

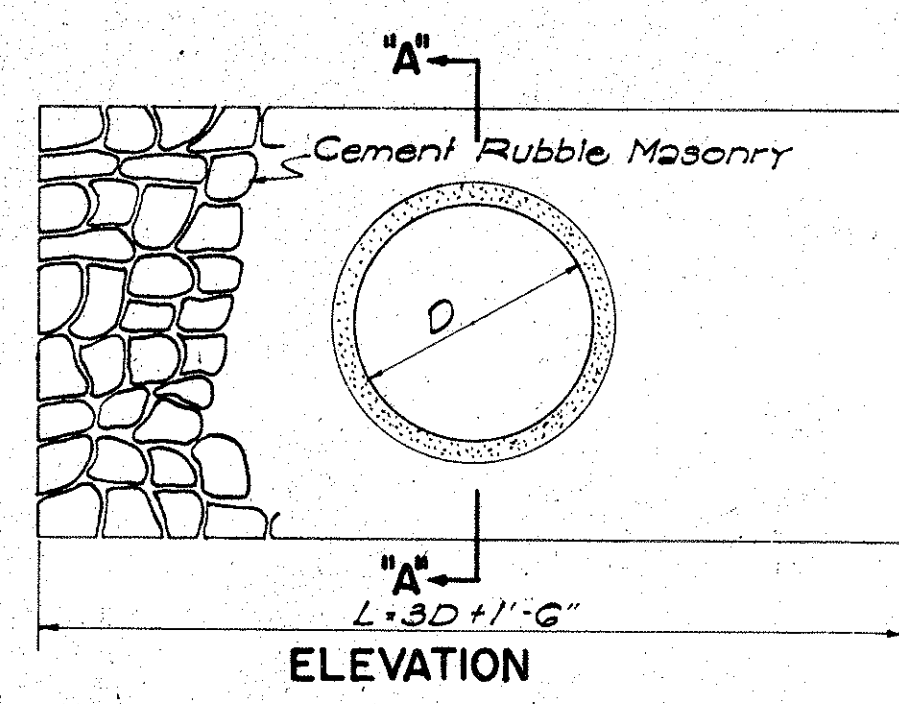
D	W	H	T=W+H
18"	24"	2'-0"	4'-0"
24"	30"	2'-0"	4'-6"
30"	30"	2'-6"	5'-0"
36"	36"	3'-0"	6'-0"

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

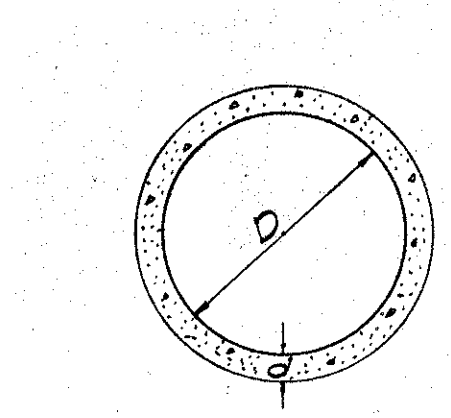
D	D	L=D+G	Cu Yds	Where Variables Equal
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

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

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

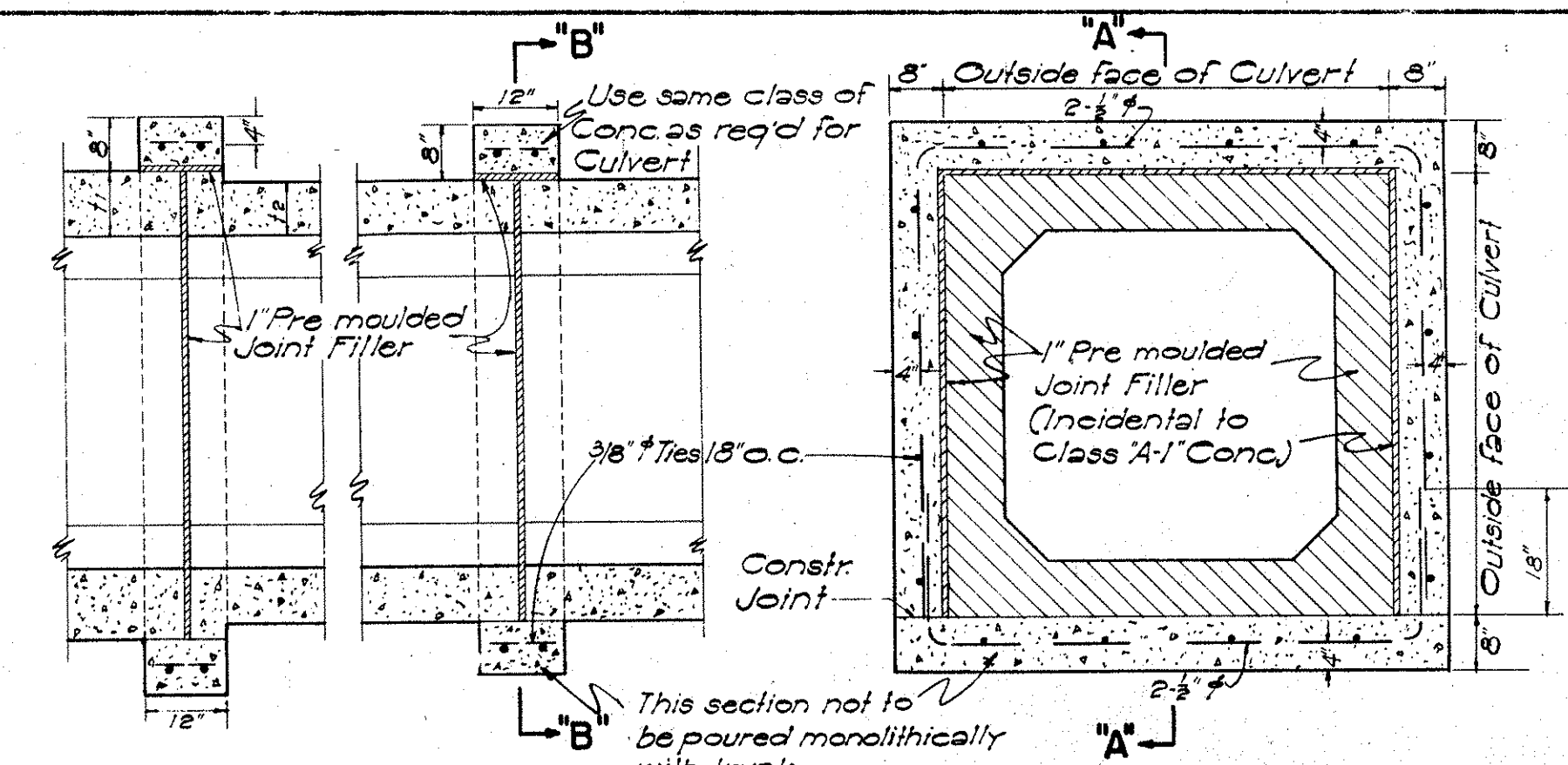
NOTE: Thickness 'd', reinforcing, and concrete used, are to conform with the approved design as provided by the Specifications.

D	d	W	Cu Yd. per Ft.
18"	4"	2'-2"	0.11
24"	4 1/2"	2'-9"	0.14
30"	5"	3'-4"	0.19
36"	5 1/2"	3'-11"	0.26

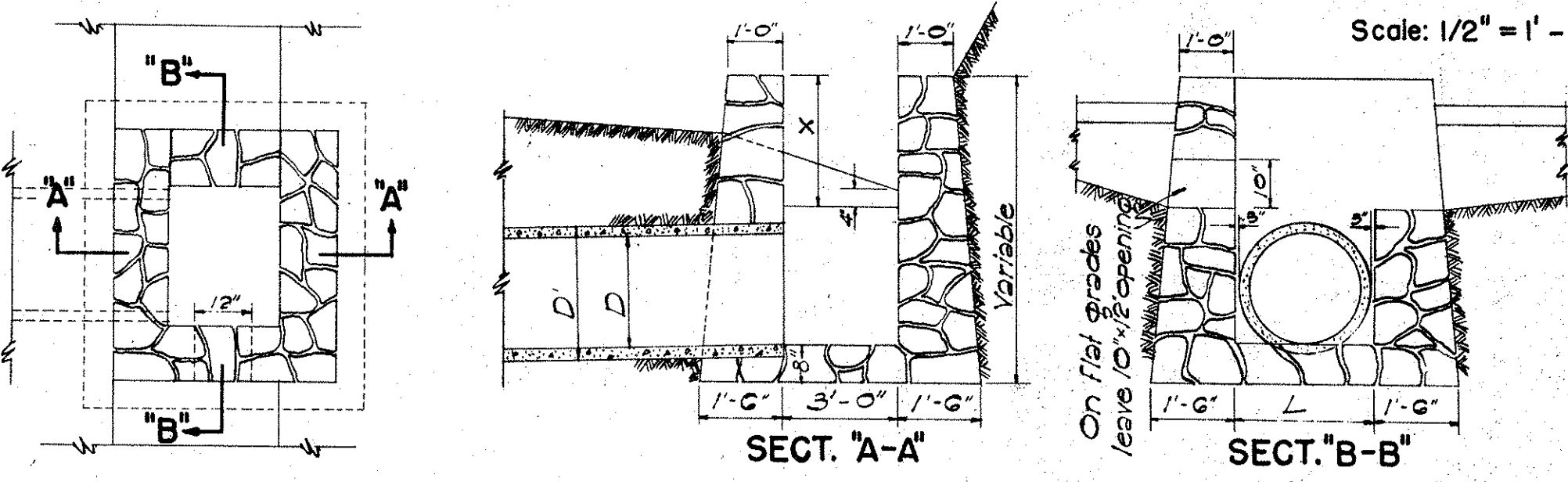
CAST-IN-PLACE CONC. CULVERT

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	1.38	4 3/4" 7'-0" 42
30"	2'-0"	9'-0"	5'-0"	1.95	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	3.87	4 3/4" 11'-6" 60
48"	2'-6"	13'-6"	6'-6"	4.66	4.66	4 3/4" 13'-0" 78

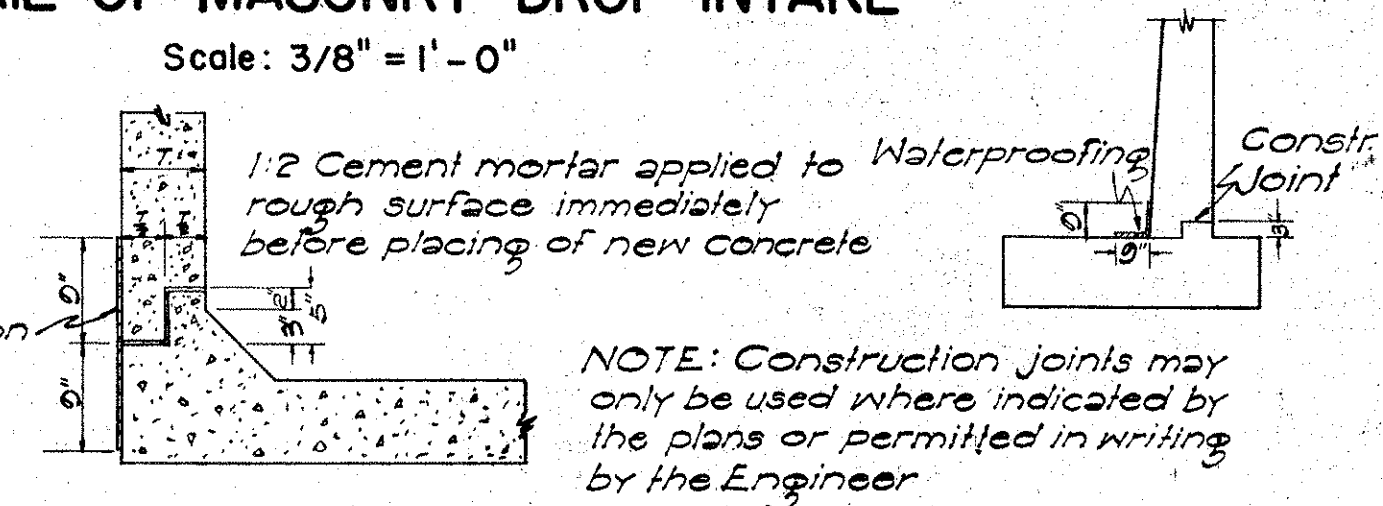
DETAIL OF CONCRETE HEADWALL
Scale: 1/2" = 1'-0"



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



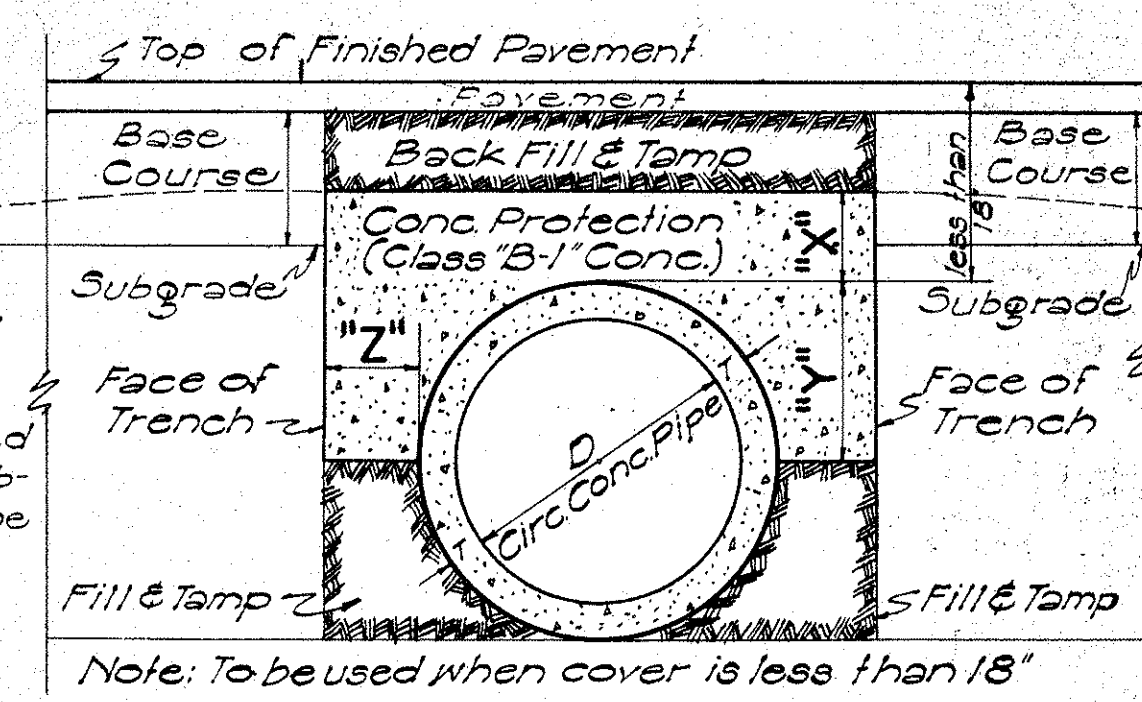
DETAIL OF MASONRY DROP INTAKE
Scale: 3/8" = 1'-0"



CONSTR. JOINT DETAILS

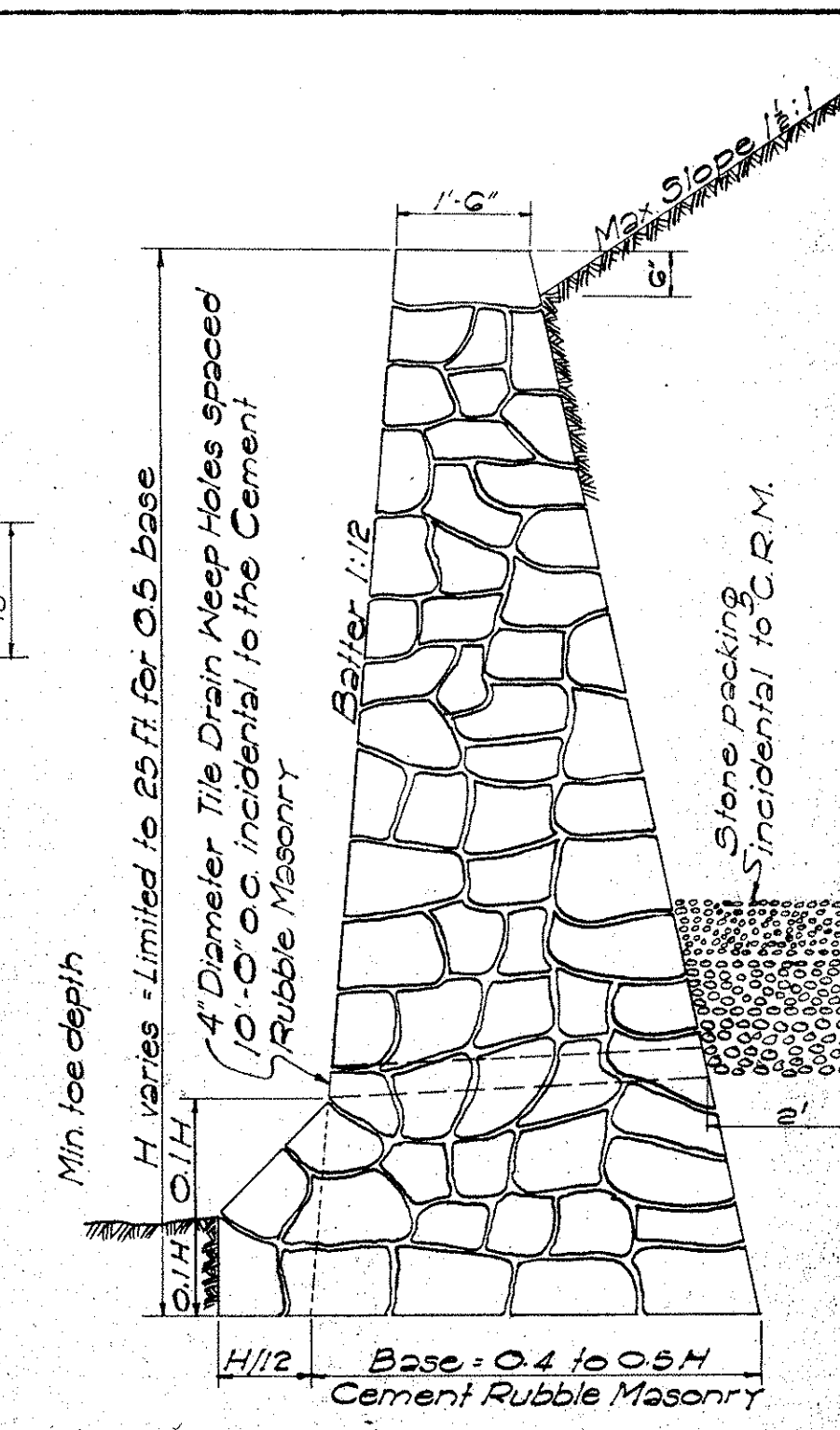
METHOD OF APPLYING CONSTR. JOINT WATERPROOFING
(1) Map surface either side of joint as required with asphalt 50-100 penetration (A.S.T.M. Desig. D 5-25) applied at 200°F.
(2) Apply one layer of 55-1b composition roofing to hot asphalt.
(3) Map surface of composition roofing and 3" beyond all around with thick coat of asphalt as specified under (1).
The above work is incidental to concrete and will not be paid for separately.

NOTE: Construction joints may only be used where indicated by the plans or permitted in writing by the Engineer.

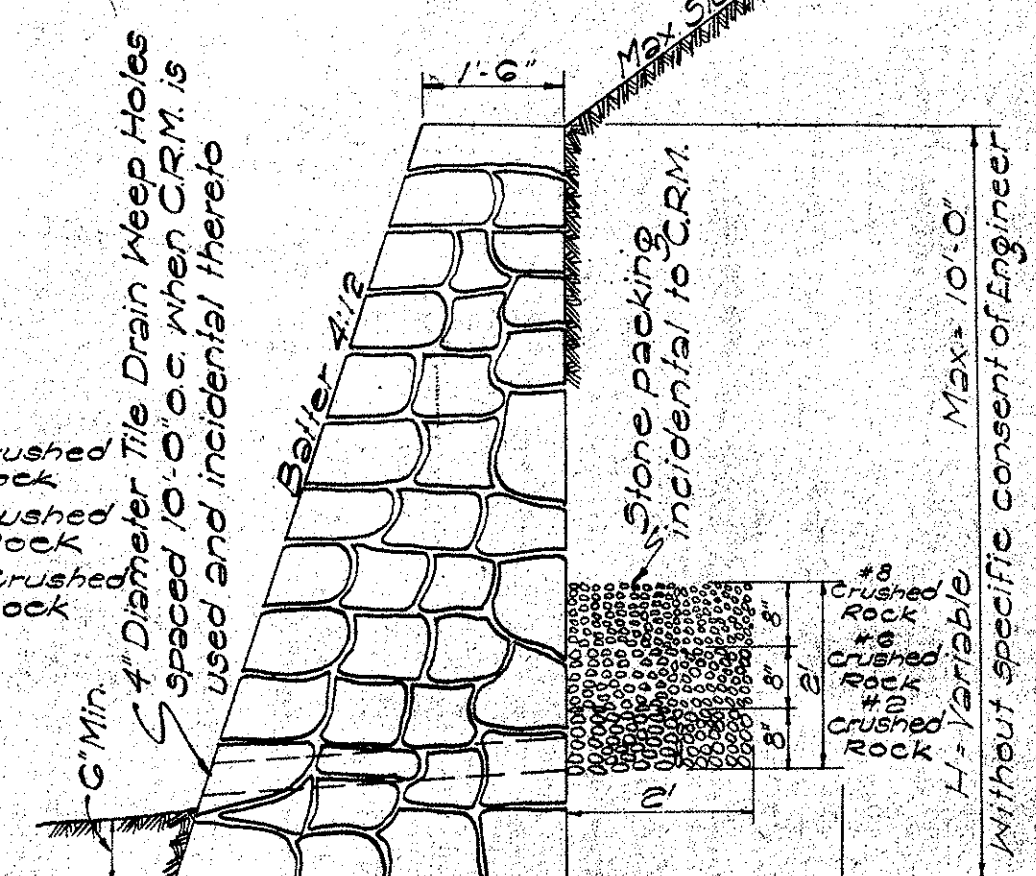


X	Y	Z
6" for 18"D		Z must be from pipe to face of trench
7" " 24"D		
8" " 30"D		
9" " 36"D	D+T	Minimum = X
10" " 42"D		Maximum pay quantity will be Z=12"
11" " 48"D		
12" " 54"D		

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



SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL

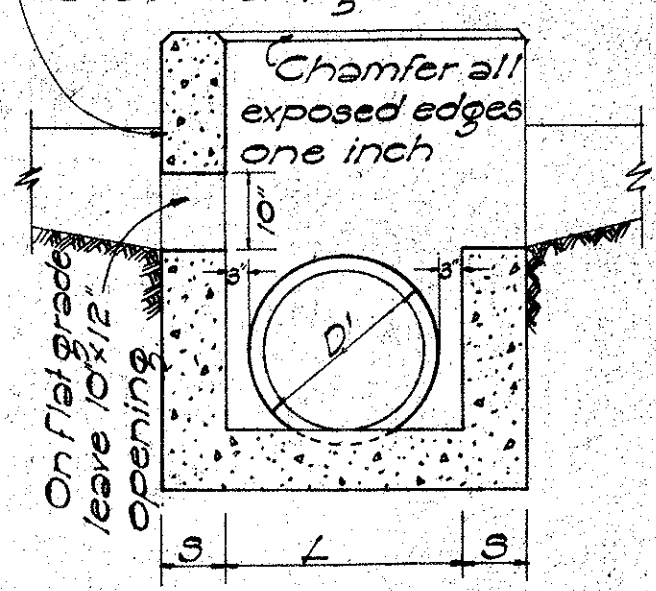


SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

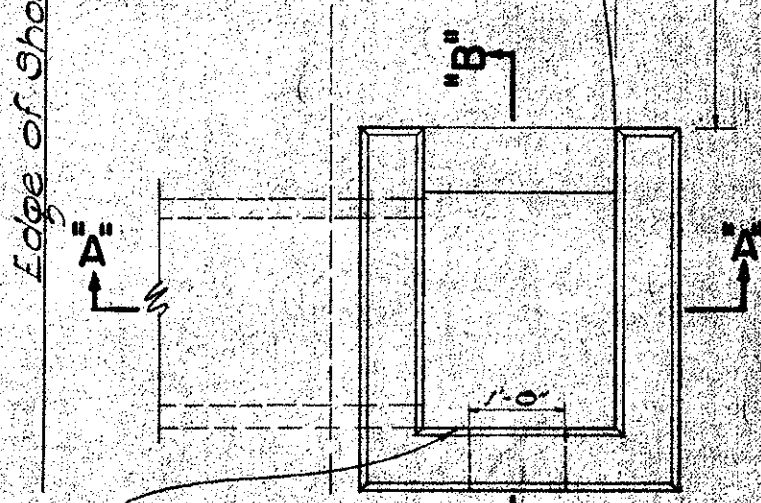
D	D	L=D+G	S	Cu Yds	Where Variables Equal
23"	18"	2'-5"	8"	1.41	4'-6"
30"	24"	3'-0"	8"	1.72	5'-0"
37"	30"	3'-7"	9"	2.32	5'-6"
44"	36"	4'-2"	9"	2.73	6'-0"
51"	42"	4'-9"	10"	3.54	6'-6"
58"	48"	5'-4"	10"	4.01	7'-0"

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 Siphons connected with Irrigation Ditches or Flumes with appropriate changes to dimensions. In this case all joints must be made water tight.



SECTION "B-B"

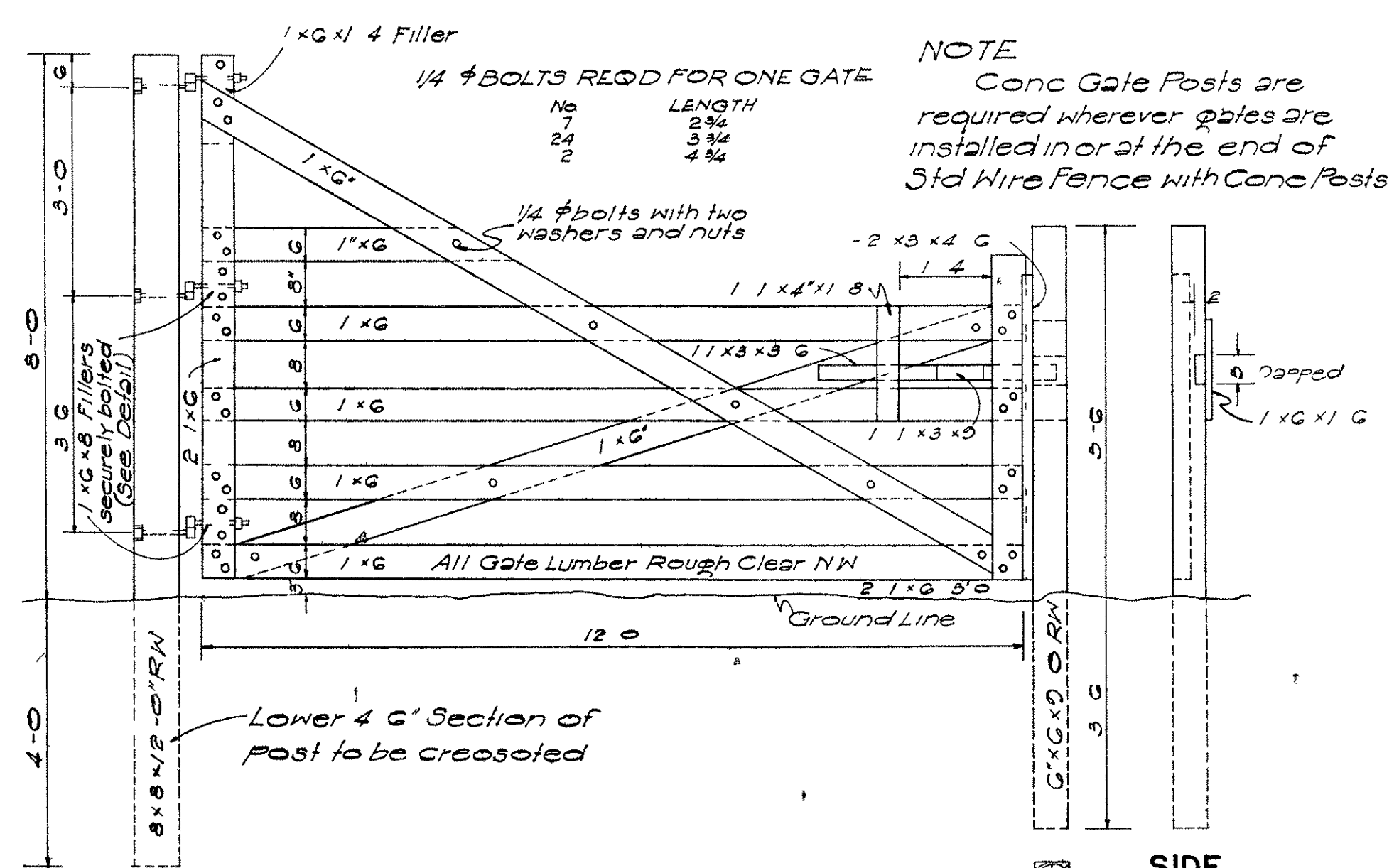


SECTION "A-A"

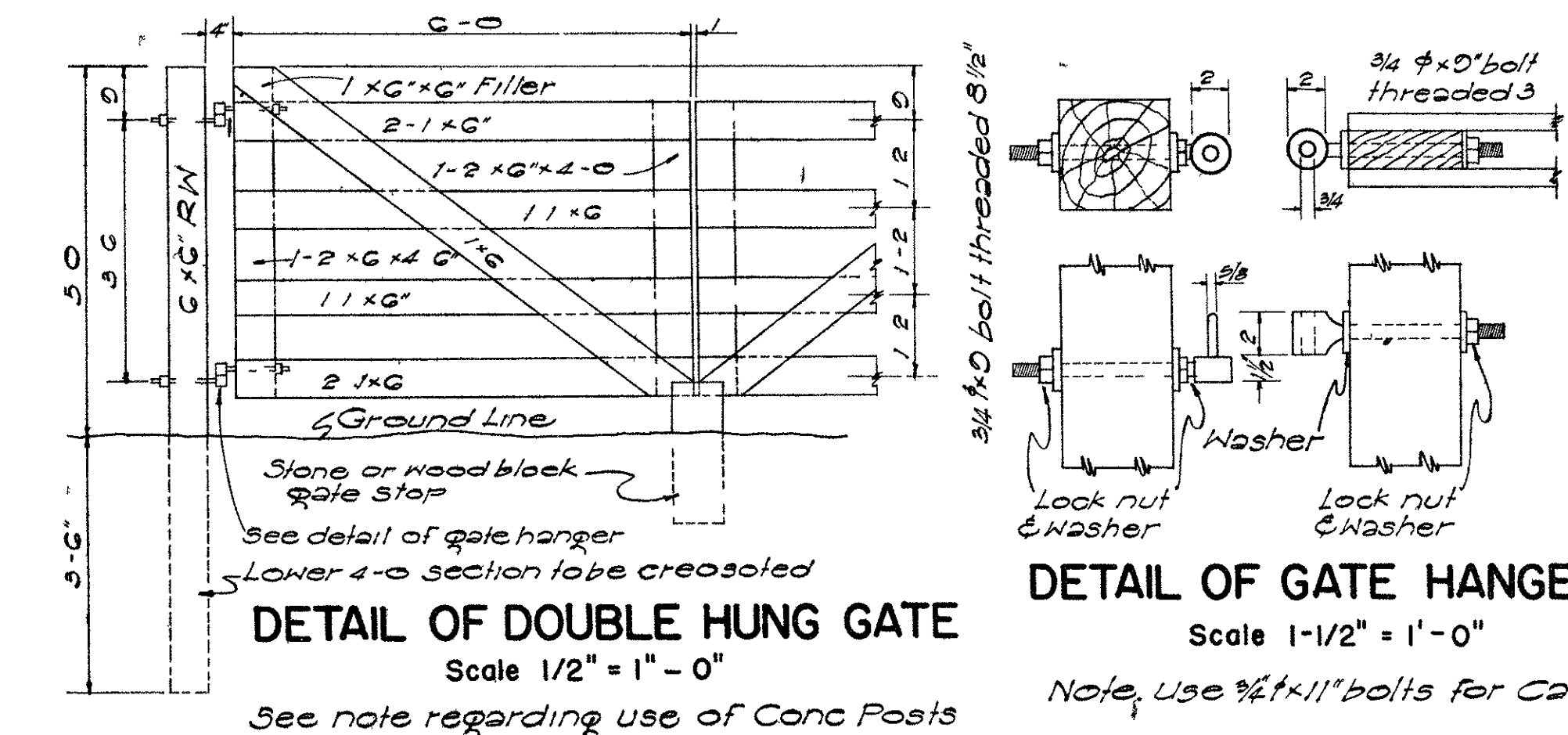
DETAIL OF CONCRETE DROP INTAKE
Scale: 1/2" = 1'-0"

APPROVED: *David E. Neather*
TERRITORIAL HIGHWAY ENGINEER

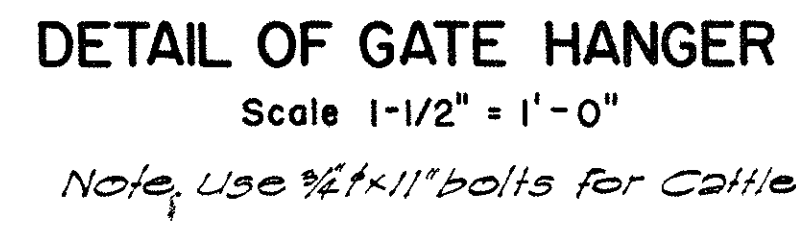
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
DROP INTAKES, RETAINING WALLS,
HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED



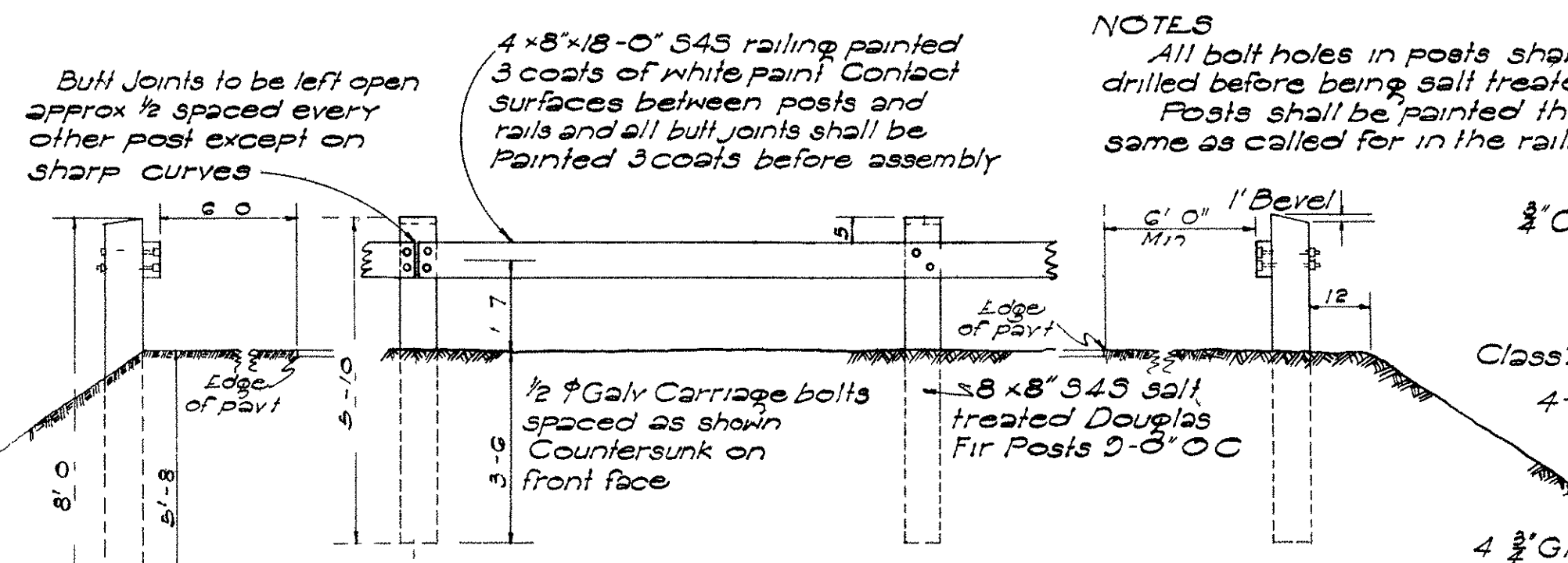
DETAIL OF CATTLE GATE
Scale 1/2" = 1'-0"



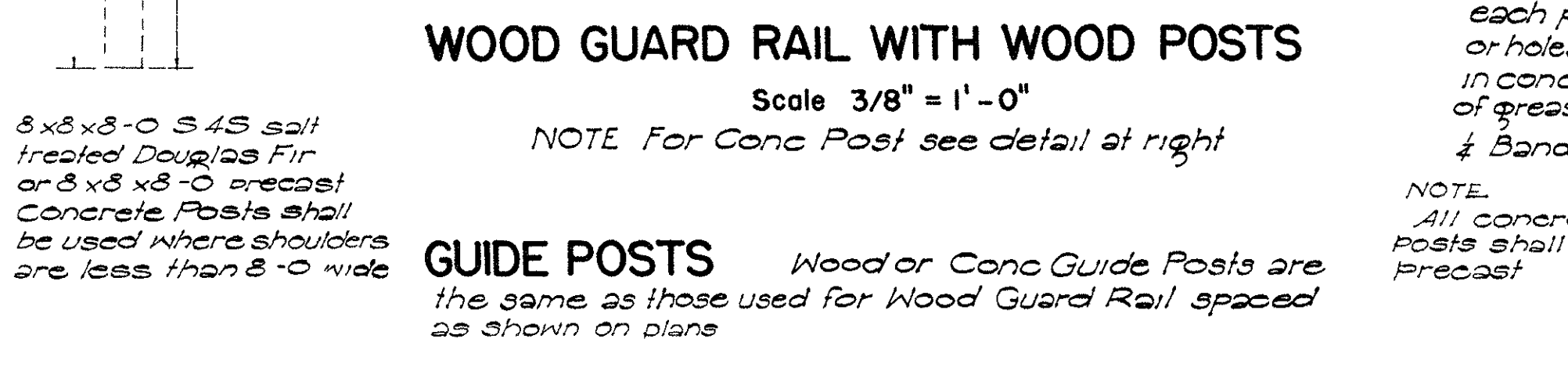
DETAIL OF DOUBLE HUNG GATE
Scale 1/2" = 1'-0"



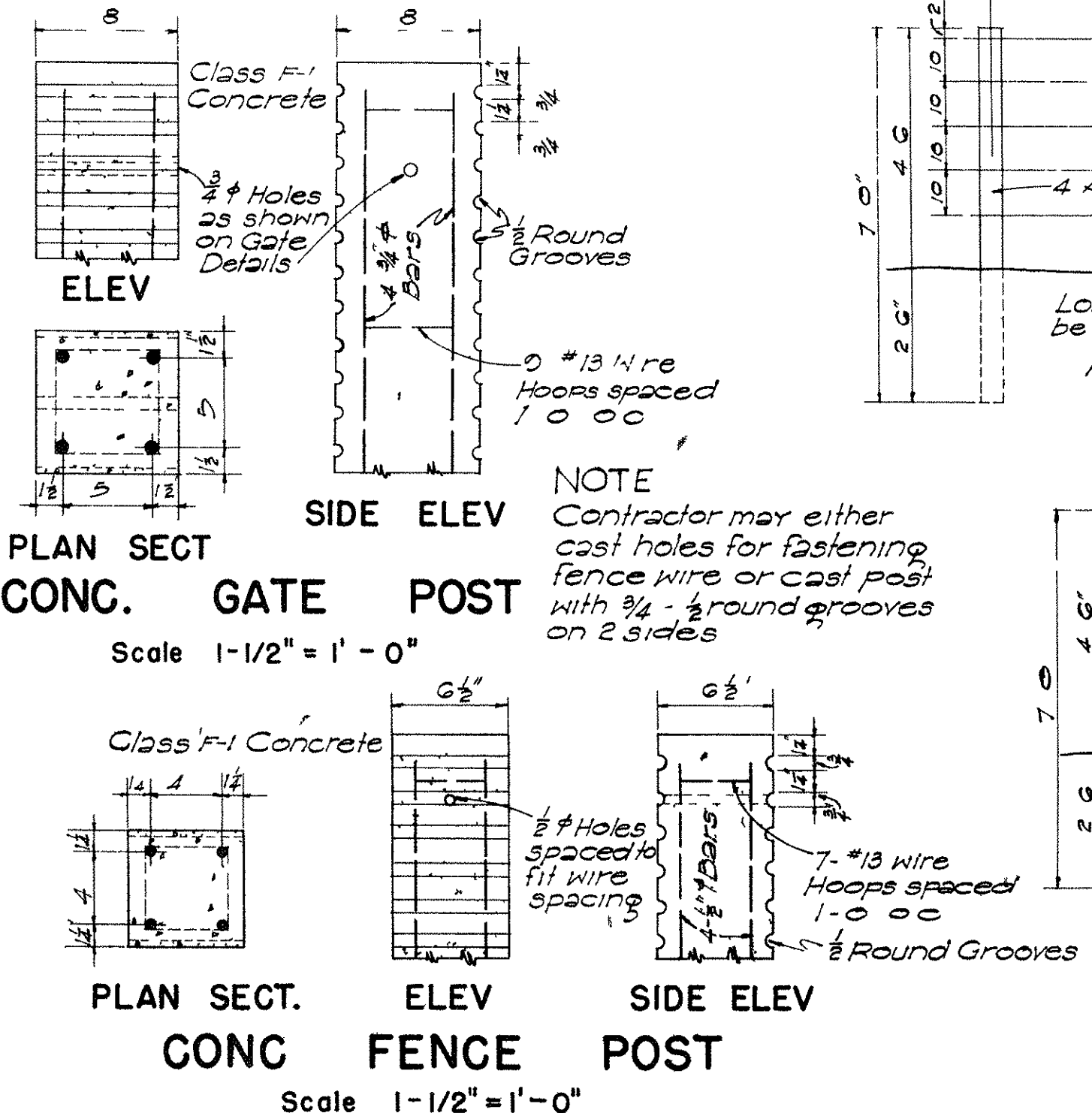
DETAIL OF GATE HANGER
Scale 1-1/2" = 1'-0"



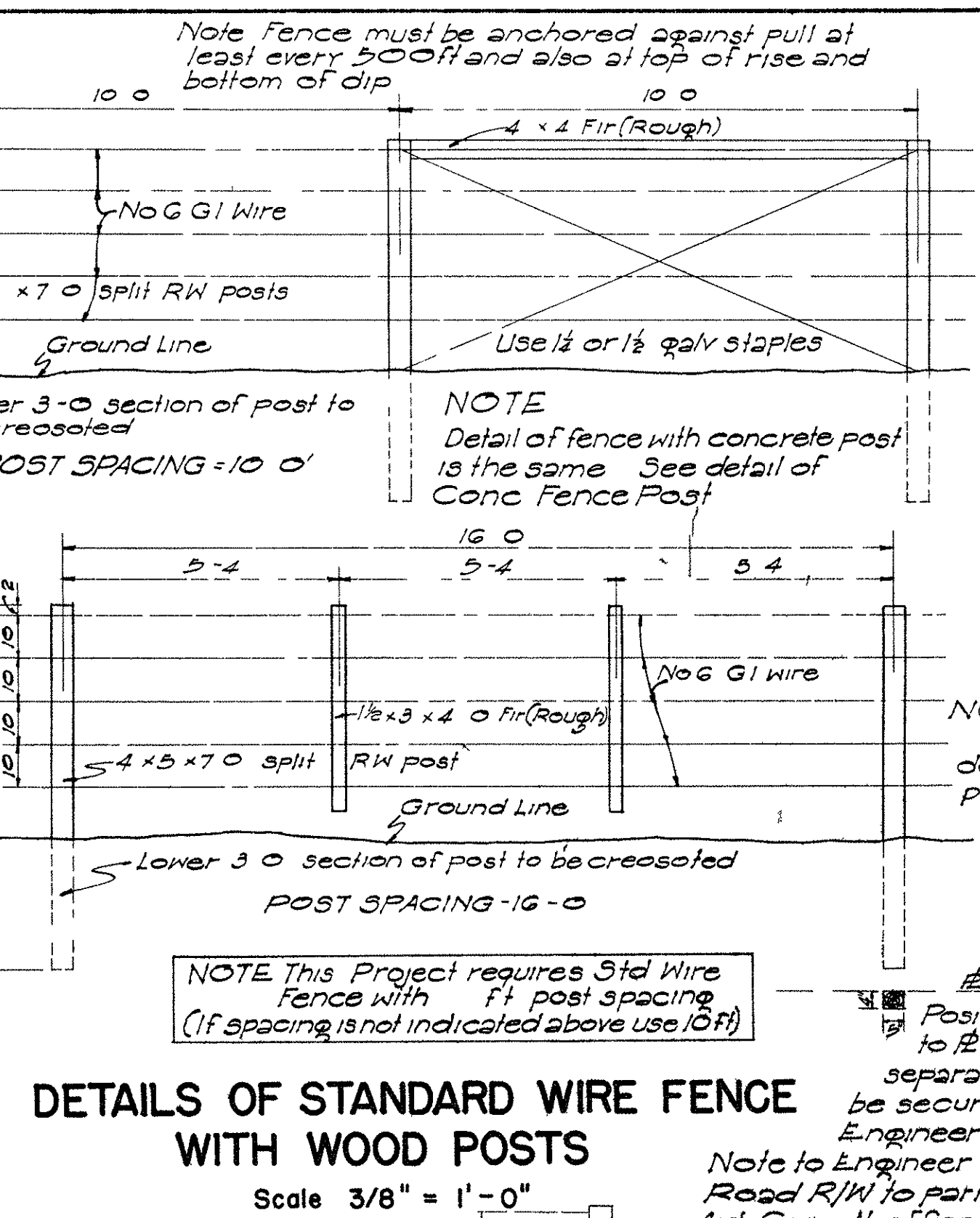
WOOD GUARD RAIL WITH WOOD POSTS
Scale 3/8" = 1'-0"



GUIDE POSTS
Scale 1-1/2" = 1'-0"



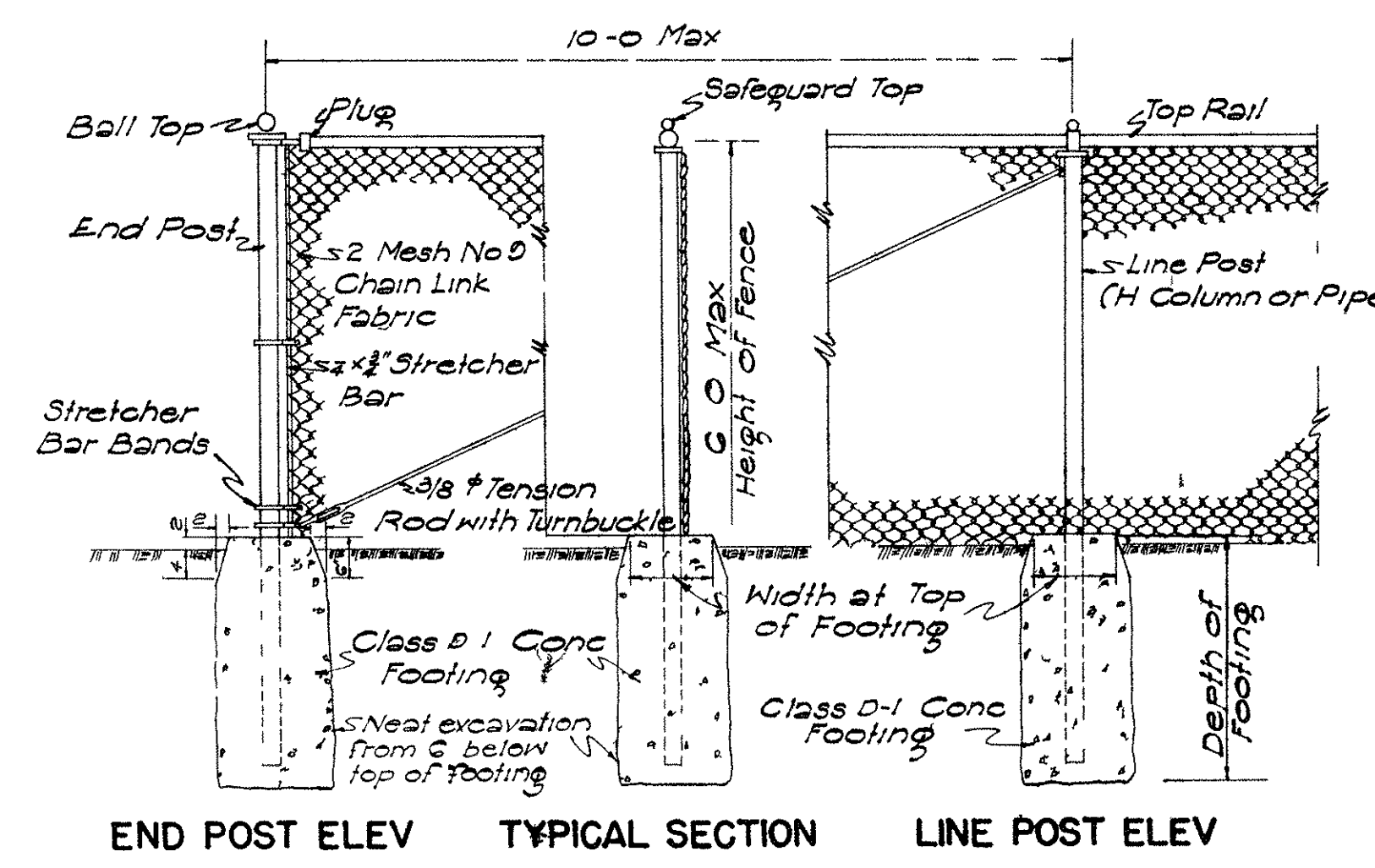
CONC. GATE POST
Scale 1-1/2" = 1'-0"



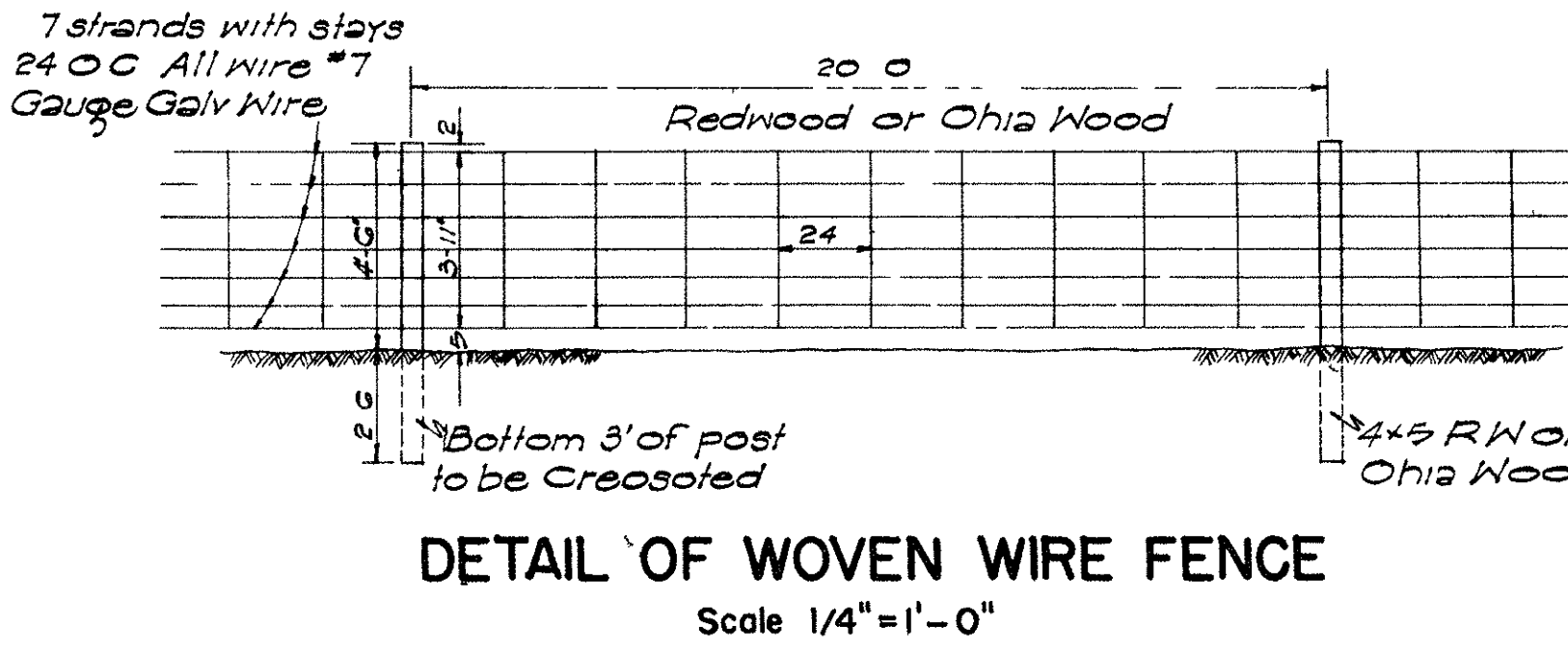
DETAILS OF STANDARD WIRE FENCE WITH WOOD POSTS
Scale 3/8" = 1'-0"

SCHEDULE FOR CHAIN LINK FENCE

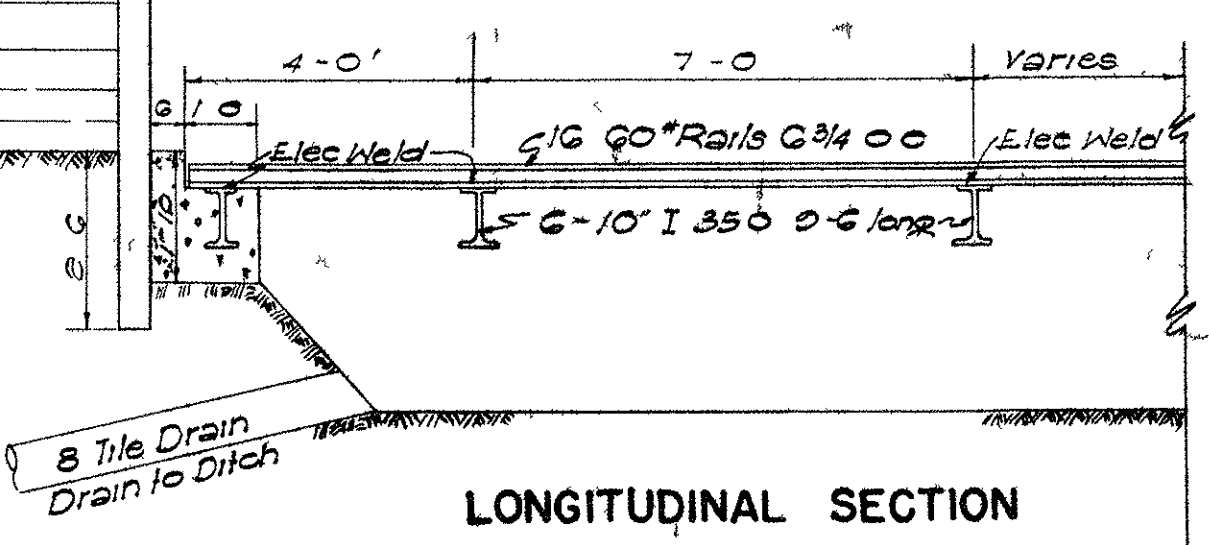
Height of Fence	Line Post	End Post	Top Rail	Depth of Footing	Top of Footing	Length of Posts
4'	2 1/2" x 1/2" x 10'0"	2" x 10'0"	1" x 10'0"	30"	24"	8' 3/4"
5'	2 1/2" x 1/2" x 10'0"	2" x 10'0"	1" x 10'0"	30"	24"	10' 3/4"
6'	2 1/2" x 1/2" x 10'0"	2" x 10'0"	1" x 10'0"	30"	24"	12' 3/4"



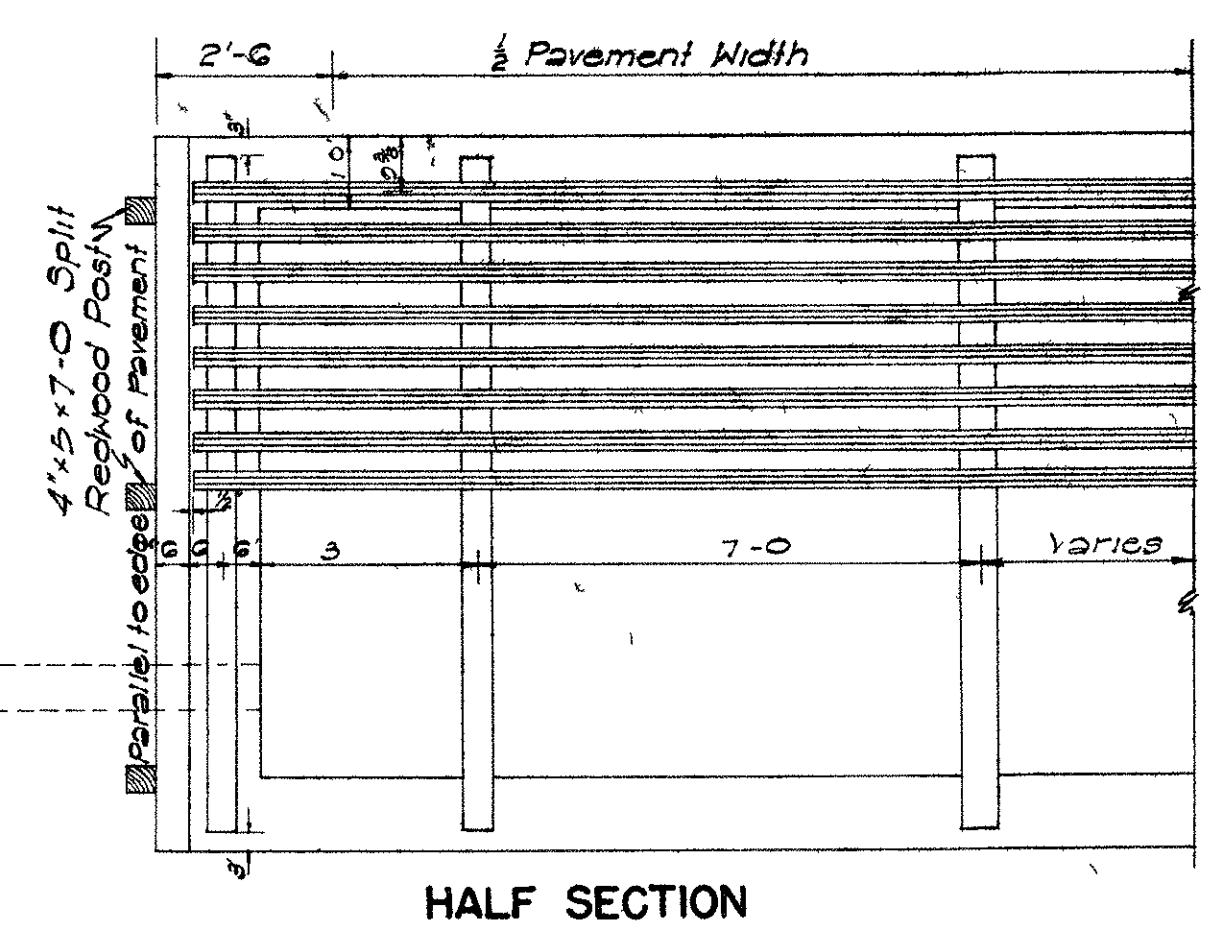
DETAIL OF CHAIN LINK FENCE
Scale 1/2" = 1'-0"



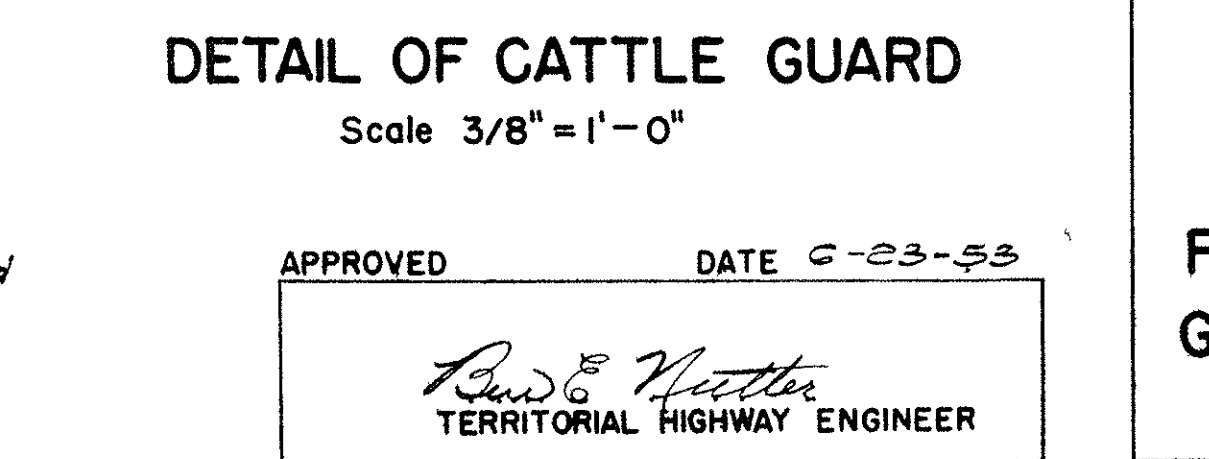
DETAIL OF WOVEN WIRE FENCE
Scale 1/4" = 1'-0"



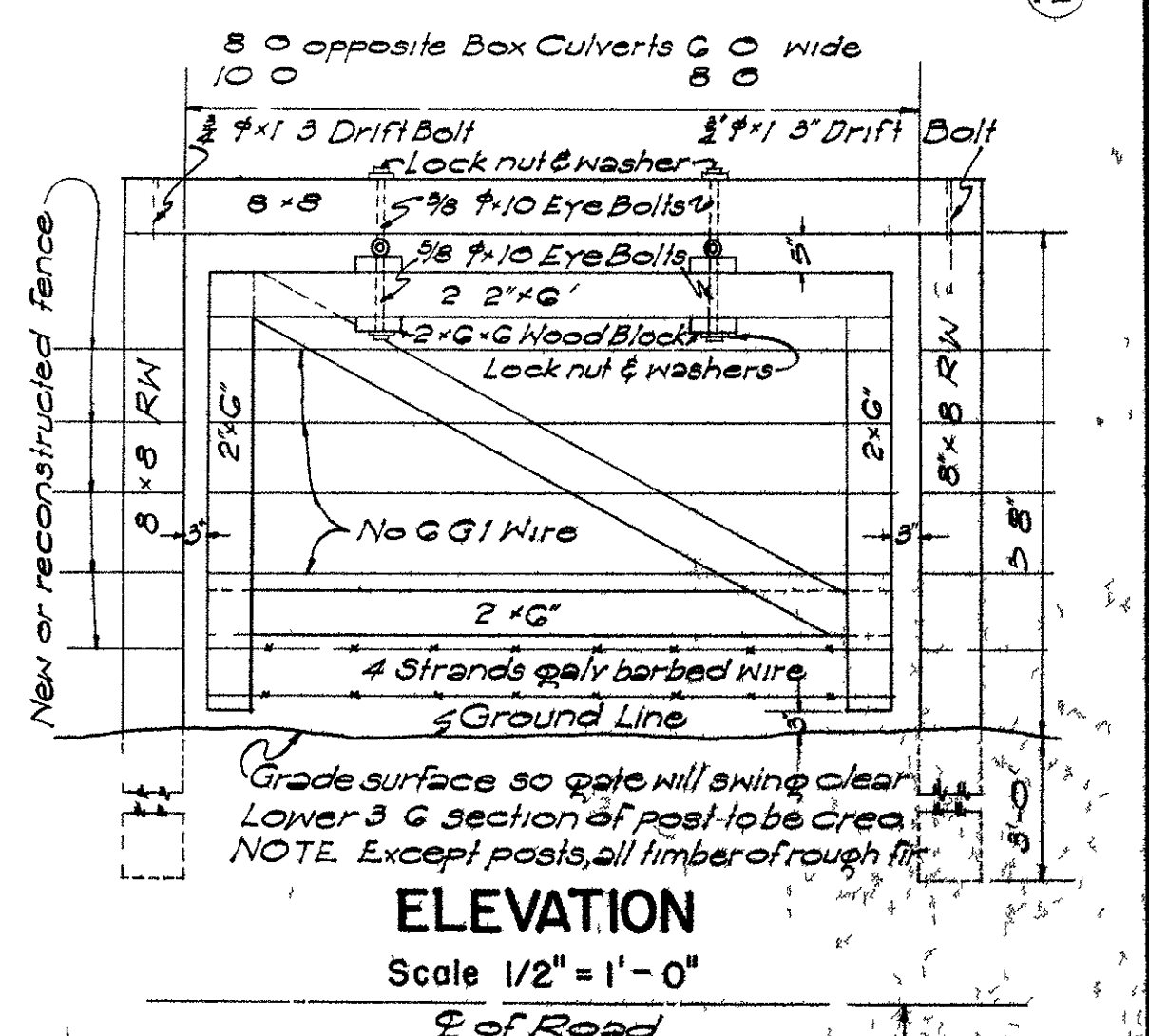
LONGITUDINAL SECTION



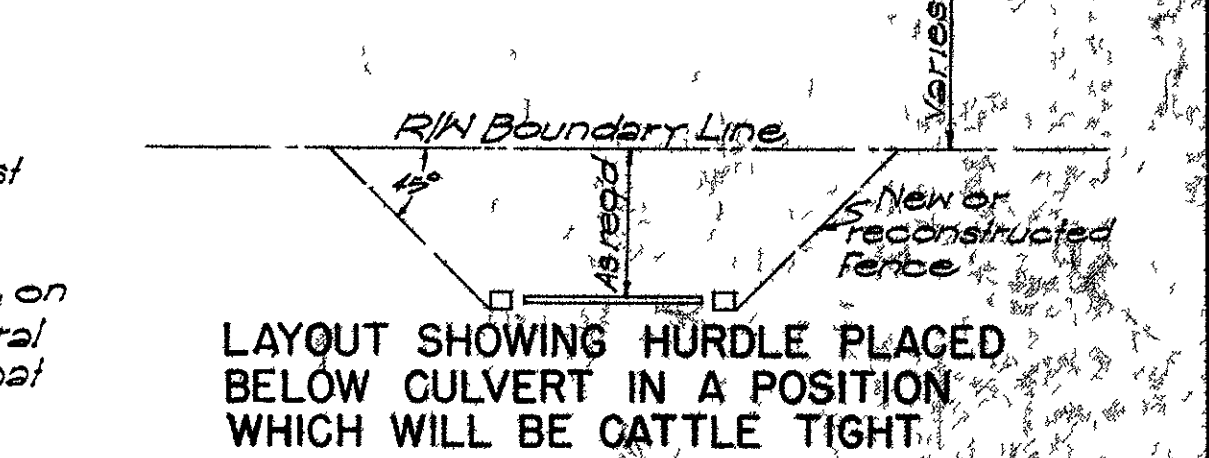
HALF SECTION



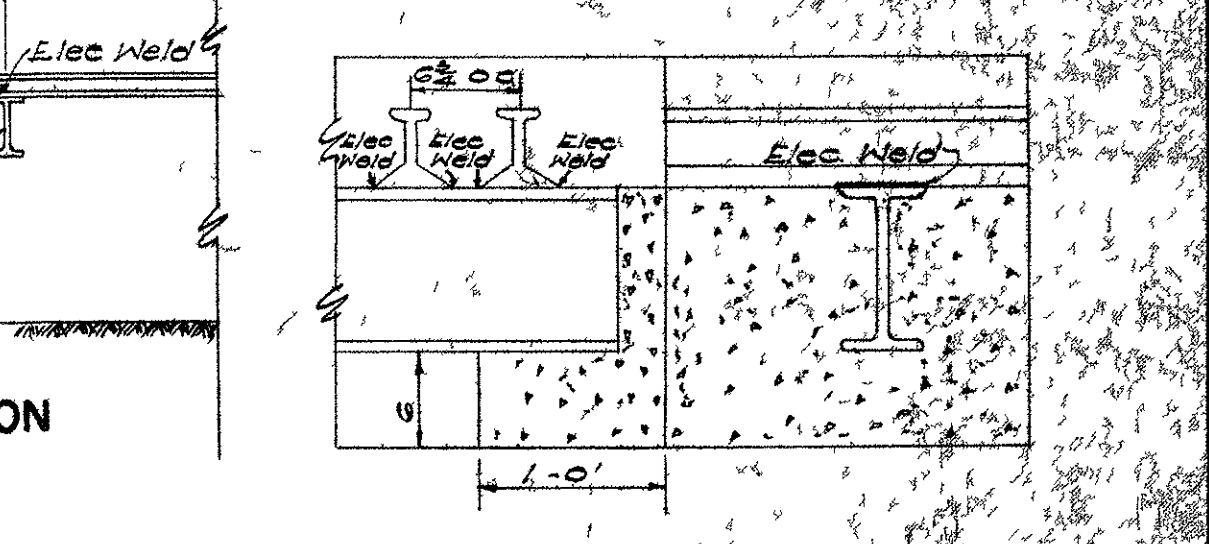
DETAIL OF CATTLE GUARD
Scale 3/8" = 1'-0"



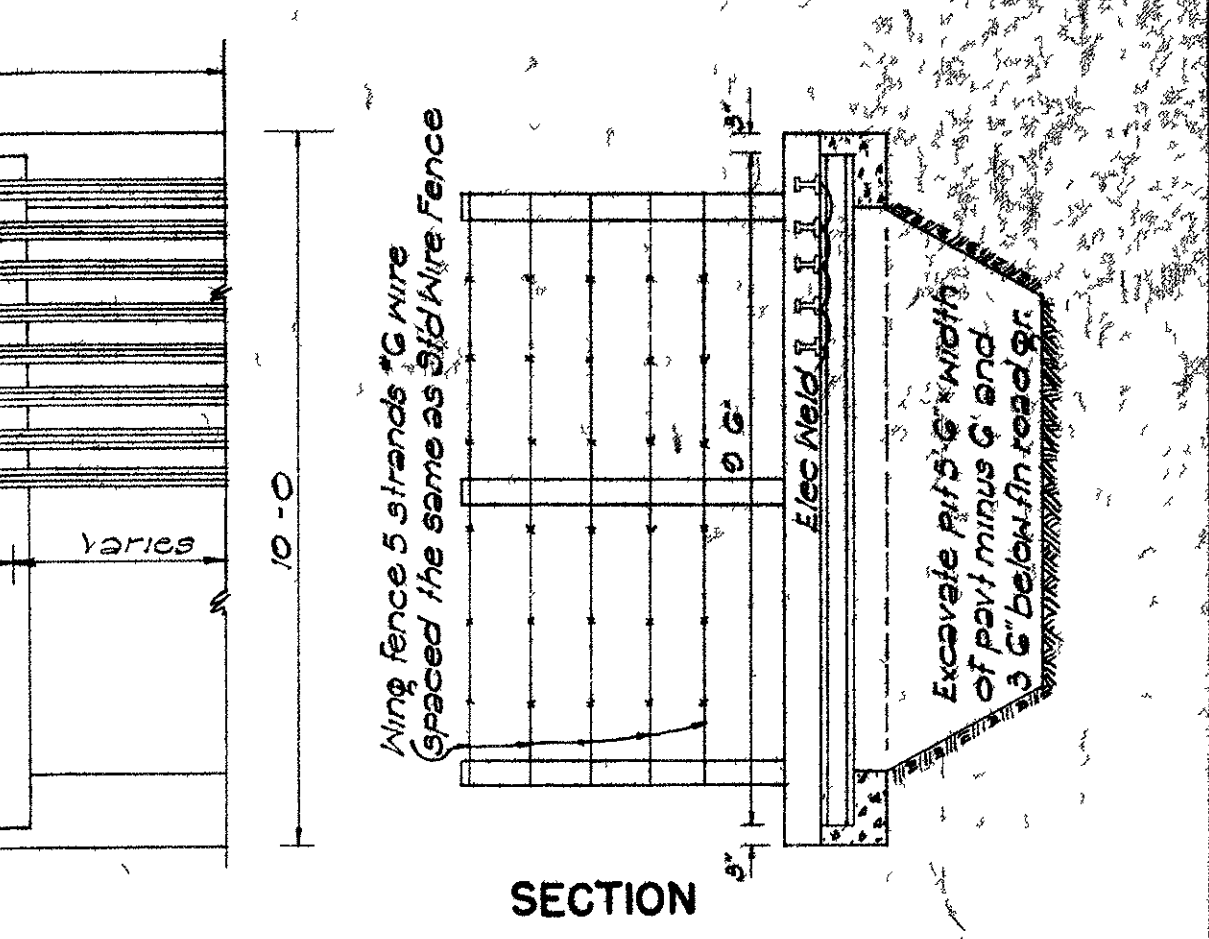
ELEVATION
Scale 1/2" = 1'-0"



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

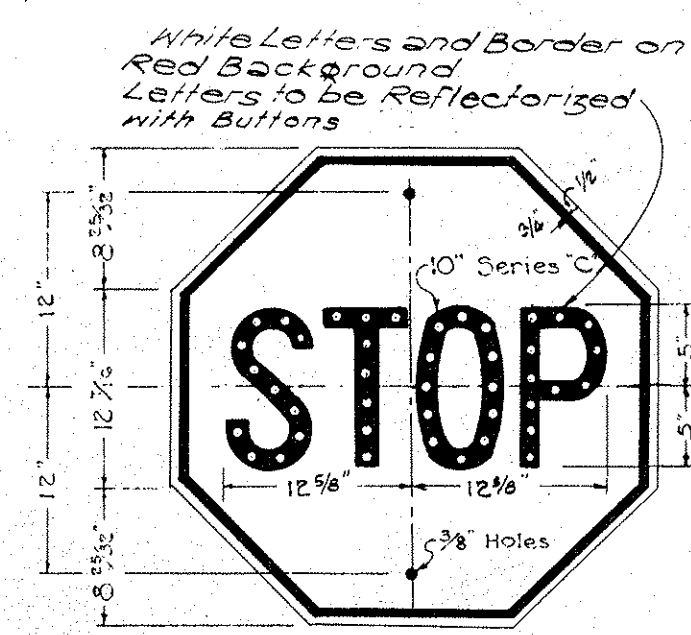


DETAILS OF HURDLE



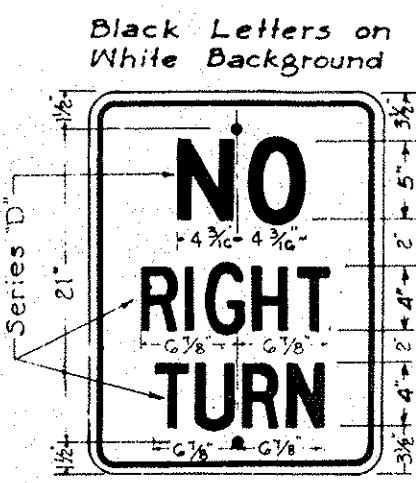
SECTION

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



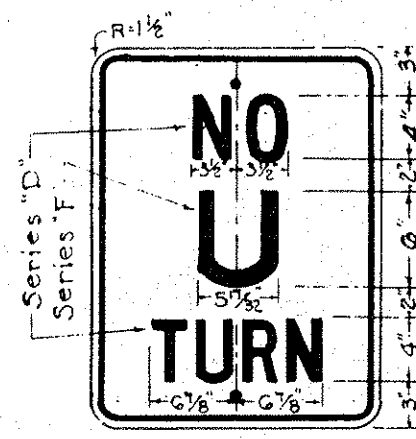
R-1

30" x 30"
Red Letters & Border on White Background



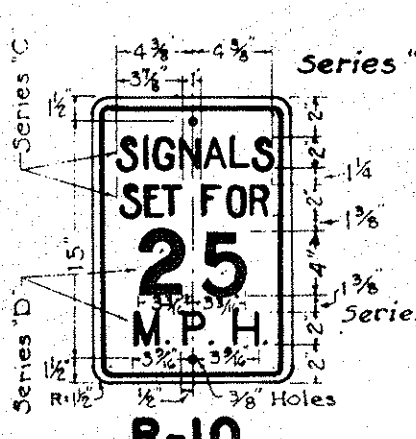
R-6

18" x 24"



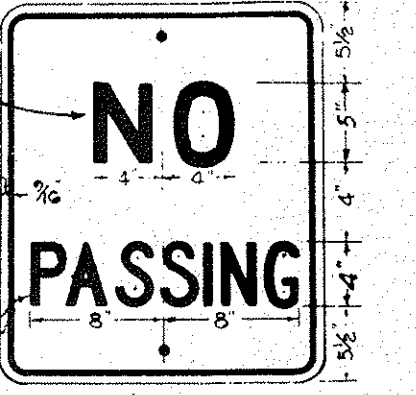
R-8

18" x 24"



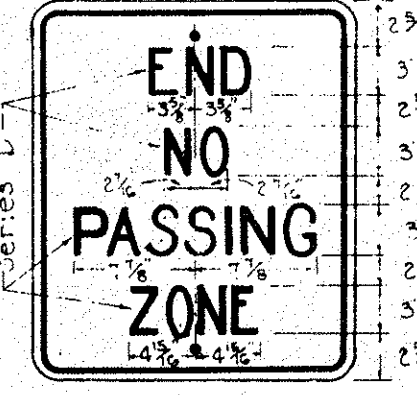
R-10

12" x 18"



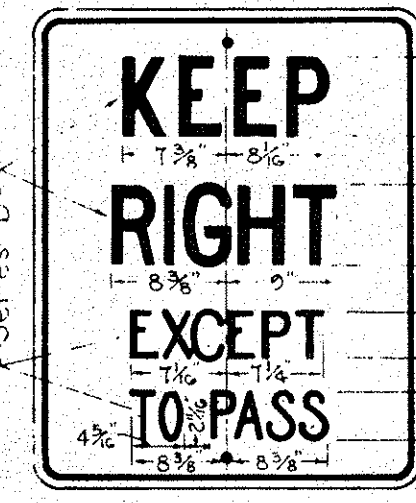
R-11

20" x 24"



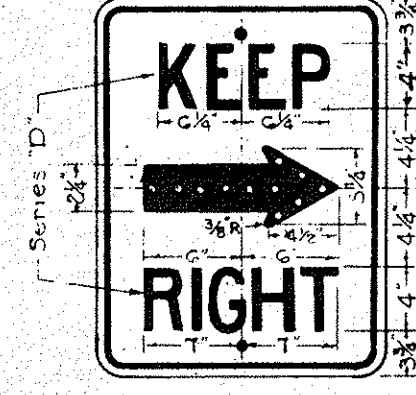
R-12

20" x 24"



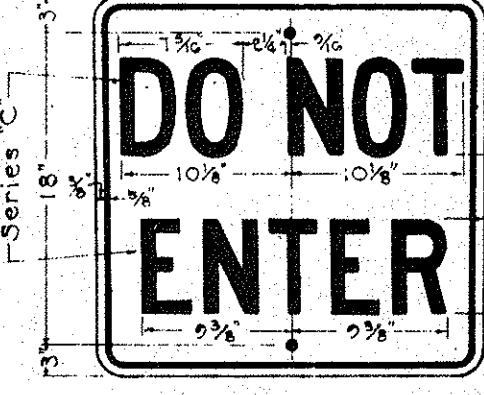
R-13

24" x 30"



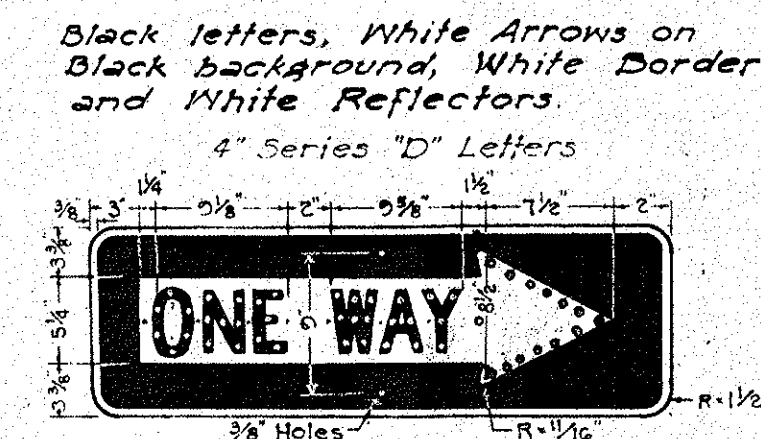
R-14

18" x 24"



R-15

24" x 24"



R-16-R
R-16-L

36" x 12"



R-18

12" x 18"



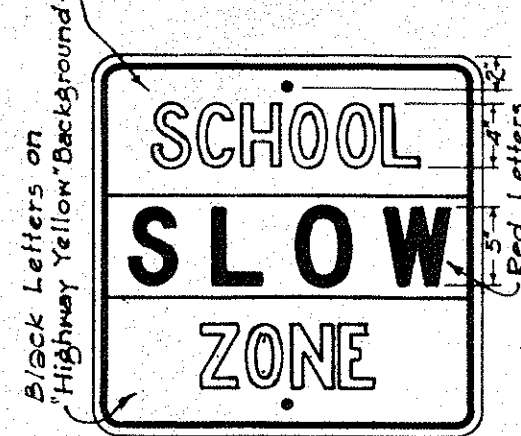
R-26

12" x 18"



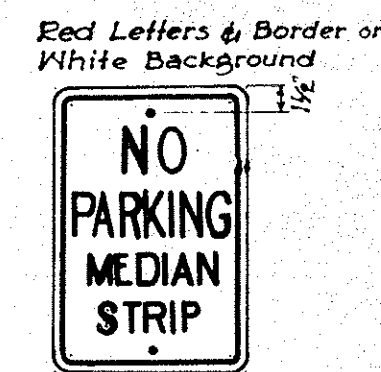
R-29

24" x 30"



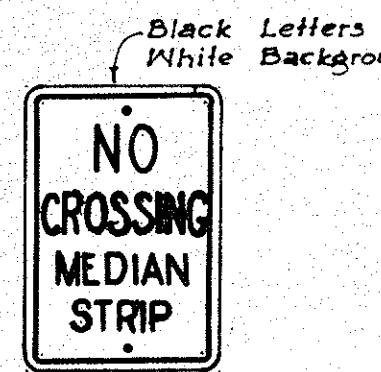
R-41-S

24" x 24"



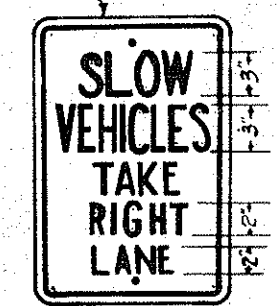
R-42-S

12" x 18"



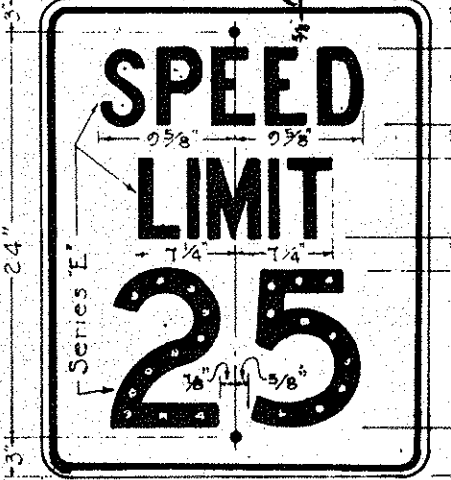
R-43-S

12" x 18"



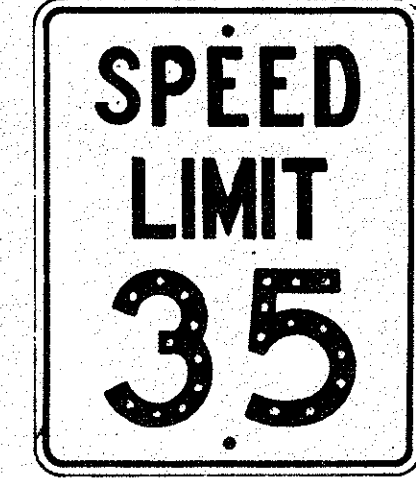
R-44-S

12" x 18"



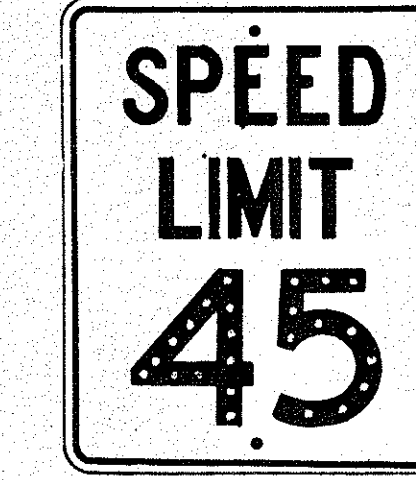
R-102-A

24" x 30"



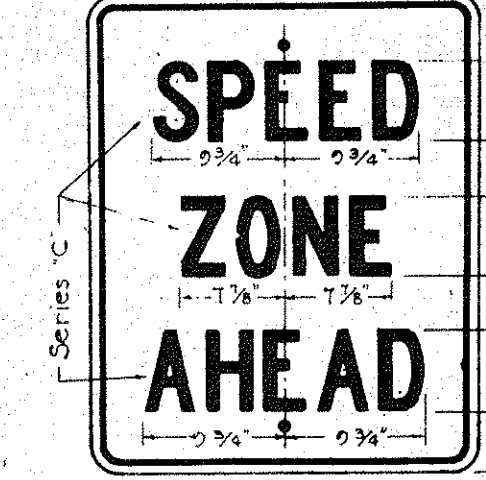
R-102-B

24" x 30"



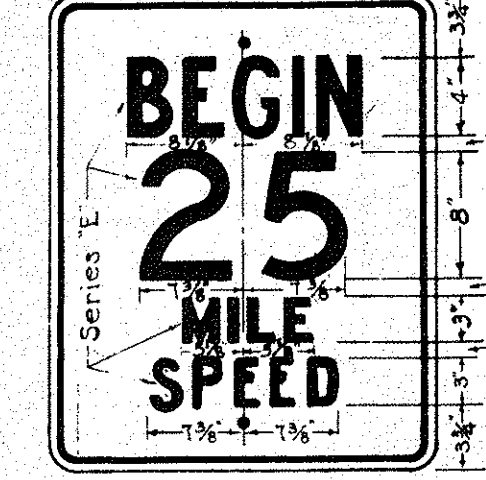
R-102-C

24" x 30"



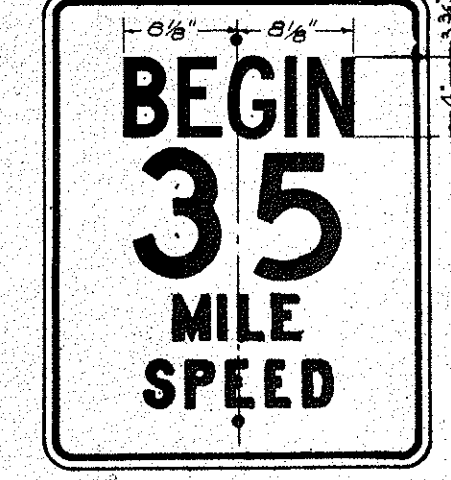
R-104

24" x 30"



R-105-A

24" x 30"



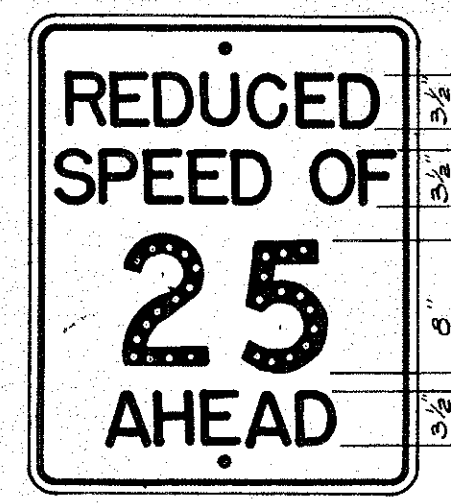
R-105-B

24" x 30"



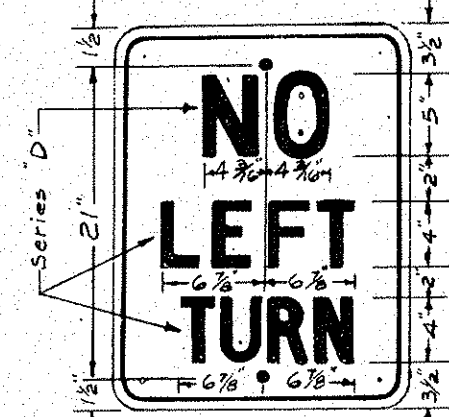
R-105-C

24" x 30"



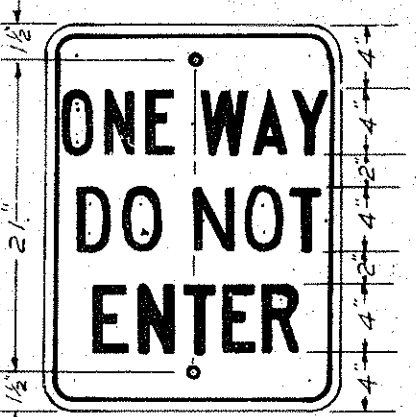
R-104-A

24" x 30"



R-7

18" x 24"



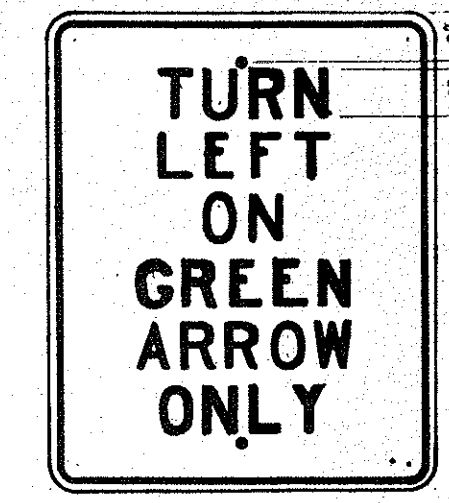
R-66

18" x 24"



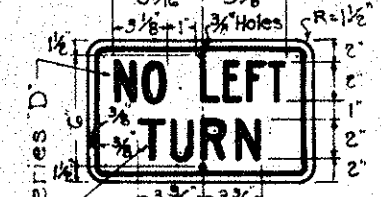
R-106

24" x 30"



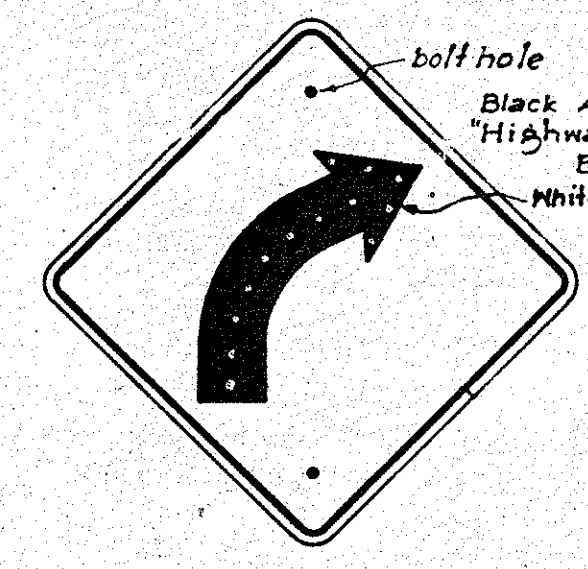
R-107-A

24" x 30"



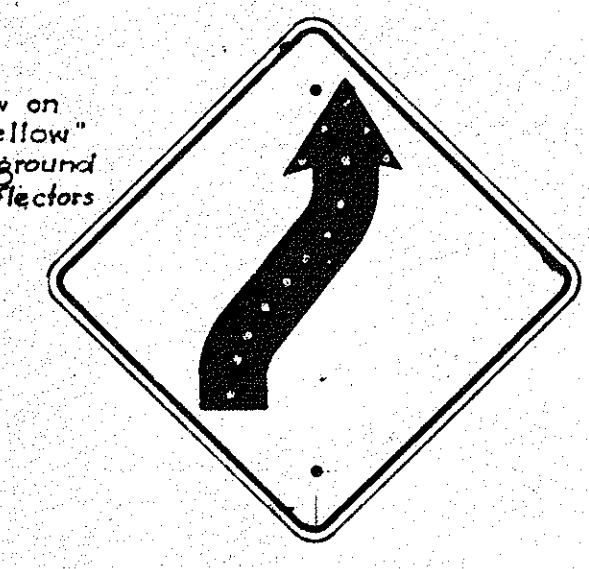
R-107

14" x 9"



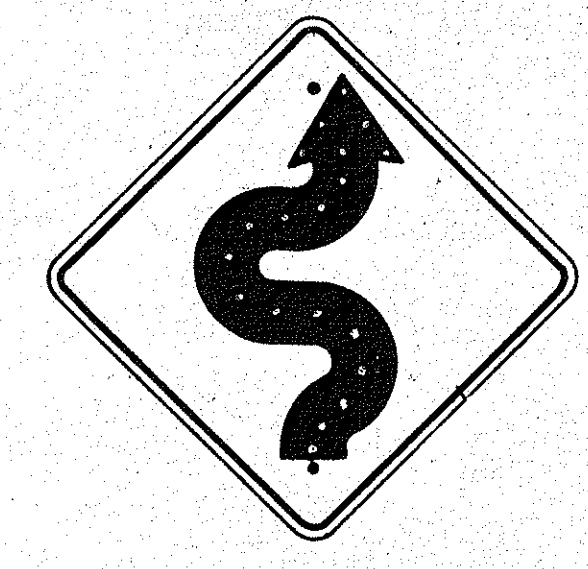
W-2-R

24" x 24"



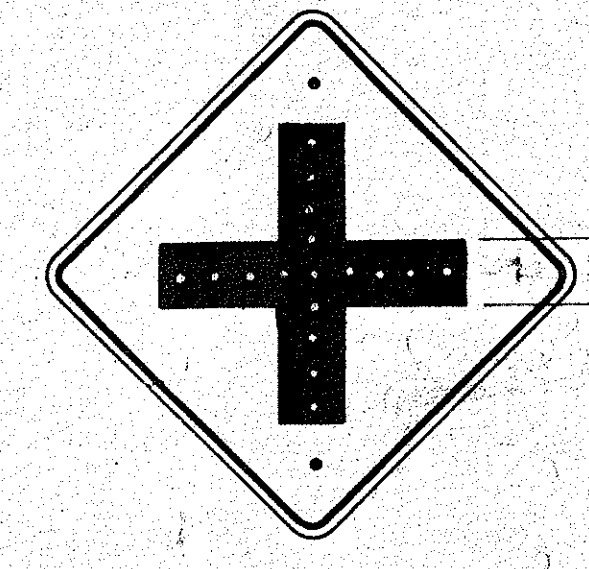
W-4-R

24" x 24"



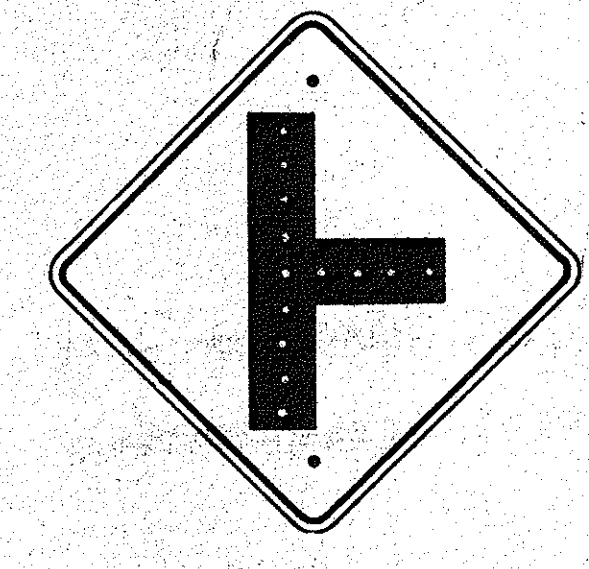
W-5-R

24" x 24"



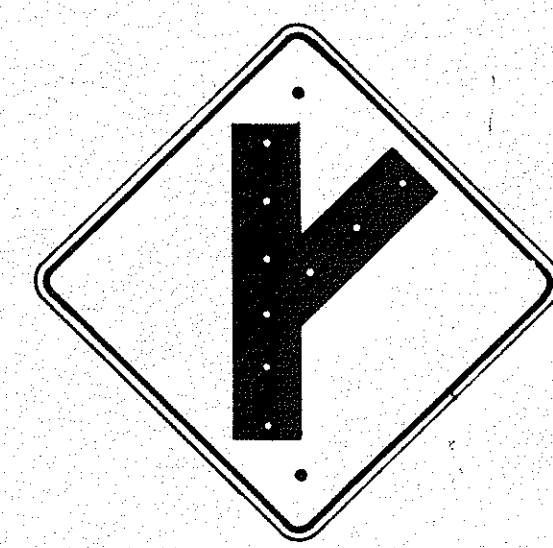
W-6

24" x 24"



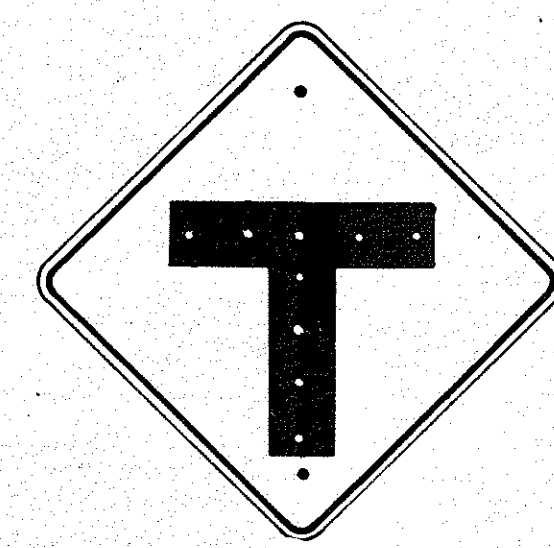
W-7

24" x 24"



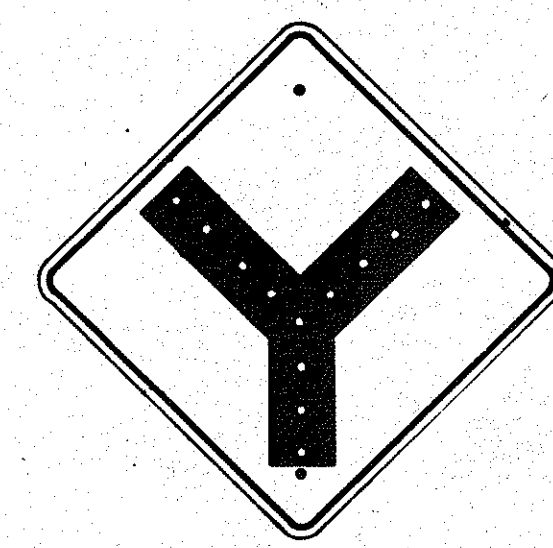
W-8-R

24" x 24"



W-9

24" x 24"



W-10

24" x 24"



W-13

24" x 24"



W-14

24" x 24"



W-14-A

24" x 24"



W-19

30" x 30"



W-20

30" x 30"



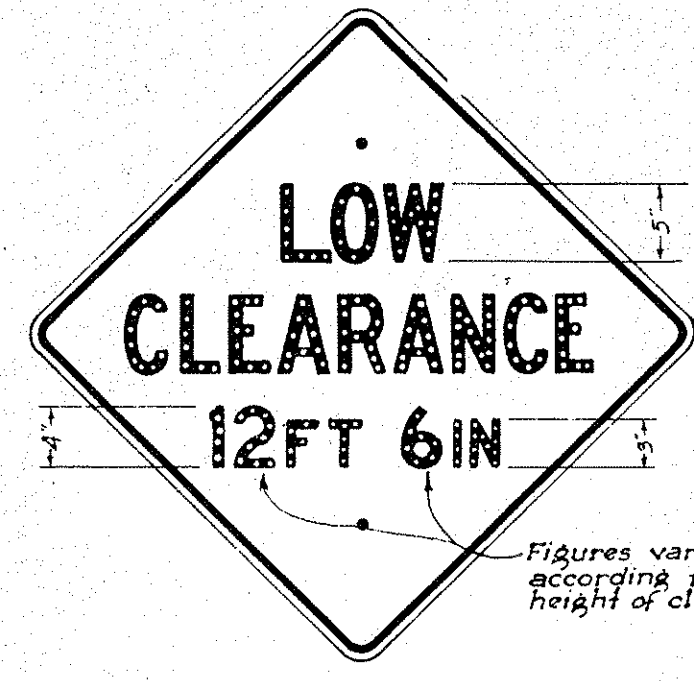
W-21

30" x 30"



W-22

24" x 24"



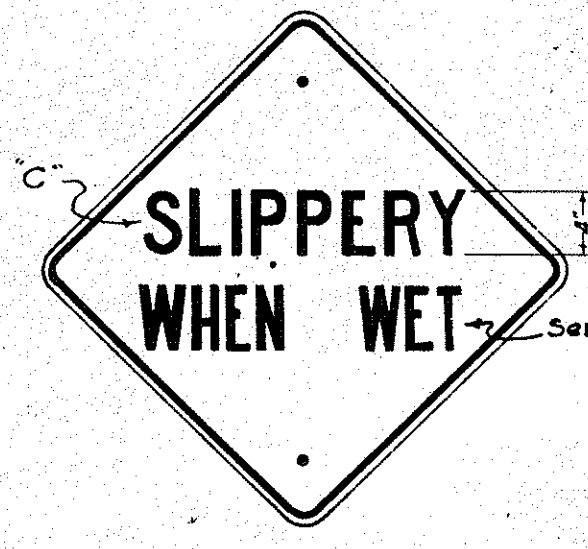
W-24

30" x 30"



W-25

24" x 24"



W-29

24" x 24"



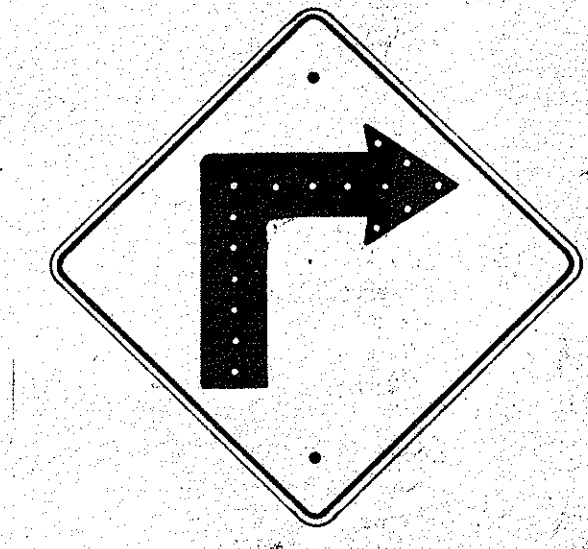
W-59

24" x 24"



W-39

24" x 24"



W-1-R

24" x 24"

Unless otherwise specified, all signs shall conform with requirements of "Manual on Uniform Traffic Control Devices for Streets and Highways."

All letters and figures shall be of size and design shown and shall conform with "Standard Alphabets for Highway Signs" as set forth by the Public Roads Administration, Federal Works Agency. Series 'C' letters and Series 'D' numerals shall be used except where noted.

Note: All Regulatory (R) signs shall have black letters on a white background except where noted. All Warning (W) signs shall have black letters or figures on a "Highway Yellow" background. Signs shall be similar but opposite in direction. See Specifications for Materials and Finish.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
REGULATORY & WARNING SIGNS
Scale: 1" = 1'
APPROVED: *Bud E. Hutter*
TERRITORIAL HIGHWAY ENGINEER
JUNE 23, 1955

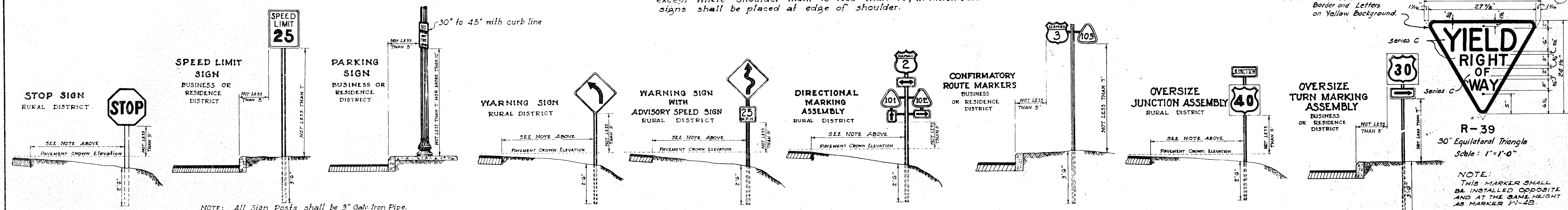
Note: Stop sign has been revised 6/9/55

6/23/54

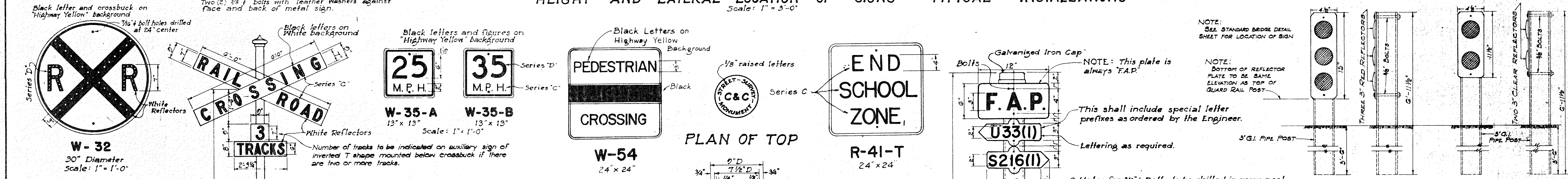
DATE: 6/23/54
DESIGNED BY: T. Tokunaga
CHECKED BY: [Signature]
QUANTITIES CHECKED BY: [Signature]
NOTED: [Signature]

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"



PLAN OF TOP

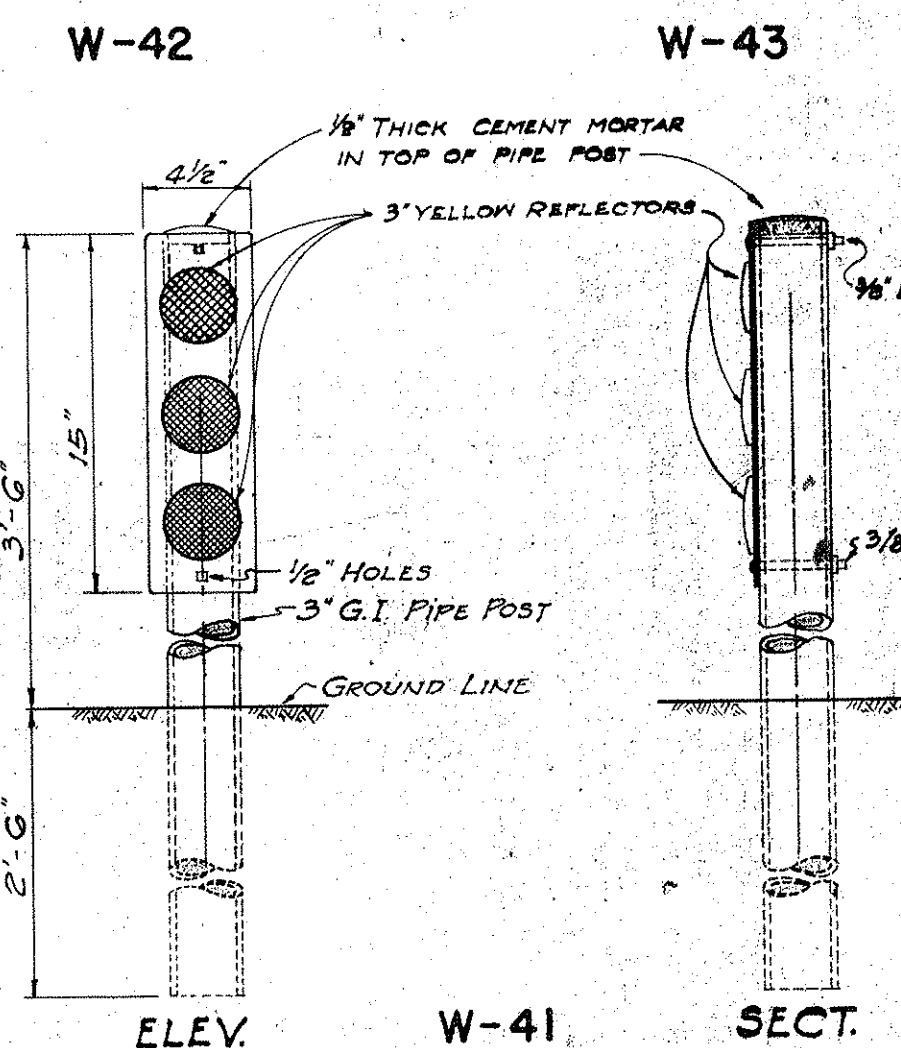
ARRANGEMENT OF MARKERS

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.

Post in place, complete with one F.A.P. Marker plate and its respective Number plate will be paid for as one item. Each additional Number plate will be paid for separately.

Markers and Number plates shall be No. 16 Ga. galvanized iron with 3/8" holes for fastening, as shown on sketch. Markers and Number plates shall be given one coat of best Chromate primer and two coats of White Marine Enamel. Before painting they shall be given a wash of 8 ounces of Copper Sulphate in one gallon of water. The lettering shall be of two coats of Black Marine Enamel.

Markers and plates shall be fastened with 3/8" galvanized bolts and washers in addition to lead washers for both sides of each plate.



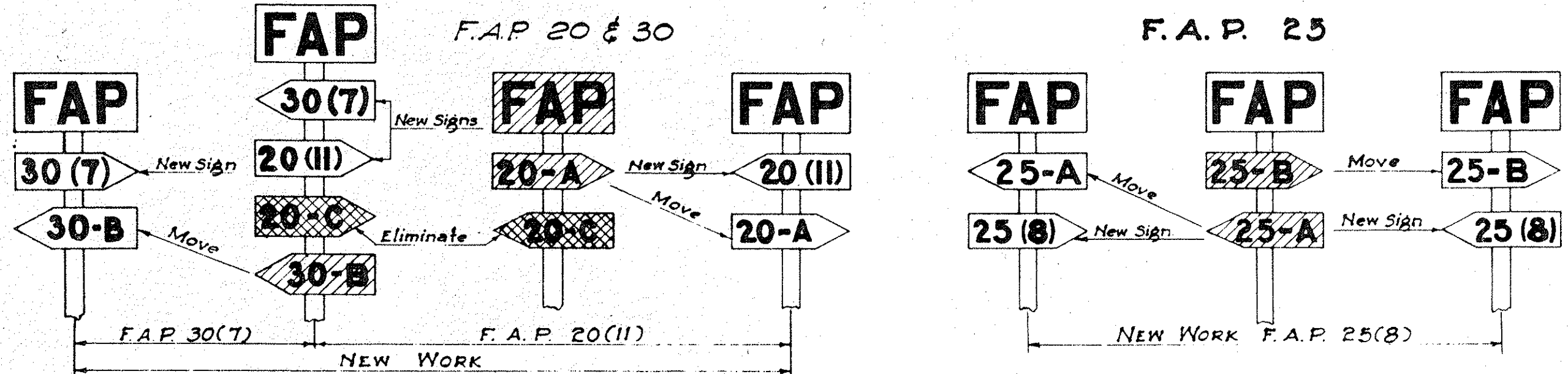
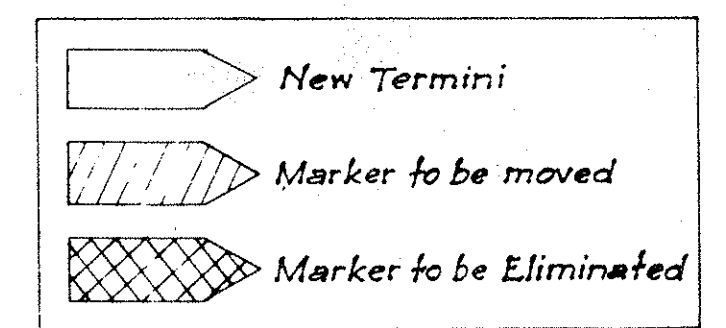
DETAIL OF SIGNS

SCALE: 1 1/2" = 1'-0"

STANDARD C & C STREET SURVEY MONUMENT

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

STANDARD DETOUR SIGN



METHOD OF MARKING F.A. PROJECTS AT OVERLAPS
(USING NUMBER SUFFIX ON NEW WORK)

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

APPROVED: *Ben E. Muttter*
TERRITORIAL HIGHWAY ENGINEER

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