

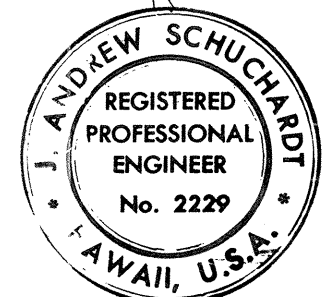
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(87)-13	1970	21	244

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

LEGEND

- Existing P.C. Concrete or Concrete Sidewalk to be Constructed.
- Asphalt Concrete Driveway to be Constructed (See Typical Section, Sheet No. 6)
- Reinforced Concrete Driveway to be Constructed.
- Building Demolished or to be Demolished or Removed by Others.
- Building to be Demolished by Contractor

C.C.O. No. 19
CRM WALL W/4' HIGH
CHAIN LINK FENCE
Not to Scale



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

HALAWA INTERCHANGE
PROJECT NO I-HI-1(87)-13

SCALE: 1"=50' DATE: 6/8/70

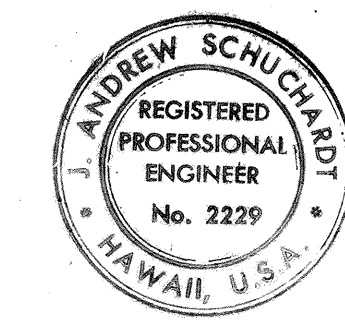
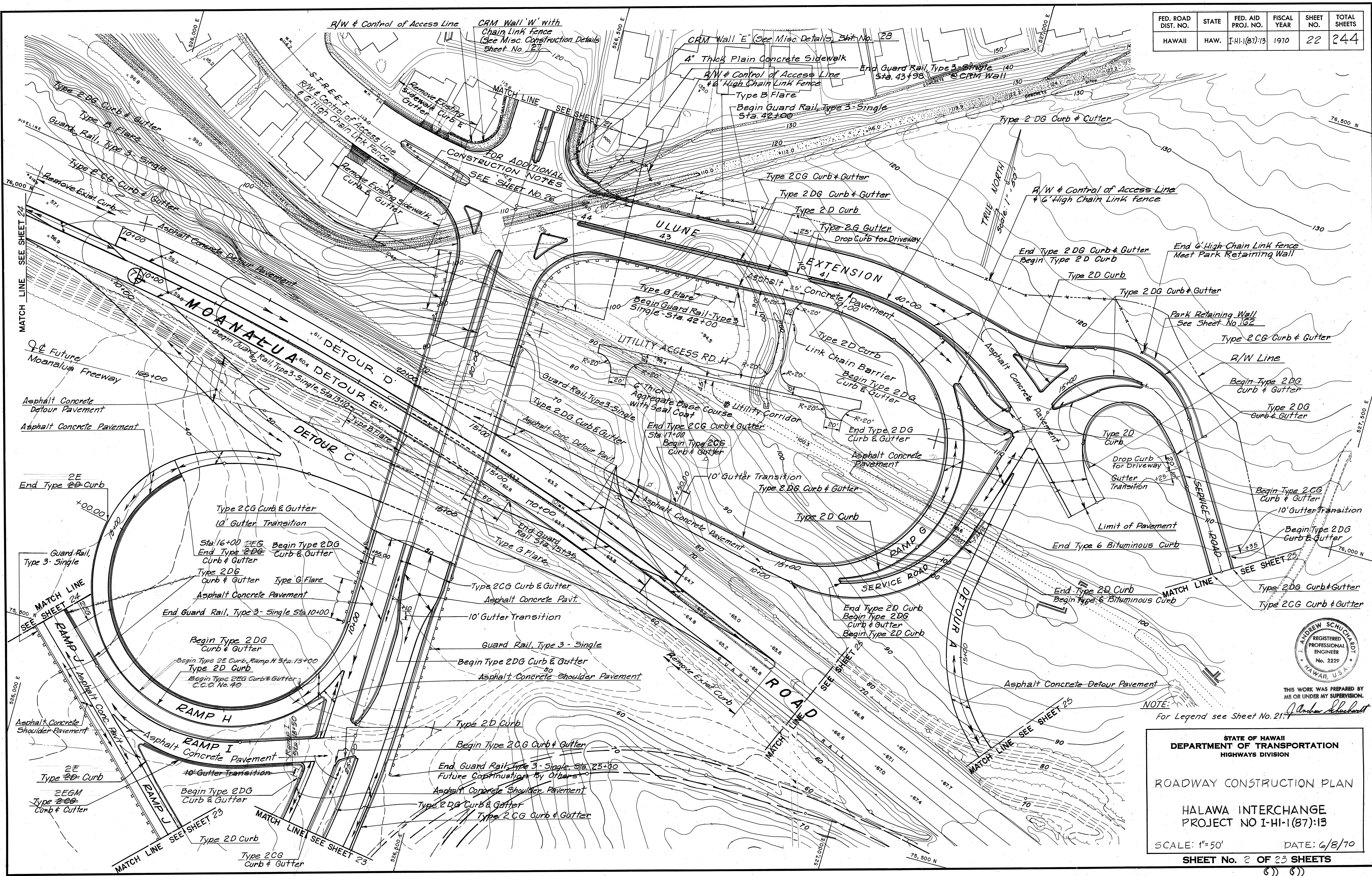
SHEET No. 1 OF 23 SHEETS

May 4, 1971

CO. 21

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(87)-13	1970	22	244

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
.....	



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Andrew Schuchardt
 NOTE: For Legend see Sheet No. 21.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

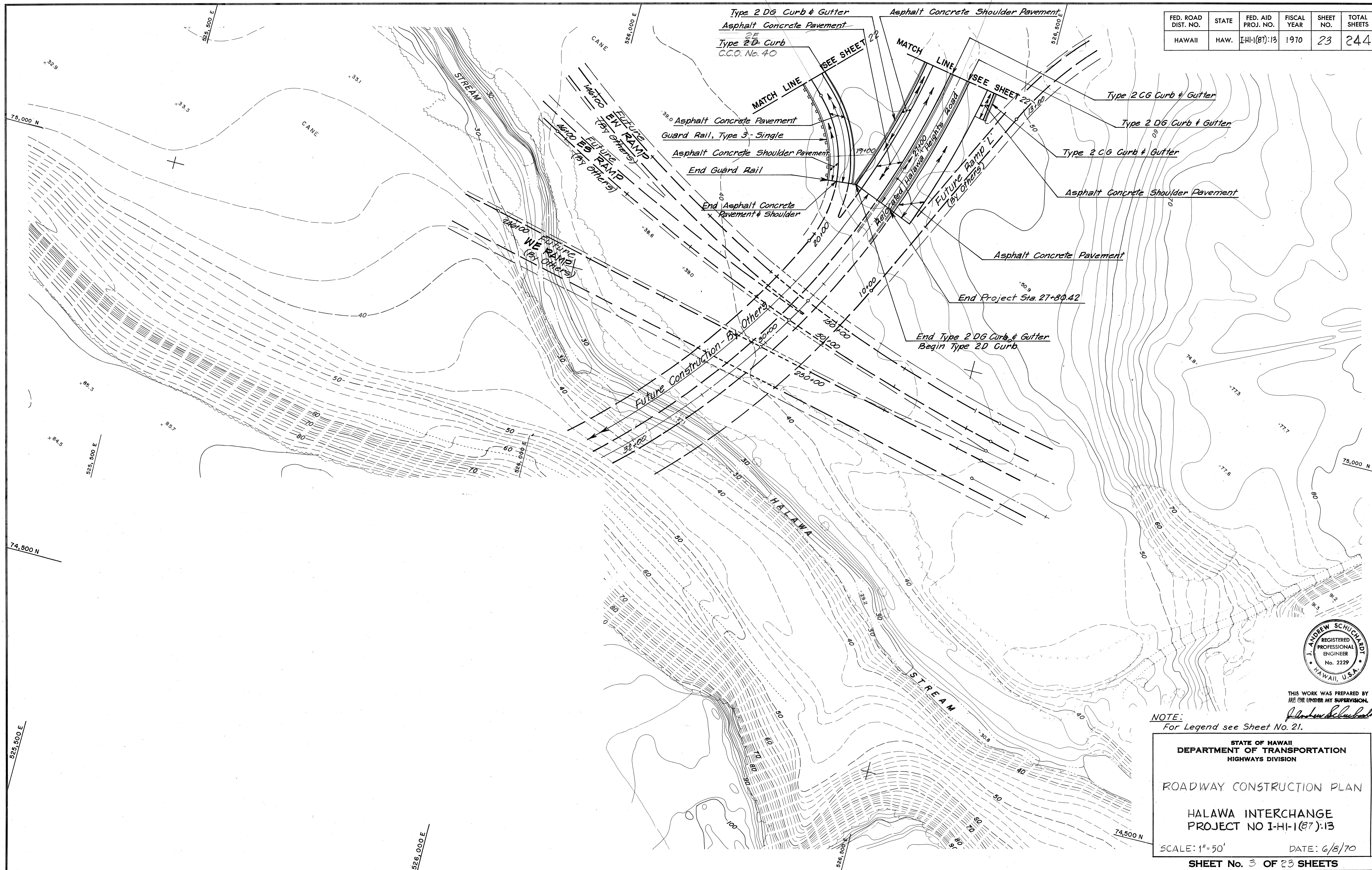
ROADWAY CONSTRUCTION PLAN

HALAWA INTERCHANGE
PROJECT NO I-HI-1(87)-13

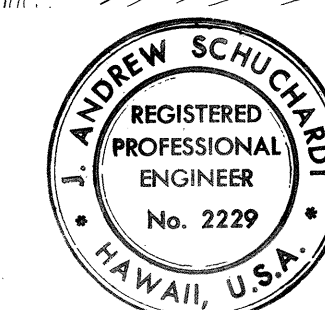
SCALE: 1"=50' DATE: 6/8/70

SHEET No. 2 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(87):13	1970	23	244



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



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J. Andrew Schuchard

NOTE:
For Legend see Sheet No. 21.

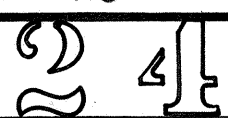
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

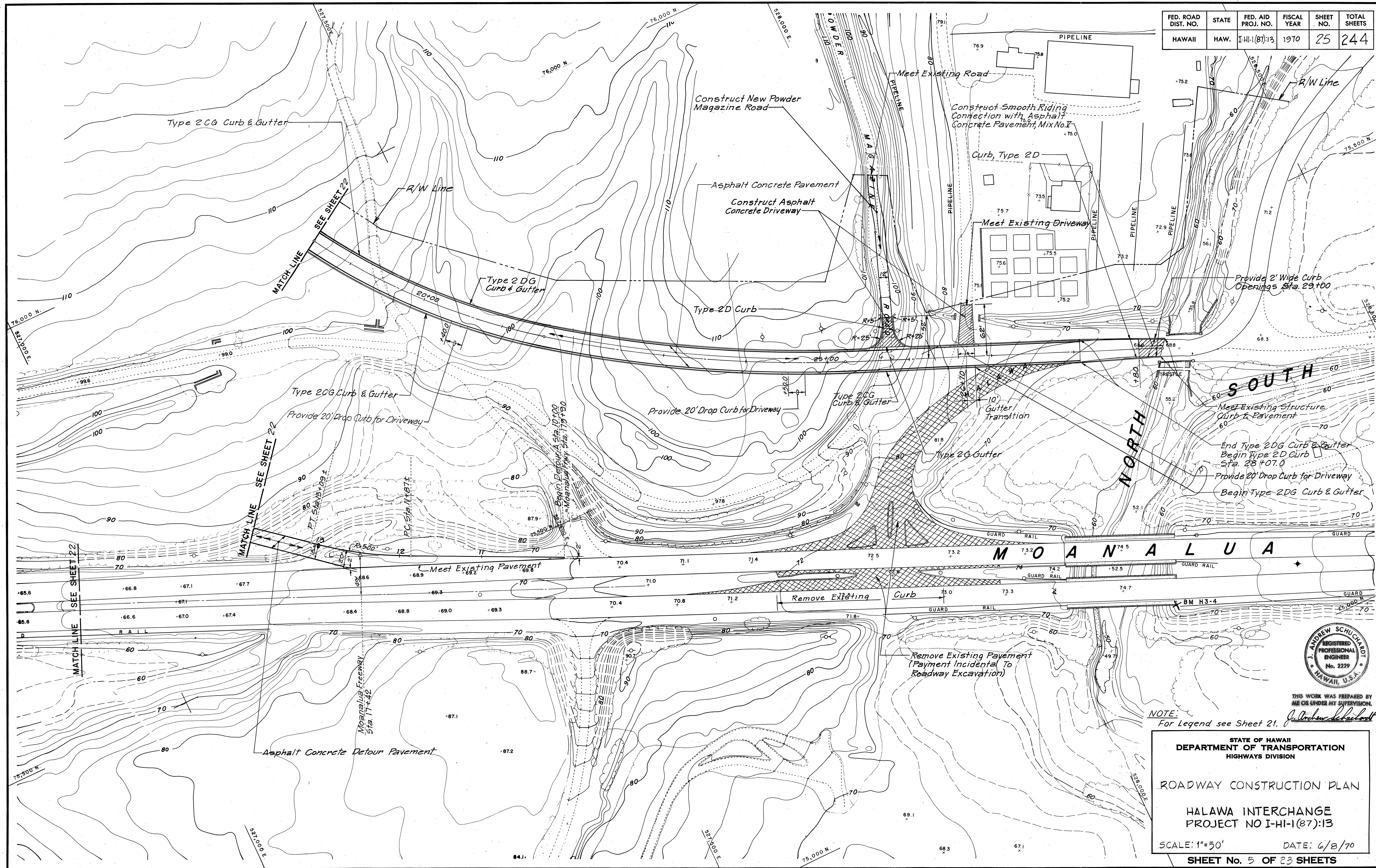
HALAWA INTERCHANGE
PROJECT NO I-HI-1(87):13
SCALE: 1"=50' DATE: 6/8/70
SHEET No. 3 OF 23 SHEETS

23

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



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



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NOTE:
For Legend see Sheet 21. J. Archer Schuchman

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

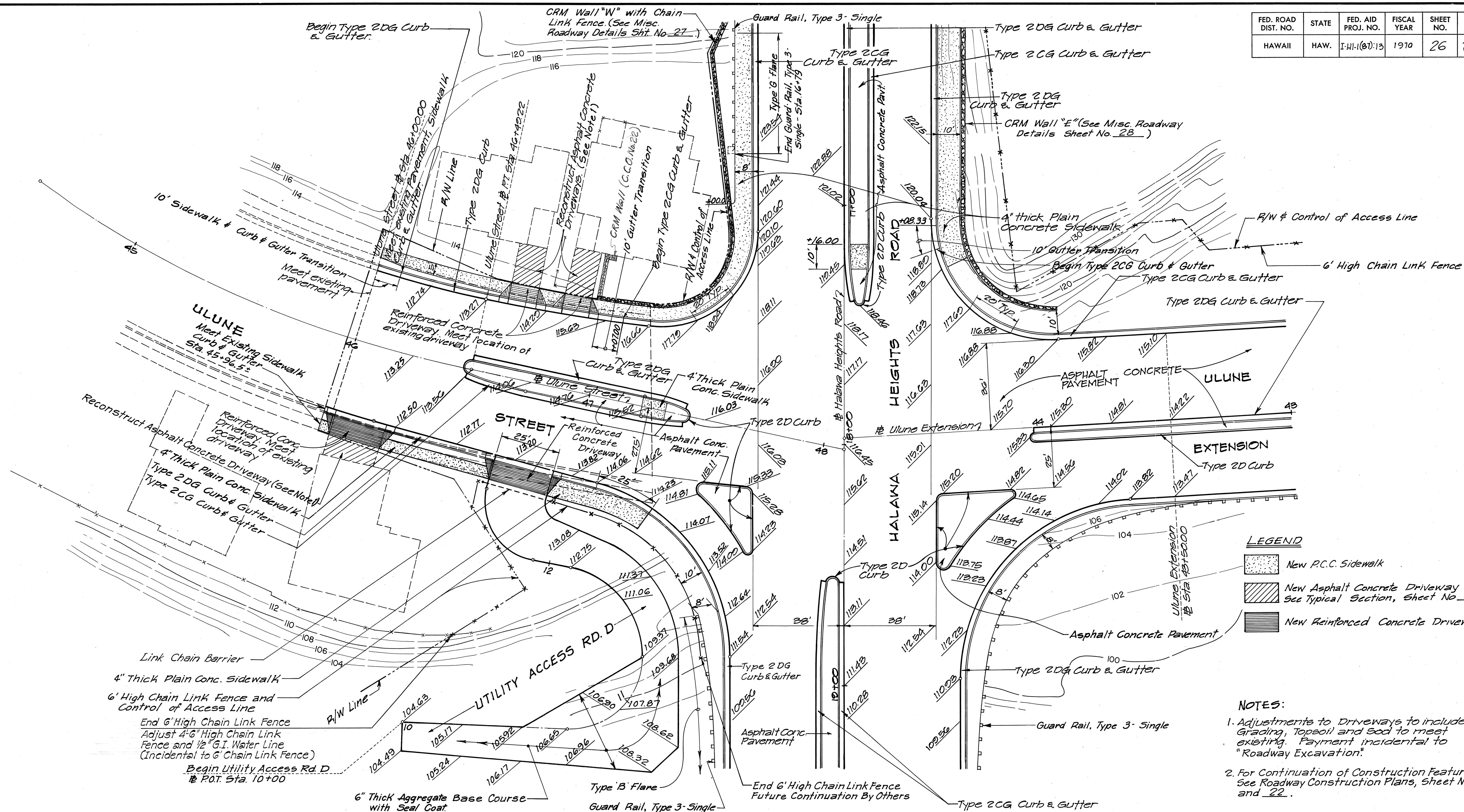
HALAWA INTERCHANGE
PROJECT NO I-HI-1(87):13

SCALE: 1"=50' DATE: 6/8/70

SHEET No. 5 OF 23 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	HAWAII	I-HI-1(87):13	1970	26	244



LEGEND

- New P.C.C. Sidewalk
- New Asphalt Concrete Driveway See Typical Section, Sheet No. 6
- New Reinforced Concrete Driveway

NOTES:

- Adjustments to Driveways to include Grading, Topsoil and Sod to meet existing. Payment incidental to "Roadway Excavation."
- For Continuation of Construction Features See Roadway Construction Plans, Sheet Nos. 21 and 22.



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J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION PLAN

HALAWA INTERCHANGE
PROJECT NO I-HI-1(87):13

SCALE: 1" = 20' DATE: 6/8/70

SHEET No. 26 OF 23 SHEETS

DATE: _____

SURVEY PLOTTED BY: _____

PLAN: _____

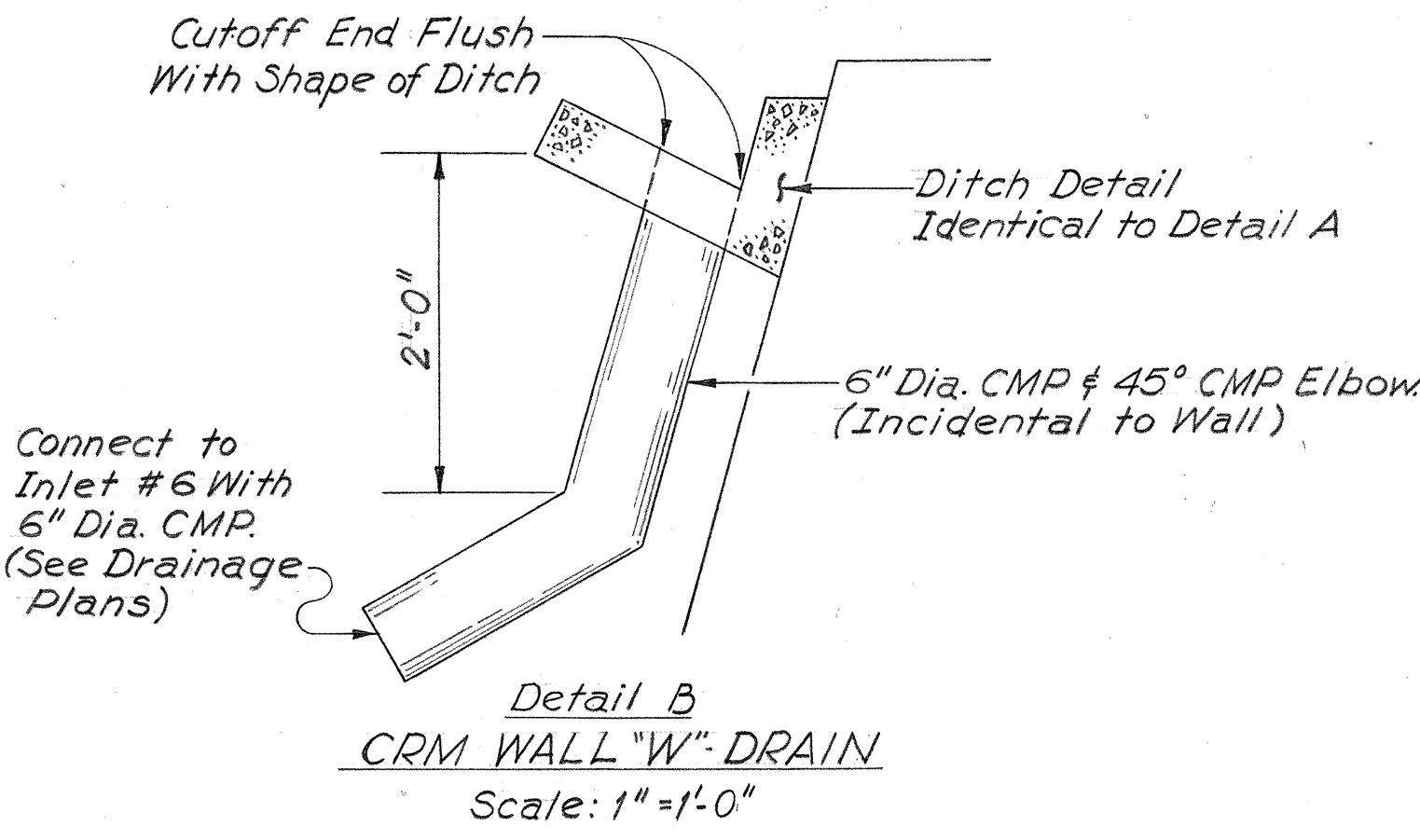
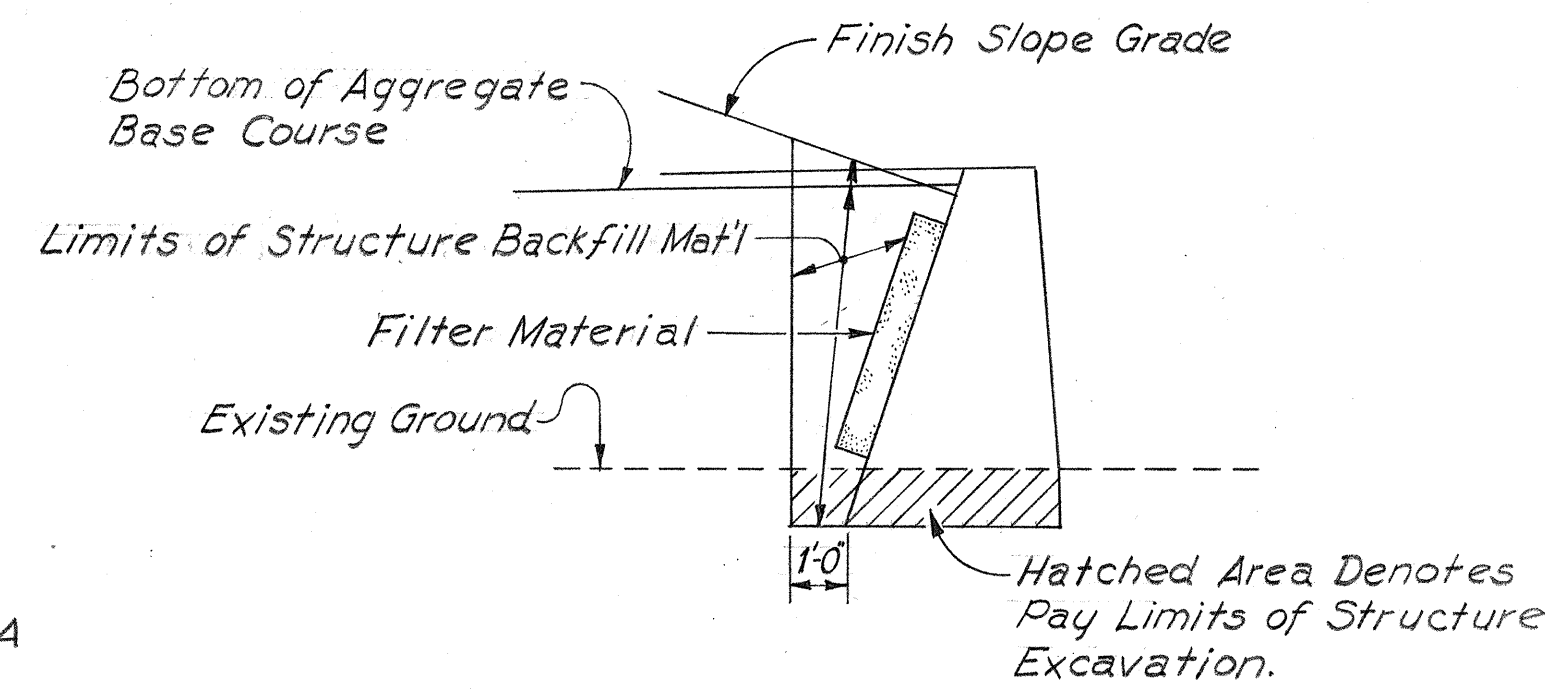
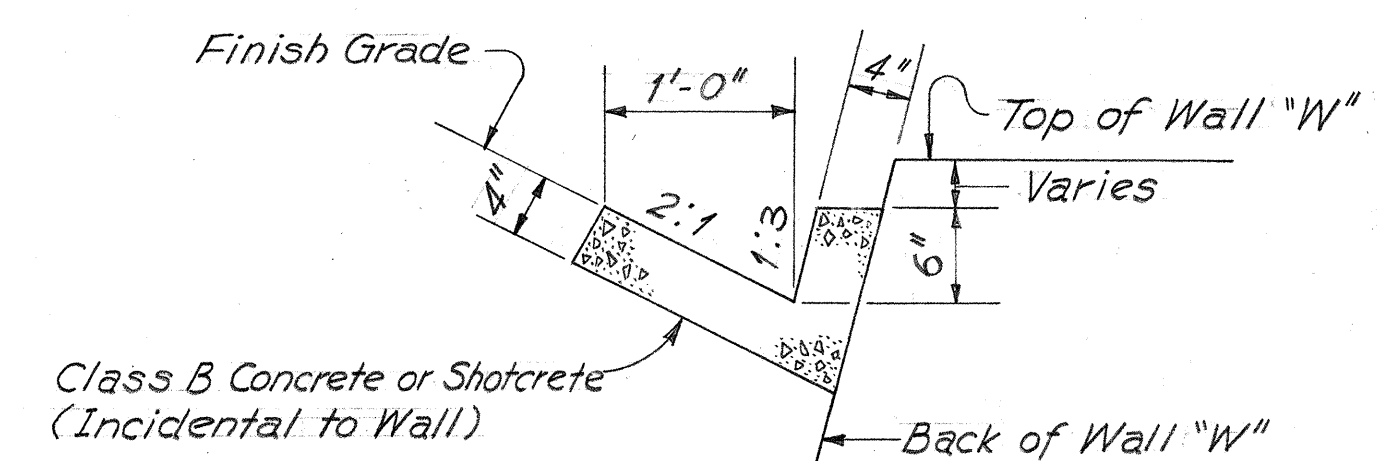
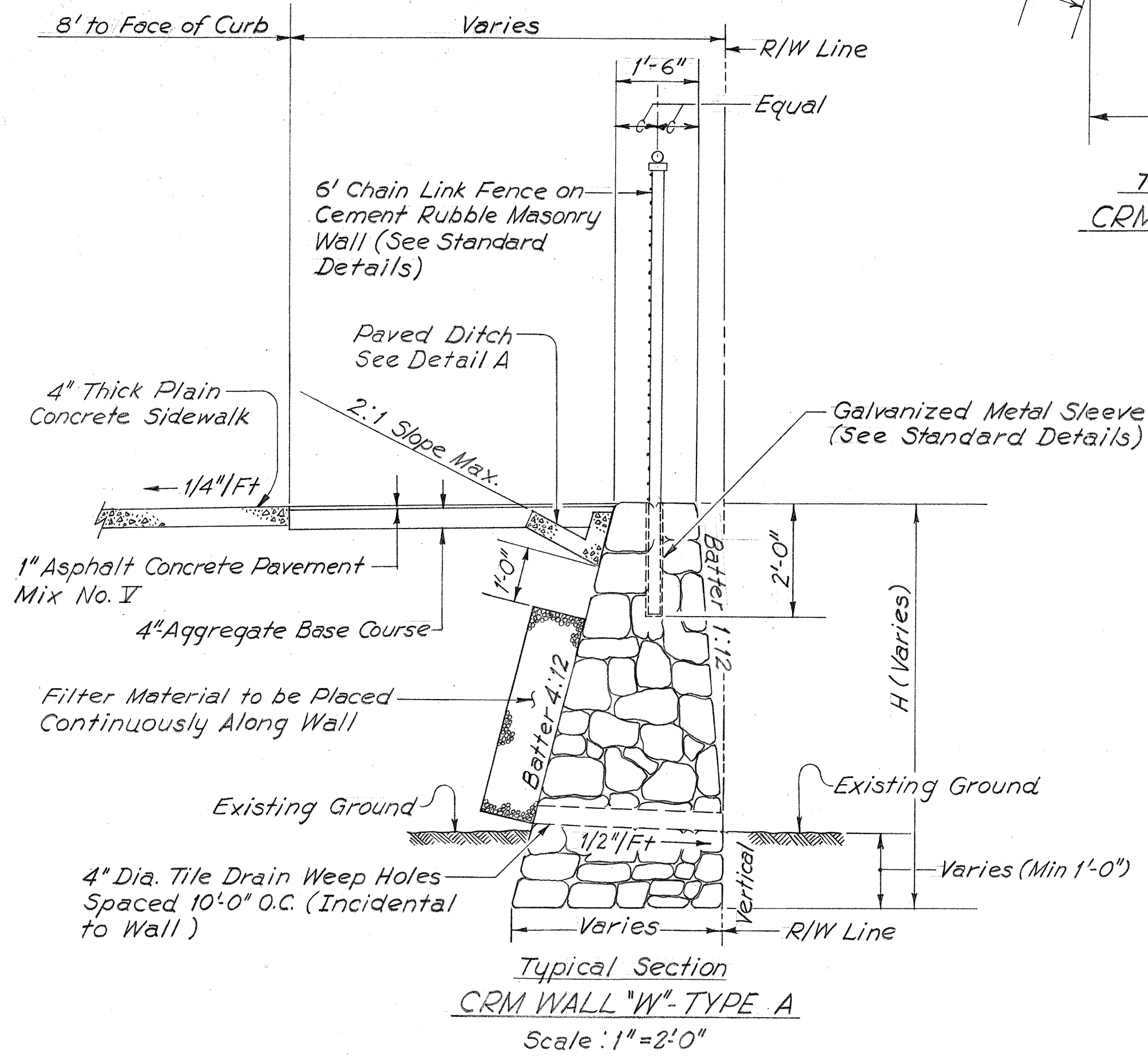
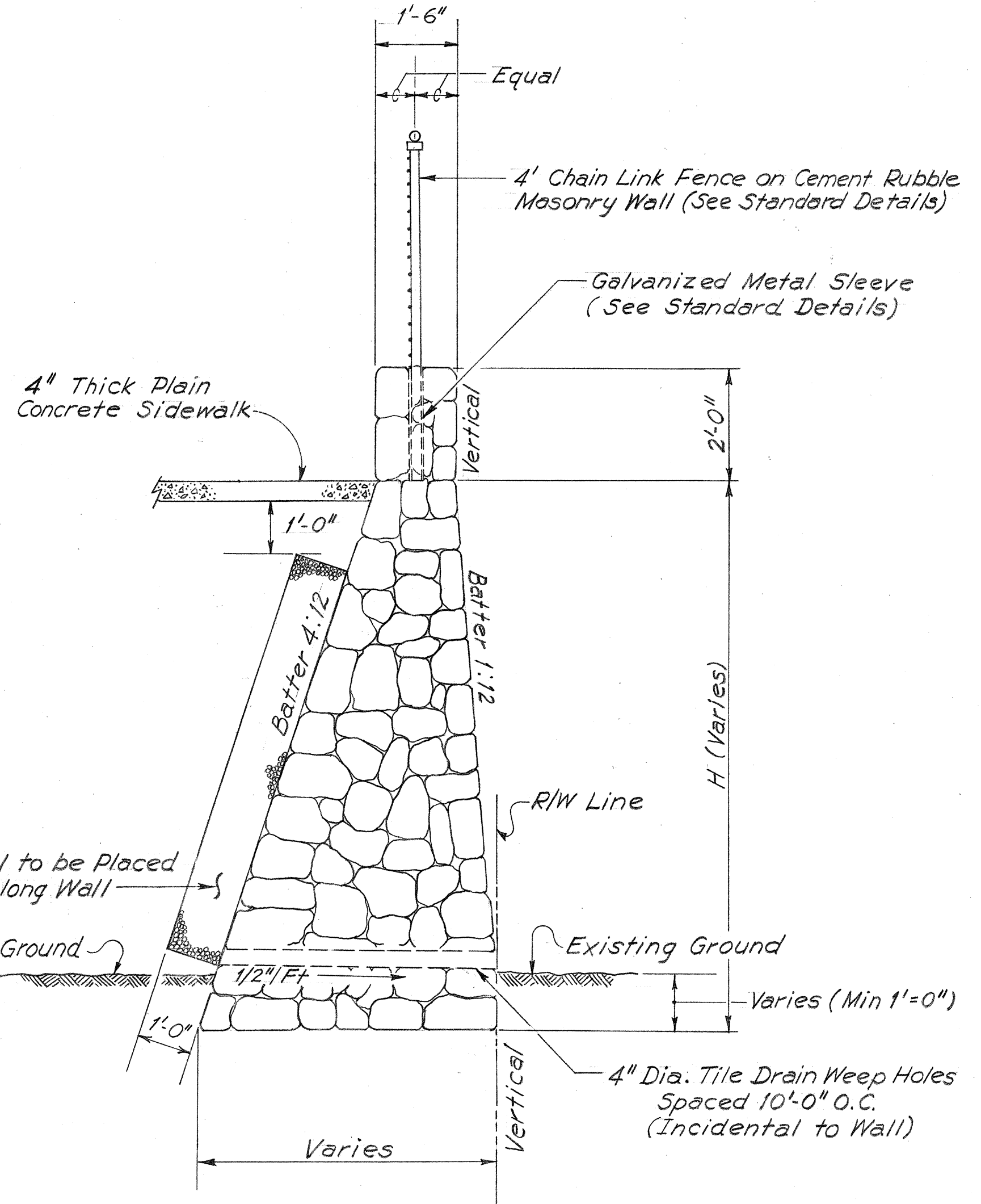
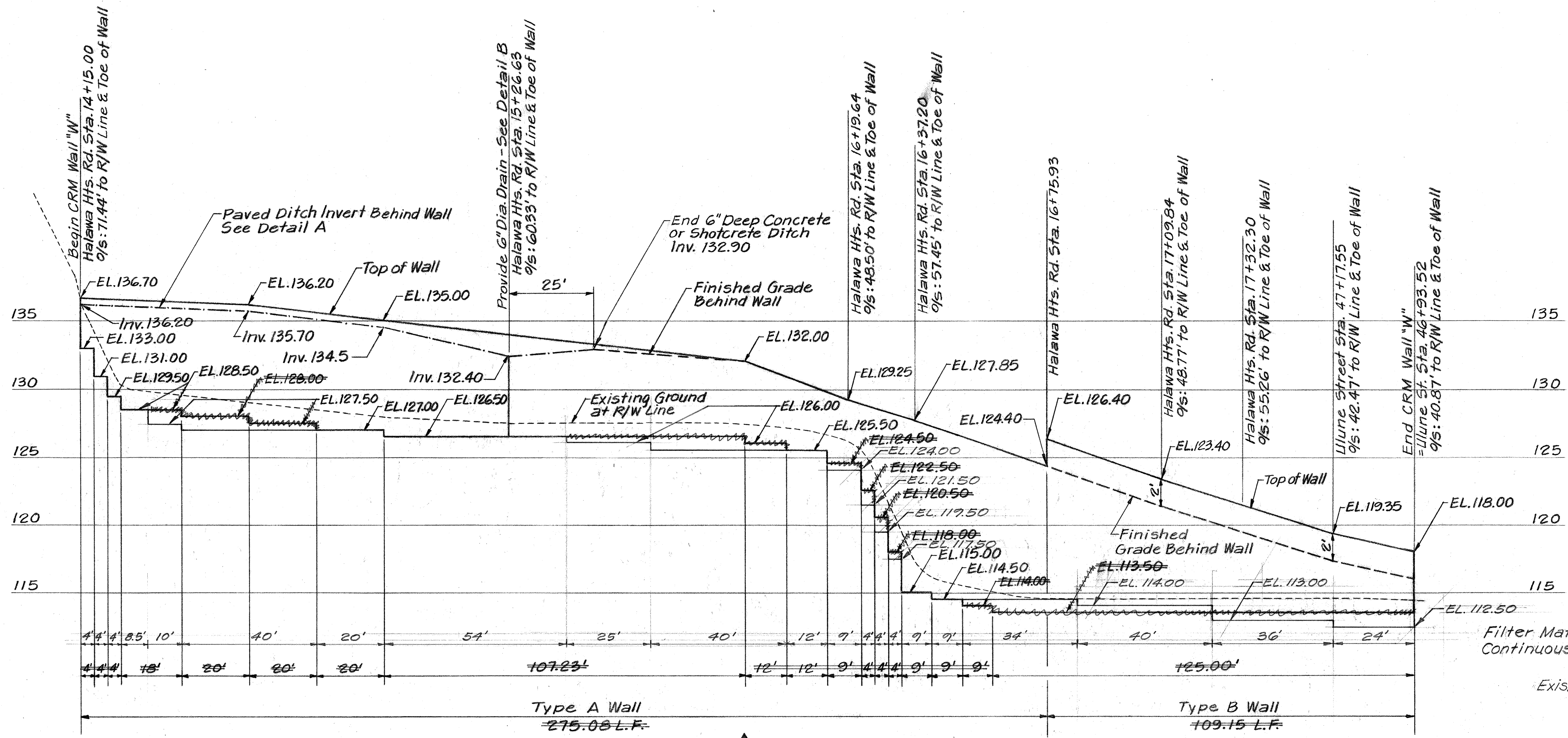
DESIGNED BY: _____

NOTE BOOK: _____

QUANTITIES BY: _____

CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(87):13	1970	27	244



LIMITS of STRUCTURE EXCAVATION
FOR CRM WALL "W"
Not to Scale

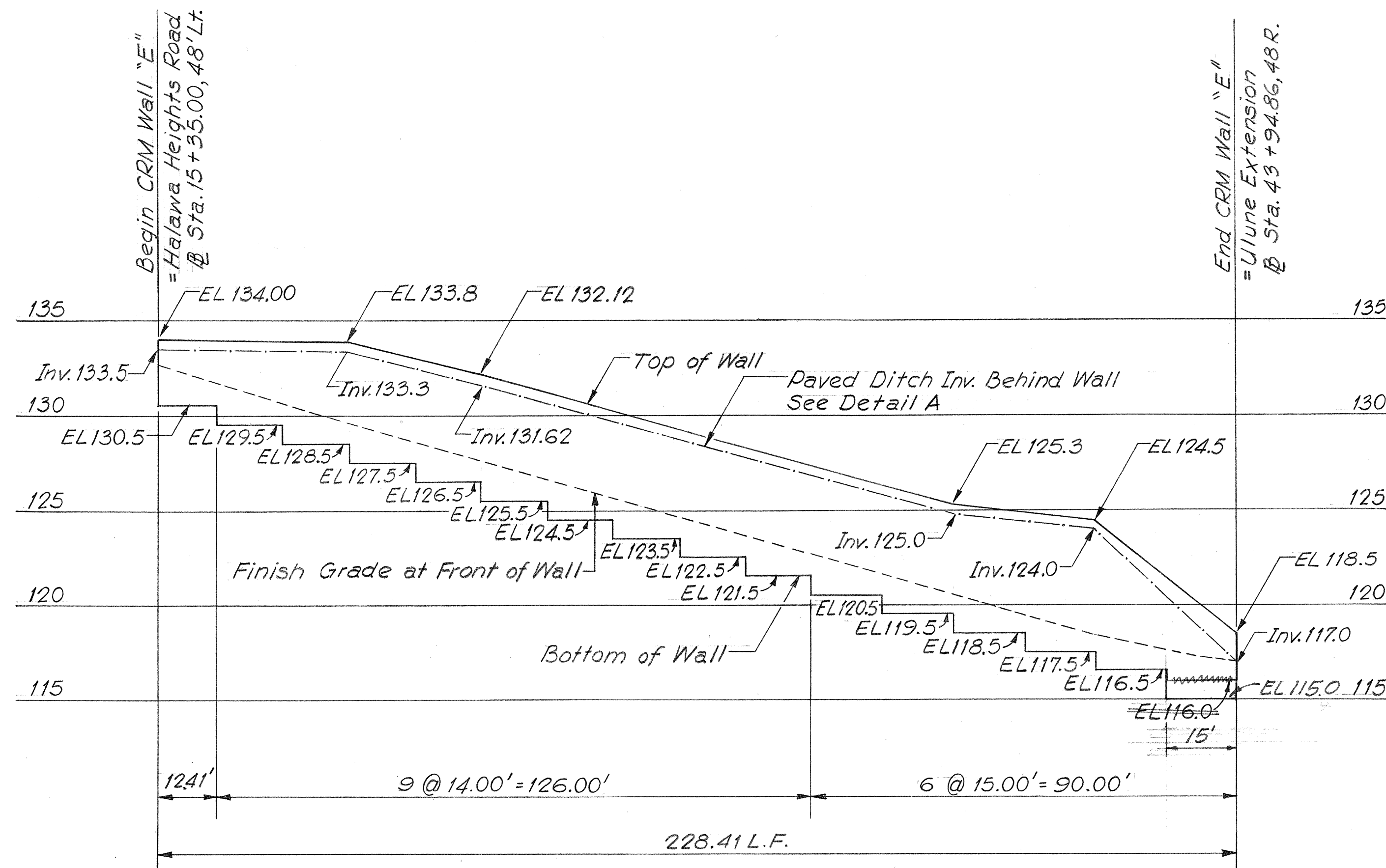


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ME OR UNDER MY SUPERVISION.
J. Andrew Schuchardt

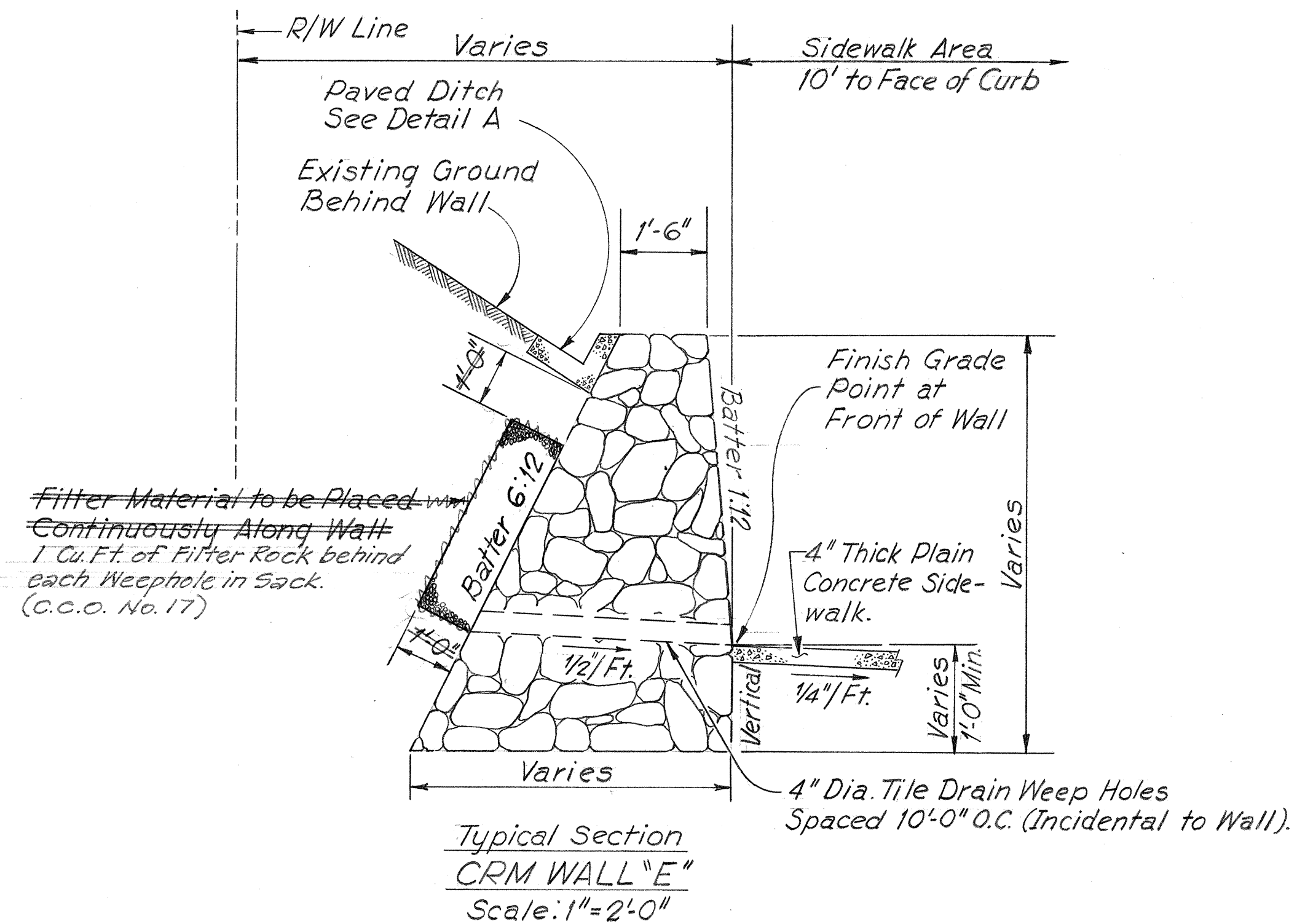
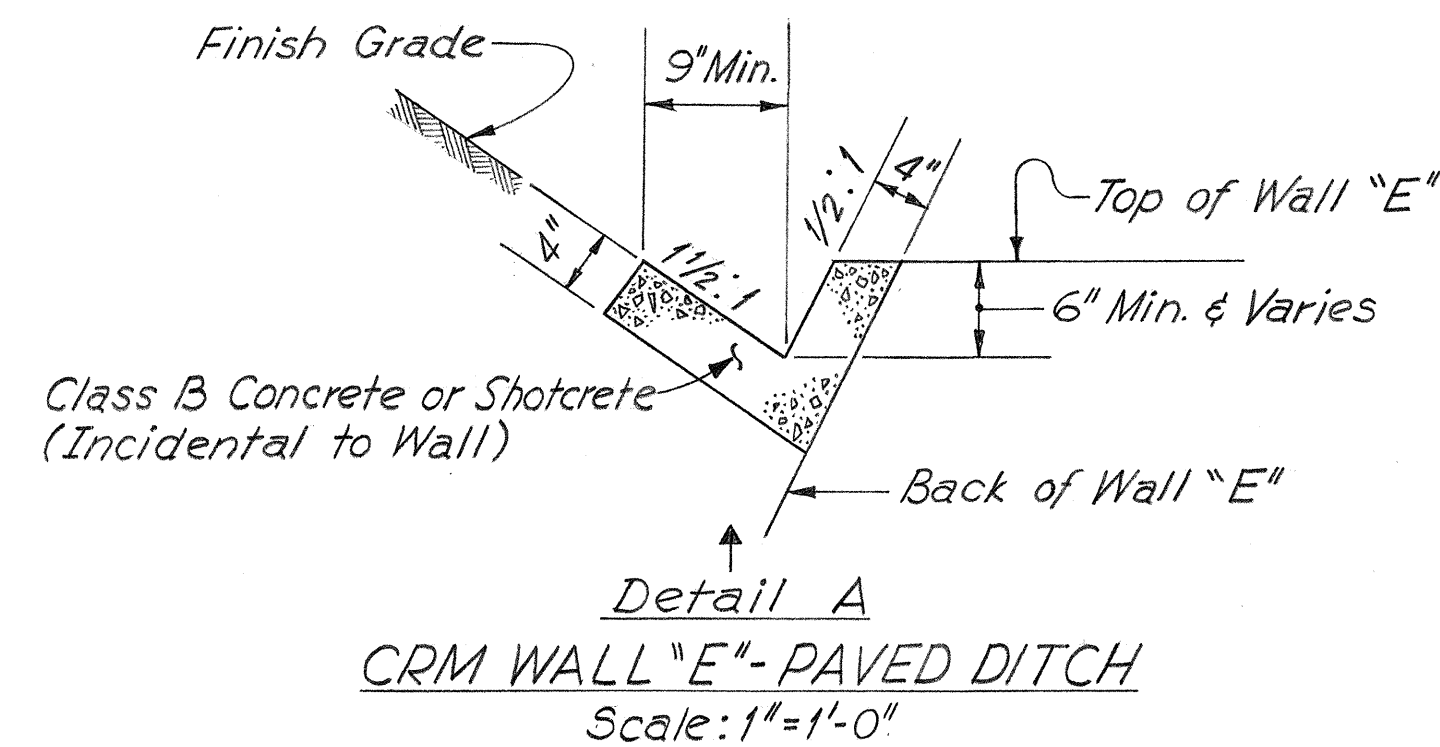
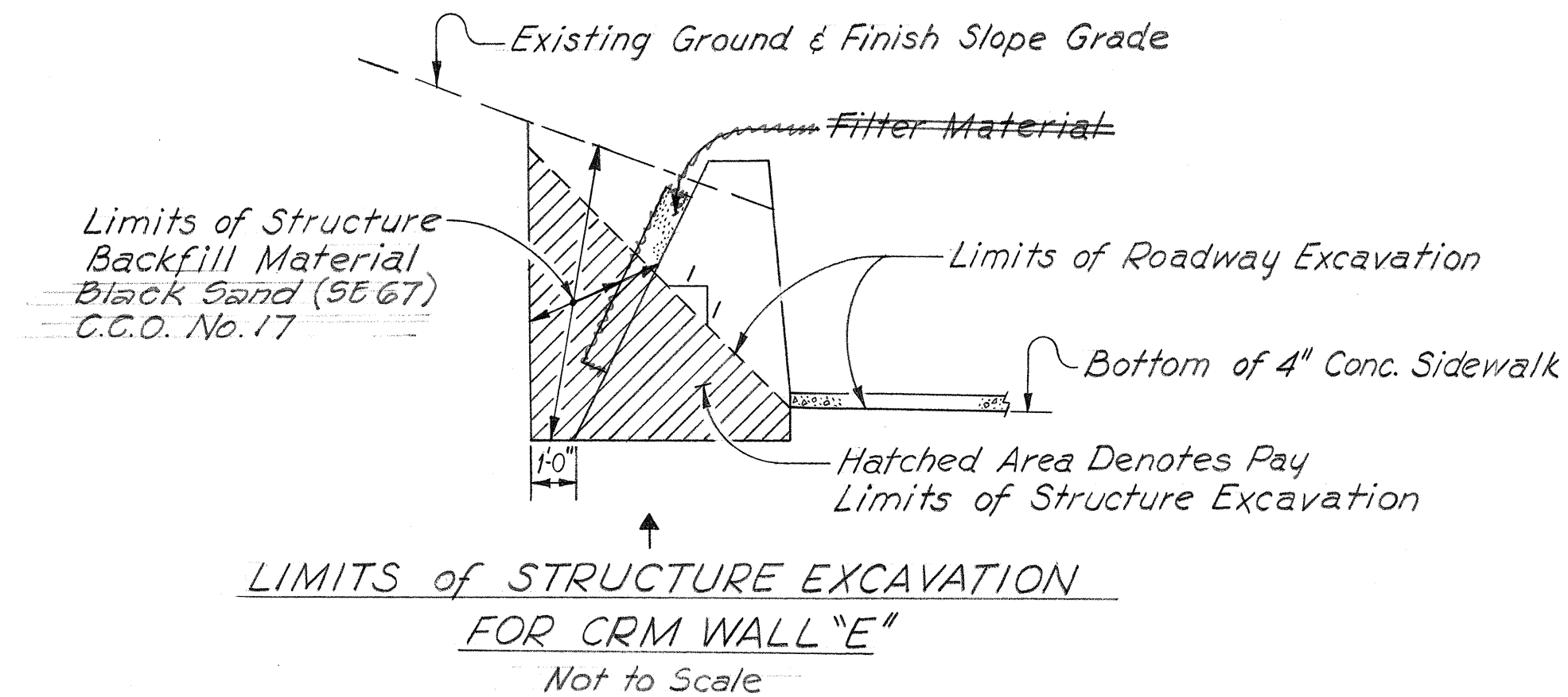
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MISCELLANEOUS ROADWAY DETAILS
CRM WALL "W"
HALAWA INTERCHANGE
PROJECT NO I-HI-1(87):13
SCALE: AS SHOWN DATE: 6/8/70
SHEET No. 7 OF 23 SHEETS

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(87):13	1970	28	244



ELEVATION
CRM WALL "E"
Scale: Horiz. 1"=20'
Vert. 1"=5'



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J. Andrew Schubardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS ROADWAY DETAILS
CRM WALL "E"

HALAWA INTERCHANGE
PROJECT NO I-HI-1(87):13

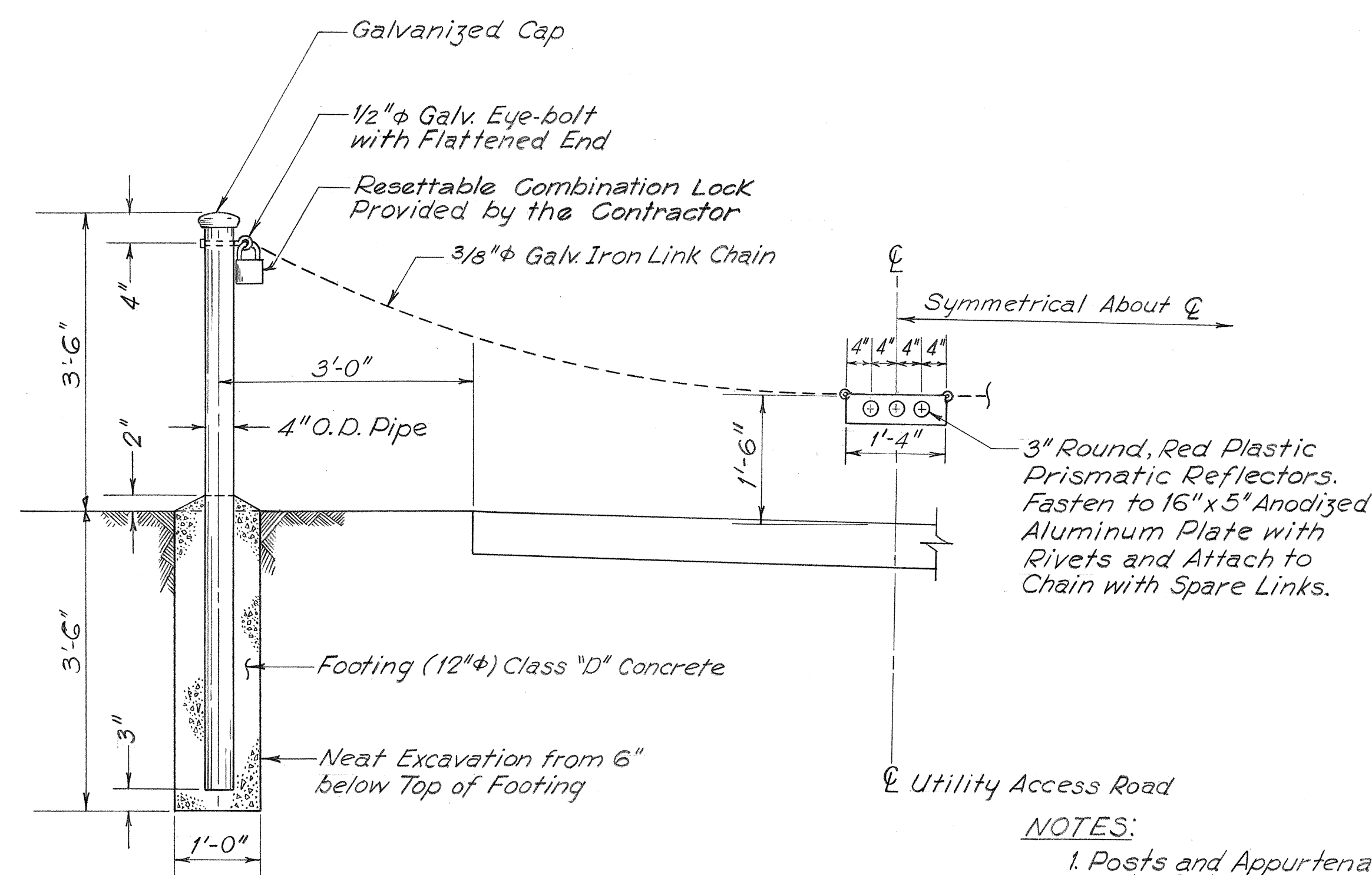
SCALE: AS SHOWN DATE: 6/8/70

SHEET No. 8 OF 23 SHEETS

23

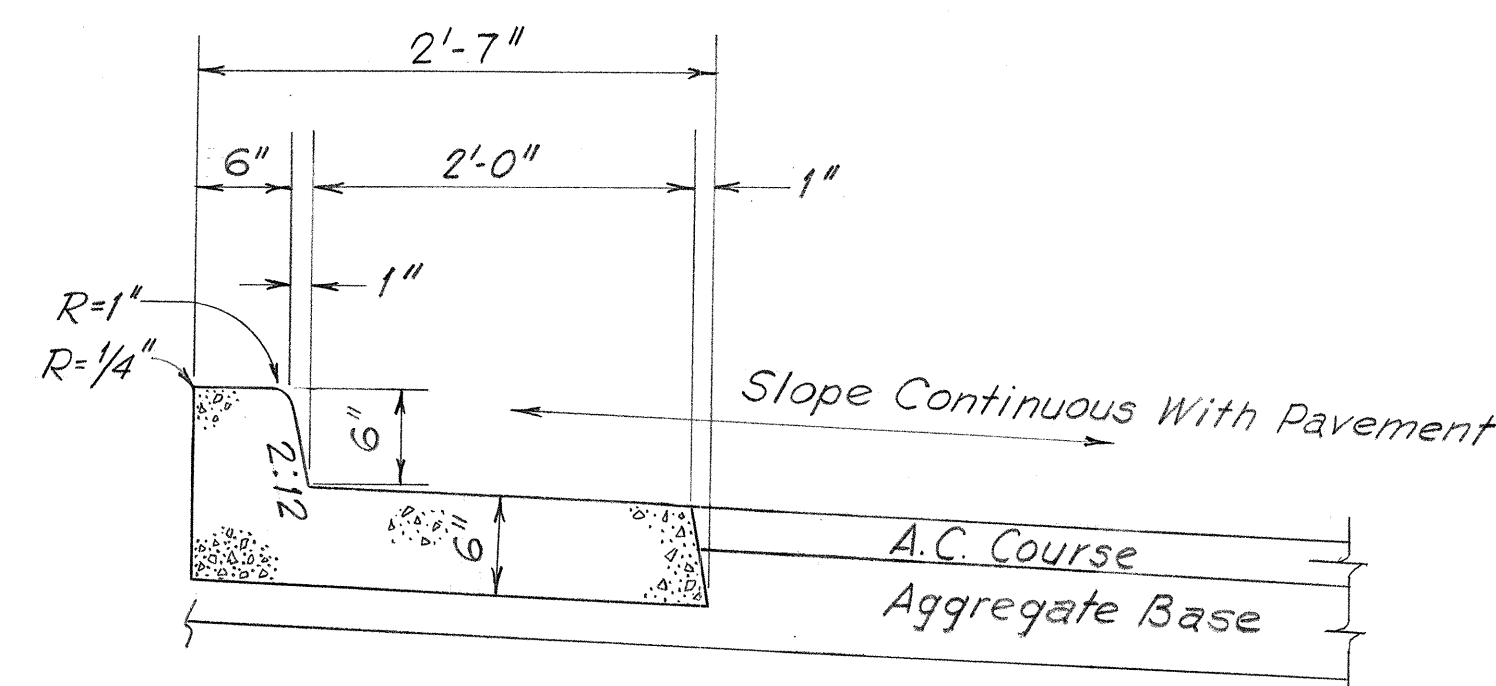
DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(87):13	1970	29	244

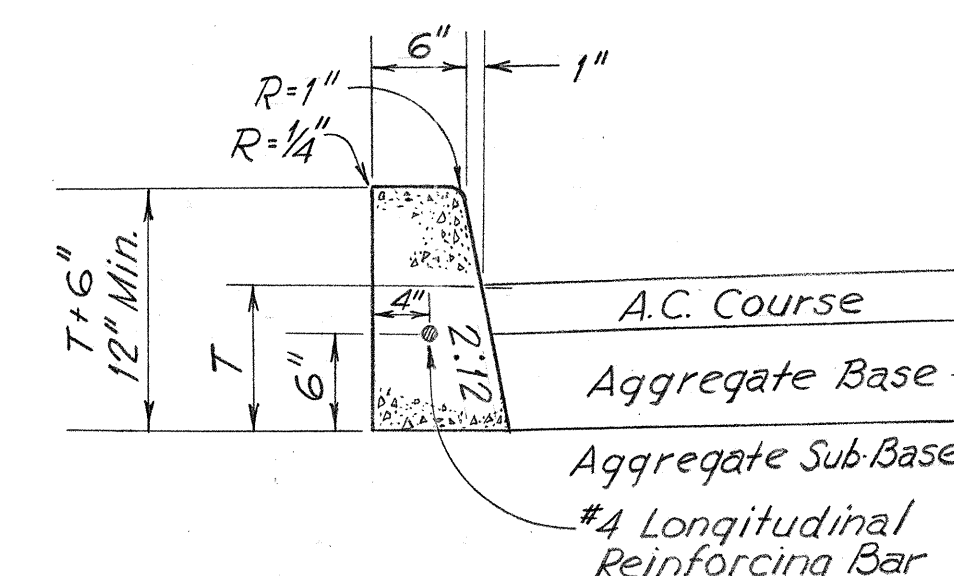


LINK CHAIN BARRIER
For Utility Access Roads D+H
Scale: 3/4" = 1'-0"

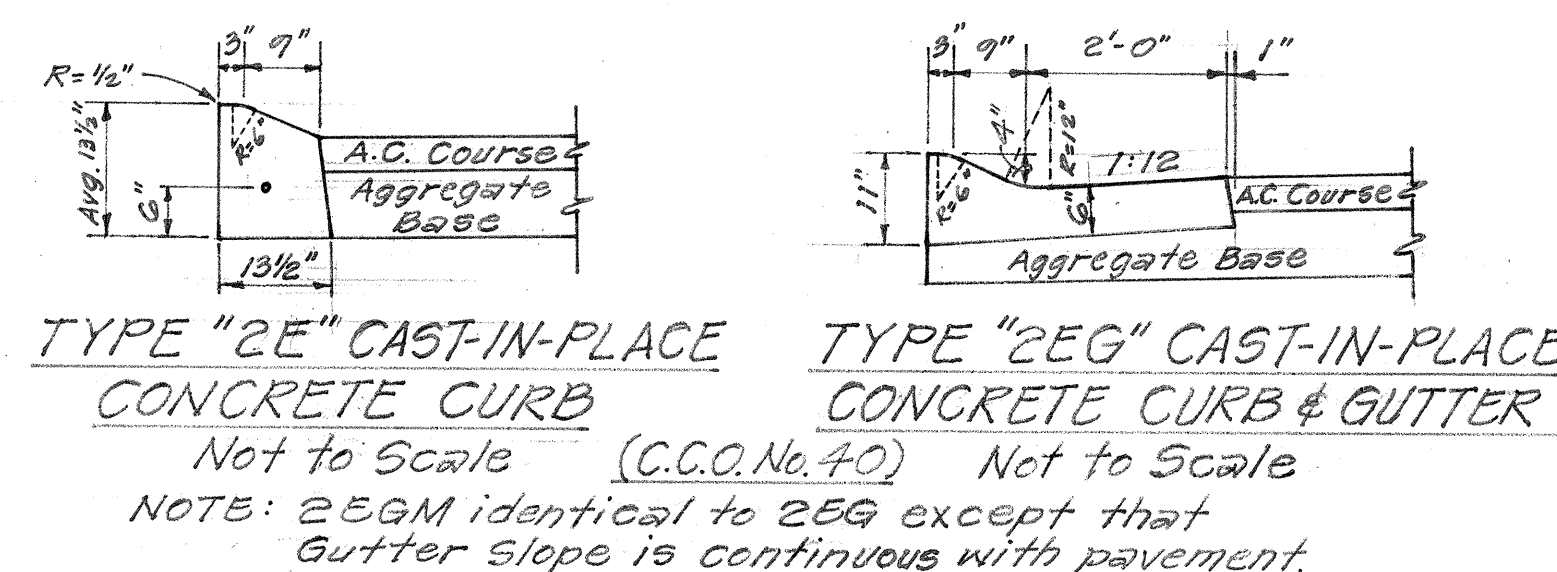
- NOTES:
1. Posts and Appurtenance to be Galvanized.
 2. 1 Lock per Gate.



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

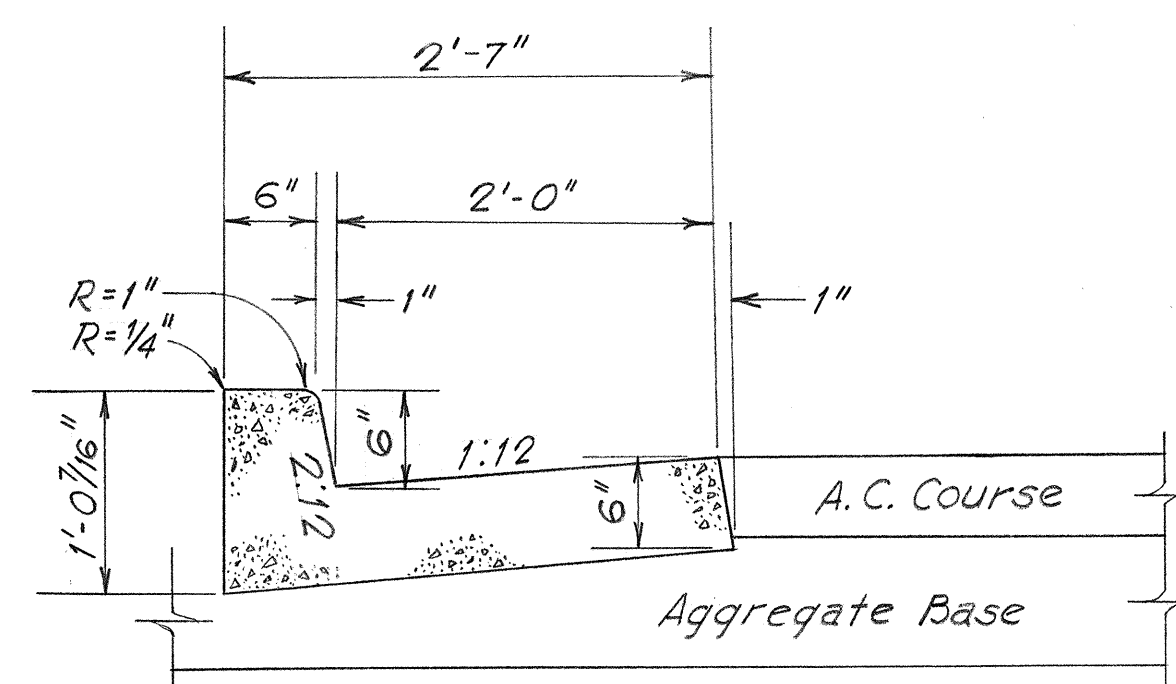


CURB, TYPE "2D"
Scale: 1" = 1'-0"

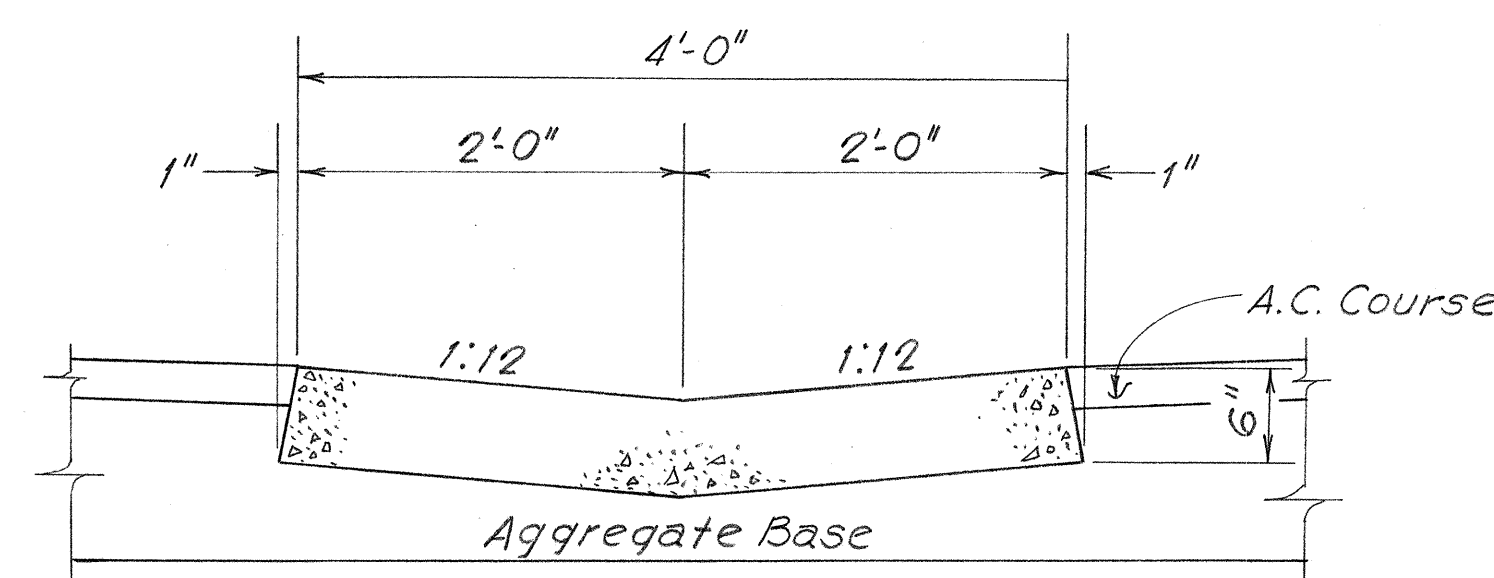


TYPE "2E" CAST-IN-PLACE CONCRETE CURB
Not to Scale (C.C.O. No. 40)
NOTE: 2EGM identical to 2EG except that Gutter Slope is continuous with pavement.

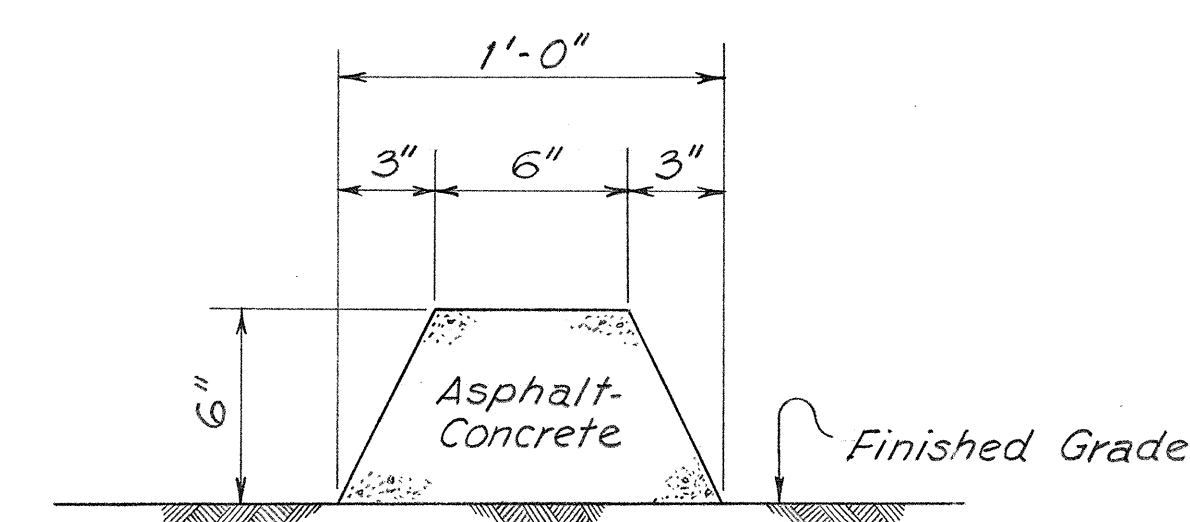
TYPE "2EG" CAST-IN-PLACE CONCRETE CURB & GUTTER
Not to Scale



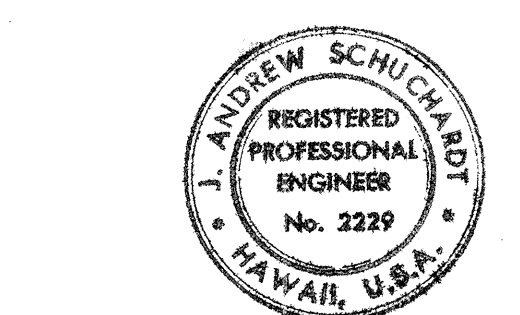
TYPE "2DG" CAST-IN-PLACE CONCRETE CURB & GUTTER
Scale: 1" = 1'-0"



GUTTER, TYPE "2G"
Scale: 1" = 1'-0"

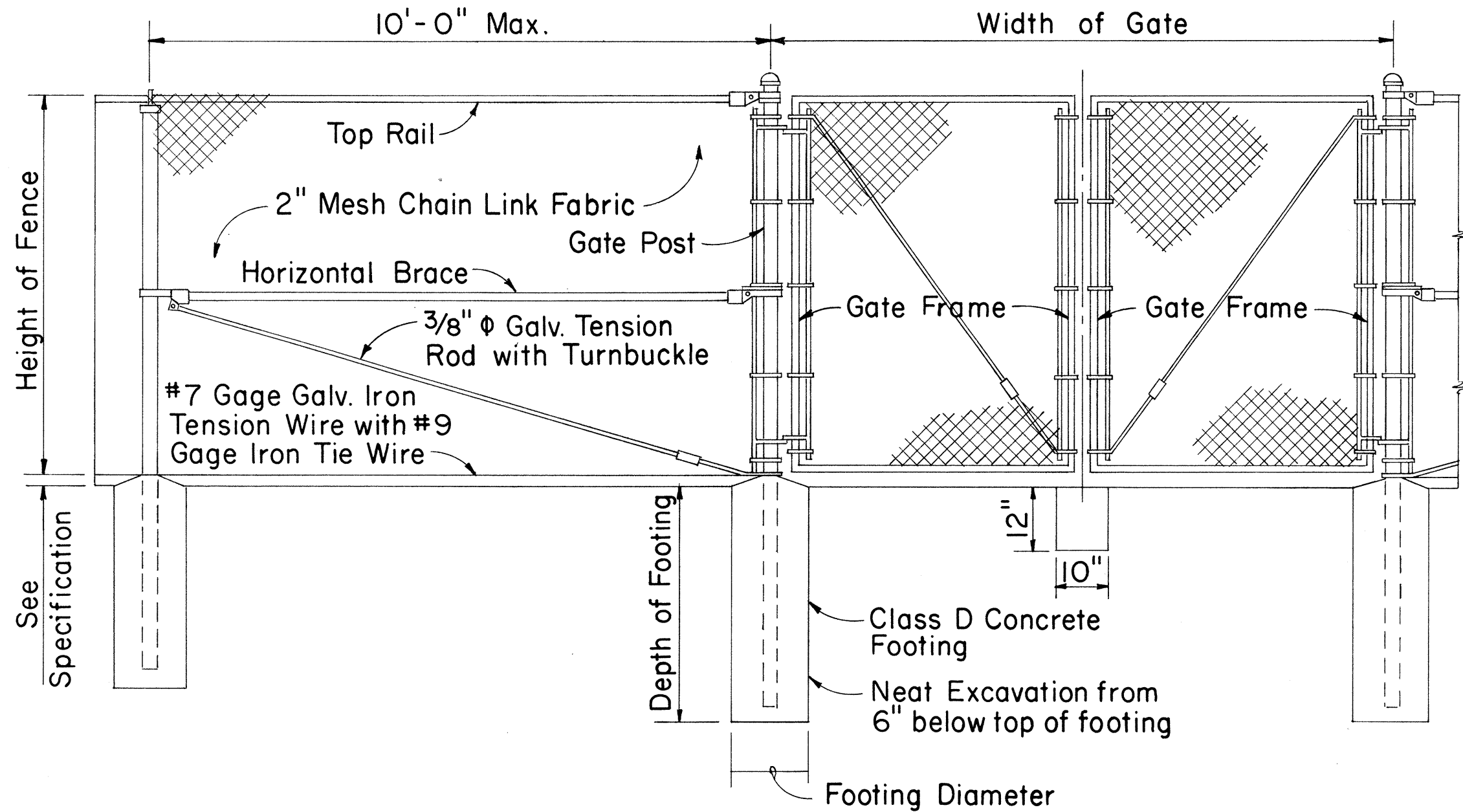


CURB, TYPE 6, BITUMINOUS
Scale: 1" = 0'-6"

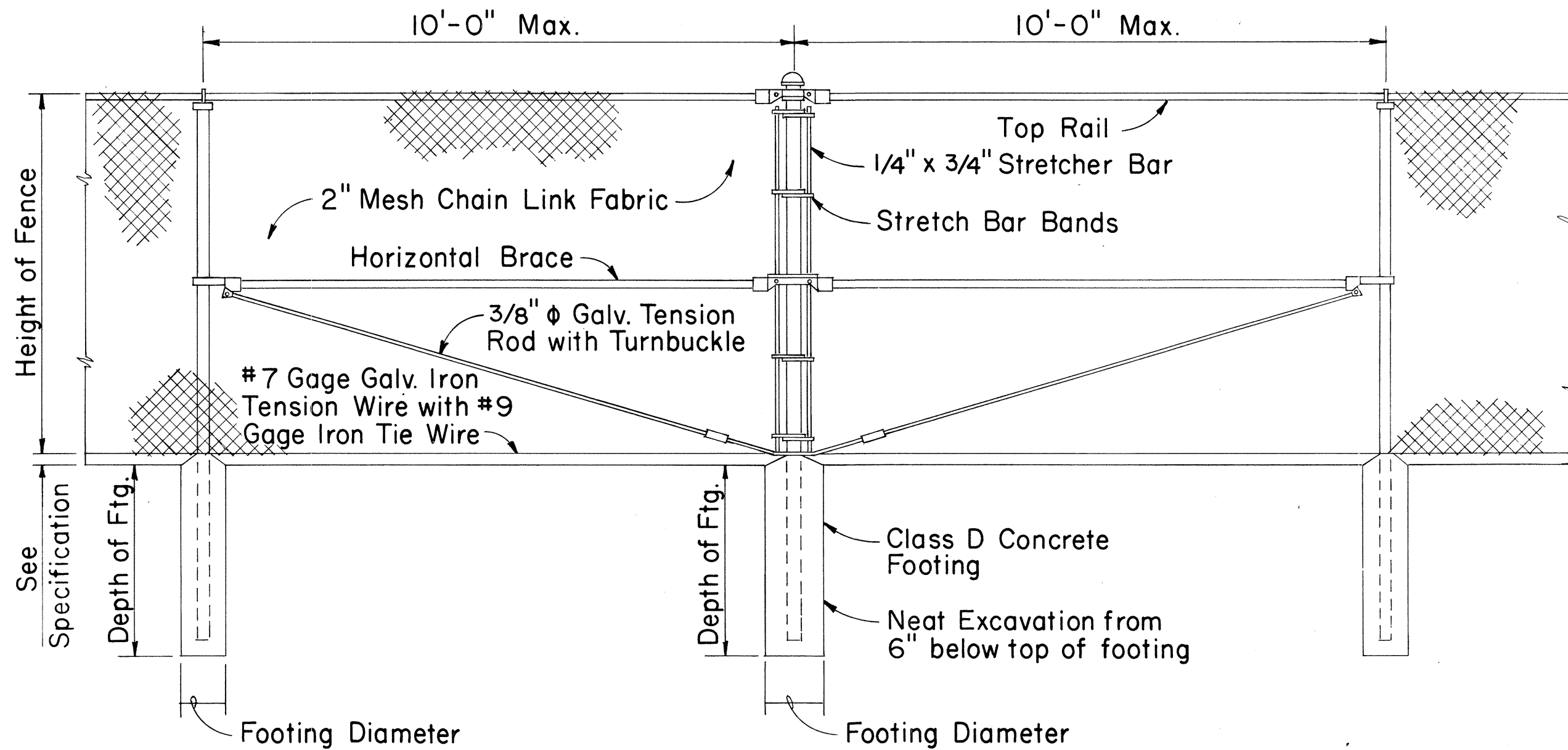


THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
J. Andrew Schuchardt

STATE OF HAWAII	
DEPARTMENT OF TRANSPORTATION	
HIGHWAYS DIVISION	
MISCELLANEOUS ROADWAY DETAILS	
LINK CHAIN BARRIER, CURB and GUTTER	
HALAWA INTERCHANGE	
PROJECT NO I-HI-1(87):13	
SCALE: AS SHOWN	
DATE: 6/8/70	
SHEET No. 29 OF 23 SHEETS	



LINE POST GATE POST GATE POST

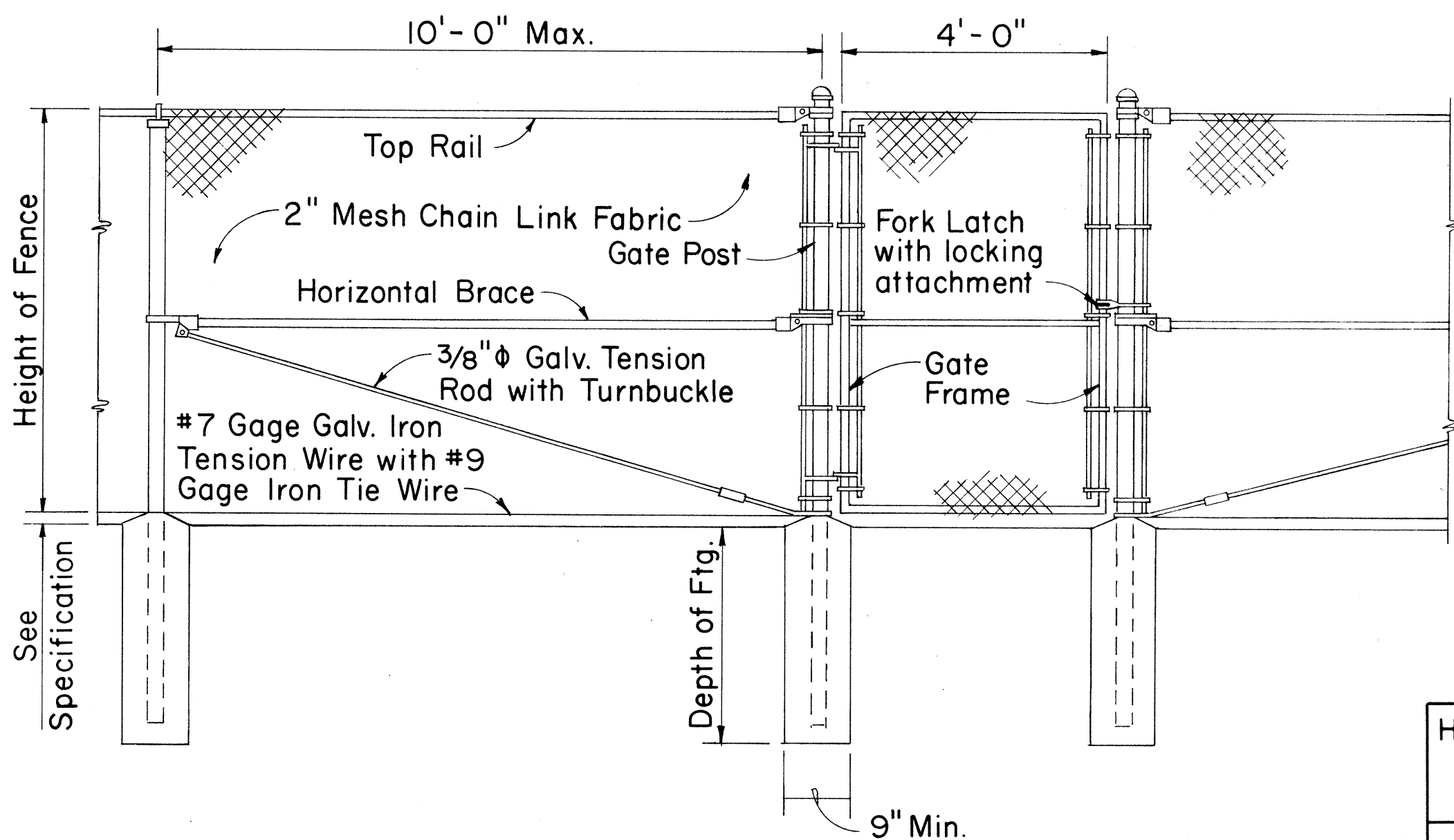


LINE POST PULL POST LINE POST

TYPICAL SECTION
(WITH CONCRETE FOOTING)

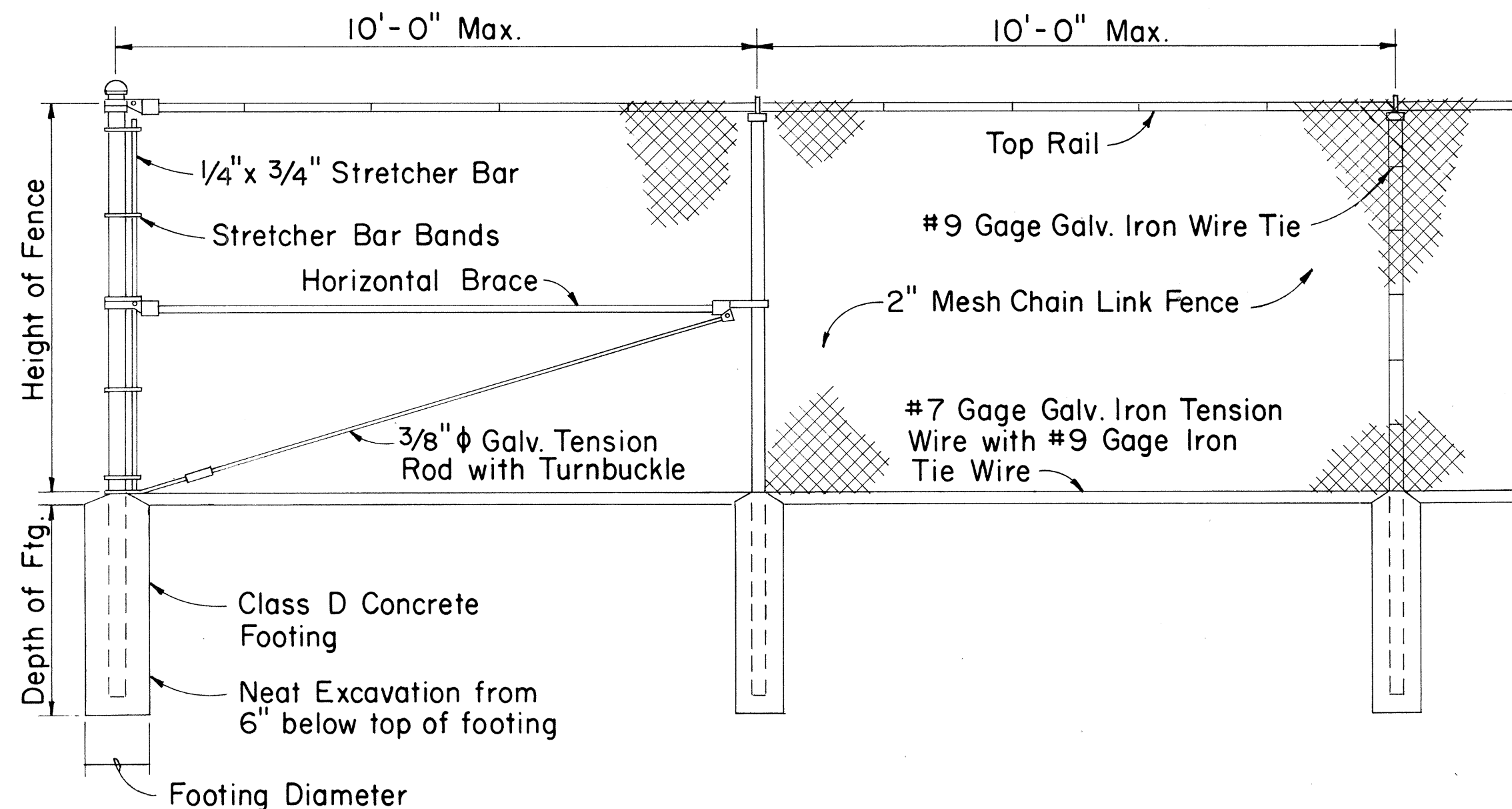
DETAIL OF CHAIN LINK GATE

- 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.

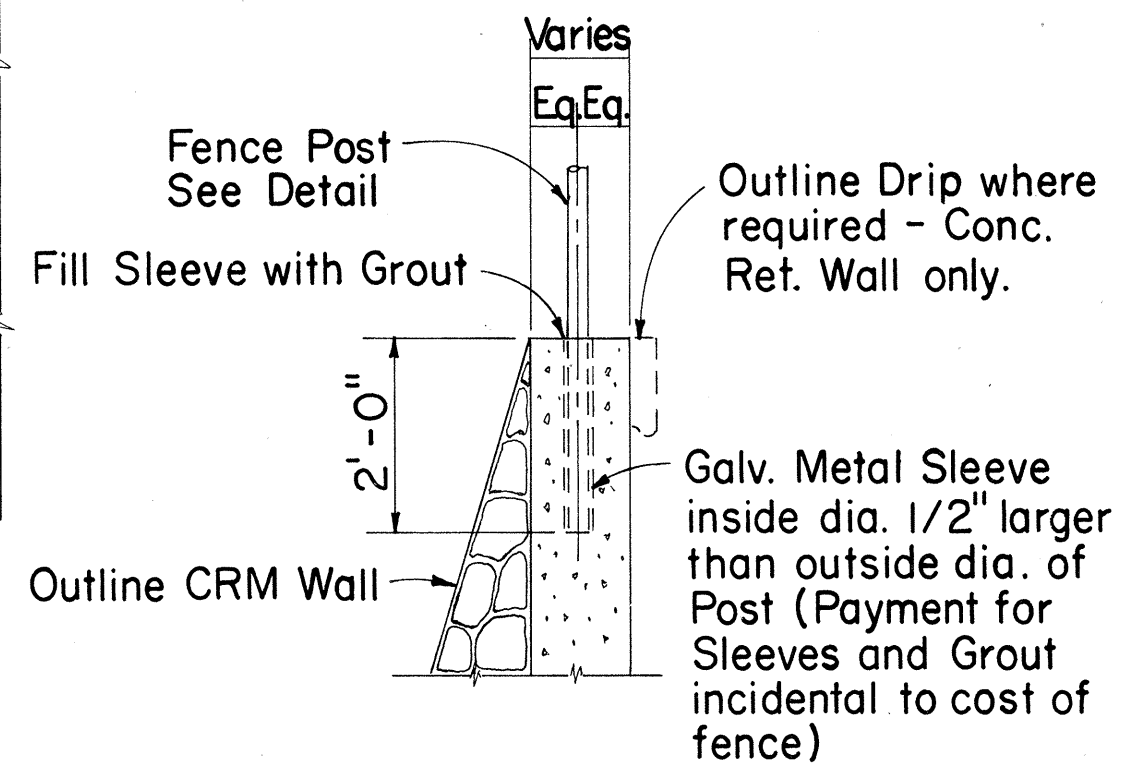


LINE POST GATE POST GATE POST

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

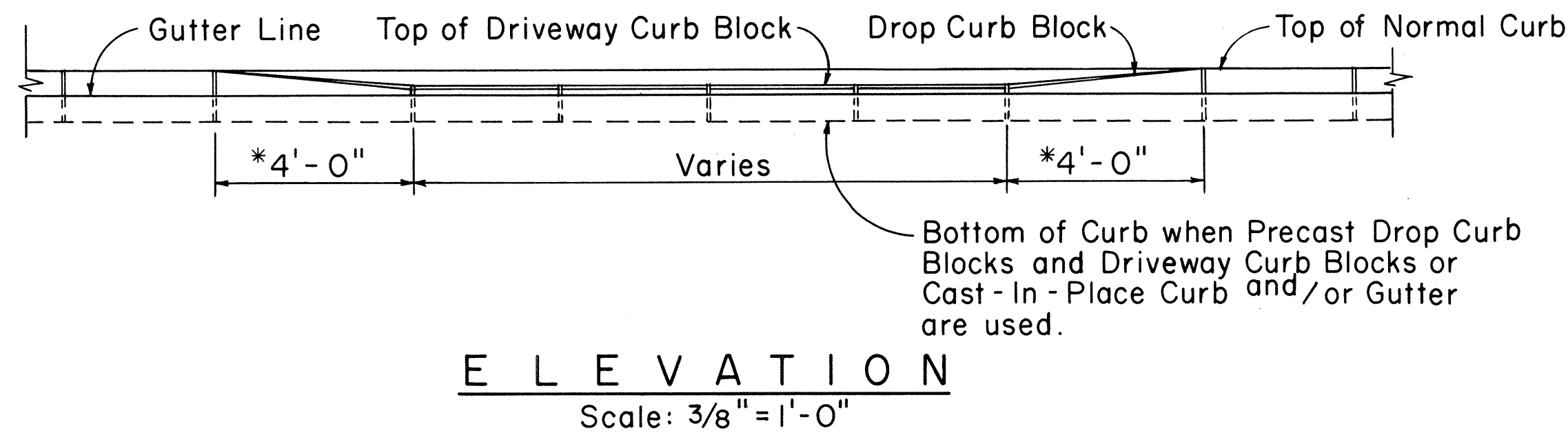
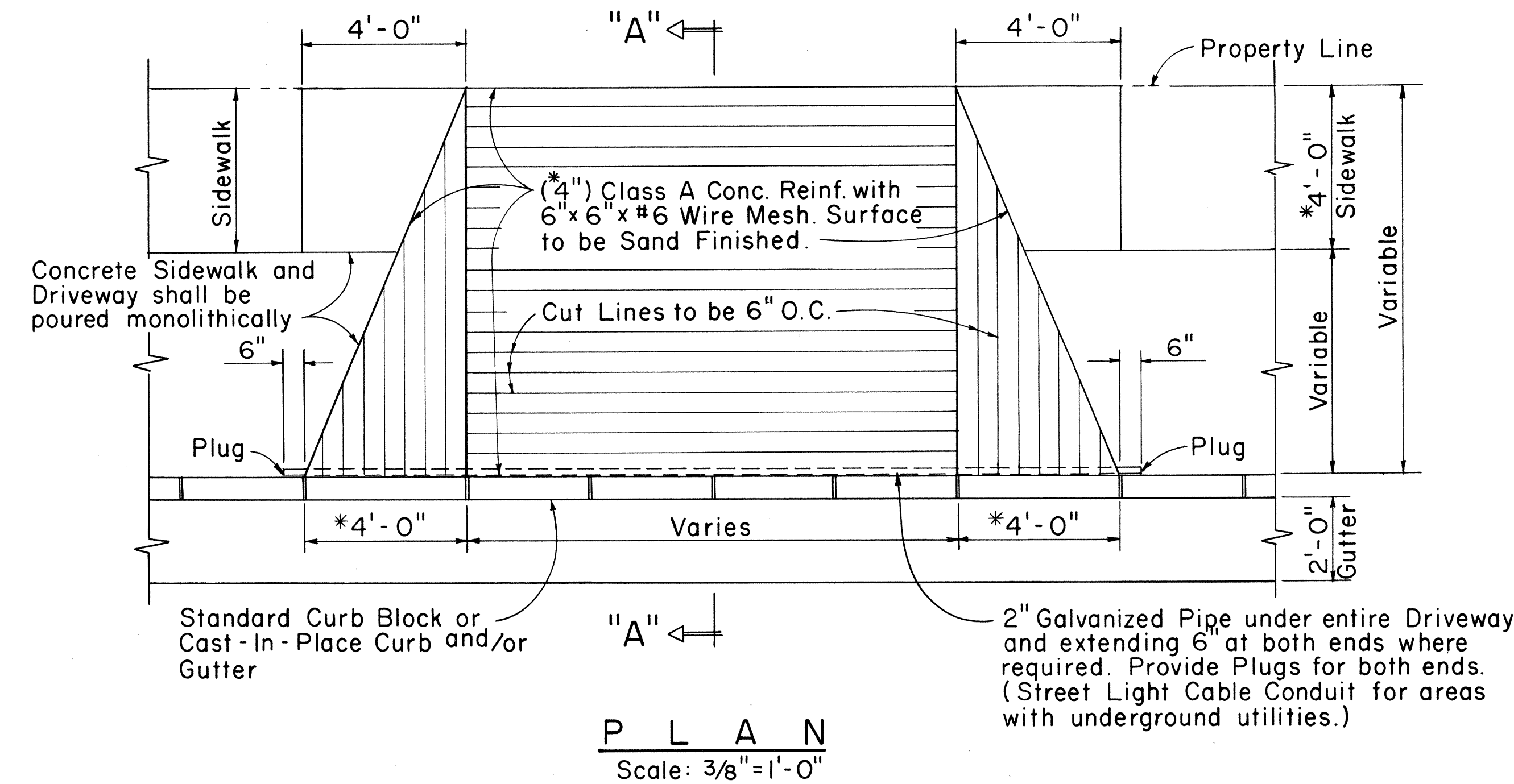
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

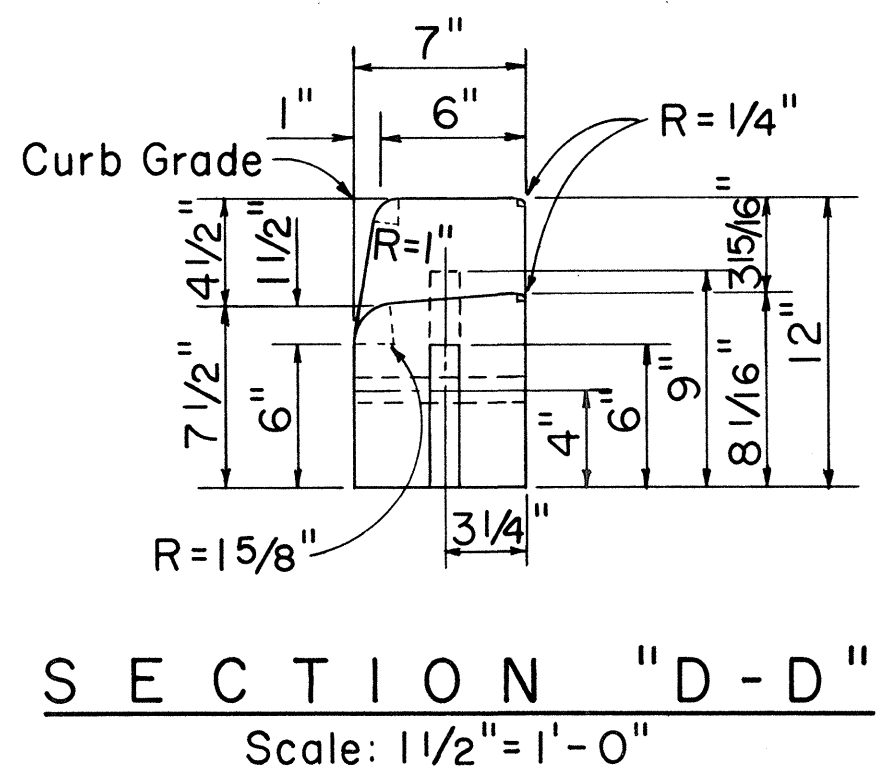
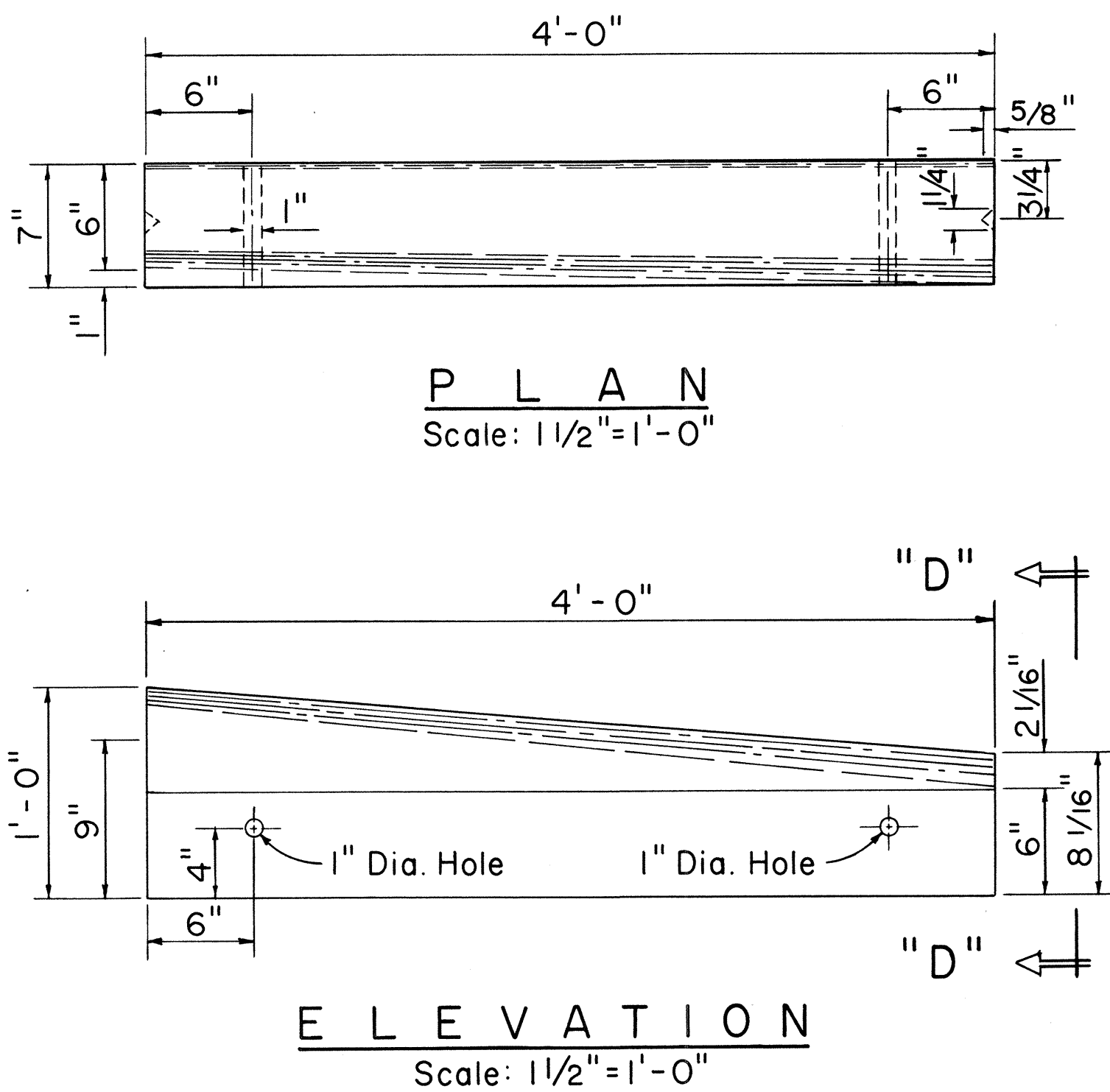
CHAIN LINK FENCE
(WITH TOPRAIL)

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

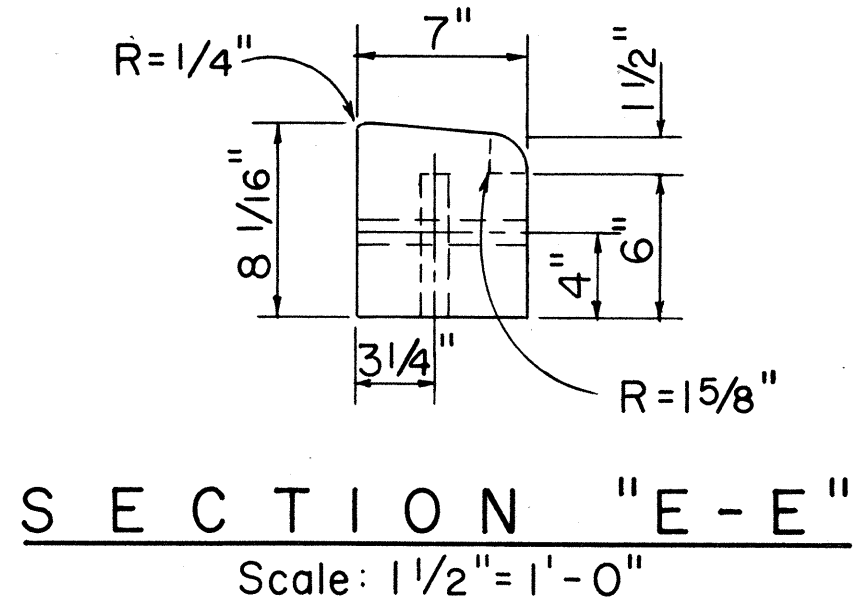
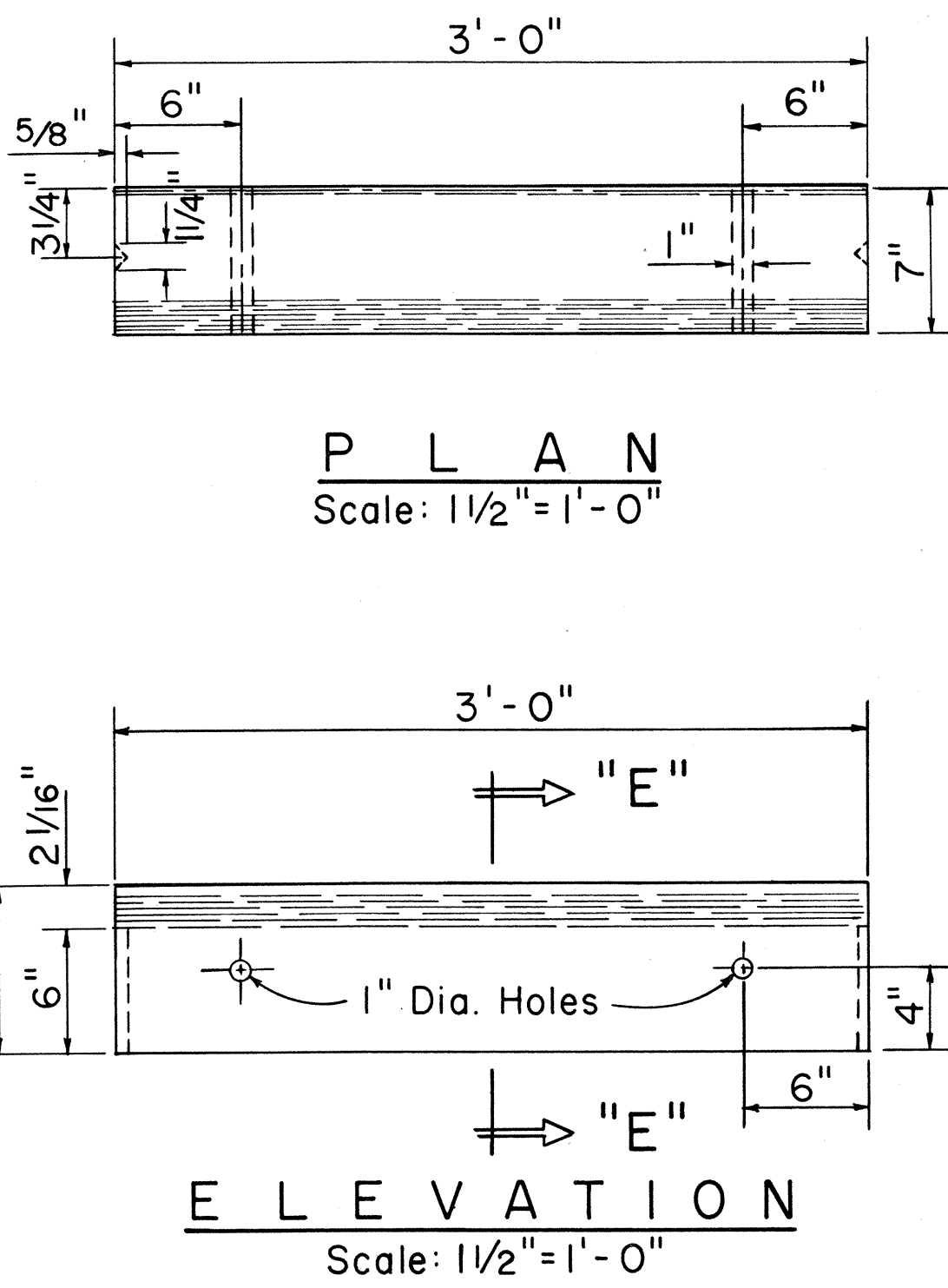
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-(87)13	1970	31	244



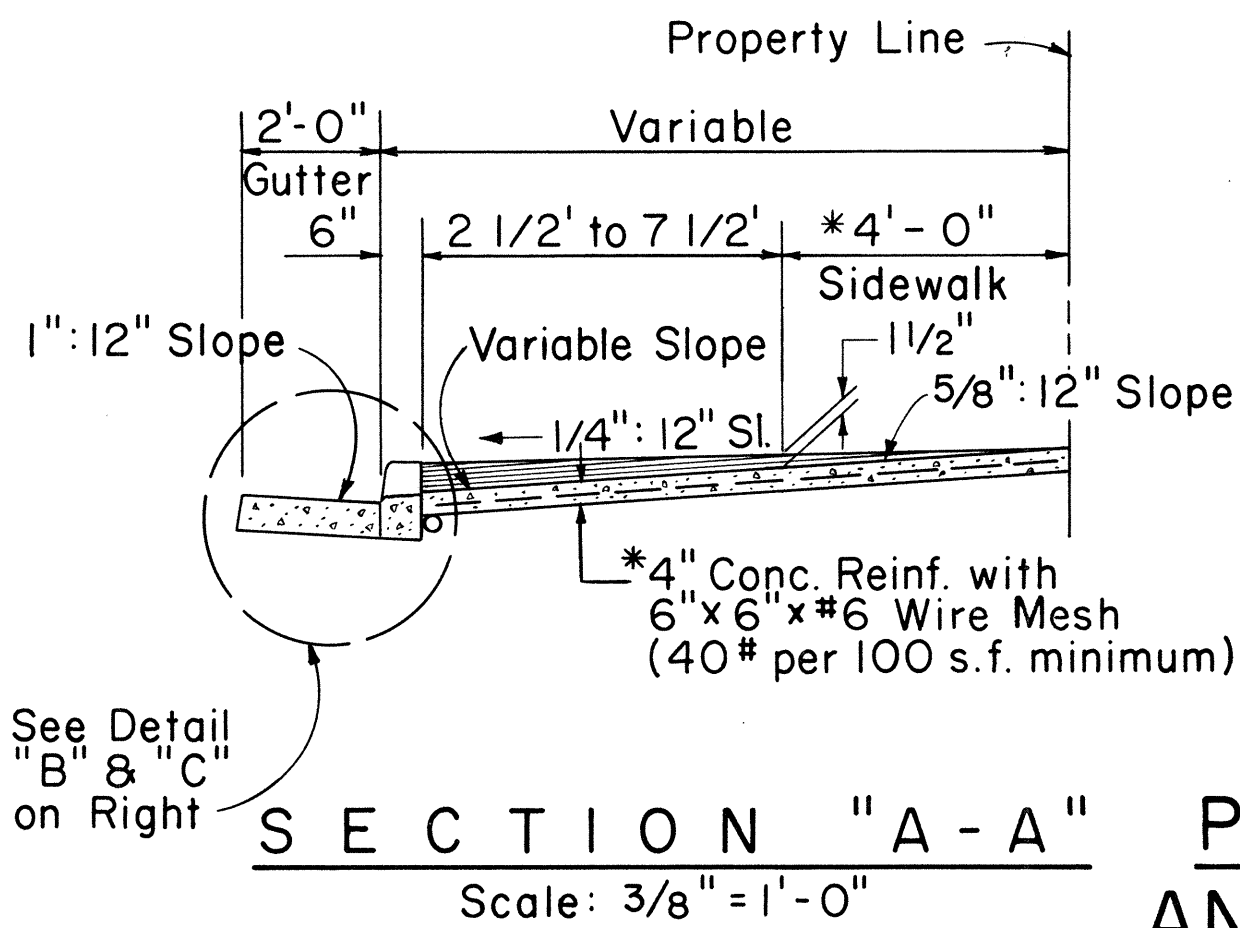
Dist. Curb Line to ℓ	Slope
12'	5/8" to 12"
10'	3/4" to 12"
8'	1" to 12"
7'	7/8" to 12"
6'	1" to 12"
3'	1 3/4" to 12"



PRE-CAST CONC. DROP CURB BLOCK



PRE-CAST CONC. DRIVEWAY CURB



PRE-CAST DRIVEWAY CURB AND CAST-IN-PLACE GUTTER

DETAIL "B"

CAST-IN-PLACE INTEGRAL DRIVEWAY CURB AND GUTTER

DETAIL "C"

TYPICAL DETAILS OF REINF. CONC. DROP DRIVEWAY

Scale: As Noted

NOTE:

1. * Use dimension shown unless otherwise noted on the plans.

APPROVAL RECOMMENDED: *Mr. J. J. J.* 12-4-69
HIGHWAY DESIGN ENGINEER DATE

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

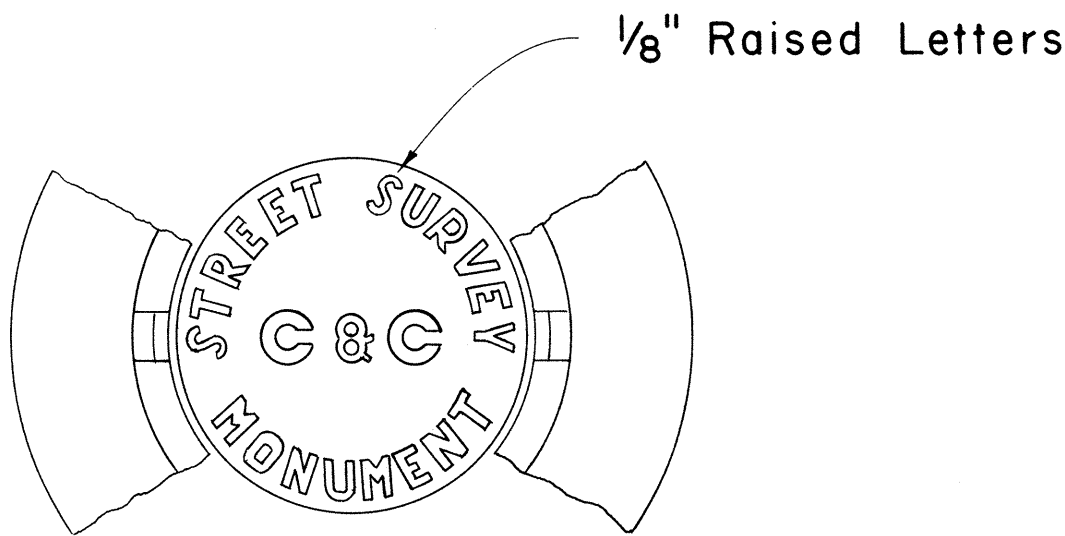
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
TYPICAL DETAILS OF
REINF. CONC. DROP DRIVEWAY

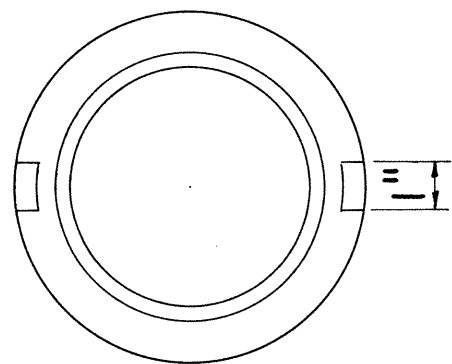
Scale: As Shown

SHEET No. 11 OF 23 SHEETS DD 610.1

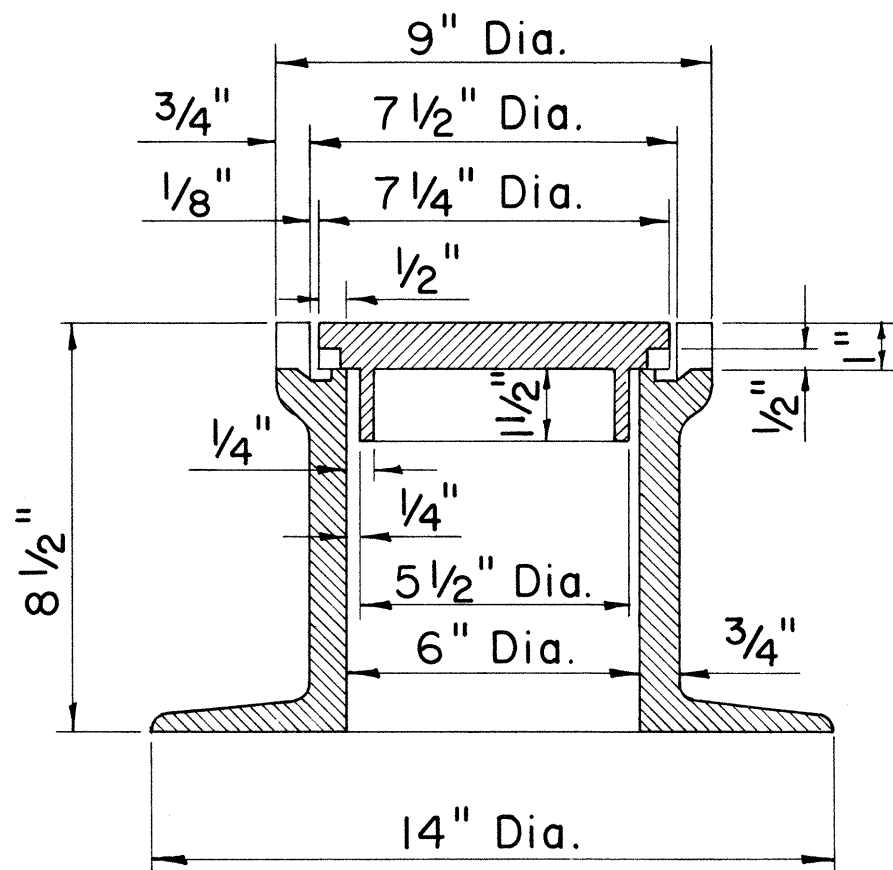
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[HI-1(87)13	1970	32	244



TOP VIEW OF COVER AND PORTION OF FRAME



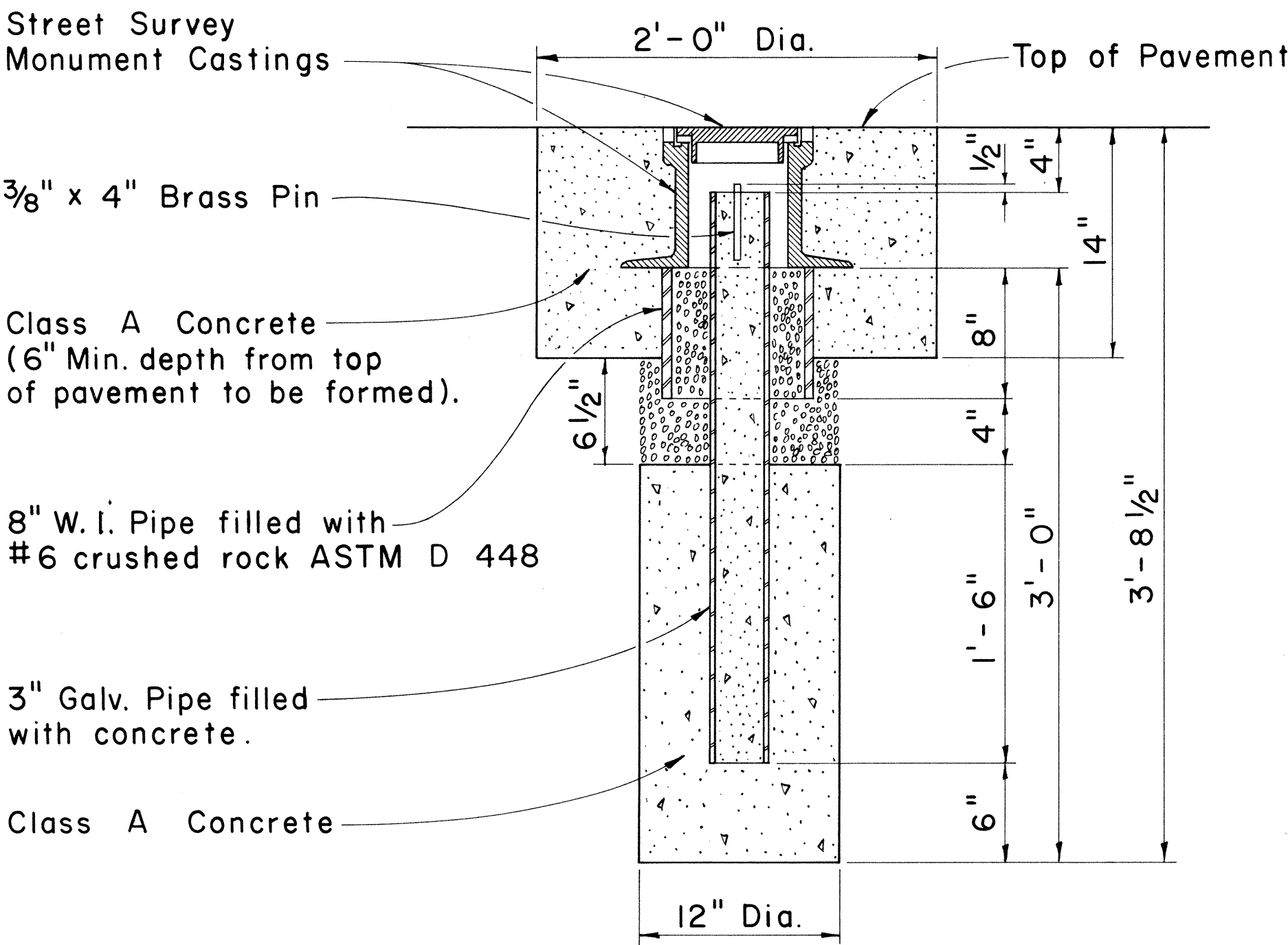
BOTTOM OF COVER



SECTIONAL VIEW OF FRAME AND COVER

STREET SURVEY MONUMENT CASTINGS

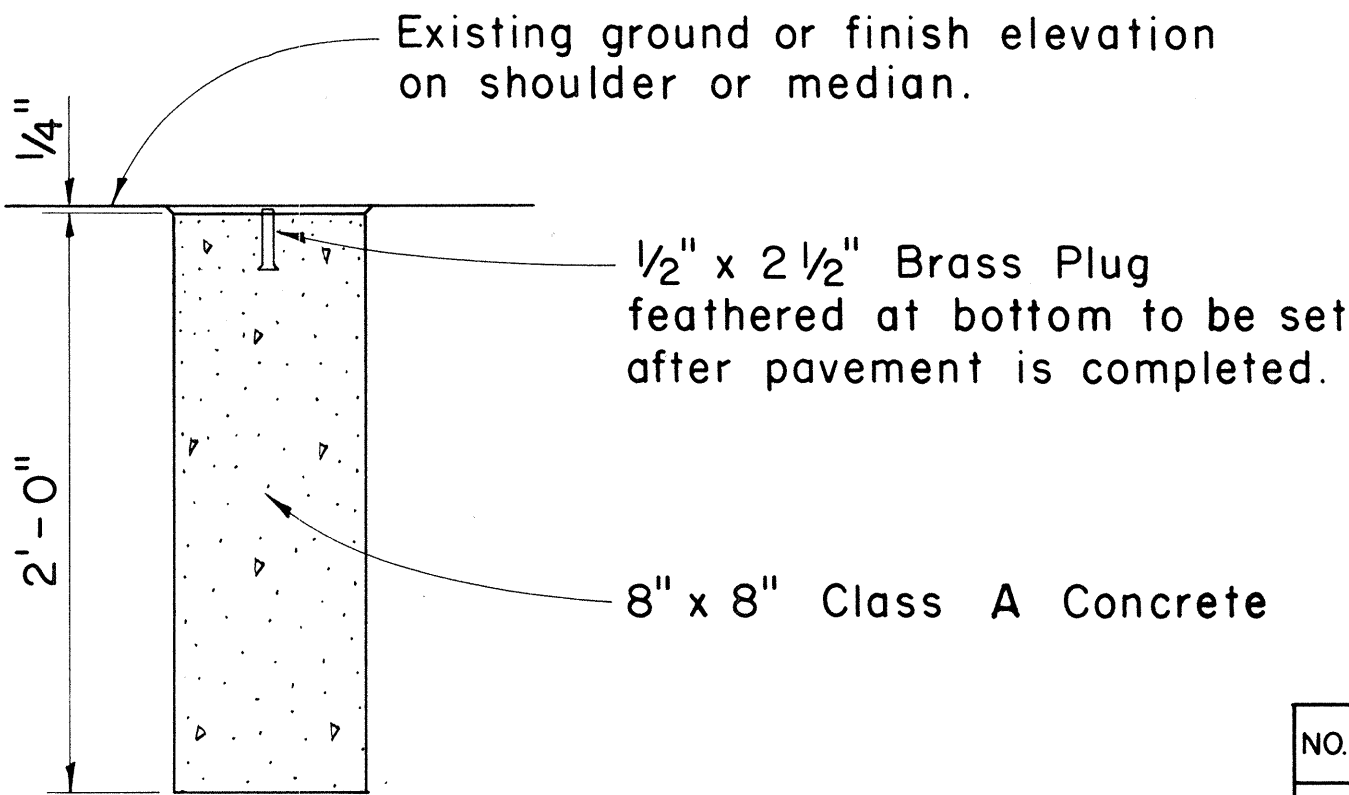
Scale: 3" = 1'-0"



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

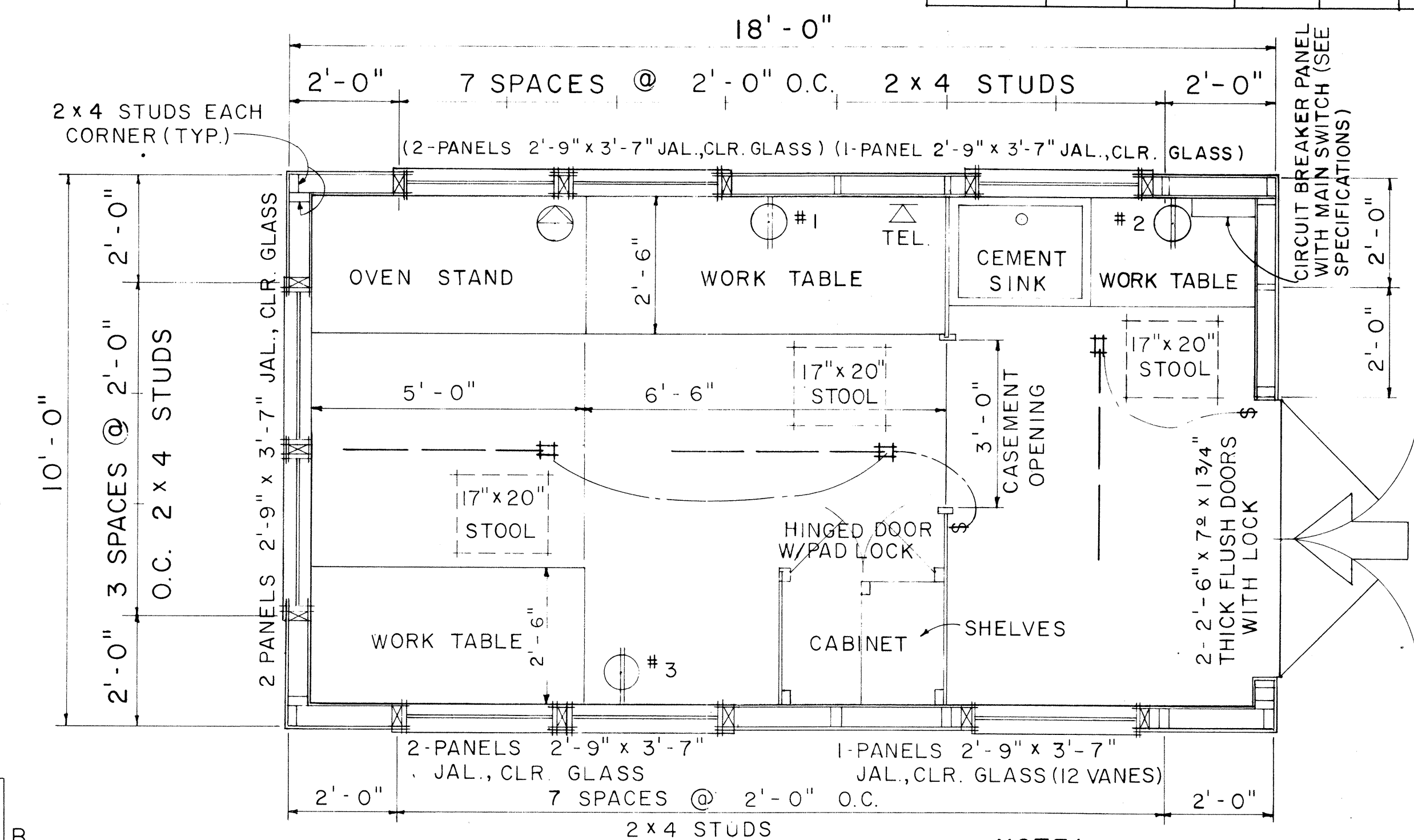
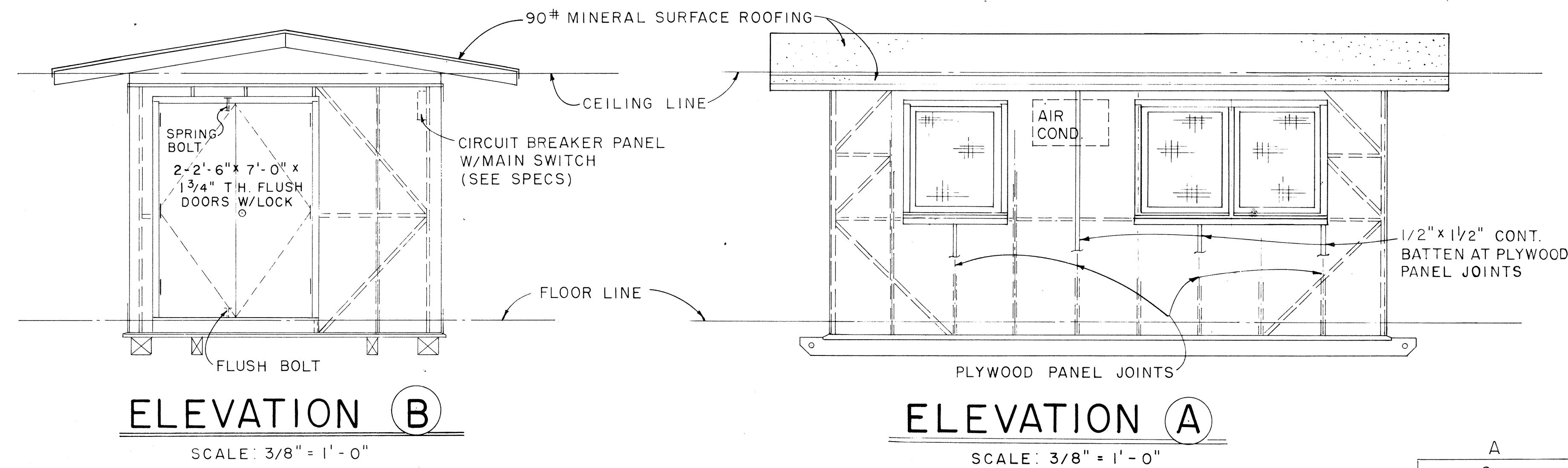
APPROVED:
[Signature] 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

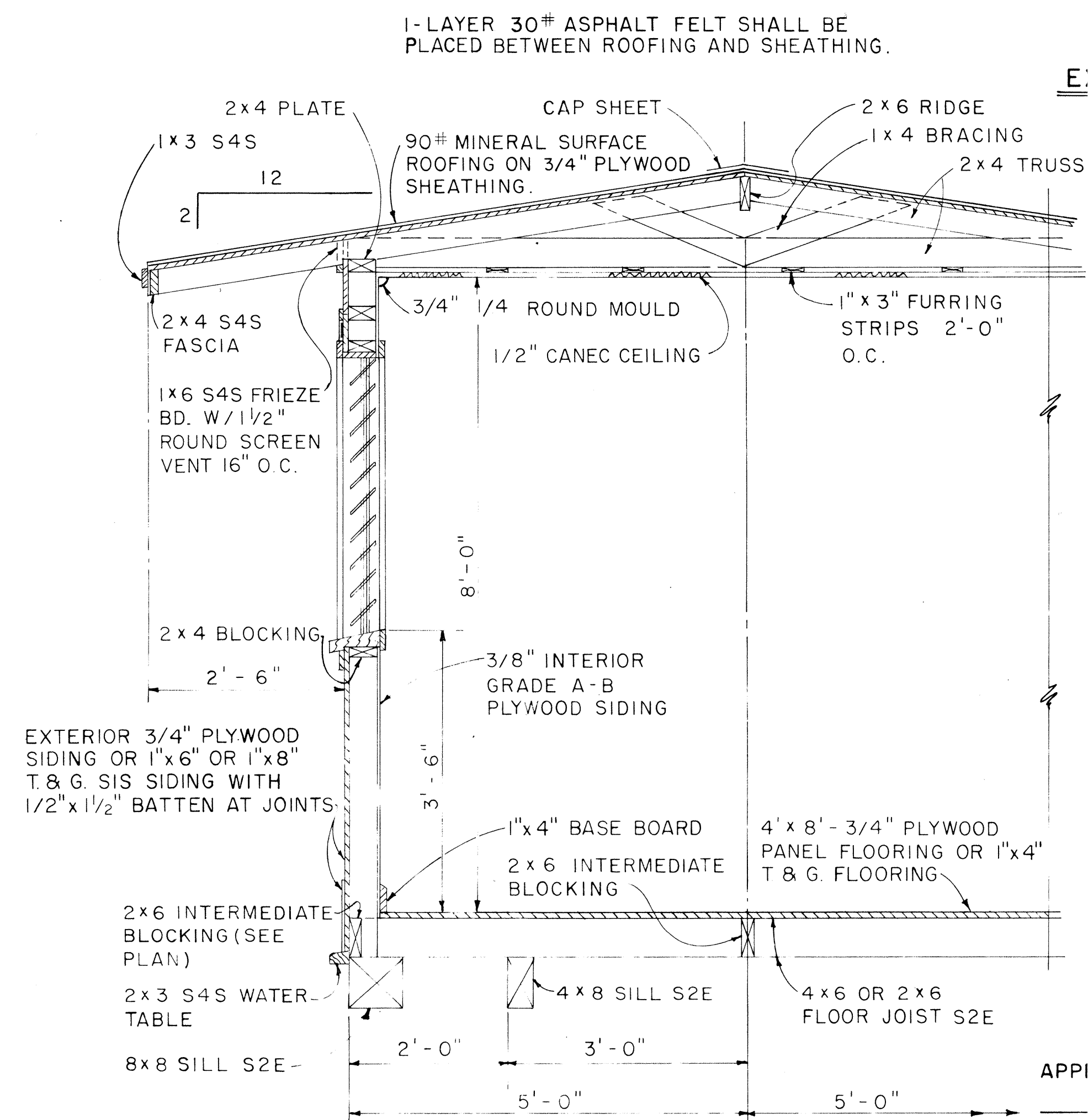
STANDARD DETAILS
CENTERLINE, REFERENCE SURVEY
AND C & C STREET SURVEY
MONUMENTS

Scale: As Shown



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

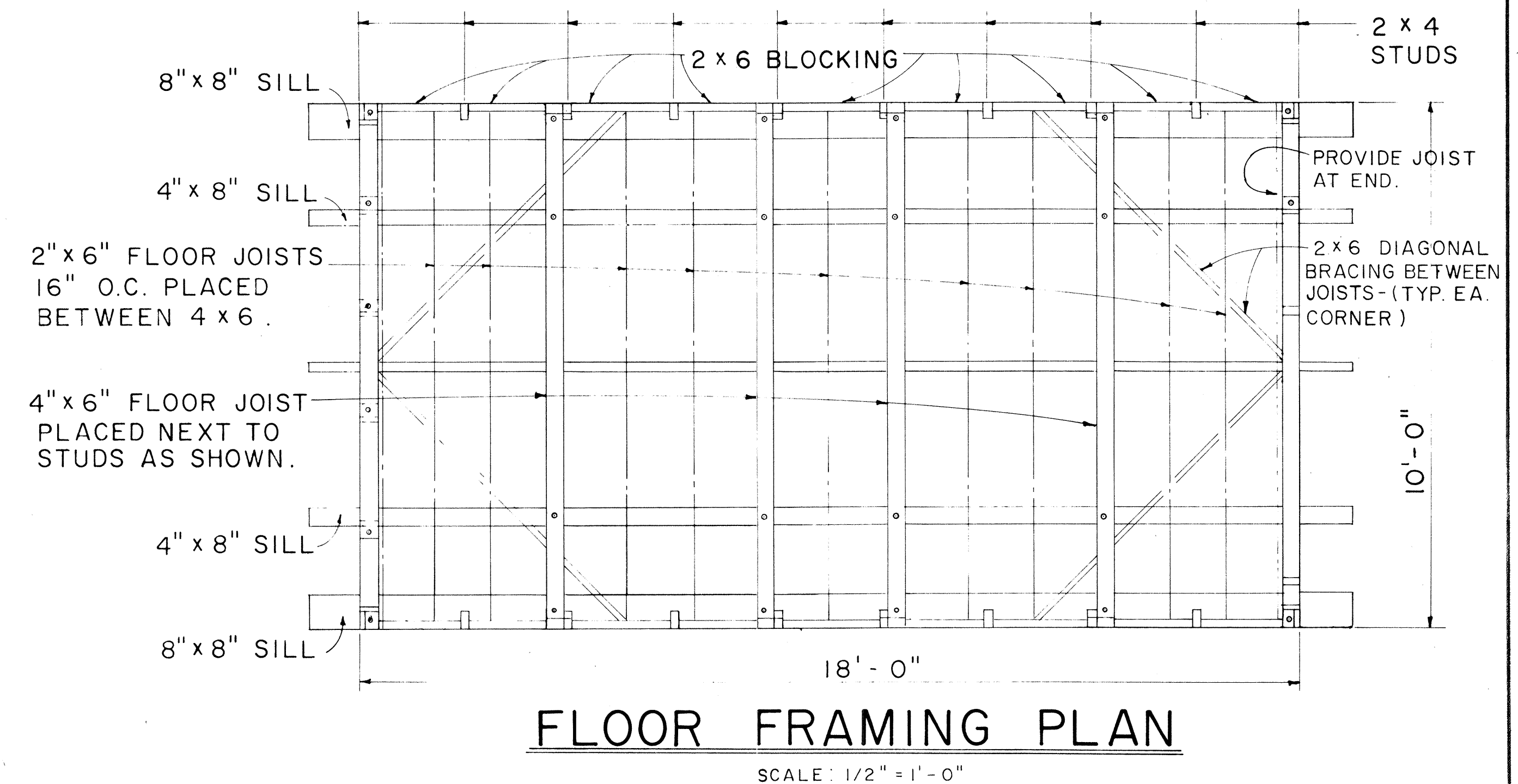
EXTERIOR & INTERIOR KEY



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



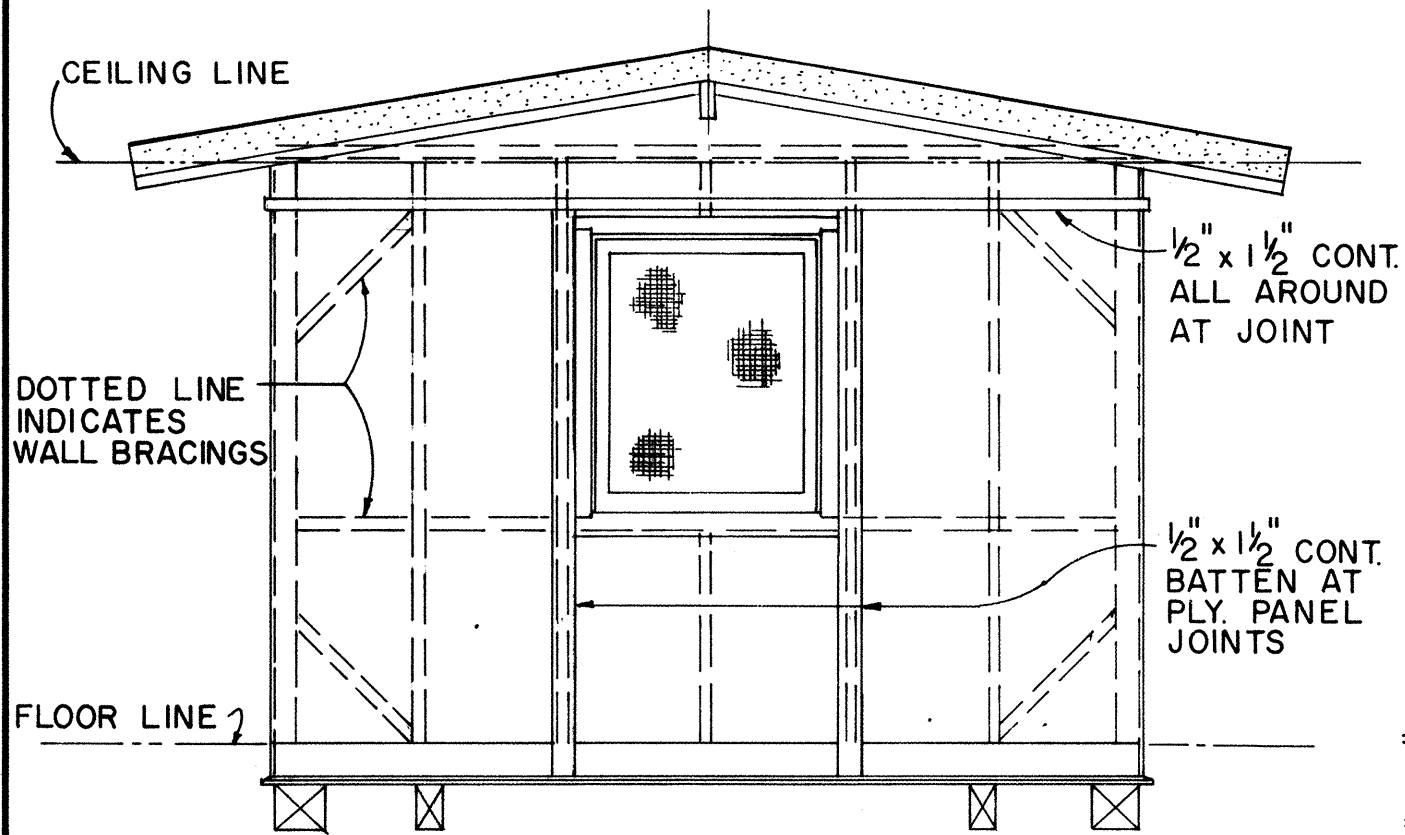
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

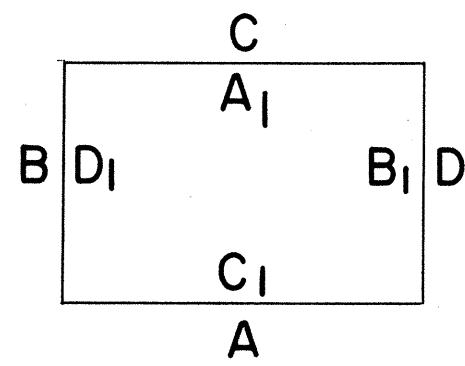
PROJECT SITE LABORATORY

Scale: As Noted

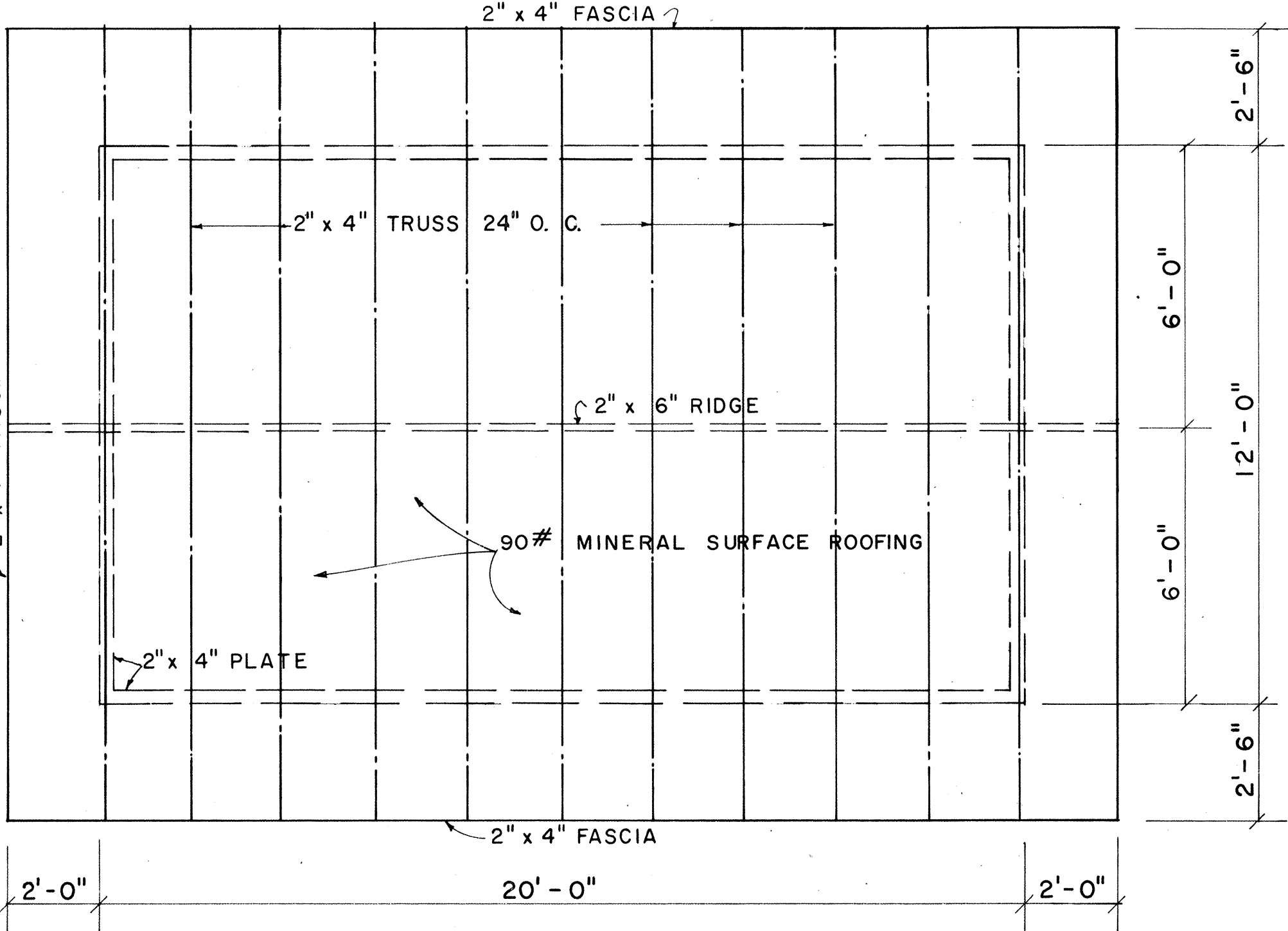
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	1-HH(87)-13	1970	33A	244



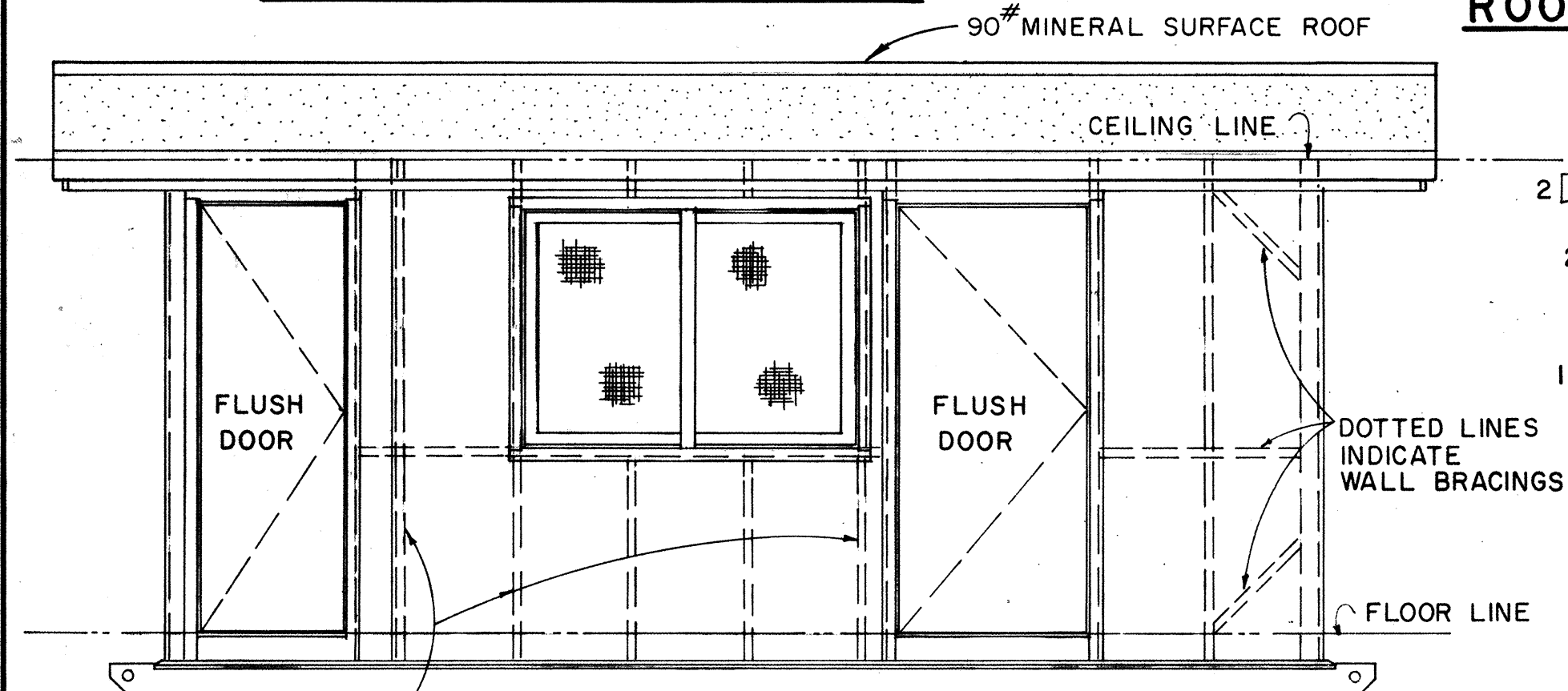
ELEVATION B
ELEVATION D SIMILAR
SCALE: $\frac{3}{8}" = 1'-0"$



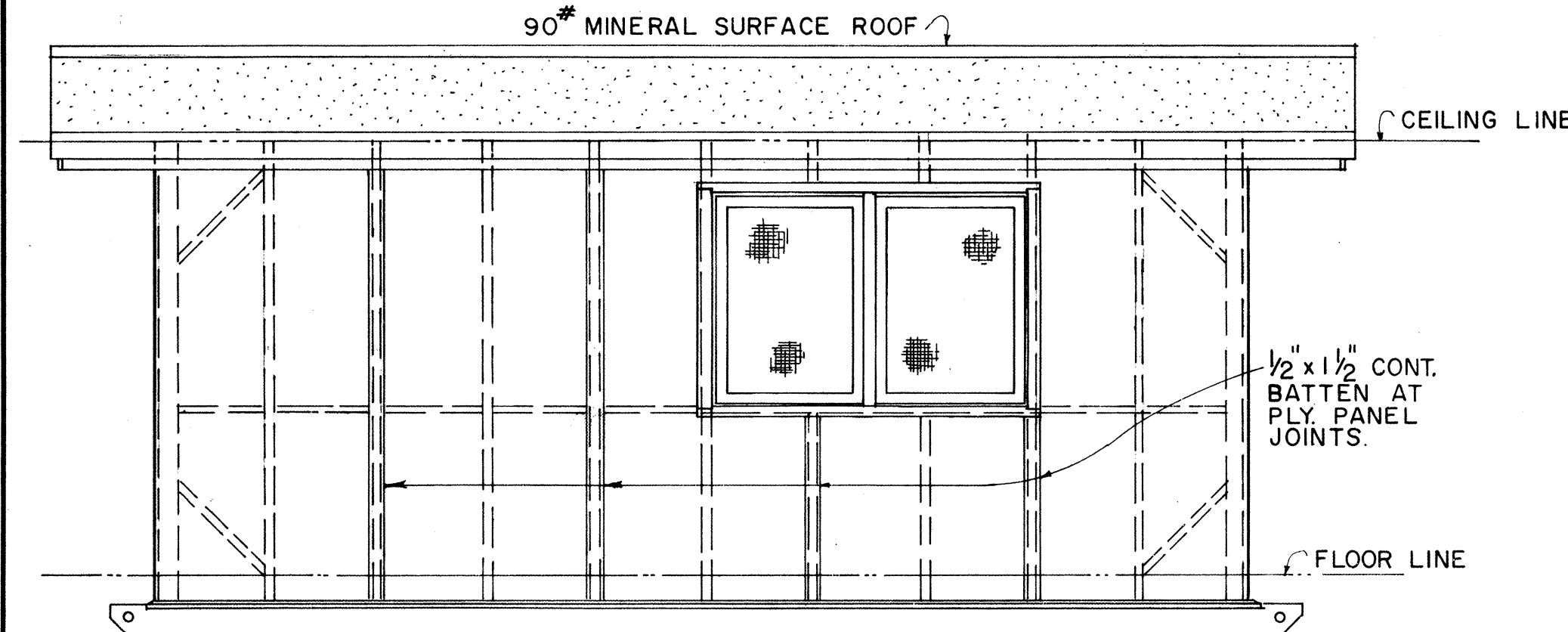
EXTERIOR & INTERIOR KEY



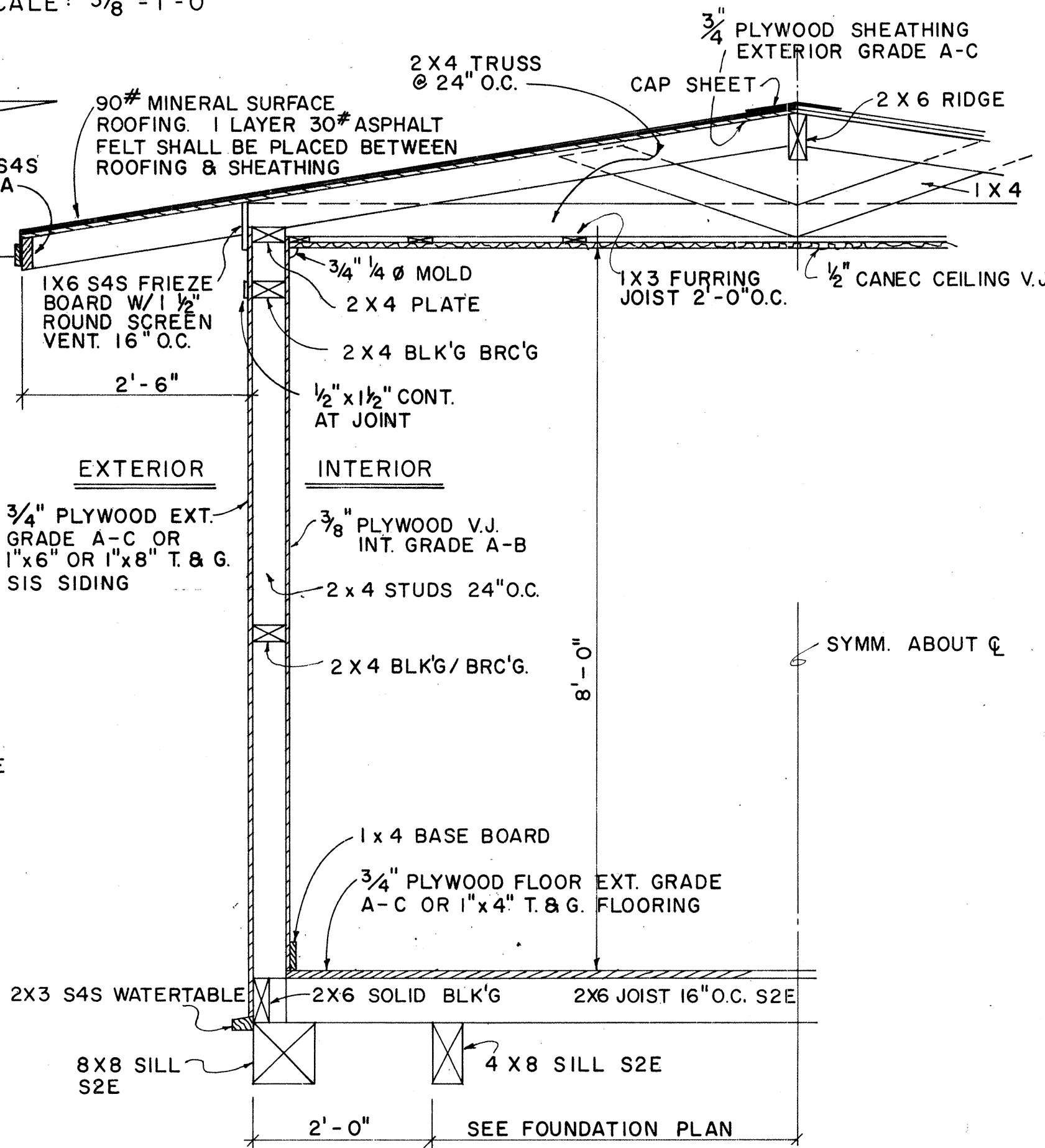
ROOF FRAMING PLAN
SCALE: $\frac{3}{8}" = 1'-0"$



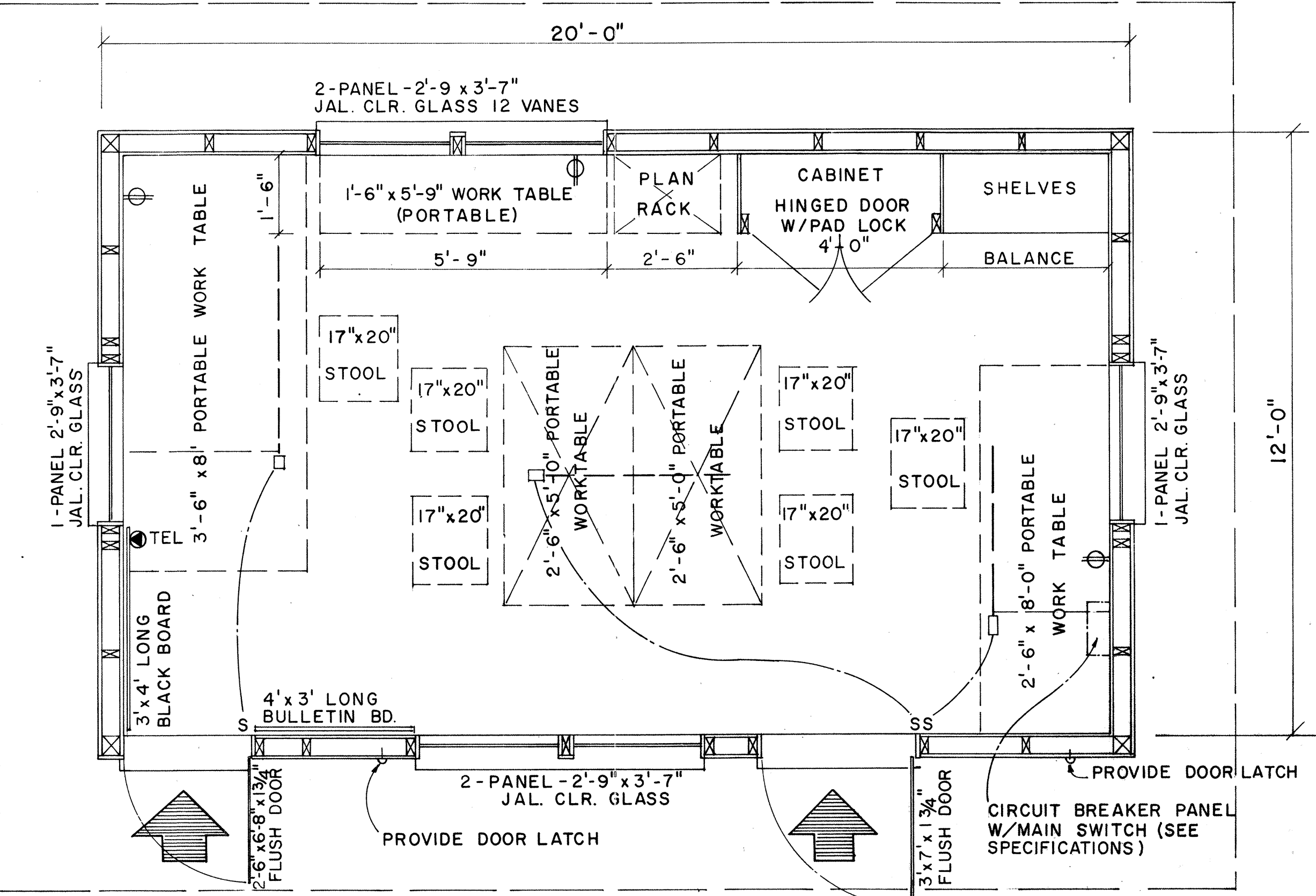
ELEVATION A
SCALE: $\frac{3}{8}" = 1'-0"$



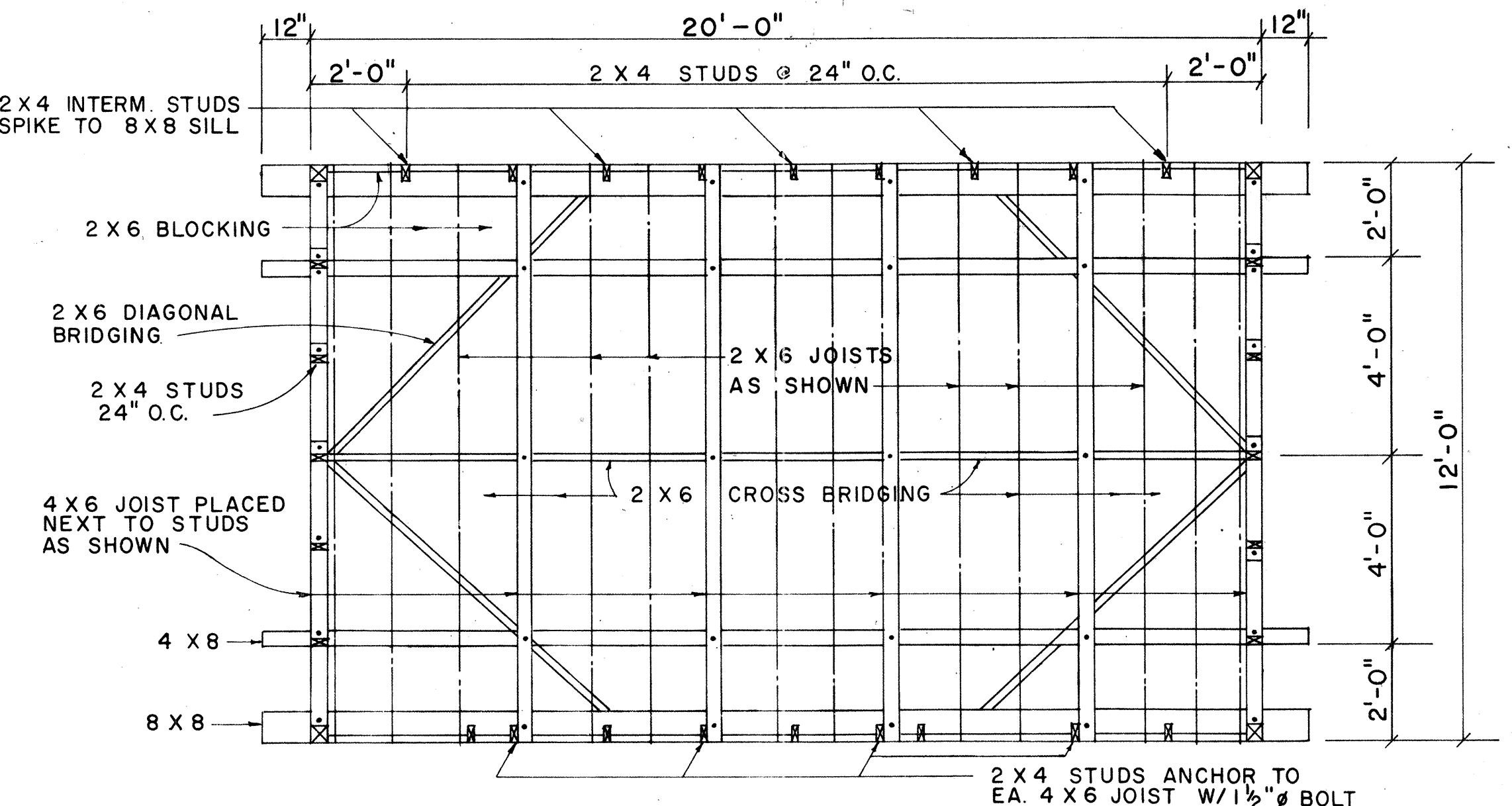
ELEVATION C
SCALE: $\frac{3}{8}" = 1'-0"$



TYPICAL WALL SECTION
SCALE: $\frac{3}{8}" = 1'-0"$



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



FOUNDATION FRAMING PLAN
SCALE: $\frac{3}{8}" = 1'-0"$

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

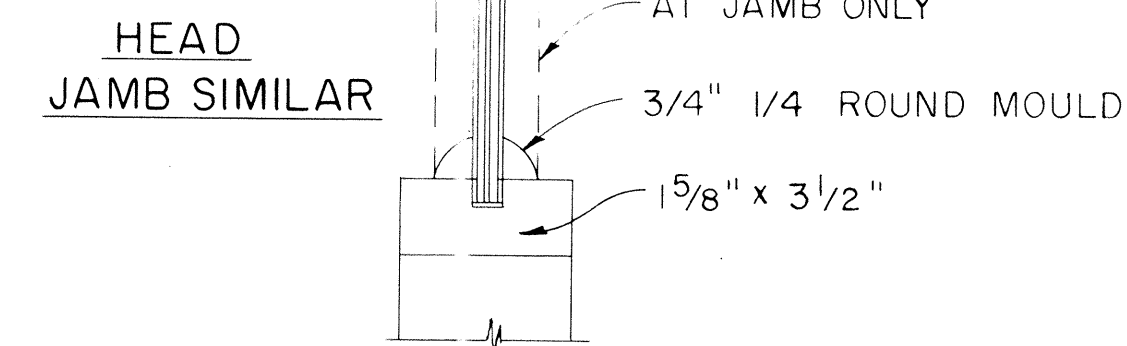
FIELD OFFICE

Scale: As Noted

SHEET NO. 14 OF 23 SHEETS DD 636.1

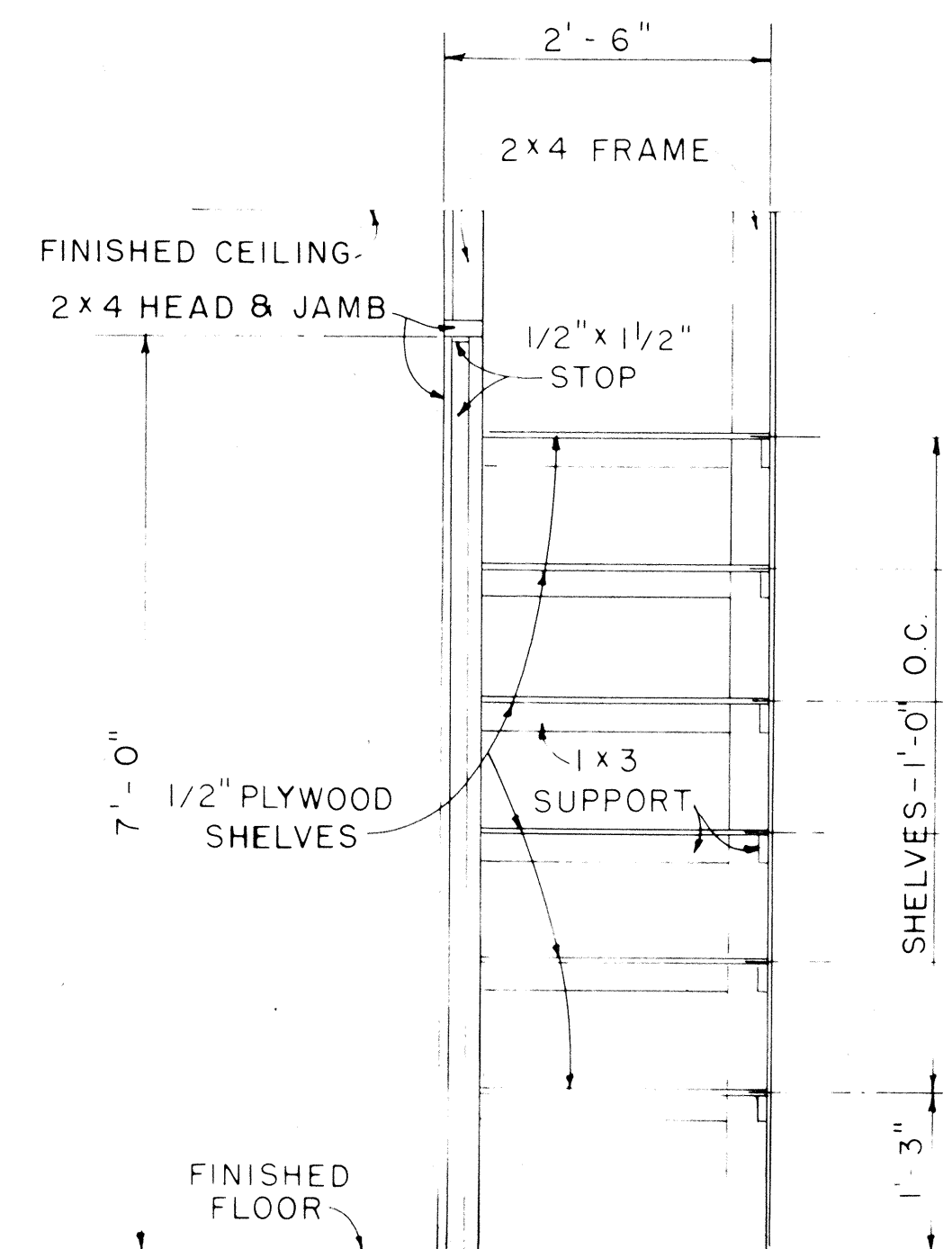
DATE: _____
SURVEY PLOTTED BY: _____
ORIGINAL PLAN: _____
DRAWN BY: _____
NOTE BOOK: _____
QUANTITIES BY: _____
CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(87):13	1970	34	244



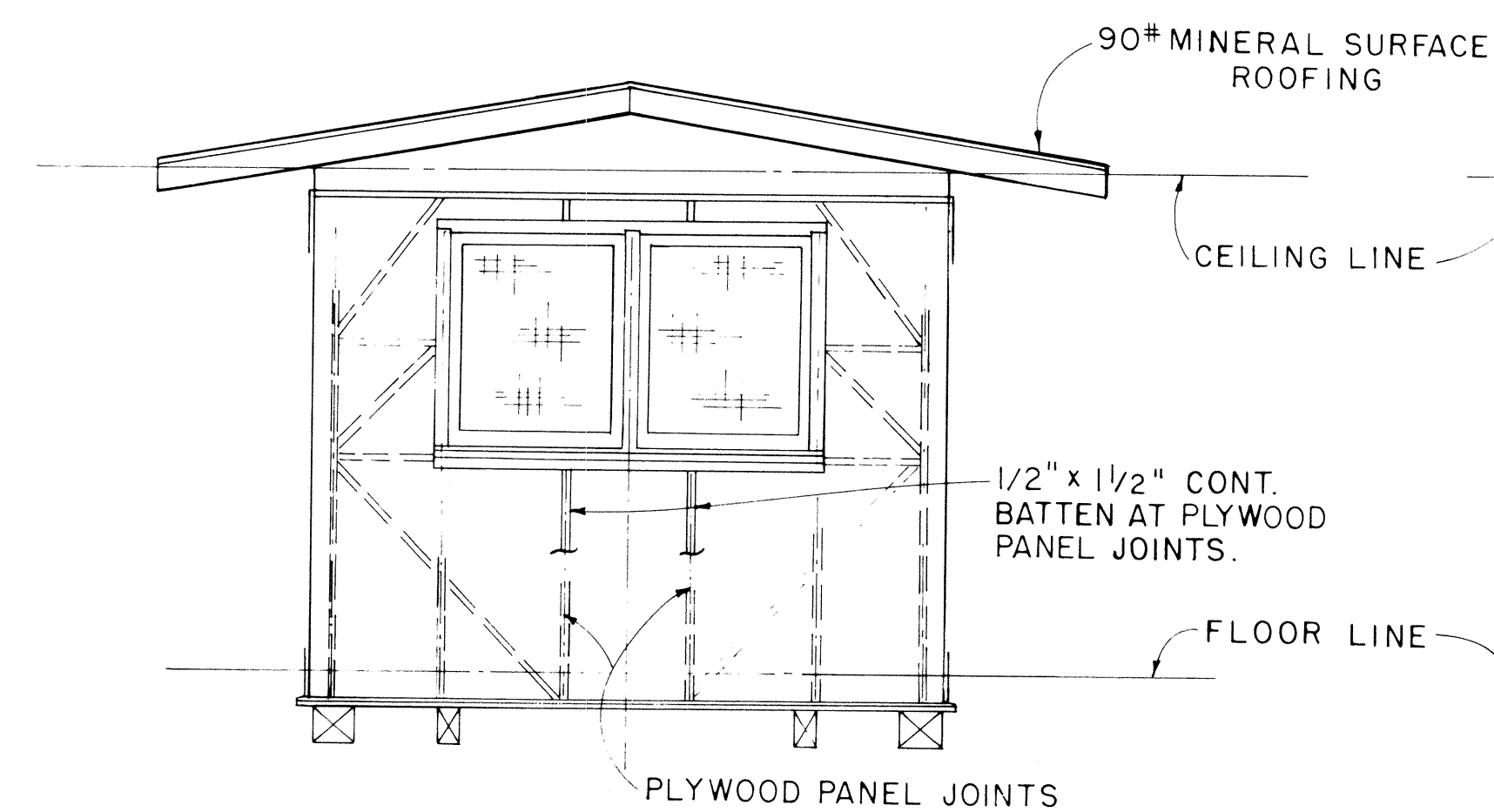
CASEMENT DETAIL

SCALE: 3" = 1'-0"



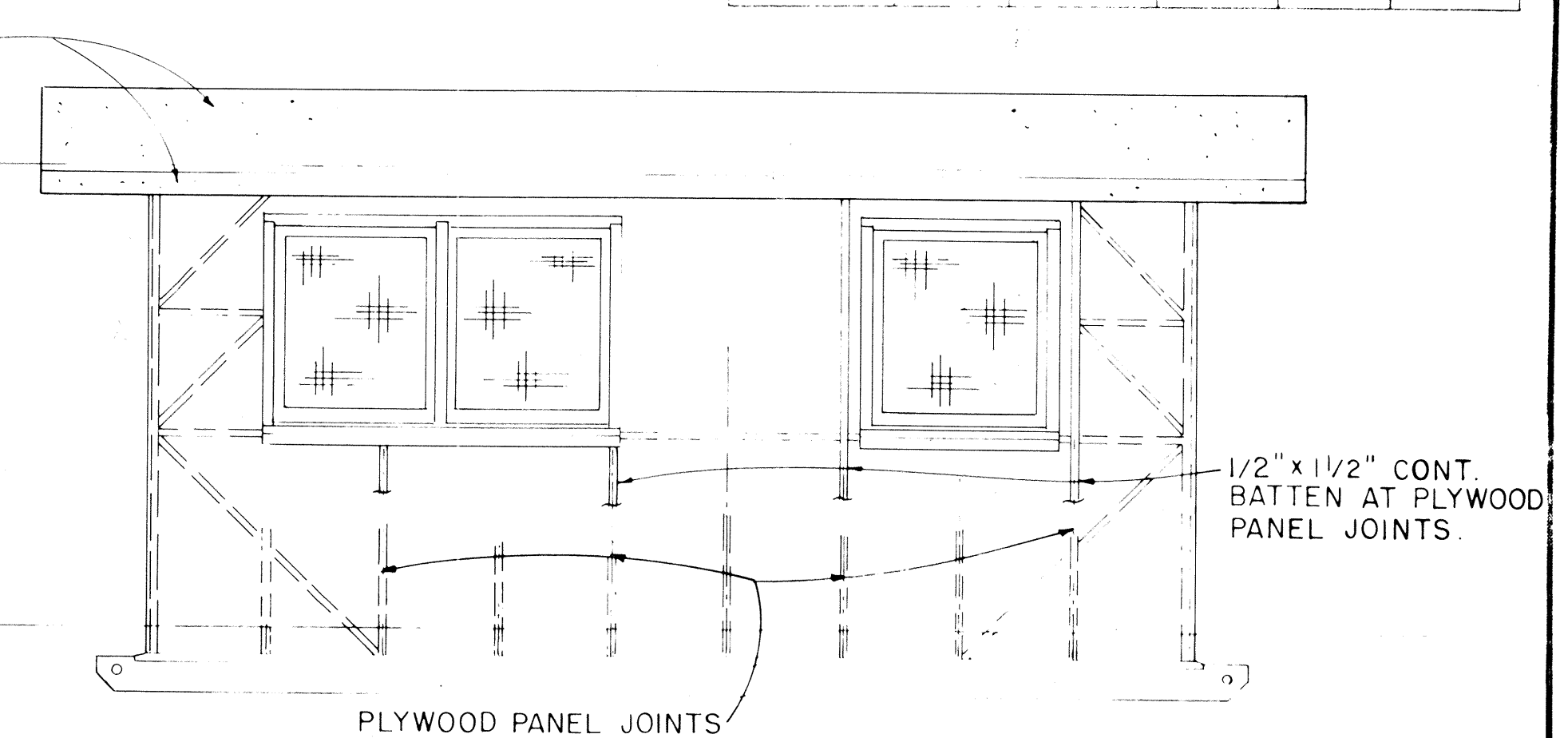
CABINET DETAIL

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

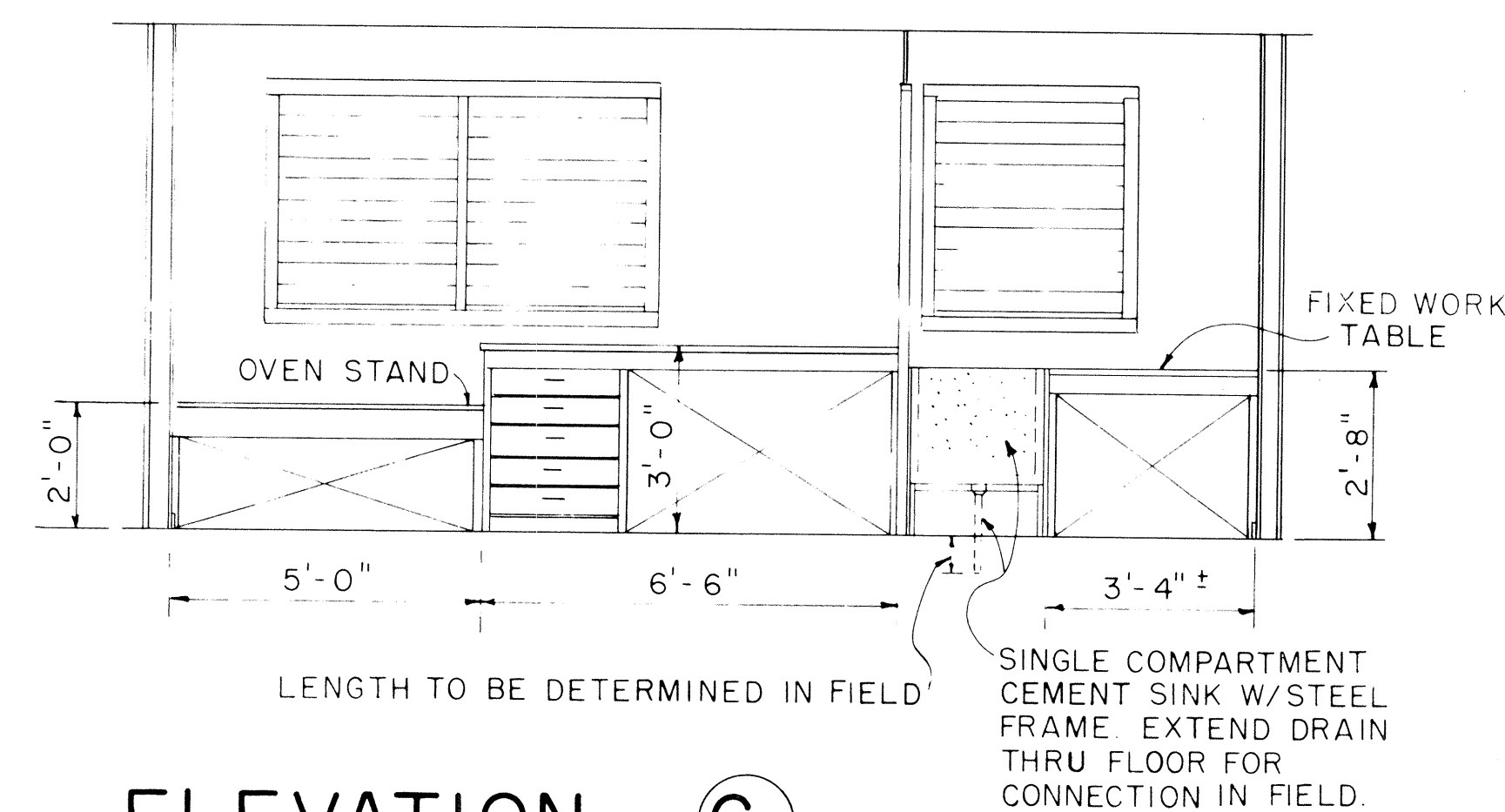


ELEVATION (D)

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

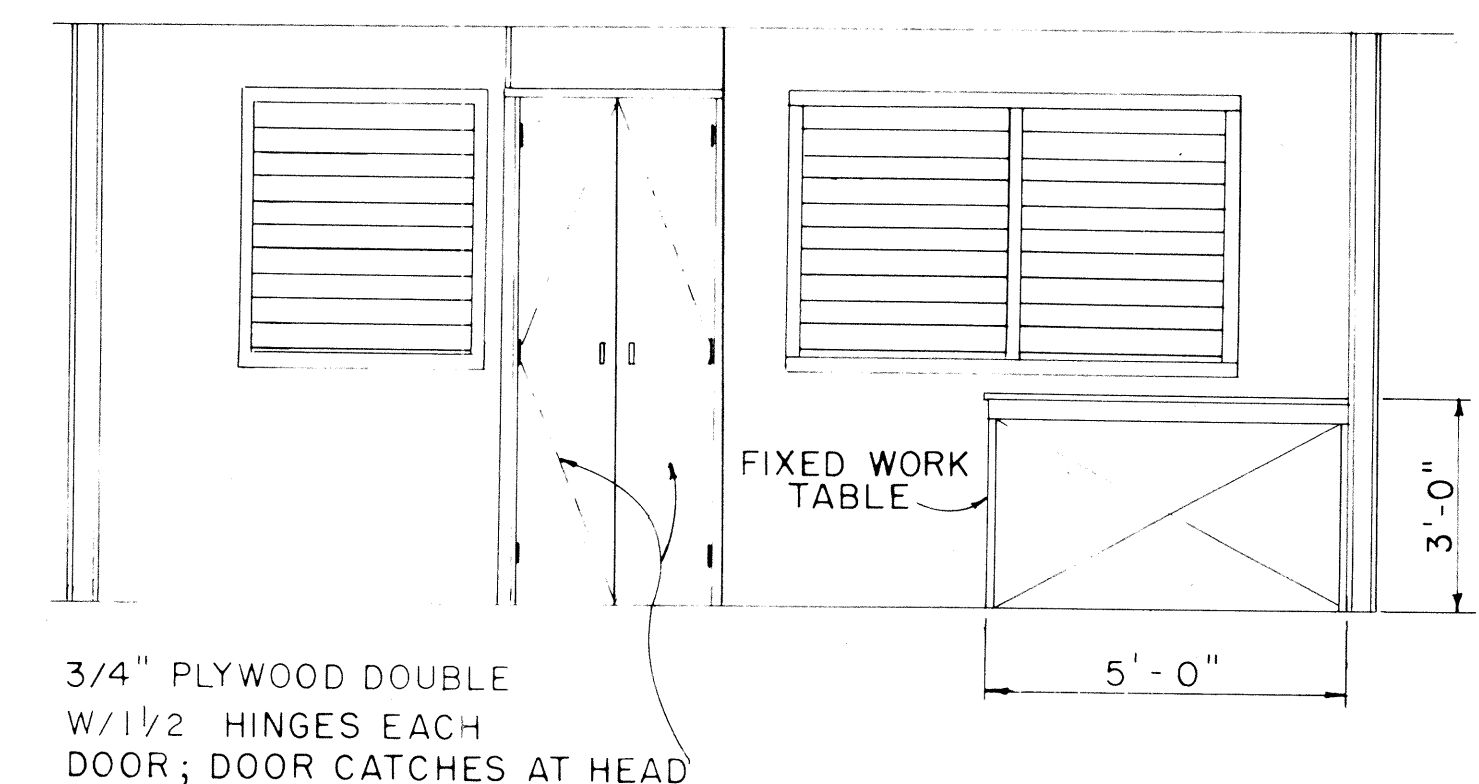


ELEVATION (C)
SCALE: 3/8" = 1' - 0"



ELEVATION (C)

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



ELEVATION A1

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

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

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

NO.	REVISION	APPROVED By	DATE

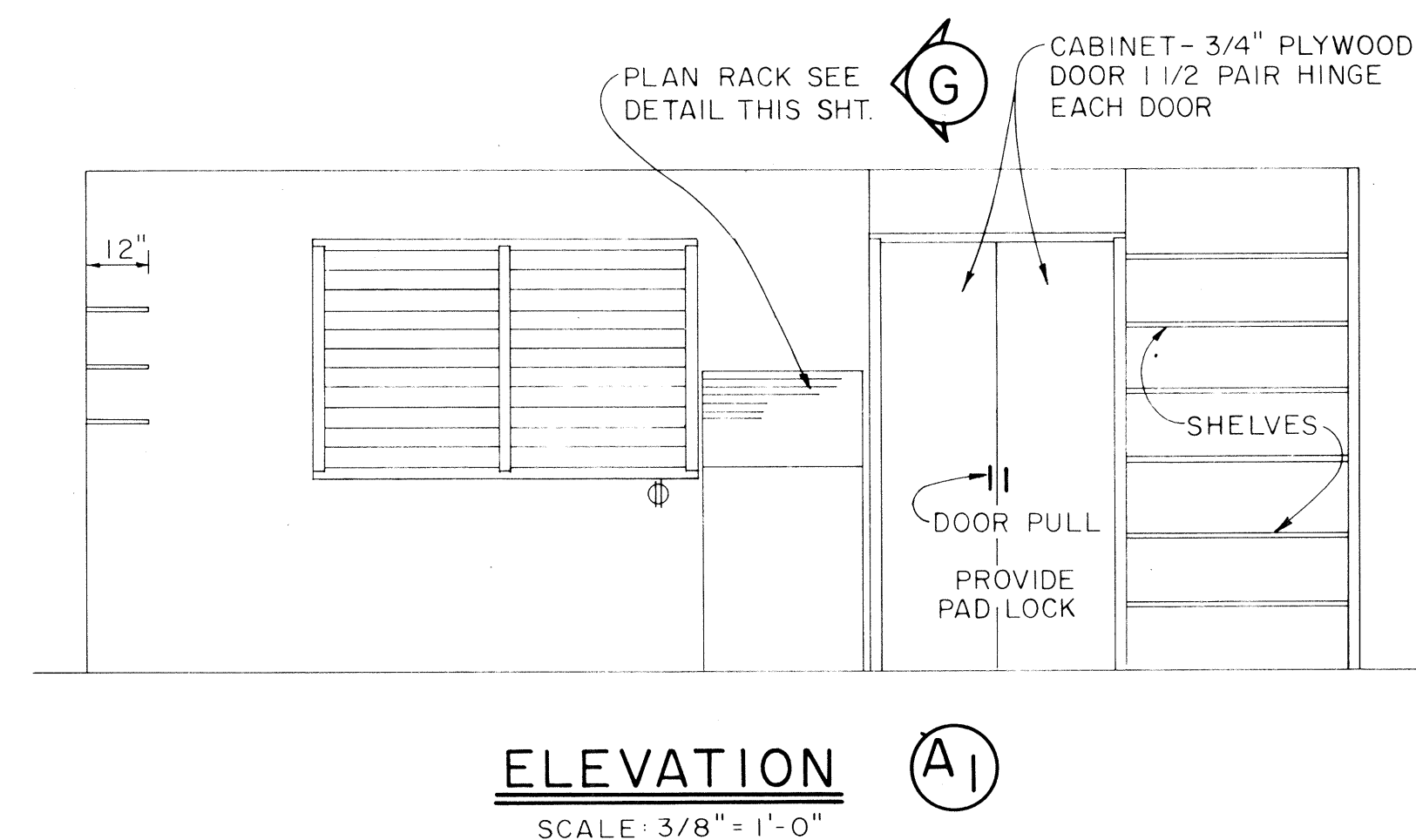
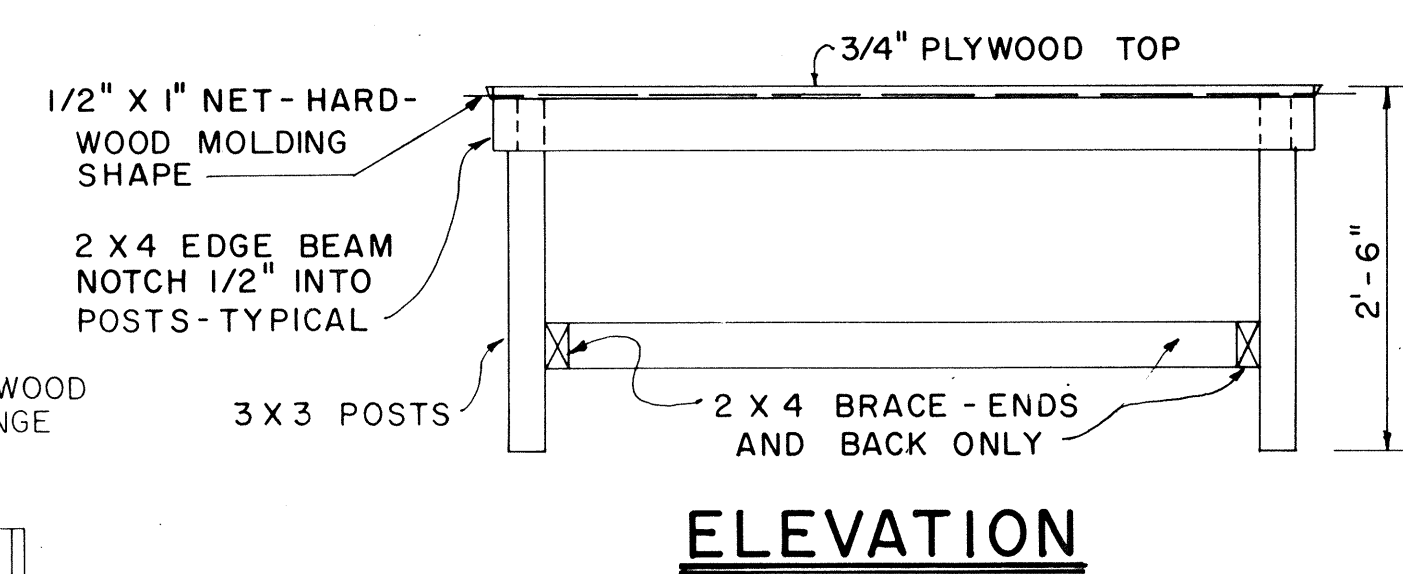
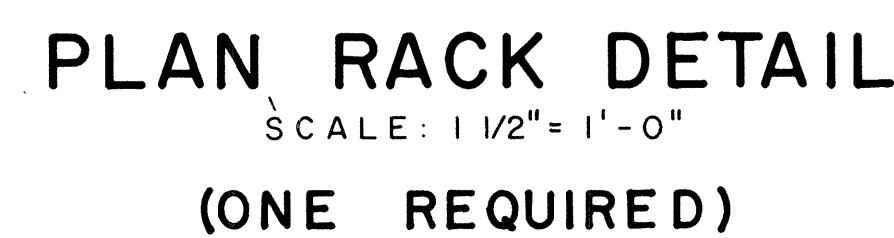
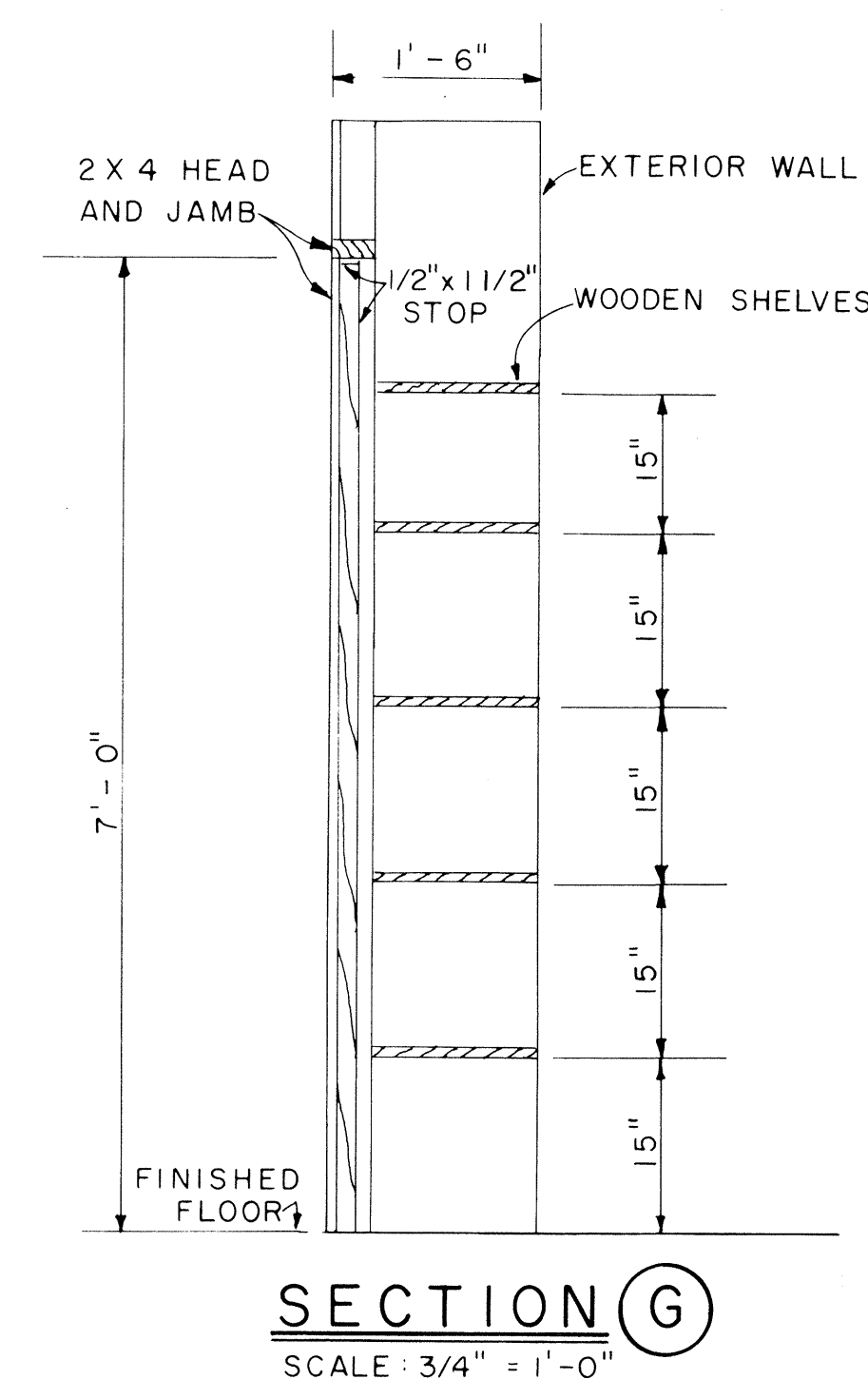
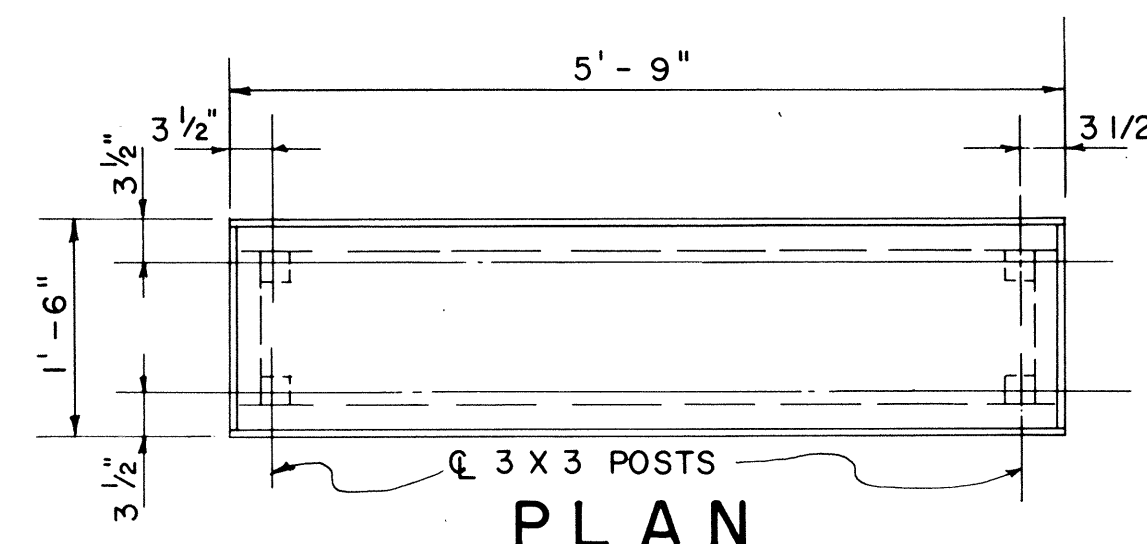
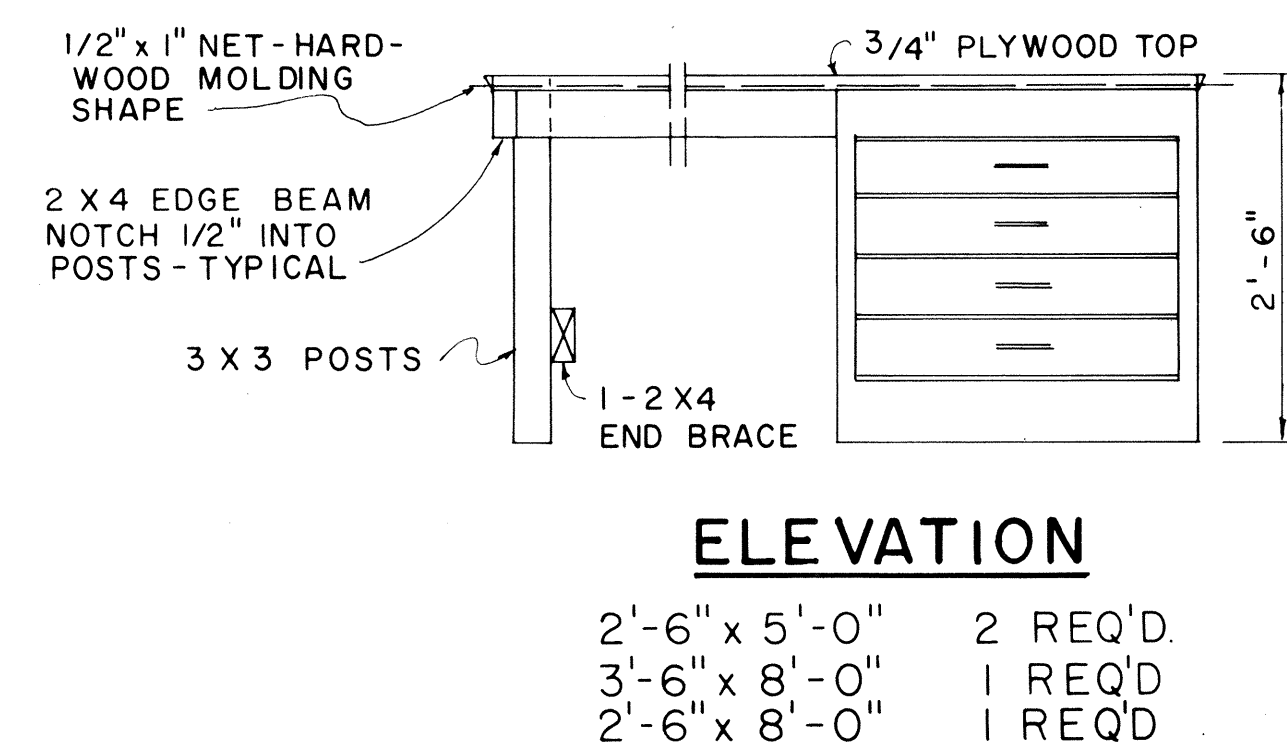
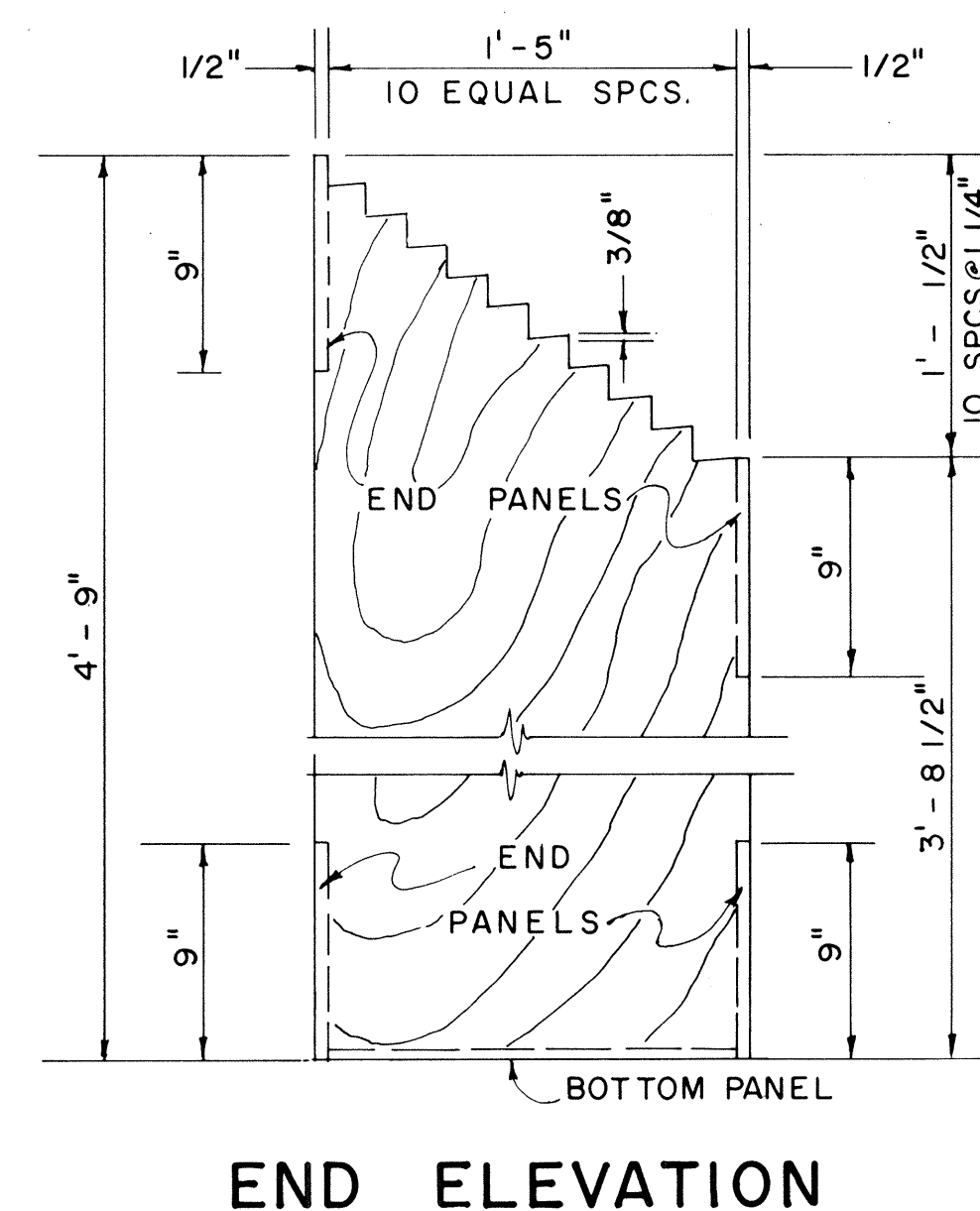
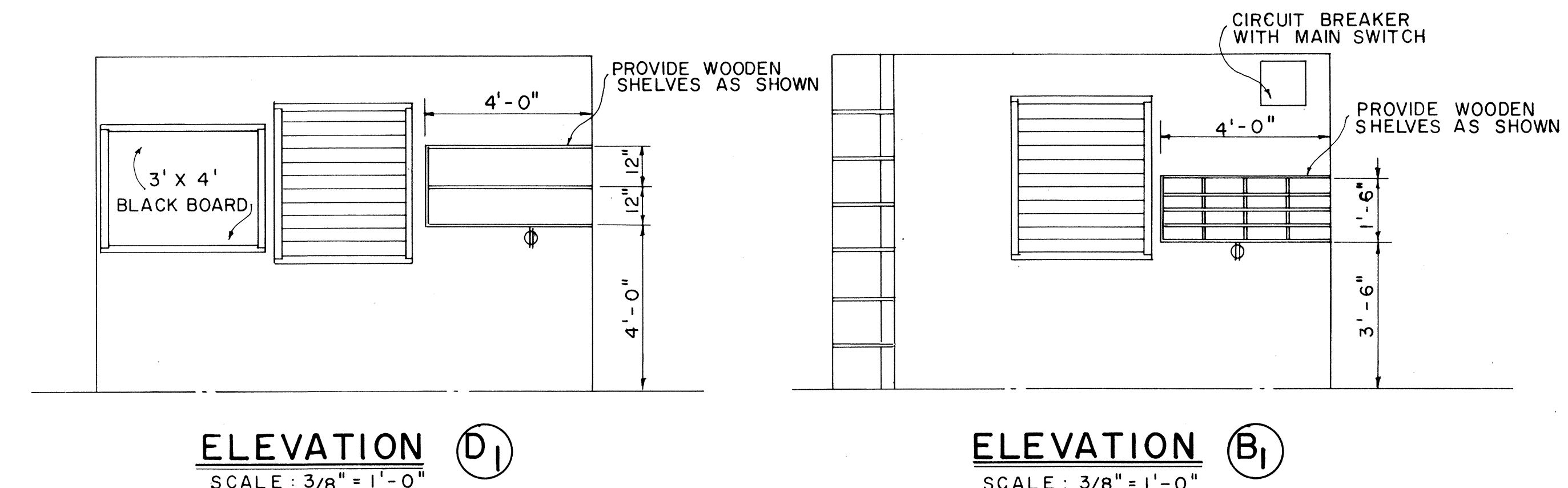
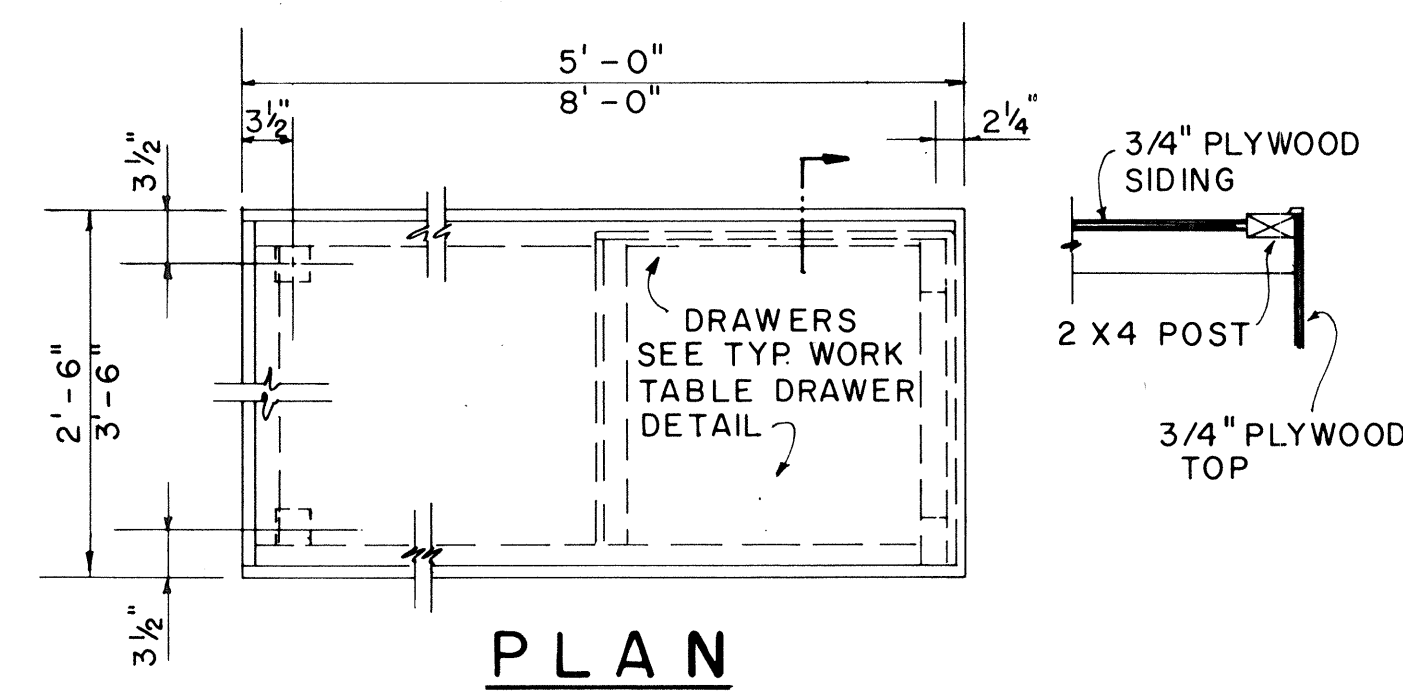
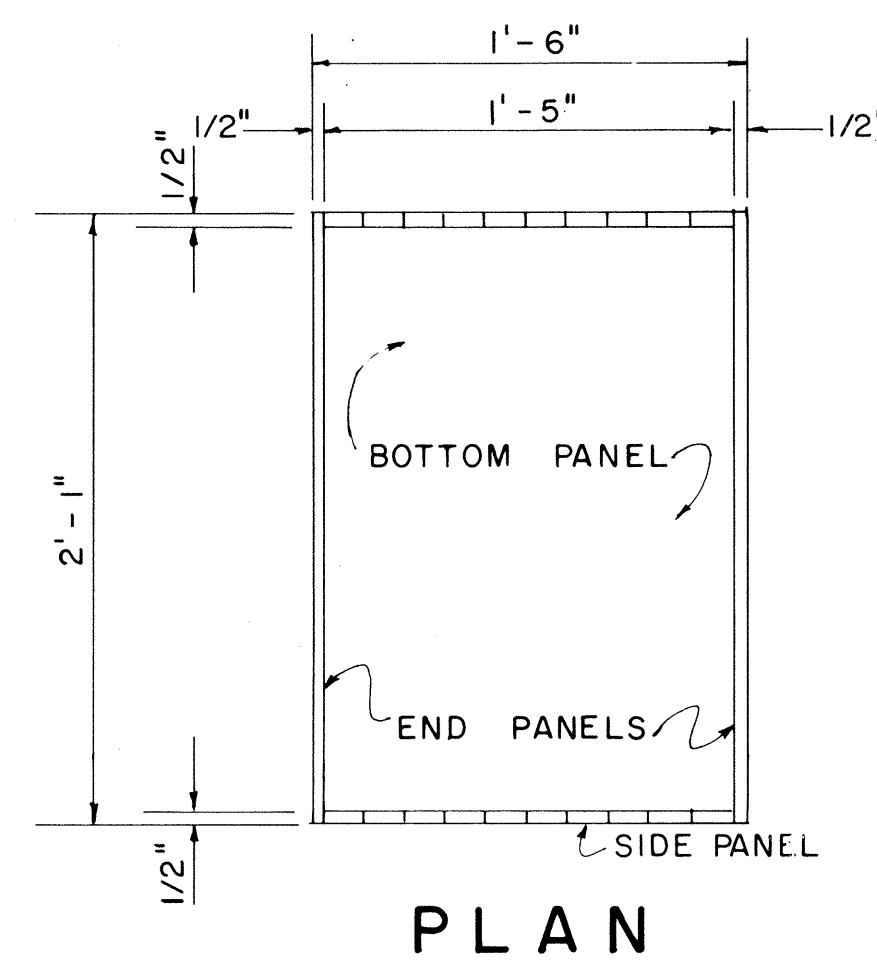
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROJECT SITE LABORATORY

Scale: As Noted

SHEET No. 15 OF 23 SHEETS		DD 636.4
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(87)13	1970	34A	244



**1'-6" x 5'-9" PORTABLE
WORK TABLE DETAIL**

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

APPROVED: Walter E. Zalski 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

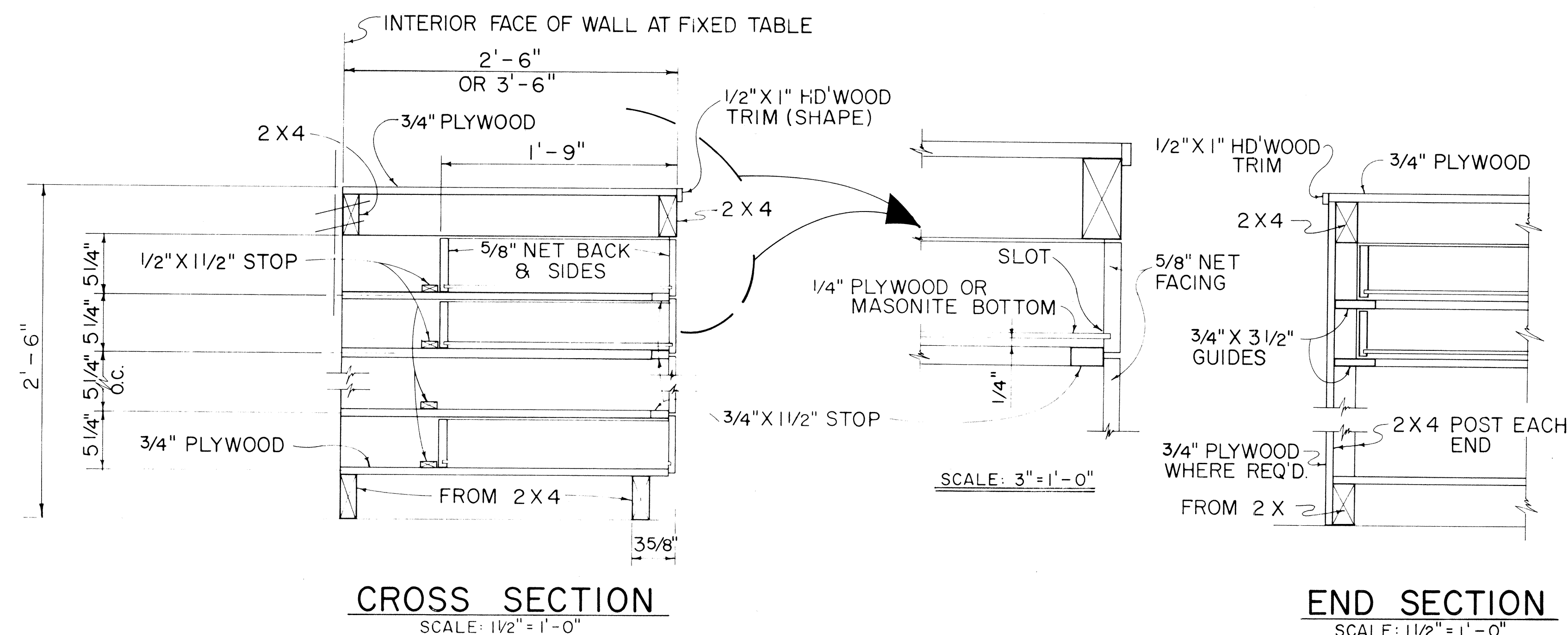
FIELD OFFICE

Scale : As Noted

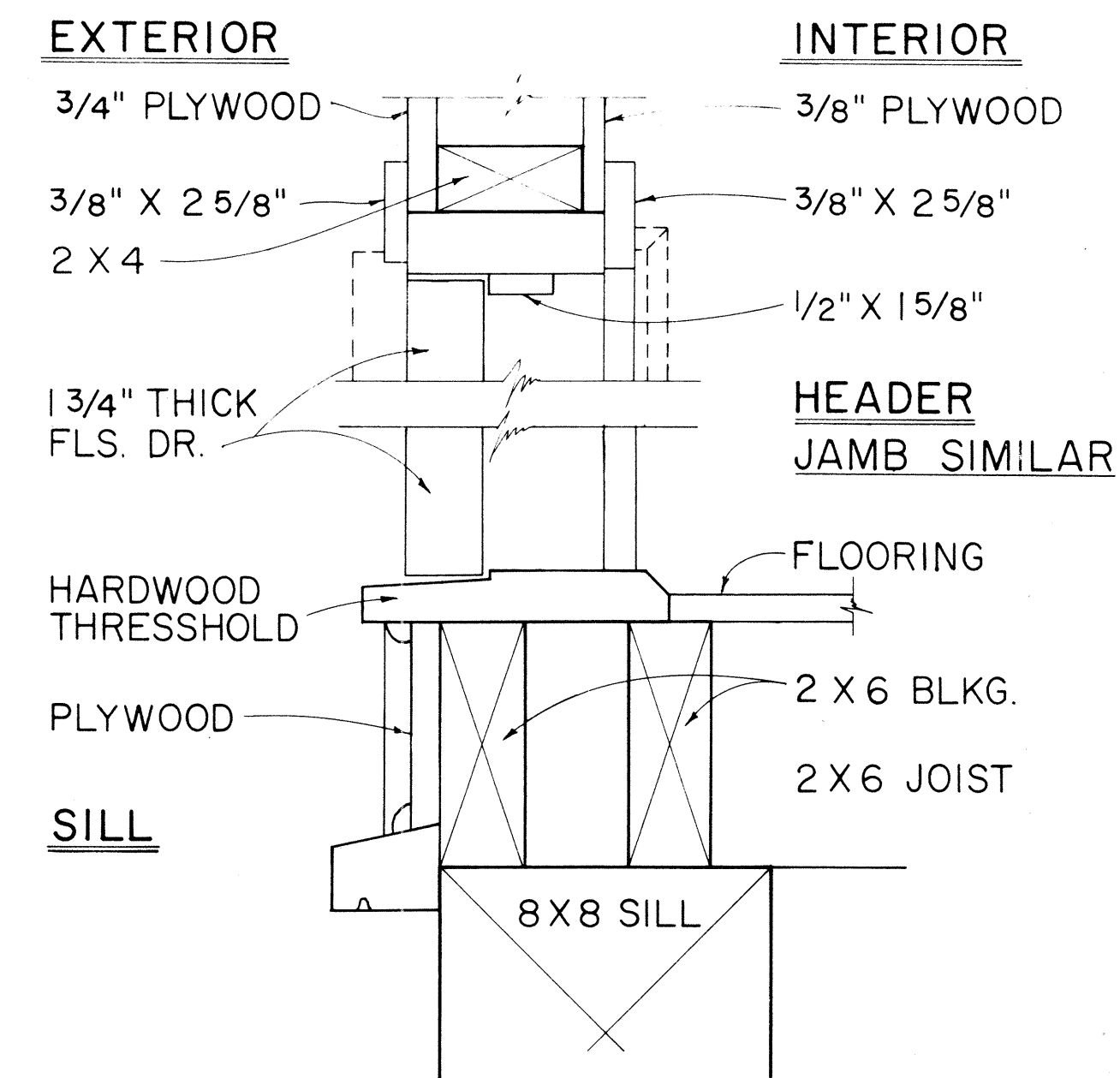
33 4 1

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-41-1(87)13	1970	35	244

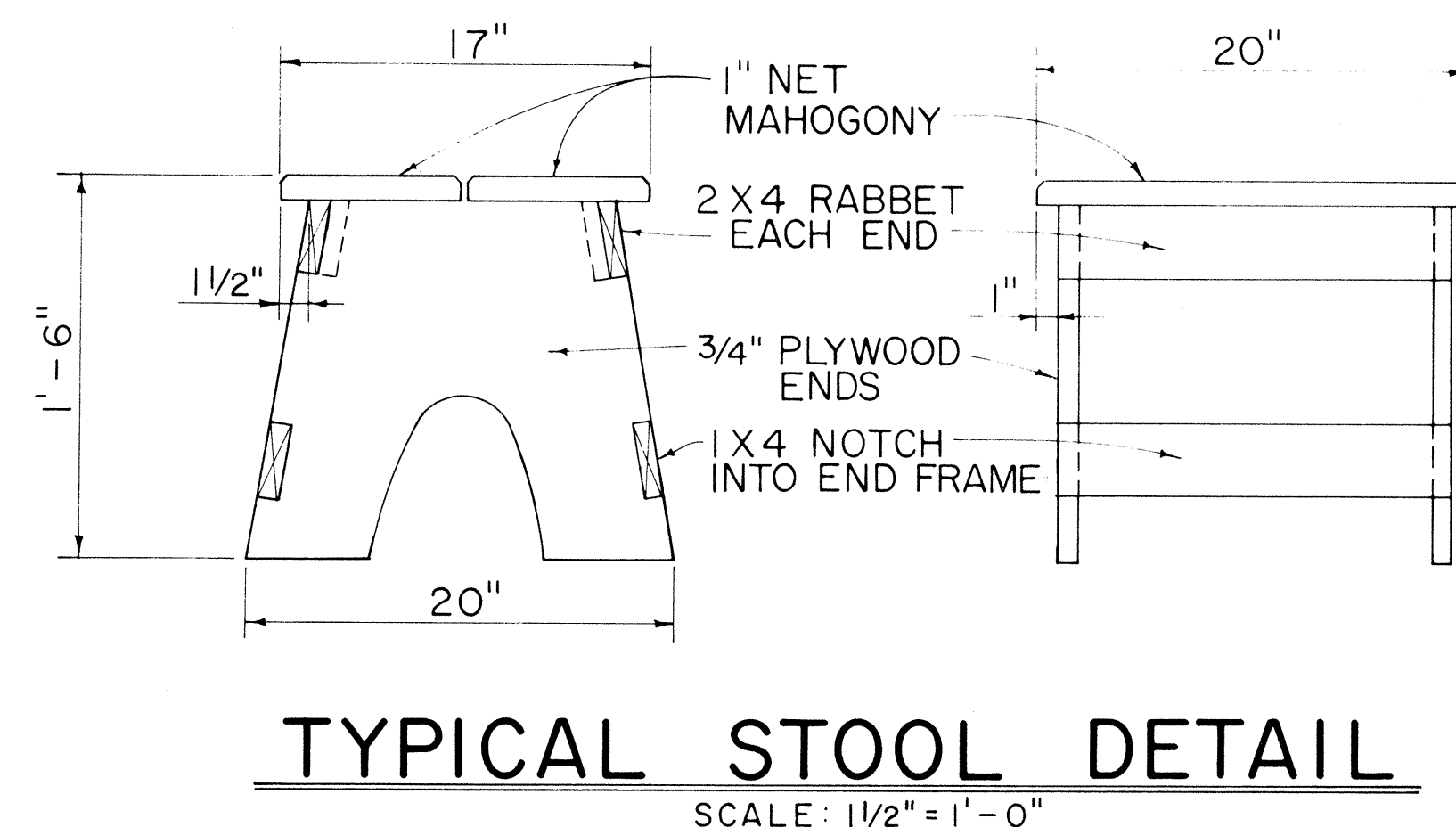


TYPICAL WORK TABLE DRAWER DETAIL



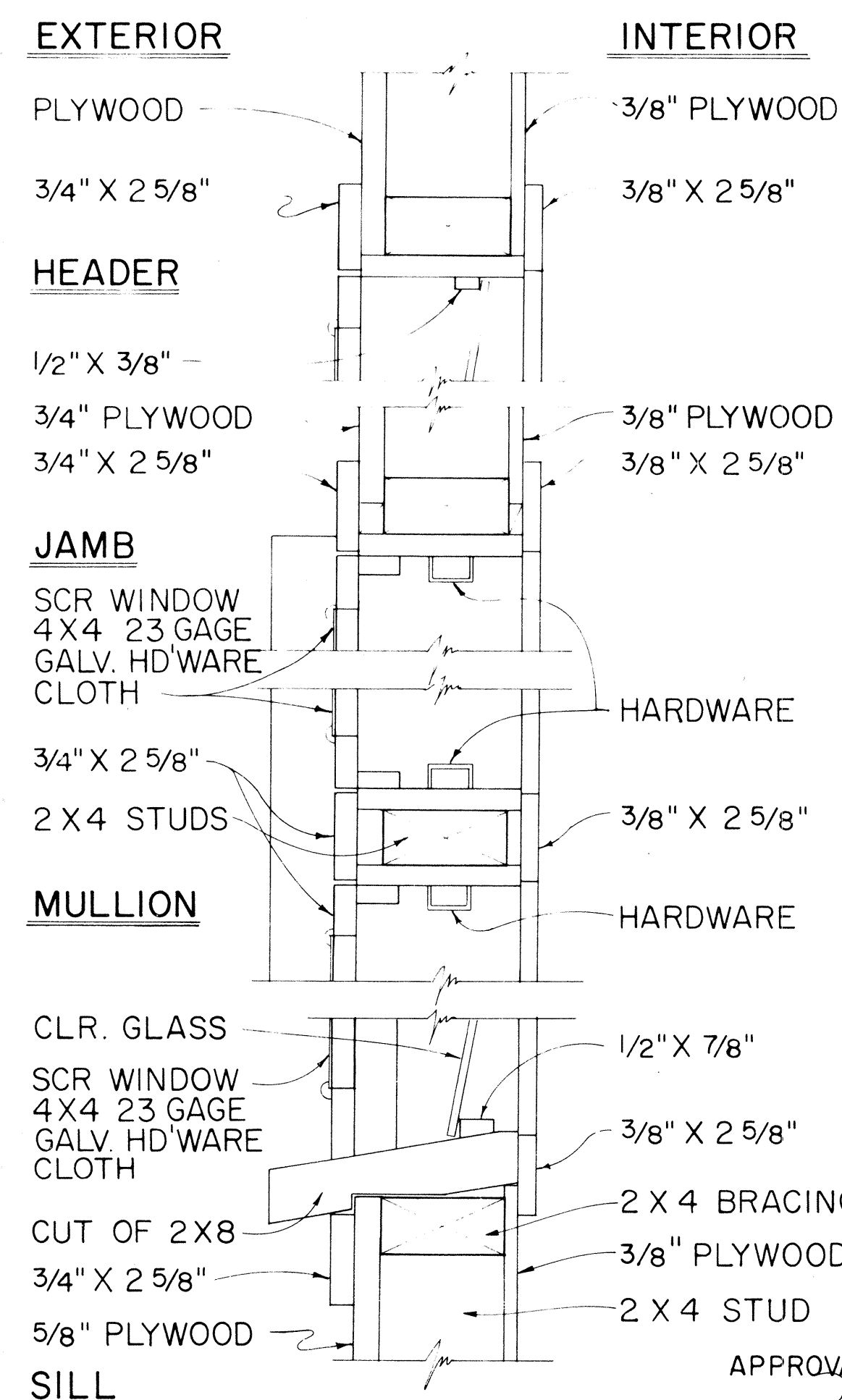
TYP. SWING OUT DOOR

TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL

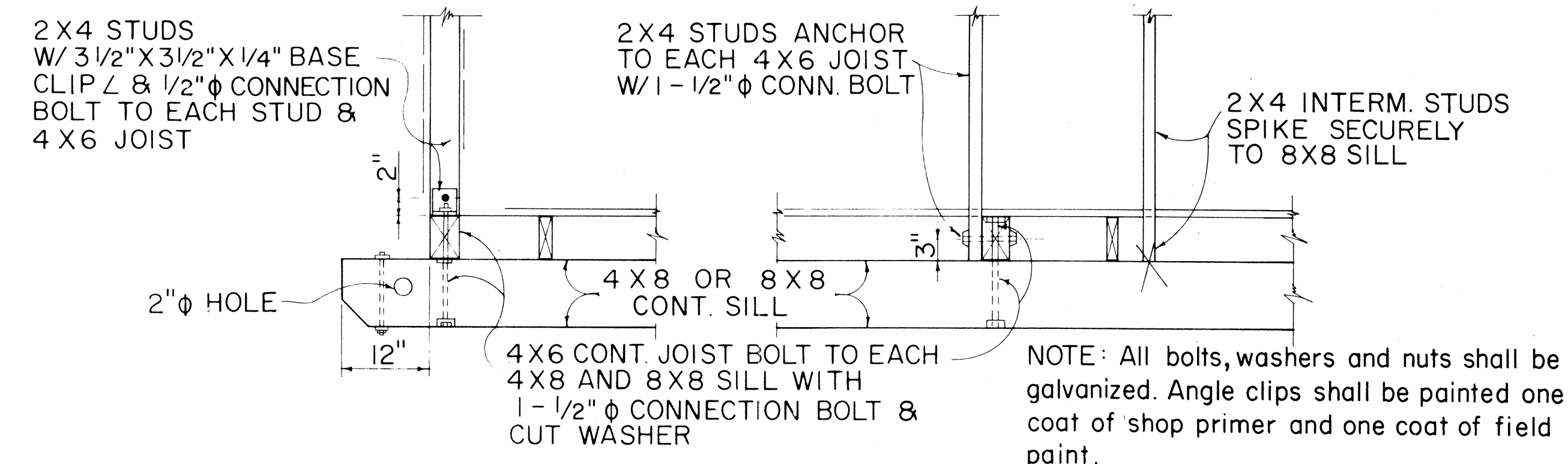


TYPICAL STOOL DETAIL

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"



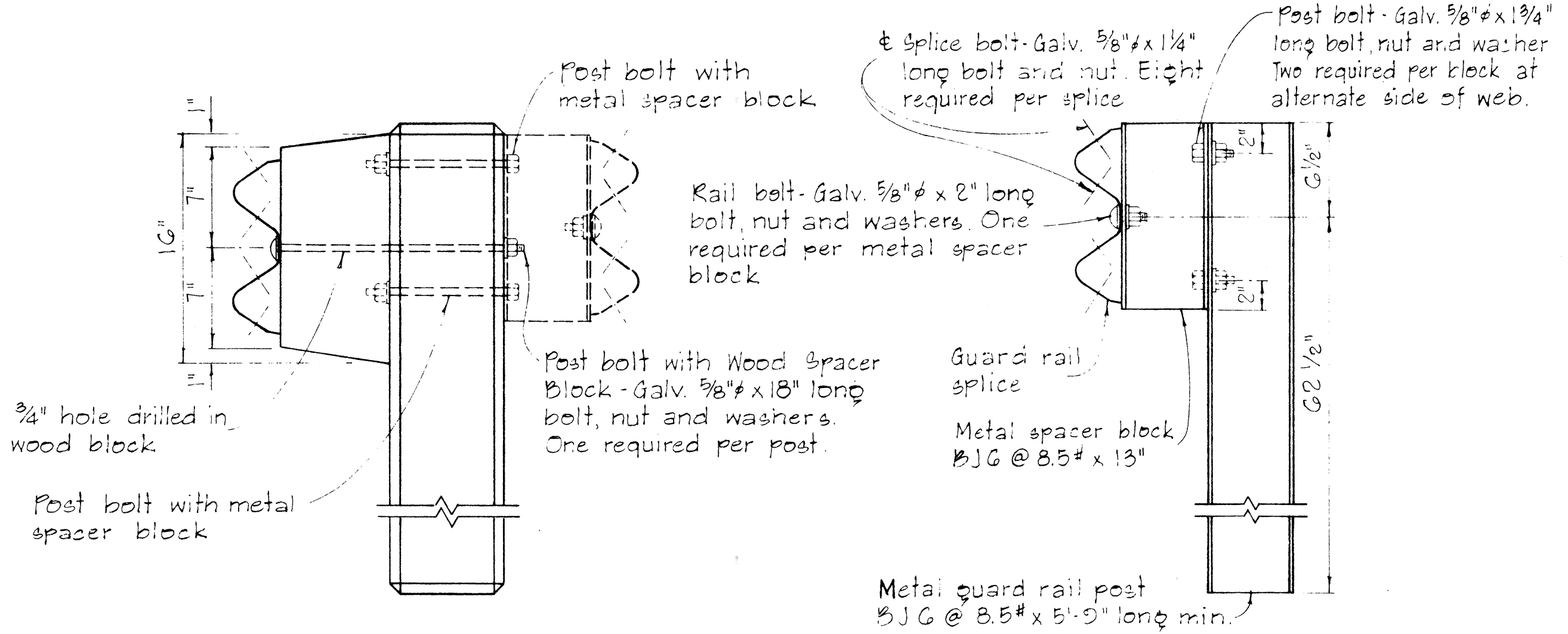
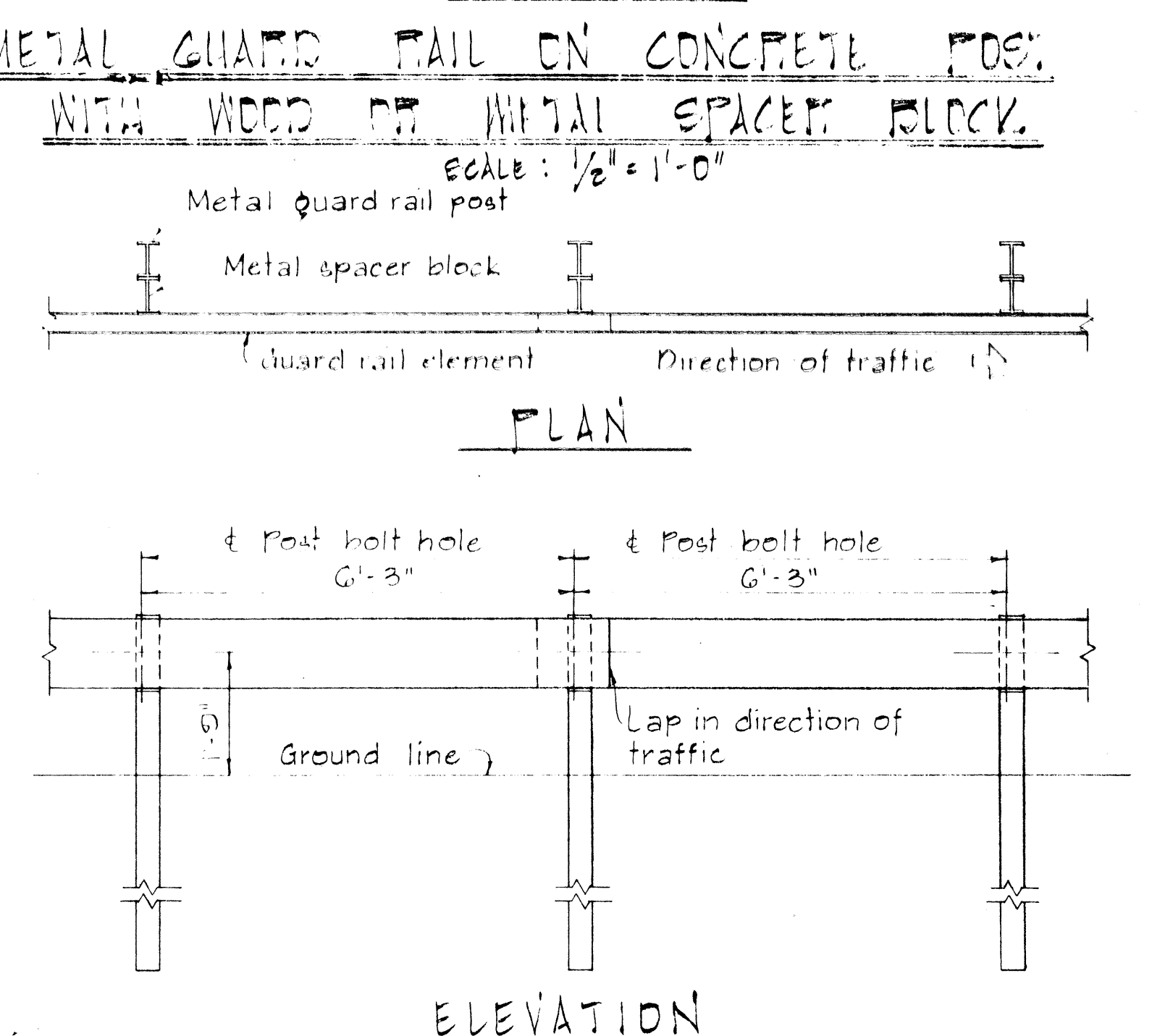
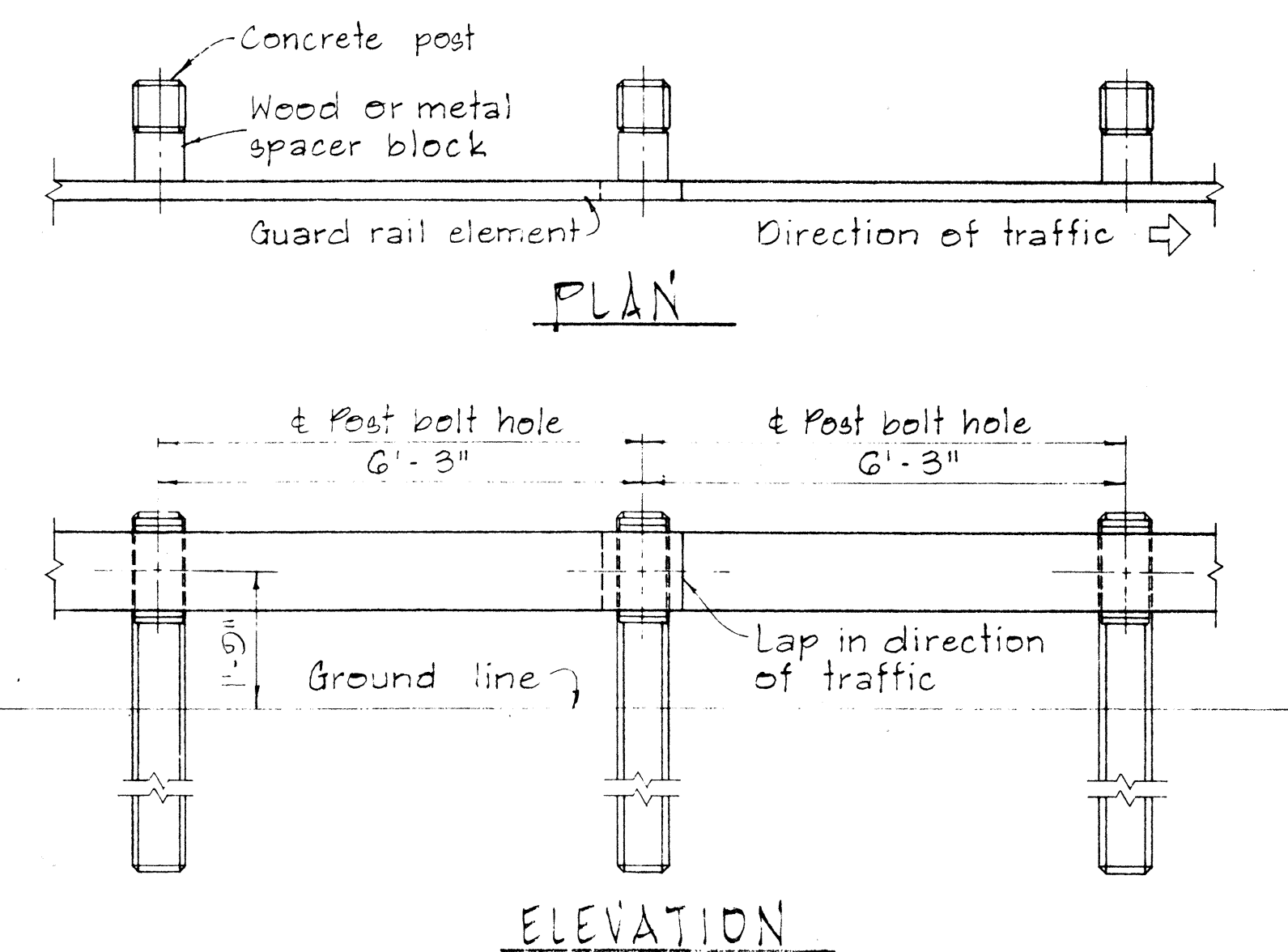
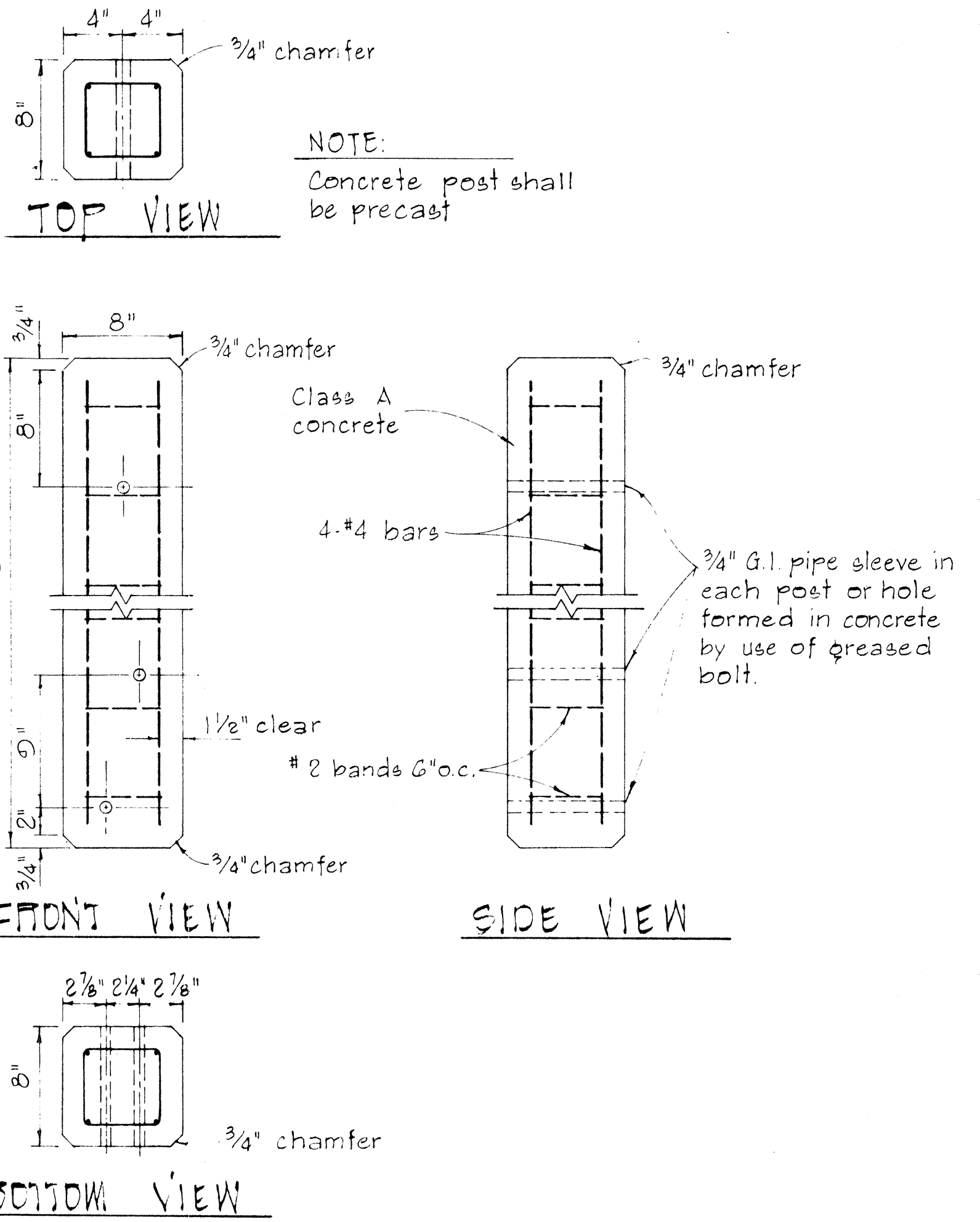
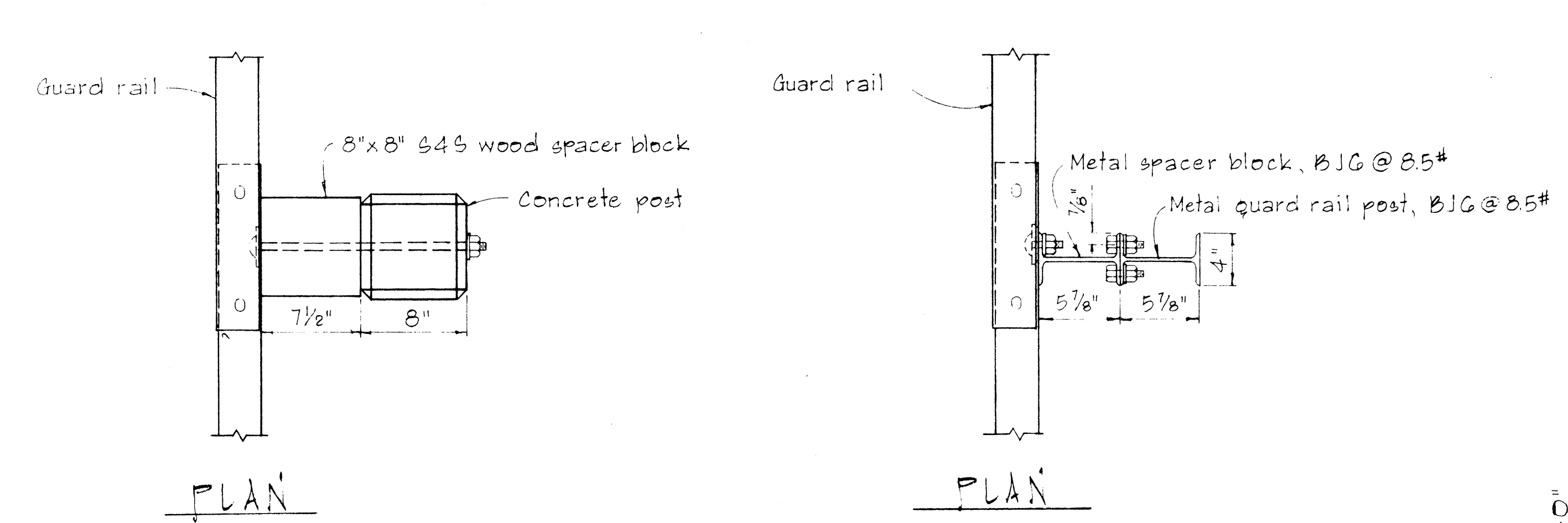
AT ENDS OF BLDG. ALONG SIDES OF BLDG.

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

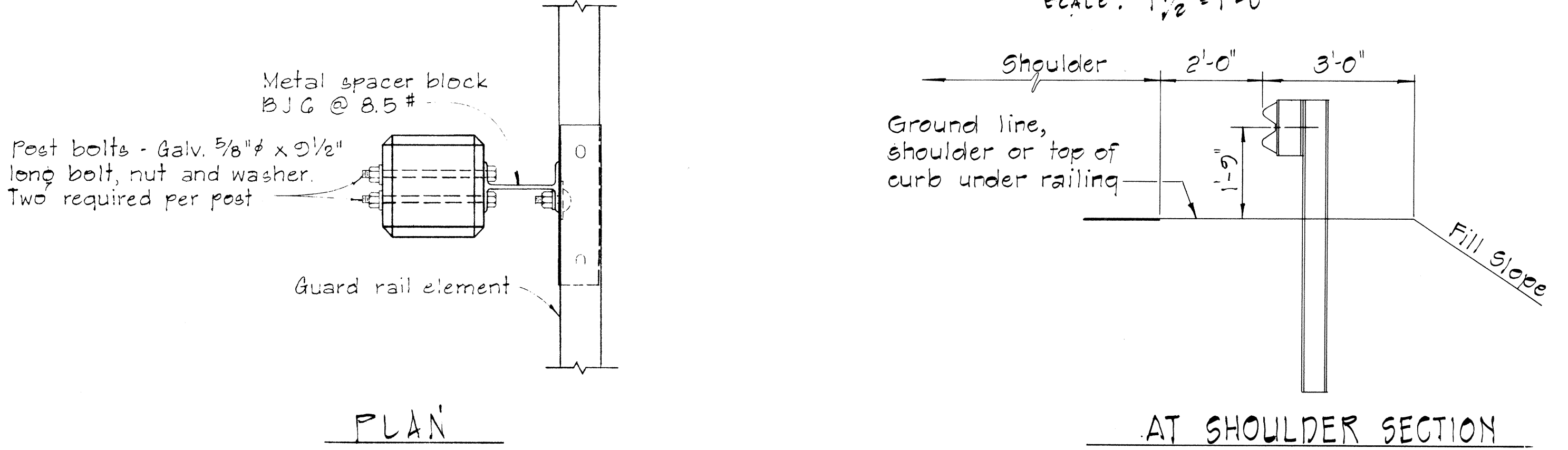
NO.	REVISION	APPROVED BY	DATE

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-(87)13	1970	36	244



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



AT SHOULDER SECTION
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 1/2" = 1'-0"

APPROVAL RECOMMENDED:
Evelyn Tanaka 12/23/69
TRAFFIC ENGINEER DATE

APPROVED:
William J. Zeldin 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

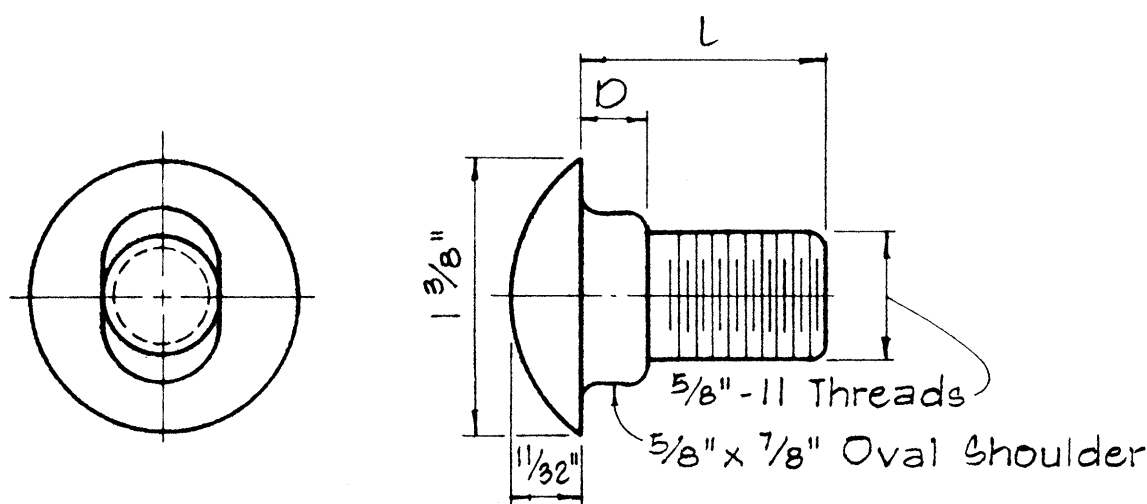
STANDARD DETAILS
METAL GUARD RAIL
SCALE: AS SHOWN NOV. 1968

DATE
SURVEY PLOTTED BY
DRAWN BY
CHECKED BY
NOTED BY
QUANTITIES BY
CHECKED BY

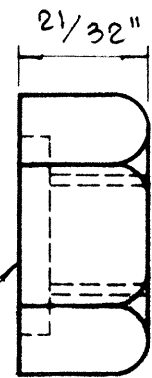
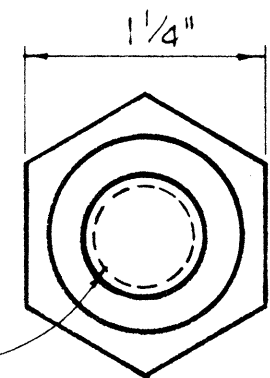
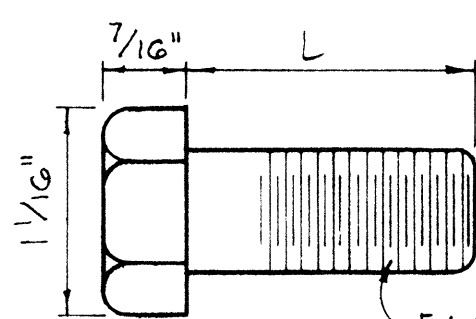
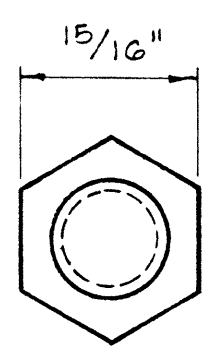
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-41-1(87)13	1970	37	244

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		D 1/2"
Post Bolt for Metal Post w/ Metal Block		1 3/4"



TYPE A BOLT



5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.

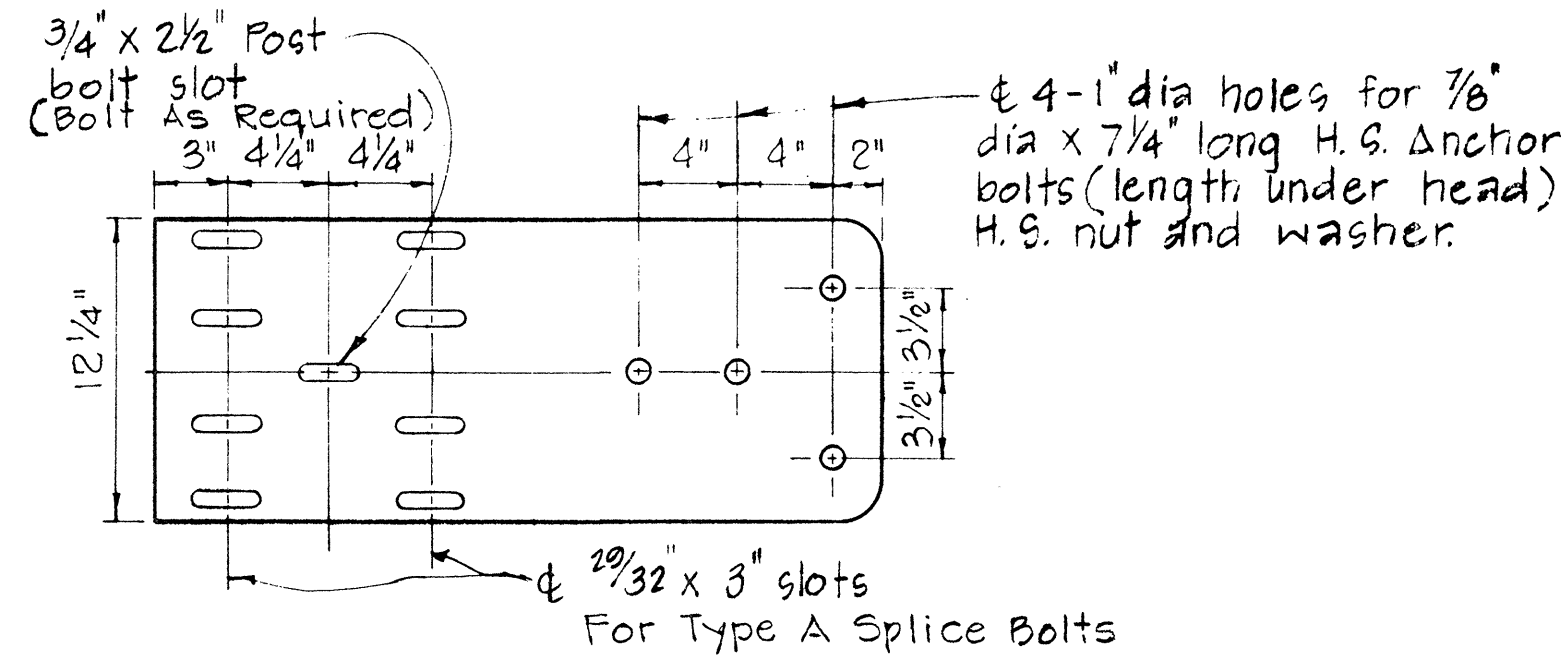
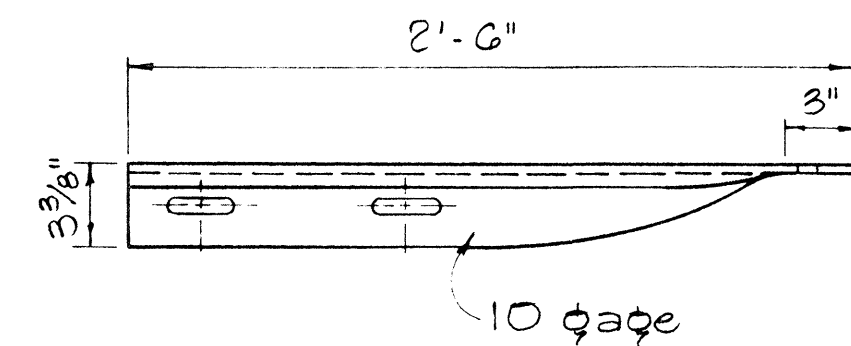
TYPE B BOLT

SPUCE RAIL AND POST BOLTS

Scale: Full Size

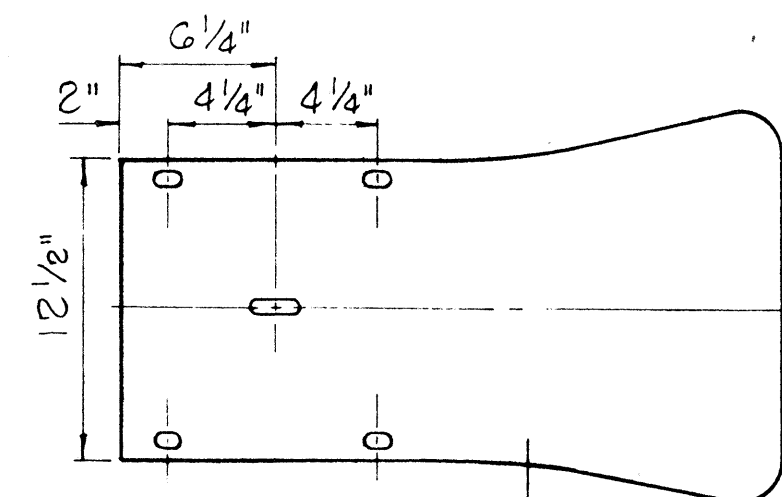
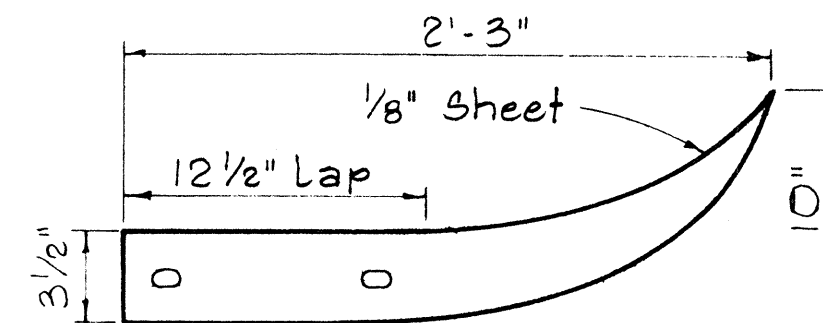
HEXAGON NUT

Scale: Full Size



SPECIAL END SHOE

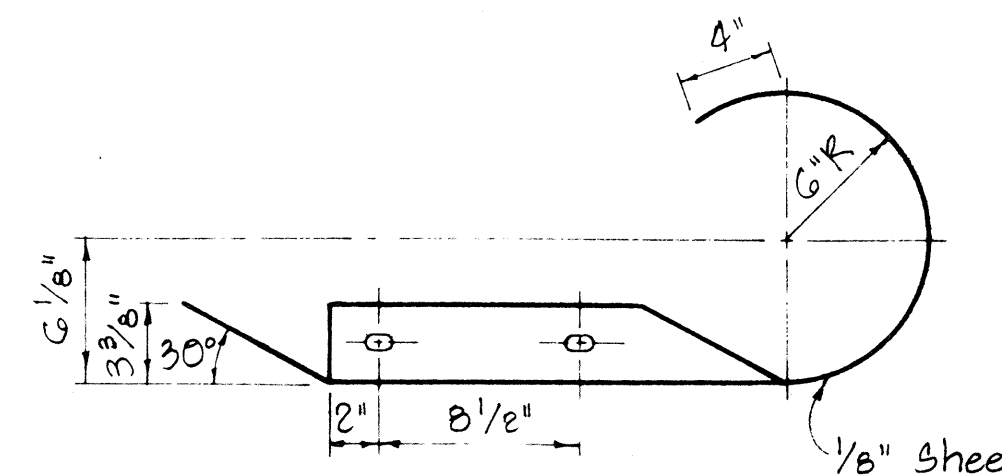
Scale: 1 1/2" = 1'-0"



Same as rail element section

FLARED END

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



CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

12/29/63
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-30-63
DATE

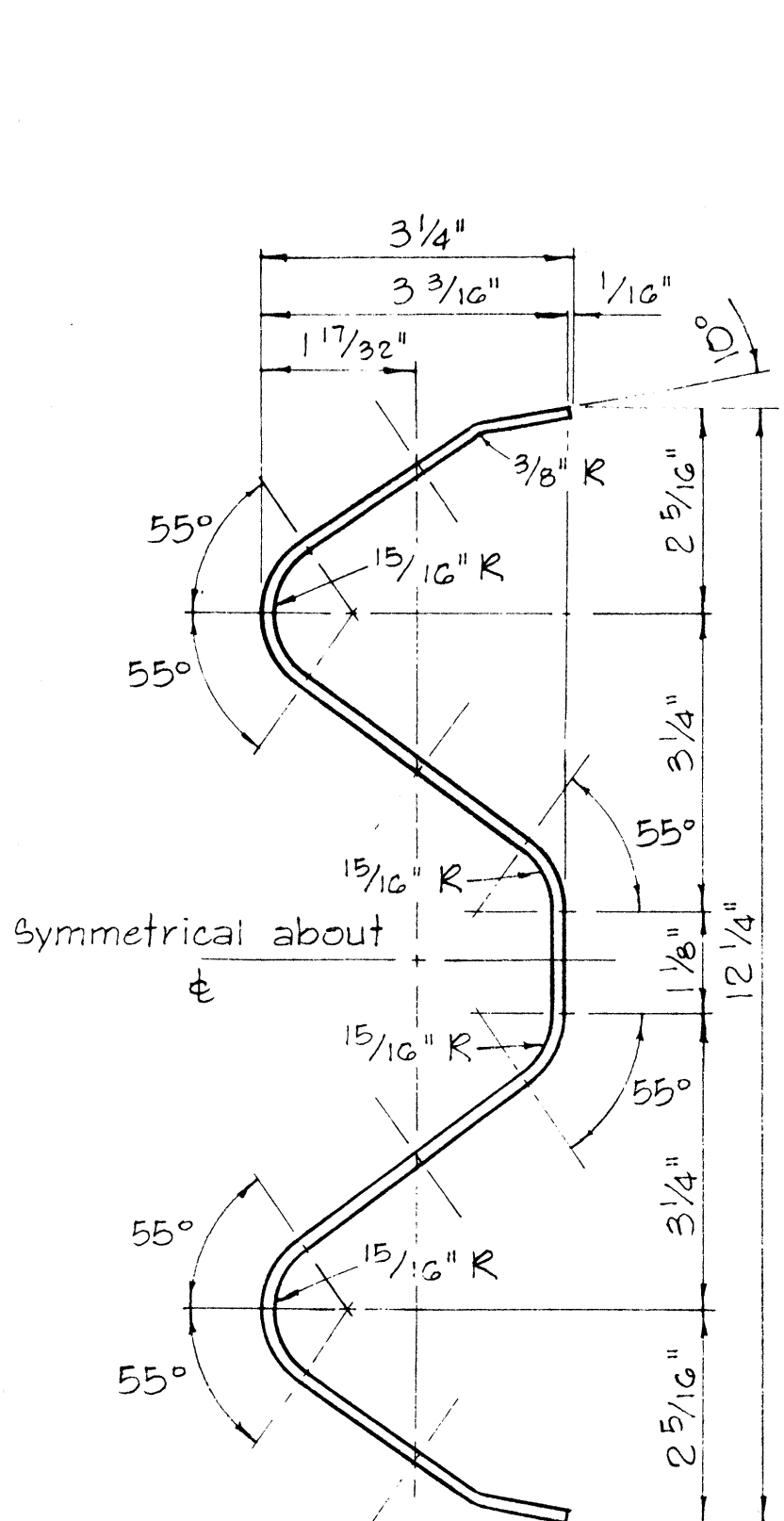
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

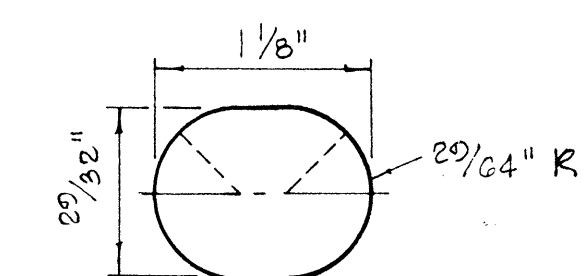
August, 1968

SHEET No. 19 OF 23 SHEETS DT 501



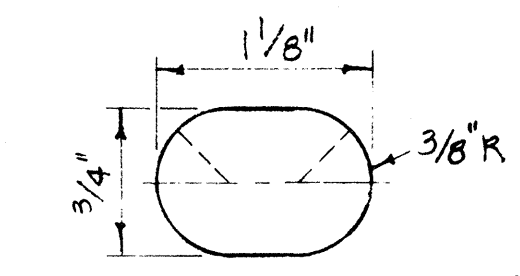
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

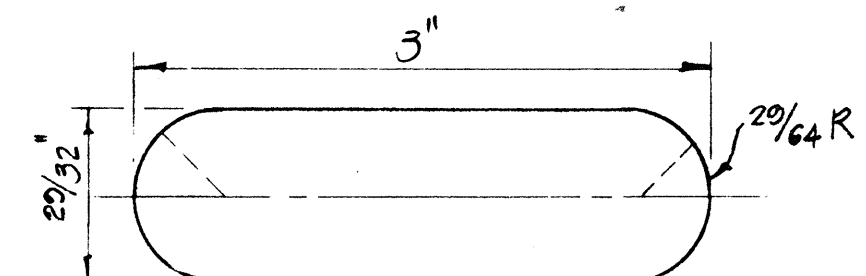


SPUCE BOLT SLOT

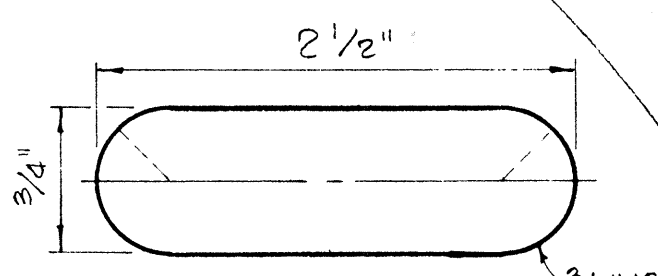
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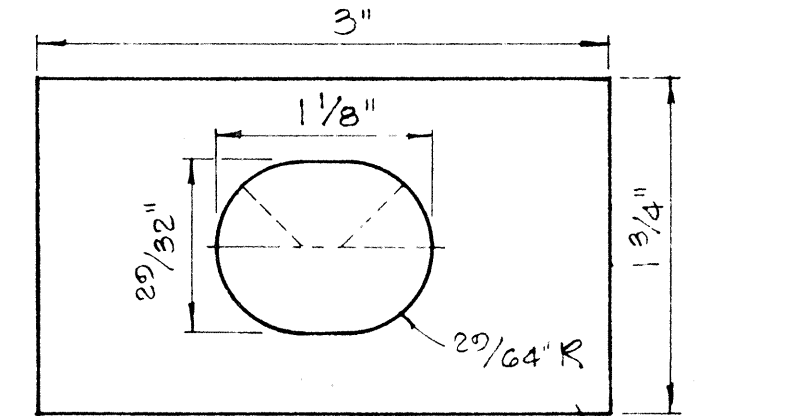
SPUCE BOLT SLOT FOR ALL ENDS



SPUCE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT

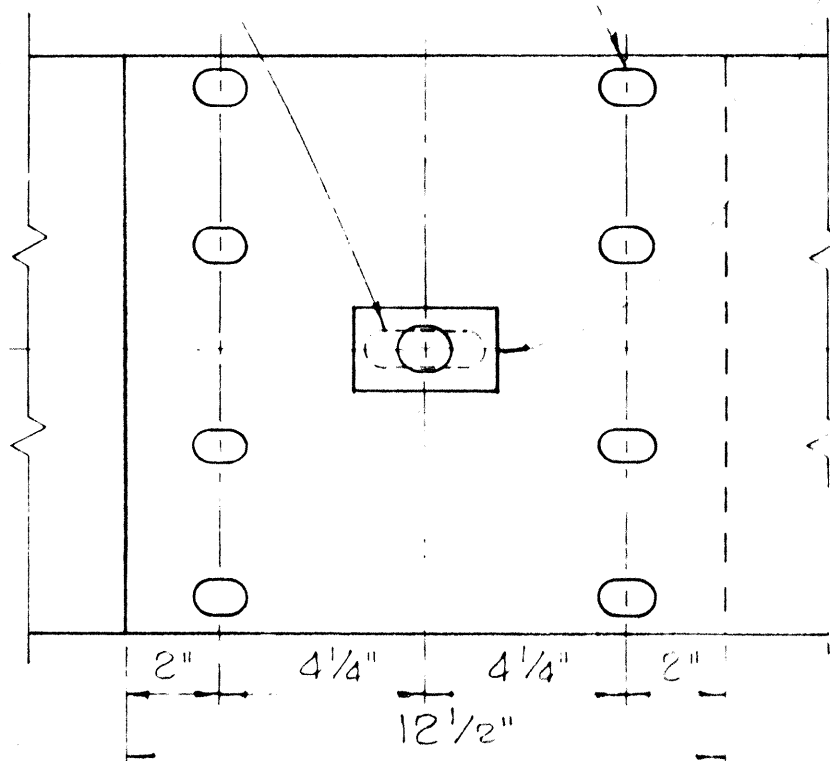


RAIL WASHER

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 AASHO 180.

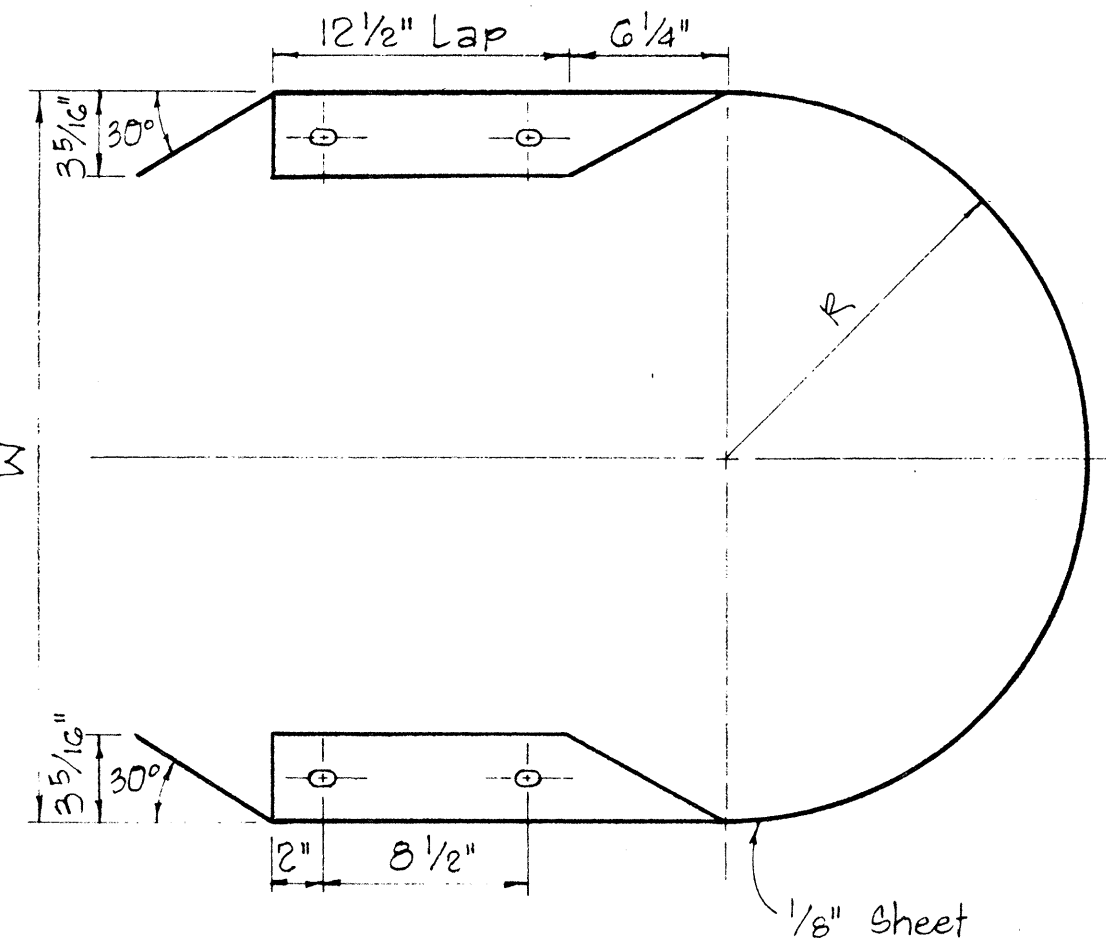
MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"



RAIL SPUCE

Scale: 3" = 1'-0"

Shape to fit rail element



MEDIAN END

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

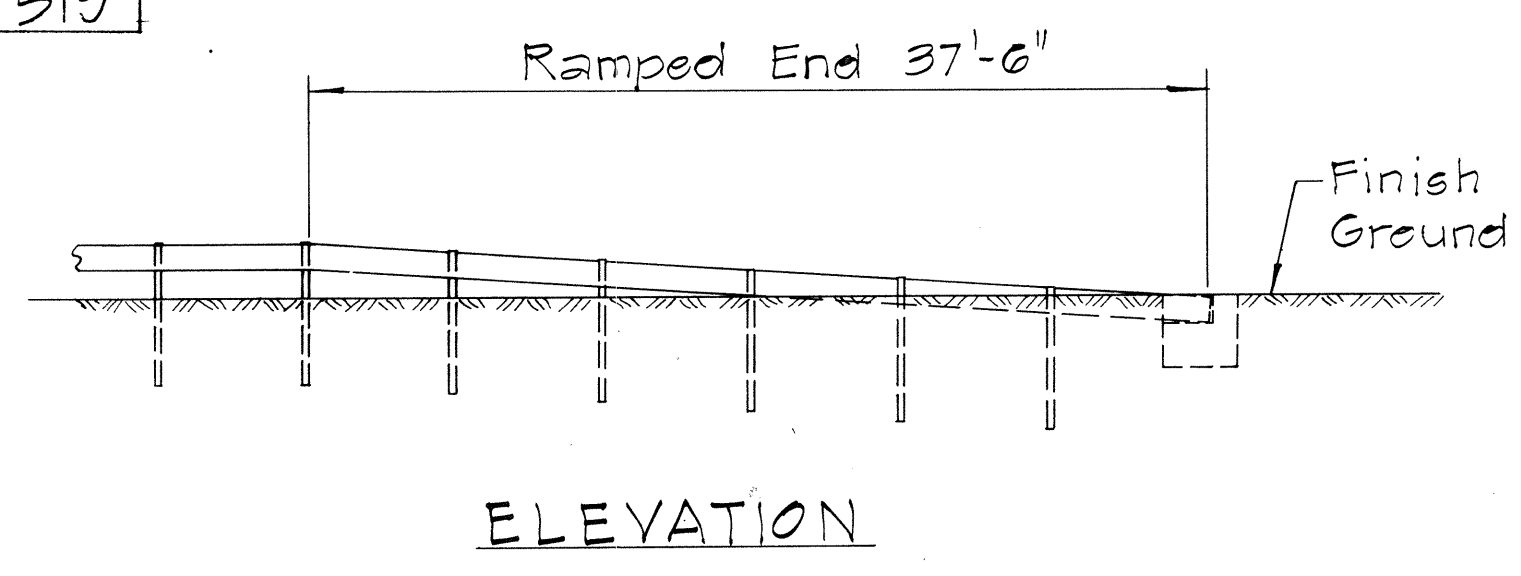
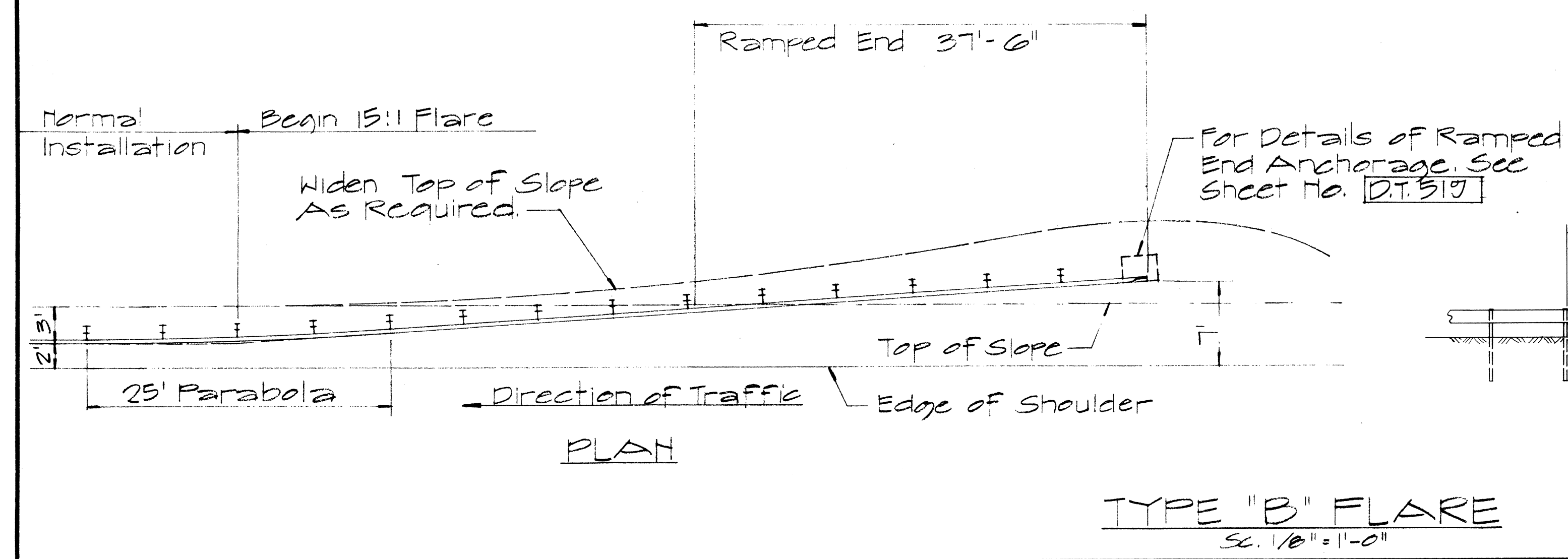
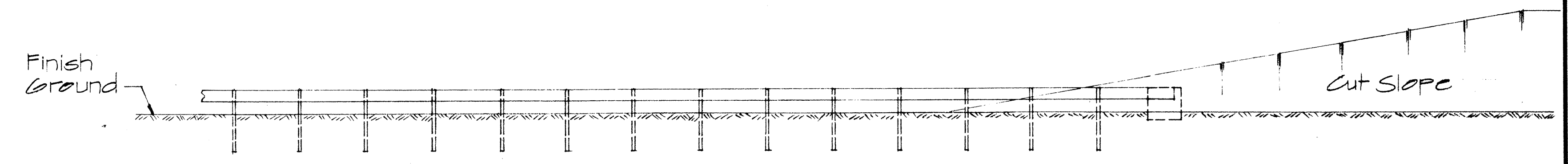
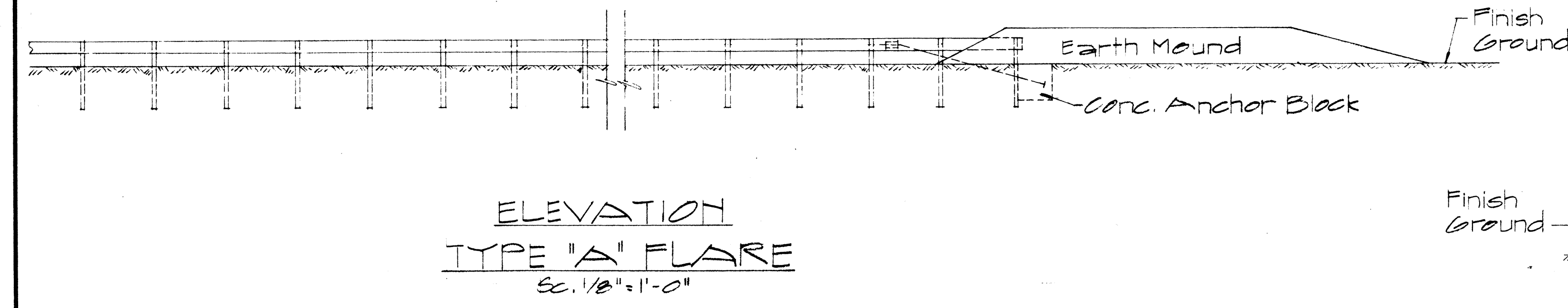
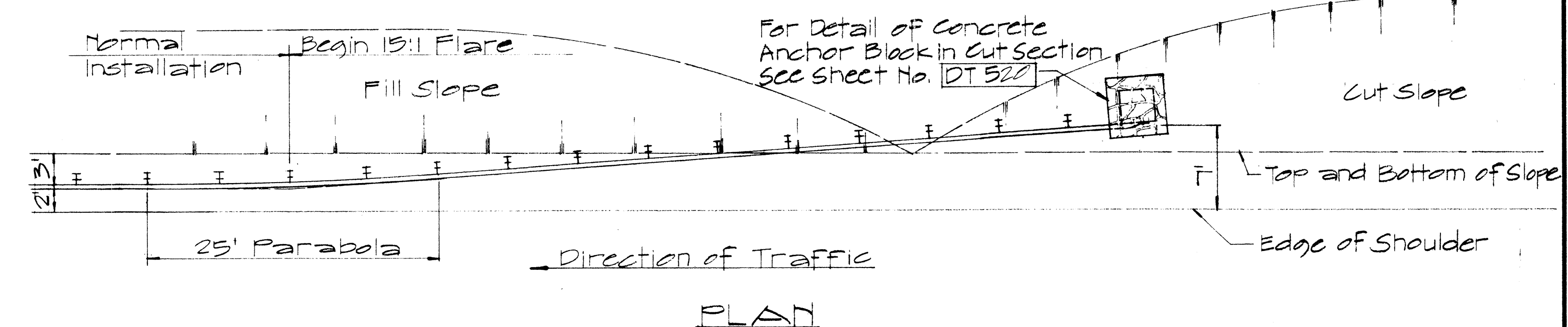
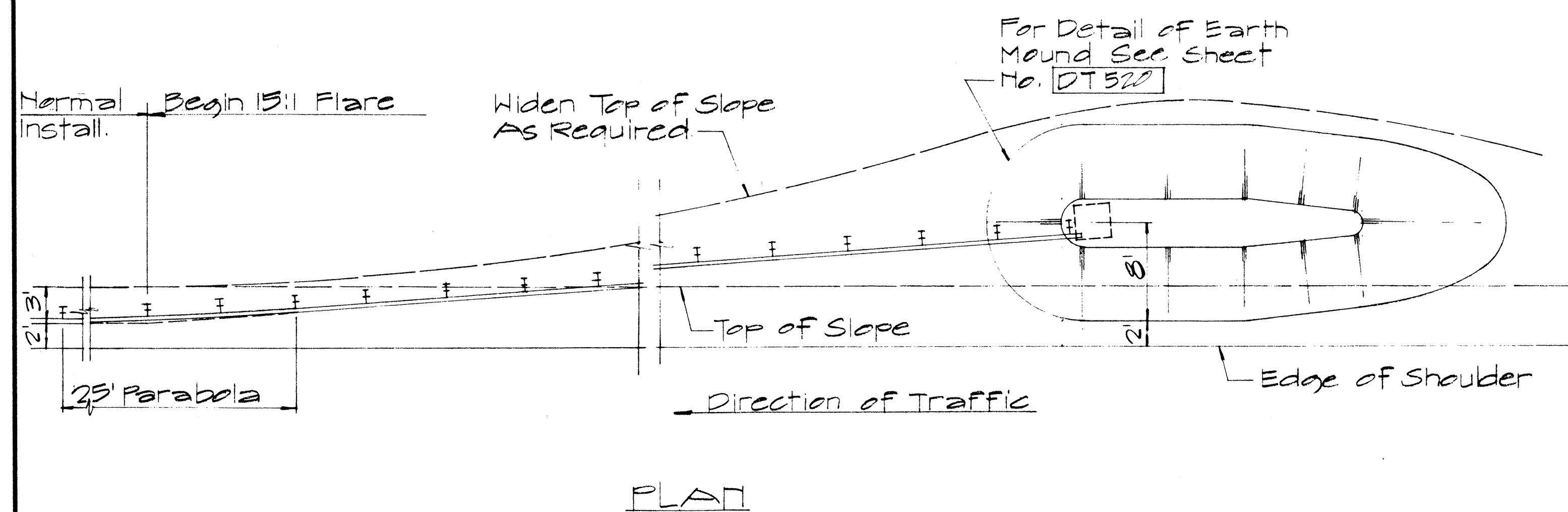
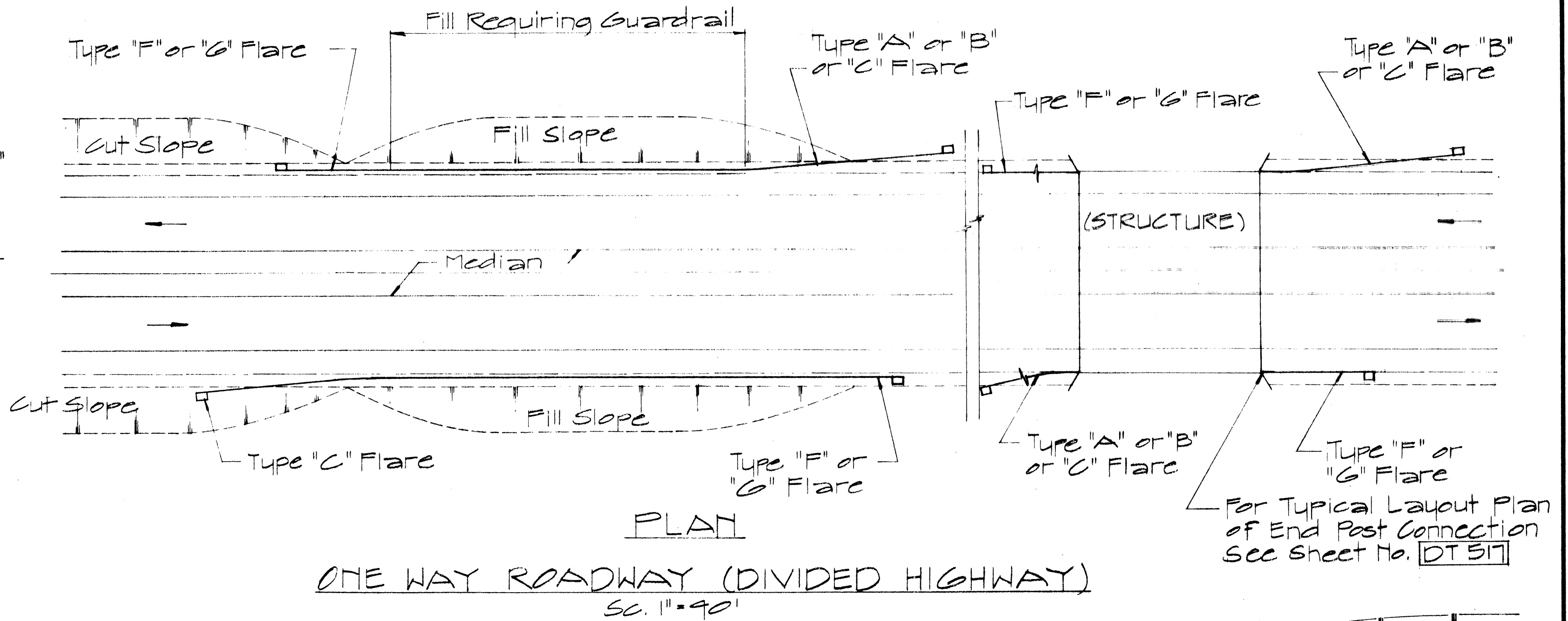
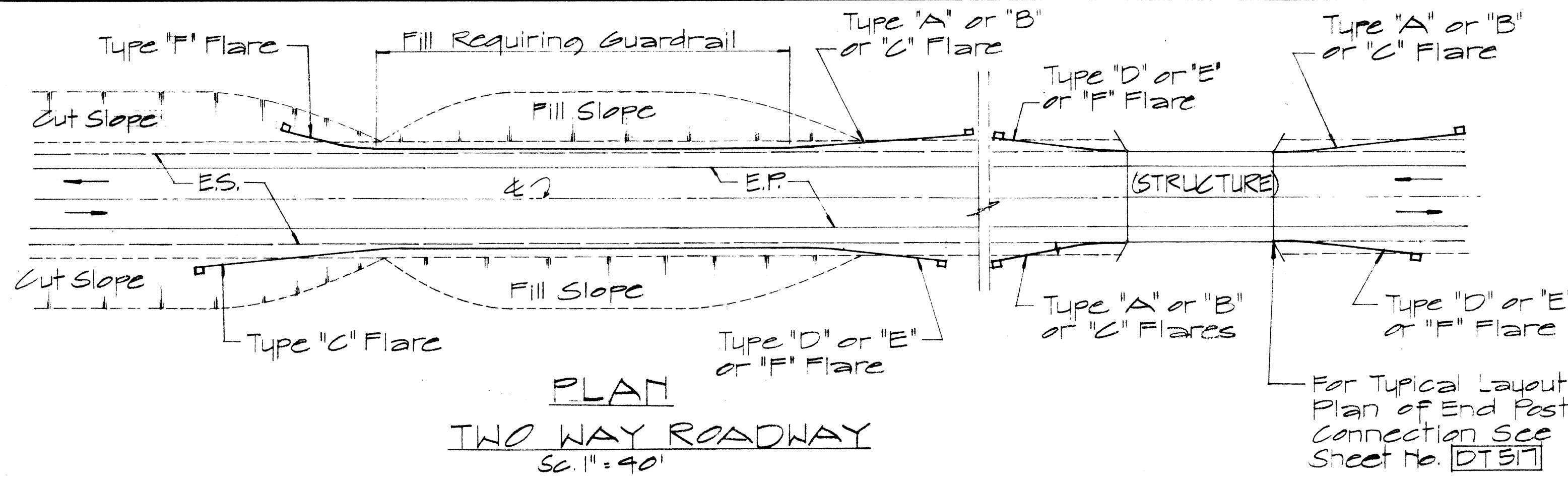
NO	REVISION

APPROVED BY	DATE

DATE	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(87)13	1970	38	244

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:
Evelyn Tanaka 12/23/69
TRAFFIC ENGINEER DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

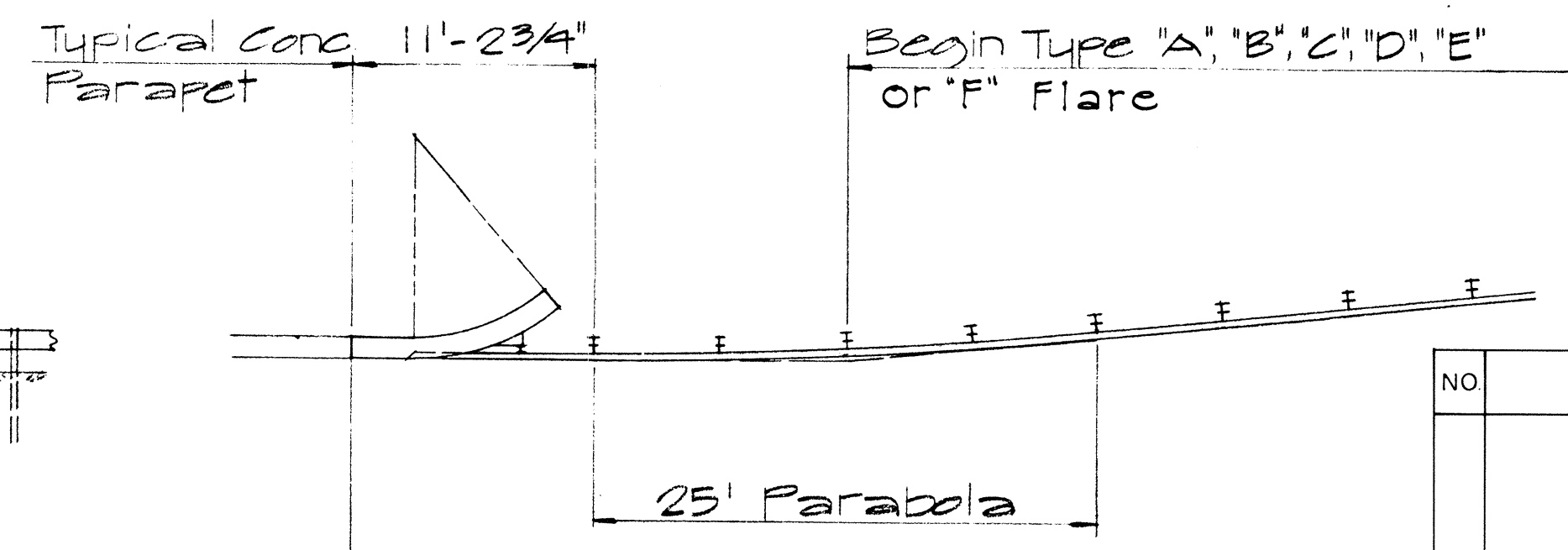
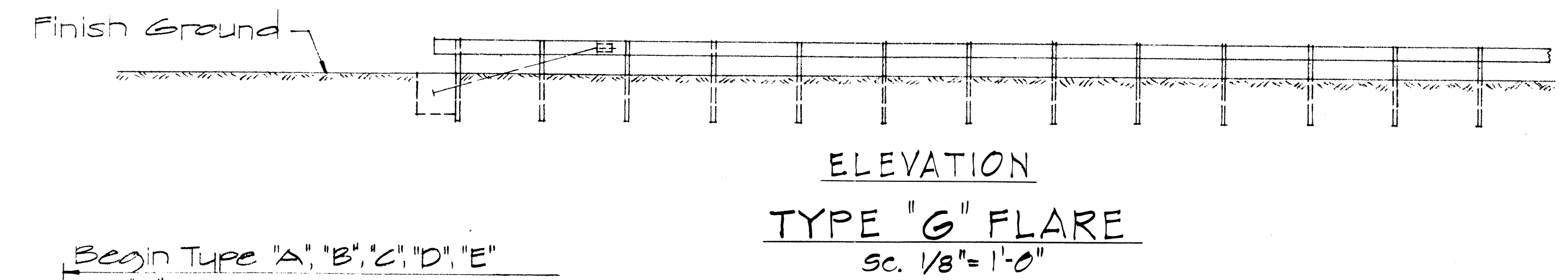
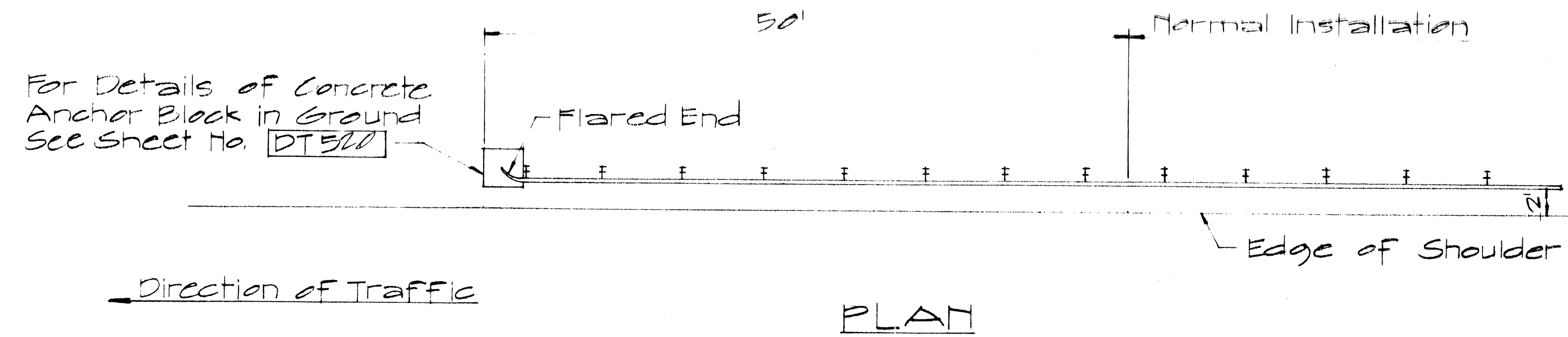
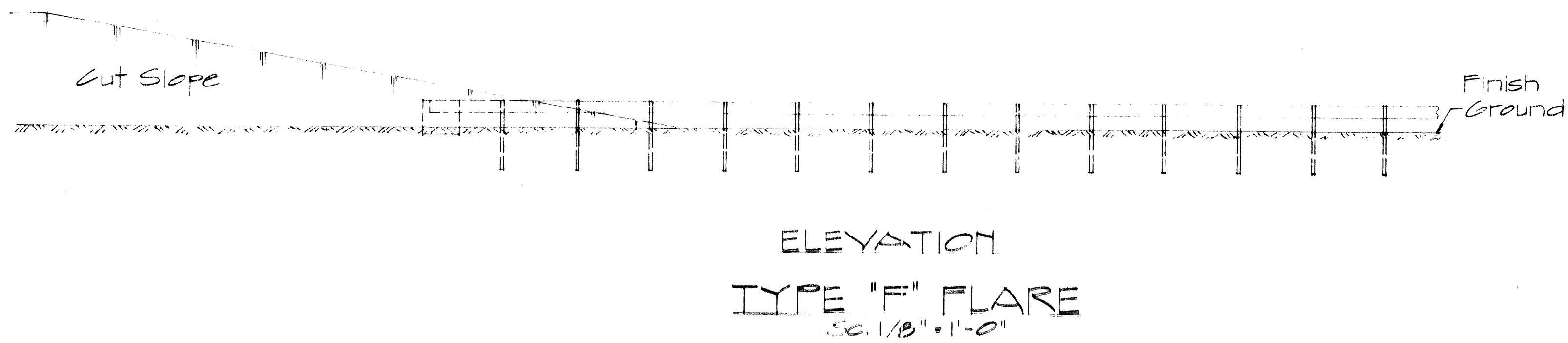
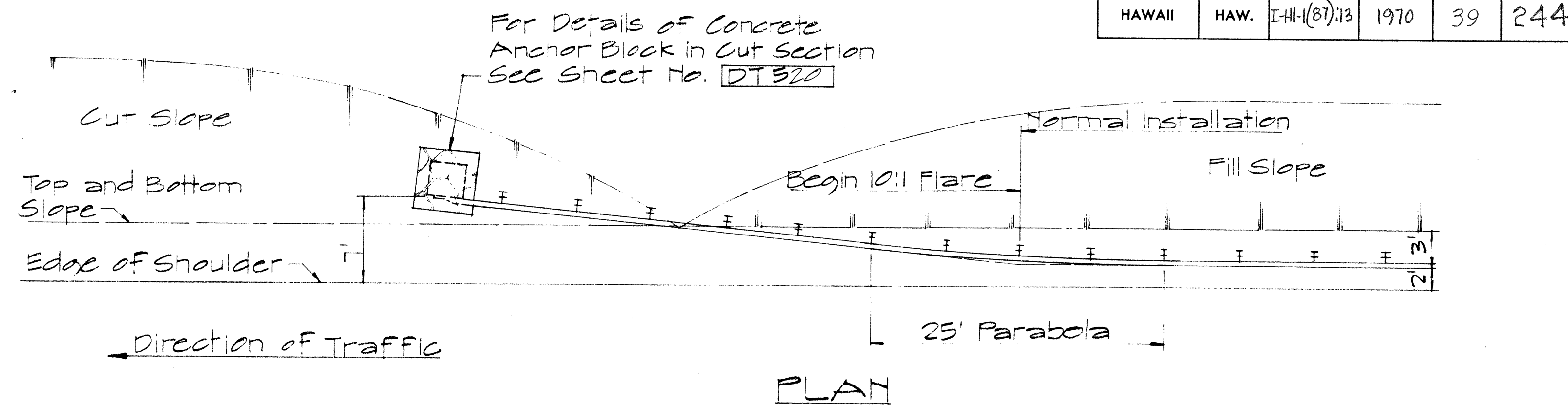
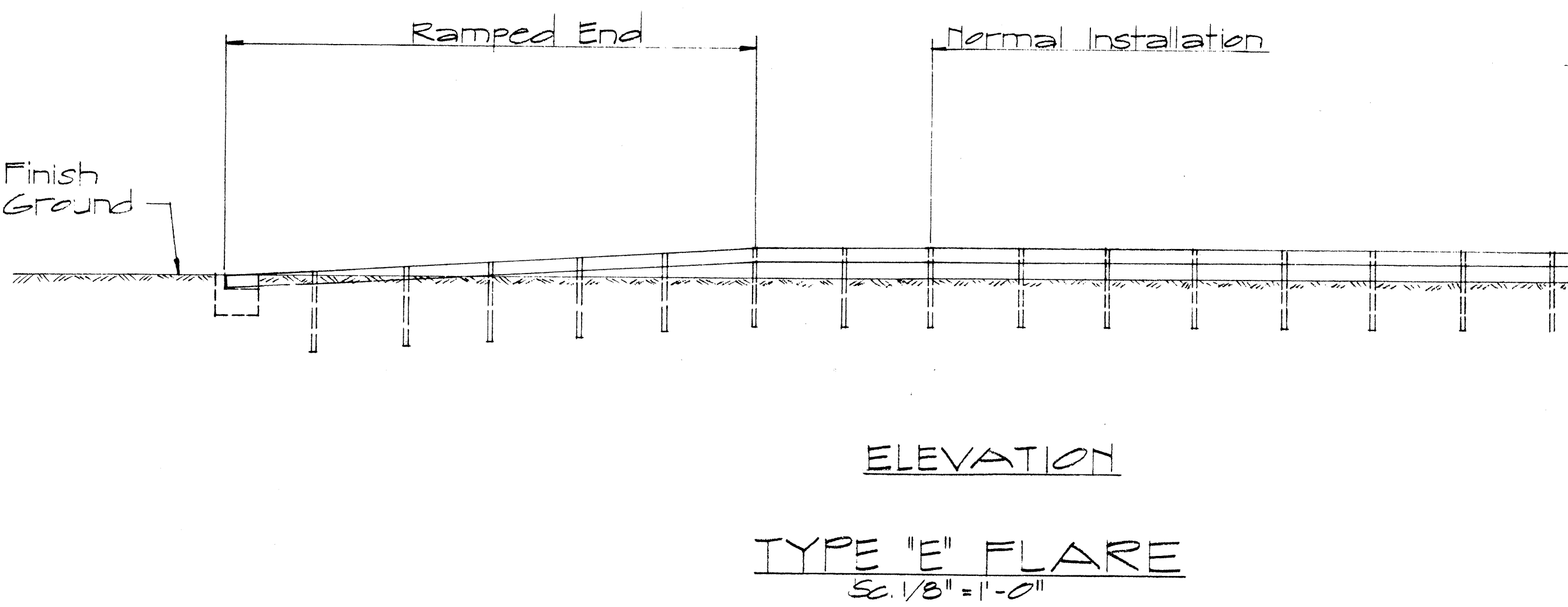
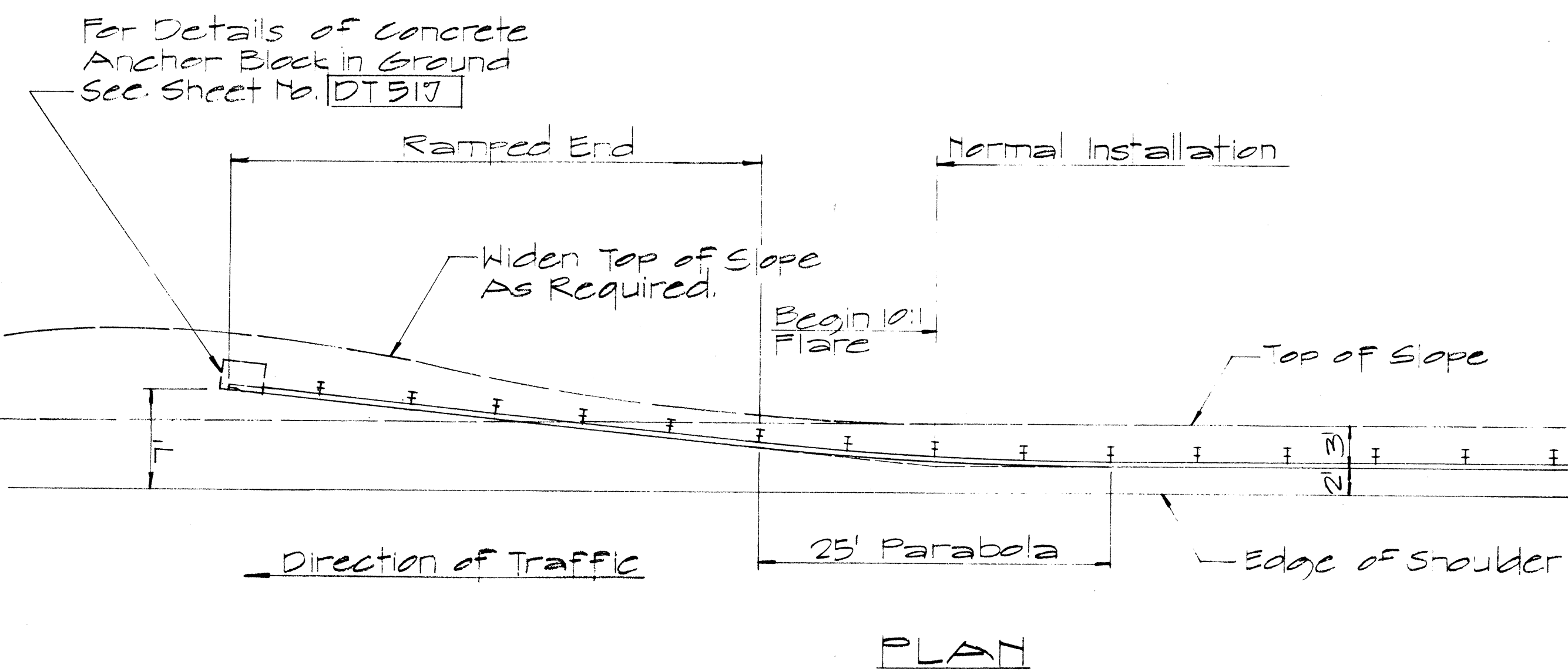
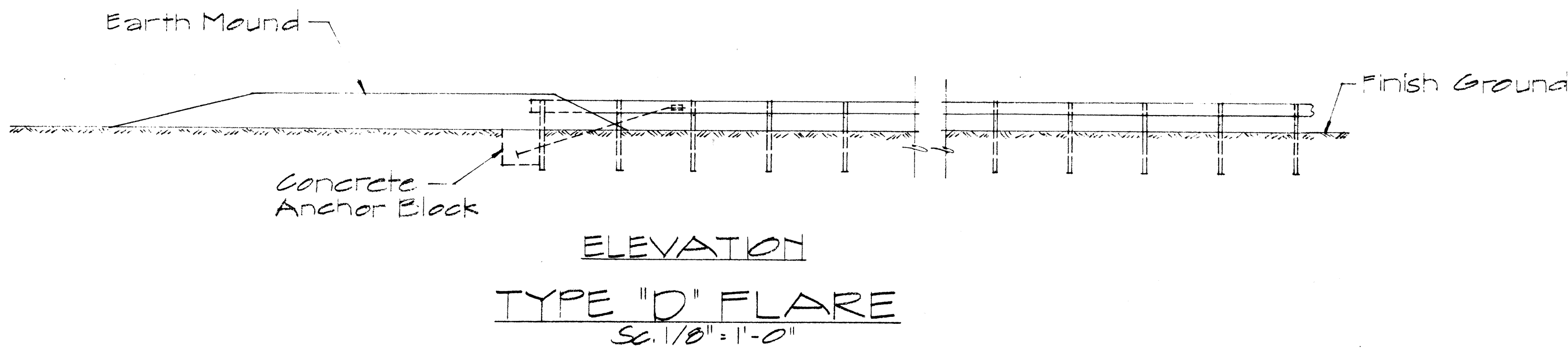
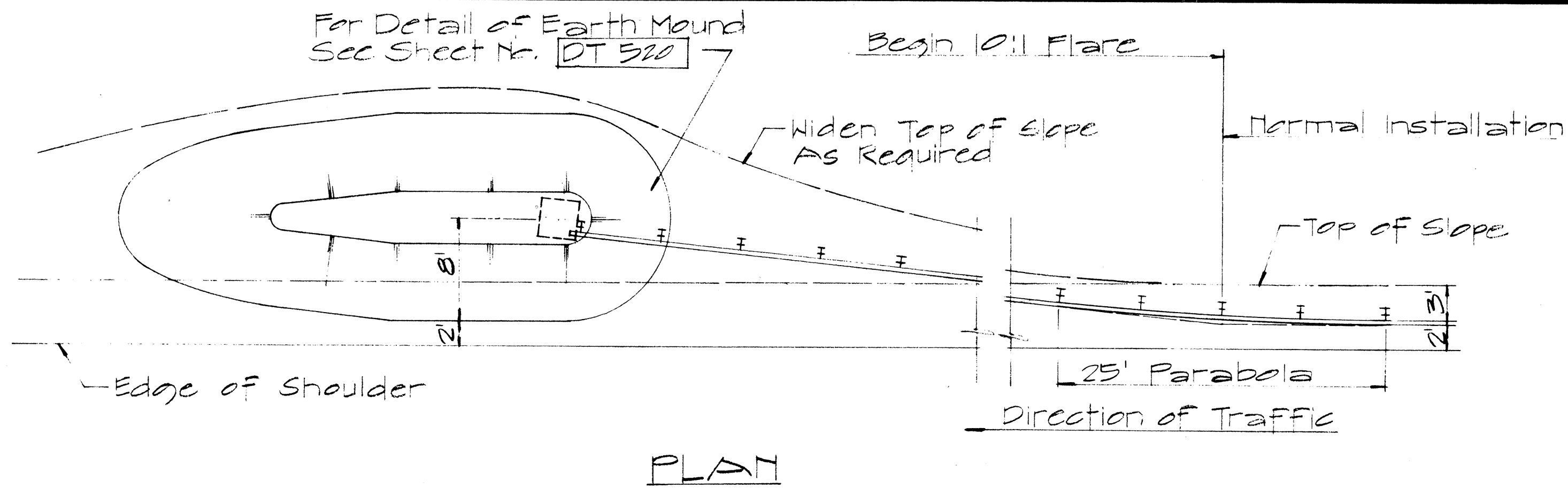
**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

Sc As Noted April 1969

SHEET No. 20 OF 23 SHEETS DT 516

DATE
SURVEY PLOTTED BY
DRAWN BY
DESIGNED 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-HI-1(81)13	1970	39	244



TYPICAL LAYOUT PLAN OF END POST CONNECTION

Sc. 1/8" = 1'-0"

NO.	REVISION	APPROVED BY	DATE

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

APPROVED:
Wm J. Skelton 12-30-69
 ASSISTANT CHIEF, ENGINEERING DATE

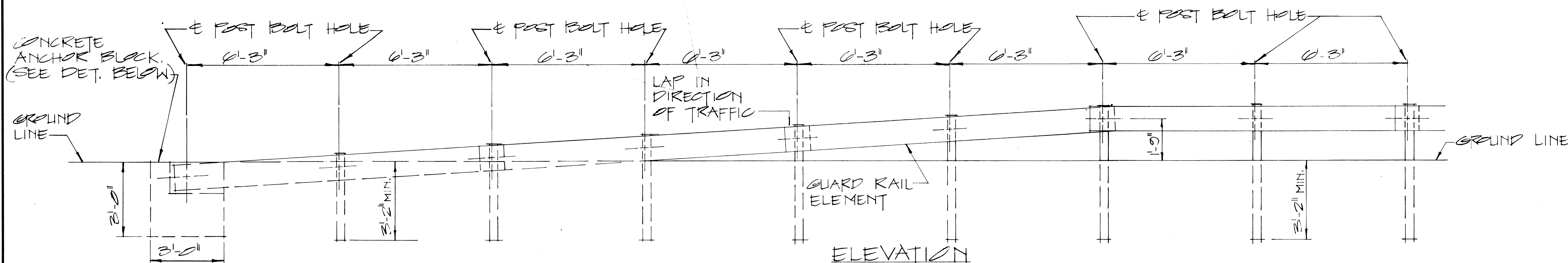
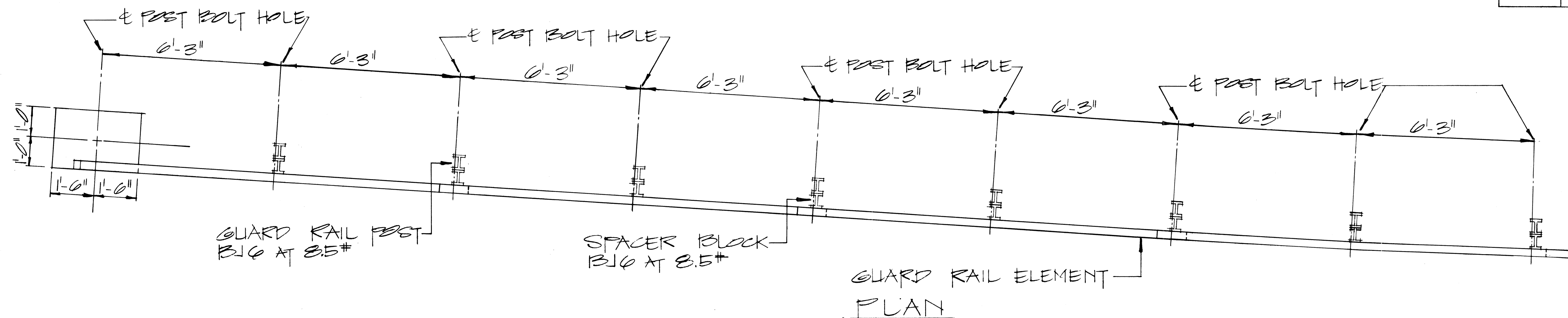
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

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

Sc. As Noted April 1969

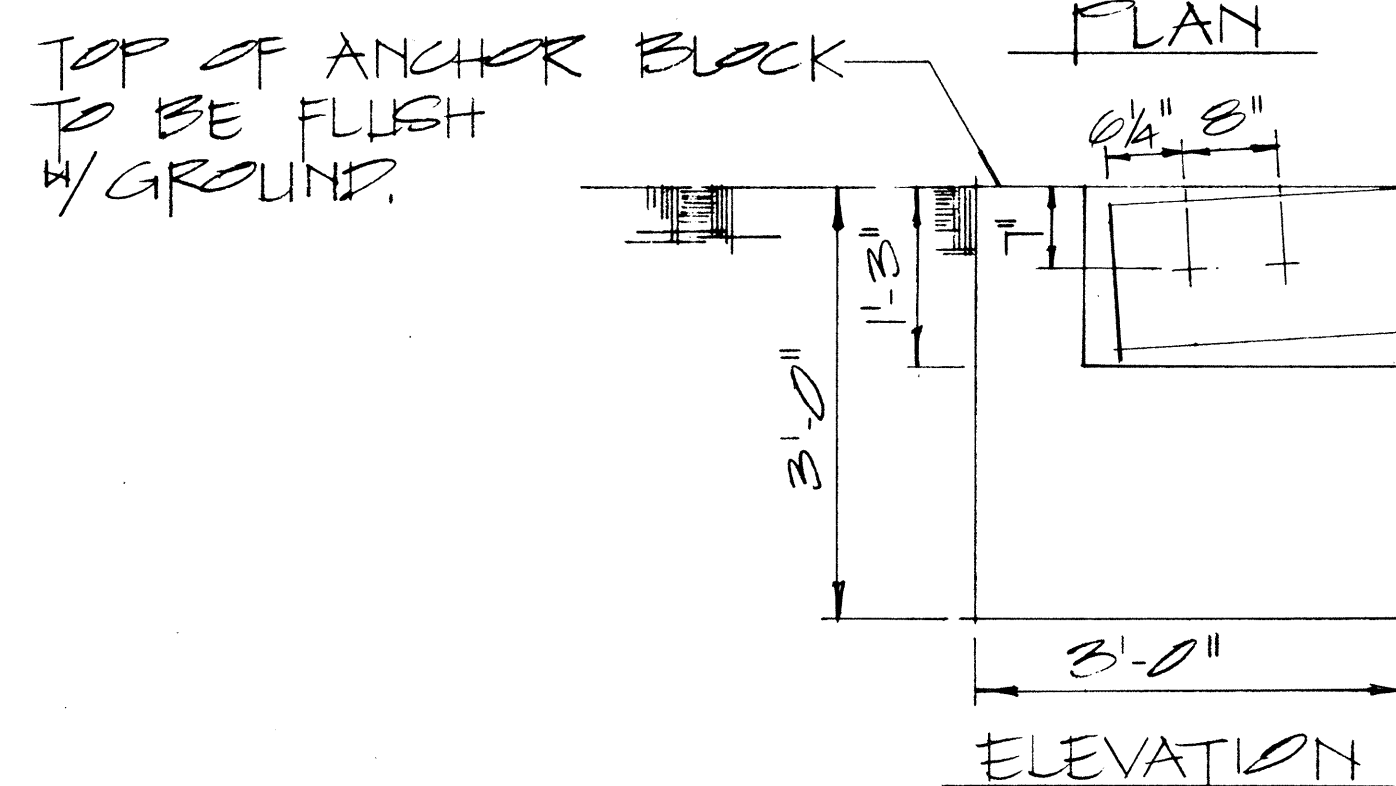
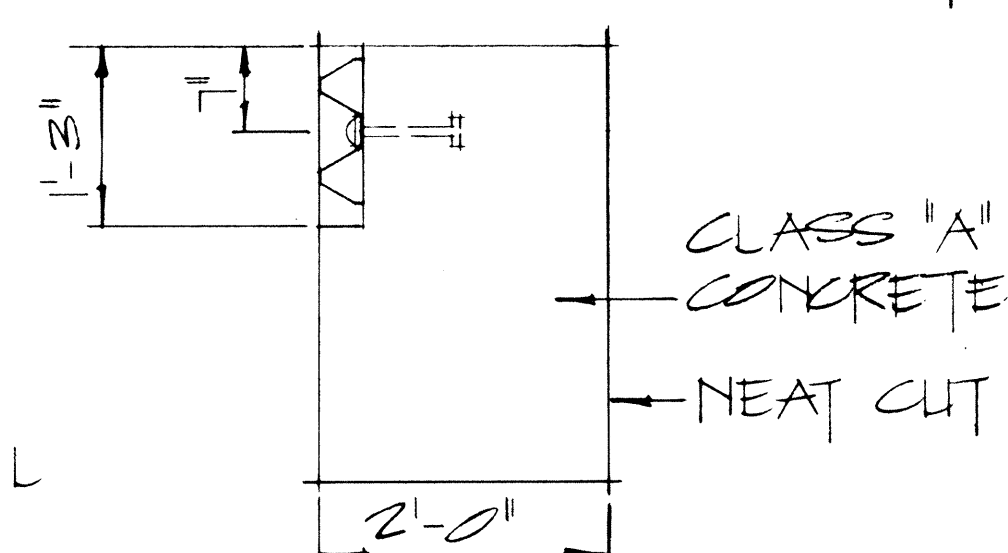
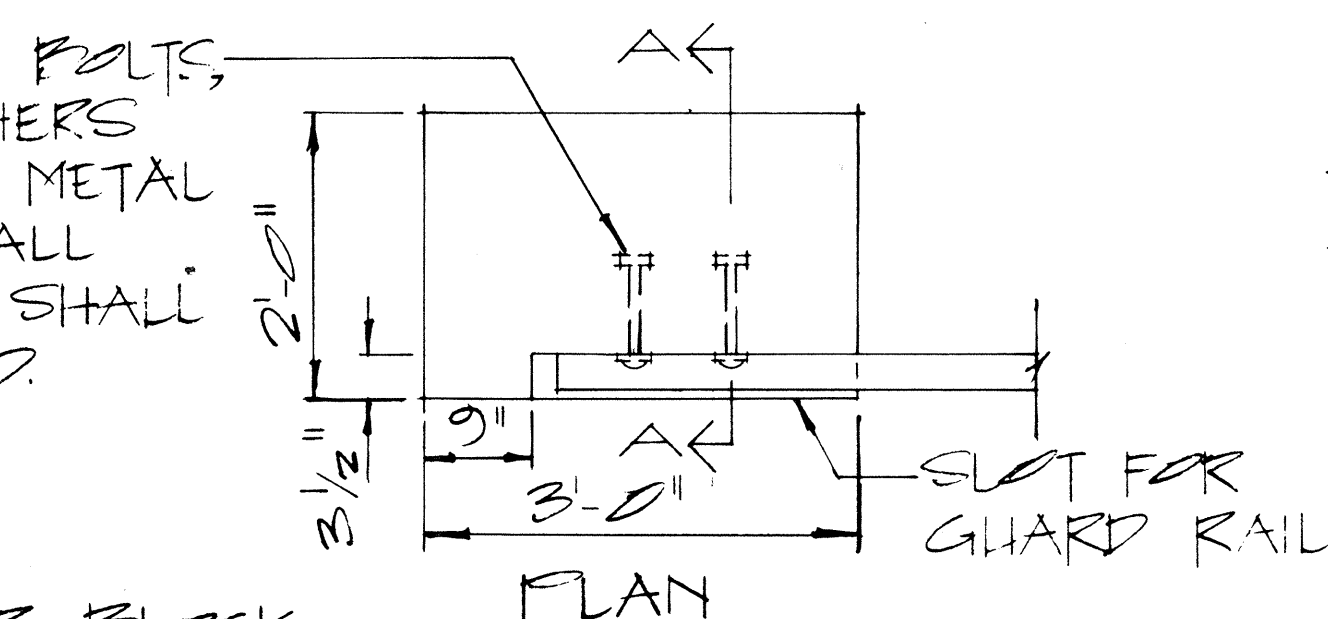
DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-44-1(87)-13	1970	40	244



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.



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:
Enoch Tanaka
 TRAFFIC ENGINEER 12/23/69
 DATE

APPROVED:
John J. Delia
 ASSISTANT CHIEF, ENGINEERING 12-30-69
 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

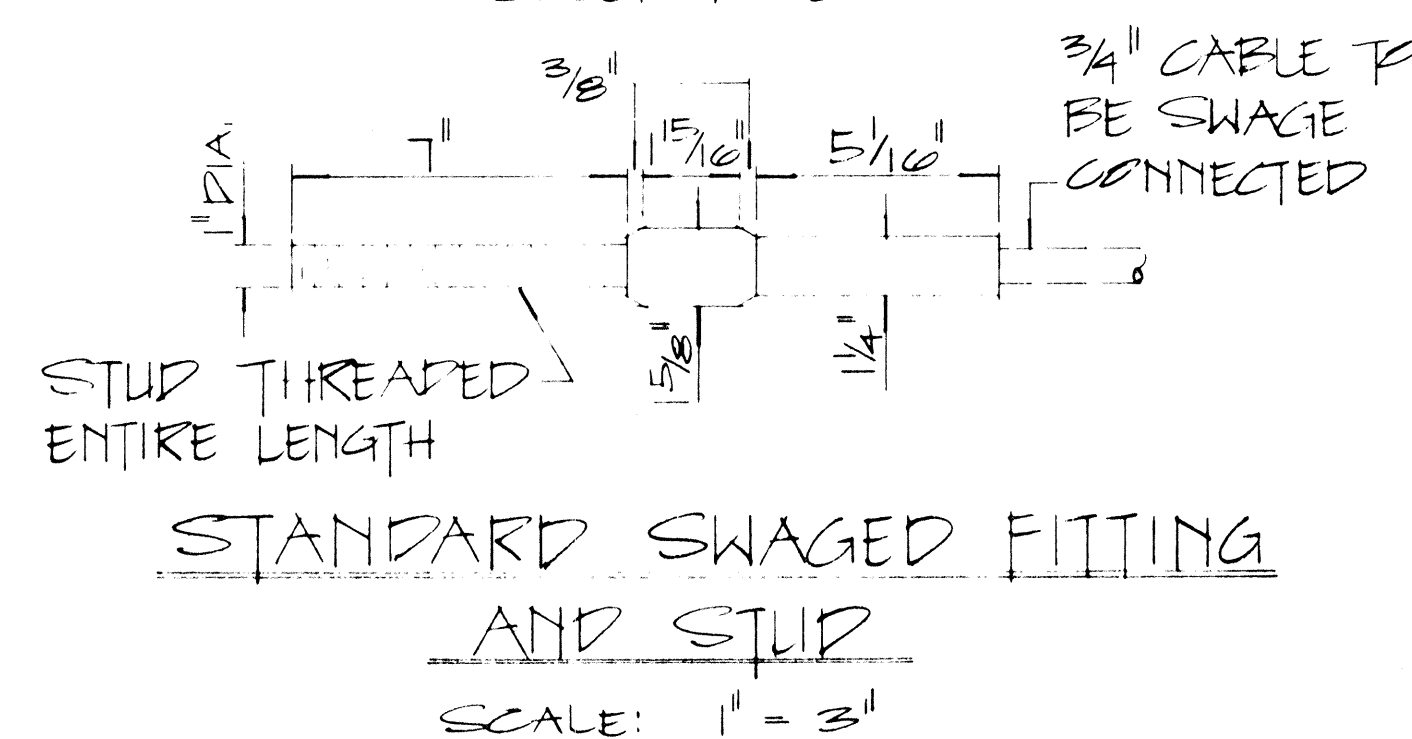
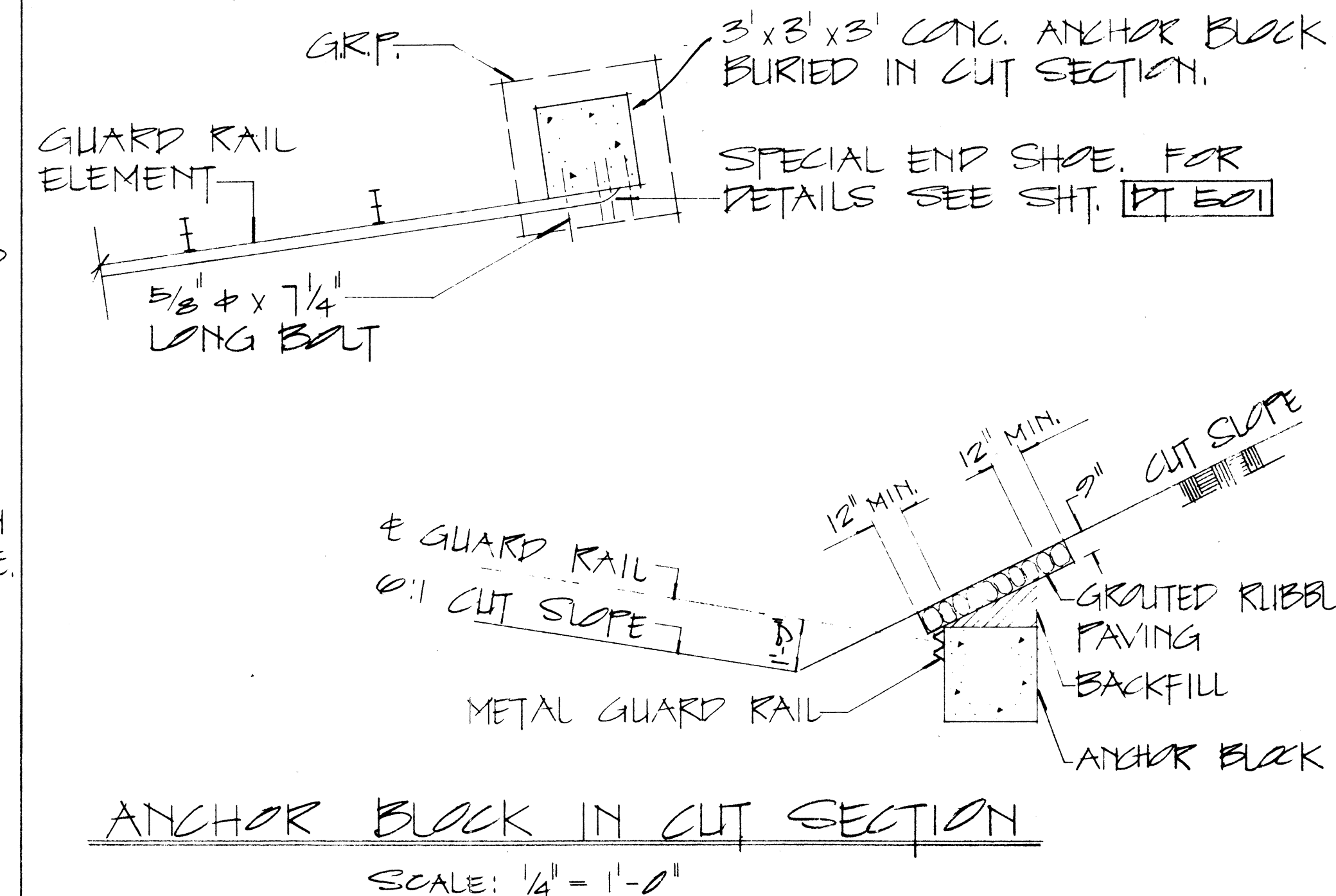
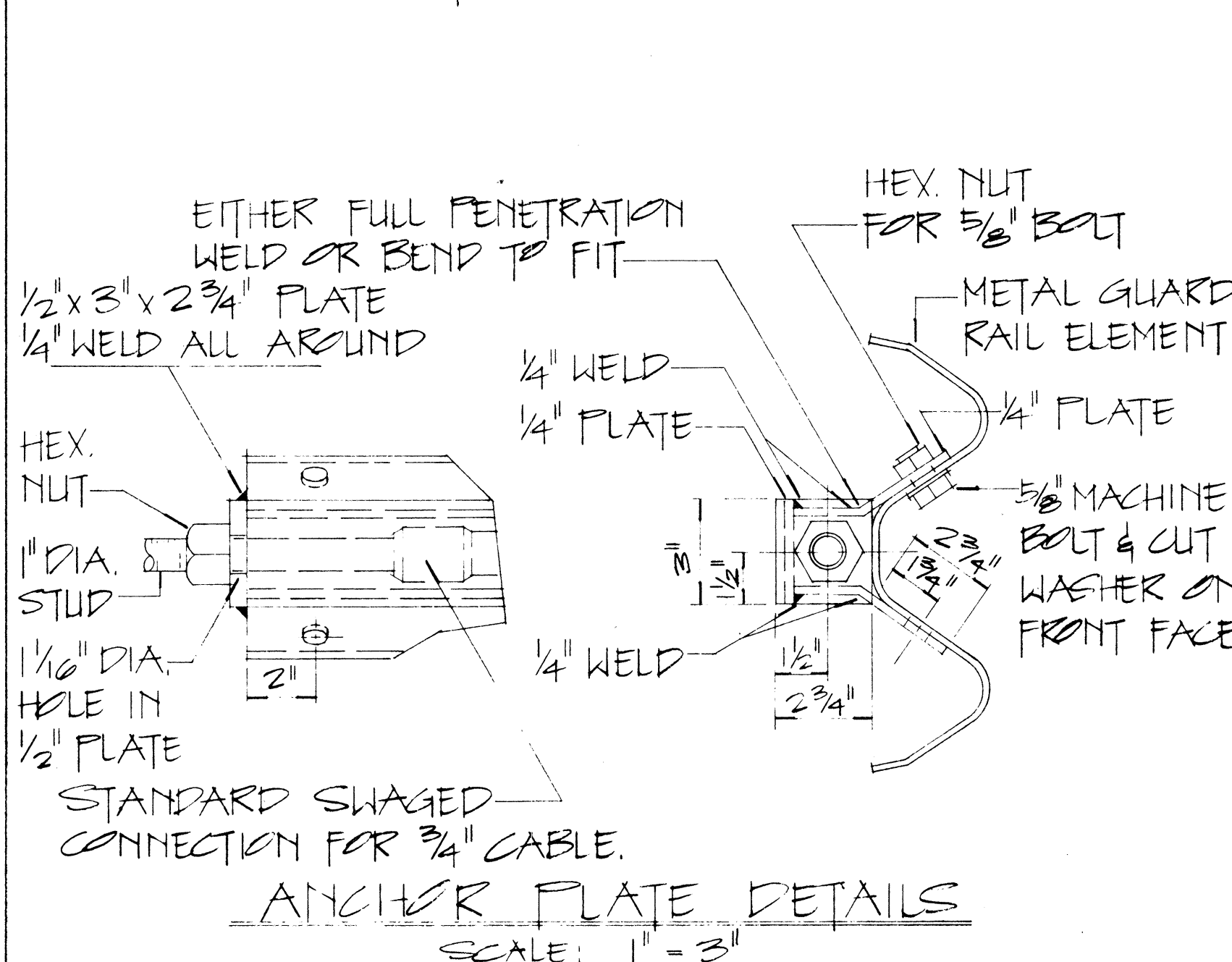
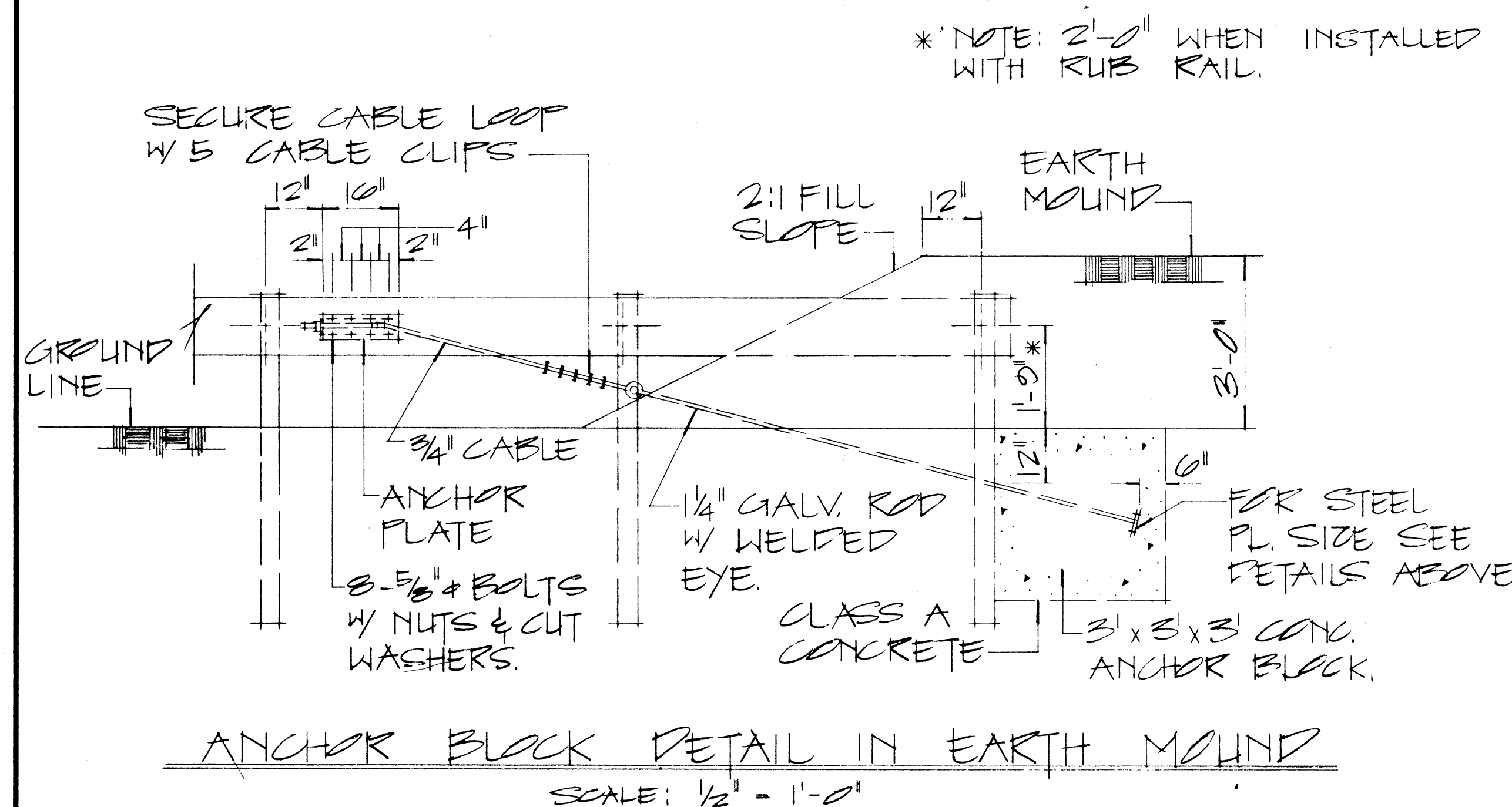
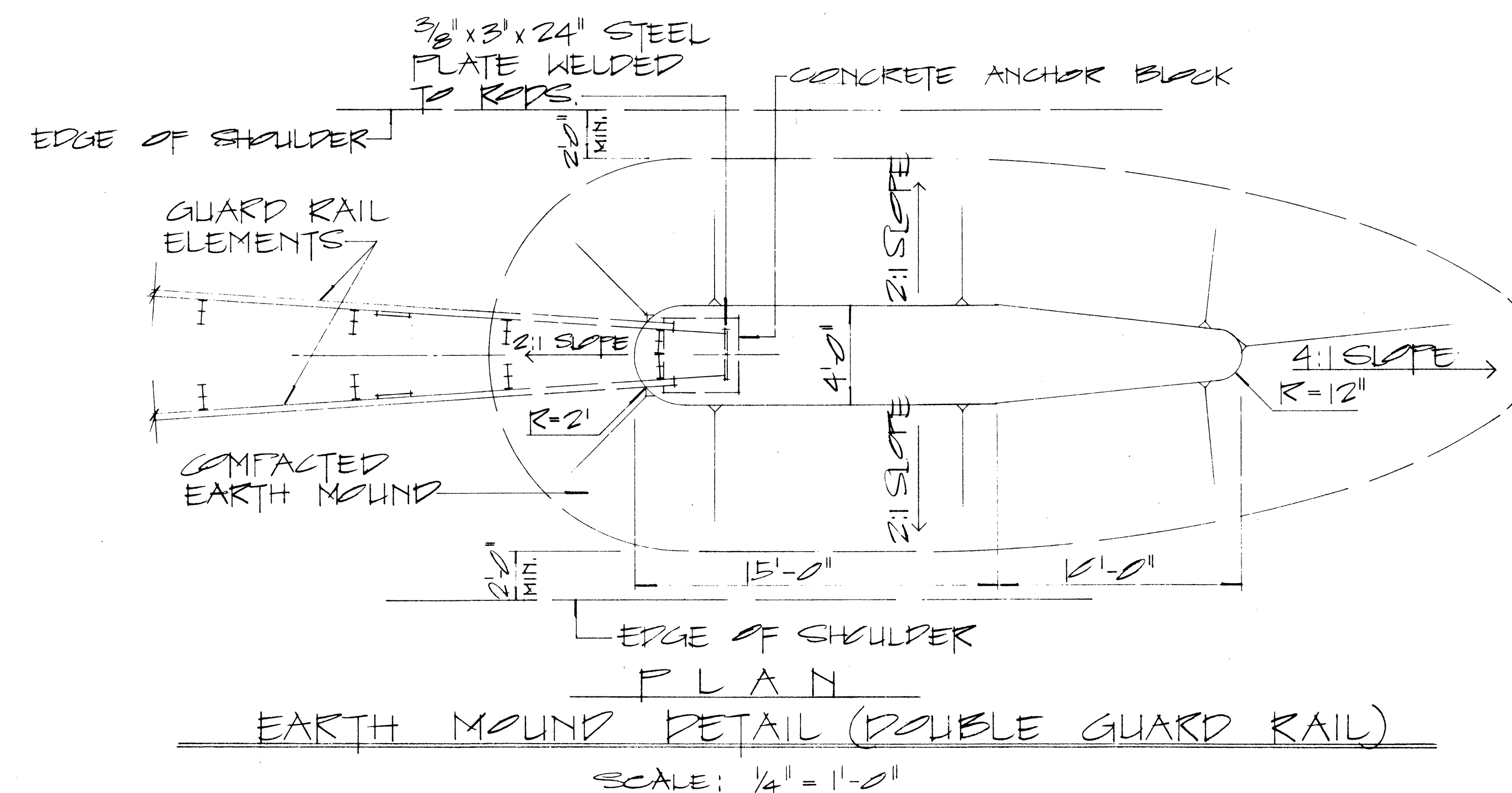
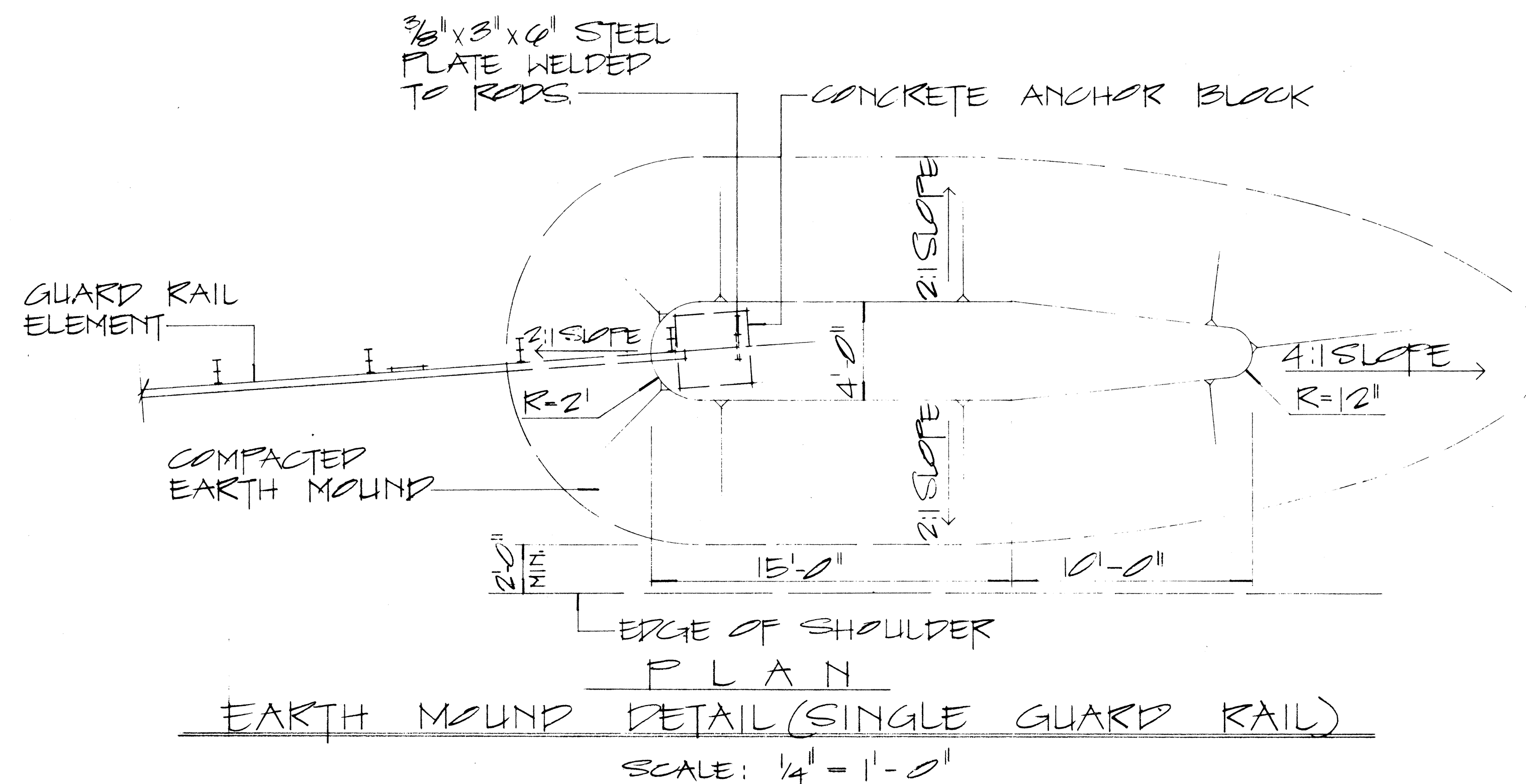
STANDARD DETAILS
 GUARD RAIL, TYPE 3
 RAMP END ANCHORAGE

SCALE: AS SHOWN

SHEET No. 22 OF 23 SHEETS DT512

SURVEY PLOTTED BY	DATE
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-H-1(87)13	1970	41	244



APPROVAL RECOMMENDED: E. Tanaka 12/23/69
TRAFFIC ENGINEER DATE

APPROVED: W. S. S. S. 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 12/19/69

SHEET No. 23 OF 23 SHEETS 12/520

DATE
SURVEY PLOTTED BY
DRAWN BY
DESIGNED BY
NOTED BY
CHECKED BY

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, GRP, EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.