

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

DETAIL OF OUTLET DITCH

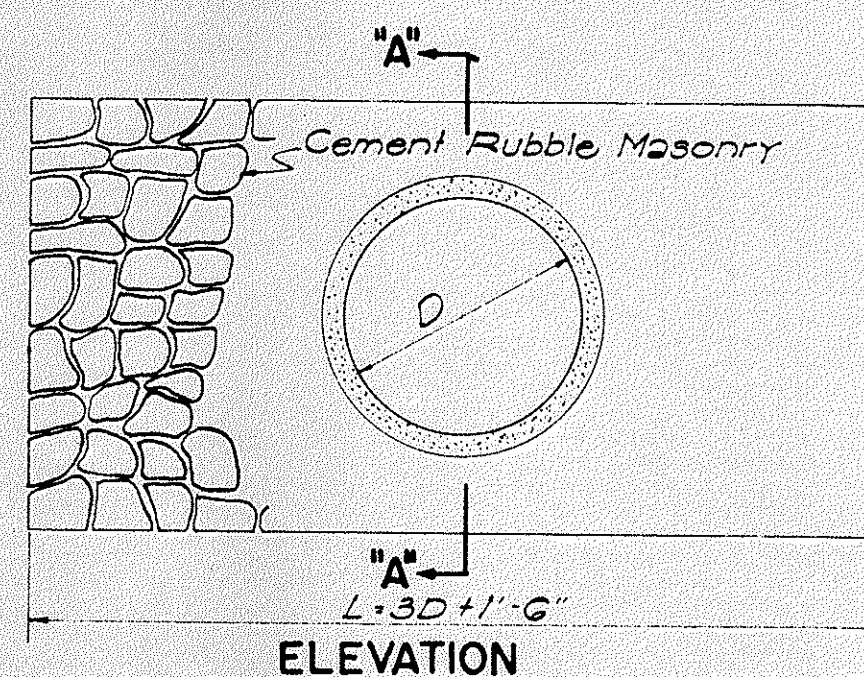
Scale: 1/2" = 1'-0"

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:

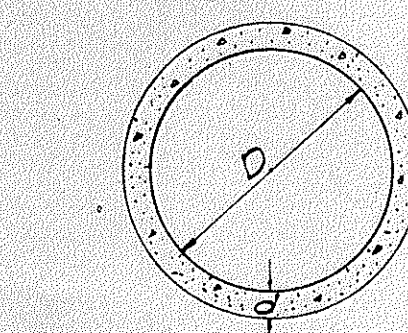
Dimension "X" is assumed as 2'-4" in figuring the above quantities.

DATA-MASONRY HEADWALL					Cast-In-Place Conc. Culvert	Conc. Pipe Culvert	Corrugated Pipe Culvert
D	H	B	L		Cu Yds	Cu Yds	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

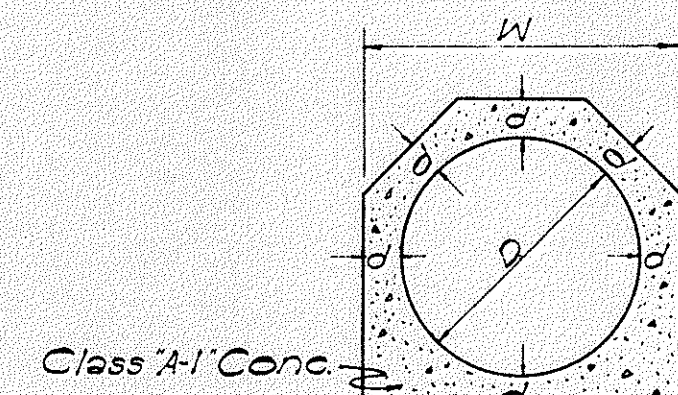
Scale: 1/2" = 1'-0"



SECTION CONC. PIPE CULVERT

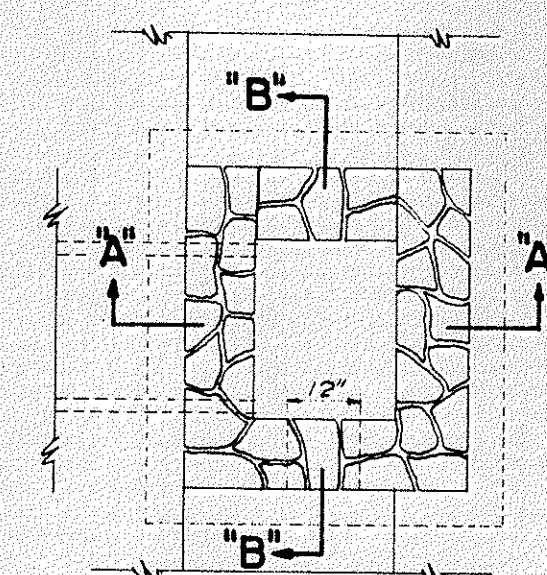
NOTE:

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



CAST-IN-PLACE CONC. CULVERT

DATA-CAST-IN-PLACE CONC. CULVERT				
D	d	W	Cu Yds per ft	
18"	4"	2'-2"	0.11	
24"	4 1/2"	2'-0"	0.14	
30"	5"	3'-4"	0.19	
36"	5 1/2"	3'-11"	0.26	



DETAIL OF MASONRY DROP INTAKE

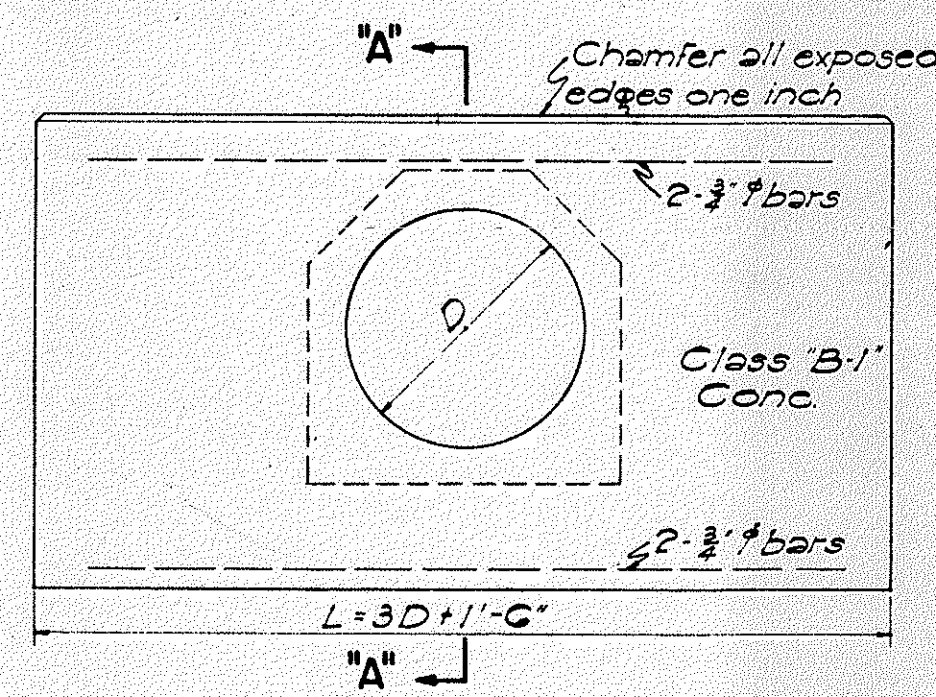
Scale: 3/8" = 1'-0"



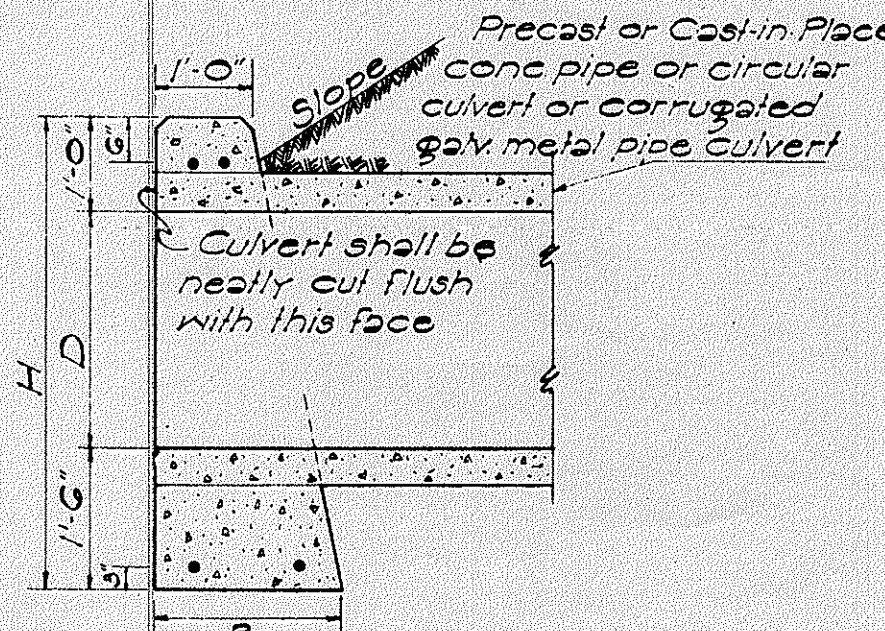
CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING
(1) Map surface either side of joint as required with asphalt 50-100 penetration (ASTM Design 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.



ELEVATION

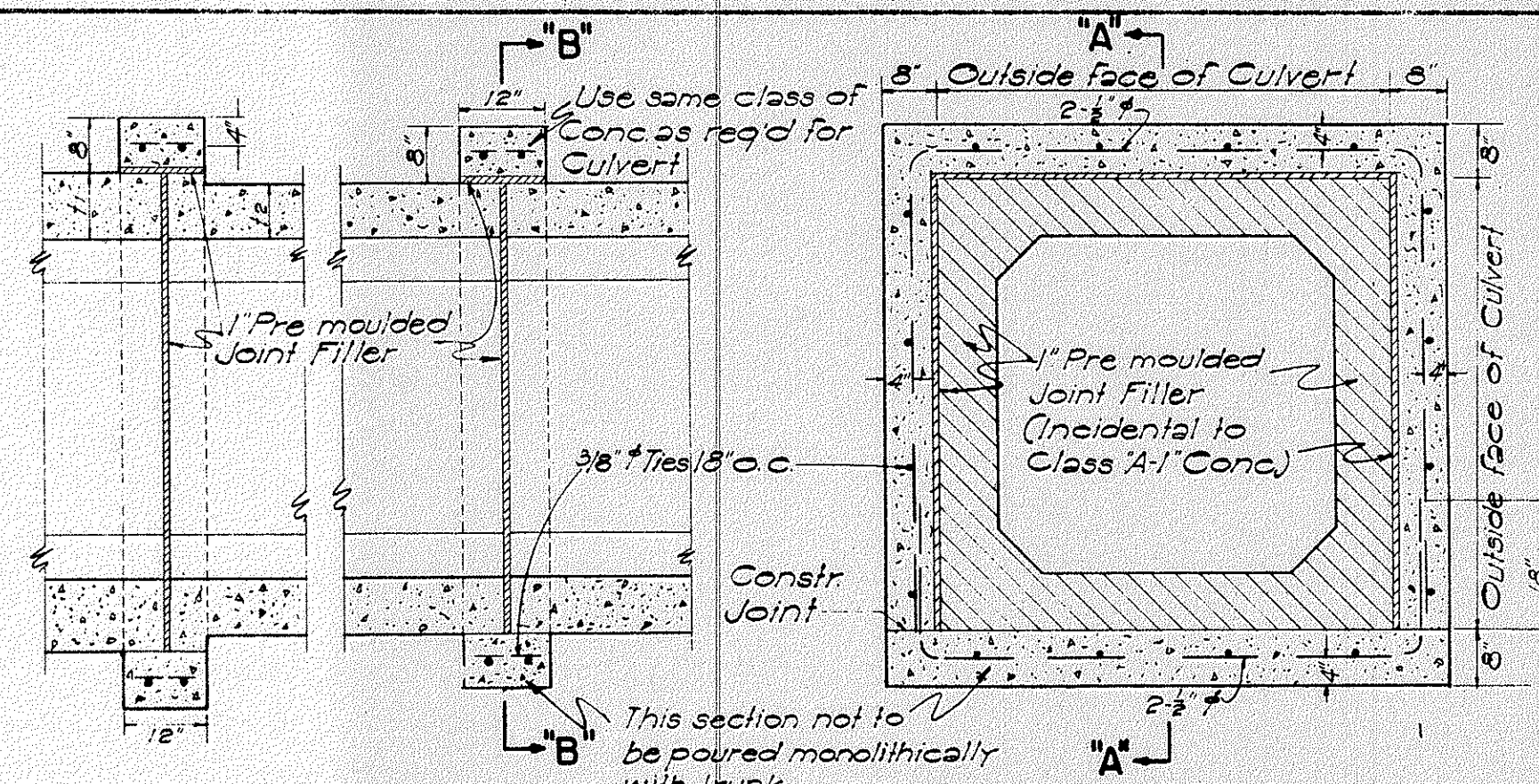


SECTION "A-A"

DATA FOR CONC. HEADWALL					Cast-In-Place Conc. Culvert	Conc. Pipe Culvert	Steel For One Headwall
D	B	L	H		Cu Yds	Cu Yds	No. of Bars Size Length Lbs.
18"	1'-6"	6'-0"	4'-0"		0.02	1.00	4 3/4" 7'-0" 33
24"	1'-6"	7'-6"	4'-6"		1.25	1.98	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	4.66	4 3/4" 11'-6" 60
48"	2'-6"	13'-6"	6'-6"		4.66		4 3/4" 13'-0" 78

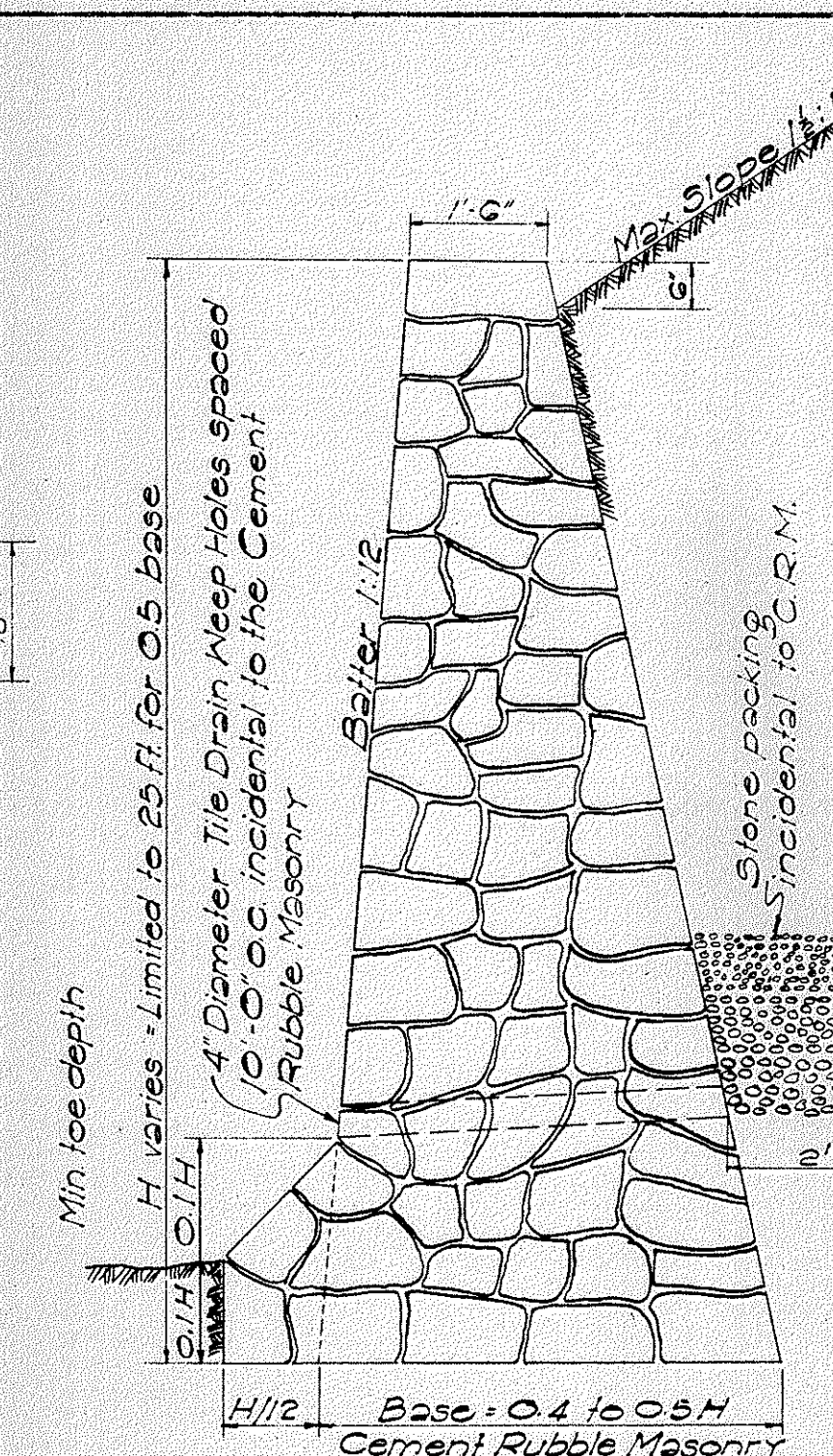
DETAIL OF CONCRETE HEADWALL

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



SECTION "A-A" CONC. COLLAR FOR CONC. BOX CULVERT

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



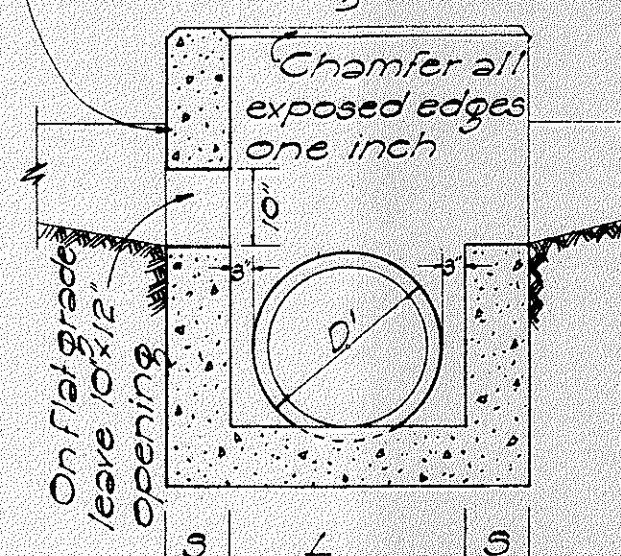
SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL

SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

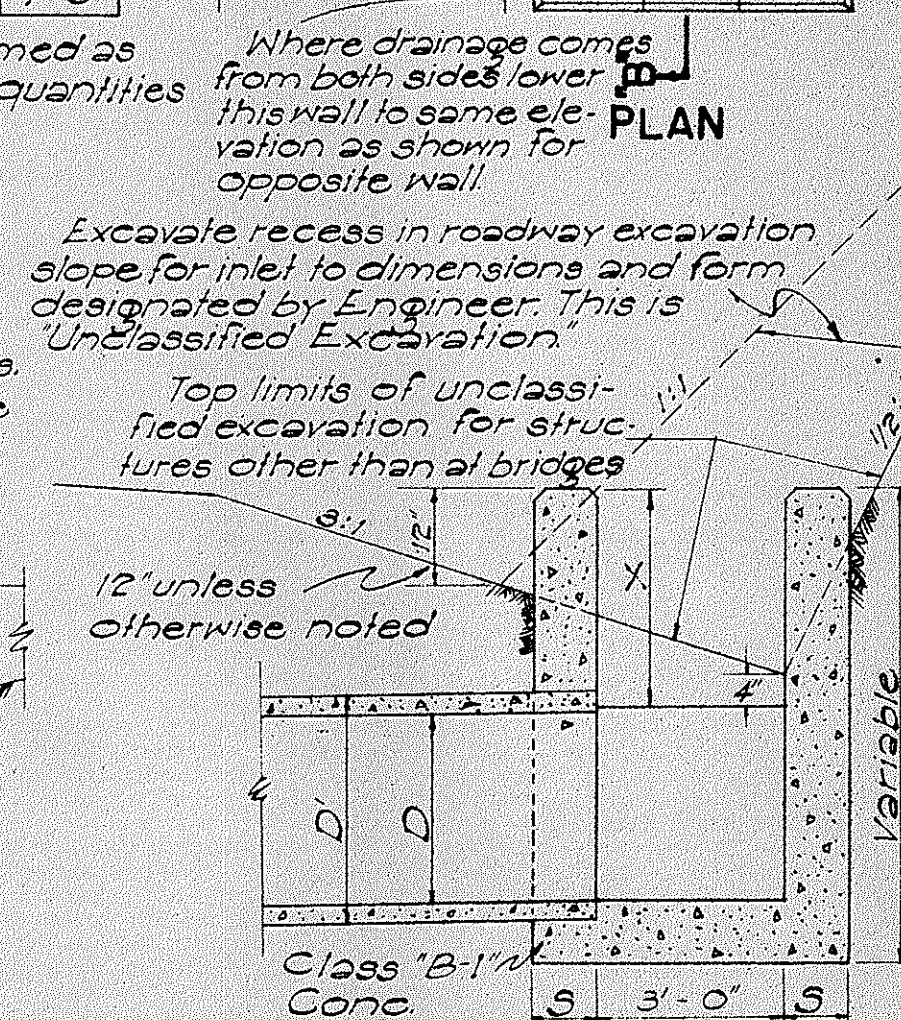
DATA-CONC. DROP INTAKE					Where Variables Equal
D	D	L=D+G	S	Cu Yds	
23"	18"	2'-5"	8"	1.41	4'-6"
30"	24"	3'-0"	8"	1.72	5'-0"
37"	30"	3'-7"	9"	2.32	5'-6"
44"	36"	4'-2"	9"	2.73	6'-0"
51"	42"	4'-9"	10"	3.54	6'-6"
58"	48"	5'-4"	10"	4.01	7'-0"

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"

SECT. OF CULVERT WITH CONC. PROTECTION

Scale: 1" = 1'-0"

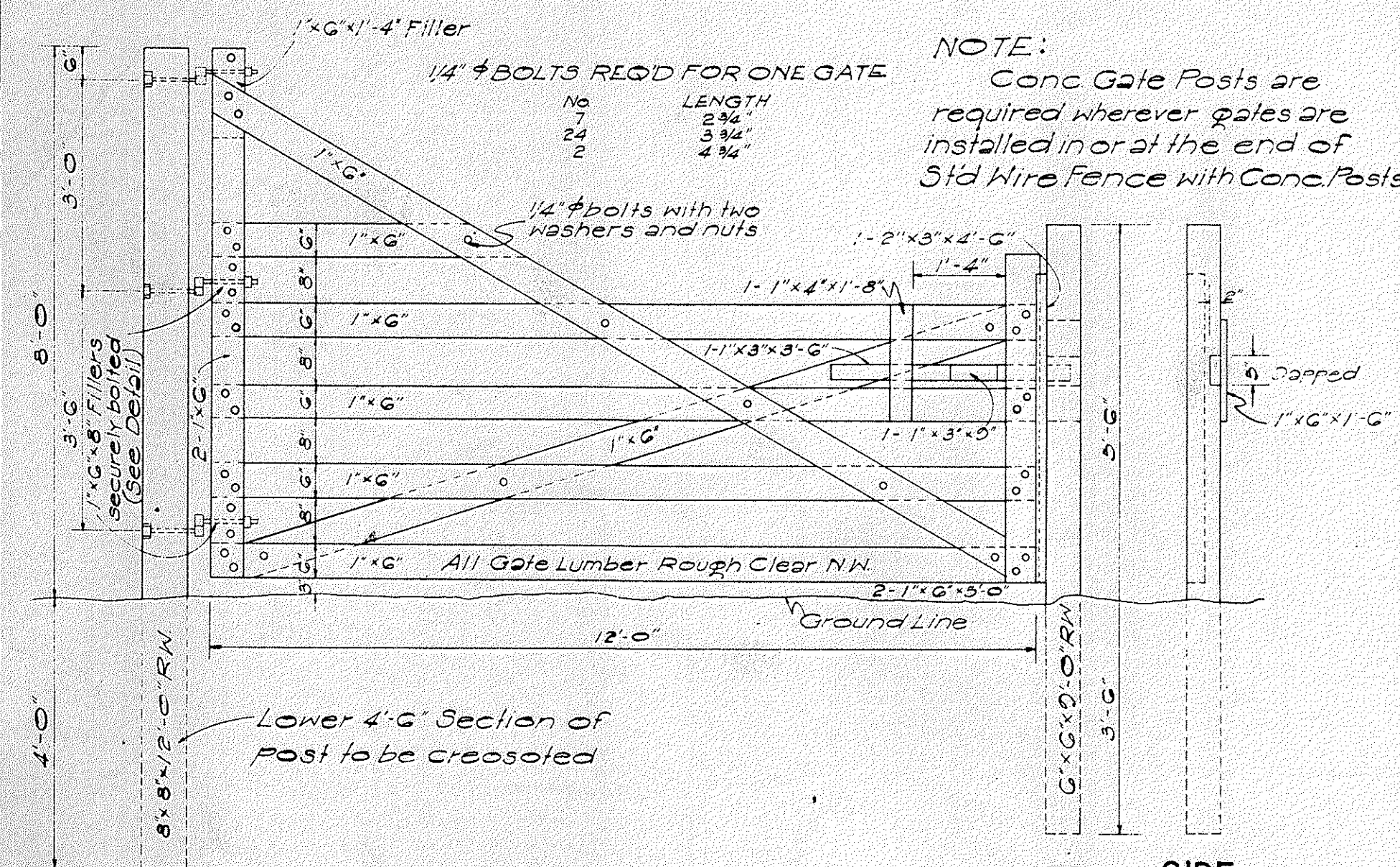
DATA FOR CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18" D		Z must be from pipe to face of trench
7" " 24" D		
8" " 30" D		
9" " 36" D	D/2 + T	Minimum = X
10" " 42" D		Maximum pay quantity will be Z=12"
11" " 48" D		
12" " 54" D		

APPROVED: DATE: 6-23-53
TERRITORIAL HIGHWAY ENGINEER

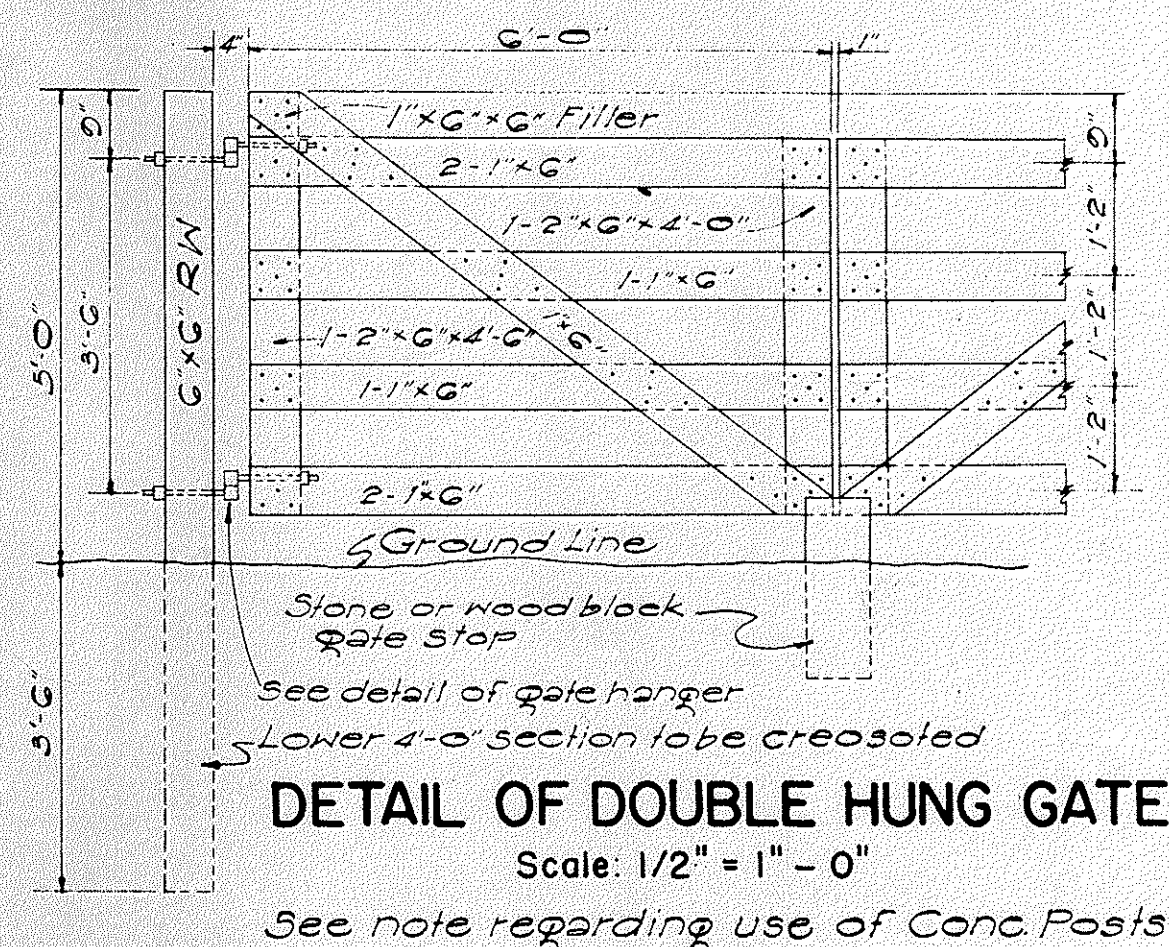
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
DROP INTAKES, RETAINING WALLS,
HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED

SHEET No. OF SHEETS

5639.5



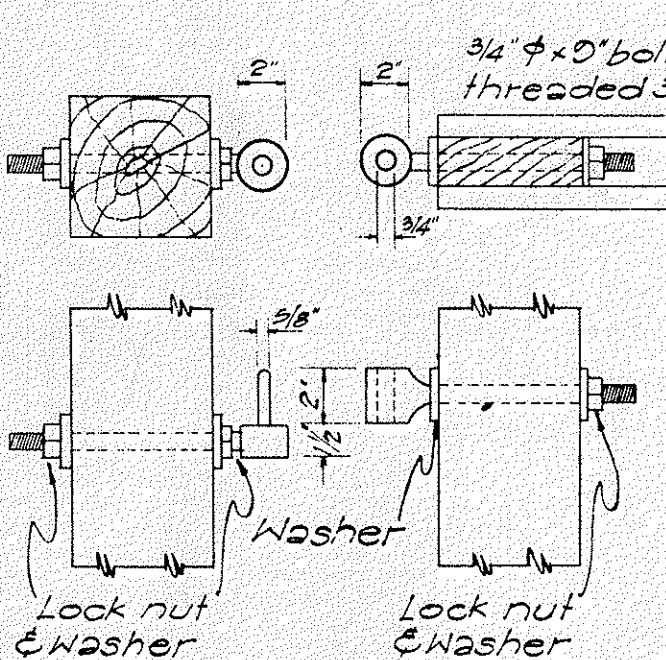
DETAIL OF CATTLE GATE
Scale: 1/2" = 1'-0"



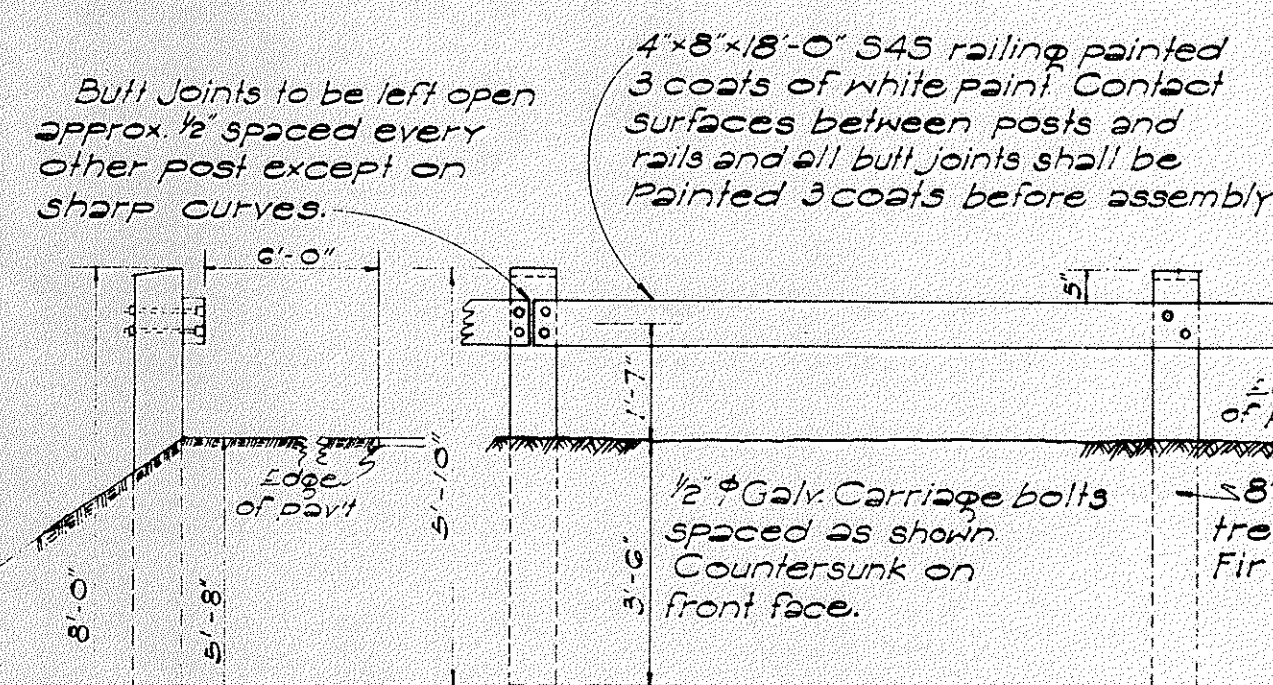
DETAIL OF DOUBLE HUNG GATE
Scale: 1/2" = 1'-0"
See note regarding use of Conc. Posts

NOTE:
Conc Gate Posts are required wherever gates are installed in or at the end of Std Wire Fence with Conc. Posts

DETAIL OF GATE HANGER
Scale: 1-1/2" = 1'-0"
Note: Use 3/4"x11" bolts for Cattle Gate

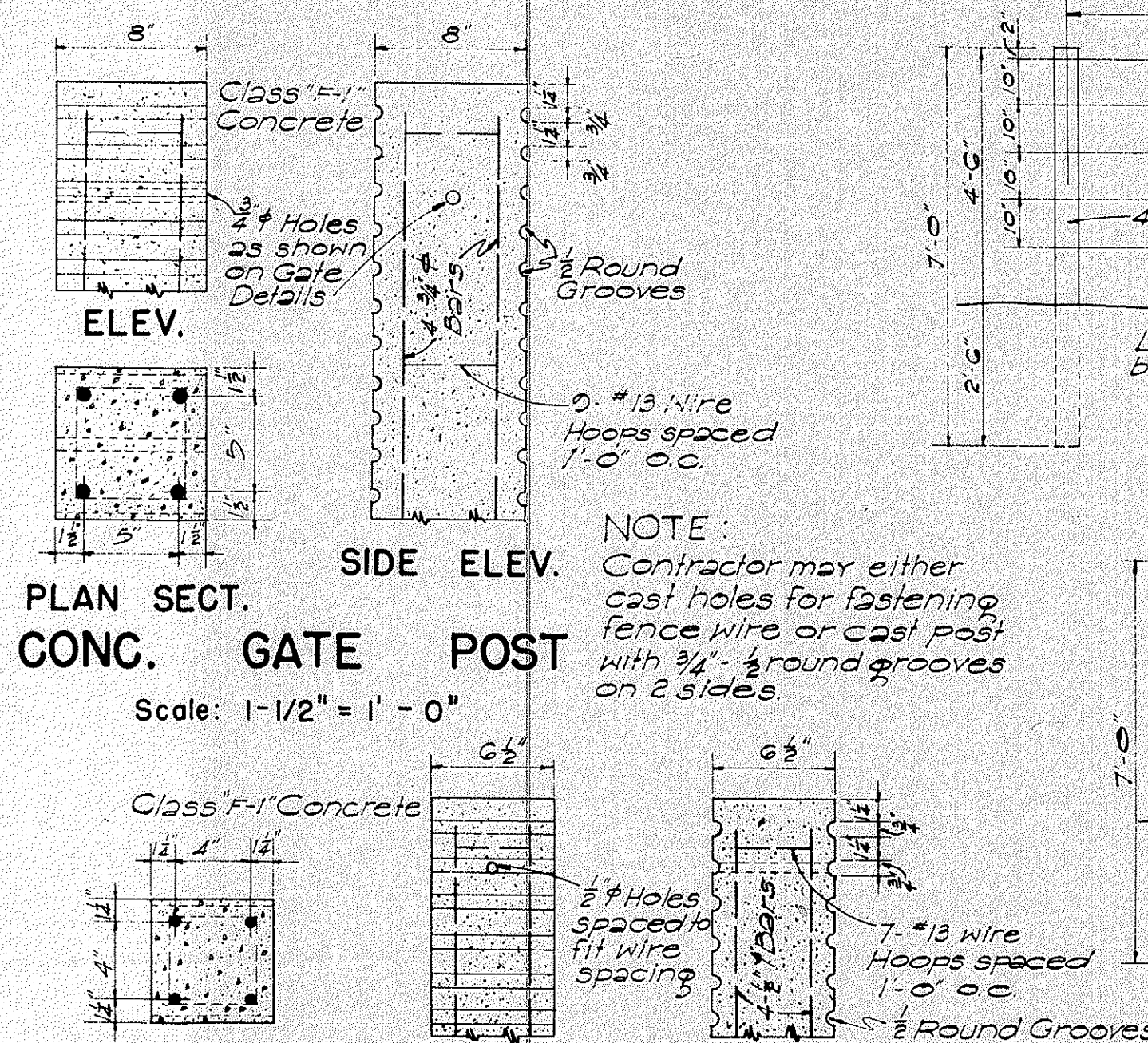


DETAIL OF GATE HANGER
Scale: 1-1/2" = 1'-0"
Note: Use 3/4"x11" bolts for Cattle Gate

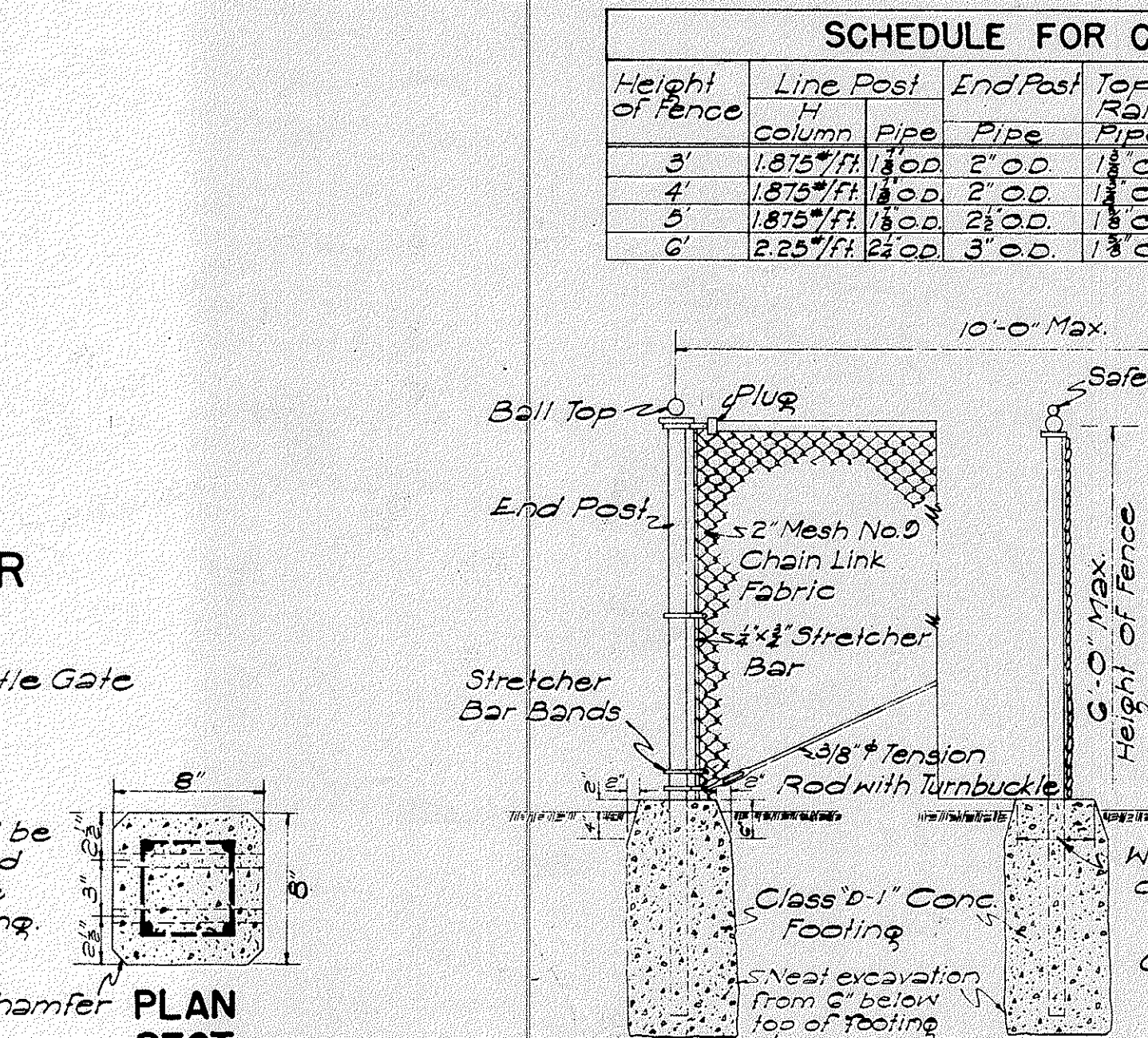


WOOD GUARD RAIL WITH WOOD POSTS
Scale: 3/8" = 1'-0"
NOTE: For Conc. Post see detail at right

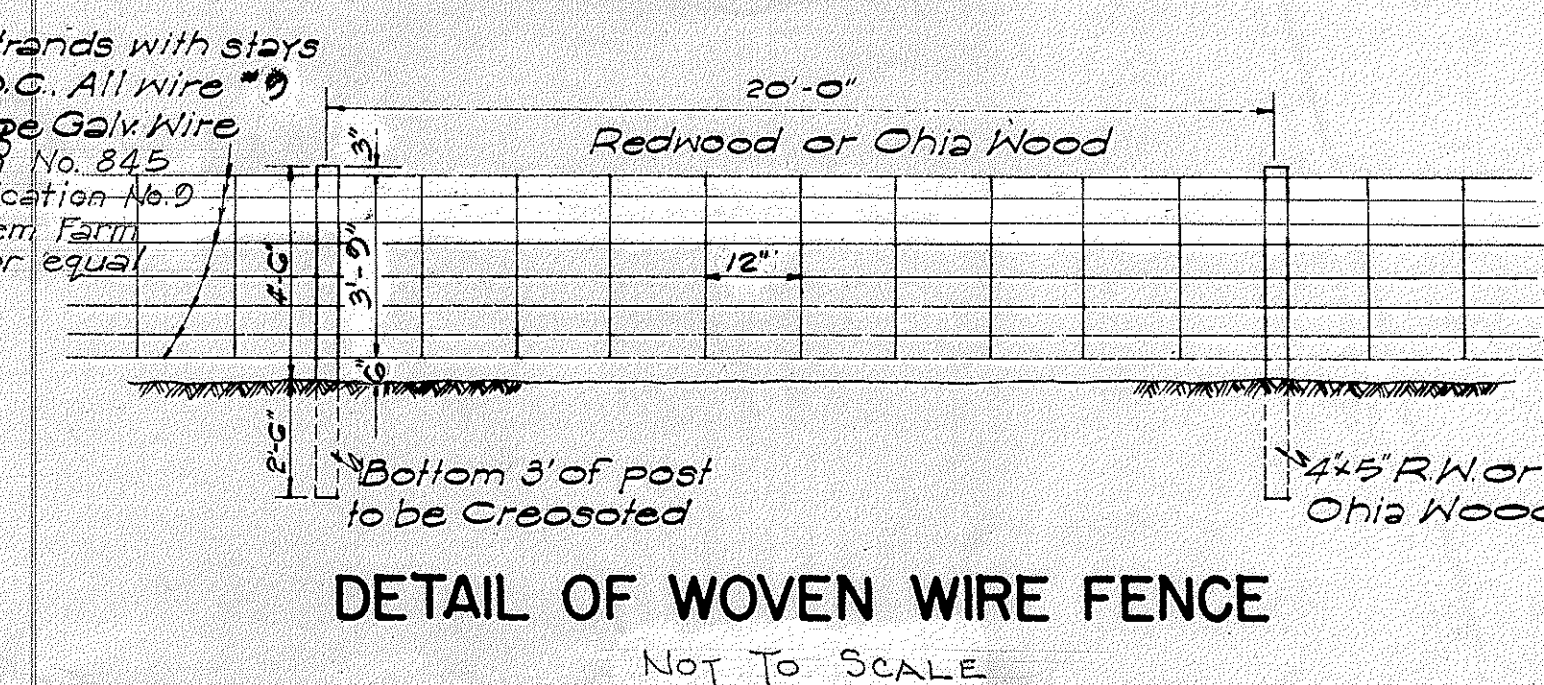
GUIDE POSTS: Wood or Conc. Guide Posts are the same as those used for Wood Guard Rail, spaced as shown on plans.



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

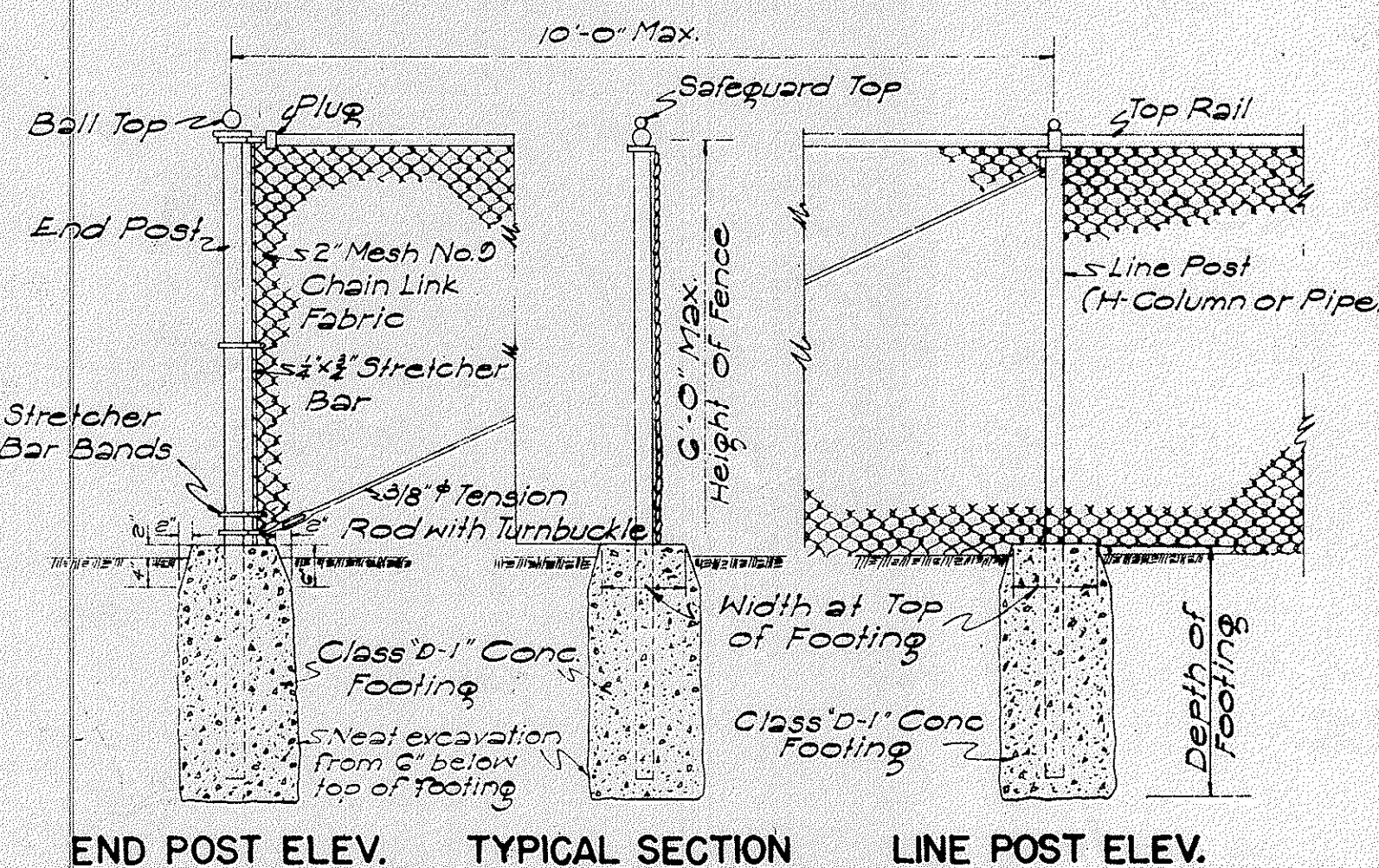


DETAIL OF CHAIN LINK FENCE
Scale: 1/2" = 1'-0"

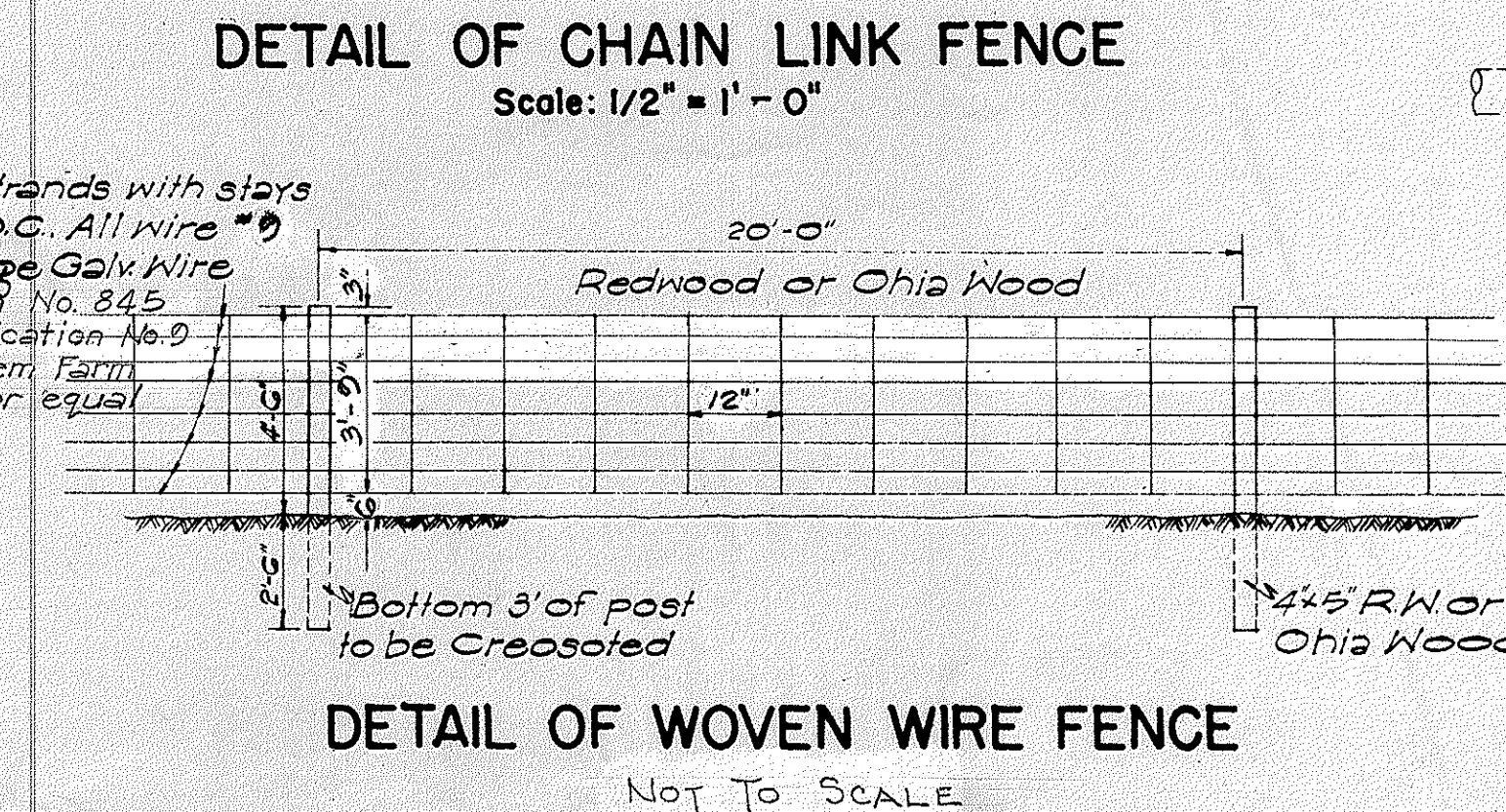


DETAILS OF STANDARD WIRE FENCE WITH WOOD POSTS
Scale: 3/8" = 1'-0"

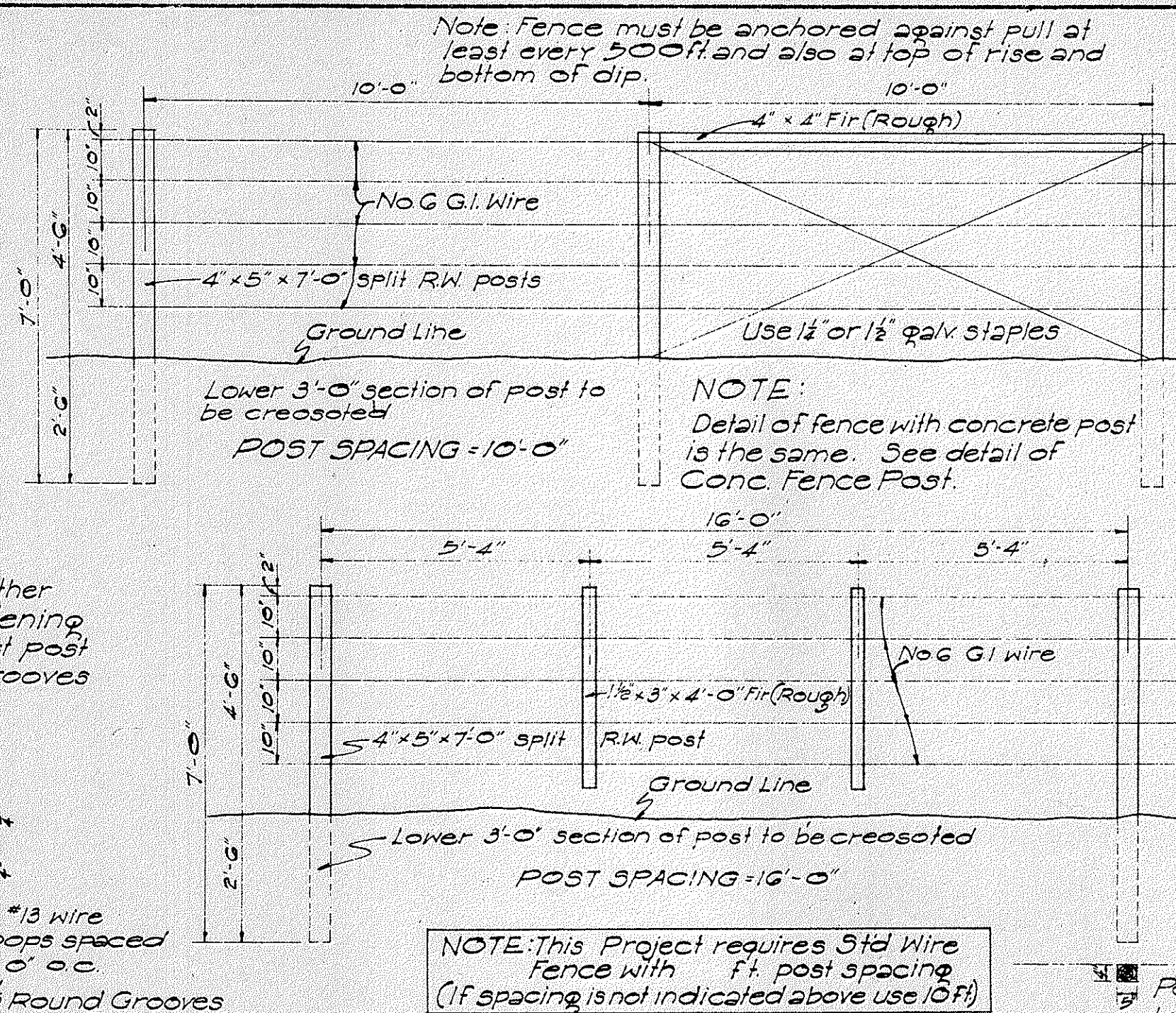
SCHEDULE FOR CHAIN LINK FENCE						
Height of Fence	Line Post	End Post	Top Rail	Depth of Footing	Top of Footing	Length of Posts
3'	1.875'/ft. 1.000	2' 0.0	1 1/2" O.D.	30" 24"	8" sq.	5'-6" 5'-0"
4'	1.875'/ft. 1.000	2' 0.0	1 1/2" O.D.	30" 24"	10" sq.	6'-6" 6'-0"
5'	1.875'/ft. 1.000	2' 0.0	1 1/2" O.D.	36" 30"	12" sq.	8'-0" 8'-0"
6'	2.25'/ft. 2.000	3' 0.0	1 1/2" O.D.	36" 30"	12" sq.	9'-0" 9'-0"



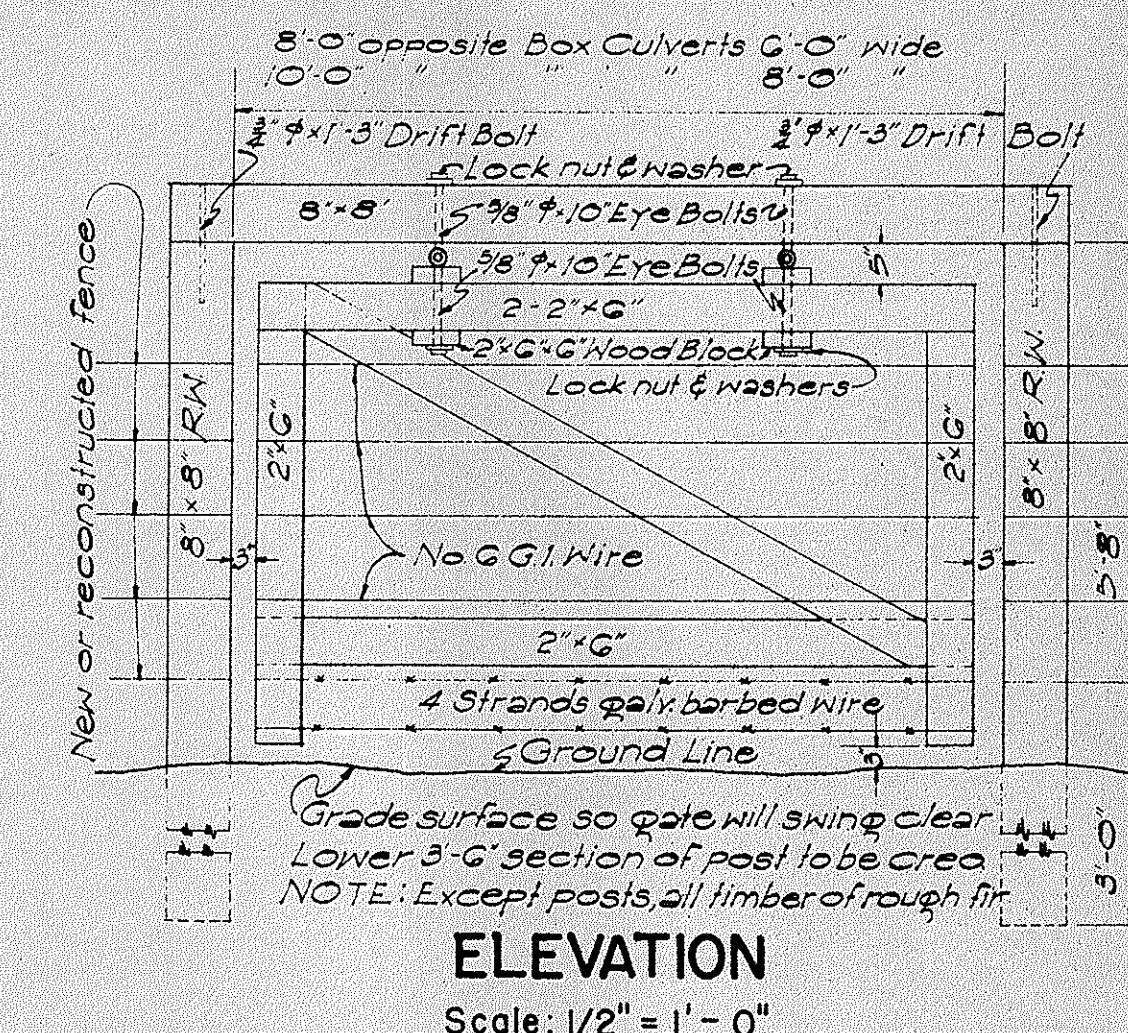
DETAIL OF CHAIN LINK FENCE
Scale: 1/2" = 1'-0"



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



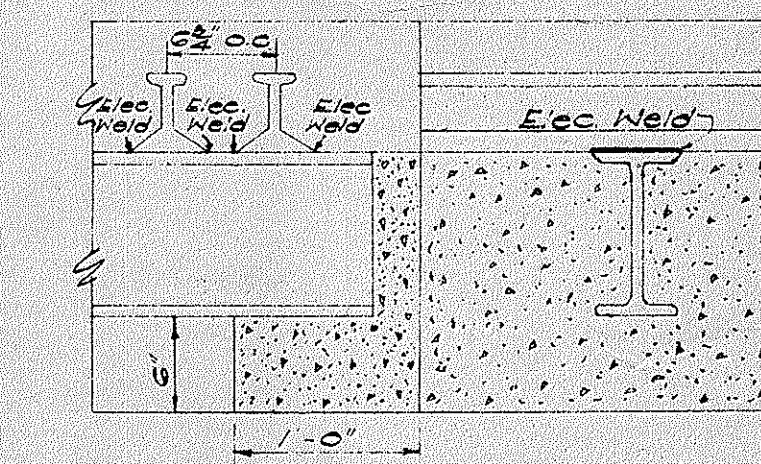
DETAILS OF STANDARD WIRE FENCE WITH WOOD POSTS
Scale: 3/8" = 1'-0"



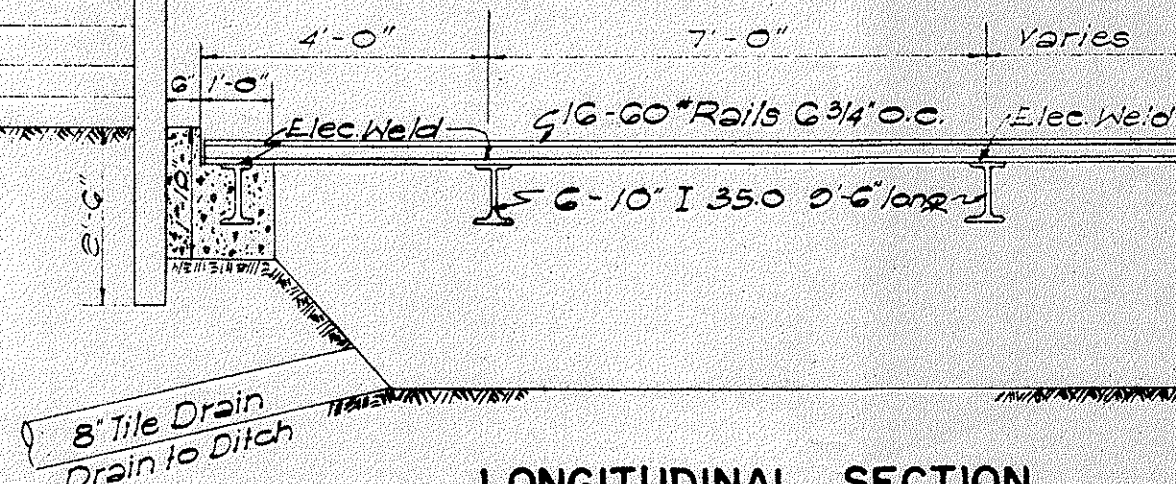
ELEVATION
Scale: 1/2" = 1'-0"

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

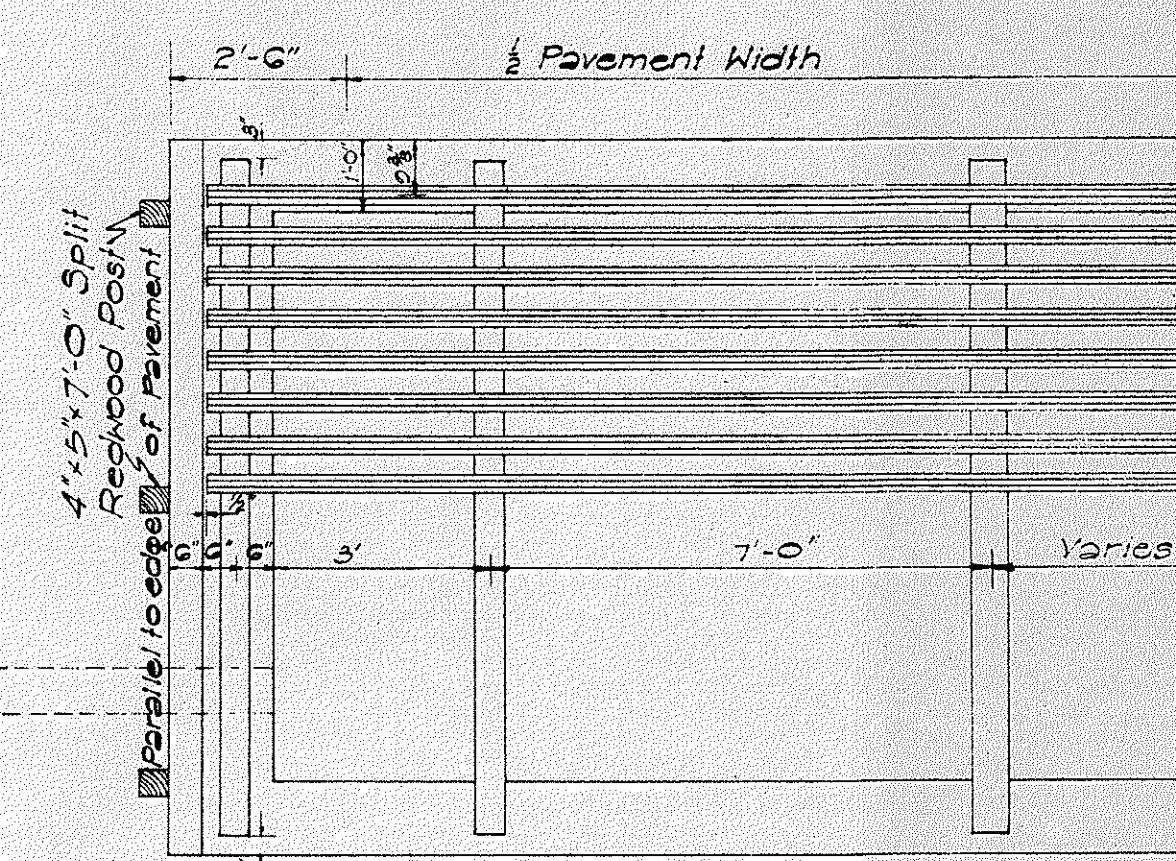
DETAILS OF HURDLE



SECTION



LONGITUDINAL SECTION



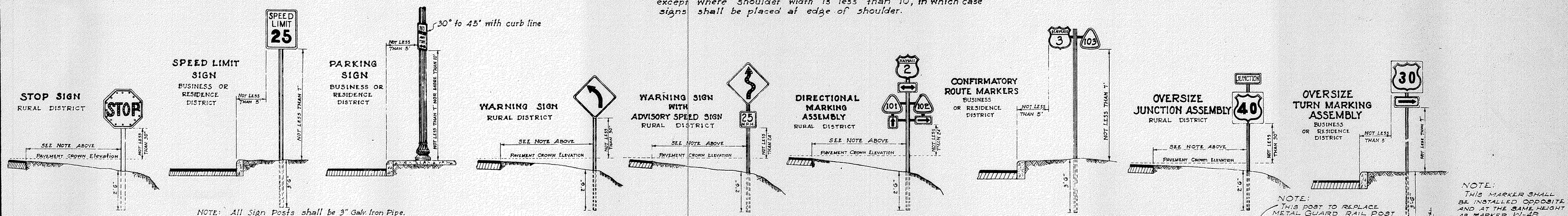
HALF SECTION

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

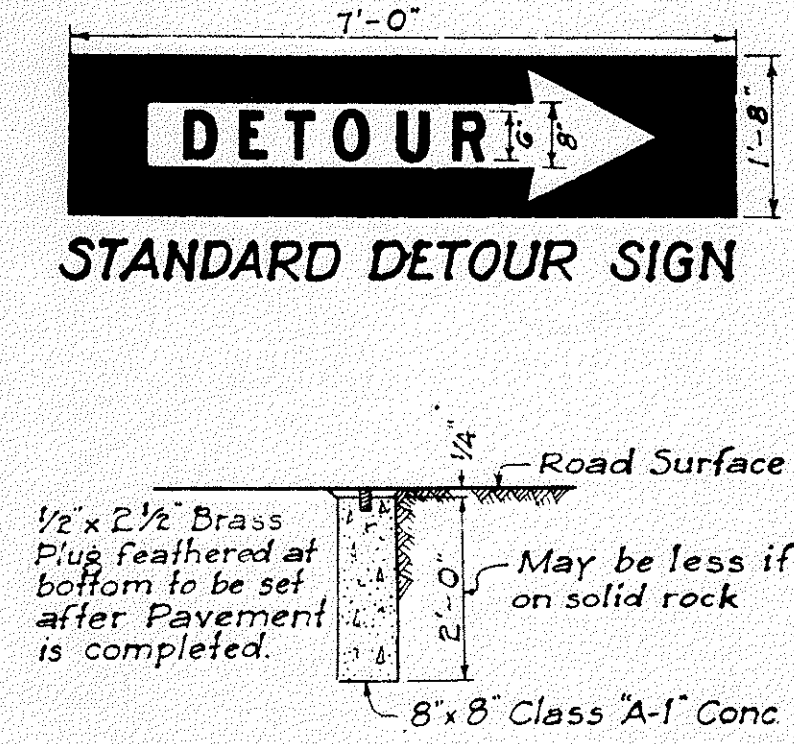
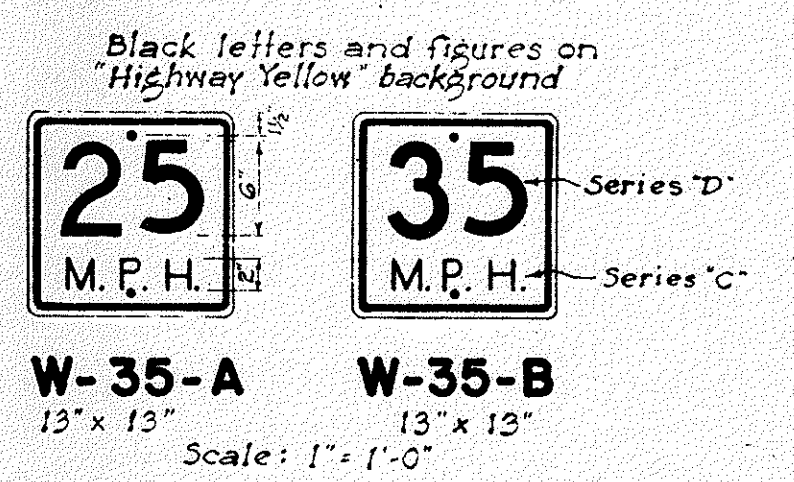
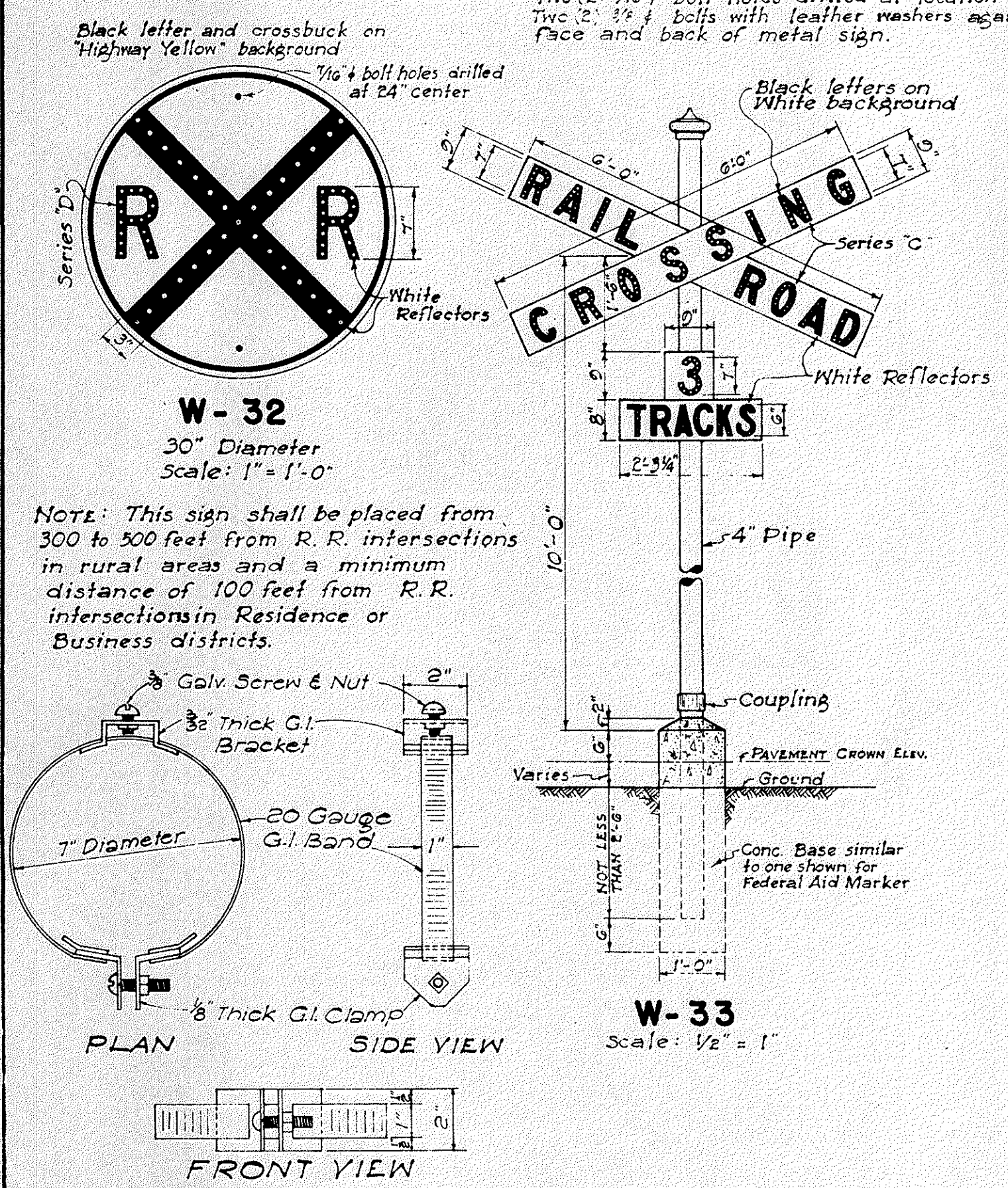
APPROVED: *Paul E. Weather*
TERRITORIAL HIGHWAY ENGINEER

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

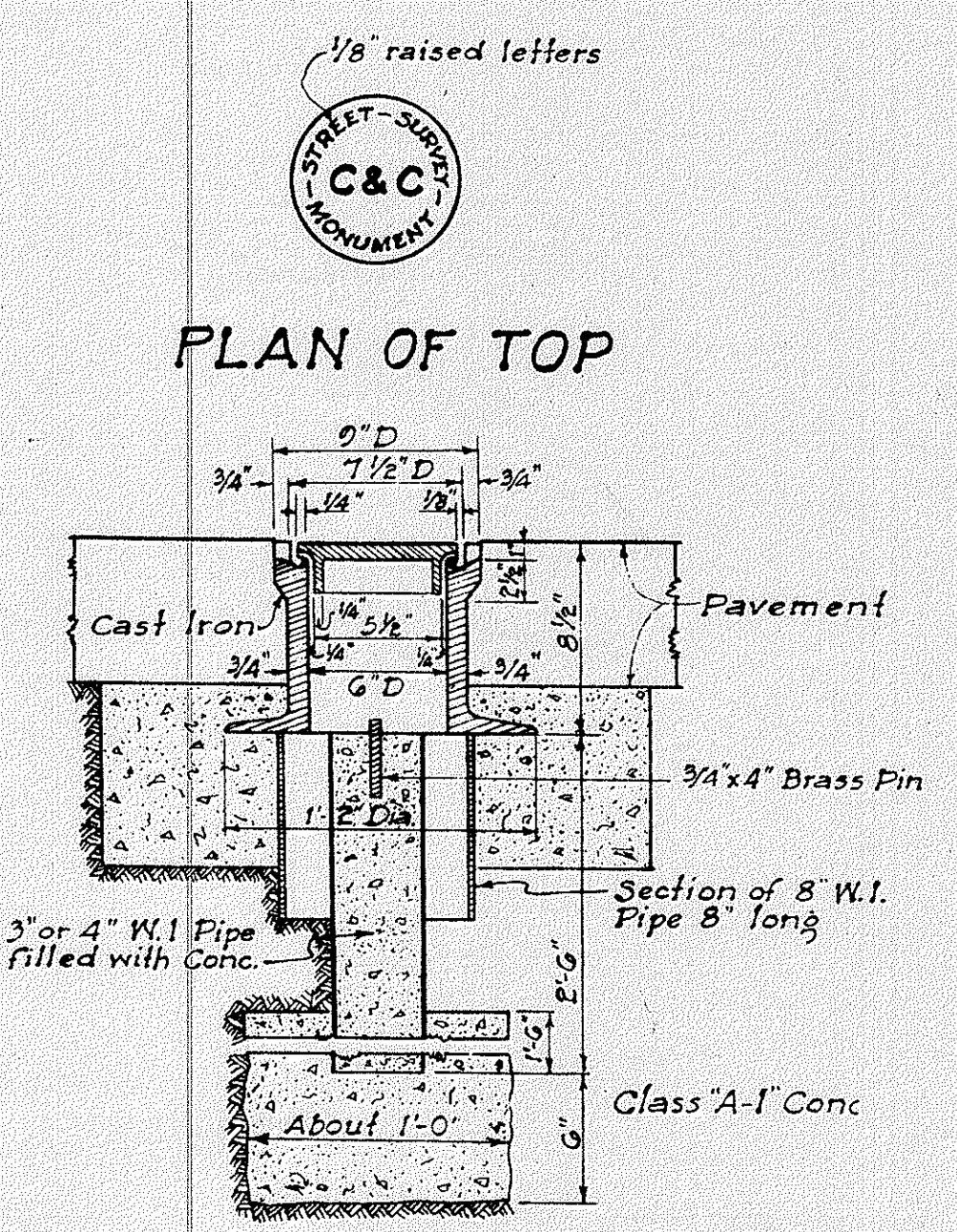
NOTE: All signs shall be placed 10' from edge of pavement except where shoulder width is less than 10', in which case signs shall be placed at edge of shoulder.



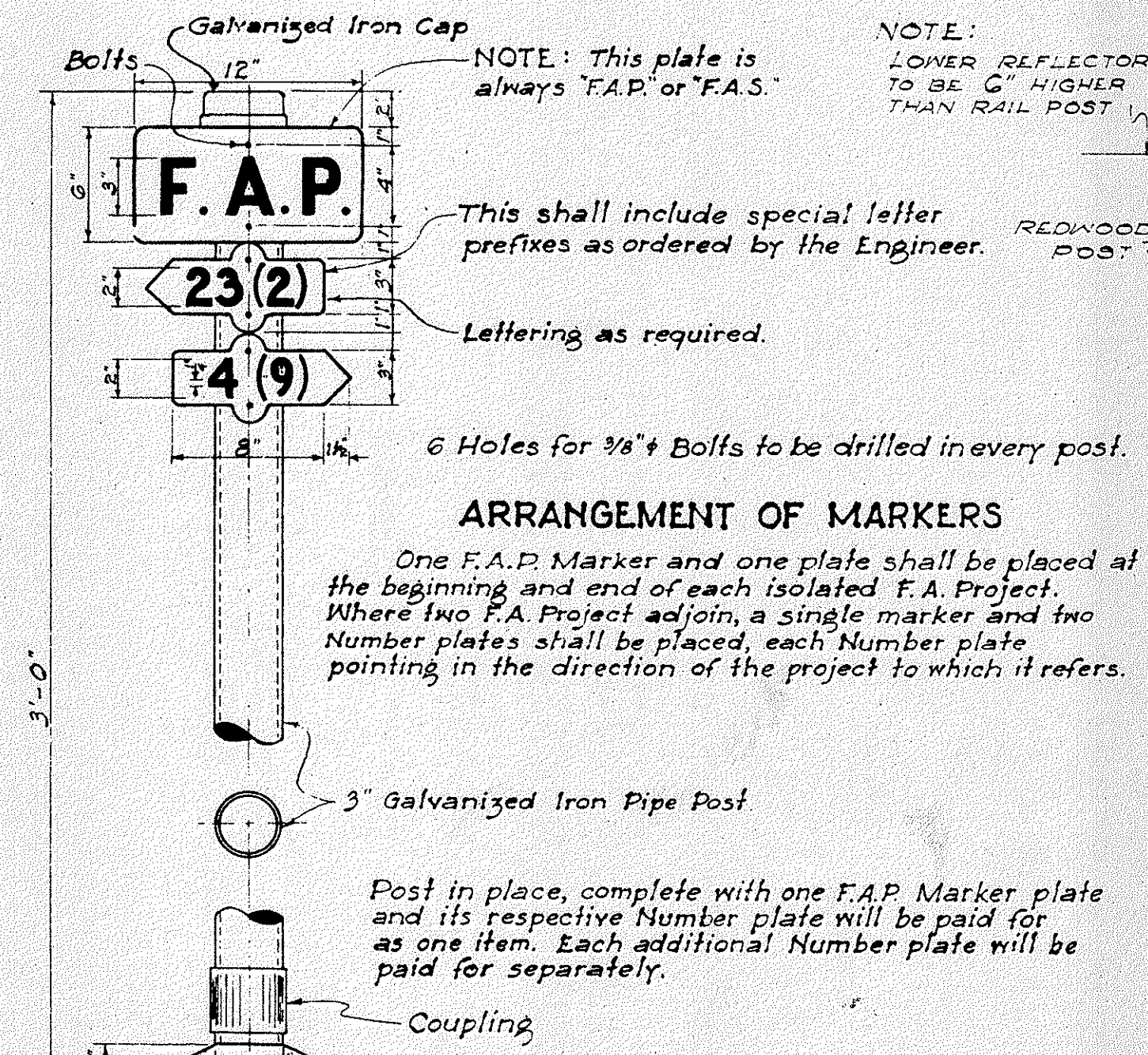
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS
Scale: 1" = 3'-0"



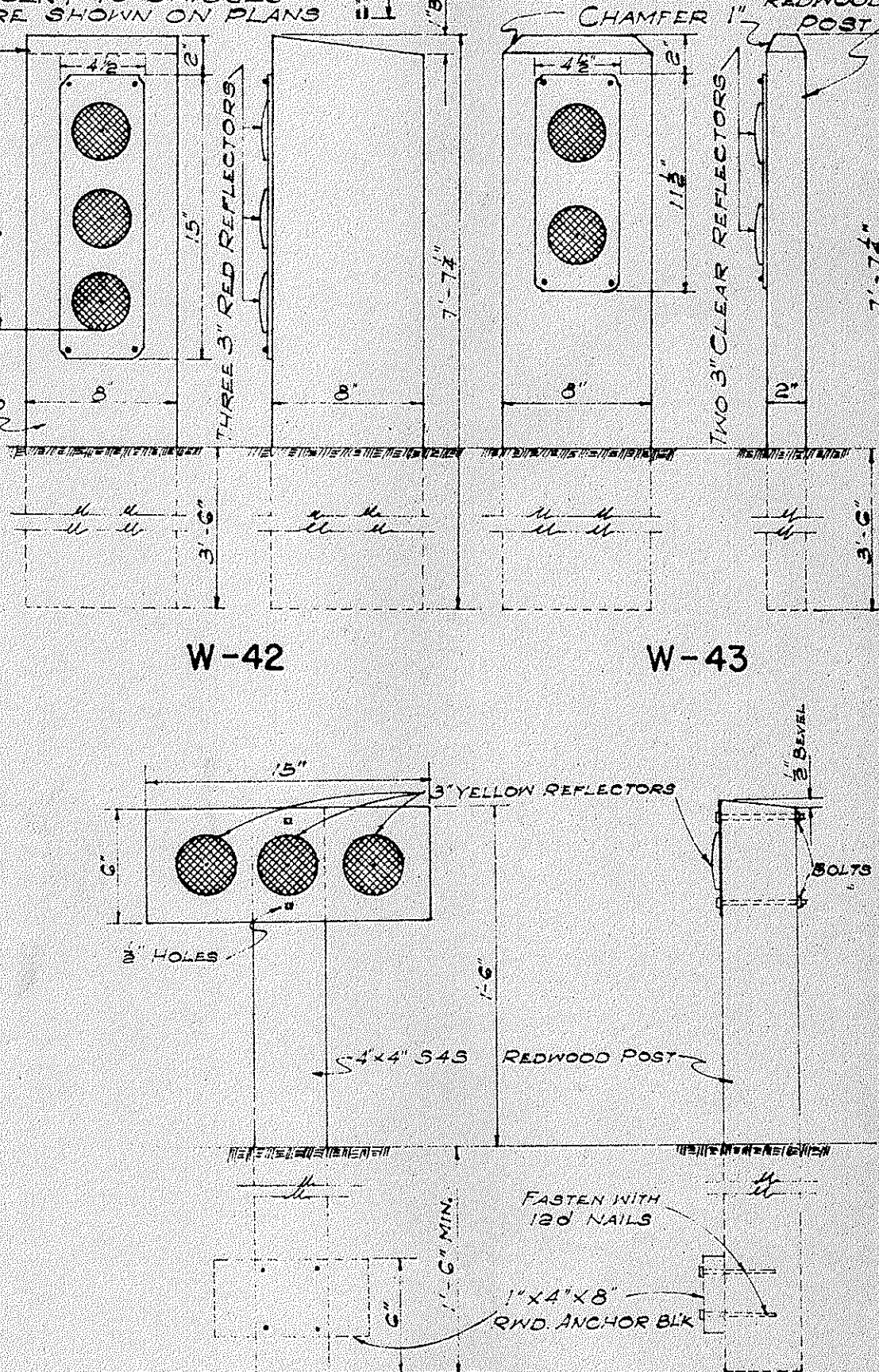
STANDARD DETOUR SIGN
Scale: 1/2" = 1'-0"



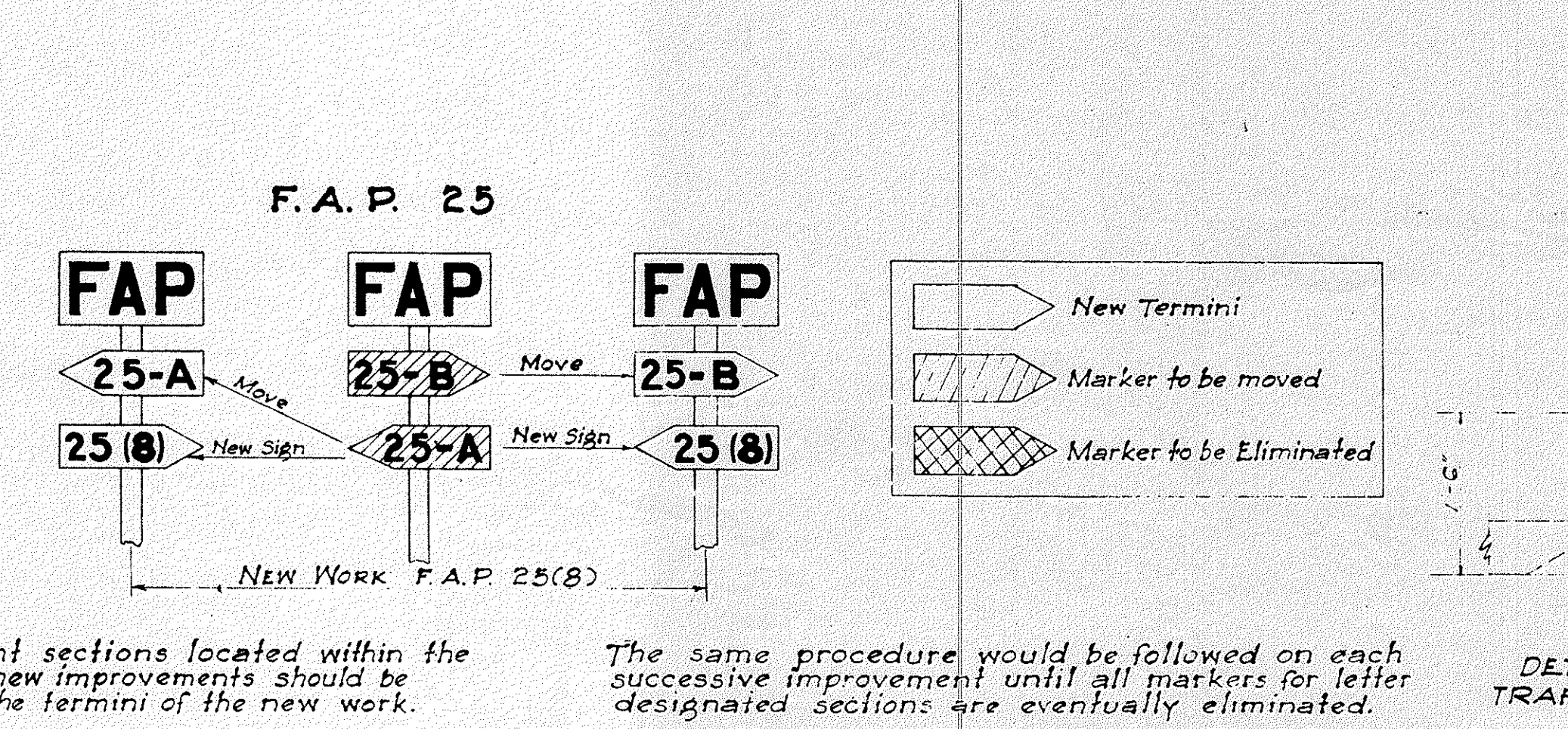
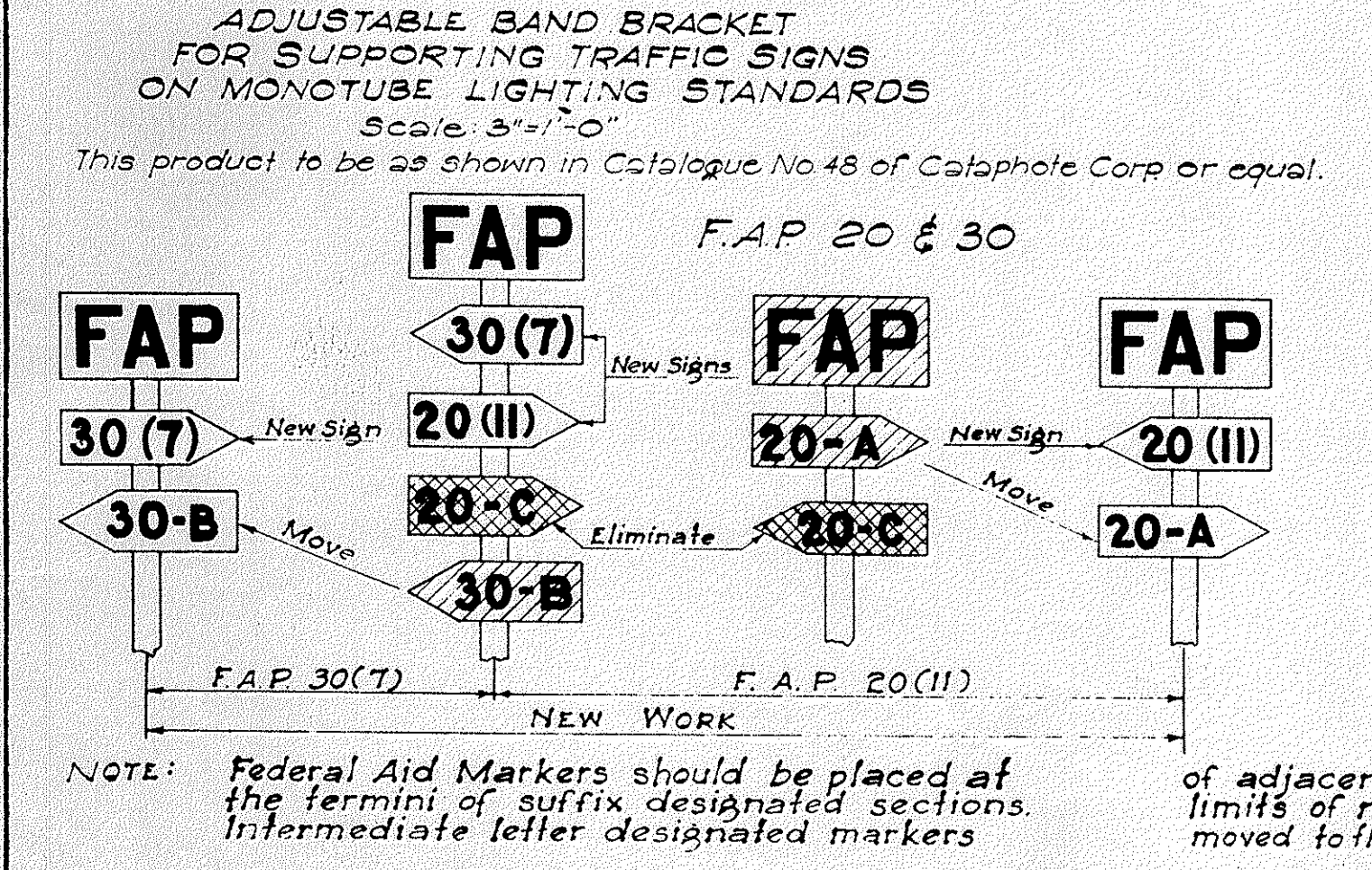
STANDARD C & C STREET SURVEY MONUMENT



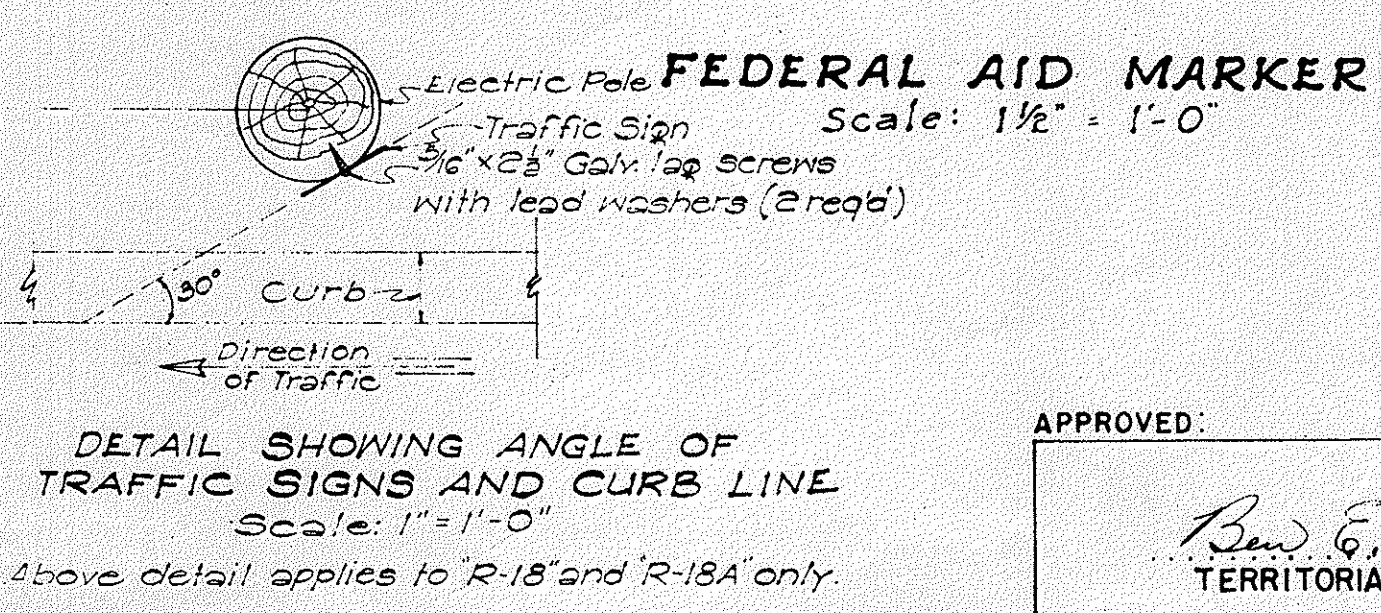
FEDERAL AID MARKER
Scale: 1 1/2" = 1'-0"



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



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: DATE: 6-23-53
Territorial Highway Engineer

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