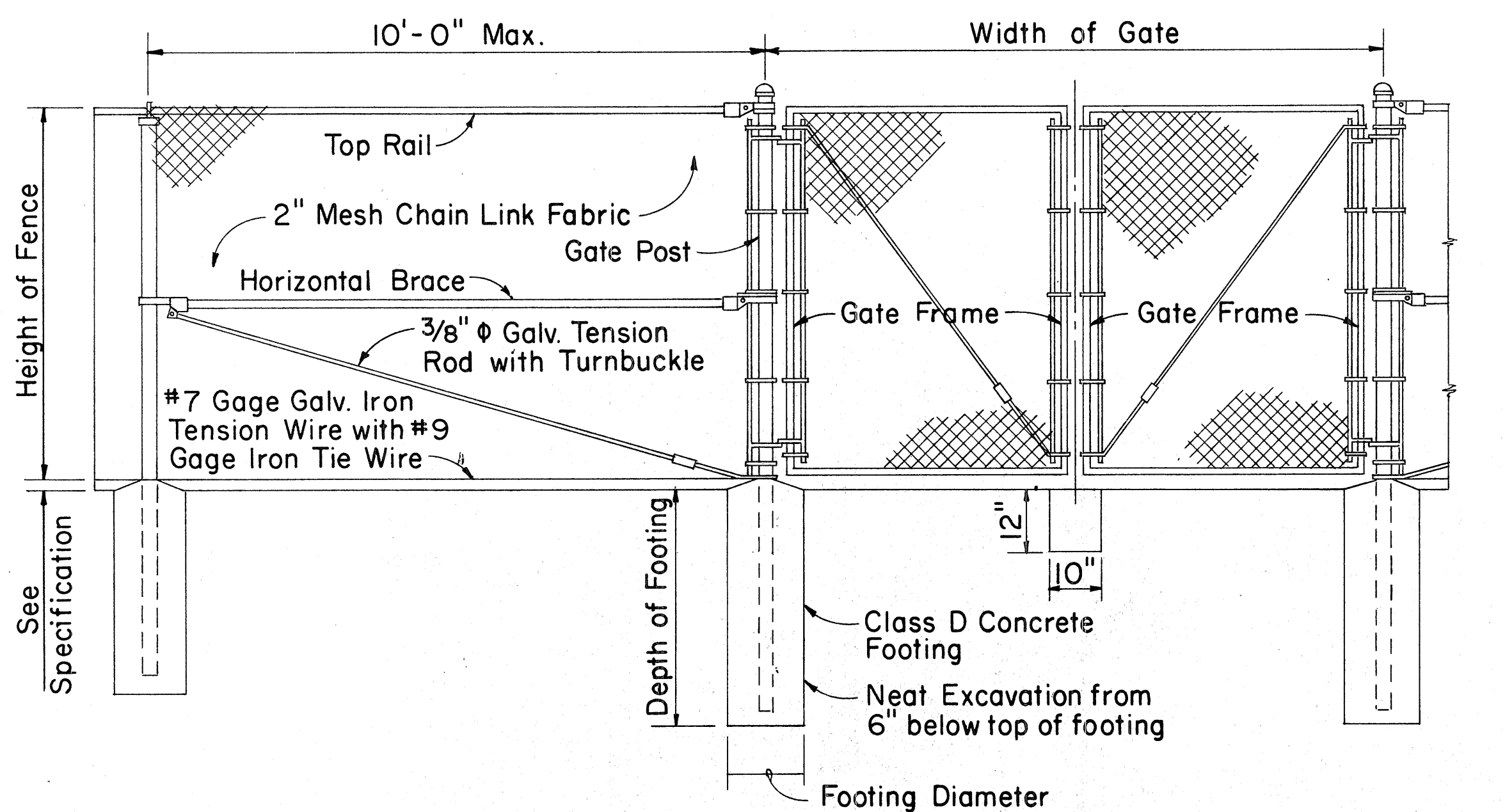
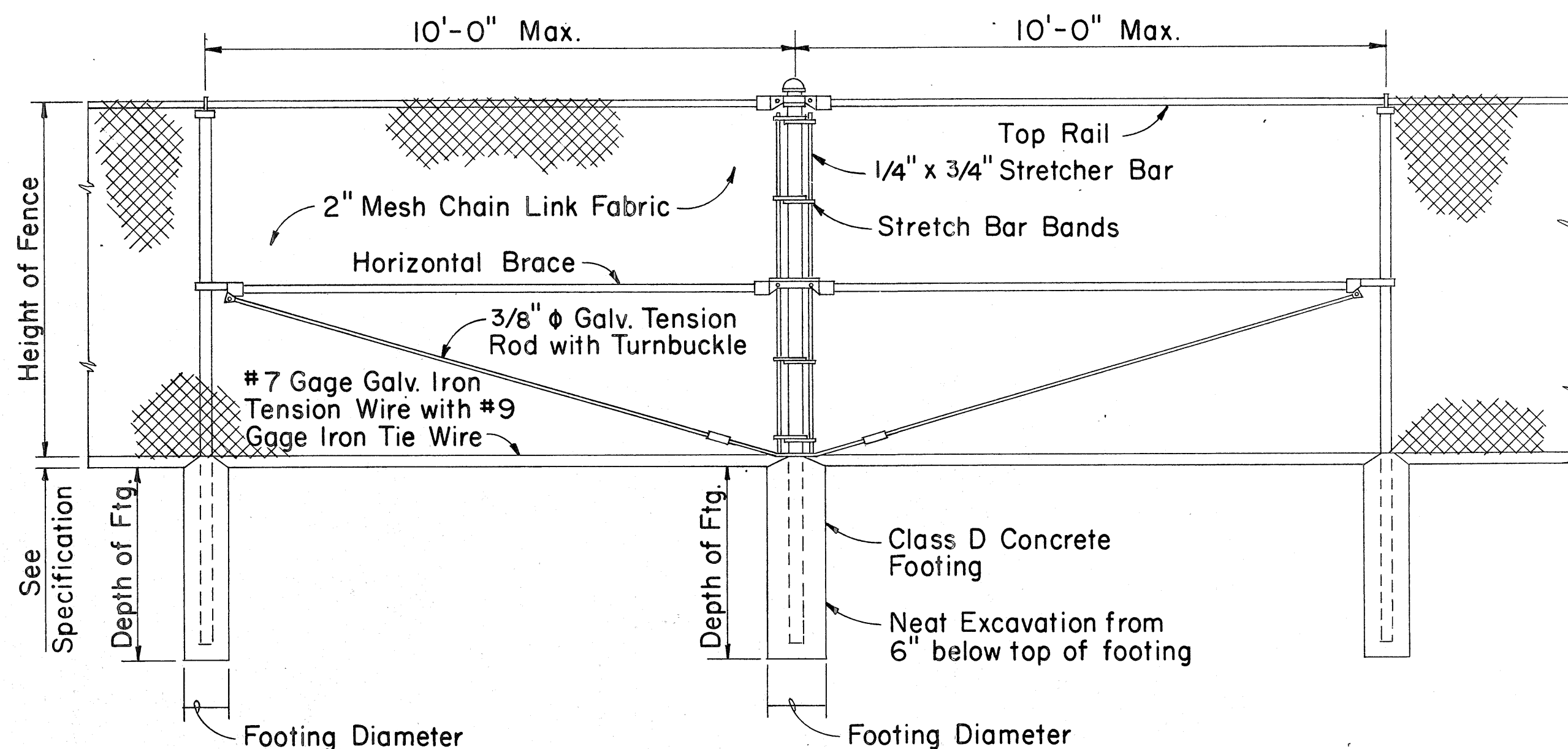


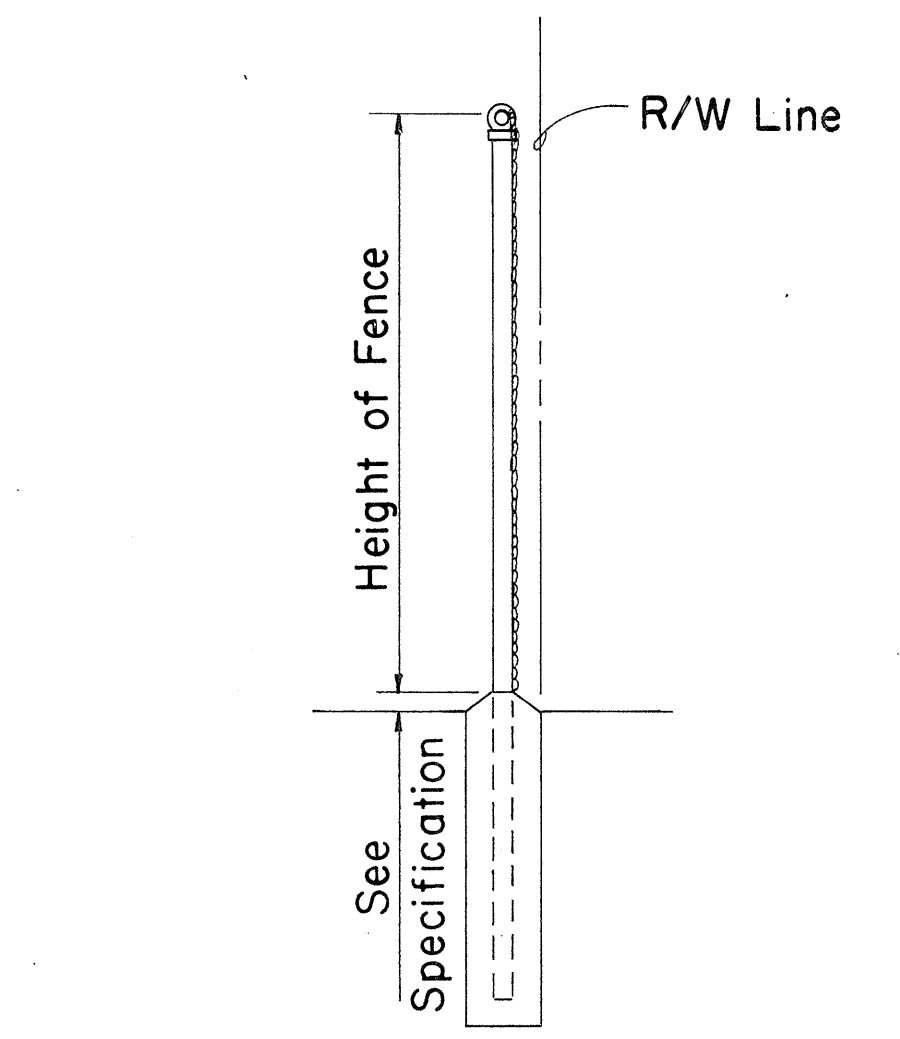
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	24	234



LINE POST GATE POST GATE POST



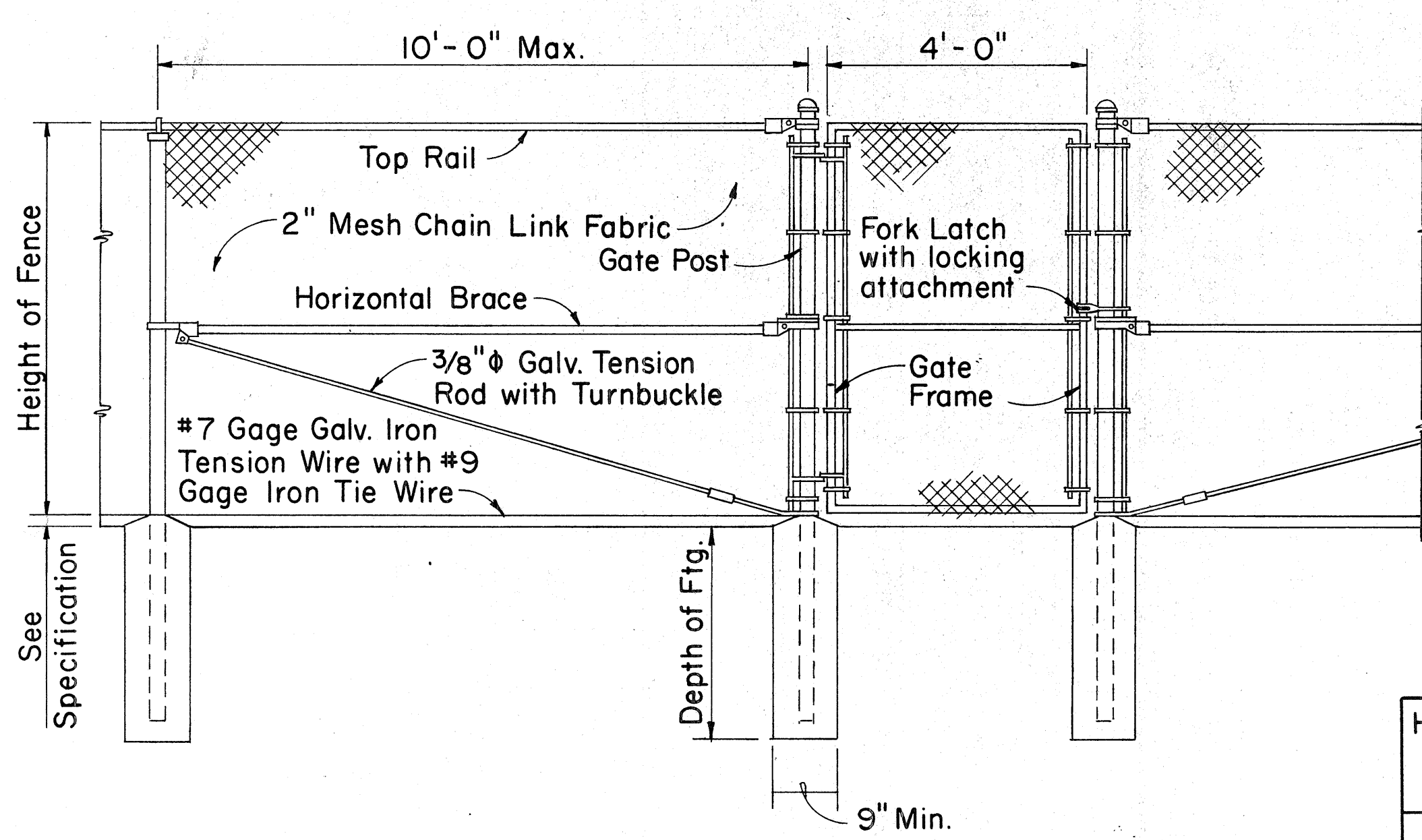
LINE POST PULL POST LINE POST



TYPICAL SECTION
(WITH CONCRETE FOOTING)

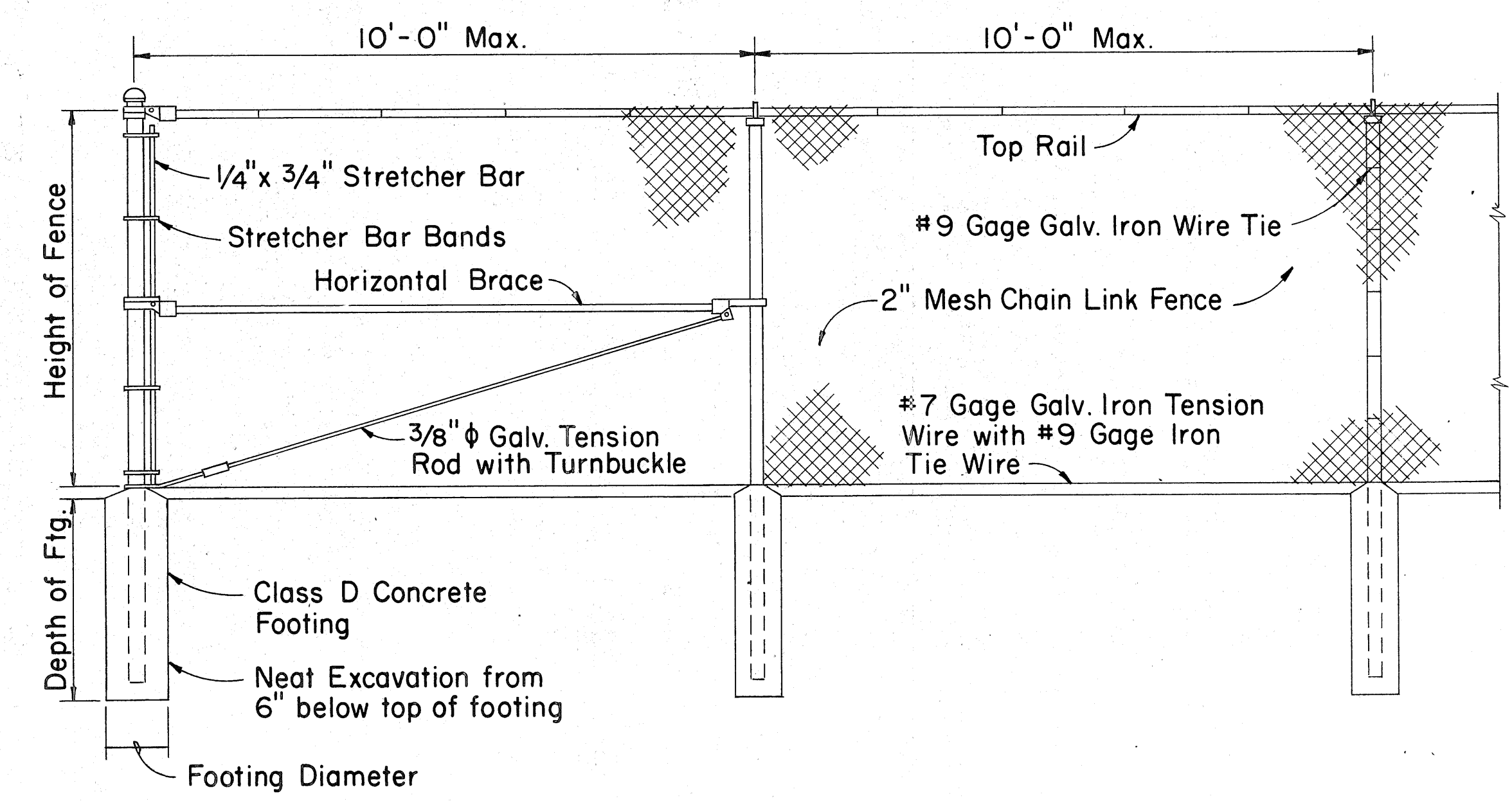
DETAIL OF CHAIN LINK GATE

- NOTE: 1. Gate fork latch and lock, flush plate and anchor, and plunger shall be installed with Gates, and shall be considered as incidental to Chain Link Fence Gate.
2. Gate frames shall be mitered and welded at corners.
3. Fence detail not shown shall be in accordance with the Standard Specifications.

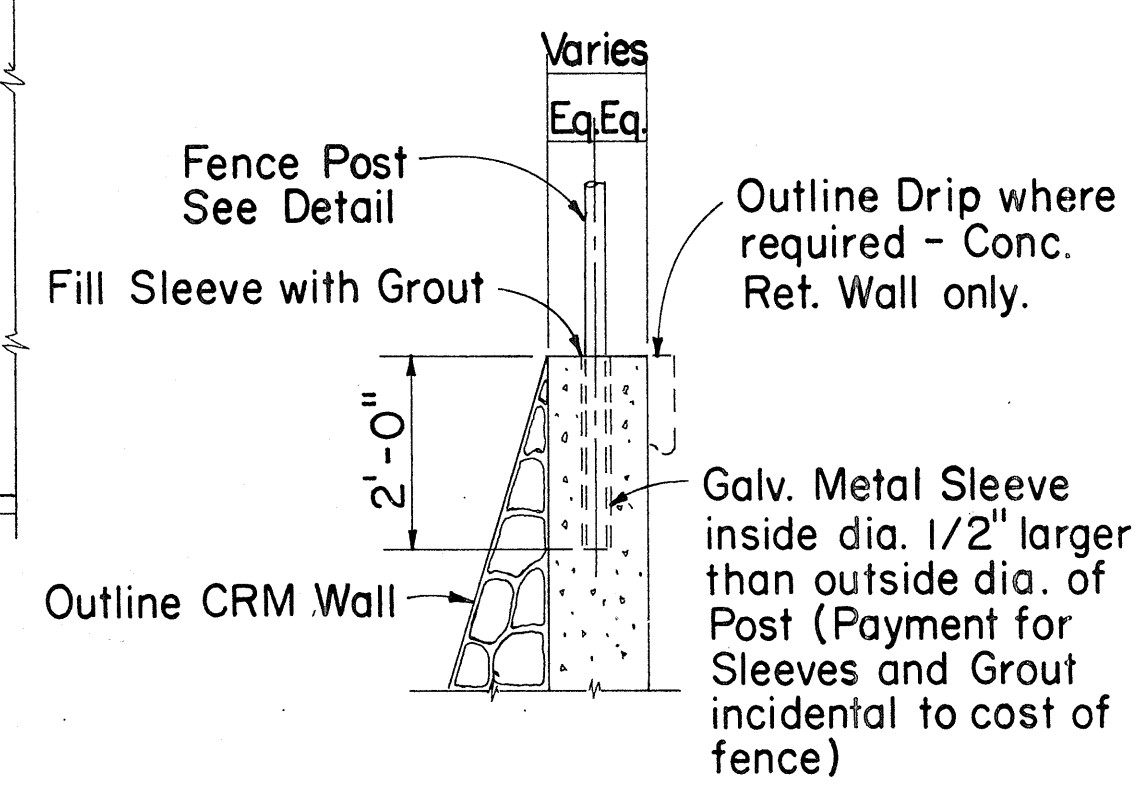


LINE POST GATE POST GATE POST

DETAIL OF 4 FT. CHAIN LINK GATE



END POST LINE POST LINE POST



TYPICAL SECTION
(ON CRM & CONC. RET. WALL)

CHAIN LINK FENCE DETAILS

Height of Fence	Minimum Depth of Footing		Minimum Footing Diameter	
	Line Post	Corner, Pull, End and Gate Posts	Line Post	Corner, Pull and End Posts
3'	2'-0"	2'-6"	8"	8"
4'	2'-6"	2'-6"	8"	8"
5'	3'-0"	3'-0"	8"	8"
6'	3'-0"	3'-0"	8"	9"

APPROVAL RECOMMENDED:

HIGHWAY DESIGN ENGINEER 12-4-69 DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING 12-10-69 DATE

NO.	REVISION	APPROVED BY	DATE

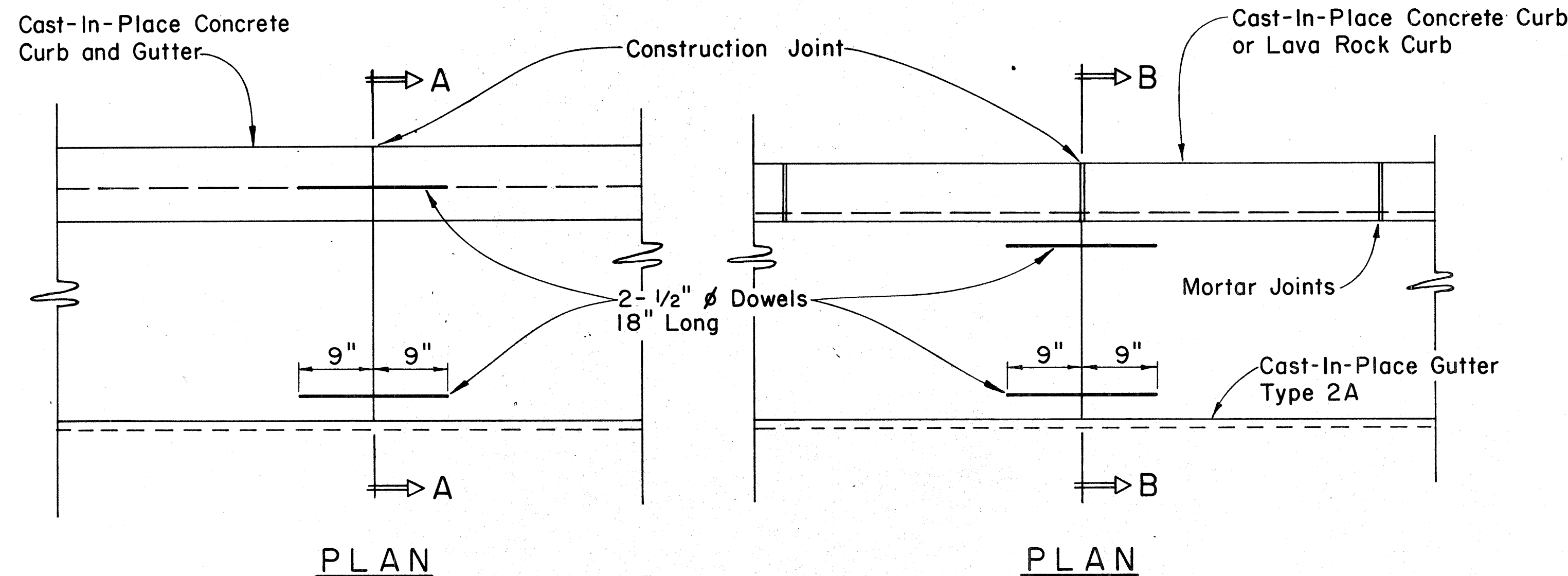
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

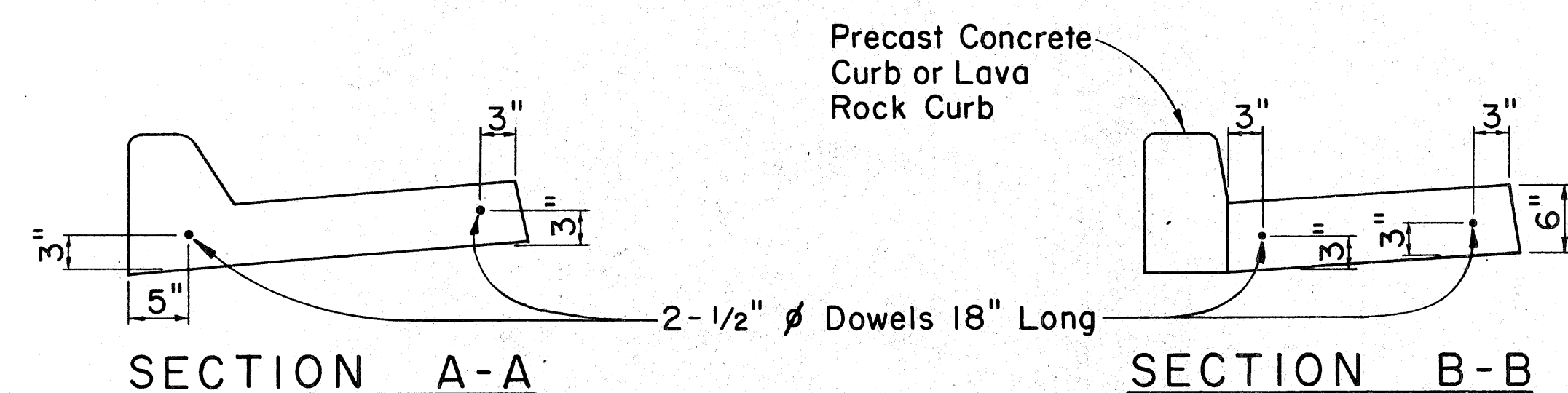
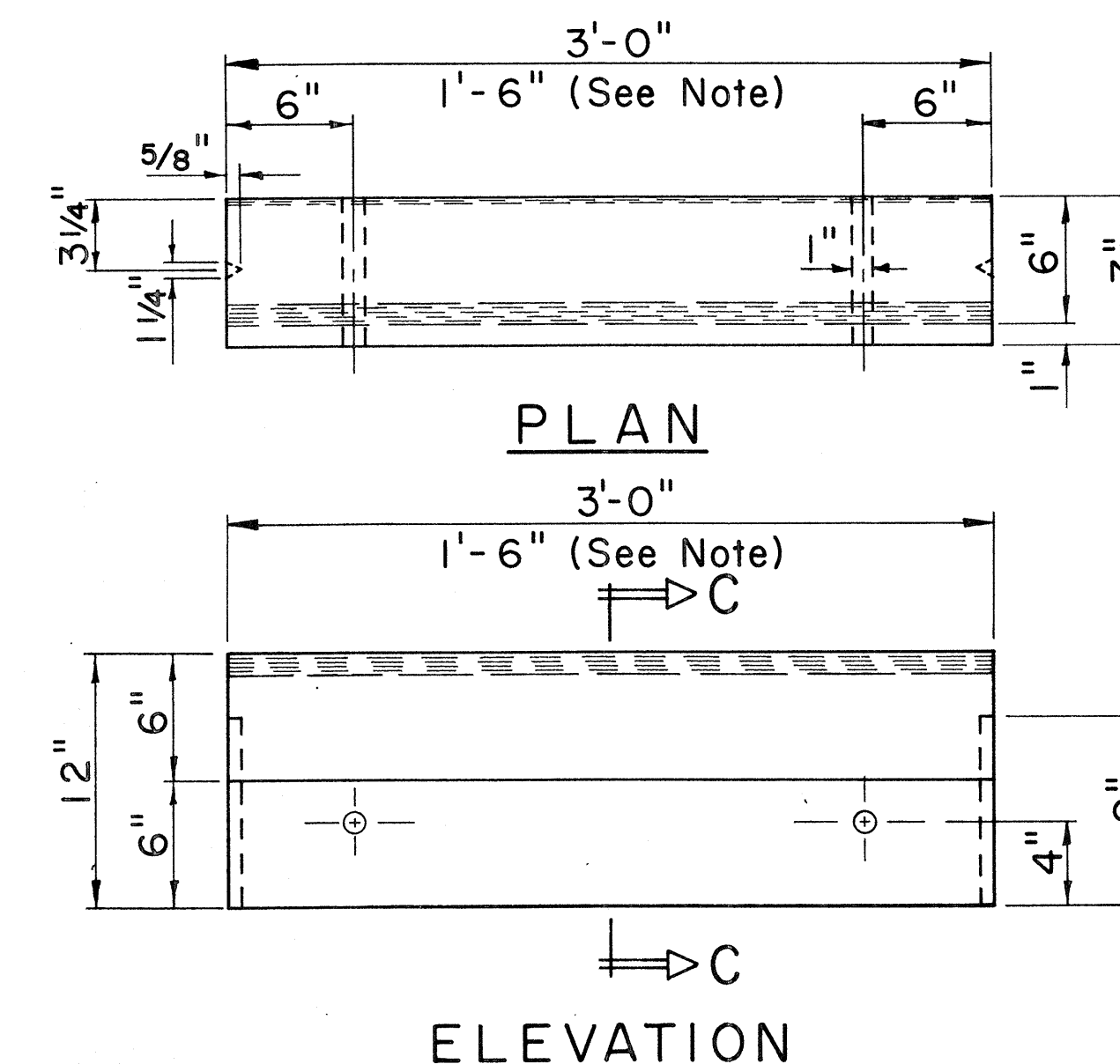
CHAIN LINK FENCE
(WITH TOPRAIL)

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-070-1(21)	1980	25	234



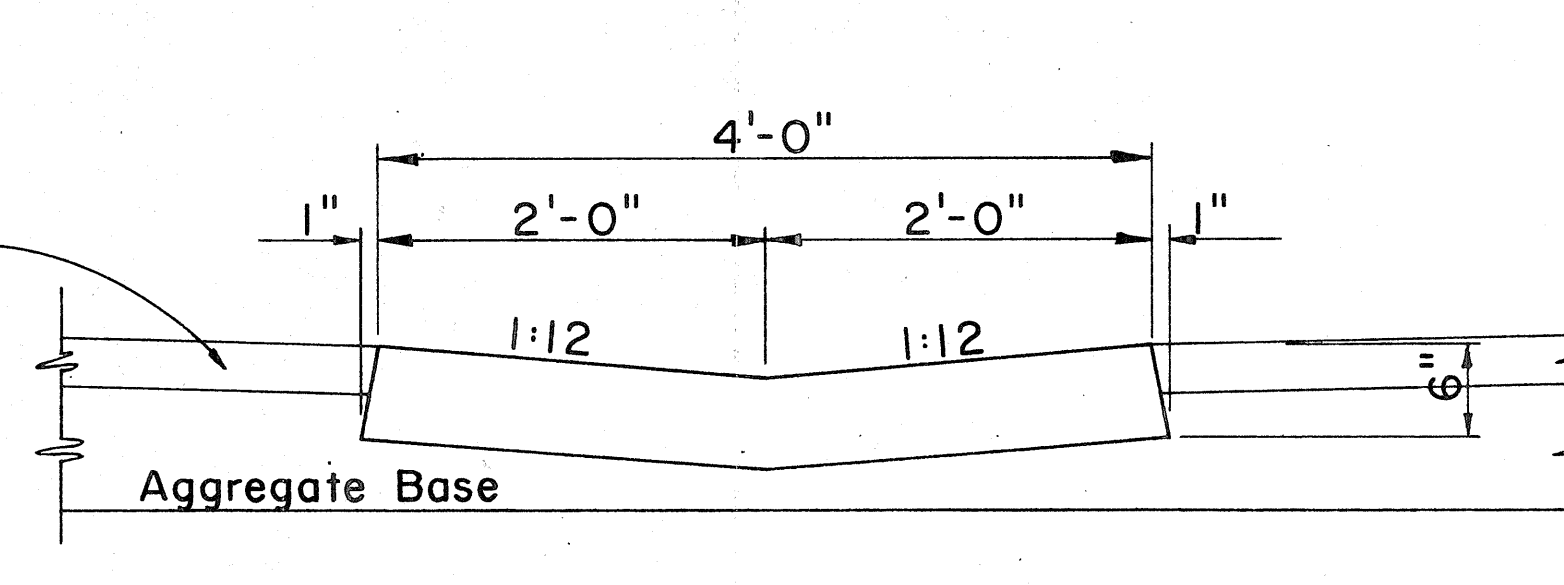
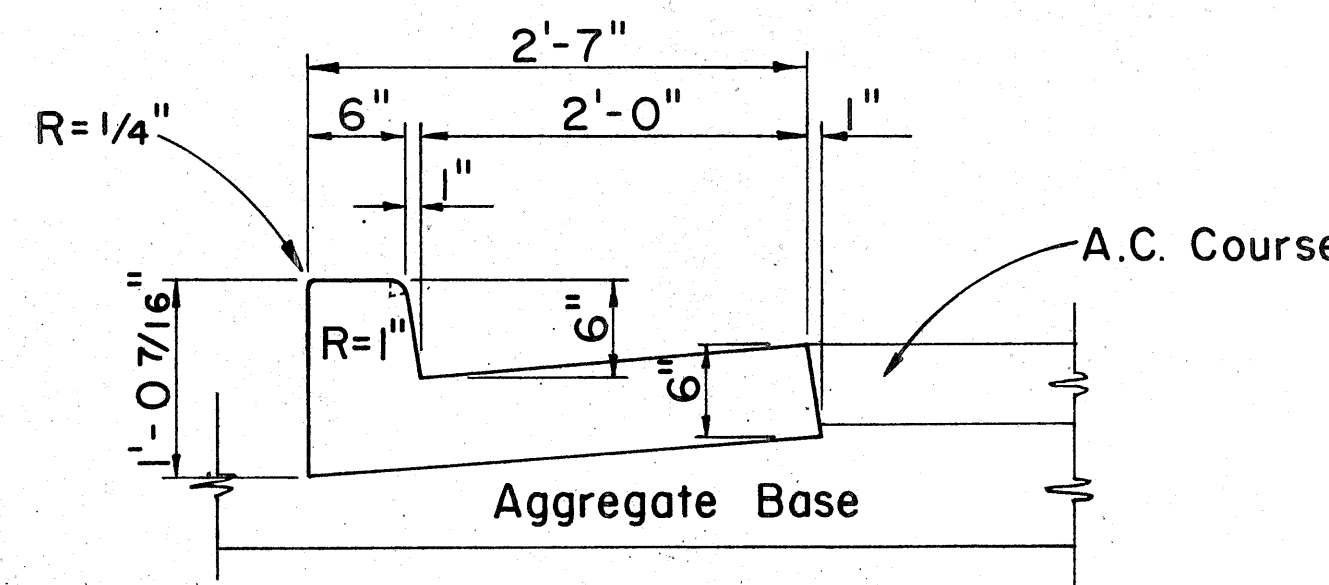
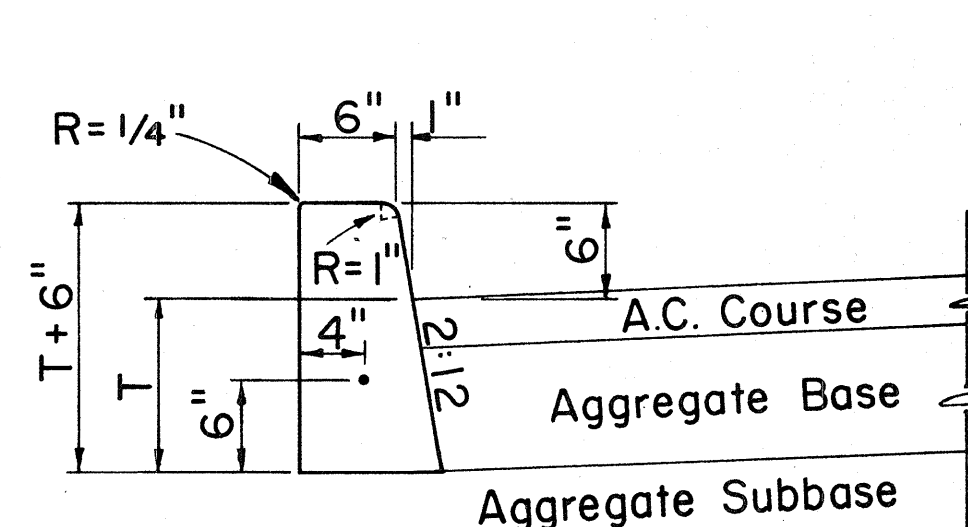
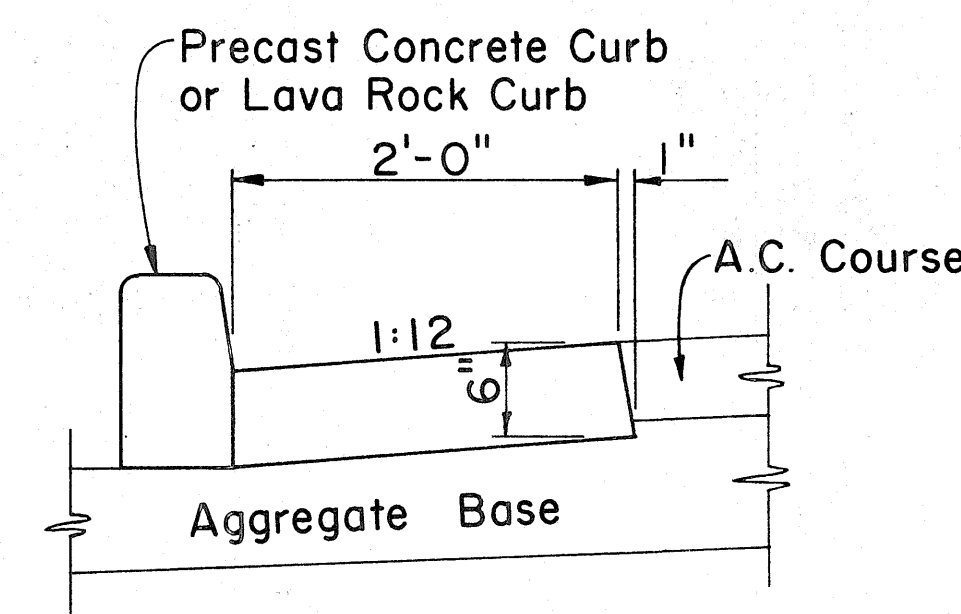
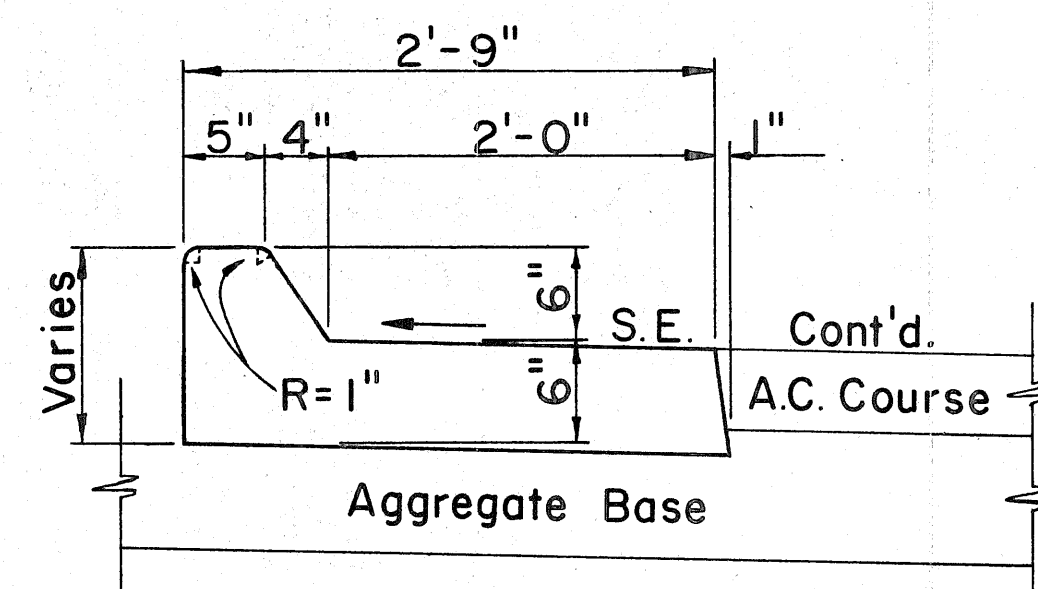
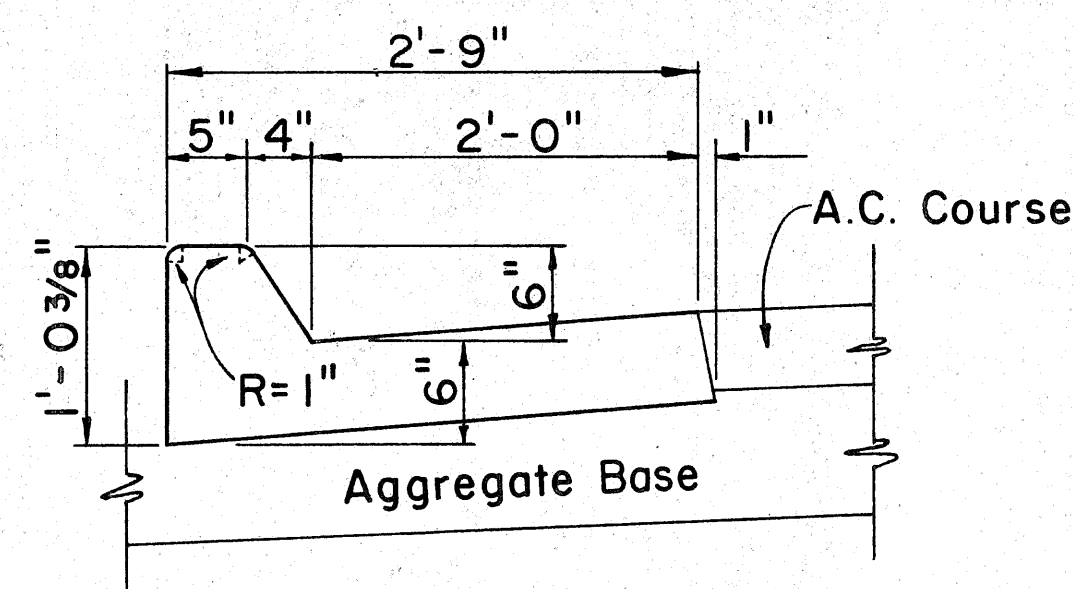
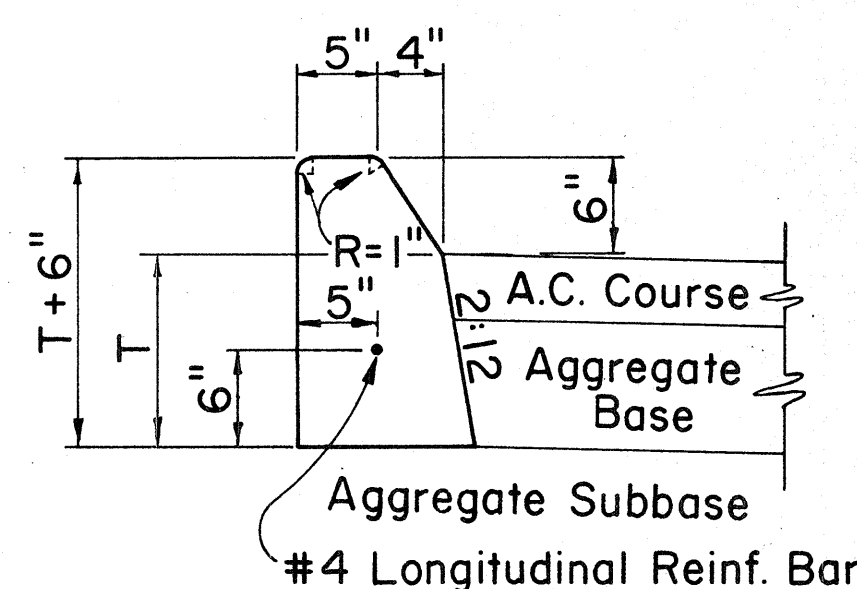
CURB, TYPE 6
BITUMINOUS CURB
 Scale: 1 1/2" = 1'-0"



CAST-IN-PLACE CURB & GUTTER **CAST-IN-PLACE GUTTER**

CONSTRUCTION JOINT DETAIL

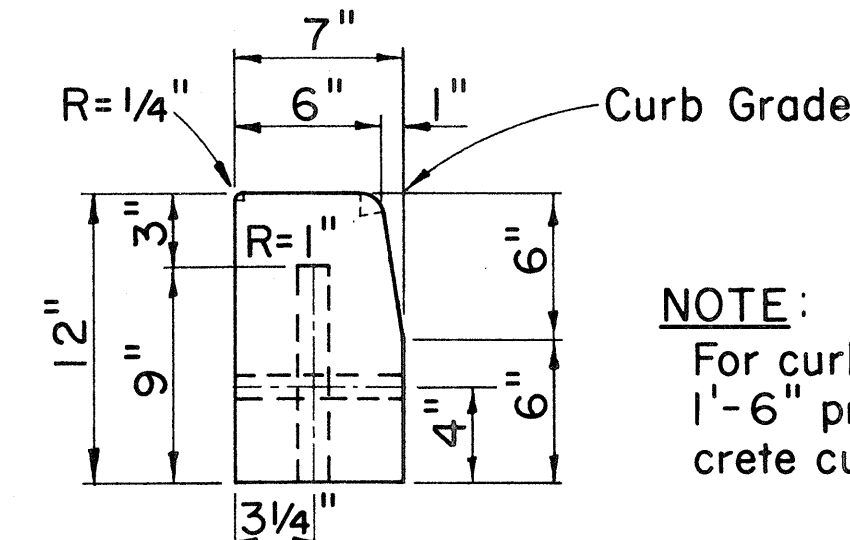
Scale: 1" = 1'-0"



CAST-IN-PLACE CONCRETE CURBS AND/OR GUTTERS

Scale: 1" = 1'-0"

CURB, TYPE 3D
PRE-CAST CONC. CURB
 Scale: 1 1/2" = 1'-0"



NOTE:
 For curb returns use
 1'-6" pre-cast concrete
 curbs.

APPROVAL RECOMMENDED:
 HIGHWAY DESIGN ENGINEER 12-4-69 DATE

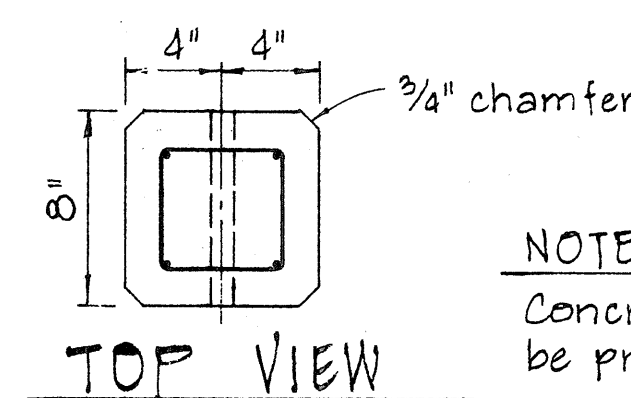
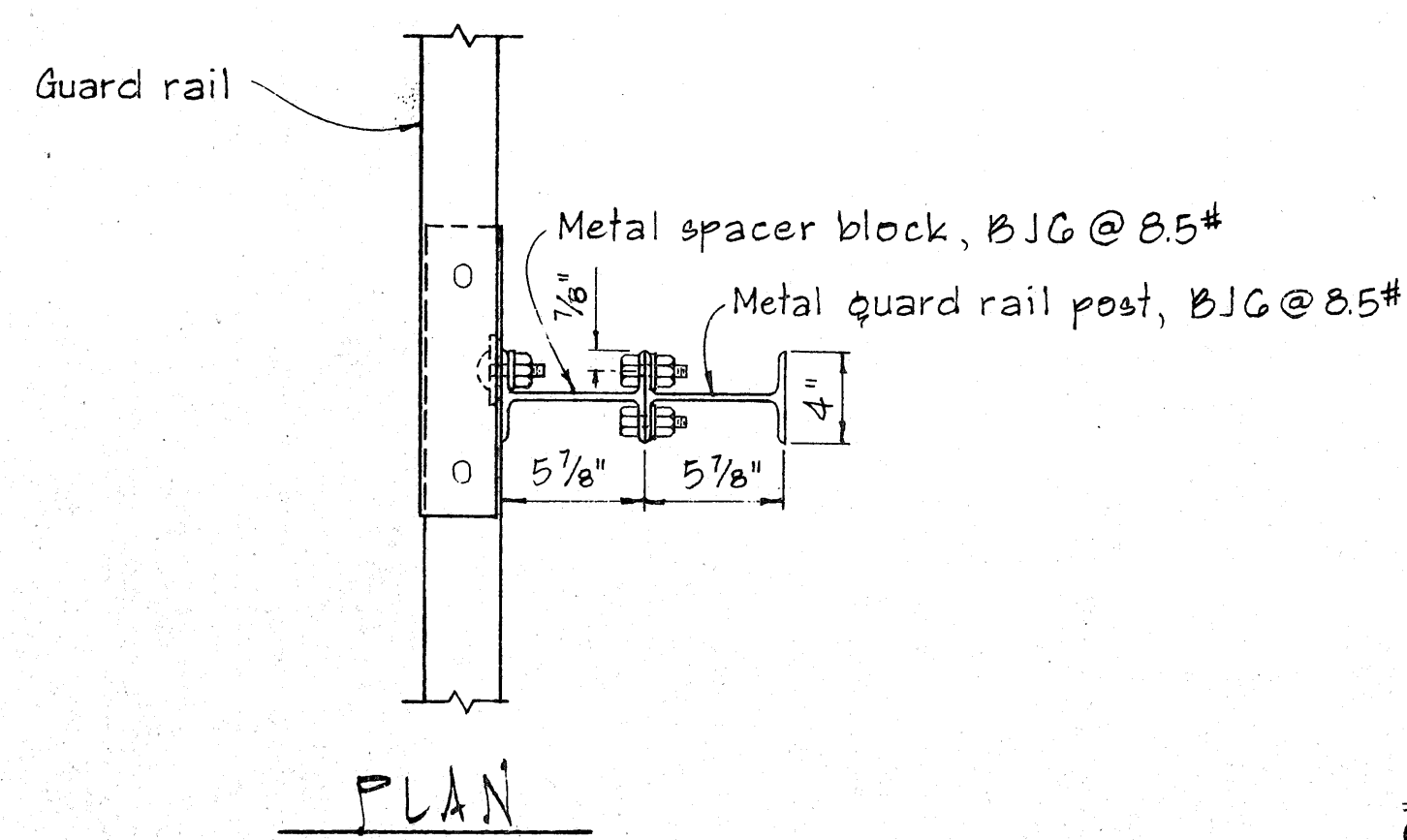
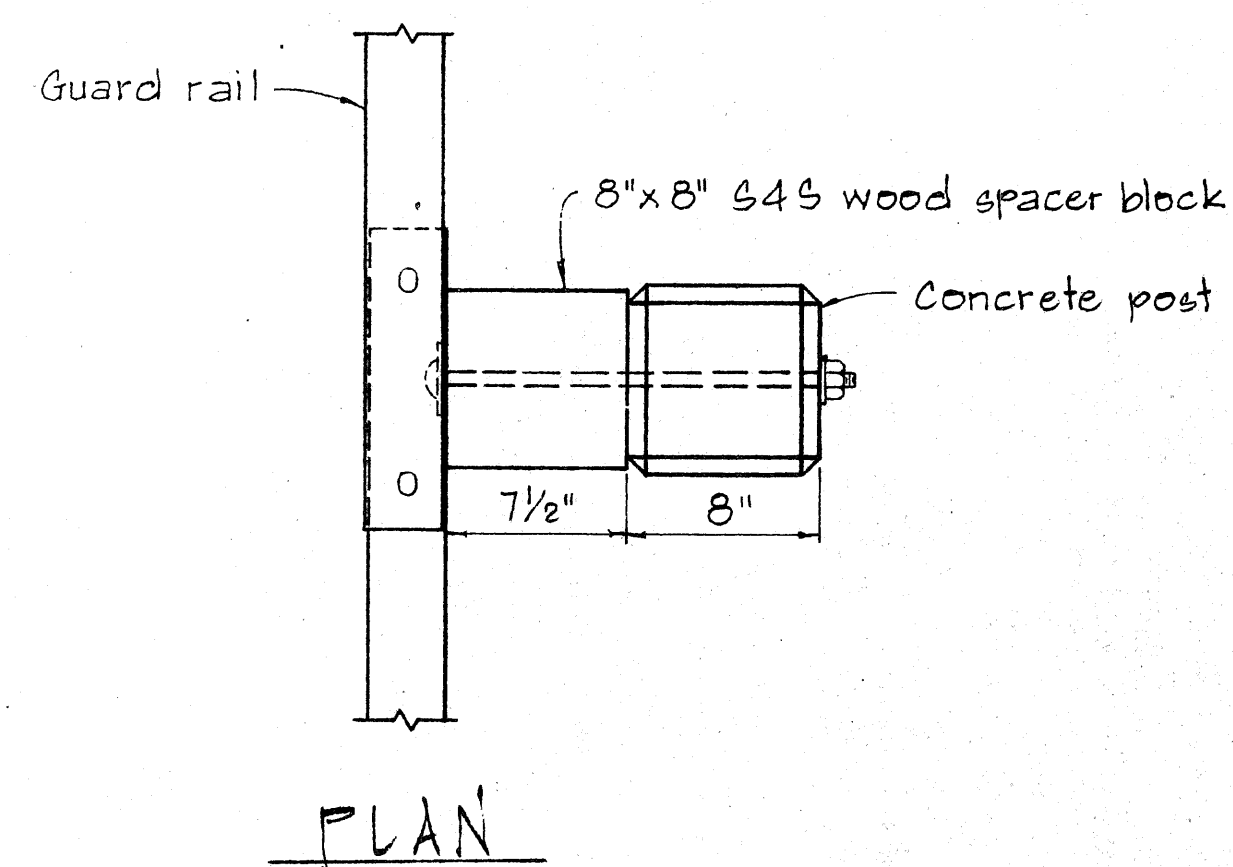
APPROVED:
 ASSISTANT CHIEF, ENGINEERING 12-10-69 DATE

NO.	REVISION	APPROVED BY	DATE

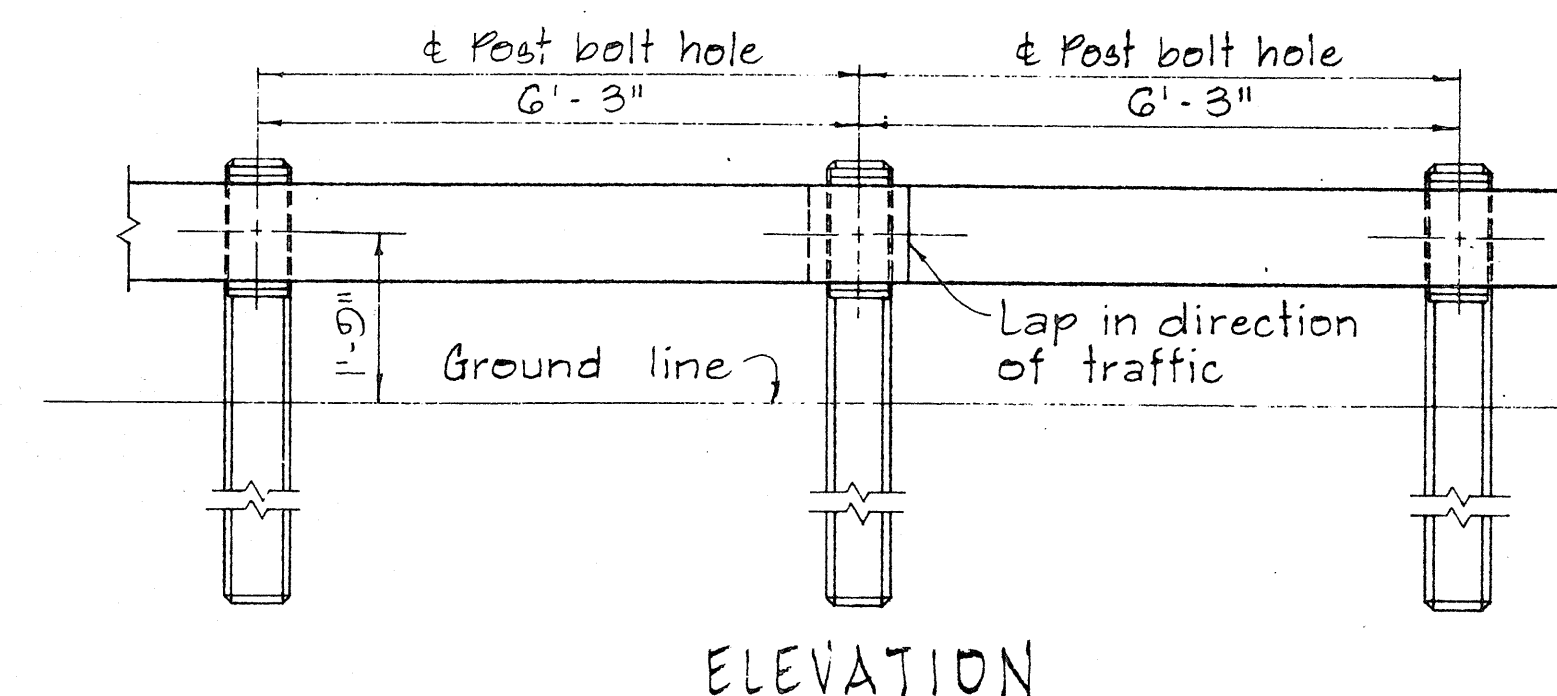
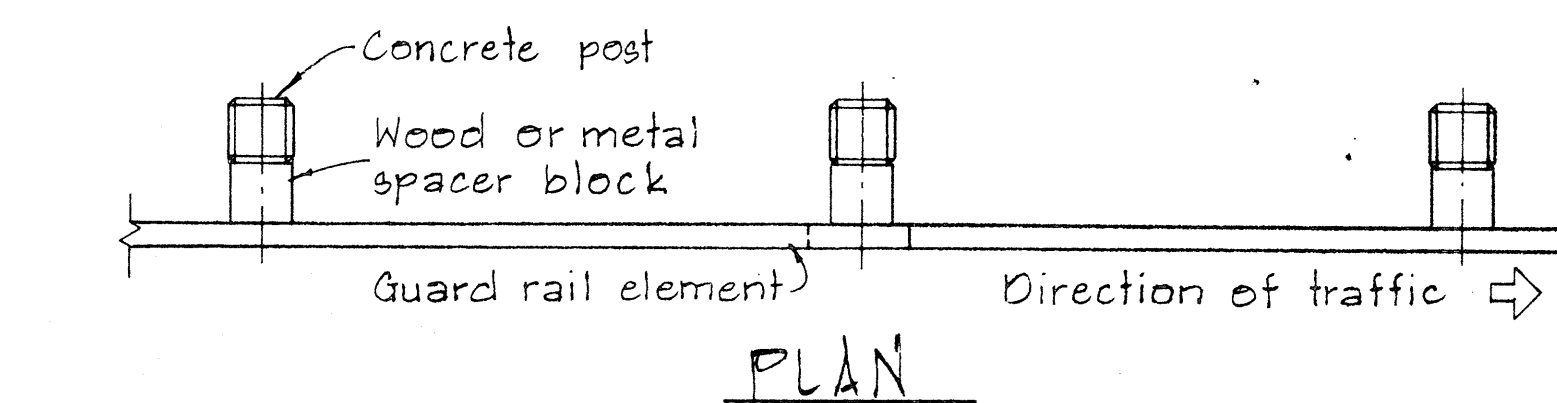
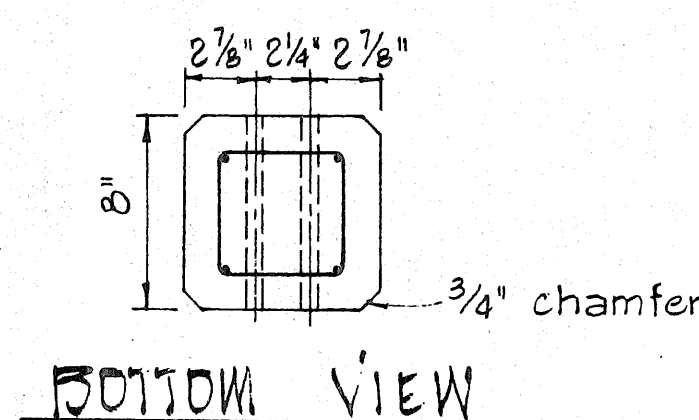
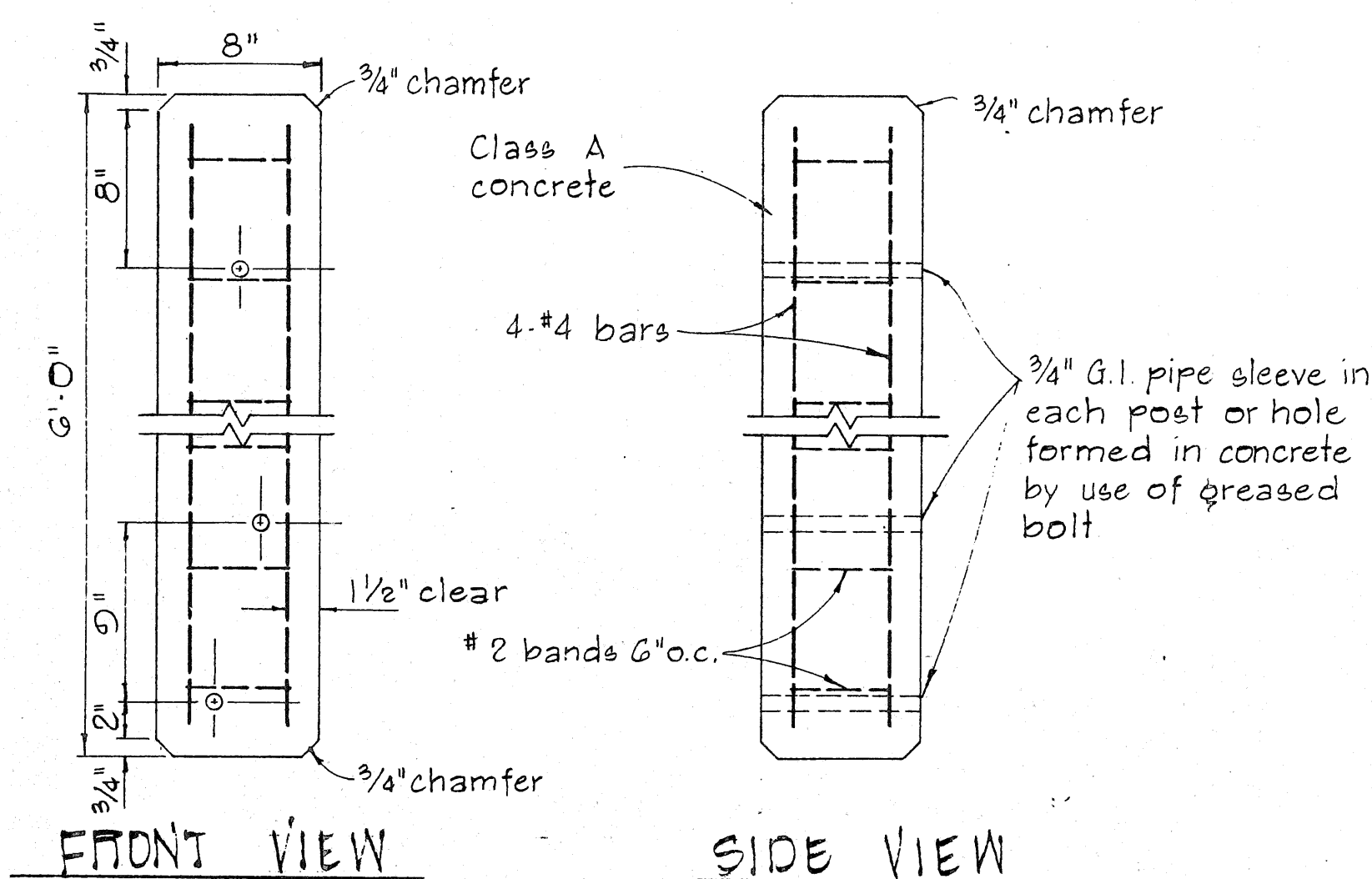
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
TYPICAL DETAILS OF CURB
AND/OR GUTTERS
 Scale: As Shown
 SHEET No. OF SHEETS DD 609.1

26

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-070-1(21)	1980	28	134

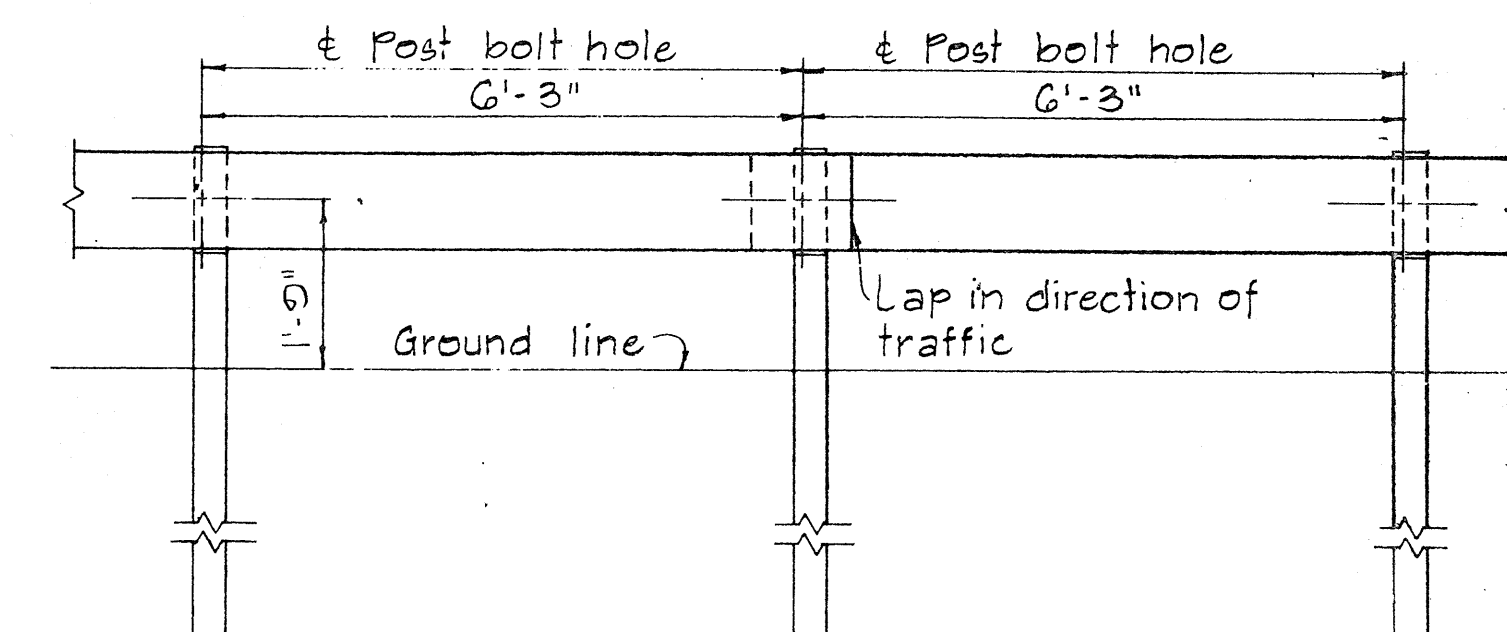
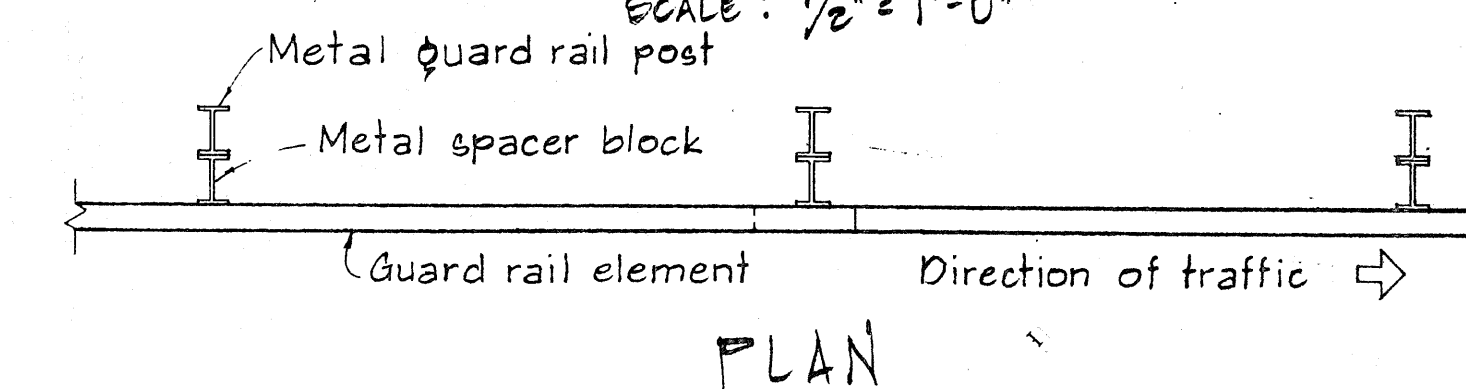


NOTE:
Concrete post shall be precast



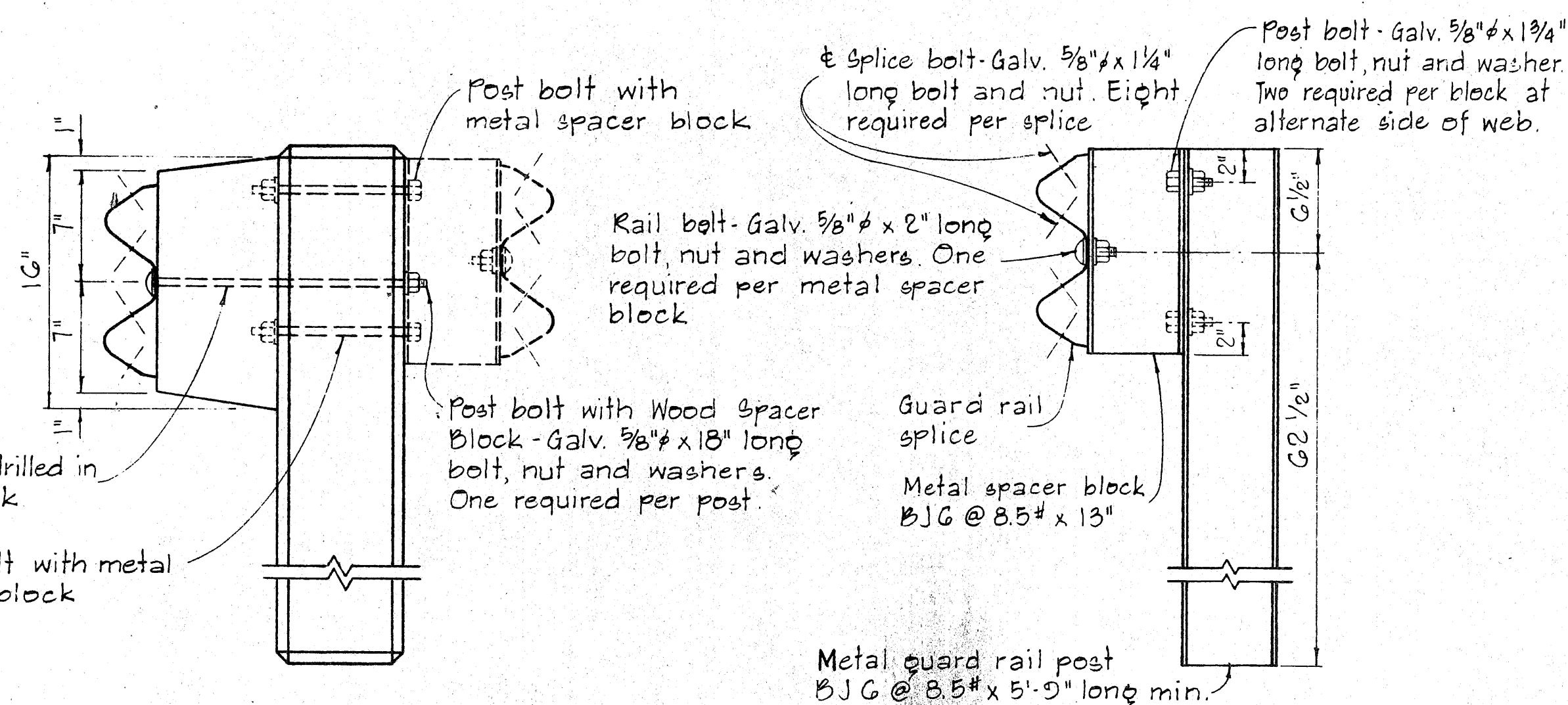
METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

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



METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

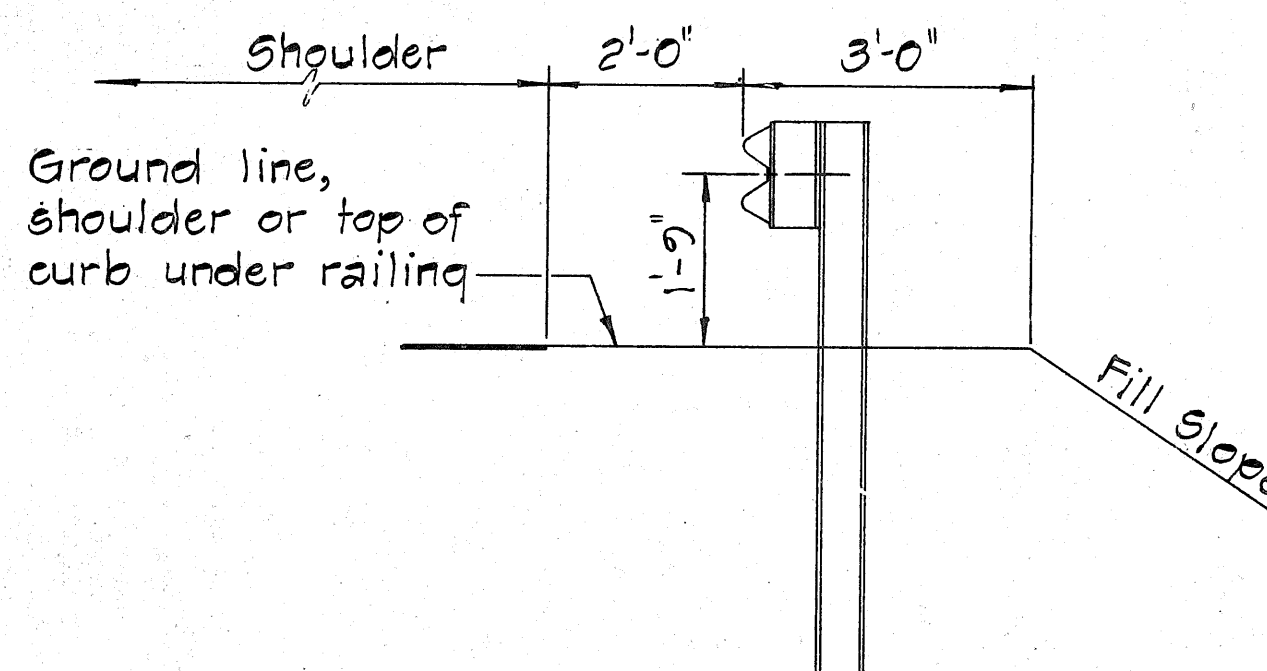
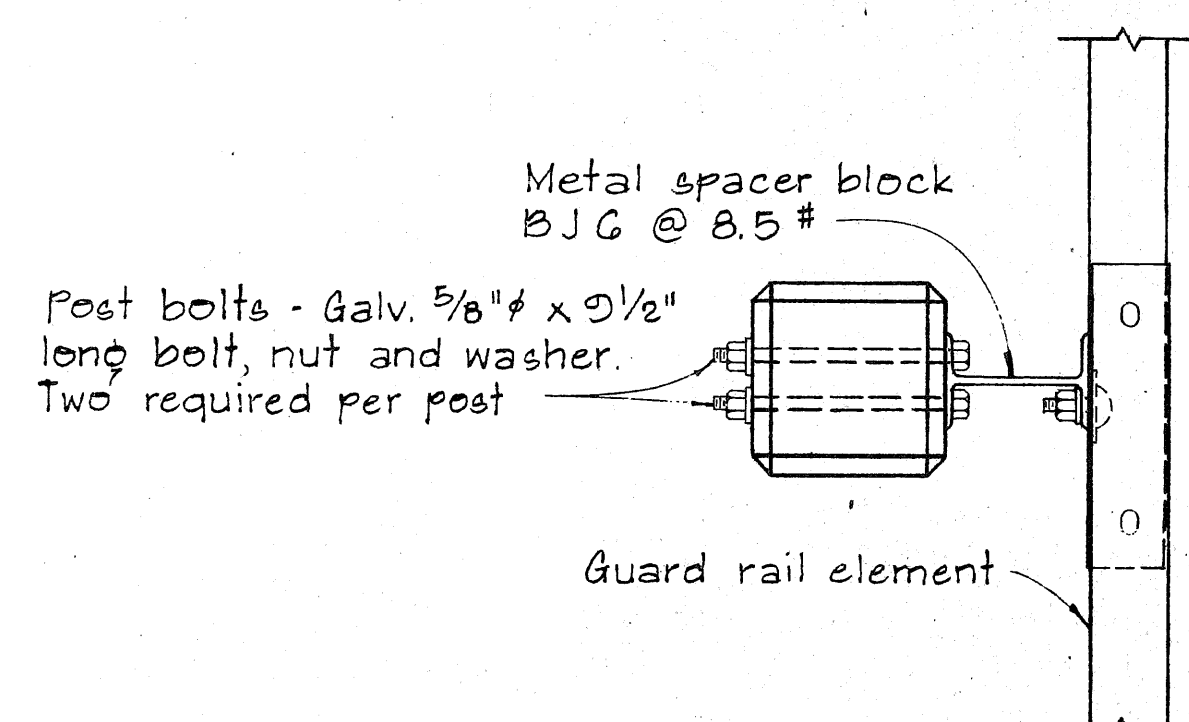
SCALE: 1/2" = 1'-0"



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

SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



TYPICAL METAL GUARD RAIL DETAIL

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

SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

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

APPROVAL RECOMMENDED:
Traffic Engineer

12/29/62
DATE

APPROVED:
Assistant Chief, Engineering

12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN

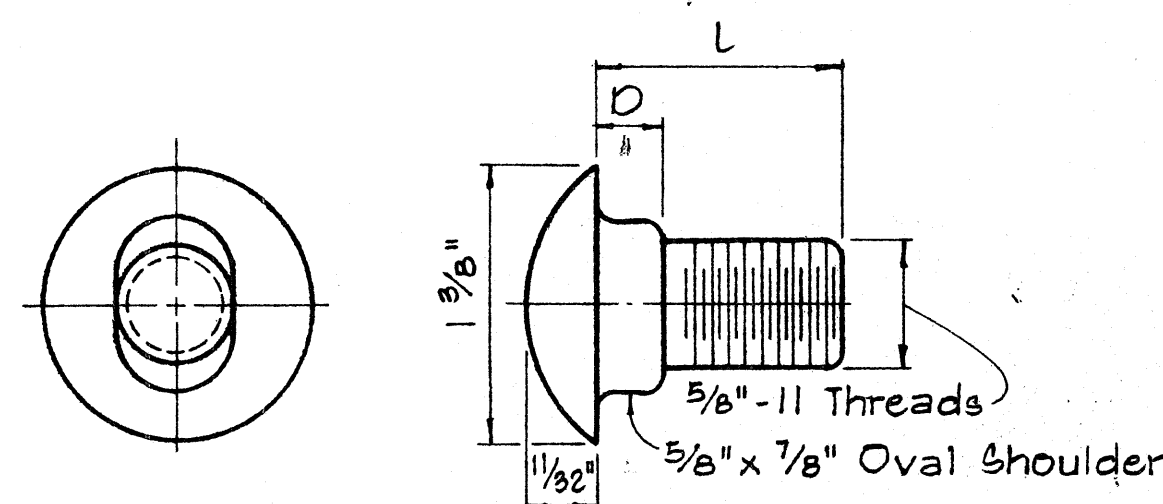
NOV 1968

SHEET No. OF SHEETS DT 500

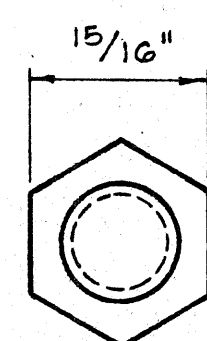
BOLT DIMENSIONS		
TYPE A BOLT		
	D	L
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	24"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	18"
Rail Bolt for Metal Block	3/32"	2"

BOLT DIMENSIONS	
TYPE B BOLT	
	L
Post Bolt for Conc. Post w/ Metal Blocks	9 1/2"
Post Bolt for Metal Post w/ Metal Block	1 3/4"

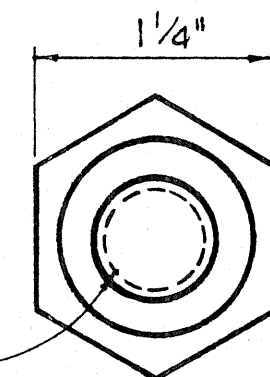
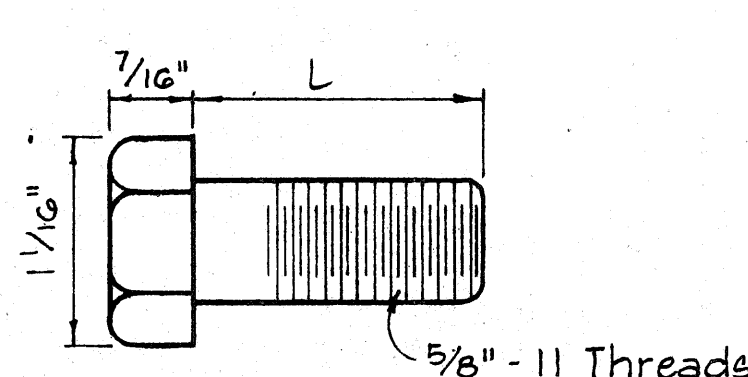
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(21)	1980	23	234



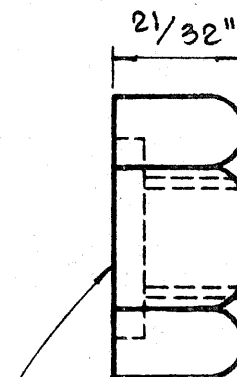
TYPE A BOLT



TYPE B BOLT



HEXAGON NUT

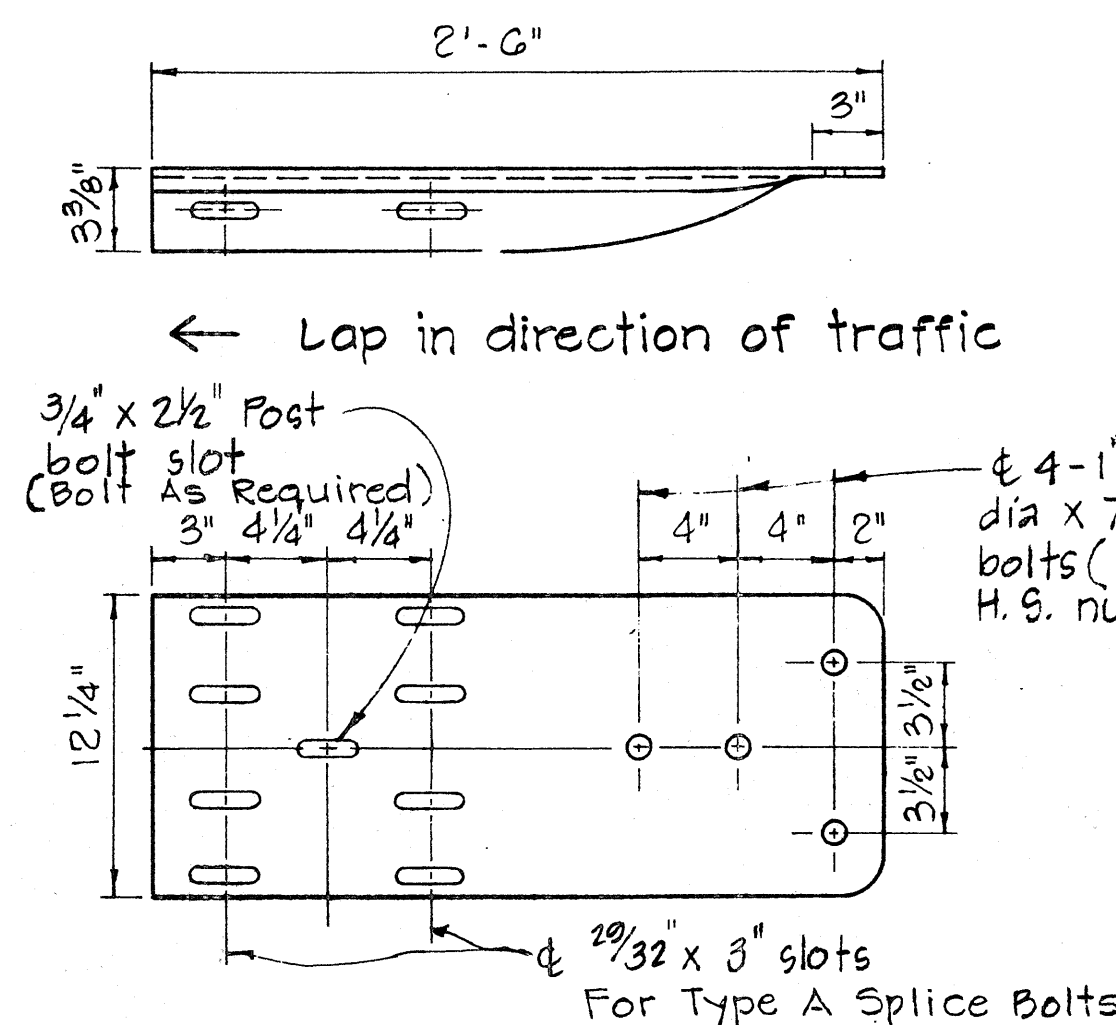


5/32" Deep x 15/16" Dia. C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.

SPICE RAIL AND POST BOLTS

Scale: Full Size

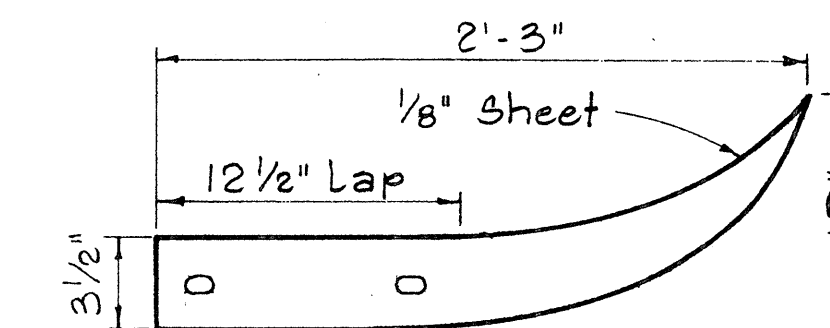
Scale: Full Size



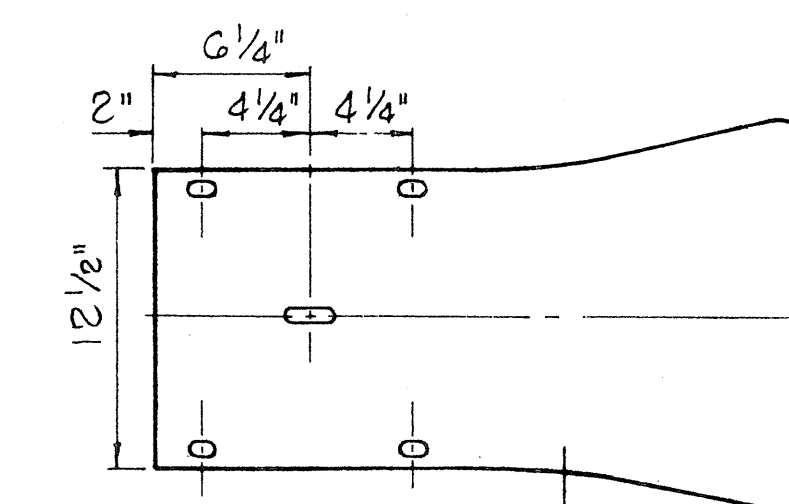
SPECIAL END SHOE

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

Lap in direction of traffic



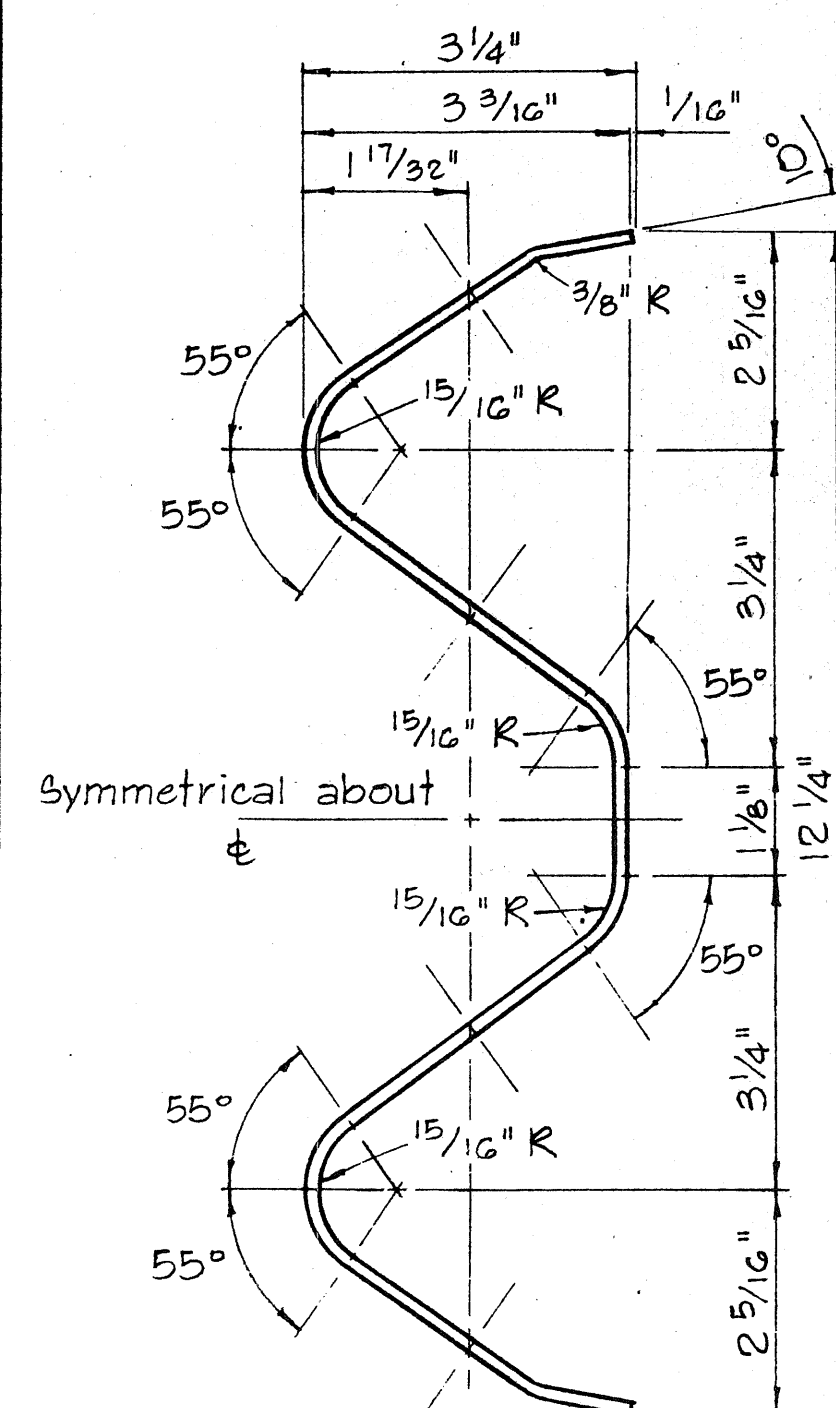
Lap in direction of traffic



Same as rail element section

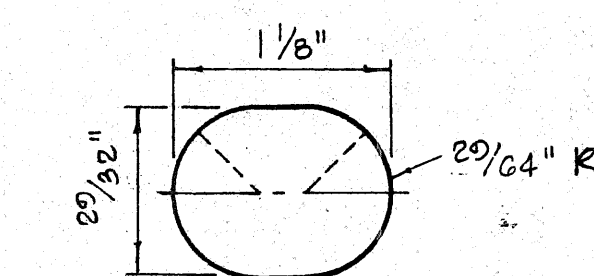
FLARED END

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



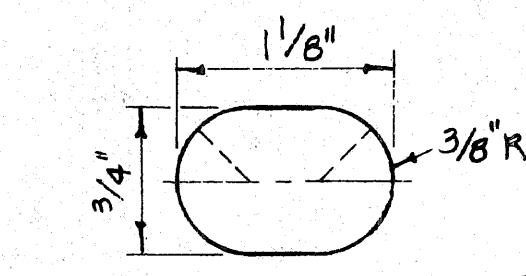
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

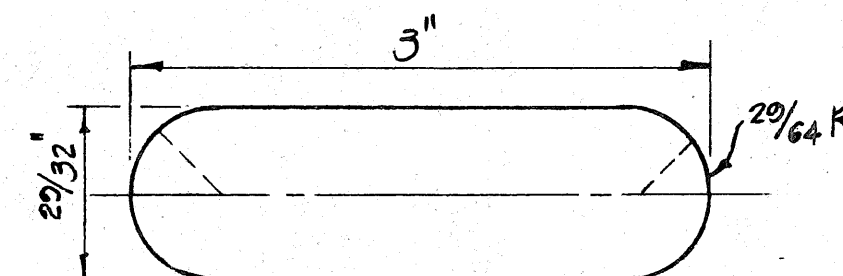


SPICE BOLT SLOT

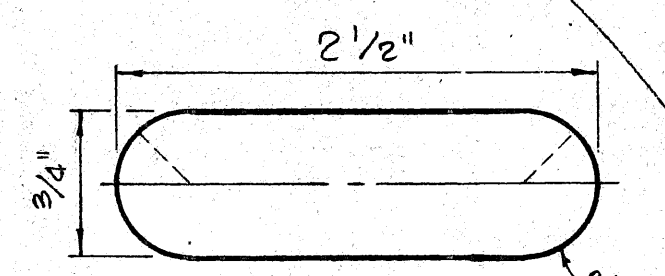
Scale: Full Size



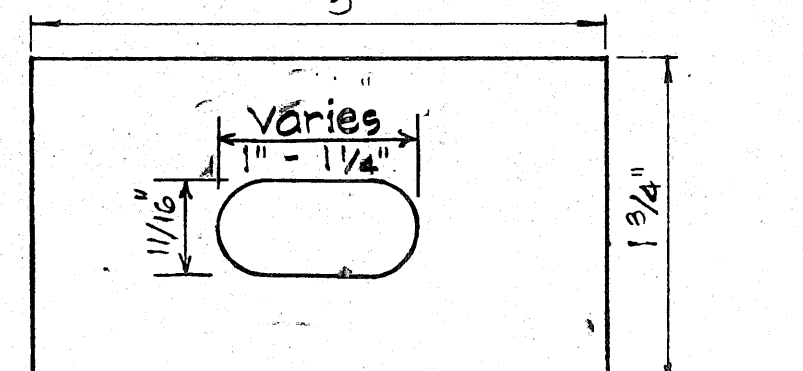
SPICE BOLT SLOT FOR ALL ENDS



SPICE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



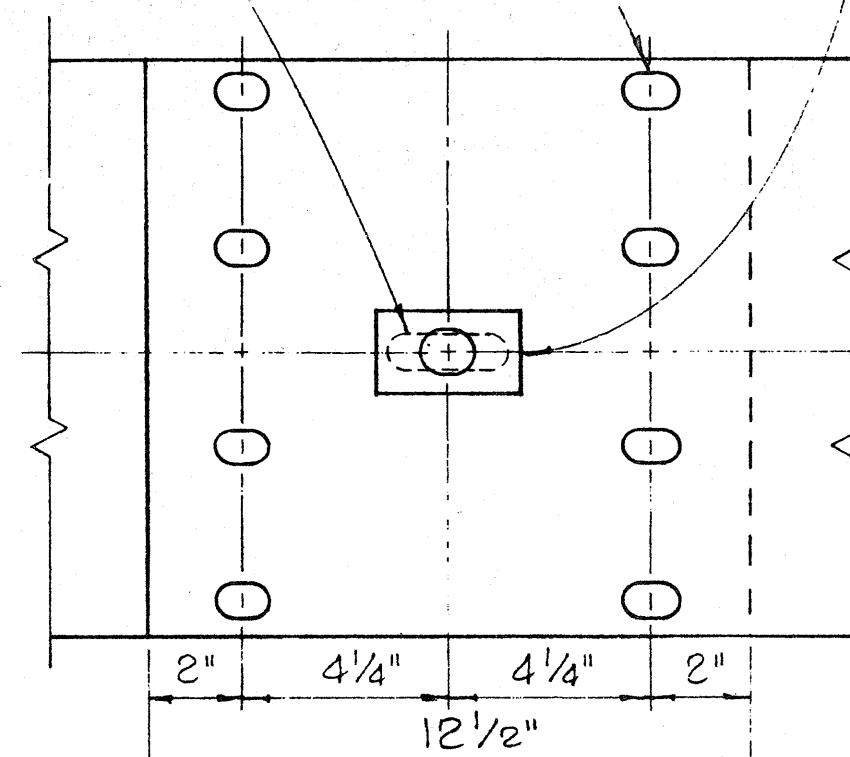
RAIL WASHER

NOTES:

1. H.S. Bolts shall conform to the requirements of ASTM A 325.
2. Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AA6HO 180.

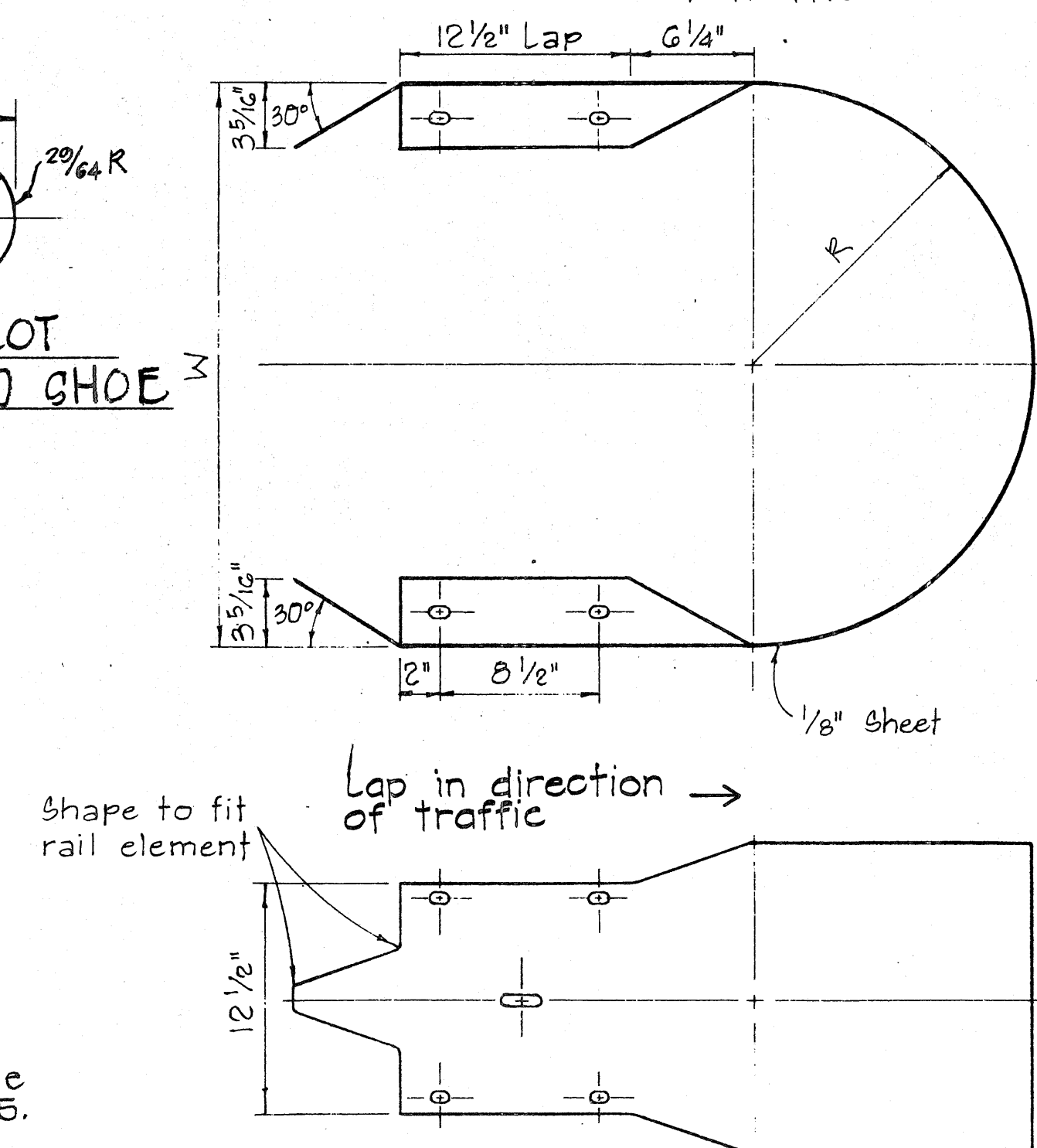
MEDIAN END DIMENSIONS

TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 3/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"



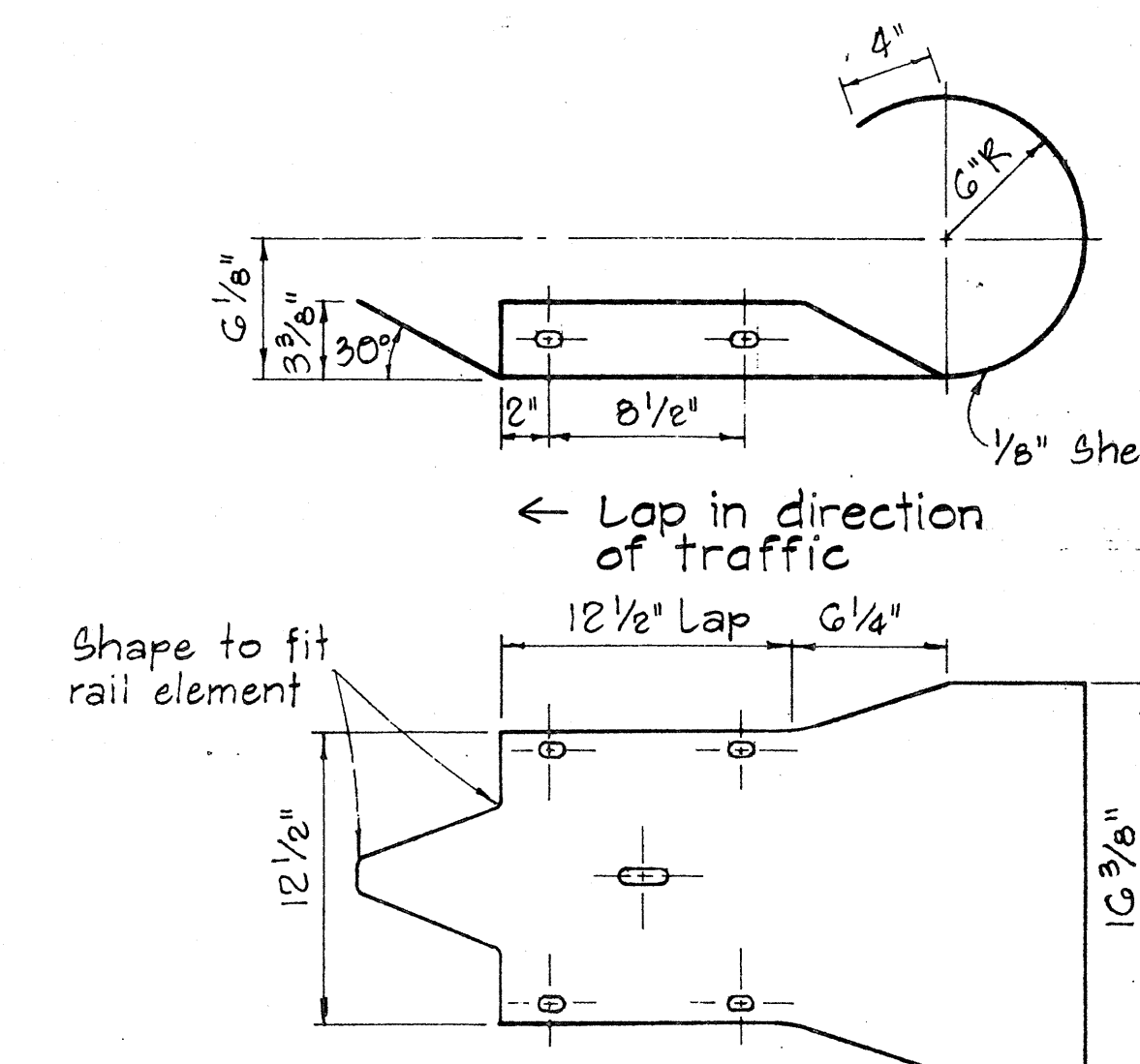
RAIL SPICE

Scale: 3" = 1'-0"



MEDIAN END

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



CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

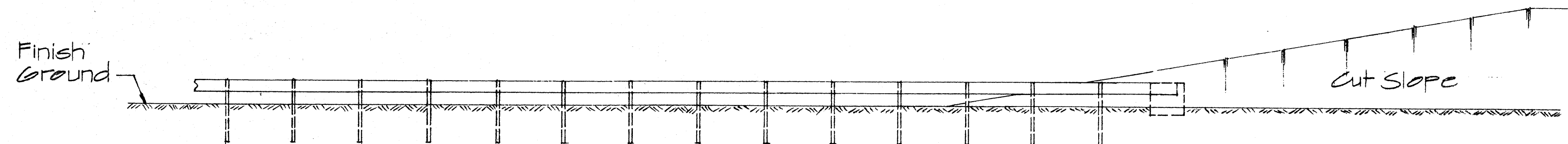
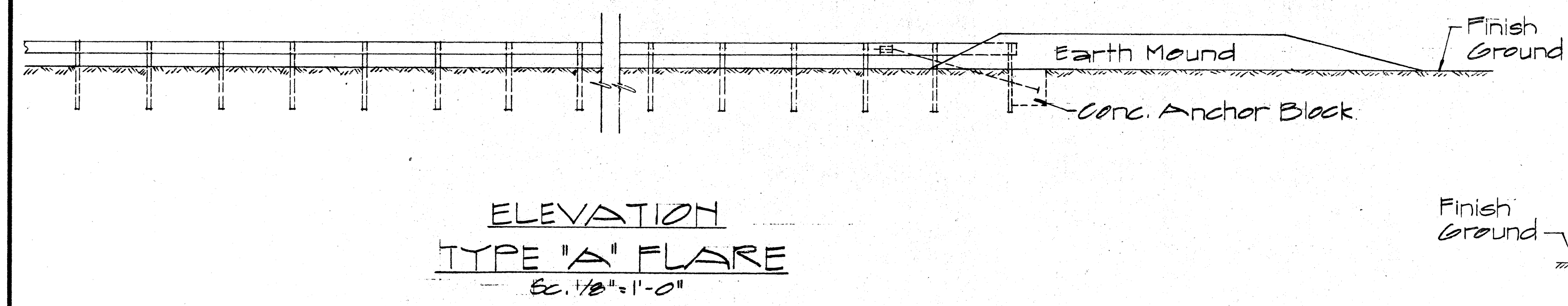
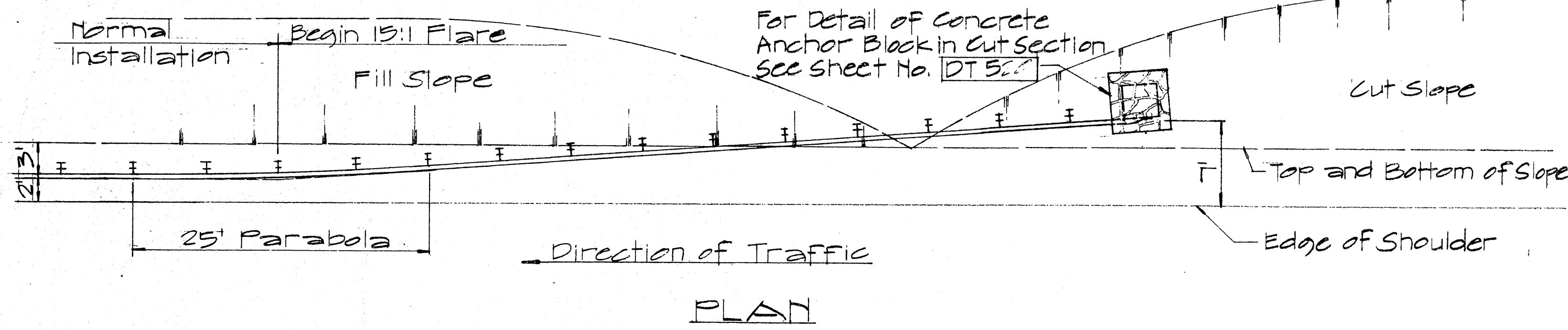
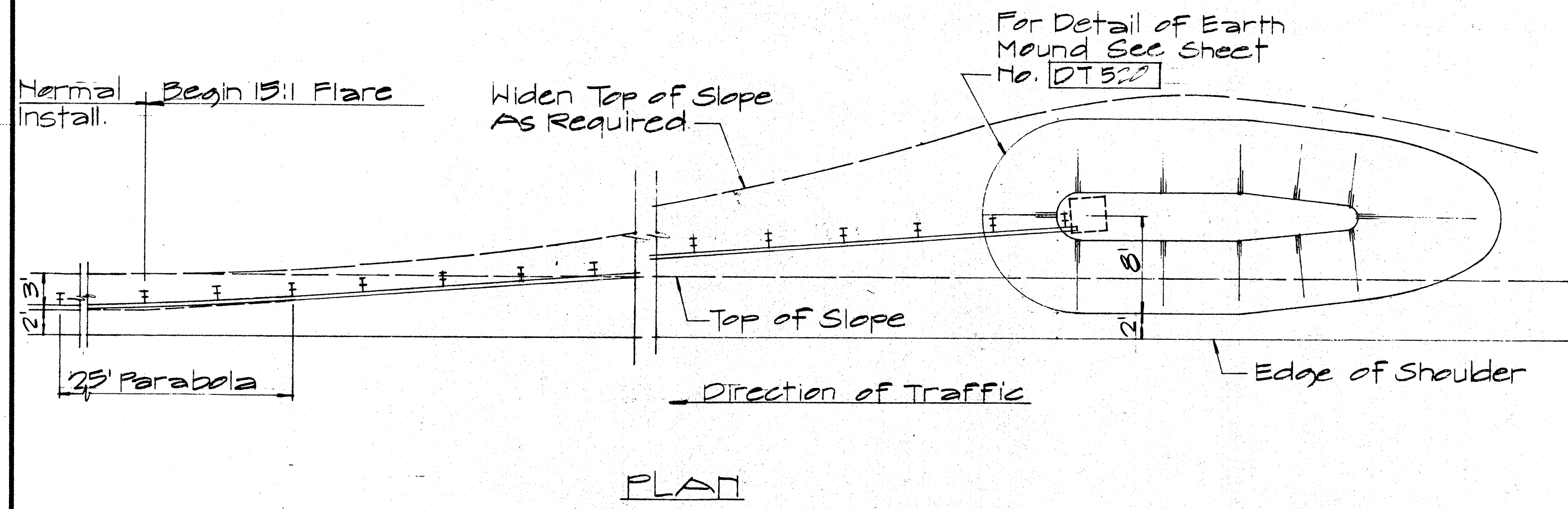
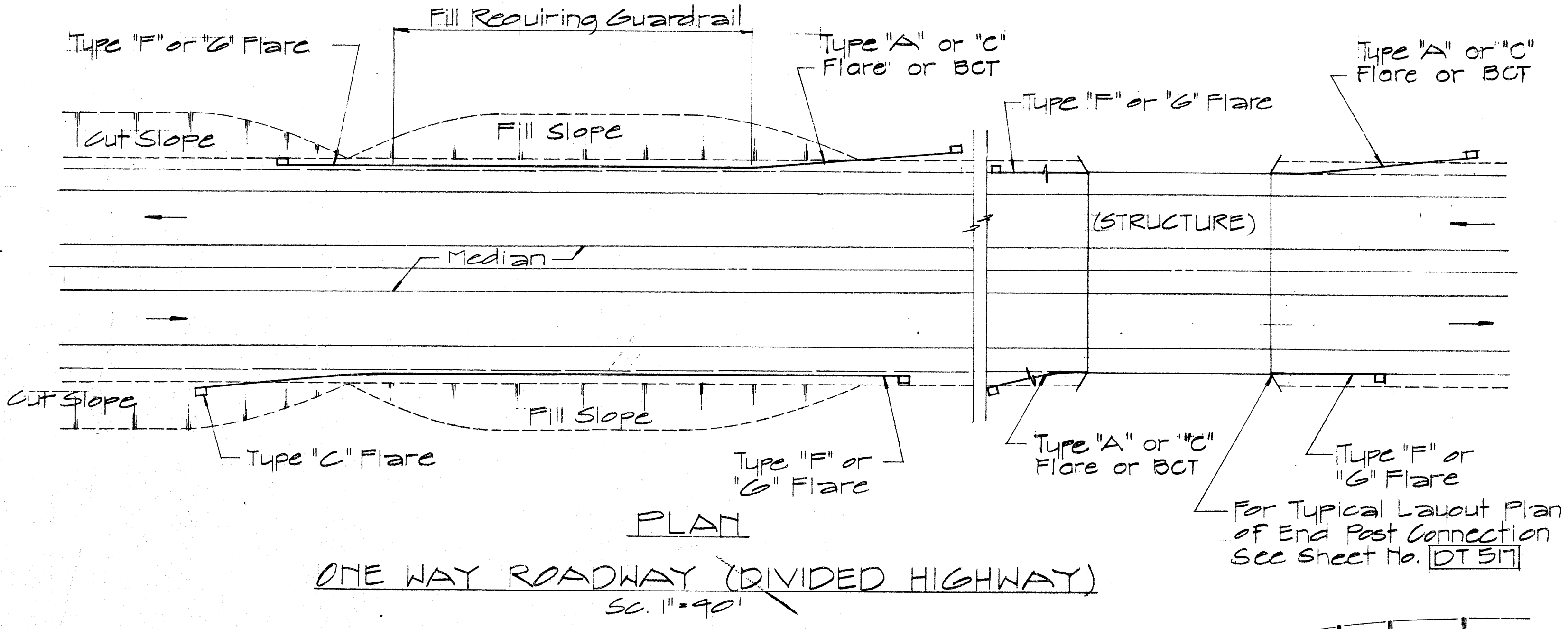
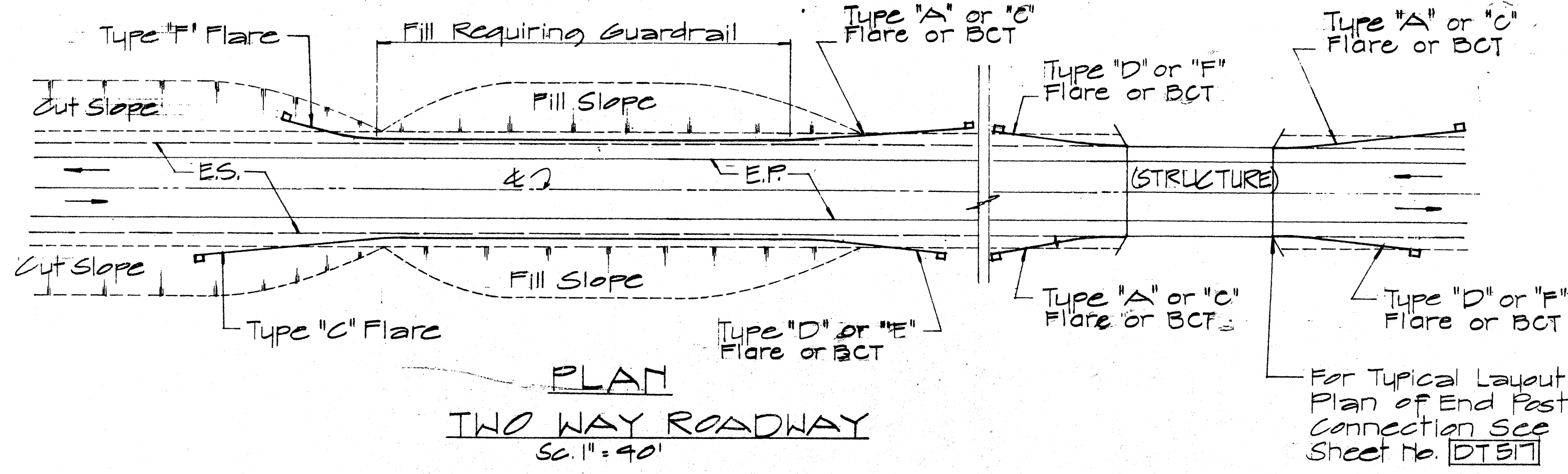
August, 1968

SHEET No. OF SHEETS DT 501

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(21)	1980	30	234

NOTE:

1. Metal guard rail connection to structures requires End Post Connection. See structure plans.
2. For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519



APPROVAL RECOMMENDED:
Erich Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:
W. S. S. S. 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/18

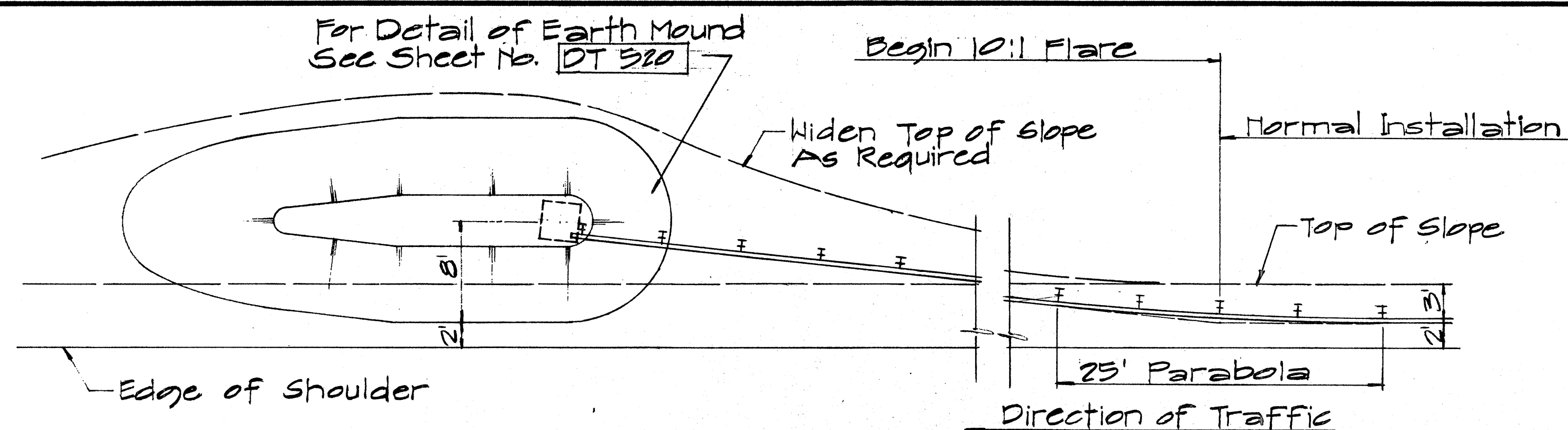
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

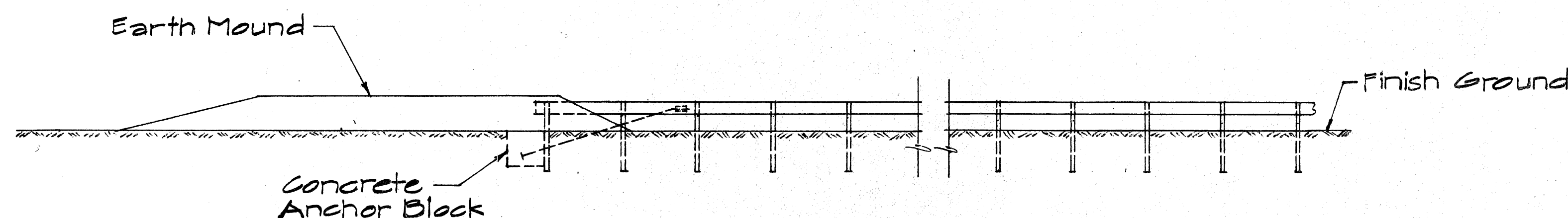
Sc. As Noted April 1969
SHEET No. OF SHEETS DT 516

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
NOTED BY	
CHECKED BY	
ORIGINAL	
PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1960	31	234

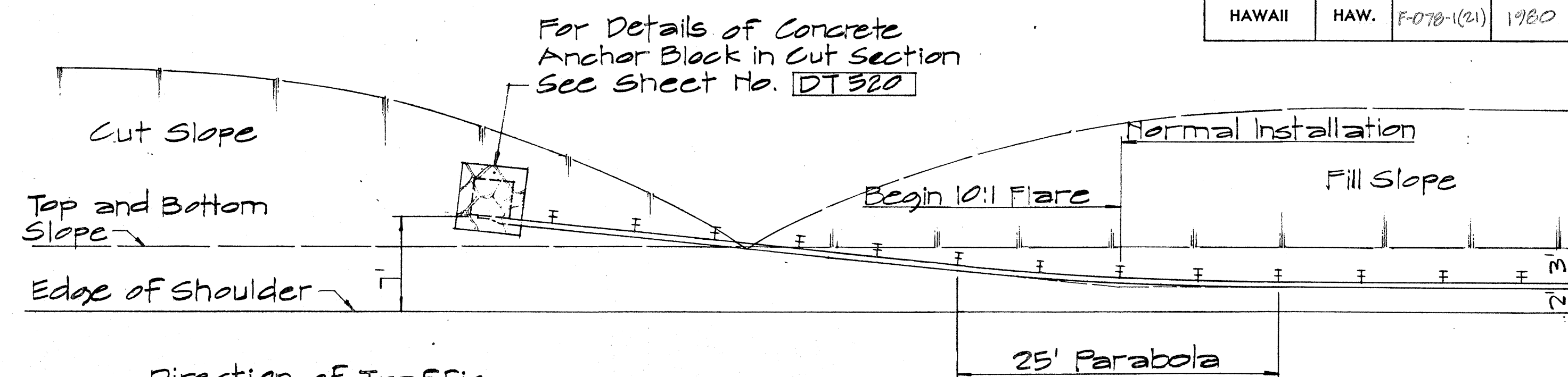


PLAN

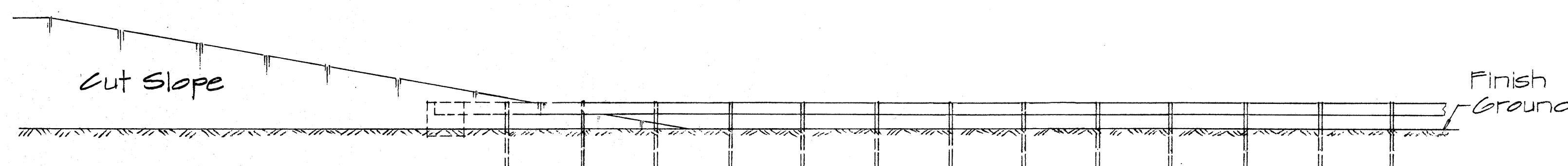


ELEVATION

TYPE "D" FLARE
Sc. 1/8" = 1'-0"

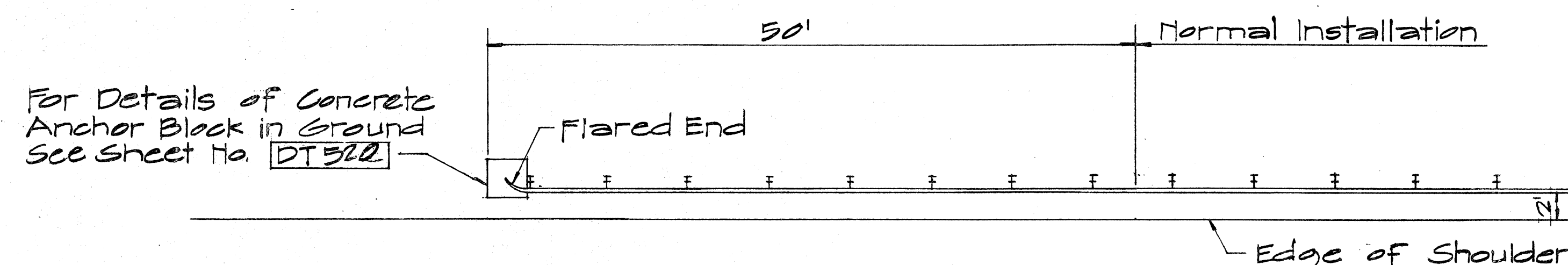


PLAN

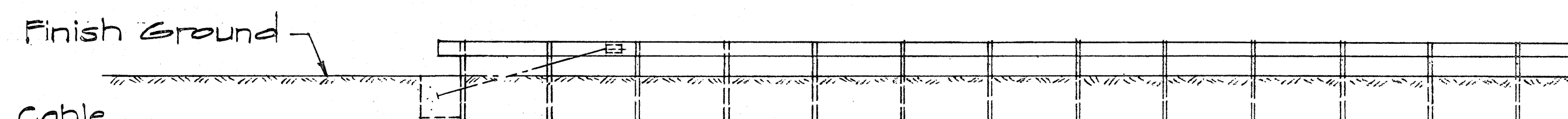


ELEVATION

TYPE "F" FLARE
Sc. 1/8" = 1'-0"



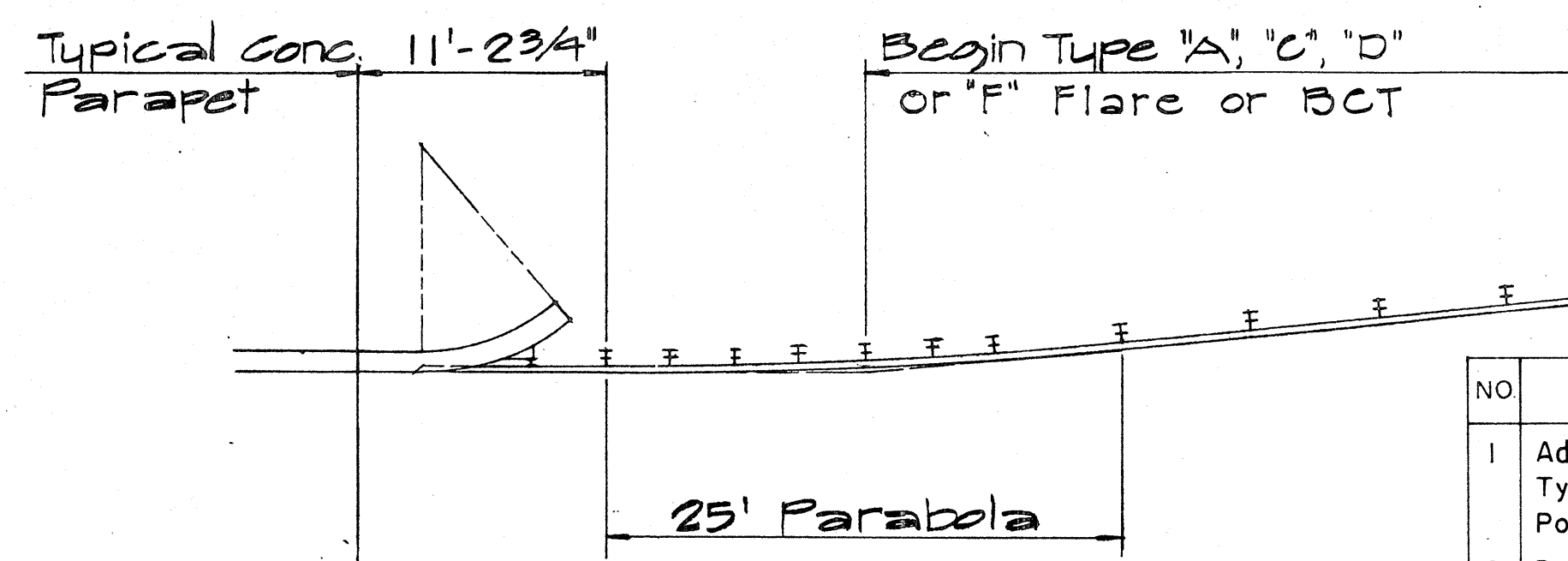
PLAN



ELEVATION

TYPE "G" FLARE
Sc. 1/8" = 1'-0"

NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519



TYPICAL LAYOUT PLAN OF
END POST CONNECTION
Sc. 1/8" = 1'-0"

NO	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-73

APPROVAL RECOMMENDED:
Eushe Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:
Wm. S. Kal 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

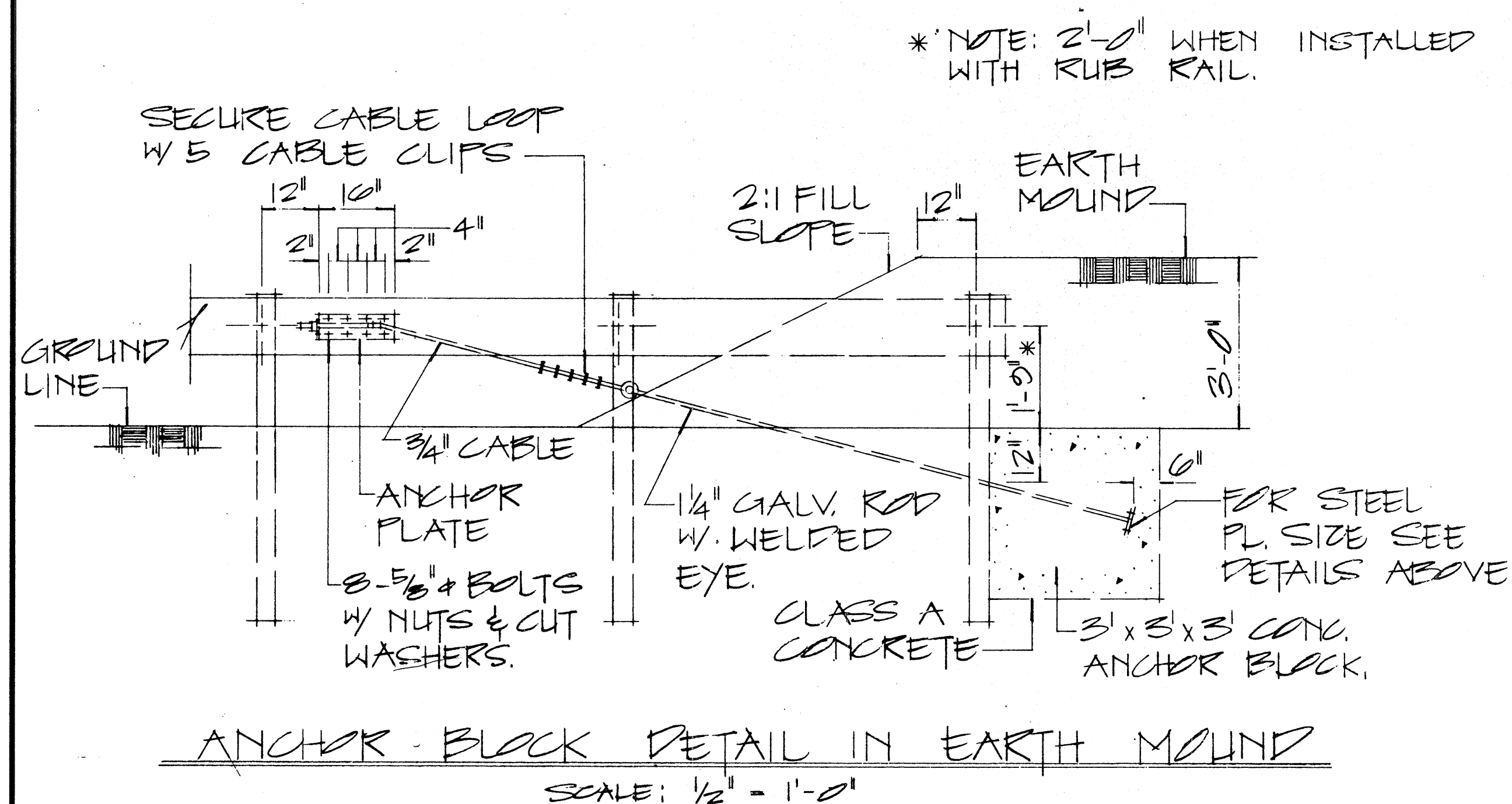
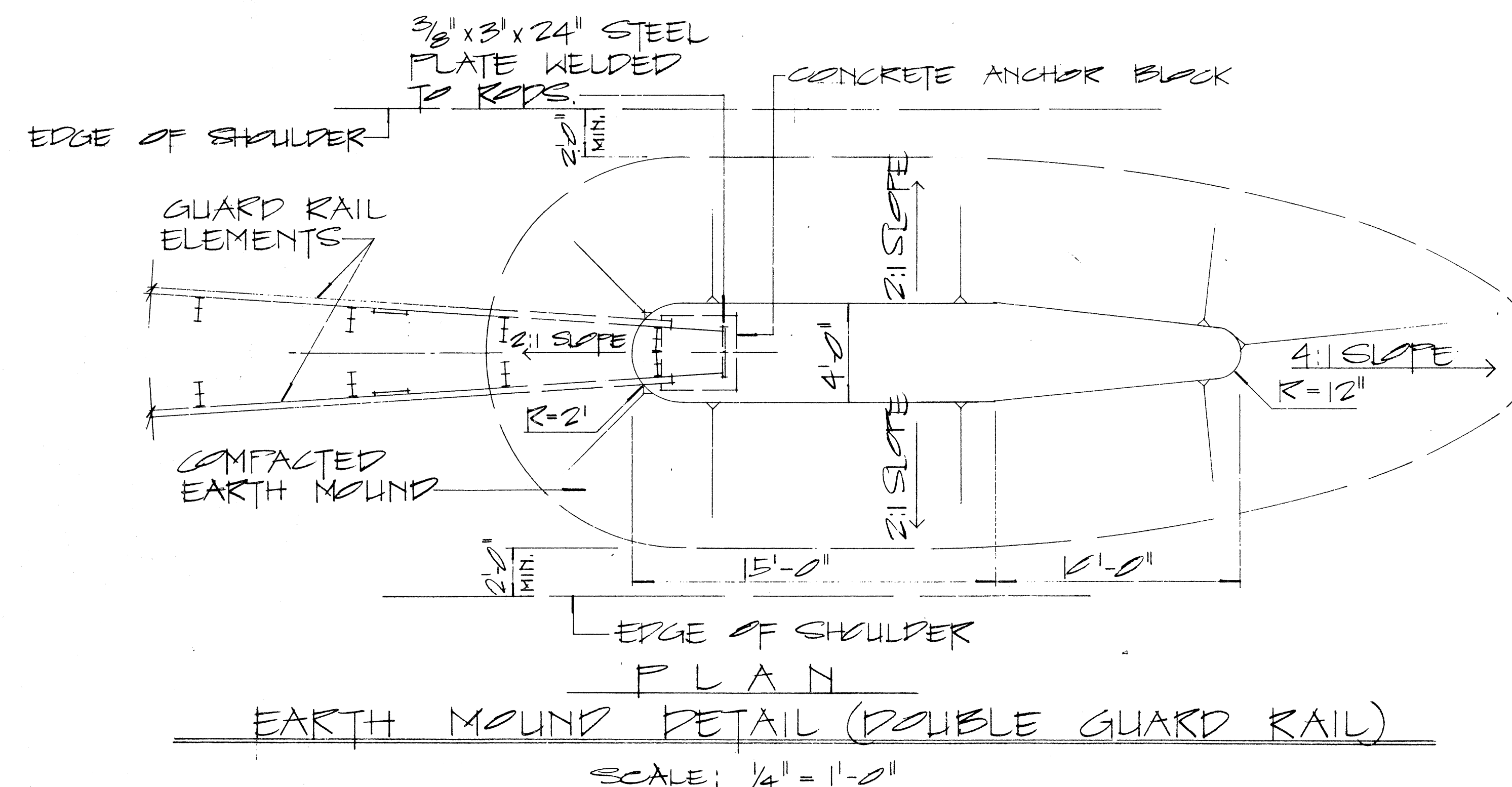
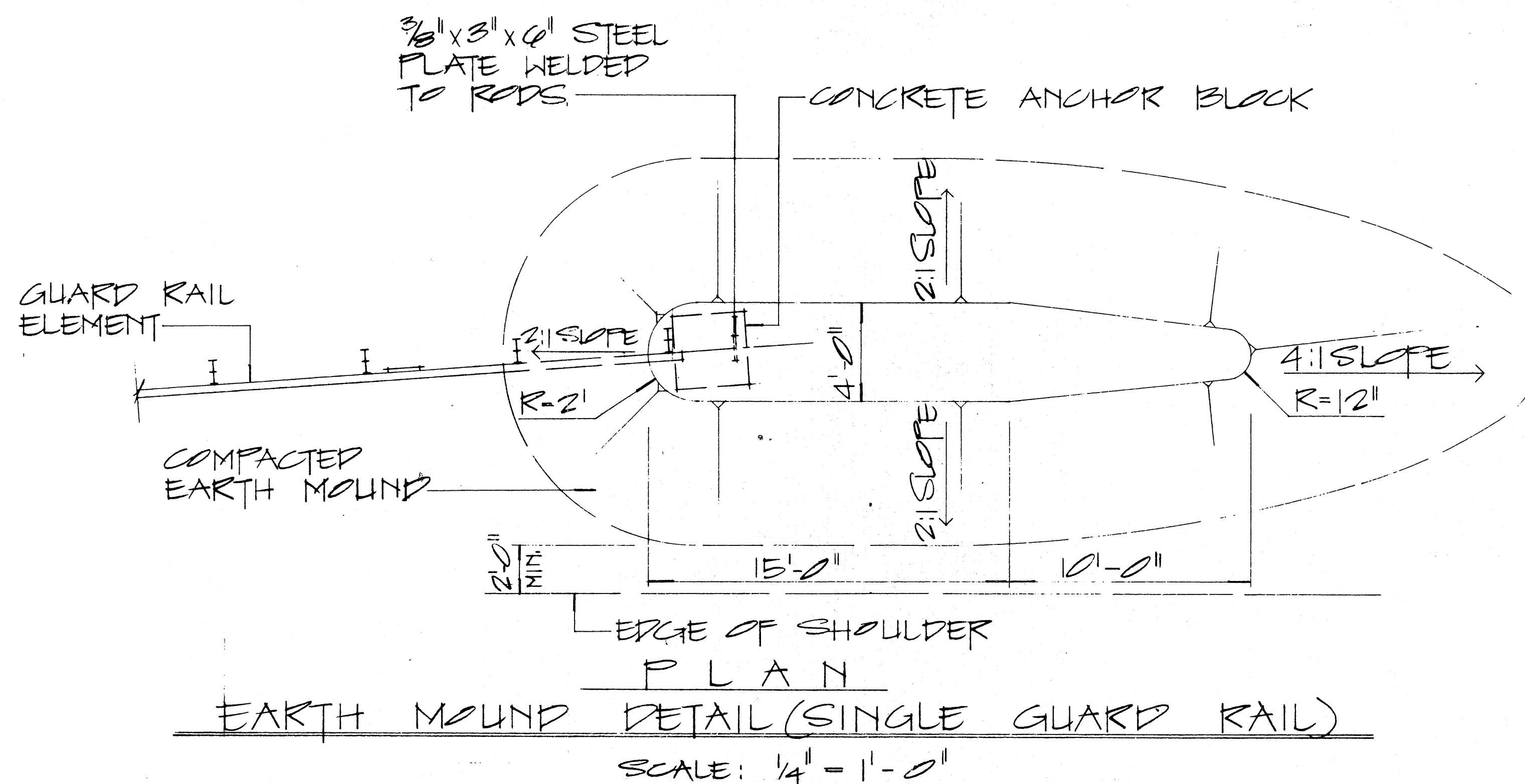
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

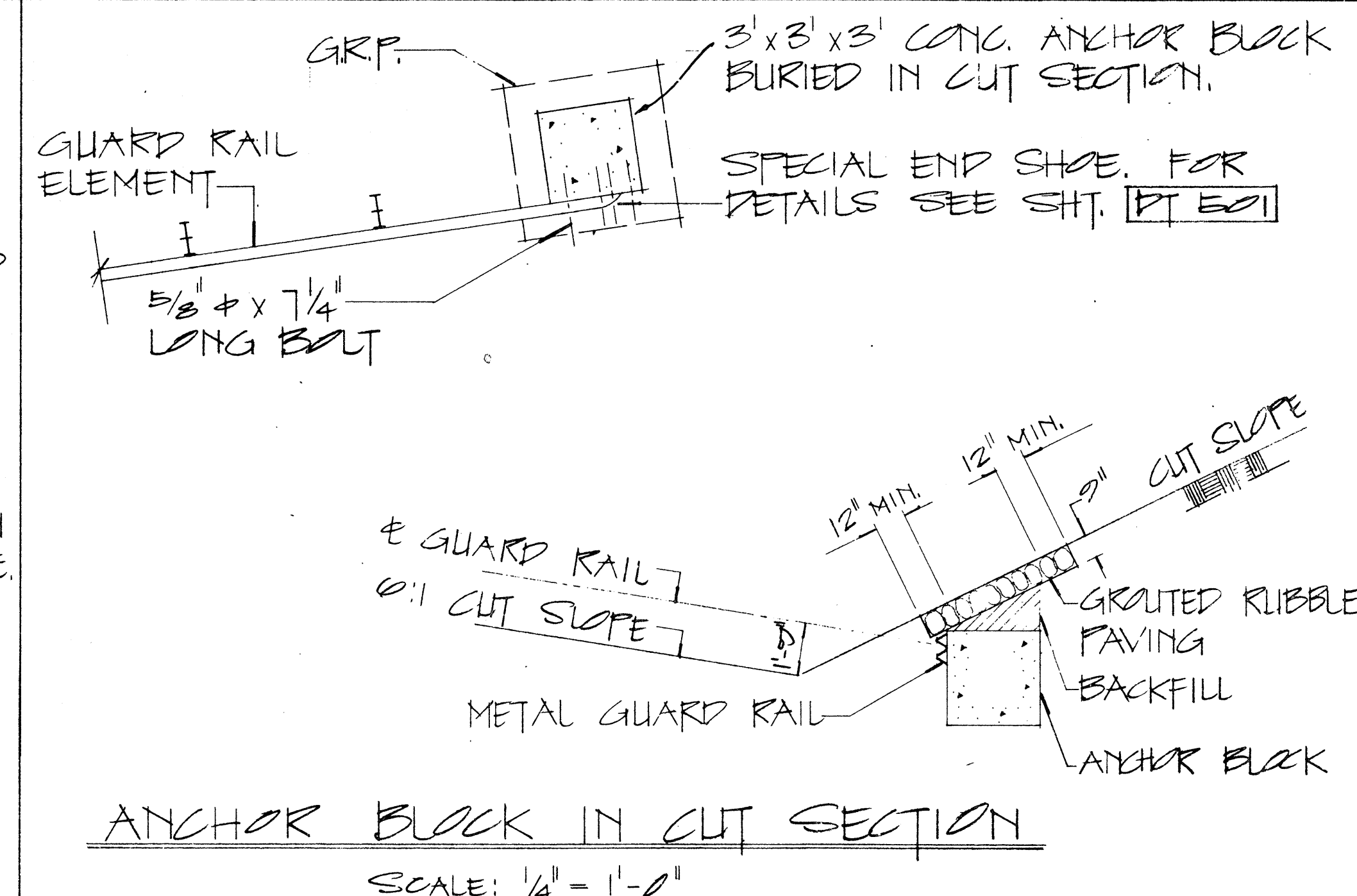
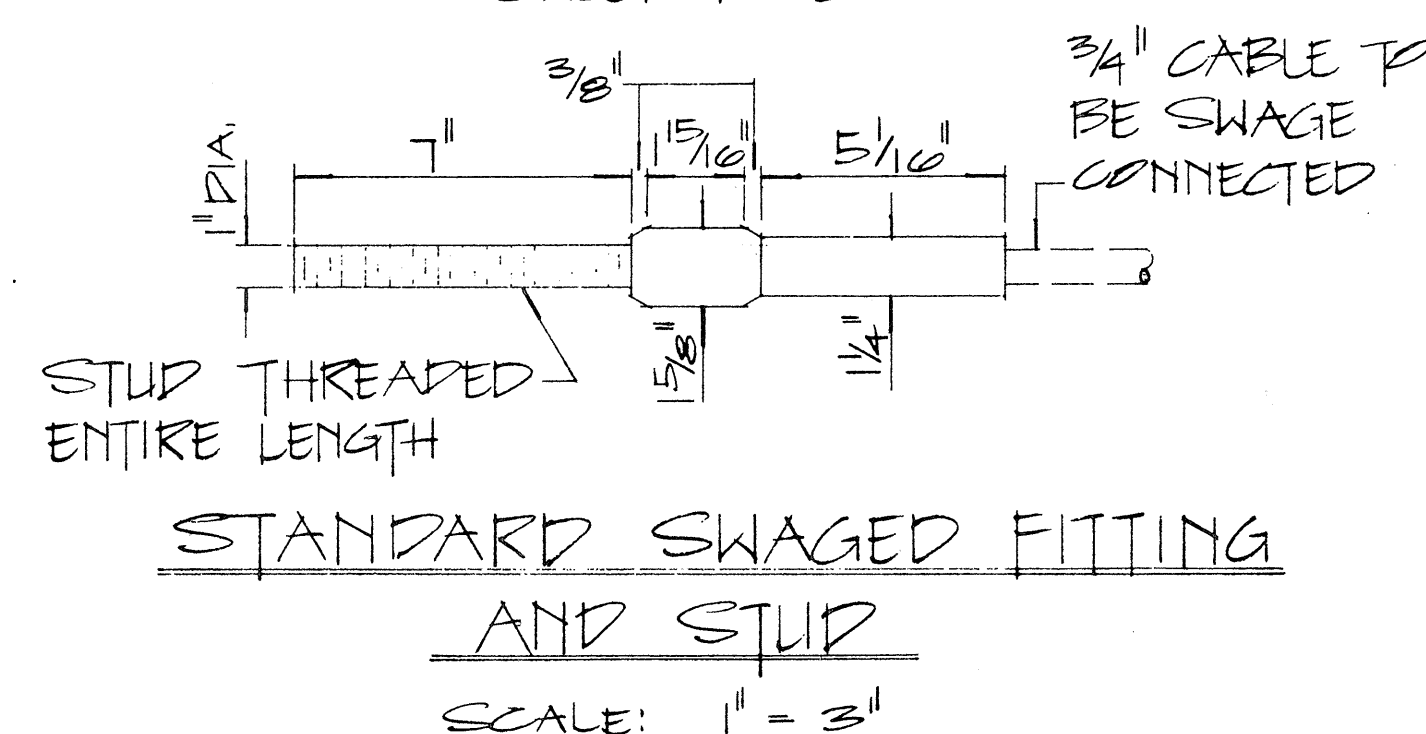
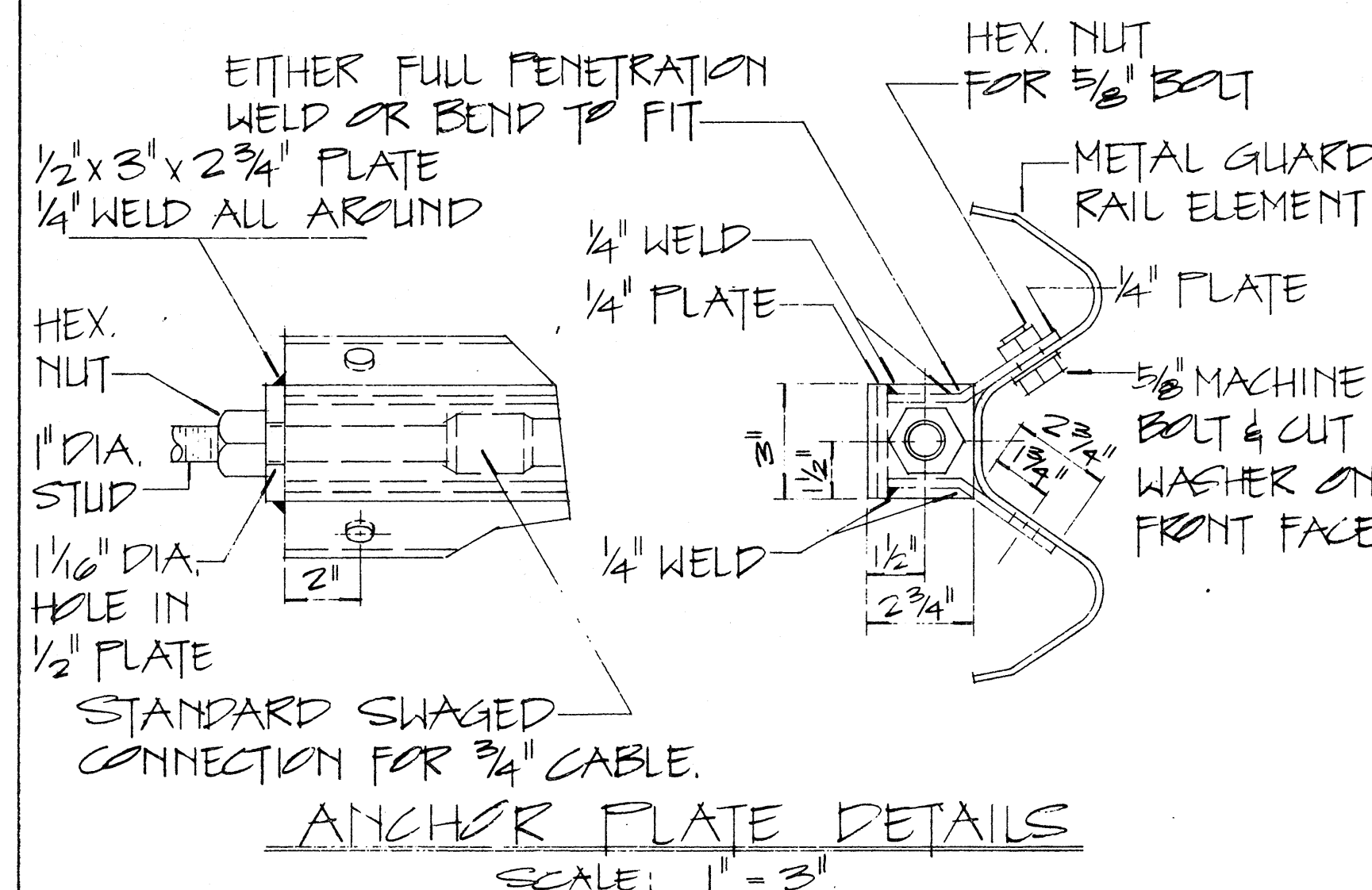
SHEET NO. OF SHEETS DT 517

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-070-1(21)	1980	33	234



NOTE:

1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND POST BURIED IN GROUND, SHALL BE COVERED WITH a Min. 20-Mil thickness of Coal TAR ENAMEL, Conforming to AWWA Standard: C 203
2. CONCRETE, G.R.P., EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.



APPROVAL RECOMMENDED:
Eiichi Tanaka 12/29/68
TRAFFIC ENGINEER DATE

APPROVED:
W. J. Salsal 12-30-68
ASSISTANT CHIEF ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

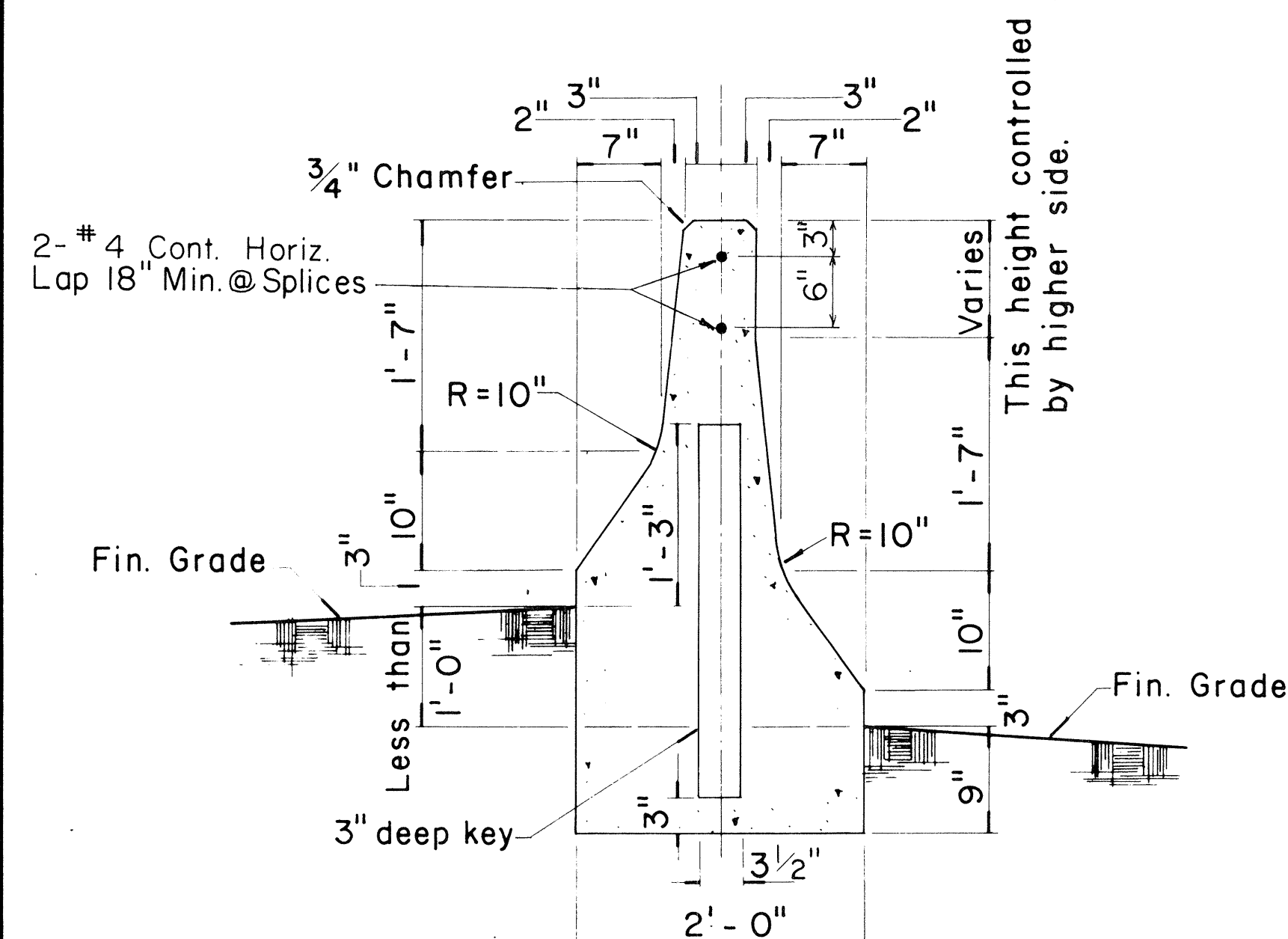
STANDARD DETAILS EARTH MOUND AND ANCHOR BLOCK DETAILS

SCALE: AS SHOWN ACT 1969
SHEET No. OF SHEETS 175

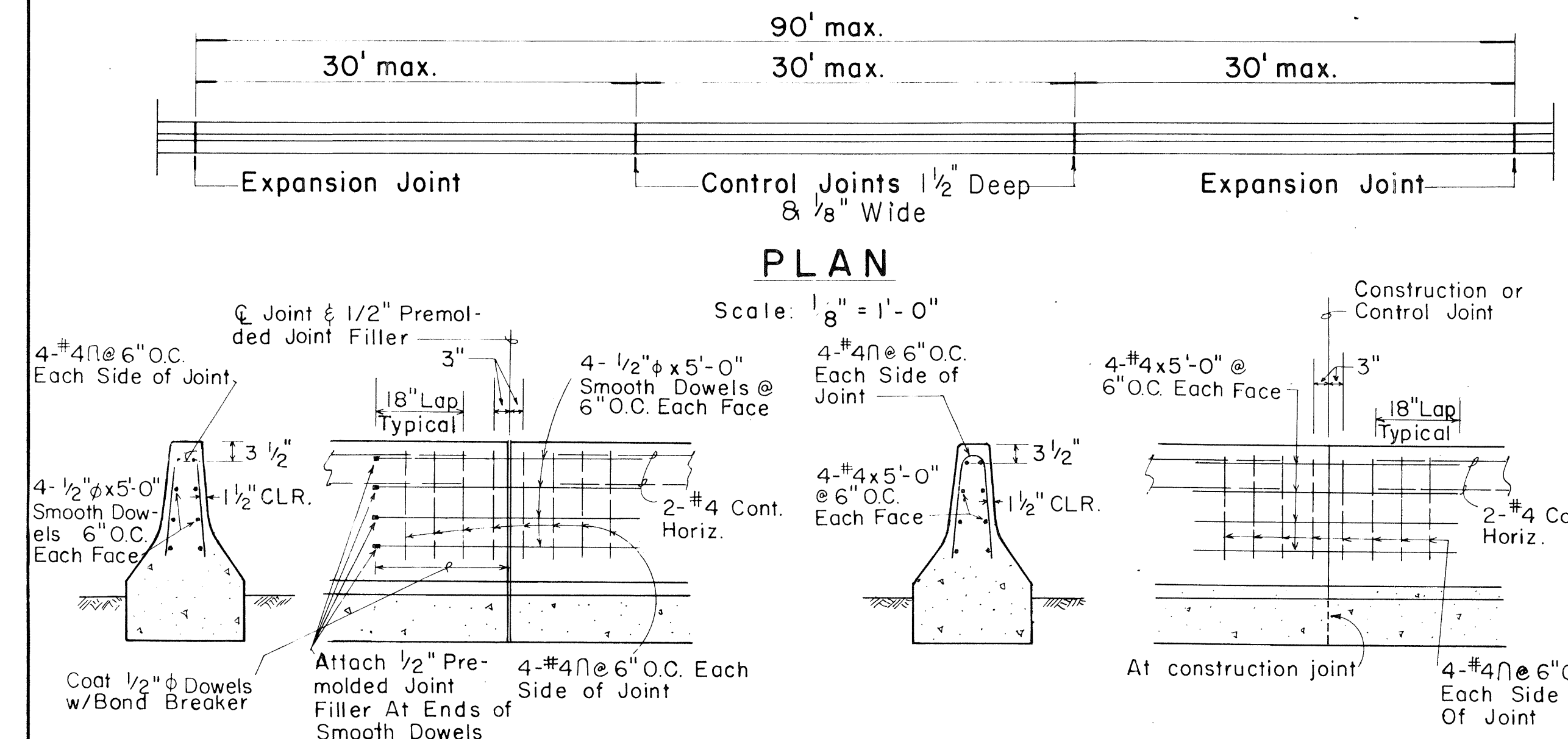
Technical drawing of a bridge pier cross-section. The drawing includes the following dimensions and details:

- Overall Dimensions:**
 - Top width: 2' - 0"
 - Bottom width: 2' - 0"
 - Height: 1' - 7"
 - Base width: 3' - 0"
 - Base depth: 9"
- Reinforcement Details:**
 - 2 - # 4 Cont. Horiz. Lap 18" Min. @ Splice
 - 3" deep key
 - 3" Chamfer
 - R=10"
- Other Labels:**
 - Fin. Grade
 - Barrier

Scale: 1" = 1'-0"



Scale: 1" = 1' - 0"



ELEVATION

CONSTRUCTION & CONTROL JOINT DETAIL

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

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

1/2"

5"

4"

3"

1/2"

1/2" Premolded Joint Filler

Varies

Scale: $1\frac{1}{2}" = 1'-0"$

Technical drawing of a wall section showing reinforcement details. The drawing includes dimensions for wall height (Varies), wall thickness (3 inches), and reinforcement spacing (e.g., #4 at 15 inches o.c., #4 cont. horiz. at 18 inches o.c. max.). It also shows a 3-inch deep key, a 3-inch chamfer, and a 3-inch cl. Typ. section. The drawing is labeled with "Fin. Grade" and "This height controlled by higher side."

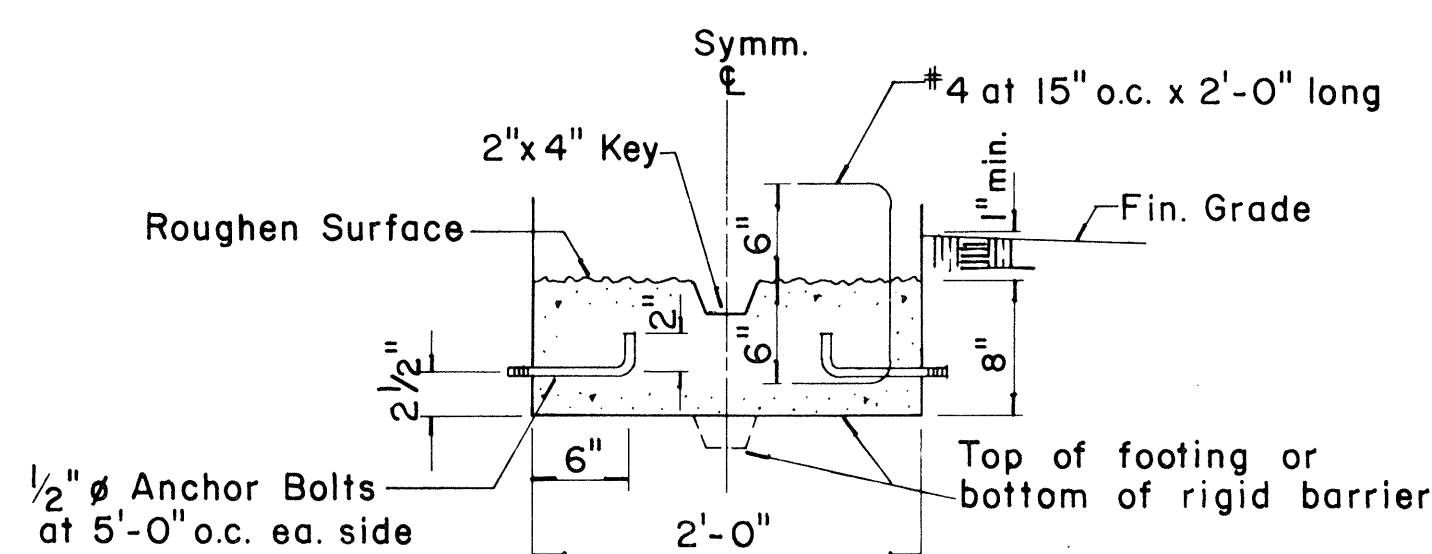
Scale: 1" = 1' - 0"

NOTE:
Except where noted all
dimensions shall be the same
for Type 4C and Type 4D.

NOTE :

The intent of the optional construction joint details for the Type 4 Rigid Barrier Guard Rail is to provide a method of securing the forms and preventing uplift so that the barrier will have a uniform and presentable appearance.

The Contractor may submit an alternate method of constructing the barrier for the approval of the Engineer and for use on a trial basis. Any unsatisfactory work shall be removed or corrected as directed by the Engineer and at the Contractor's expense.



Scale: 1" = 1'-0"

NO.	REVISION	APPROVED By	DATE
1	Supersede Sht. DT 521 Approved 2-10-72	H.L.	7/2/71

STANDARD DETAILS
GUARD RAIL TYPE
(RIGID BARRIER)

Scale: As Shown			
SHEET No.	OF	SHEETS	DT 52