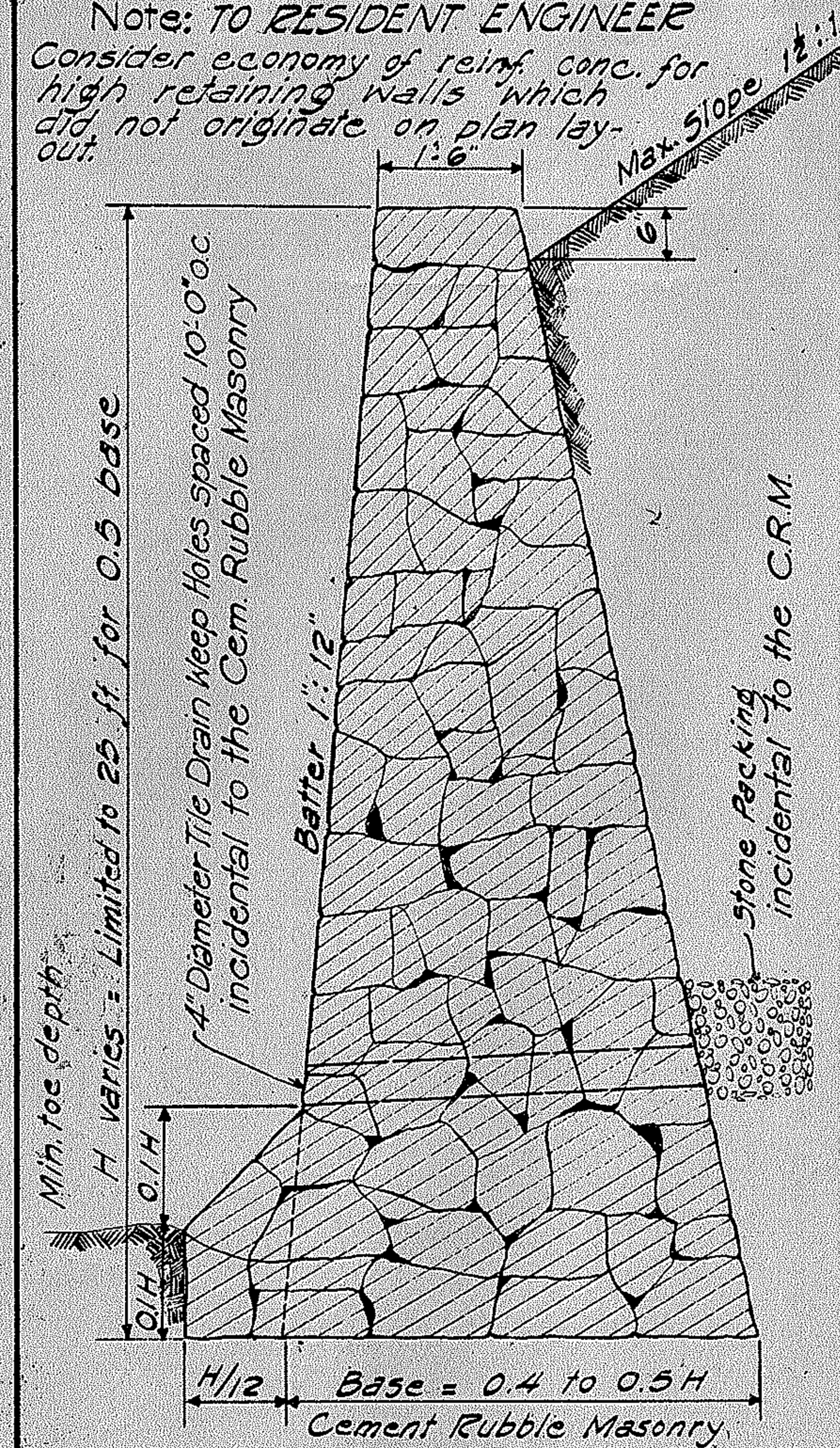
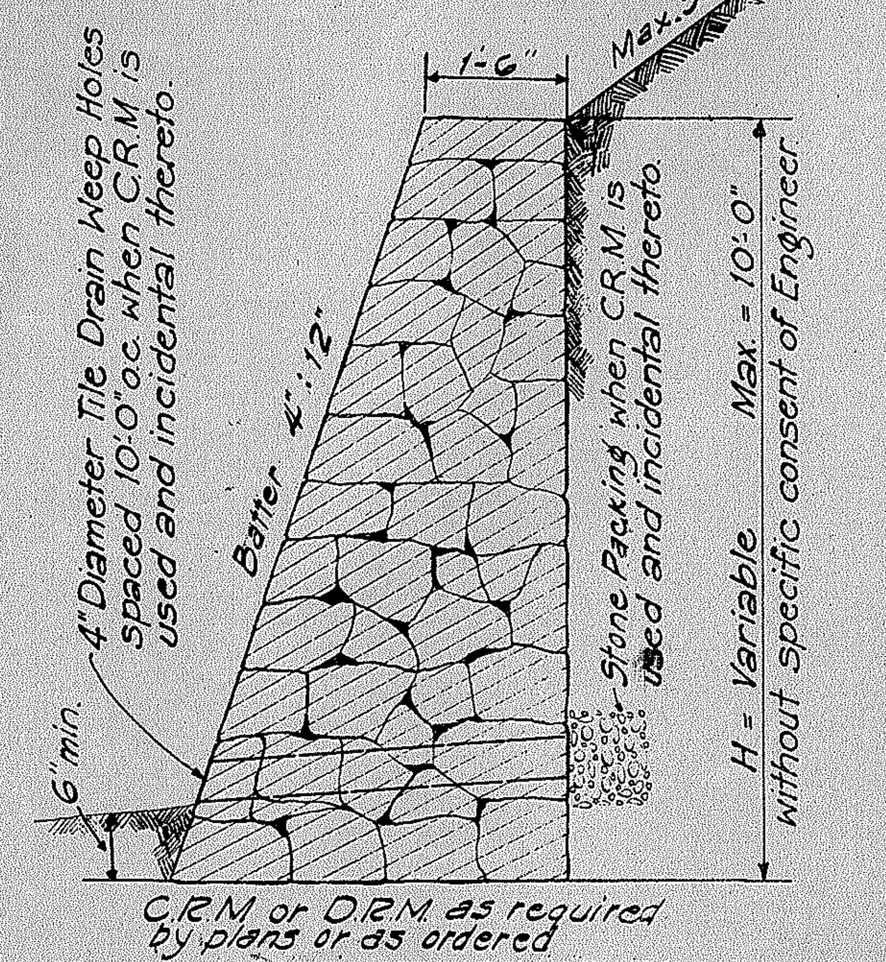
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	ER-2(1)	1951	7	17

Note: TO RESIDENT ENGINEER
Consider economy of reinf. conc. for high retaining walls which did not originate on plan layout.



STANDARD SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL



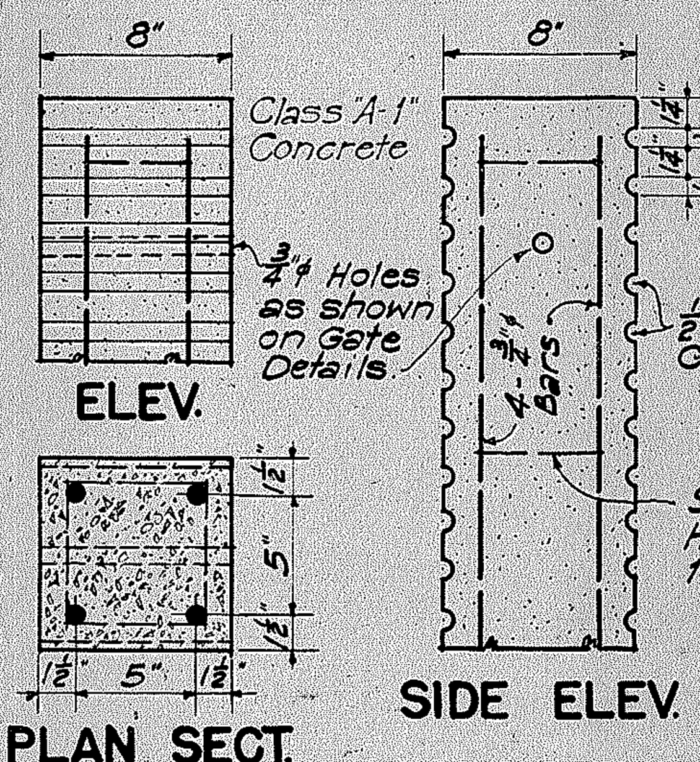
STANDARD SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

NOTE:
Elevation of weep holes to be determined by Resident Engineer. Holes to be placed as close to the existing ground line as local conditions permit.

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

Data Standard Masonry Drop Intake				Where Variable Equals
D'	D	L = D+6"	Cu. Yds	
22½"	18"	2'-0"	2.41	4'-6"
29"	24"	2'-6"	2.89	5'-0"
35½"	30"	3'-0"	3.38	5'-6"
42"	36"	3'-6"	3.92	6'-0"

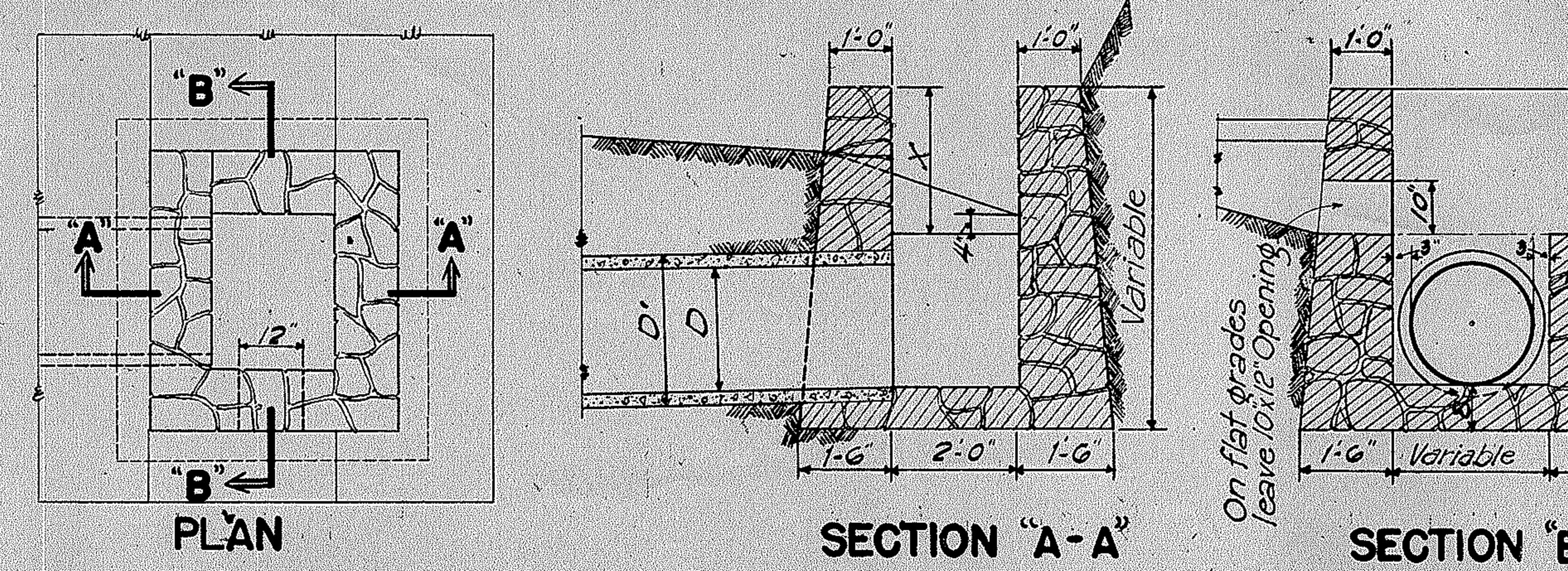
NOTE: Dimension "X" is assumed as 2'-4" in figuring the above quantities.



CONC. GATE POST

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

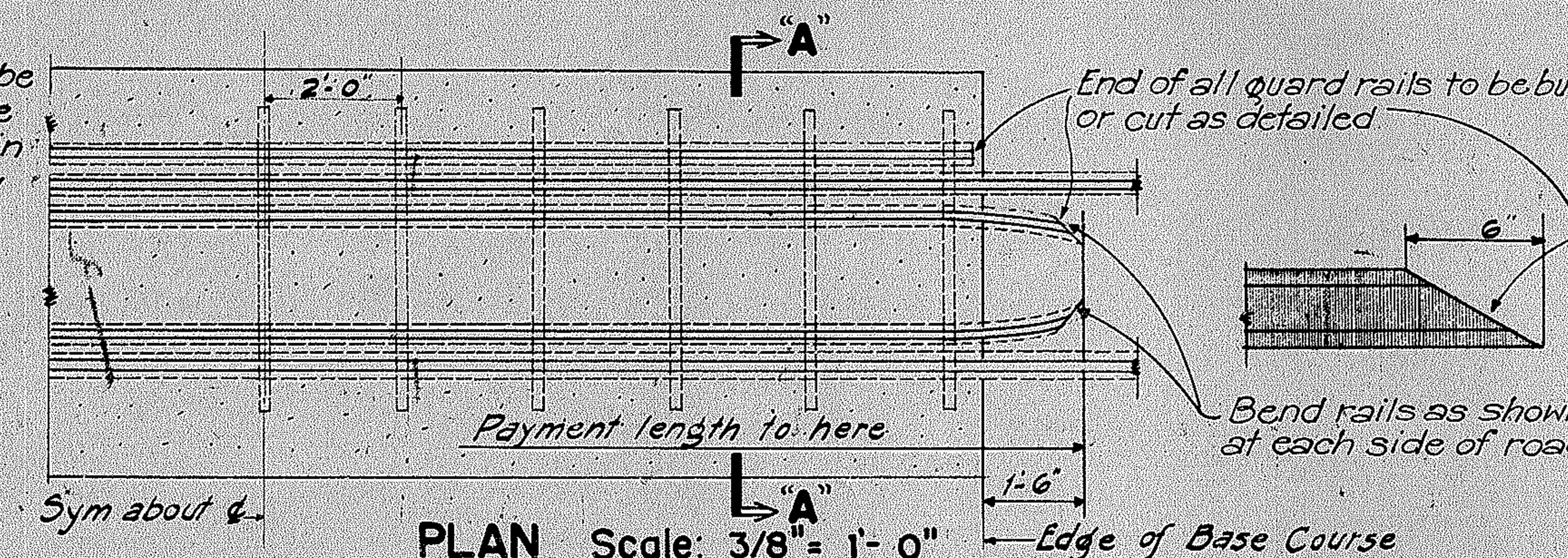
NOTE:
Contractor may either cast holes for fastening fence wire or cast post with ¾"-½ round grooves on 2 sides.

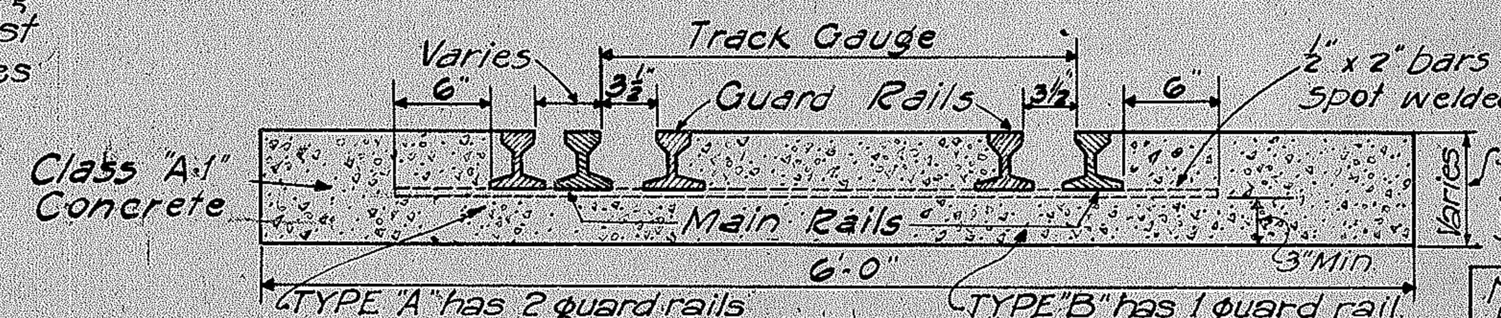


STANDARD MASONRY DROP INTAKE

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

NOTE:
Guard rails are to be of the same shape and weight as Main rails. Details may be varied to suit conditions in field.

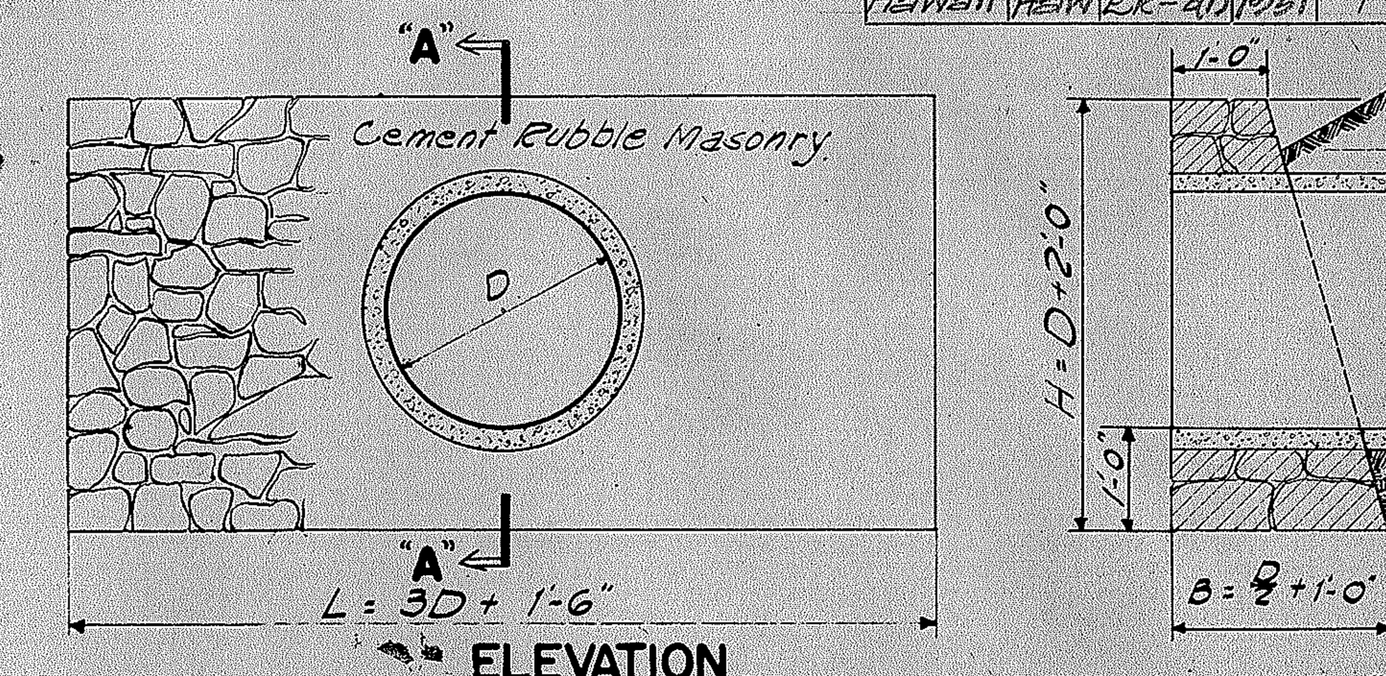




SECTION "A-A" Scale: 1-1/2" = 1'-0"

INDUSTRIAL TRACK CROSSING

NOTE: Use TYPE "A" if neither TYPE "A" or "B" is specified



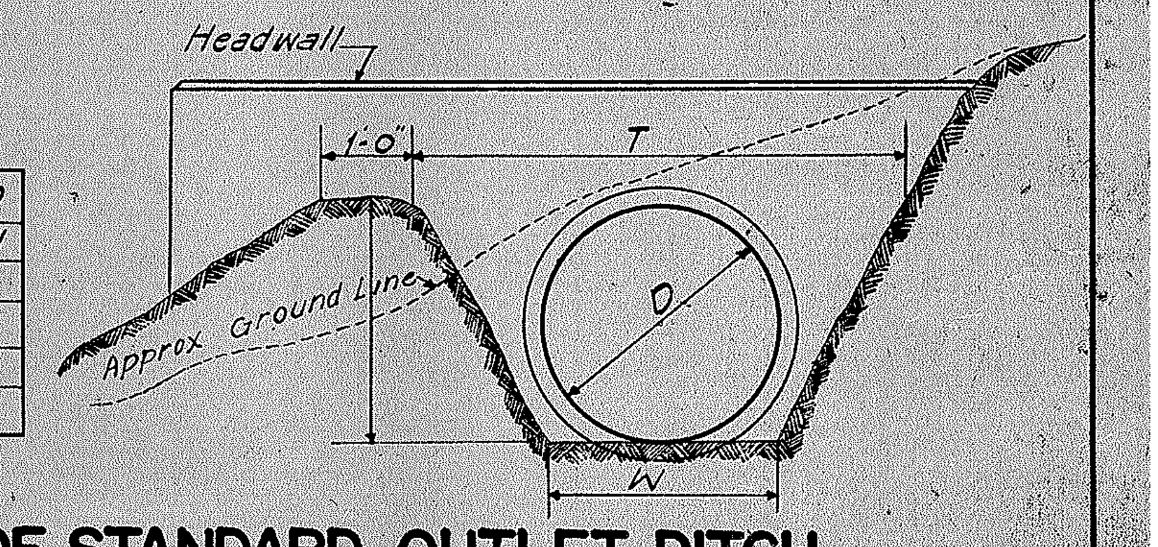
Cast-in-Place	Precast	Data-Standard Rubble Masonry H.W.				
Cu. Yds.	Cu. Yds.	D	H	B	L	C.Y. one H.W.
0.85	0.95	18"	3'-6"	1'-9"	6'-0"	0.93
1.28	1.45	24"	4'-0"	2'-0"	7'-6"	1.41
1.83	2.06	30"	4'-6"	2'-3"	9'-0"	2.00
2.49	2.84	36"	5'-0"	2'-6"	10'-6"	2.72

NOTE! Volume for one head wall is for corrugated pipe culvert

STANDARD MASONRY HEADWALL

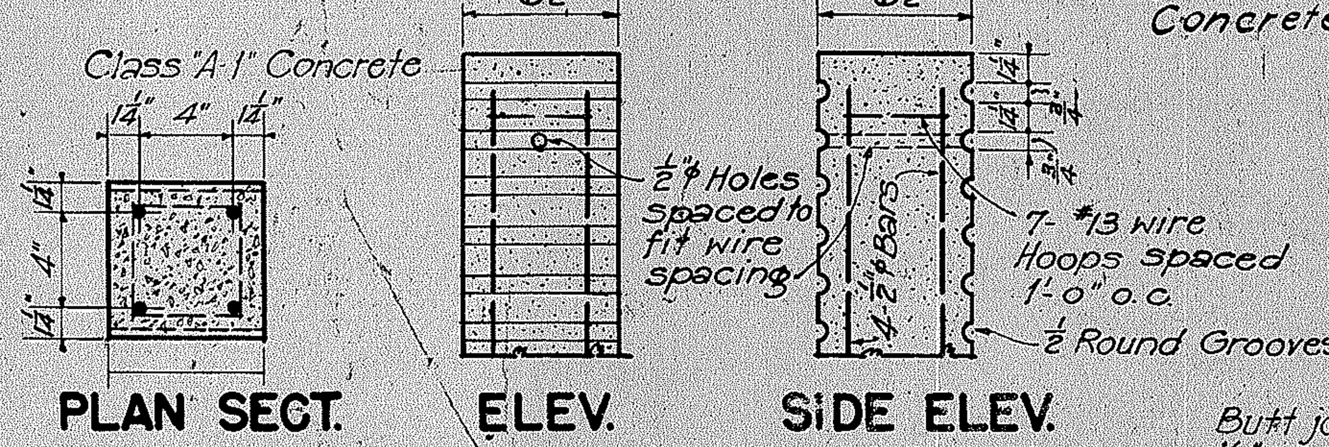
Scale: 1/2" = 1'-0"

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



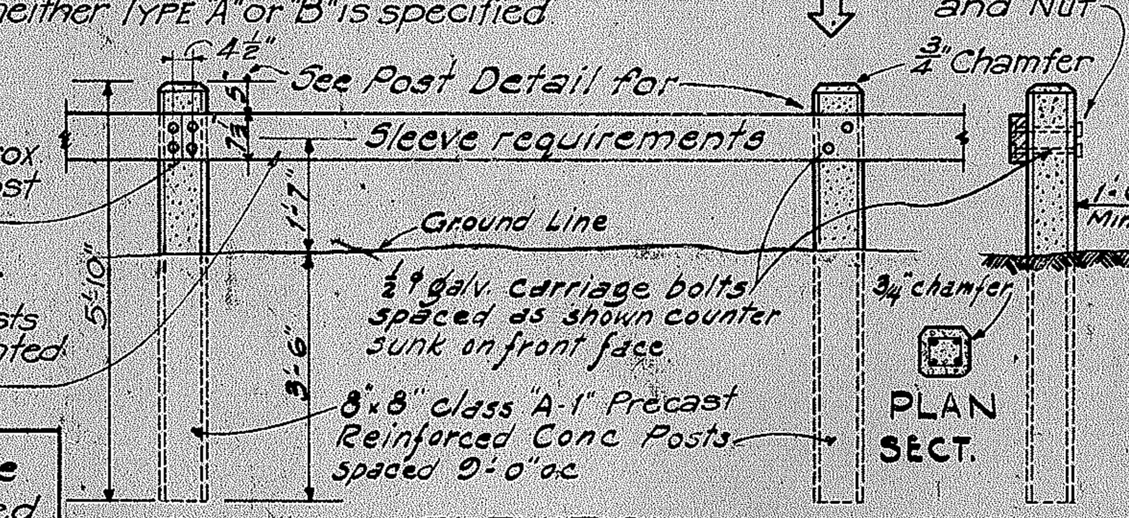
DETAIL OF STANDARD OUTLET DITCH

NOTE: Suggest holes in rail for bolts be bored from back of post after lining up and temporarily fastening rails.



CONC. FENCE POST

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

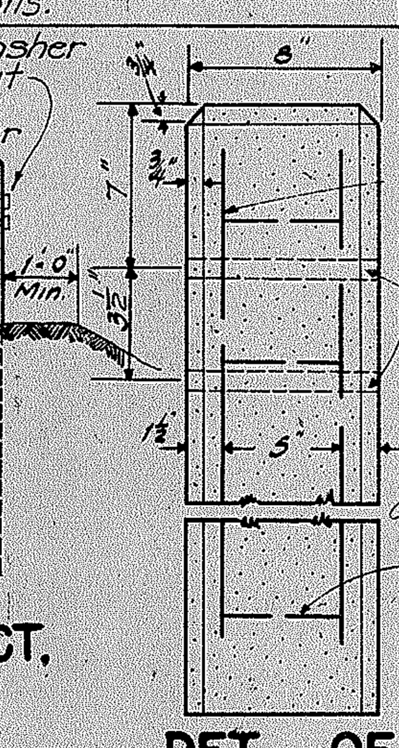


Butt joints to be left open approx. ½" and spaced every other post except on sharp curves.

4"x 8"x 18'-0" S4S Railing painted 3 coats of white paint. Contact surfaces between posts and rails and all butt joints shall be painted 3 coats before assembly.

STANDARD WOOD GUARD RAIL

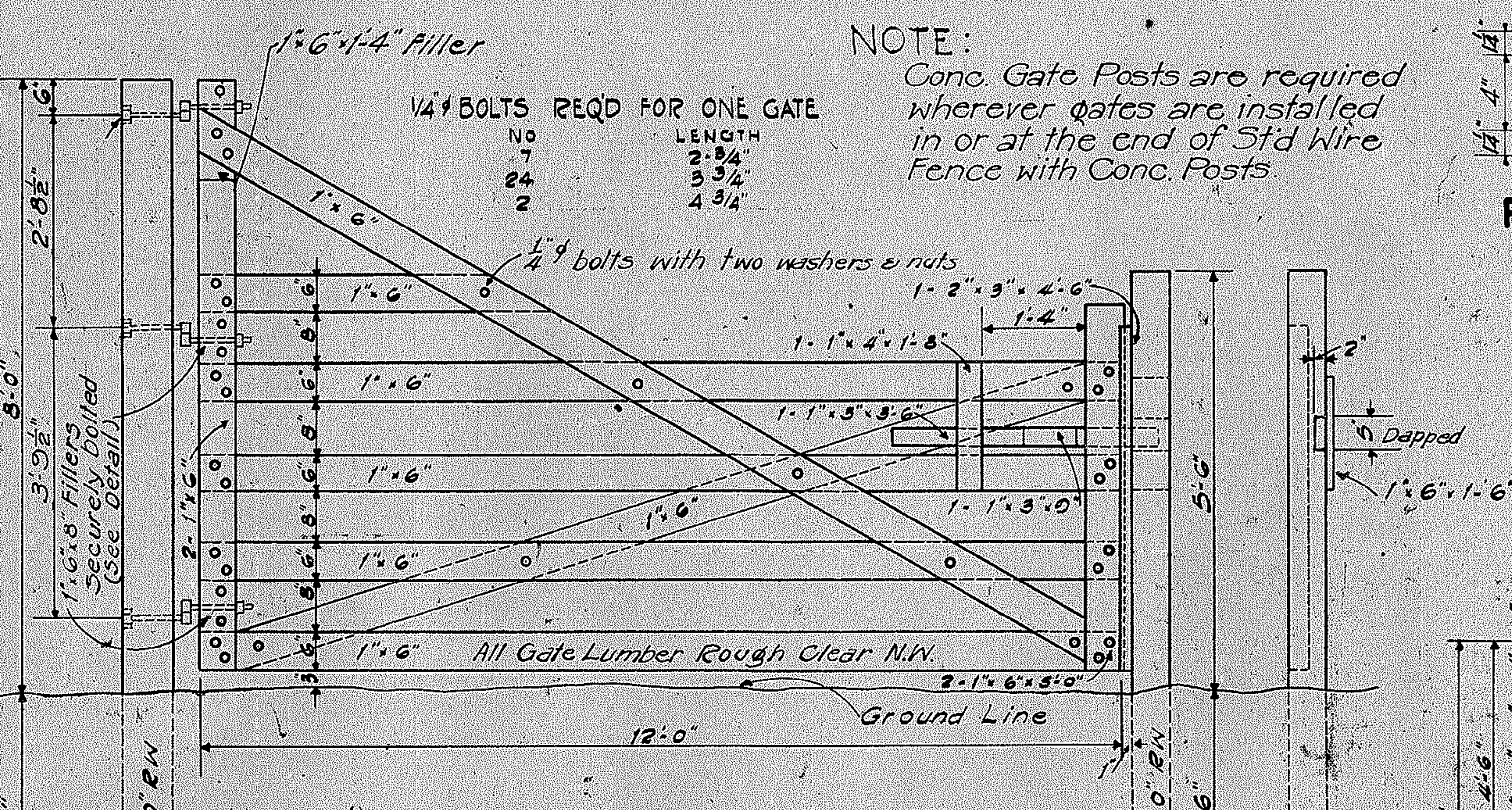
Scale: 3/8" = 1'-0"



DET. OF CONC. POST

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

STANDARD GUIDE POSTS: 8"x8" Rein. Conc. Guide Posts are the same as those used for Std Wood Guard Rail spaced 18'-0" oc unless otherwise specified



¼" ø BOLTS REQ'D FOR ONE GATE

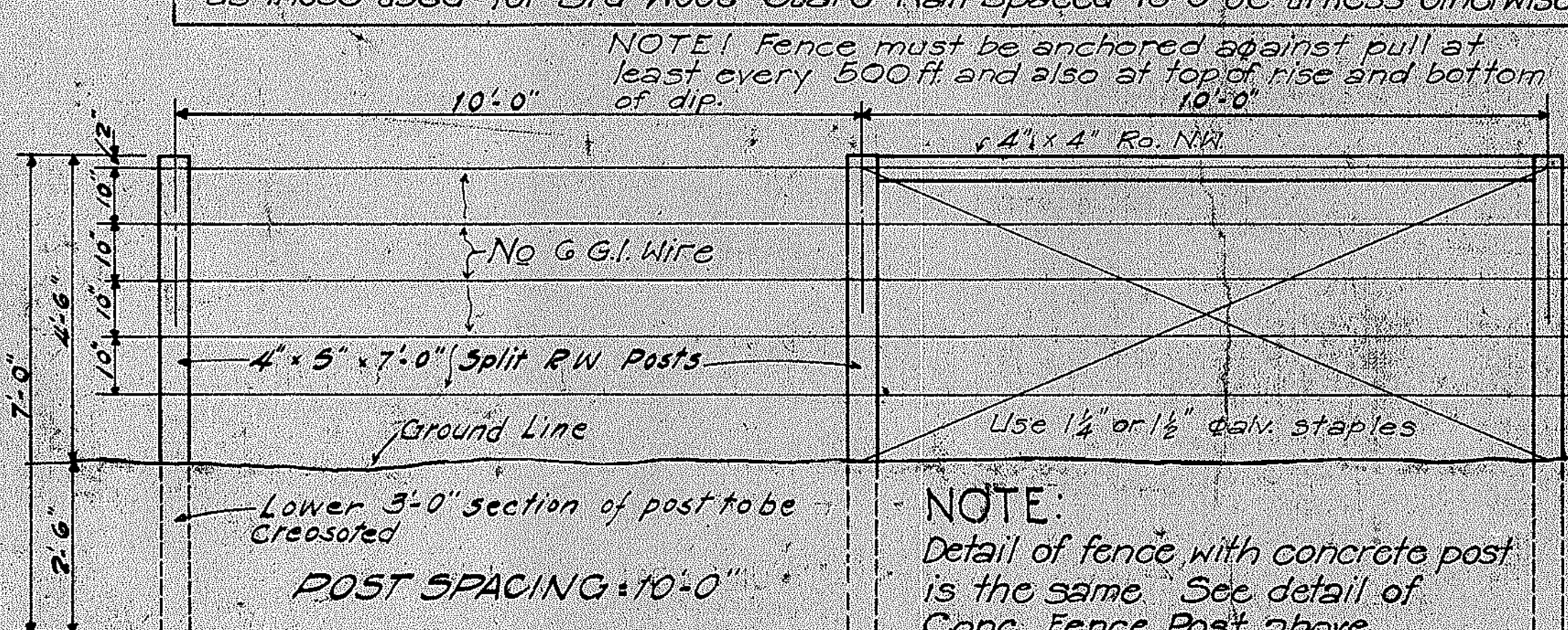
NO	LENGTH
7	2-3/4"
24	3 3/4"
2	4 3/4"

DETAIL OF STANDARD CATTLE GATE

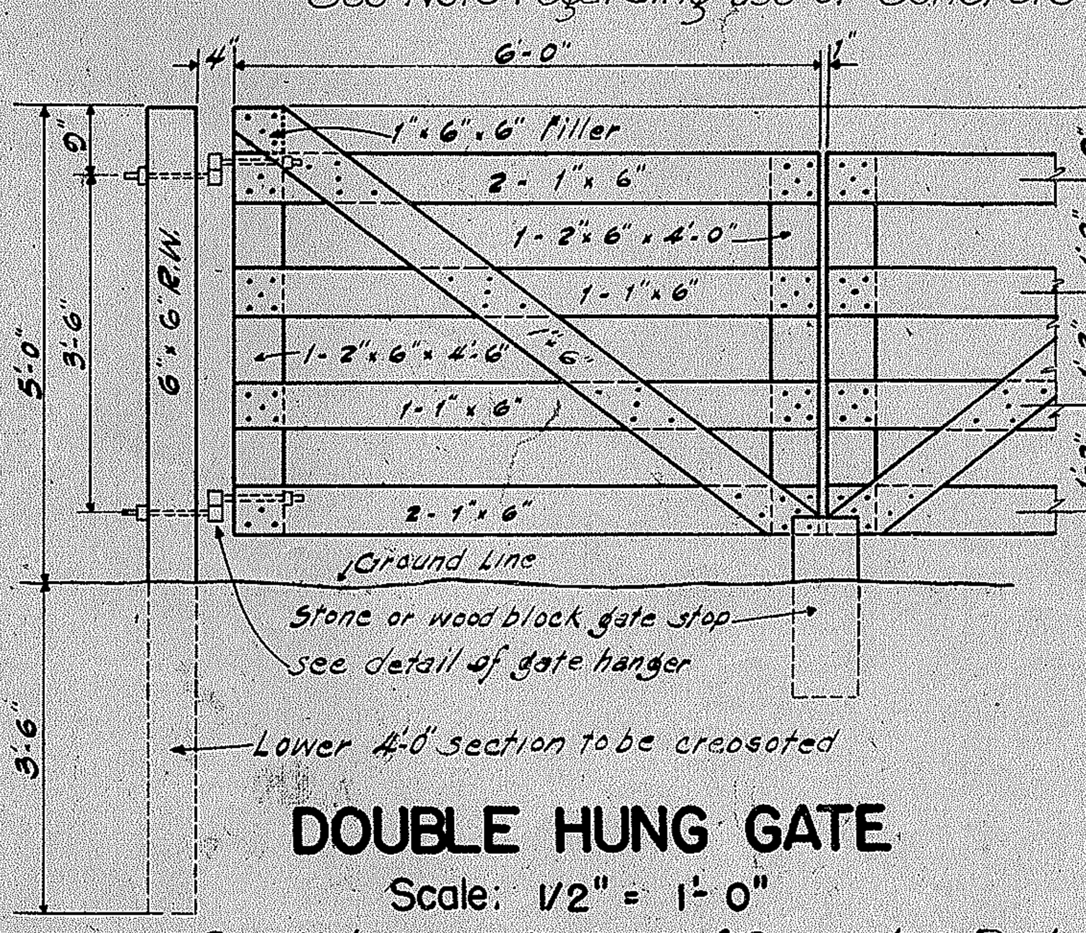
Scale: 1/2" = 1'-0"

See Note regarding use of Concrete Posts.

PLAN SECT. SIDE ELEV.



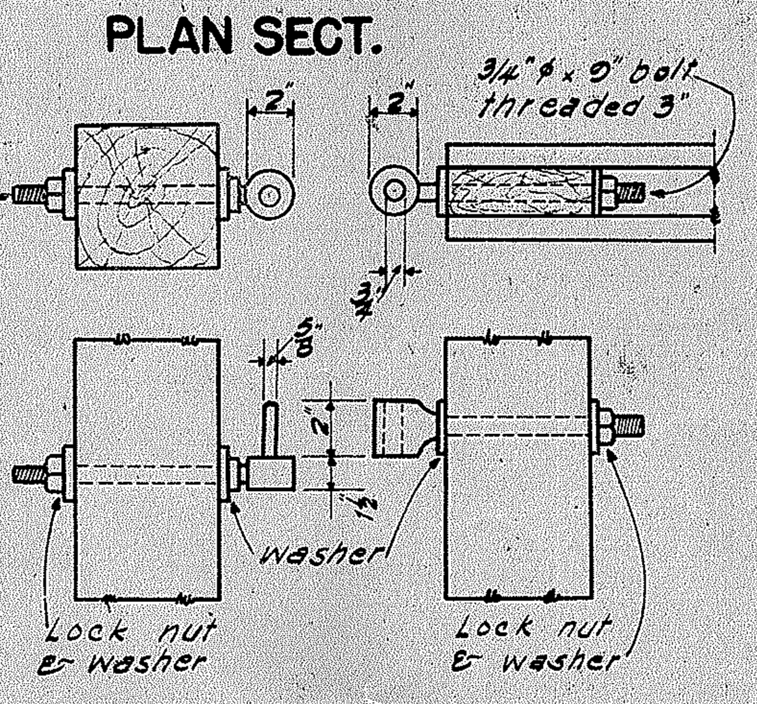
NOTE:
Detail of fence with concrete post is the same. See detail of Conc. Fence Post above.



DOUBLE HUNG GATE

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

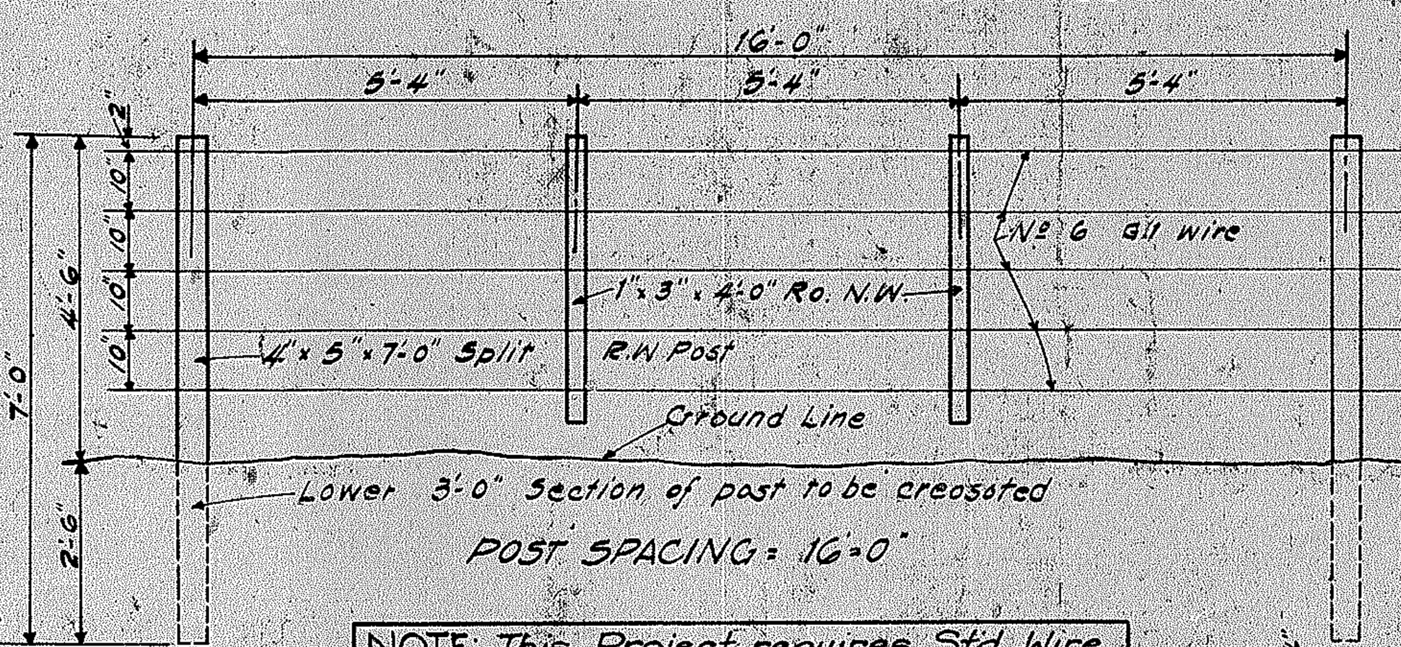
See Note regarding use of Concrete Posts.



DETAIL OF GATE HANGER

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

Note: Use ¾" ø x 11" bolts for cattle gate



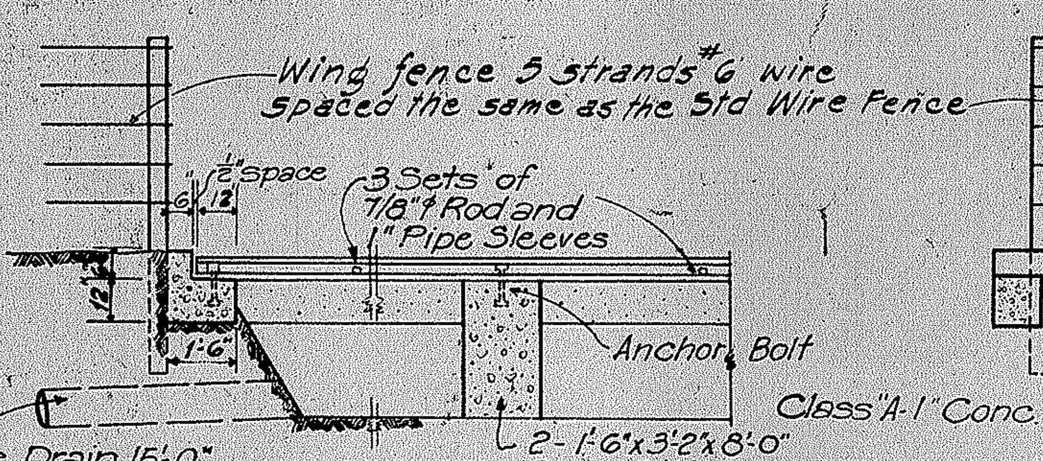
NOTE: This Project requires Std Wire Fence with 10 ft post spacing. (If spacing is not indicated above, use 10 ft.)

DETAILS OF STANDARD WIRE FENCE WITH WOODEN POSTS

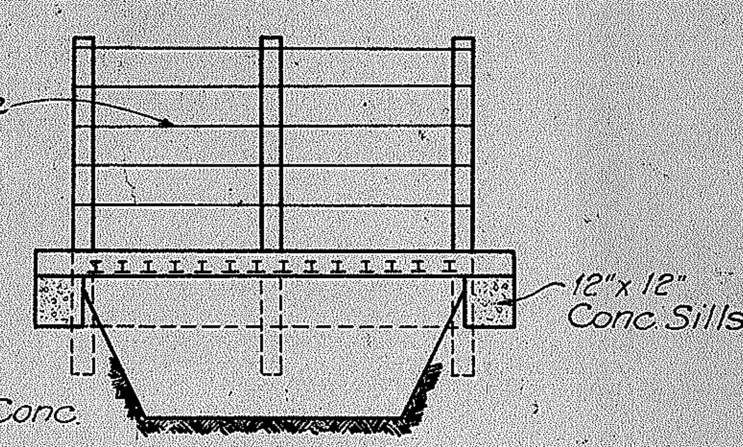
Scale: 3/8" = 1'-0"

NOTE TO ENGINEER: Fence must be on road R/W to participate in Fed. Aid. Consult office if uncertain what to do.

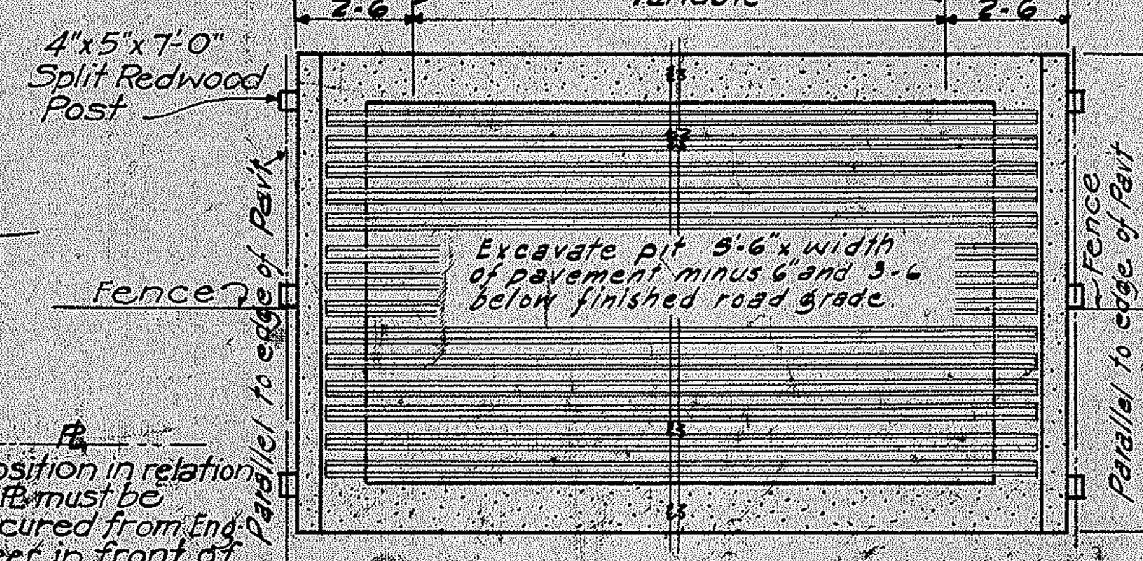
Position in relation to ℄ must be secured from Engineer in front of each separate property.



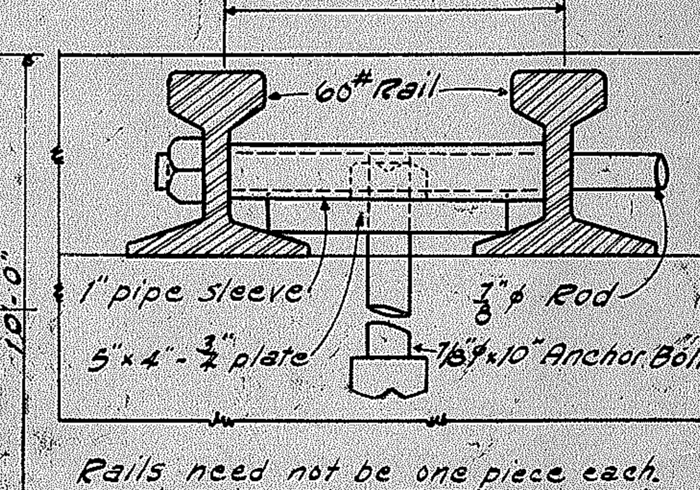
PART LONG. SECTION



CROSS SECTION

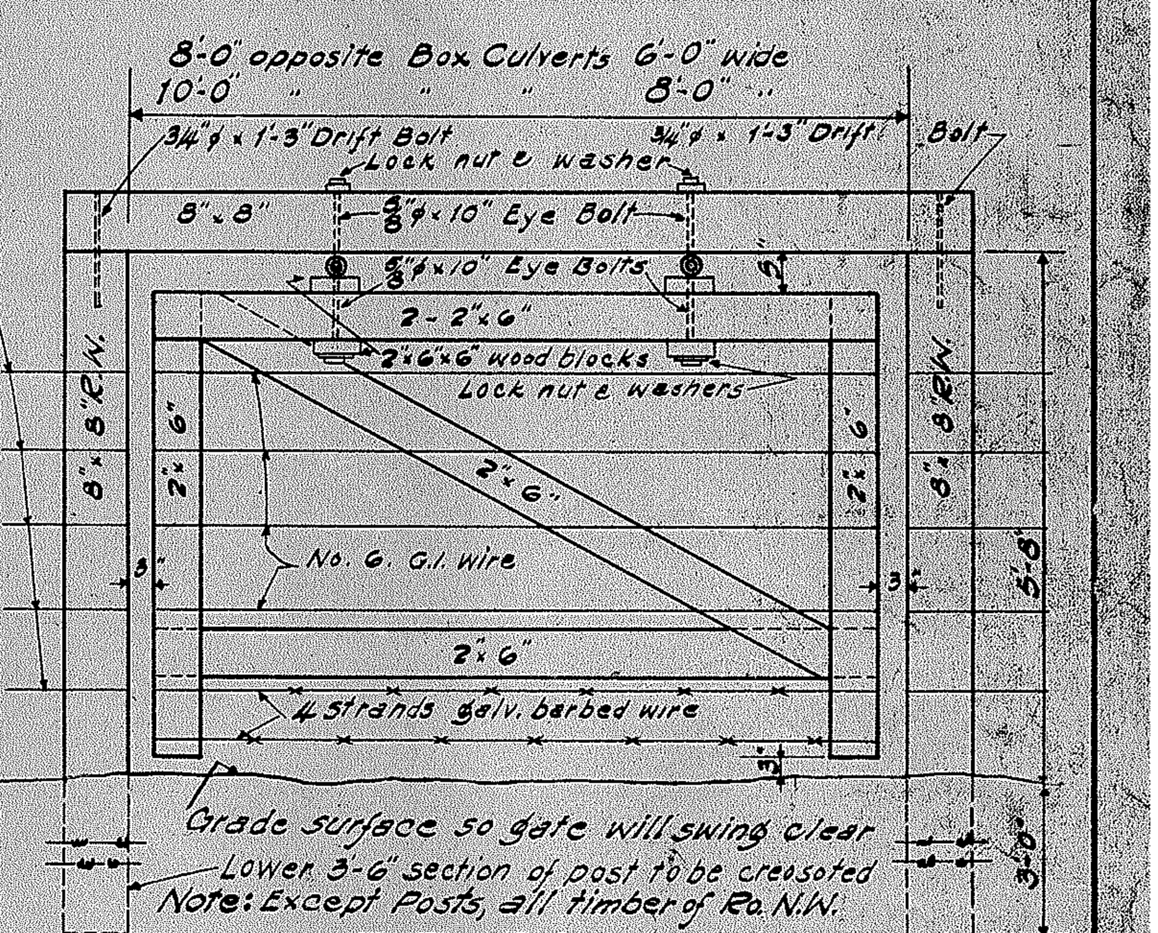


PLAN



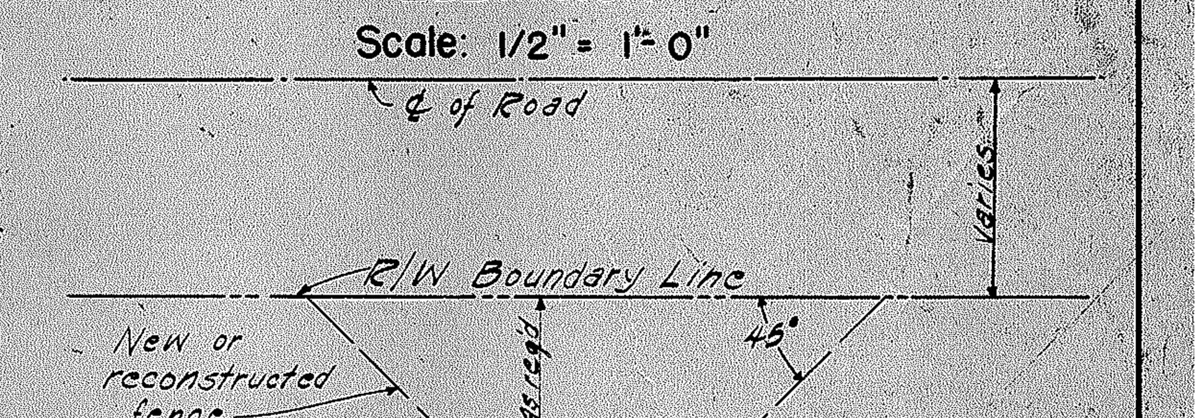
Rails need not be one piece each. Each rail may be spliced once with Std Fish Plate.

DETAILS OF CATTLE GUARD



ELEVATION

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



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

DETAILS OF HURDLE

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

SCALES AS NOTED Apr. 15, 1948

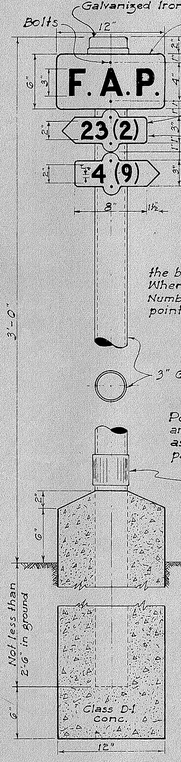
APPROVED: [signature]
Territorial Highway Engineer

SHEET № 1 OF 2 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY S. Uzambu	
NOTE BOOK	QUANTITIES BY	
	QUANTITIES CHECKED BY	
No.	CHECKED BY	

553S.7

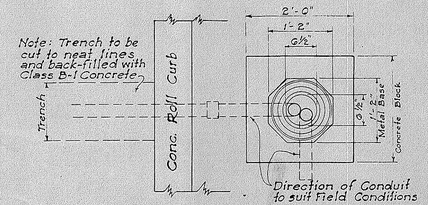
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	ER-2(10)	1951	8	17



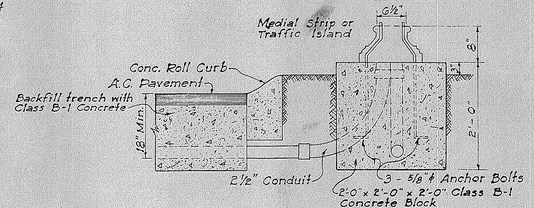
ARRANGEMENT OF MARKERS

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. Project 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.

FEDERAL AID MARKER
Scale: 1½" = 1'-0"



PLAN

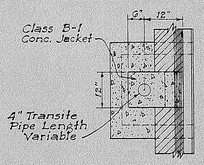


SECTION

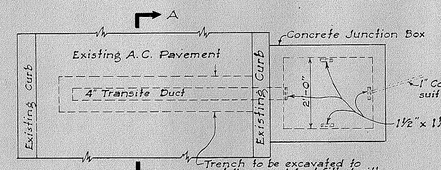
NOTE: Unless otherwise specified, all concrete for base for Traffic Standards, Pull Boxes, Concrete Jackets for Transite Ducts shall be Class B-1 Concrete.

DETAIL OF BASE FOR TRAFFIC STANDARD AND DISPATCHER PEDESTAL

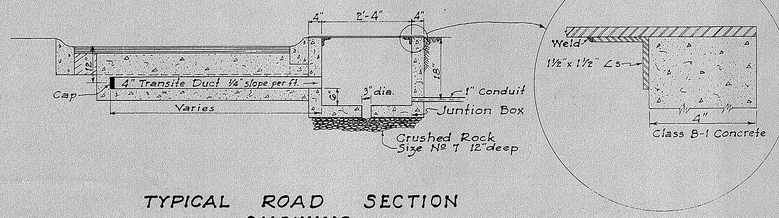
PLAN OF COVER PLATE



SECTION "A-A"

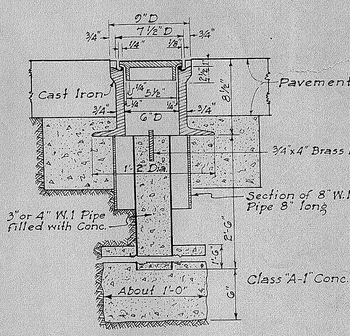


PLAN

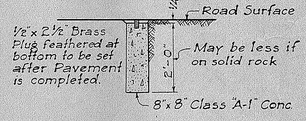


TYPICAL ROAD SECTION SHOWING TRAFFIC DETECTOR JUNCTION BOX AND DUCT

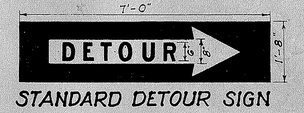
PLAN OF TOP



STANDARD C&C STREET SURVEY MONUMENT



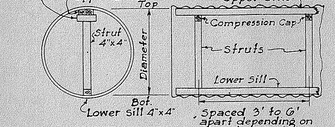
CENTER LINE MONUMENT
Scale: ½" = 1'-0"



STANDARD DETOUR SIGN

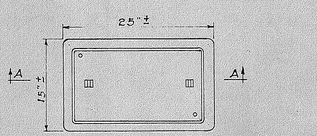
Diameter of Pipe in inches	Length of Struts in inches	Spacing of Struts in ft. for Various Heights FILL 1' to 5'	FILL 5' to 10'	FILL 10 to 20'	FILL 20 to 30'	FILL Over 30'
48	36 3/8	–	–	–	G	4
54	42 3/4	G	G	G	G	4
60	51	G	G	G	G	4
62	57 1/4	G	G	G	G	4
72	G3 5/8	G	G	G	5	3.5
78	G9 7/8	G	G	G	4.5	3.5
84	76 1/4	G	G	G	4	3

NOTE: Length of Struts are based on 4"x4" timbers which is the minimum size recommended. If larger sills or compression caps are used, length of struts should be changed accordingly.

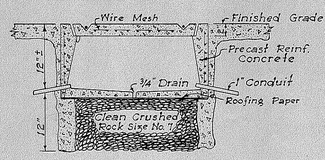


END VIEW LONGITUDINAL SECTION

STRUTTING DIAGRAM & TABLE FOR CORRUGATED METAL PIPE CULVERT



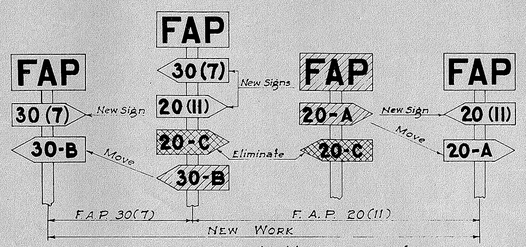
PLAN



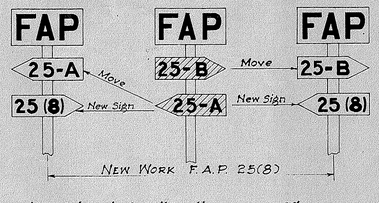
SECTION A-A

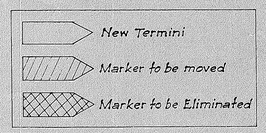
DETAIL OF PULL BOX
Scale: 1" = 1'-0"

F.A.P. 20 & 30



F.A.P. 25





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.

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

ORIGINAL PLAN
SURVEY PLOTTED BY
DESIGNED BY
DRAWN BY T. Tokunaga
CHECKED BY
QUANTITIES BY
CHECKED BY
NOTE BOOK No.
DATE

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
SCALES AS NOTED
May 31, 1949
APPROVED: Territorial Highway Engineer

SHEET No. 2 OF 2 SHEETS

5538.8