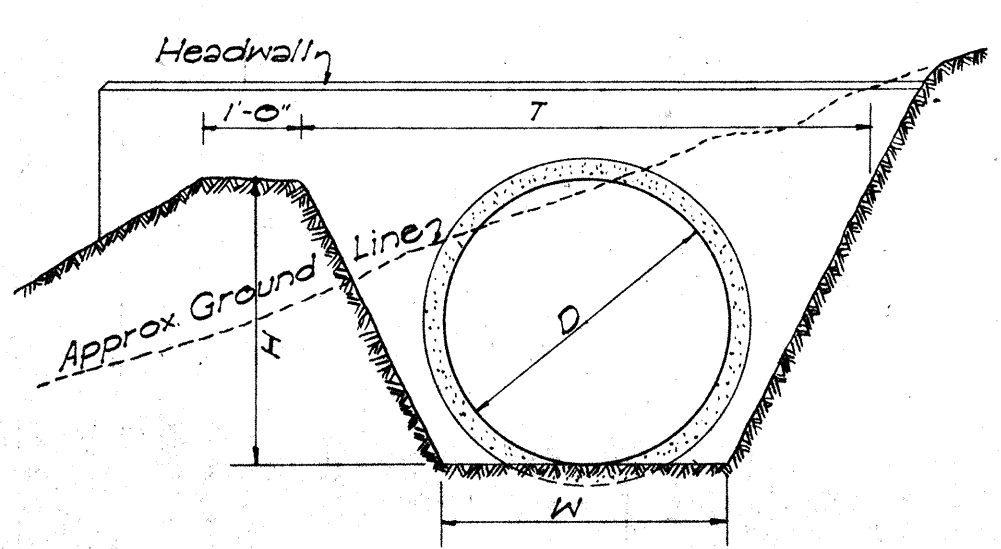
NOTE: Federal Aid Markers should be placed at the termini of suffix designated sections. Intermediate letter designated markers of adjacent sections located within the limits of new improvements should be moved to the termini of the new work. The same procedure would be followed on each successive improvement until all markers for letter designated sections are eventually eliminated.

DETAIL SHOWING ANGLE OF TRAFFIC SIGNS AND CURB LINE
Scale: 1" = 1'-0"

APPROVED: *Ben E. Muttler*
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
F.A. MARKERS, MONUMENTS
SIGNS & LOCATION OF SIGNS
SCALES AS NOTED

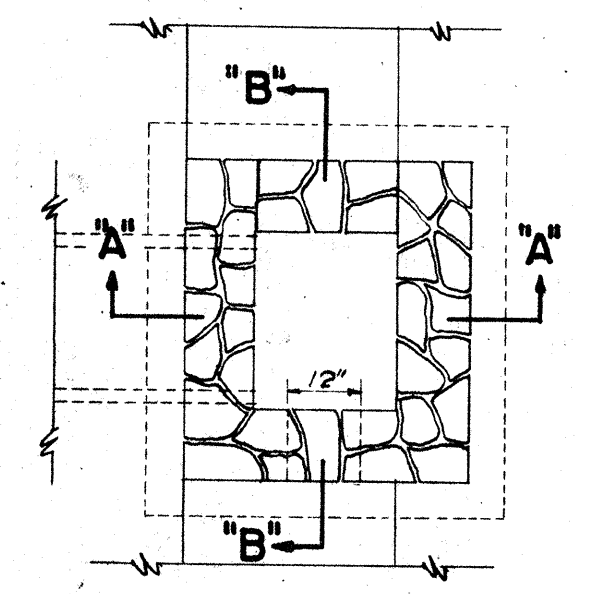
D	W	H	T+H+H
18"	24"	2'-0"	4'-0"
24"	30"	2'-0"	4'-6"
30"	30"	2'-6"	5'-0"
36"	36"	3'-0"	6'-0"



DETAIL OF OUTLET DITCH
Scale: 1/2" = 1'-0"

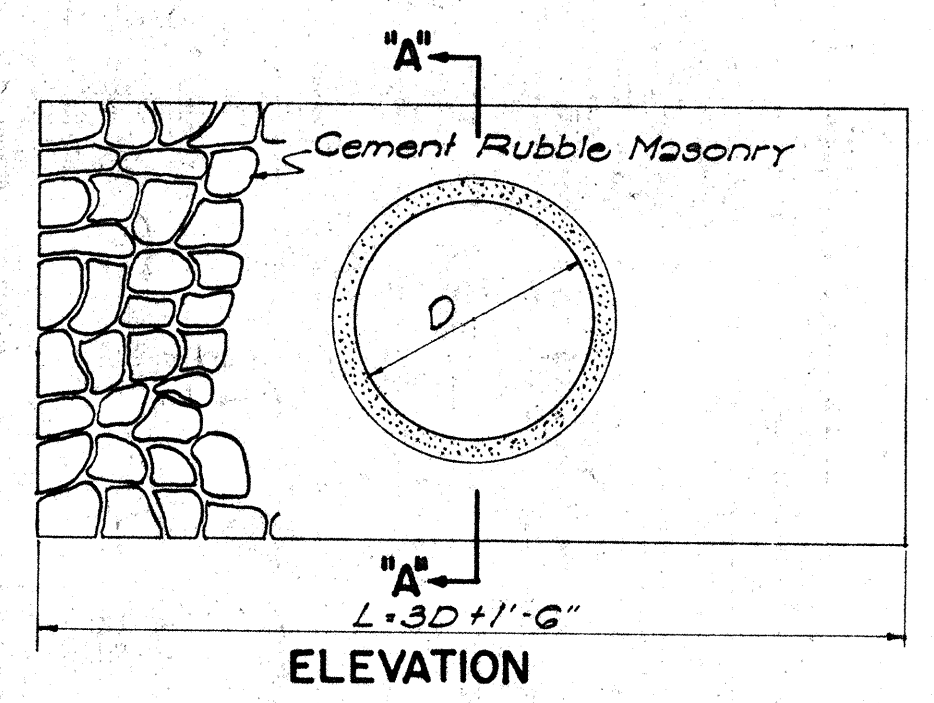
D	D	L+D+G	Cu Yds.	Where Variables Equal
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

NOTE: Dimension "X" is assumed as 2'-4" in figuring the above quantities.

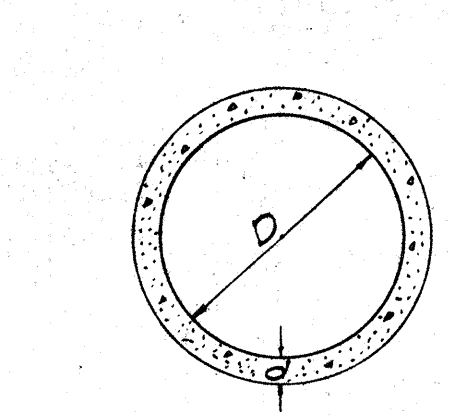


DETAIL OF MASONRY DROP INTAKE
Scale: 3/8" = 1'-0"

D	H	B	L	Cast-in-Place Conc. Culvert Cu Yds.	Conc. Pipe Culvert Cu Yds.	Corrugated Pipe Culvert Cu Yds.
18"	3'-6"	1'-0"	6'-0"	0.85	0.05	0.03
24"	4'-0"	2'-0"	7'-6"	1.28	1.45	1.41
30"	4'-6"	2'-3"	9'-0"	1.83	2.06	2.00
36"	5'-0"	2'-6"	10'-6"	2.40	2.84	2.72

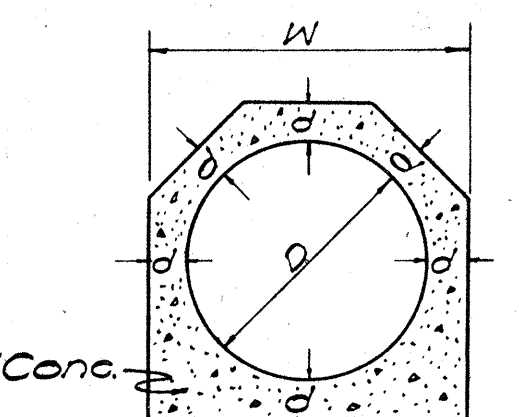


DETAIL OF MASONRY HEADWALL
Scale: 1/2" = 1'-0"



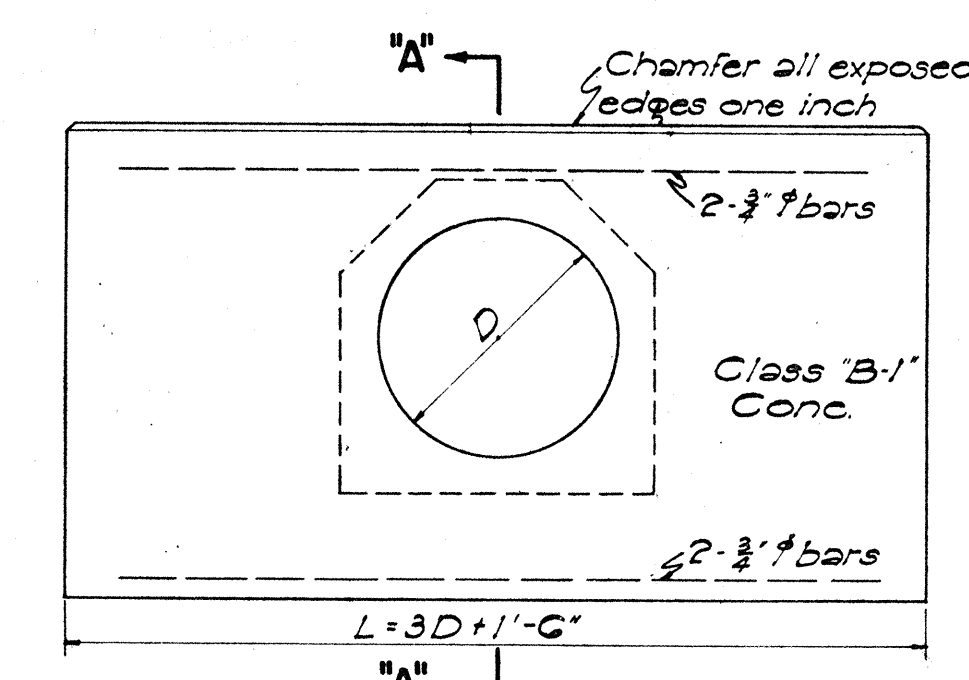
SECTION CONC. PIPE CULVERT

NOTE: Thickness 'd', reinforcing, and concrete used, are to conform with the approved design as provided by the Specifications.



CAST-IN-PLACE CONC. CULVERT

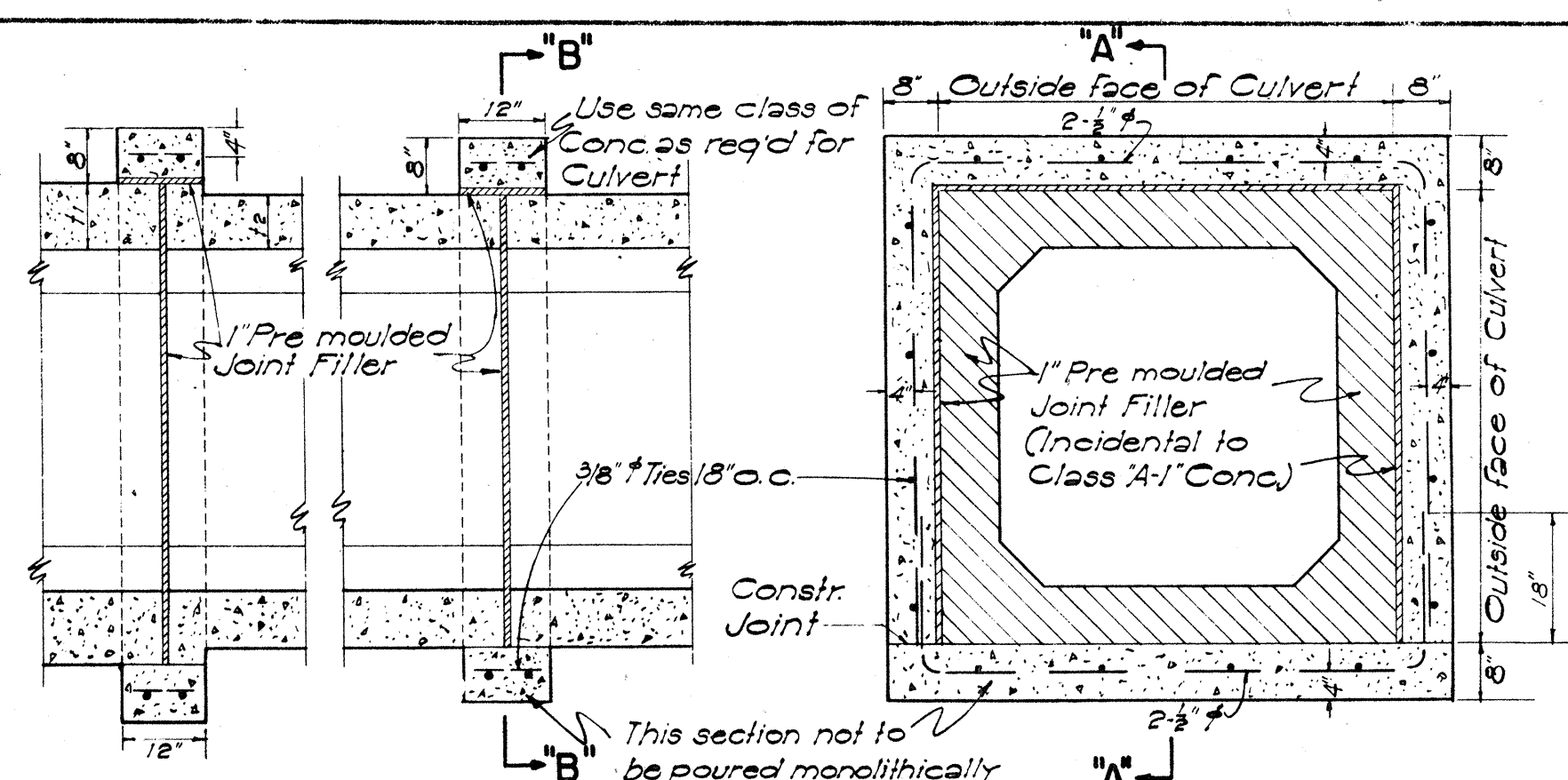
D	d	W	Cu Yd. per Ft.
18"	4"	2'-2"	0.11
24"	4 1/2"	2'-5"	0.14
30"	5"	3'-4"	0.19
36"	5 1/2"	3'-11"	0.26



DETAIL OF CONCRETE HEADWALL
Scale: 1/2" = 1'-0"

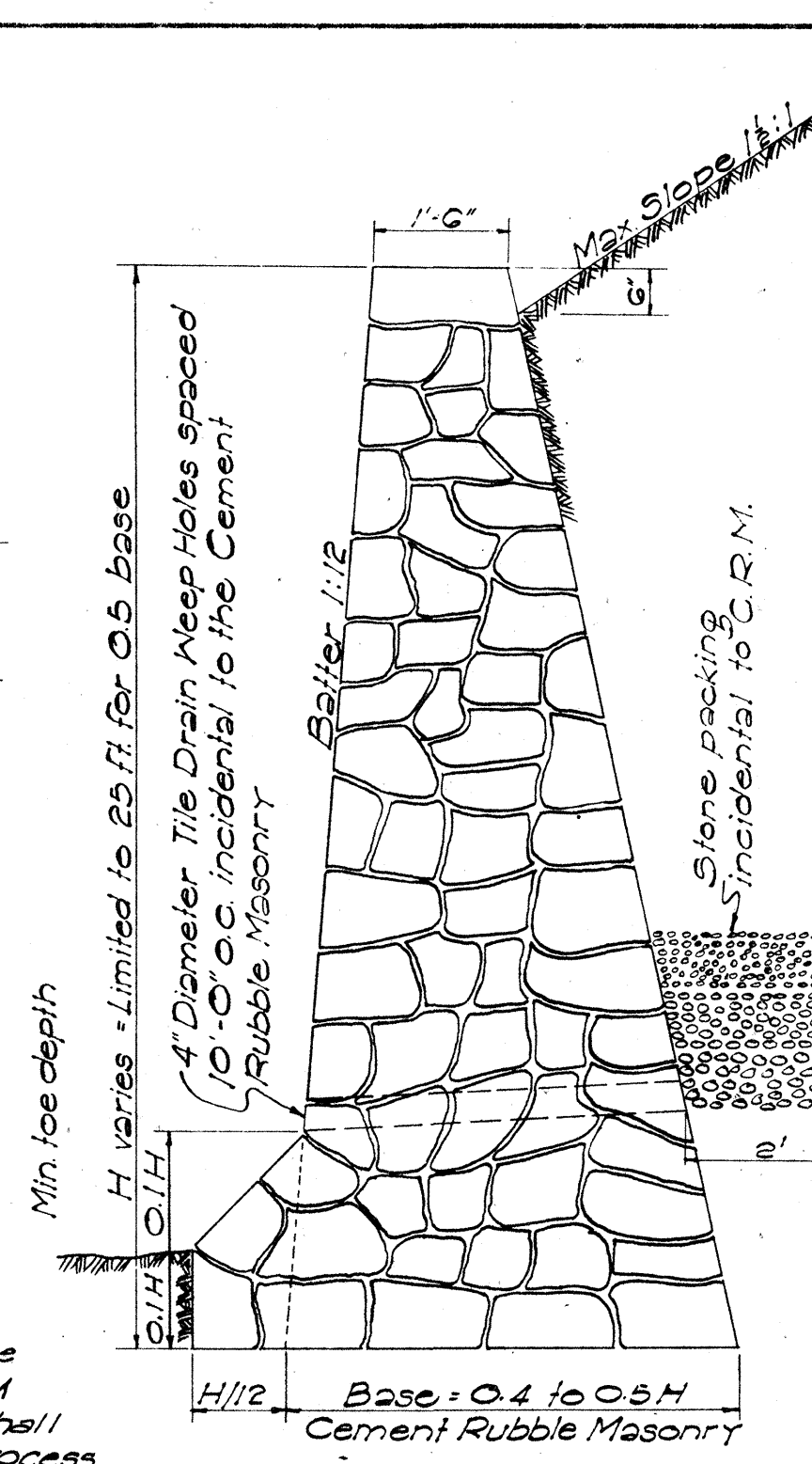
D	B	L	H	Cast-in-Place Conc. Culvert Cu Yd.	Conc. Pipe Culvert Cu Yd.	Steel For One Headwall No. of Bars Size Length Lbs.
18"	1'-6"	6'-0"	4'-0"	0.02	1.00	4 3/4" 5'-6" 33
24"	1'-6"	7'-6"	4'-6"	1.25	1.35	4 3/4" 7'-0" 42
30"	2'-0"	9'-0"	5'-0"	1.05	2.17	4 3/4" 8'-6" 51
36"	2'-0"	10'-6"	5'-6"	2.45	2.74	4 3/4" 10'-0" 60
42"	2'-6"	12'-0"	6'-0"		3.87	4 3/4" 11'-6" 60
48"	2'-6"	13'-6"	6'-6"		4.66	4 3/4" 13'-0" 78

DETAIL OF CONCRETE HEADWALL
Scale: 1/2" = 1'-0"

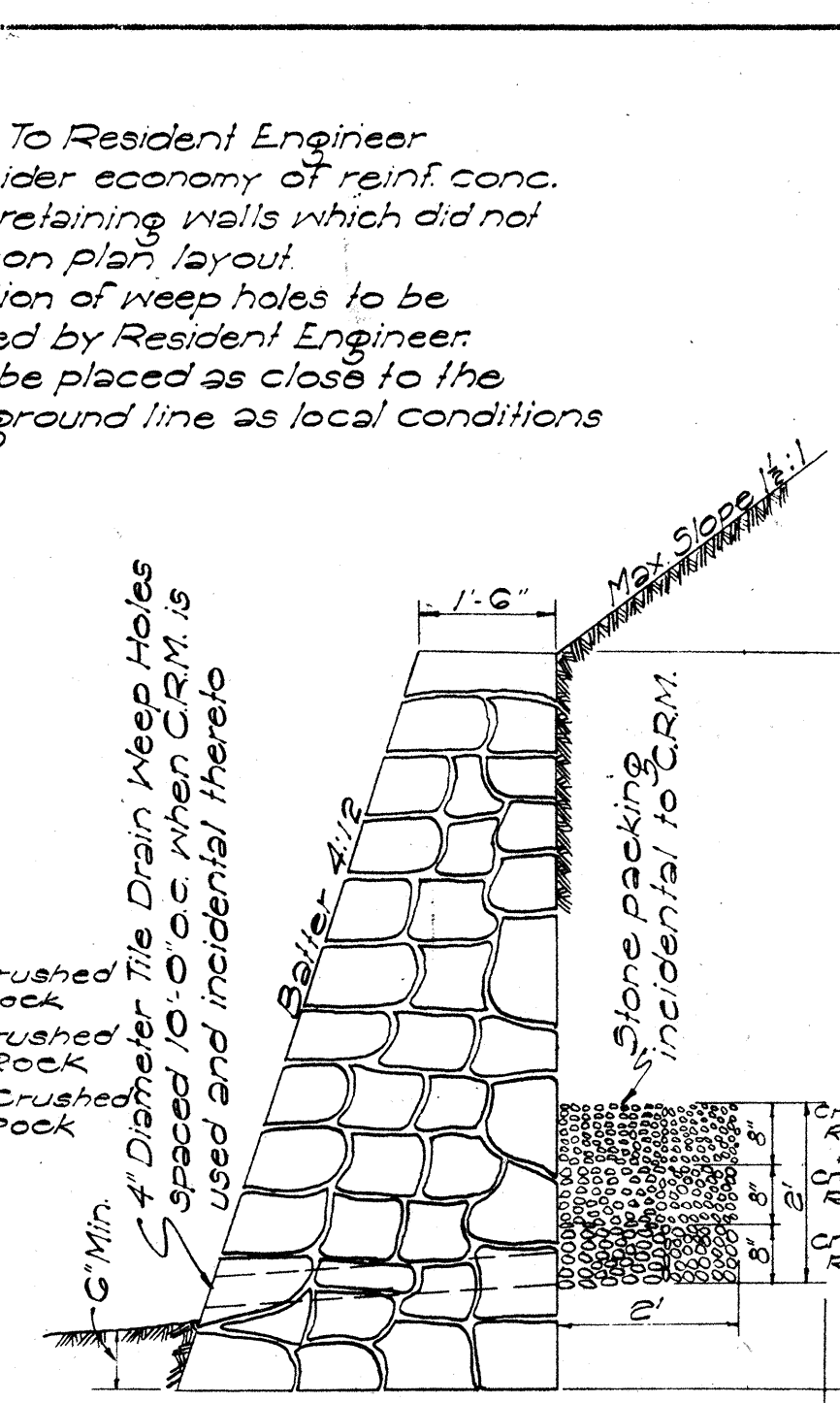


SECTION "A-A" SECTION "B-B" CONC. COLLAR FOR CONC. BOX CULVERT
Scale: 1/2" = 1'-0"

REINFORCING BARS
All reinforcing bars for concrete shall be Billet Steel bars, ASTM A15, intermediate grade. Steel shall be made by the open-hearth process. All bars shall be deformed type conforming to ASTM A-305



SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL

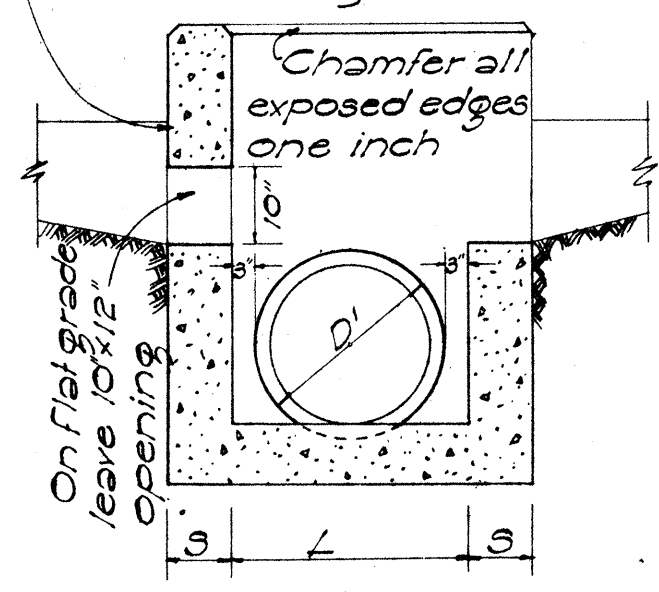


SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

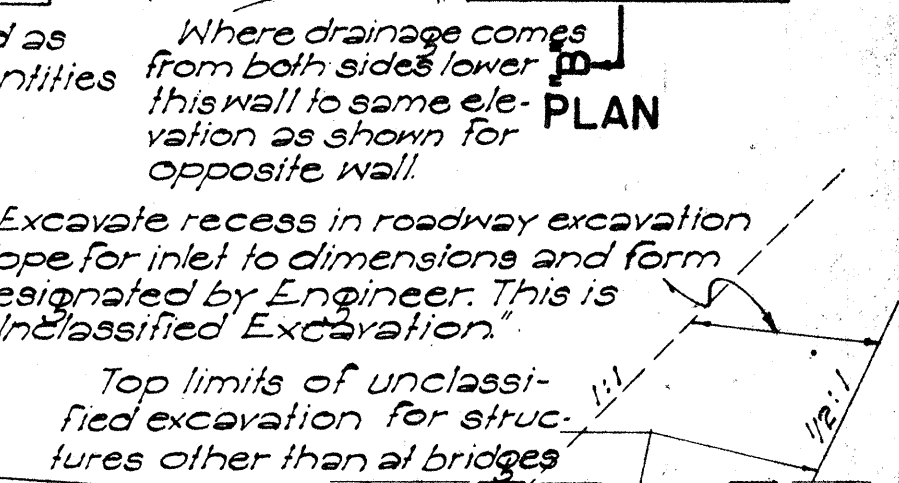
D	D	L+D+G	S	Cu Yds.	Where Variables Equal
23"	18"	2'-5"	8"	1.41	4'-6"
30"	24"	3'-0"	8"	1.72	5'-0"
37"	30"	3'-7"	9"	2.32	5'-6"
44"	36"	4'-2"	9"	2.73	6'-0"
51"	42"	4'-9"	10"	3.54	6'-6"
58"	48"	5'-4"	10"	4.01	7'-0"

Note: Dimension "X" is assumed as 2'-4" in figuring the above quantities

Note: This type of structure shall also be used for the Drop Intakes of Syphons connected with Irrigation Ditches or Flumes with appropriate changes to dimensions. In this case all joints must be made water tight.

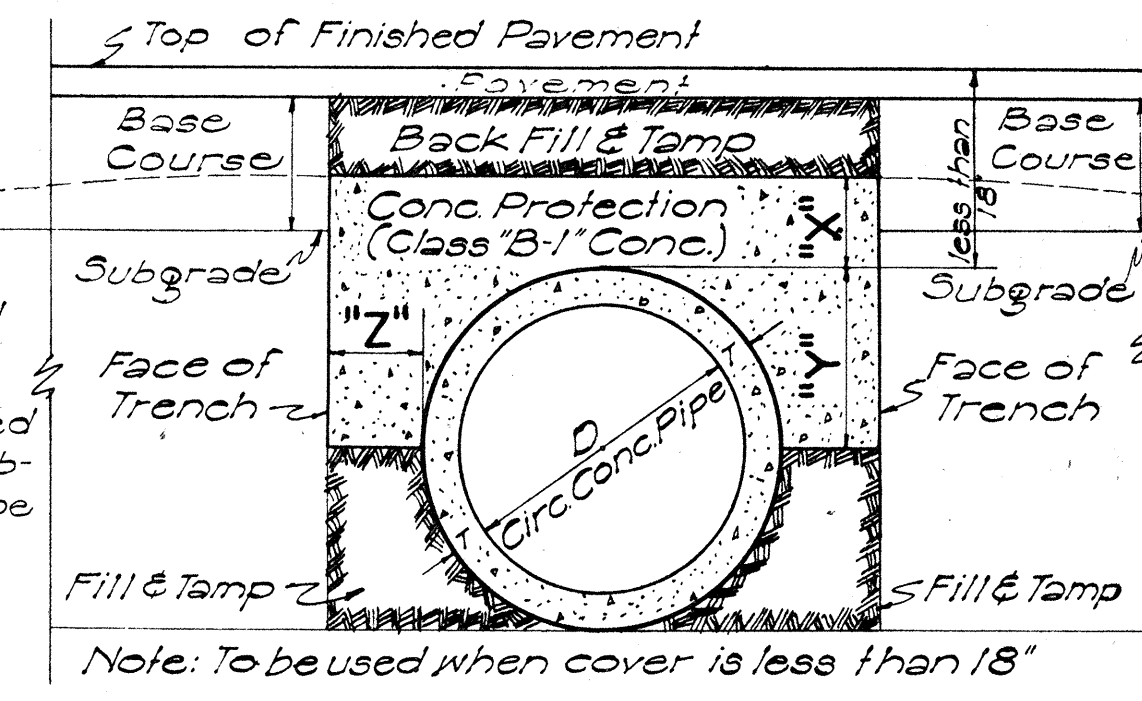


SECTION "B-B"



SECTION "A-A"

DETAIL OF CONCRETE DROP INTAKE
Scale: 1/2" = 1'-0"

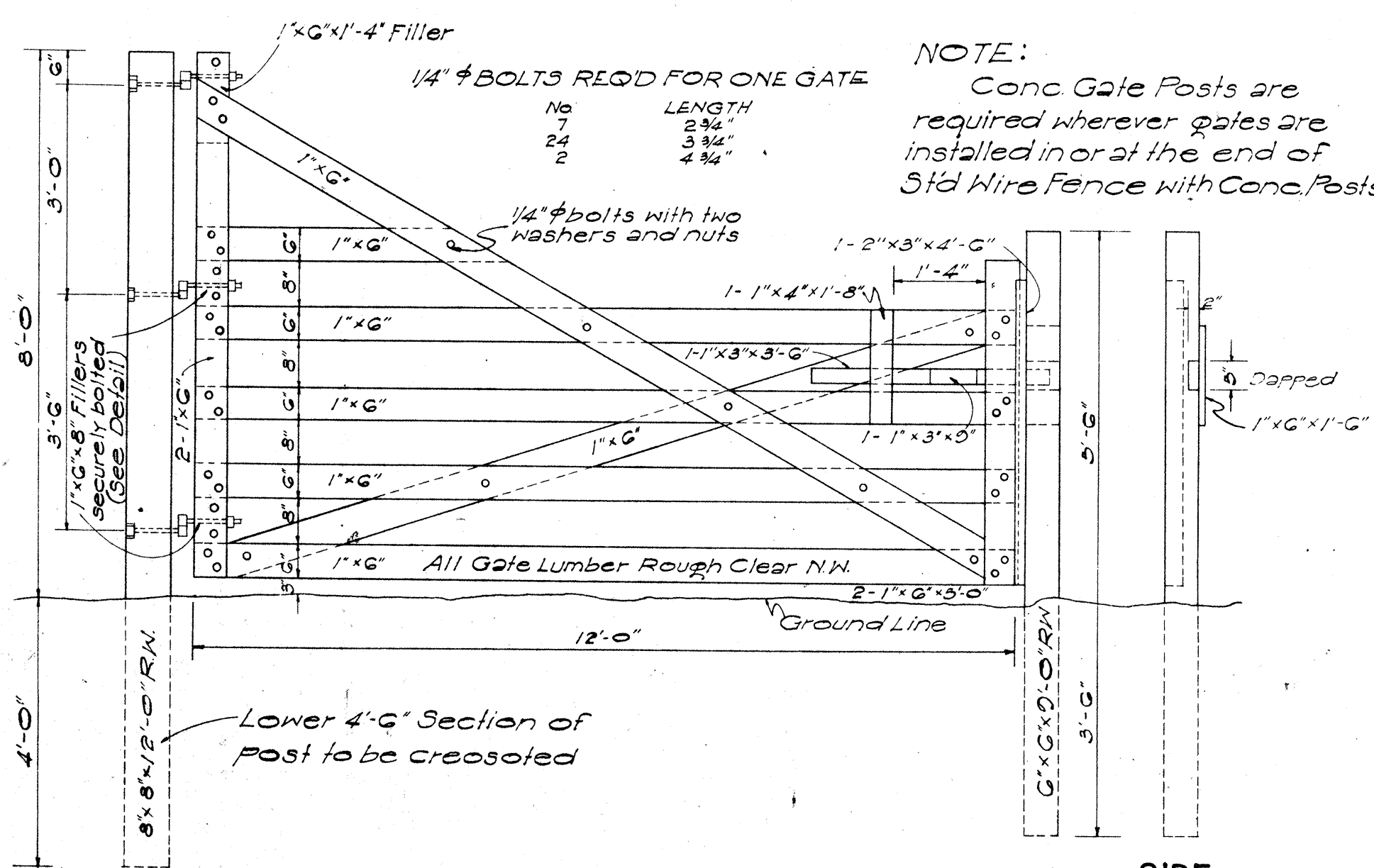


X	Y	Z
6" for 18" D		Z must be from pipe to face of trench
7" " 24" D		
8" " 30" D		
9" " 36" D	D/2 + T	Minimum = X
10" " 42" D		Maximum pay quantity will be Z=12"
11" " 48" D		
12" " 54" D		

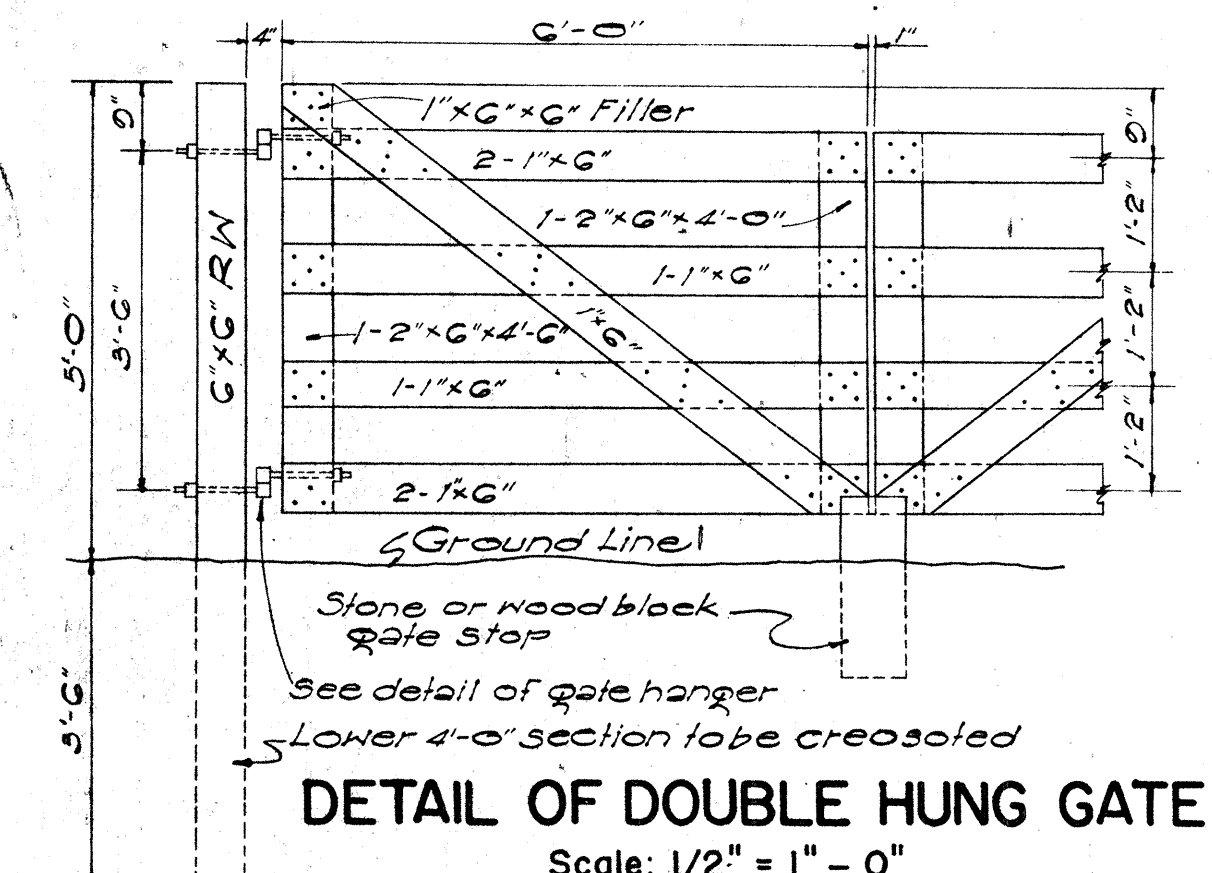
SECT. OF CULVERT WITH CONC. PROTECTION
Scale: 1" = 1'-0"

APPROVED: DATE 6-23-52
Territorial Highway Engineer

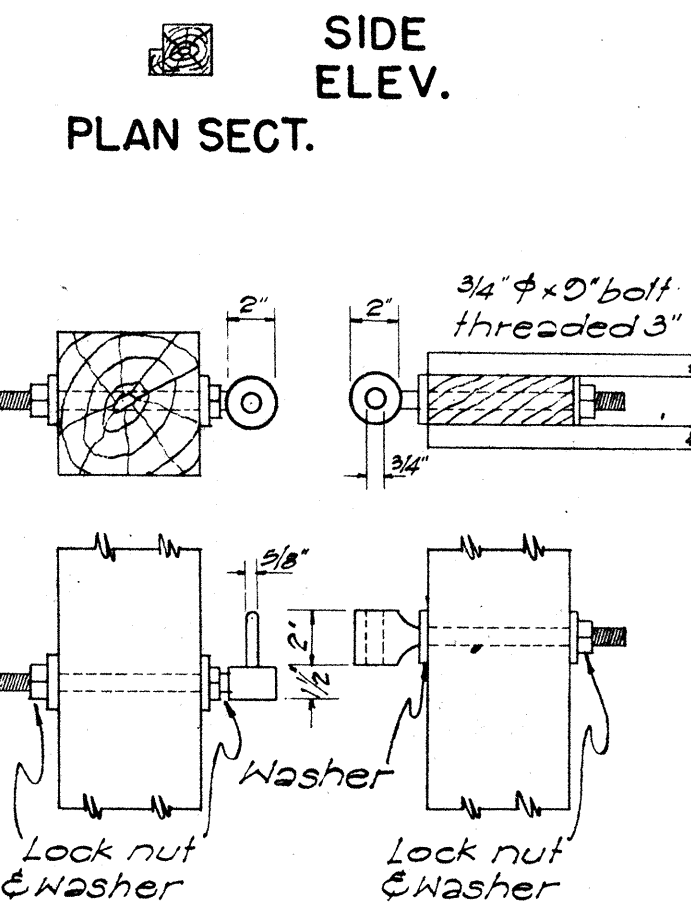
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
DROP INTAKES, RETAINING WALLS,
HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED



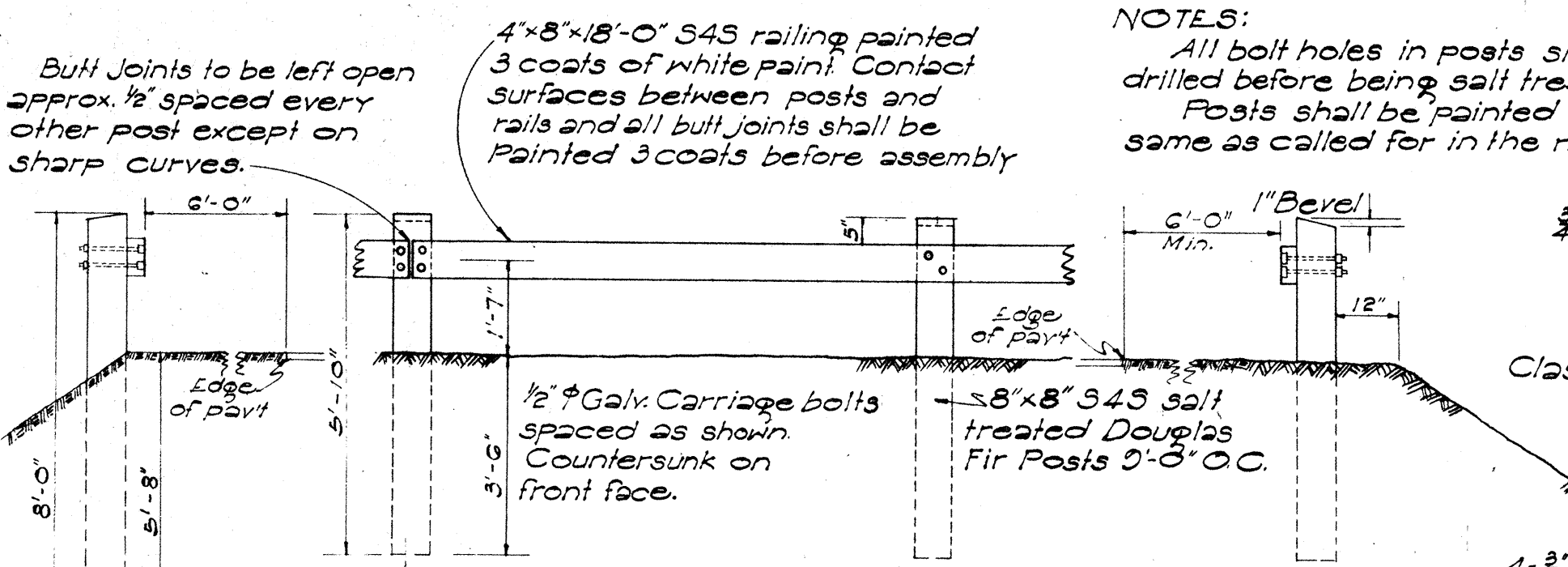
DETAIL OF CATTLE GATE
Scale: 1/2" = 1'-0"



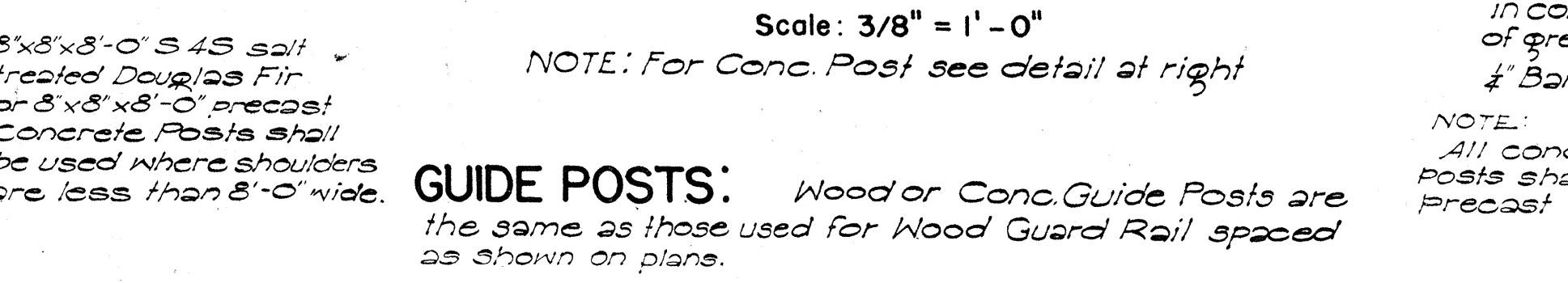
DETAIL OF DOUBLE HUNG GATE
Scale: 1/2" = 1'-0"



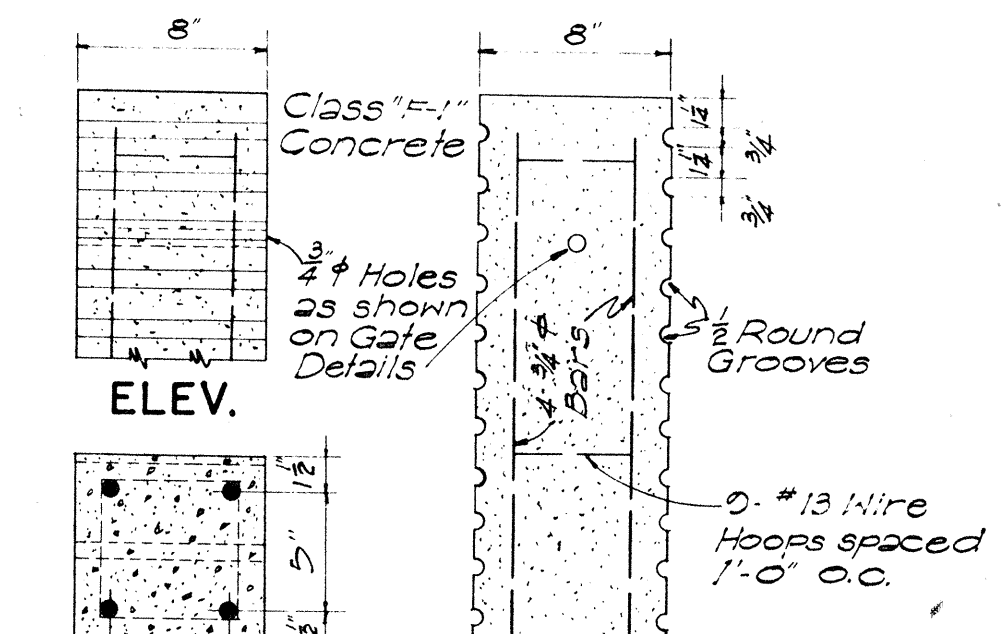
DETAIL OF GATE HANGER
Scale: 1-1/2" = 1'-0"



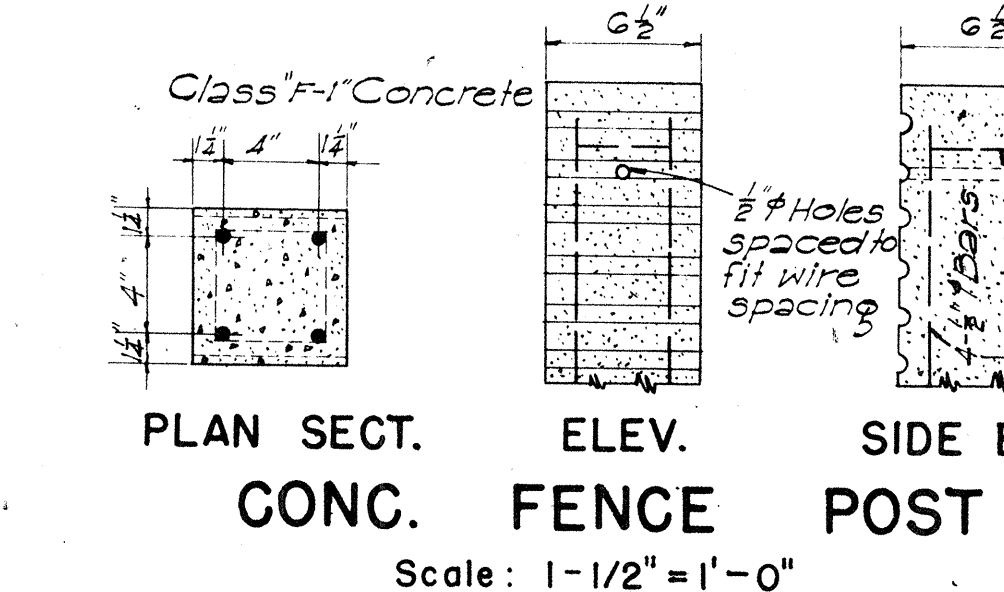
WOOD GUARD RAIL WITH WOOD POSTS
Scale: 3/8" = 1'-0"



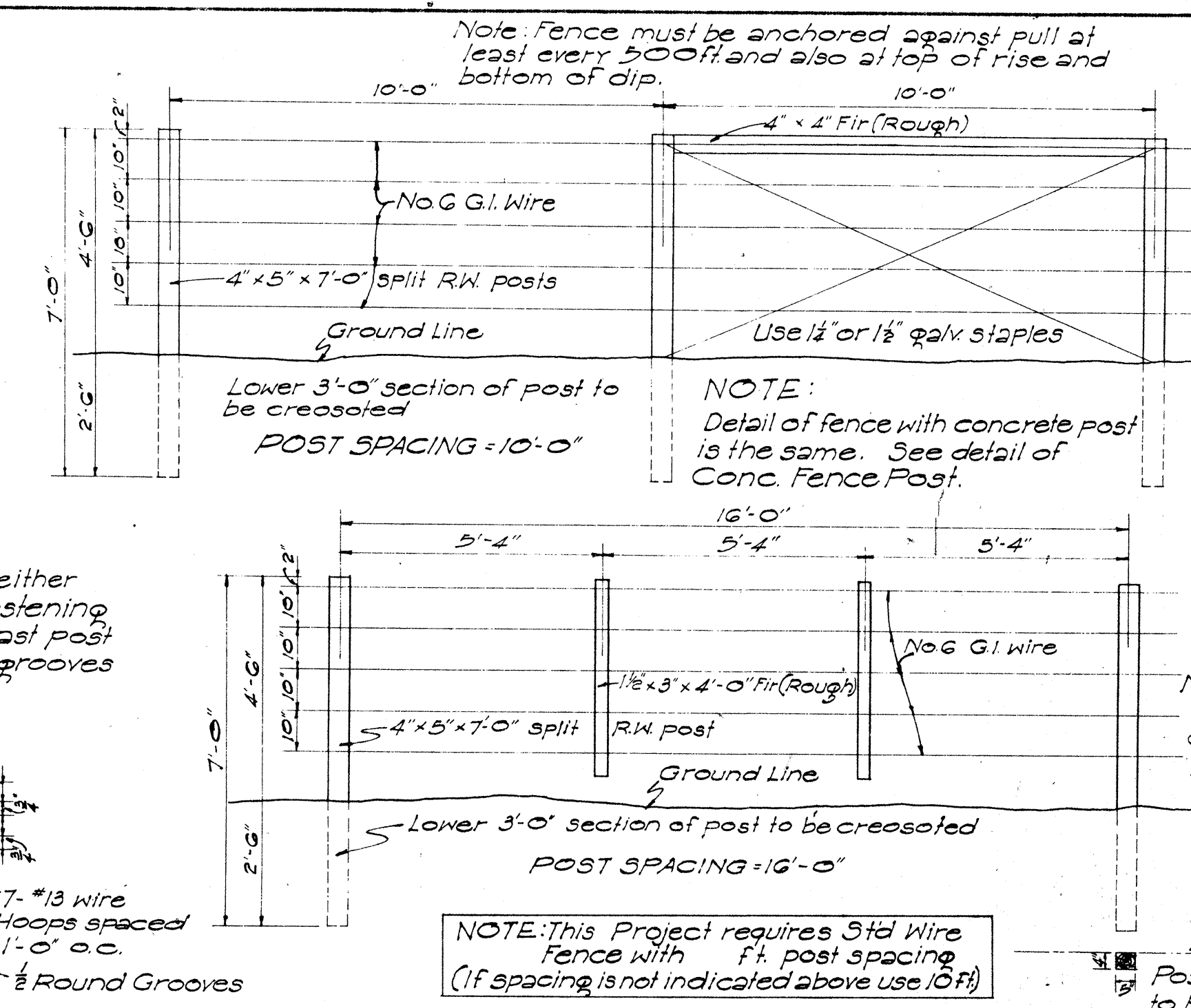
GUIDE POSTS: Wood or Conc. Guide Posts are the same as those used for Wood Guard Rail spaced as shown on plans.



CONC. GATE POST
Scale: 1-1/2" = 1'-0"



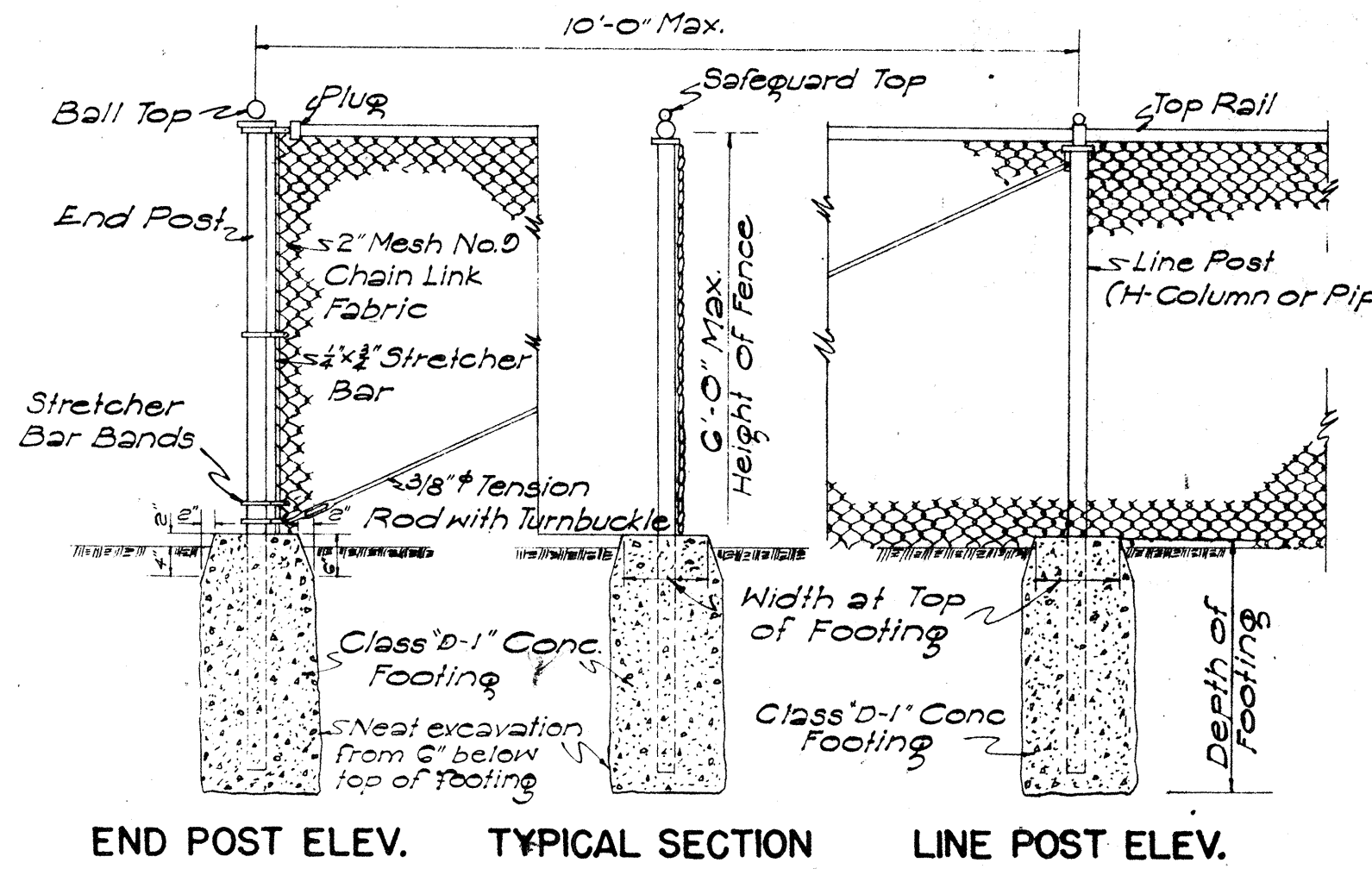
CONC. FENCE POST
Scale: 1-1/2" = 1'-0"



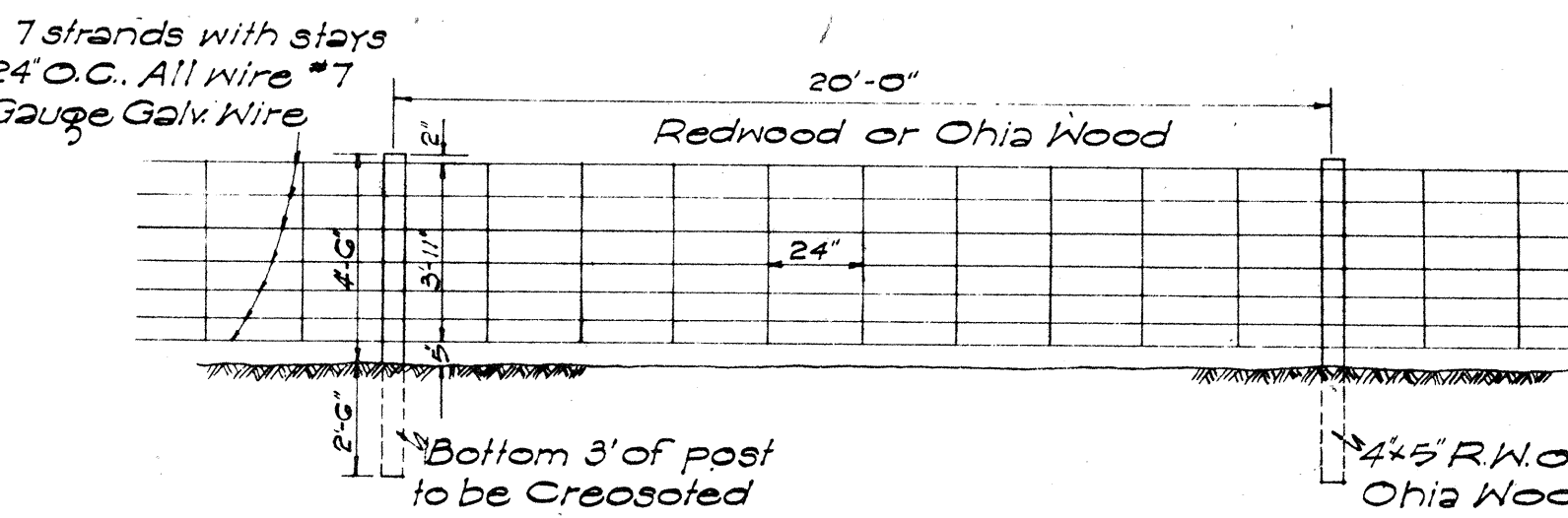
DETAILS OF STANDARD WIRE FENCE WITH WOOD POSTS
Scale: 3/8" = 1'-0"

SCHEDULE FOR CHAIN LINK FENCE

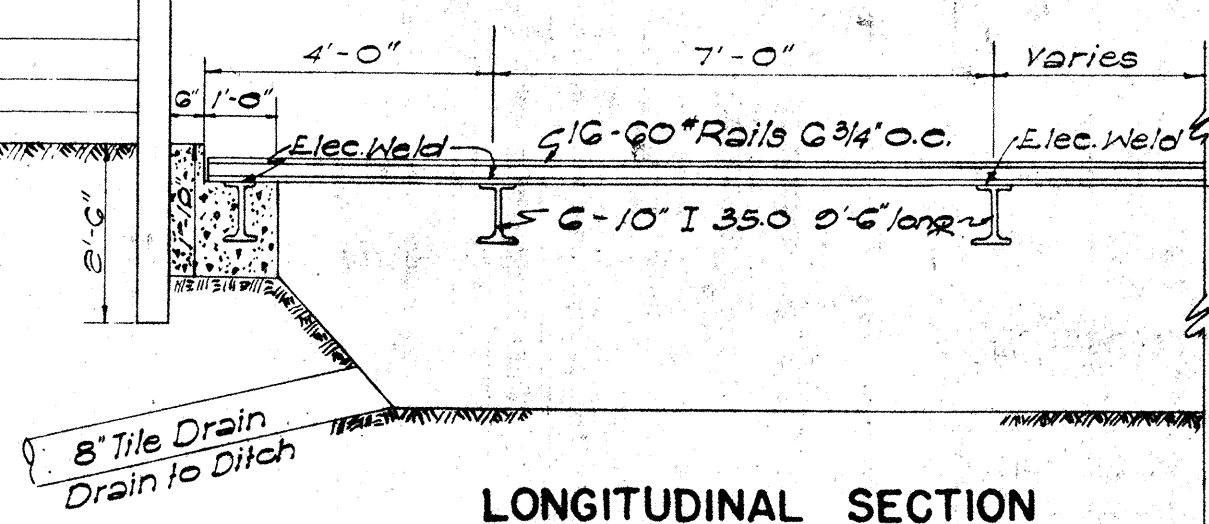
Height of Fence	Line Post	End Post	Top Rail	Depth of Footing	Top of Footing	Length of Posts
4'	2.8' ft. 1.00	2' O.D.	1 1/2" O.D.	30" 24"	8" sq.	5'-6" 5'-0"
5'	2.8' ft. 1.00	2' O.D.	1 1/2" O.D.	30" 24"	10" sq.	6'-6" 6'-0"
6'	2.8' ft. 1.00	2' O.D.	1 1/2" O.D.	36" 36"	12" sq.	8'-0" 8'-0"



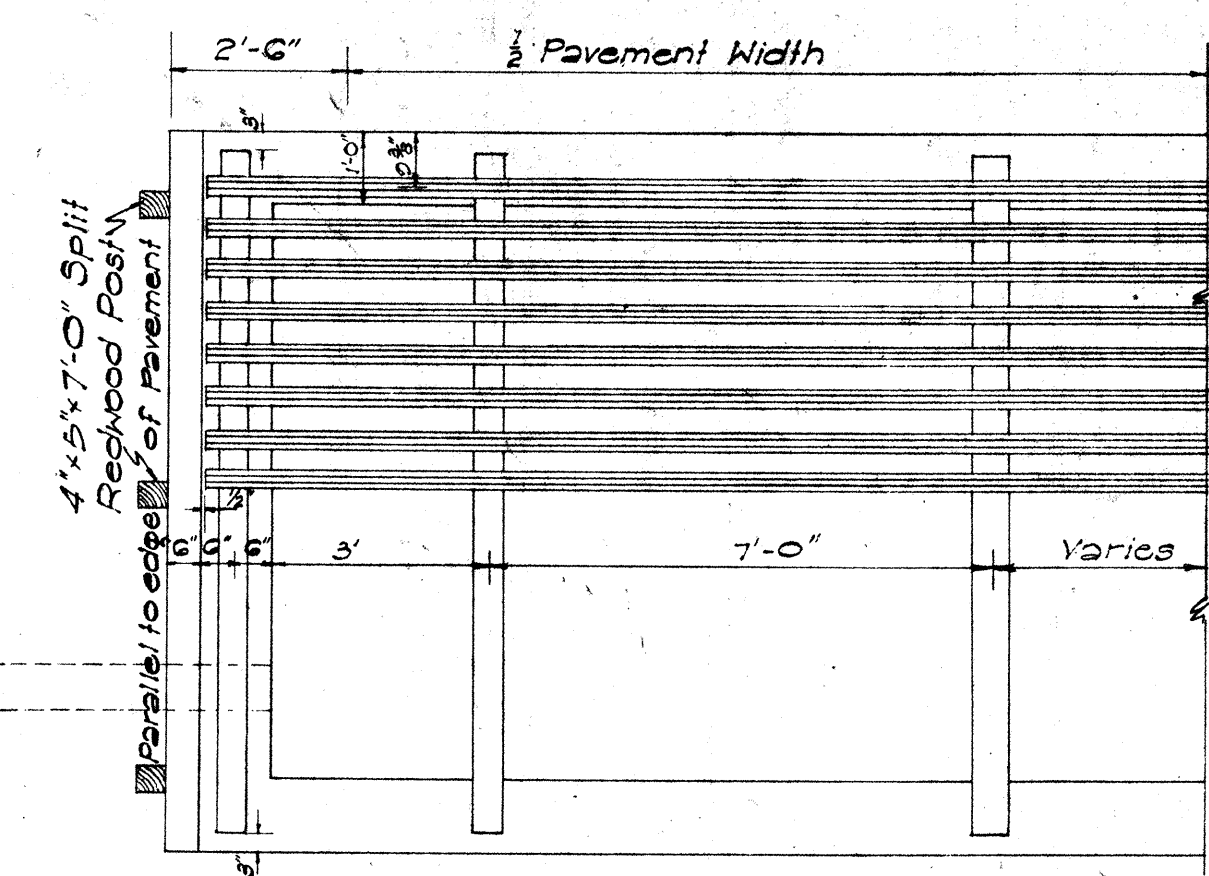
DETAIL OF CHAIN LINK FENCE
Scale: 1/2" = 1'-0"



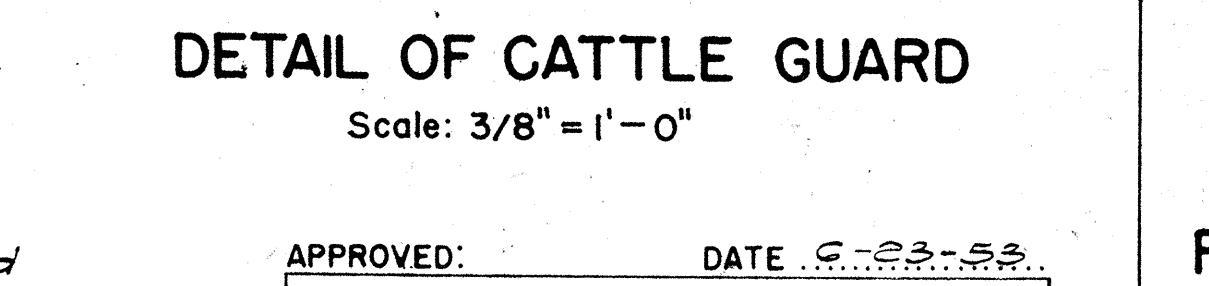
DETAIL OF WOVEN WIRE FENCE
Scale: 1/4" = 1'-0"



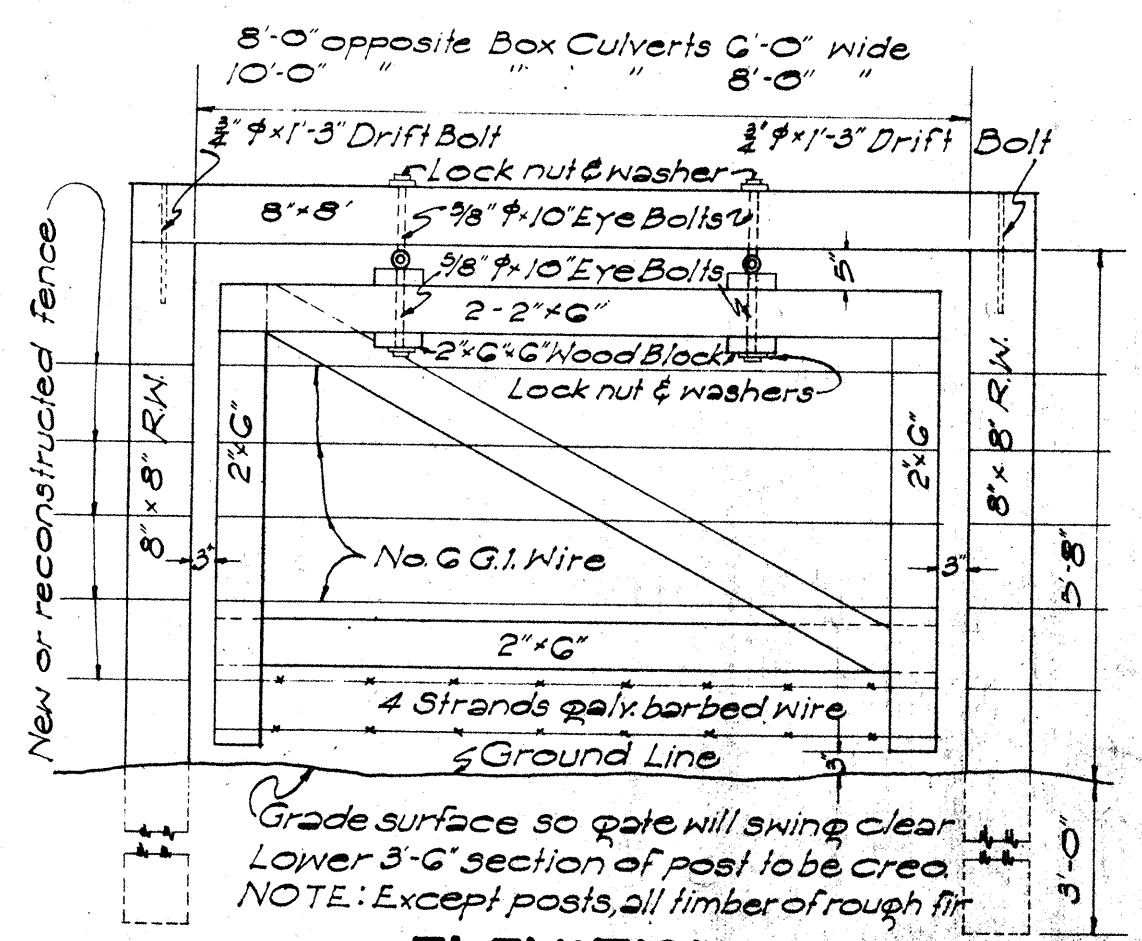
LONGITUDINAL SECTION



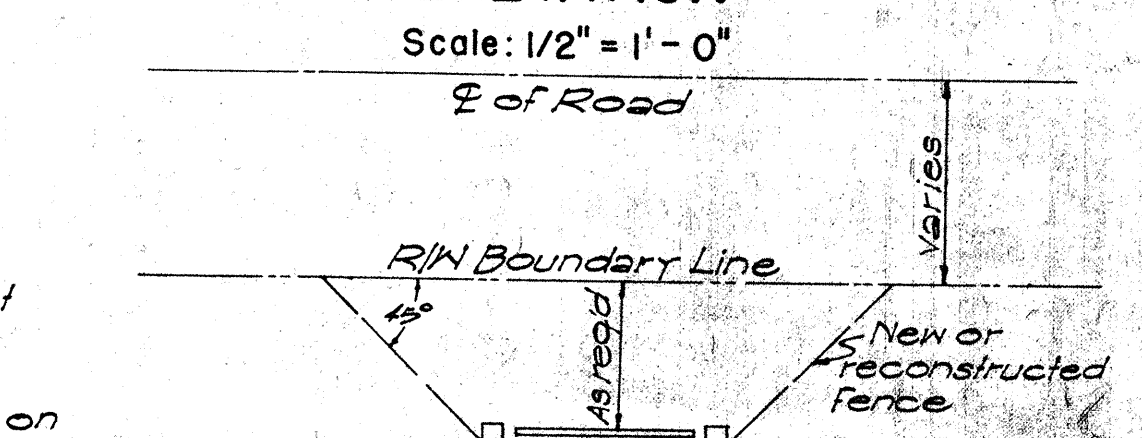
HALF SECTION



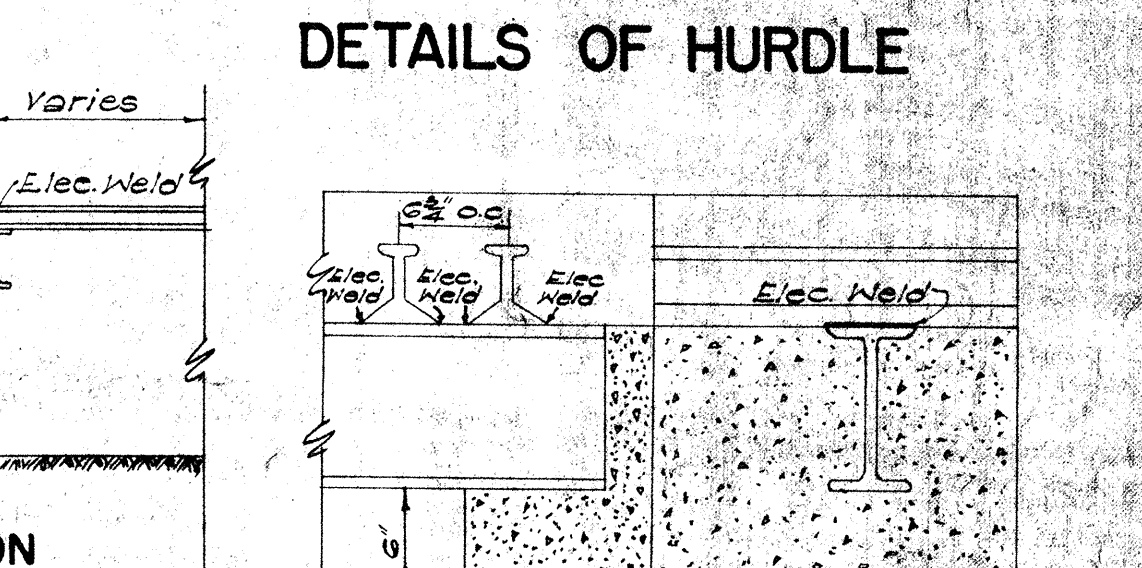
DETAIL OF CATTLE GUARD
Scale: 3/8" = 1'-0"



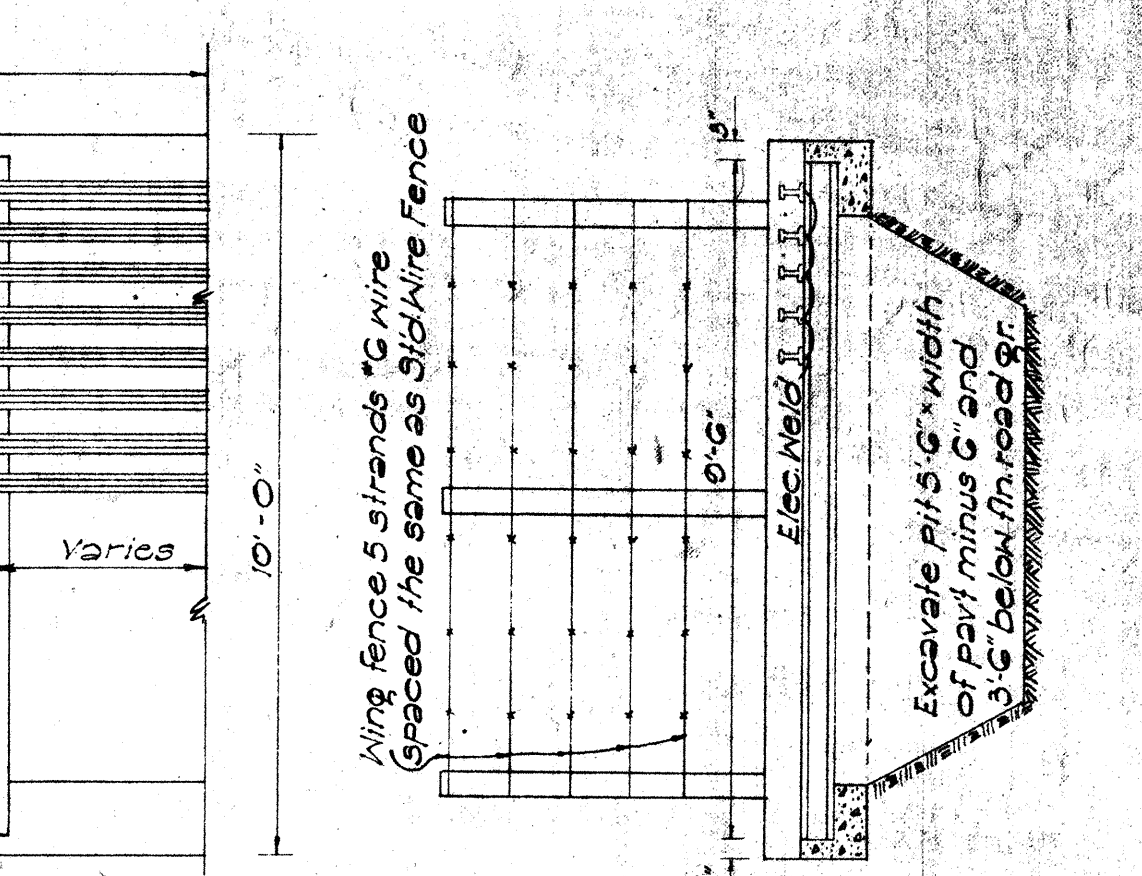
ELEVATION
Scale: 1/2" = 1'-0"



LAYOUT SHOWING HURDLE PLACED BELOW CULVERT IN A POSITION WHICH WILL BE CATTLE TIGHT



DETAILS OF HURDLE



SECTION

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
FENCES, GATES, GUARD RAILS,
GUIDE POSTS, CATTLE GUARD
SCALES AS NOTED

APPROVED: *Paul E. Weather*
TERRITORIAL HIGHWAY ENGINEER