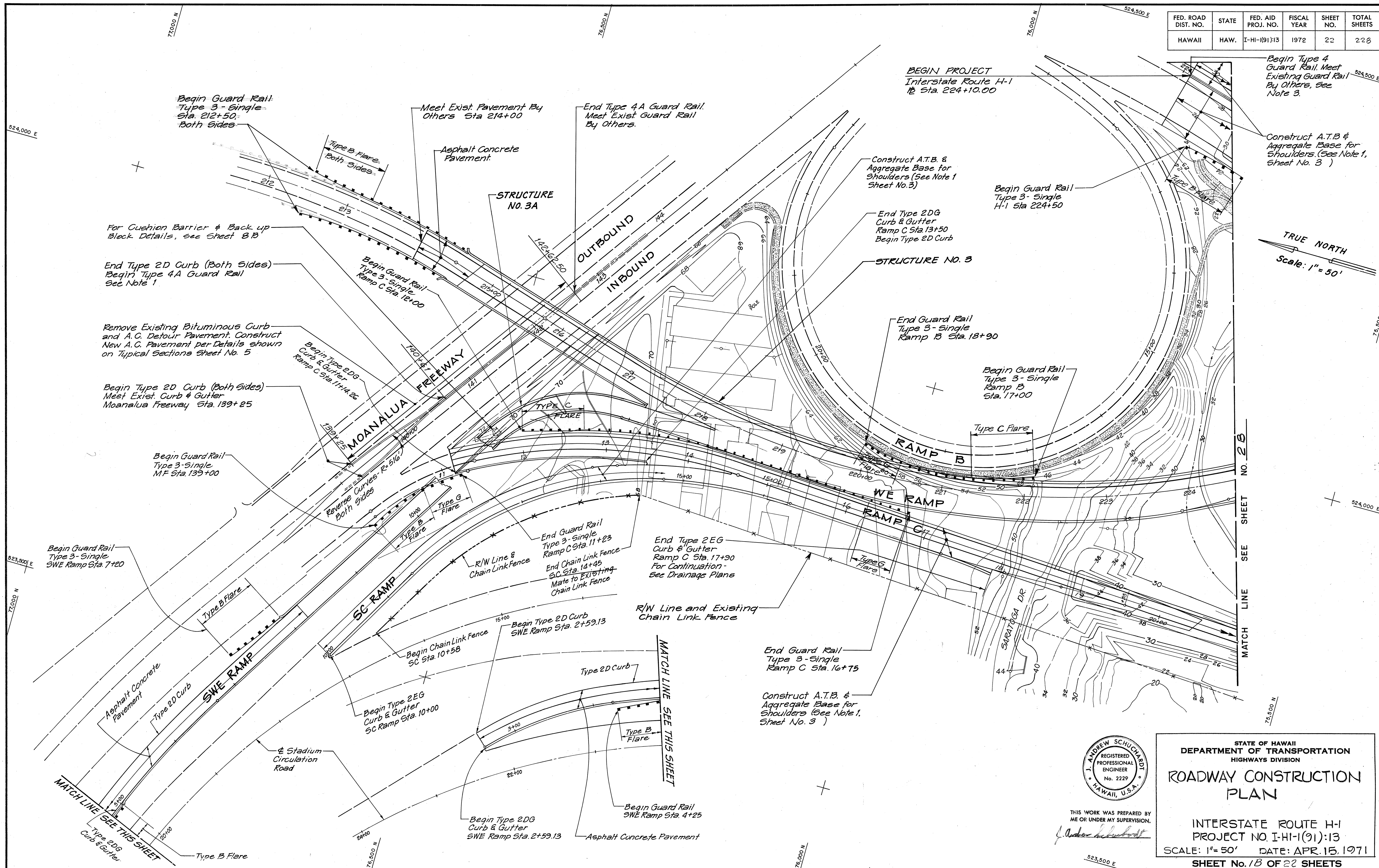
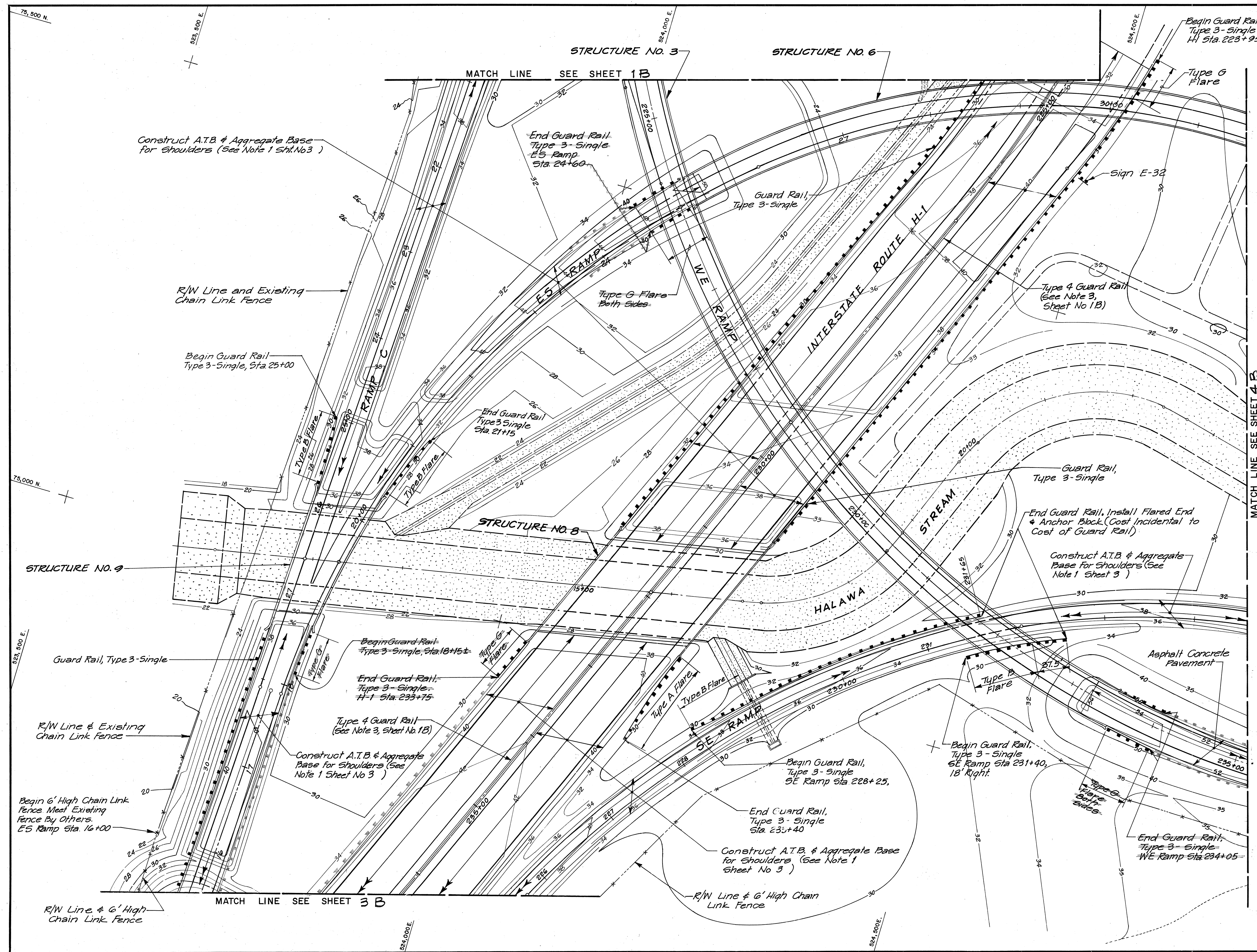
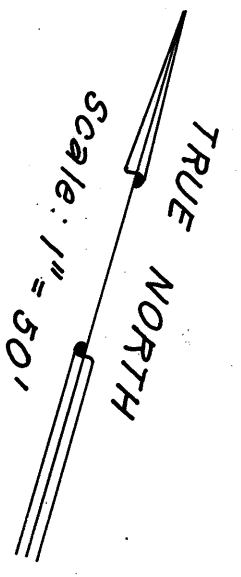


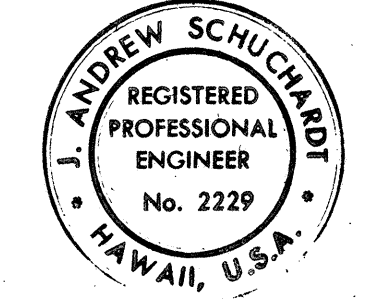
ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY		46
	TRACED BY		46
	DESIGNED BY		46
	QUANTITIES BY		46
NOTE BOOK	CHECKED BY		46
	No.		



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(91)13	1972	23	228



For Additional Notes See Sheet 1B



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

INTERSTATE ROUTE H-1
PROJECT NO I-HI-1(91)13

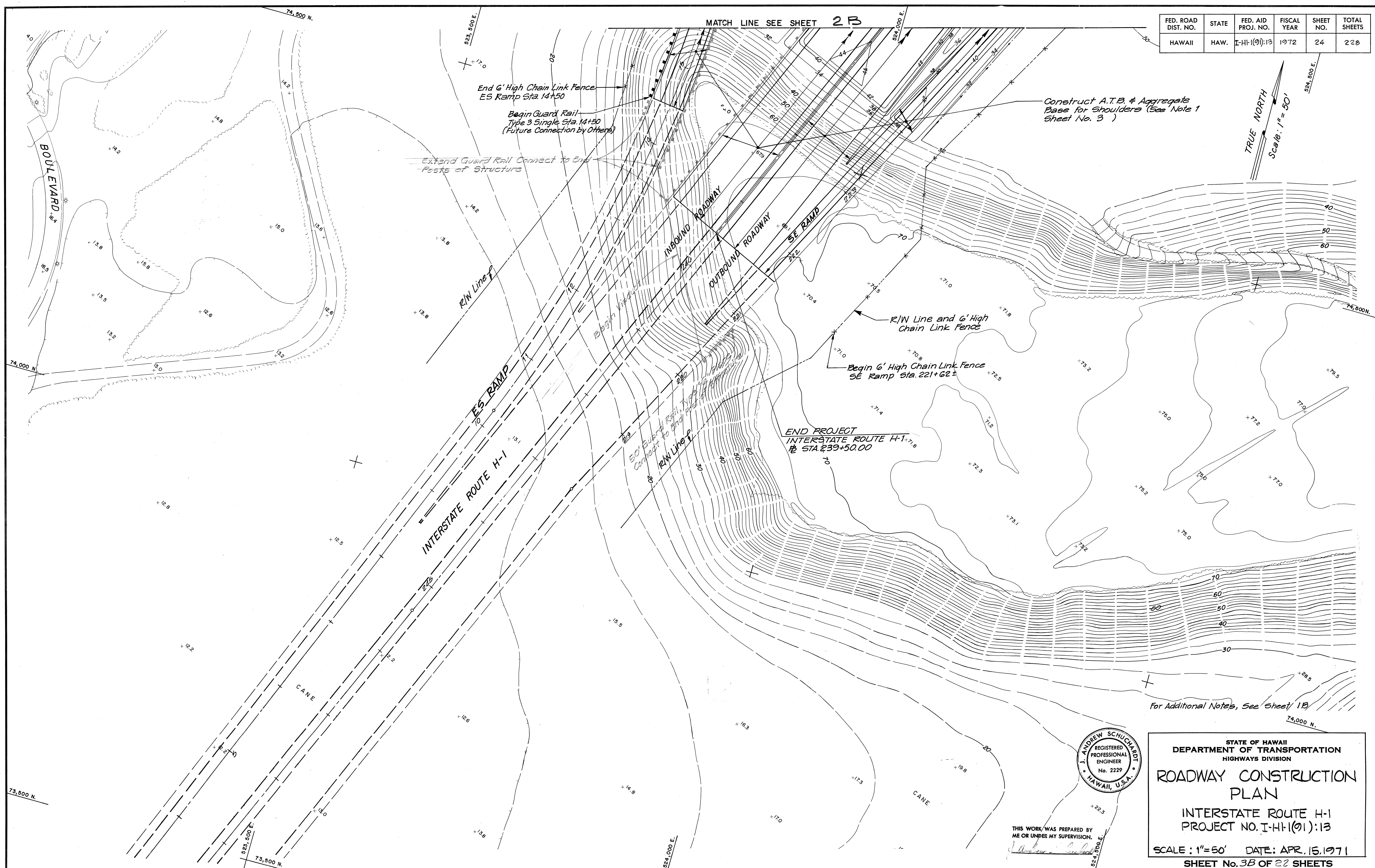
SCALE: 1" = 50' DATE: APR. 15, 1971
SHEET No. 23 OF 22 SHEETS

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

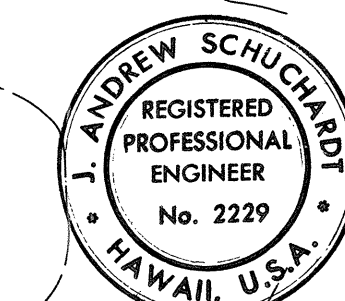
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(01):13	1972	24	228

TRUE NORTH
Scale: 1" = 50'

MATCH LINE SEE SHEET 2B



SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

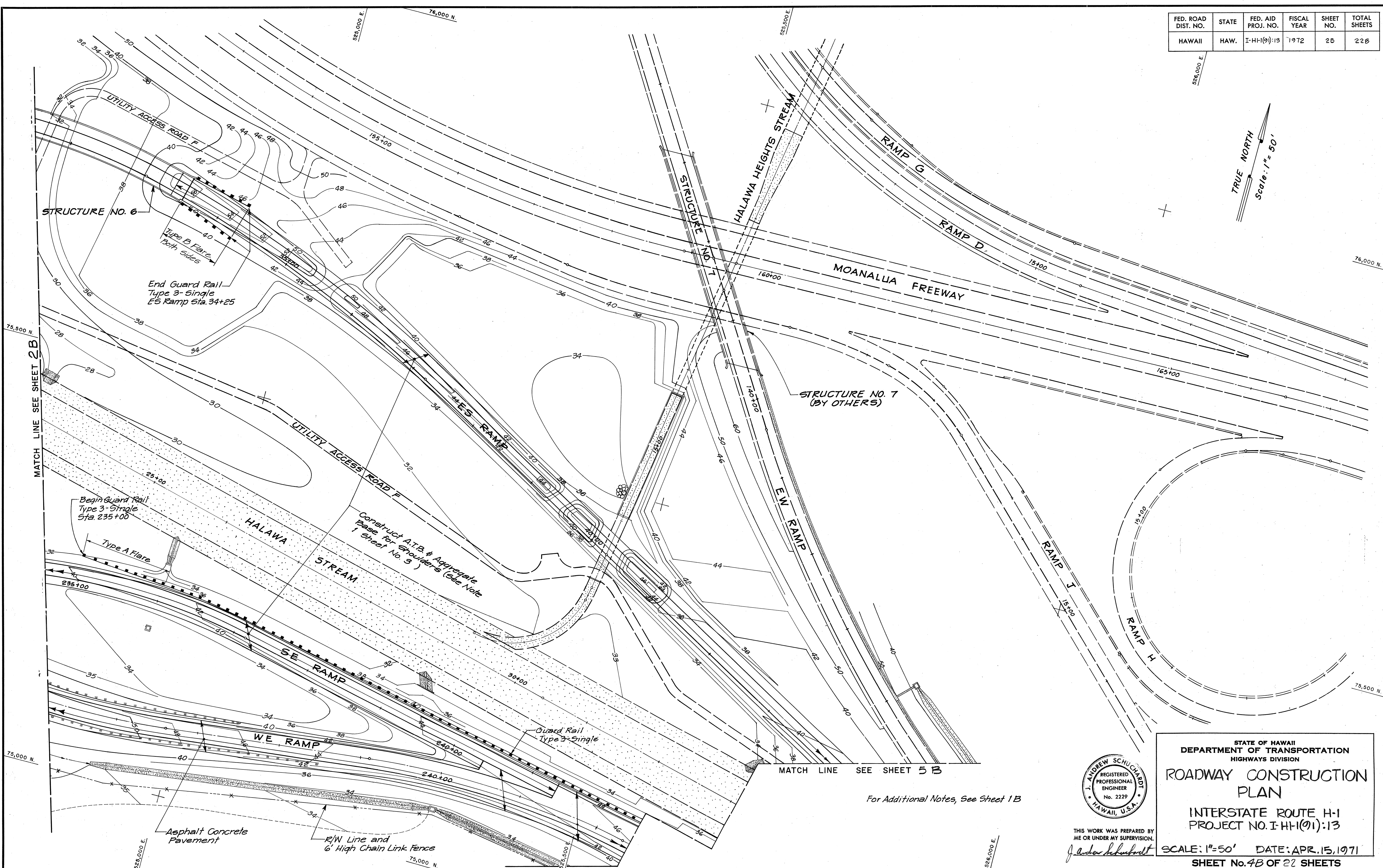
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(01):13

SCALE: 1" = 50' DATE: APR. 15, 1971
SHEET No. 3B OF 22 SHEETS

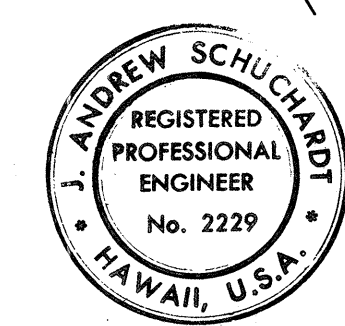
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(91):13	1972	25	226

TRUE NORTH
Scale: 1" = 50'

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTE BOOK	
CHECKED BY	



For Additional Notes, See Sheet 1 B



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ME OR UNDER MY SUPERVISION.
J. Andrew Schuchman

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**ROADWAY CONSTRUCTION
PLAN**

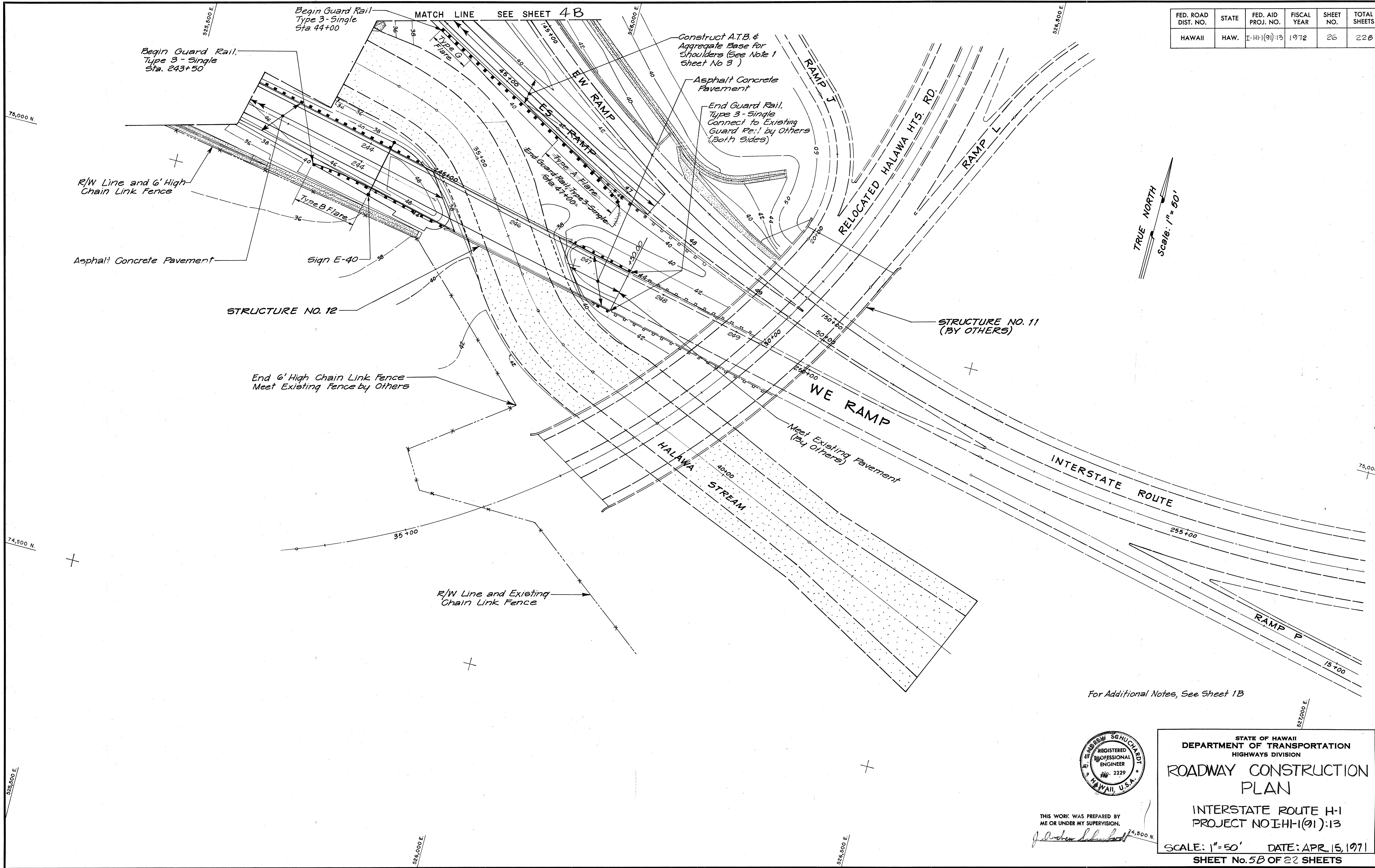
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(91):13

SCALE: 1"=50' DATE: APR. 15, 1971

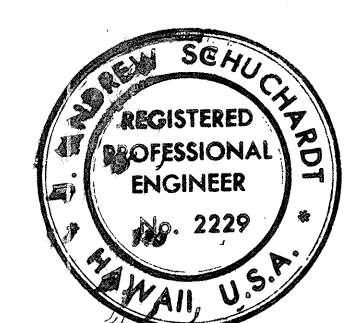
SHEET No. 4B OF 22 SHEETS

25

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI(91)-13	1972	26	228



ORIGINAL PLAN	DATE
SURVEY LOCATED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
No.	



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Andrew Schuchardt

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

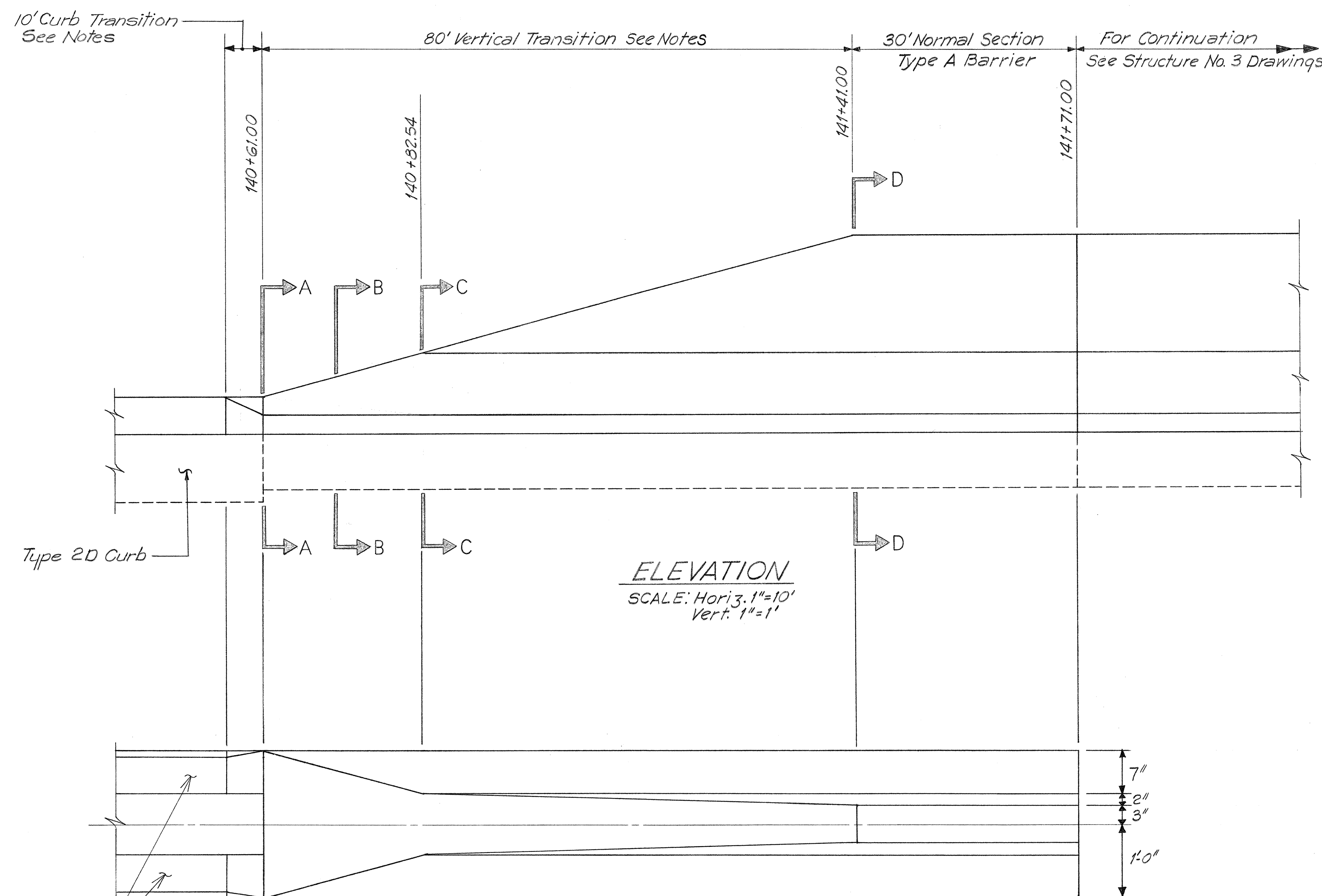
ROADWAY CONSTRUCTION PLAN

INTERSTATE ROUTE H-1
 PROJECT NO. HI-1(91)-13

SCALE: 1"=50' DATE: APR. 15, 1971

SHEET No. 5B OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(9)13	1972	28	228

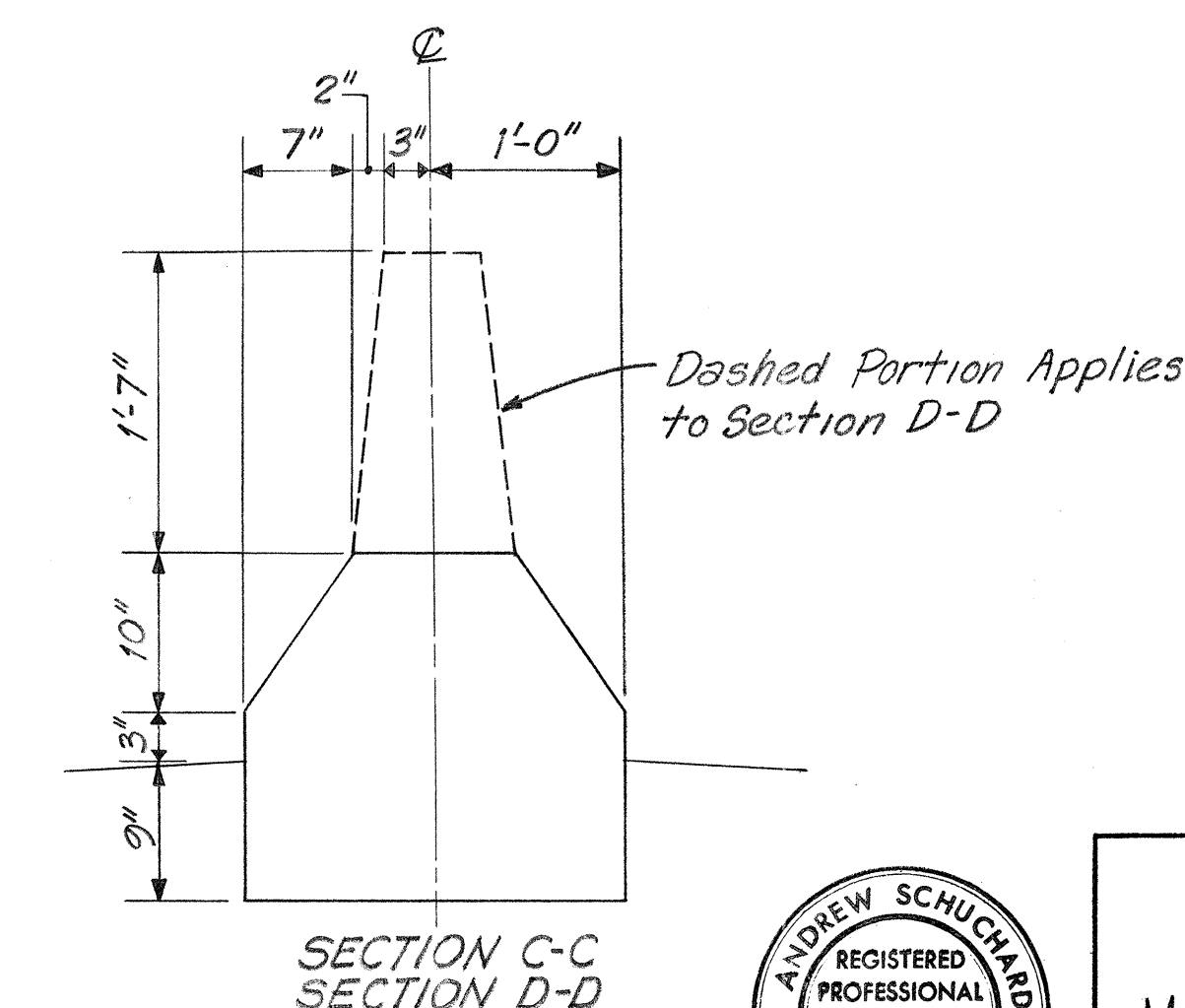
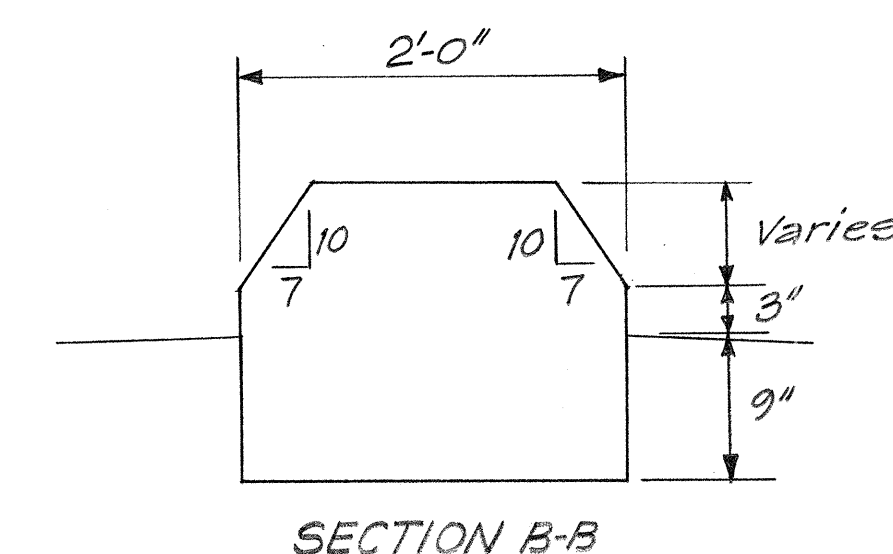
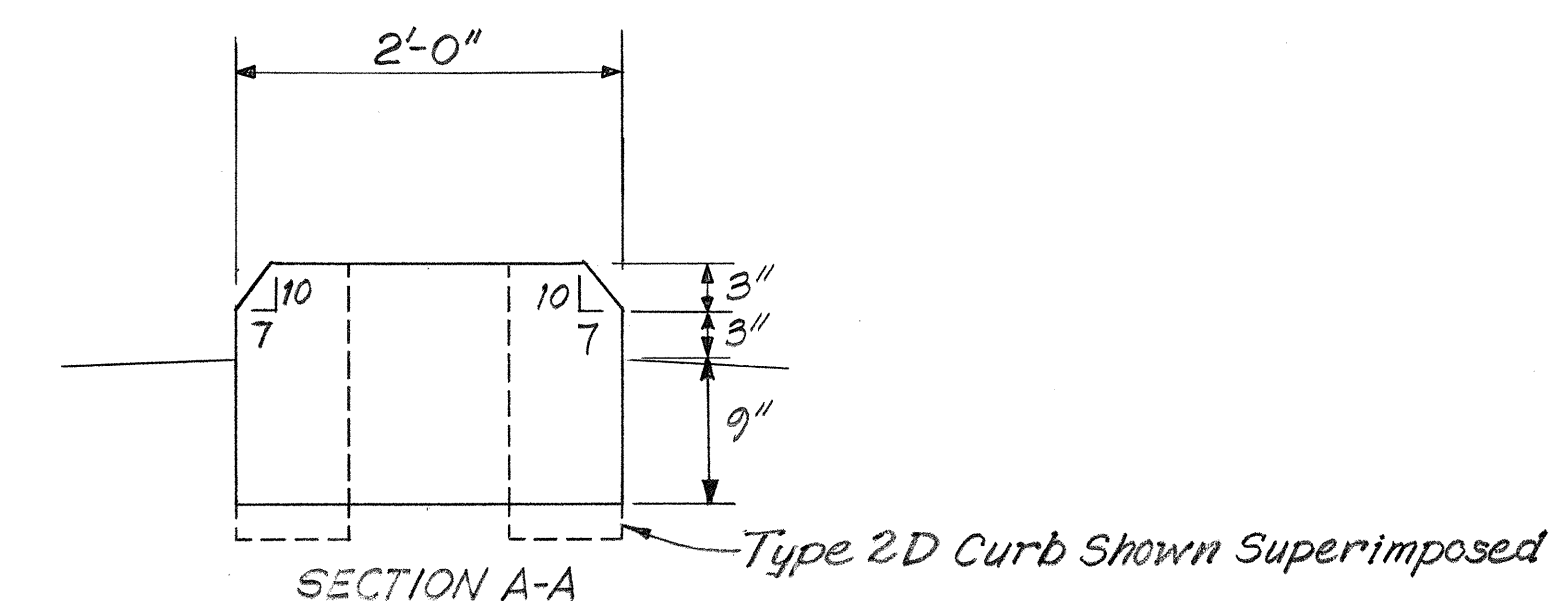


Type 2D Curb
Note: For Curb Taper,
see Roadway Construction
Plan, Sheet No. 11B

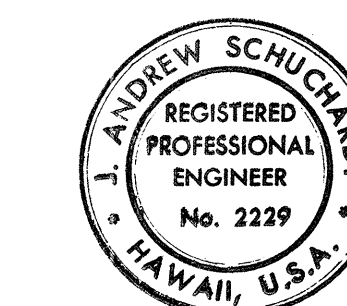
PLAN
SCALE: Horiz. 1"=10'
Vert. 1"=1'

DETAIL
RIGID BARRIER INTRODUCTION
MOANALUA FREEWAY
SCALE: AS SHOWN

- NOTES:**
1. Vertical Barrier Transition shall be paid for as Guard Rail, Type 4A
 2. For widened section of Barrier at Pier, see Structure No. 3 Drawings.
 3. 10' Curb Transition shall be paid for as Type 2D Curb. Curb shall be transitioned to blend smoothly with Barrier shape at Section A-A, as shown.



SECTIONS
SCALE: 1"=1'

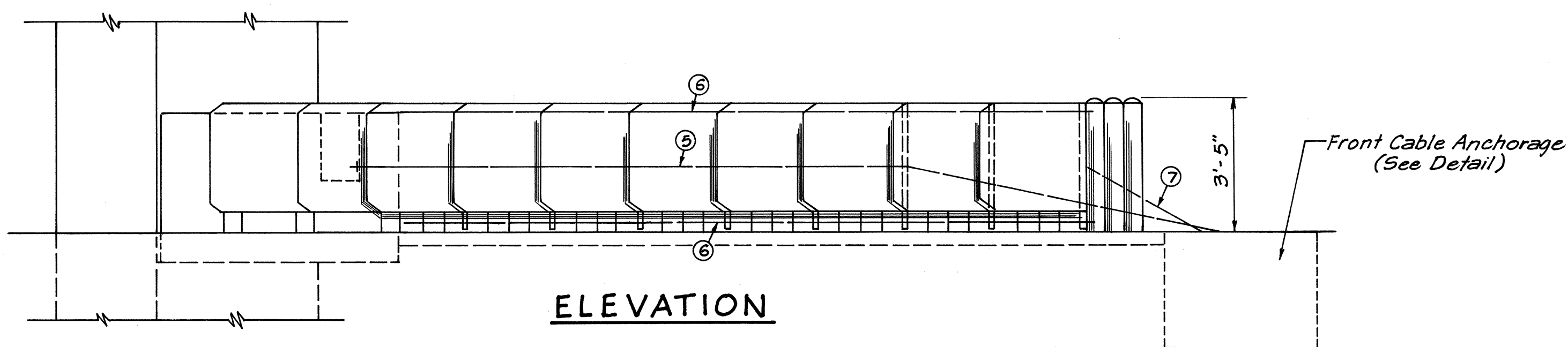
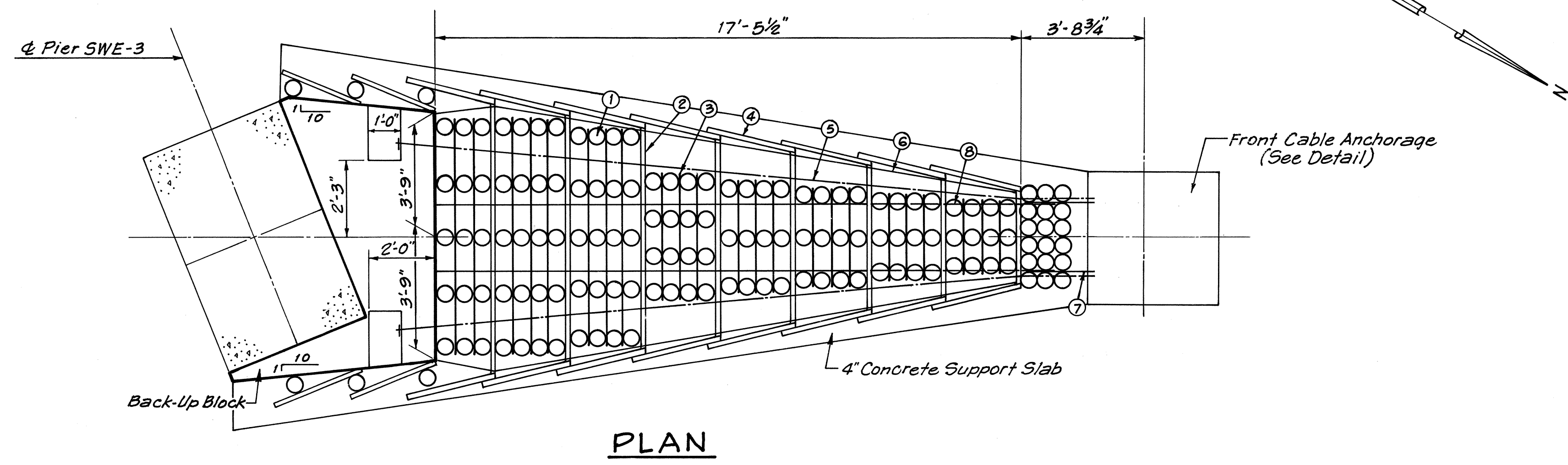


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Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS ROADWAY DETAILS
RIGID BARRIER INTRODUCTION
MOANALUA FREEWAY
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(9)13
SCALE: AS SHOWN DATE: APR. 15, 1971
SHEET No. 7B OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(91):13	1972	29	228

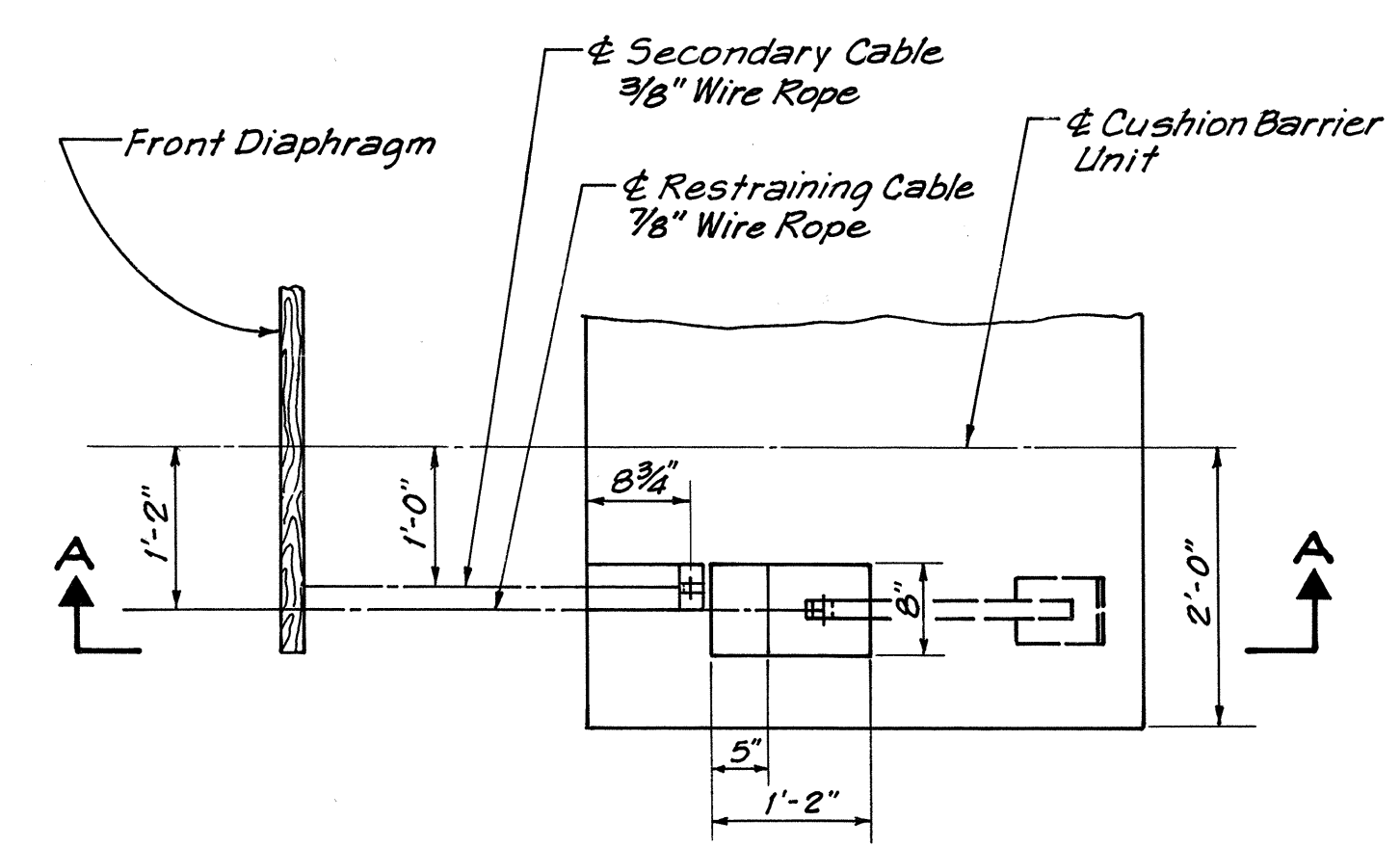
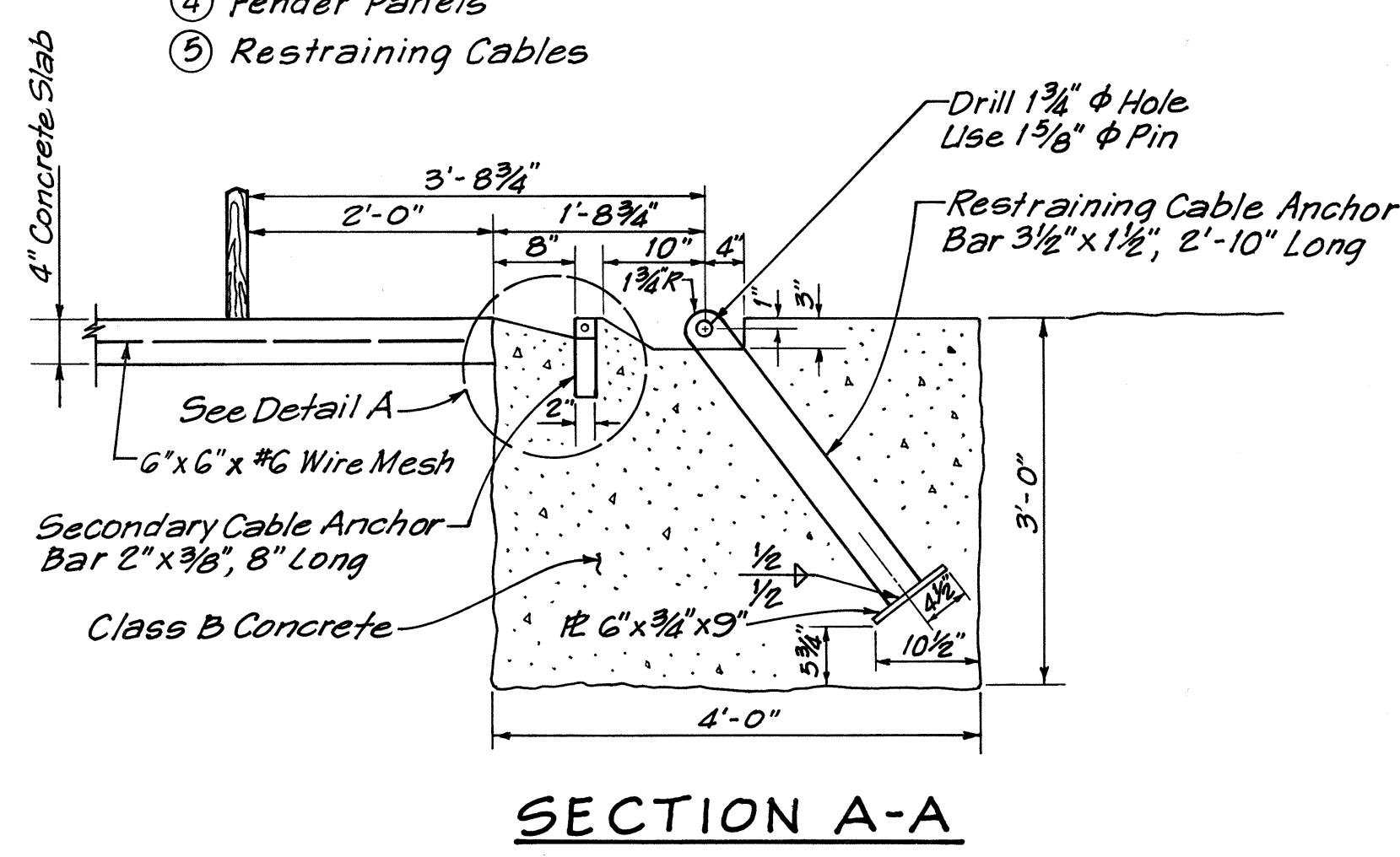


LEGEND:

- ① Cushion Cells (6" ± O.D.)
- ② Diaphragms
- ③ Interior Panels
- ④ Fender Panels
- ⑤ Restraining Cables
- ⑥ Pull-Out Cables
- ⑦ Secondary Cables
- ⑧ Slide Straps

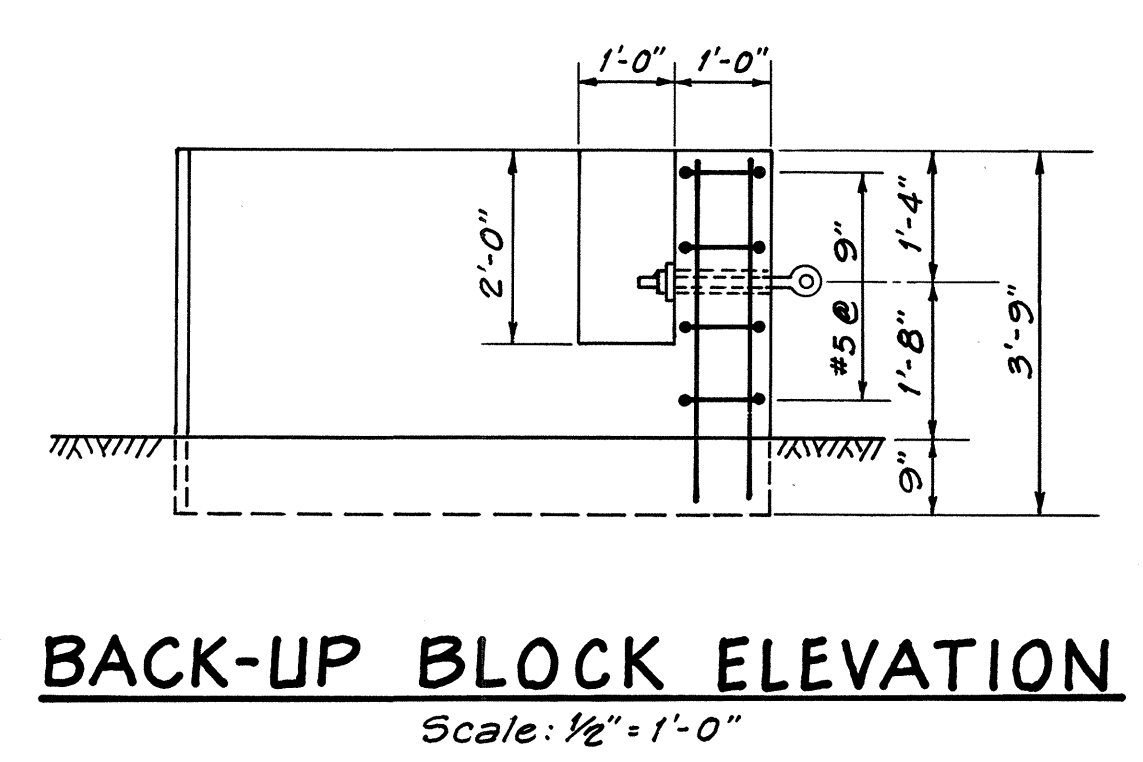
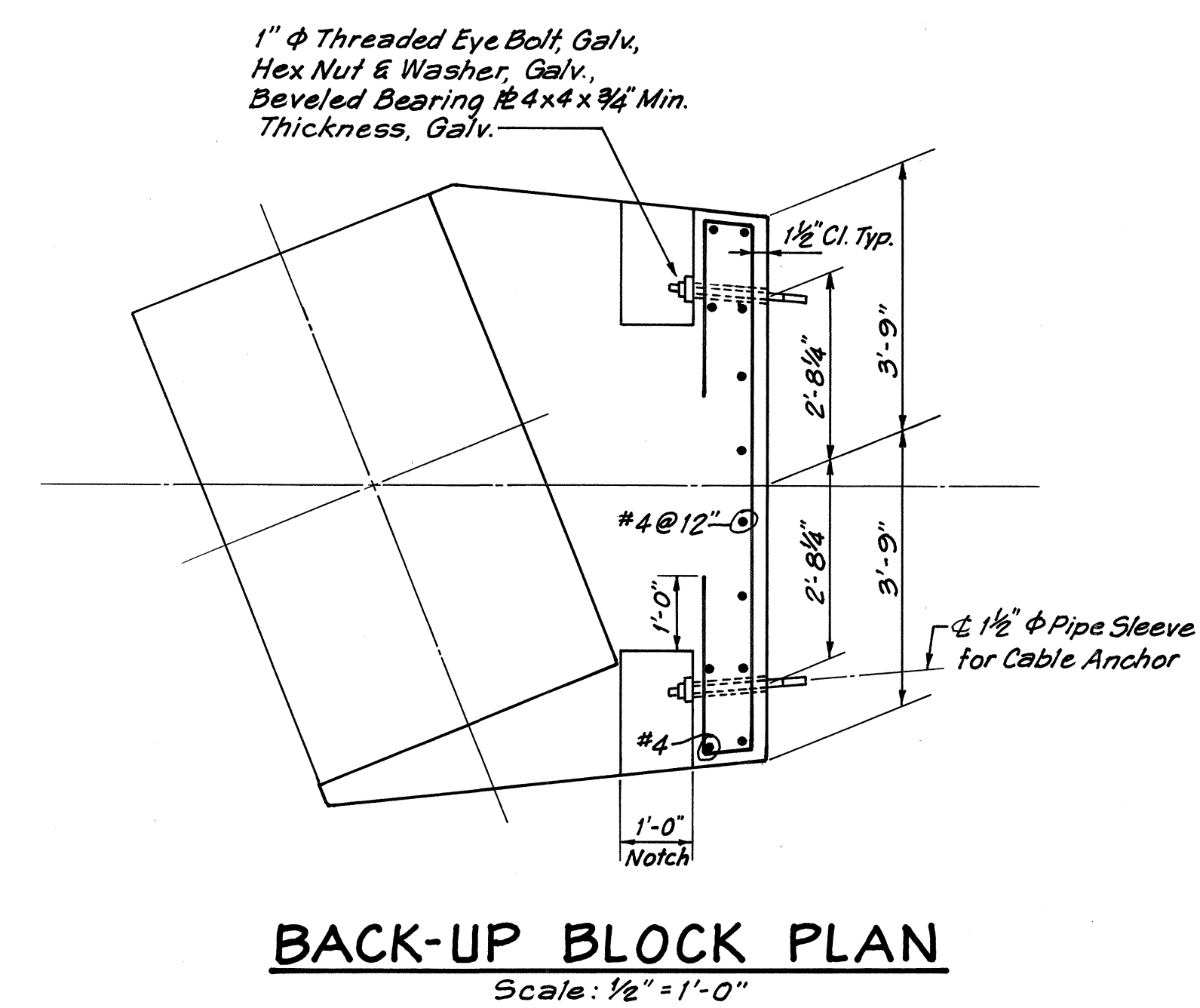
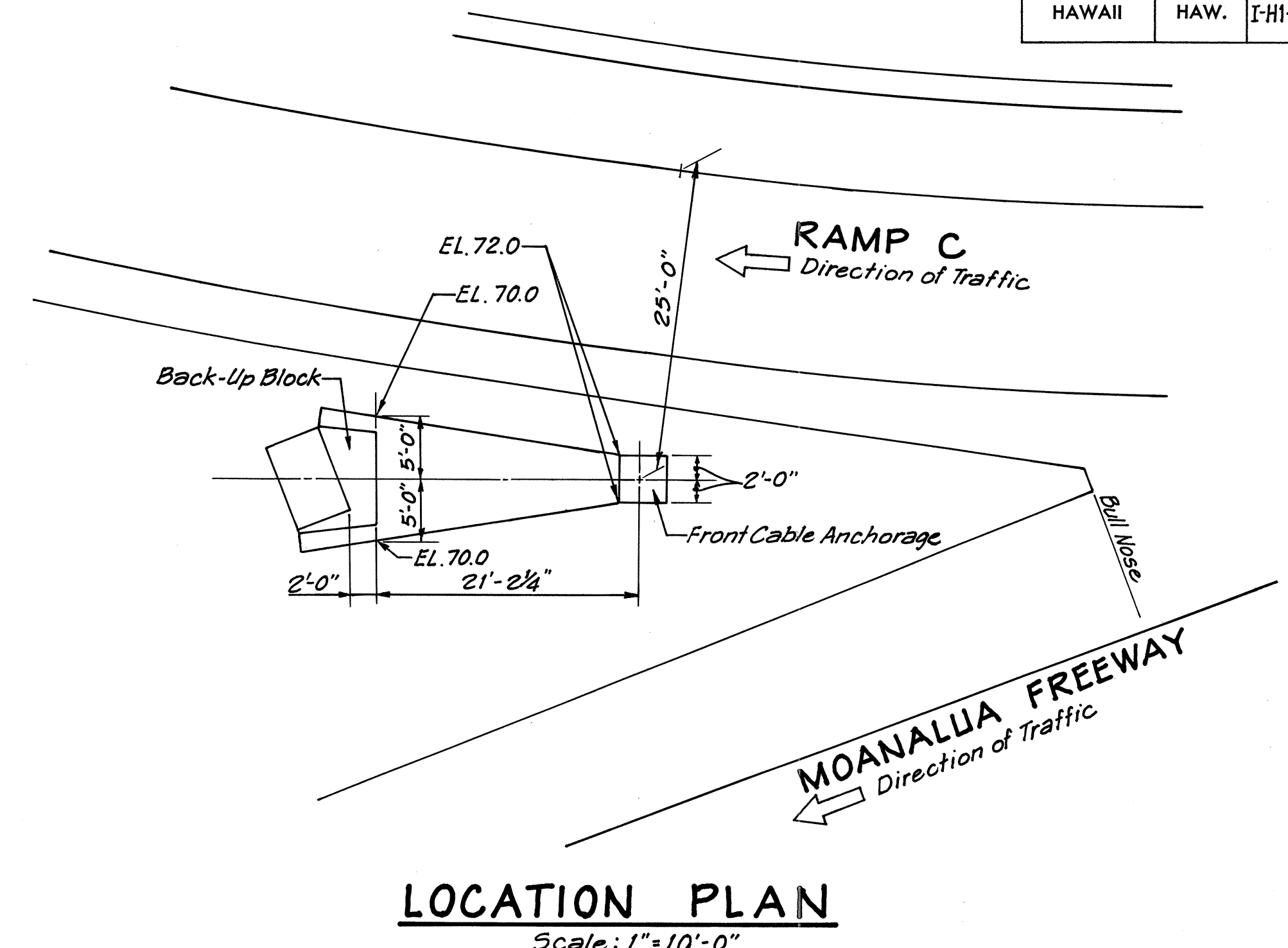
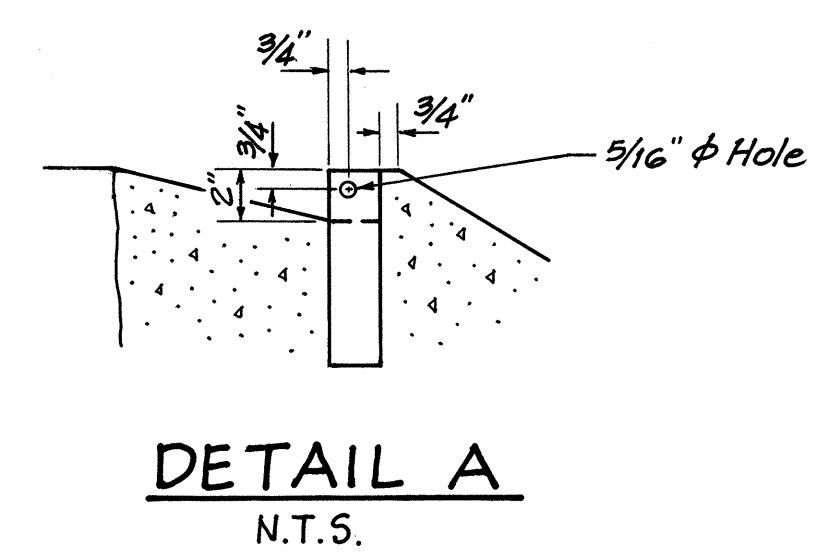
CUSHION BARRIER LAYOUT

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

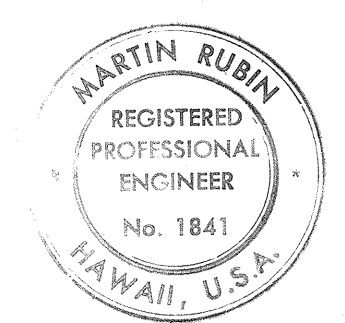


FRONT CABLE ANCHORAGE DETAILS

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



- NOTES
1. Payment for Back-Up Block, Cable Anchorage and Support Slab shall be incidental to the cost of the Cushion Barrier.
 2. All Concrete shall be Class A unless noted.
 3. All Structural Steel shall be galvanized after fabrication.



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STATE OF HAWAII
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HIGHWAYS DIVISION

MISCELLANEOUS ROADWAY DETAILS
CUSHION BARRIER & BACK UP BLOCK

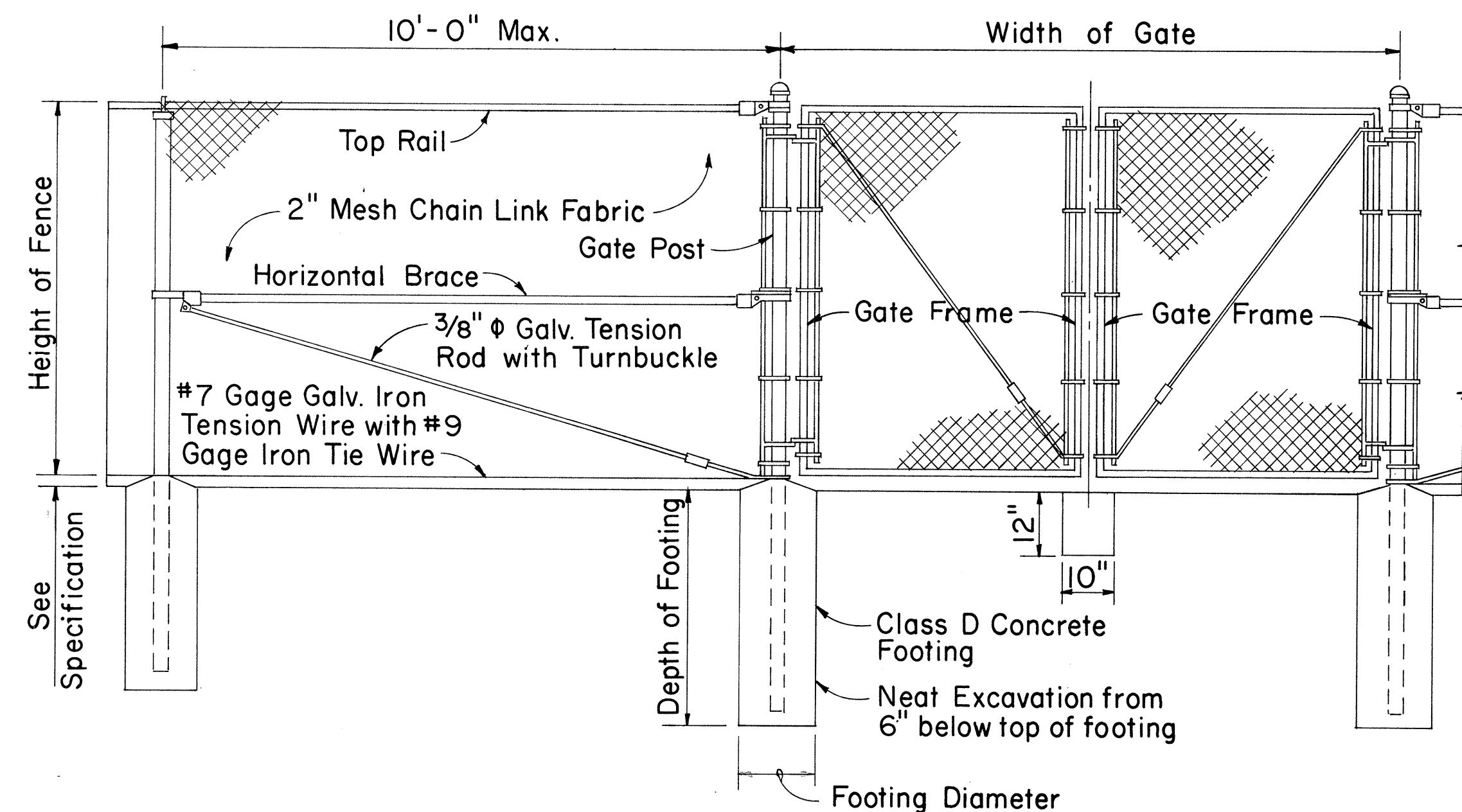
INTERSTATE ROUTE H-1
PROJECT NO. I-H1-1 (91):13

SCALE: AS SHOWN DATE: MAR. 15, 1972

SHEET No. 8B OF 29 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
APPROVED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HA-118(1)15	1972	30	228



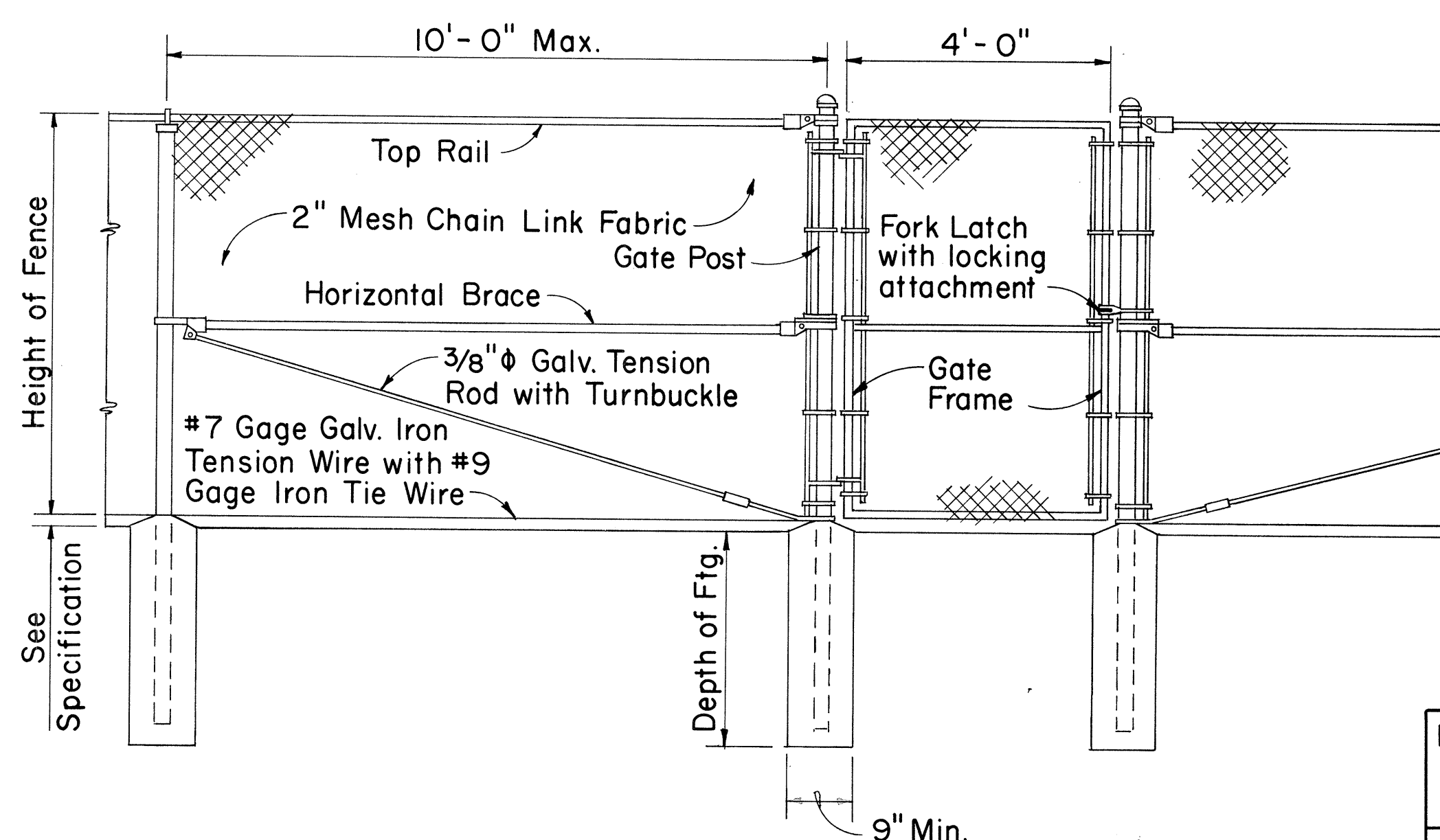
LINE POST

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.

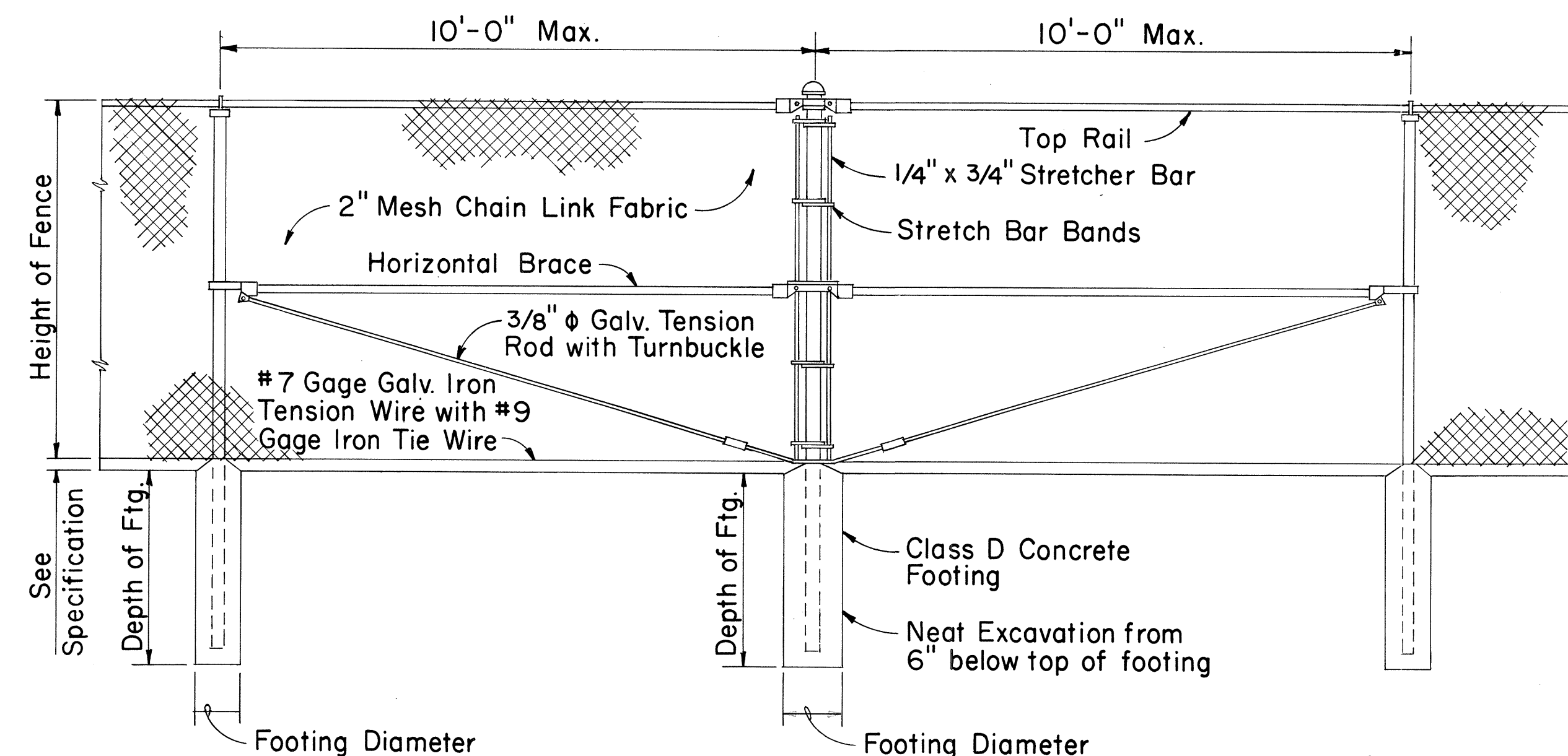


LINE POST

GATE POST

GATE POST

DETAIL OF 4 FT. CHAIN LINK GATE

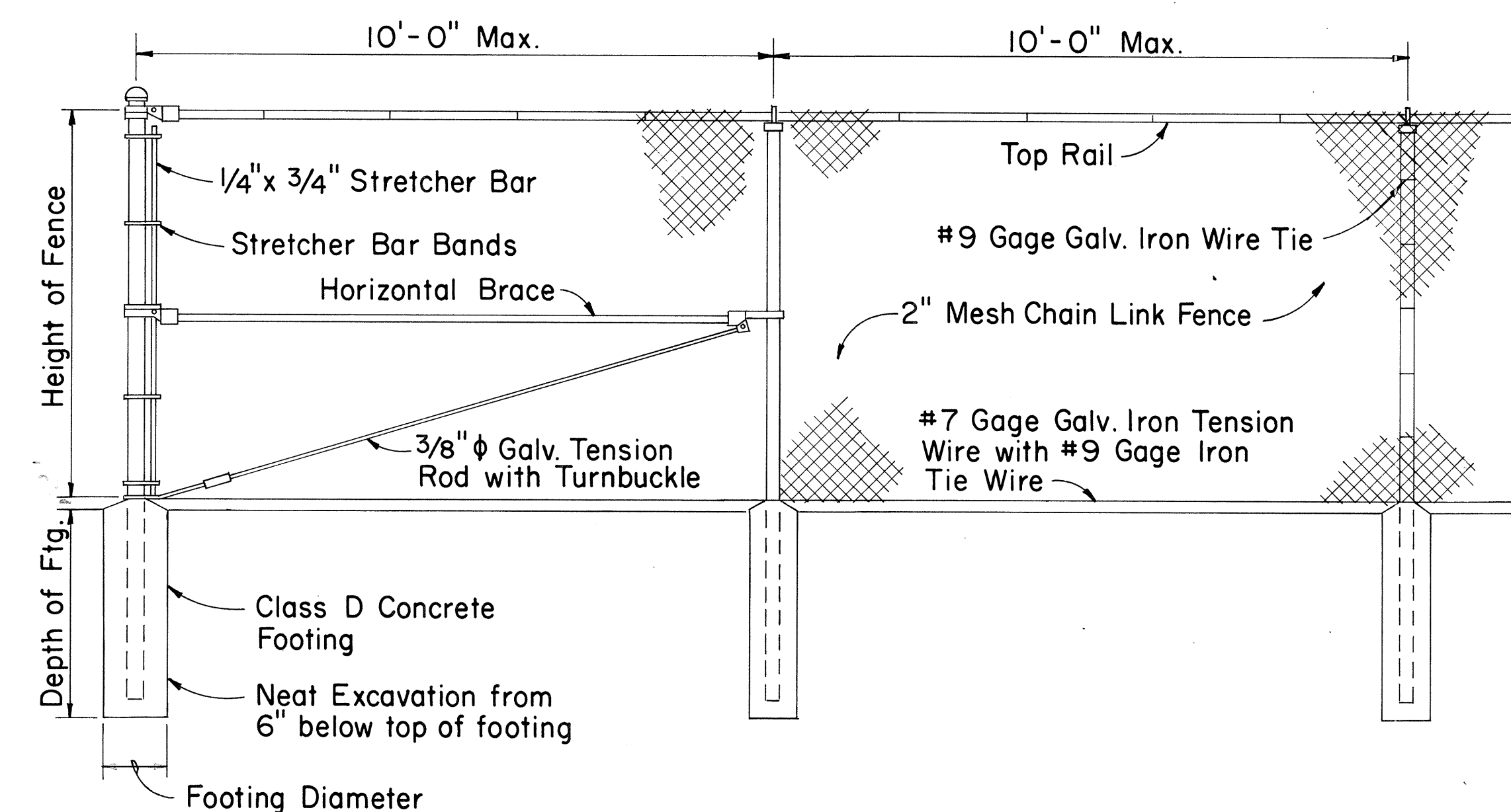


LINE POST

PULL POST

LINE POST

TYPICAL SECTION (WITH CONCRETE FOOTING)



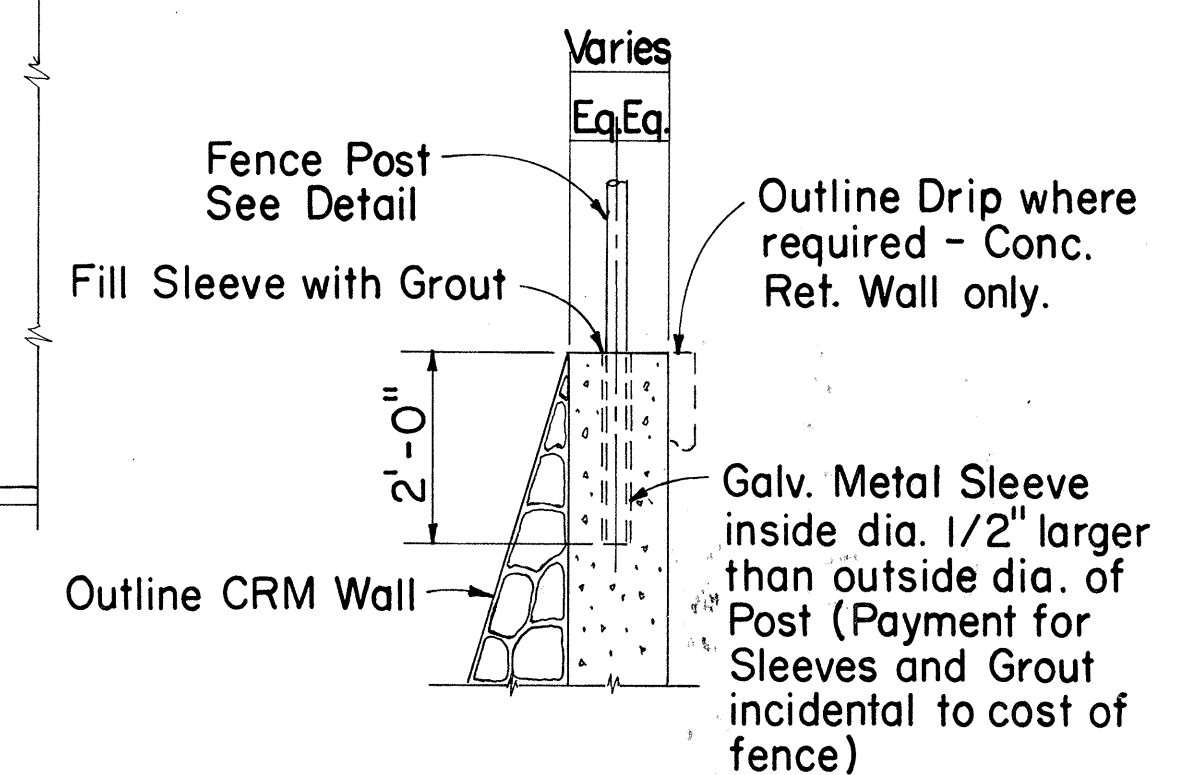
END POST

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 (ON CRM & CONC. RET. WALL)

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

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

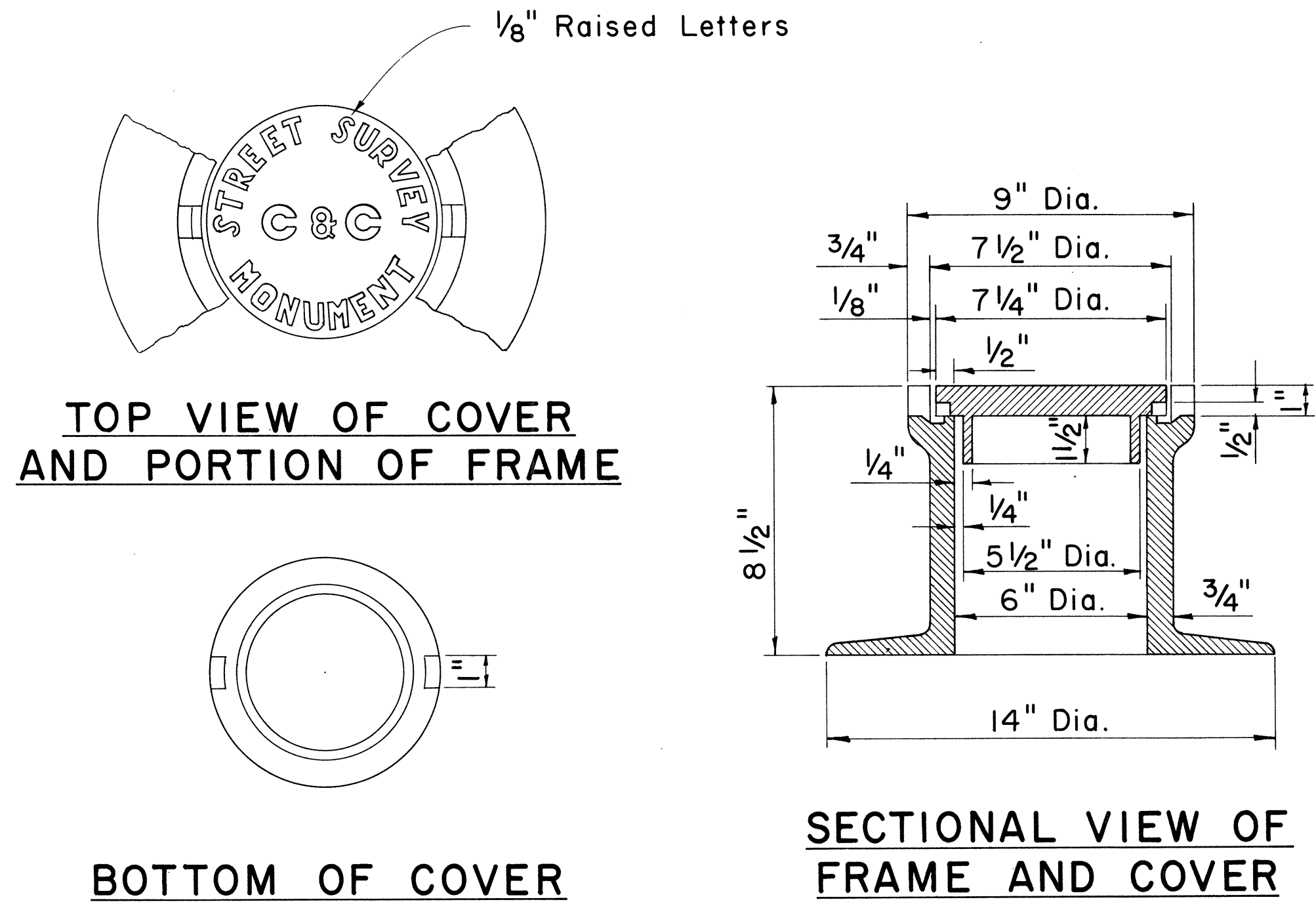
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CHAIN LINK FENCE
(WITH TOPRAIL)

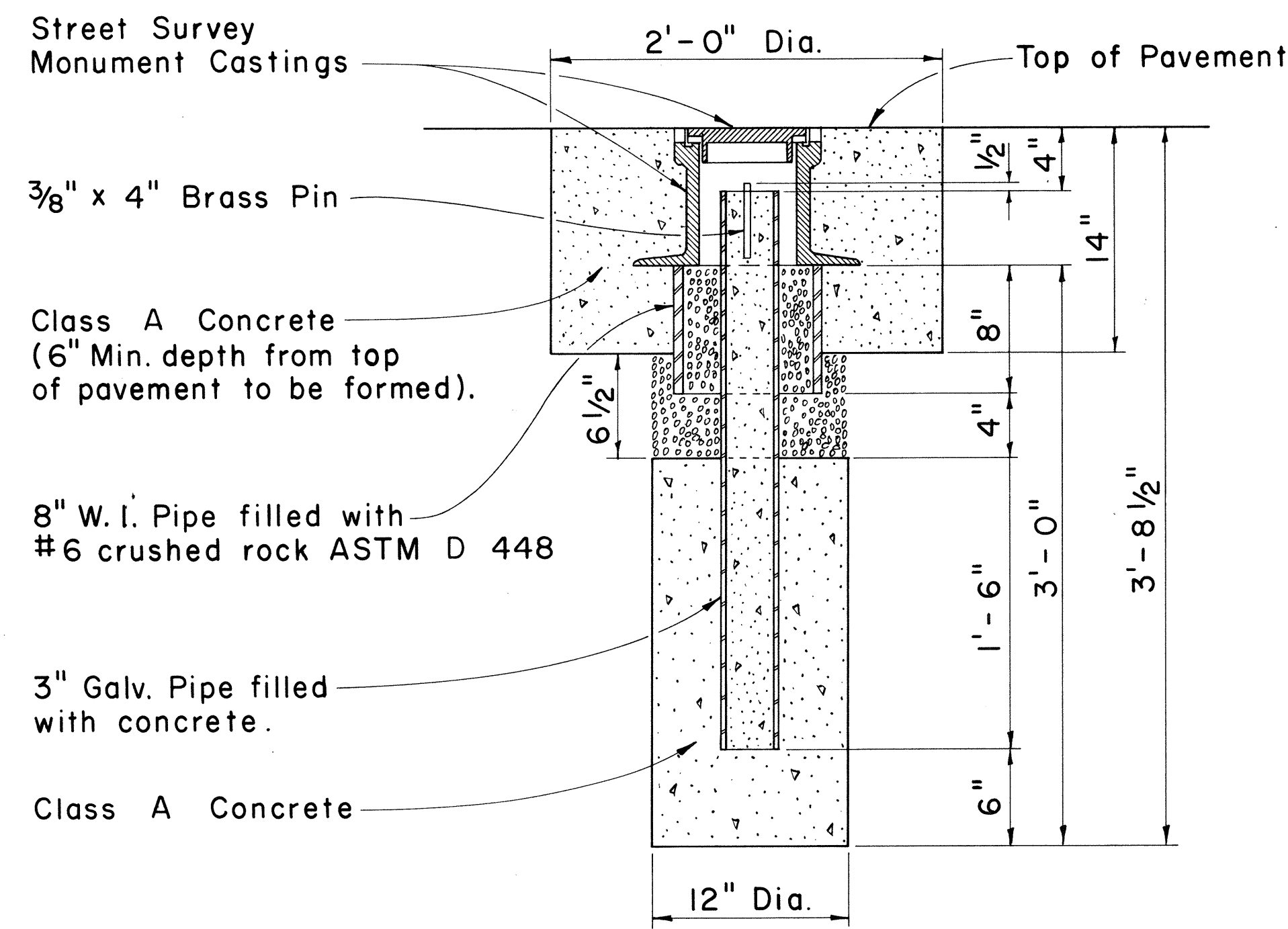
Scale: 1/2" = 1'-0" Date: APR 15, 1971

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(9)113	1972	31	228



STREET SURVEY MONUMENT CASTINGS

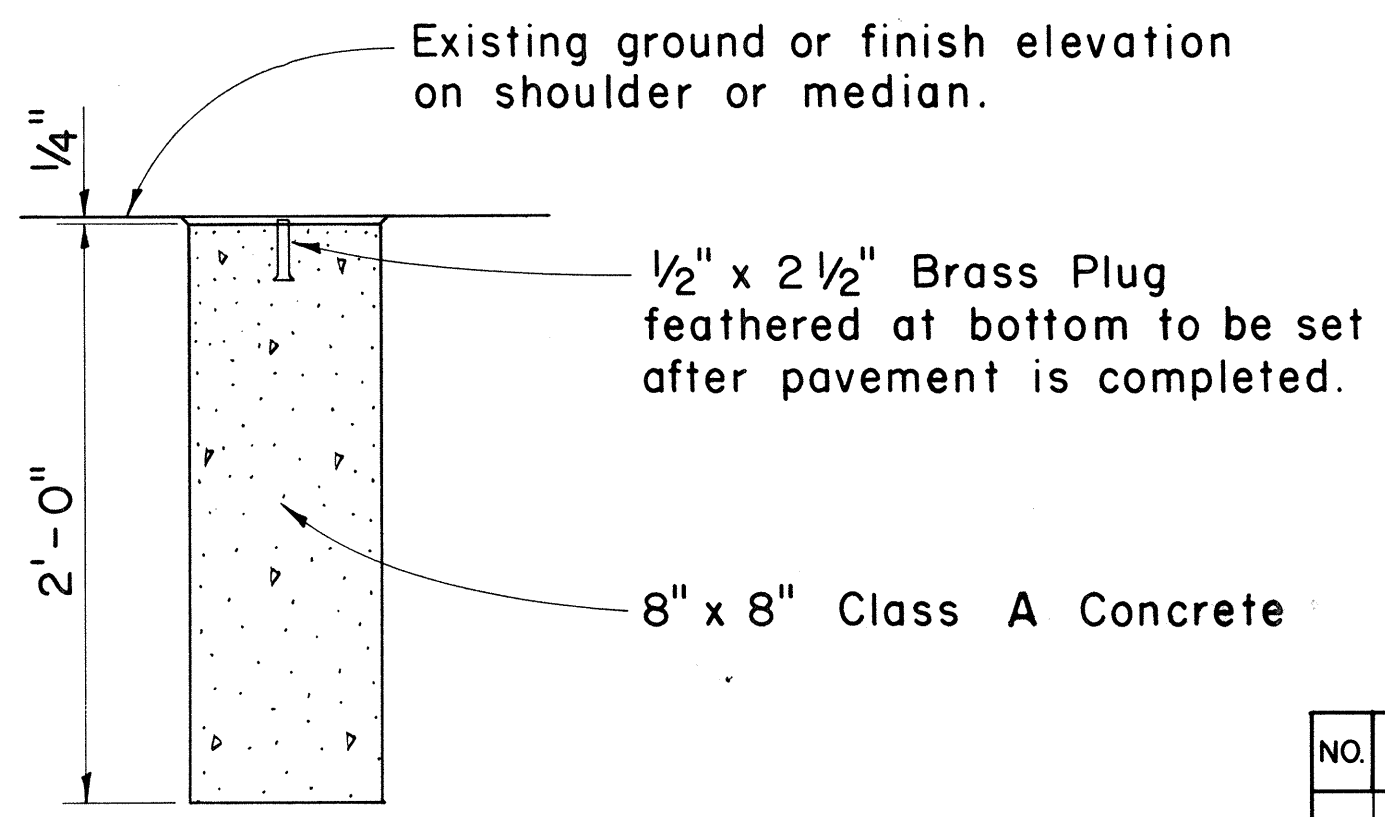
Scale: 3" = 1'-0"



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. Hironaka 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

Diagram illustrating the construction details of a shed roof and wall. The diagram shows a cross-section of the structure, including the roof, walls, and floor.

Key components and labels:

- CEILING LINE**: Indicated by a curved arrow pointing to the top edge of the interior wall.
- FLOOR LINE**: Indicated by a curved arrow pointing to the bottom edge of the interior wall.
- DOTTED LINE INDICATES WALL BRACINGS**: A label with an arrow pointing to the diagonal dashed lines within the wall sections.
- 1/2" x 1 1/2" CONT. ALL AROUND AT JOINT**: A label with an arrow pointing to the horizontal joint in the roof structure.
- 1/2" x 1 1/2" CONT. BATTEN AT PLY. PANEL JOINTS**: A label with an arrow pointing to the horizontal batten at the joint between the plywood panels.

A rectangle is shown with vertices labeled A (bottom), B (left), C (top), and D (right). Inside the rectangle, there are four points labeled A₁ (top), B₁ (right), C₁ (bottom), and D₁ (left).

90° MINERAL SURFACE ROOF

CEILING LINE

FLUSH DOOR

FLUSH DOOR

DOTTED LINES INDICATE WALL BRACINGS

FLOOR LINE

1/2" x 1 1/2" CONT. BATTEN AT PLY. PANEL JOINTS

ELEVATION (A)

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

90" MINERAL SURFACE ROOF

CEILING

1/2" x 1 1/2" CONT. BATTEN AT PLY. PANEL JOINTS

FLOOR LINE

2" x 4" FASCIA

2" x 4" TRUSS 24" O. C.

2" x 6" RIDGE

90# MINERAL SURFACE ROOFING

2" x 4" PLATE

20'-0"

24'-0"

SCALE: $\frac{3}{8}'' = 1'-0''$

12

2

2" x 4" S4S FASCIA

1 X 3

1 X 6 S4S FRIEZE BOARD W/ 1 1/2" ROUND SCREEN VENT. 16" O.C.

2'-6"

EXTERIOR

3/4" PLYWOOD EXT. GRADE A-C OR 1" x 6" OR 1" x 8" T. & G. SIS SIDING

90# MINERAL SURFACE ROOFING. 1 LAYER 30# ASPHALT FELT SHALL BE PLACED BETWEEN ROOFING & SHEATHING

2 X 4 TRUSS @ 24" O.C.

3/4" PLYWOOD SHEATHING EXTERIOR GRADE A-C

CAP SHEET

2 X 6 RIDGE

1 X 4

1 X 3 FURRING JOIST 2'-0" O.C.

1/2" CANEC CEILING V.

3/4" 1/4 phi MOLD

2 X 4 PLATE

2 X 4 BLK'G BRC'G

1/2" x 1 1/2" CONT. AT JOINT

3/8" PLYWOOD V.J. INT. GRADE A-B

2 X 4 STUDS 24" O.C.

2 X 4 BLK'G/ BRC'G.

1 X 4 BASE BOARD

3/4" PLYWOOD FLOOR EXT. GRADE A-C OR 1" x 4" T. & G. FLOORING

2 X 6 SOLID BLK'G

2 X 6 JOIST 16" O.C. S2E

4 X 8 SILL S2E

2 X 3 S4S WATERTABLE

8 X 8 SILL S2E

2'-0"

SEE FOUNDATION PLAN

SYMM. ABOUT C

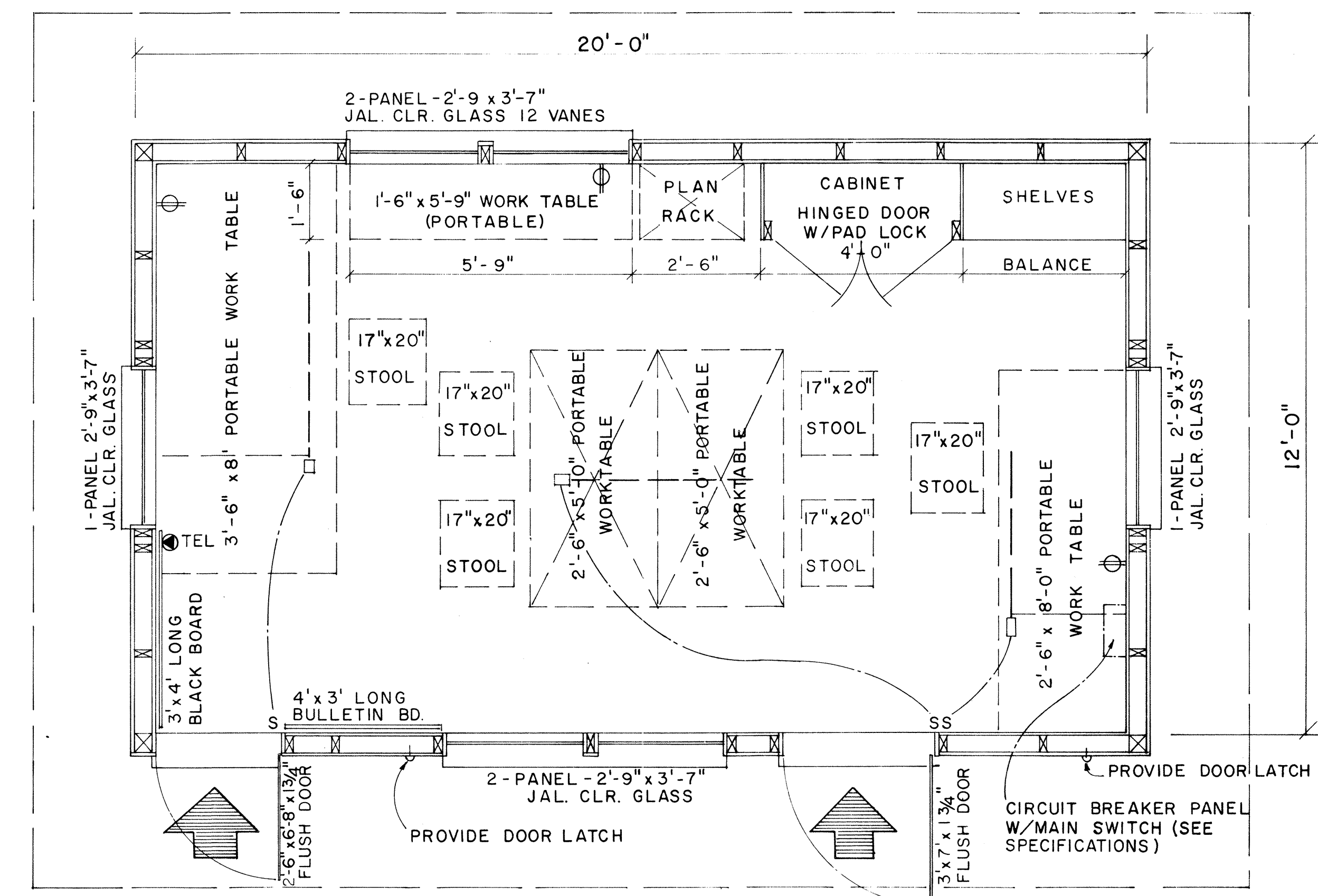
CEILING LINE

DOOR LINE

CONT. PANEL

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

APPROVED: Hubert E. Smith 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE



Technical drawing of a roof truss system. The drawing shows a cross-section of the truss with various components labeled and dimensions provided.

Dimensions:

- Overall width: 20'-0"
- Overall height: 12'-0"
- Top chord spacing: 2'-0" (left and right ends)
- Vertical spacing: 4'-0" (middle section), 2'-0" (bottom section)

Components and Labels:

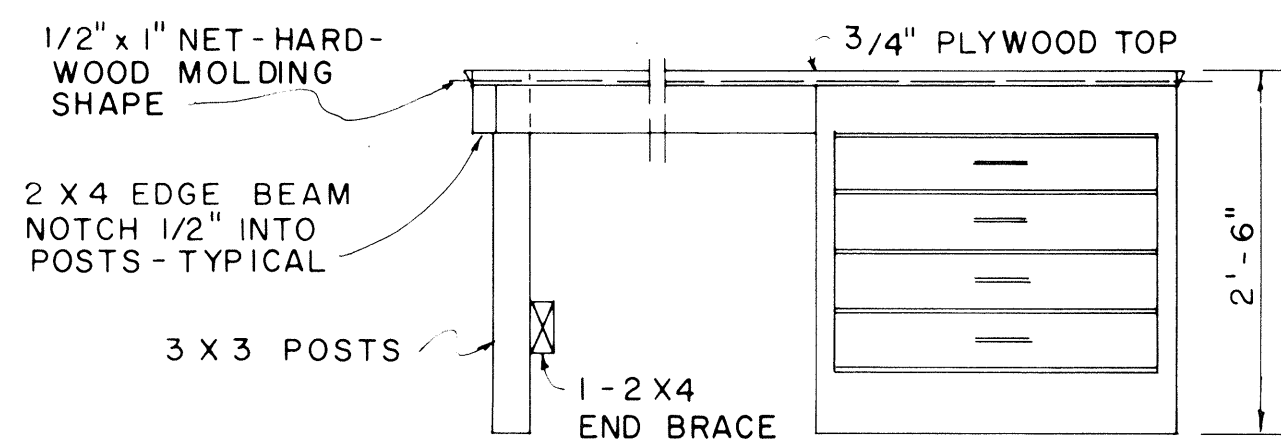
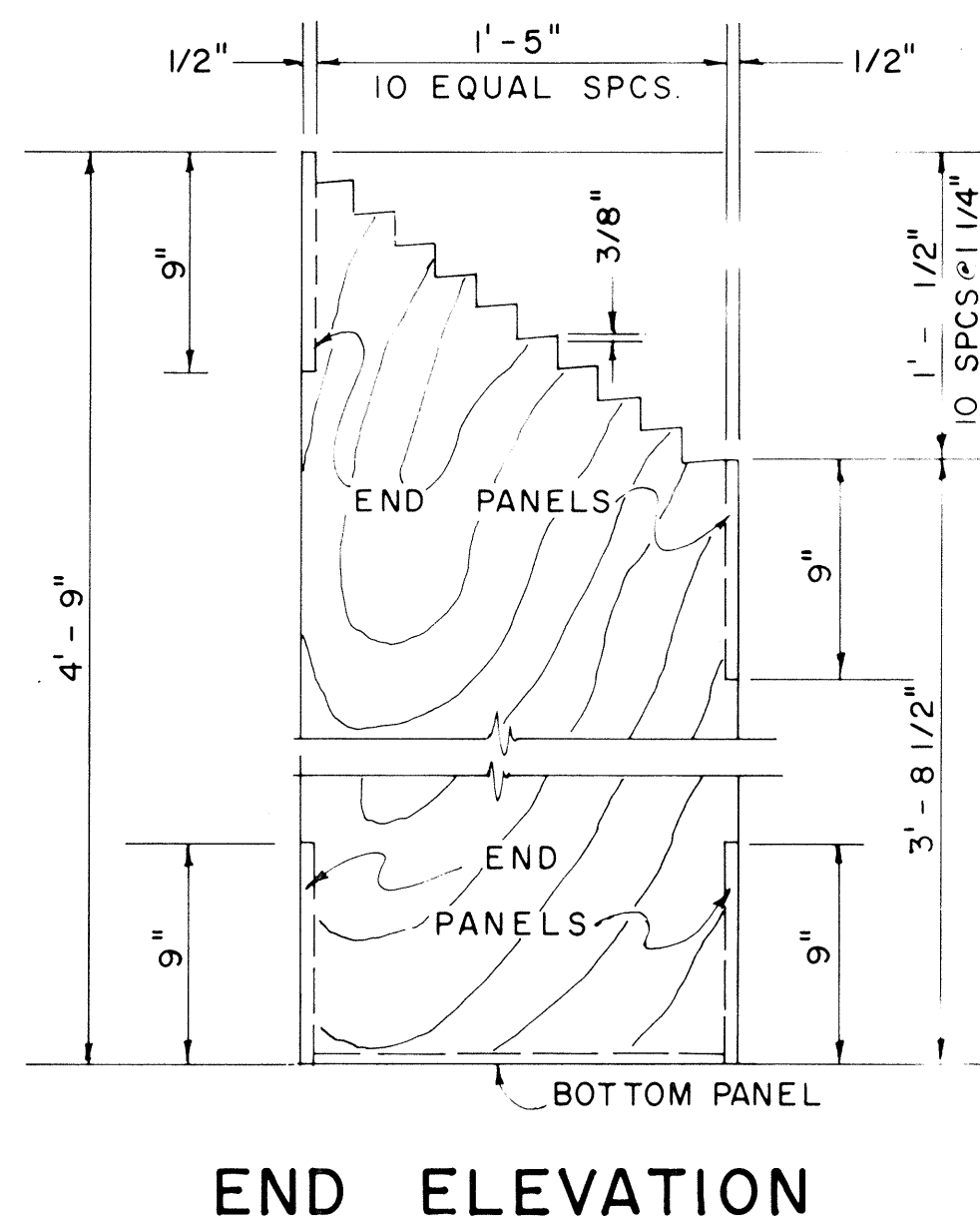
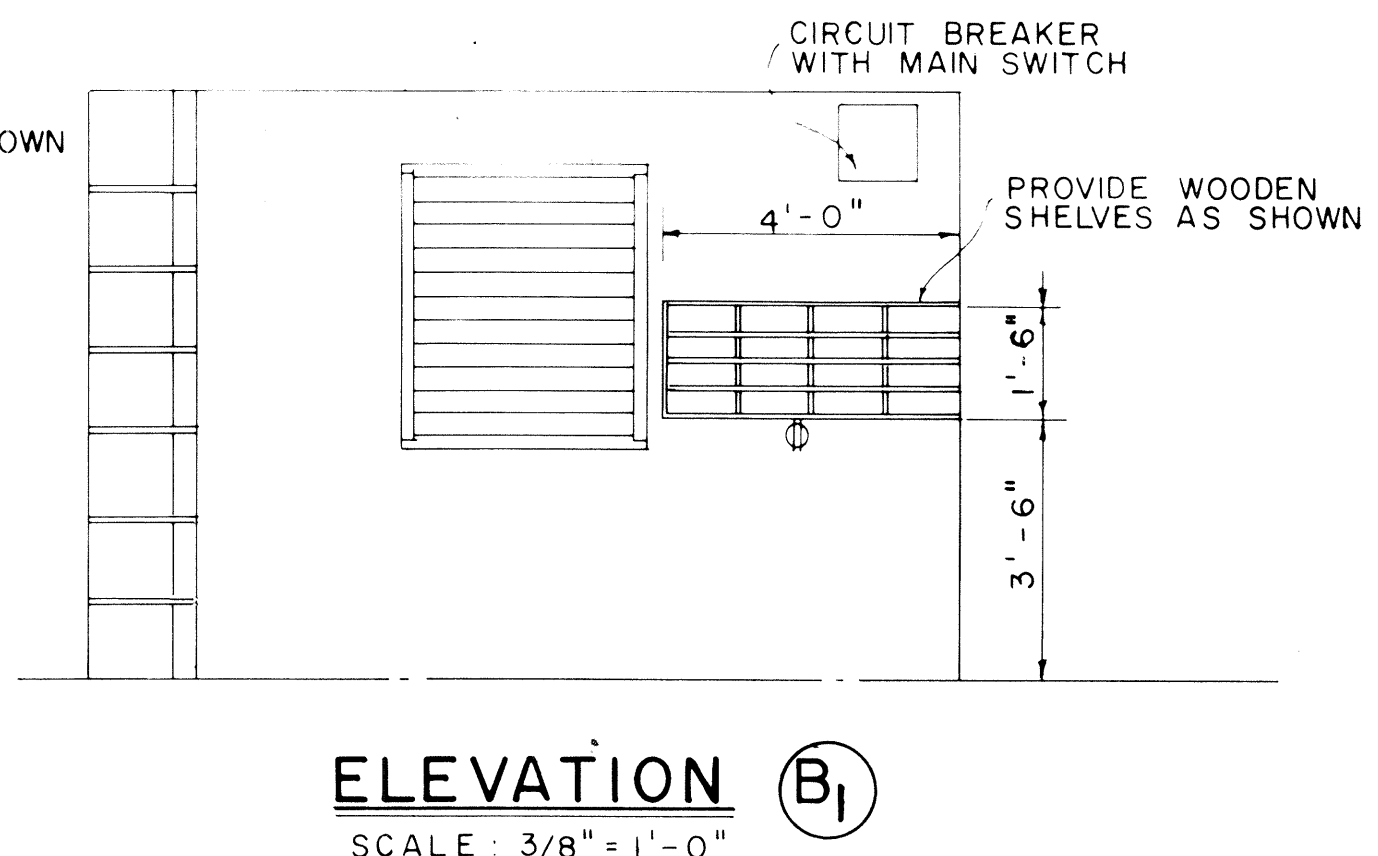
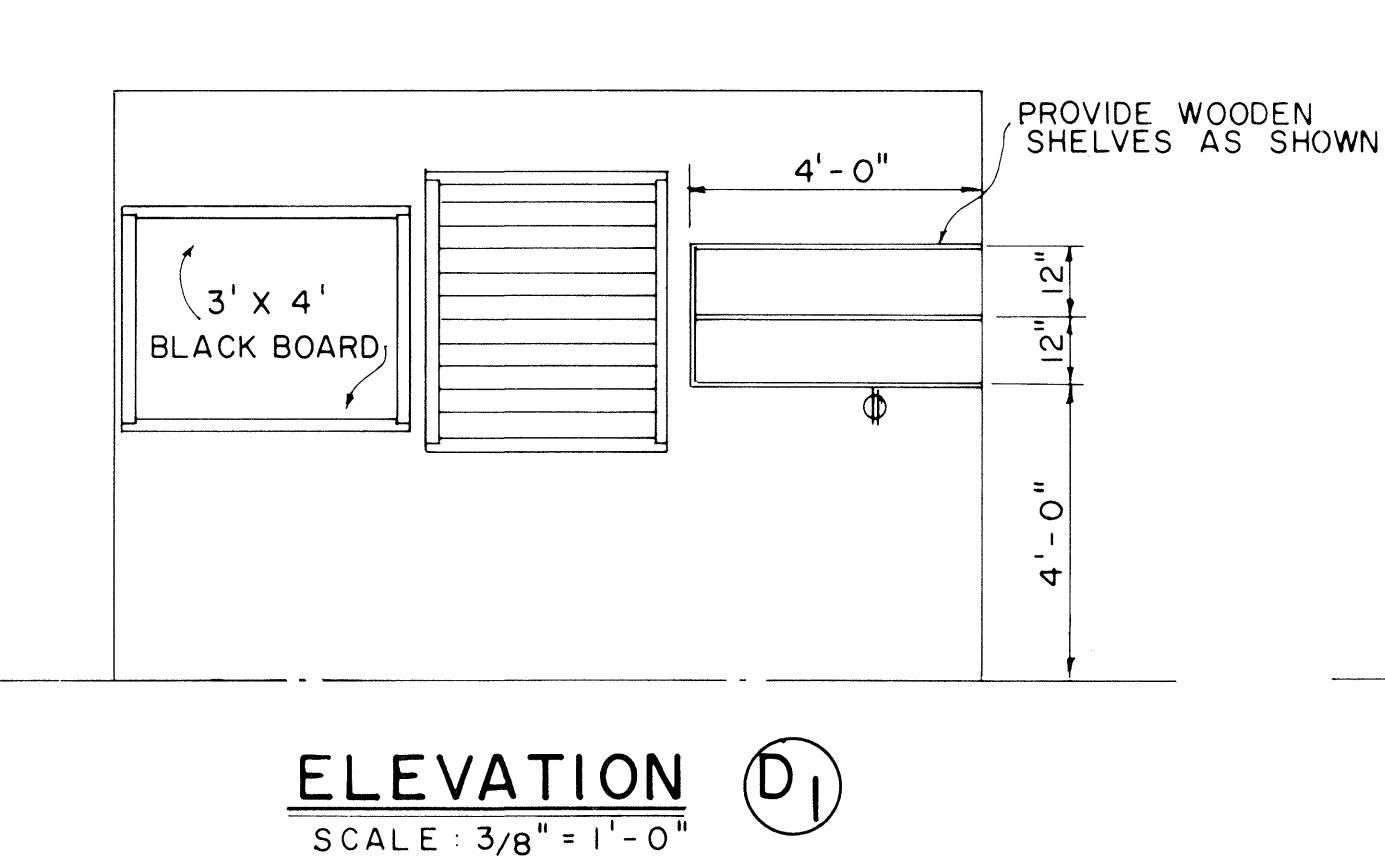
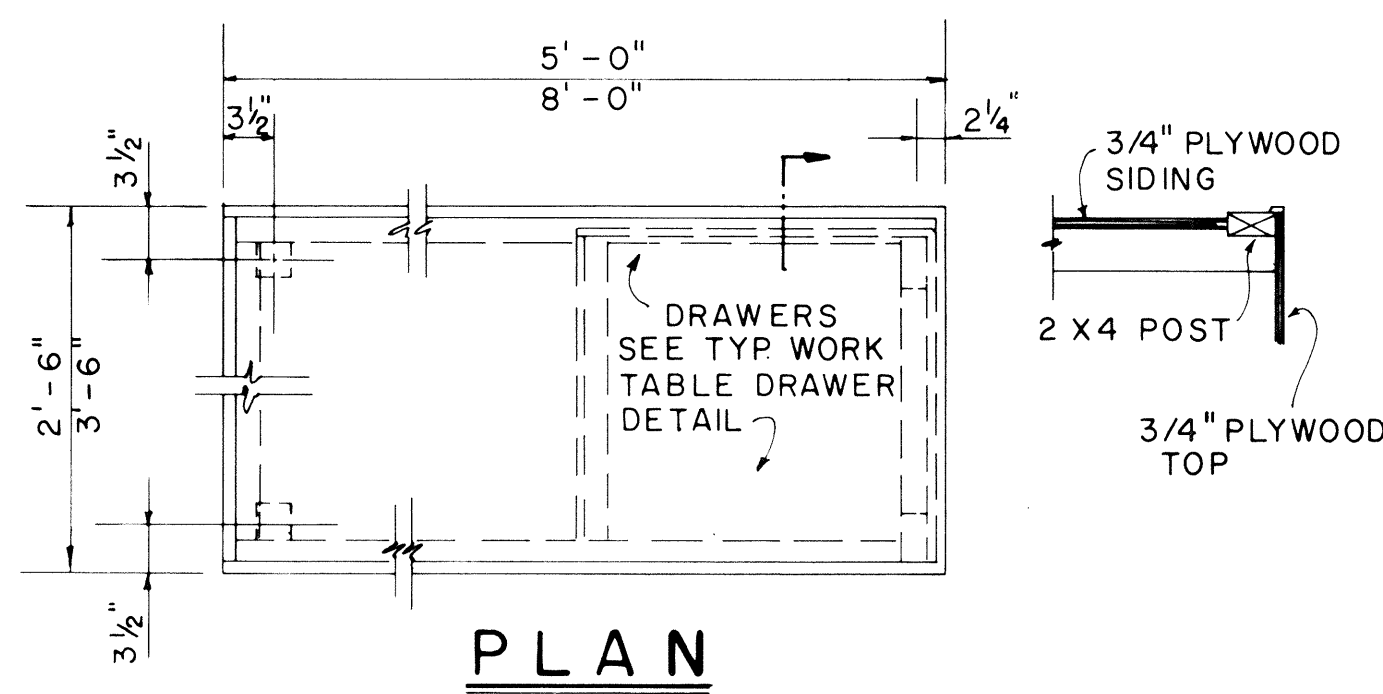
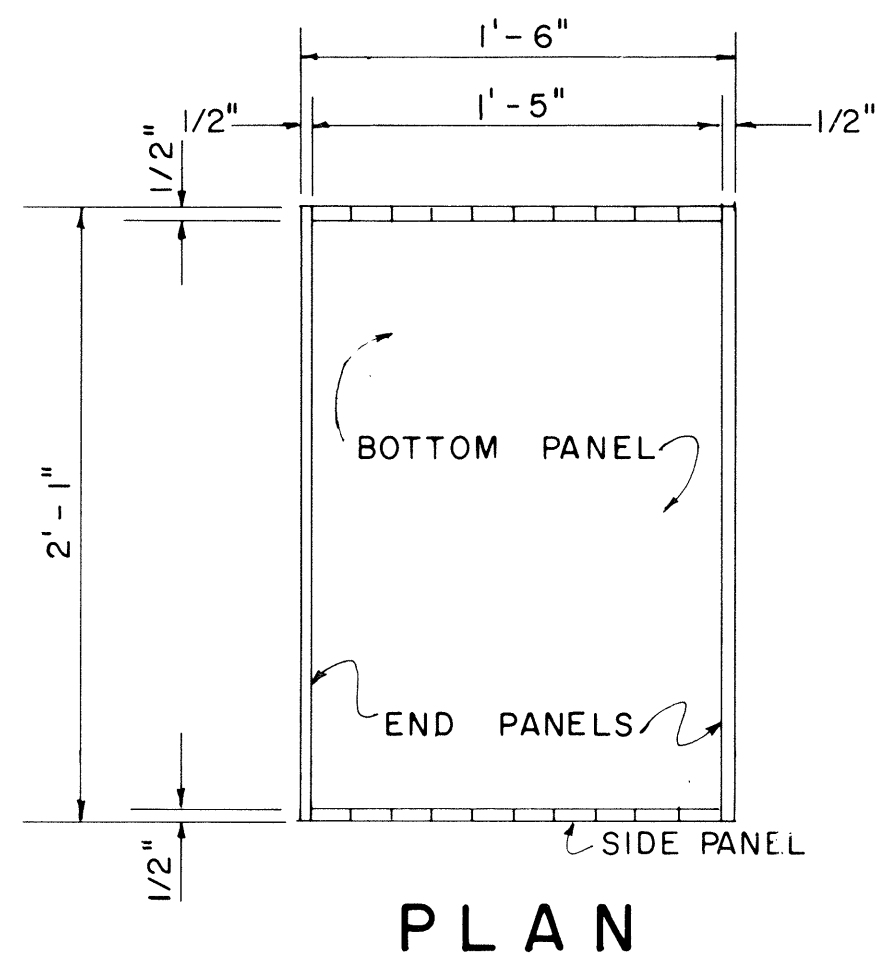
- 2 X 4 INTERM. STUDS SPIKE TO 8 X 8 SILL
- 2 X 6 BLOCKING
- 2 X 6 DIAGONAL BRIDGING
- 2 X 4 STUDS 24" O.C.
- 4 X 6 JOIST PLACED NEXT TO STUDS AS SHOWN
- 4 X 8
- 8 X 8
- 2 X 6 JOISTS AS SHOWN
- 2 X 6 CROSS BRIDGING
- 2 X 4 STUDS ANCHOR TO EA. 4 X 6 JOIST W/ 1 1/2" Ø BOLT

NO.	REVISION	APPROVED BY	DATE

Scale : As Noted

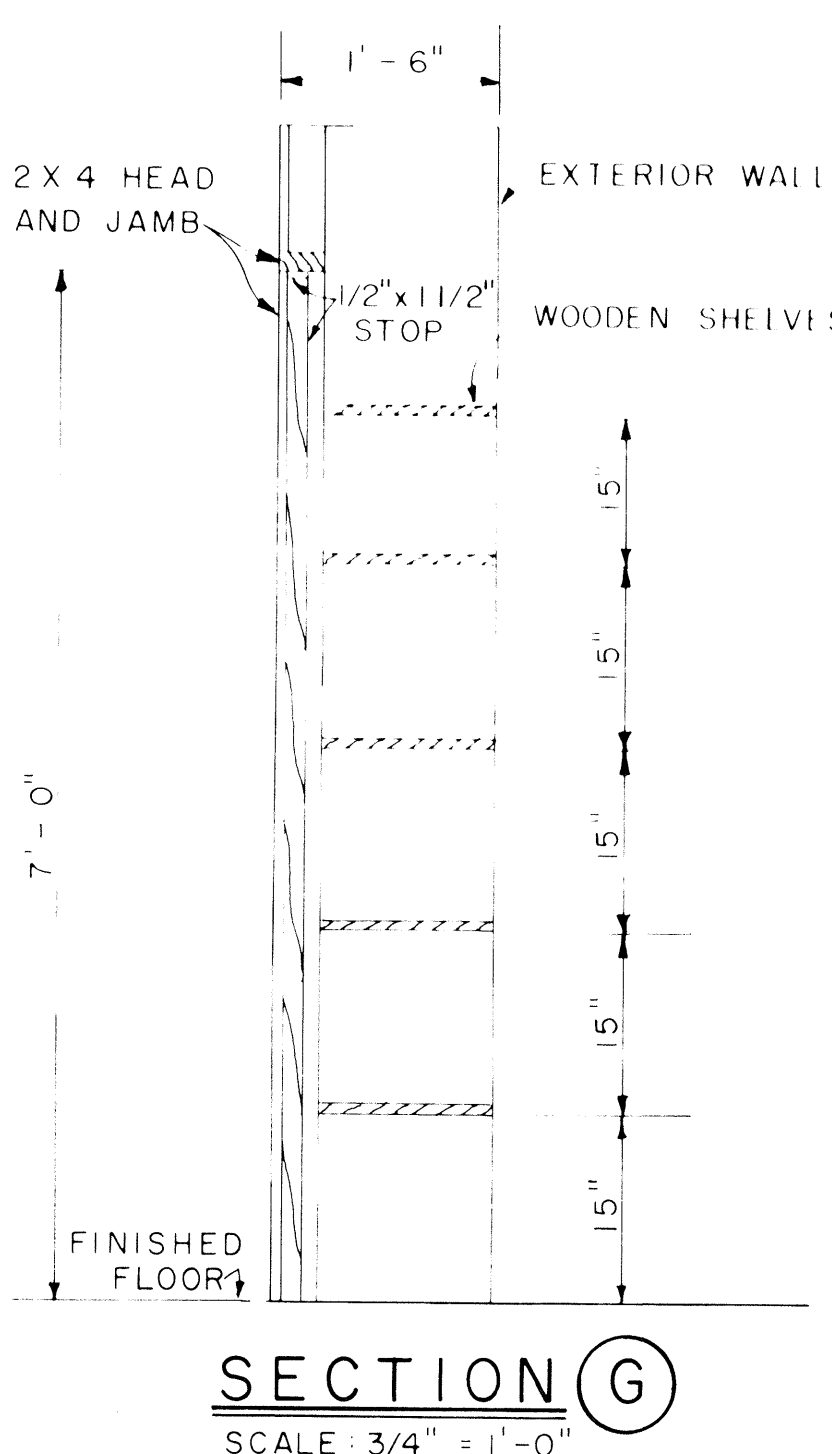
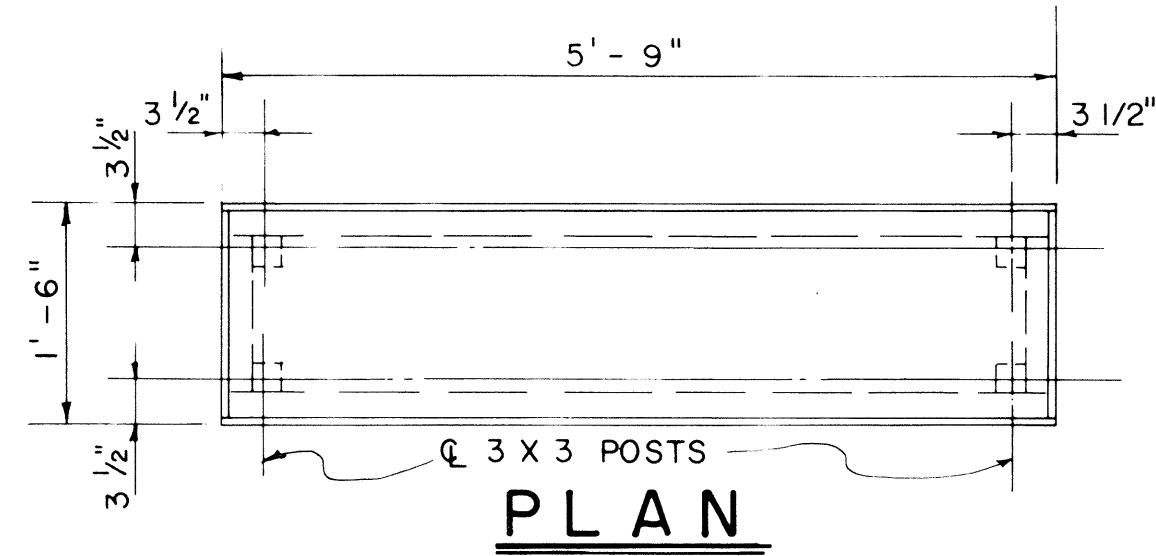
SHEET NO 11 OF 22 SHEETS		DD 636.1
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-H-1(91)-13	1972	33	228

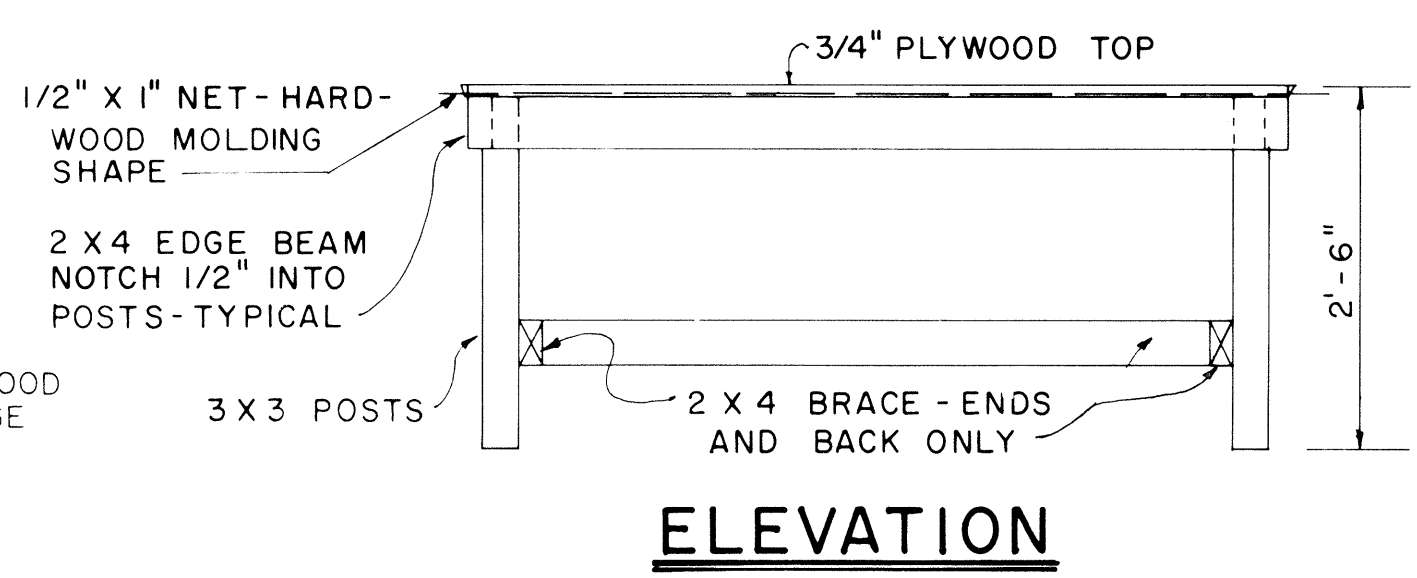
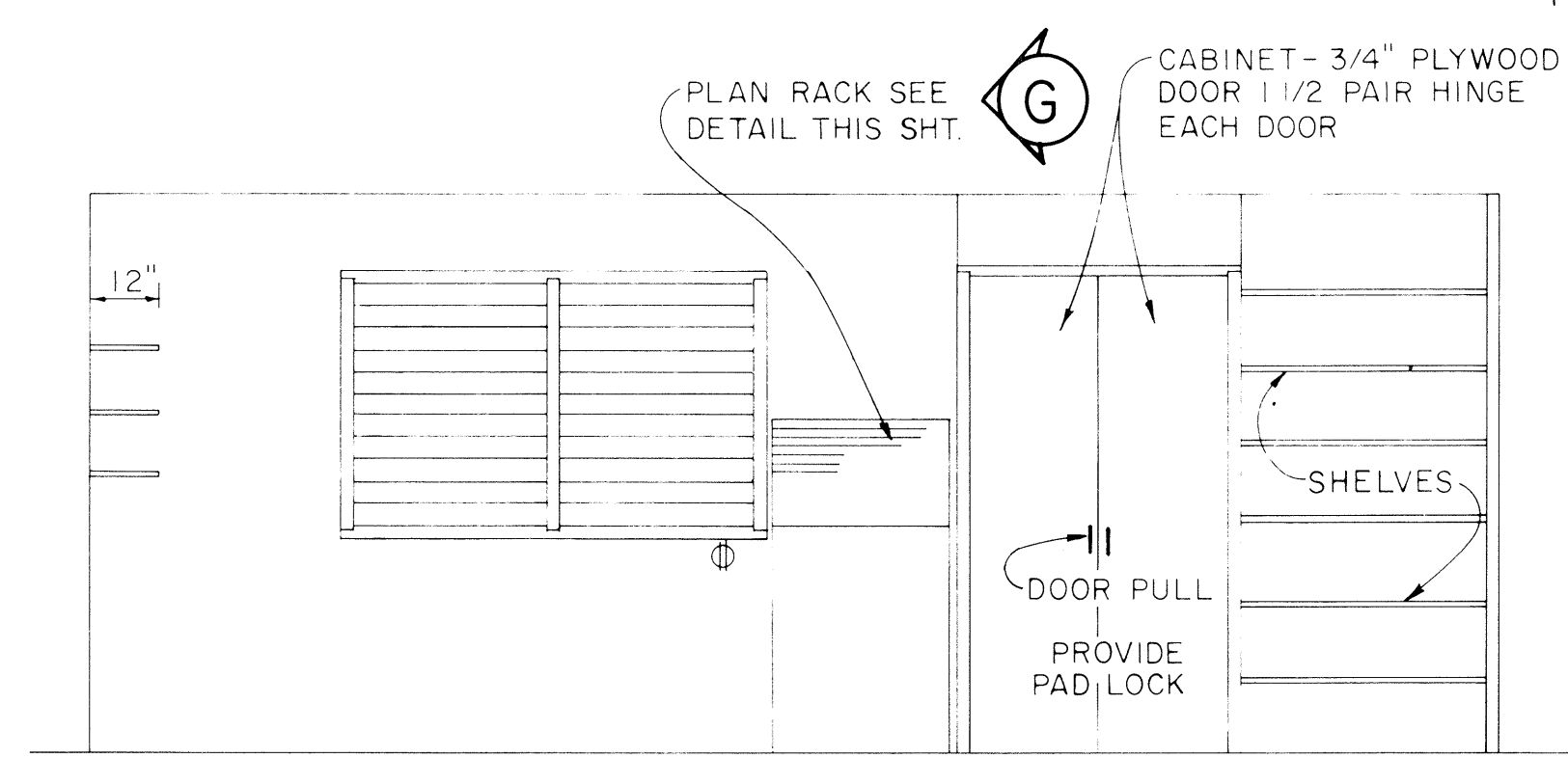


2'-6" x 5'-0" 2 REQ'D
3'-6" x 8'-0" 1 REQ'D
2'-6" x 8'-0" 1 REQ'D

PORTABLE WORK TABLE DETAIL
SCALE: 3/4" = 1'-0"



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



1'-6" x 5'-9" PORTABLE WORK TABLE DETAIL
SCALE: 3/4" = 1'-0"

APPROVAL RECOMMENDED:
[Signature] 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:
[Signature] 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

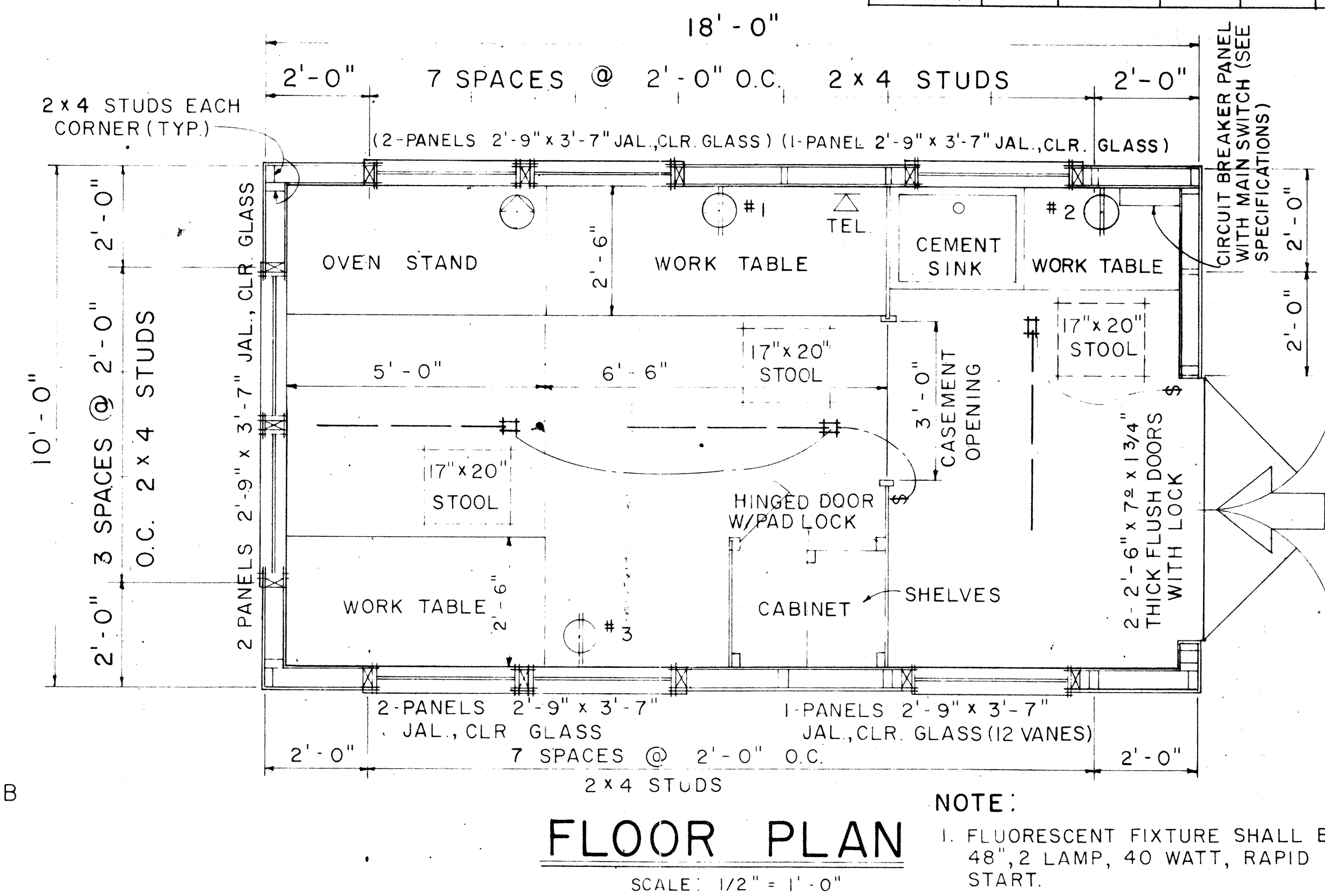
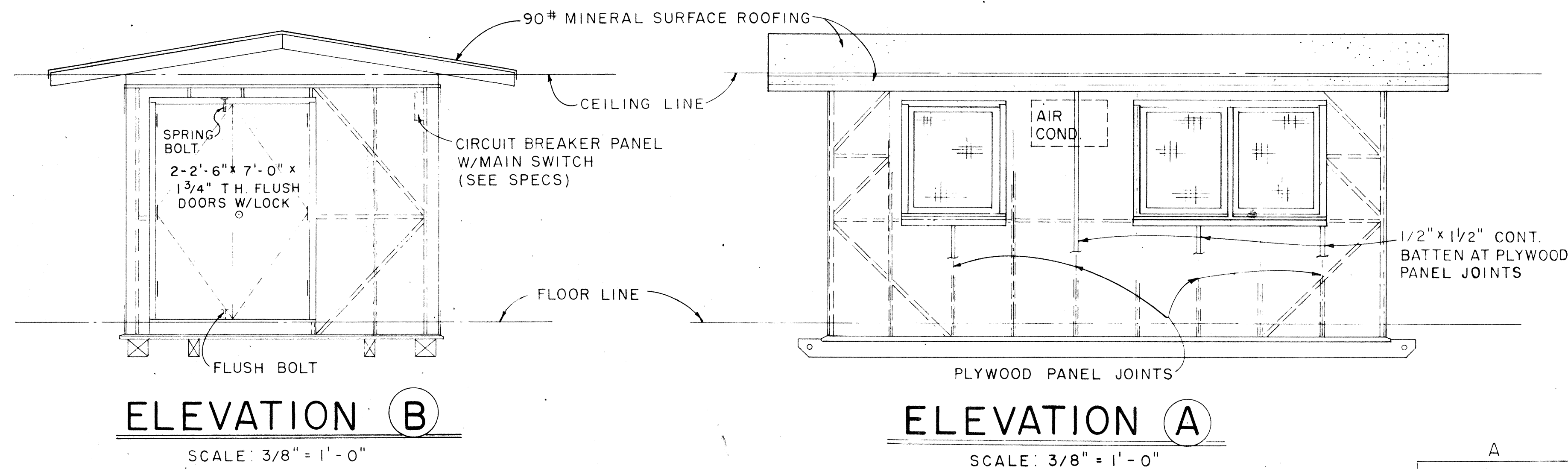
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIELD OFFICE

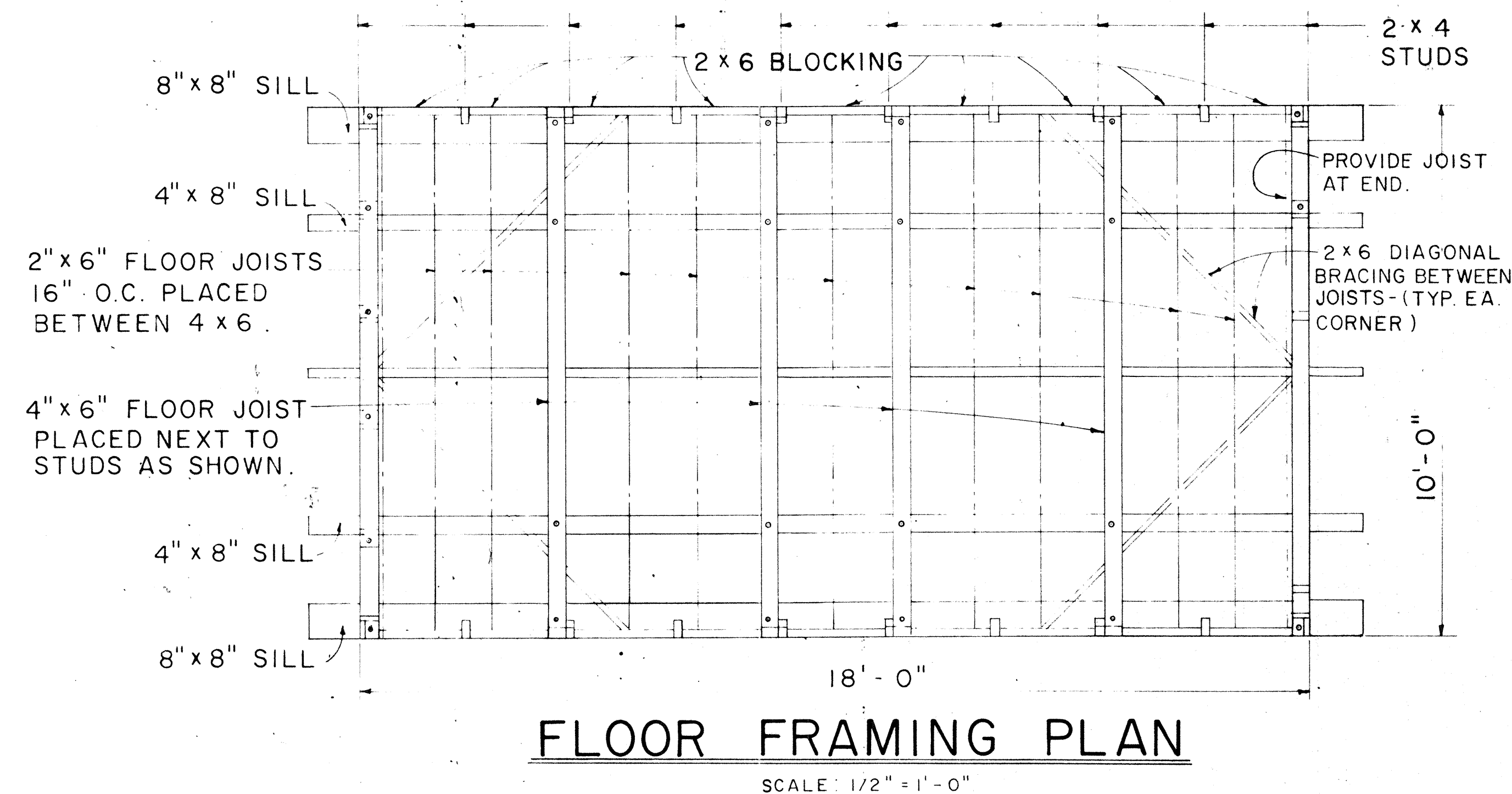
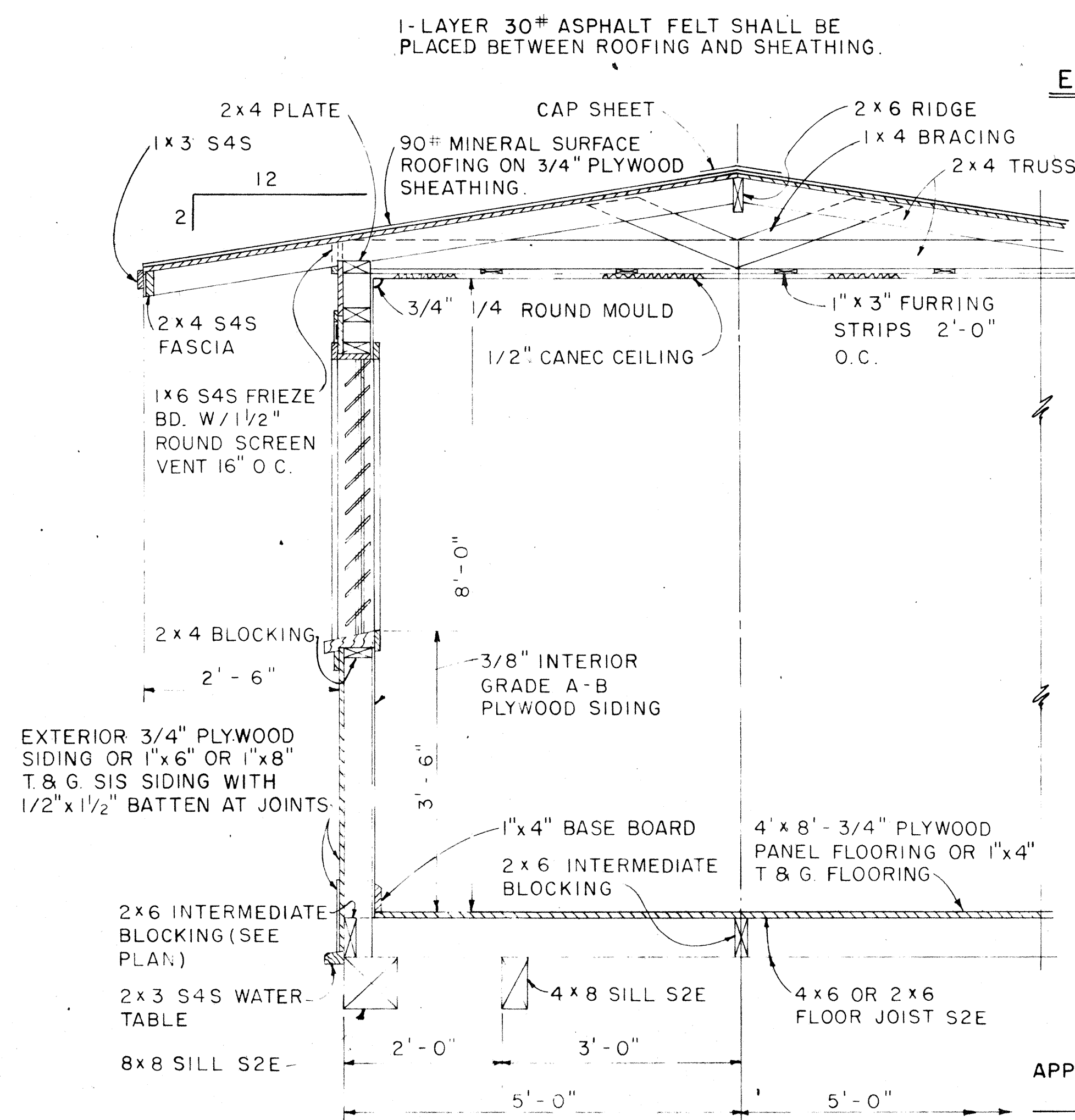
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	LHI-101-13	1972	34	228



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

EXTERIOR & INTERIOR KEY



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

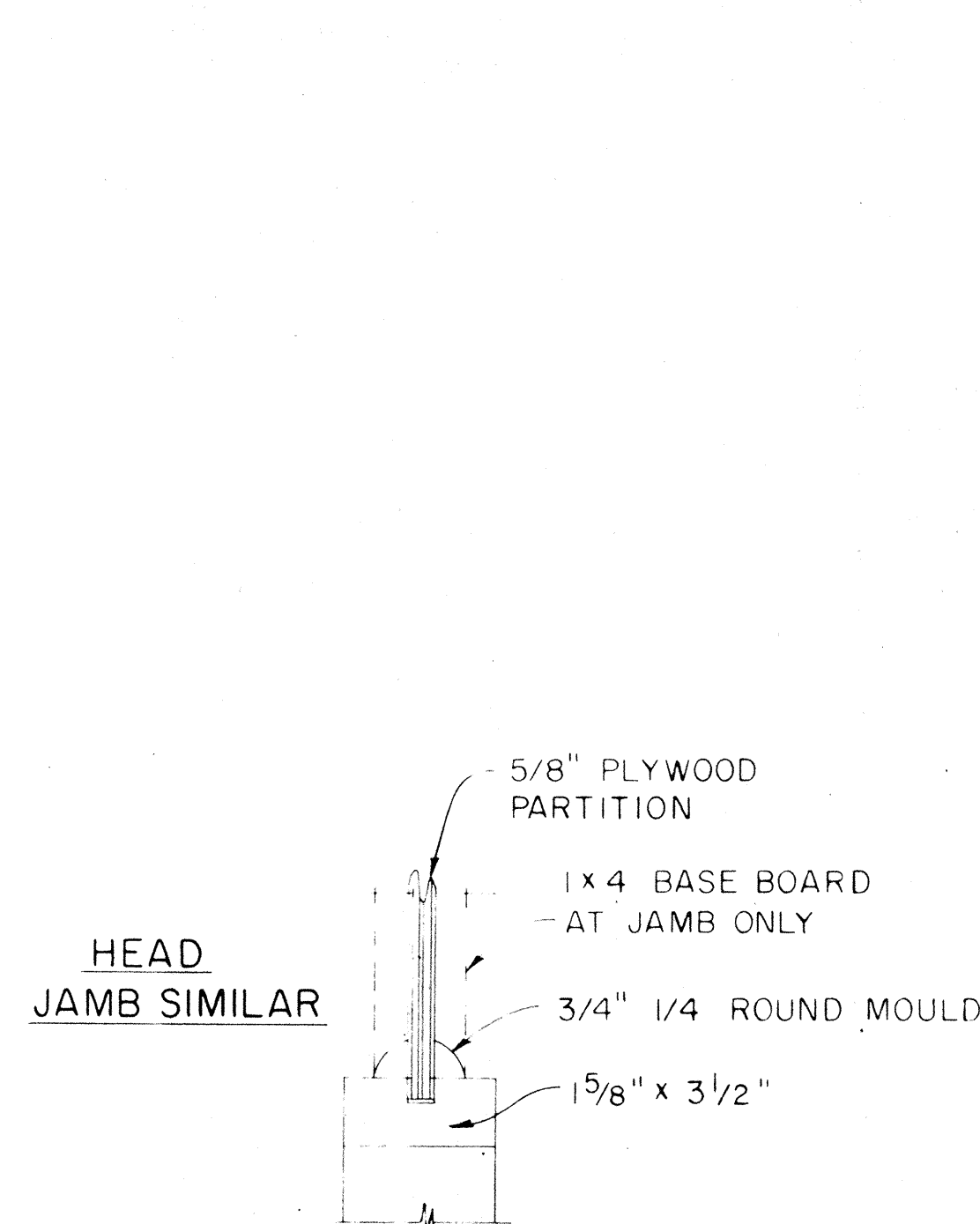
PROJECT SITE LABORATORY

Scale: As Noted

SHEET No. 138 OF 22 SHEETS DD 636.3

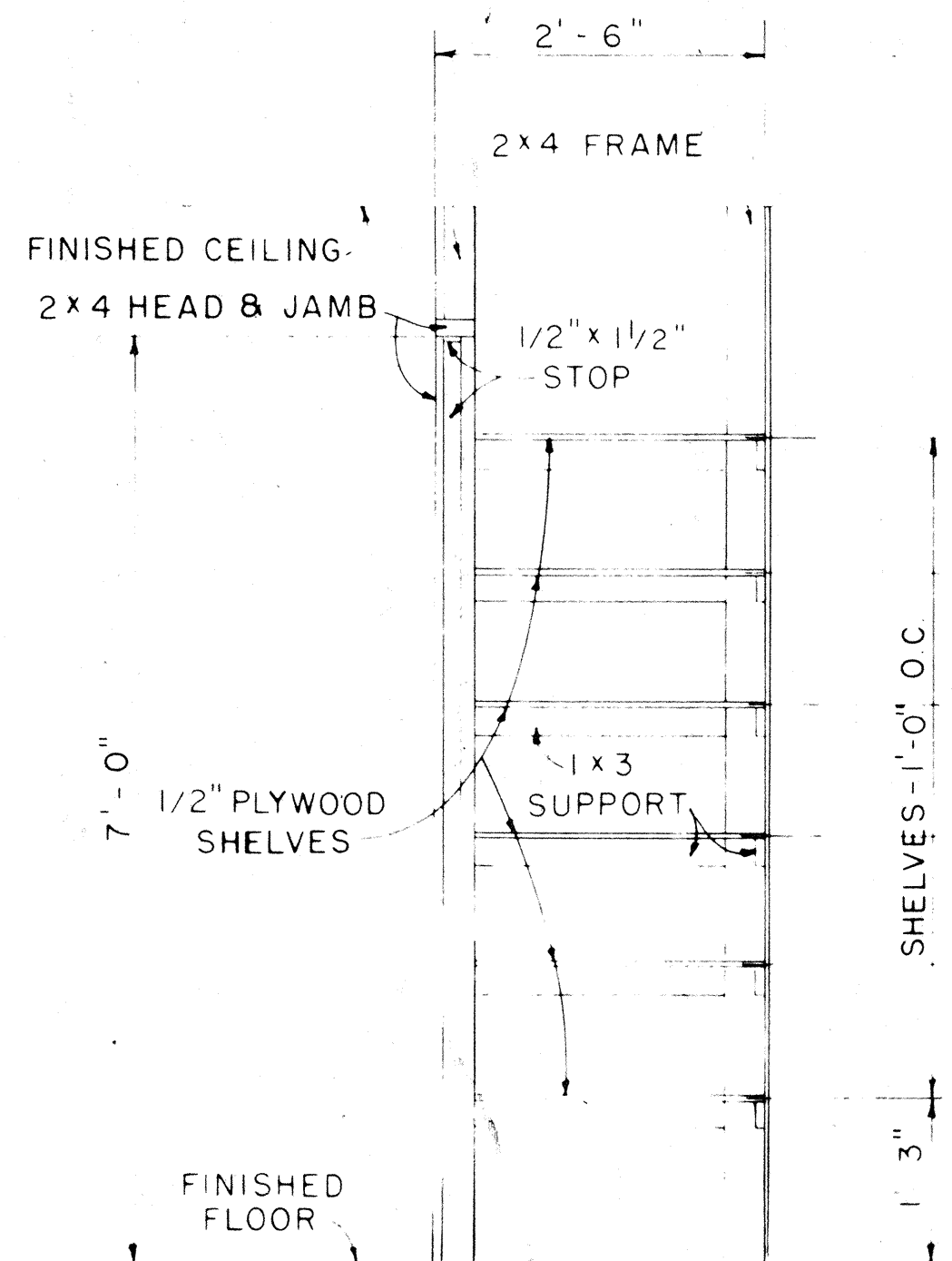
DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	1-HH(01)-13	1972	35	228



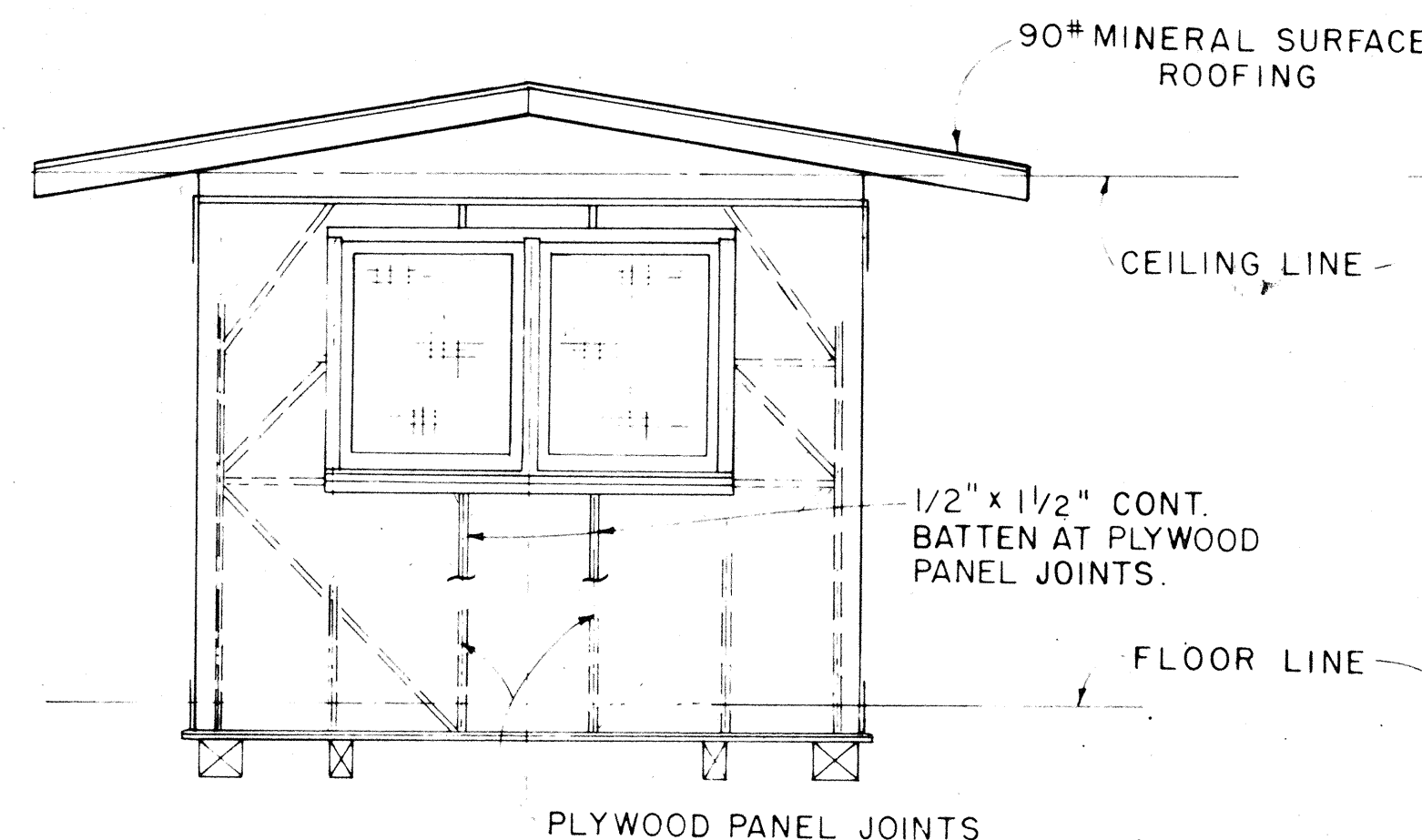
CASEMENT DETAIL

SCALE: 3" = 1'-0"



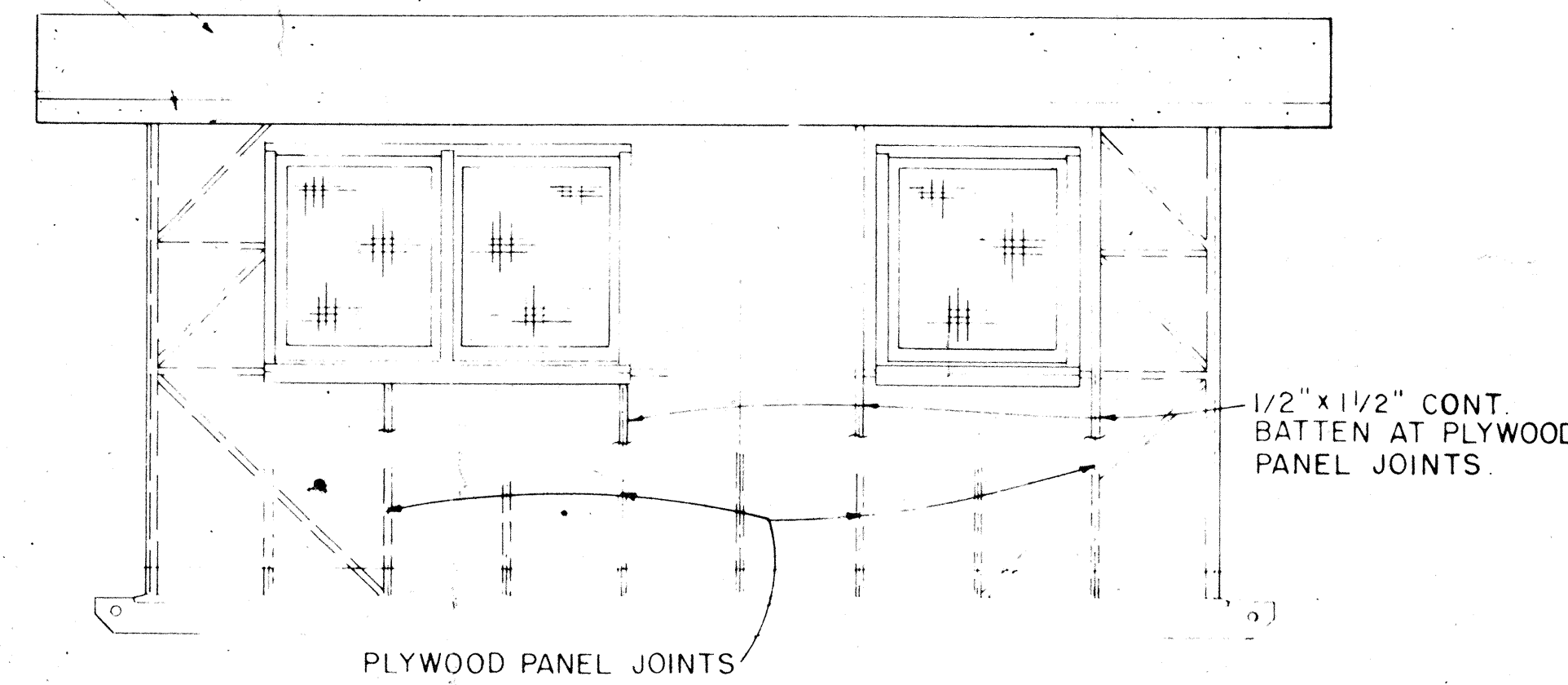
CABINET DETAIL

SCALE 3/4" = 1'-0"



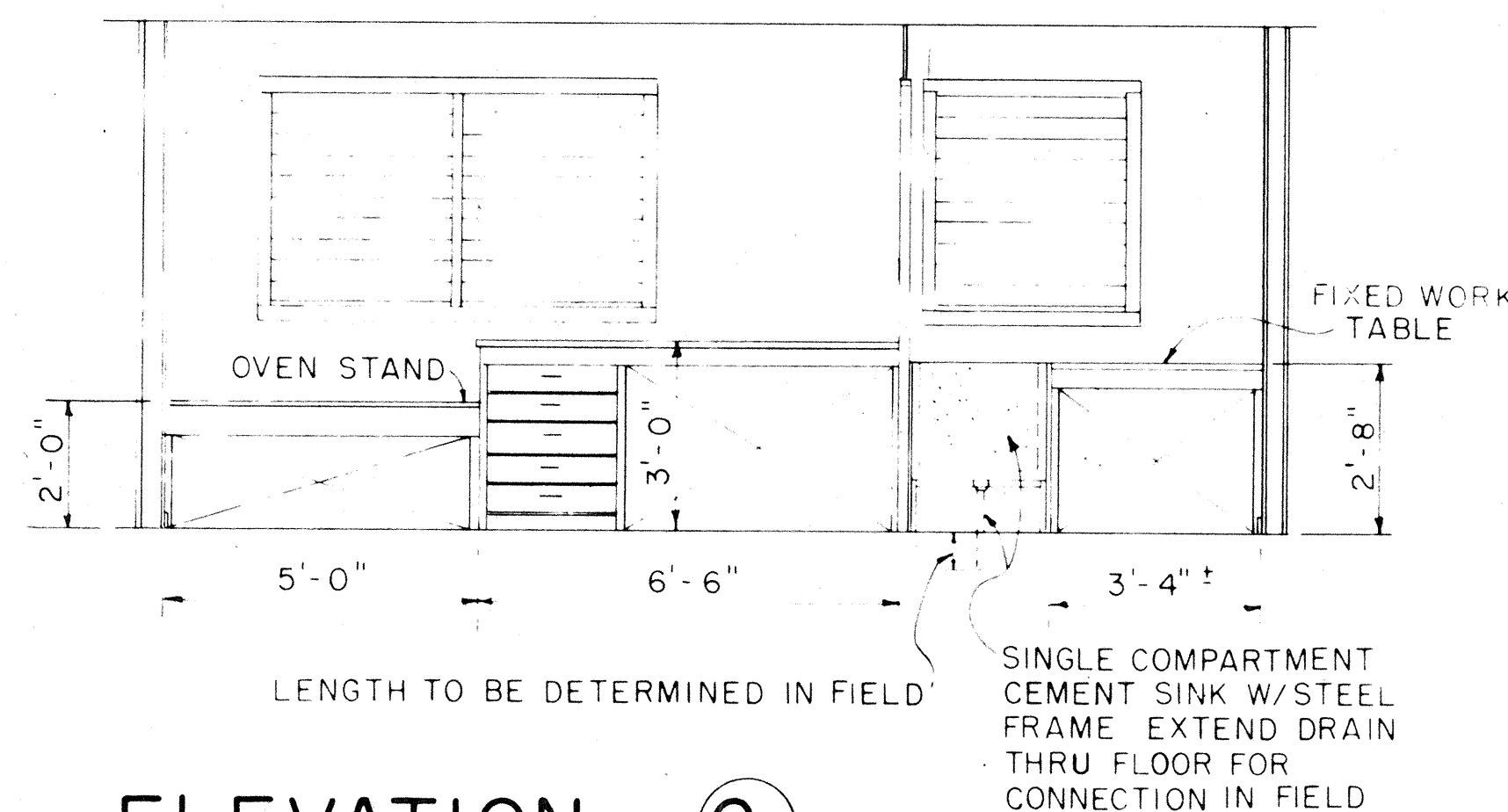
ELEVATION (D)

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



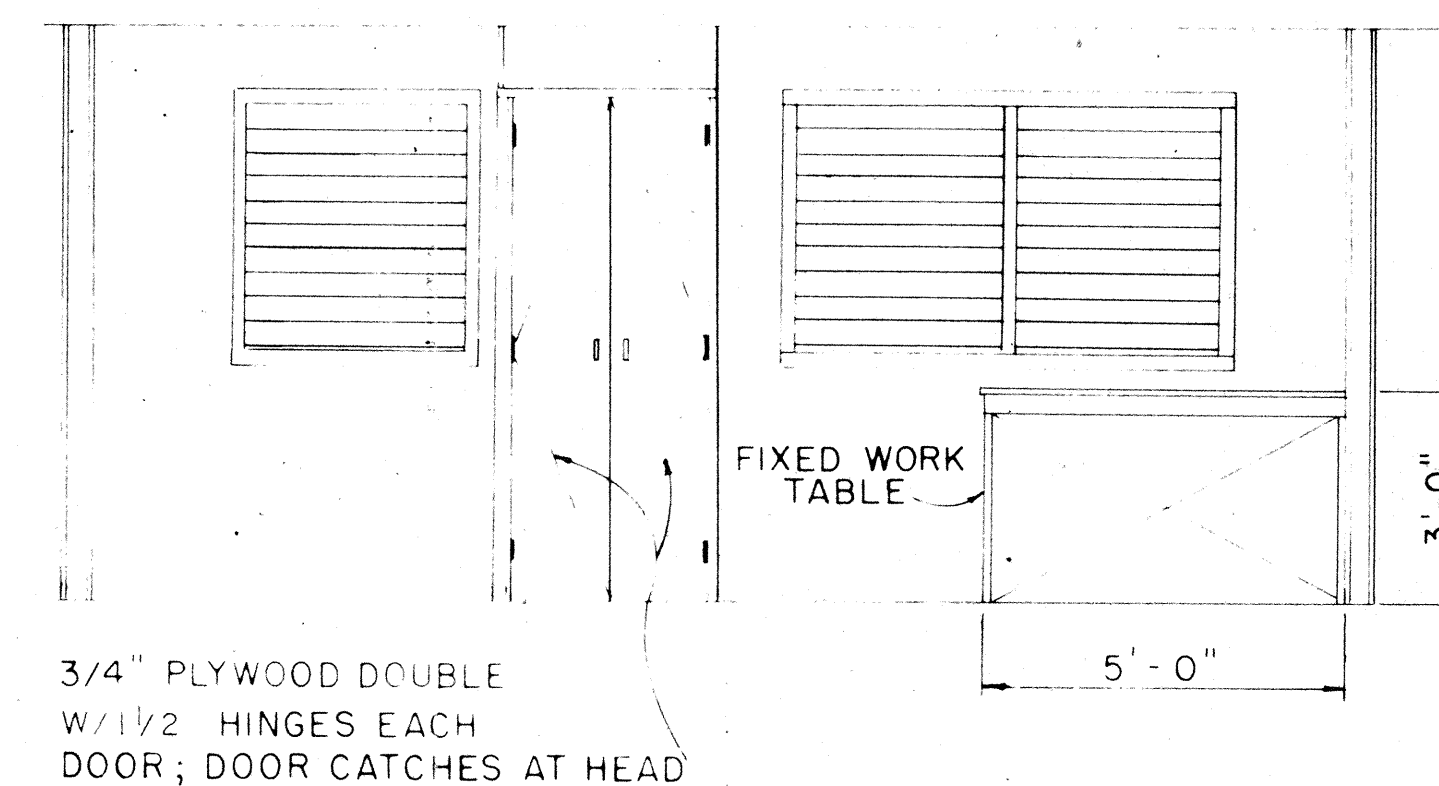
ELEVATION (C)

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



ELEVATION (C1)

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



ELEVATION (A1)

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

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
DATE	

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

Scale: As Noted

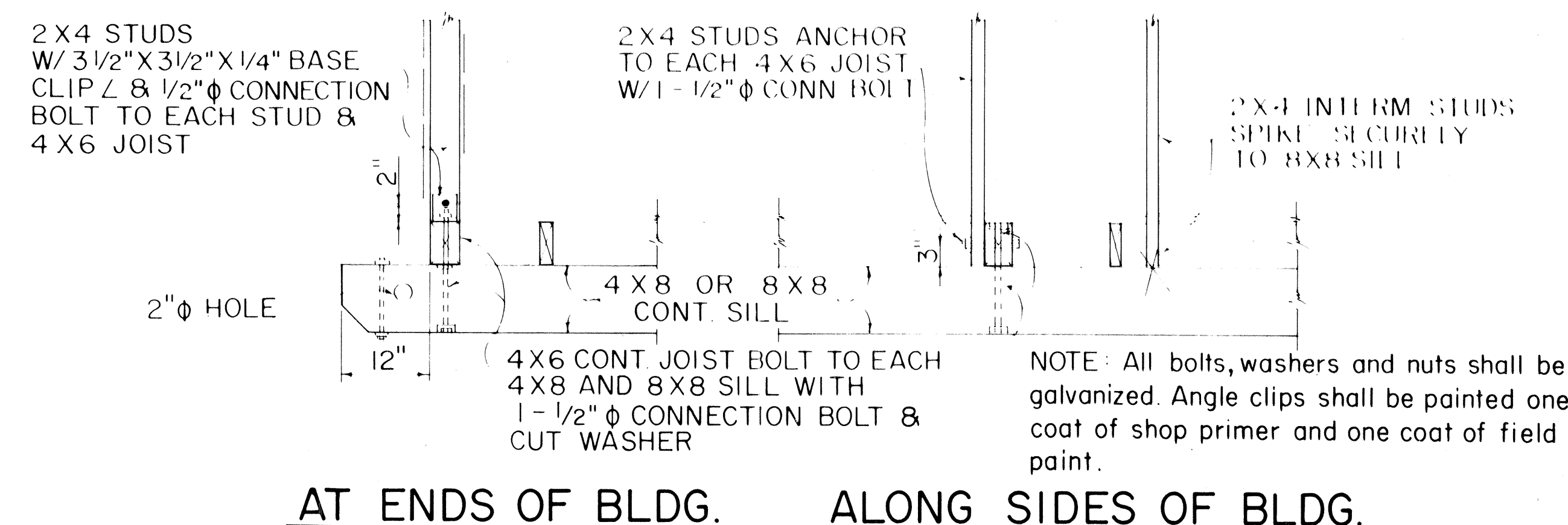
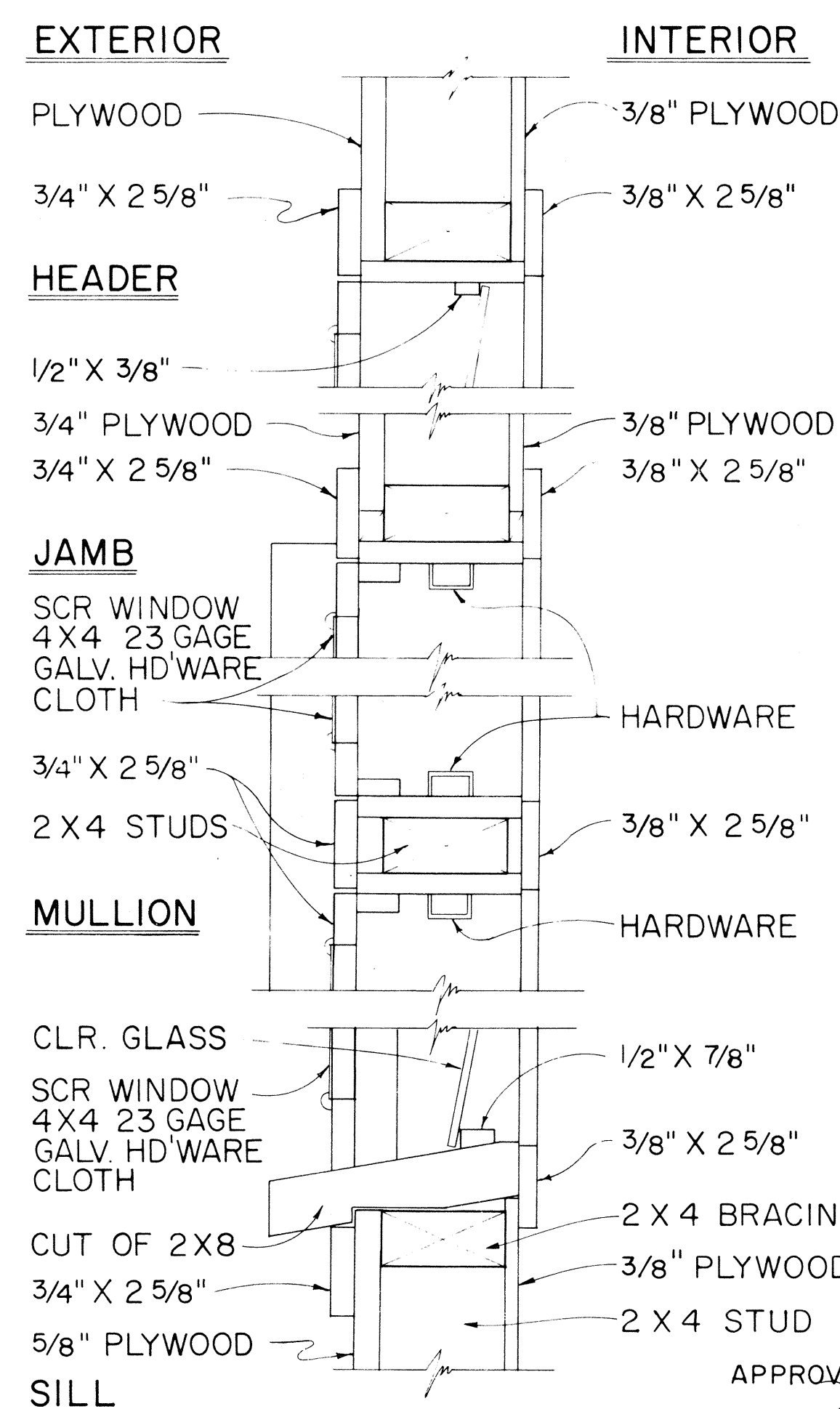
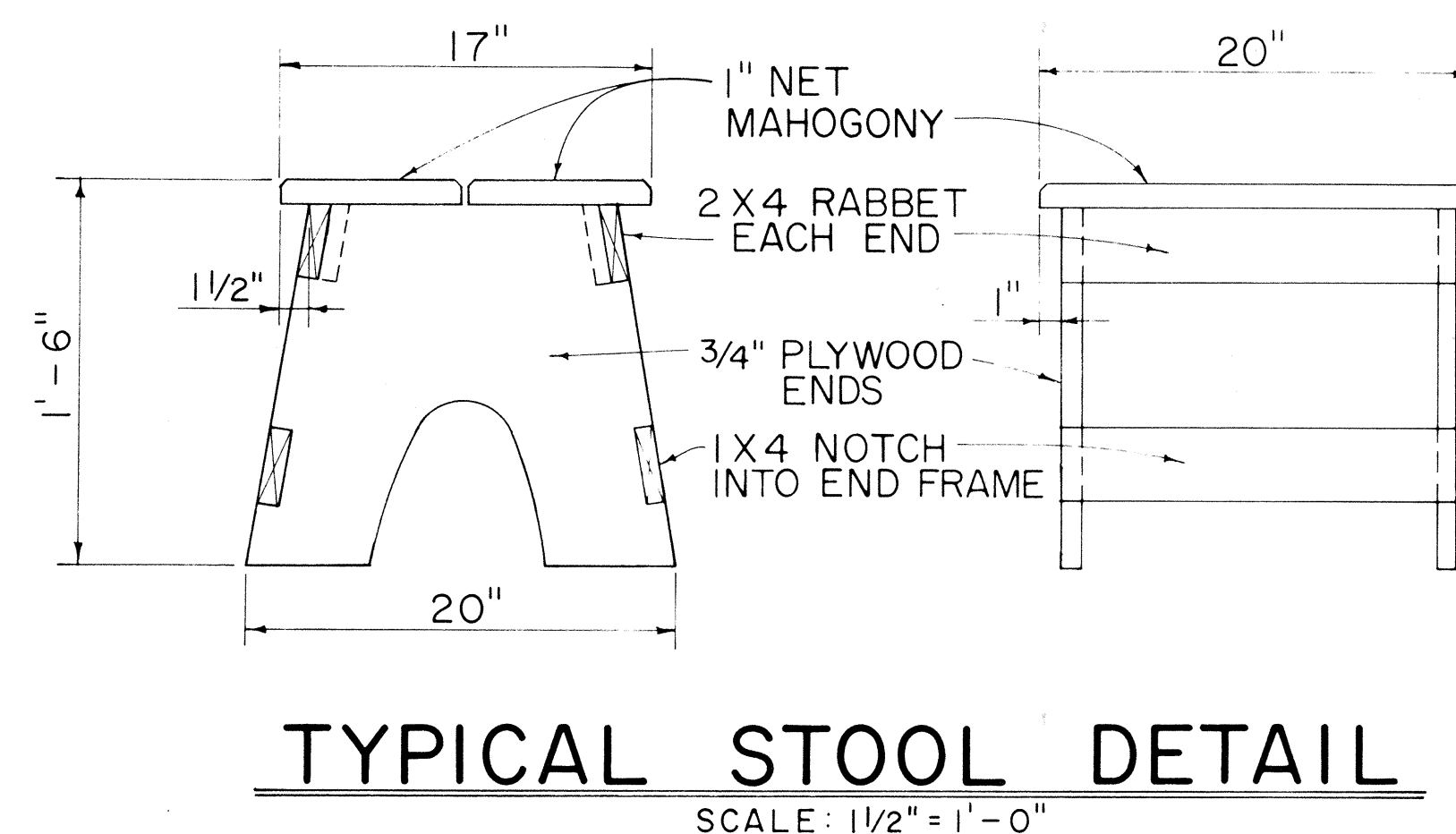
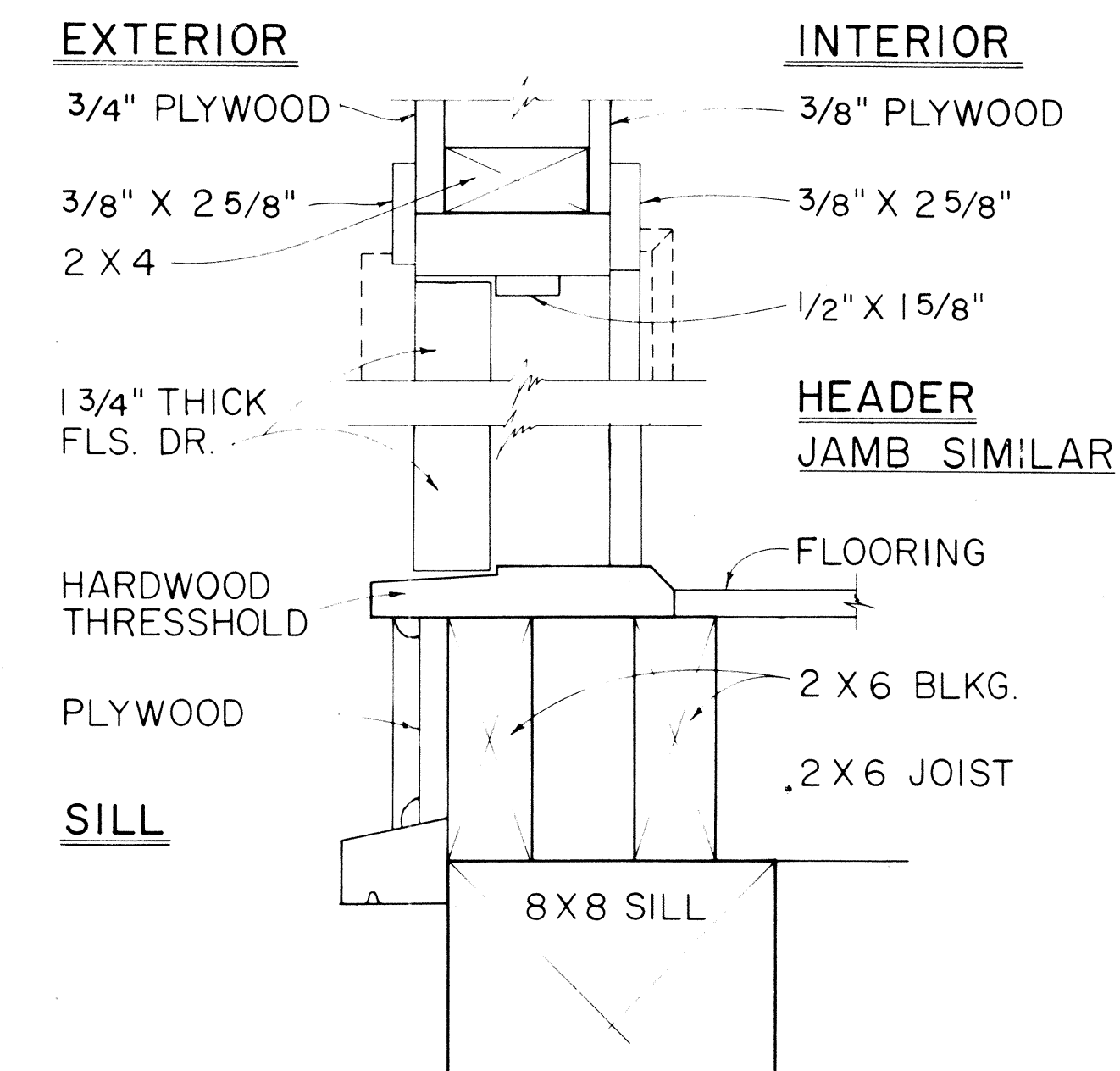
Technical drawings of the interior face of a wall at a fixed table, showing cross and end sections.

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

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

Labels and dimensions include:

- INTERIOR FACE OF WALL AT FIXED TABLE
- 2'-6" OR 3'-6"
- 2 X 4
- 3/4" PLYWOOD
- 1'-9"
- 1/2" X 1" HD' WOOD TRIM (SHAPE)
- 2 X 4
- 5/8" NET BACK & SIDES
- 1/2" X 1 1/2" STOP
- 5 1/4" 5 1/4" 5 1/4" 5 1/4" O.C.
- 3/4" PLYWOOD
- FROM 2 X 4
- 3 5/8"
- 1/4" PLYWOOD OR MASONITE BOTTOM
- SLOT
- 1/4"
- SCALE: 3" = 1'-0"
- 1/2" X 1" HD' WOOD TRIM
- 3/4" PLYWOOD
- 2 X 4
- 5/8" NET FACING
- 3/4" X 3 1/2" GUIDES
- 2 X 4 POST EACH END
- 3/4" PLYWOOD WHERE REQ'D.
- FROM 2 X 4



NO.	REVISION	APPROVED BY	DATE
2			

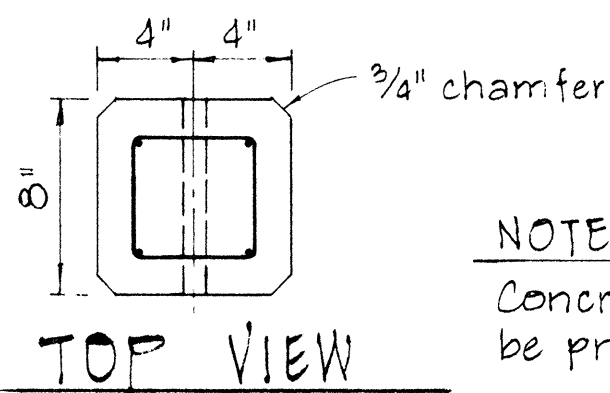
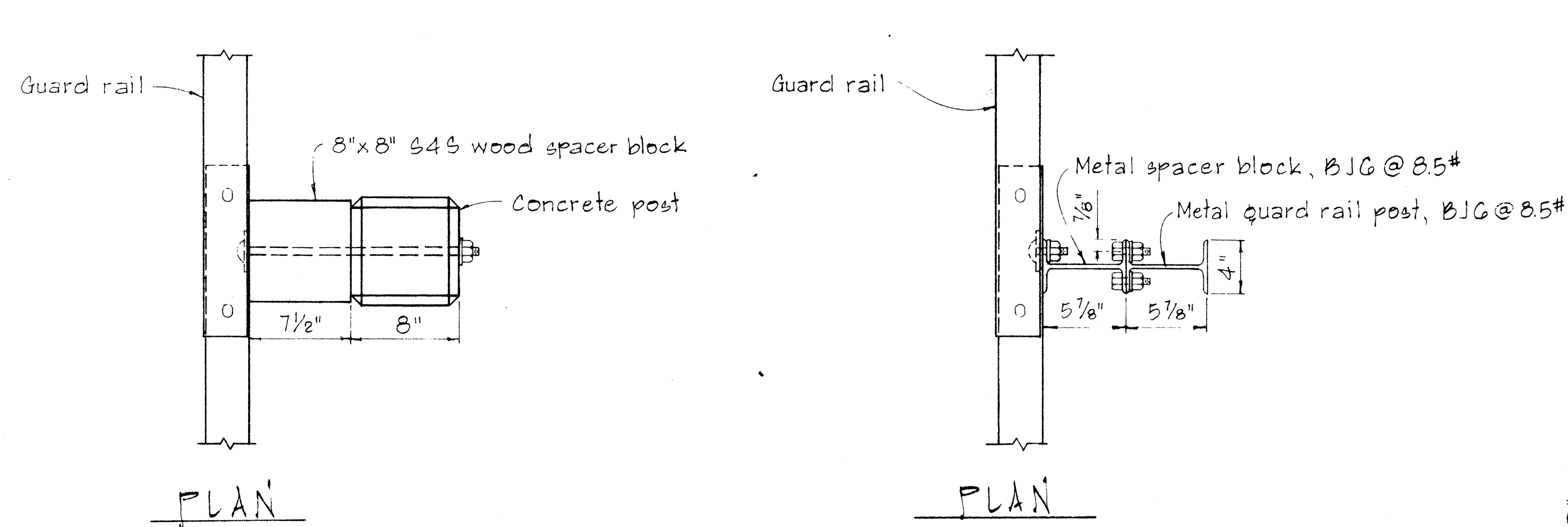
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIELD OFFICE
&
PROJECT SITE LABORATORY

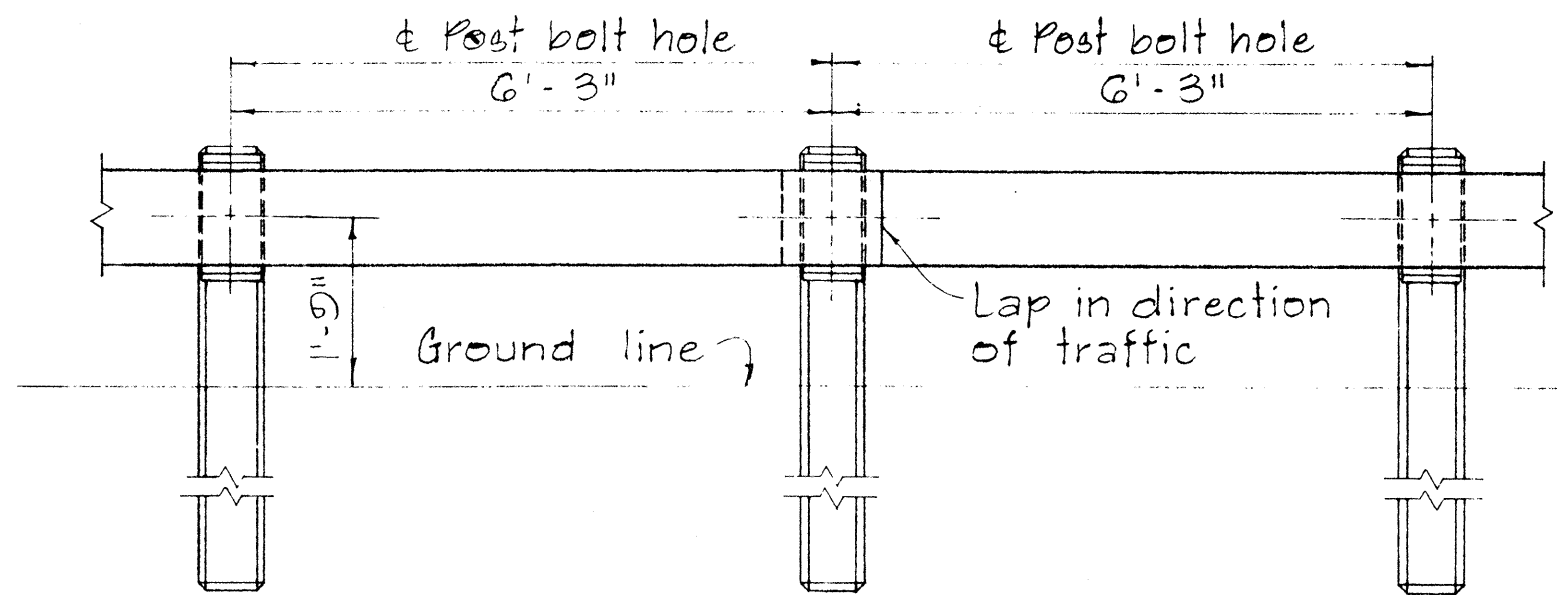
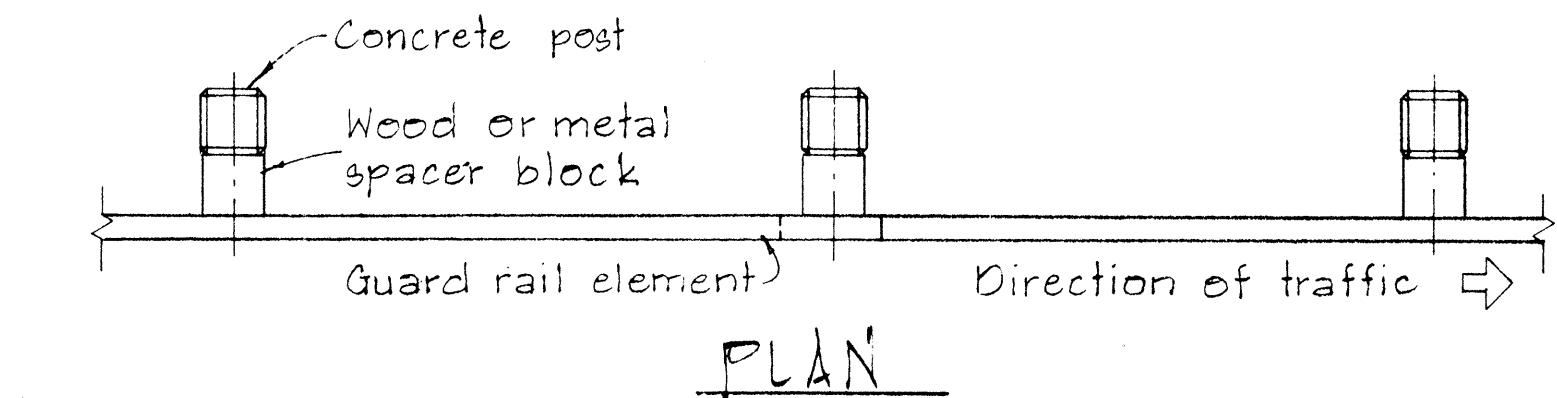
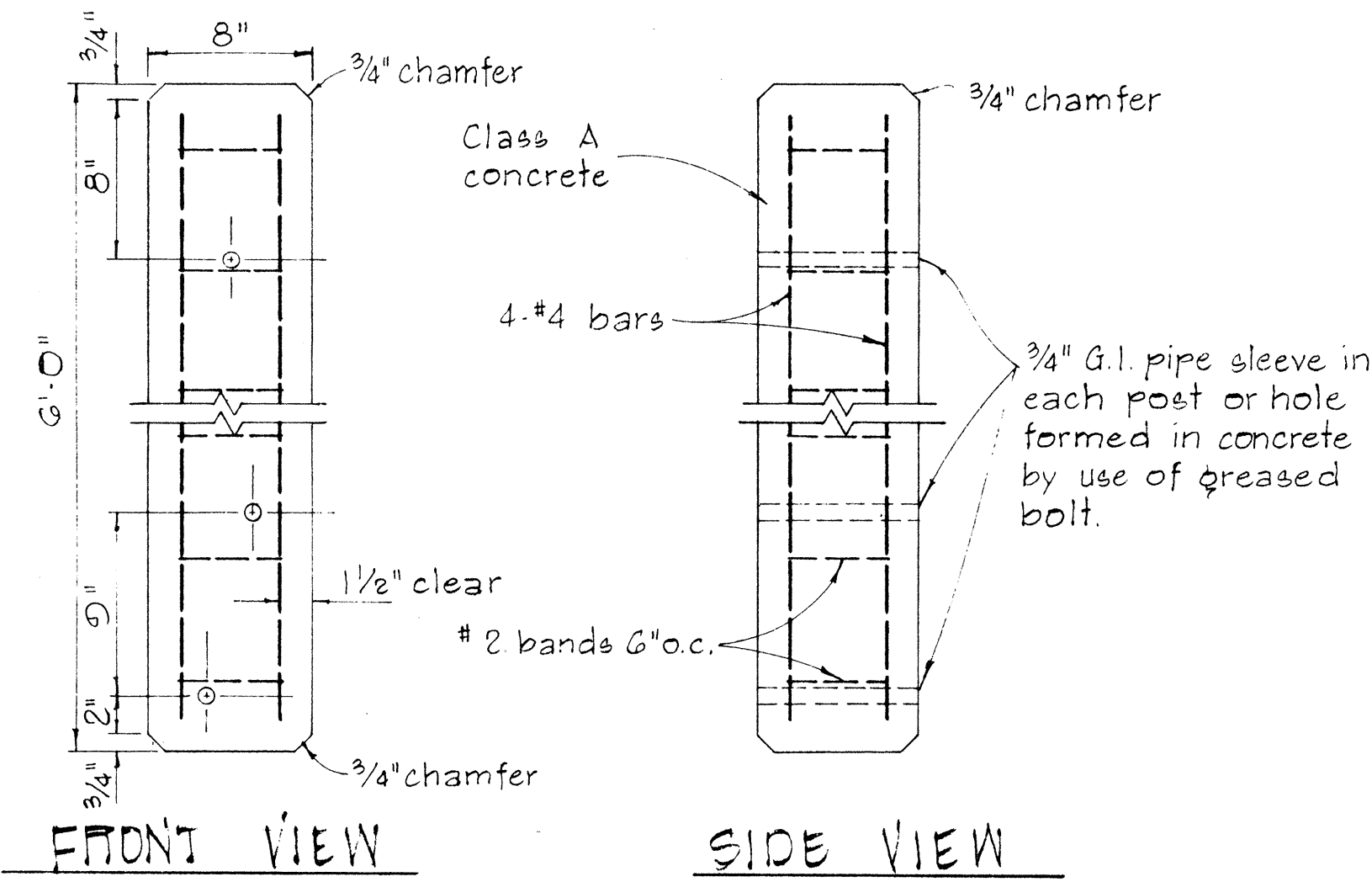
Scale As Noted

SHEET No. 153 OF 22 SHEETS DD 636

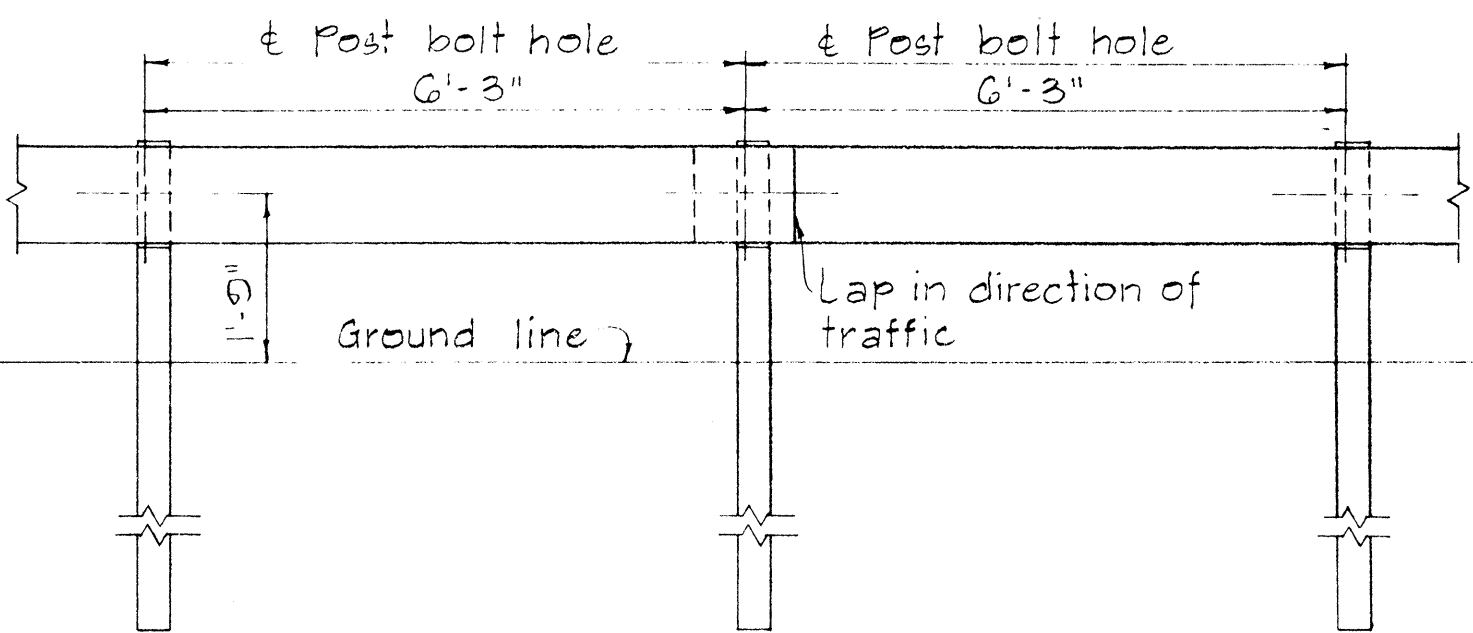
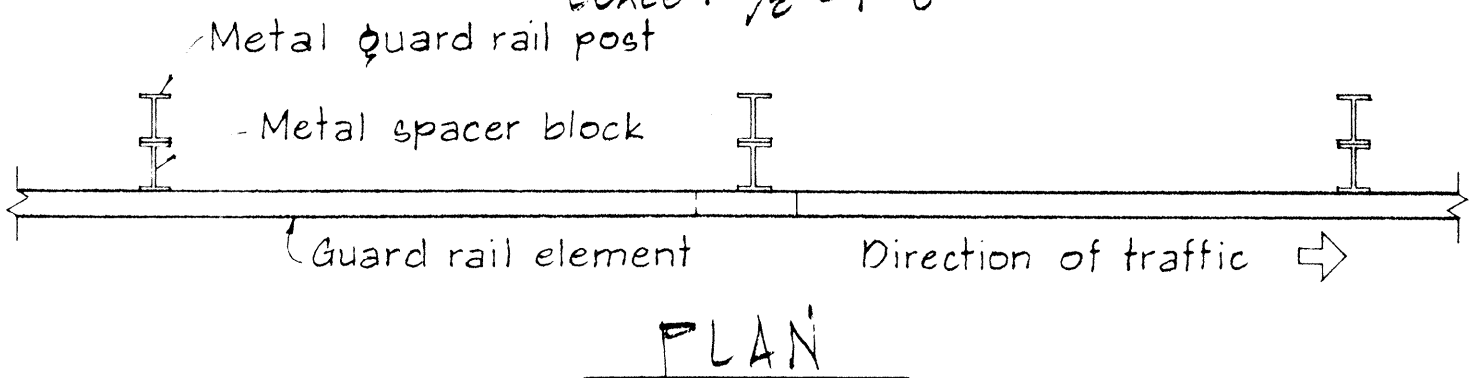
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHI-1(9)13	1972	37	228



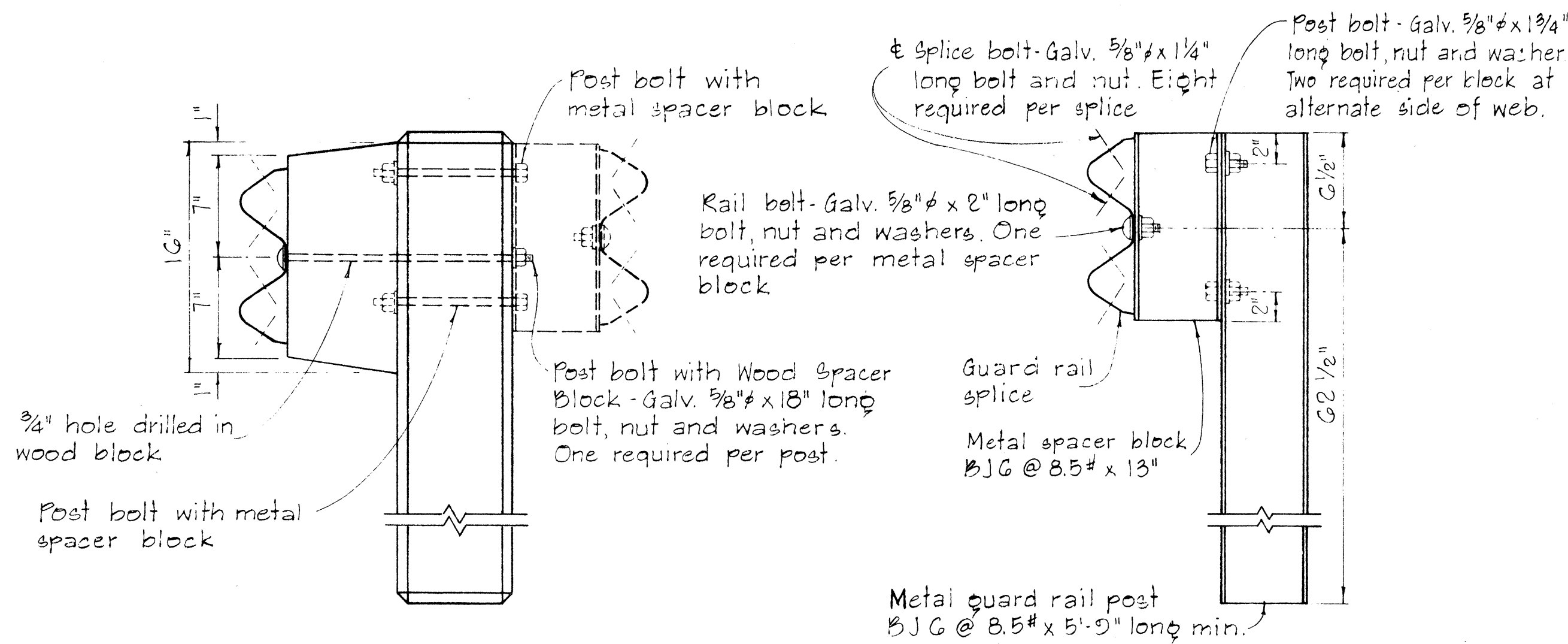
NOTE:
Concrete post shall be precast



METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK.
SCALE: 1/2" = 1'-0"

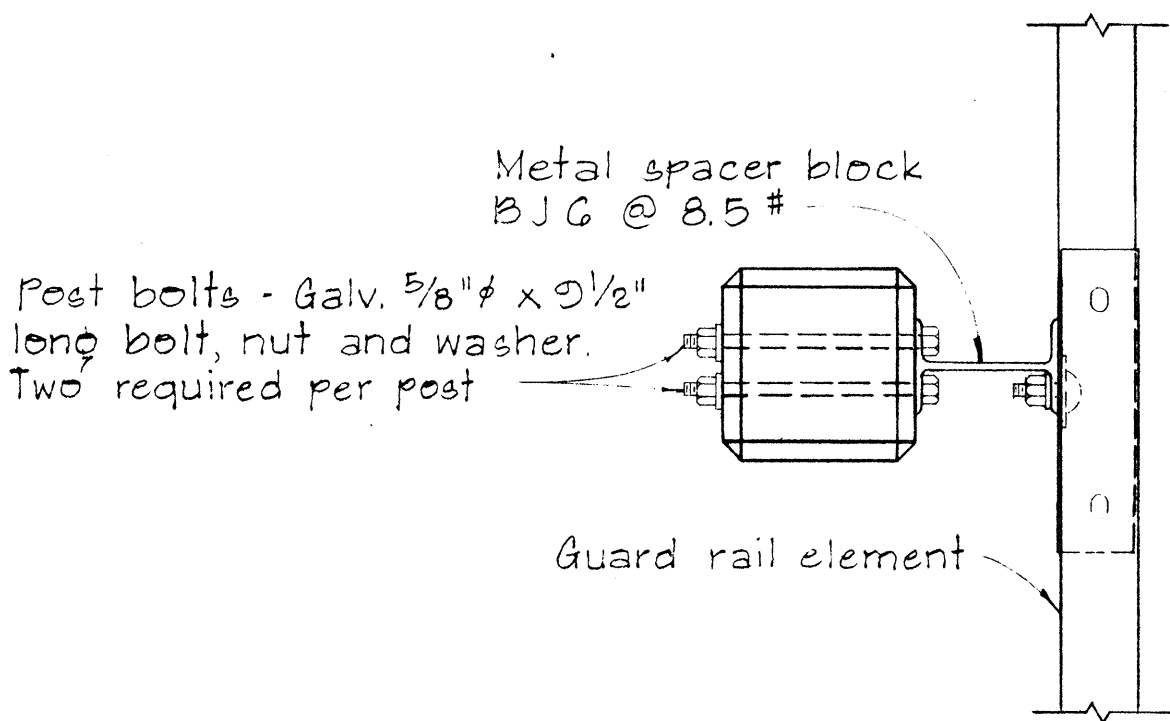


METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK
SCALE: 1/2" = 1'-0"

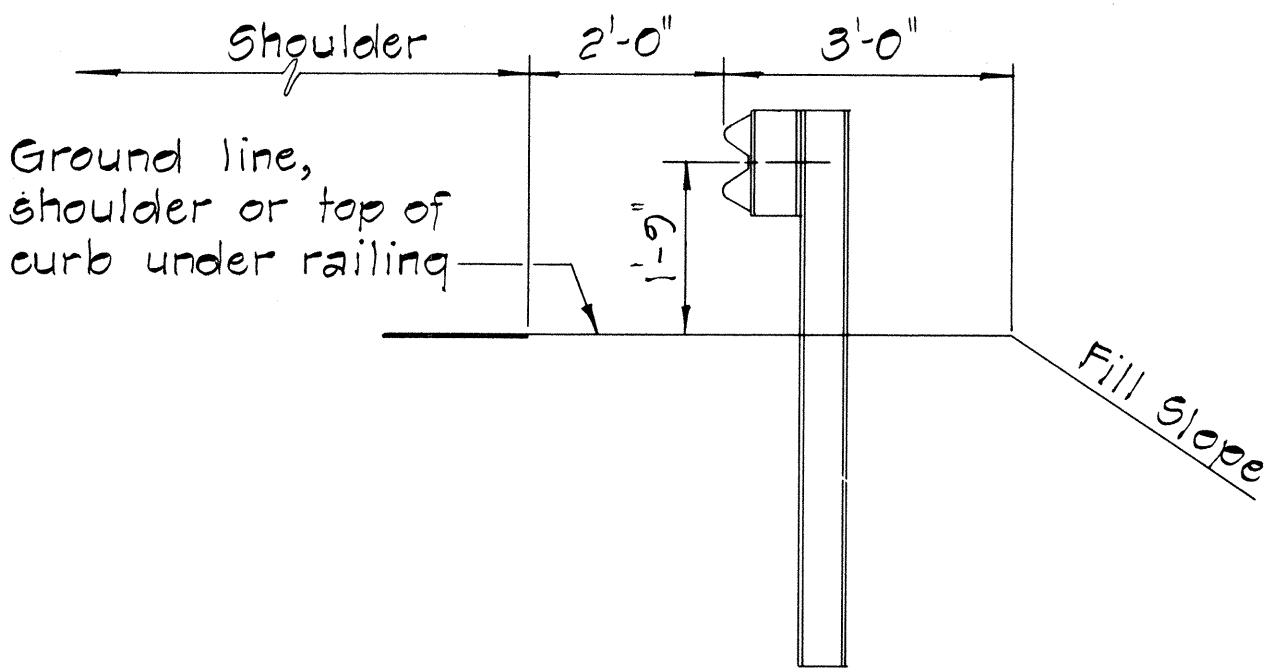


DETAIL OF CONCRETE POST
SCALE: 1 1/2" = 1'-0"

SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



PLAN



AT SHOULDER SECTION

SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

TYPICAL METAL GUARD RAIL DETAIL
SCALE: 1/2" = 1'-0"

APPROVAL RECOMMENDED:
Eugene Tanaka
TRAFFIC ENGINEER
DATE: 12/29/62

APPROVED:
Hubert J. Deland
ASSISTANT CHIEF, ENGINEERING
DATE: 12-30-69

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

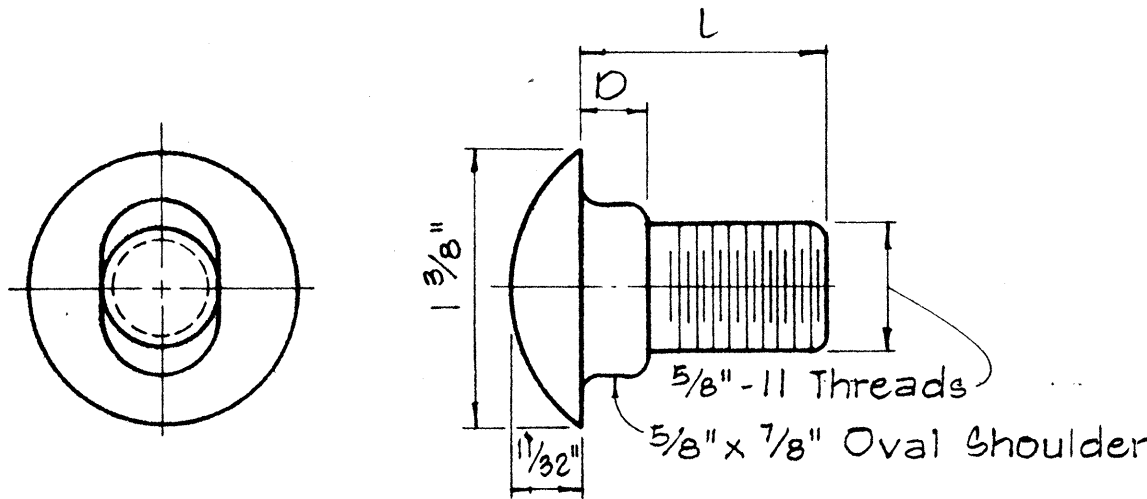
STANDARD DETAILS
METAL GUARD RAIL
SCALE: AS SHOWN
NOV. 1968

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

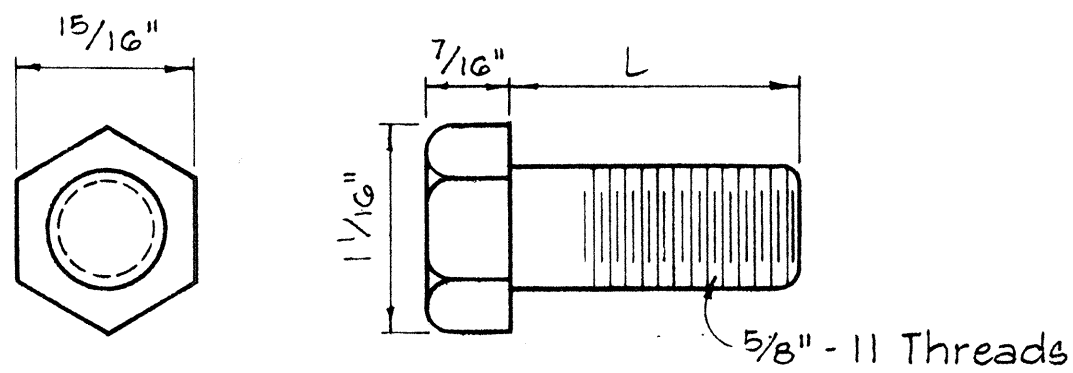
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-41-1(91)13	1972	38	228

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	5/16"
Post Bolt for Metal Post w/ Metal Block	1 3/4"



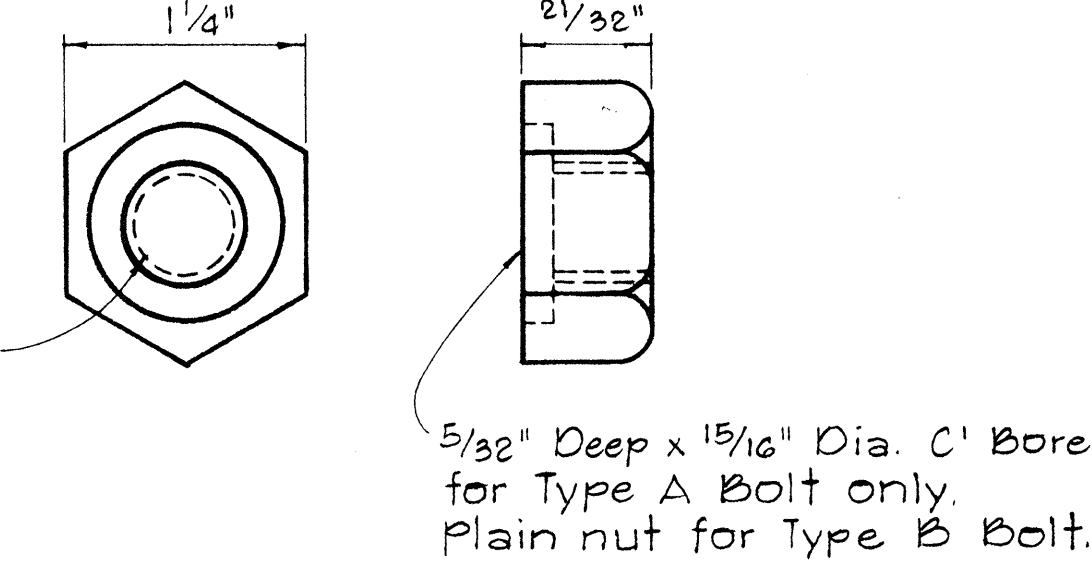
TYPE A BOLT



TYPE B BOLT

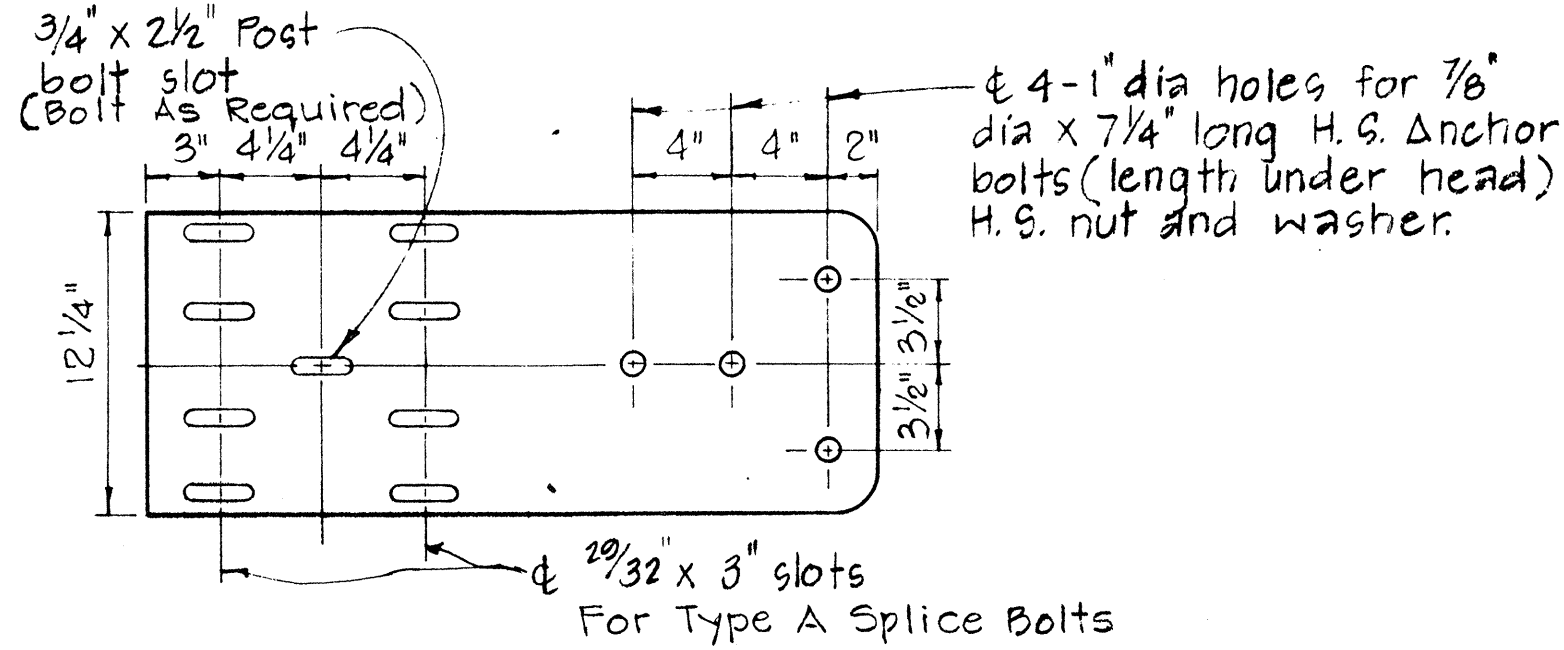
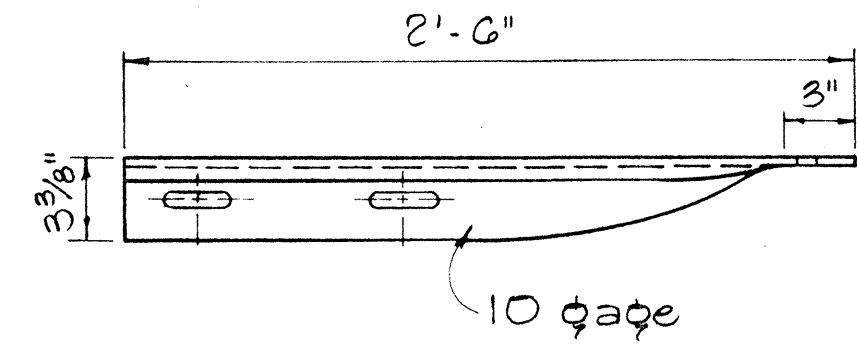
SPUCE RAIL AND POST BOLTS

Scale: Full Size



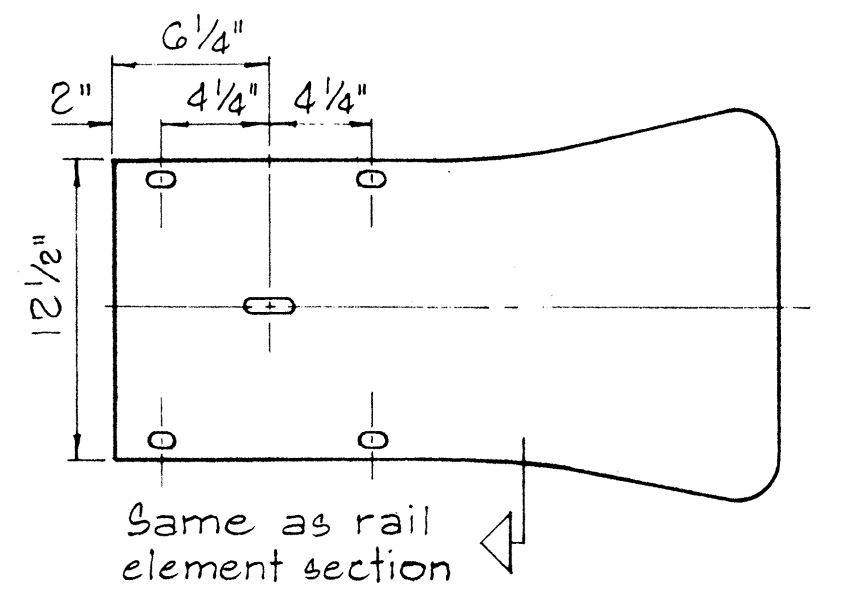
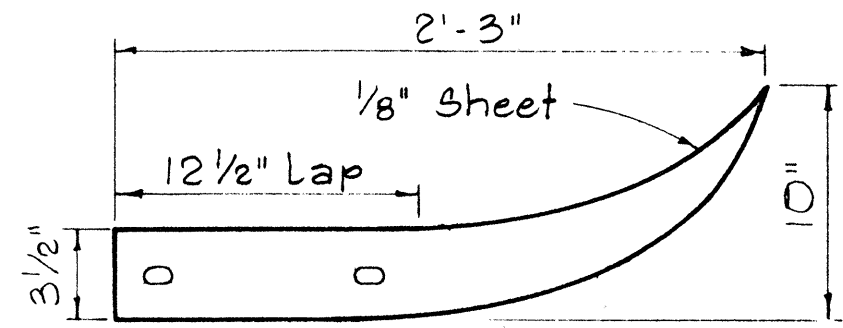
HEXAGON NUT

Scale: Full Size



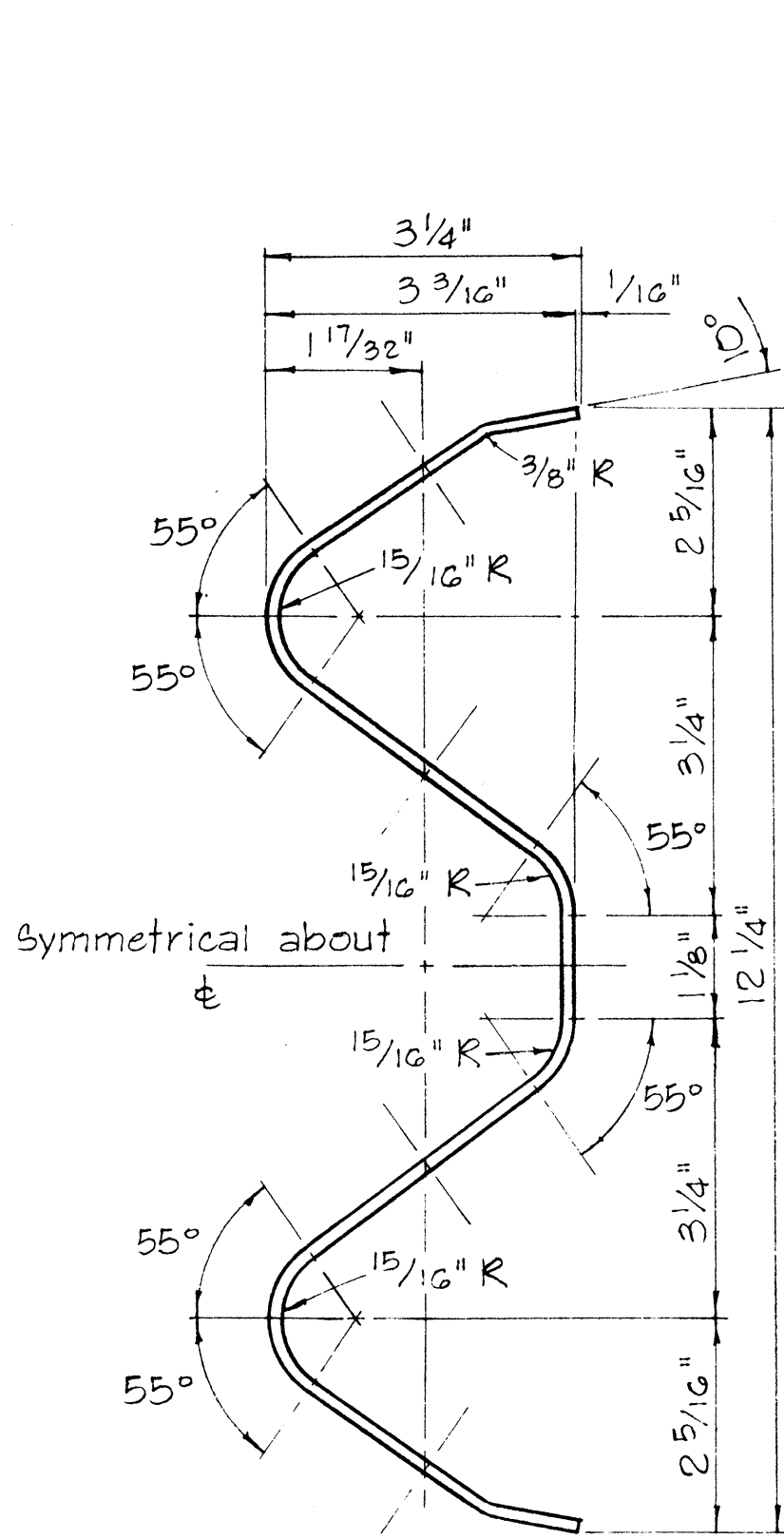
SPECIAL END SHOE

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



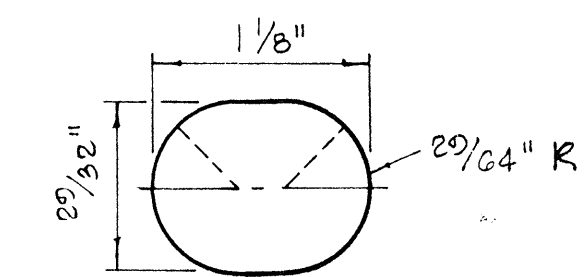
FLARED END

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



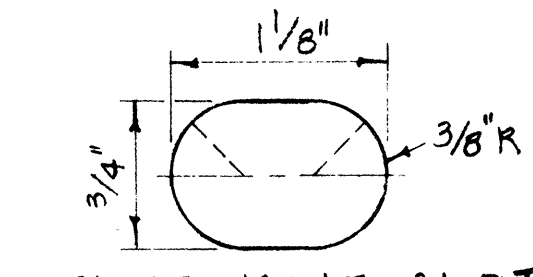
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

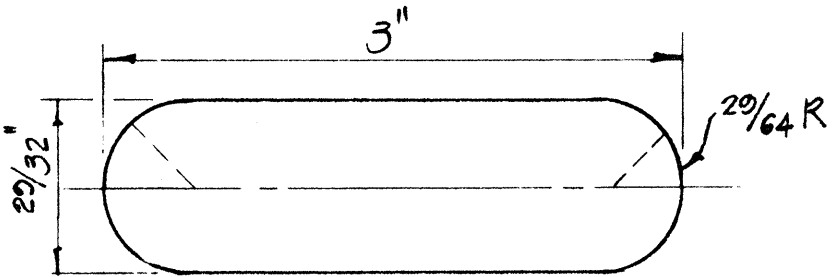


SPUCE BOLT SLOT

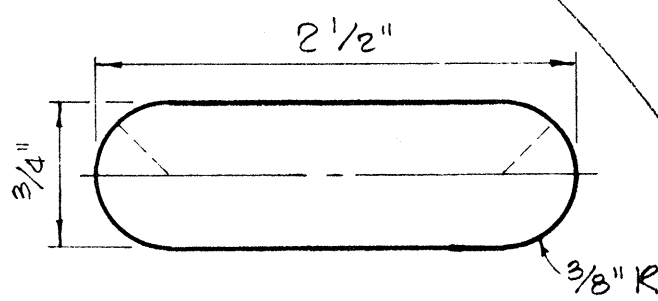
Scale: Full Size



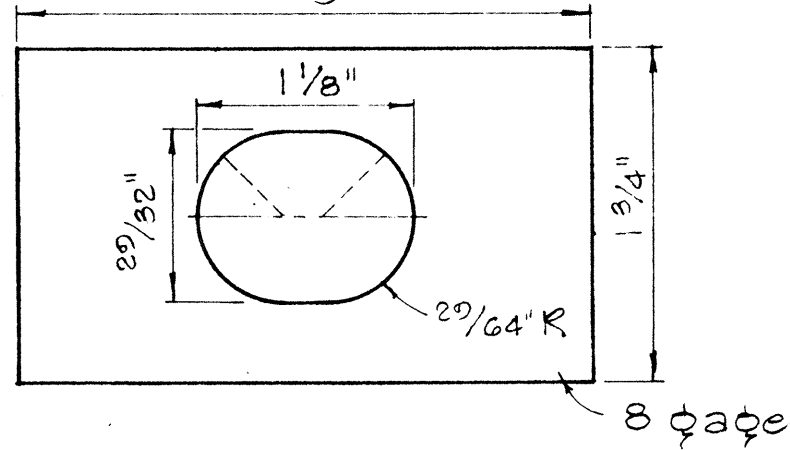
SPUCE BOLT SLOT FOR ALL ENDS



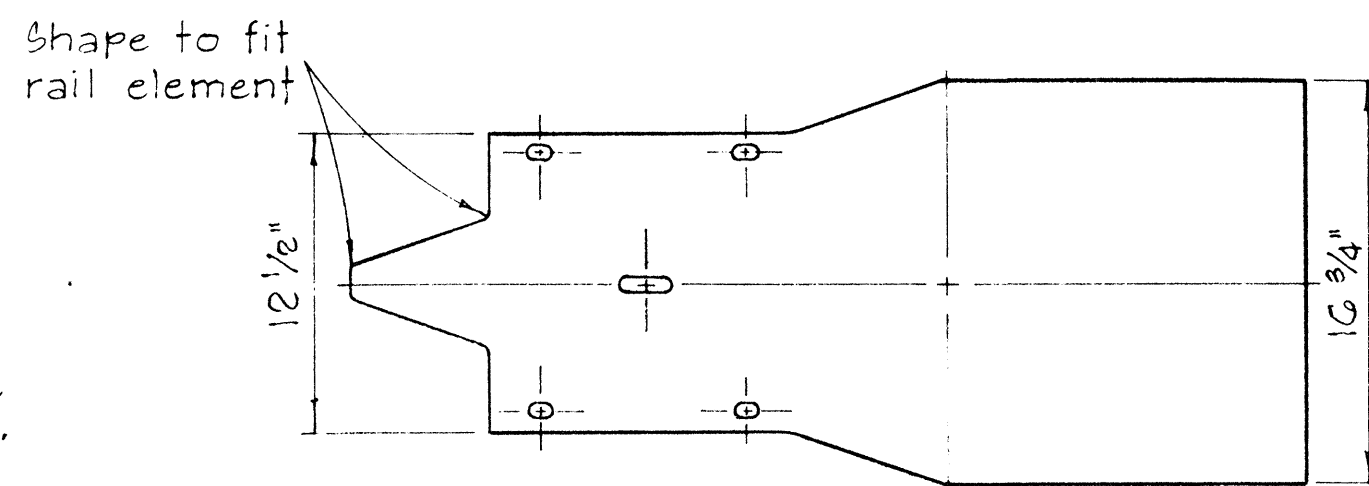
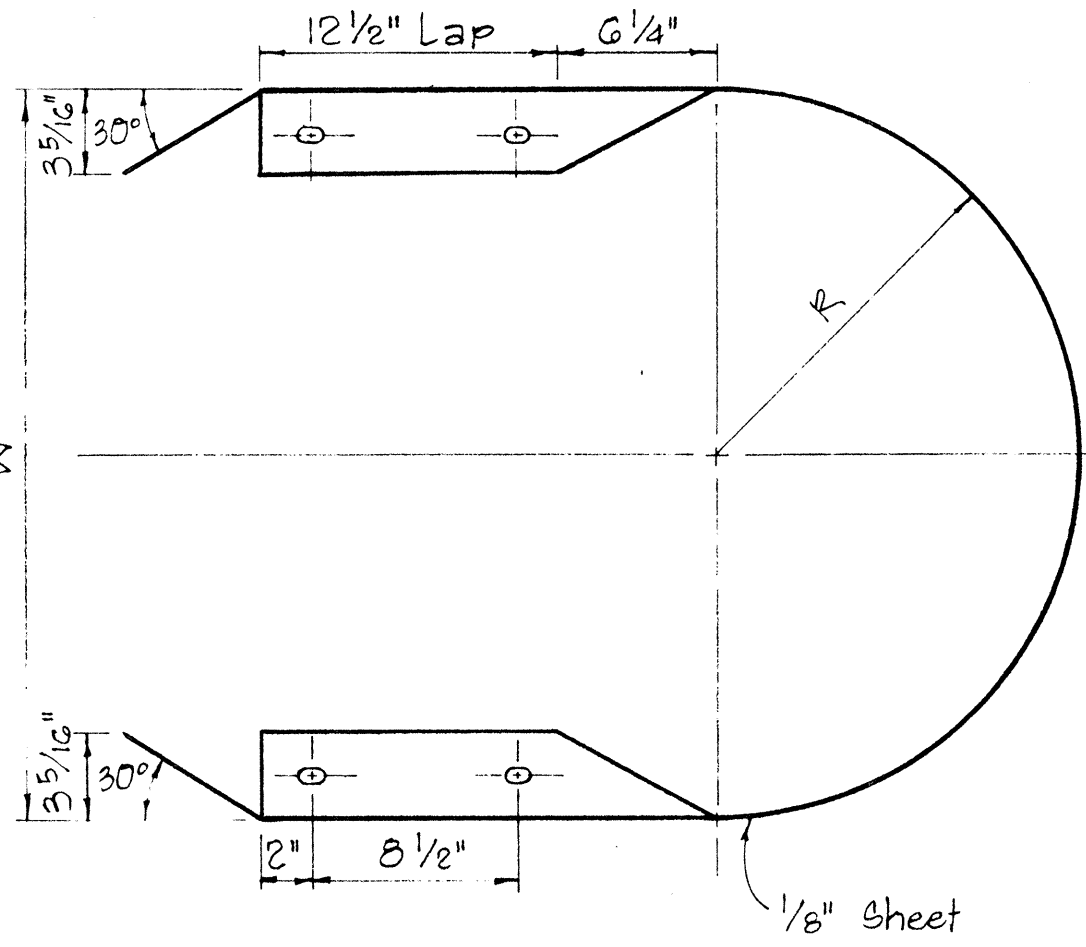
SPUCE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT

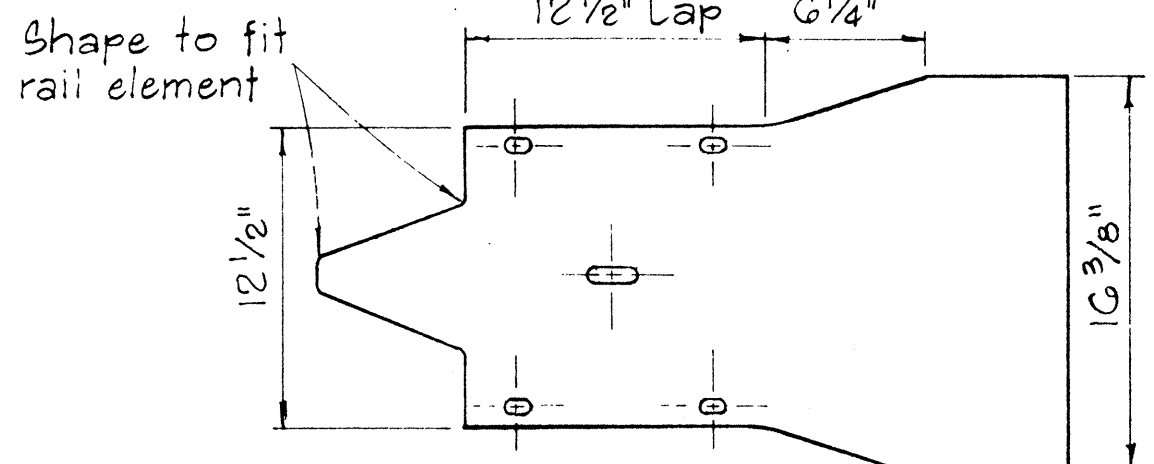
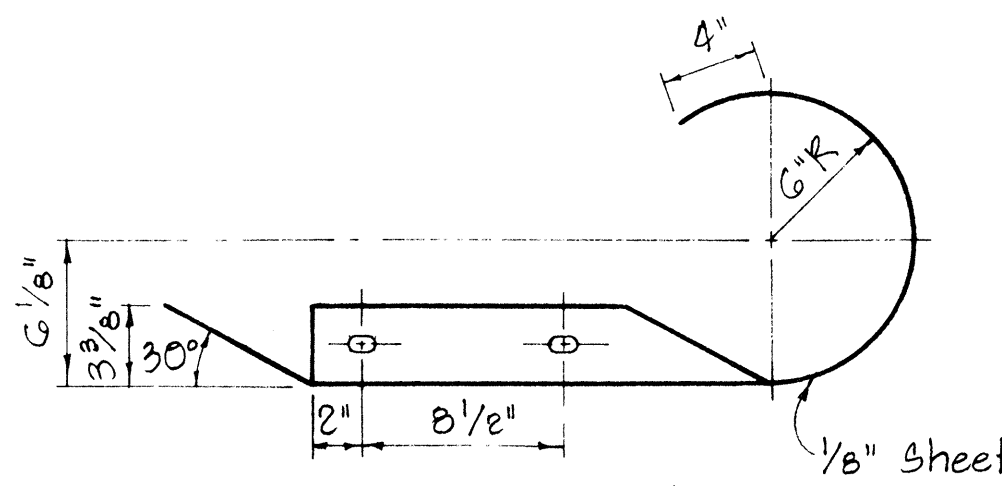


RAIL WASHER



MEDIAN END

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



CURVED END

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

APPROVAL RECOMMENDED:	12/23/69
TRAFFIC ENGINEER	DATE
APPROVED:	12-20-69
ASSISTANT CHIEF, ENGINEERING	DATE

- 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 AASHO 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 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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL GUARD RAIL

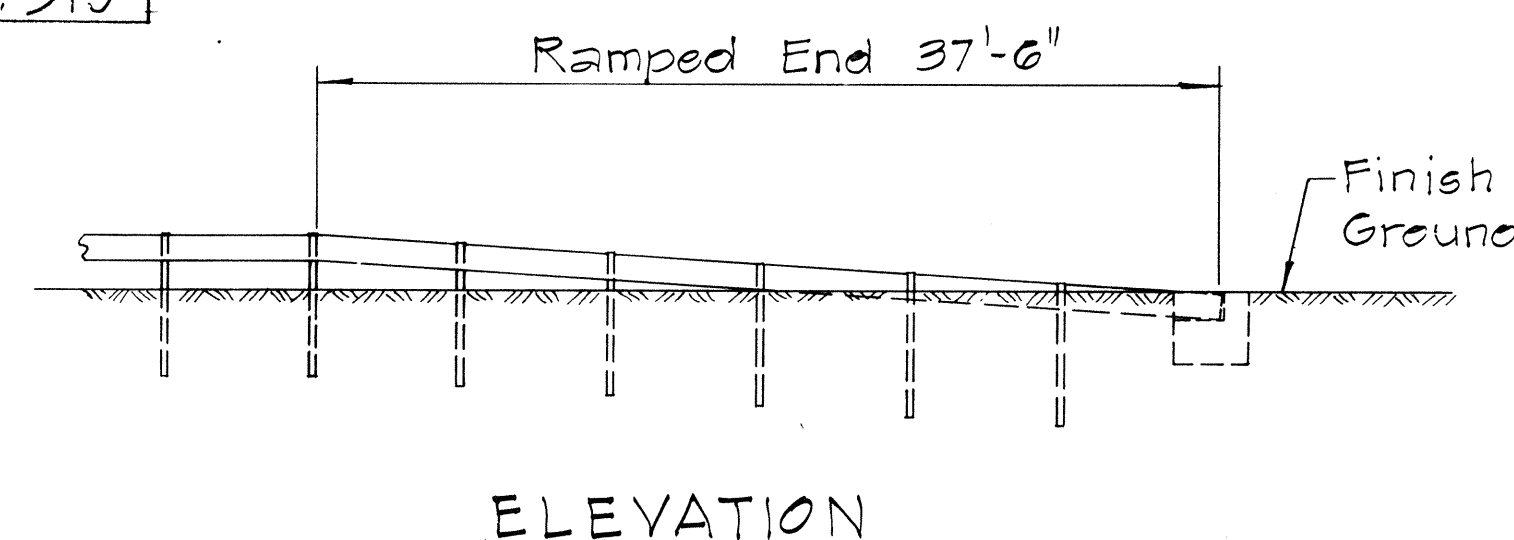
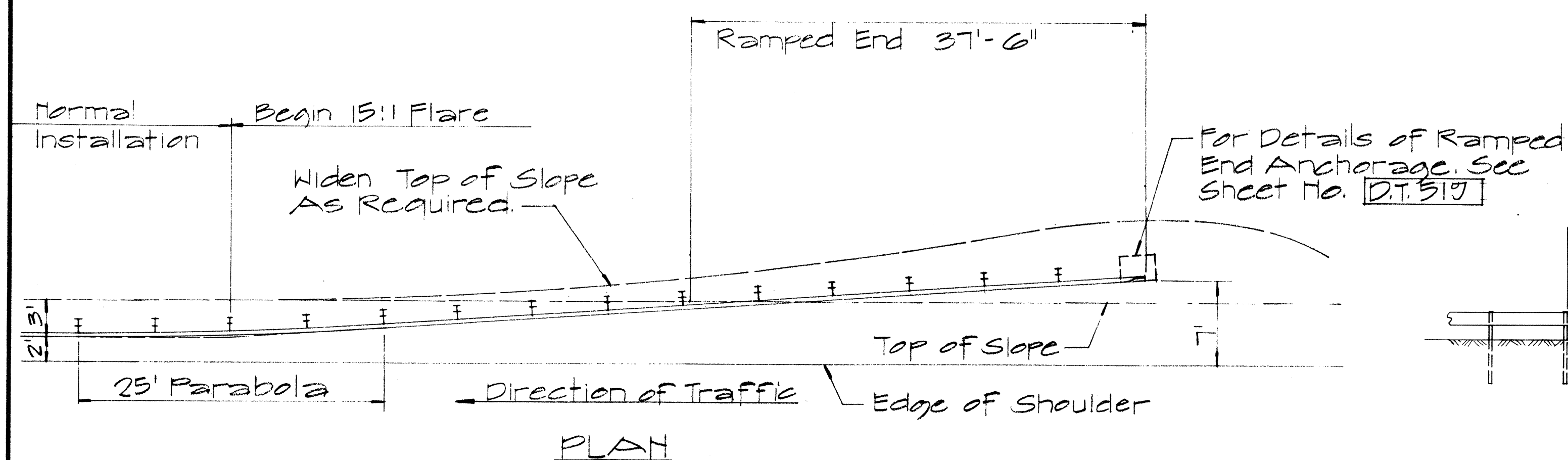
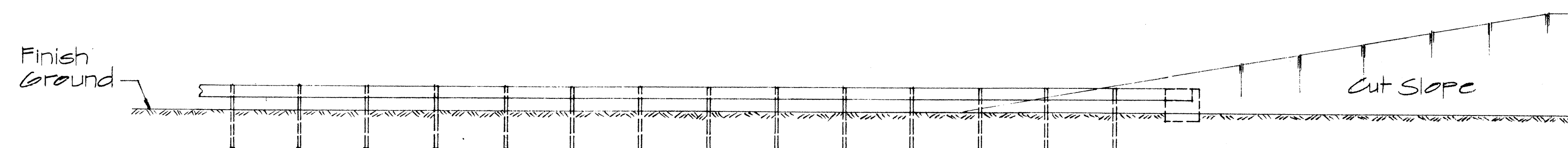
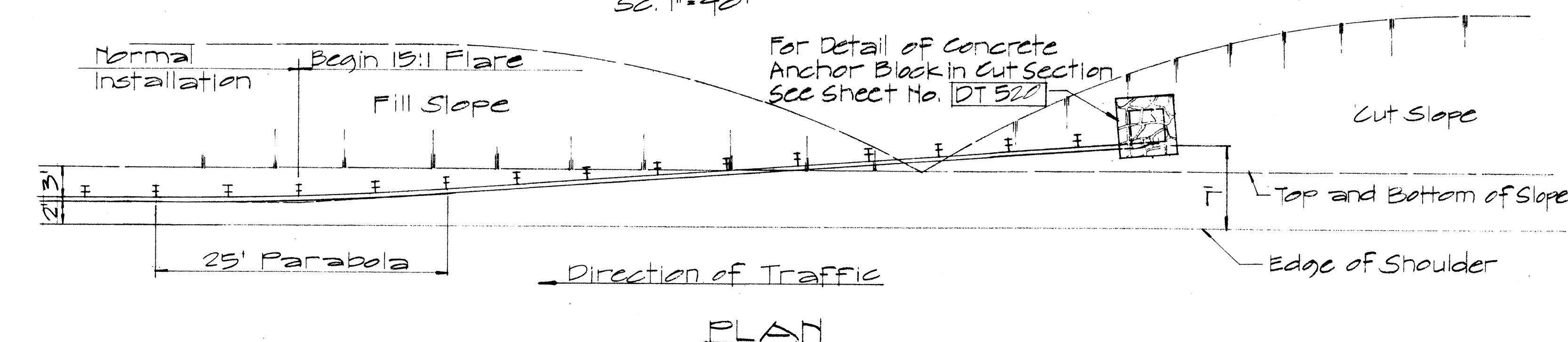
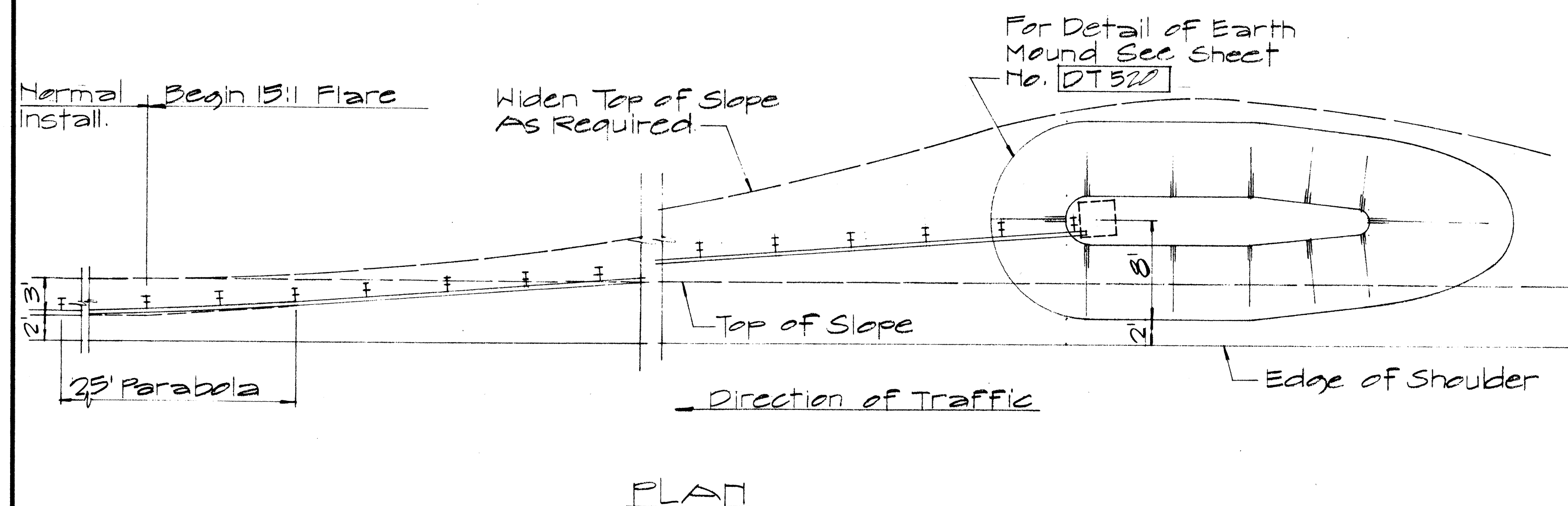
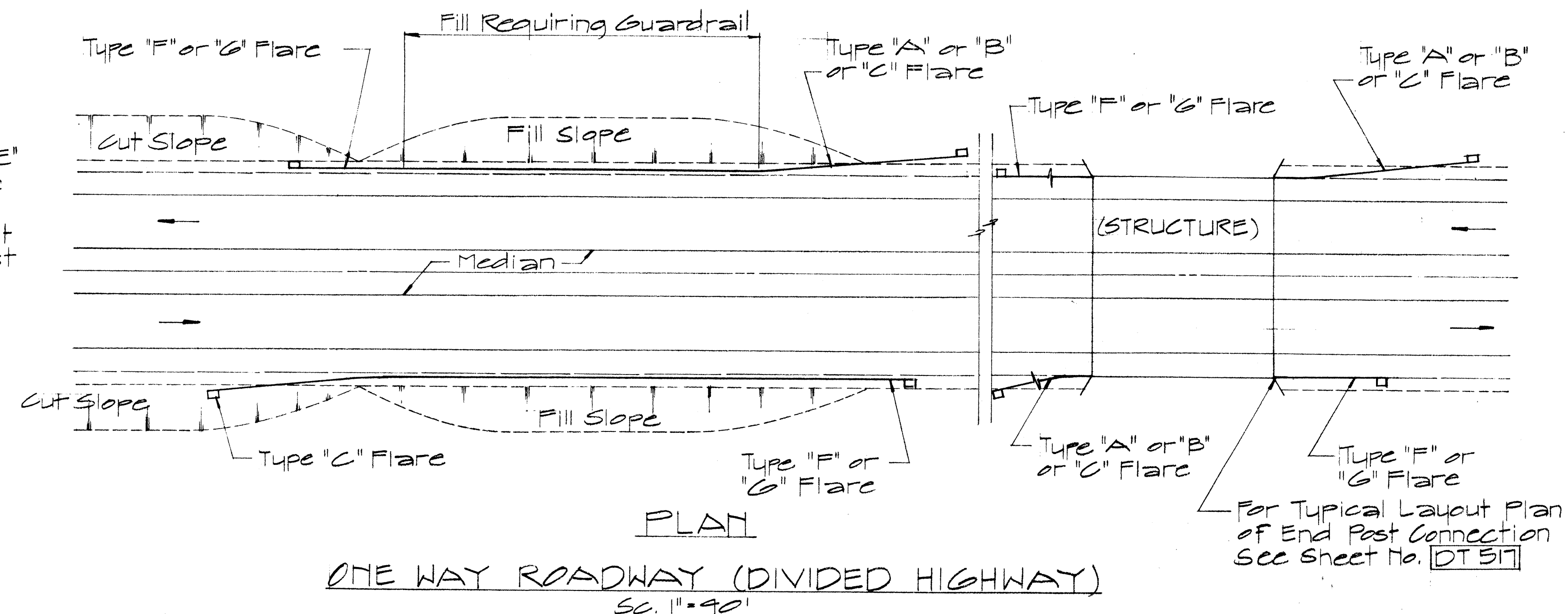
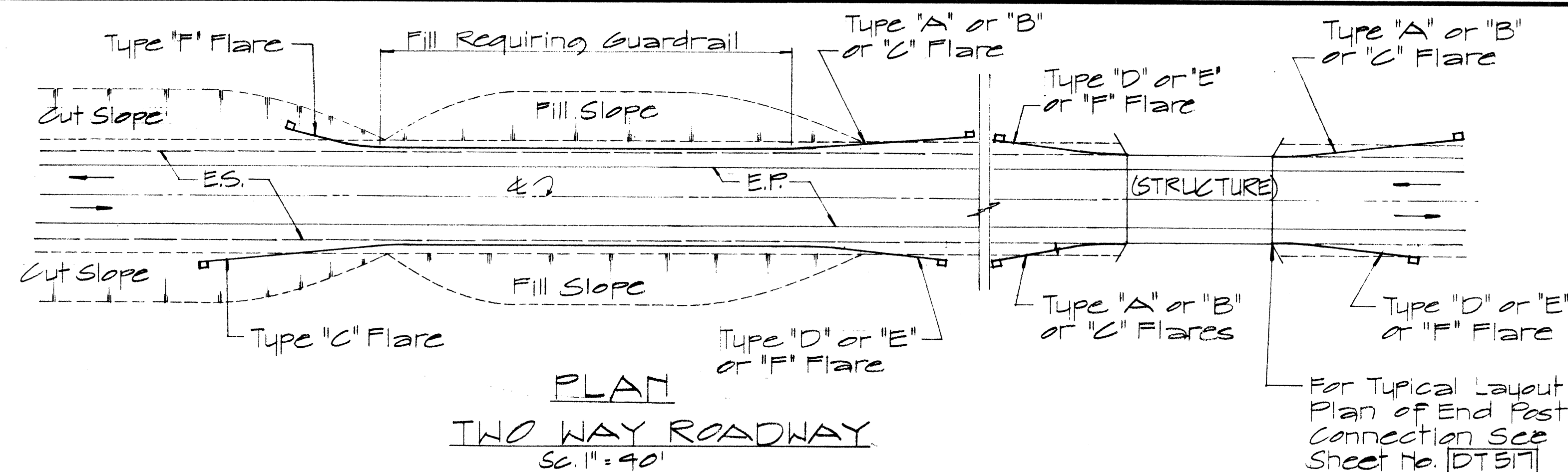
Scale: As Noted August, 1968

SHEET No. 178 OF 22 SHEETS DT 501

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES 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.	1-HI-1(6)13	1972	39	228

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



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

NO.	REVISION	APPROVED BY	DATE

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

APPROVED:
[Signature] 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

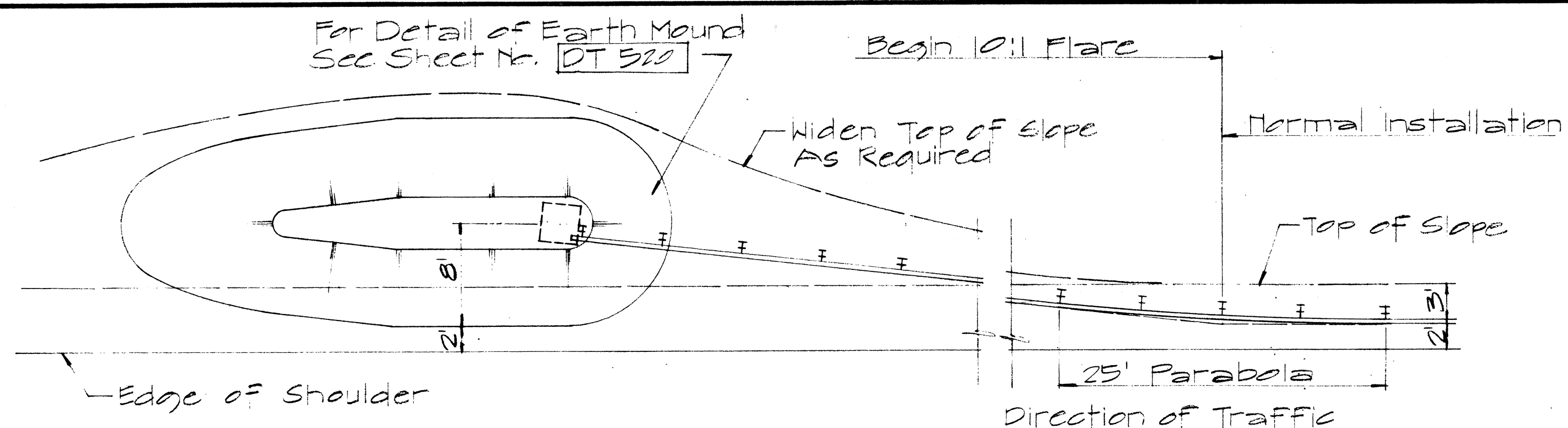
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

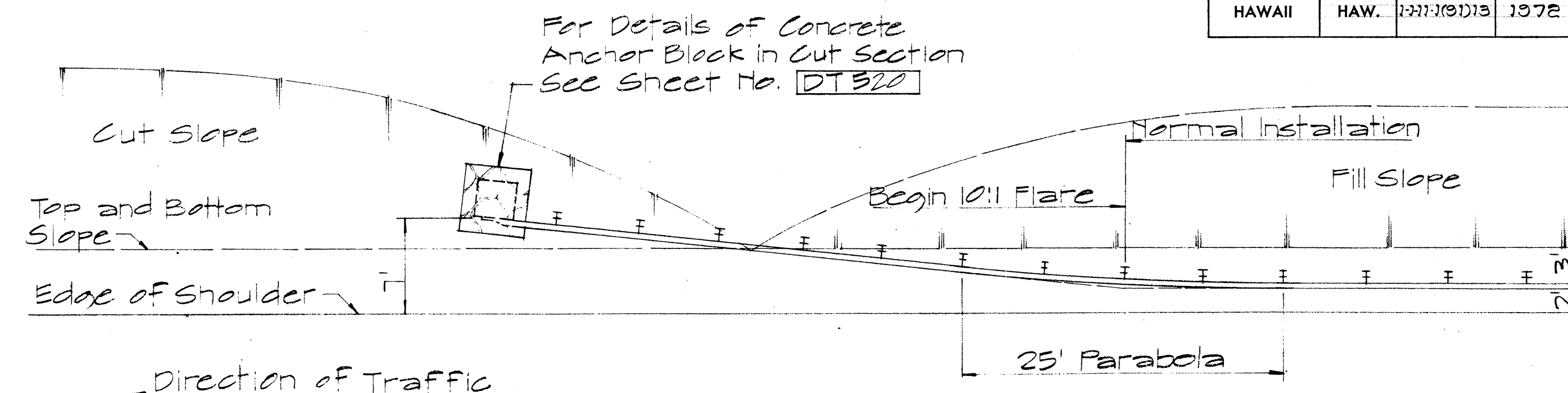
Sc. As Noted April 1969

SHEET No. 188 OF 22 SHEETS [DT 516]

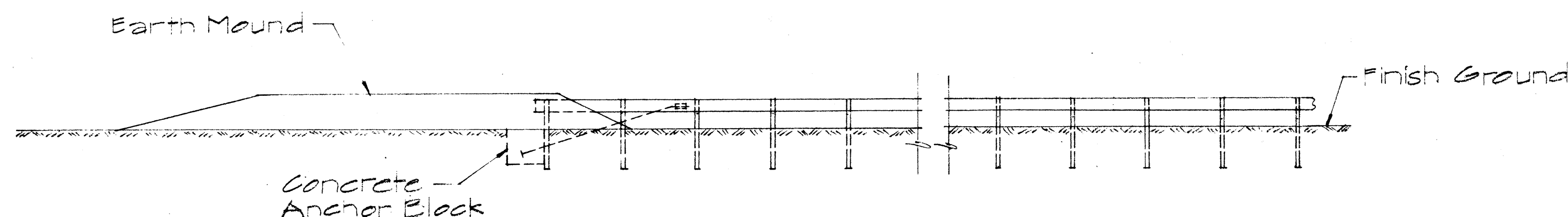
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-377-1(01)13	1972	40	228



PLAN

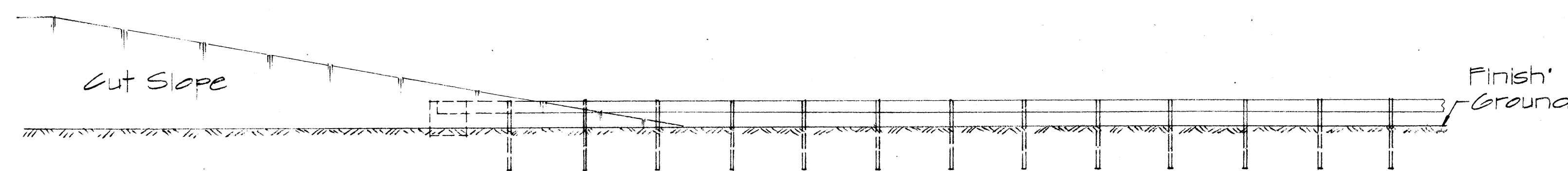


PLAN



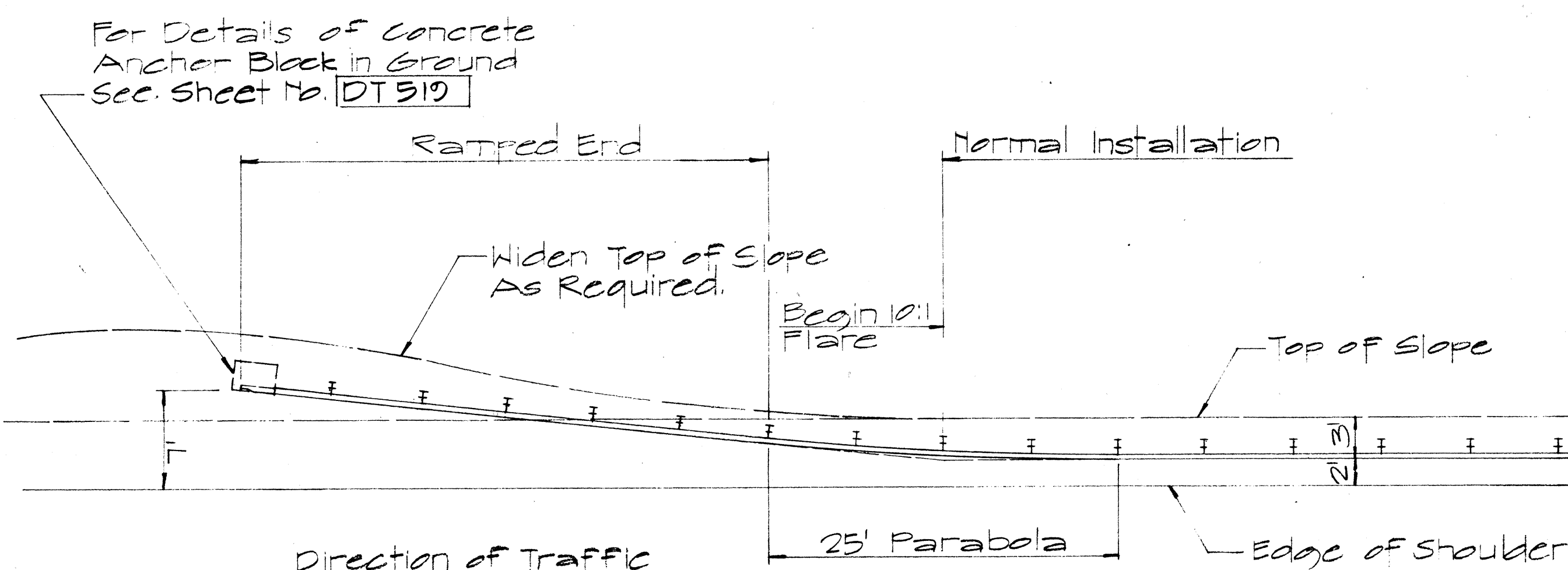
ELEVATION

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

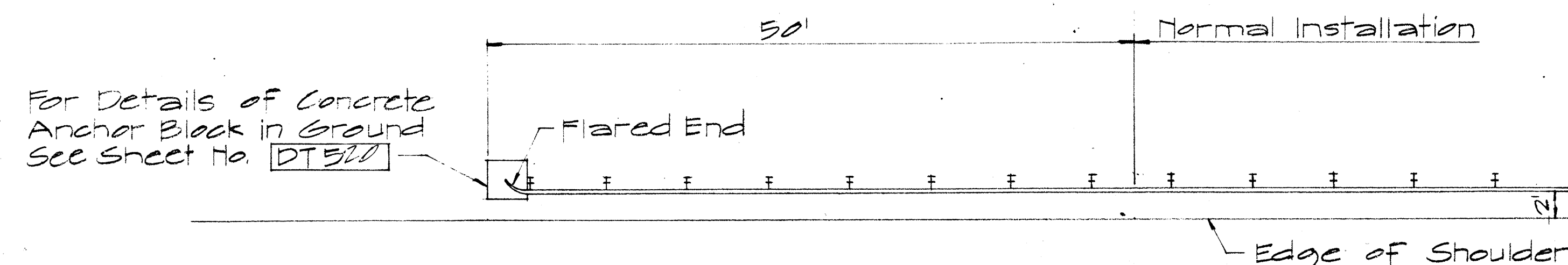


ELEVATION

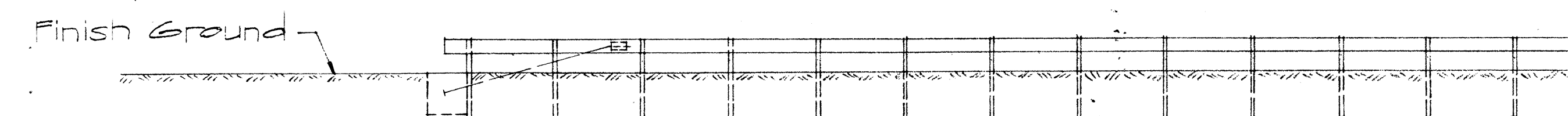
TYPE "F" FLARE
Sc. 1/8" = 1'-0"



PLAN

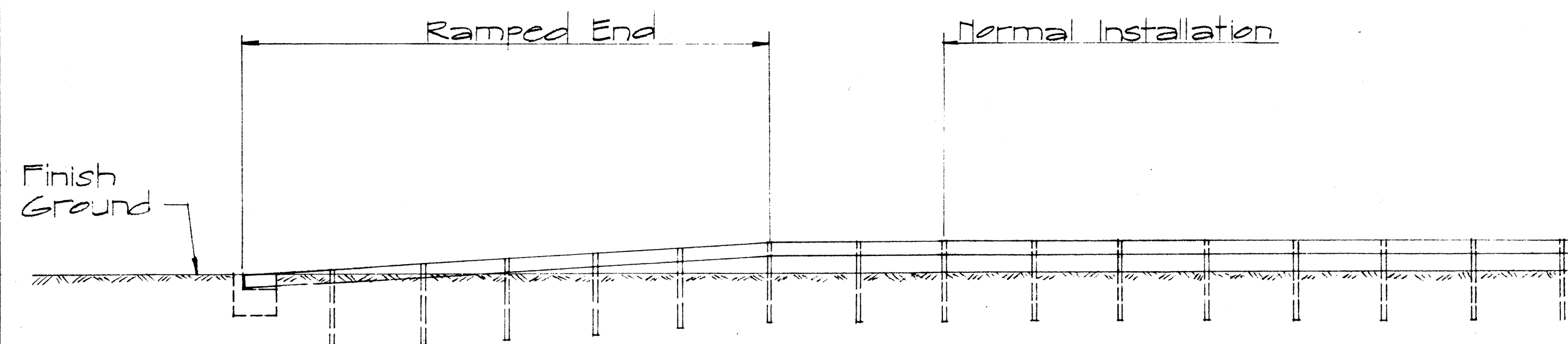


PLAN



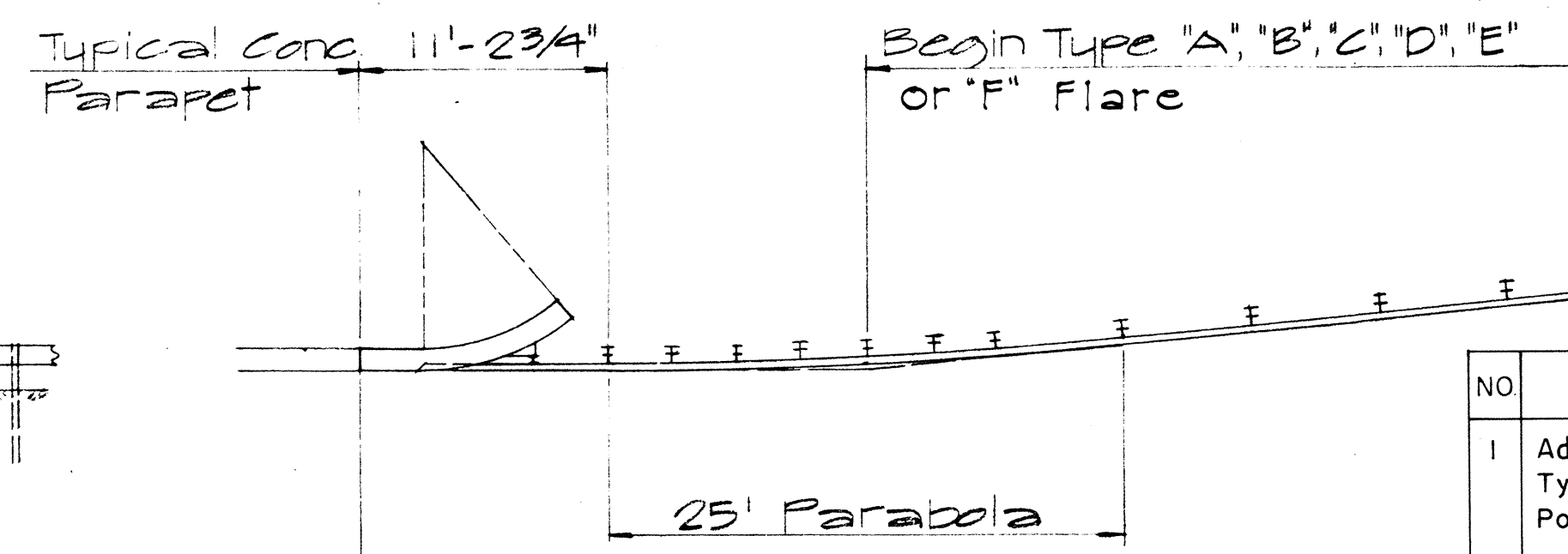
ELEVATION

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



ELEVATION

TYPE "E" 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:
E. I. Tanaka 12/29/69
 TRAFFIC ENGINEER DATE
 APPROVED:
W. J. J. J. 12-30-69
 ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

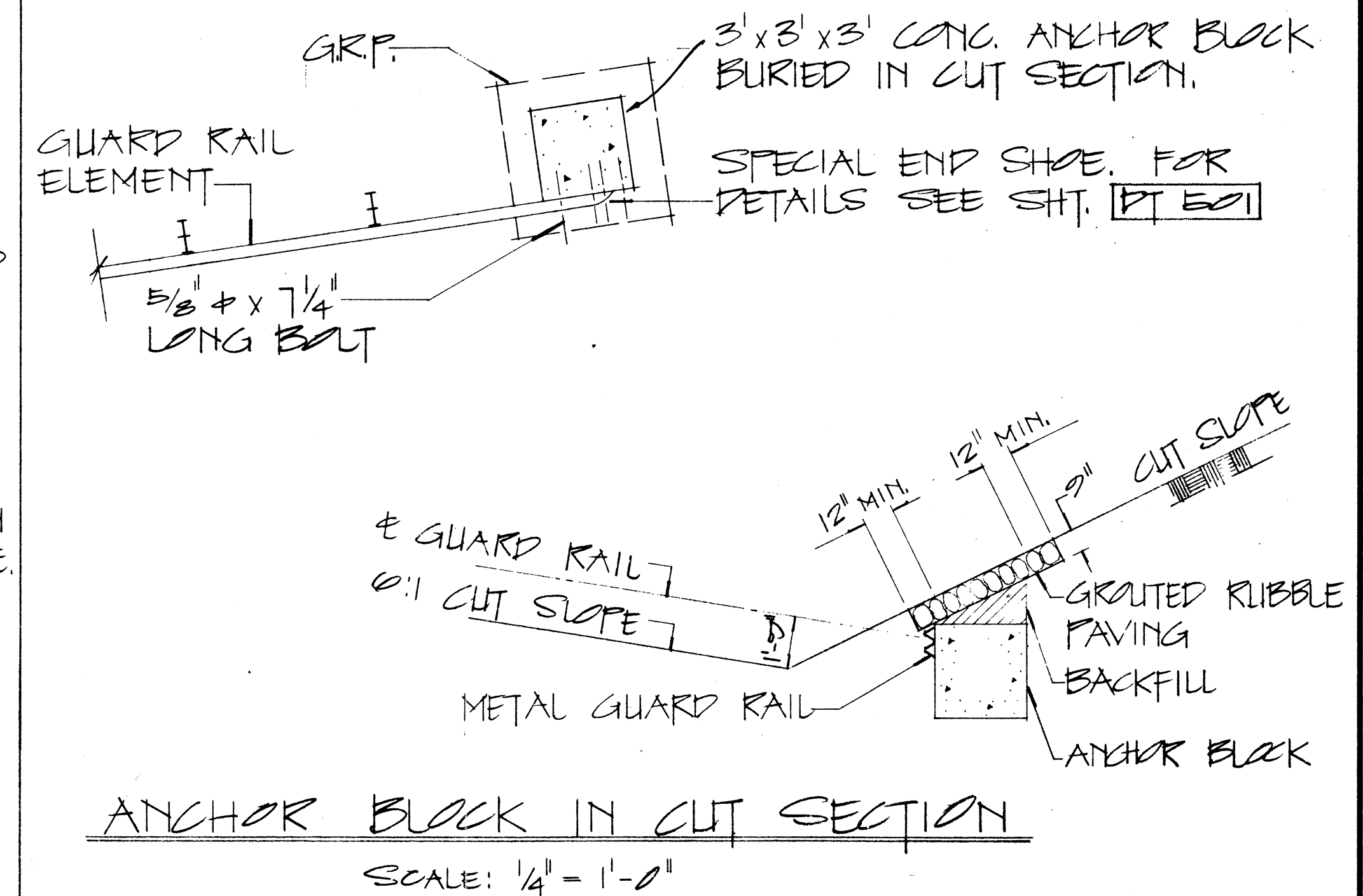
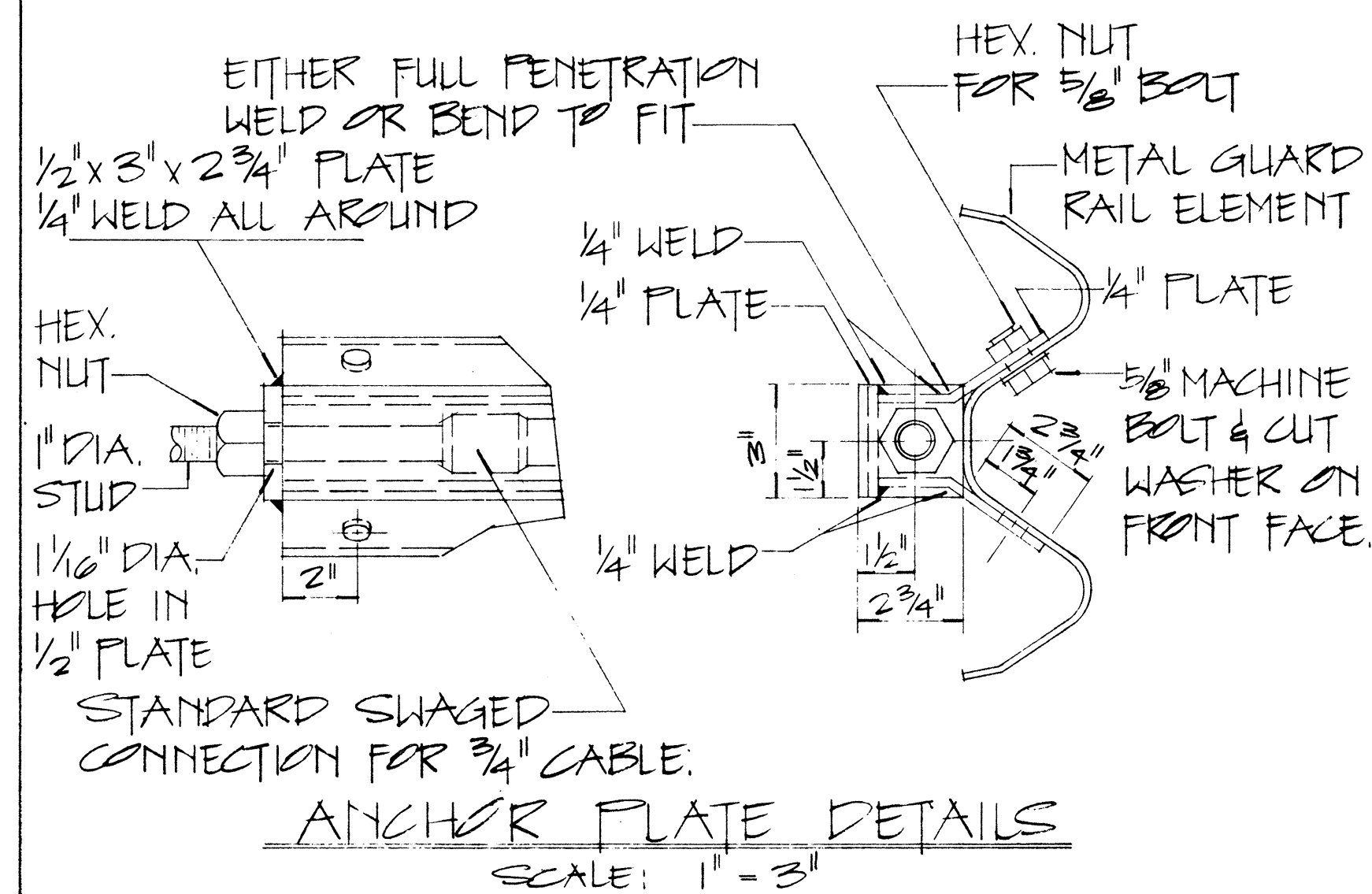
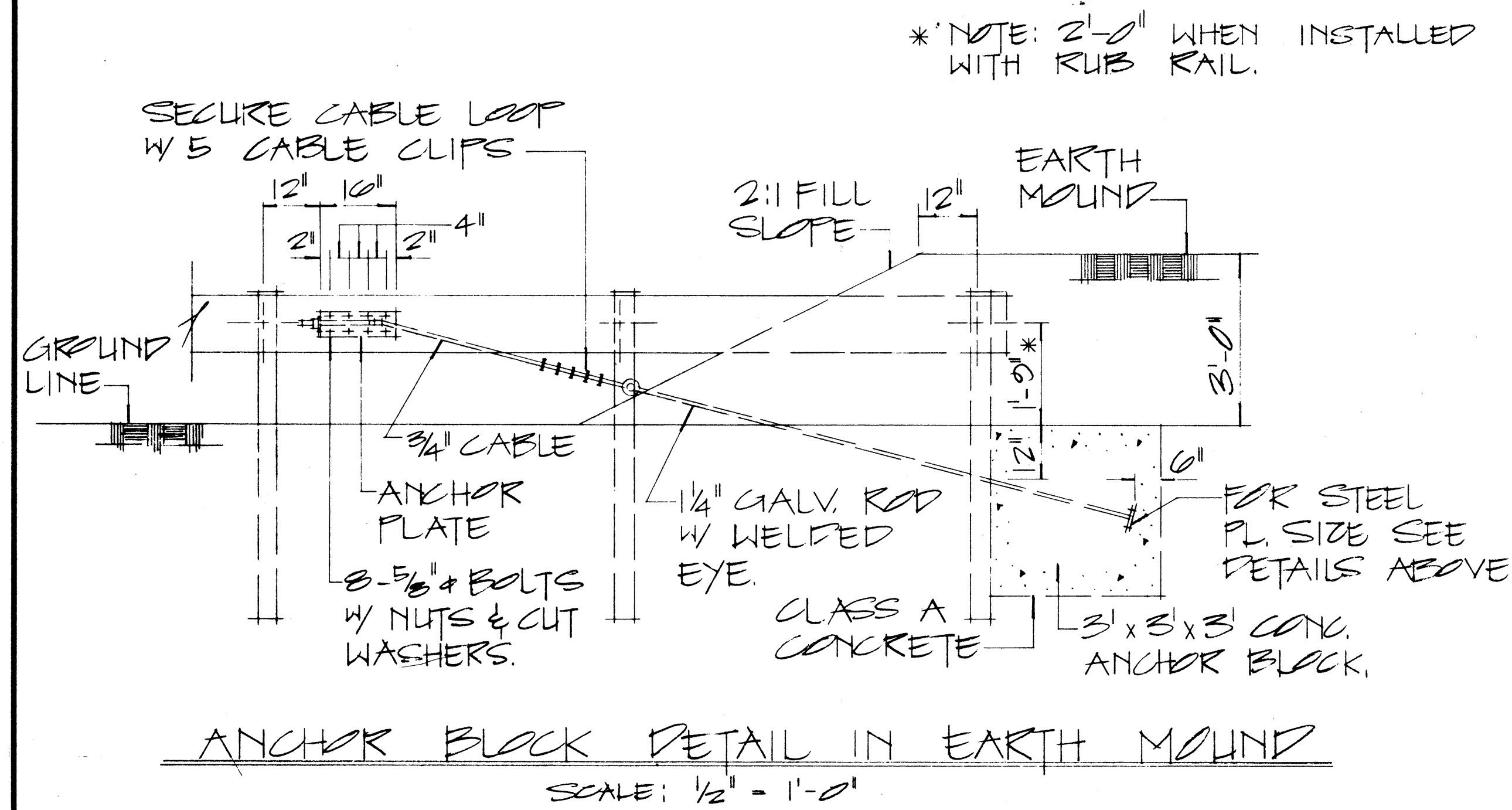
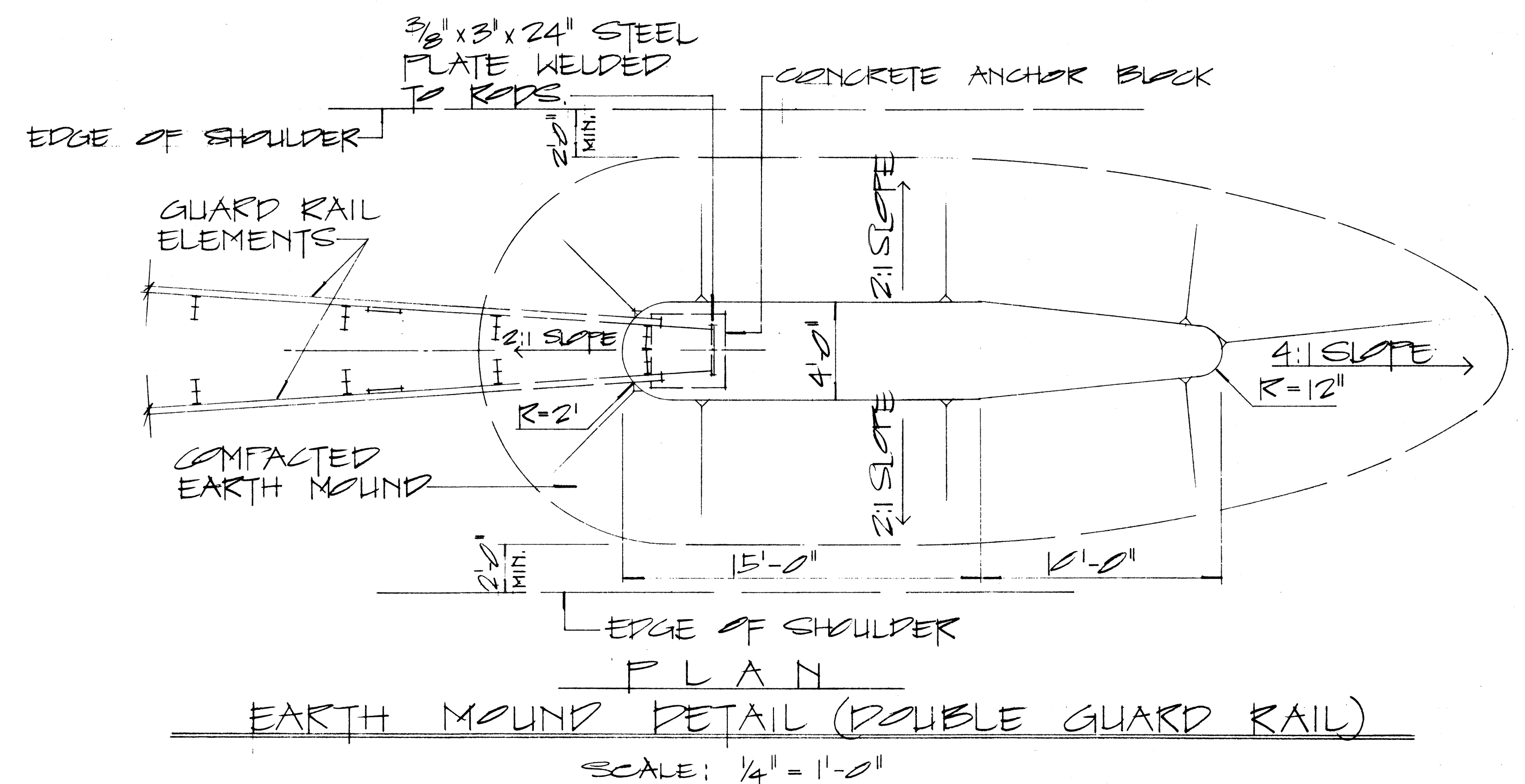
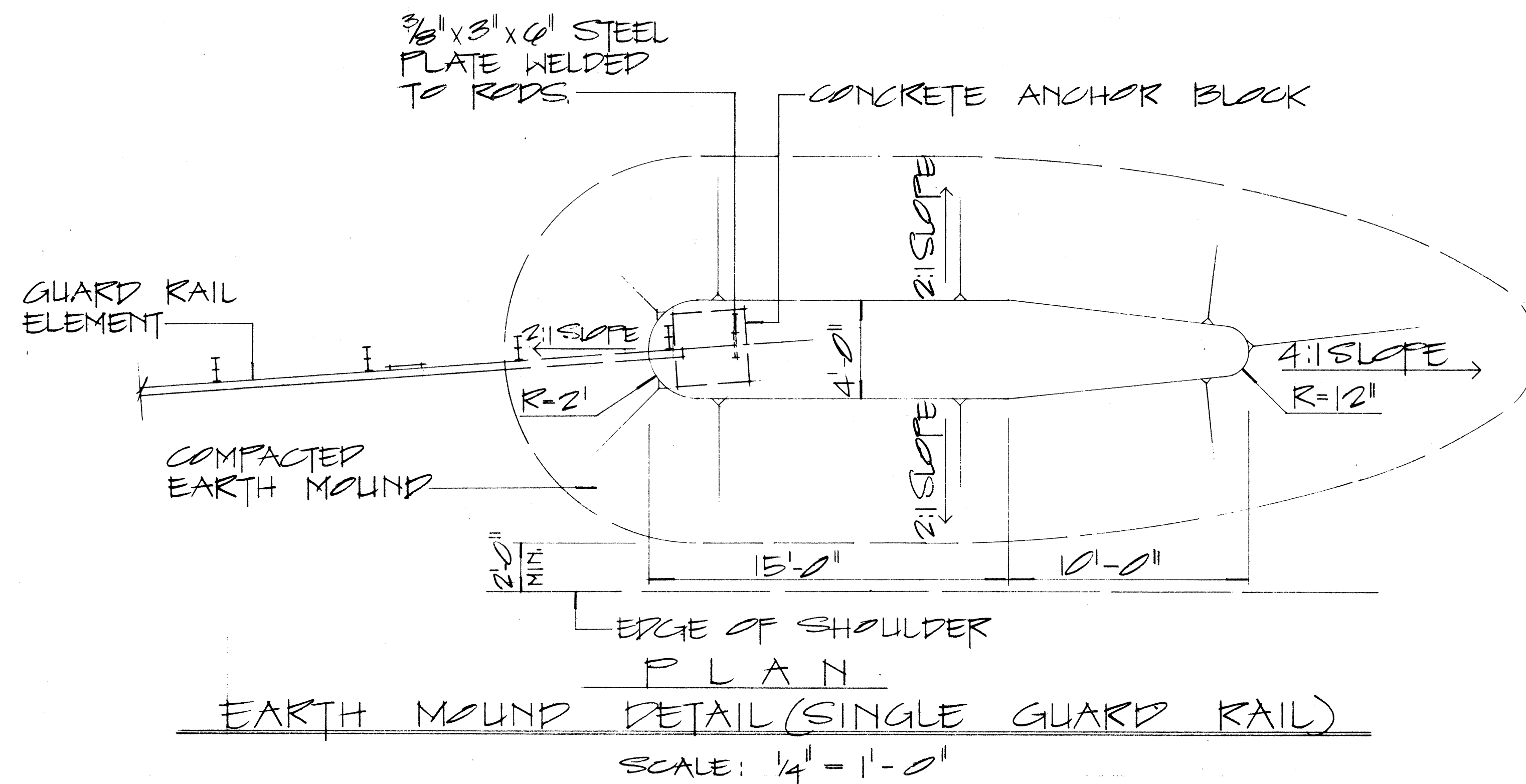
STANDARD DETAILS
 TRAILING END
 FLARE - ONE & TWO
 WAY ROADWAY

Scale: As Noted April 1969

SHEET No. 103 OF 22 SHEETS DT 517

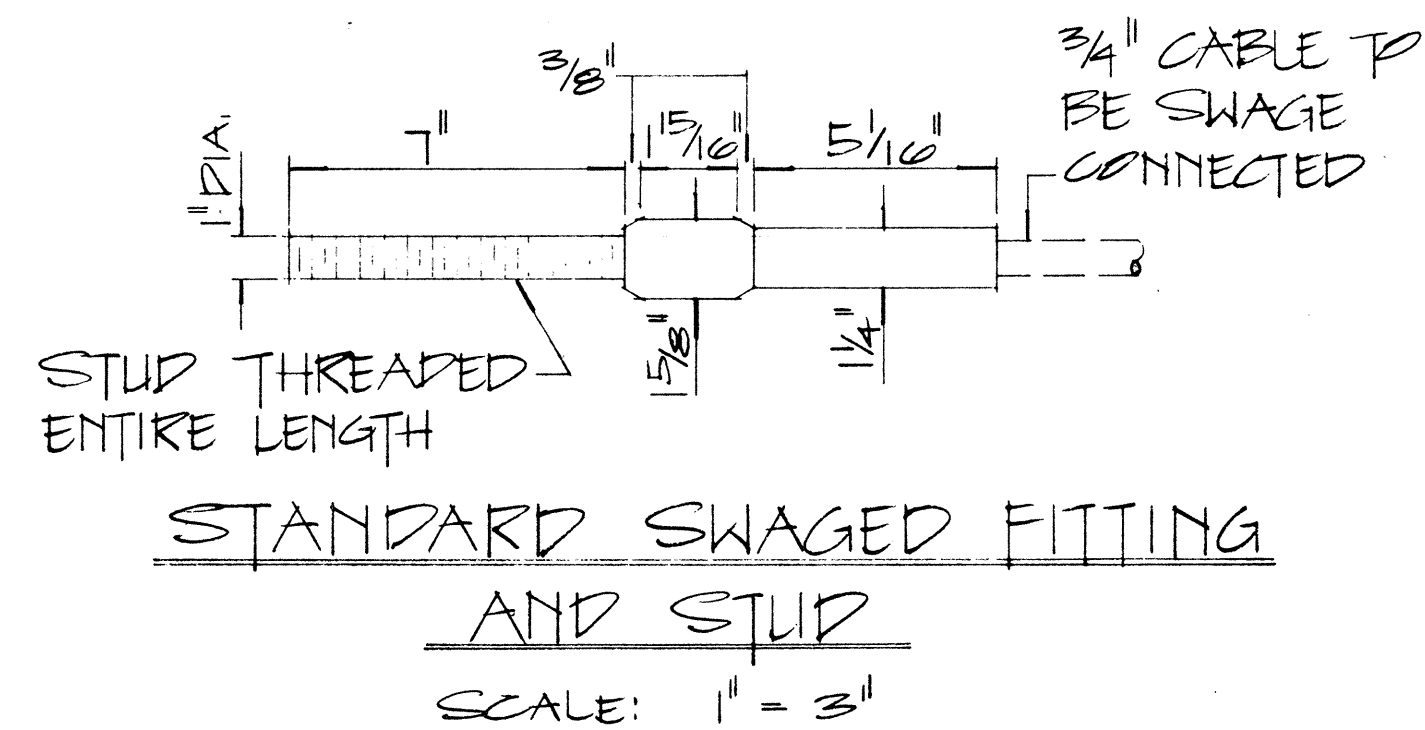
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-11-1(9)-13	1972	42	228



NOTE:

1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND FAST BURIED IN GROUND SHALL BE COVERED WITH A Min. 20-Mil Thickness of Coal TAR ENAMEL, conforming to AWWA Standard: C 203
2. CONCRETE, GRP, 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:

Euske Tanaka

12/29/69

TRAFFIC ENGINEER

DATE

APPROVED:

2nd 22nd

12-30-69

ASSISTANT CHIEF, ENGINEERING

DATE

NO.	REVISION	APPROVED BY	DATE

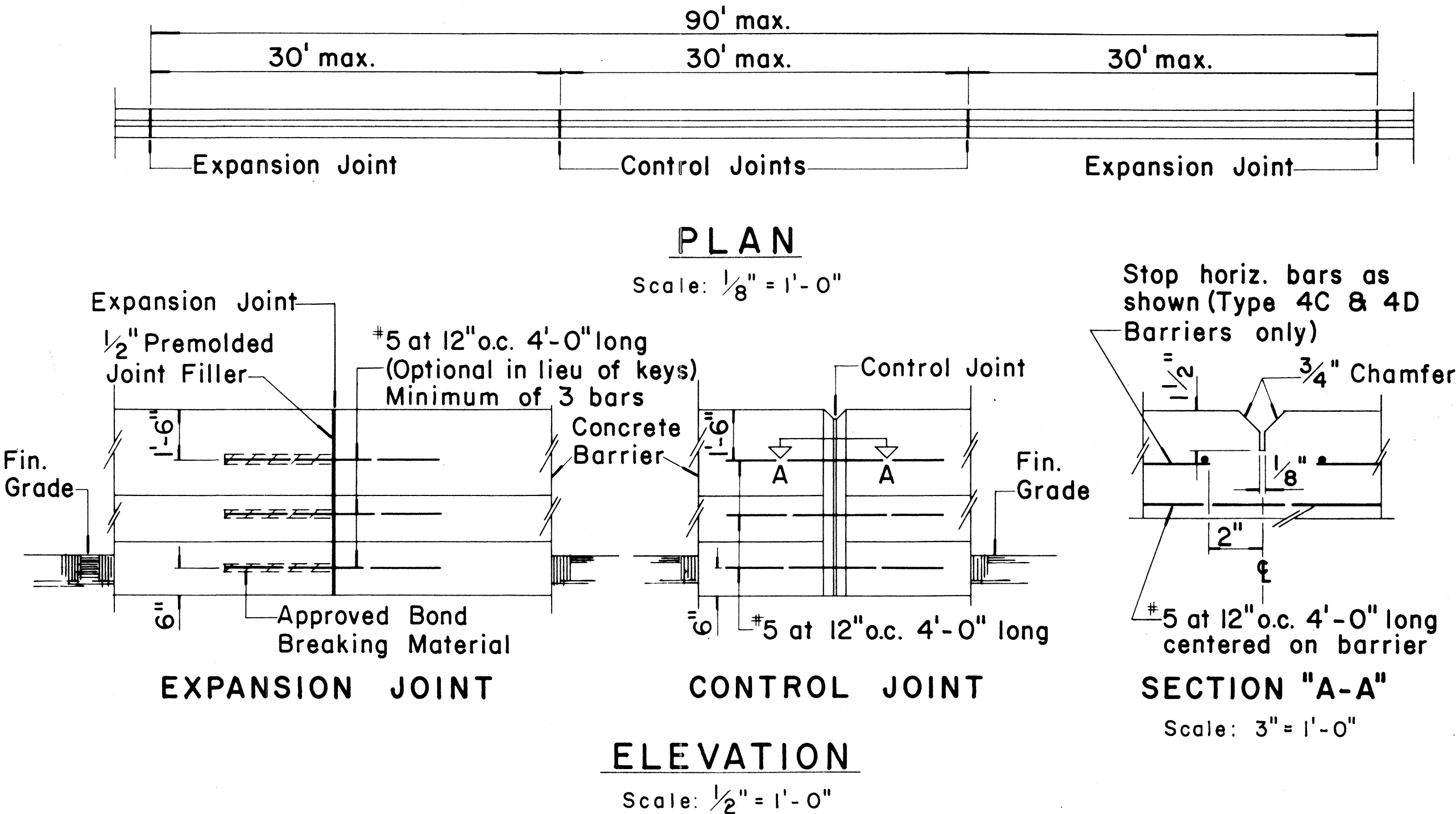
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DETAILS

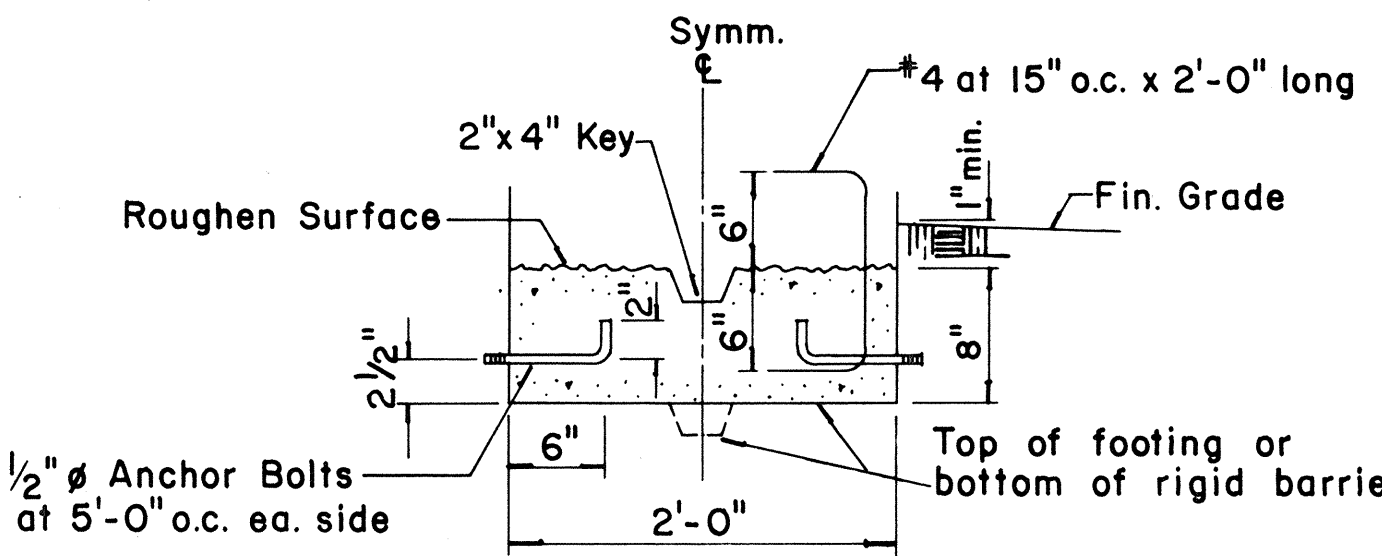
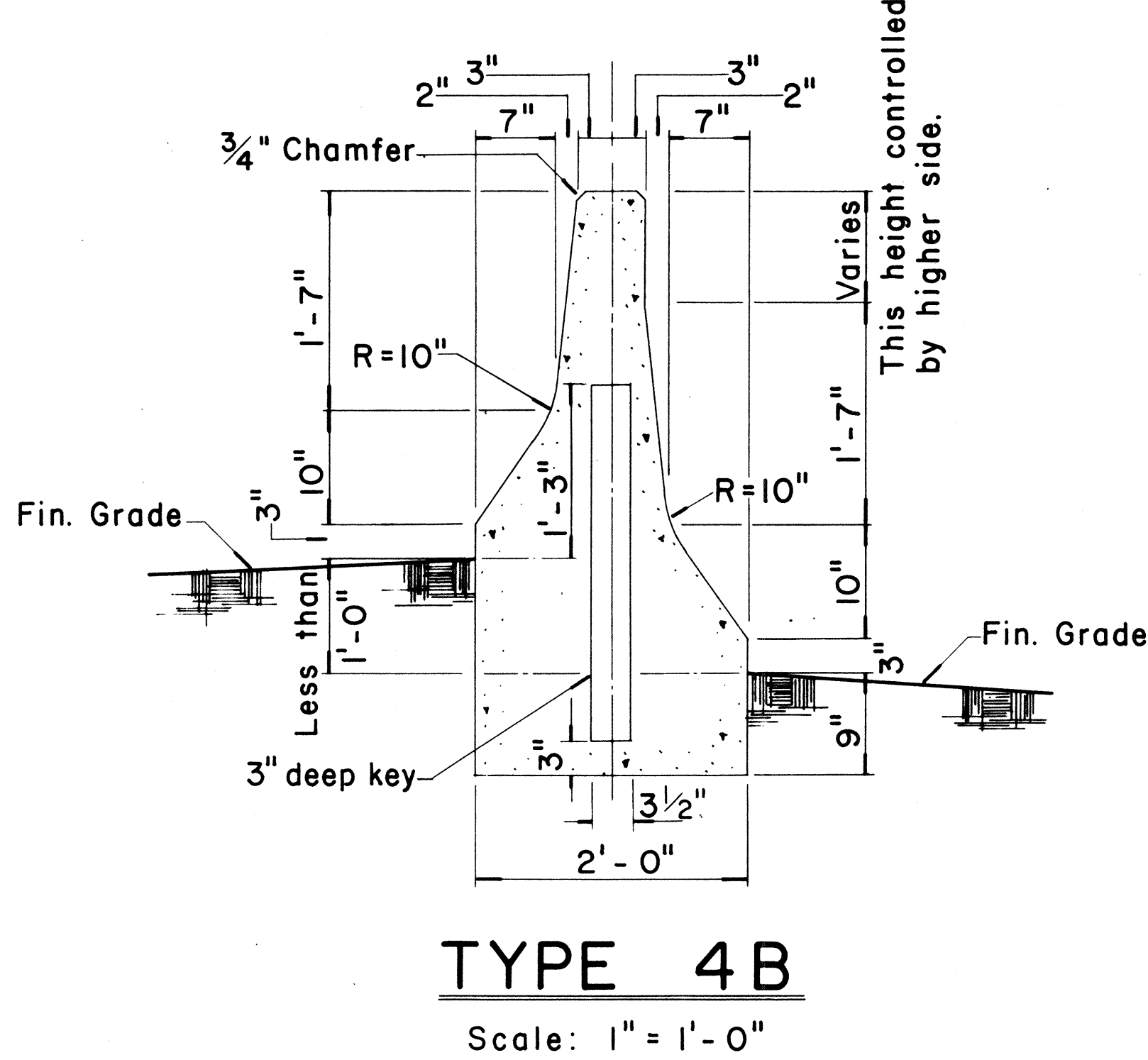
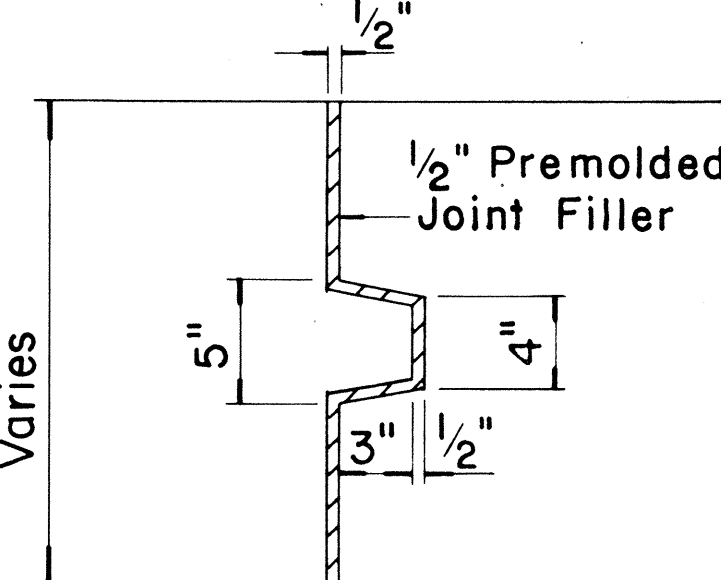
SCALE: AS SHOWN OCT 1960

SHEET No. 21B OF 22 SHEETS DT 520

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-111-1(9)13	1972	43	228



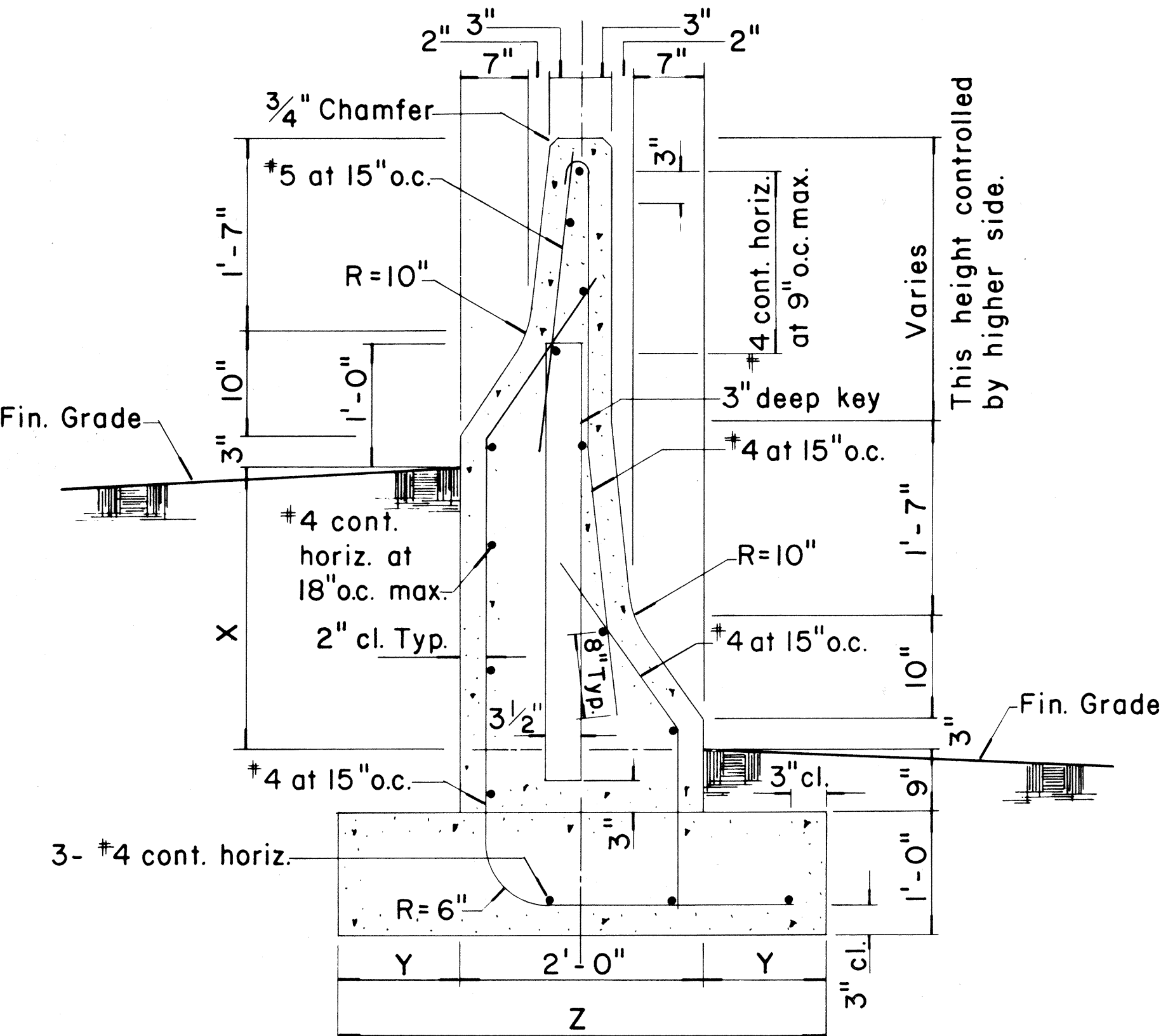
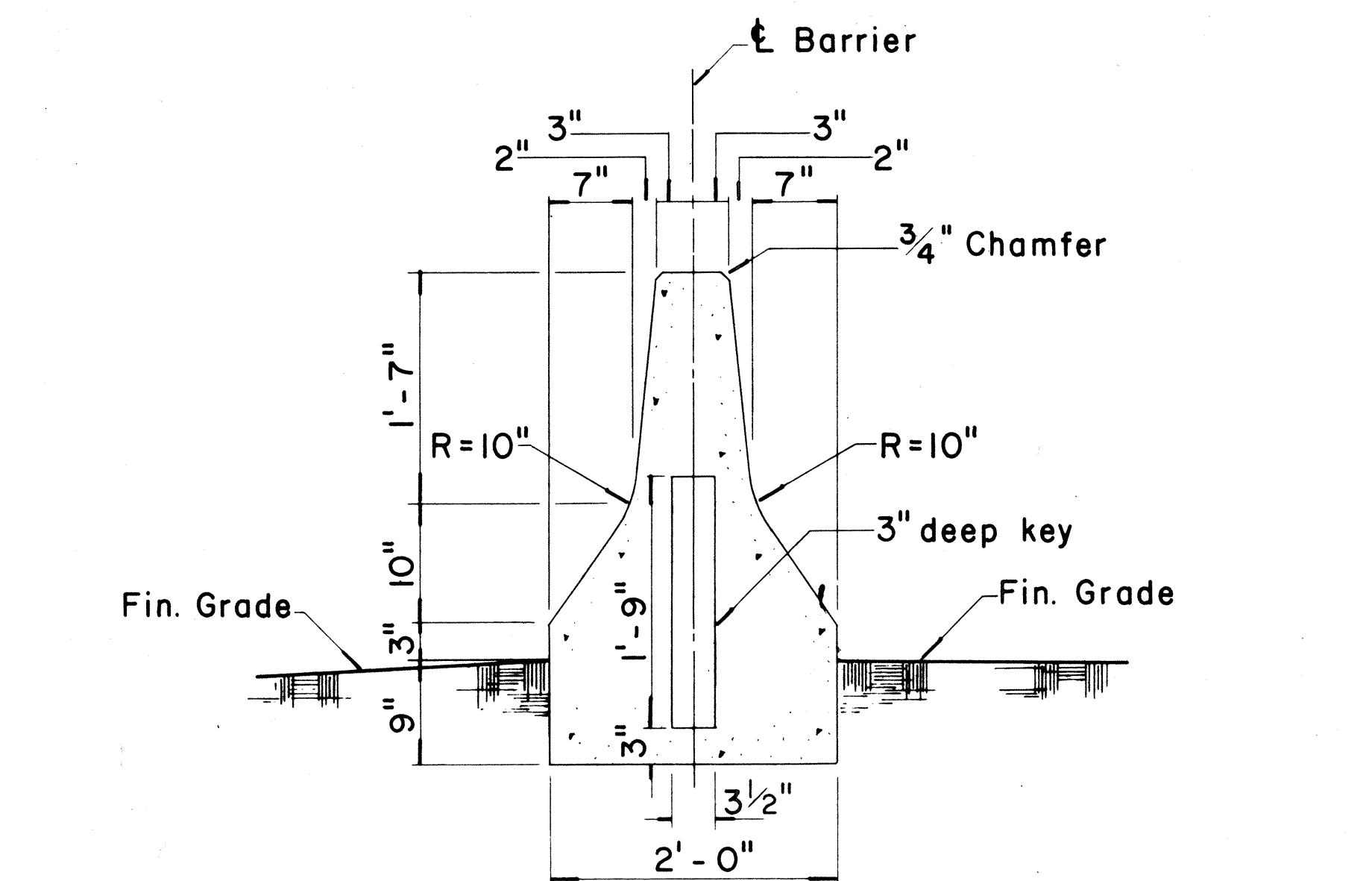
- GENERAL NOTES**
- Precast Rigid Barrier Guard Rail may be installed as an option to cast-in-place Type 4 Rigid Barrier Guard Rail. Contractor shall submit shop drawings to Engineer for approval.
 - Expansion Joints shall be constructed at ninety-foot (90 ft.) maximum intervals and at existing expansion 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.



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.



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. 228 OF 228 SHEETS DT 521A

ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DRAWN BY	
NOTE BOOK	CHECKED BY	
	QUANTITIES BY	
	CHECKED BY	