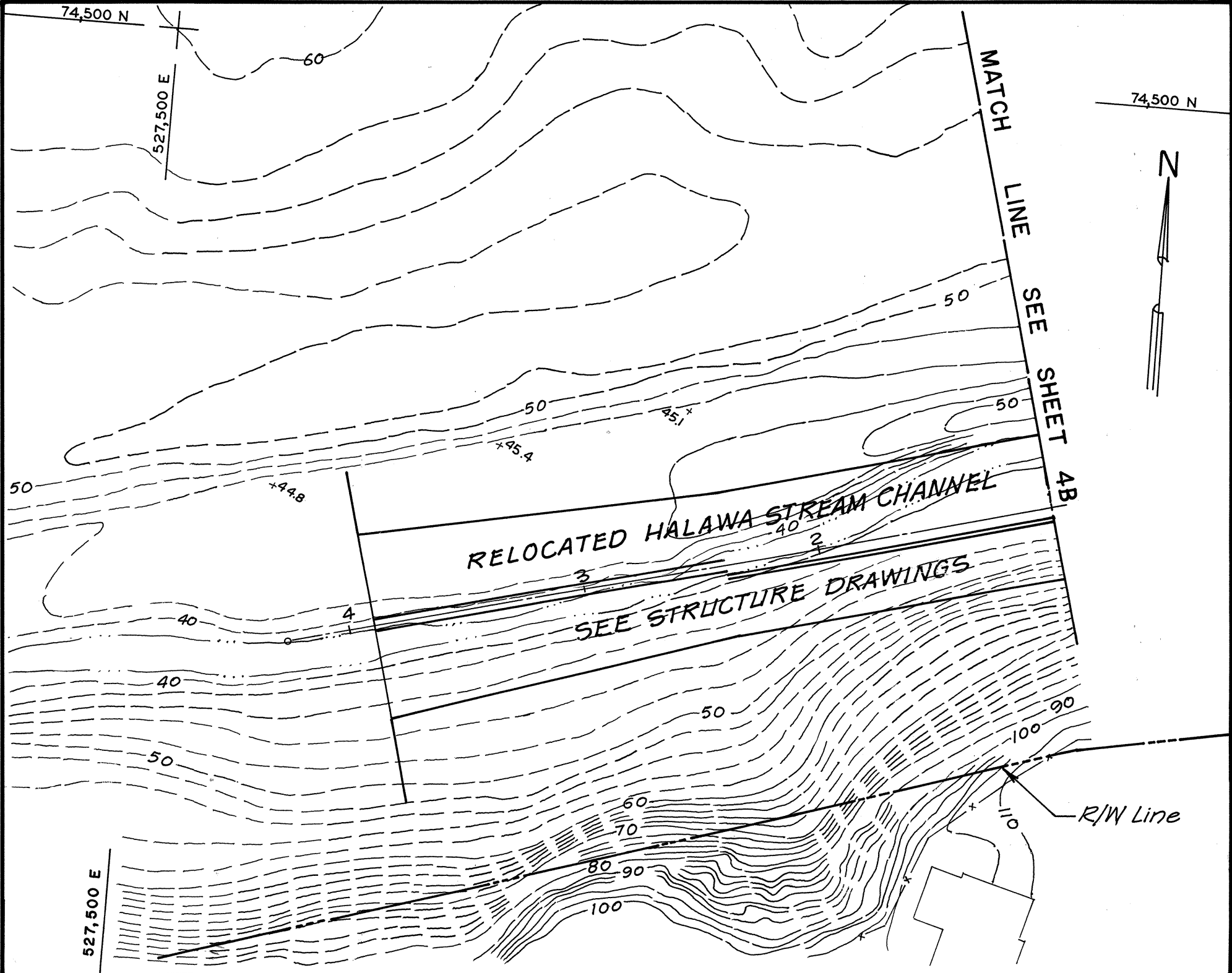
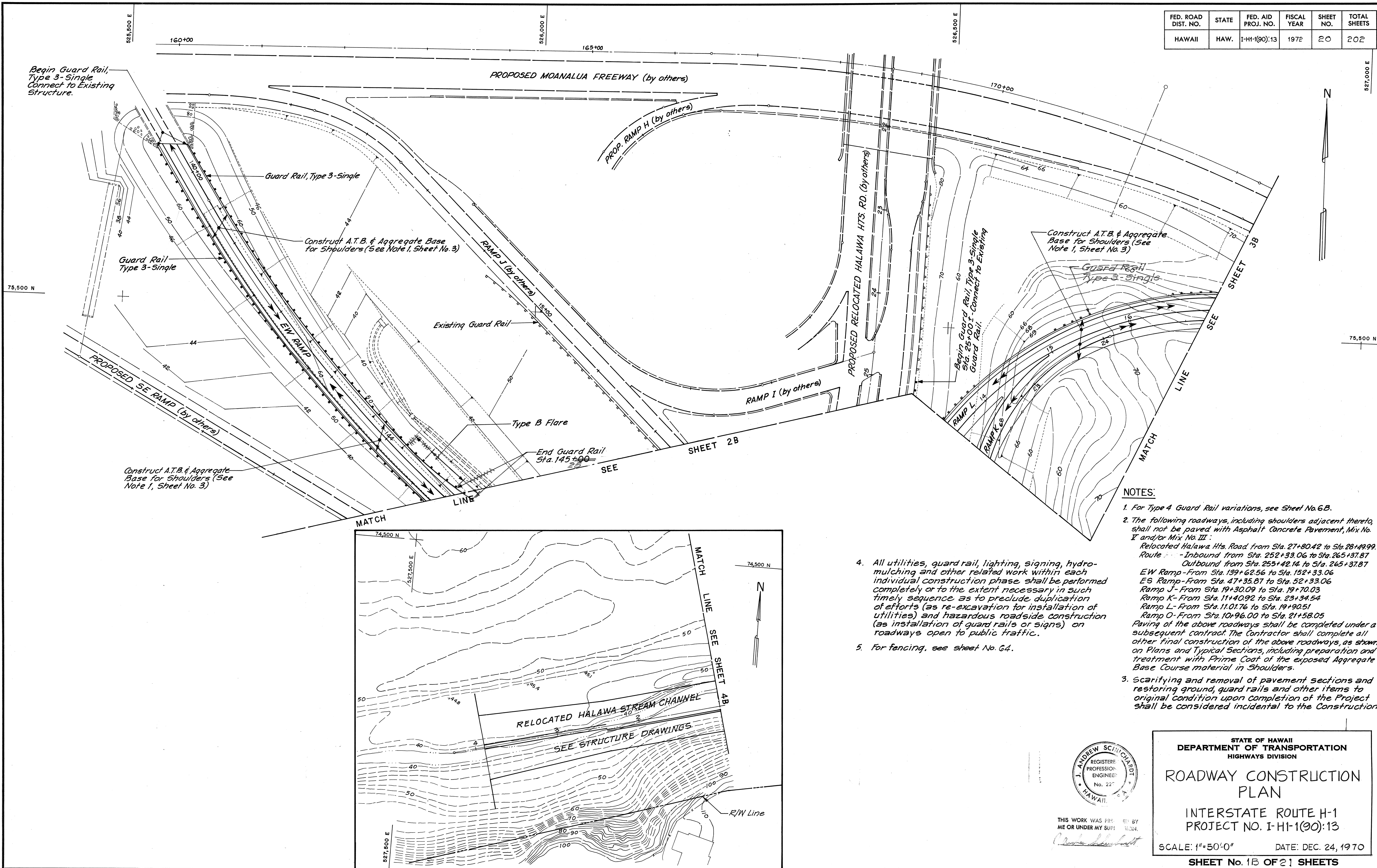
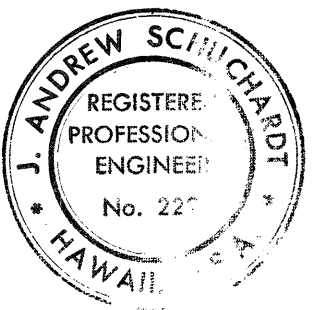


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(90):13	1972	20	202



- NOTES:
- For Type 4 Guard Rail variations, see Sheet No. 6.B.
 - The following roadways, including shoulders adjacent thereto, shall not be paved with Asphalt Concrete Pavement, Mix No. I' and/or Mix No. III:
 Relocated Halawa Hts. Road from Sta. 27+80.42 to Sta. 28+49.99
 Route - Inbound from Sta. 252+33.06 to Sta. 265+37.87
 Outbound from Sta. 255+42.14 to Sta. 265+37.87
 EW Ramp - From Sta. 139+62.56 to Sta. 152+33.06
 ES Ramp - From Sta. 47+35.87 to Sta. 52+33.06
 Ramp J - From Sta. 19+30.09 to Sta. 19+70.03
 Ramp K - From Sta. 11+40.92 to Sta. 23+34.54
 Ramp L - From Sta. 11.01.76 to Sta. 19+90.51
 Ramp O - From Sta. 10+96.00 to Sta. 21+58.05
 Paving of the above roadways shall be completed under a subsequent contract. The Contractor shall complete all other final construction of the above roadways, as shown on Plans and Typical Sections, including preparation and treatment with Prime Coat of the exposed Aggregate Base Course material in Shoulders.
 - Scarifying and removal of pavement sections and restoring ground, guard rails and other items to original condition upon completion of the Project shall be considered incidental to the construction.
 - All utilities, guard rail, lighting, signing, hydro-mulching and other related work within each individual construction phase, shall be performed completely or to the extent necessary in such timely sequence as to preclude duplication of efforts (as re-excavation for installation of utilities) and hazardous roadside construction (as installation of guard rails or signs) on roadways open to public traffic.
 - For fencing, see sheet No. 64.



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

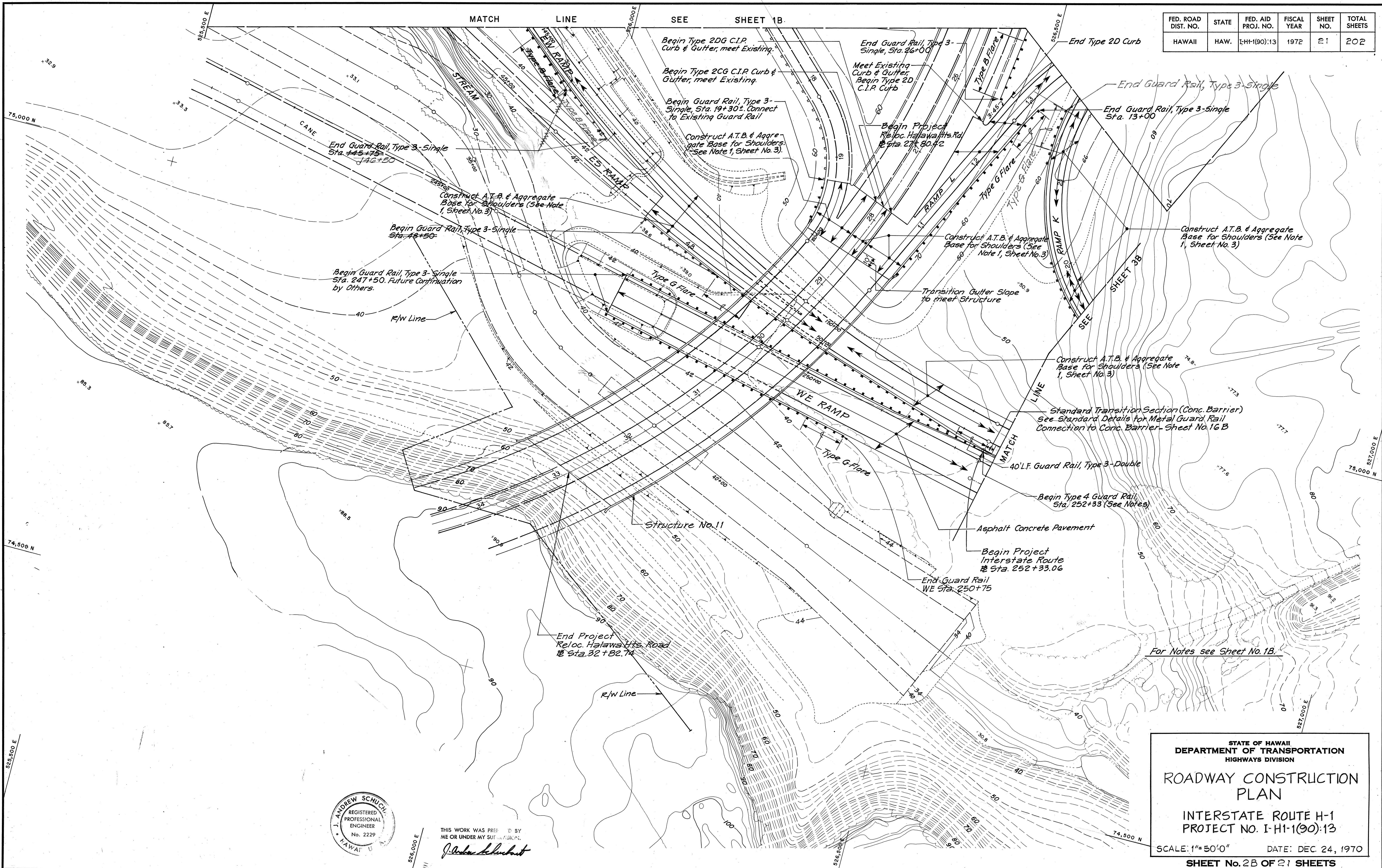
INTERSTATE ROUTE H-1
 PROJECT NO. I-H1-1(90):13

SCALE: 1"=50'-0" DATE: DEC. 24, 1970

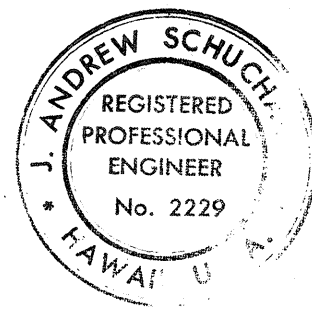
SHEET No. 1B OF 21 SHEETS

DATE	_____
DESIGNED BY	_____
DRAWN BY	_____
CHECKED BY	_____
NOTE BOOK	_____
No.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(90):13	1972	21	202



DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	



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J. Andrew Schuch

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION
PLAN

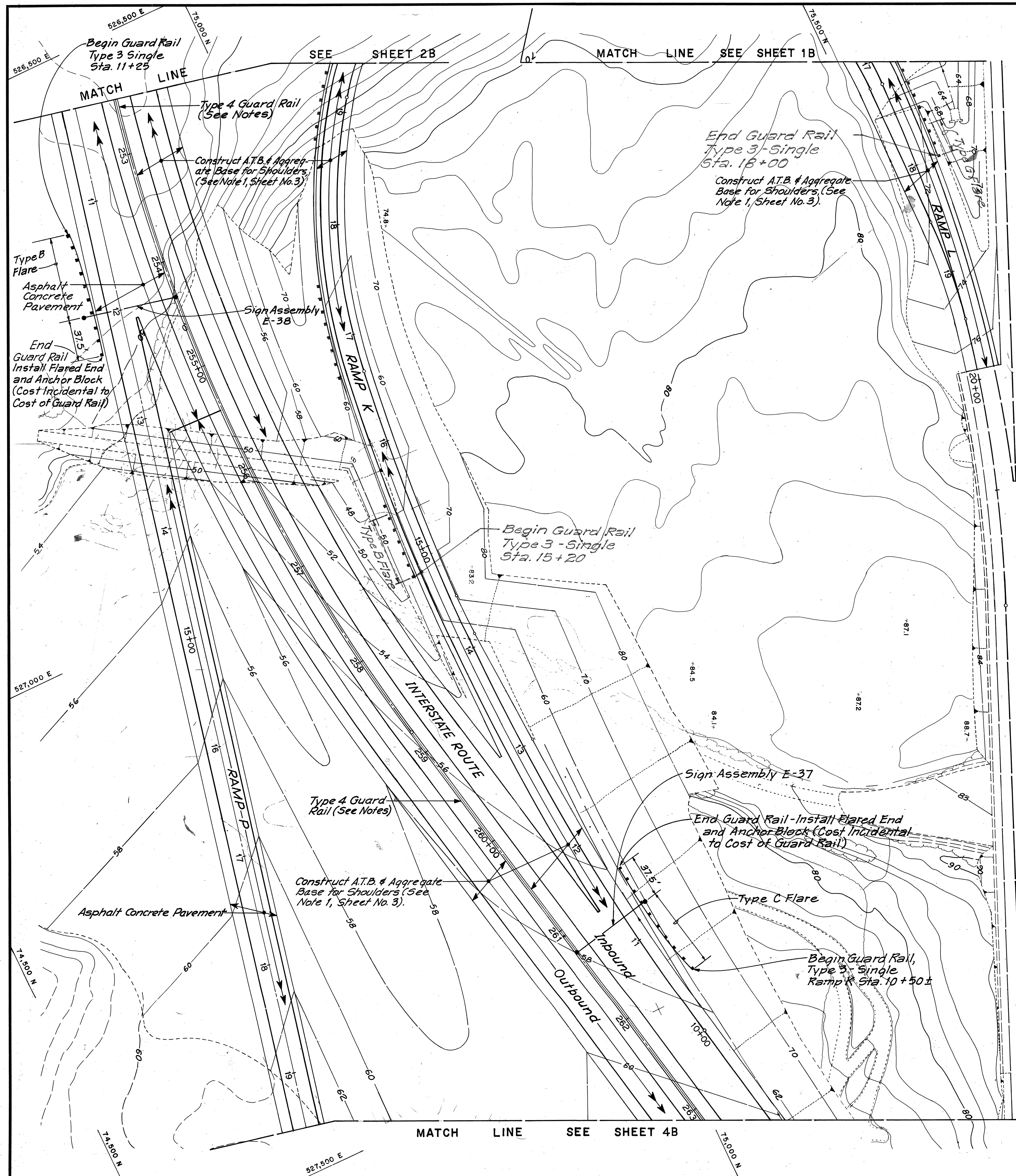
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(90):13

SCALE: 1"=50'-0" DATE: DEC. 24, 1970

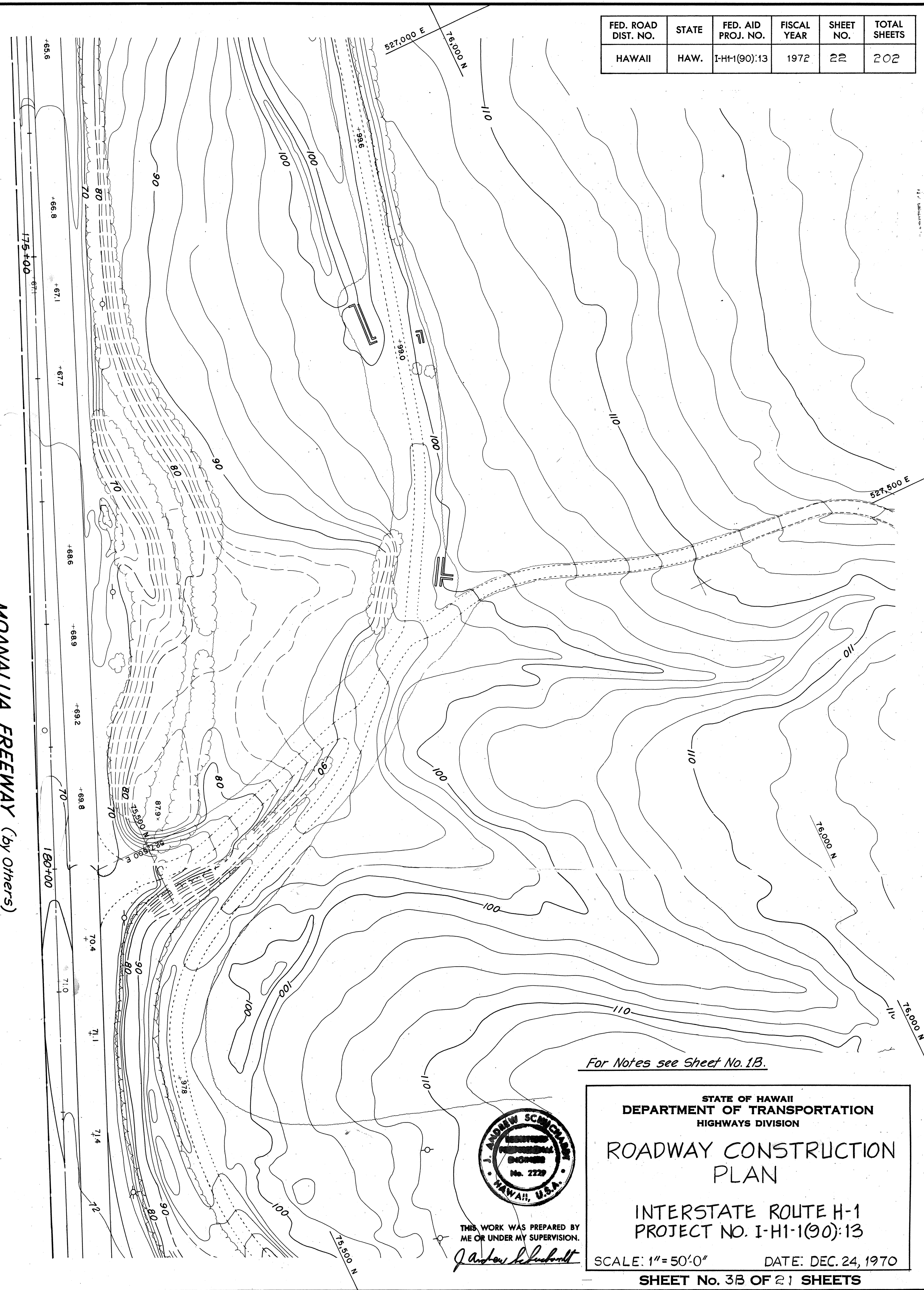
SHEET No. 2B OF 21 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1(90):13	1972	22	202

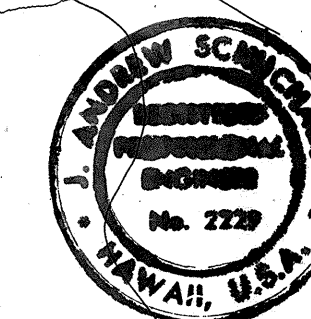
DATE	DESIGNED BY	CHECKED BY
NO.	NO.	NO.



MOANALUA FREEWAY (by Others)



For Notes see Sheet No. 1B.



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Andrew Schmitt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION
PLAN

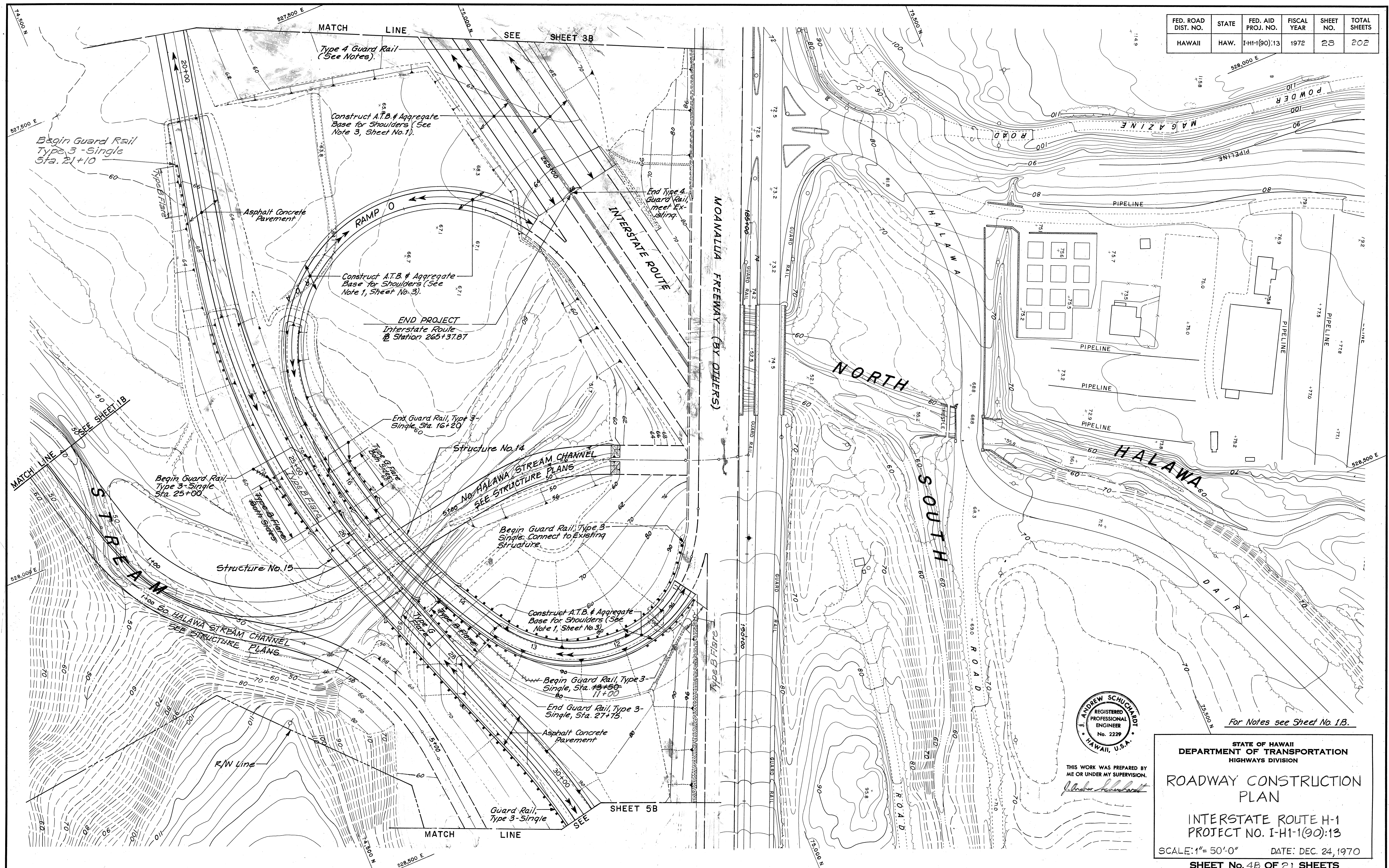
INTERSTATE ROUTE H-1
PROJECT NO. I-H1(90):13

SCALE: 1"=50'-0" DATE: DEC. 24, 1970

SHEET No. 3B OF 21 SHEETS

22

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(90):13	1972	23	202



ORIGINAL	SURVEY PLOTTED BY _____	DATE _____
PLAN	DRAWN BY _____	" _____
	TRACED BY _____	" _____
NOTE BOOK	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
No. _____	CHECKED BY _____	" _____



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J. Andrew Schuchardt

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

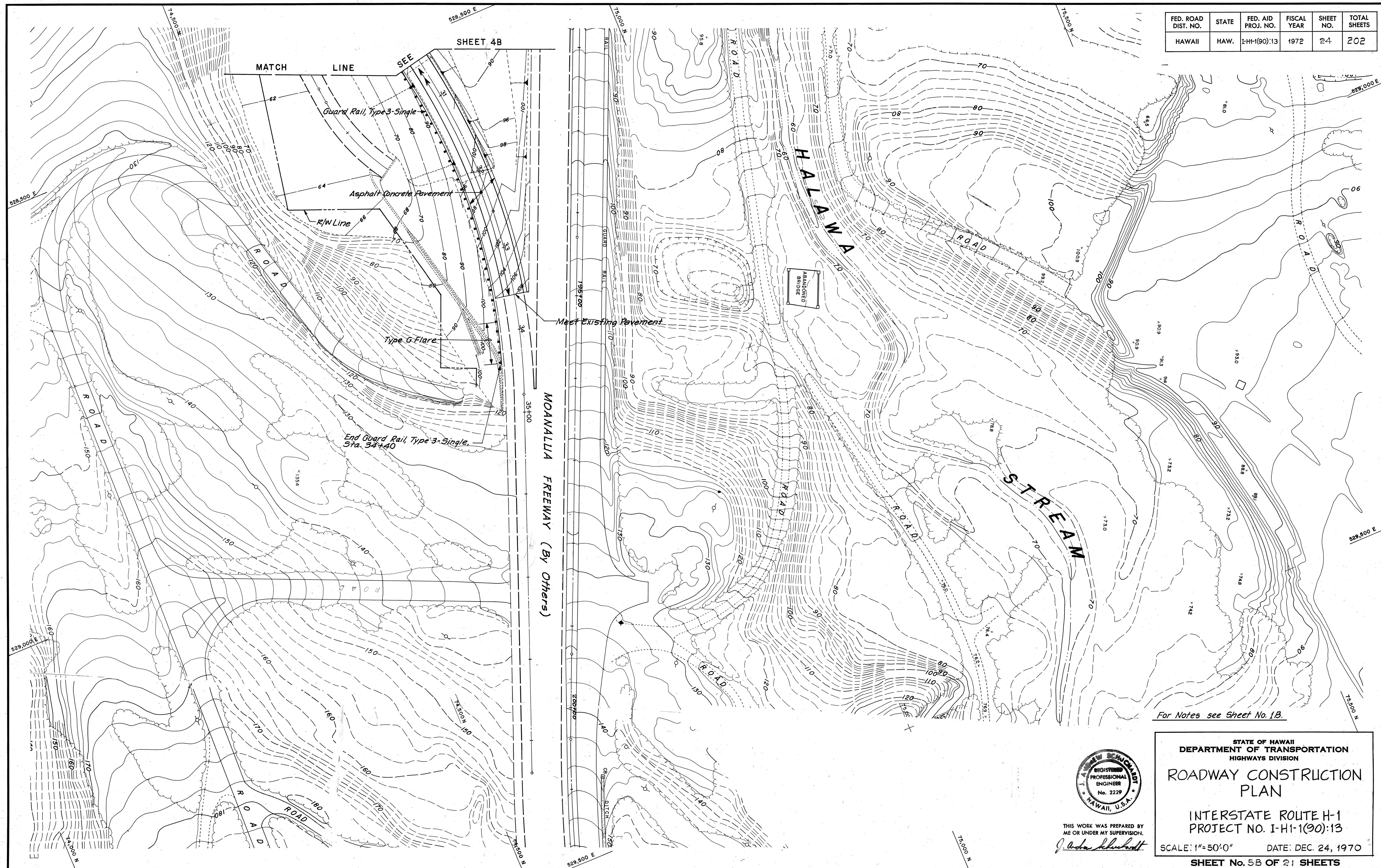
ROADWAY CONSTRUCTION PLAN

INTERSTATE ROUTE H-1
PROJECT NO. I-H1-1(90):13

SCALE: 1" = 50'-0" DATE: DEC. 24, 1970

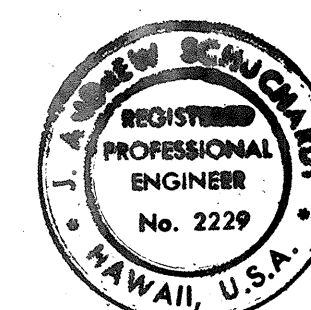
SHEET No. 4B OF 21 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(90):13	1972	24	202



ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	" _____
	TRACED BY _____	" _____
NOTE BOOK	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
	CHECKED BY _____	" _____
No. _____		

For Notes see Sheet No. 1B.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

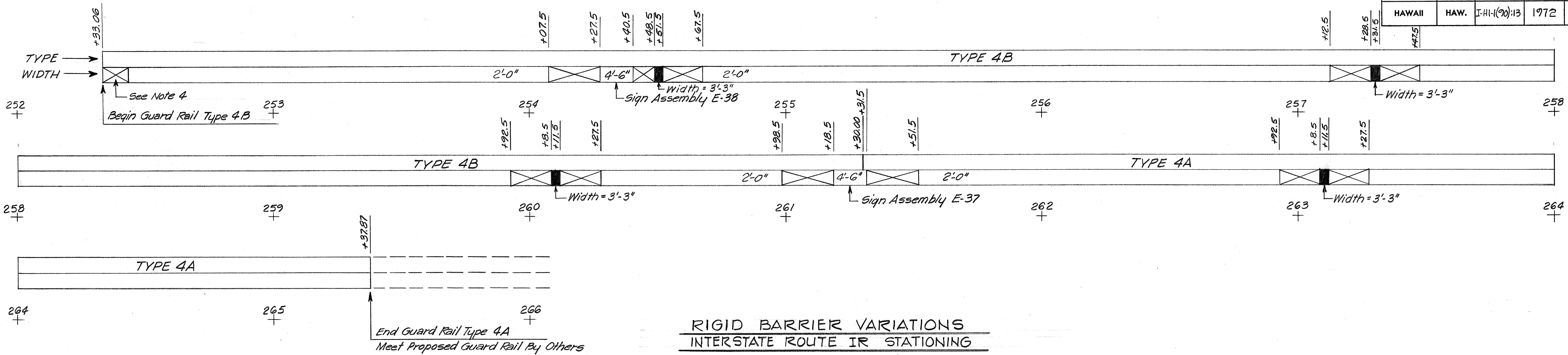
INTERSTATE ROUTE H-1
PROJECT NO. I-H1-1(90):13

SCALE: 1"=50'-0" DATE: DEC. 24, 1970

SHEET No. 5B OF 21 SHEETS

241

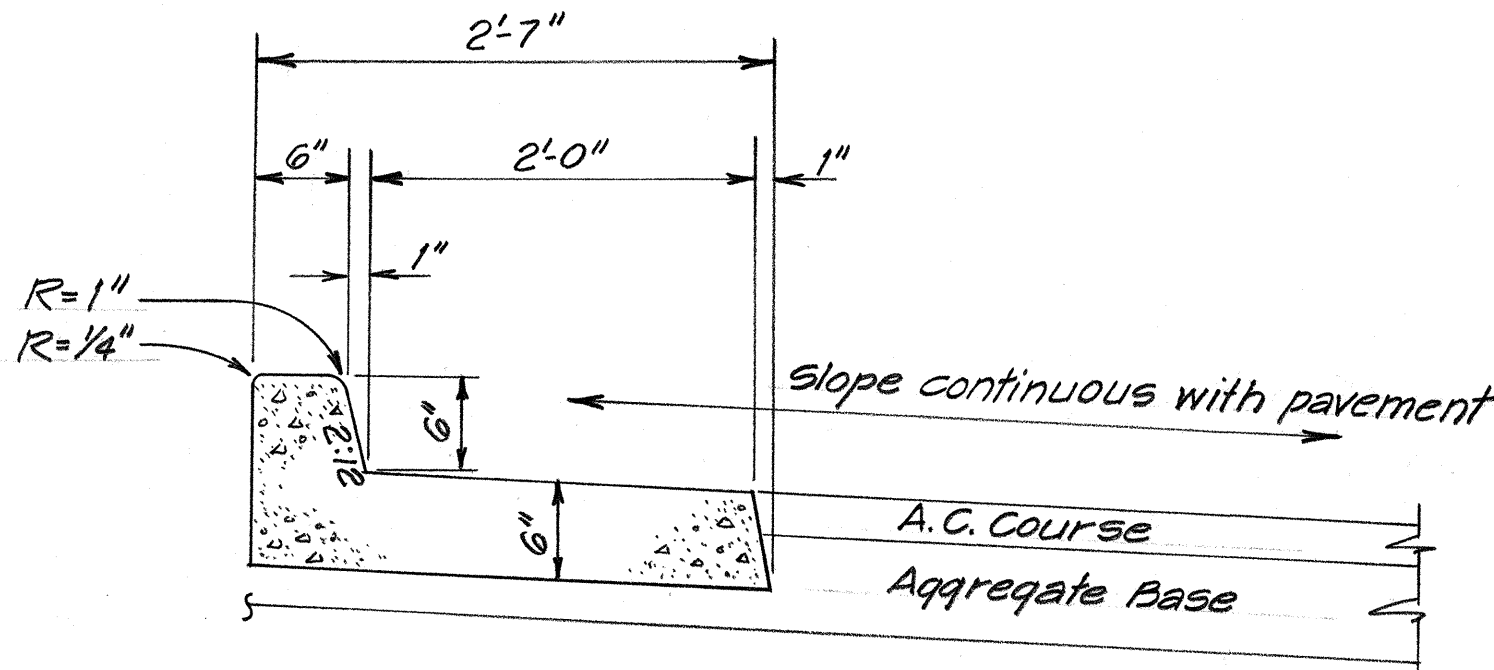
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(90)13	1972	25	202



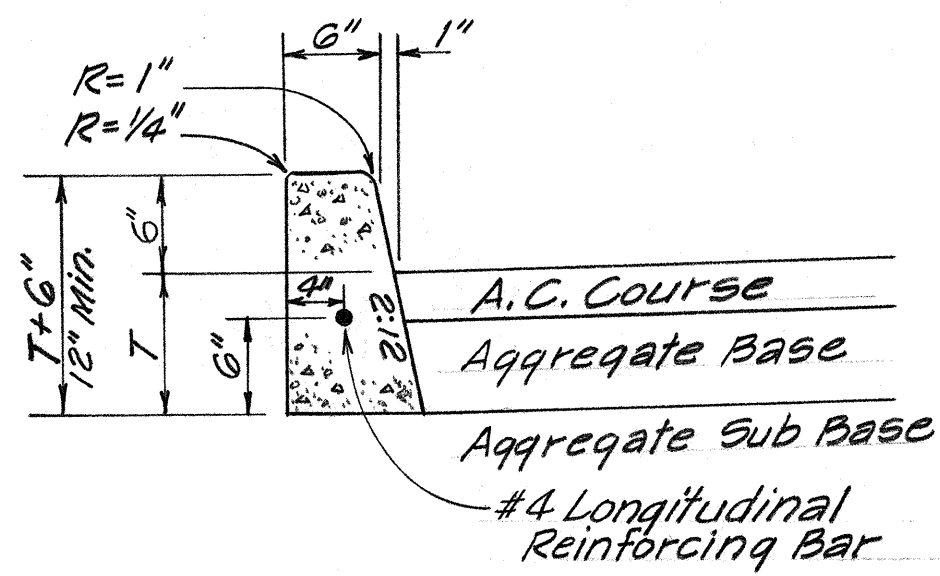
**RIGID BARRIER VARIATIONS
INTERSTATE ROUTE IR STATIONING**
SCALE: HORIZ. 1" = 20'

- NOTES:**
- Guard Rail Types 4A and 4B to be paid on a linear foot basis, including transitions and widened sections around overhead sign support structures.
 - See Standard Details for Rigid Barrier at sign supports and lighting standards.
 - Ten (10) foot long standard transition section for connection to metal guard rail. See Standard Details.

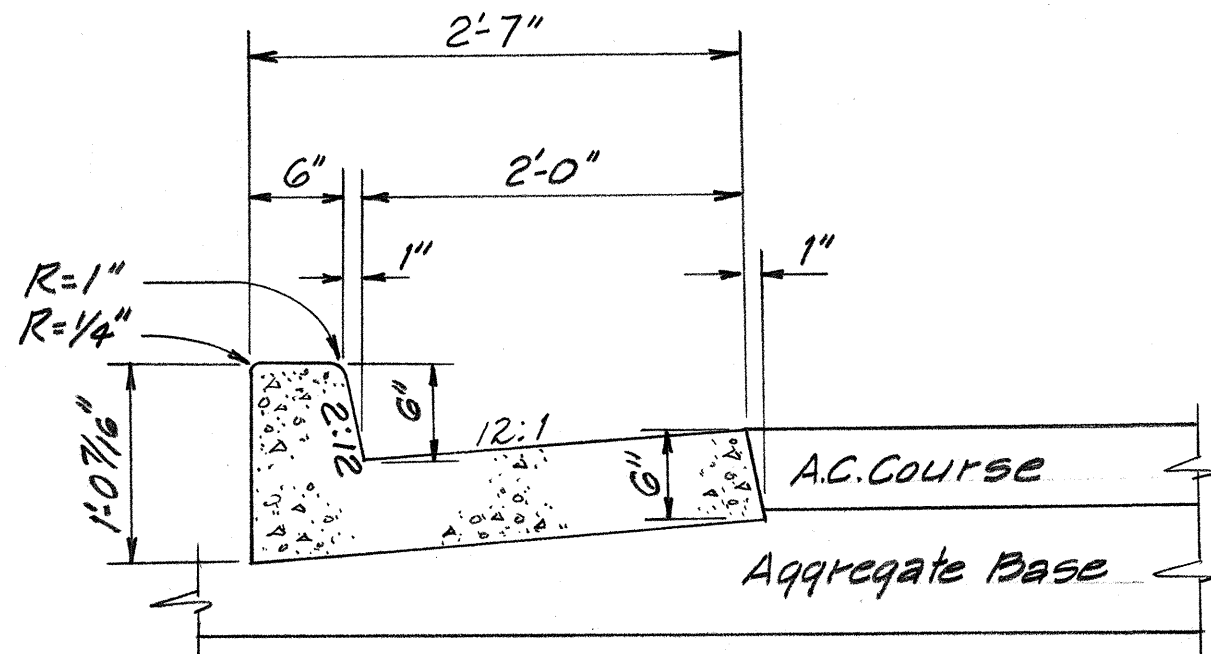
LEGEND
 = Transition
 = Light Standard



TYPE "2CG" CAST-IN-PLACE CONCRETE CURB & GUTTER
SCALE: 1" = 1'-0"



CURB, TYPE "2D"
SCALE: 1" = 1'-0"



TYPE "2DG" CAST-IN-PLACE CONCRETE CURB & GUTTER
SCALE: 1" = 1'-0"

TABLE OF CENTERLINE & REFERENCE SURVEY MONUMENTS				
ROADWAY	STATION	OFFSET	QUANTITIES	
			# MONUMENTS	REF SURVEY MON.
INTERSTATE	252+33.06	6.00' RT.		1
INTERSTATE	258+78.27	6.00' RT.		1

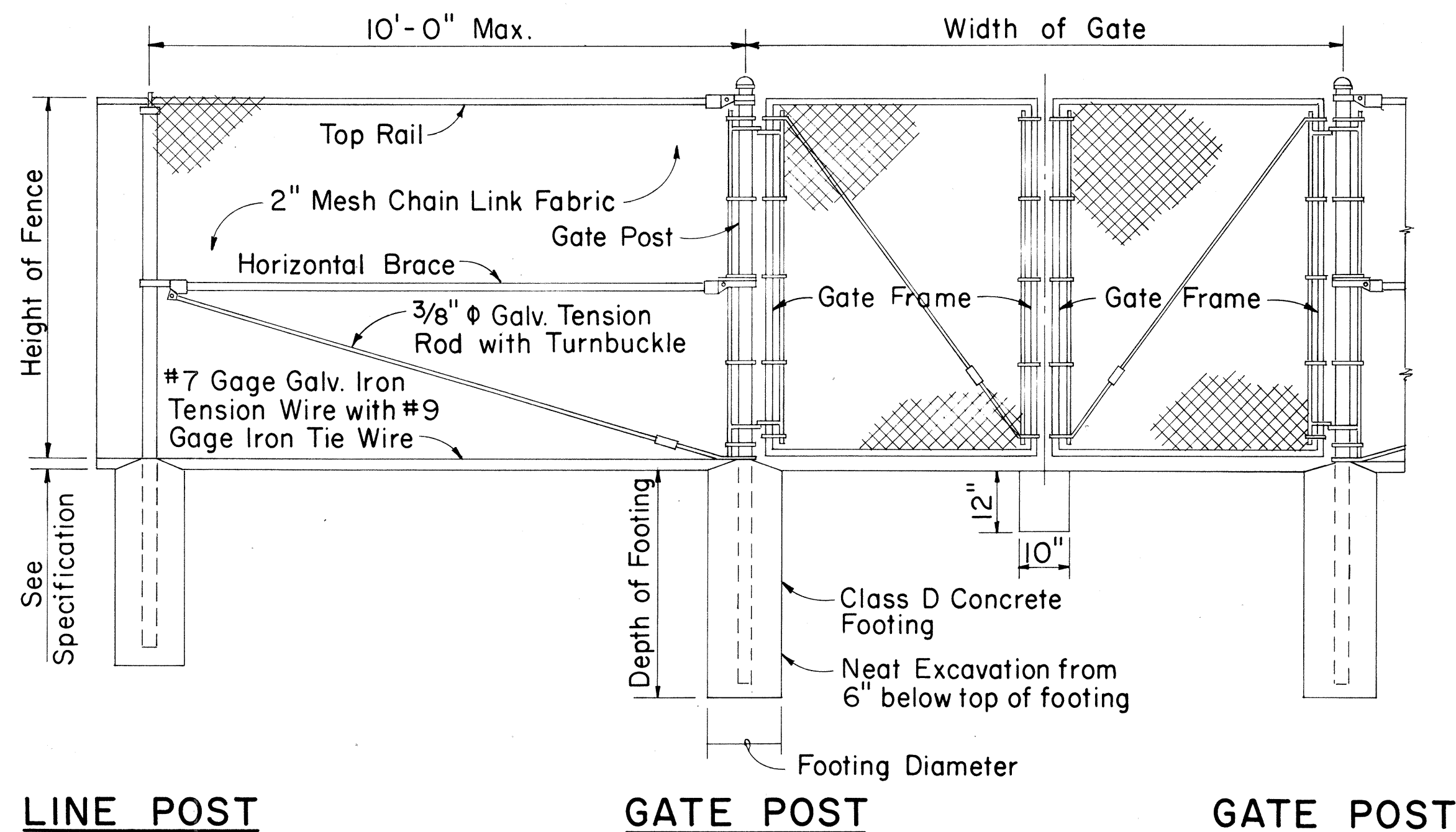
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
CHECKED BY	
No.	

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J. Andrew Schuchard

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MISCELLANEOUS ROADWAY DETAILS
RIGID BARRIER, CURB & GUTTER
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(90)13
SCALE: AS SHOWN DATE: DEC. 24, 1970
SHEET No. 68 OF 21 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(90)-13	1972	26	202



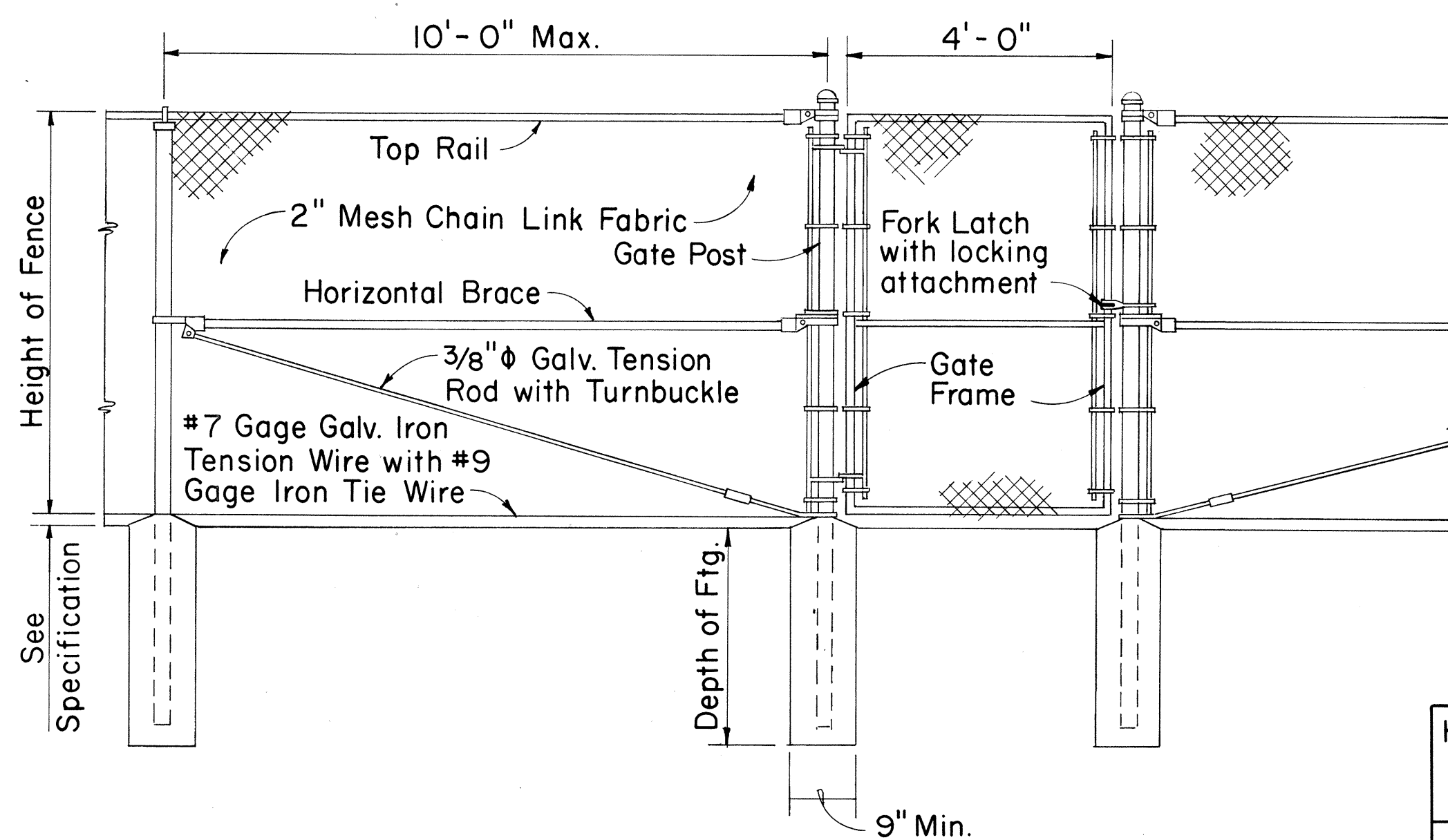
LINE POST

GATE POST

GATE POST

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.
4. Padlock (combination type) shall be provided, and shall be considered incidental to Chain Link Gate.

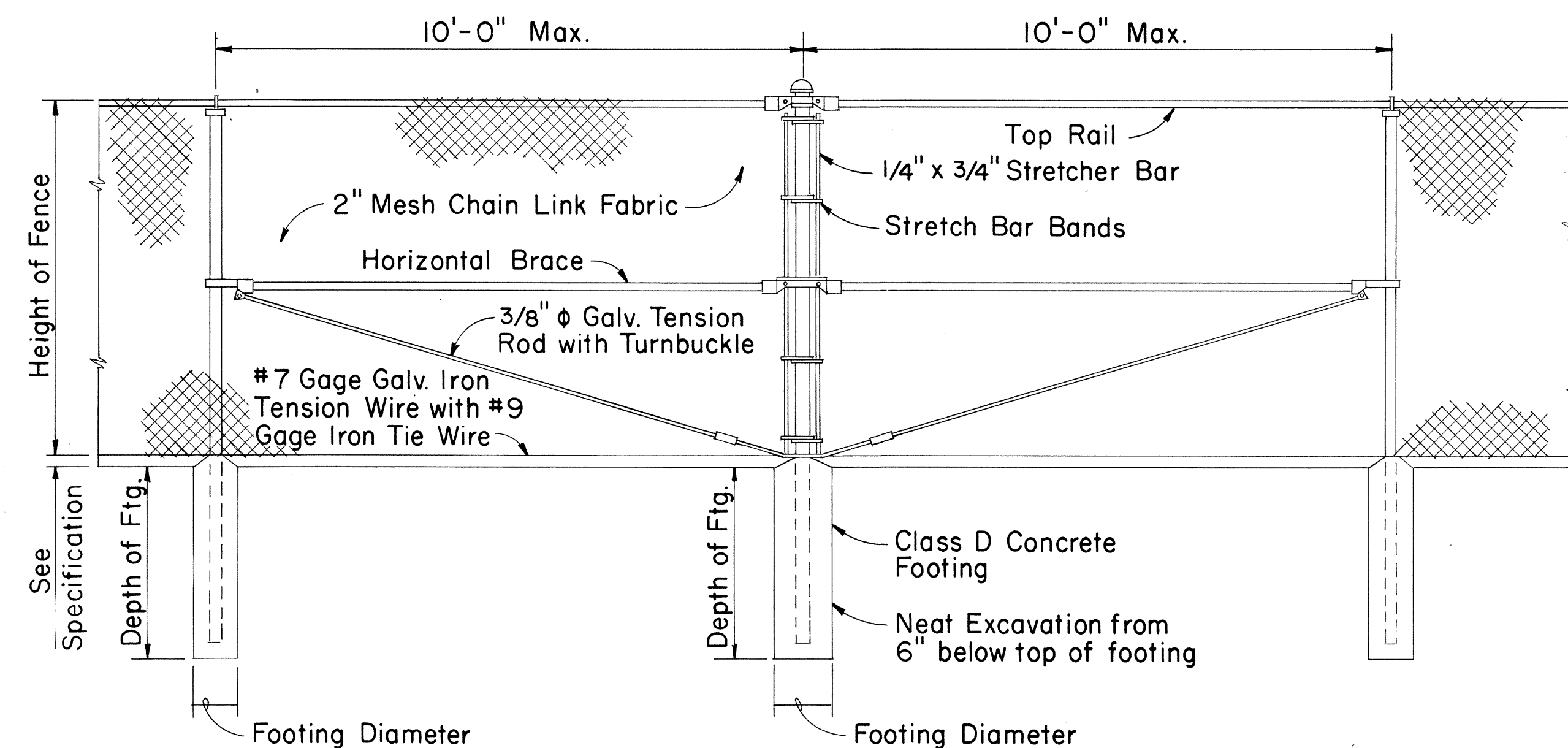


LINE POST

GATE POST

GATE POST

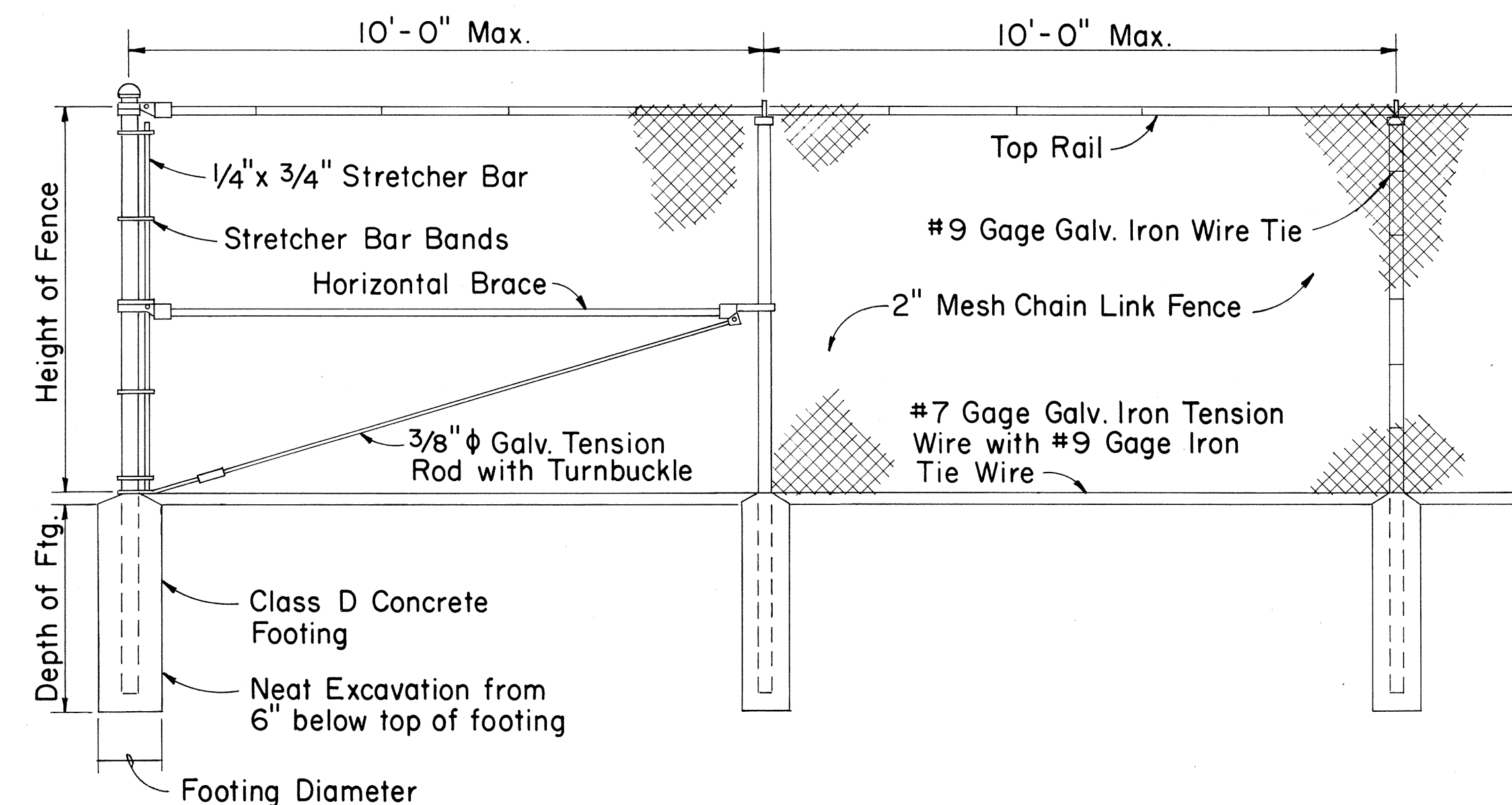
DETAIL OF 4 FT. CHAIN LINK GATE



LINE POST

PULL POST

LINE POST



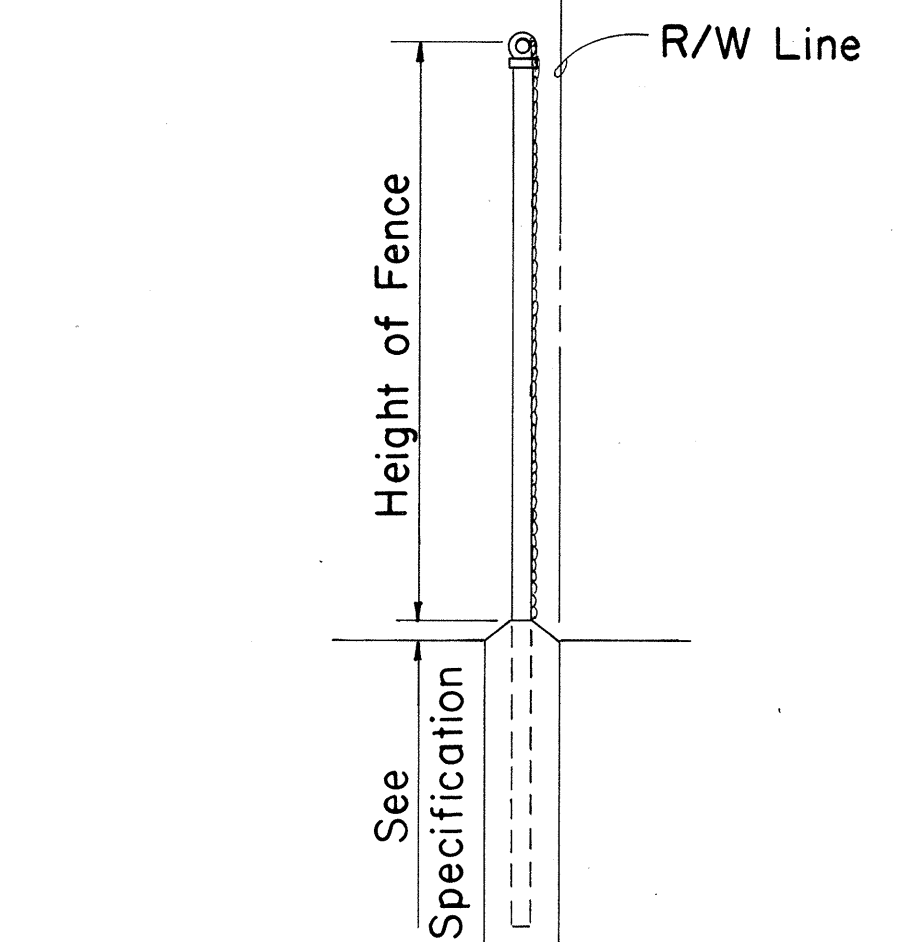
END POST

LINE POST

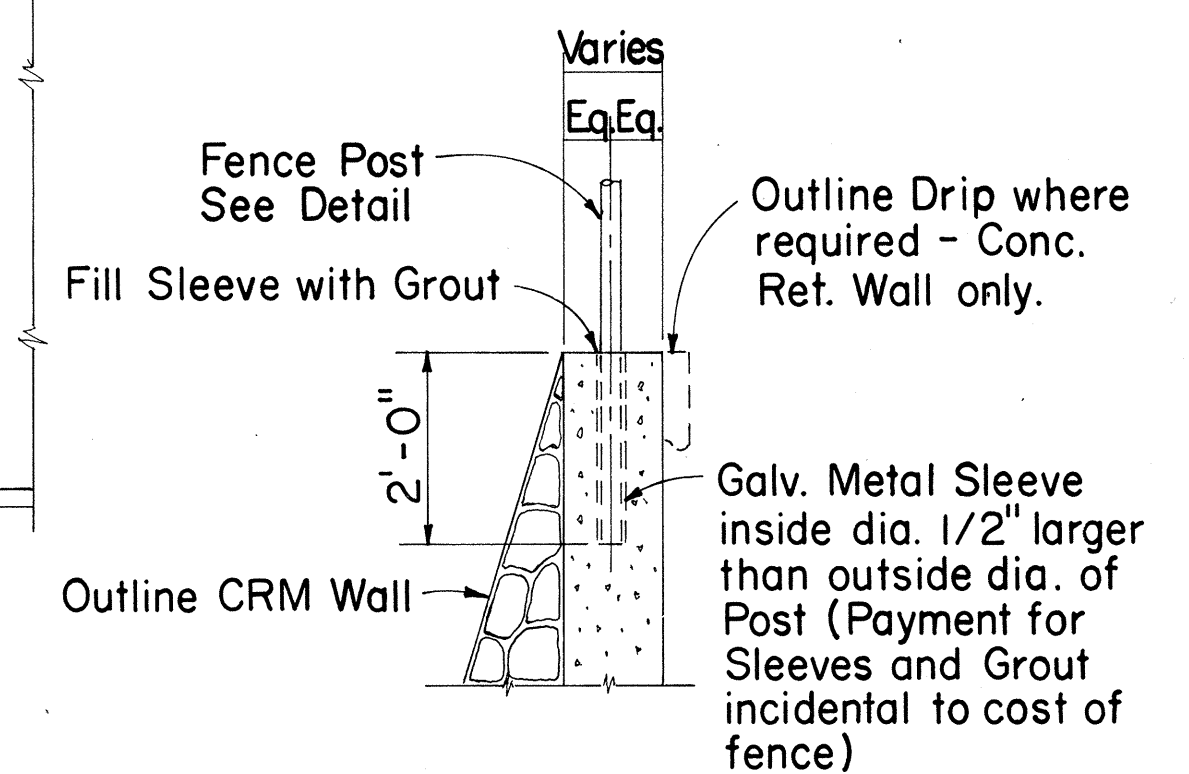
LINE POST

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"



TYPICAL SECTION (WITH CONCRETE FOOTING)



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

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

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

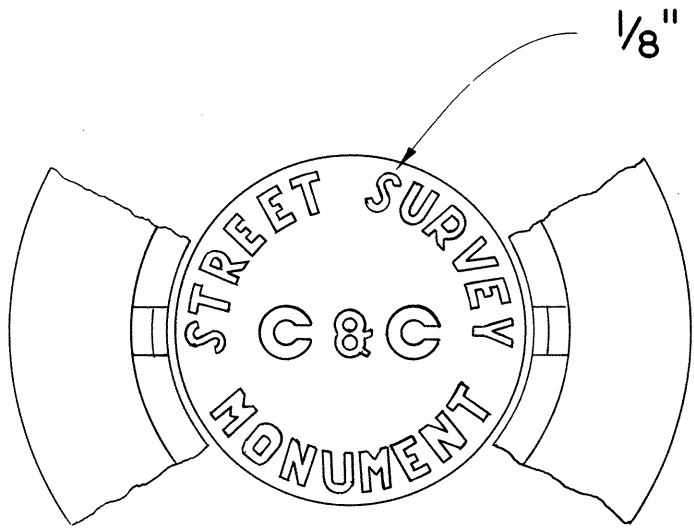
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

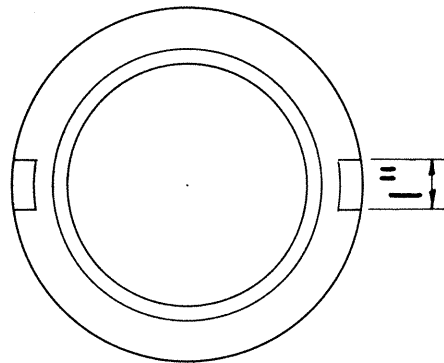
STANDARD DETAILS
CHAIN LINK FENCE
(WITH TOPRAIL)

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

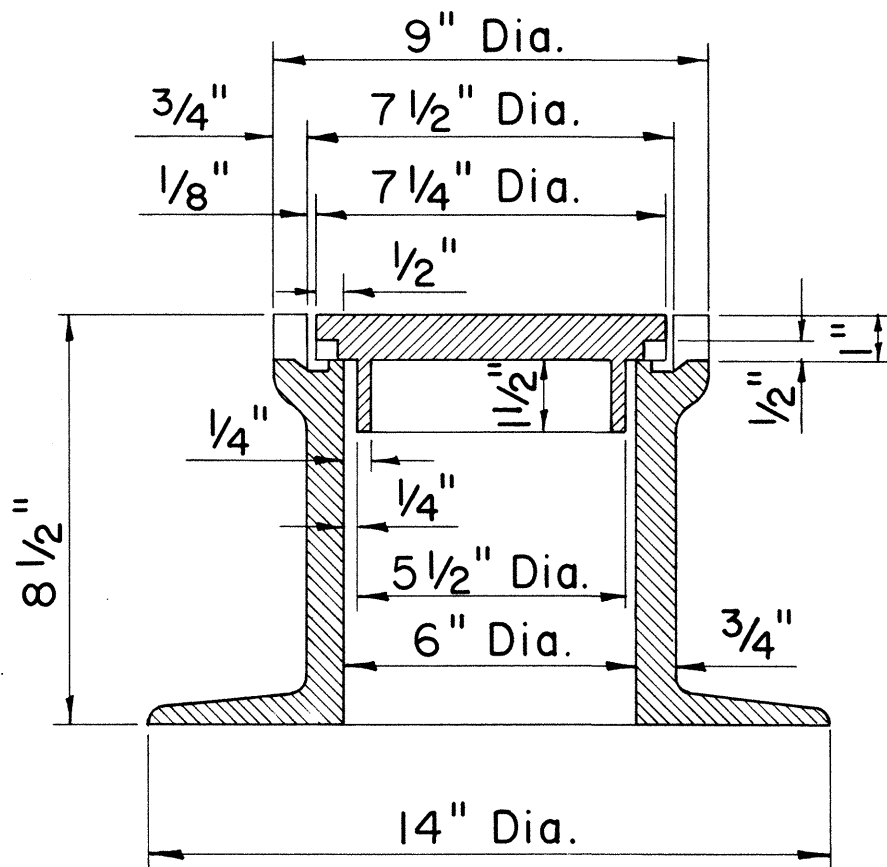
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-411(90):13	1972	27	202



TOP VIEW OF COVER
AND PORTION OF FRAME



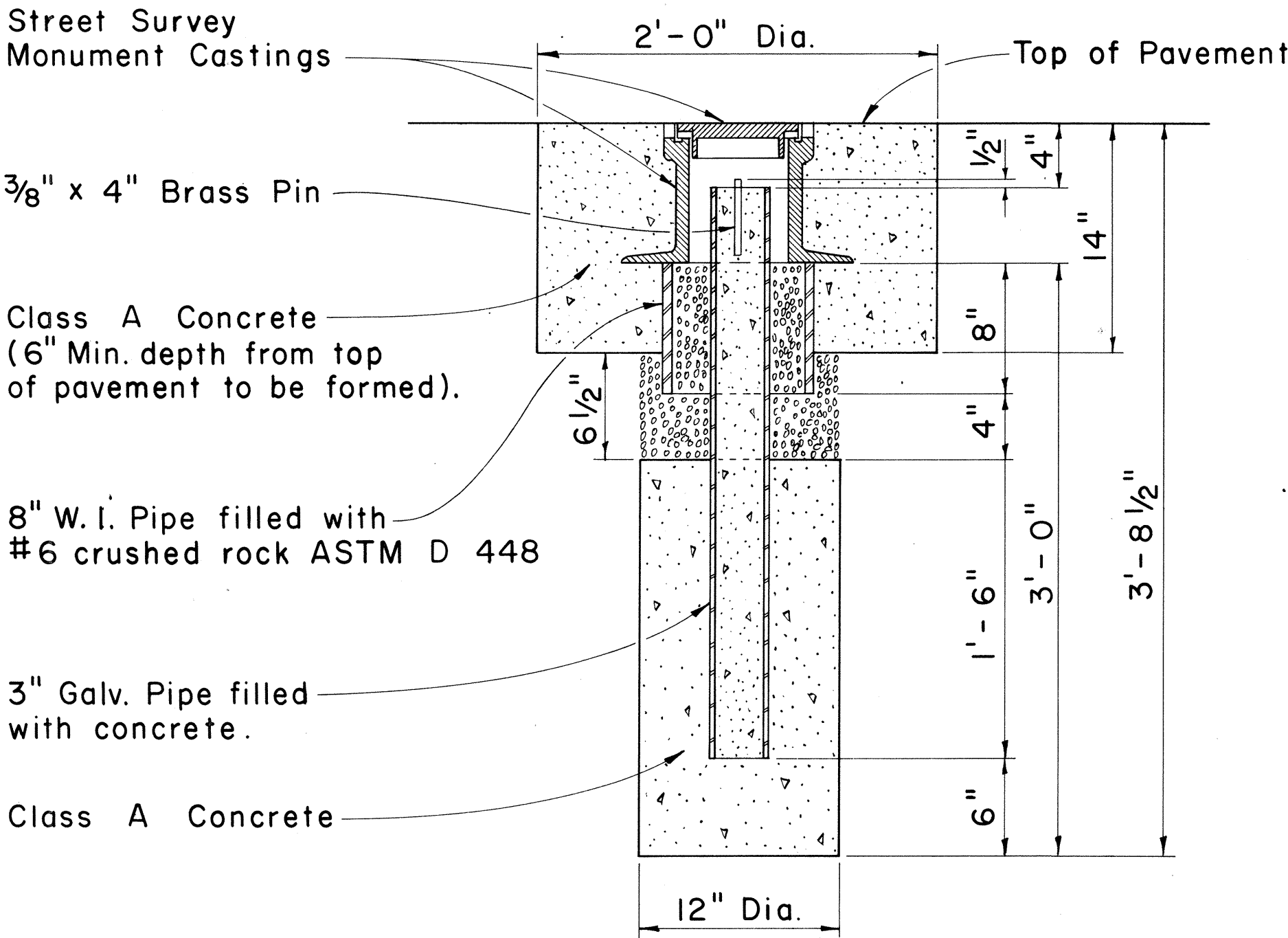
BOTTOM OF COVER



SECTIONAL VIEW OF
FRAME AND COVER

STREET SURVEY MONUMENT CASTINGS

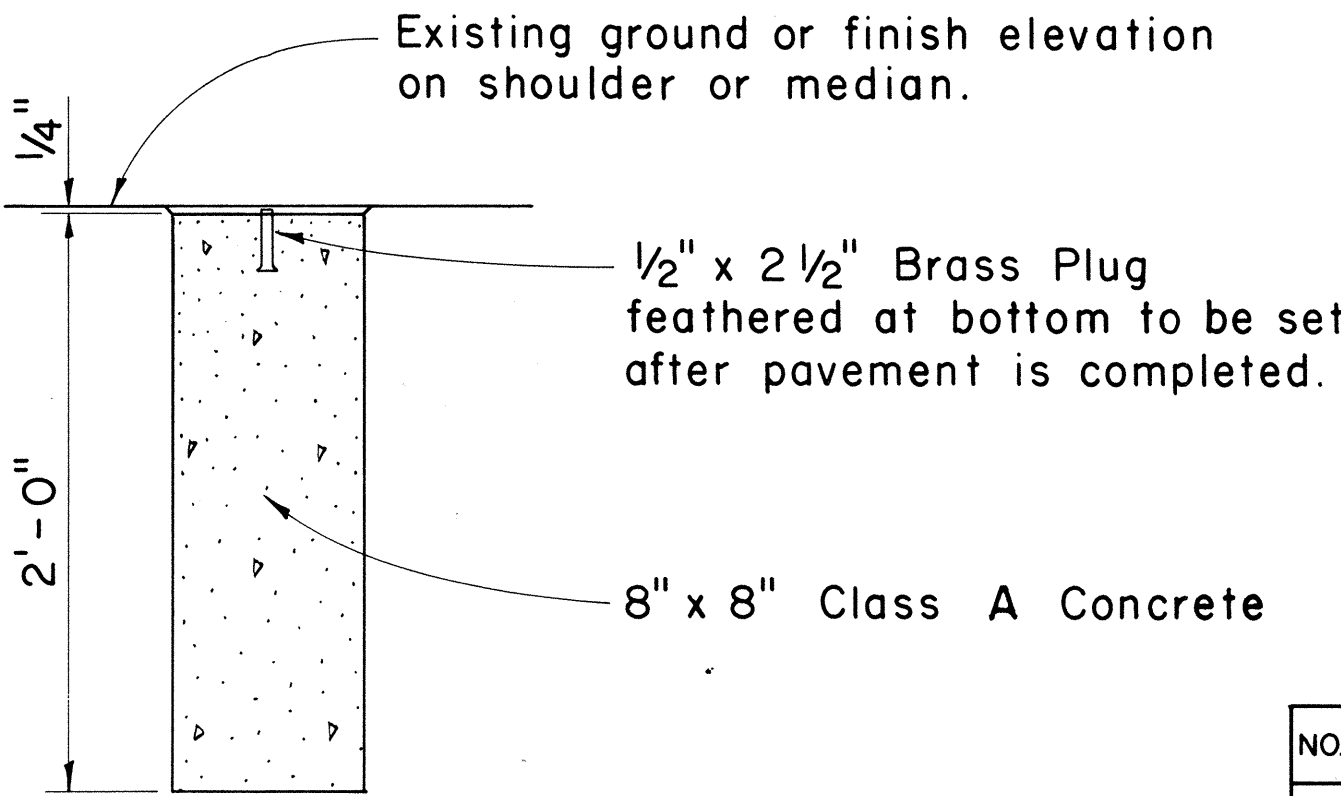
Scale: 3" = 1'-0"



NOTE:
Where the excavation extends into solid rock the depth may be decreased if approved by the Engineer.

STREET SURVEY MONUMENT

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



DETAIL FOR
CENTERLINE AND REFERENCE
SURVEY MONUMENT

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

APPROVAL RECOMMENDED:
M. H. H. H. 12-4-69
HIGHWAY DESIGN ENGINEER DATE

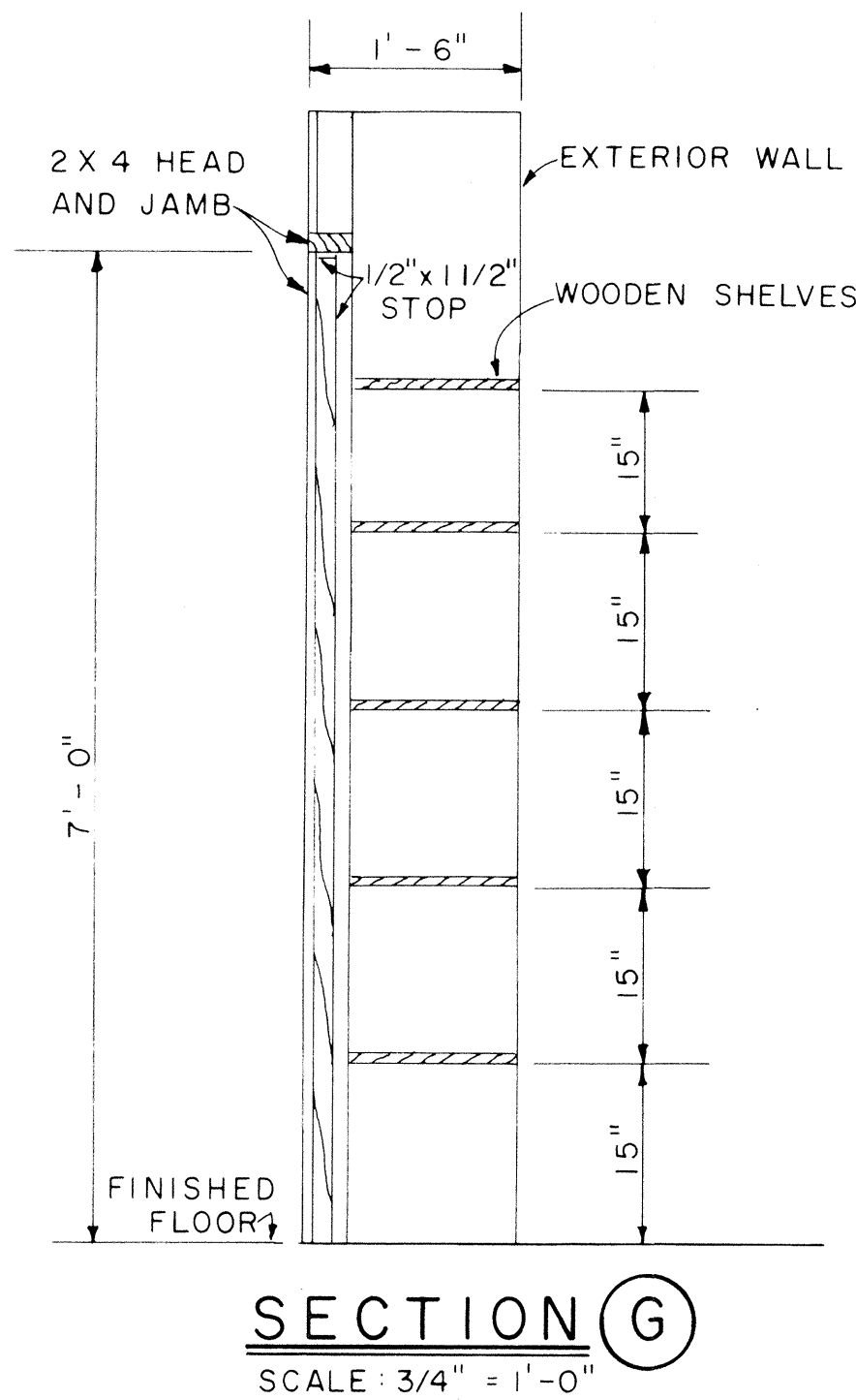
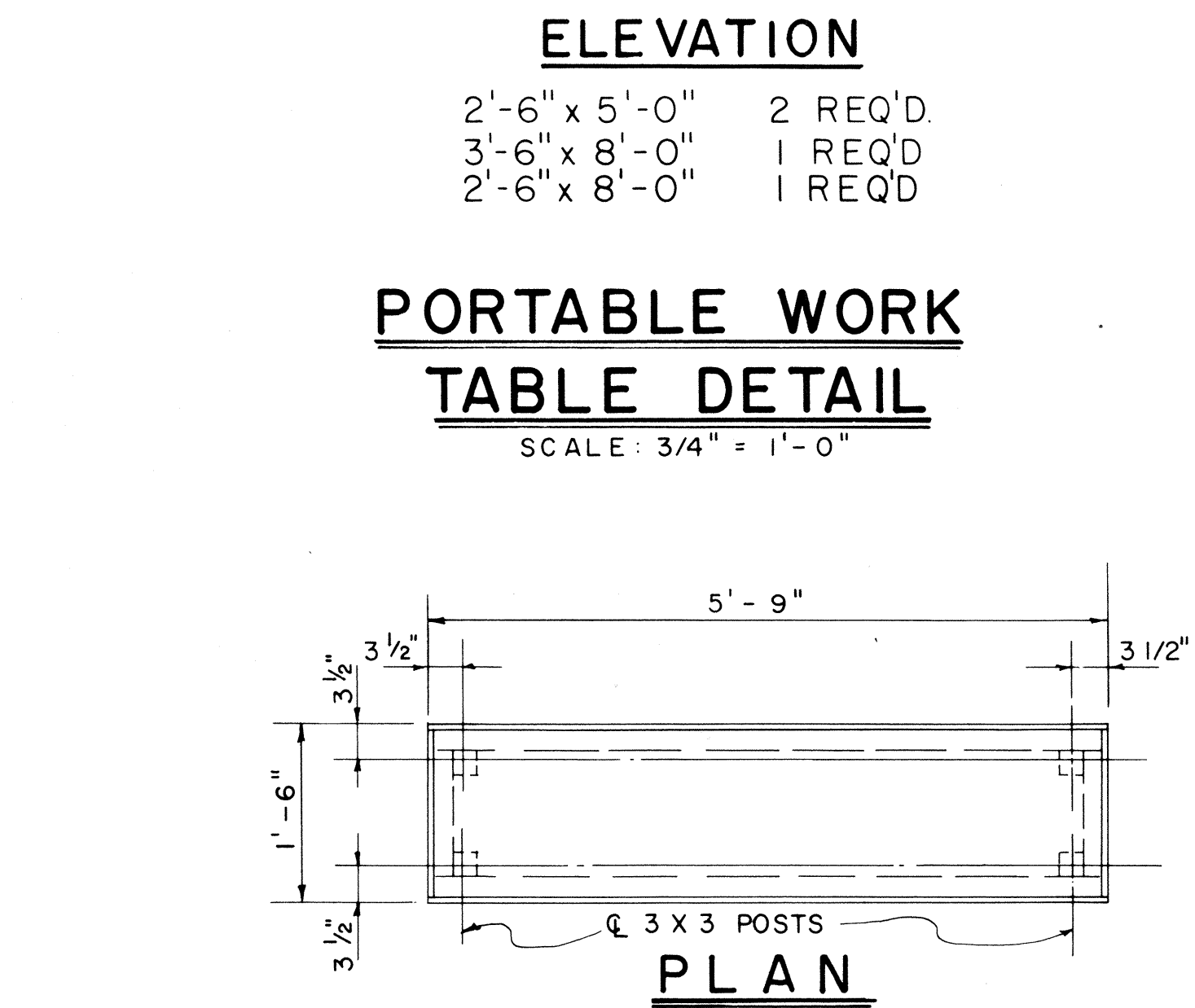
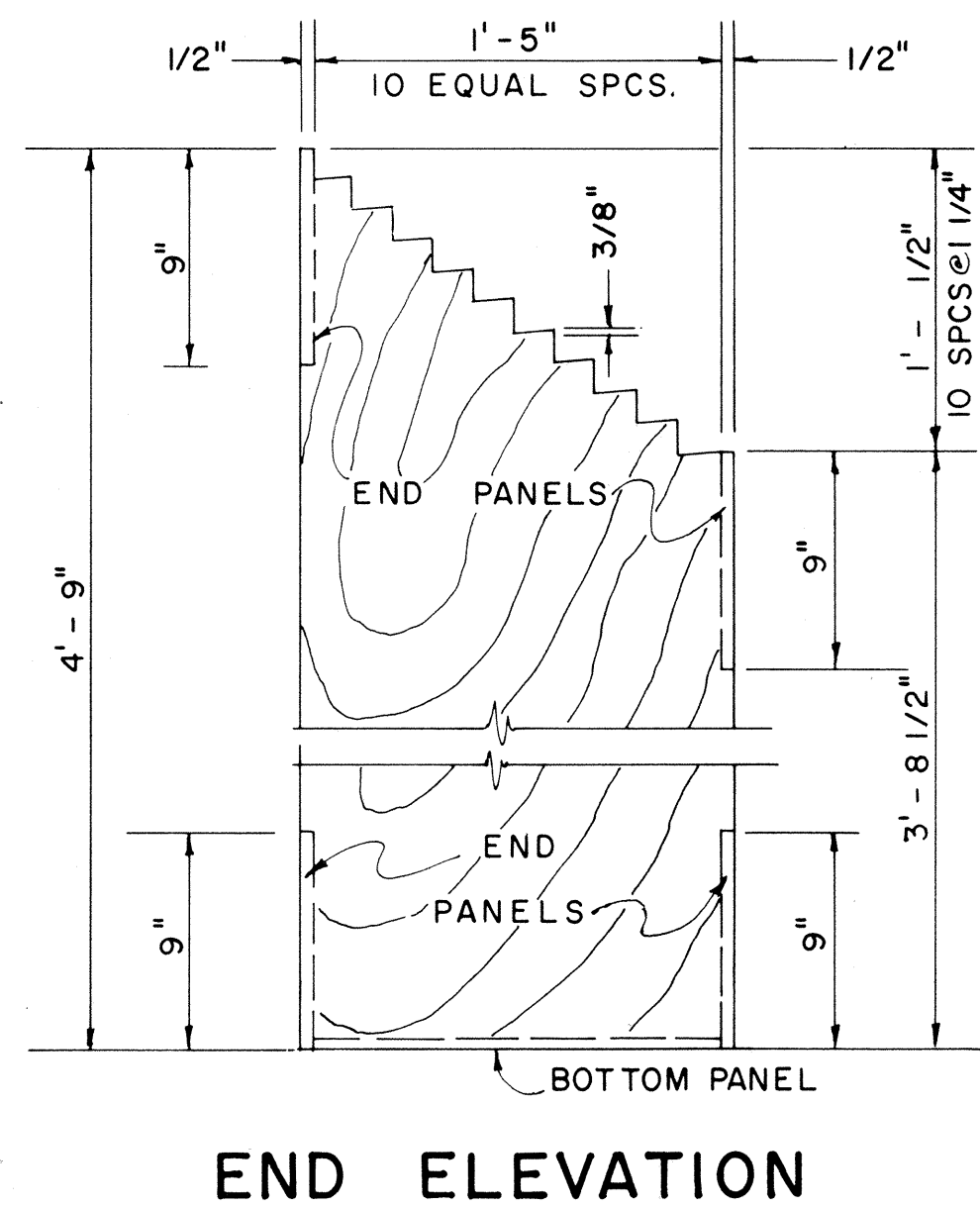
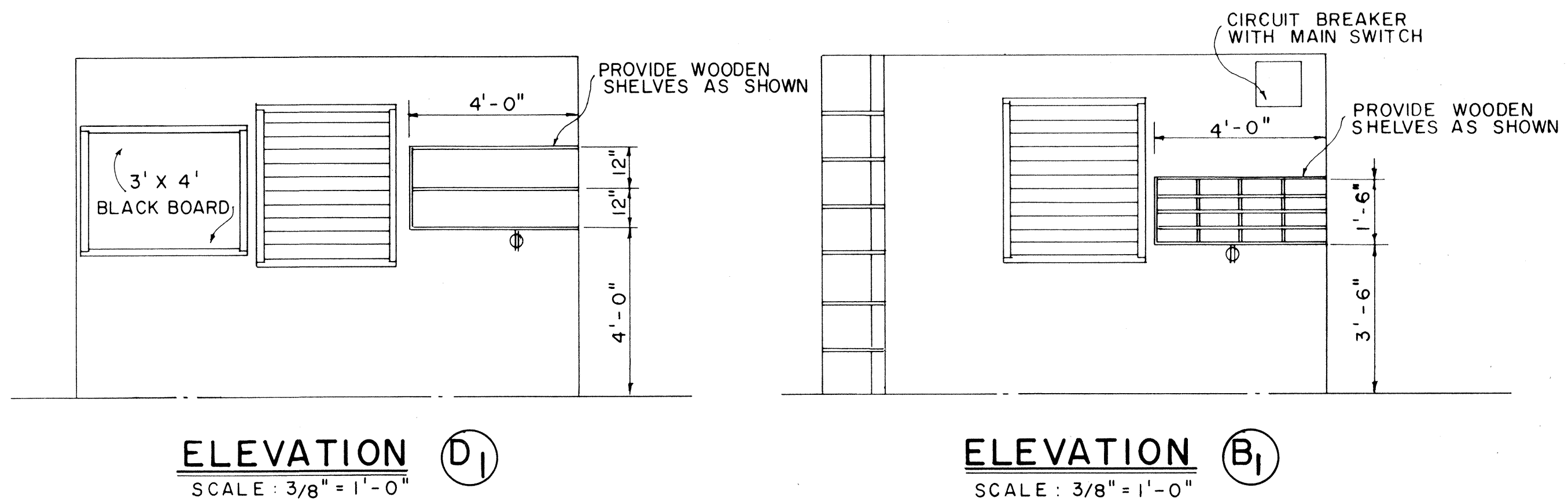
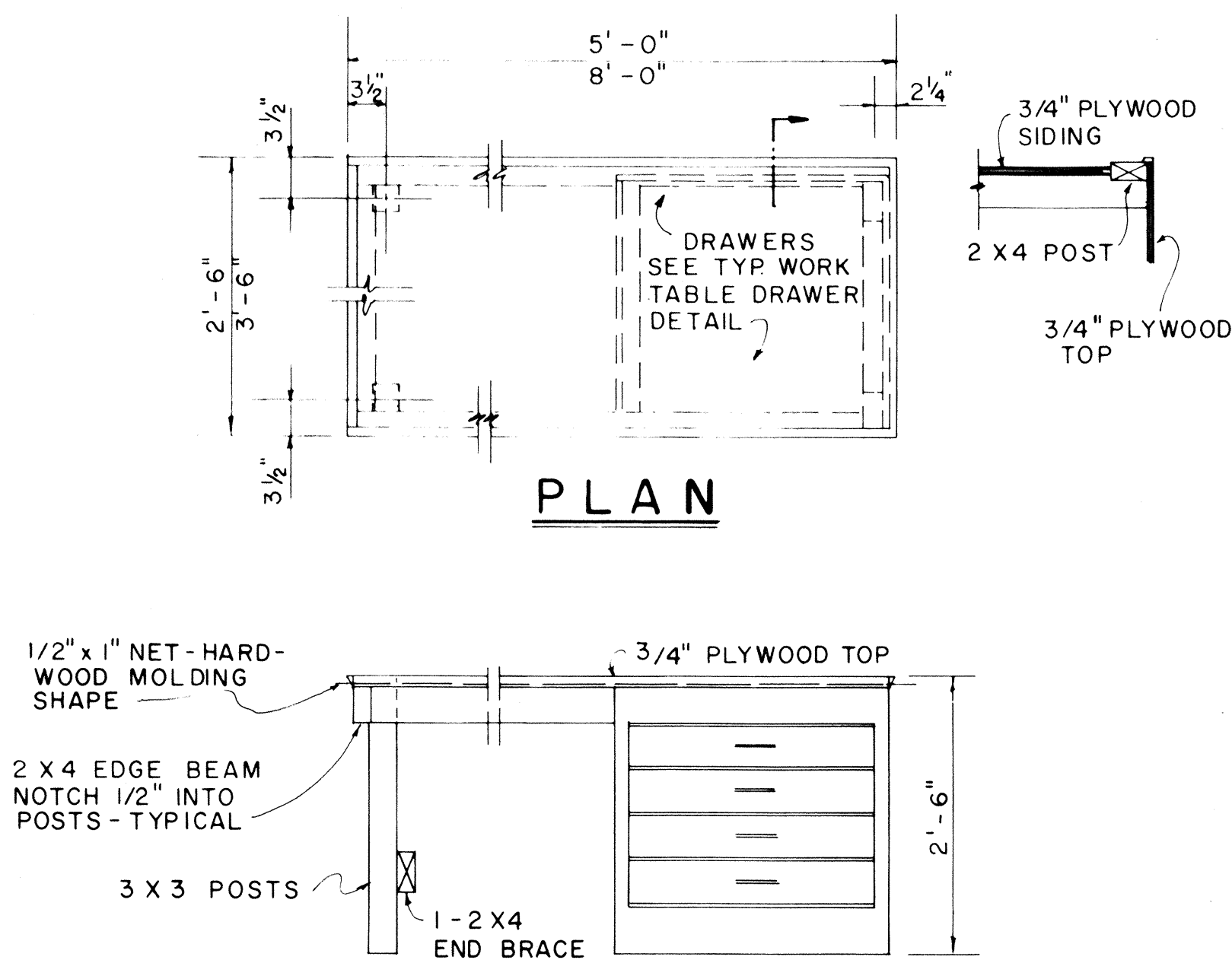
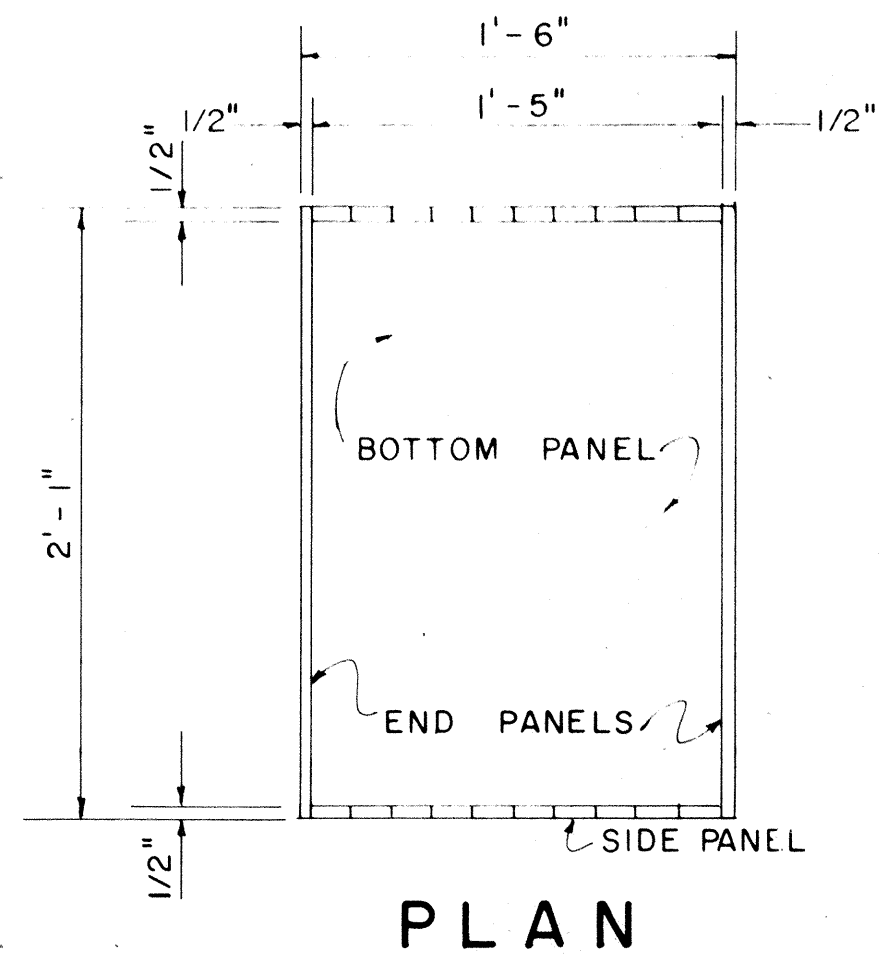
APPROVED:
W. J. J. J. 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

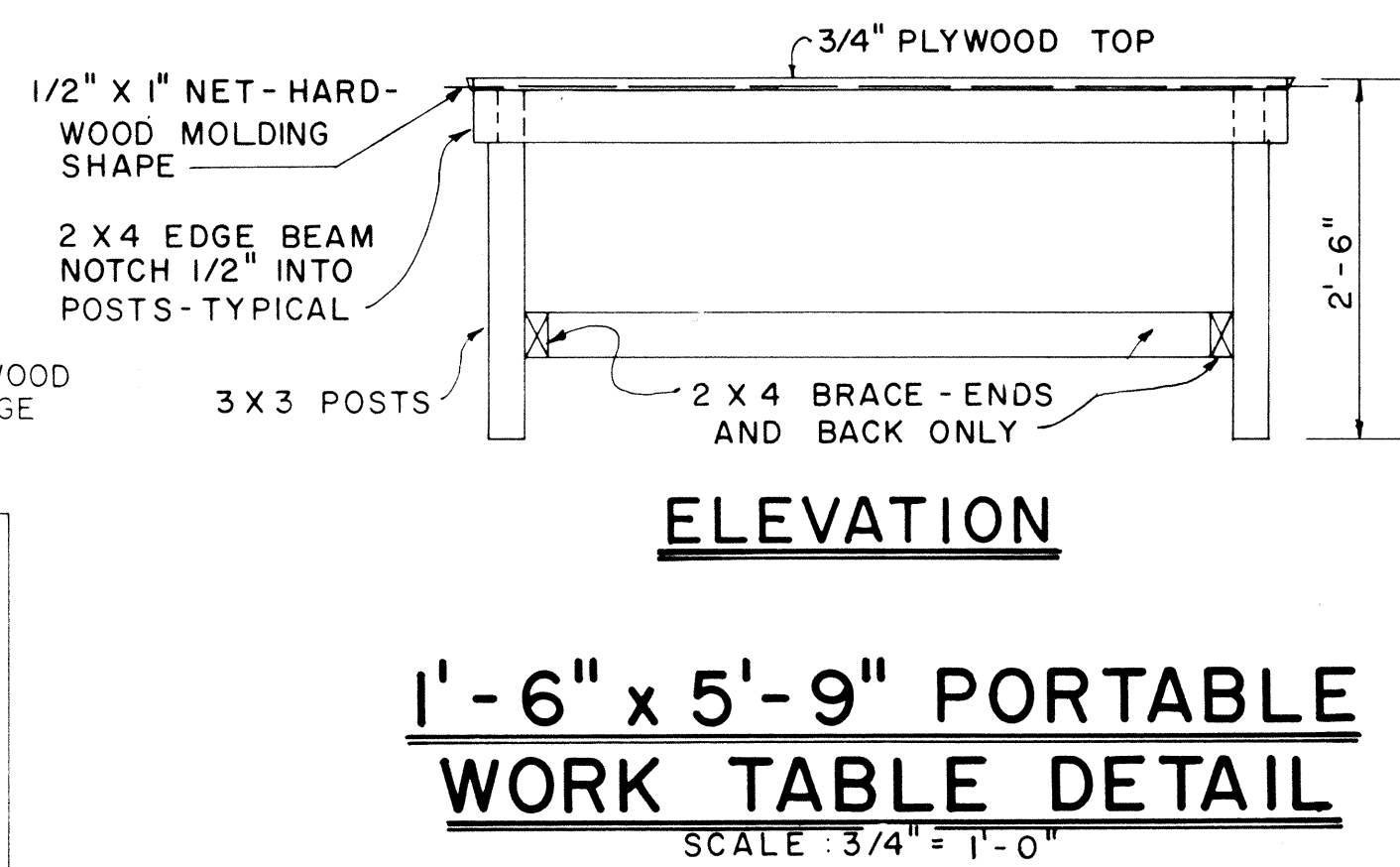
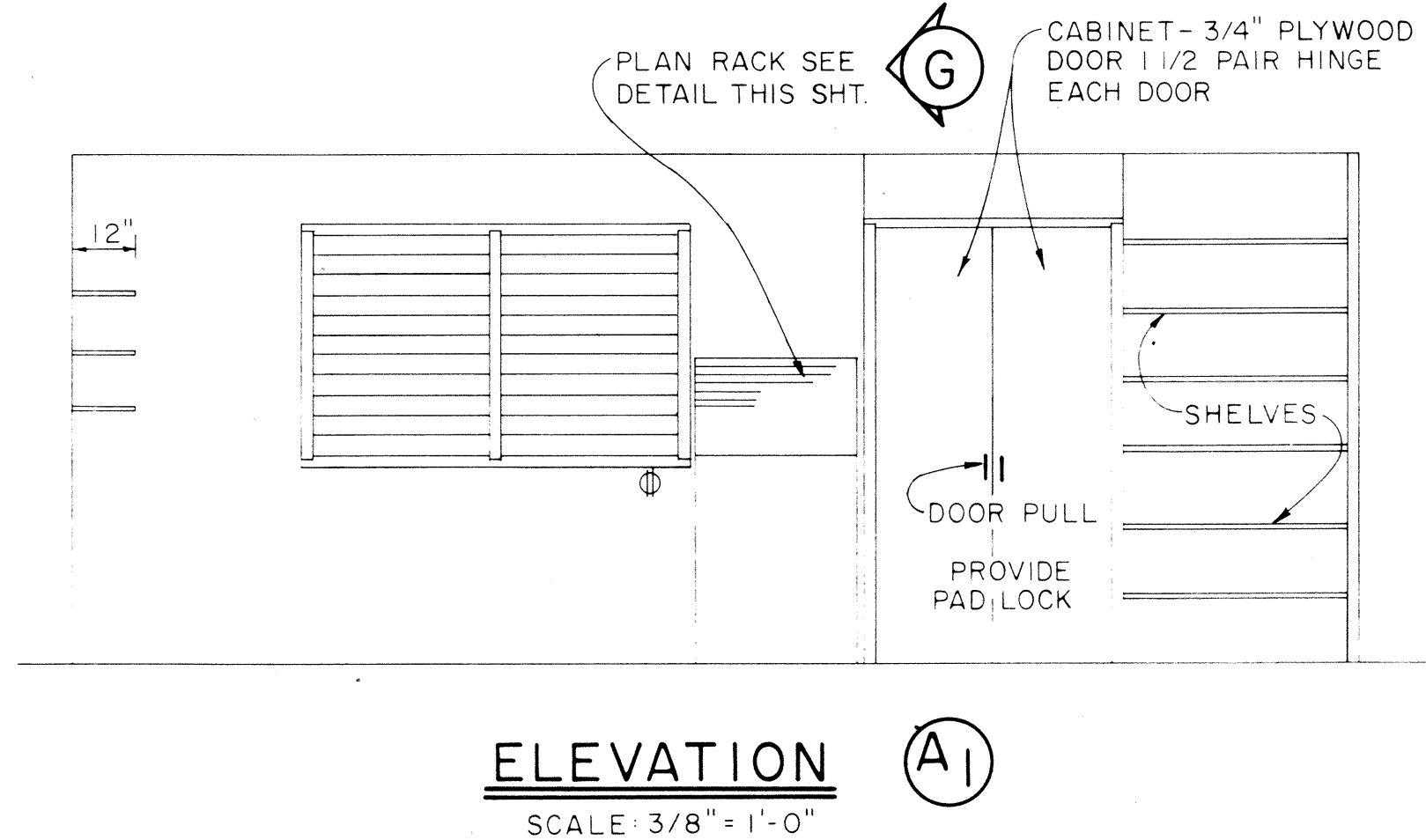
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CENTERLINE, REFERENCE SURVEY
AND C & C STREET SURVEY
MONUMENTS

Scale: As Shown

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	1-111-1(20)13	1972	29	202



PLAN RACK DETAIL
SCALE: 1 1/2" = 1'-0"
(ONE REQUIRED)



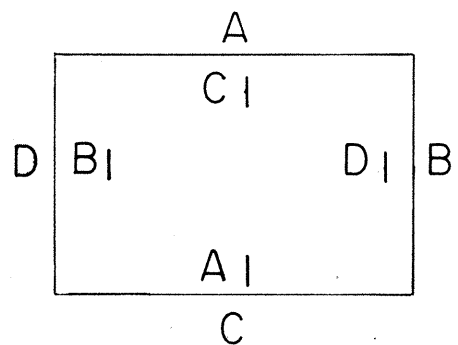
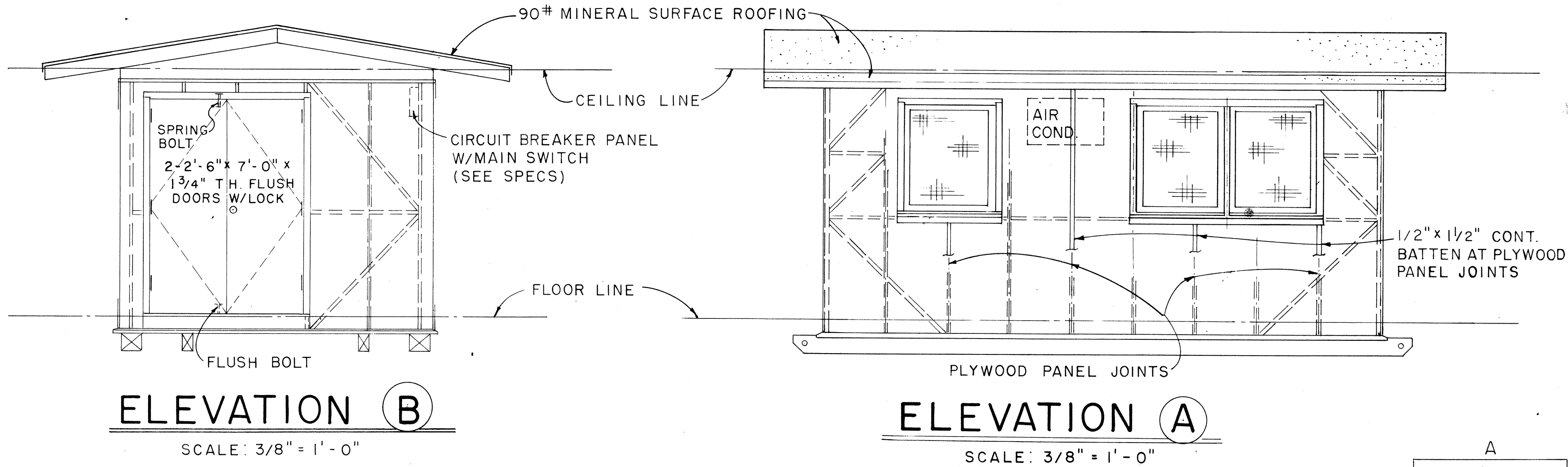
APPROVAL RECOMMENDED:
HIGHWAY DESIGN ENGINEER
DATE: 12-4-69

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

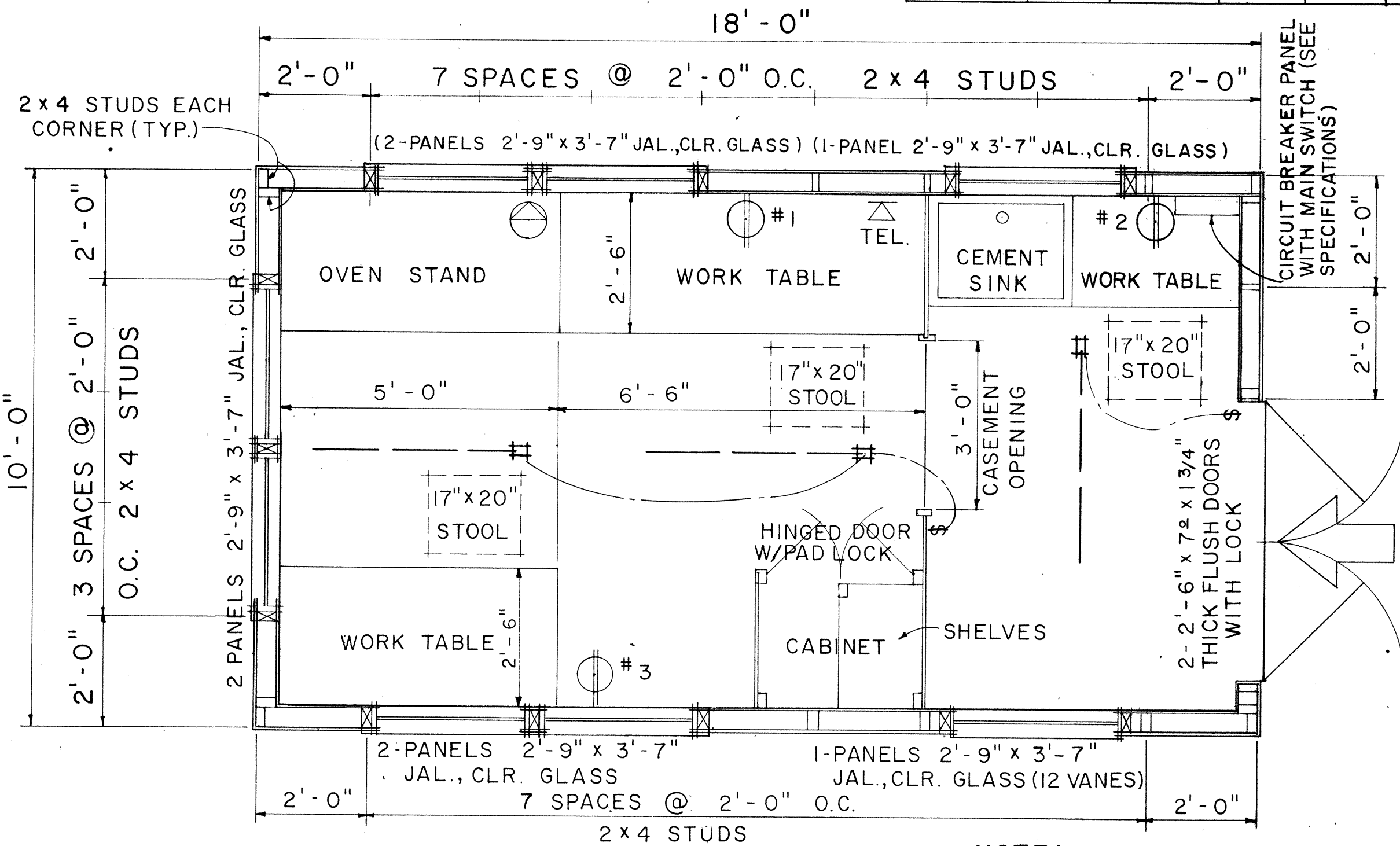
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
FIELD OFFICE

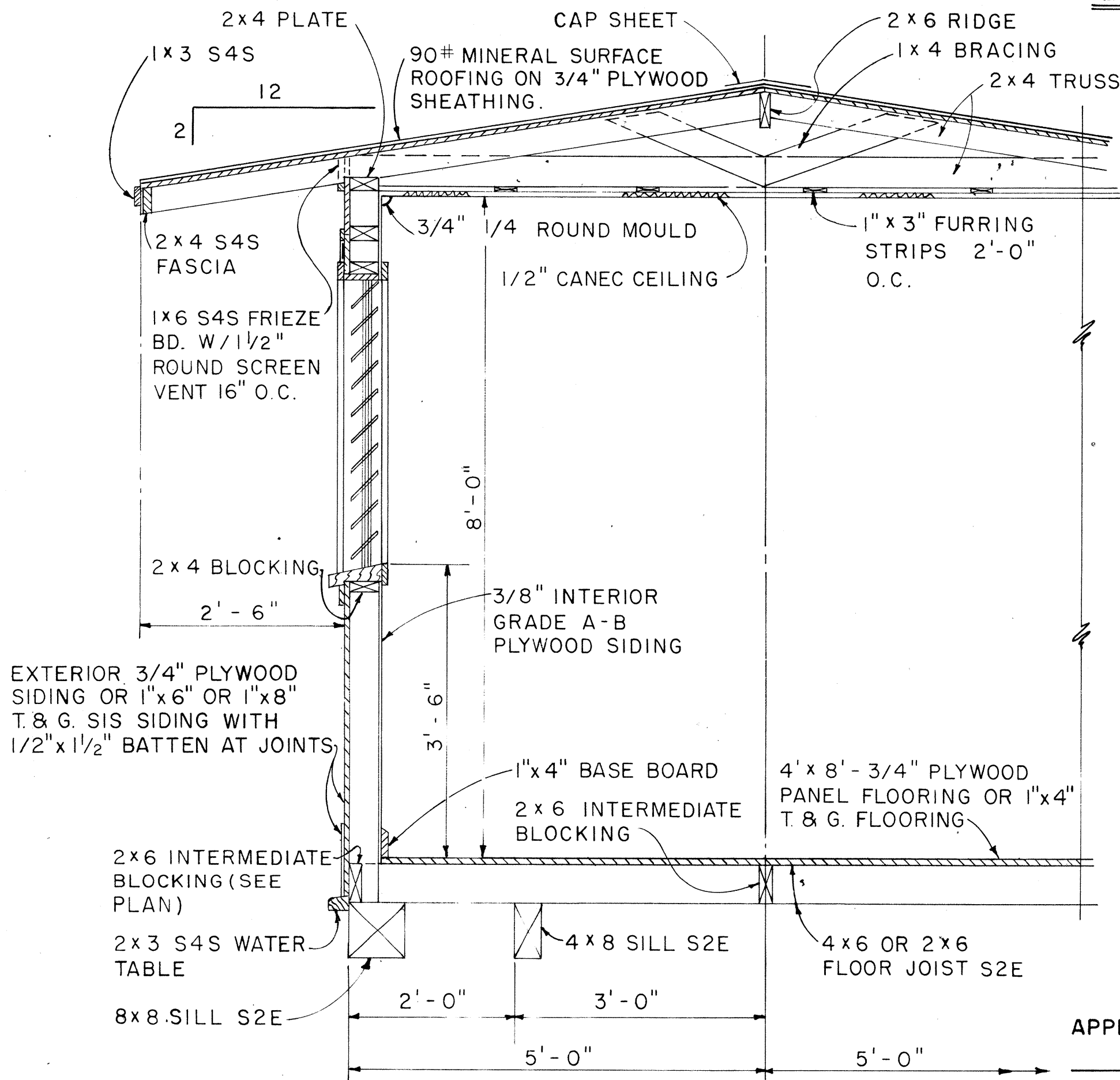
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-100-13	1972	30	202



EXTERIOR & INTERIOR KEY



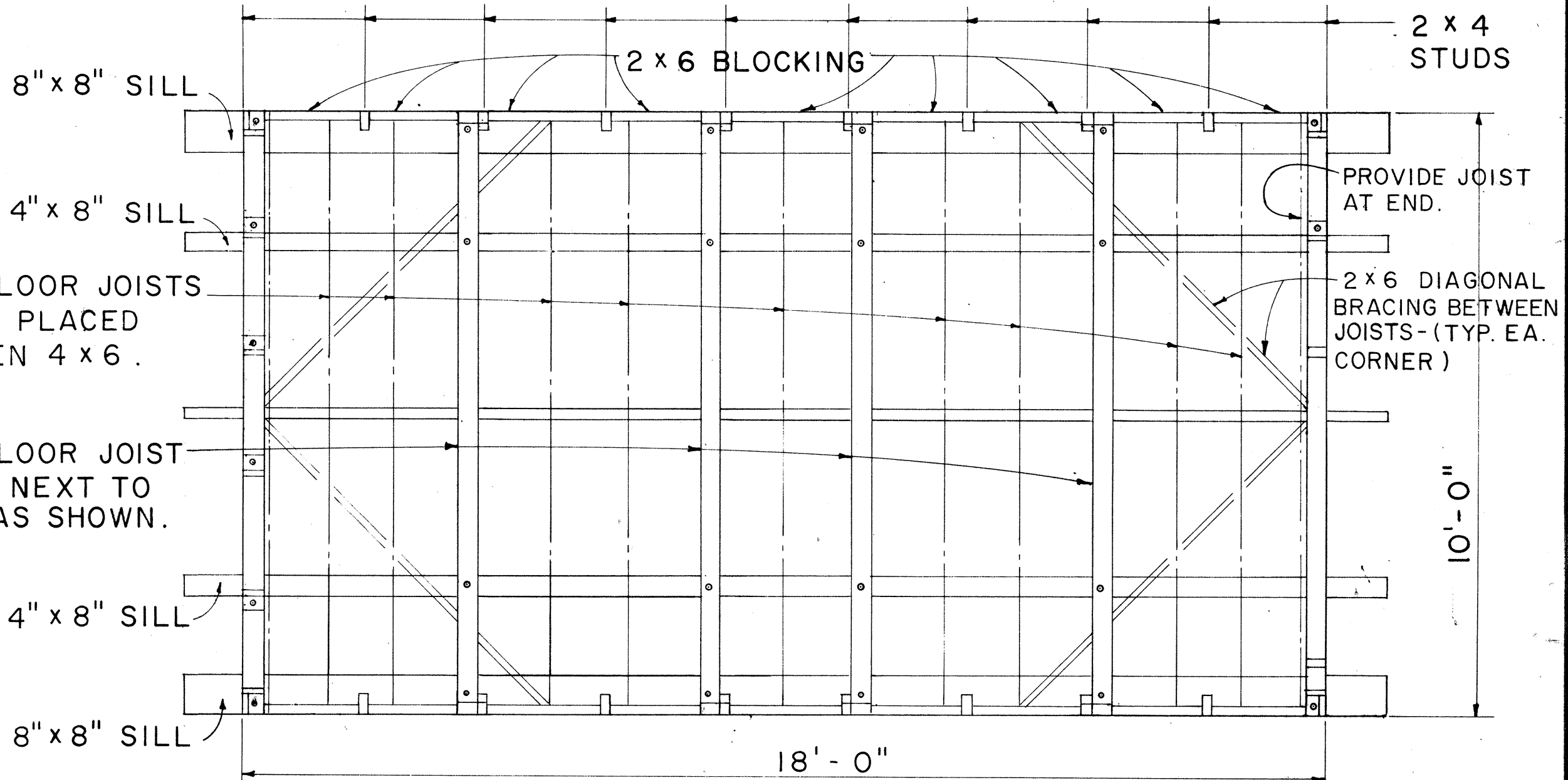
- NOTE:
1. FLUORESCENT FIXTURE SHALL BE 48", 2 LAMP, 40 WATT, RAPID START.
 2. TELEPHONE AND WALL OUTLET 4'-0" ABOVE FLOOR.



NOTE:
ALL 3/4" PLYWOOD SHALL BE EXTERIOR GRADE A-C OR BETTER.

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

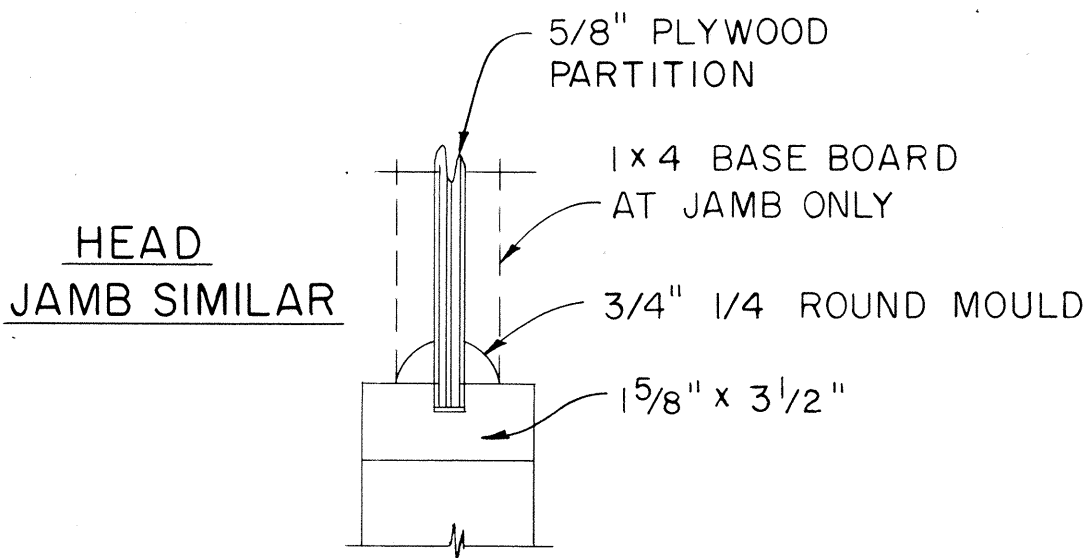
APPROVED:
ASSISTANT CHIEF, ENGINEERING
DATE 12-10-69



NO.	REVISION	APPROVED BY	DATE

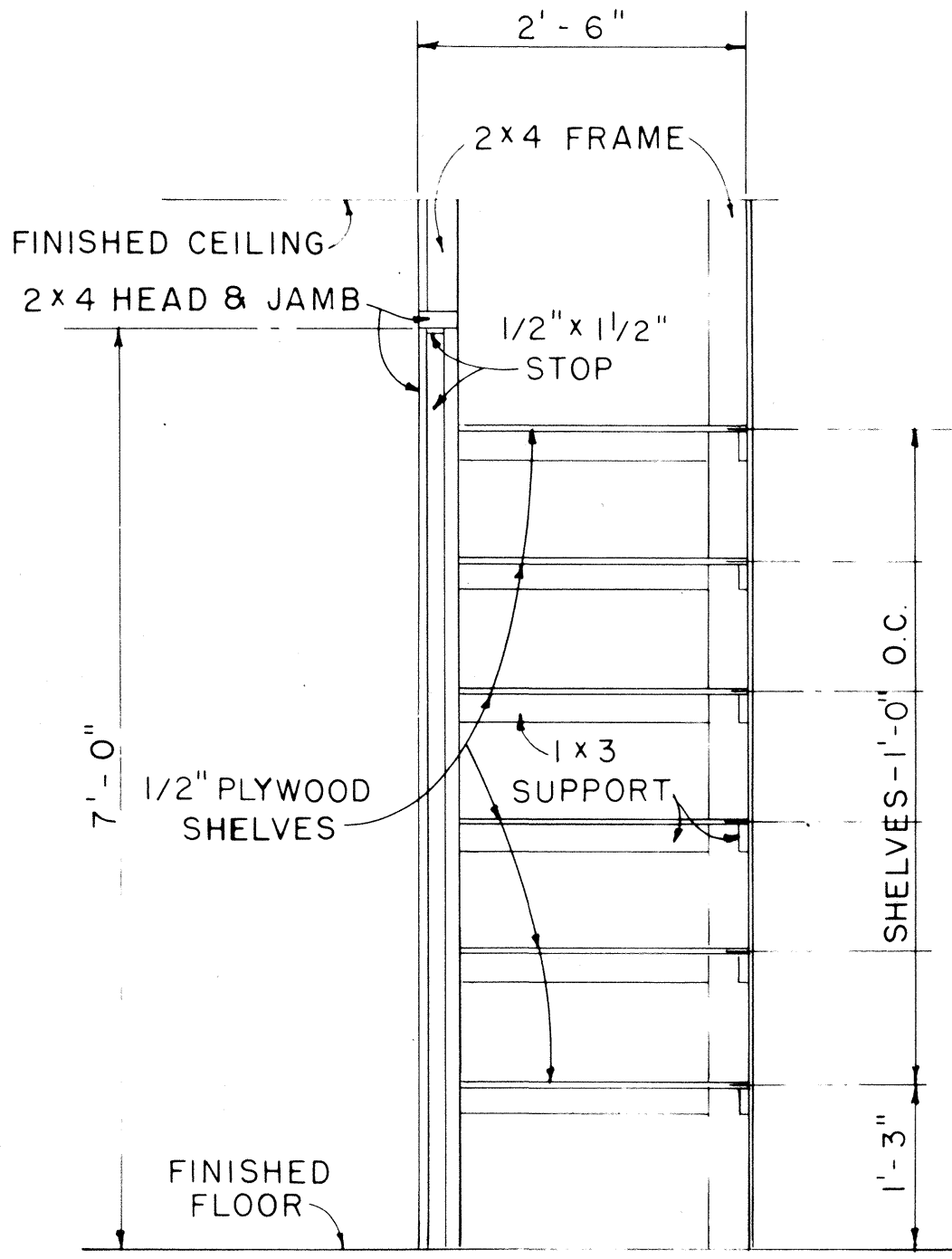
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PROJECT SITE LABORATORY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HH-1(20)13	1972	31	202



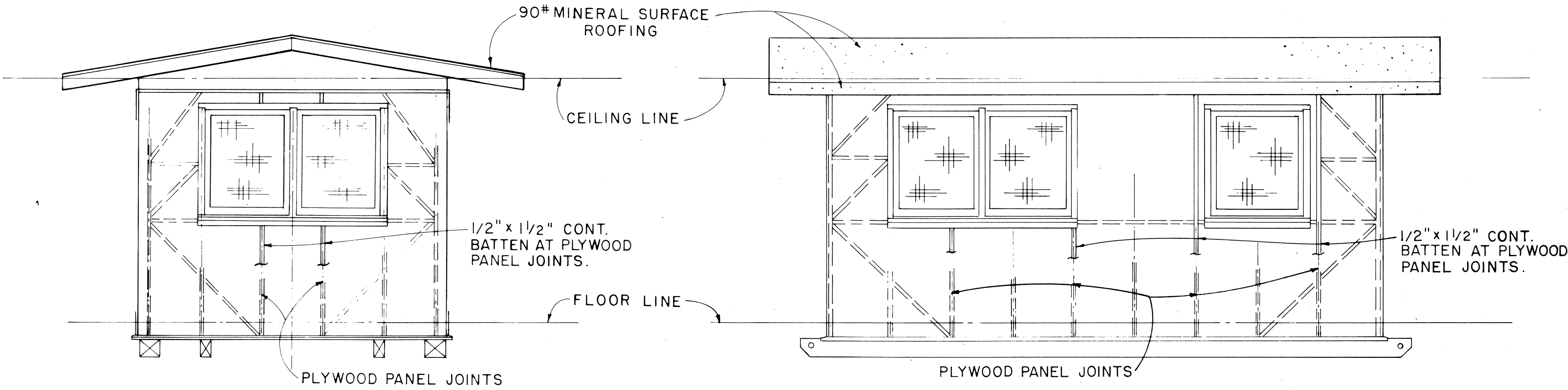
CASEMENT DETAIL

SCALE: 3" = 1'-0"



CABINET DETAIL

SCALE: 3/4" = 1'-0"

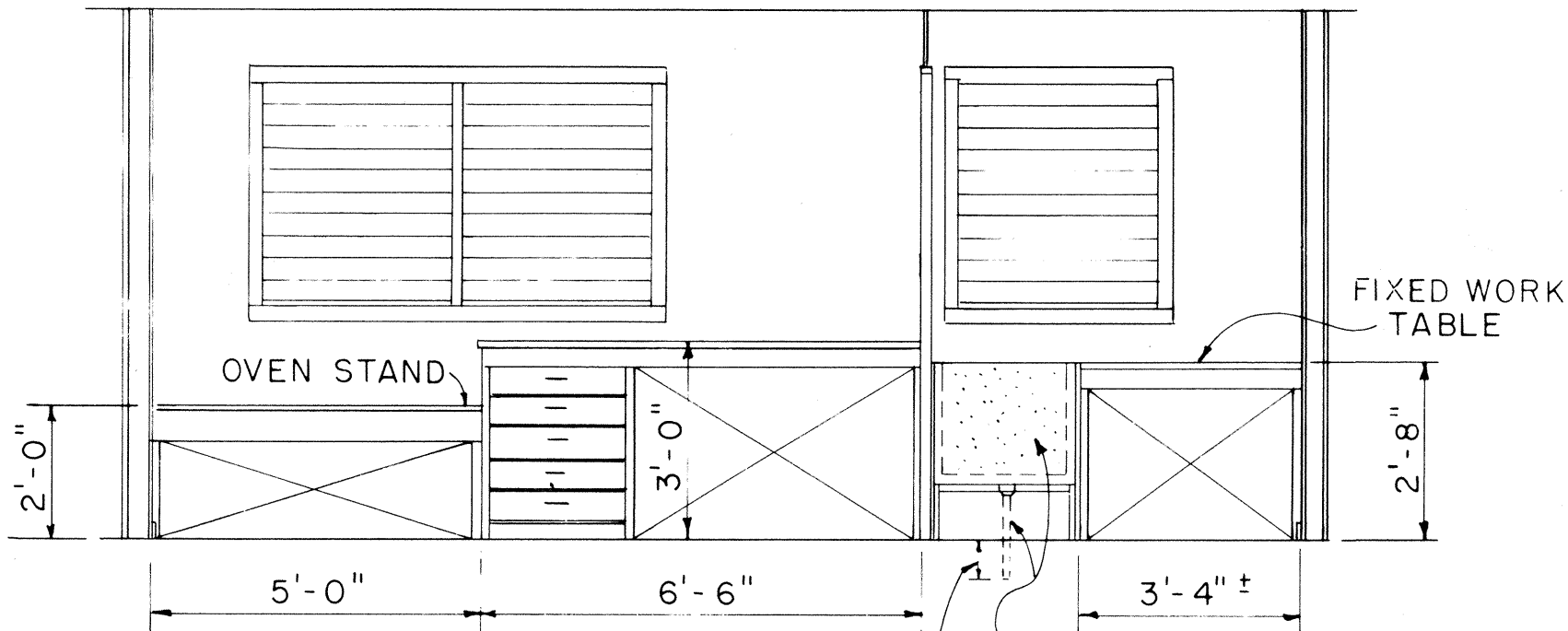


ELEVATION D

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

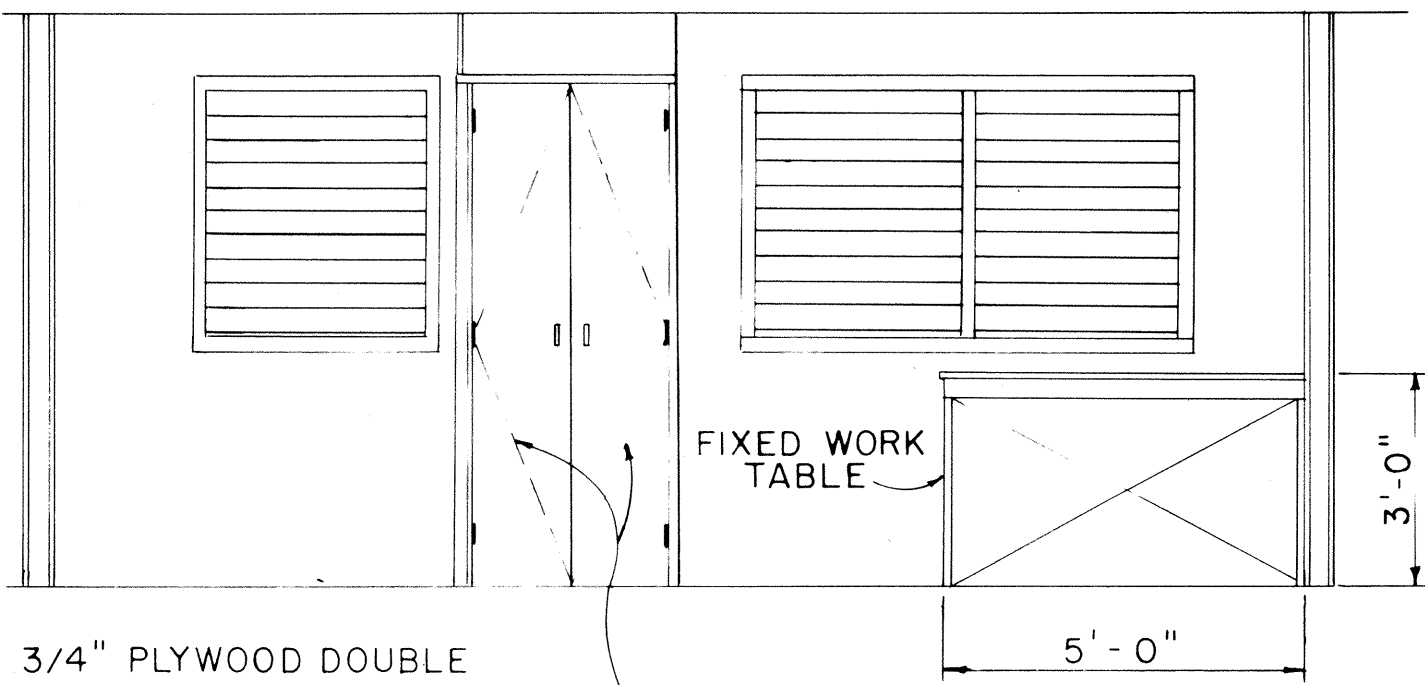
ELEVATION C

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



ELEVATION C1

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



ELEVATION A1

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

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
DATE	

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

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

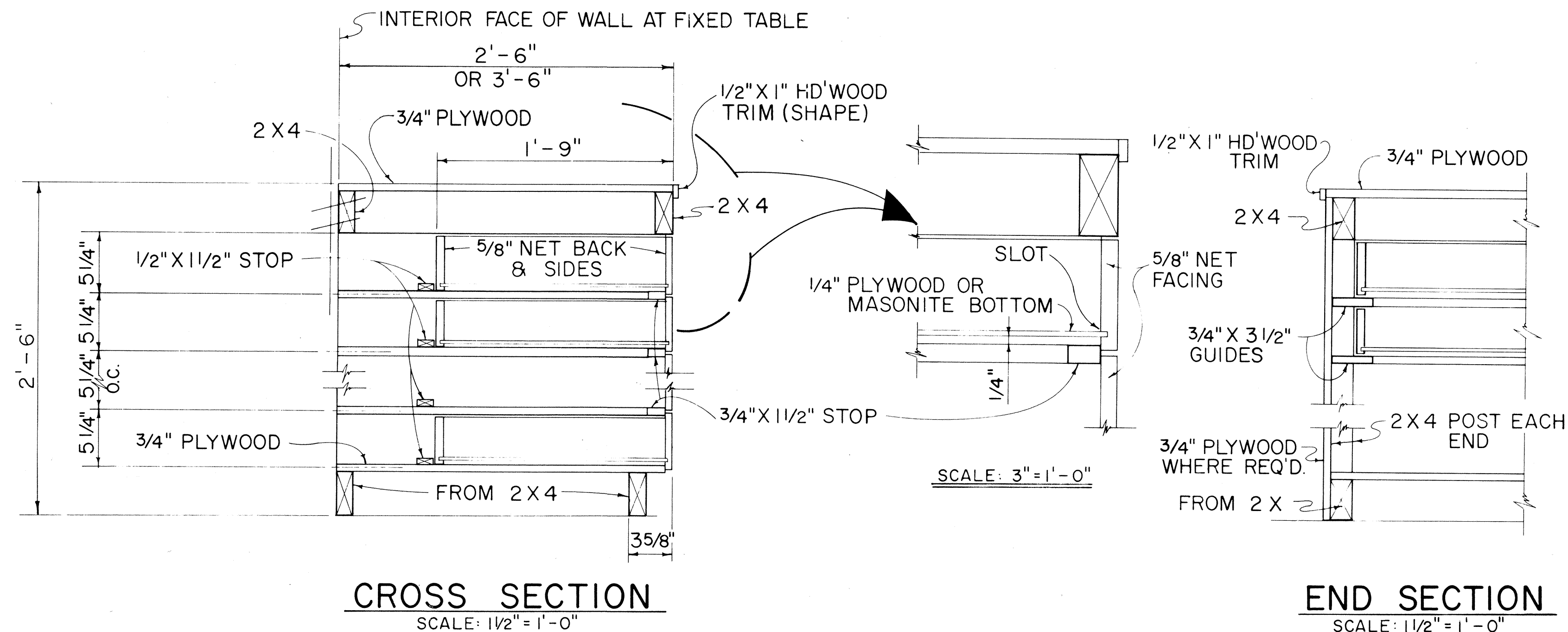
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

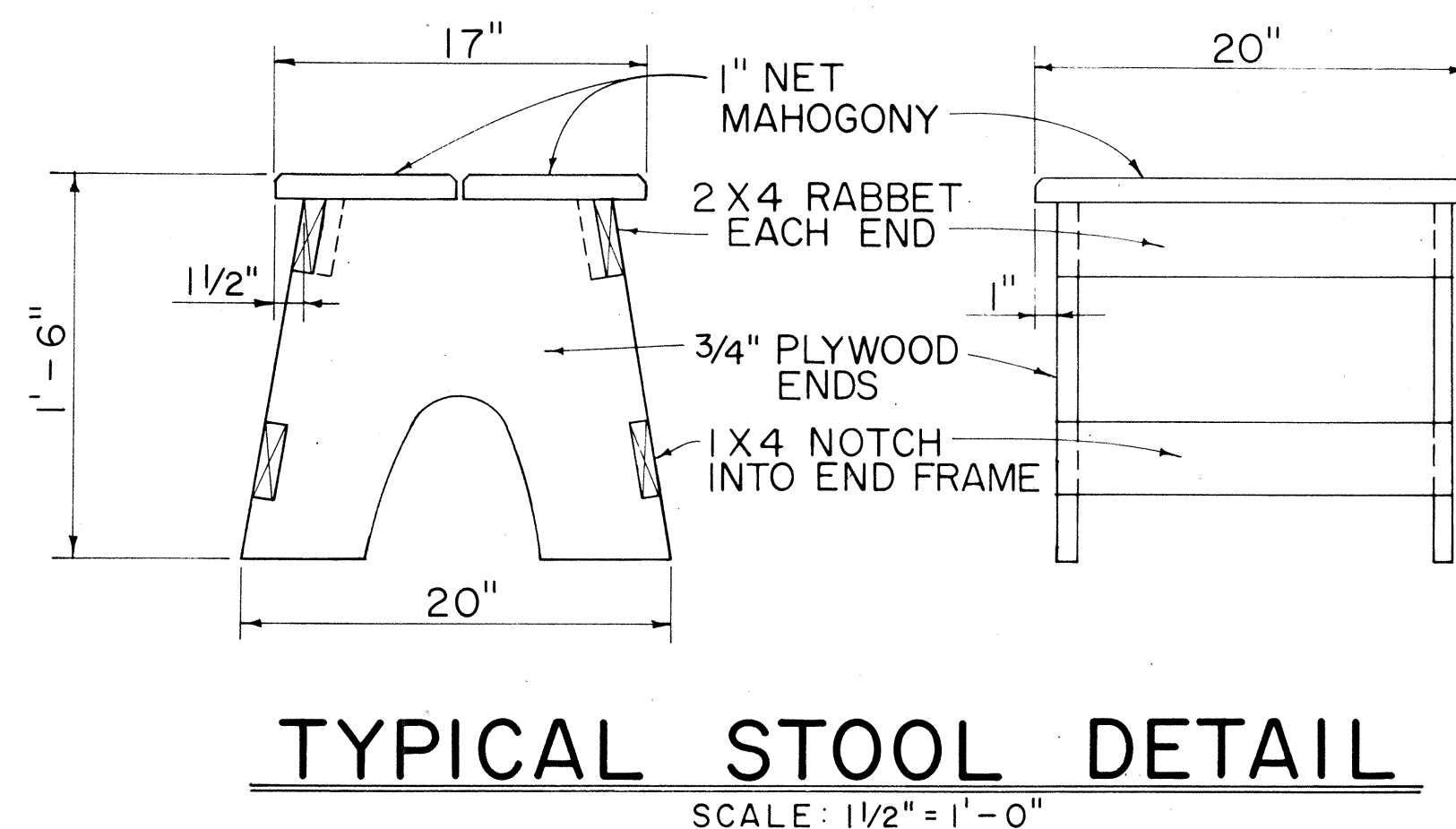
PROJECT SITE LABORATORY

Scale: As Noted

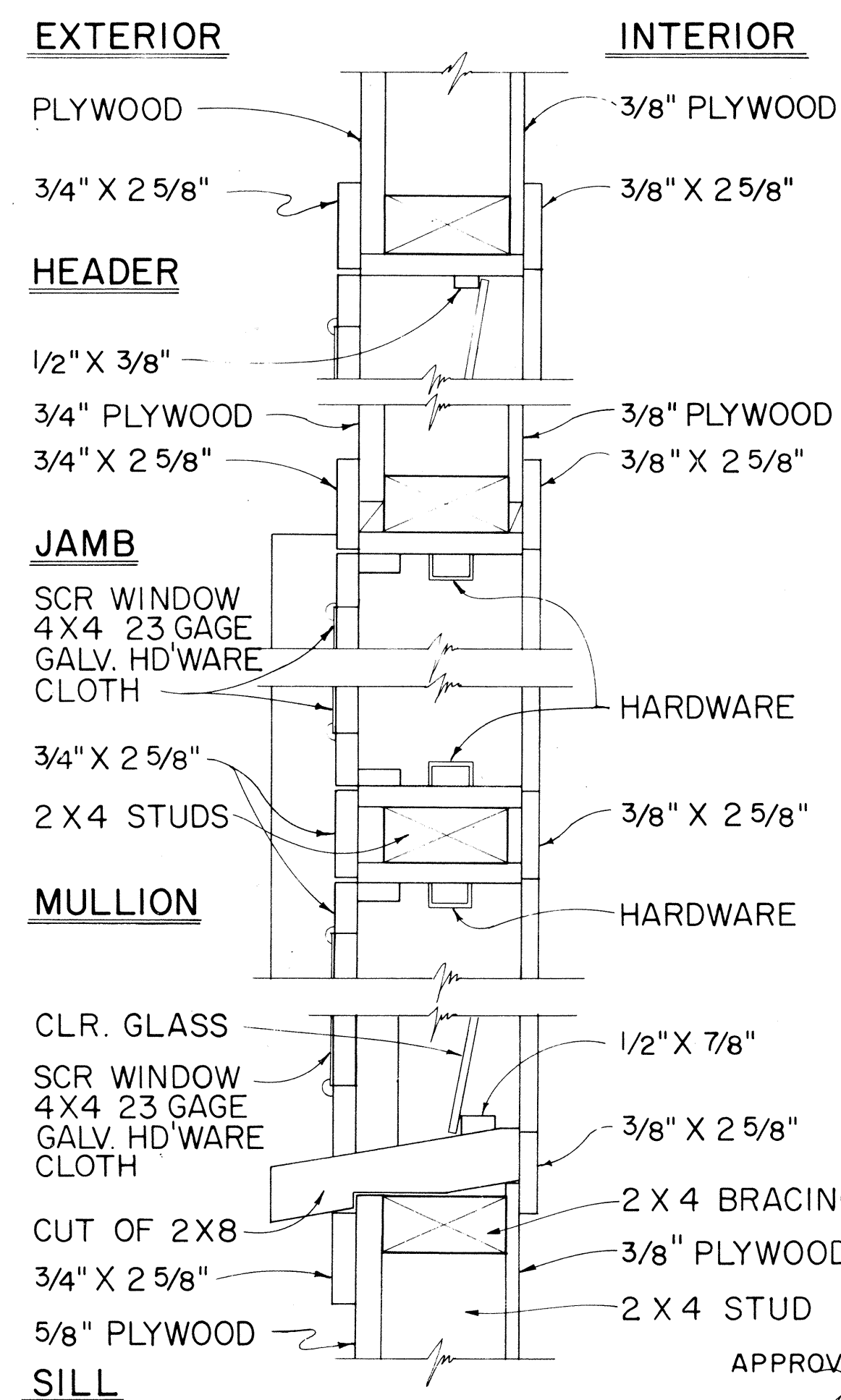
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-41-100-13	1972	32	202



TYPICAL WORK TABLE DRAWER DETAIL



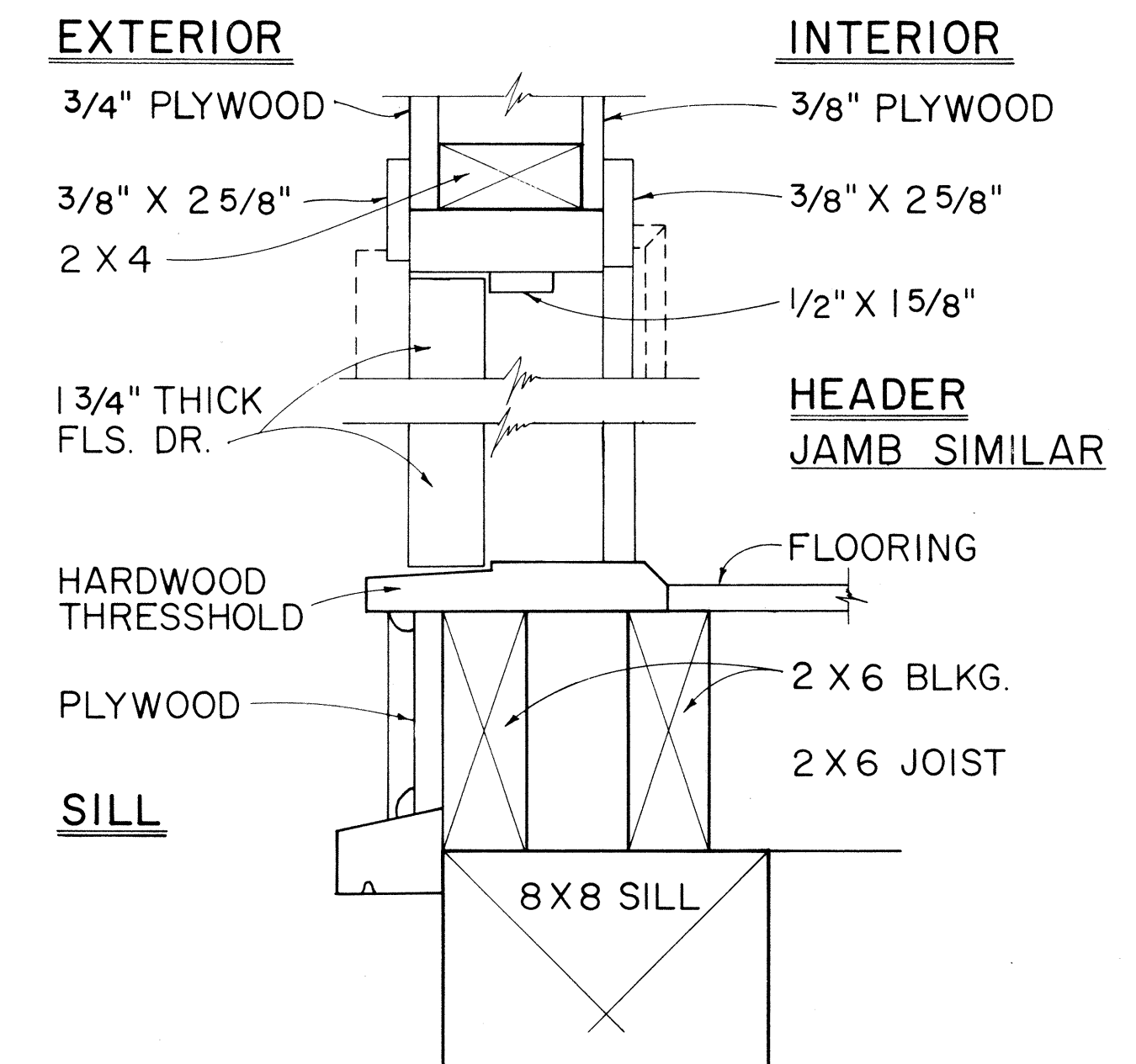
NOTE: CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH THE FIELD OFFICE OR PROJECT SITE LABORATORY WITH STOOLS OTHER THAN THE TYPE SHOWN IN THE DETAIL.



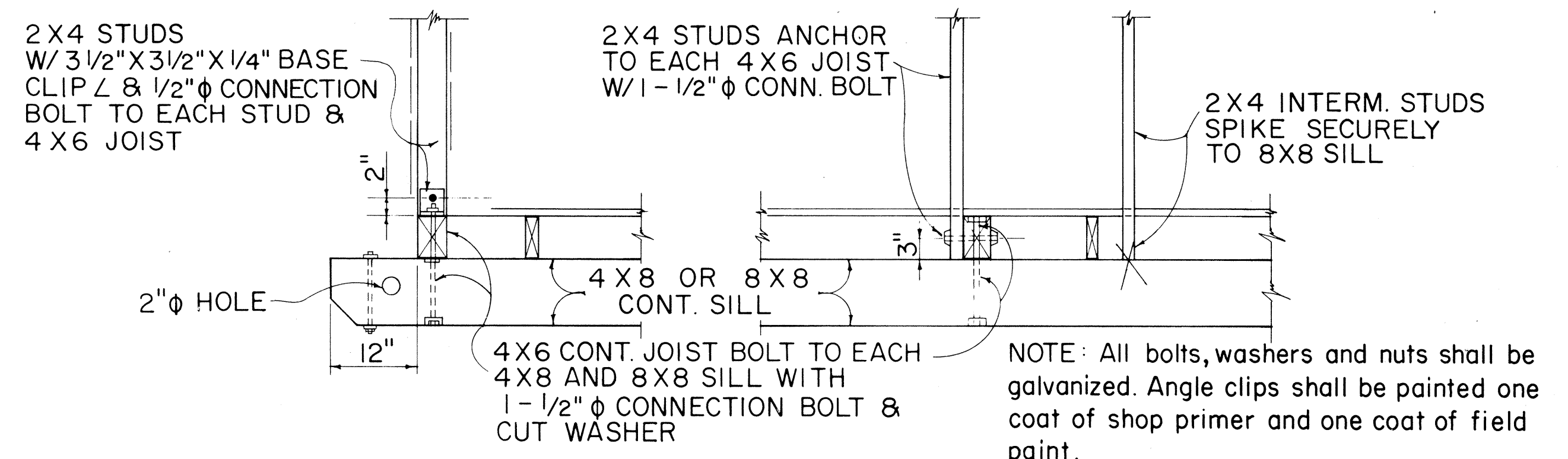
TYPICAL DETAIL JALOUSIES WINDOWS
SCALE: 3" = 1'-0"

APPROVAL RECOMMENDED:
M. Hironaka
HIGHWAY DESIGN ENGINEER
DATE: 12-4-69

APPROVED:
John S. S. S.
ASSISTANT CHIEF, ENGINEERING
DATE: 12-10-69



TYP. SWING OUT DOOR
TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL

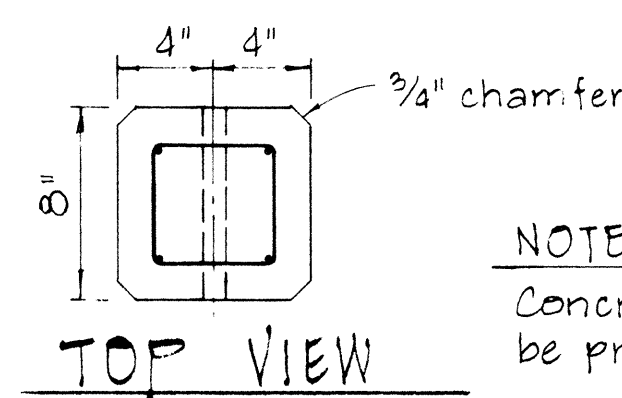
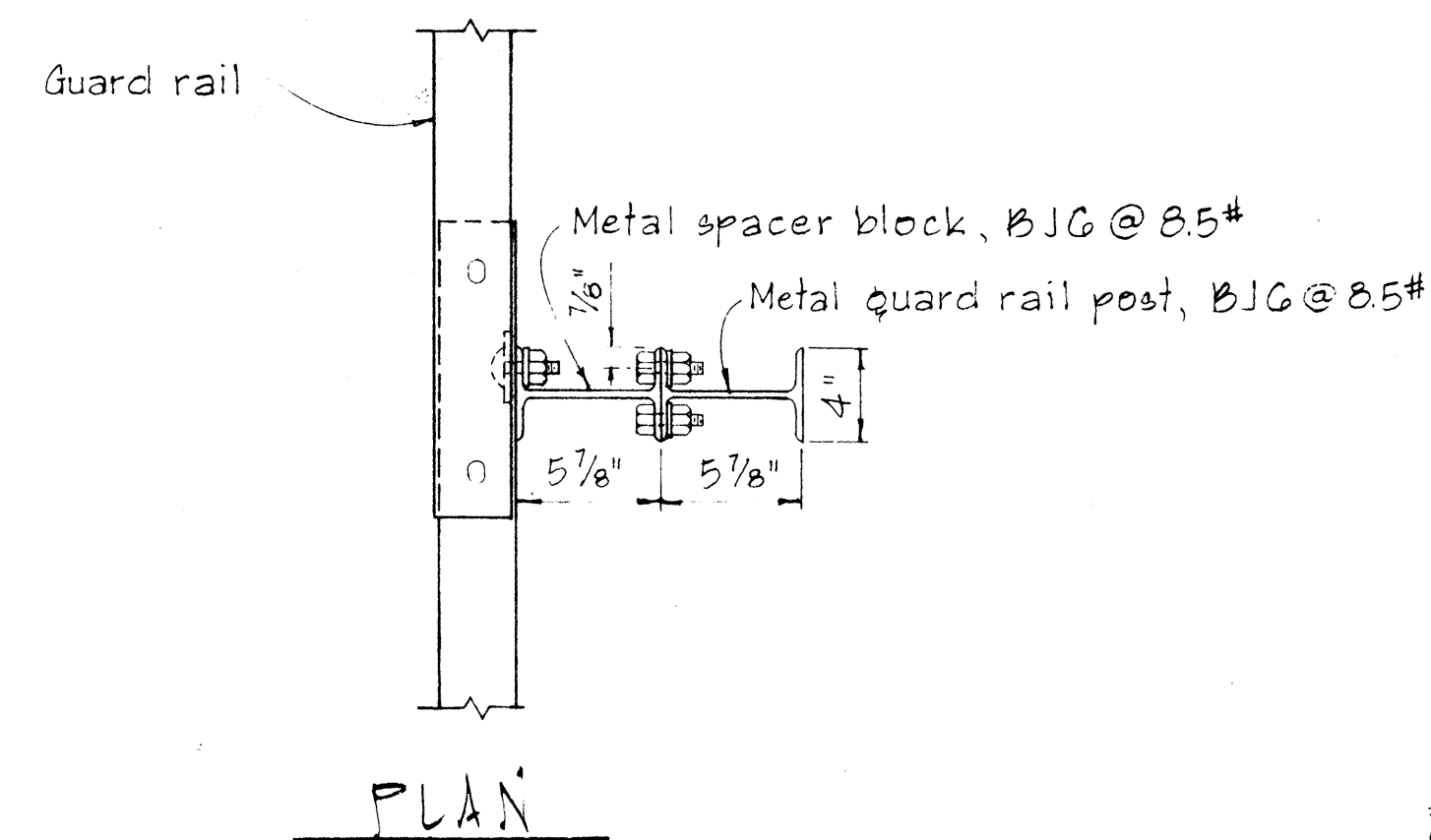
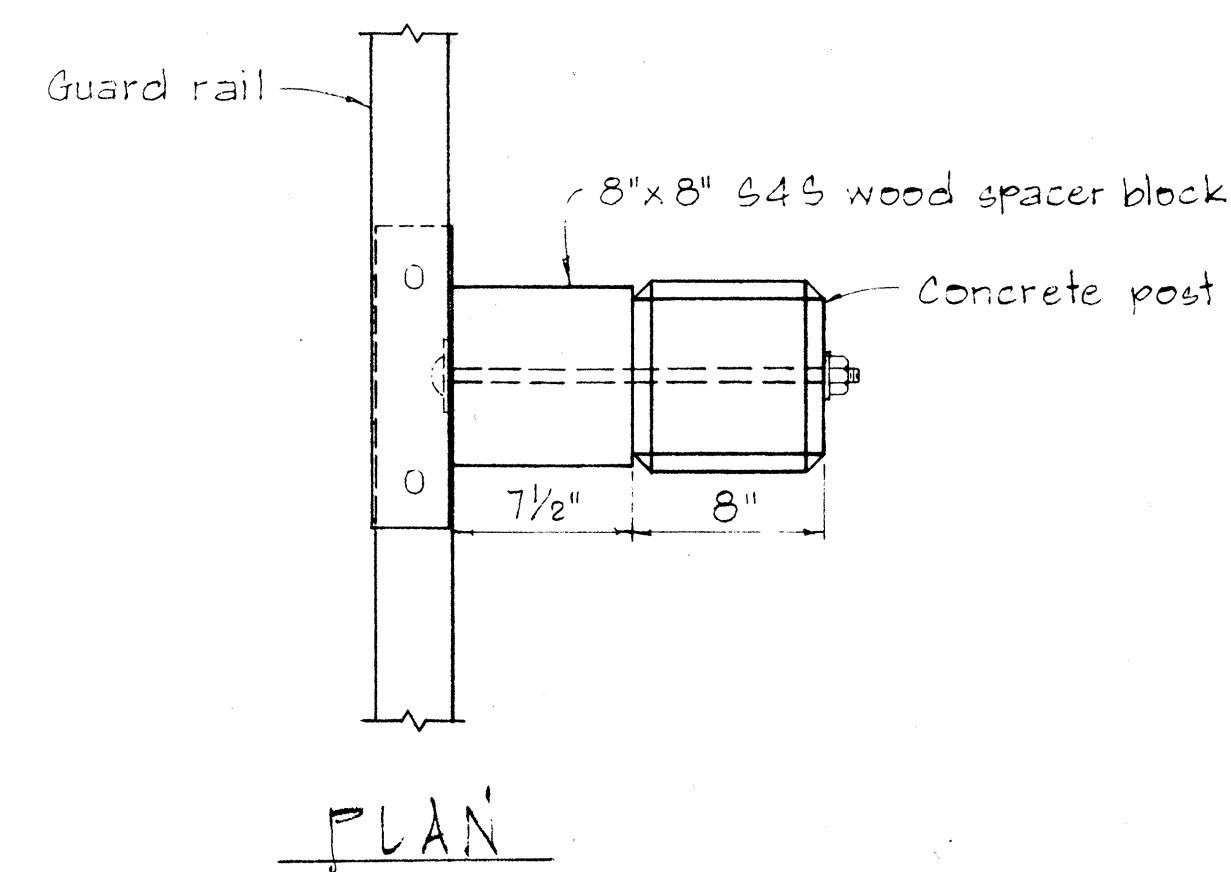


TYPICAL 2 X 4 STUD & 4 X 6 FLOOR JOIST BASE CONNECTION DETAILS

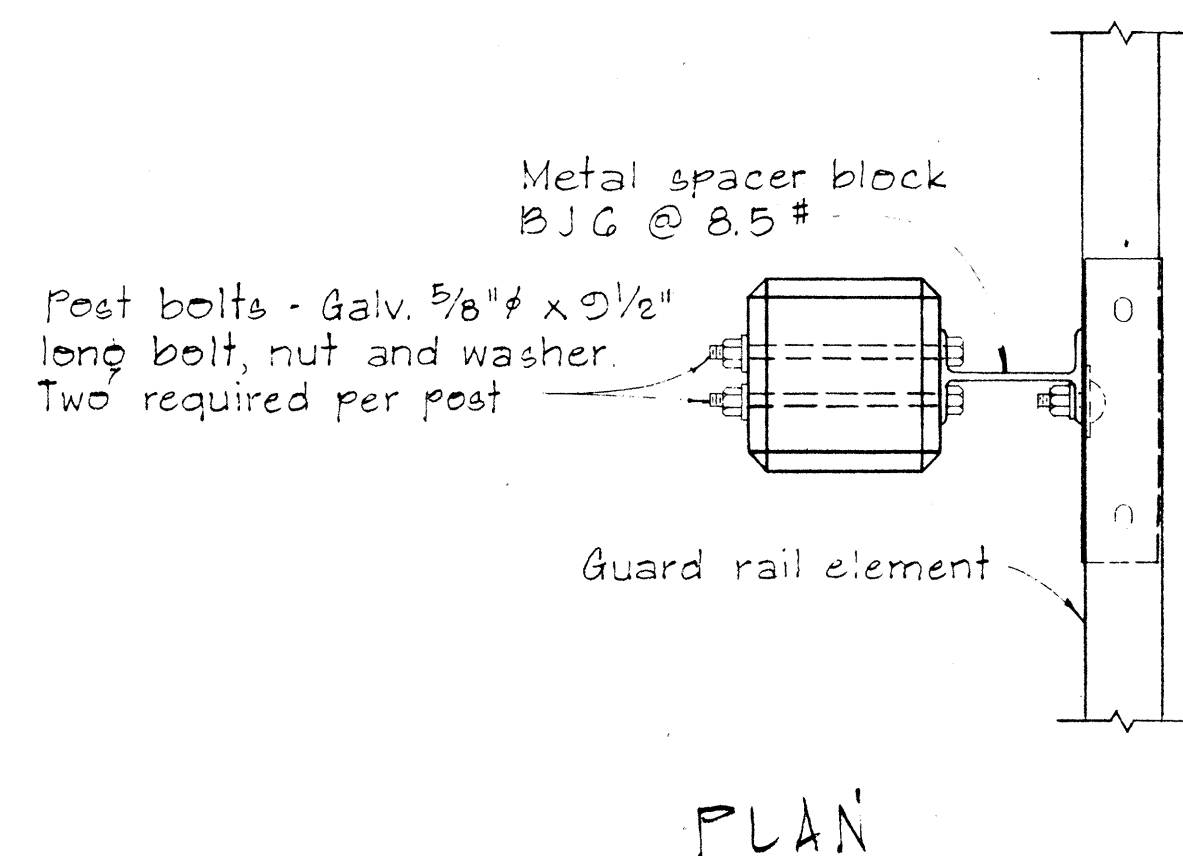
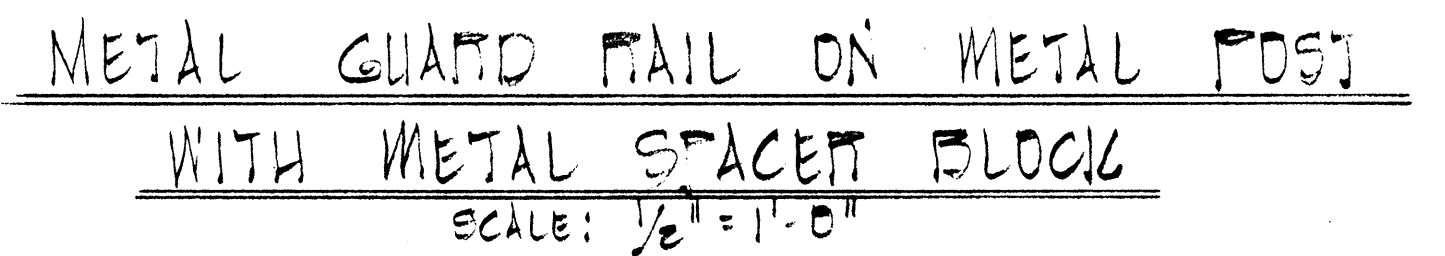
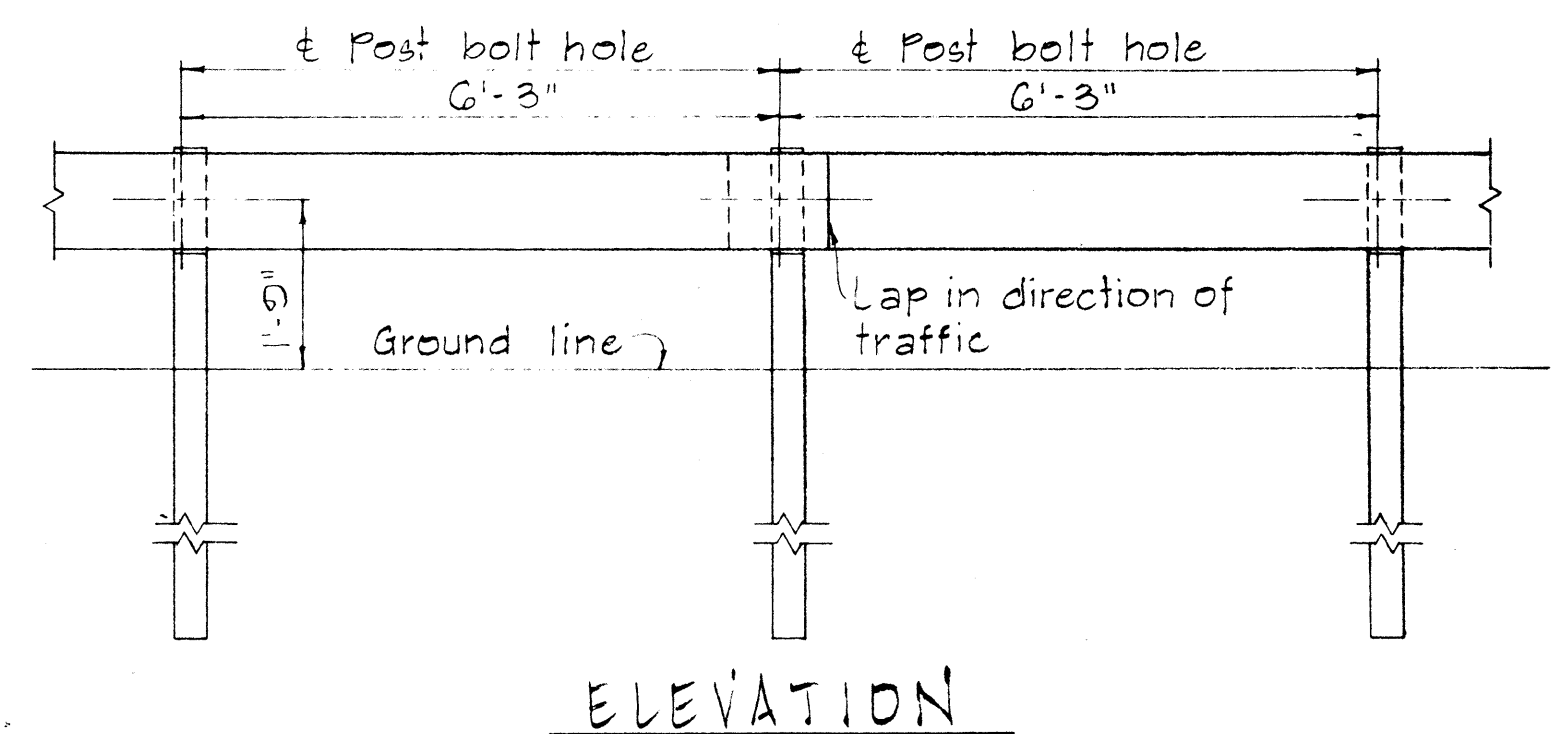
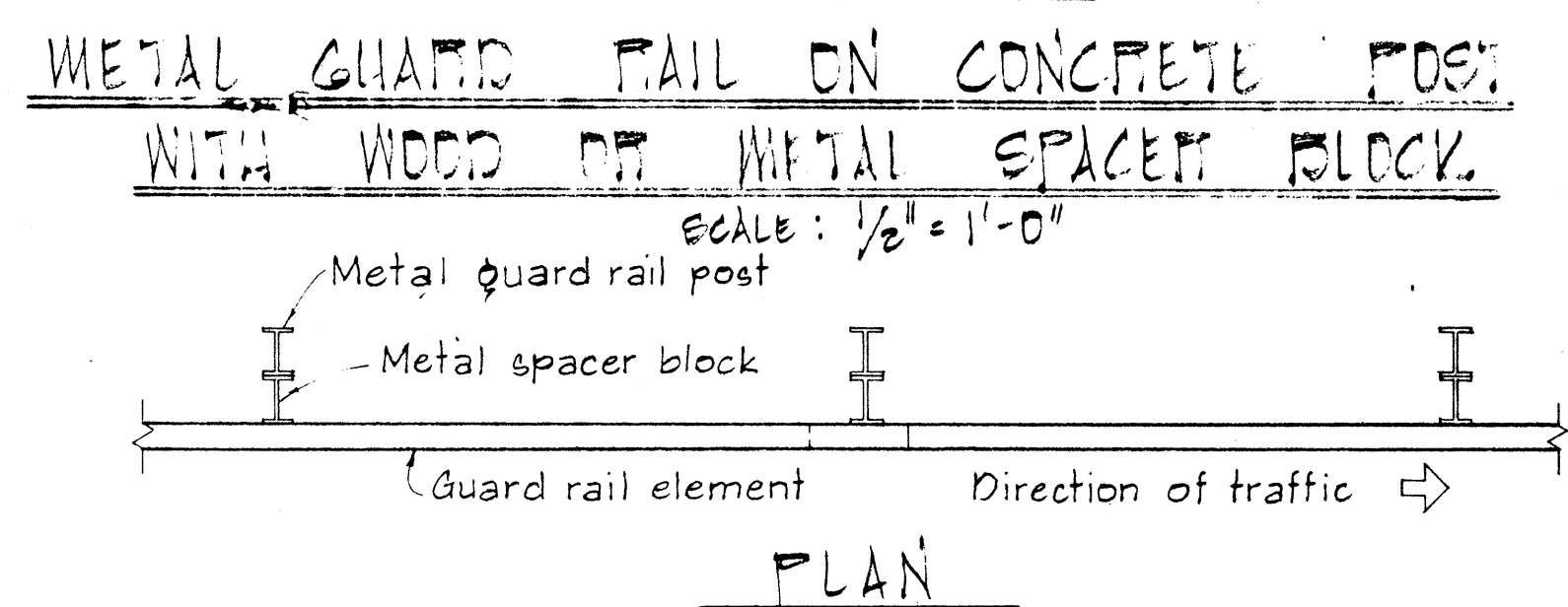
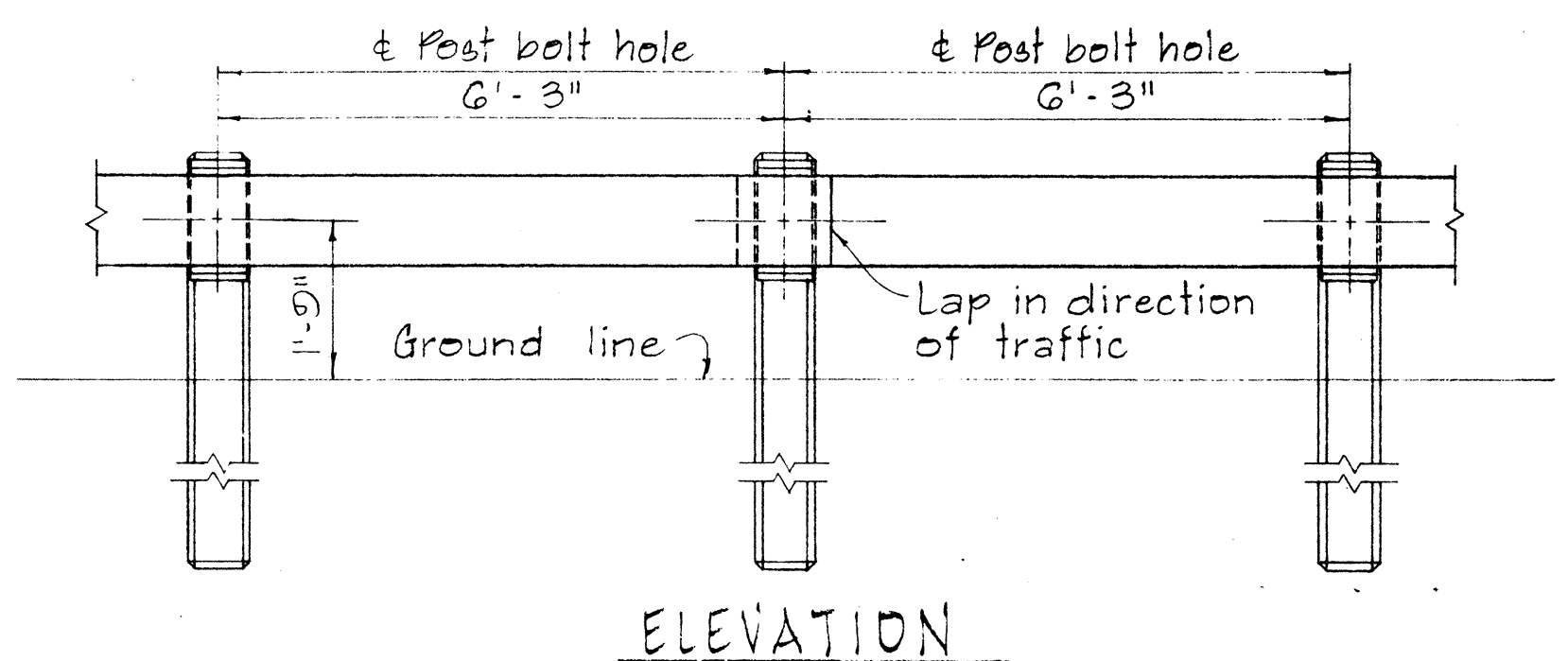
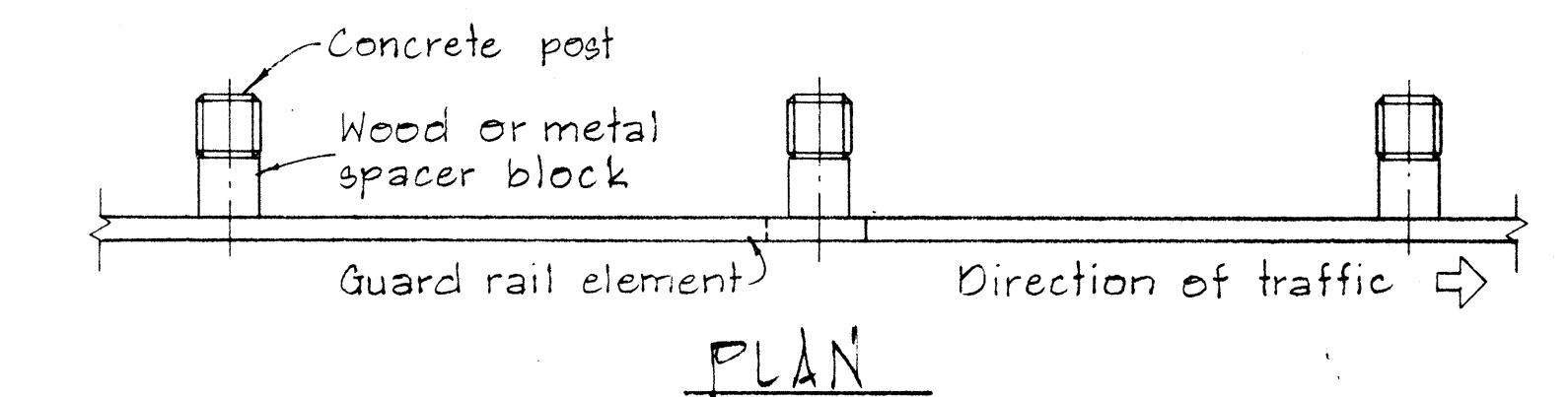
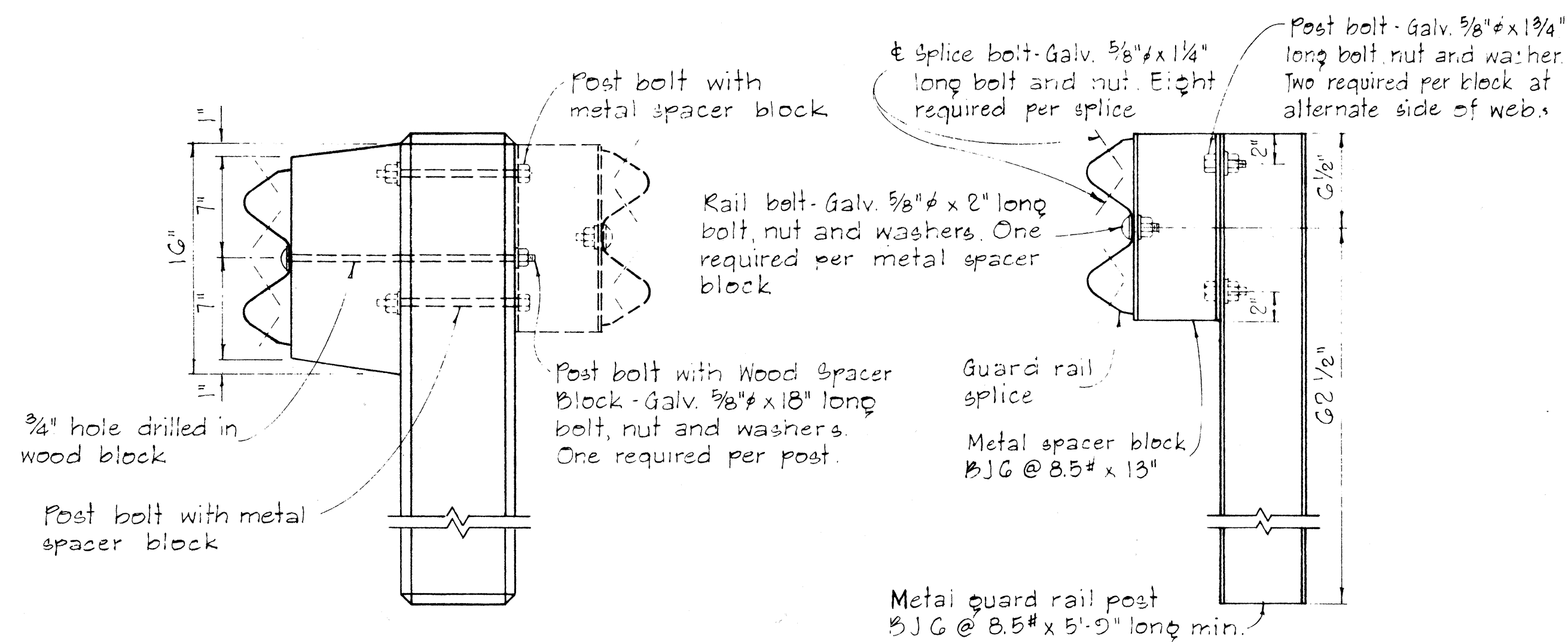
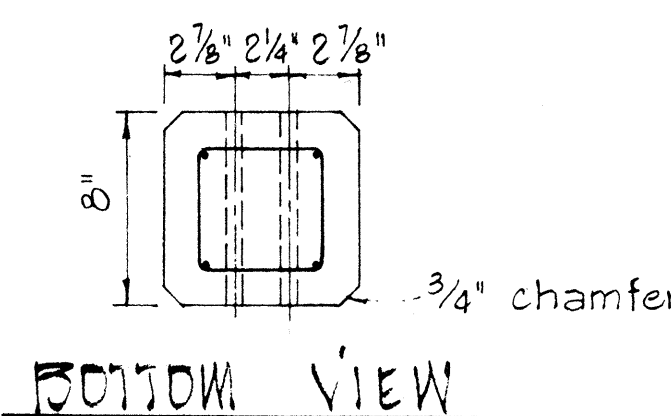
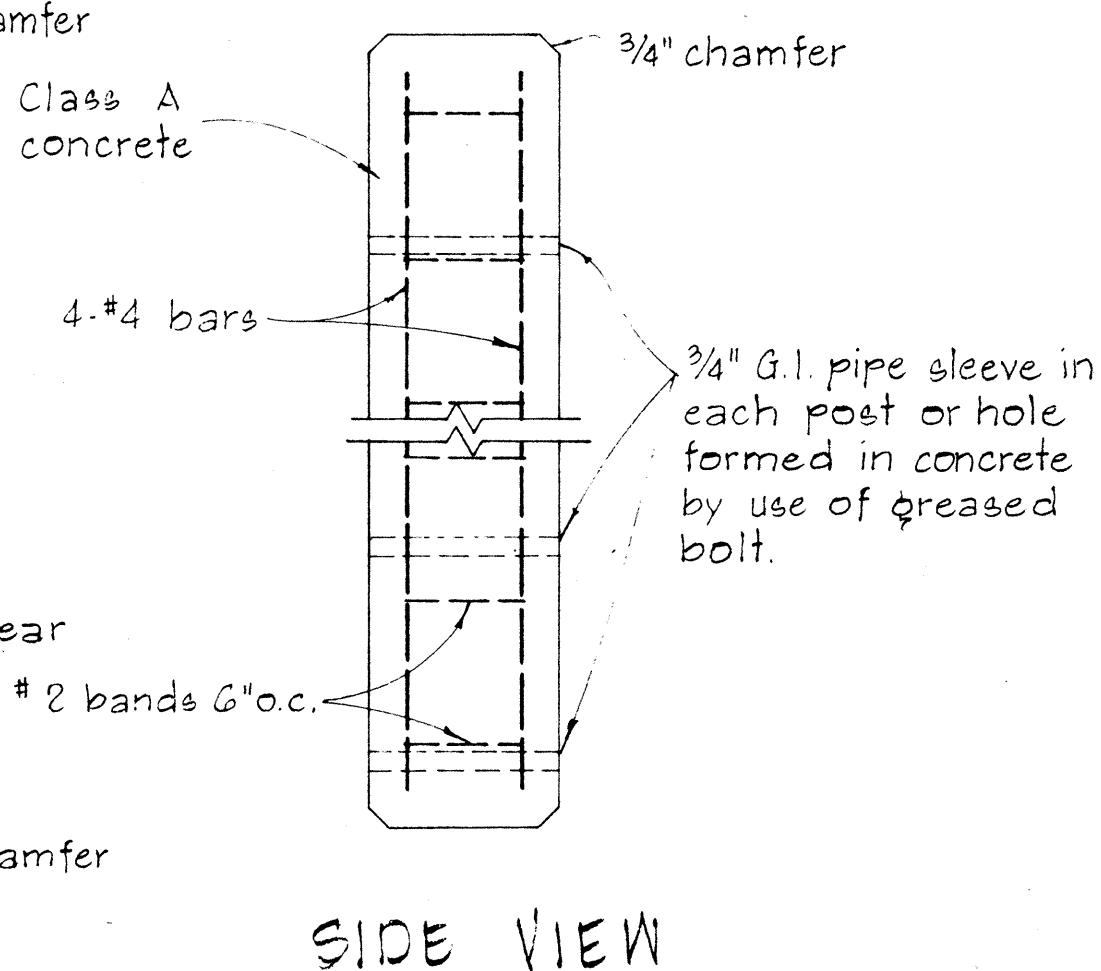
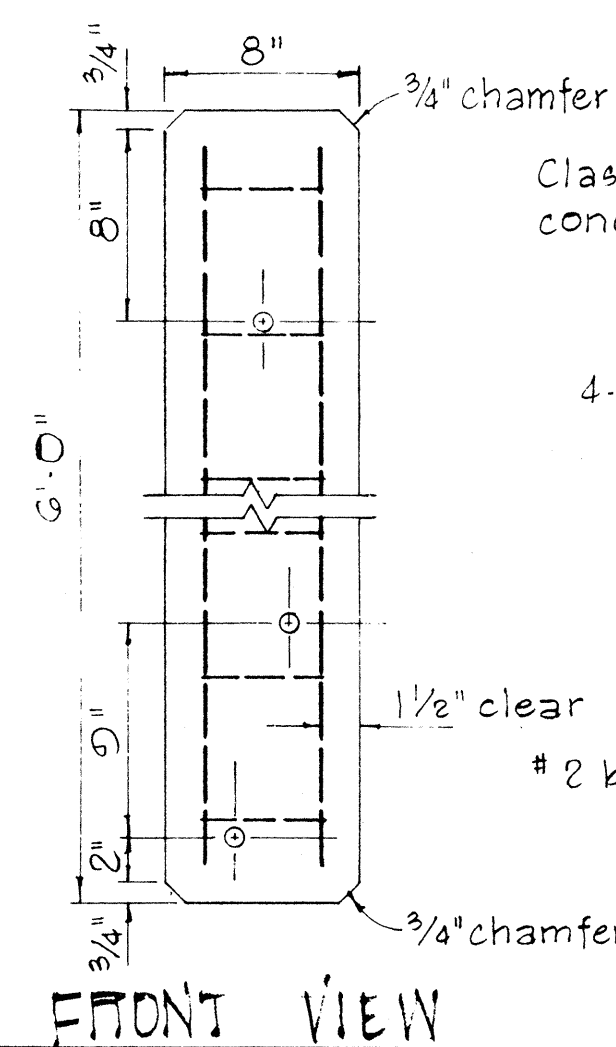
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
FIELD OFFICE & PROJECT SITE LABORATORY
Scale: As Noted

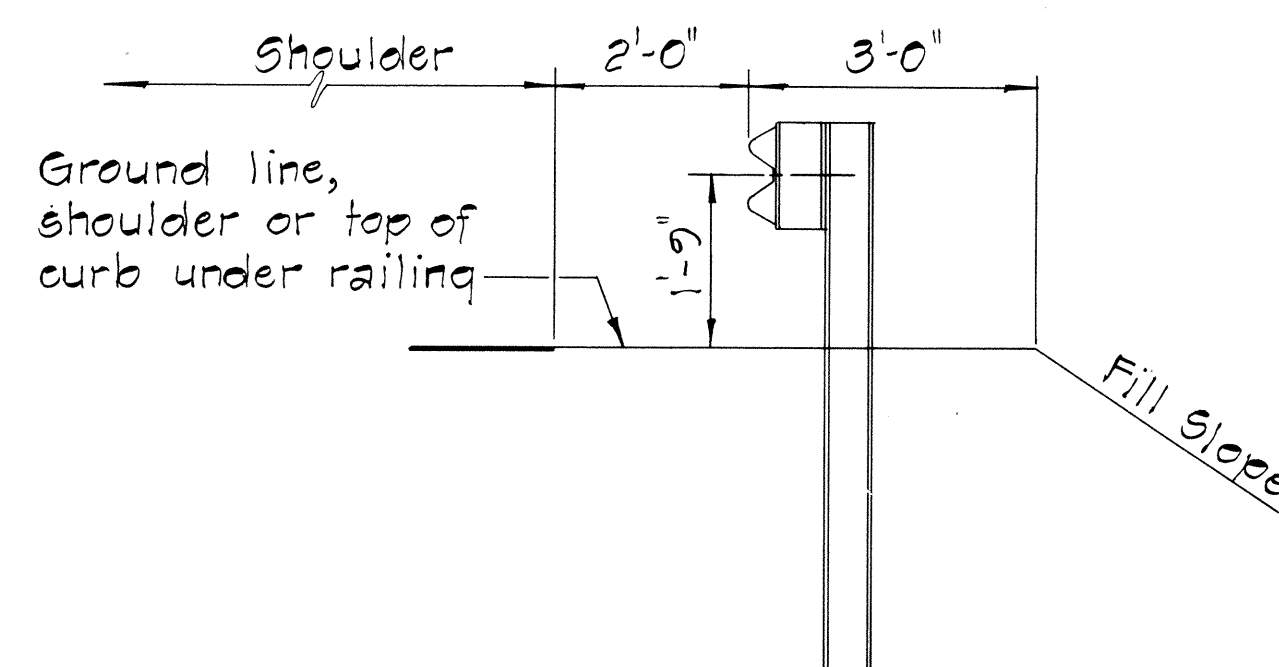
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(90):13	1972	33	202



NOTE:
Concrete post shall be precast



SINGLE METAL GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: $1\frac{1}{2}" = 1'-0"$



AT SHOULDER SECTION

TYPICAL METAL GUARD
RAIL DETAIL

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

APPROVAL RECOMMENDED:
Etschi Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

APPROVED: Hubert L. Zelenka
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

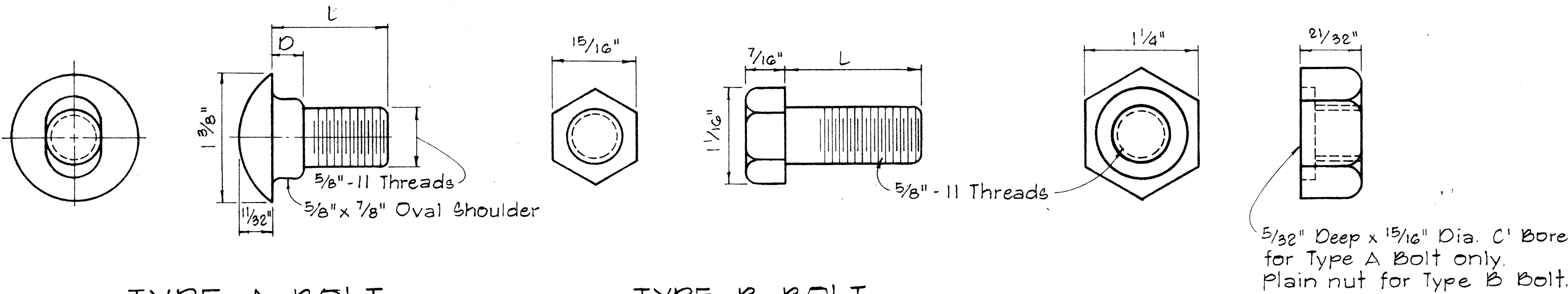
SCALE: AS SHOWN NOV 1968

SHEET No. 14B OF 21 SHEETS	PT 500
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(20)-13	1972	34	202

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

BOLT DIMENSIONS		
TYPE B BOLT		
Post Bolt for Conc. Post w/ Metal Blocks	L	
Post Bolt for Metal Post w/ Metal Block	5 1/2"	
	1 3/4"	



TYPE A BOLT

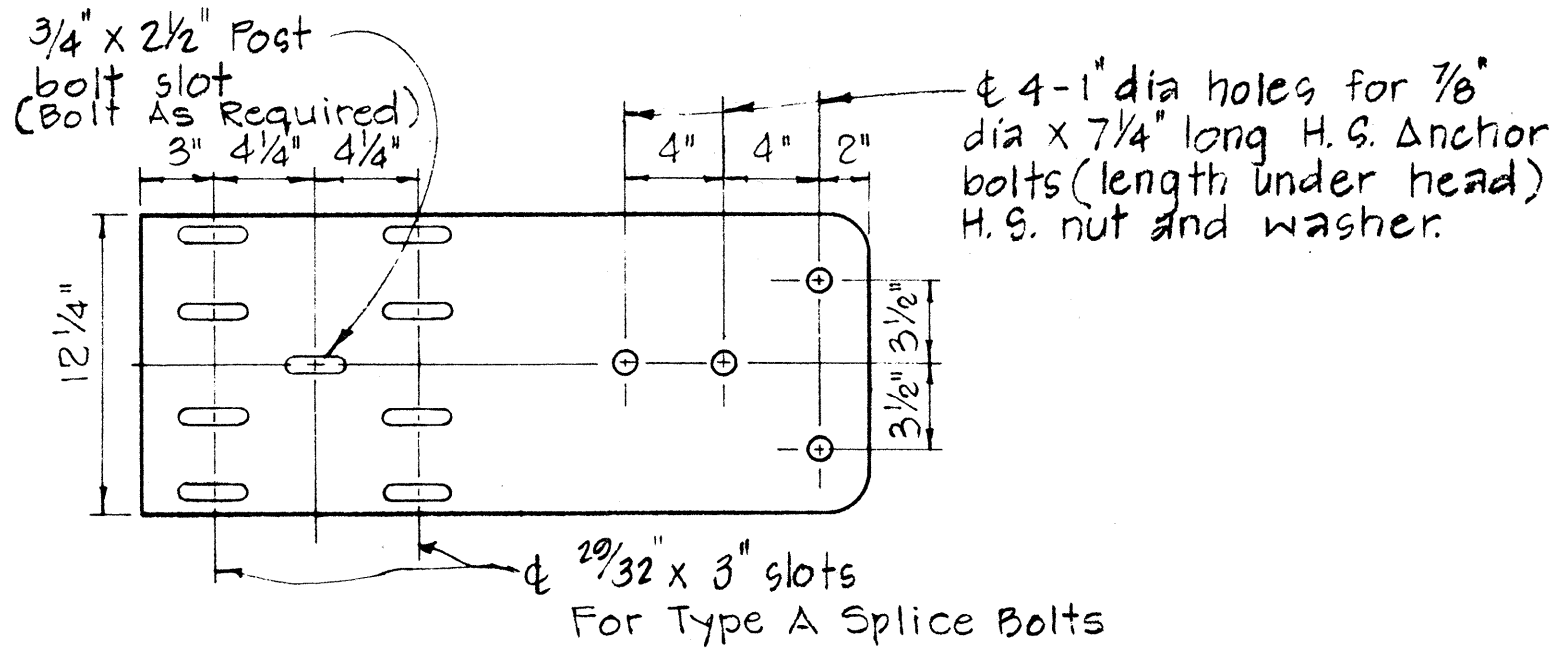
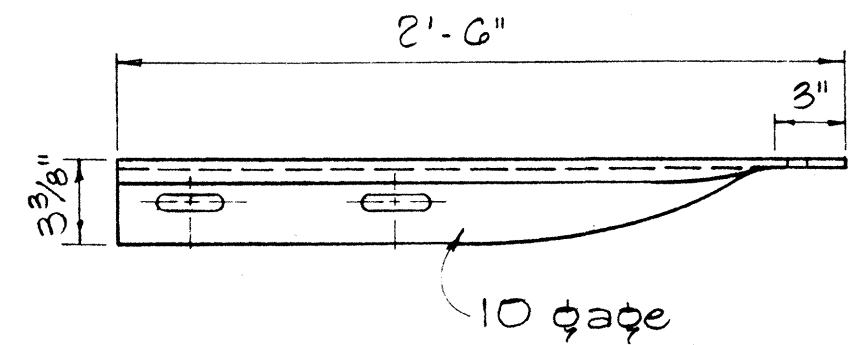
TYPE B BOLT

SPlice RAIL AND POST BOLTS

Scale: Full Size

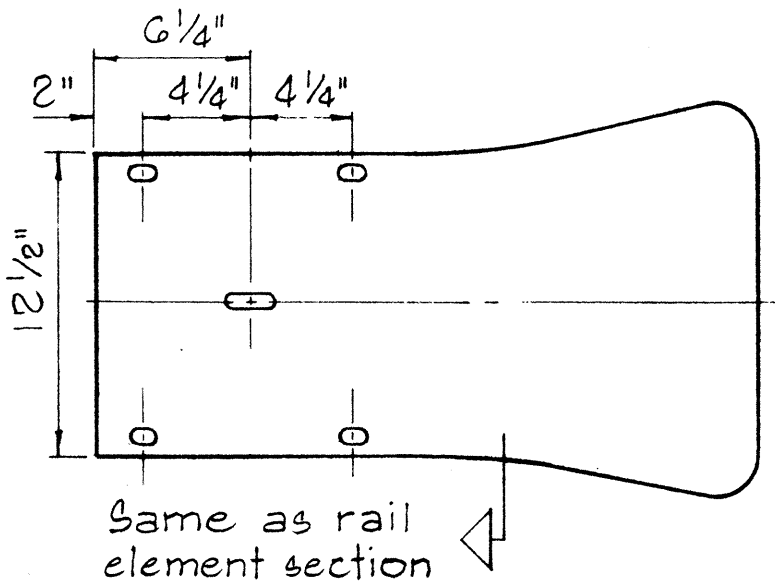
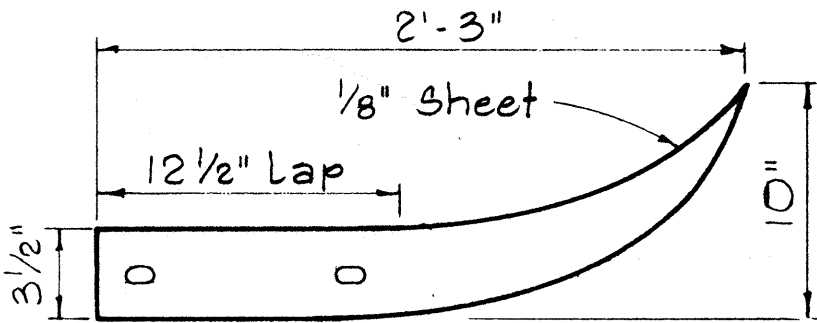
HEXAGON NUT

Scale: Full Size



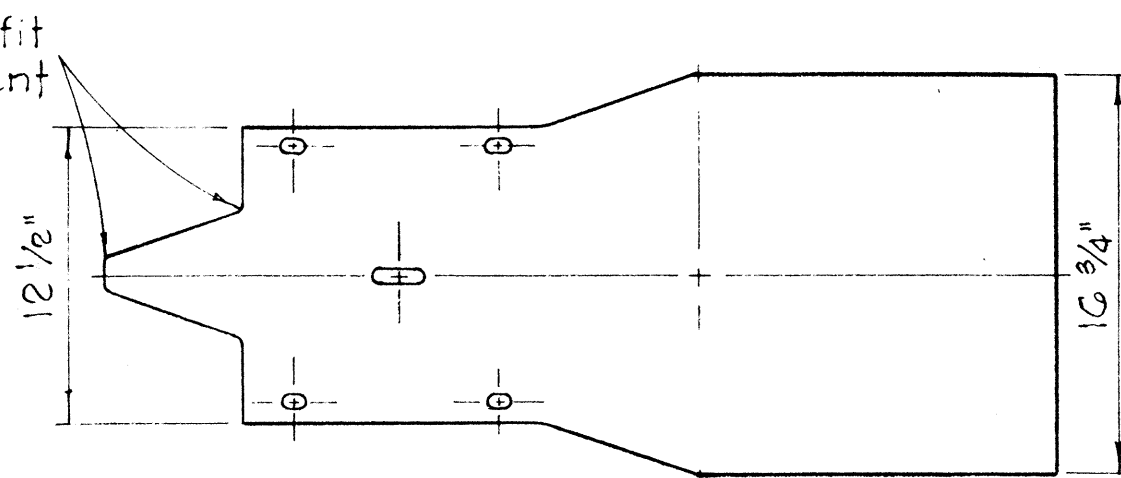
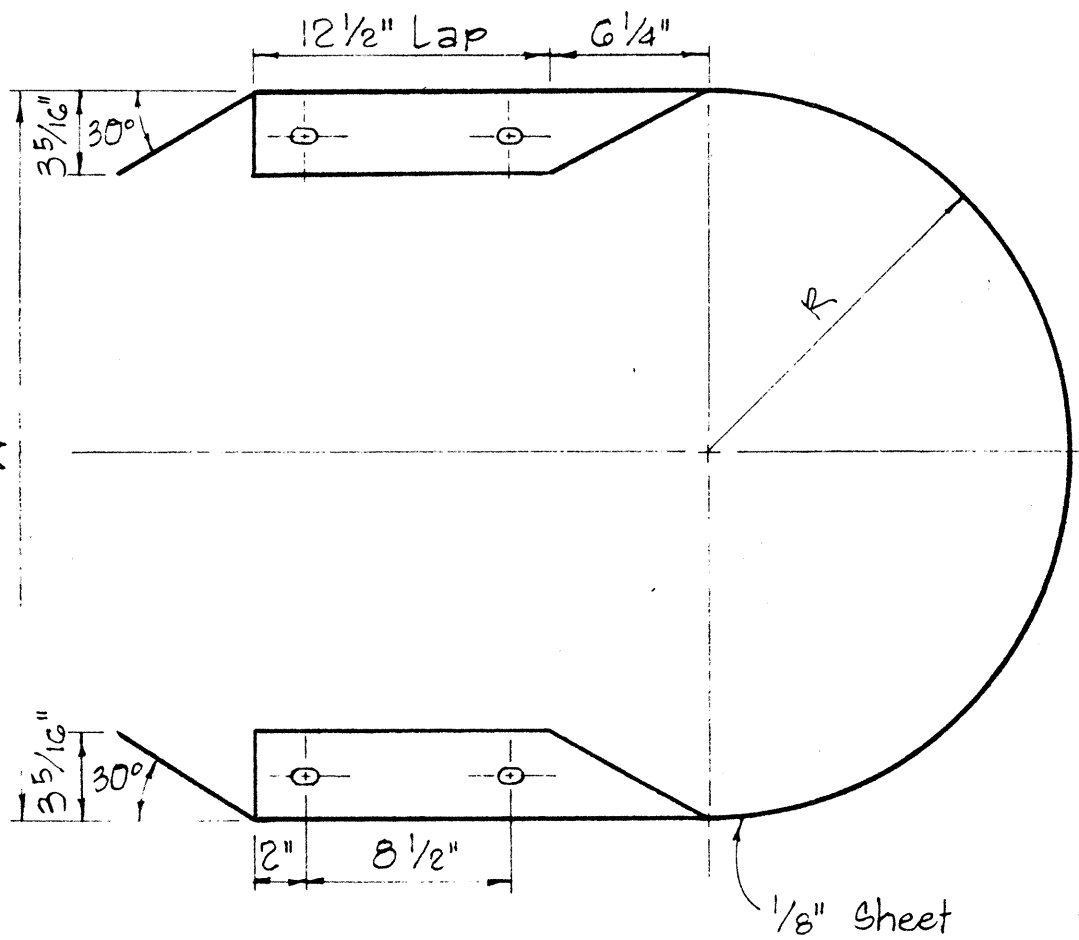
SPECIAL END SHOE

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



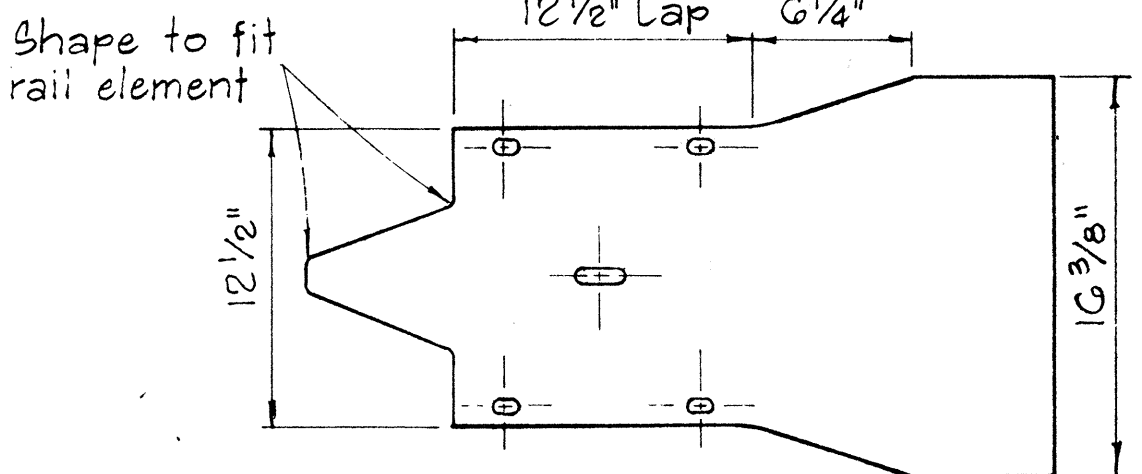
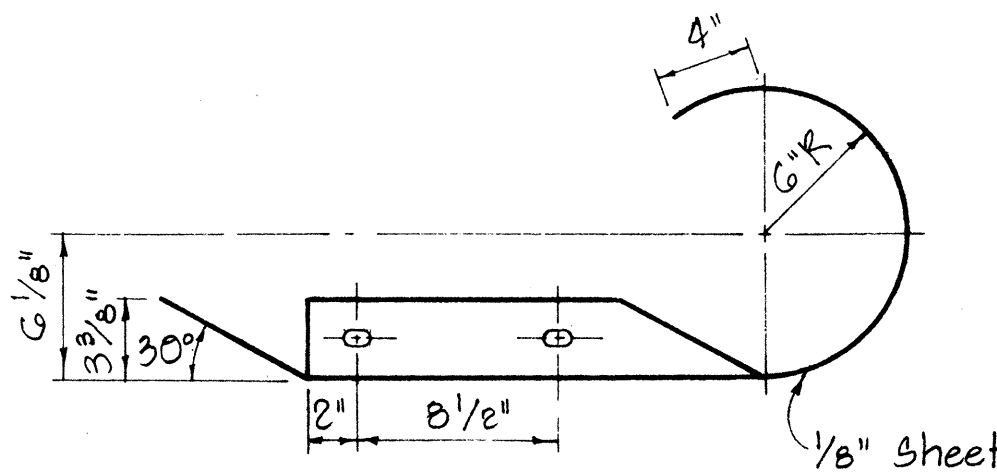
FLARED END

Scale: 1 1/2" = 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

12/23/69

DATE

12-20-69

DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

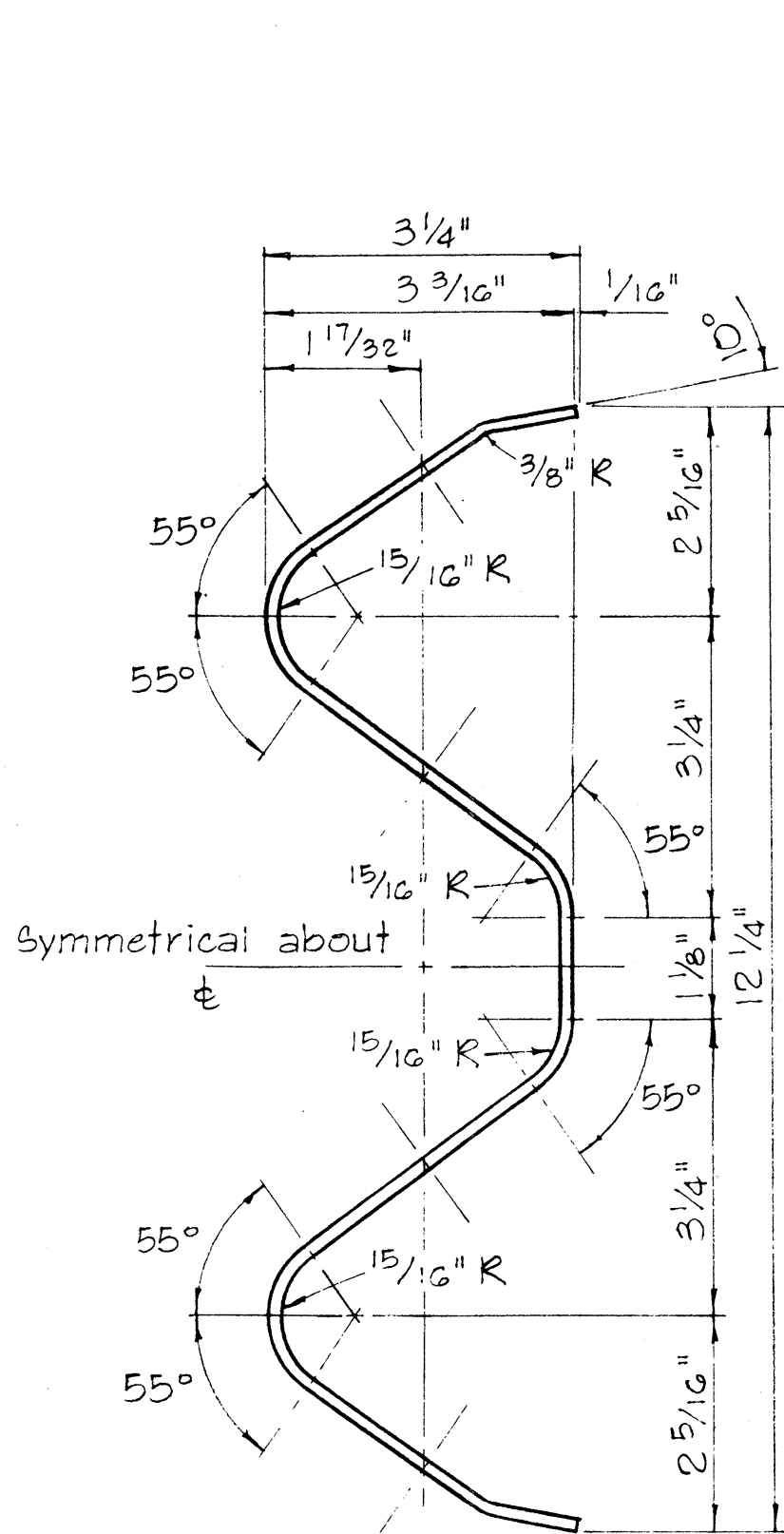
August, 1968

SHEET No. 15 OF 21 SHEETS DT 501

- NOTES:
- H.S. Bolts shall conform to the requirements of ASTM A 325.
 - Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHTO 150.

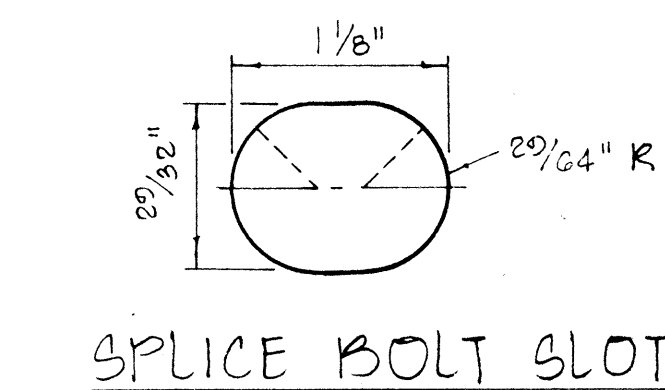
MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"

NO	REVISION	APPROVED BY	DATE



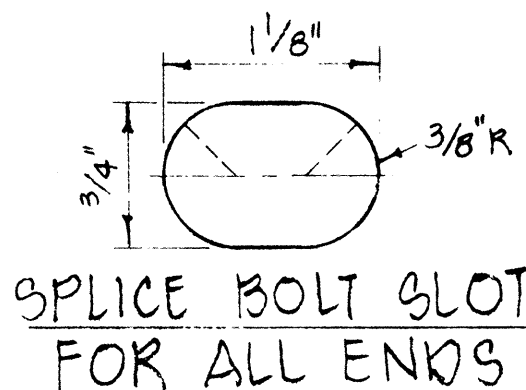
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

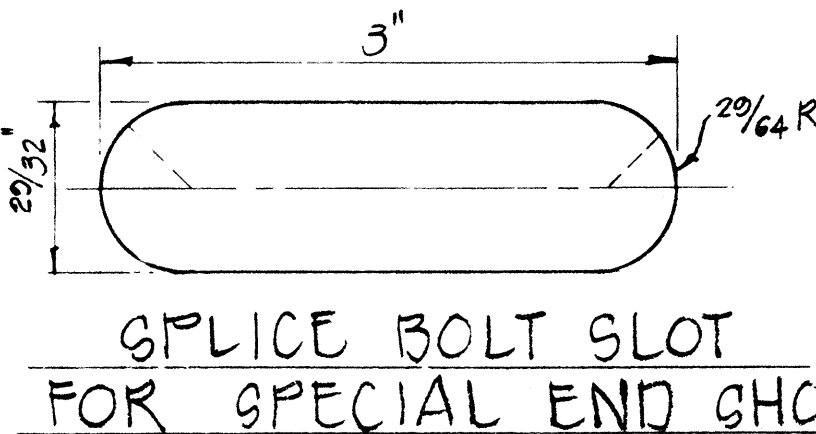


SPlice BOLT SLOT

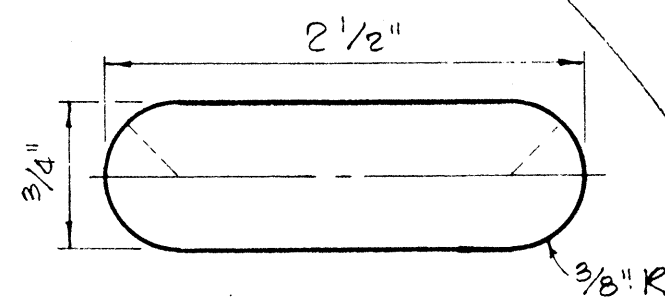
Scale: Full Size



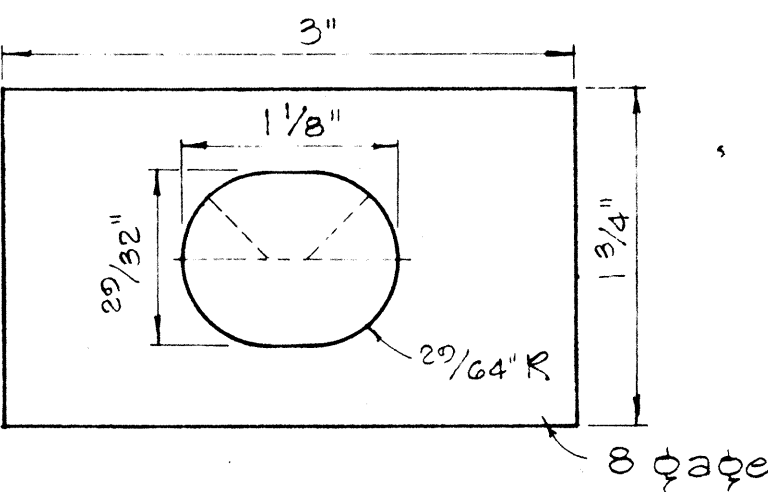
SPlice BOLT SLOT FOR ALL ENDS



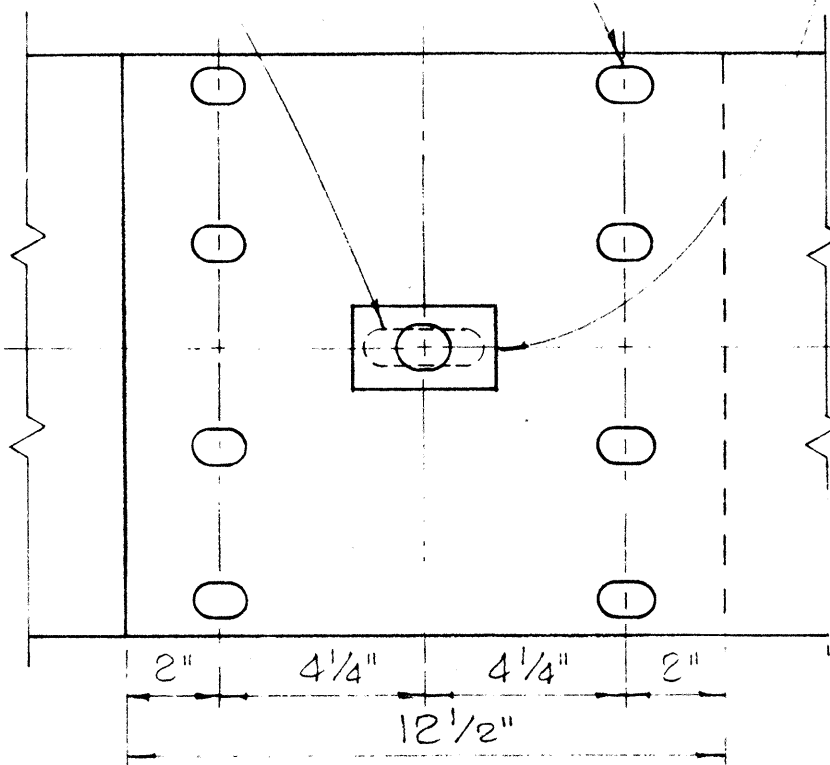
SPlice BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER

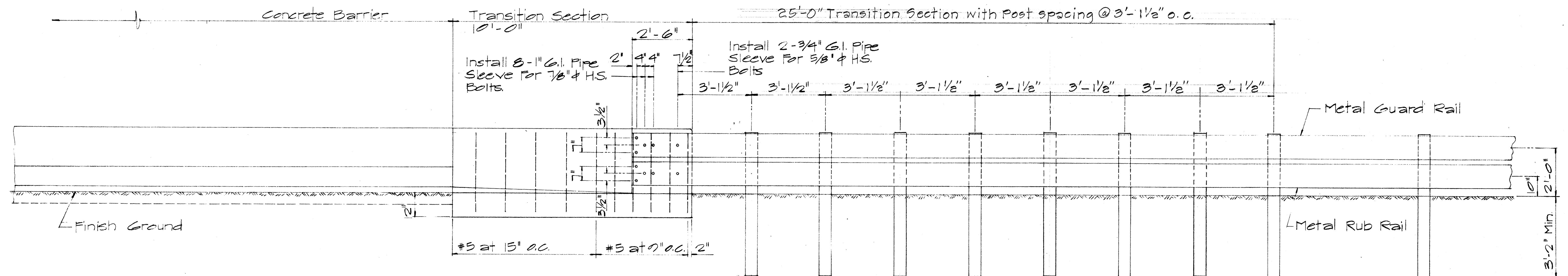
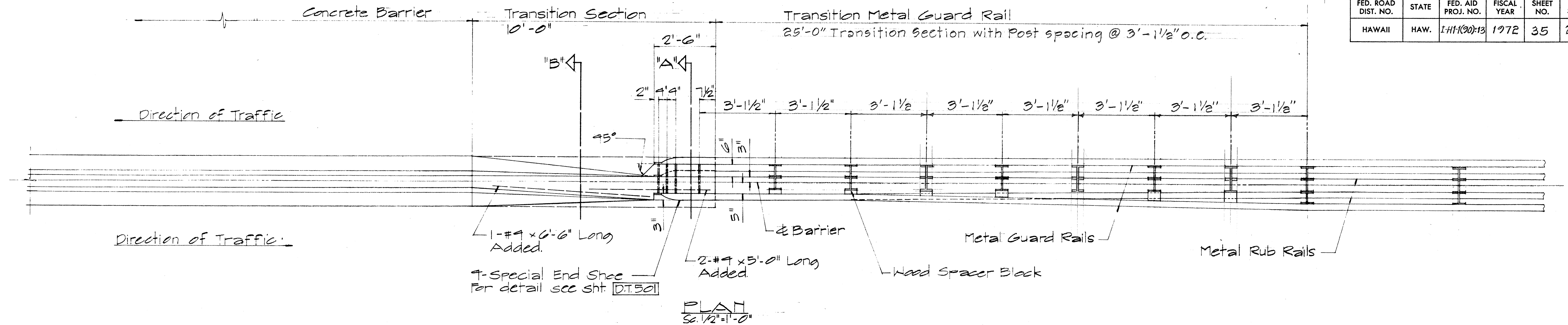


RAIL SPlice

Scale: 3" = 1'-0"

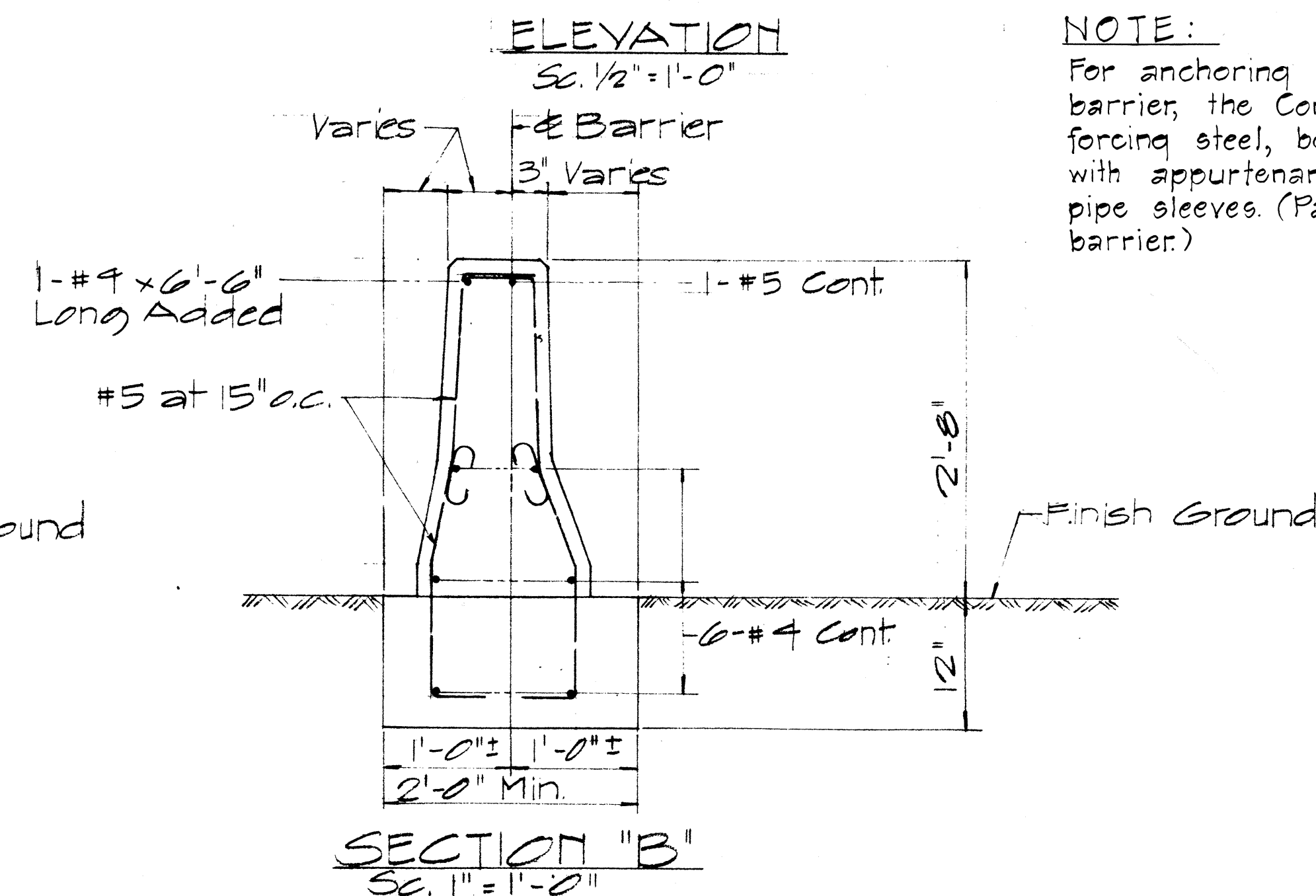
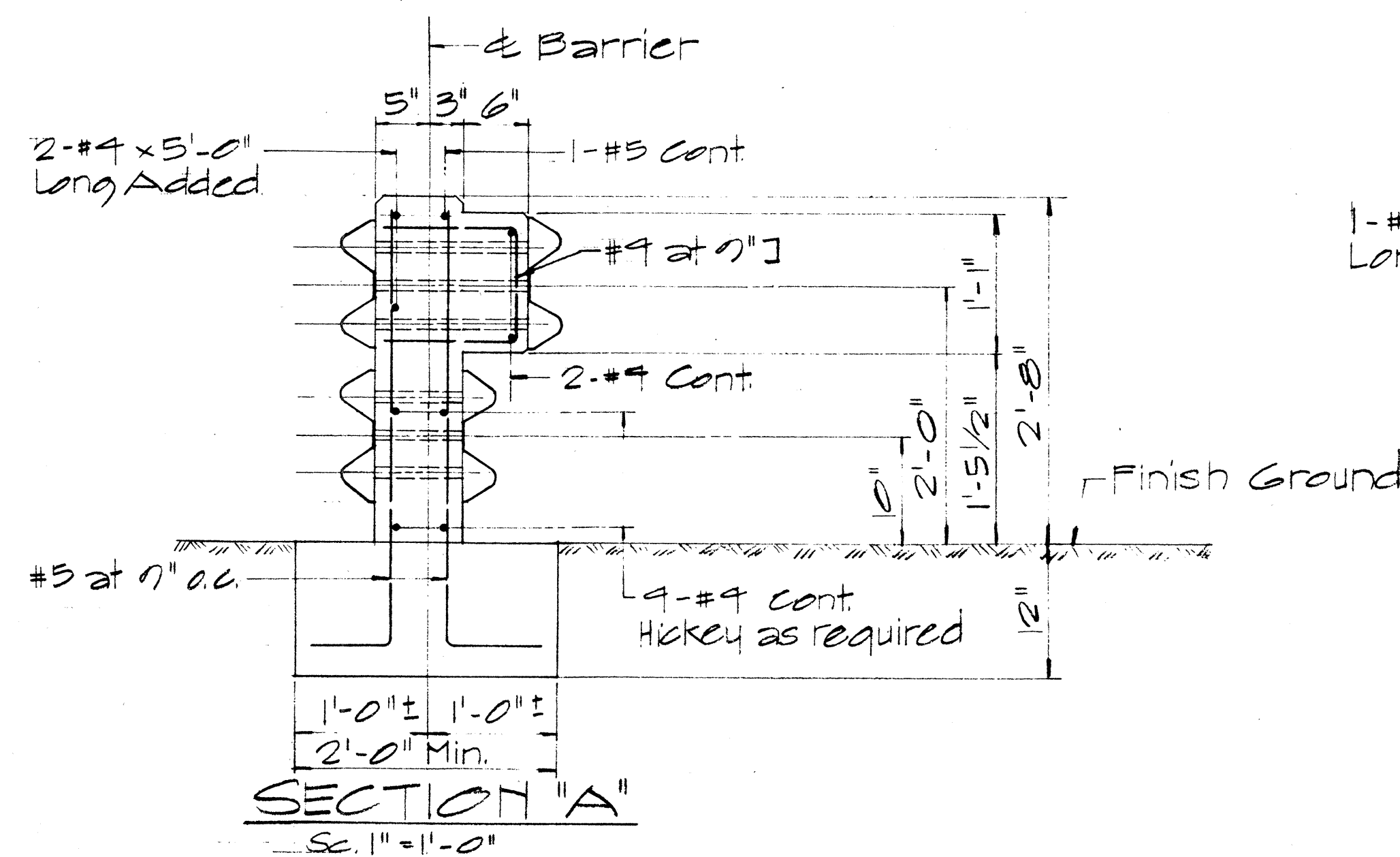
ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-11(20)-13	1972	35	202



NOTE:

For anchoring metal guard rail elements to concrete barrier, the Contractor shall furnish and install reinforcing steel, bolts of appropriate lengths and size with appurtenant washers, nuts, wooden blocks and pipe sleeves. (Payments shall be incidental to concrete barrier.)



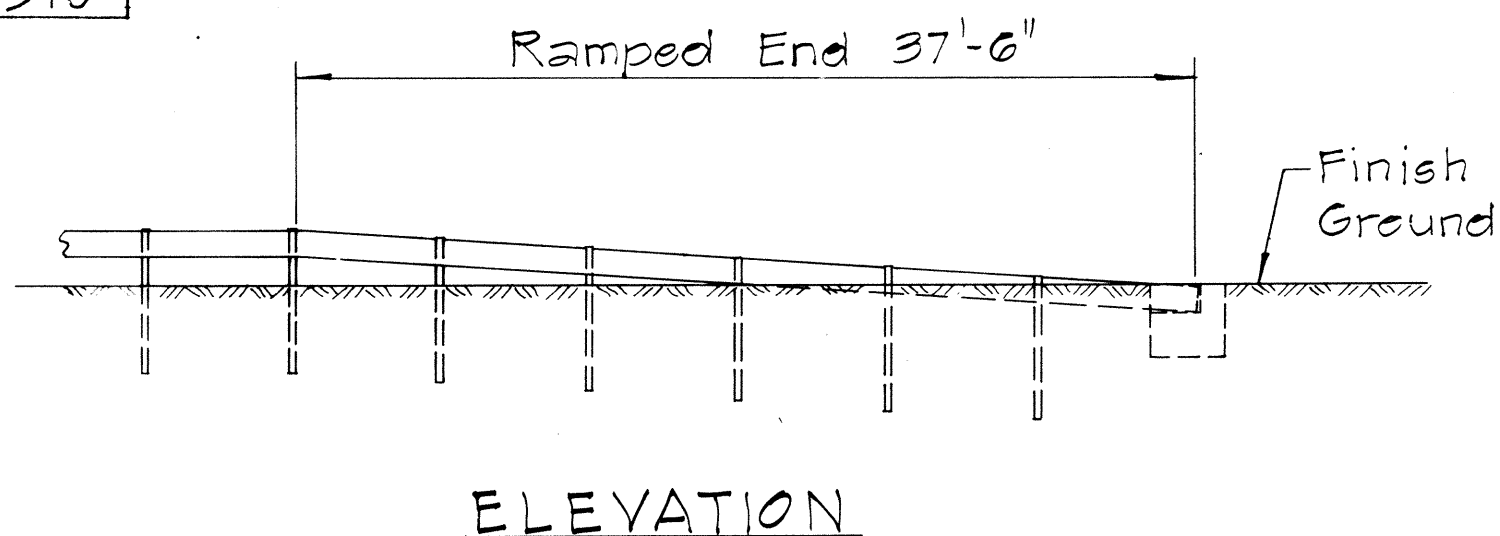
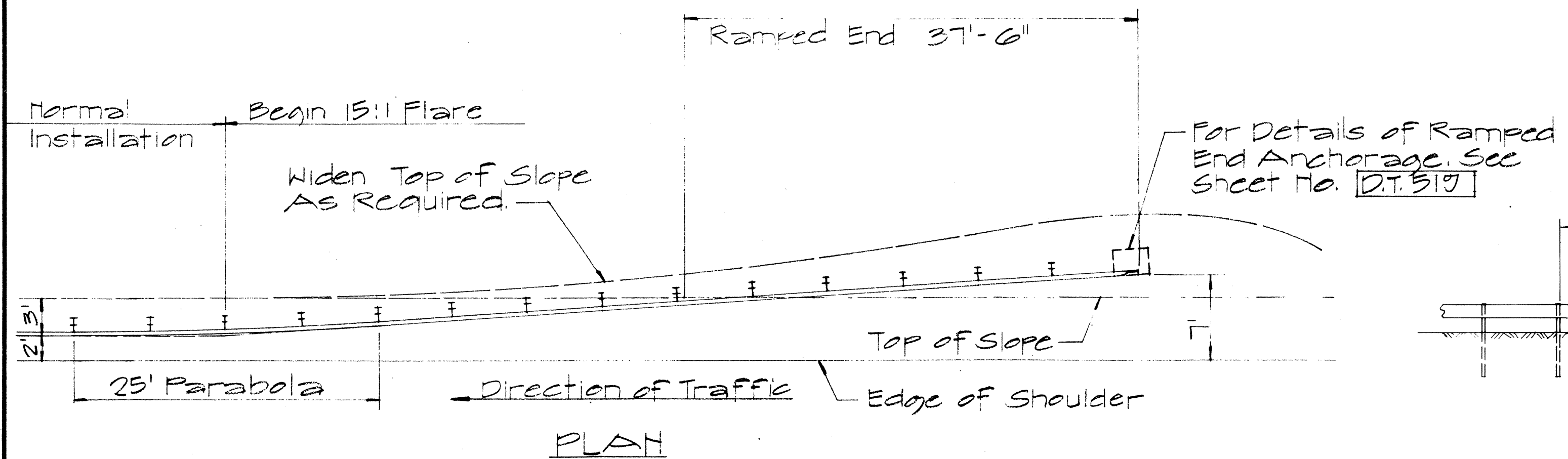
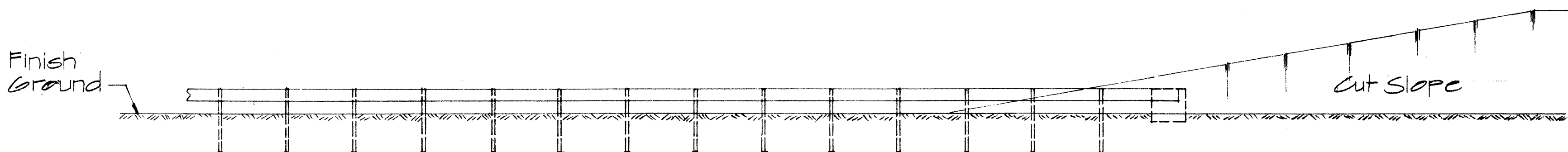
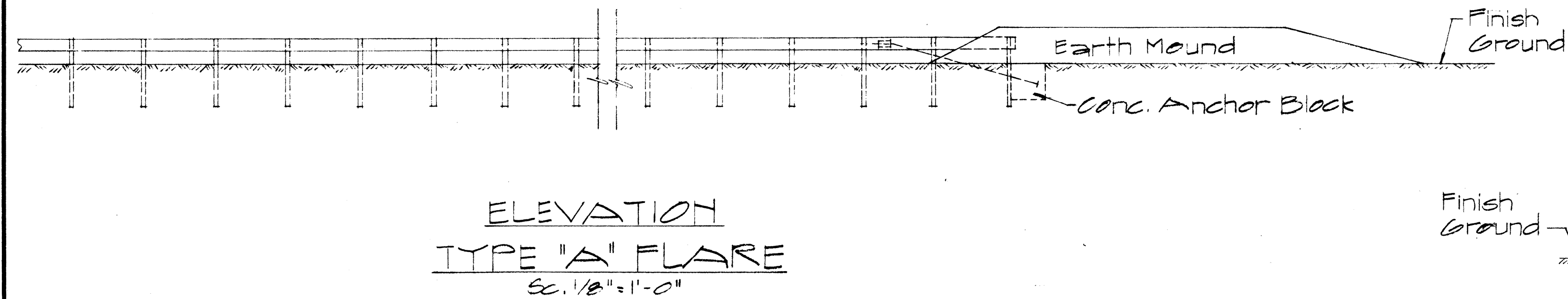
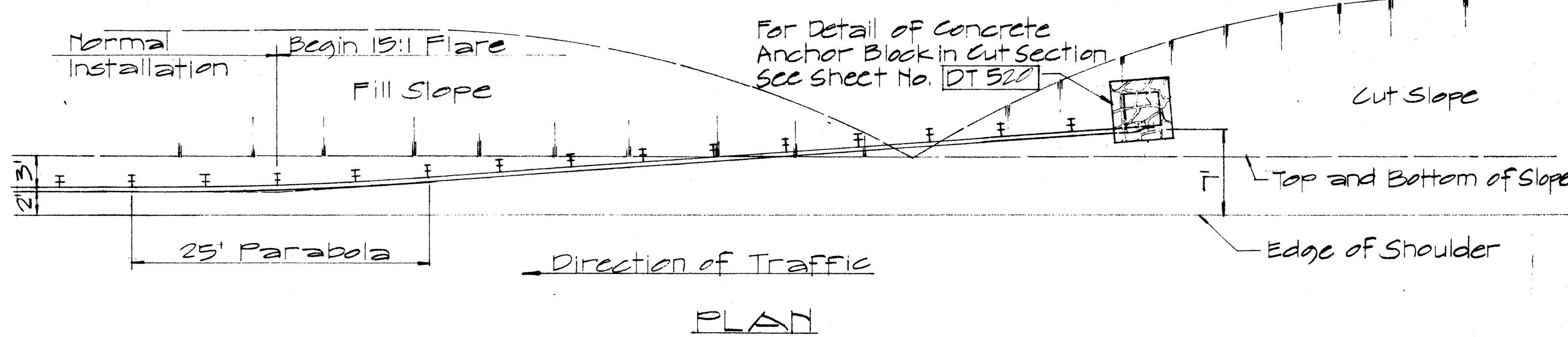
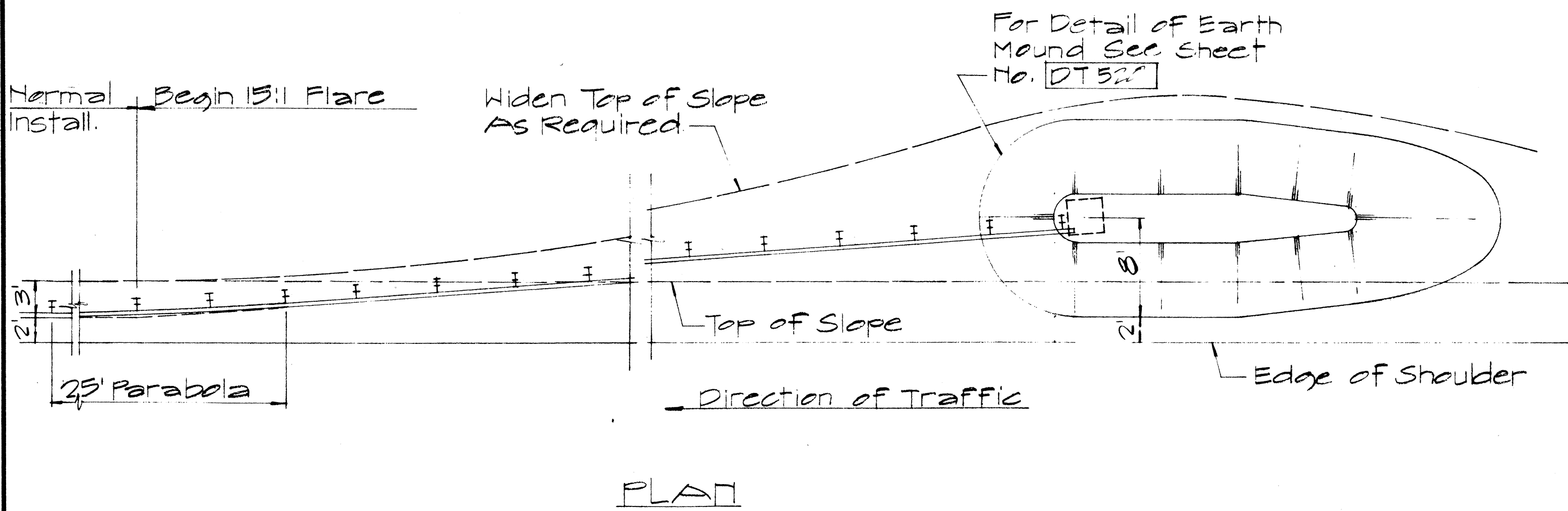
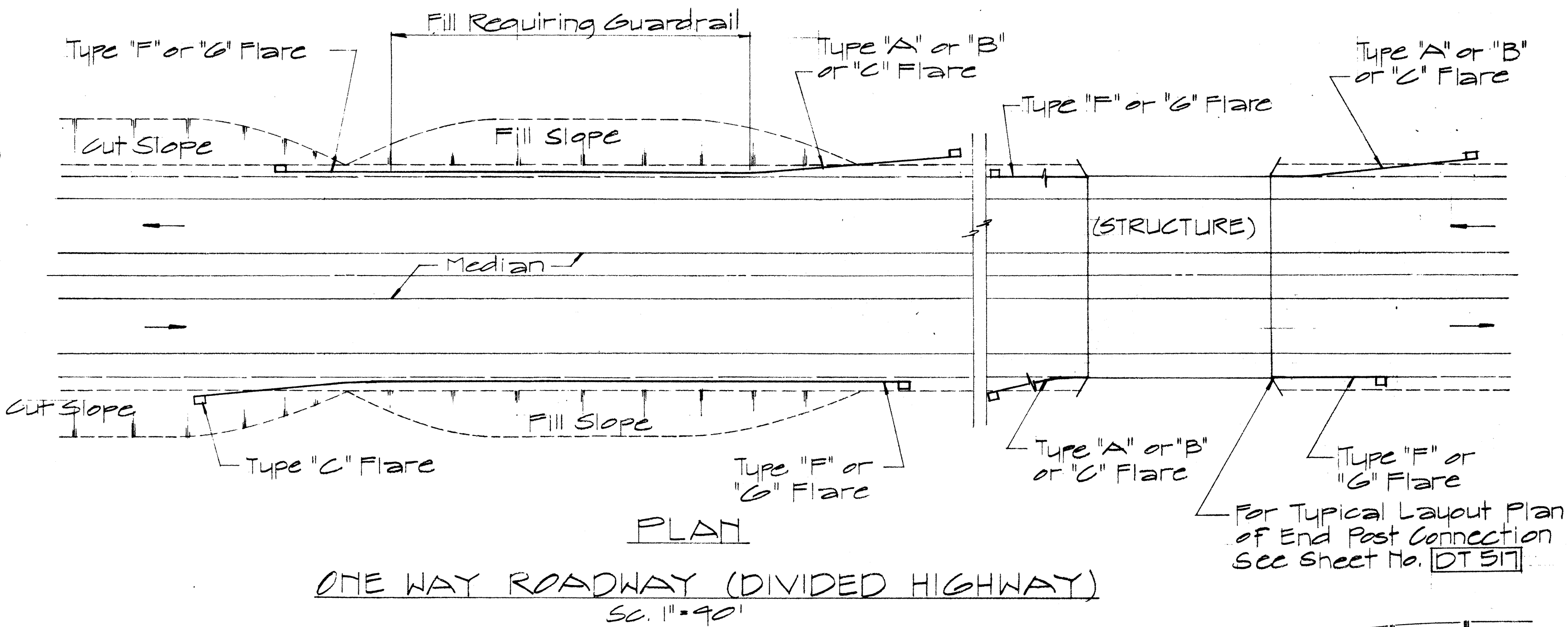
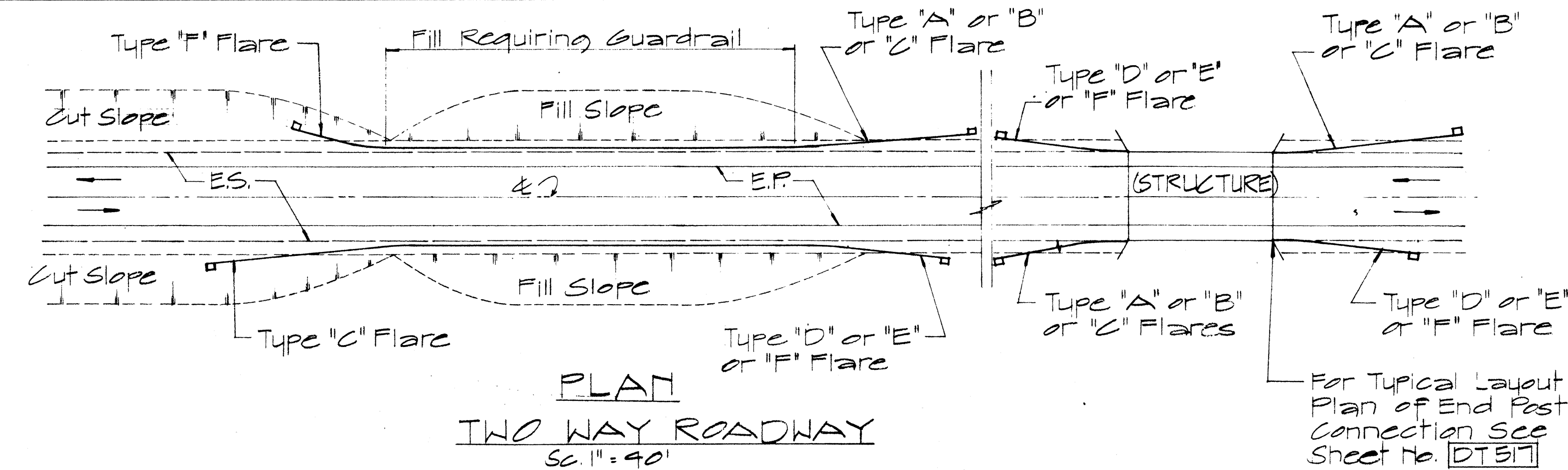
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

METAL GUARD RAIL
CONNECTION TO CONG.
BARRIER

Scale As Noted Feb. 1967
SHEET No. 168 OF 21 SHEETS DT 513

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(90)-13	1972	36	202

NOTE:
Metal guard rail connection to structures requires End Post Connection. See structure plans.



TYPE "B" FLARE
SC. 1/8" = 1'-0"

ELEVATION
TYPE "C" FLARE
SC. 1/8" = 1'-0"

NO.	REVISION	APPROVED BY	DATE

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

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

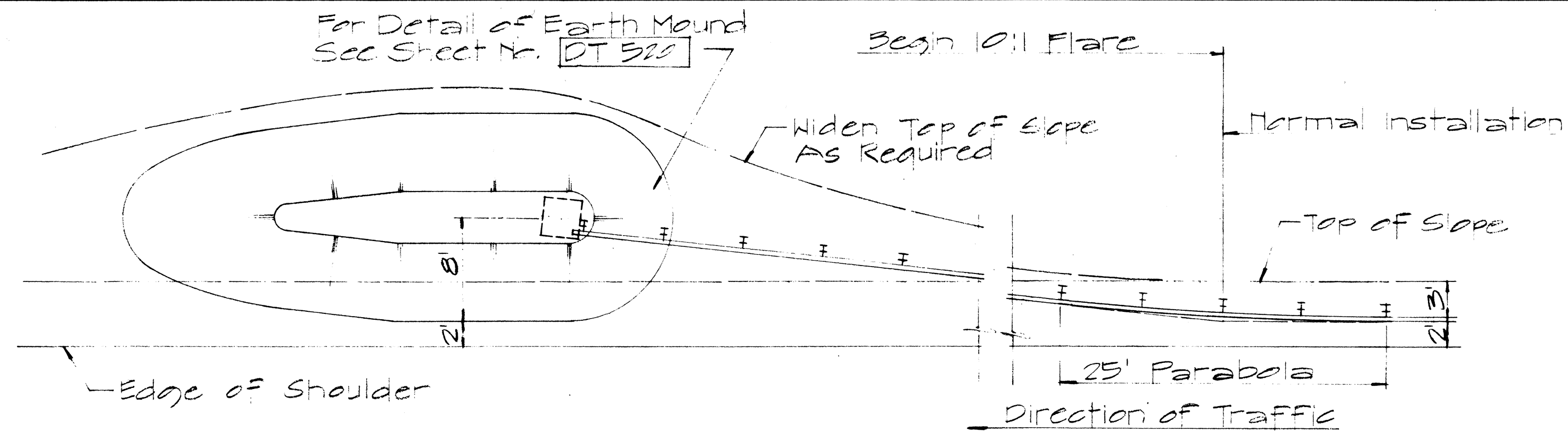
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

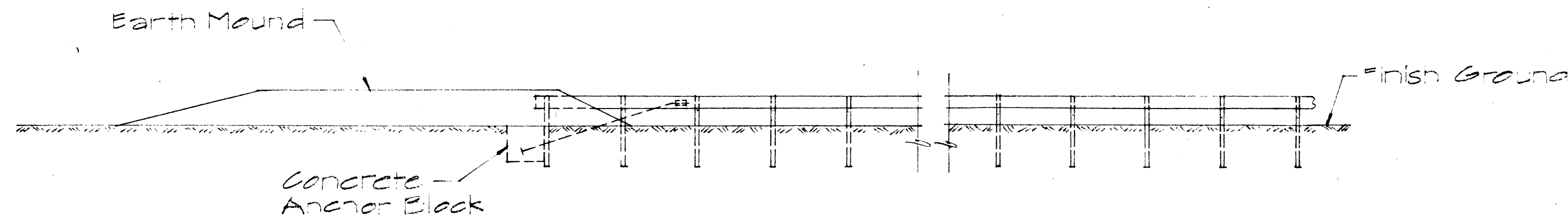
SC. As Noted April 1969
SHEET No. 178 OF 21 SHEETS DT 516

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1110003	1972	37	202

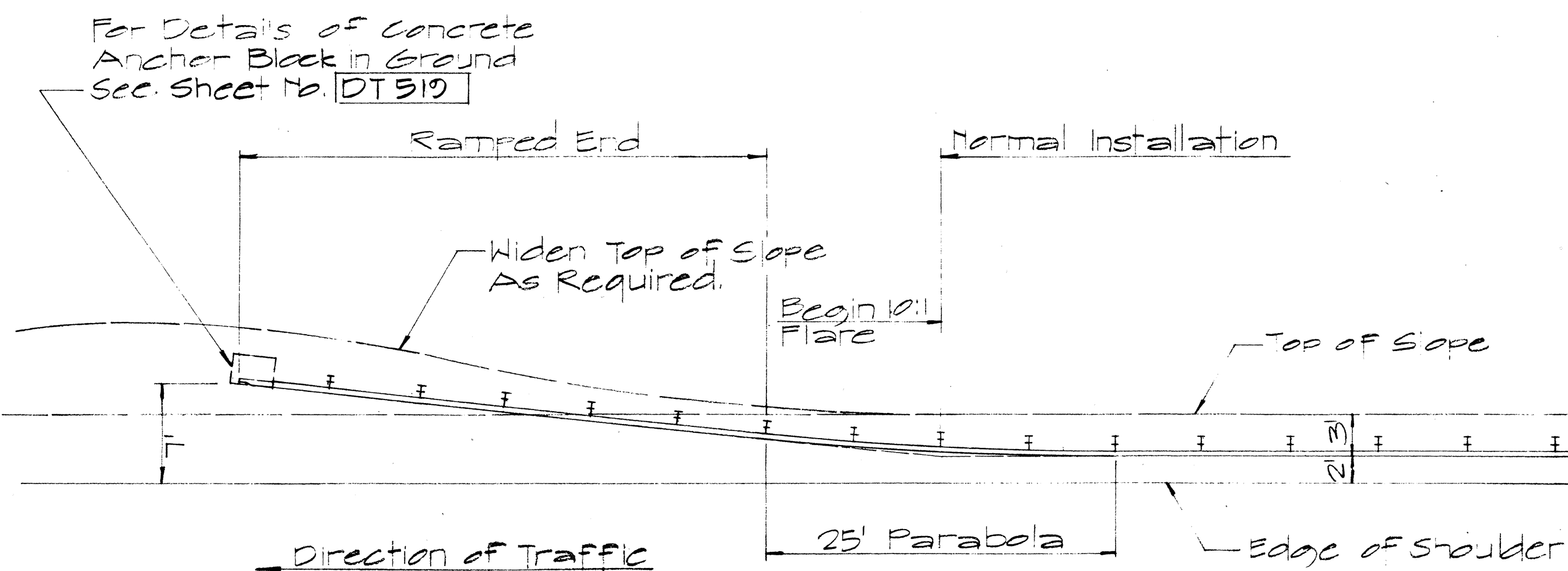


PLAN

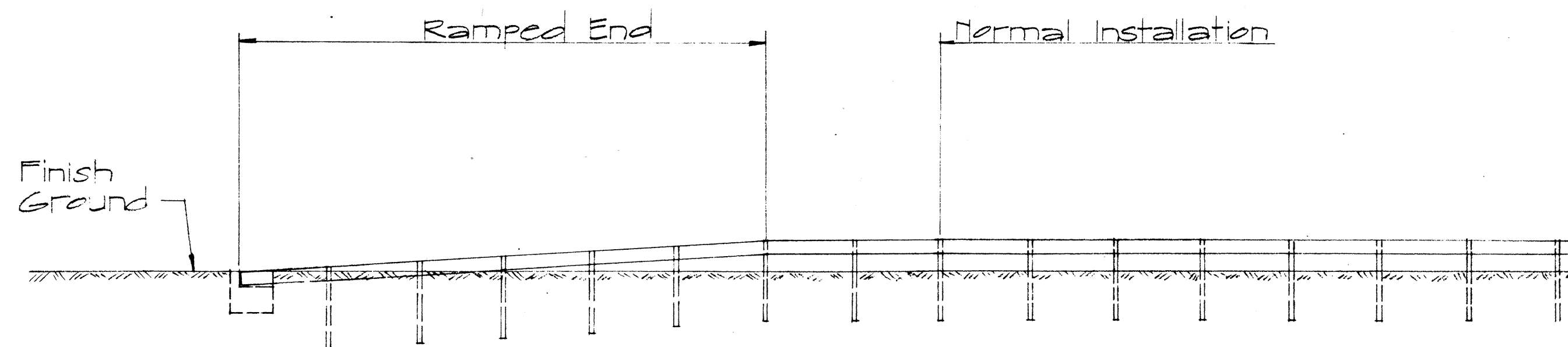


ELEVATION

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

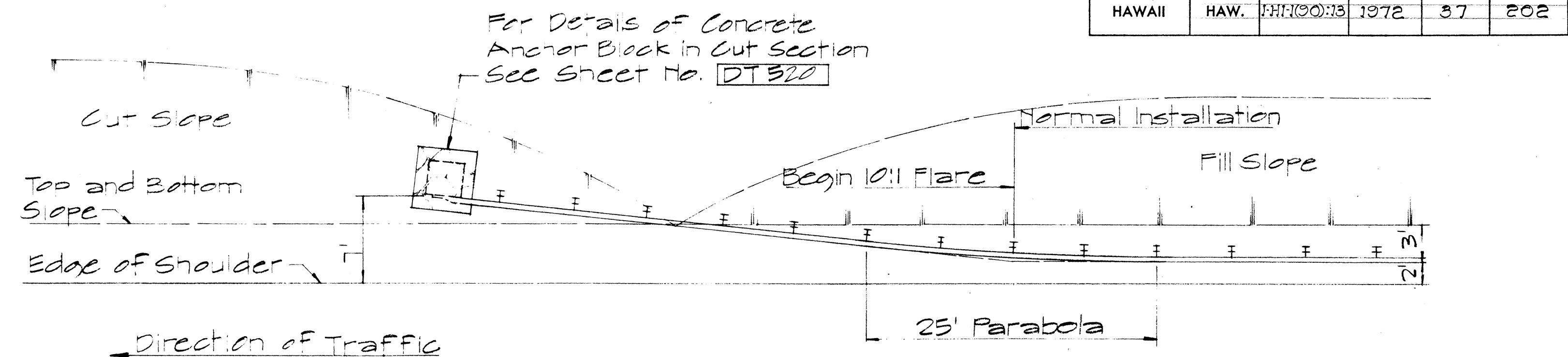


PLAN

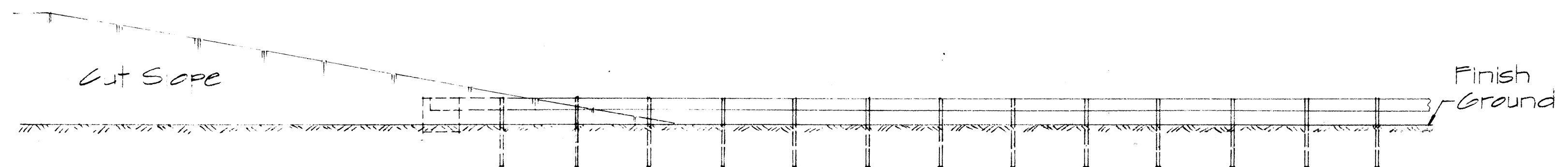


ELEVATION

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

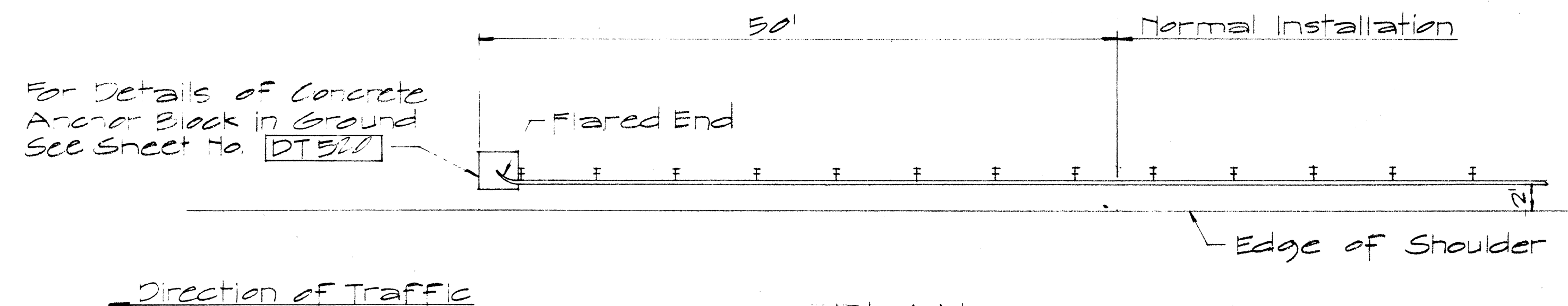


PLAN

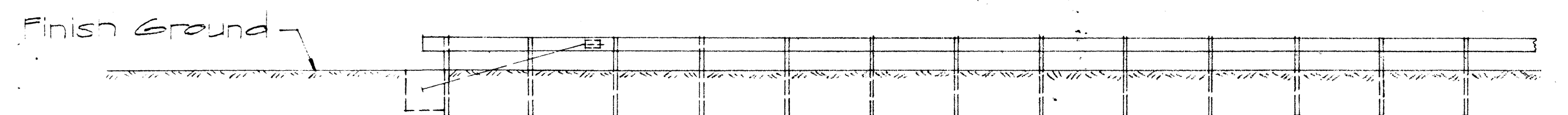


ELEVATION

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

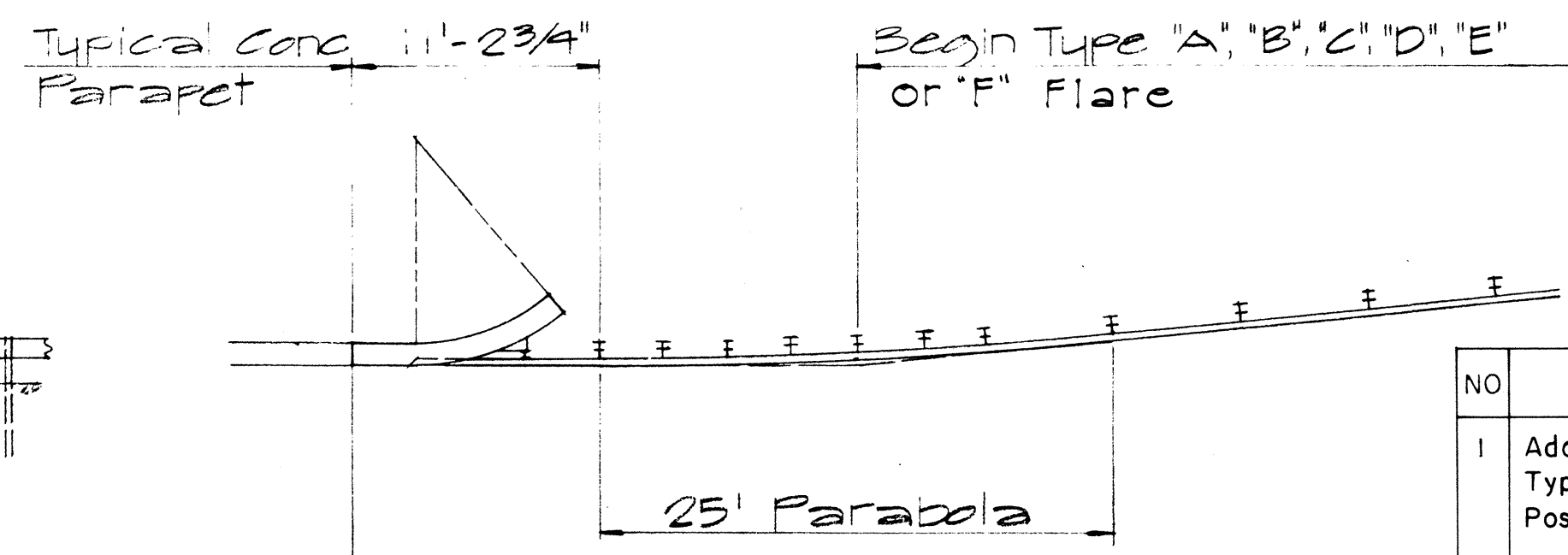


PLAN



ELEVATION

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



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

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

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

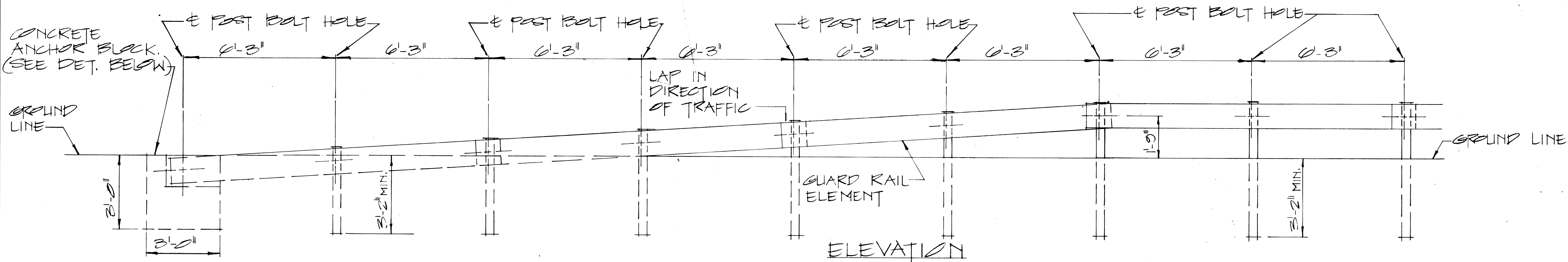
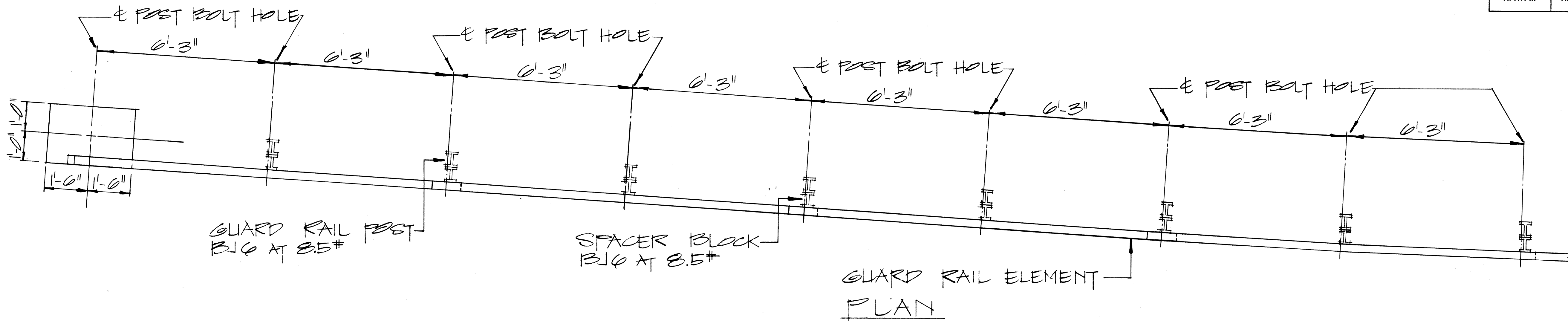
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969
SHEET No. 18 OF 21 SHEETS DT 517

DATE	
DESIGNED BY	
CHECKED BY	
NO. 1	

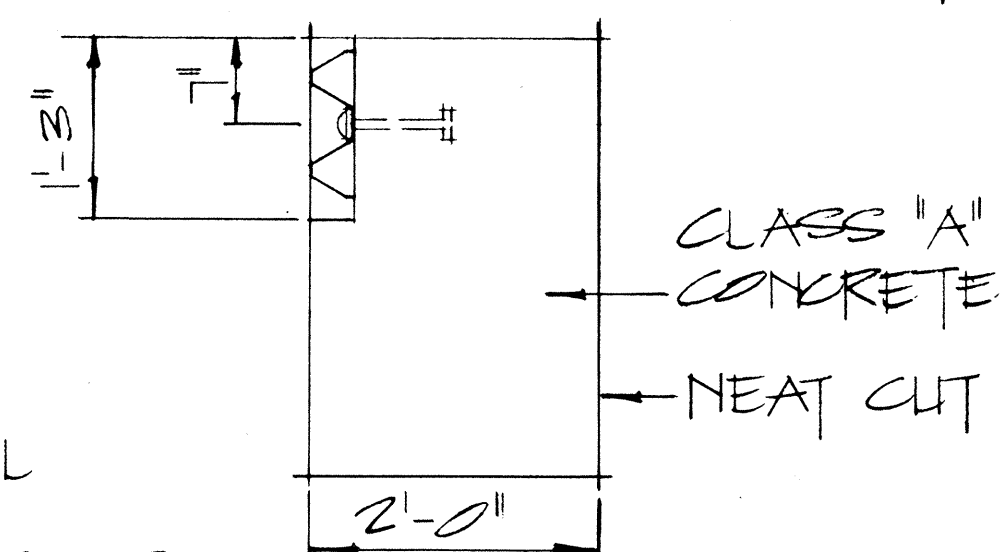
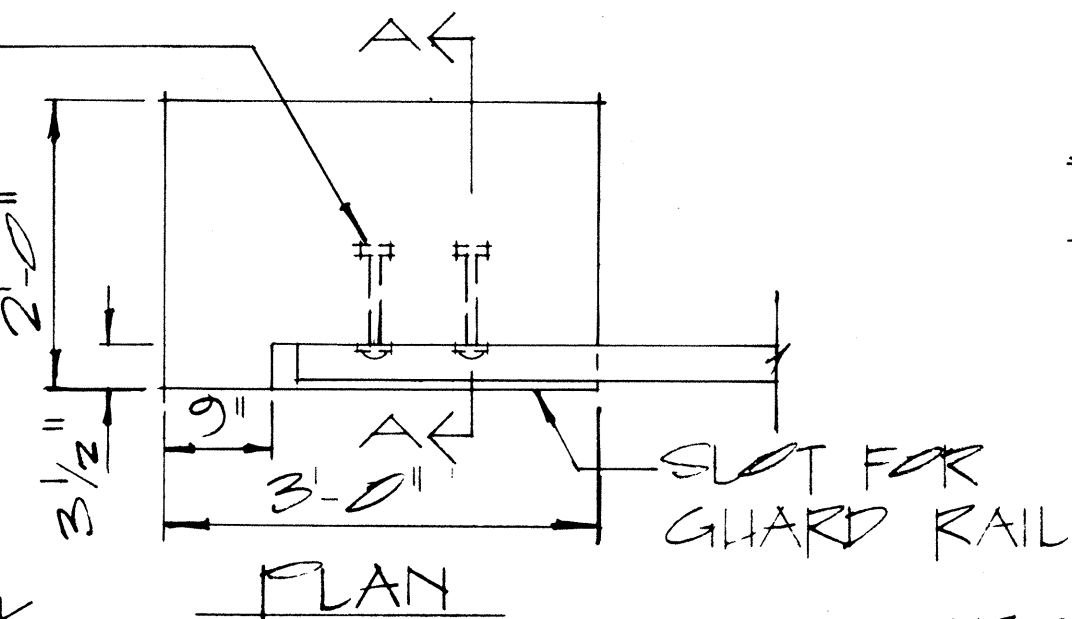
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H1-1(90)13	1972	38	202



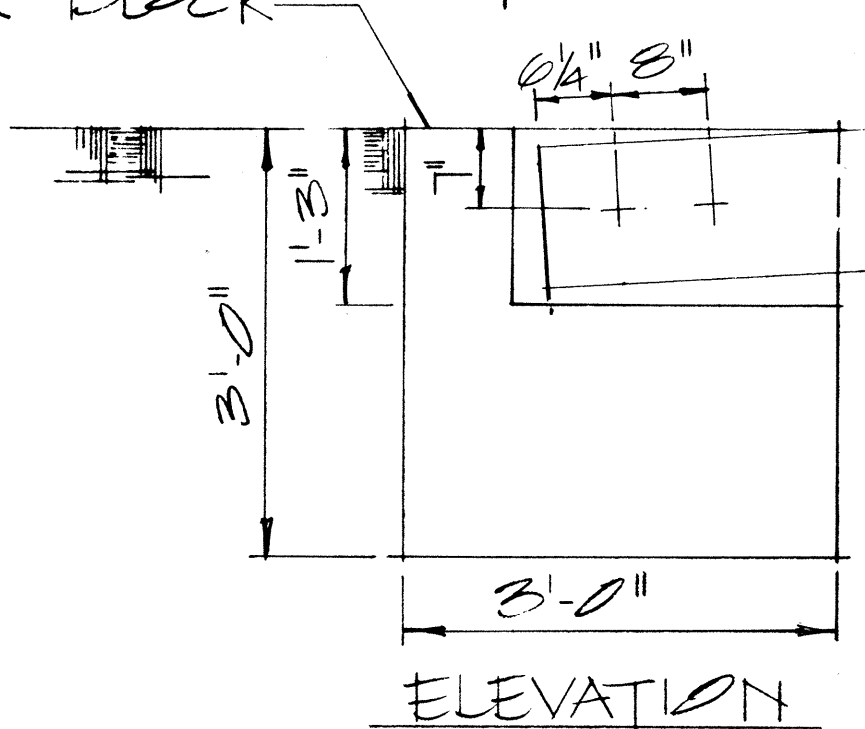
RAMP END ANCHORAGE

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

2-5/8" x 7/4" LONG BOLTS, W/ NUTS & WASHERS INCIDENTAL TO METAL GUARD RAIL. ALL METAL PIECES SHALL BE GALVANIZED.



TOP OF ANCHOR BLOCK TO BE FLUSH W/ GROUND.



NOTE: CONCRETE, EXCAVATION AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS, SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.

CONCRETE ANCHOR BLOCK

SCALE: 3/4" = 1'-0"

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

APPROVED: *22 del* 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

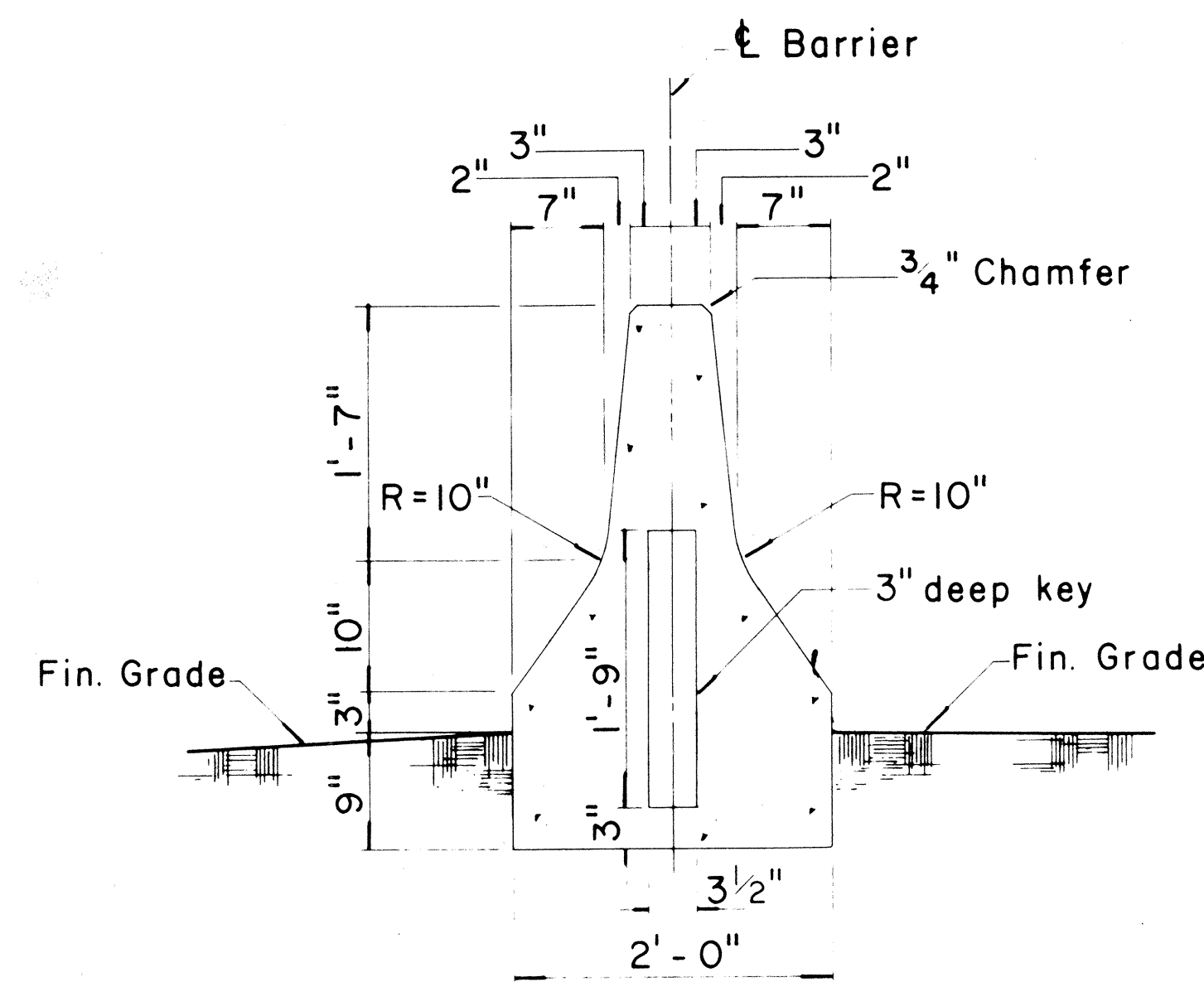
STANDARD DETAILS
GUARD RAIL, TYPE 3
RAMP END ANCHORAGE

SCALE: AS SHOWN

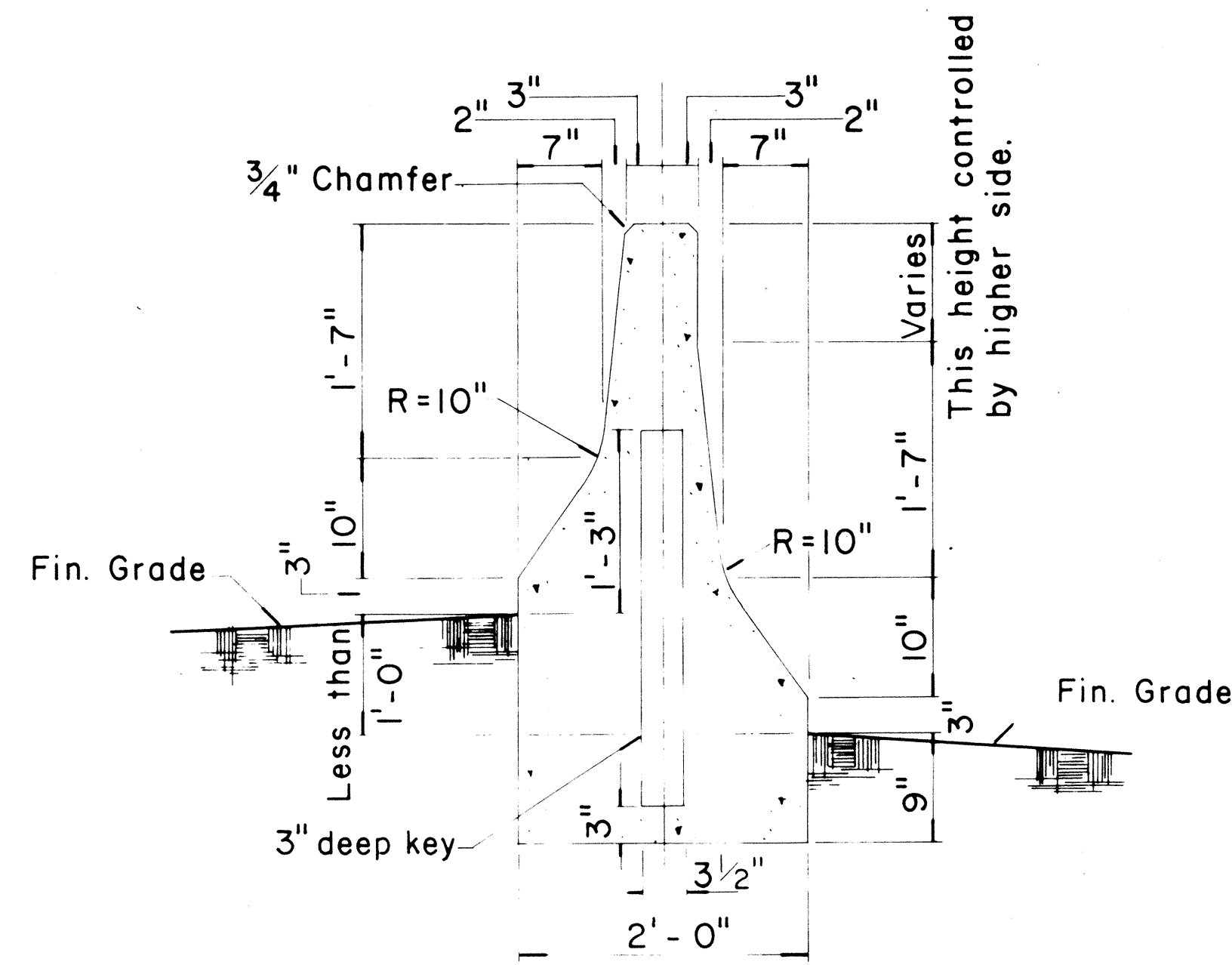
SHEET No. 198 OF 21 SHEETS

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
CHECKED BY	
NOTE BOOK	
NO.	

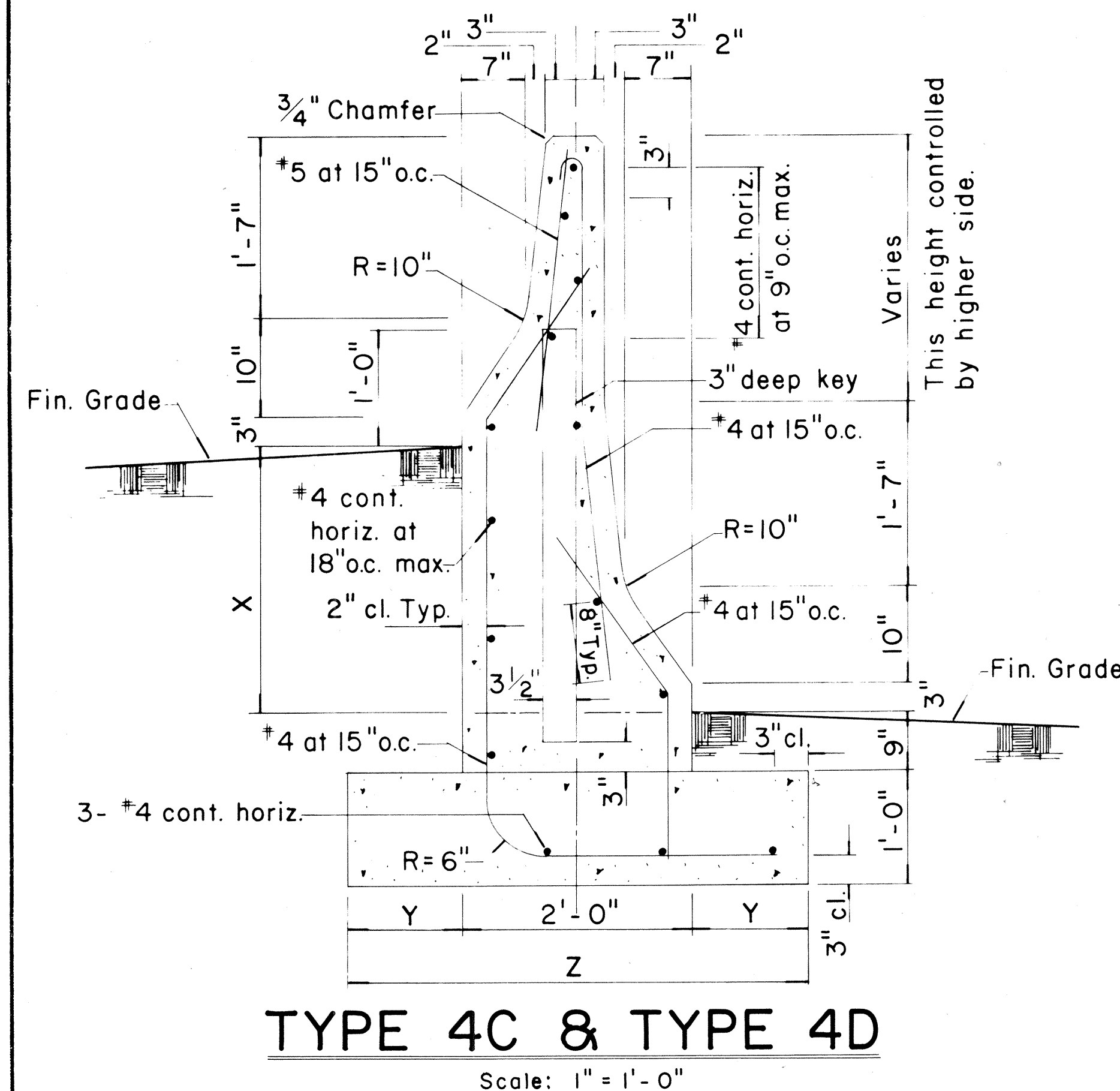
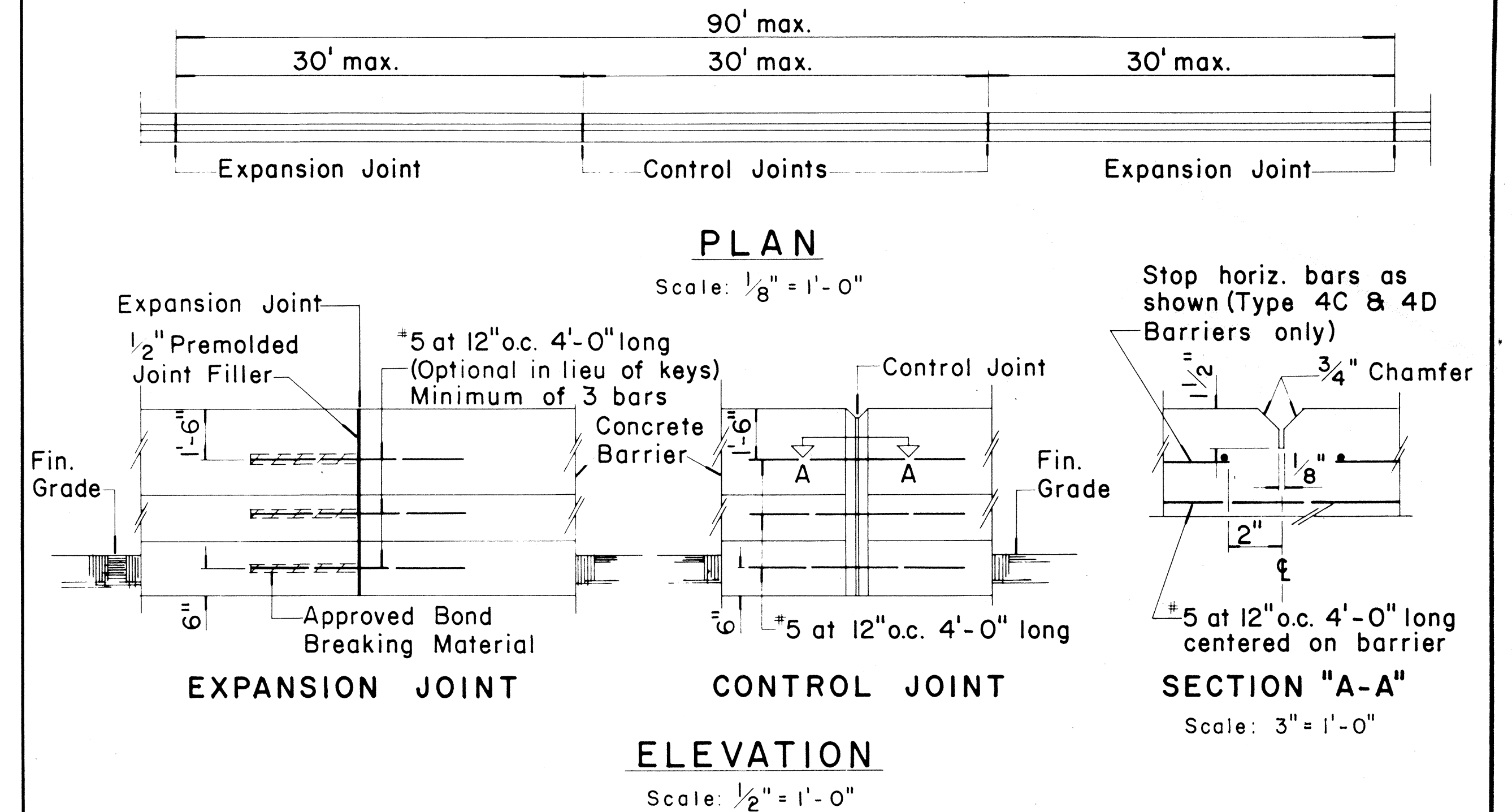
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(90):13	1972	40	202



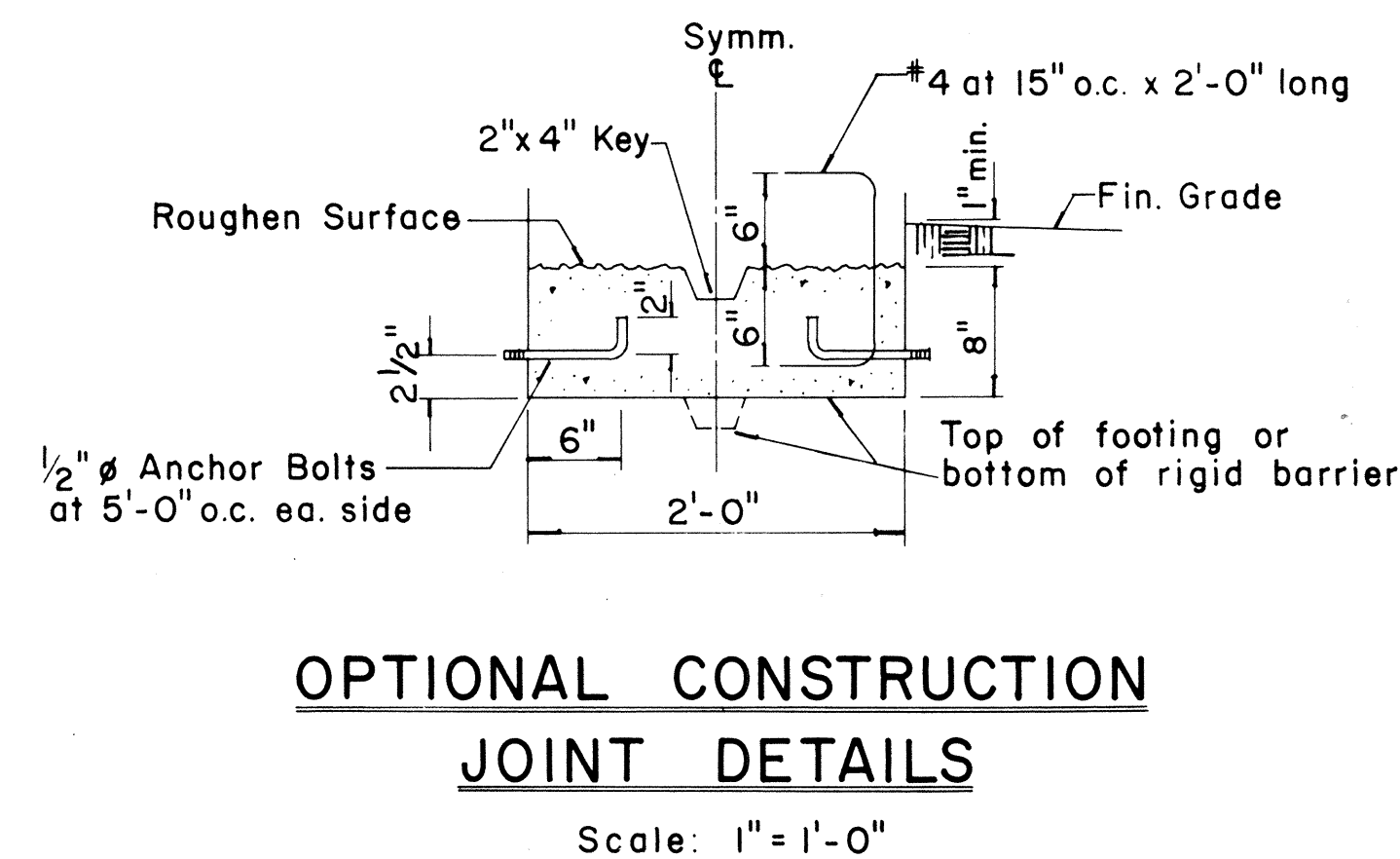
TYPE 4A
Scale: 1" = 1'-0"



TYPE 4B
Scale: 1" = 1'-0"

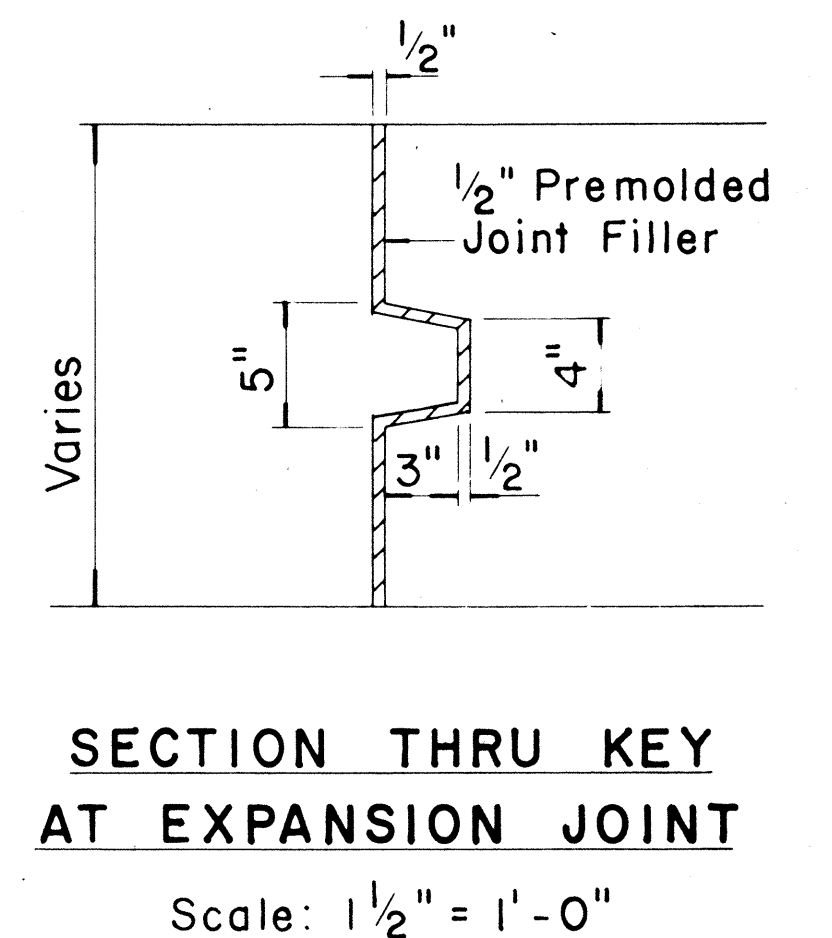


TYPE 4C & TYPE 4D
Scale: 1" = 1'-0"



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.

- GENERAL NOTES**
- Precast Rigid Barrier Guard Rail may be installed as an option to cast-in-place Type 4 Rigid Barrier Guard Rail. Contractor shall submit shop drawings to Engineer for approval.
 - Expansion Joints shall be constructed at ninety-foot (90 ft.) maximum intervals and at existing expansion joints of structures. (Use 1/2" premolded joint filler, incidental to Type 4 Rigid Barrier Guard Rail). Control Joints shall be placed between expansion joints at 30' maximum. Shear keys shall be required at all construction joints.
 - The exterior surface and vertical alignment of the Type 4 Rigid Barrier Guard Rail shall be constructed to give a uniform and presentable appearance. Variation of more than 1/4" in 20' max. and 1/2" in 40' or more will be considered objectionable. The Engineer shall determine the acceptability of the work. During the course of the work, samples may be tested and measurements made to establish whether or not the specified values or dimensions are being met. If the specified values or dimensions are not being met, the Engineer shall determine the degree of the non-conformance, the effect on the serviceability of the project, whether the work be accepted and remain in place and, if so, the amount to be paid for such work, or whether the work shall be removed and replaced or otherwise corrected at the Contractor's expense.



SECTION THRU KEY AT EXPANSION JOINT
Scale: 1 1/2" = 1'-0"

TYPE	DIFFERENCE IN FIN. GRADE	FOOTING
	X	Y Z
4C	1'-0" min., 2'-4" max.	1'-0" 4'-0"
4D	Greater than 2'-4", 4'-4" max.	1'-3" 4'-6"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GUARD RAIL TYPE 4
(RIGID BARRIER)**

Scale: As Shown Oct. 1969
SHEET No. 21 OF 21 SHEETS

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