

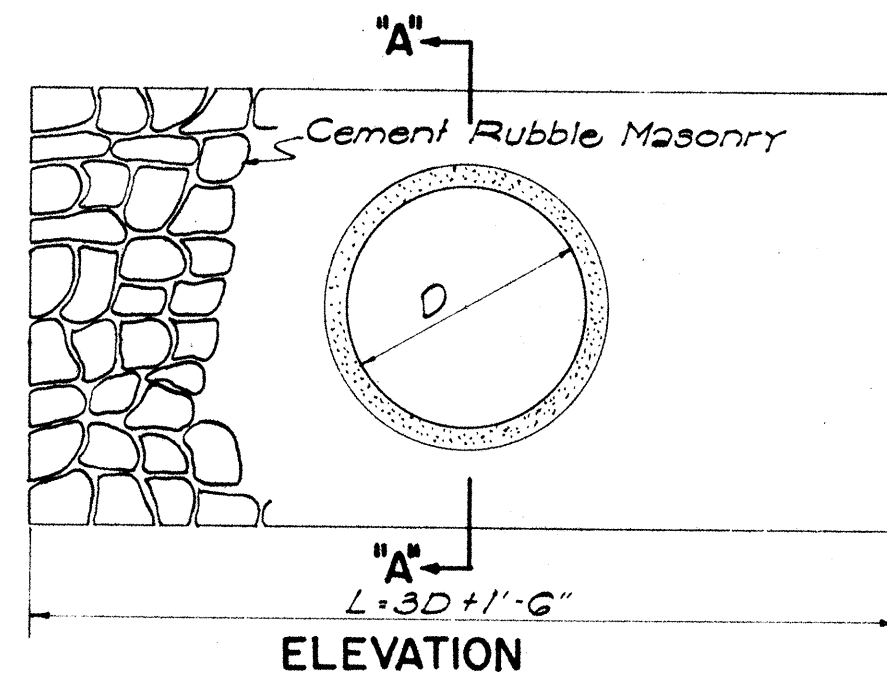
DATA FOR OUTLET DITCH			
D	W	H	T=W+H
18"	24"	2'-0"	4'-0"
24"	30"	2'-0"	4'-6"
30"	30"	2'-6"	5'-0"
36"	36"	3'-0"	6'-0"

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

DATA FOR MASONRY DROP INTAKE				Where Variables Equal
D'	D	L=D+G	Cu.Yds.	
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.

DATA - MASONRY HEADWALL				Cast-in-Place Conc. Culvert Cu.Yds.	Conc. Pipe Culvert Cu.Yds.	Corrugated Pipe Culvert Cu.Yds.
D	H	B	L			
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'-6"	9'-0"	1.83	2.06	2.00
36"	5'-0"	2'-6"	10'-6"	2.40	2.84	2.72



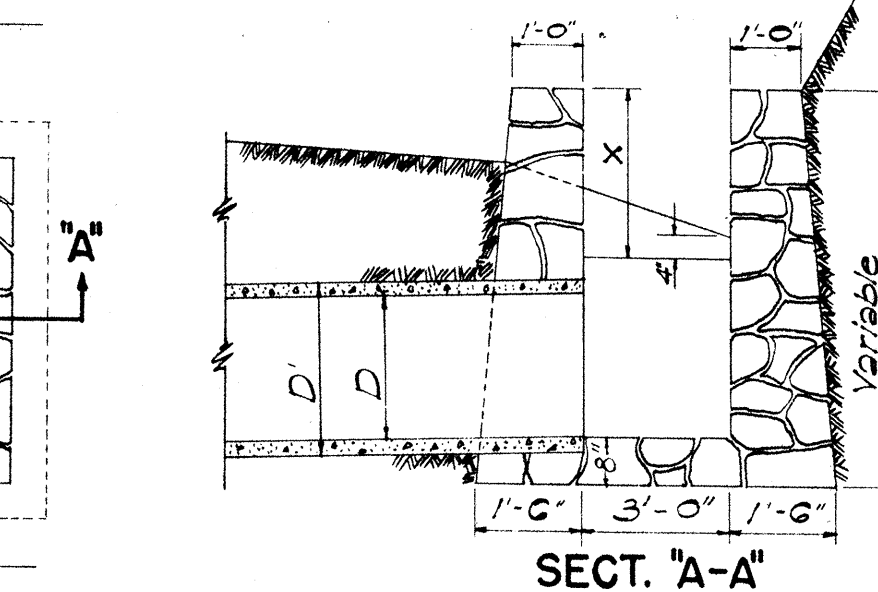
DETAIL OF MASONRY HEADWALL
Scale: 1/2" = 1'-0"

SECTION
CONC. PIPE CULVERT

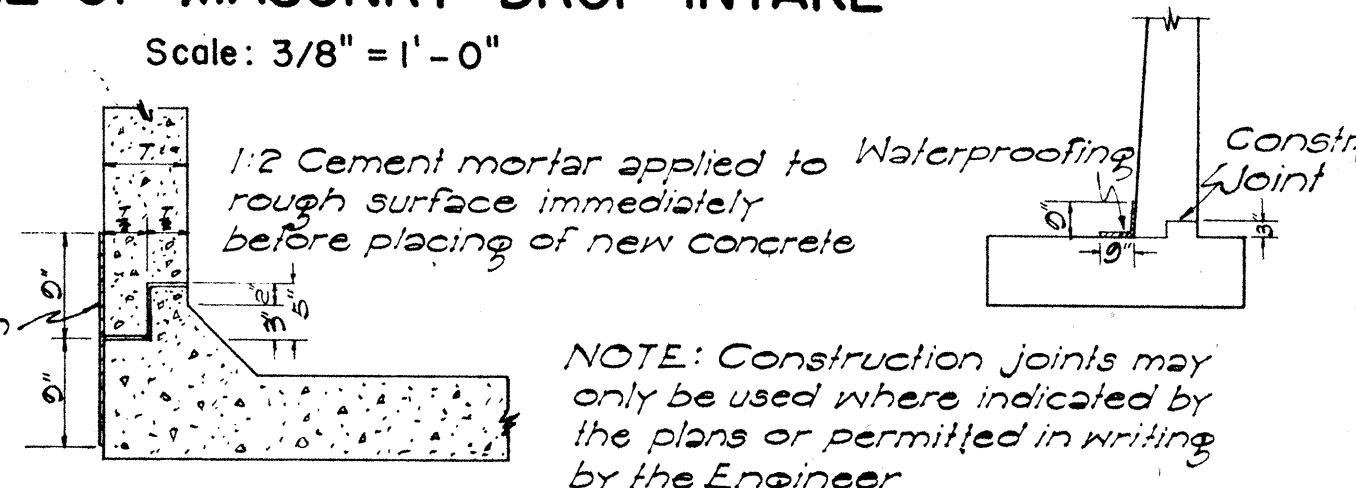
NOTE:
Thickness "d", reinforcing, and concrete used, are to conform with the approved design as provided by the Specifications.

CAST-IN-PLACE
CONC. CULVERT

DATA - CAST-IN-PLACE CONC. CULVERT			
D	d	W	Cu.Yd. per ft.
18"	4"	2'-2"	0.11
24"	4 1/2"	2'-0"	0.14
30"	5"	3'-4"	0.10
36"	5 1/2"	3'-11"	0.26



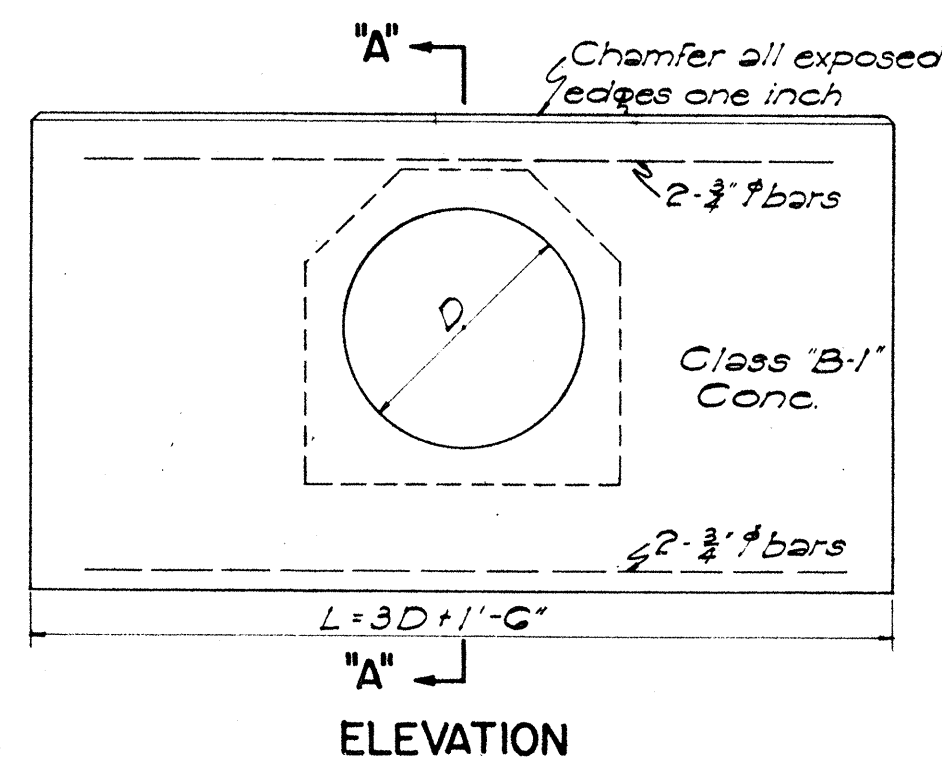
DETAIL OF MASONRY DROP INTAKE
Scale: 3/8" = 1'-0"



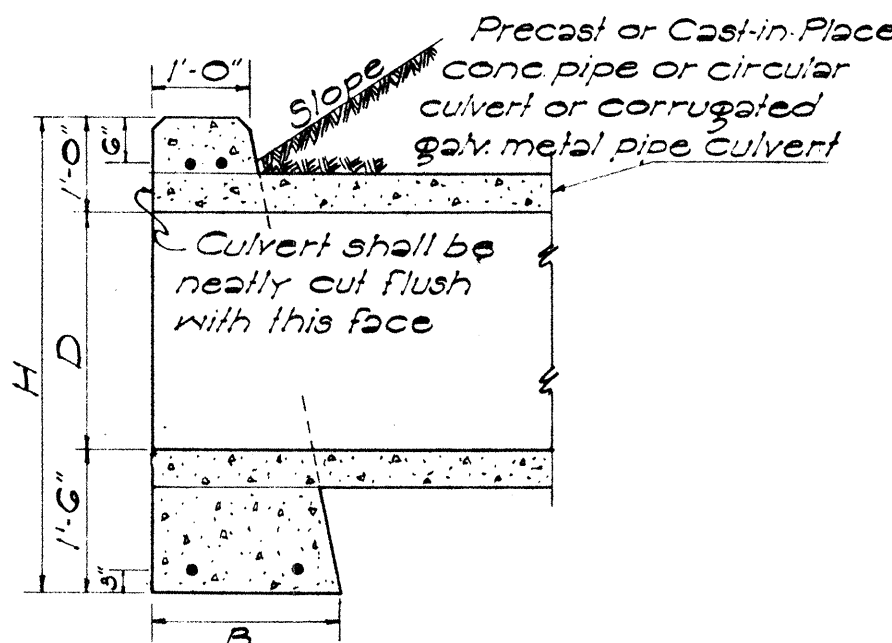
CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING
(1) Mop 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 55-15 composition roofing to hot asphalt.
(3) Mop 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:
When subgrade is below top of jacket, it shall be fully compacted to this line and then re-excavated (Struc. exc.) to proper subgrade. This surface shall be rolled again.



ELEVATION

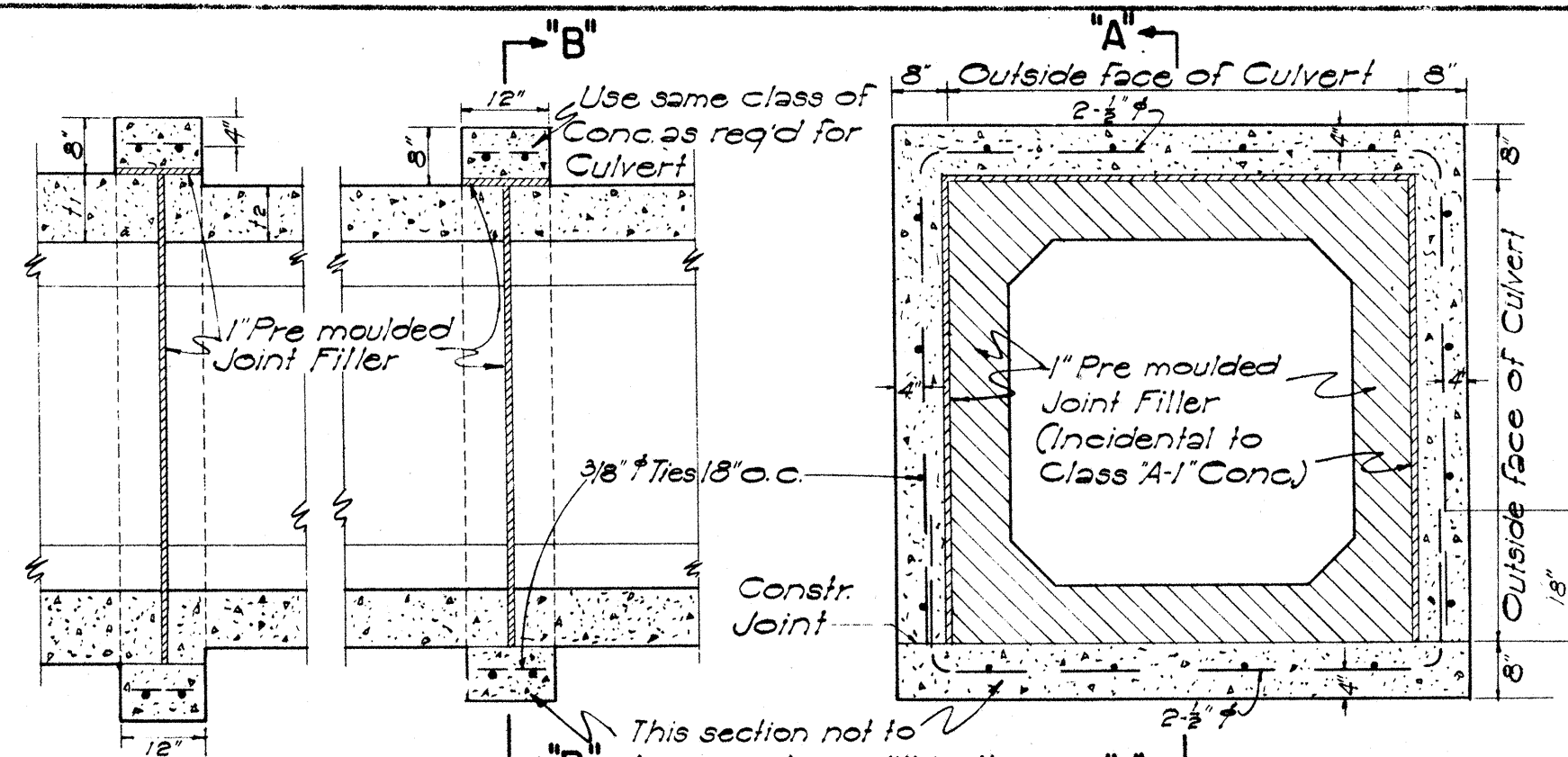


SECTION "A-A"

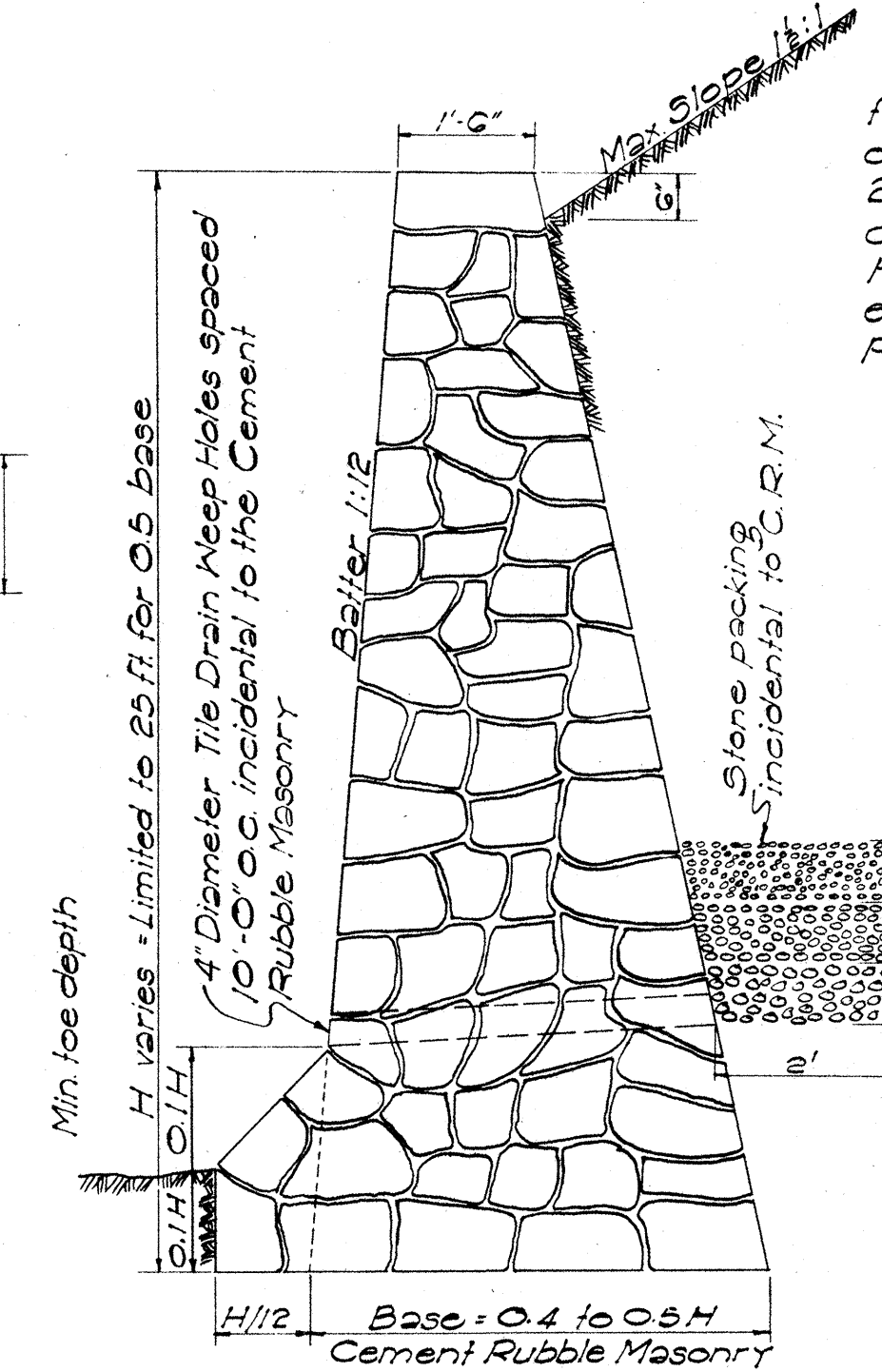
DATA FOR CONC. HEADWALL				Cast-in-Place Conc. Culvert Cu.Yds.	Conc. Pipe Culvert Cu.Yds.	Steel For One Headwall No. of Bars Size Length Lbs.
D	B	L	H			
18"	1'-6"	6'-0"	4'-0"	0.22	1.00	4 3/4" 7'-0" 32
24"	1'-6"	7'-6"	4'-6"	1.25	1.38	4 3/4" 7'-0" 42
30"	2'-0"	9'-0"	5'-0"	1.05	2.17	4 3/4" 8'-0" 51
36"	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

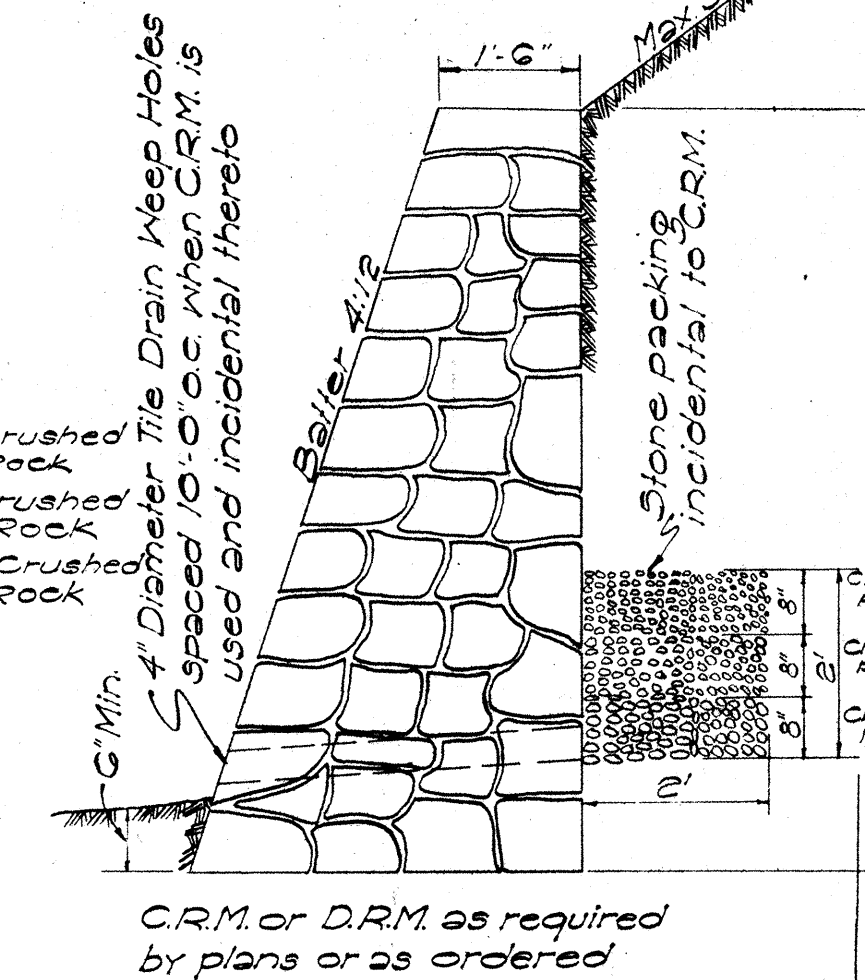
Scale: 1/2" = 1'-0"



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



SECTION OF HIGH CEMENT
RUBBLE MASONRY RETAINING
WALL OR SEAWALL

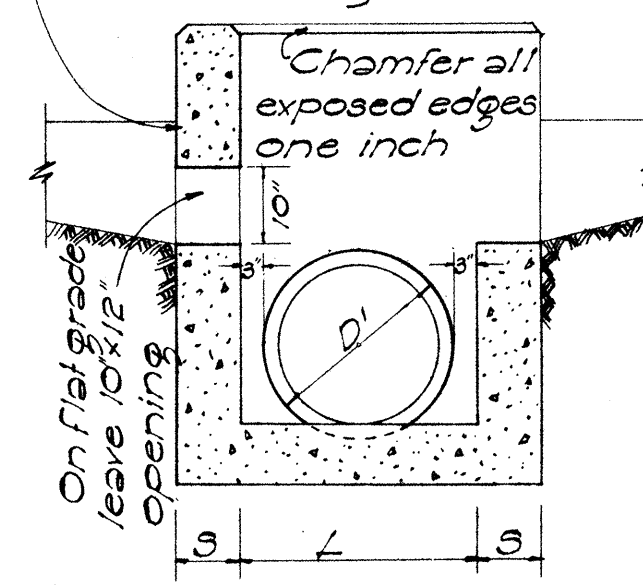


SECTION OF LOW
MASONRY RETAINING
WALL OR SEAWALL

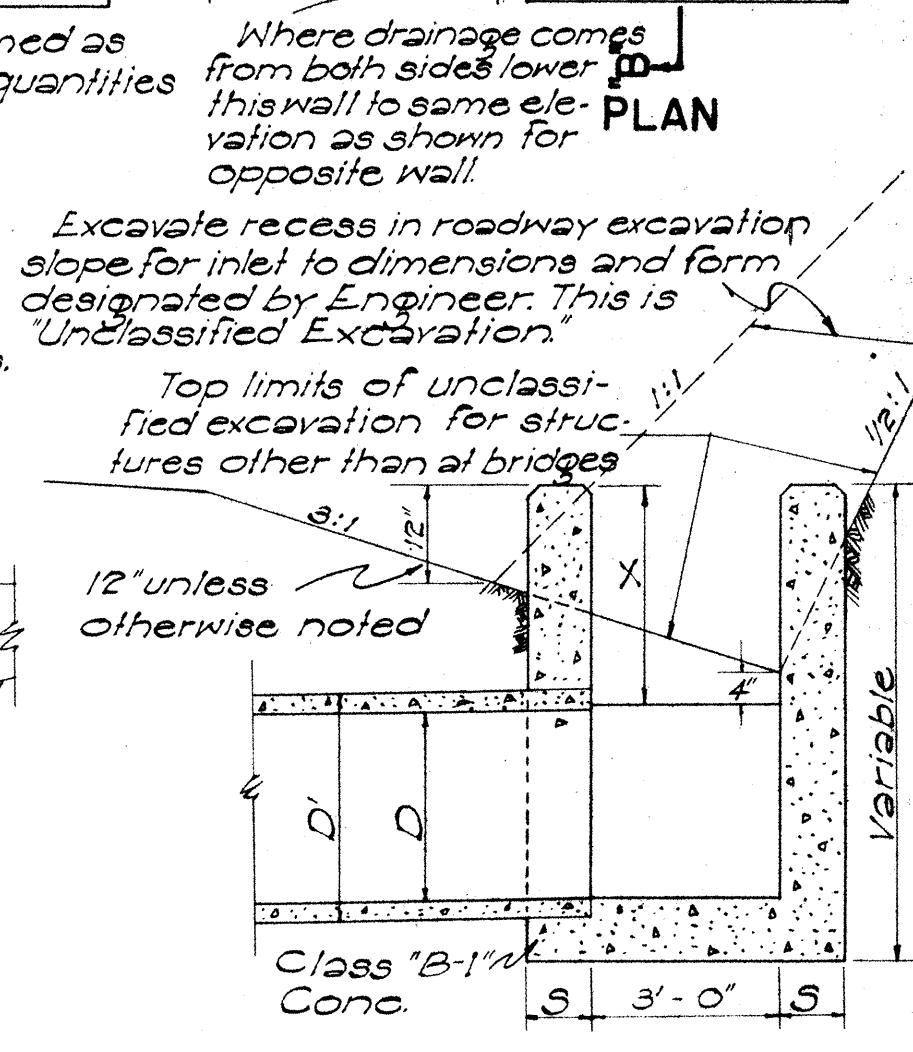
DATA - CONC. DROP INTAKE				Where Variables Equal
D'	D	L=D+G	Cu.Yds.	
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

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

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"

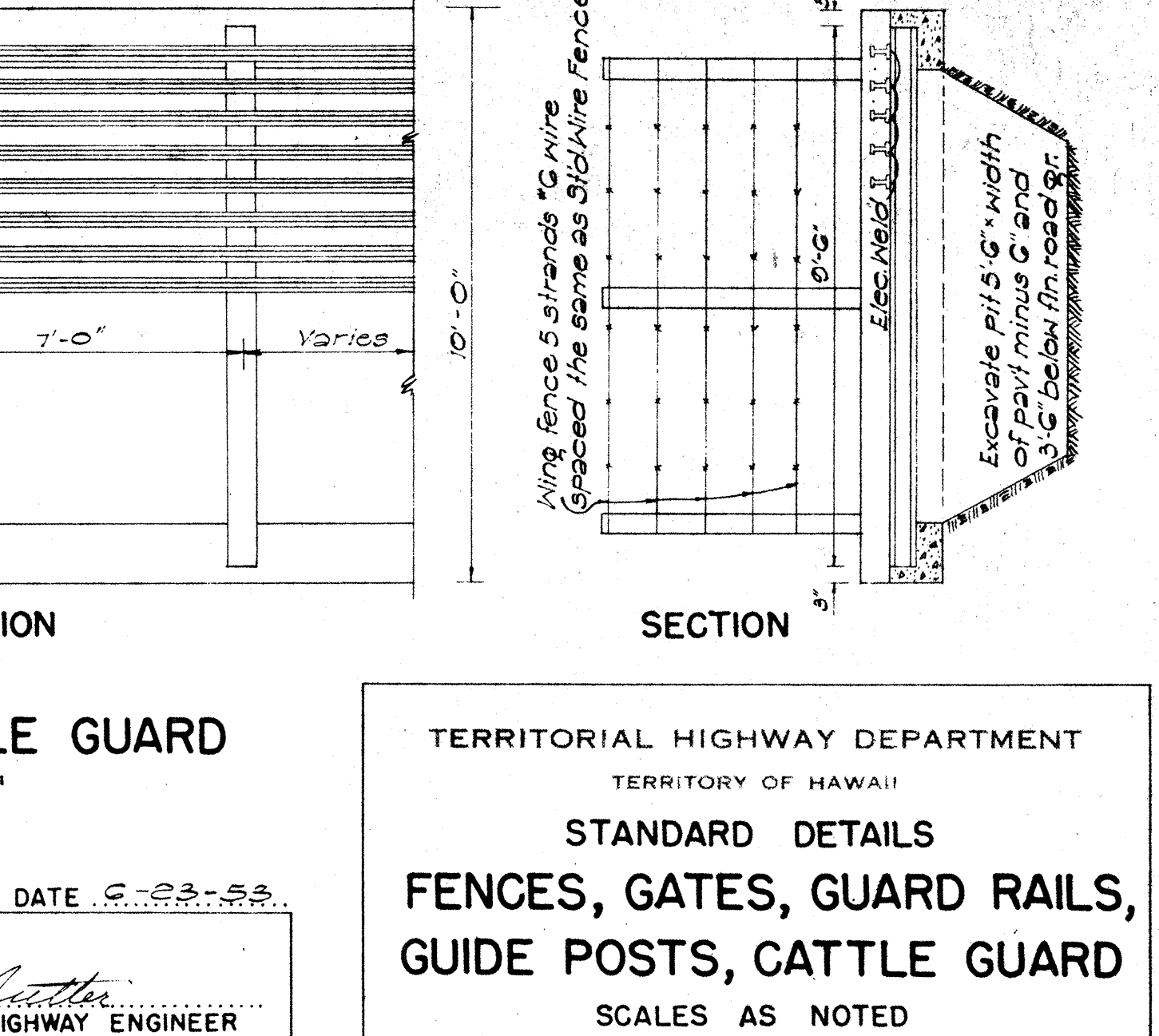
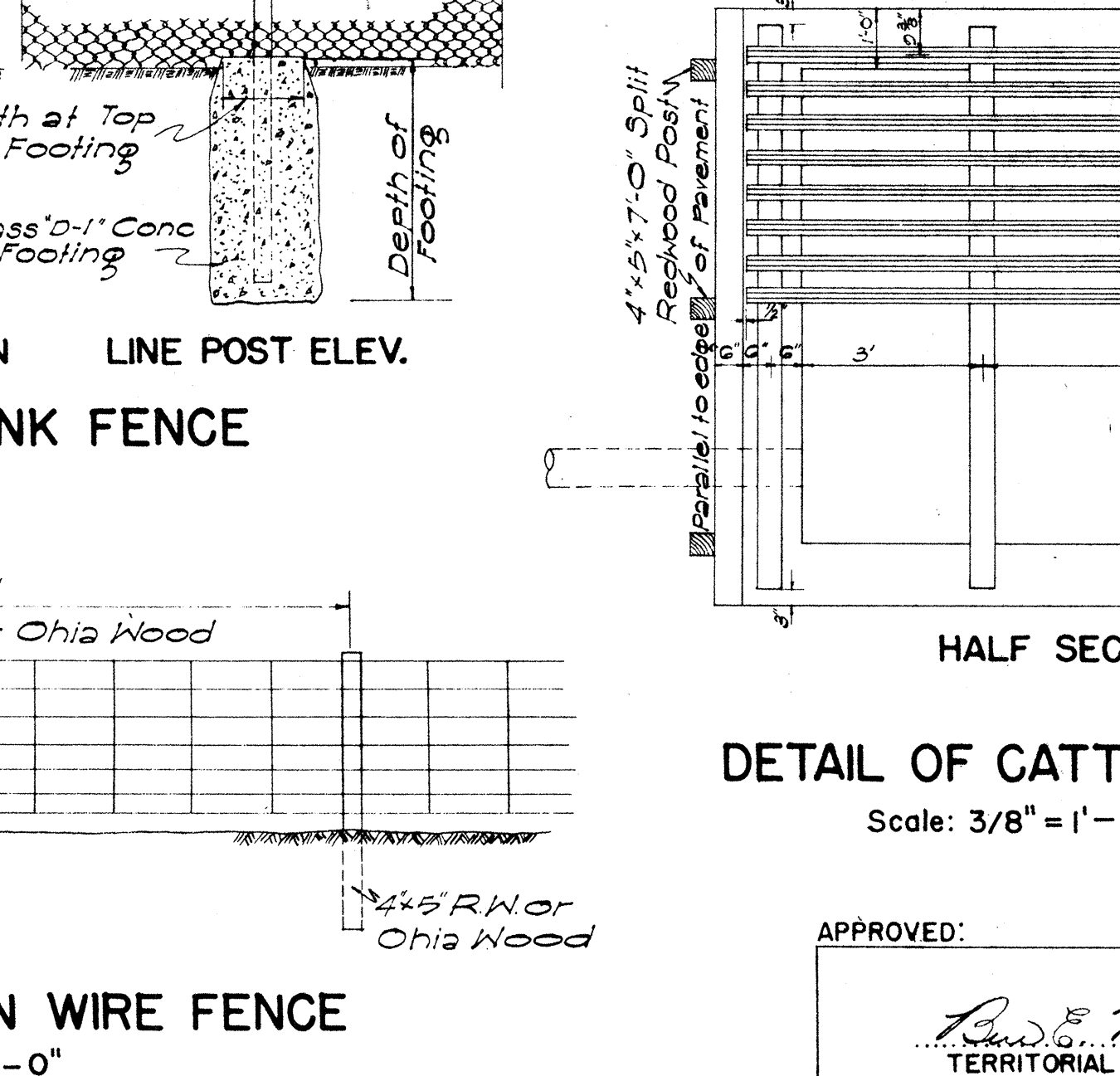
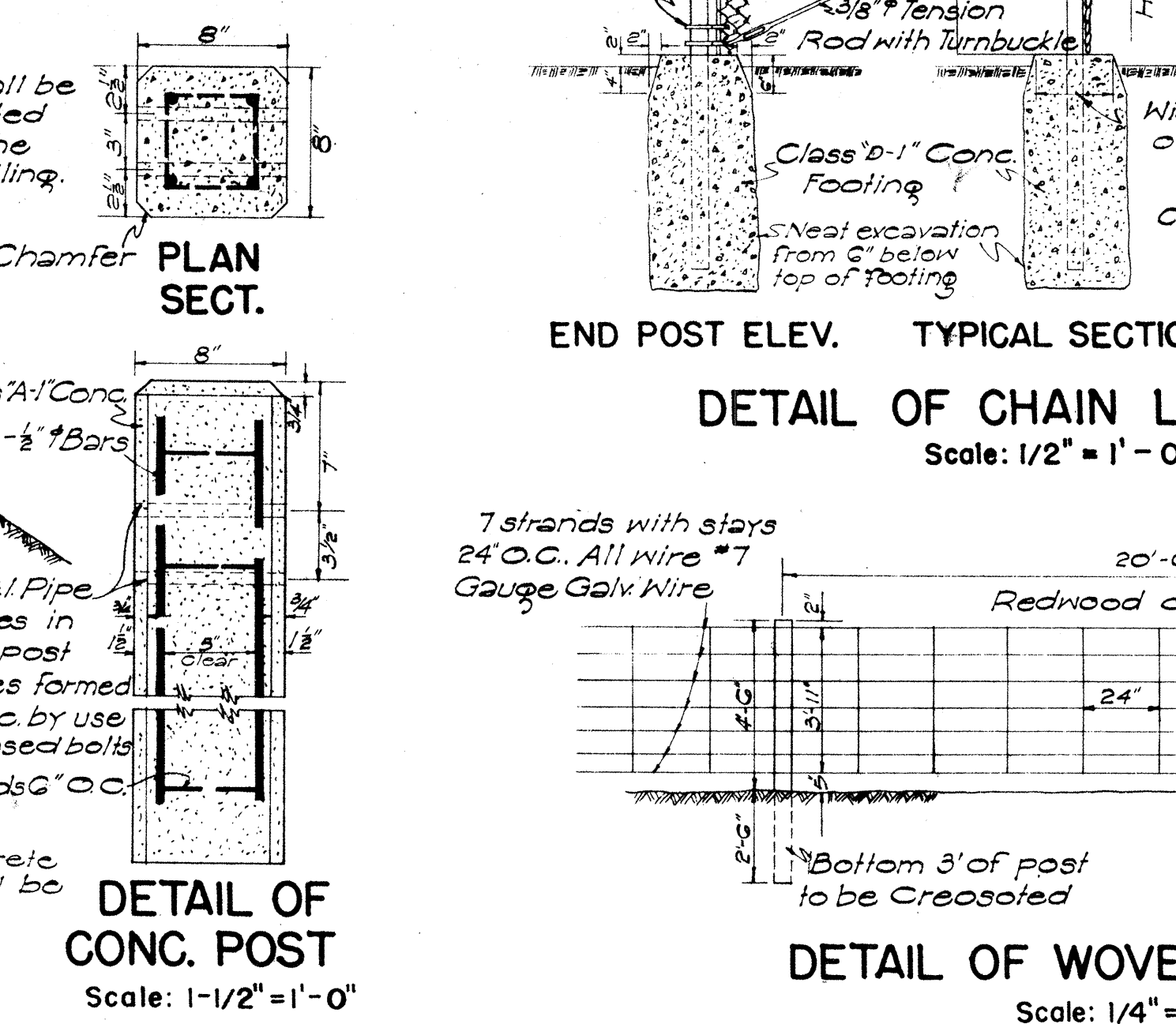
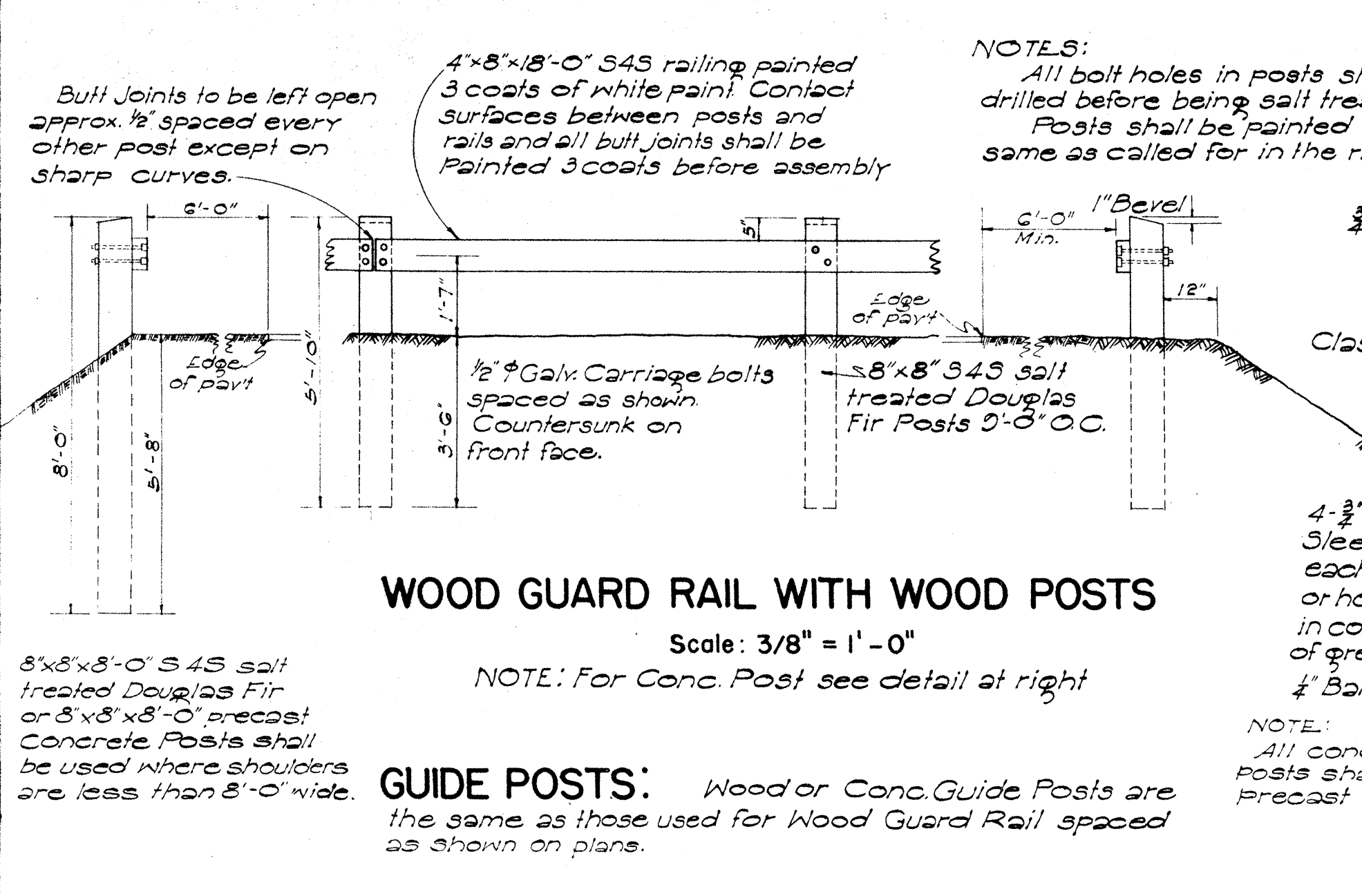
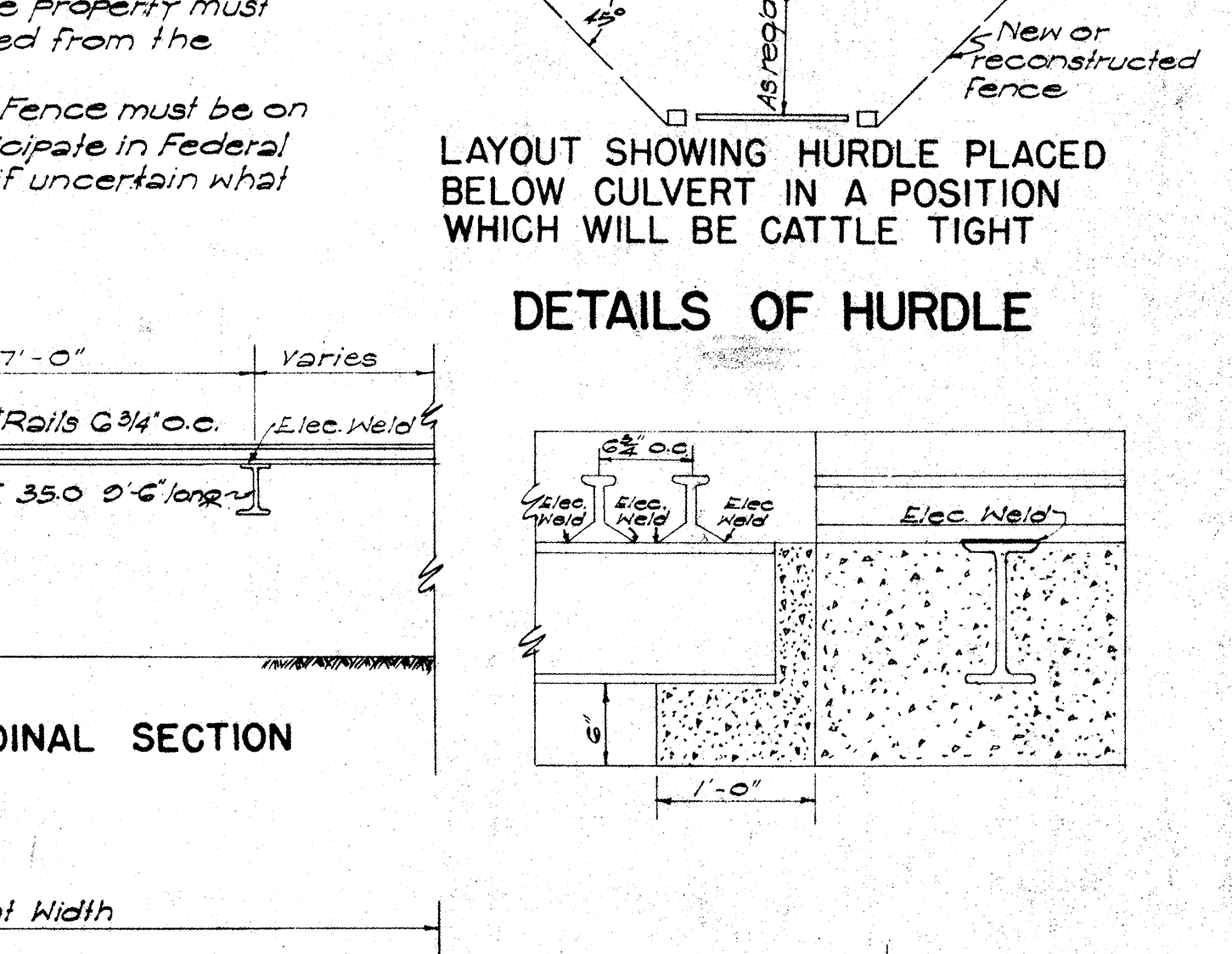
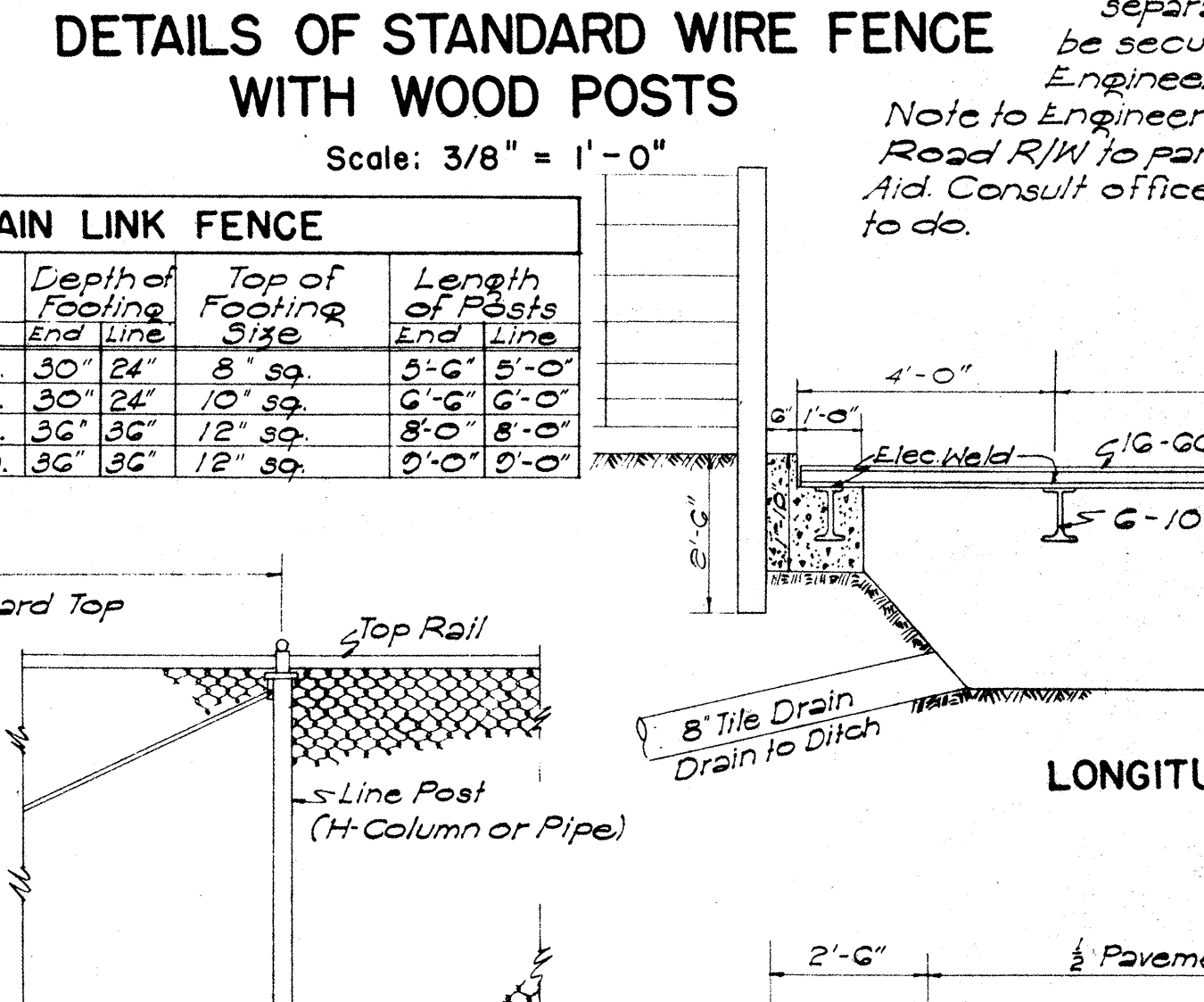
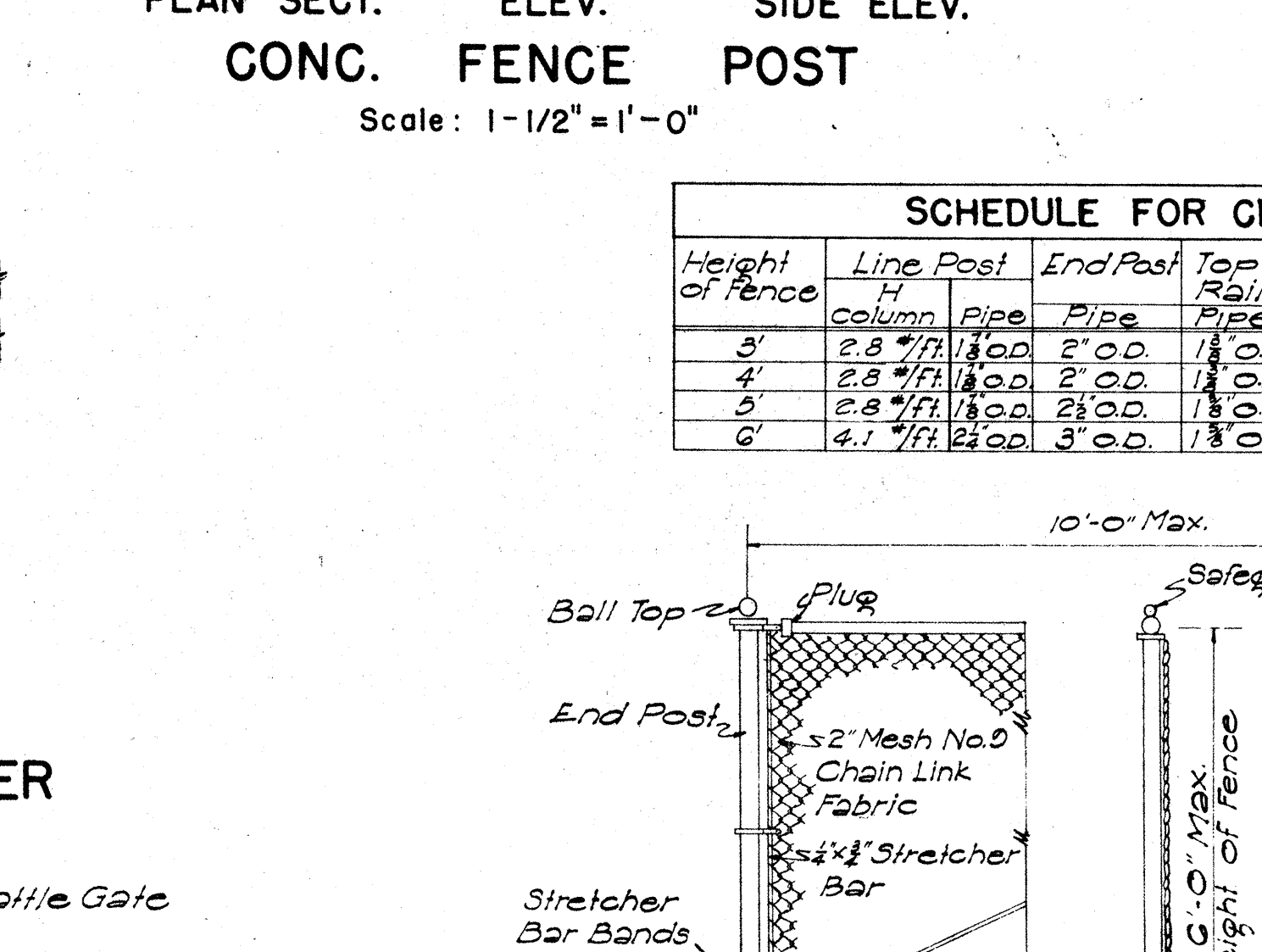
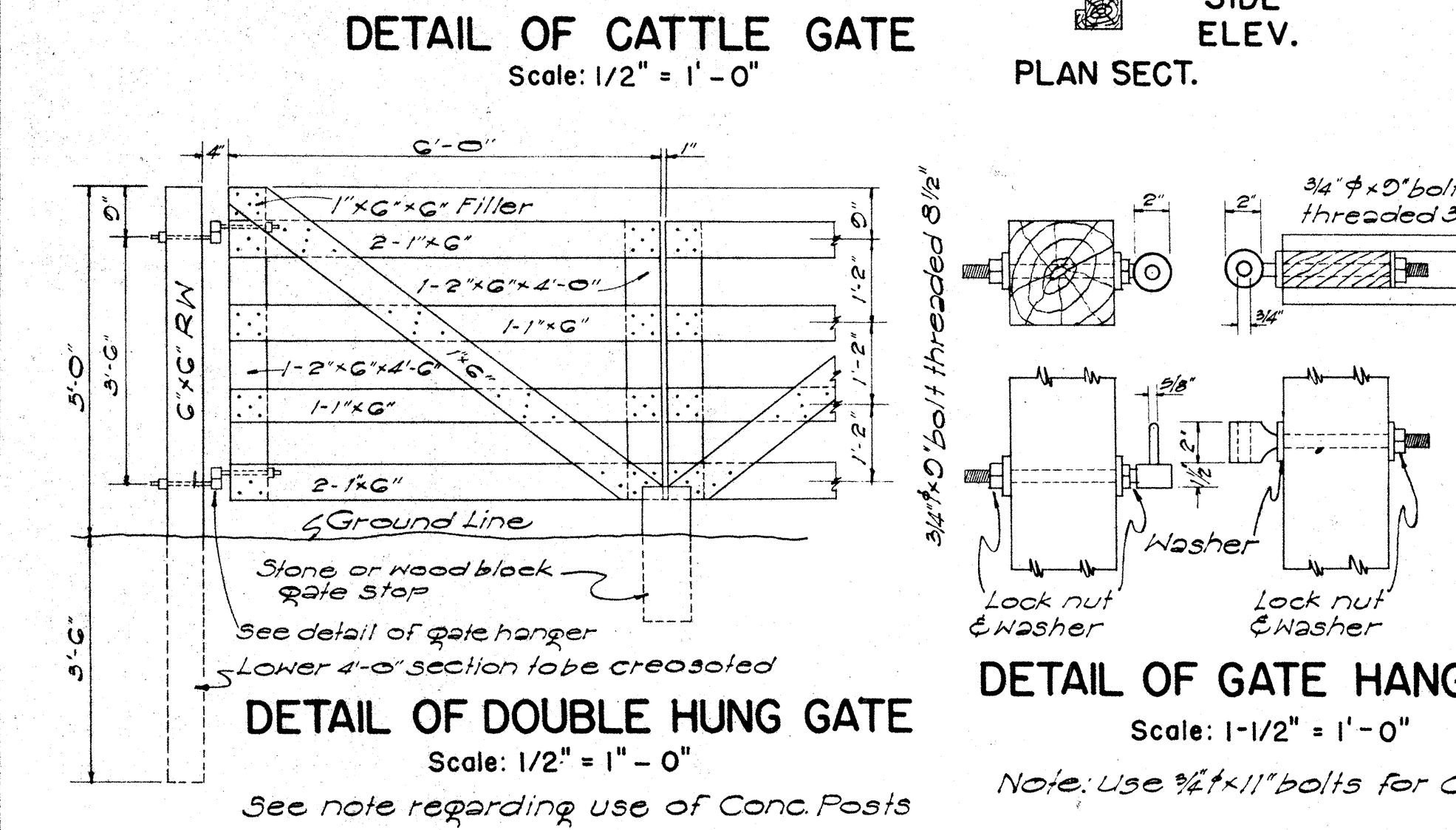
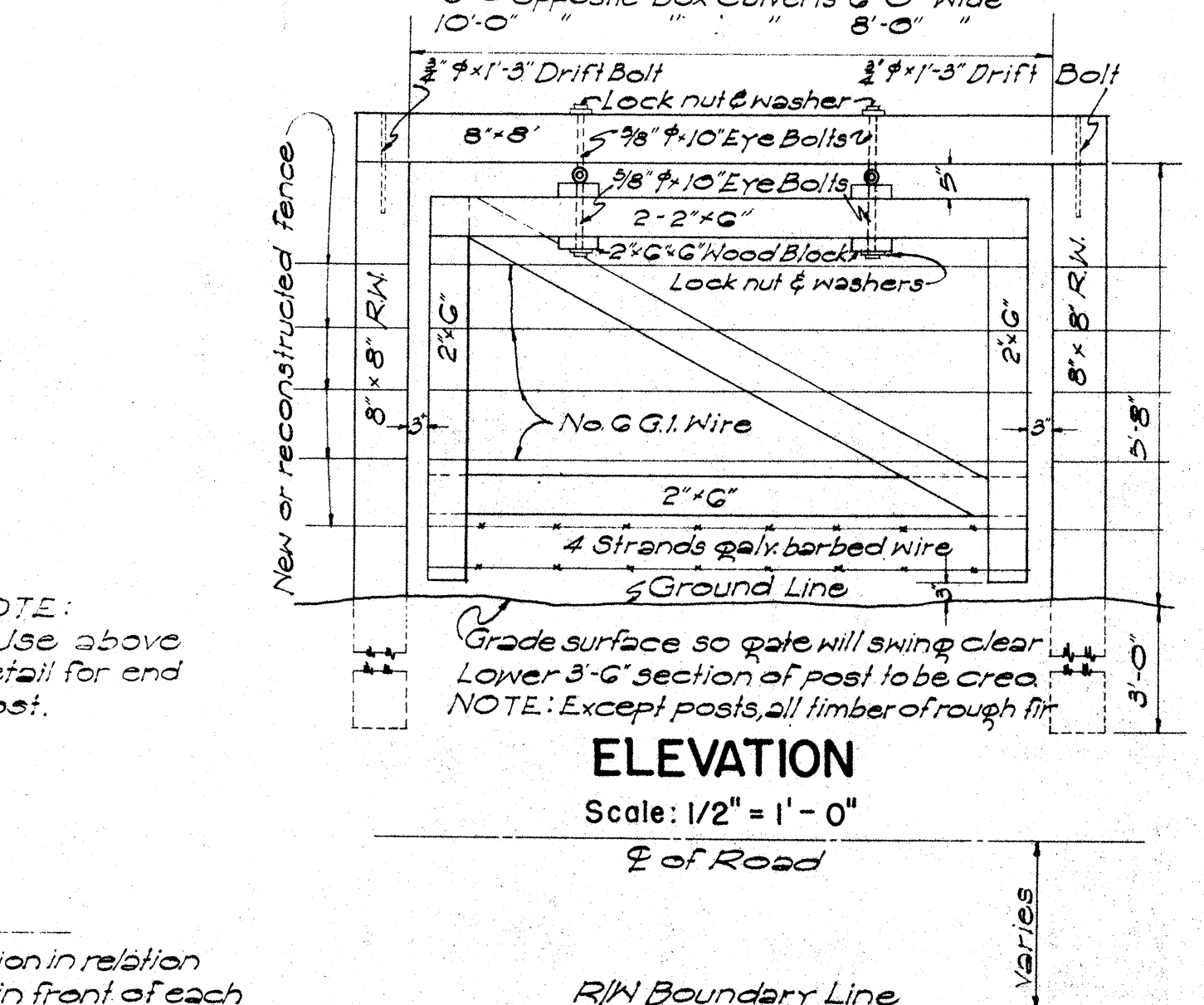
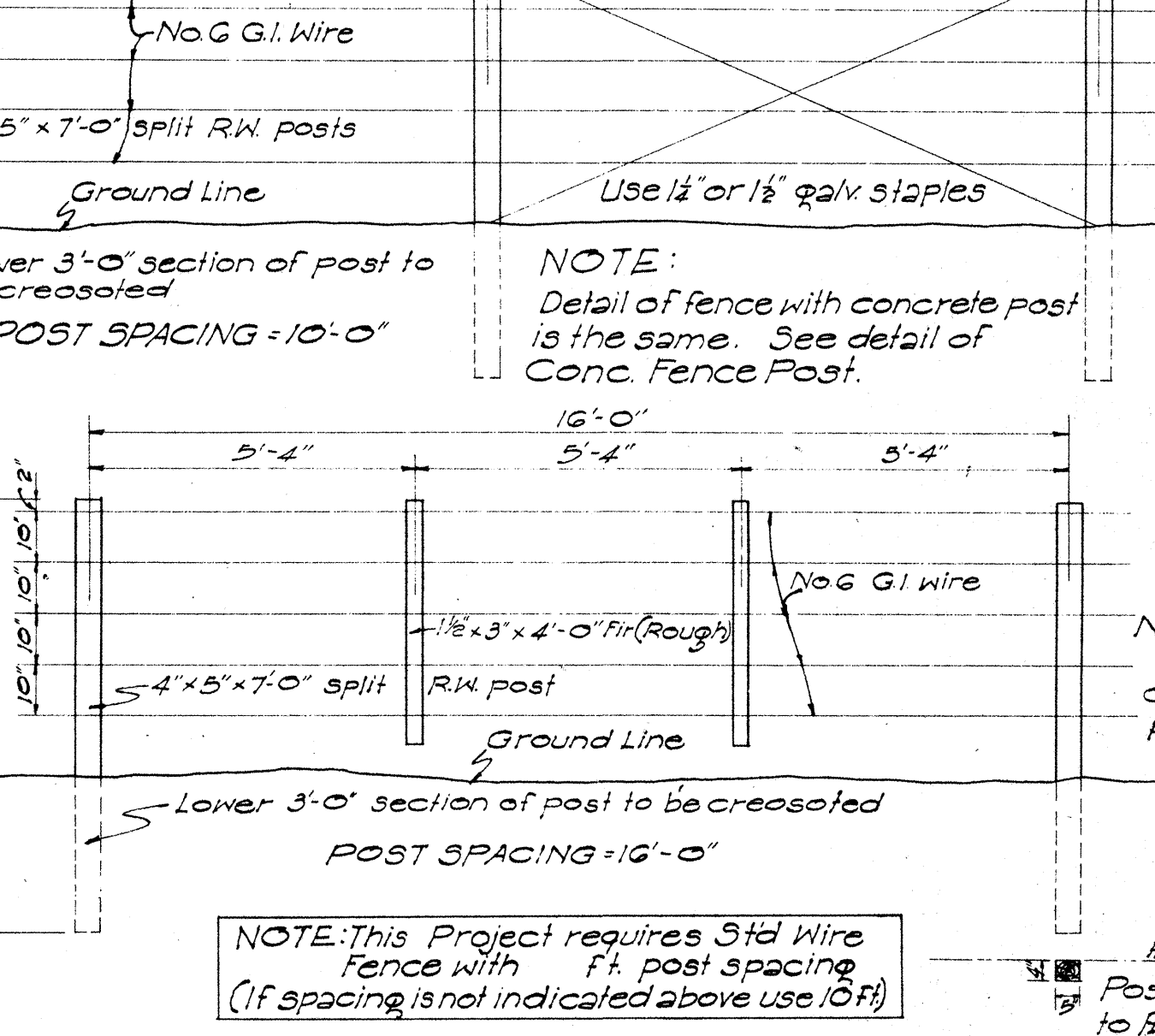
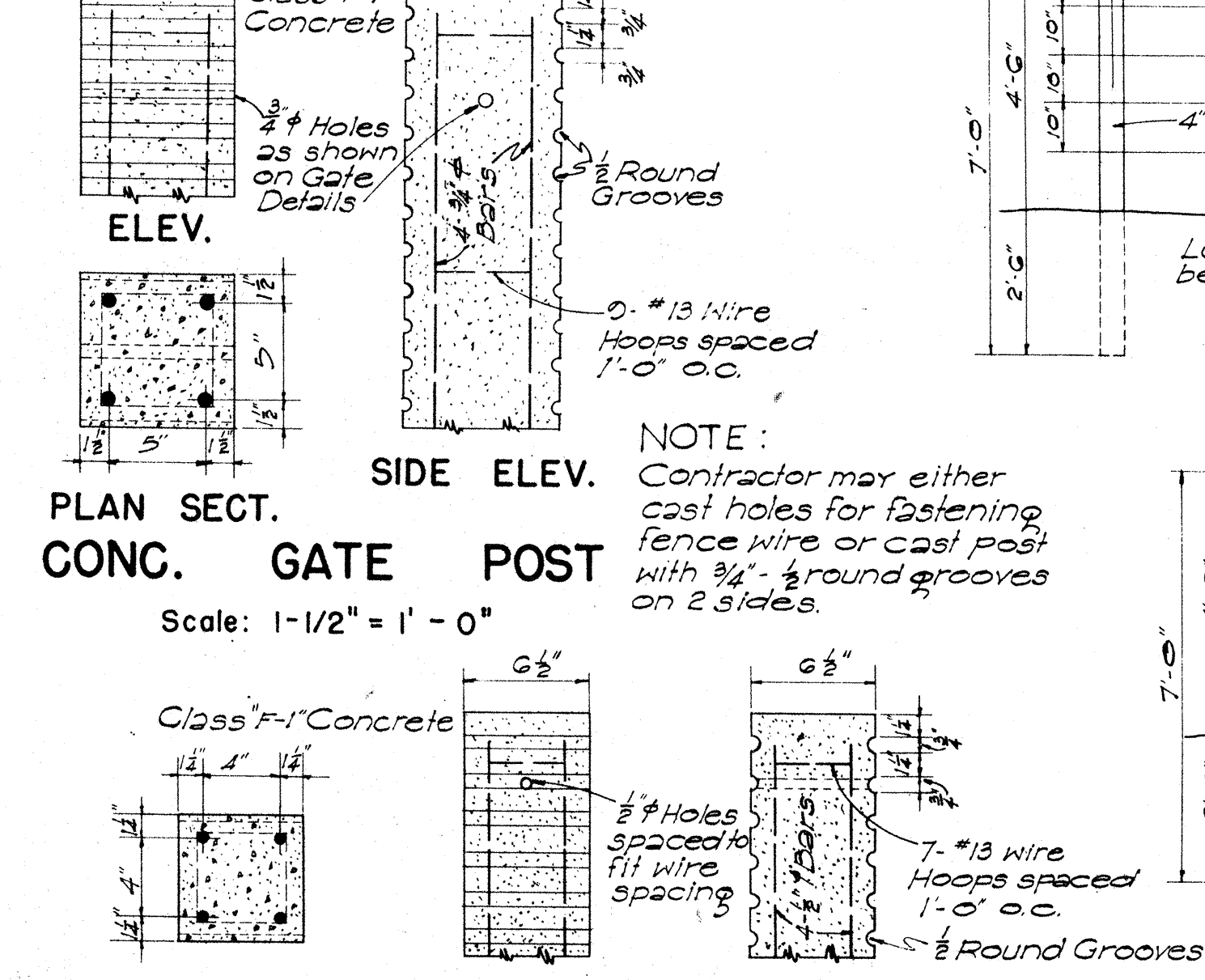
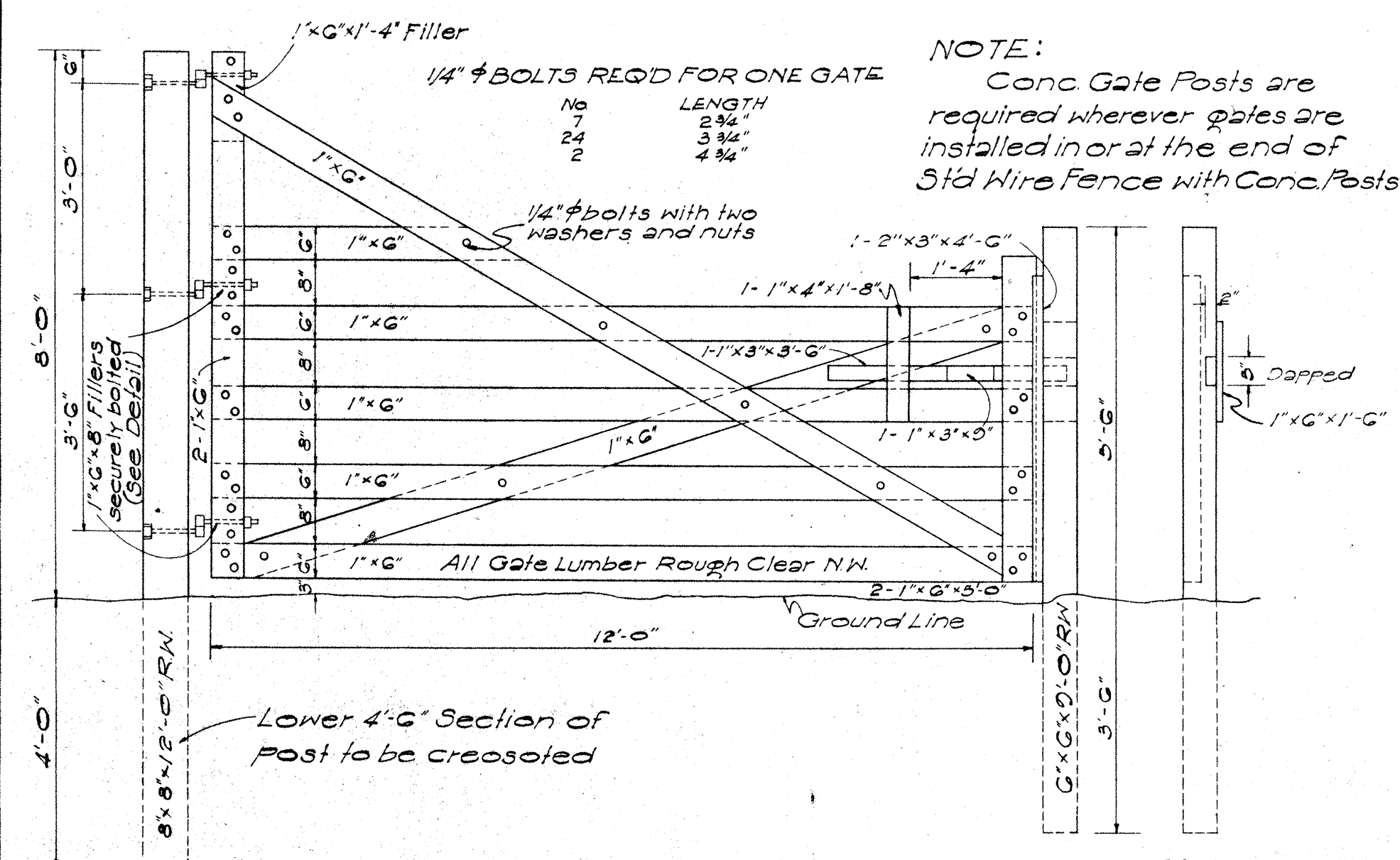
SECT. OF CULVERT WITH CONC. PROTECTION

Scale: 1" = 1'-0"

DATA FOR CONCRETE PROTECTION OVER CULVERTS		
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		
10" " 42"D		
11" " 48"D		
12" " 54"D		

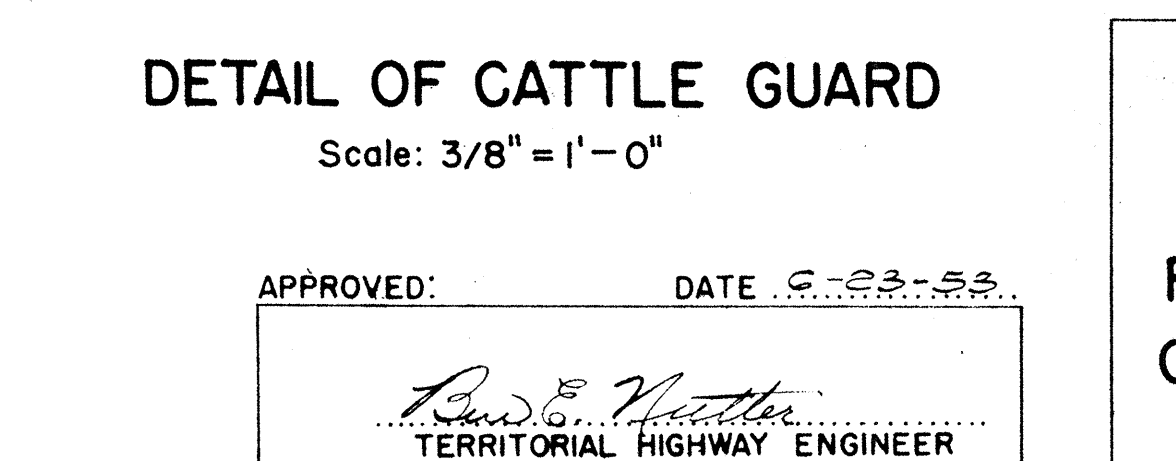
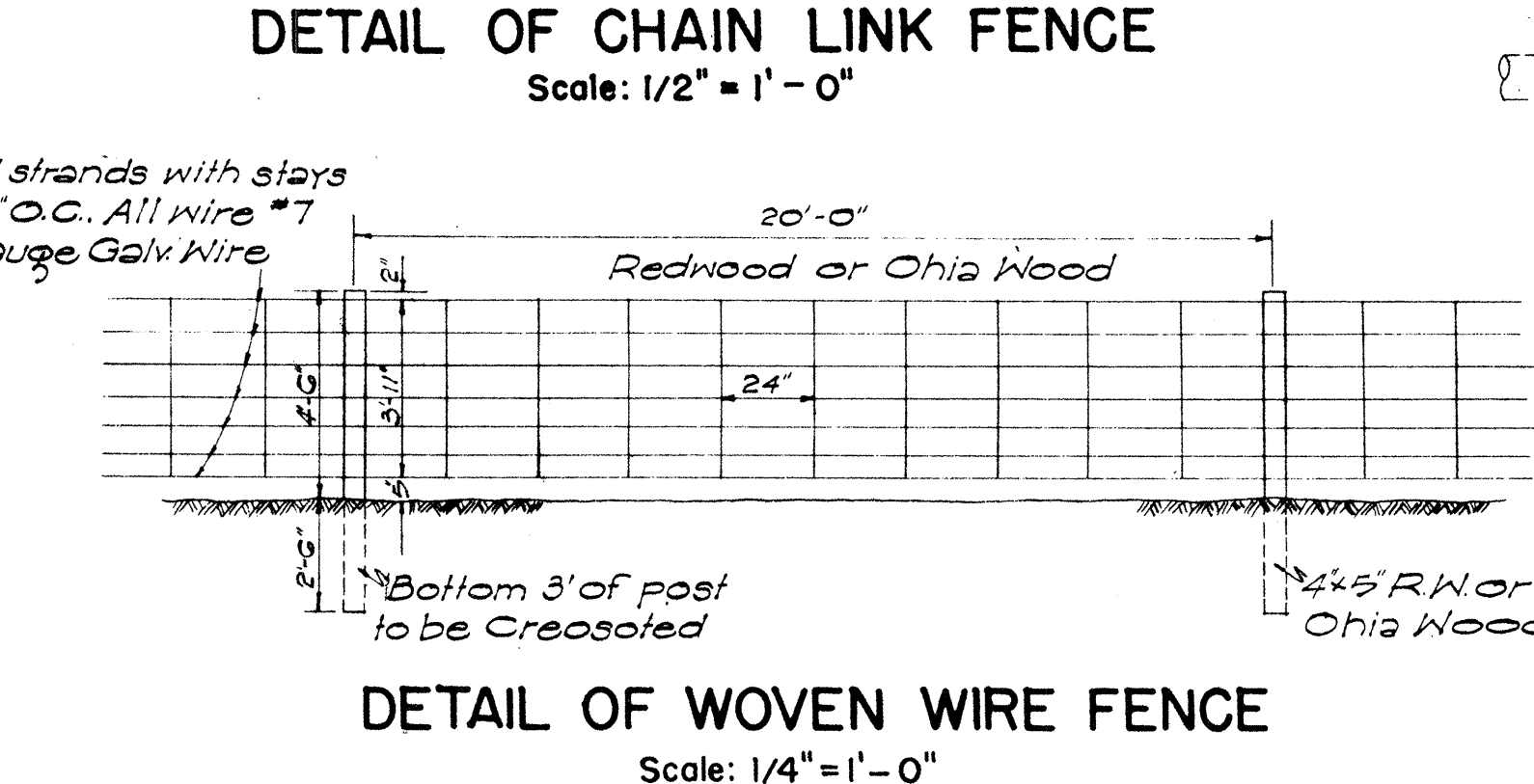
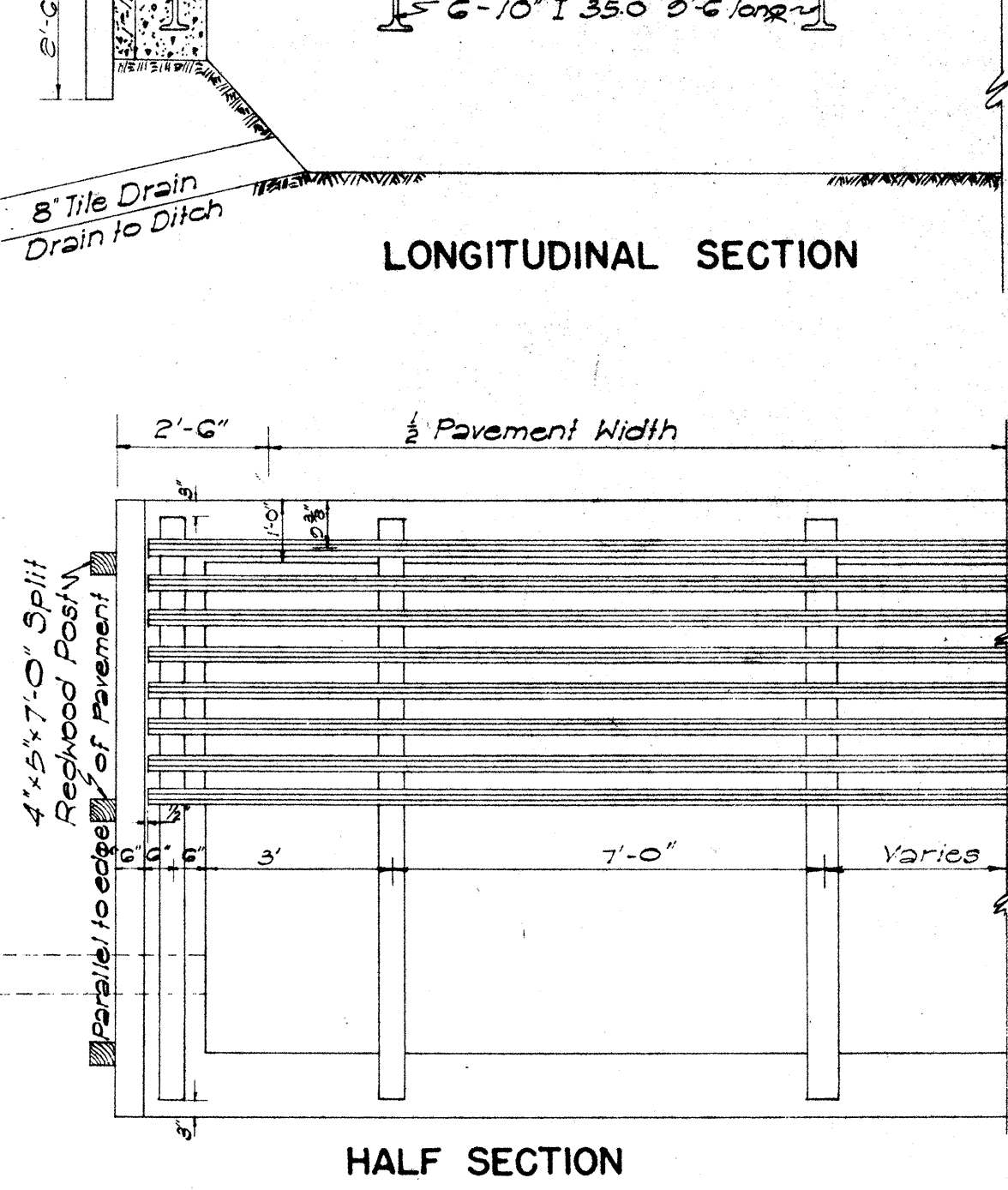
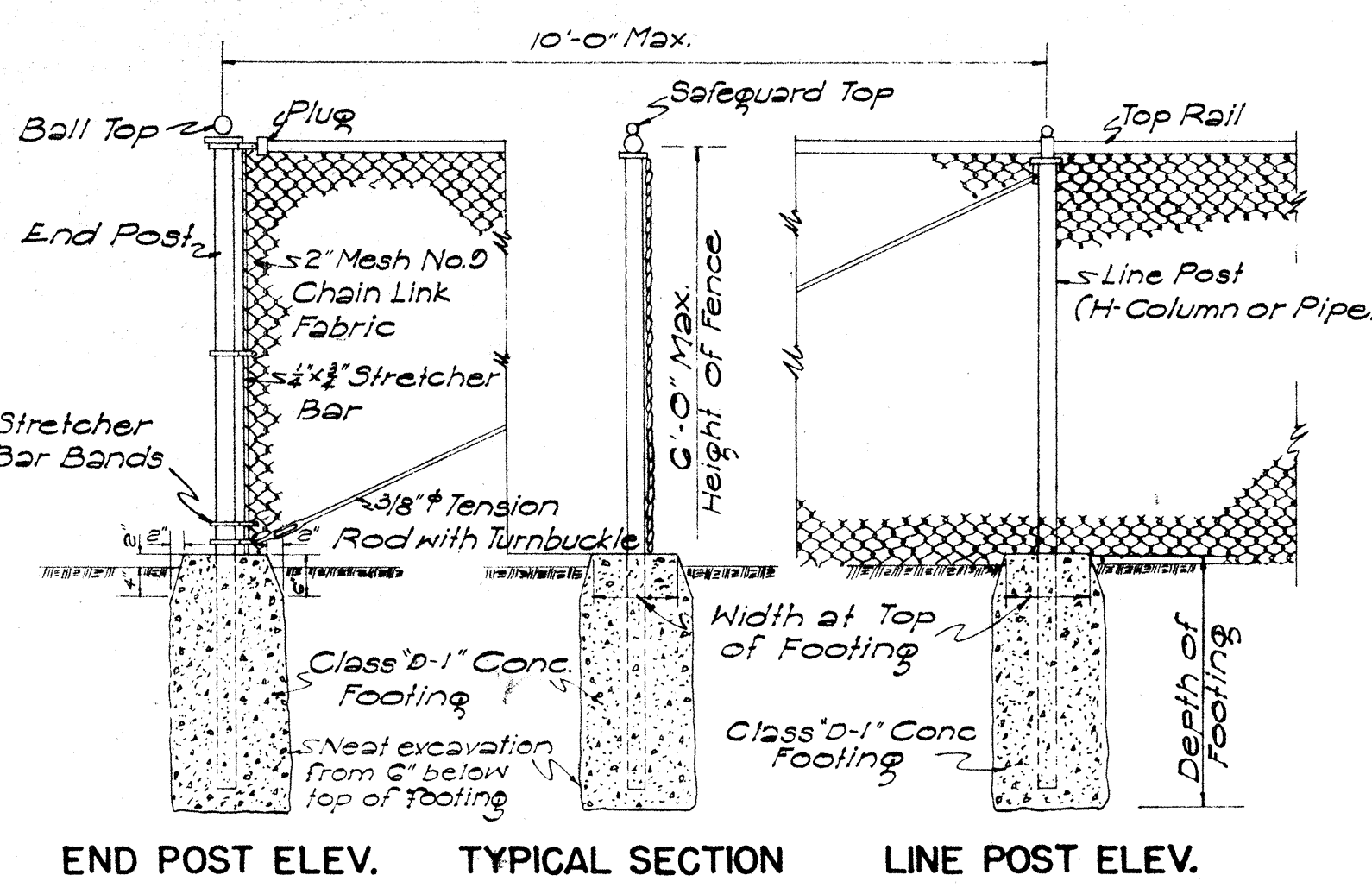
APPROVED: DATE 6-23-53
TERRITORIAL HIGHWAY ENGINEER

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



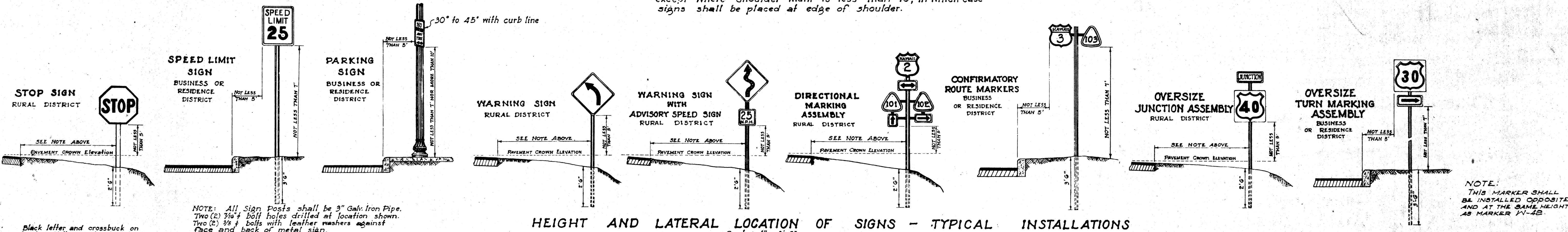
SCHEDULE FOR CHAIN LINK FENCE

Height of Fence	Line Post	End Post	Top Rail	Depth of Footing	Top of Footing	Length of Posts
	H Column	Pipe	Pipe	End Line	End Line	End Line
3'	2.8" x 11' 1/2" O.D.	2" O.D.	1 1/2" O.D.	30" x 24"	5' sq.	5'-6" x 5'-0"
4'	2.8" x 11' 1/2" O.D.	2" O.D.	1 1/2" O.D.	30" x 24"	10' sq.	6'-6" x 6'-0"
5'	2.8" x 11' 1/2" O.D.	2" O.D.	1 1/2" O.D.	36" x 36"	12' sq.	8'-0" x 8'-0"
6'	4.1" x 11' 1/2" O.D.	3" O.D.	1 1/2" O.D.	36" x 36"	12' sq.	9'-0" x 9'-0"

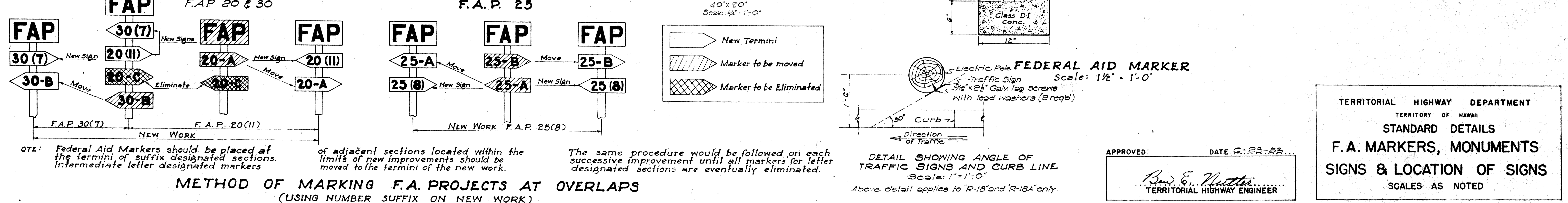
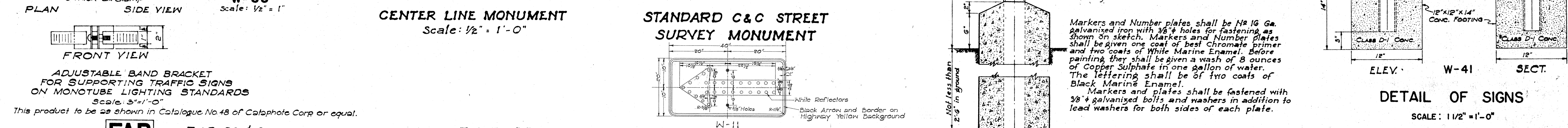
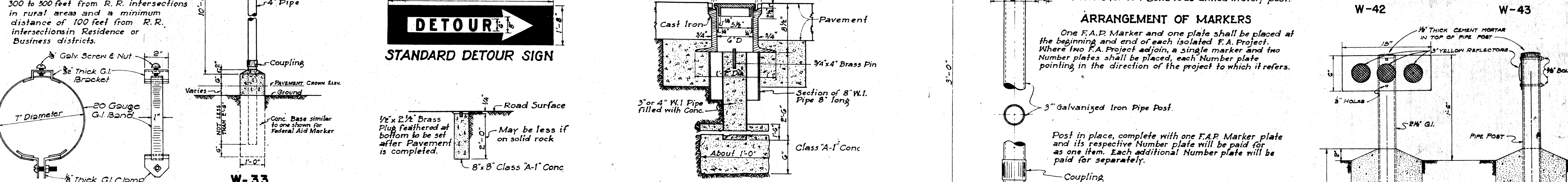
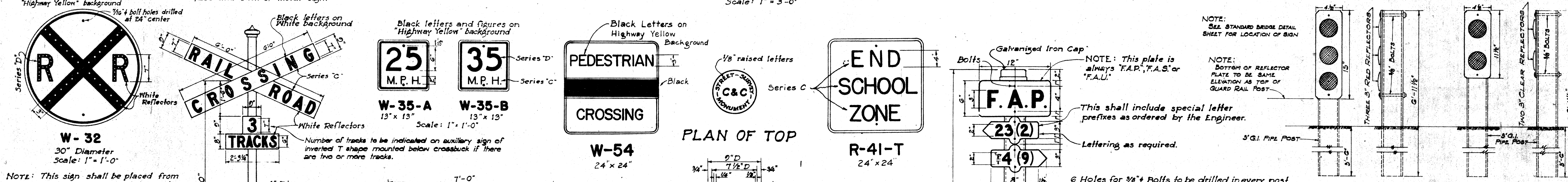


TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
 STANDARD DETAILS
 FENCES, GATES, GUARD RAILS,
 GUIDE POSTS, CATTLE GUARD
 SCALES AS NOTED

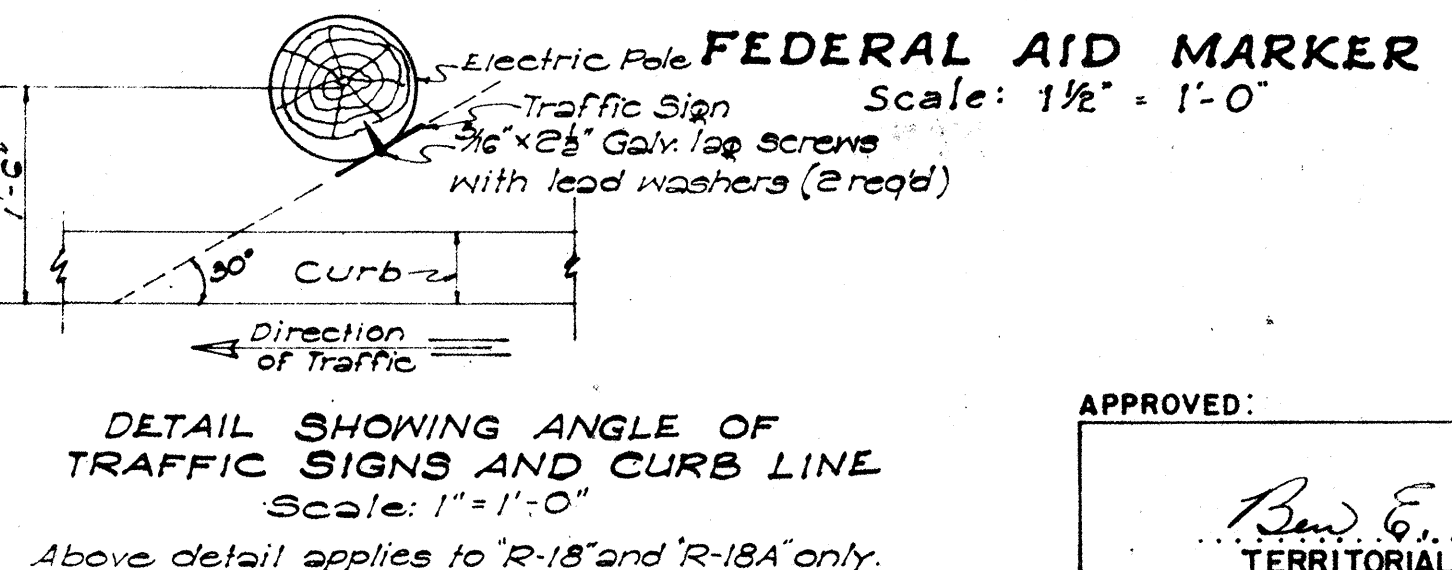
Note: All signs shall be placed 10' from edge of pavement except where shoulder width is less than 10', in which case signs shall be placed at edge of shoulder.



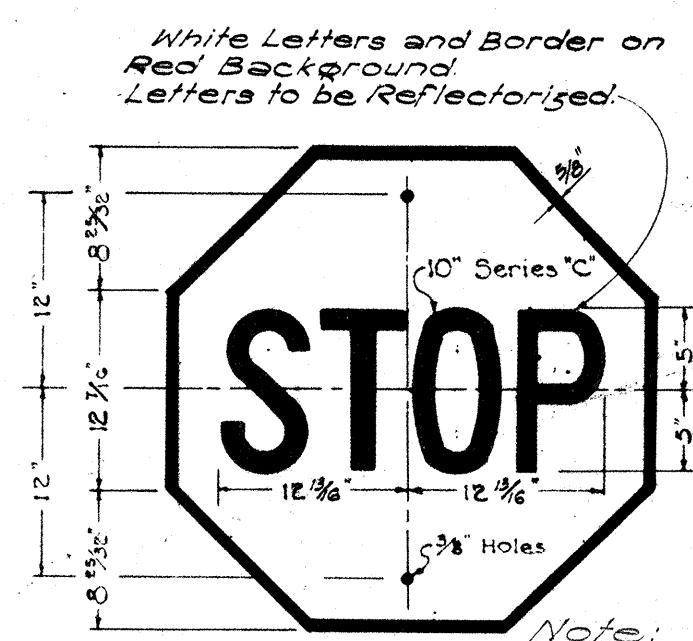
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS
Scale: 1" = 3'-0"



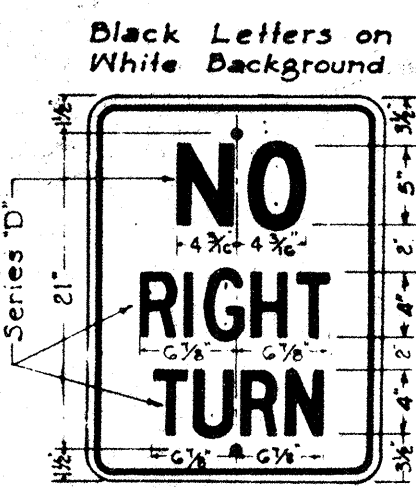
METHOD OF MARKING F.A. PROJECTS AT OVERLAPS
(USING NUMBER SUFFIX ON NEW WORK)



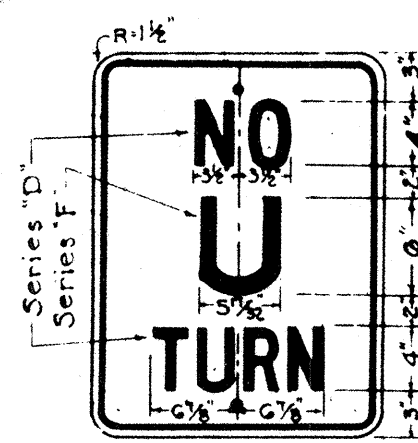
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
F.A. MARKERS, MONUMENTS
SIGNS & LOCATION OF SIGNS
SCALES AS NOTED



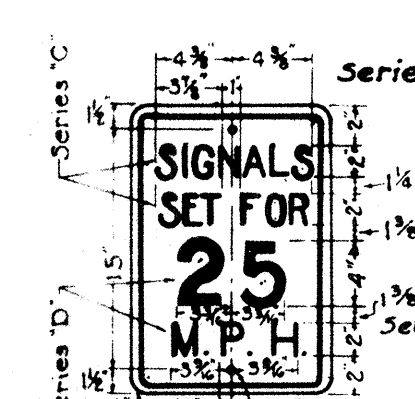
R-1
30" x 30"



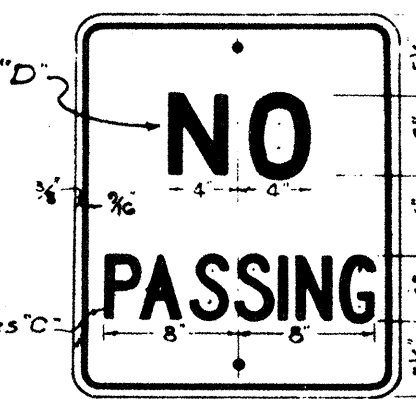
R-6
18" x 24"



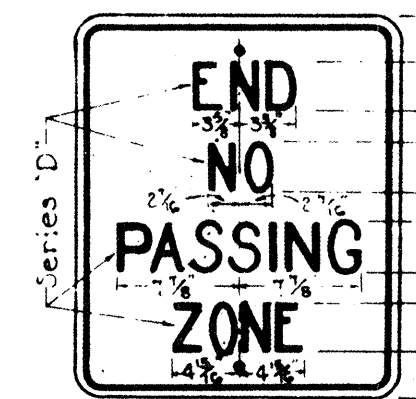
R-8
18" x 24"



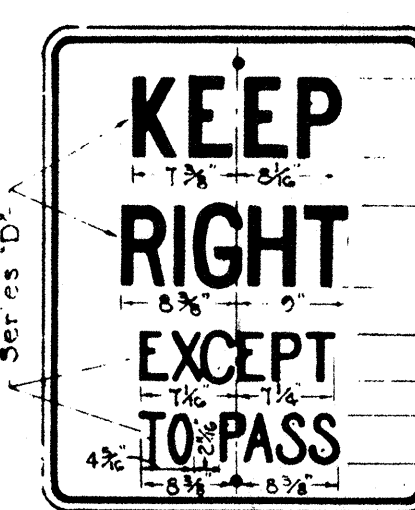
R-10
12" x 18"



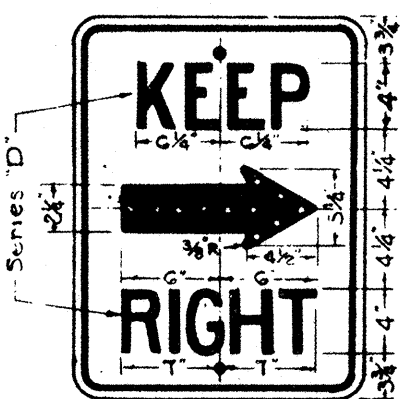
R-11
20" x 24"



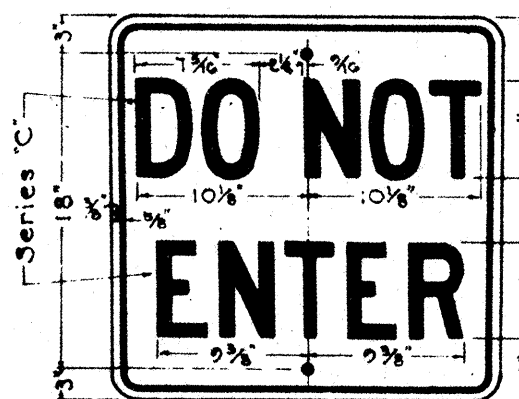
R-12
20" x 24"



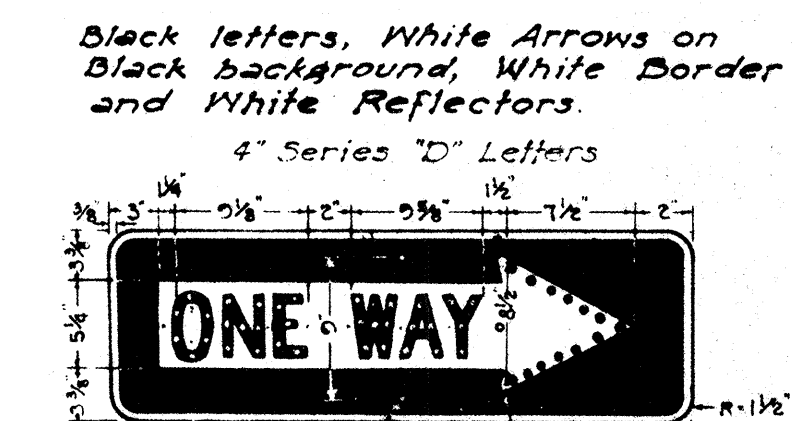
R-13
24" x 30"



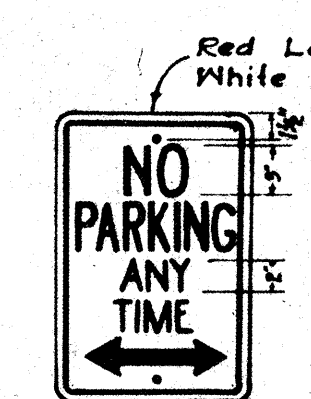
R-14
18" x 24"



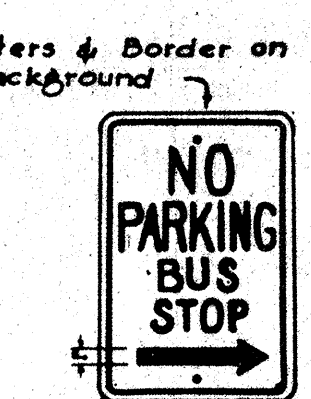
R-15
24" x 24"



R-16-R
R-16-L
36" x 12"



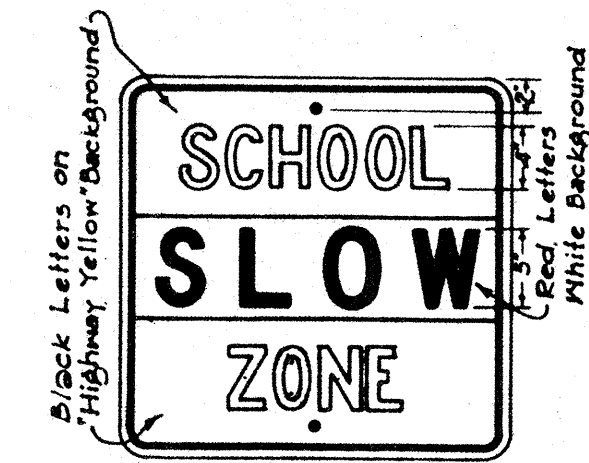
R-18
12" x 18"



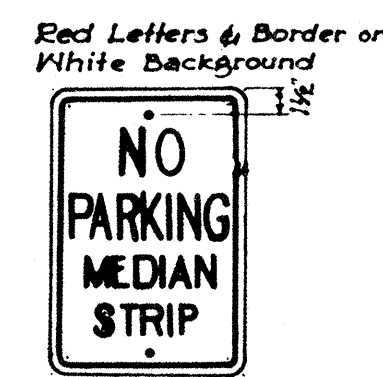
R-26
12" x 18"



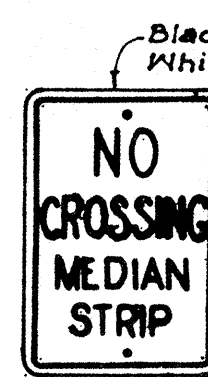
R-29
24" x 30"



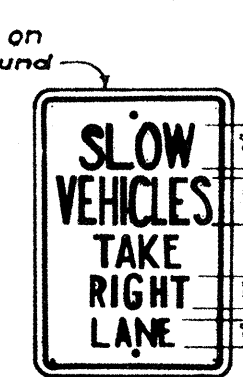
R-41-S
24" x 24"



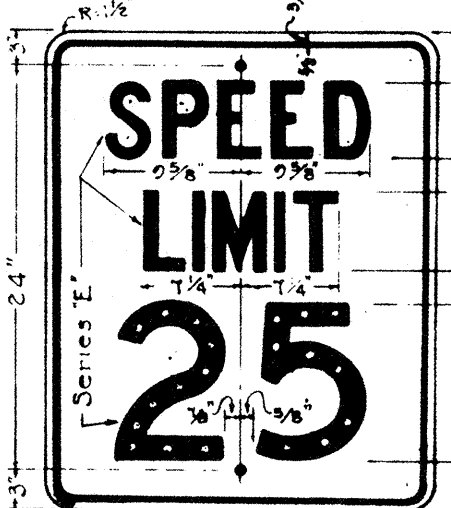
R-42-S
12" x 18"



R-43-S
12" x 18"



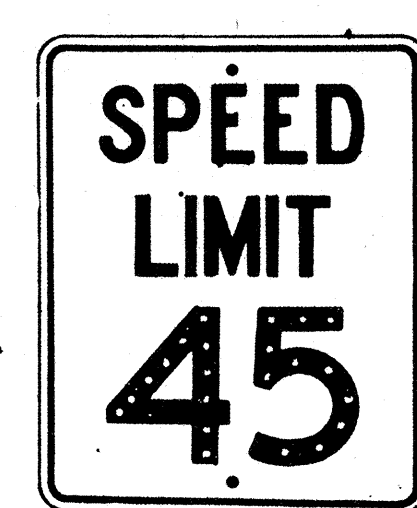
R-44-S
12" x 18"



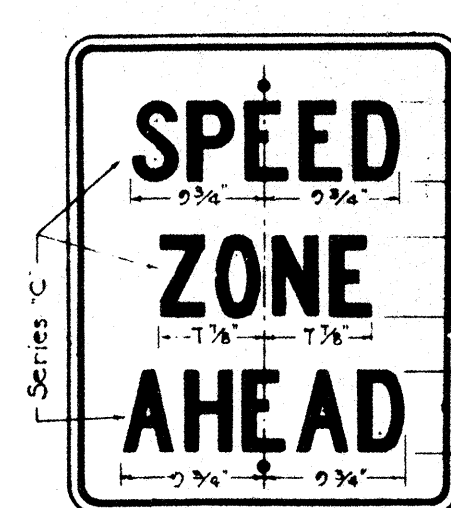
R-102-A
24" x 30"



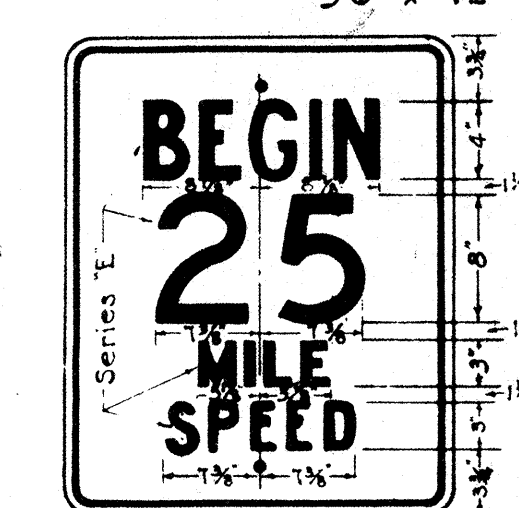
R-102-B
24" x 30"



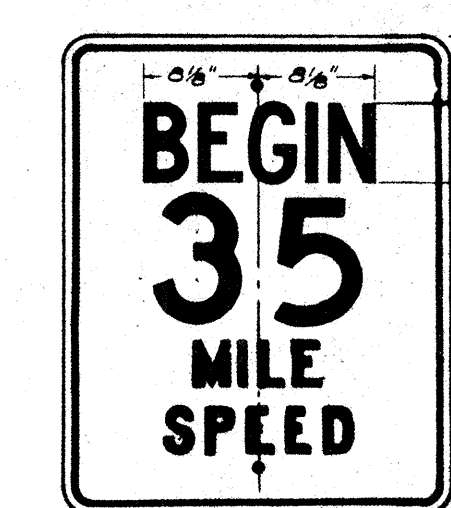
R-102-C
24" x 30"



R-104
24" x 30"



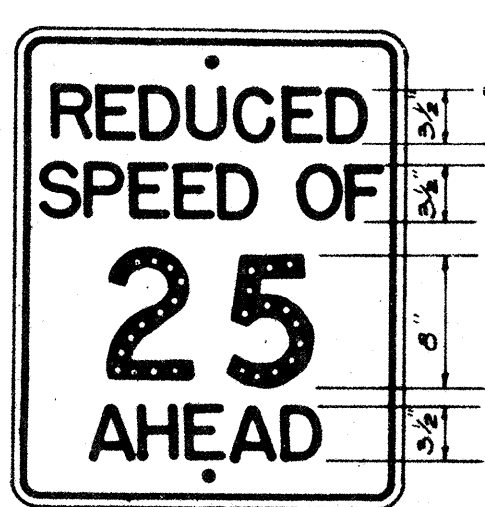
R-105-A
24" x 30"



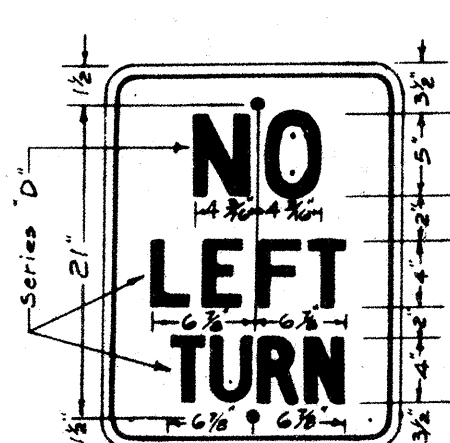
R-105-B
24" x 30"



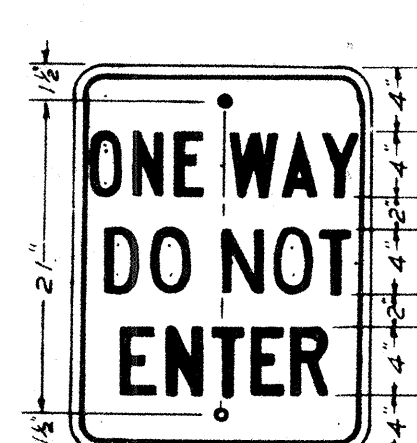
R-105-C
24" x 30"



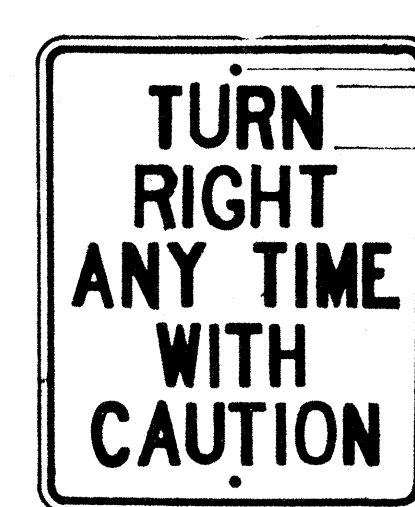
R-104-A
24" x 30"



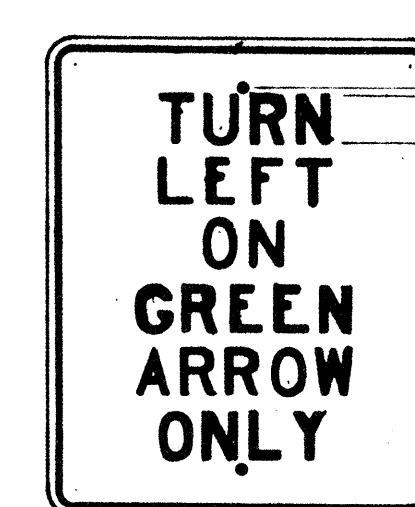
R-7
18" x 24"



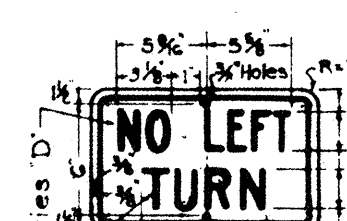
R-66
18" x 24"



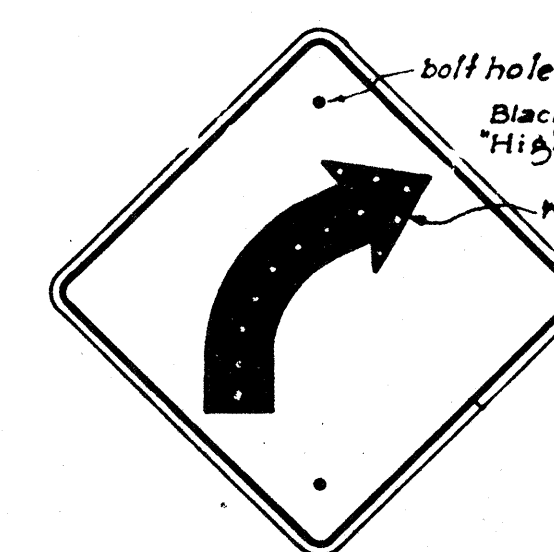
R-106
24" x 30"



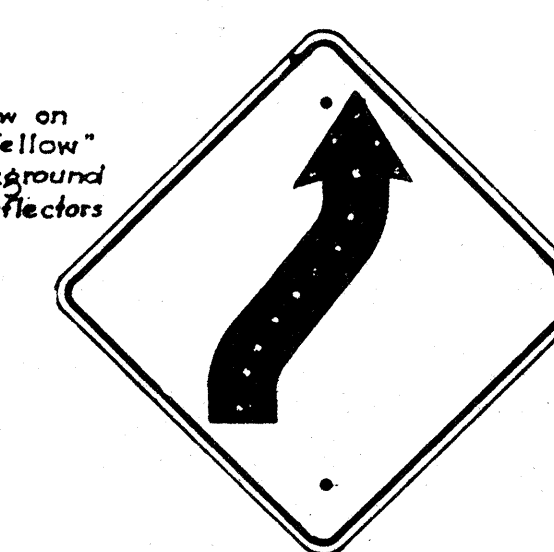
R-107-A
24" x 30"



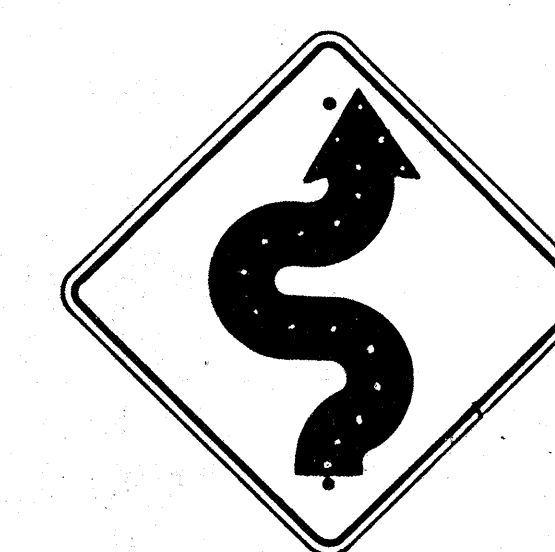
R-107
14" x 9"



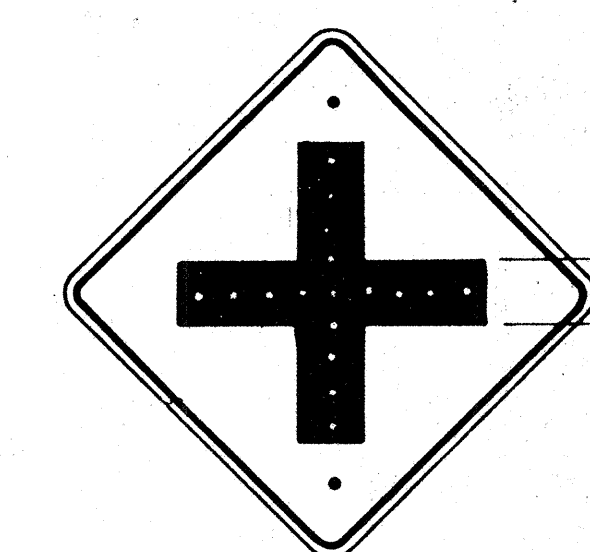
W-2-R
W-2-L
24" x 24"



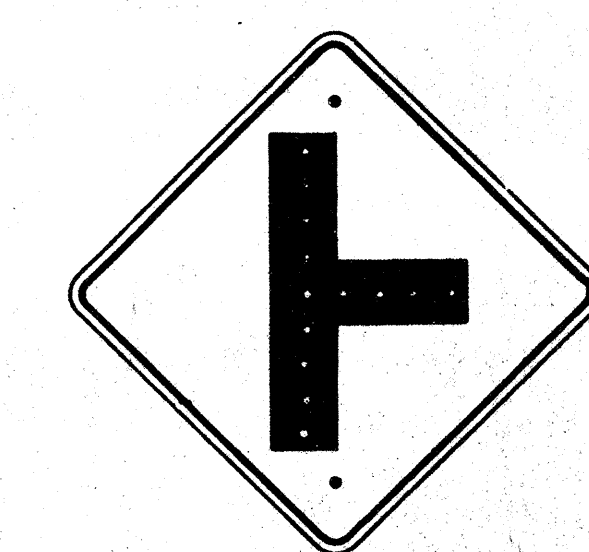
W-4-R
W-4-L
24" x 24"



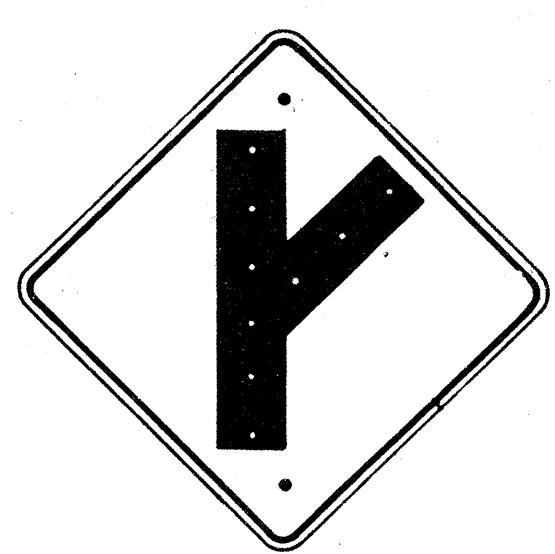
W-5-R
W-5-L
24" x 24"



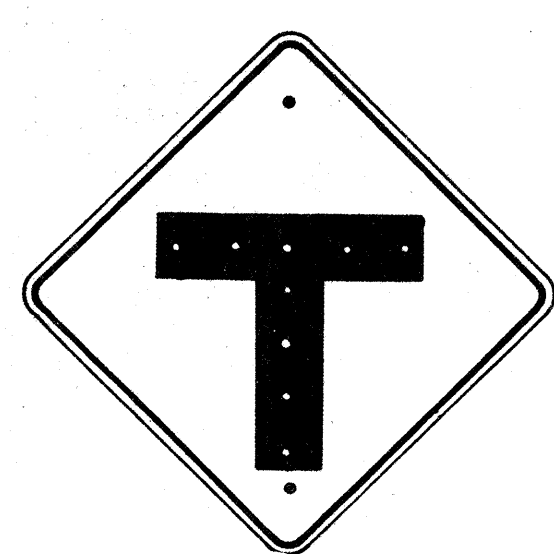
W-6
24" x 24"



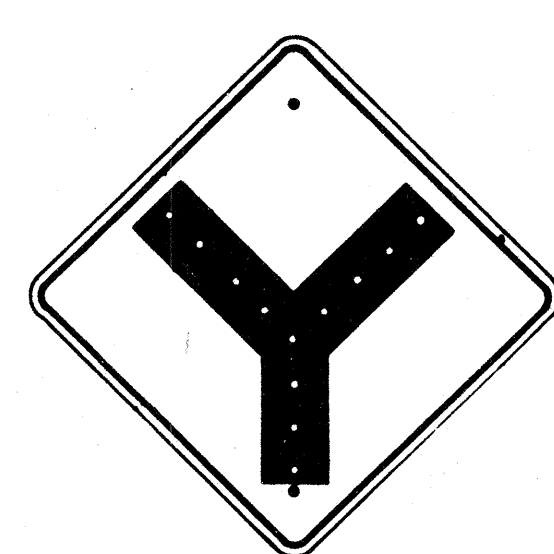
W-7
24" x 24"



W-8-R
W-8-L
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"



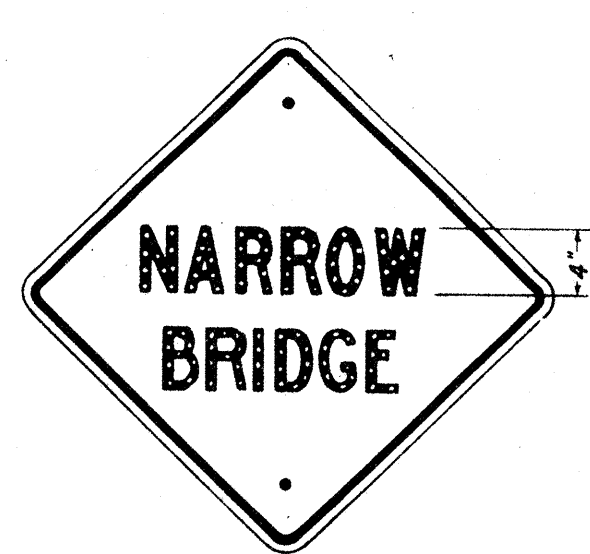
W-19
30" x 30"



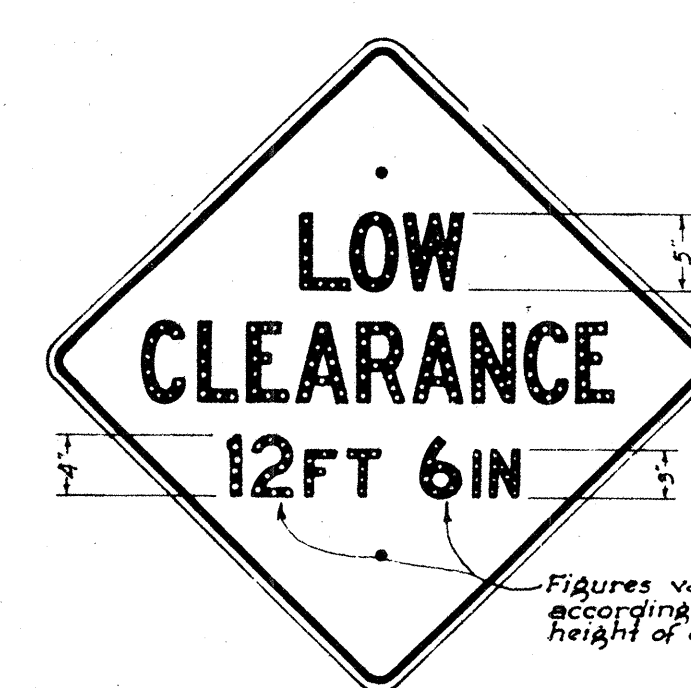
W-20
30" x 30"



W-21
30" x 30"



W-22
24" x 24"



W-24
30" x 30"



W-25
24" x 24"



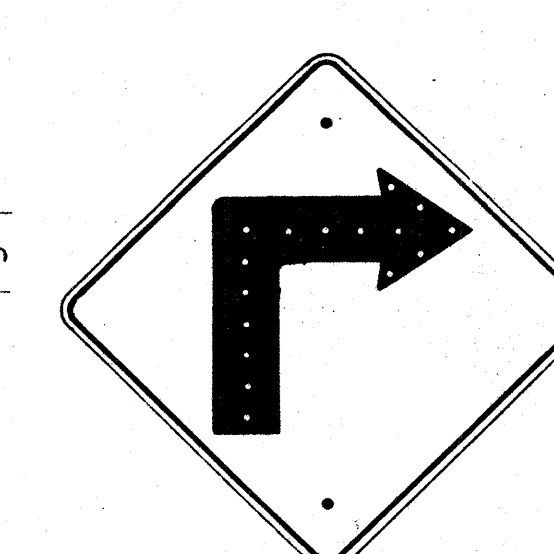
W-29
24" x 24"



W-59
24" x 24"



W-39
24" x 24"



W-1-R
W-1-L
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: *Bruce E. Nuttall*
TERRITORIAL HIGHWAY ENGINEER
JUNE 23, 1953

Note: Stop Sign has been Revised 12/19/54

DATE: 6/22/54
SURVEY PROVIDED BY: [blank]
DRAWN BY: T. Tokunaga
CHECKED BY: [blank]
PLAN: [blank]
QUANTITIES BY: [blank]
SHEET NO.: [blank]