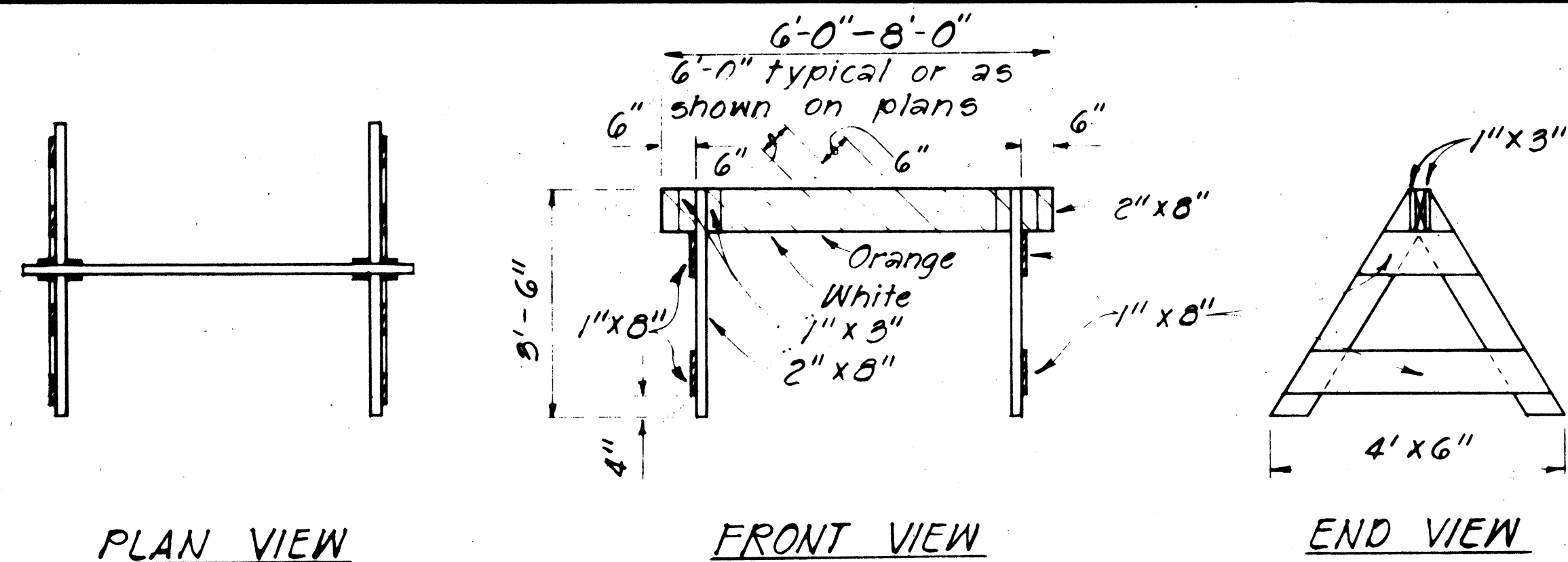
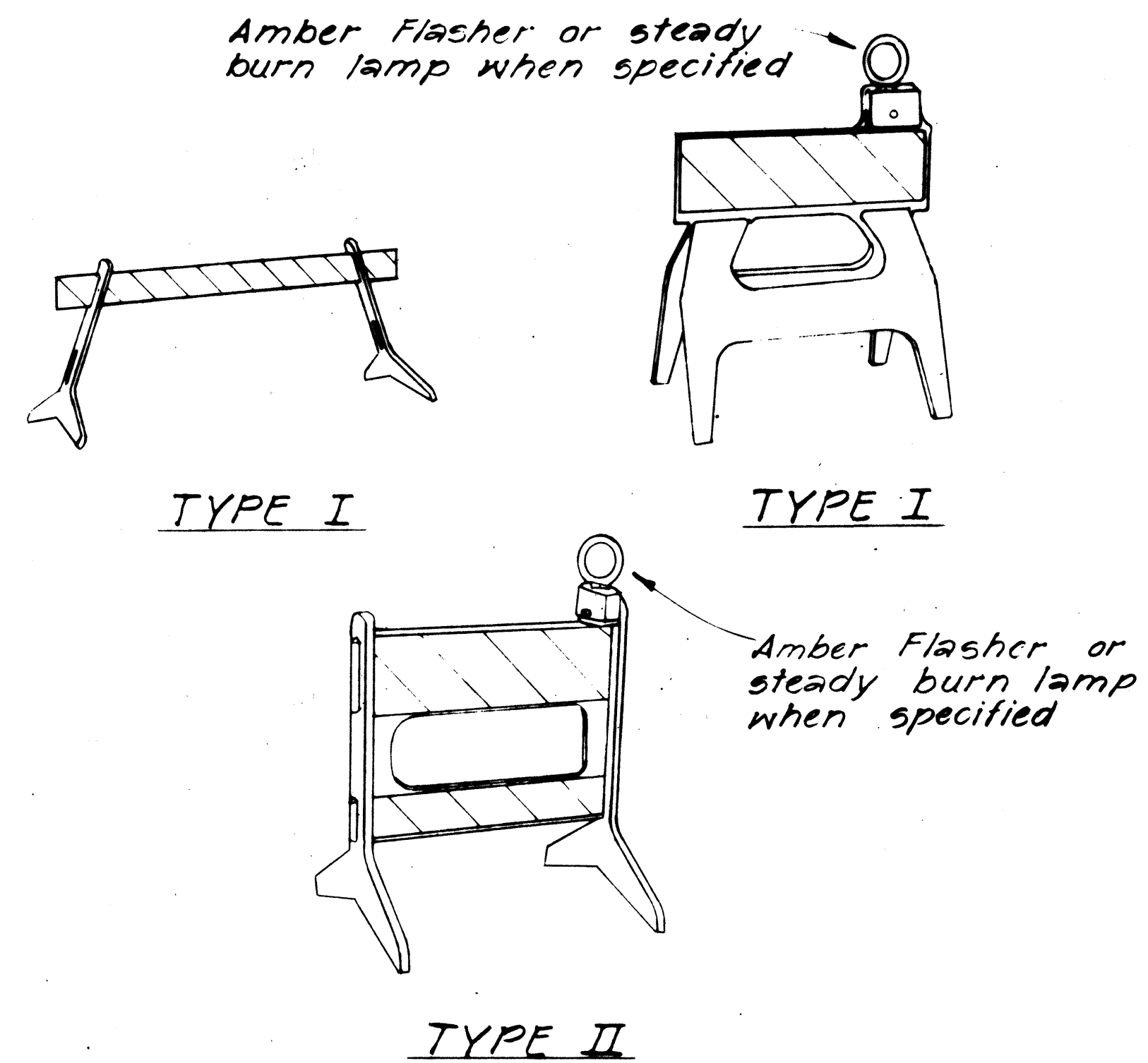


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	191-02-75 UNIT 1	1970	16	42

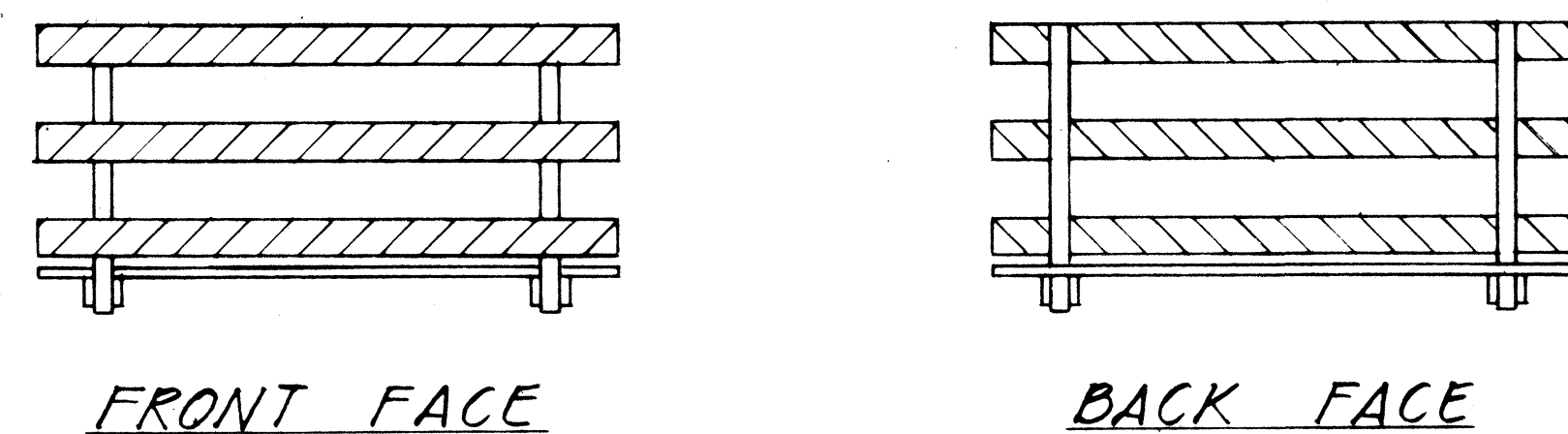


TYPE I BARRICADE
Scale: 1/2" = 1'-0"

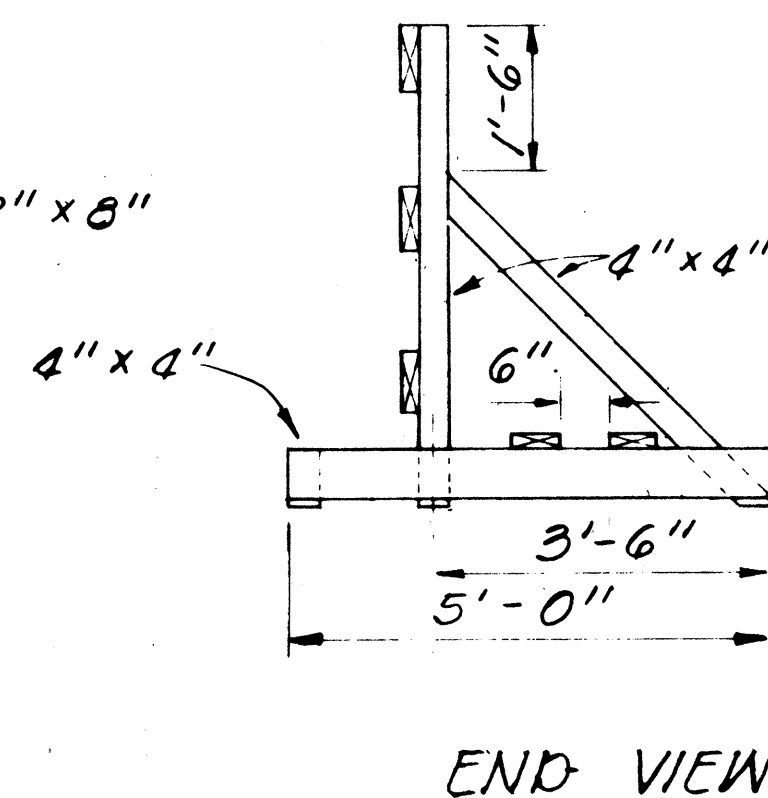


TYPE II

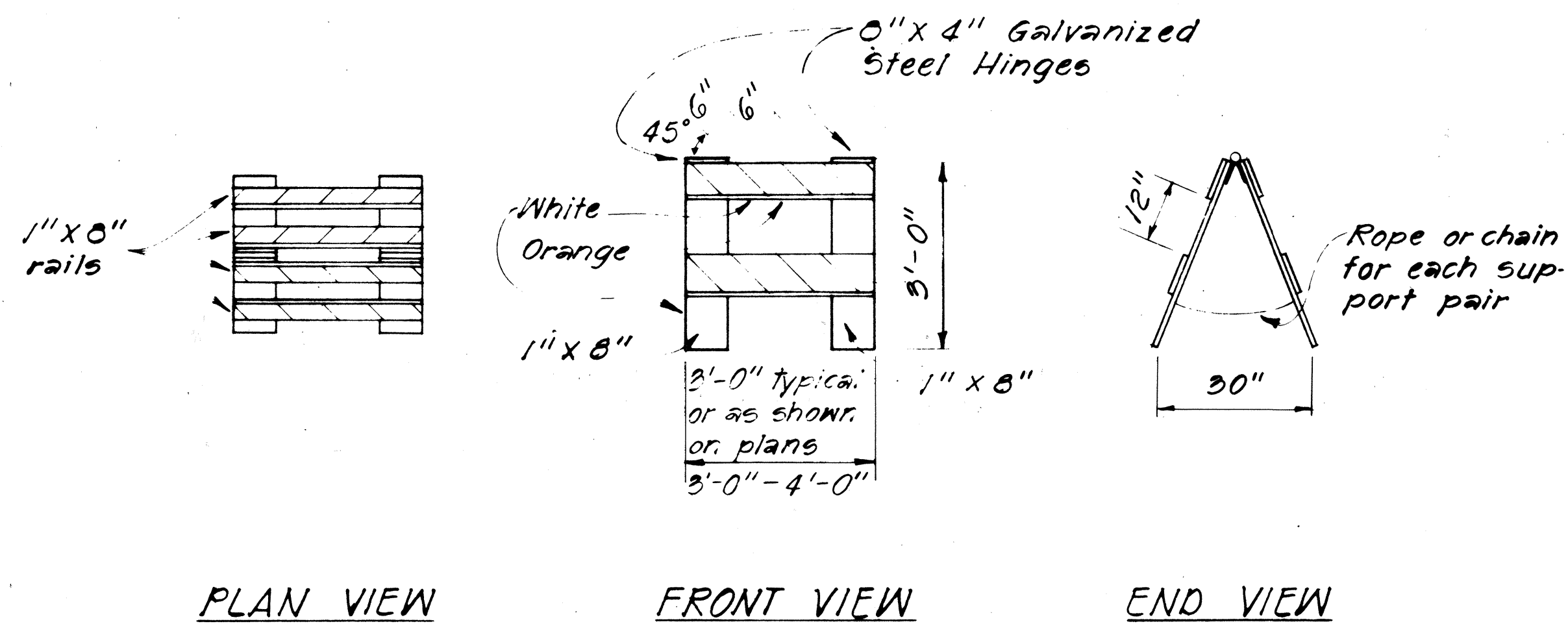
PLASTIC MOLDED BARRICADE OPTIONS *
Not to Scale
* Shop Drawings must be submitted for approval.



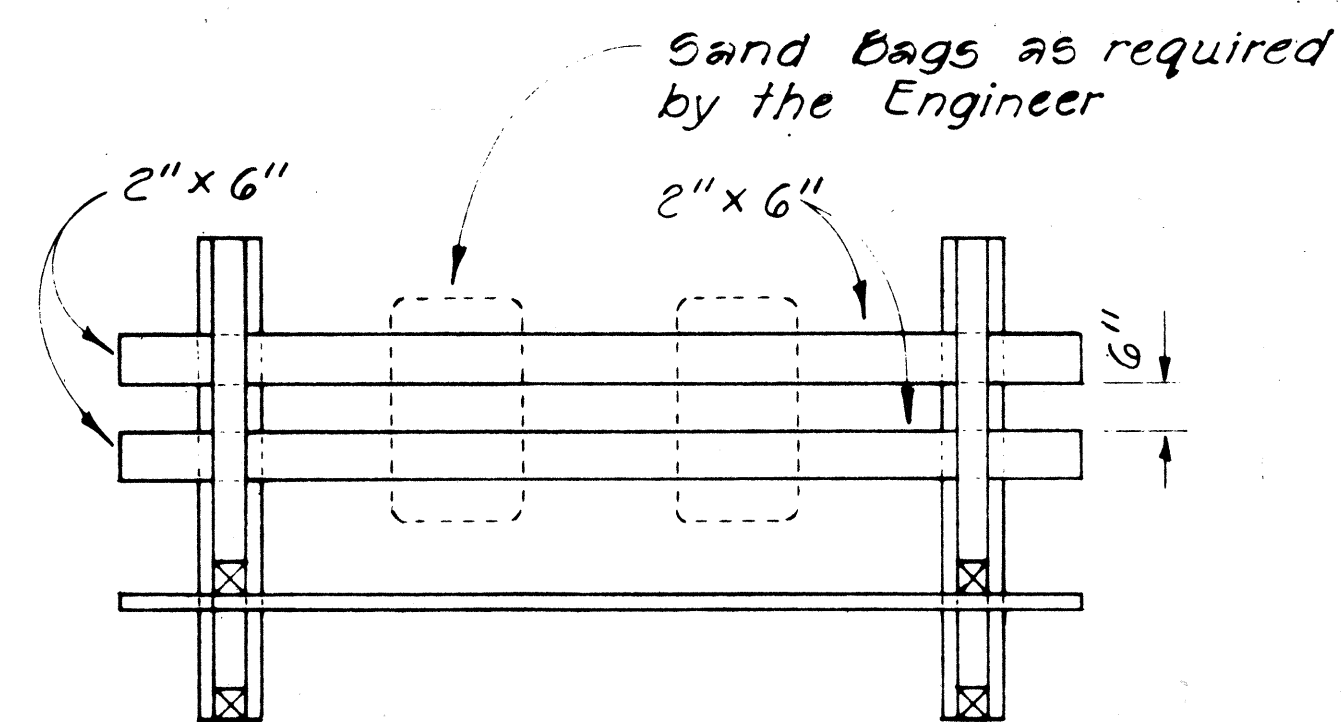
BARRICADE STRIPING DETAILS
Not to Scale



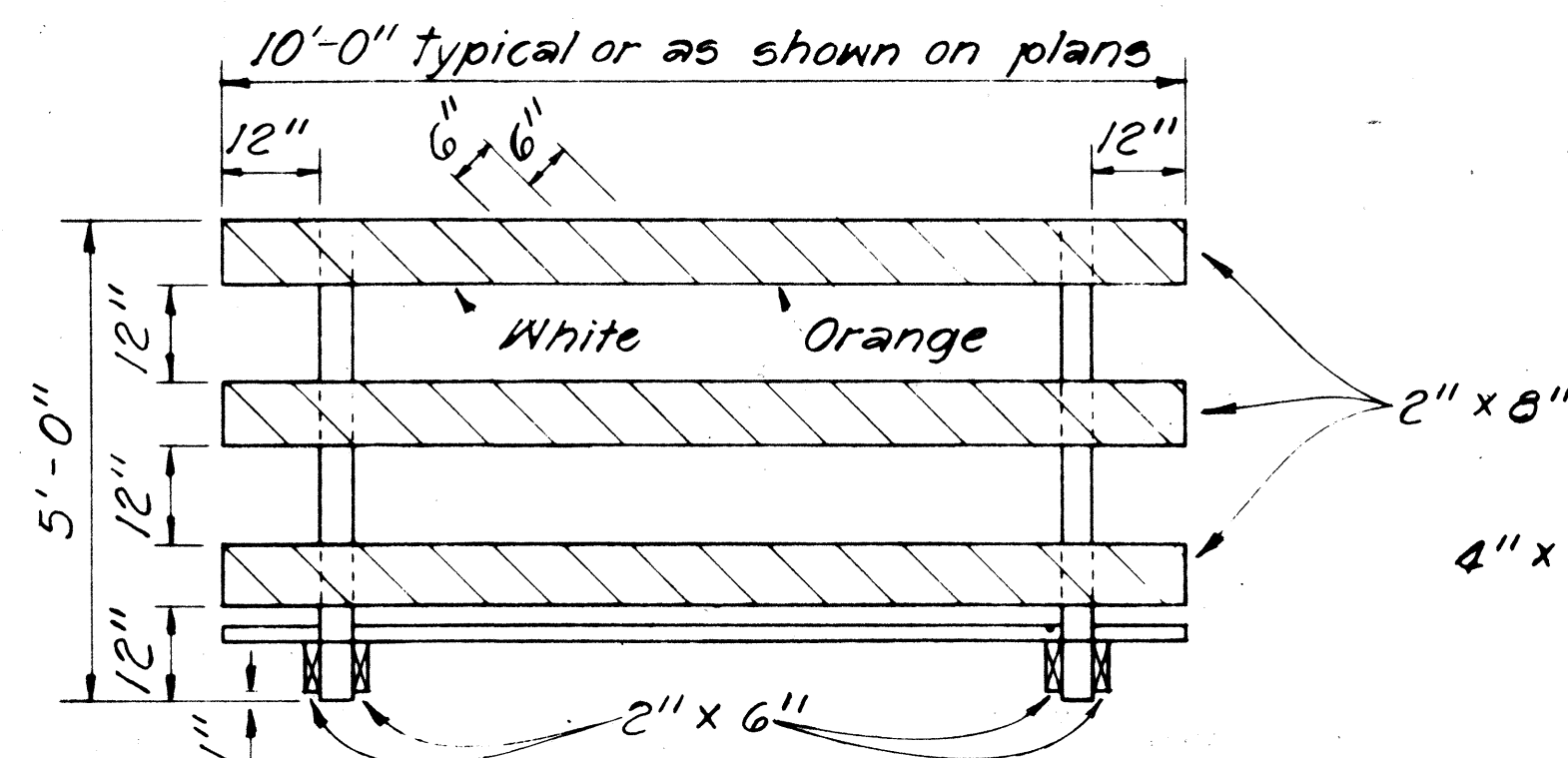
END VIEW



TYPE II BARRICADE
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW

TYPE III BARRICADE
Scale: 1/2" = 1'-0"

GENERAL NOTES

- The Contractor shall construct, install and maintain the barricades at the locations shown on the Plans.
- The barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property, unless otherwise specified.
- The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized with reflective sheeting.
- Both faces of the barricade rails shall be striped. See Striping Detail Arrangement.
- Contractor may submit alternate designs for approval.
- Barricade details shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, by the Federal Highway Administration and as amended.
- If wooden rails are used, 26 ga. galv. steel sheet shall be first tacked on to the rails and then overlaid with reflective sheeting.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

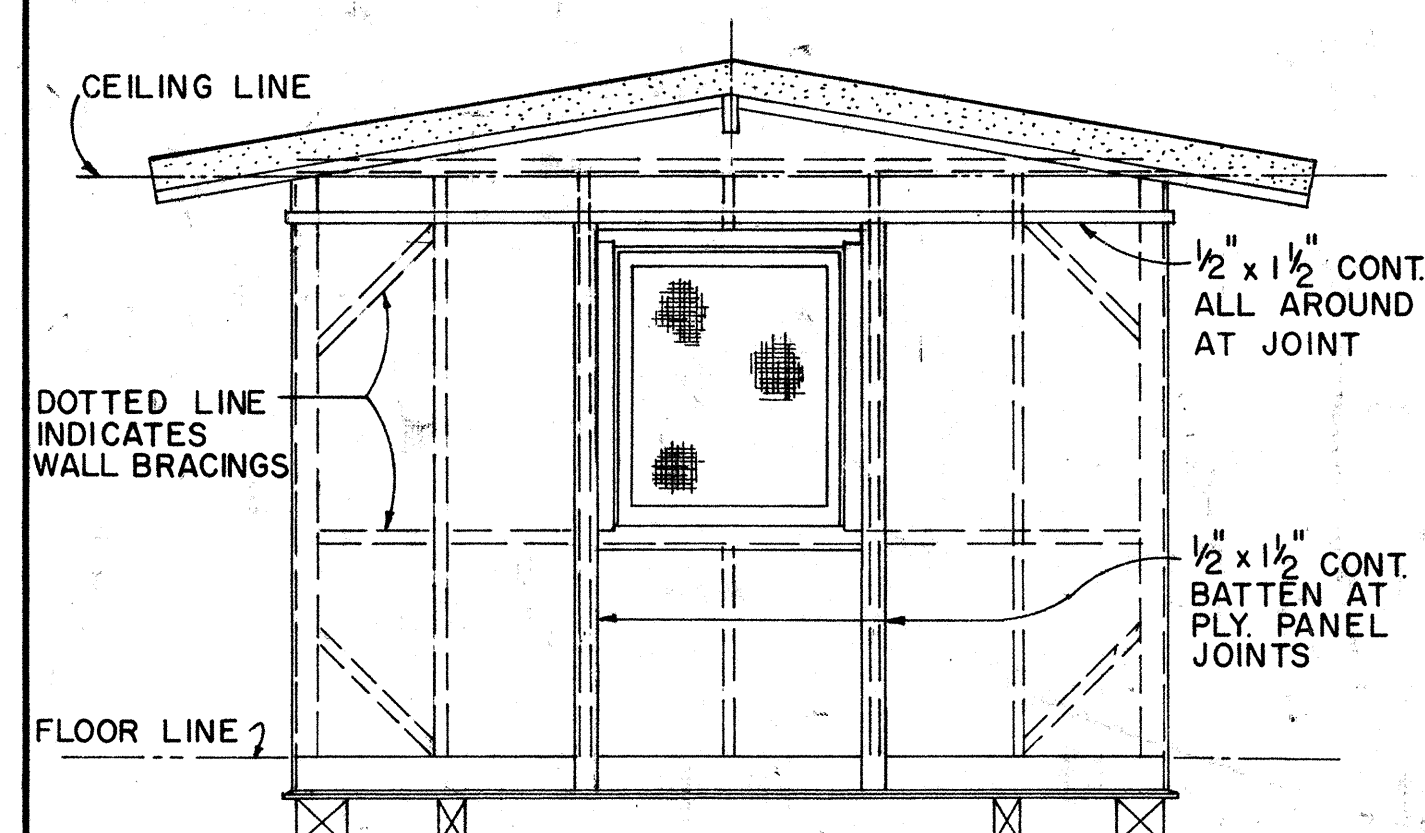
TYPICAL DETAILS

BARRICADES

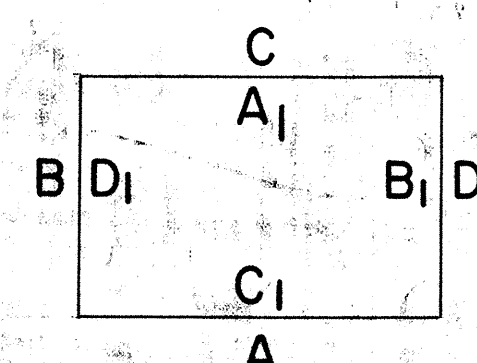
SCALE: As Shown

SHEET NO. 1 OF 18 SHEETS

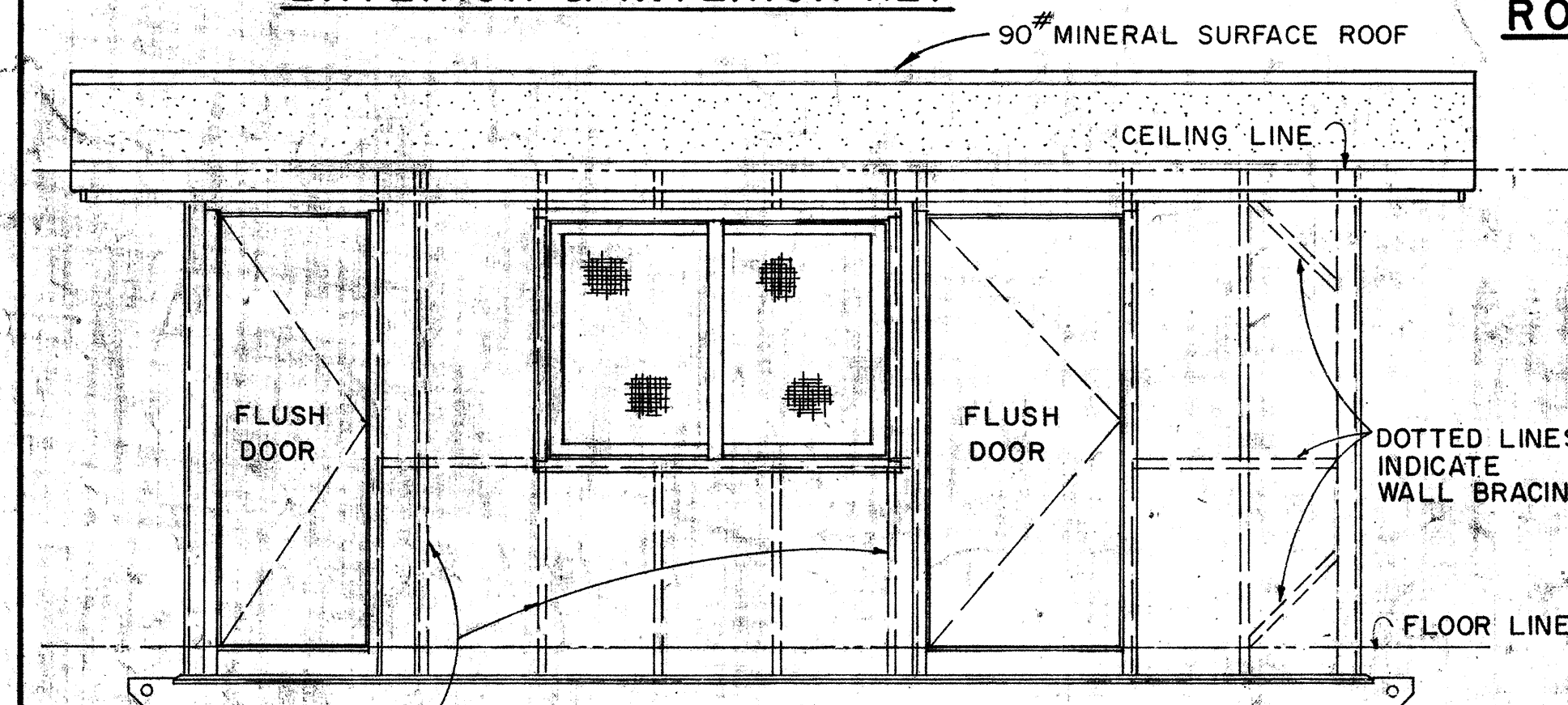
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19J-02-75 UNIT I	1979	17	42



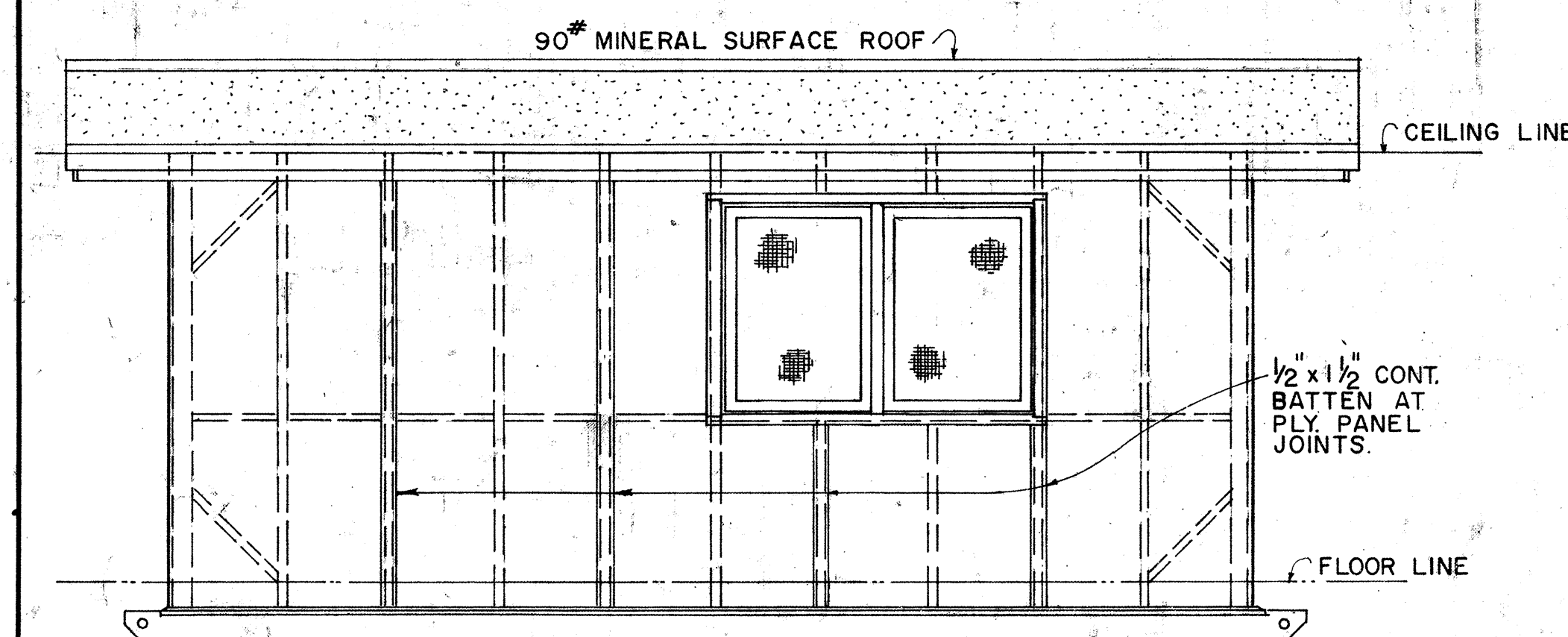
ELEVATION (B)
ELEVATION (D) SIMILAR
SCALE: $\frac{3}{8}" = 1'-0"$



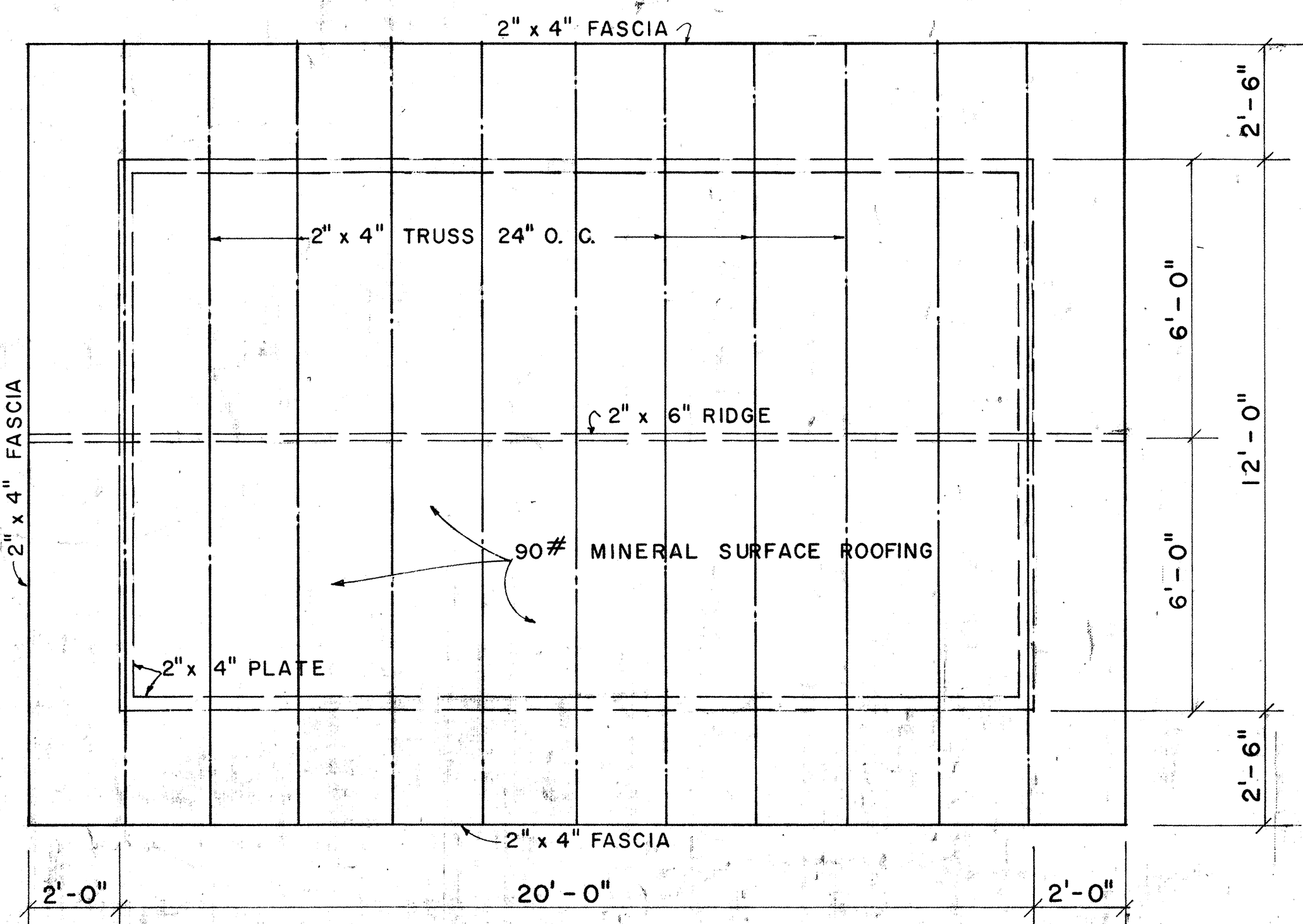
EXTERIOR & INTERIOR KEY



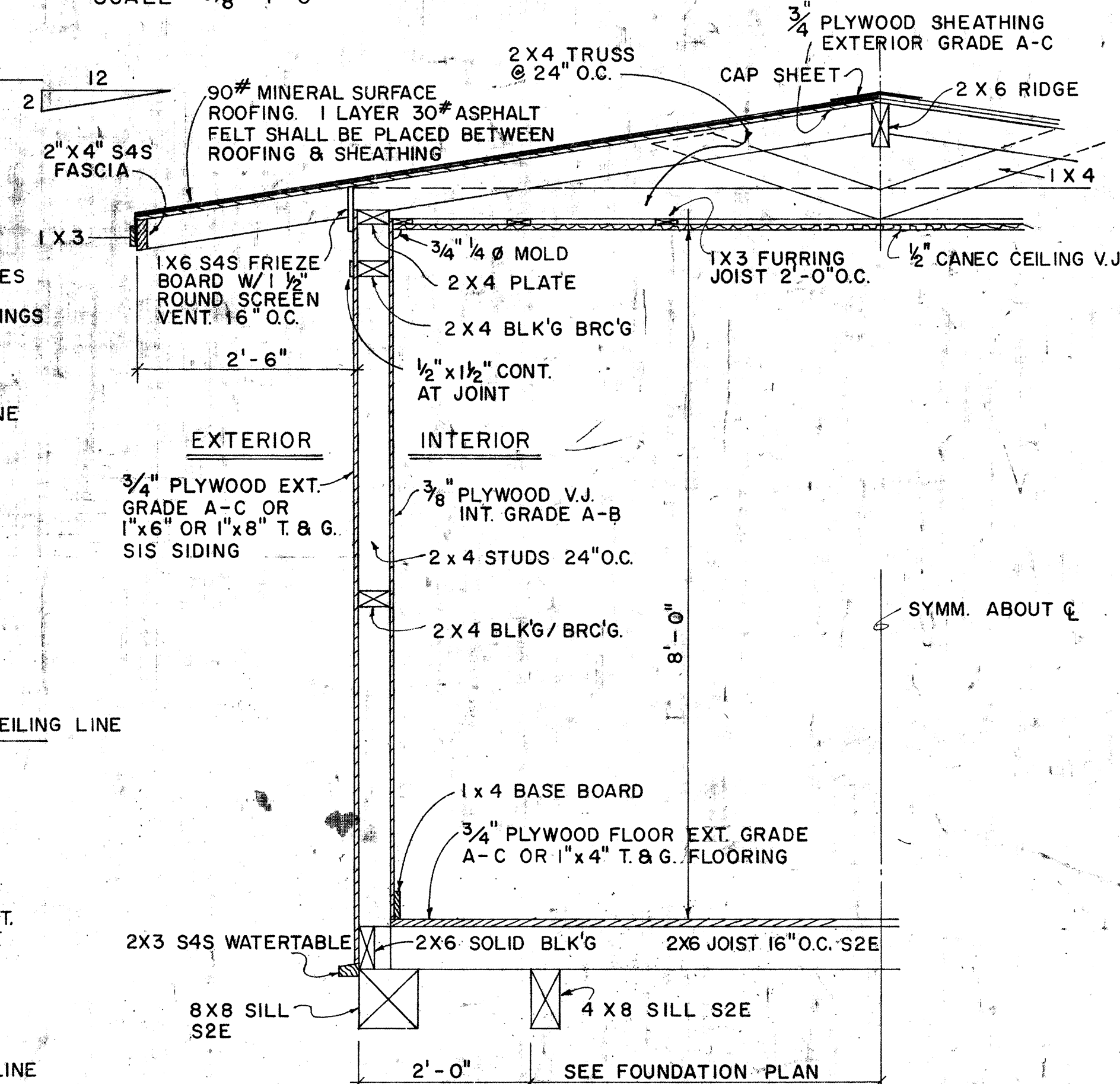
ELEVATION (A)
SCALE: $\frac{3}{8}" = 1' - 0"$



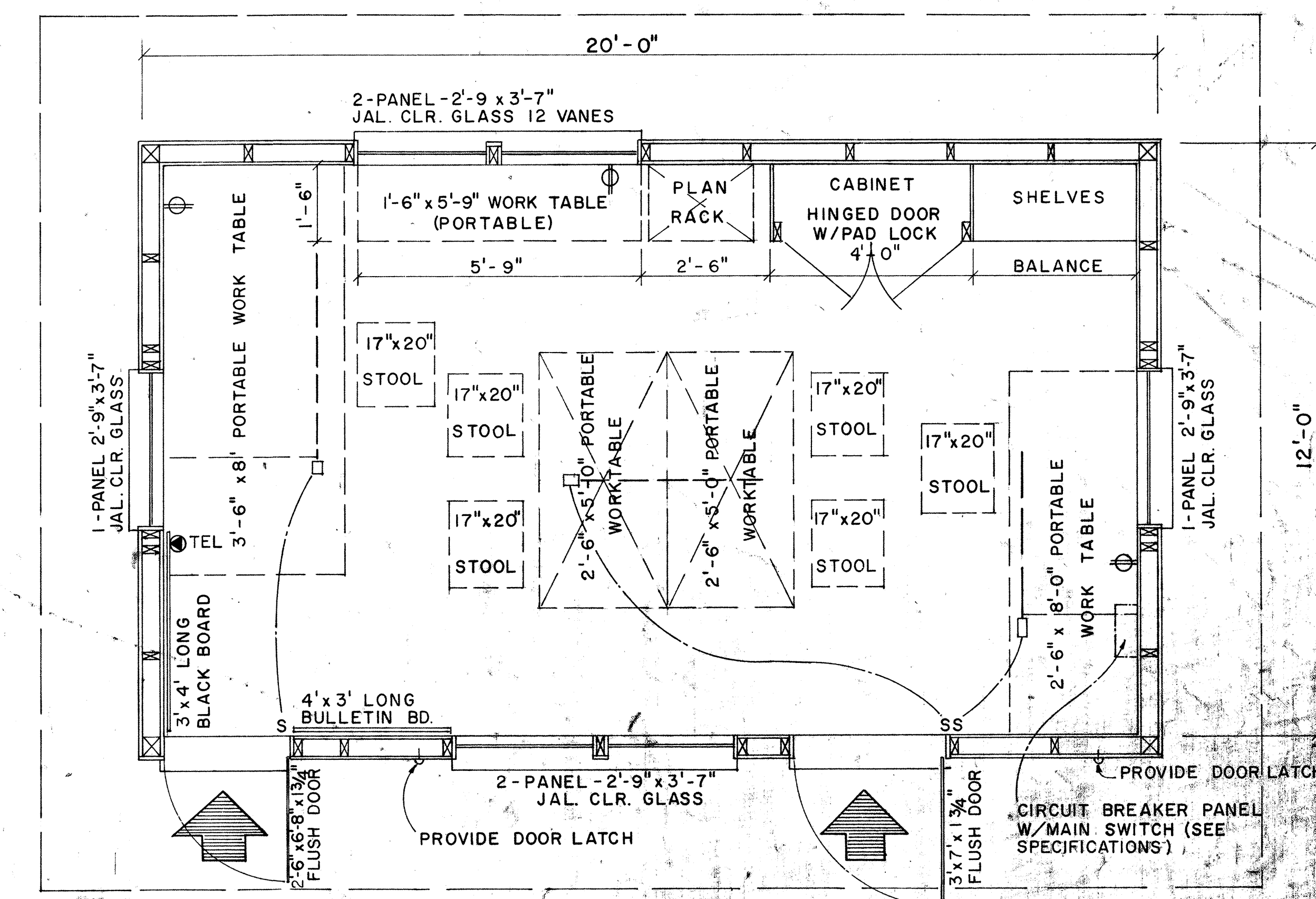
ELEVATION (C)
SCALE: $\frac{3}{8}" = 1'-0"$



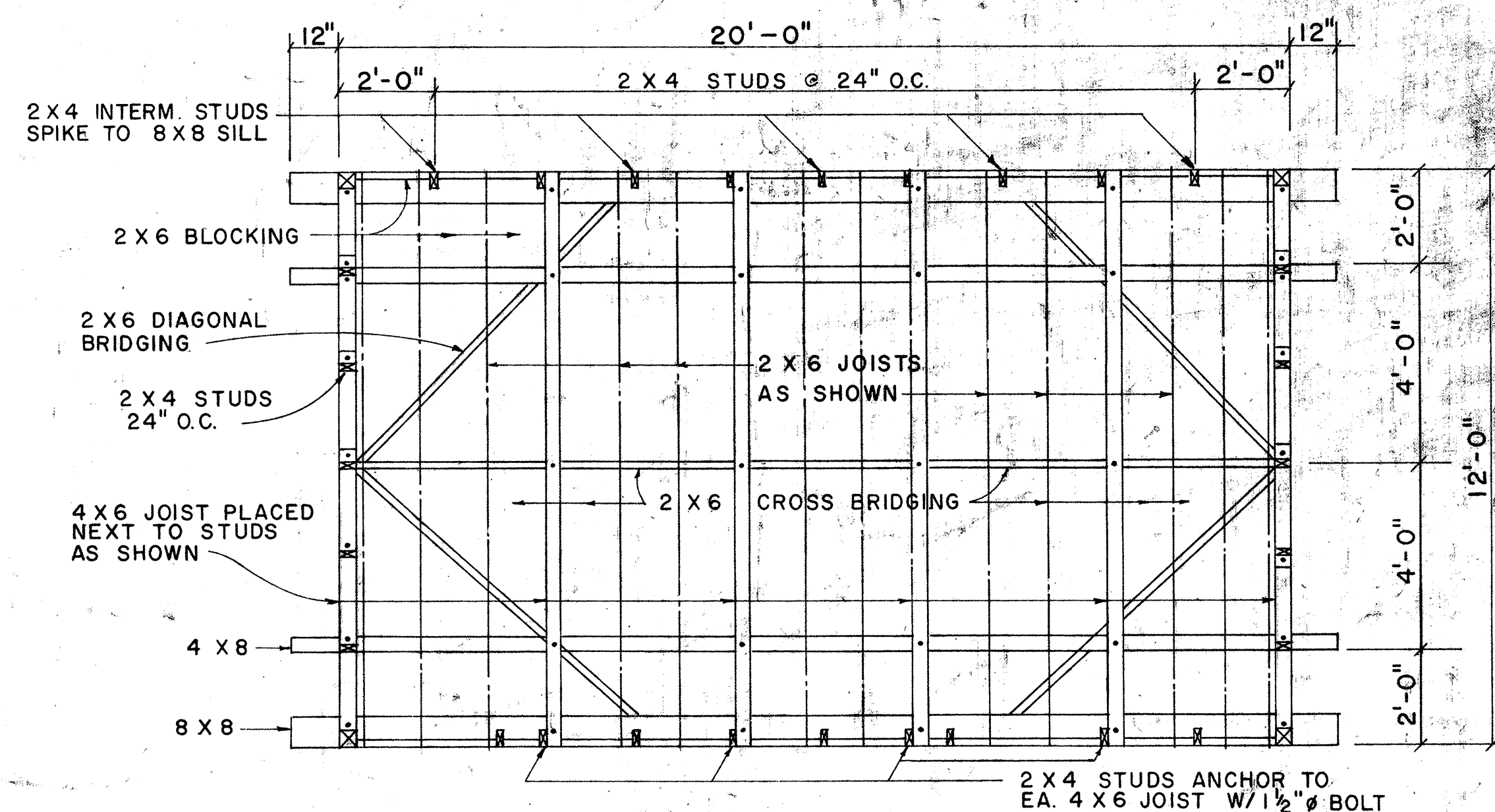
ROOF FRAMING PLAN
SCALE: $\frac{3}{8}" = 1'-0"$



TYPICAL WALL SECTION
SCALE: $3\frac{1}{2}" = 1' - 0"$



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



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

NO.	REVISION	APPROVED BY	DATE

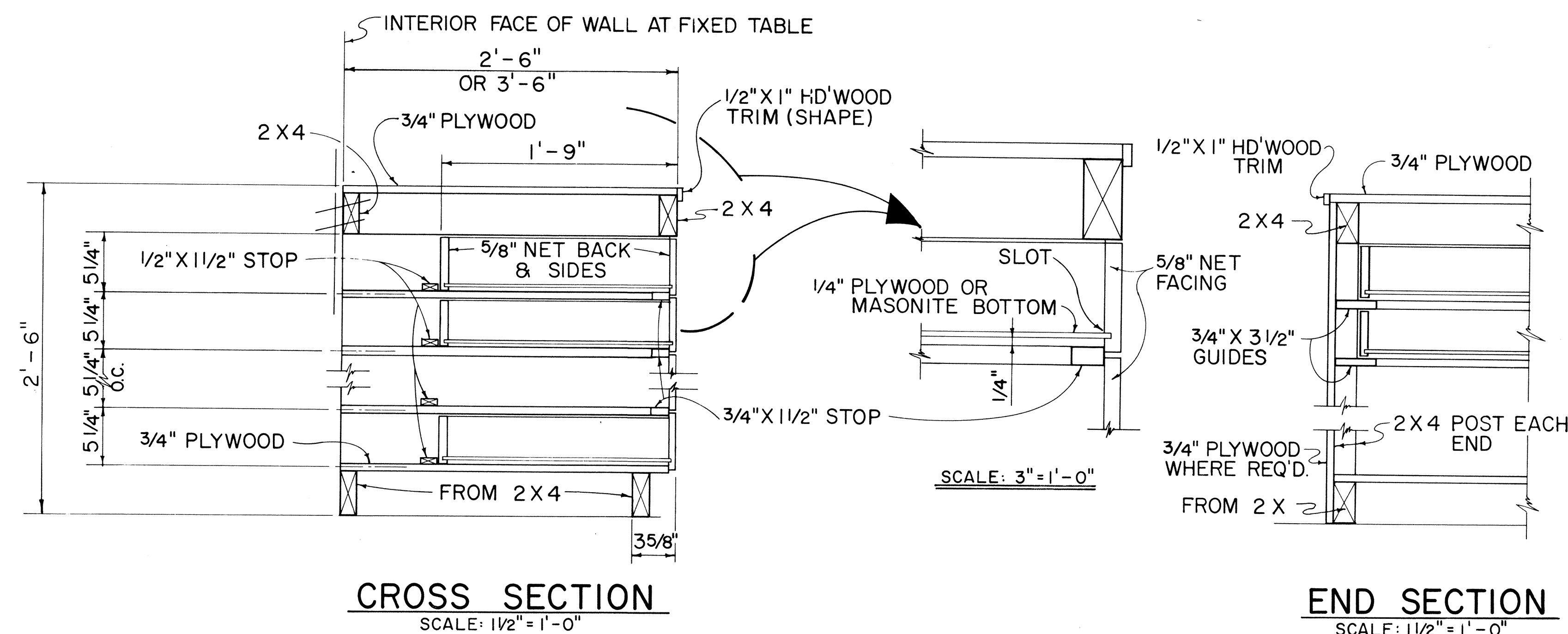
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

FIELD OFFICE

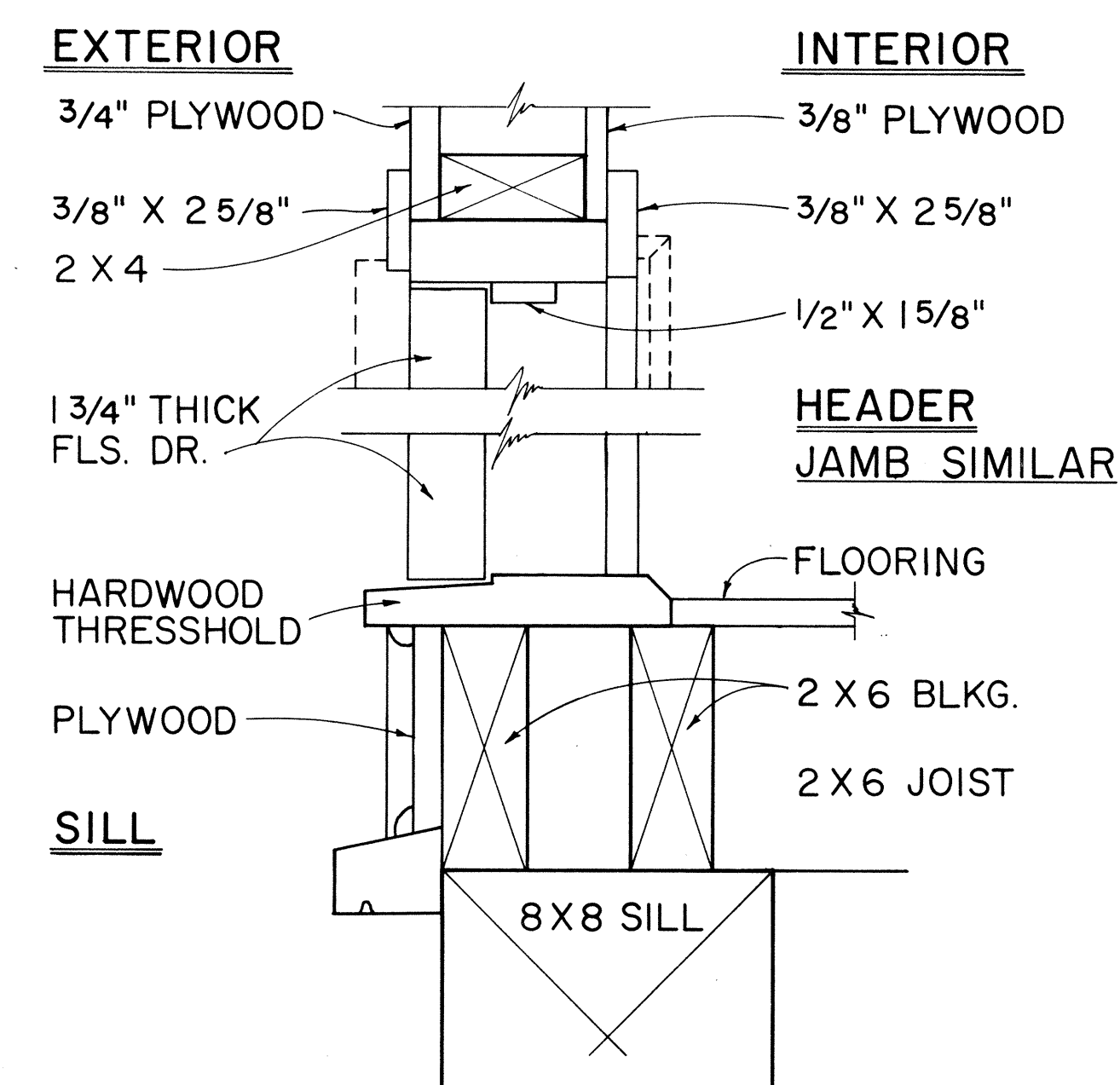
Scale : As Noted

SHEET NO 2 OF 18 SHEETS DD 636

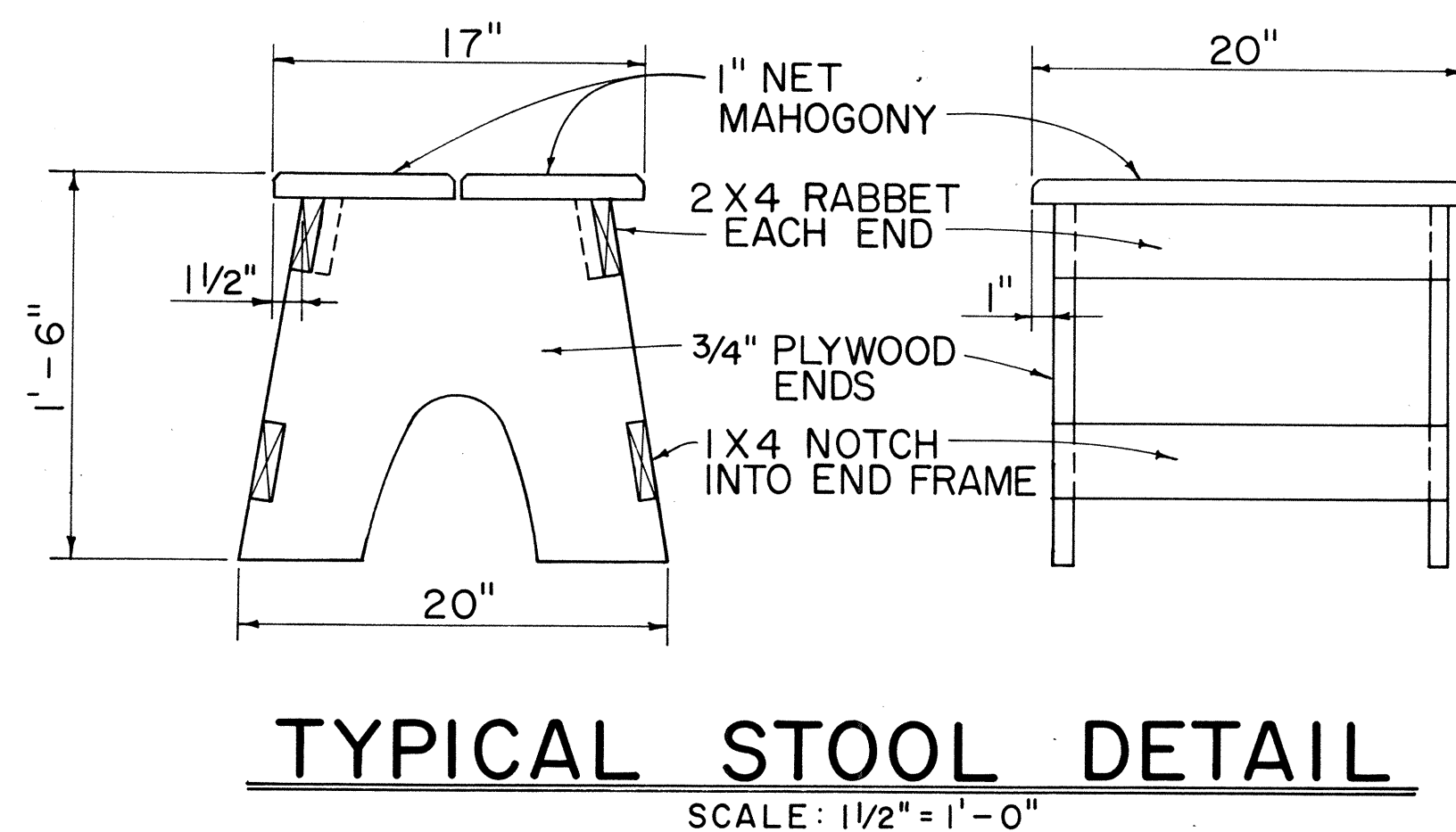
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19J-02-75 UNIT I	1979	19	42



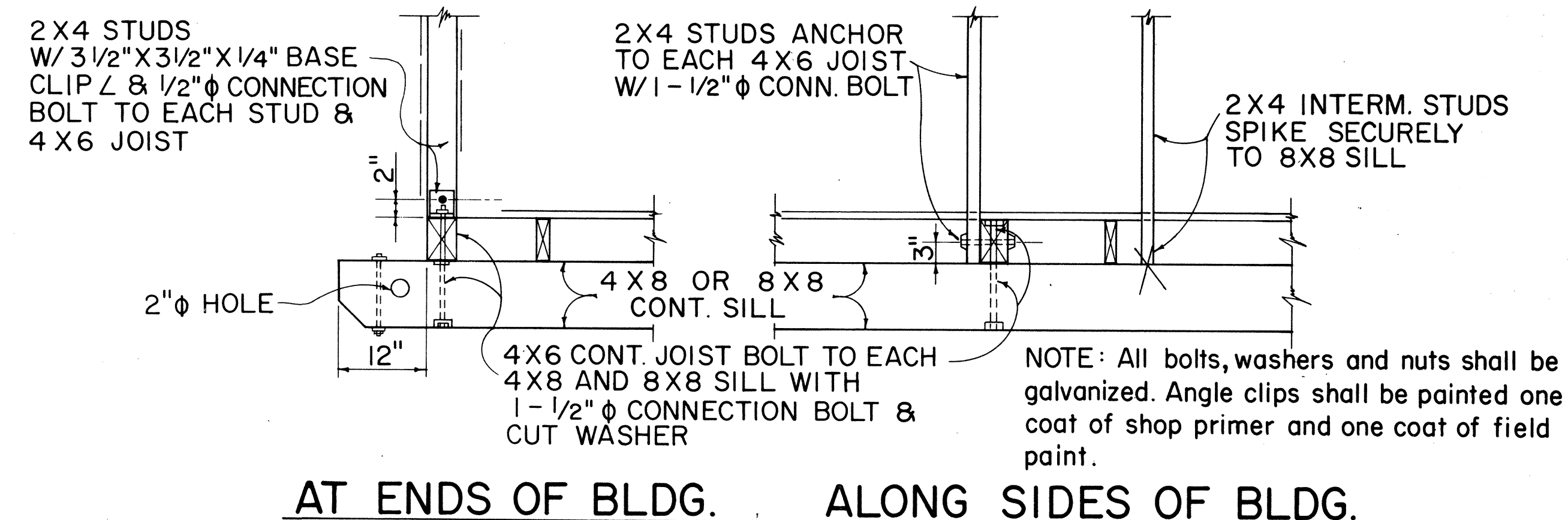
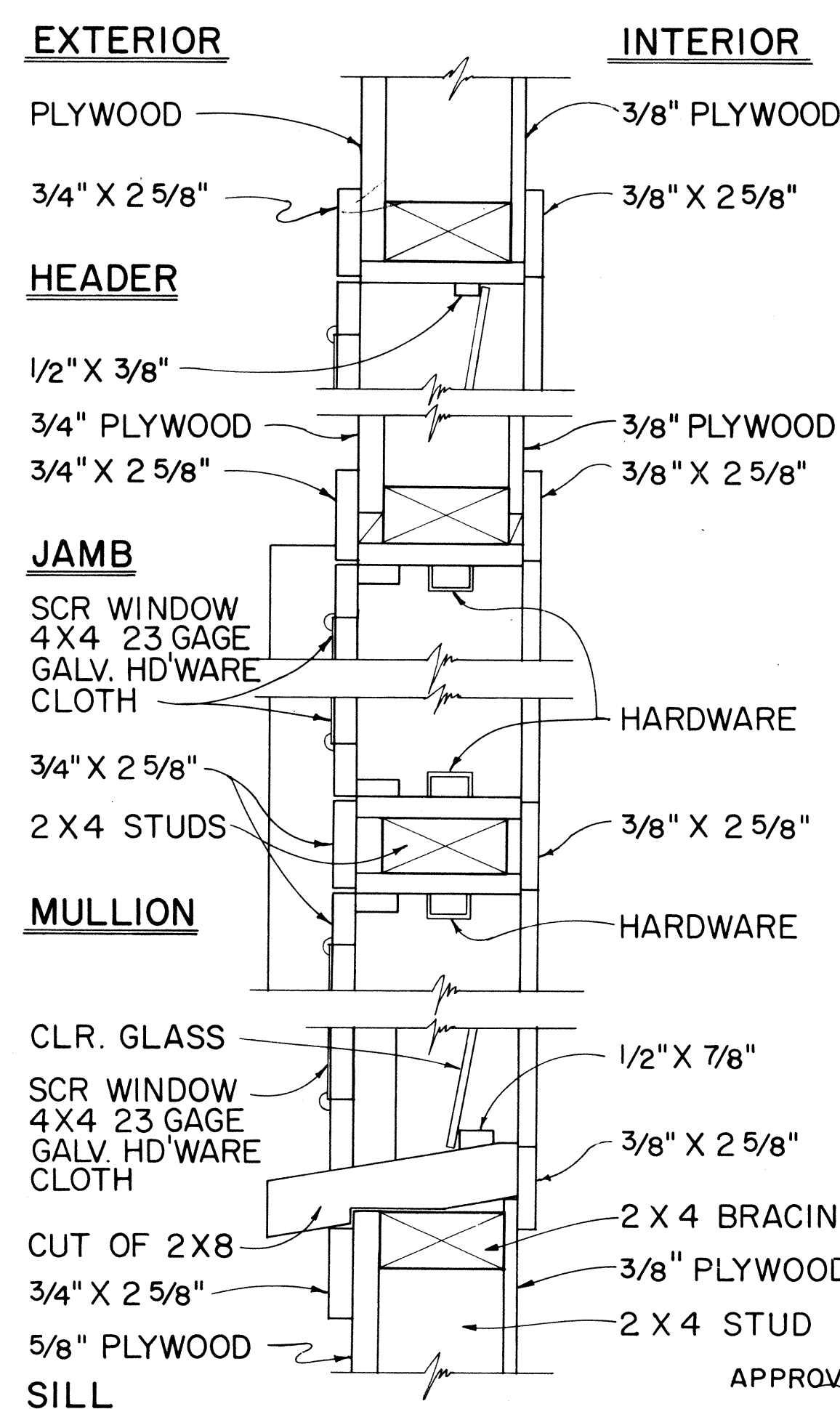
TYPICAL WORK TABLE DRAWER DETAIL



TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL



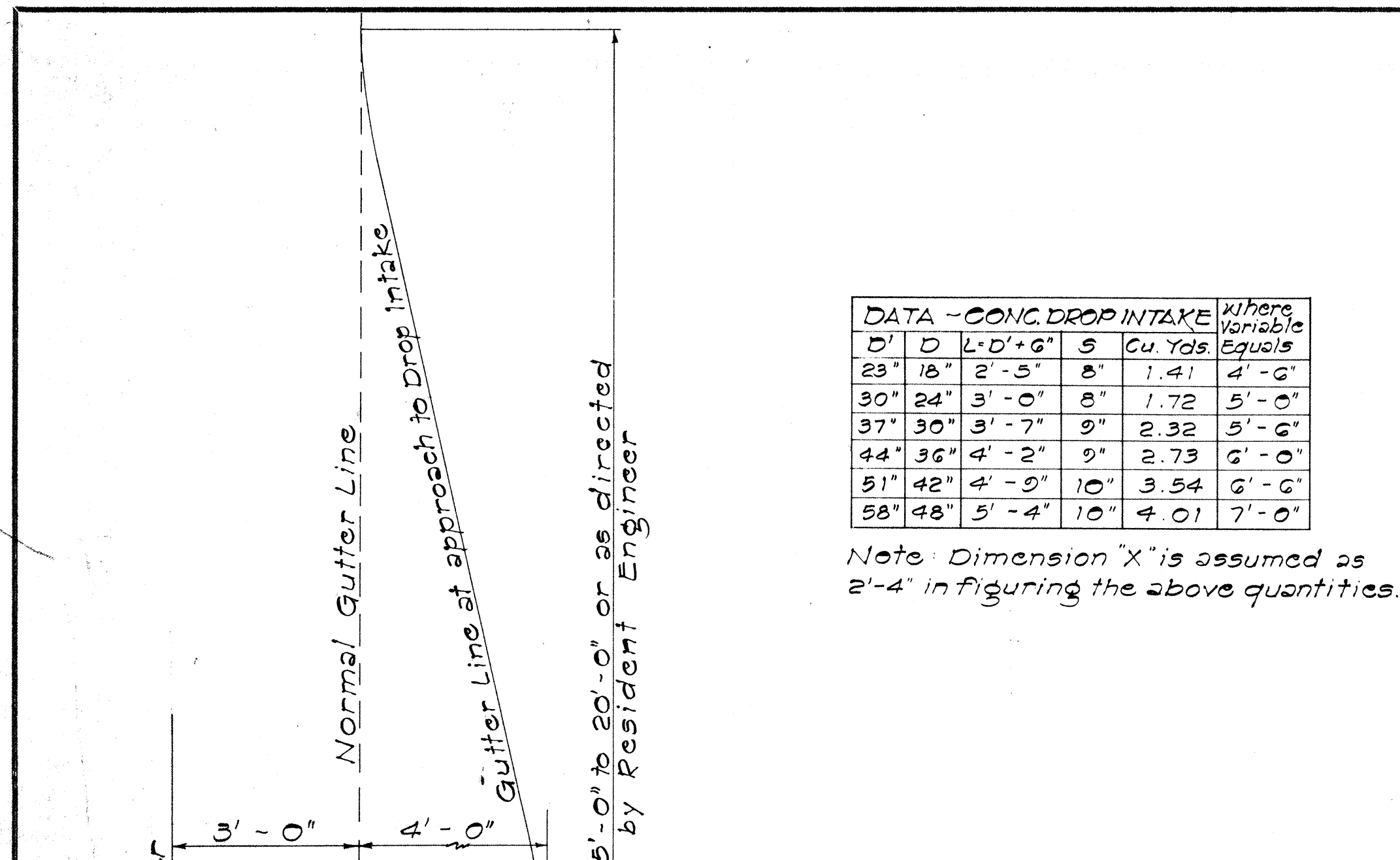
NOTE: CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH THE FIELD OFFICE OR PROJECT SITE LABORATORY WITH STOOLS OTHER THAN THE TYPE SHOWN IN THE DETAIL.



NO.	REVISION	APPROVED BY	DATE

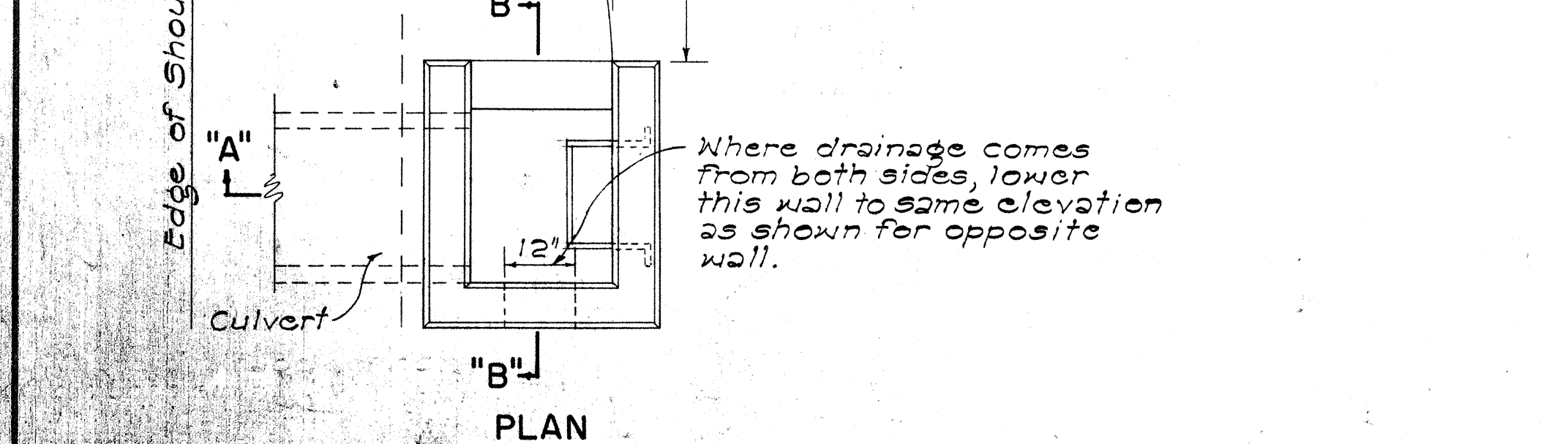
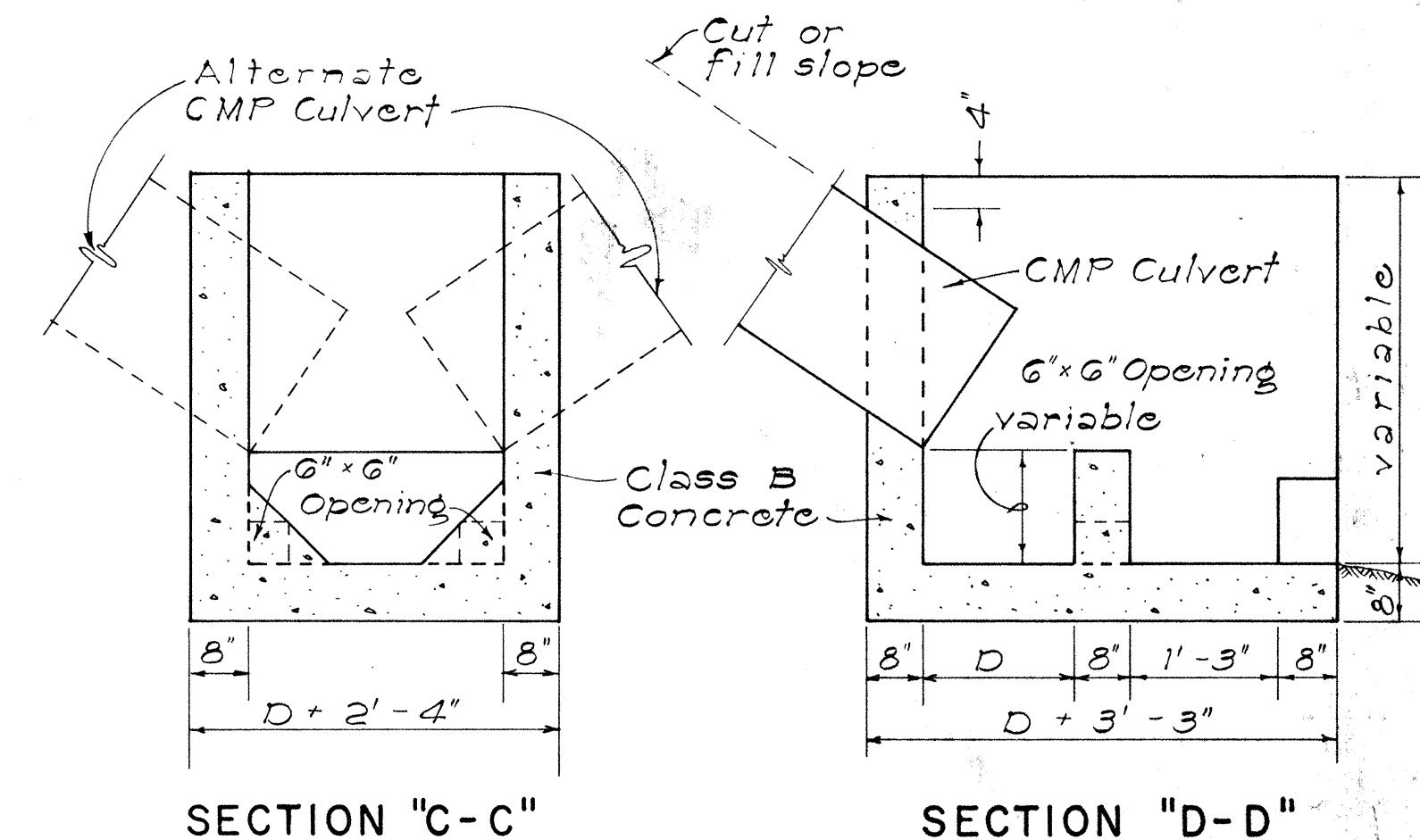
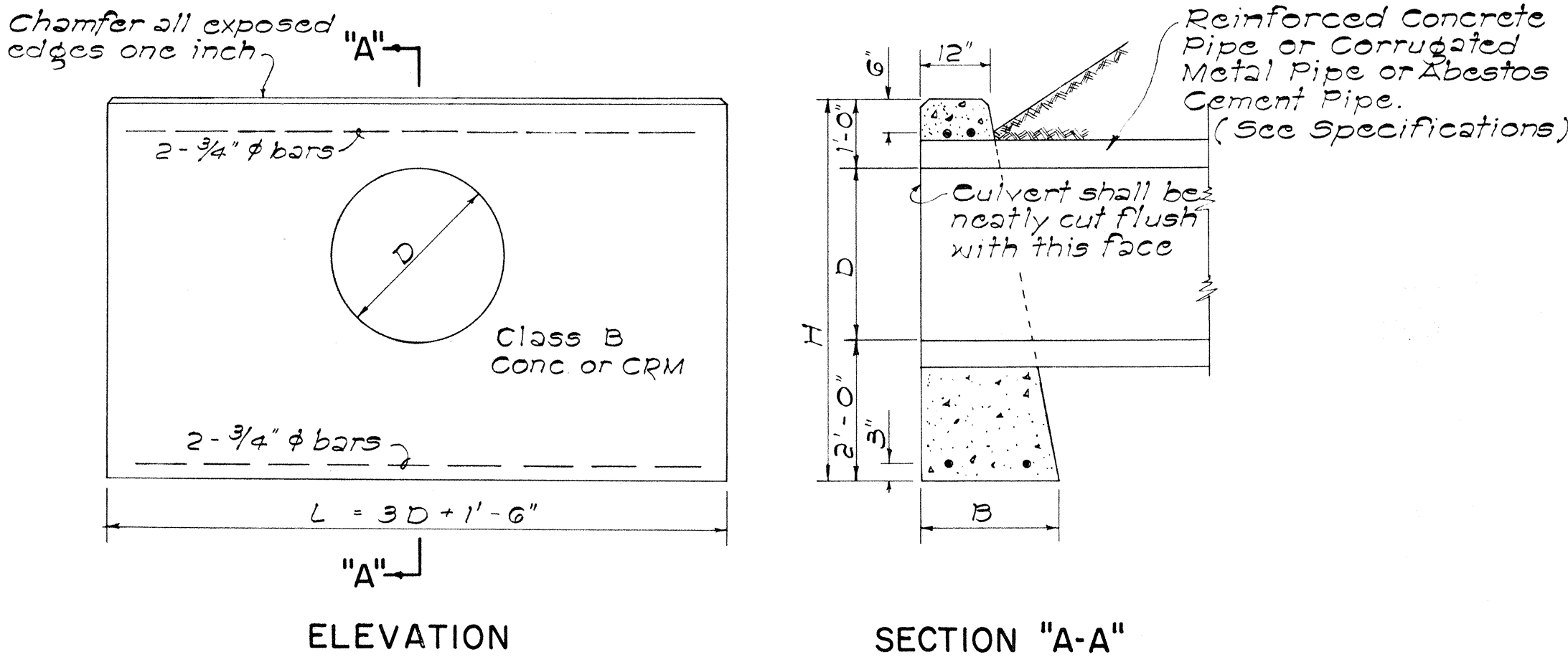
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION
FIELD OFFICE & PROJECT SITE LABORATORY
Scale: As Noted

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19J-02-75	1979	20	42
UNIT I					



DATA - CONC. DROP INTAKE	Where Variable Equals
D' D L'D+6" S Cu. Yds	
23" 18" 2'-5" 8" 1.41	4'-6"
30" 24" 3'-0" 8" 1.72	5'-0"
37" 30" 3'-7" 9" 2.32	5'-6"
44" 36" 4'-2" 9" 2.73	6'-0"
51" 42" 4'-9" 10" 3.54	6'-6"
58" 48" 5'-4" 10" 4.01	7'-0"

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

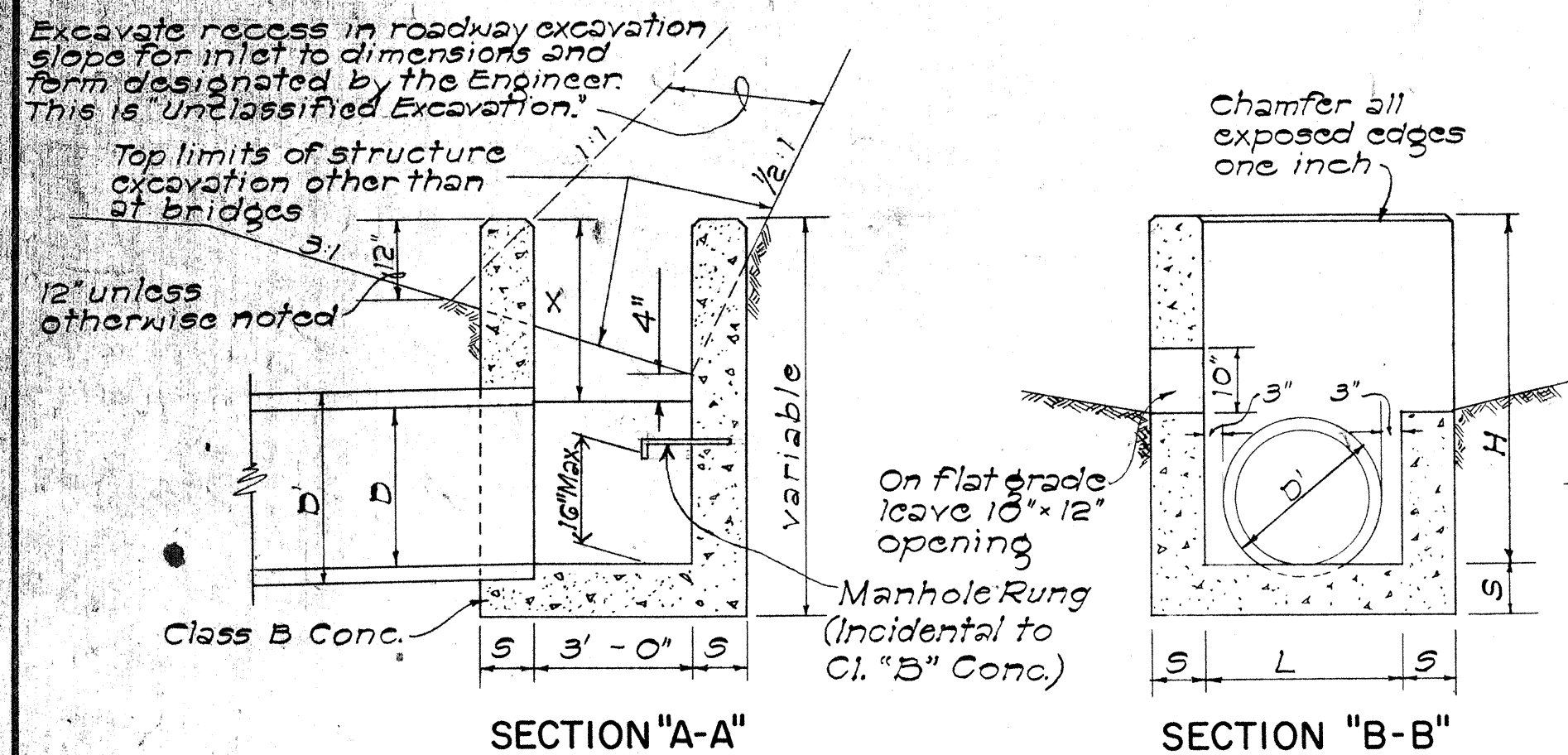


DATA FOR CONC. HEADWALL				Cl. B CONC FOR R.C.P.	Cl. B CONC FOR C.M.P.	Steel For One Headwall			
D	B	L	H	Cu. Yd.	Cu. Yd.	No. of Bars	Size	Length	Lbs.
18"	1'-6"	6'-0"	4'-6"	1.12	1.17	4	#4	5'-6"	33
24"	2'-0"	7'-6"	5'-0"	1.52	1.60	4	#4	7'-0"	42
30"	2'-6"	9'-0"	5'-6"	2.36	2.49	4	#4	8'-6"	51
36"	3'-0"	10'-6"	6'-0"	2.94	3.13	4	#4	10'-0"	60
42"	3'-6"	12'-0"	6'-6"	4.19	4.47	4	#4	11'-6"	69
48"	4'-0"	13'-6"	7'-0"	5.01	5.36	4	#4	13'-0"	78

DATA - MASONRY HEADWALL				CRM FOR R C P	CRM FOR C M P
D	B	L	H	Cu. Yd.	Cu. Yd.
18"	1'-0"	6'-0"	4'-6"	1.24	1.29
24"	2'-0"	7'-6"	5'-0"	1.83	1.92
30"	2'-3"	9'-0"	5'-6"	2.56	2.70
36"	2'-6"	10'-6"	6'-0"	3.45	3.66

Note: When subgrade is below top of jacket, it shall be fully compacted to this line and then re-excavated (struc. exc.) to proper subgrade. This surface shall be rolled again.

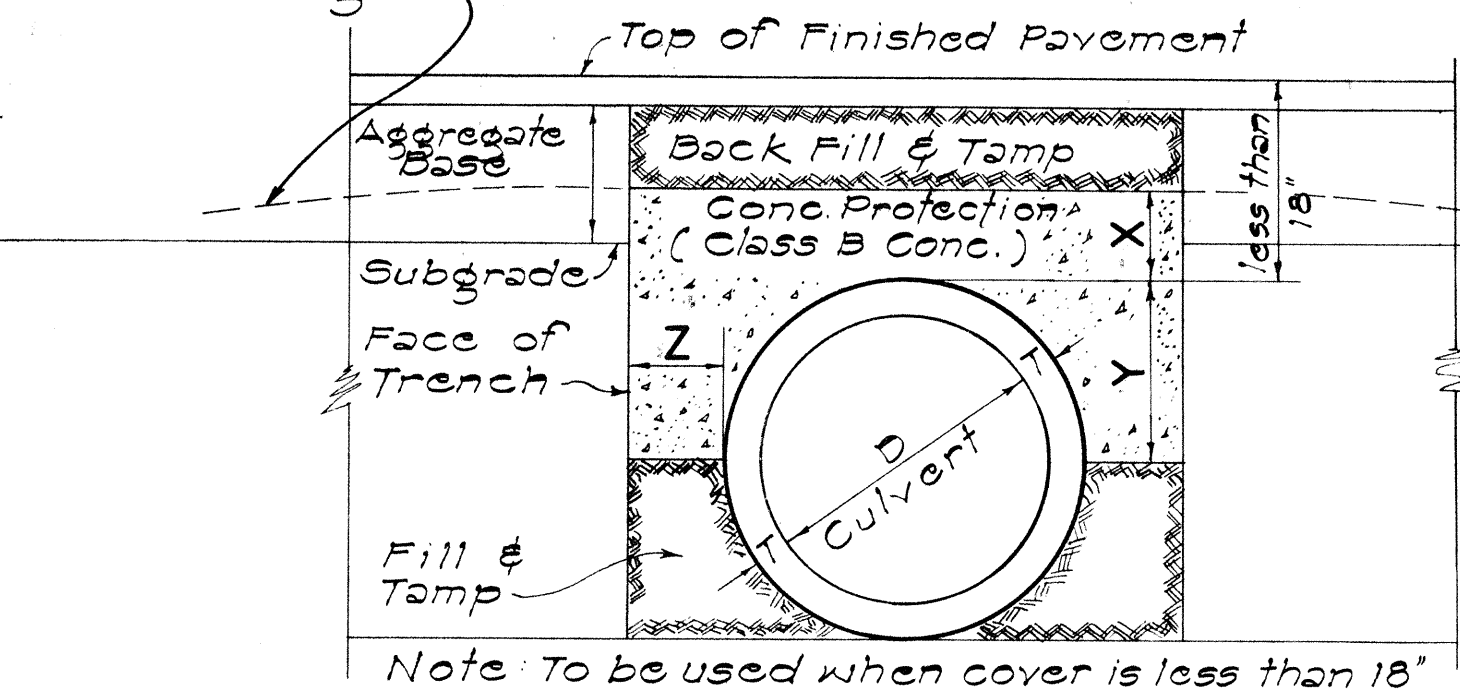
DETAIL OF HEADWALL
Scale: 1/2" = 1'-0"



DETAIL OF CONCRETE DROP INTAKE
Scale: 1/2" = 1'-0"

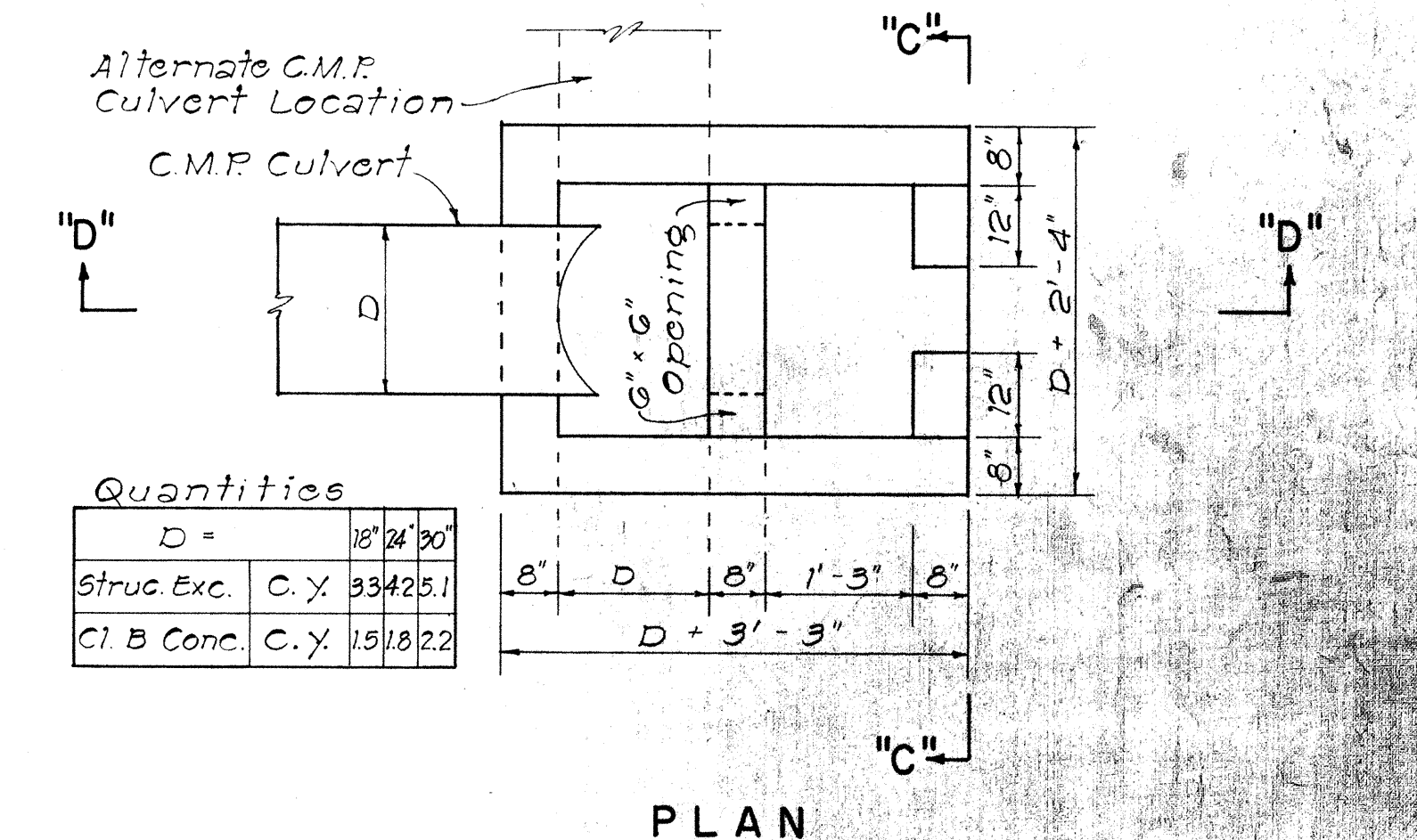
GENERAL NOTES

- Culvert shall enter and leave Drop Intake from any position and in the direction indicated by the plans or ordered by the Engineer.
- D' shall be the maximum outside dimension of the culvert at the Drop Intake wall.
- Manhole Rungs (12" o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (16 inches from the bottom) is required if "H" is 4 feet 6 inches or less. Manhole Rungs may be placed at any location as ordered by the Engineer.



DATA FOR CONCRETE PROTECTION OVER CULVERTS	X	Y	Z
	6" for 18" D.	D 8" + T	Z must be from pipe to face of trench
	7" for 24" D.		
	8" for 30" D.		
	9" for 36" D.		
	10" for 42" D.		
	11" for 48" D.		
	12" for 54" D.		Minimum = X Maximum pay quantity will be Z = 12"

SECT. OF CULVERT WITH CONC. PROTECTION
Scale: 1" = 1'-0"



DETAILS OF CONC. DROP BOX AT
OUTLET OF CULVERT PIPE
NOT TO SCALE

APPROVAL RECOMMENDED:
HYDRAULIC DESIGN ENGINEER
DATE 12-17-69

APPROVED:
ASSISTANT CHIEF, ENGINEERING
DATE 12-17-69

NO.	REVISION	APPROVED BY	DATE
1	Spacing on Manhole Rungs to conform to OSHA.	H.T.	1-21-75

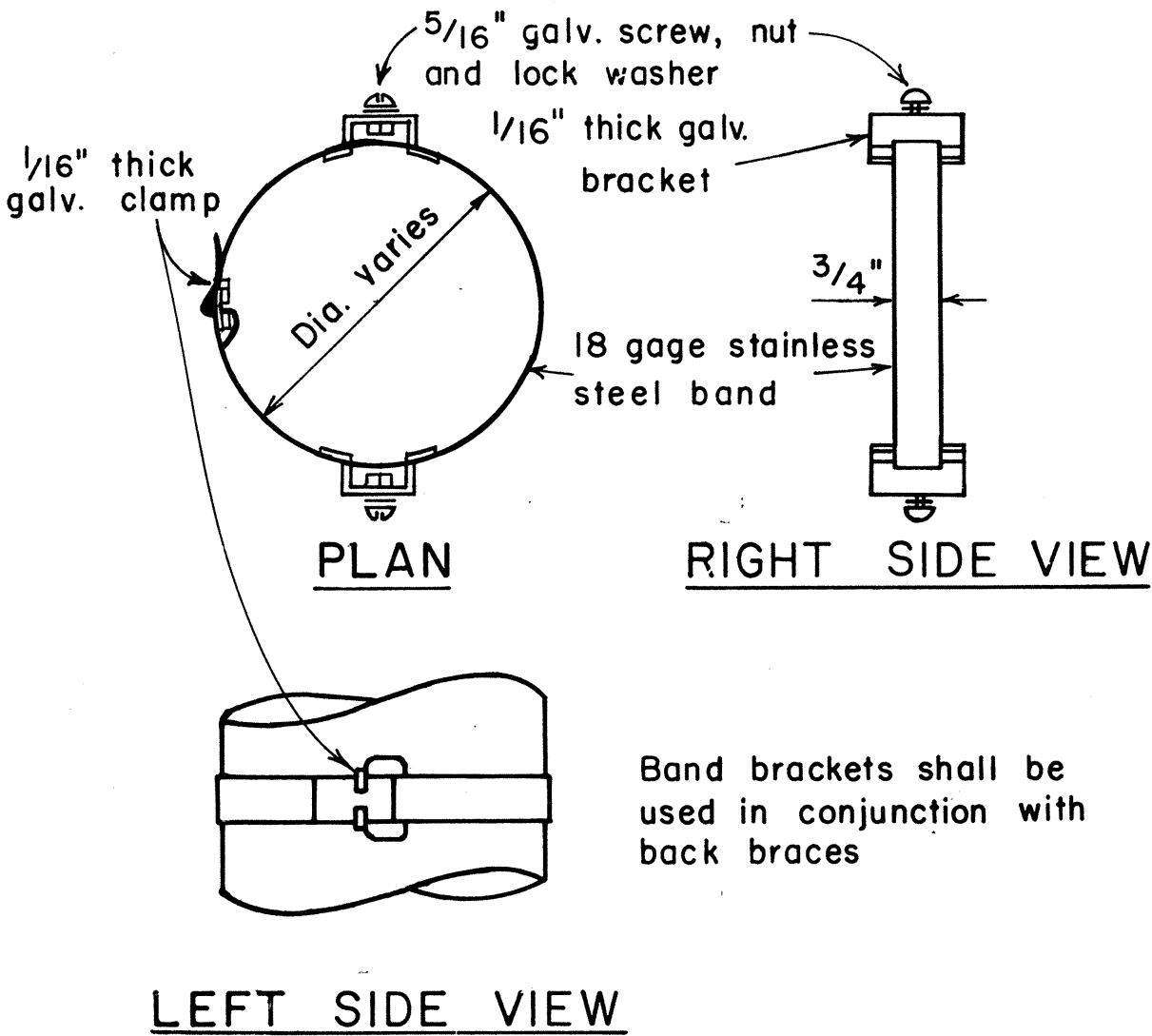
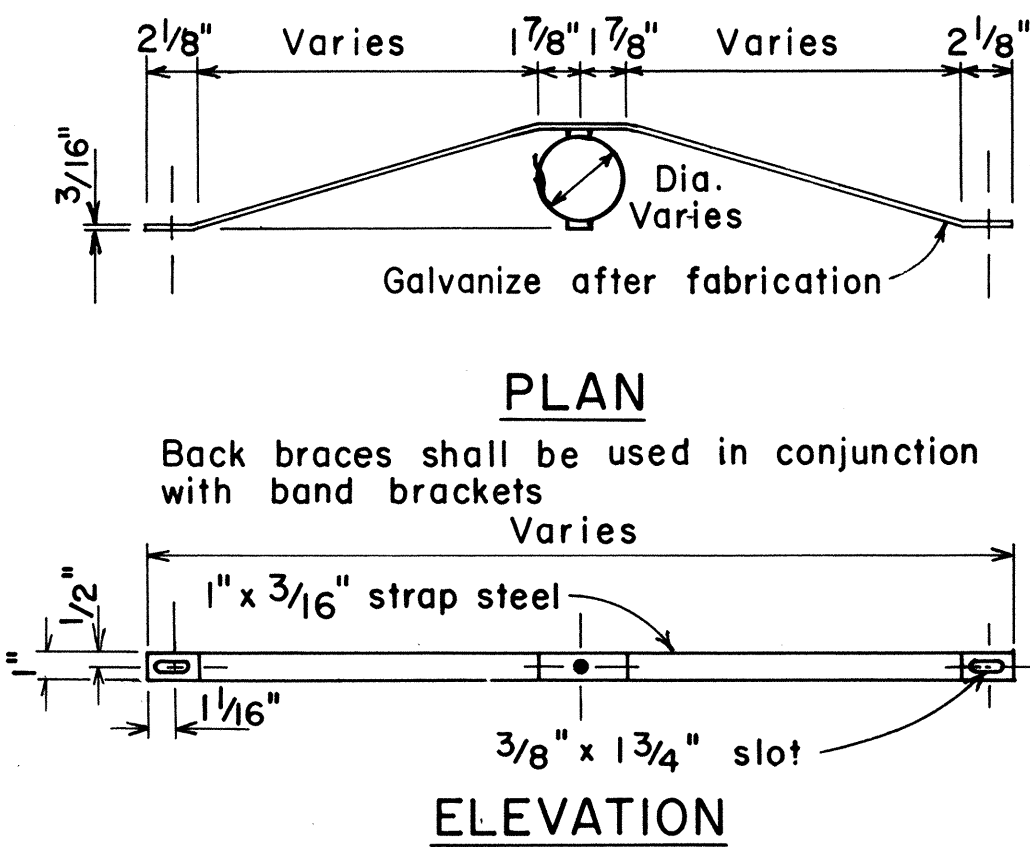
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
DROP INTAKE, HEADWALL &
CONCRETE PROTECTION
Scale: As Noted. Date: Aug. 1967
SHEET No. 5 OF 18 SHEETS DH-10

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	10 J-02-75 UNIT I	1979	21	42

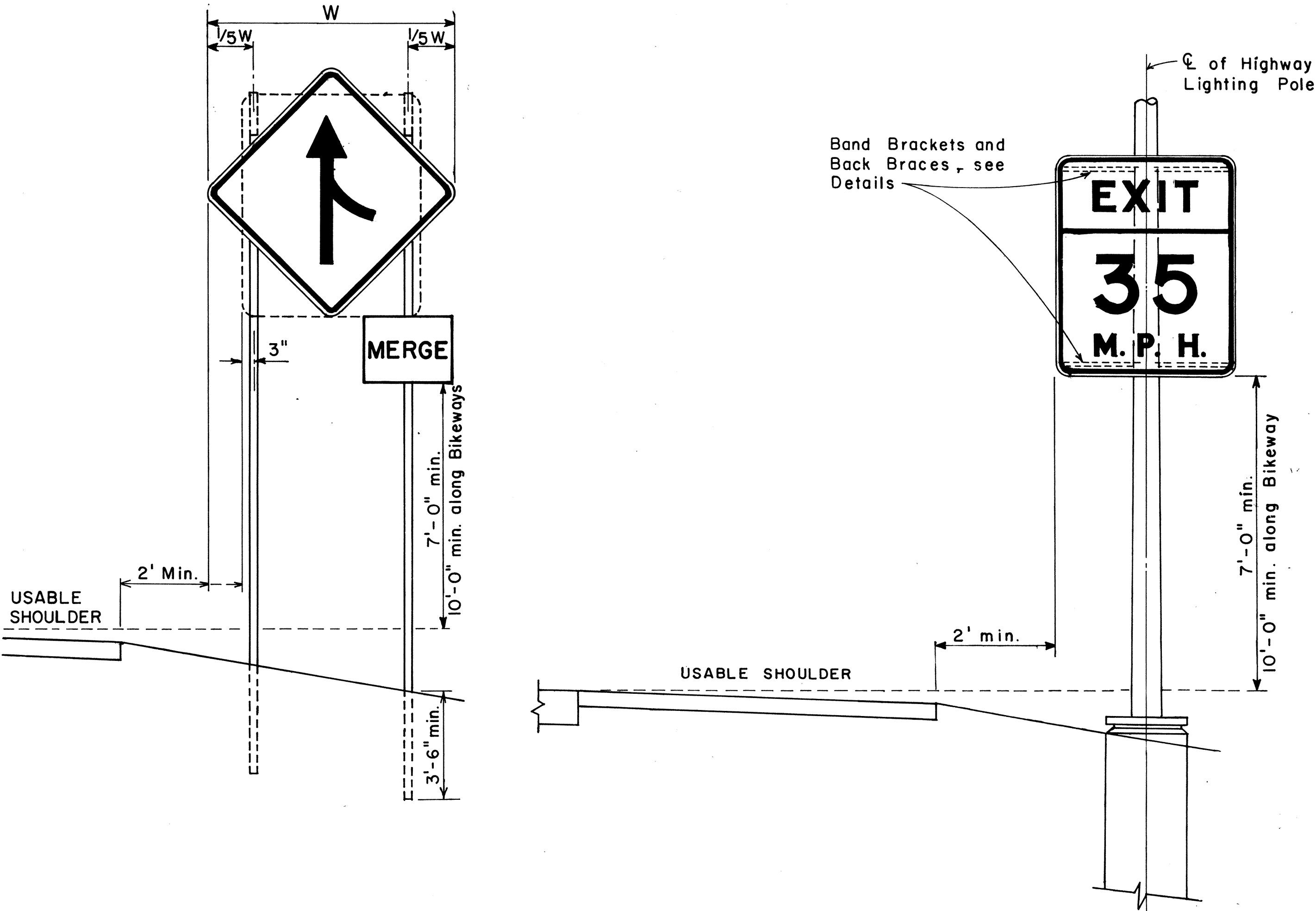
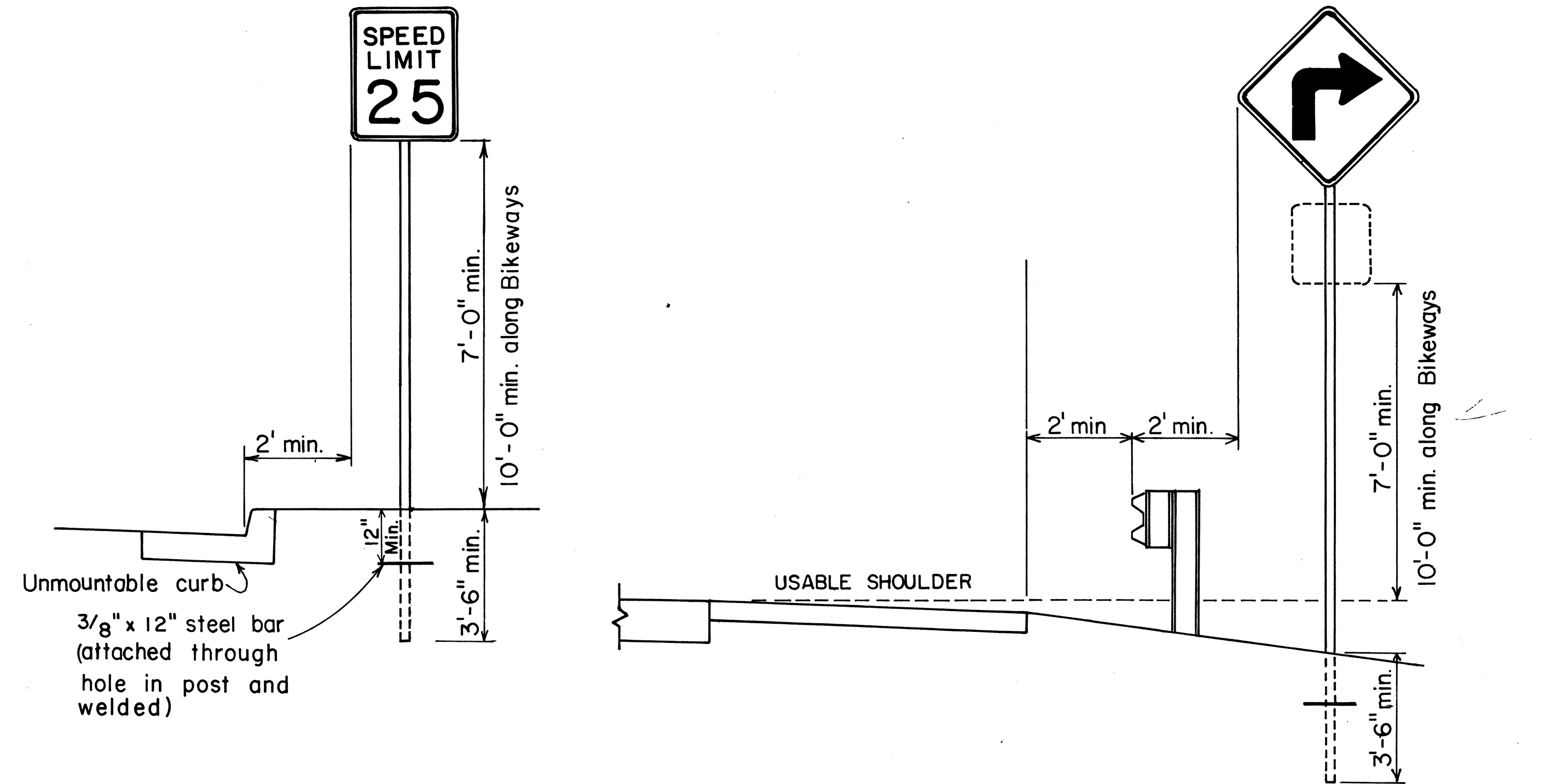
GENERAL NOTES

- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two sign posts.
- All signs larger than 10 sq. ft. in area or 48" inches and wider, and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least two sets of band brackets and back braces.
- All signs 28 sq. ft. in area or larger and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least three sets of band brackets and back braces.
- Signs shall be attached to post with 5/16" galv. bolts with nuts and 7/8" x 0.06" stainless steel washers with neoprene rubber gasket.
- Sign posts shall extend 3 1/2" above sign where required for City and County street name signs.
- (R) or (L) indicates right or left and shall be as shown on the plans.

BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS



HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION

APPROVAL RECOMMENDED:
Erich Tanaka 11/10/77
 TRAFFIC ENGINEER DATE

APPROVED:
Harbert S. Sakai 11/15/77
 ASSISTANT CHIEF, ENGINEERING DATE

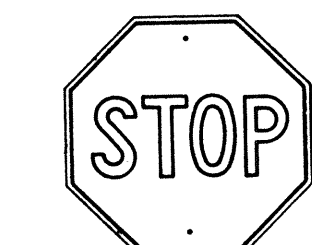
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

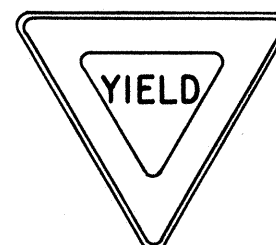
STANDARD DETAILS
 MISCELLANEOUS SIGN DETAILS

Not to scale June, 1977

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19J-02-75 UNIT 1	1979	22	42



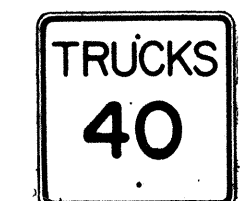
R1-1 30"x 30"
R1-1-A 36"x 36"
4-WAY
R1-3 12"x 6"
R1-3-A 18"x 9"



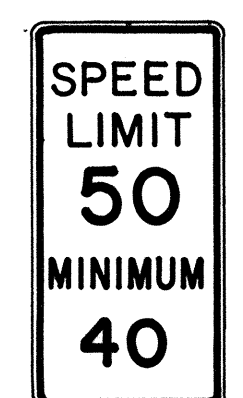
R1-2 36"x 36"x 36"
R1-2-A 48"x 48"x 48"



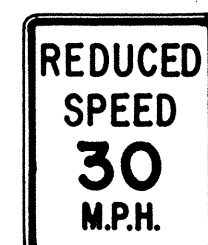
R2-1(50) 24"x 30"
R2-1(50)-A 48"x 60"



R2-2(40) 24"x 24"
R2-2(40)-A 48"x 48"



R2-4a(50/40) 24"x 48"
R2-4a(50/40)-A 48"x 96"



R2-5b(30) 24"x 30"
R2-5b(30)-A 48"x 60"



R3-1 24"x 24"
24"x 18"
R3-1-A 48"x 48"
48"x 36"



R3-2 24"x 24"
24"x 18"
R3-2-A 48"x 48"
48"x 36"



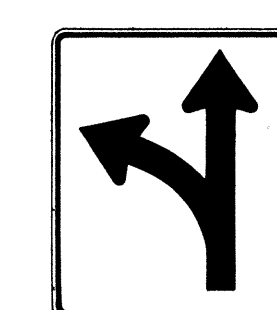
R3-3 24"x 24"
R3-3-A 48"x 48"



R3-4 24"x 24"
24"x 18"
R3-4-A 48"x 48"
48"x 36"



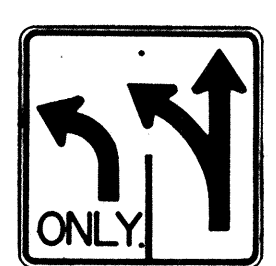
R3-5(L) 30"x 36"
R3-5(L)-A 48"x 60"



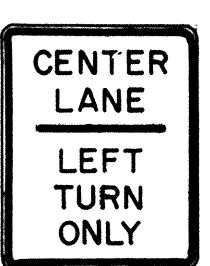
R3-6(L) 30"x 36"
R3-6(L)-A 48"x 60"



R3-7(R) 30"x 30"
R3-7(R)-A 48"x 48"



R3-8(L) 30"x 30"
R3-8(L)-A 36"x 36"
R3-8(L)-B 48"x 48"



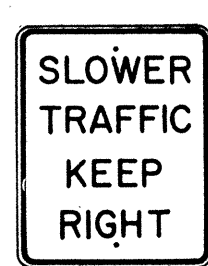
R3-9 24"x 30"



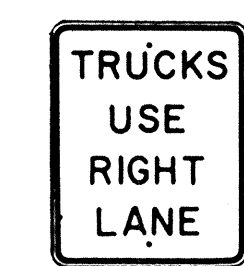
R4-1 24"x 30"



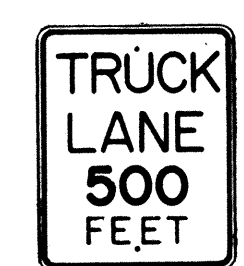
R4-2 24"x 30"



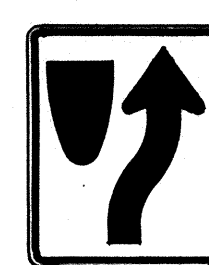
R4-3 24"x 30"
R4-3-A 48"x 60"



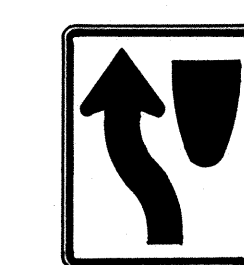
R4-5 24"x 30"



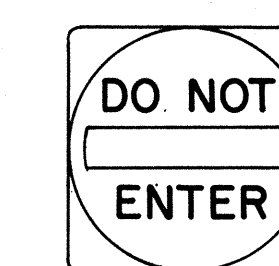
R4-6(500) 24"x 30"



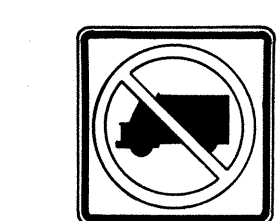
R4-7 24"x 30"
24"x 18"



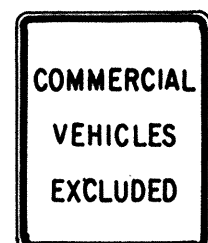
R4-8 24"x 30"
24"x 18"



R5-1 30"x 30"
R5-1-A 48"x 48"



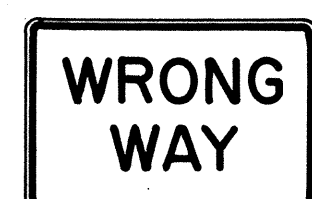
R5-2 24"x 24"
24"x 18"



R5-4 24"x 30"



R5-6 24"x 24"
24"x 18"



R5-9 36"x 24"



R6-1 (R) 36"x 12"



R6-2(R) 18"x 24"



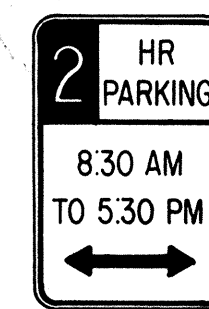
R7-1 12"x 18"
R7-1-A 24"x 30"



R7-4 12"x 18"
R7-4-A 24"x 30"



R7-107(R) 12"x 18"



R7-108 12"x 18"



R7-201 12"x 6"
R7-201-A 24"x 12"



R8-1 24"x 30"



R8-2 24"x 30"



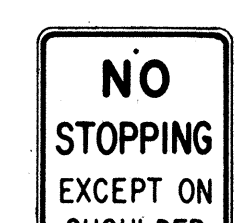
R8-3 24"x 30"



R8-4 30"x 24"
R8-4-A 48"x 36"



R8-5 24"x 30"



R8-6 24"x 30"



R8-7 30"x 24"
R8-7-A 48"x 36"



R9-1 18"x 24"



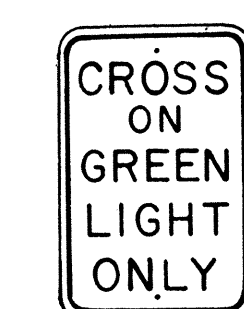
R9-2 12"x 18"



R9-3 12"x 18"



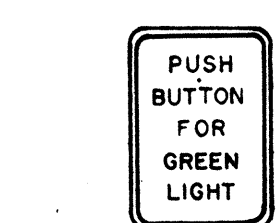
R9-4 18"x 24"



R10-1 12"x 18"



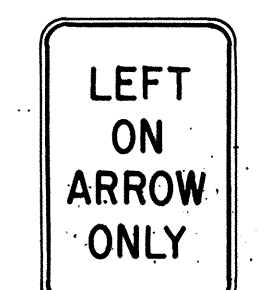
R10-2 12"x 18"



R10-3 9"x 12"



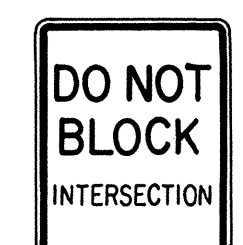
R10-4 9"x 12"



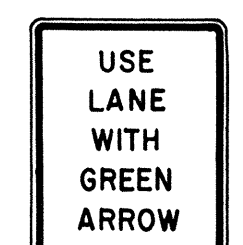
R10-5 24"x 30"



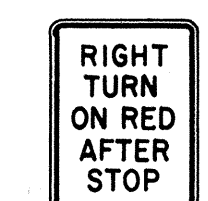
R10-6 24"x 36"



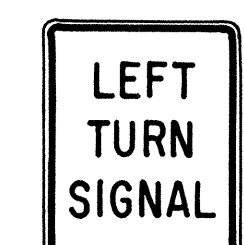
R10-7 24"x 30"



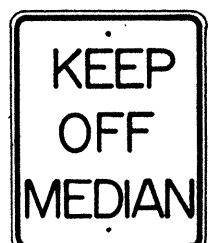
R10-8 24"x 30"



R10-9 24"x 30"



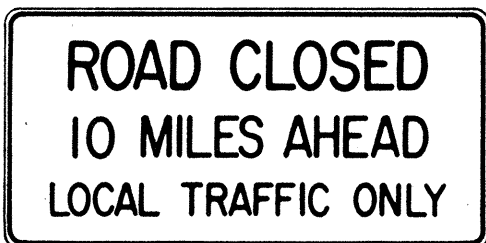
R10-10 24"x 30"



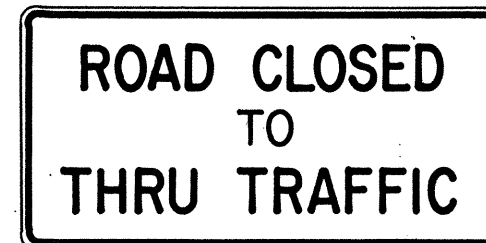
R11-1 24"x 30"



R11-2 48"x 30"



R11-3(10) 60"x 30"



R11-4 60"x 30"



R12-1(10) 24"x 30"

GENERAL NOTES

1. Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
2. All regulatory signs shall be reflectorized unless otherwise specified.
3. All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.
4. Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER *Etsuki Tanaka* 3/17/72
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING *Robert Datsis* 3-20-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.C.	8/20/72
2	Revised General Note 1.	H.C.	10/14/74

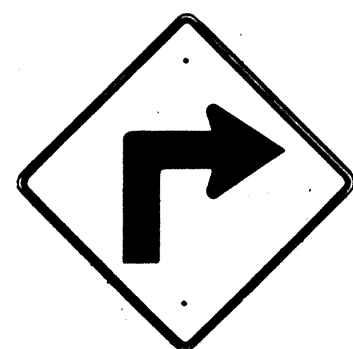
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
REGULATORY SIGNS

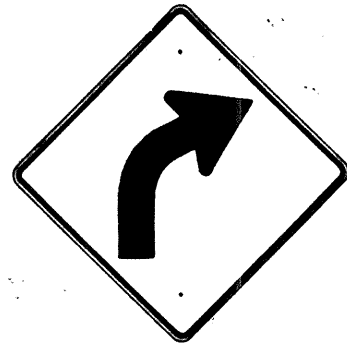
NOT TO SCALE
SHEET No. 7 OF 18 SHEETS DT 101

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

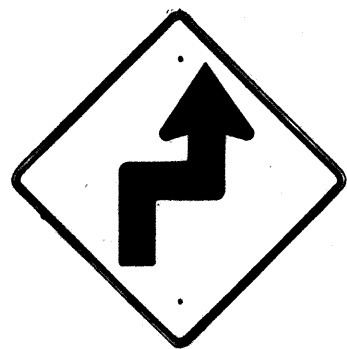
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	10J-0275 UNIT 1	1979	23	42



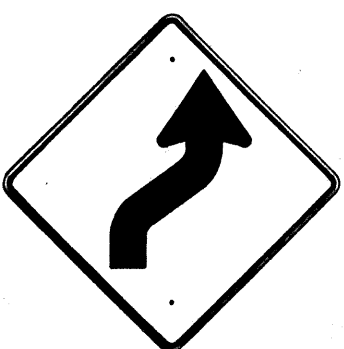
W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



W1-2(R) 30"x30"
W1-2(R)-A 48"x48"



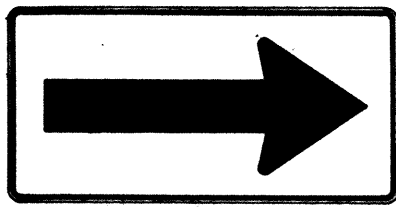
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



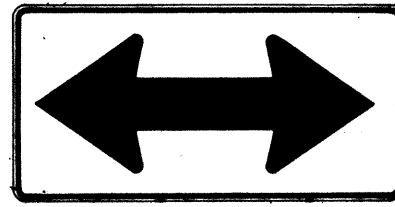
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



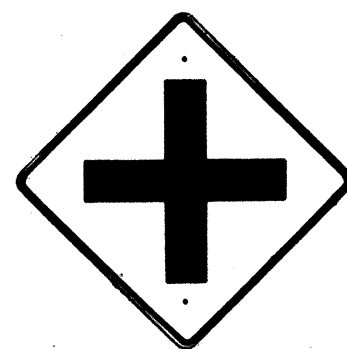
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



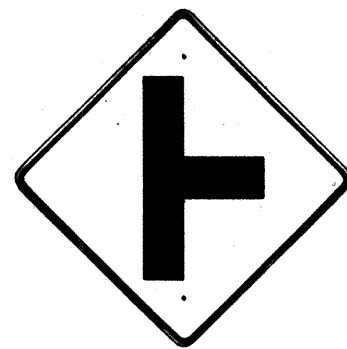
W1-6 48"x24"



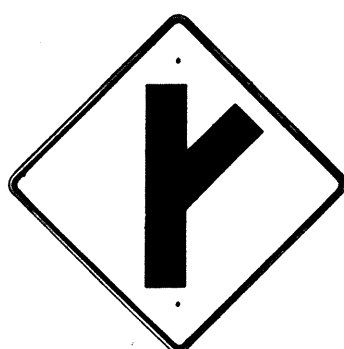
W1-7 48"x24"



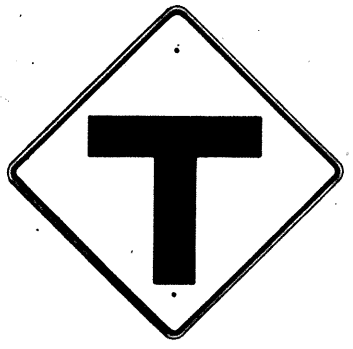
W2-1 30"x30"
W2-1-A 48"x48"



W2-2 30"x30"
W2-2-A 48"x48"



W2-3(R) 30"x30"
W2-3(R)-A 48"x48"



W2-4 30"x30"
W2-4-A 48"x48"



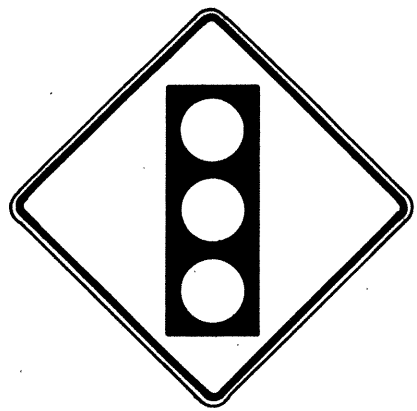
W2-5 30"x30"
W2-5-A 48"x48"



W3-1 30"x30"
W3-1-A 36"x36"



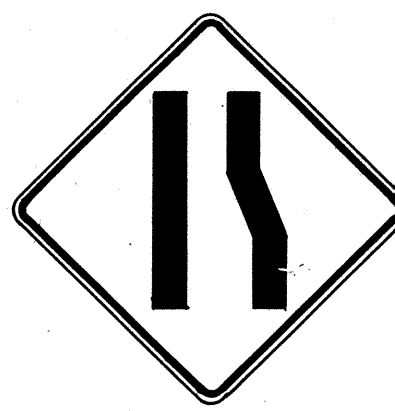
W3-2 30"x30"
W3-2-A 36"x36"



W3-3 36"x36"
24"x18"



W4-1(R) 30"x30"
24"x18"
W4-1(R)-A 48"x48"
24"x18"



W4-2(R) 36"x36"
W4-2(R)-A 48"x48"



W5-1 36"x36"



W5-2 30"x30"
W5-2-A 36"x36"



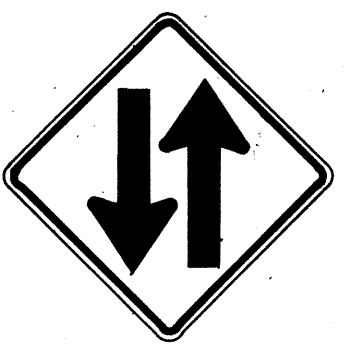
W5-3 36"x36"



W6-1 36"x36"
24"x18"



W6-2 36"x36"
24"x18"



W6-3 30"x30"
24"x18"
W6-3-A 36"x36"
24"x18"
W6-3-B 48"x48"
24"x18"



W7-1 30"x30"
24"x18"
W7-1-A 36"x36"
24"x18"



W7-2 24"x18"



W8-1 30"x30"
W8-1-A 36"x36"



W8-2 30"x30"
W8-2-A 36"x36"



W8-3 30"x30"
W8-3-A 36"x36"



W8-4 30"x30"
W8-4-A 36"x36"



W8-5 30"x30"
24"x18"
W8-5-A 36"x36"
24"x18"



W9-1(R) 30"x30"
W9-1(R)-A 36"x36"
W9-1(R)-B 48"x48"



W9-2(L) 36"x36"
W9-2(L)-A 48"x48"



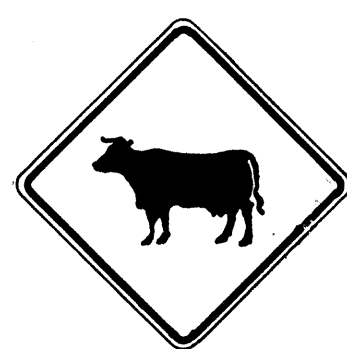
W10-1 36" Diameter



W11-1 30"x30"
24"x18"
W11-1-A 36"x36"
24"x18"



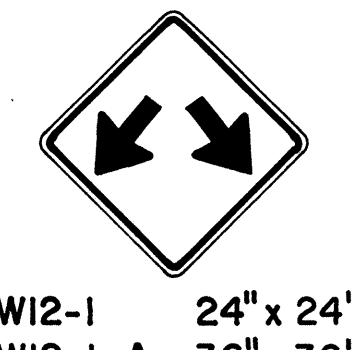
W11-2 30"x30"
24"x18"
W11-2-A 36"x36"
24"x18"



W11-4 30"x30"
24"x18"
W11-4-A 36"x36"
24"x18"



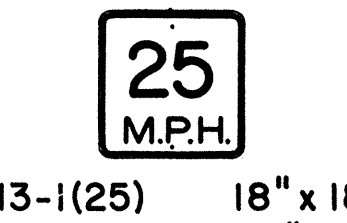
W11-5 30"x30"
24"x18"
W11-5-A 36"x36"
24"x18"



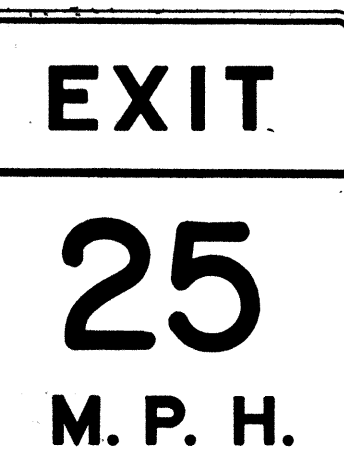
W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"



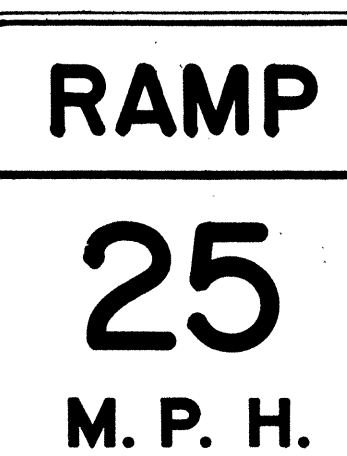
W12-2(12'-6") 36"x36"
24"x18"



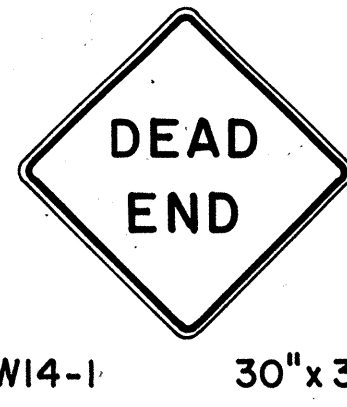
W13-1(25) 18"x18"
W13-1(25)-A 24"x24"



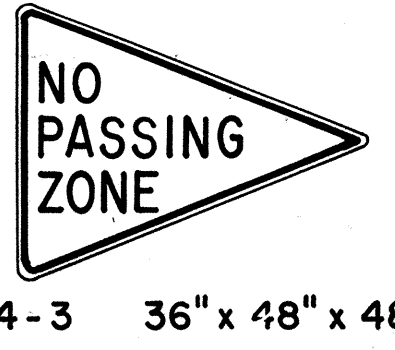
W13-2(25) 48"x60"



W13-3(25) 48"x60"



W14-1 30"x30"



W14-3 36"x48"x48"

GENERAL NOTES

1. Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
2. All warning signs shall be reflectorized unless otherwise specified.
3. All warning signs shall have 3/8" bolt holes drilled at appropriate locations.
4. Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
5. Signs prefixed with "CW" on the plans shall indicate orange and black construction signs, and shall be reflectorized.

APPROVAL RECOMMENDED:

Emile Tanaka
TRAFFIC ENGINEER

3/17/12
DATE

APPROVED:

David J. Salsin
ASSISTANT CHIEF, ENGINEERING

3-20-12
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	HT	3/20/12
2	Revised General Note 1	HT	10/16/12
3	Revised General Note 5	HT	9-16-75
4	Revised General Note 5	HT	9-14-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS WARNING SIGNS

NOT TO SCALE

SHEET No. 8 OF 18 SHEETS DT 102

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	121-02-75 UNIT 1	1979	24	42



CW20-1a 48"x 48"



CW20-2d 48"x 48"



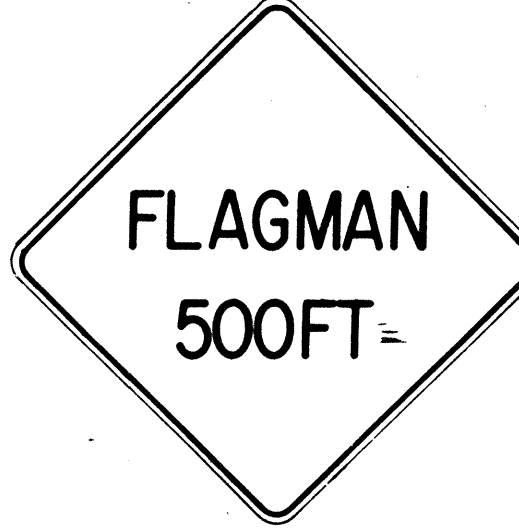
CW20-3b 48"x 48"



CW20-4d 48"x 48"



CW20-5d(L) 48"x 48"



CW20-7c 48"x 48"



CW21-1 30"x 30"



CW21-2 30"x 30"



CW21-3 36"x 36"



CW21-4 36"x 36"



CW21-5 30"x 30"



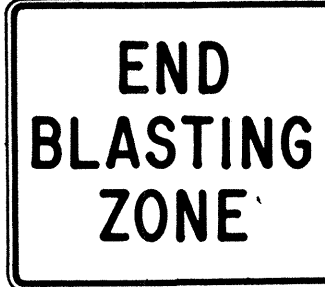
CW21-6 30"x 30"



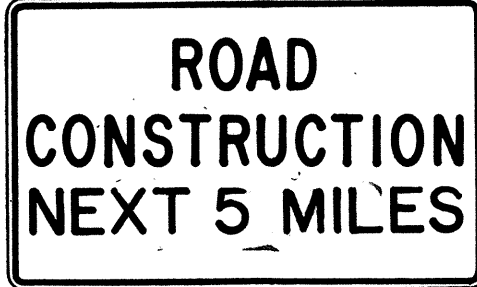
CW22-1b 48"x 48"



CW22-2 42"x 36"



CW22-3 42"x 36"



CG20-1(5) 60"x 36"



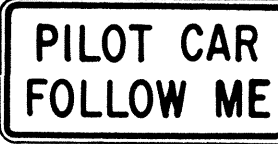
CG20-2 60"x 24"



CM4-9(R) 30"x 24"



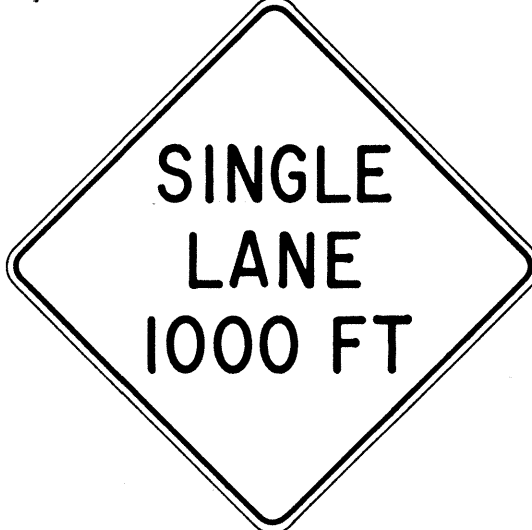
CM4-10(R) 48"x 18"



CG20-4 36"x 18"



CW23-1 36"x 36"



CW23-2b 48"x 48"



CW23-3(R) 48"x 48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All construction signs shall be reflectorized.
- All construction signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- For "CW" series signs, suffixes a,b,c and d are as follows:
a-1500 FT, b-1000 FT,
c-500 FT and d-AHEAD.

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	H.T.	3/23/72
2	Revised General Note 1	H.T.	10/10/74
3	Revised General Note 2	H.T.	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	H.T.	9-14-76

APPROVAL RECOMMENDED:
Erich Tanaka 3/21/72
TRAFFIC ENGINEER DATE

APPROVED:
Shirley Salsich 3/23/72
ASSISTANT CHIEF, ENGINEERING DATE

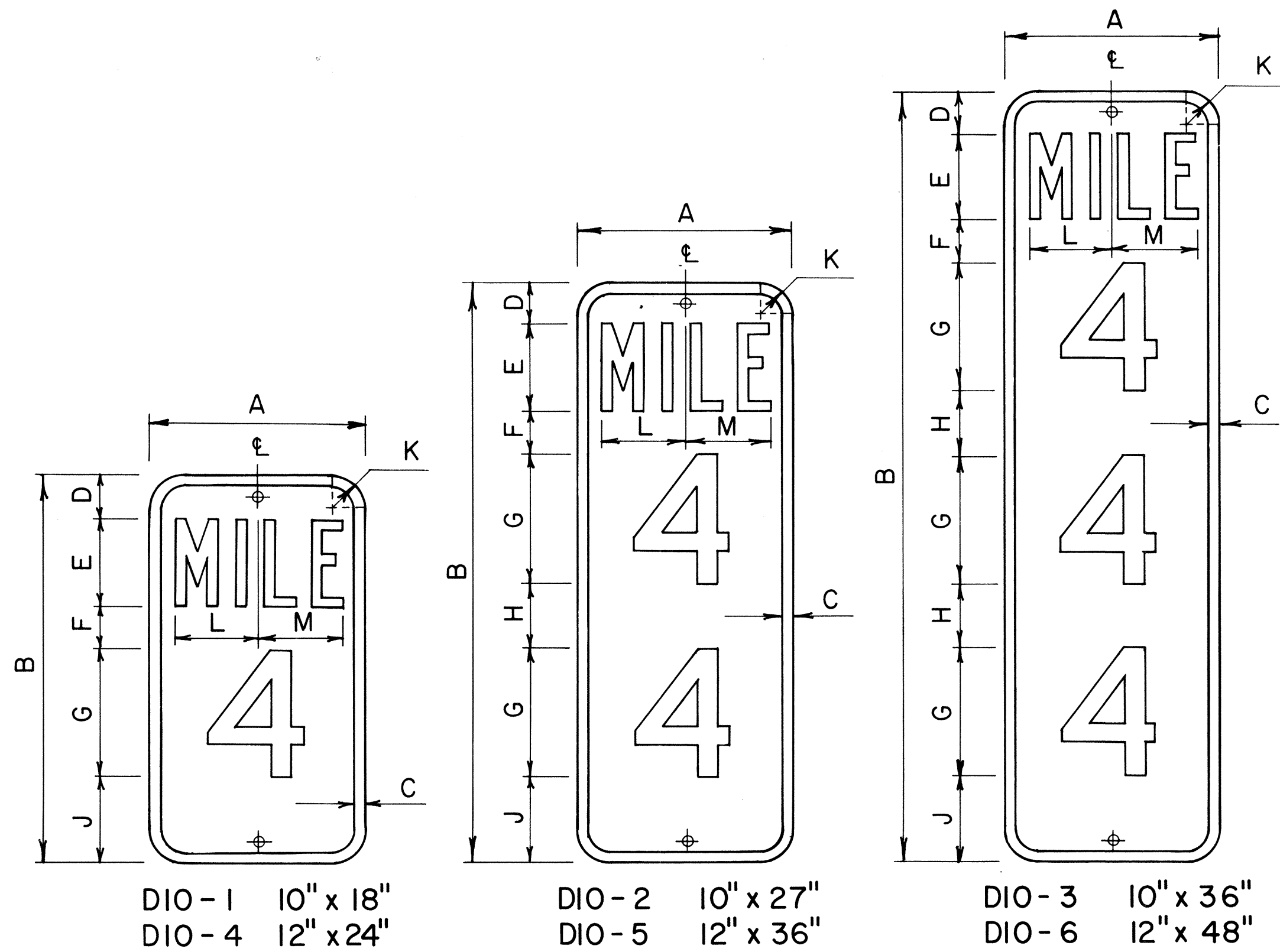
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS CONSTRUCTION SIGNS
NOT TO SCALE

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	127-02-75 UNIT 1	1979	25	42

GENERAL NOTES:

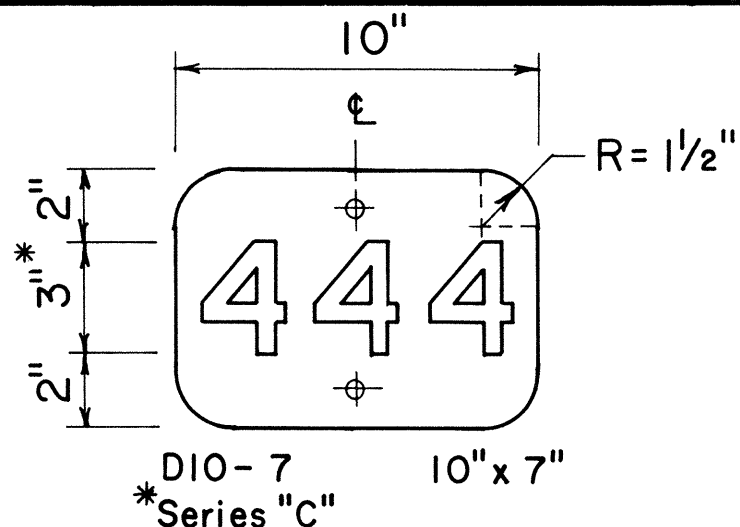
- Milepost marker and highway route number plates shall conform to the latest editions of the following FHWA publications:
 - "Standard Alphabets for Highway Signs," and as amended.
 - "Standard Highway Signs," and as amended.
 - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Milepost markers and highway route numbers shall be completely reflectorized with reflective sheeting as follows:
 - Milepost markers shall have white legends and border on a green background.
 - Highway route numbers shall have black numerals on a white background.
- The plate backings for milepost markers and highway route numbers shall conform to the requirements for standard highway signs. The plates shall have 3/8" bolt holes drilled at appropriate locations.
- Highway route number plates shall be used in conjunction with milepost marker plates on all roadways, except Interstate freeways. Fabrication and installation costs of highway route number plates shall be considered incidental to the milepost marker assembly.
- Milepost markers shall be installed on all roadways as follows:
 - One milepost on each side of multi-lane roadways.
 - Back-to-back mileposts on one side of 2-lane roadways. (Right side of roadway in direction of increasing mileage.)



MILEPOST MARKER PLATE DETAILS

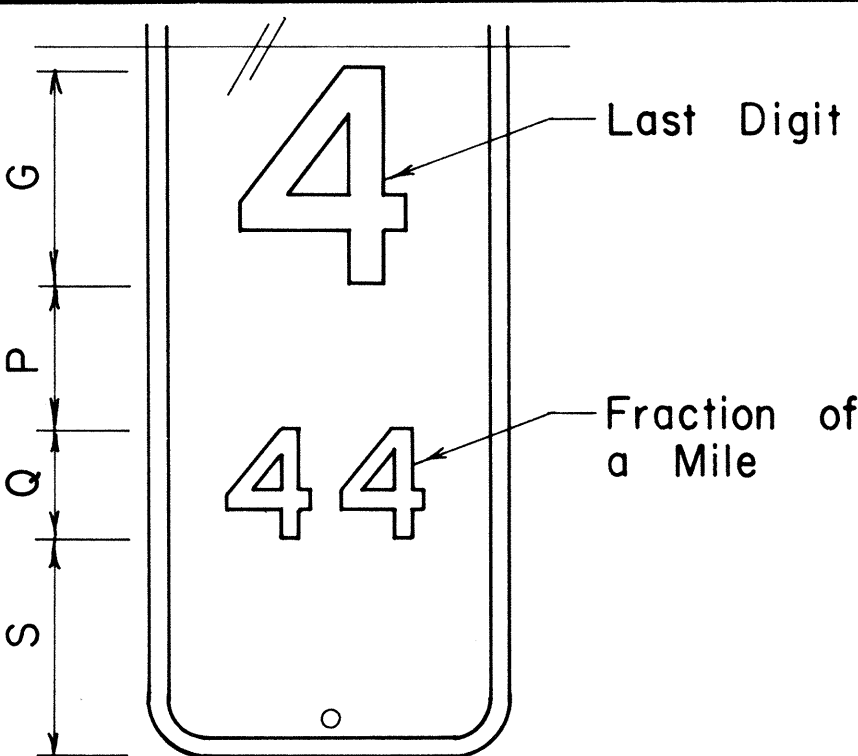
Scale: 3/16" = 1"

MILEPOST PLATE SCHEDULE (INCHES)														LETTER SERIES	NUMERAL SERIES
NAME	SIZE	A	B	C	D	E	F	G	H	J	K	L	M		
DIO-1 DIO-4	10 x 18 12 x 24	10 12	18 24	1/2 1/2	2 3	4 4	2 3	6 10		4 4	1 1/2 1 1/2	3 5/8 4 3/8	3 7/8 4 7/8	B C	C C
DIO-2 DIO-5	10 x 27 12 x 36	10 12	27 36	1/2 1/2	2 3	4 4	2 3	6 10	3 3	4 3	1 1/2 1 1/2	3 5/8 4 3/8	3 7/8 4 7/8	B C	C C
DIO-3 DIO-6	10 x 36 12 x 48	10 12	36 48	1/2 1/2	2 3	4 4	2 3	6 10	3 2 1/2	4 3	1 1/2 1 1/2	3 5/8 4 3/8	3 7/8 4 7/8	B C	C C



HIGHWAY ROUTE NUMBER PLATE DETAIL

Scale: 3/16" = 1"

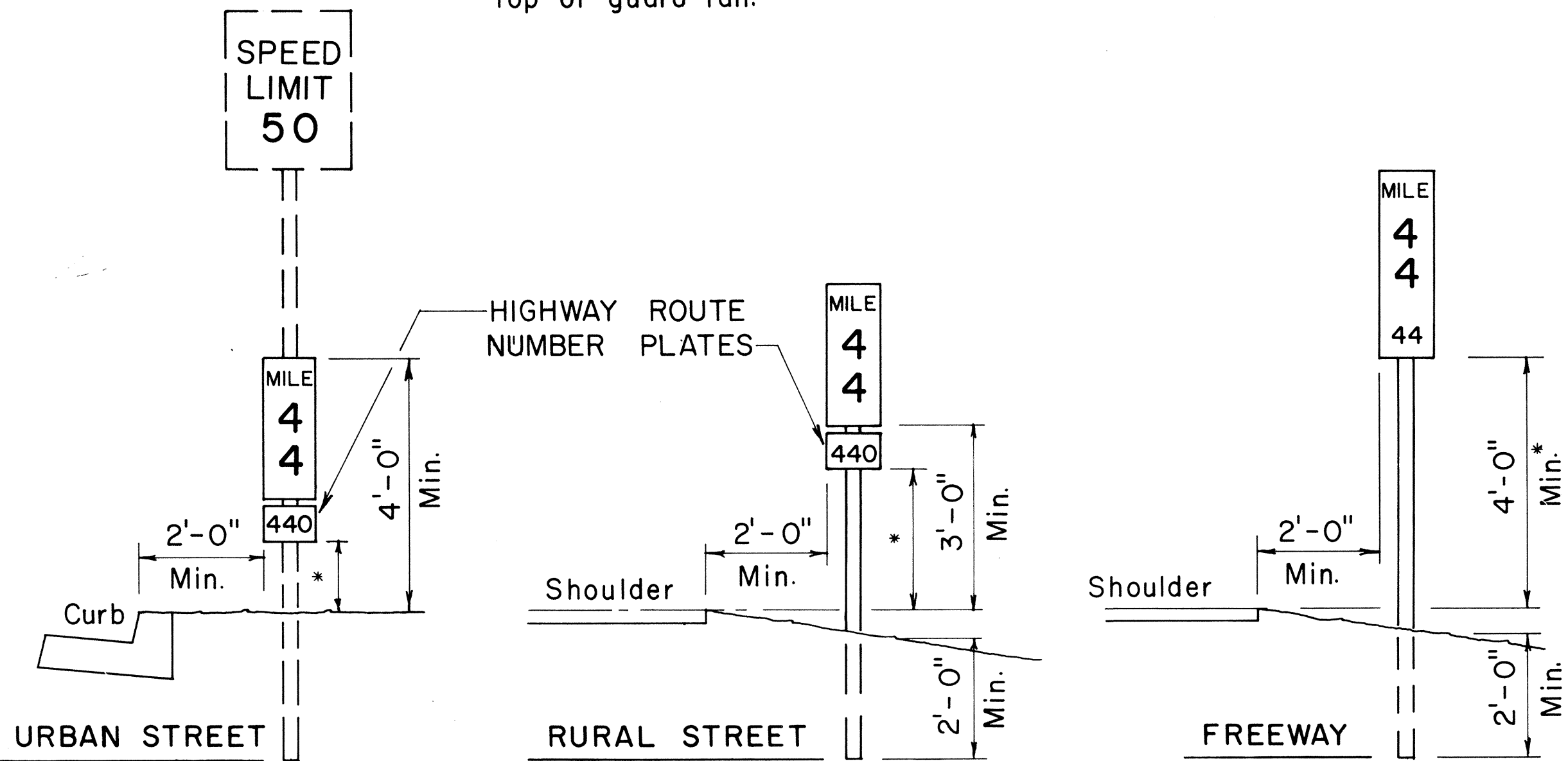


MILEPOST MARKER FRACTION DETAIL

Scale: 3/16" = 1"

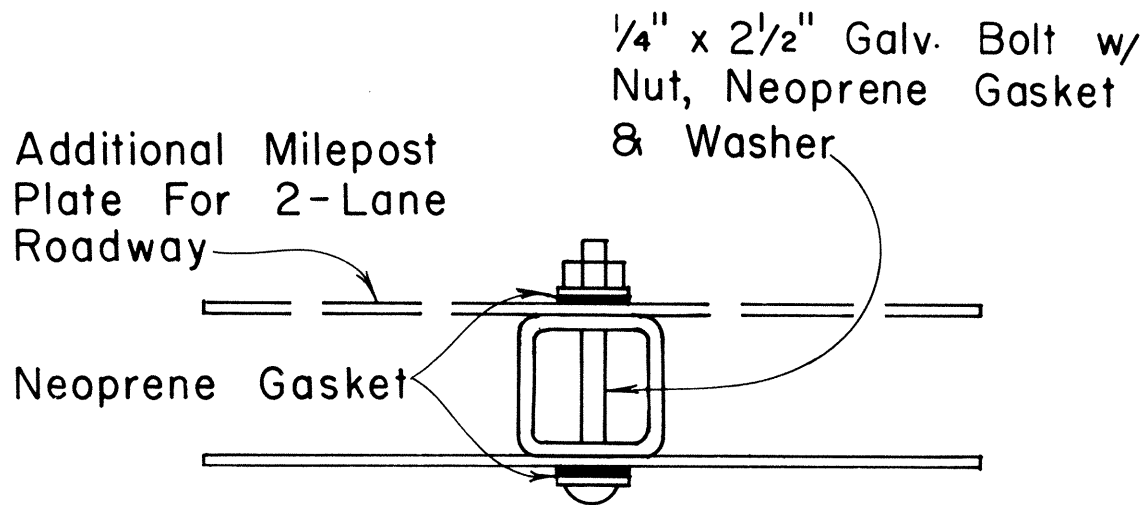
MILEPOST PLATE SCHEDULE WITH FRACTION OF A MILE						
NAME	SIZE	G	P	Q	S	NUMERAL SERIES
DIO-1a	10" x 27"	6"	4"	3"	6"	C
DIO-4a	12" x 36"	10"	4"	5"	7"	C
DIO-2a	10" x 36"	6"	4"	3"	6"	C
DIO-5a	12" x 48"	10"	4"	5"	6"	C
DIO-3a	10" x 45"	6"	4"	3"	6"	C
DIO-6a	12" x 60"	10"	4"	5"	6"	C

*One-foot minimum clearance above top of guard rail.

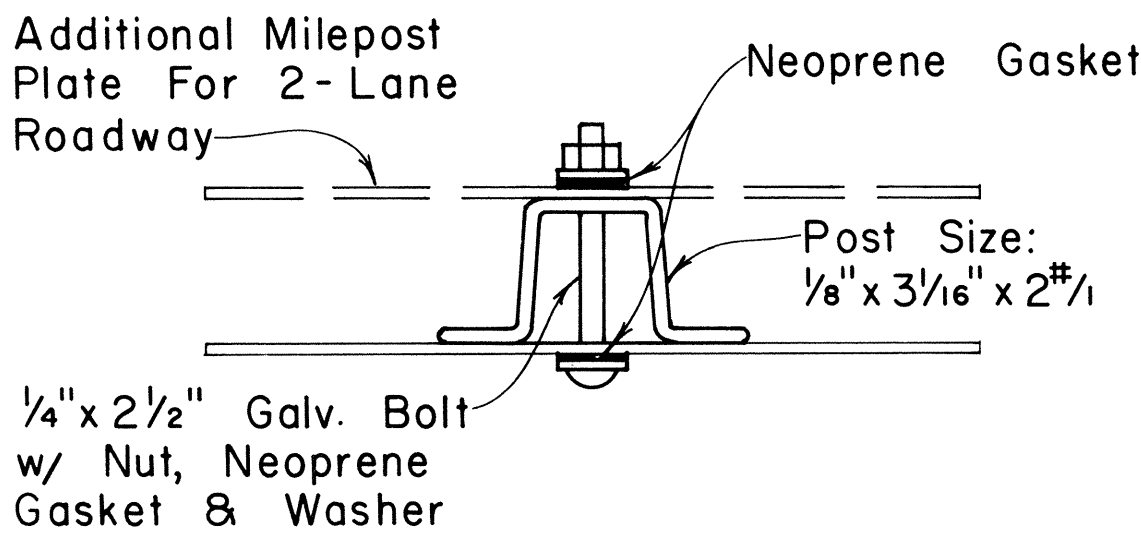


TYPICAL ROADSIDE INSTALLATION

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



GALVANIZED SQUARE TUBE POST



GALVANIZED FLANGED CHANNEL POST

TYPICAL MOUNTING DETAILS

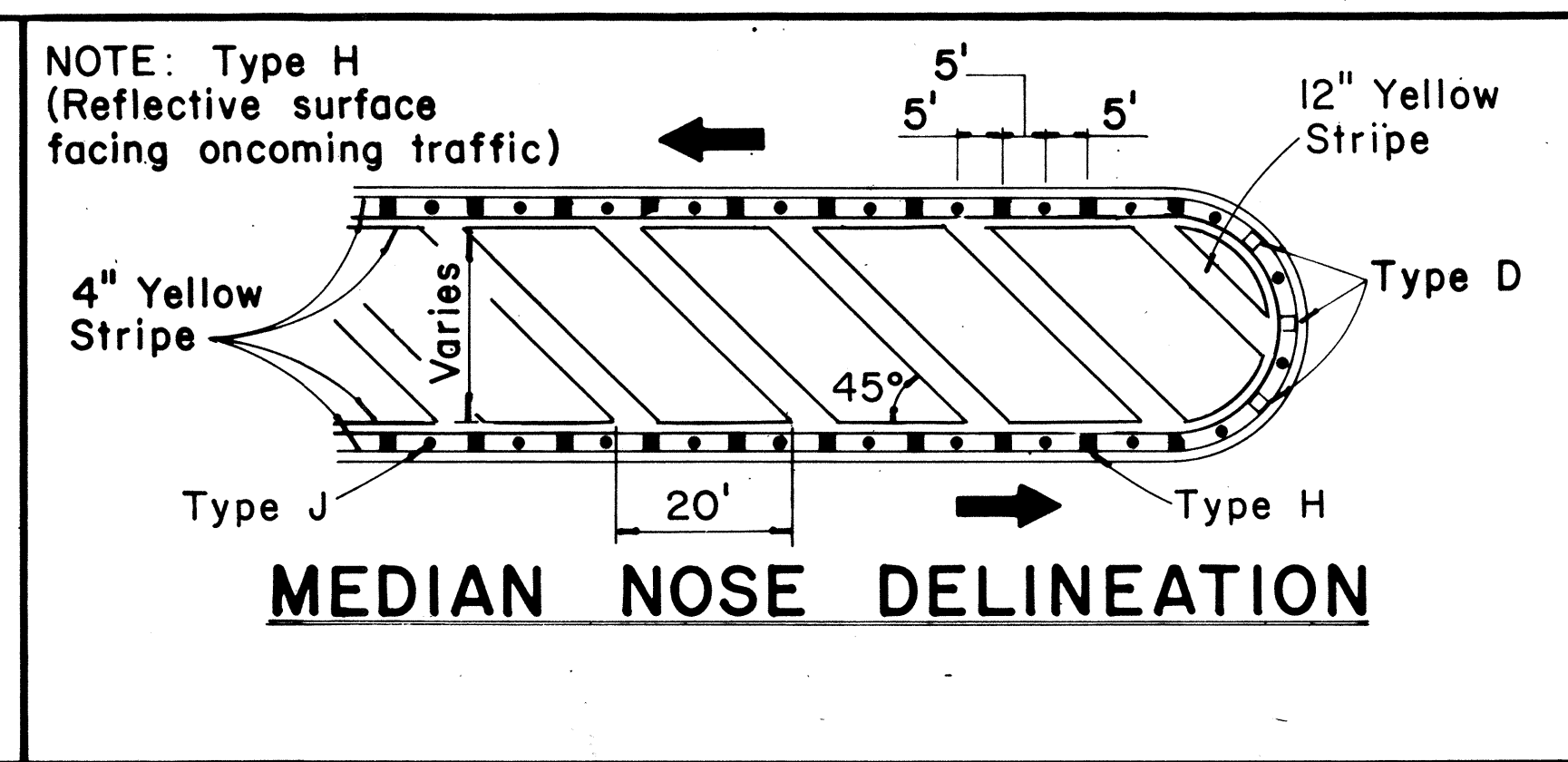
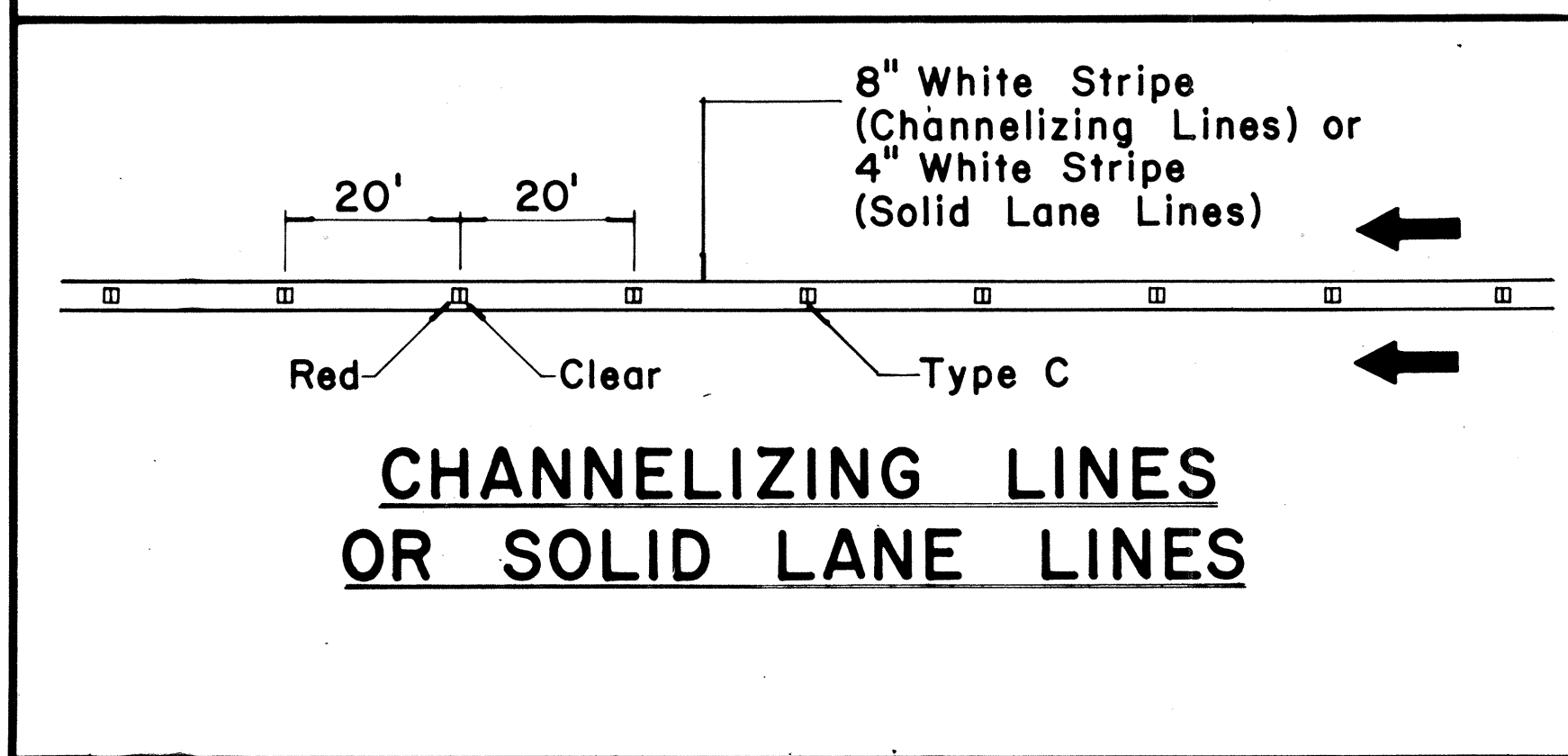
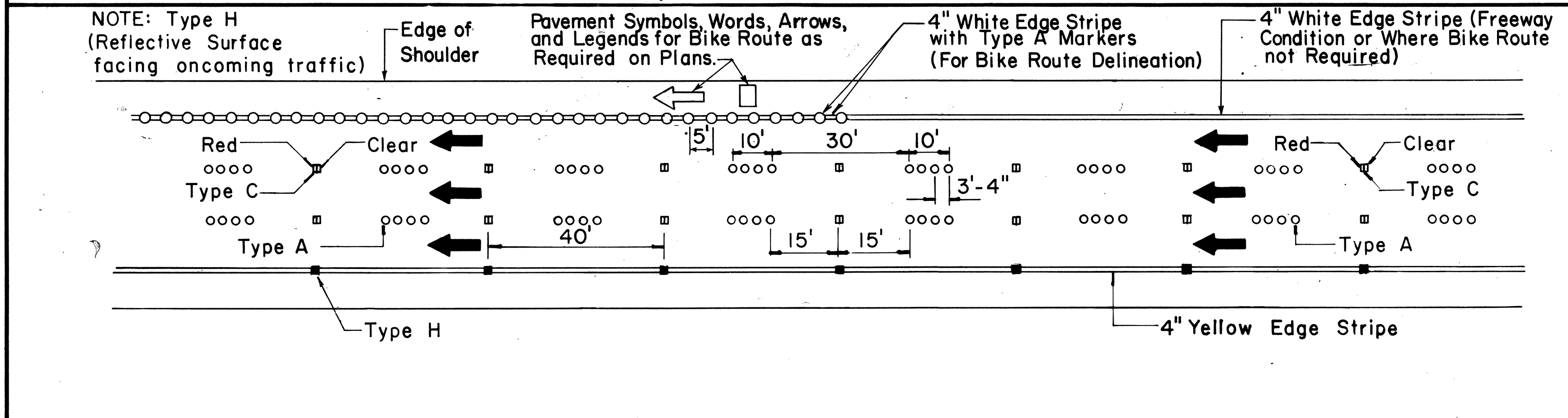
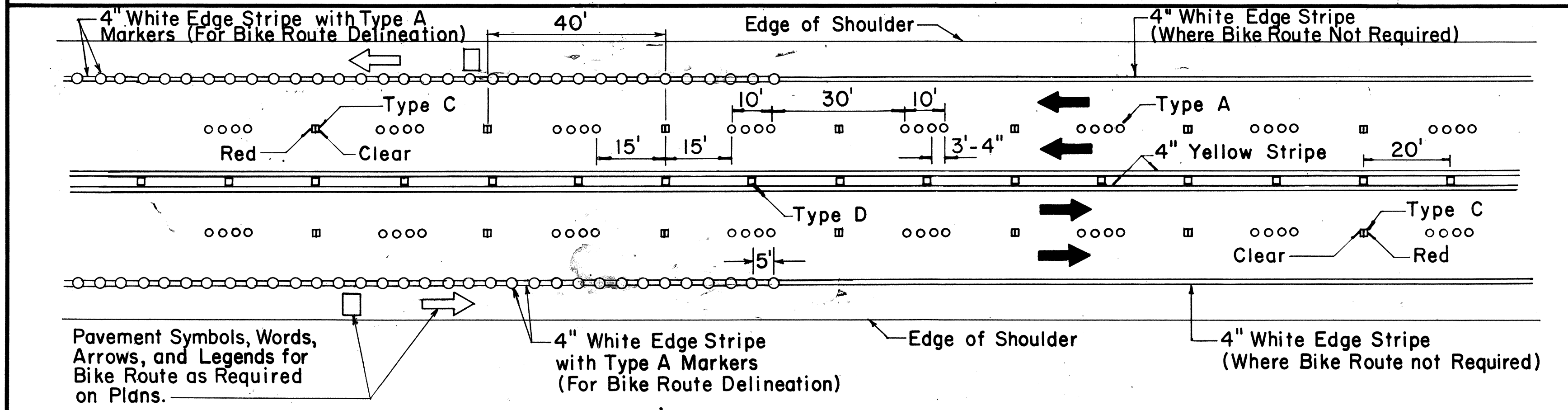
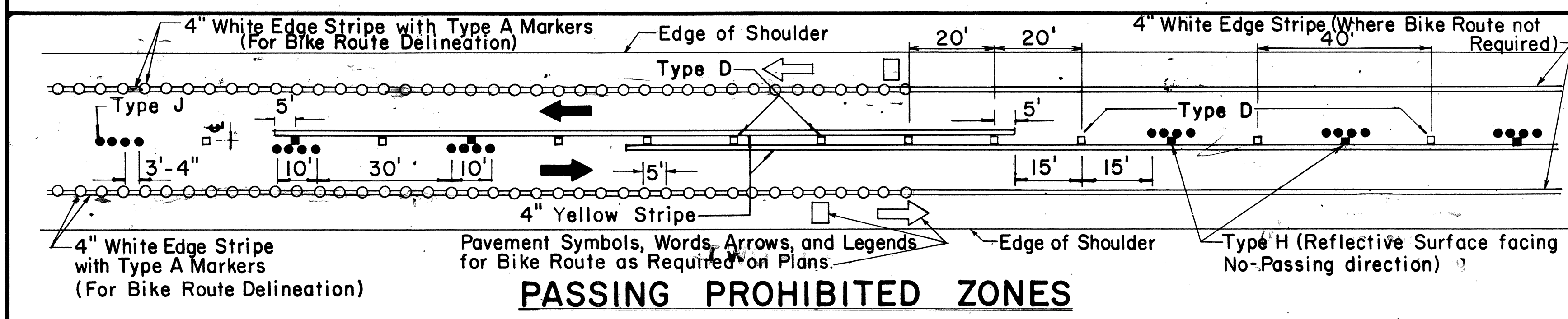
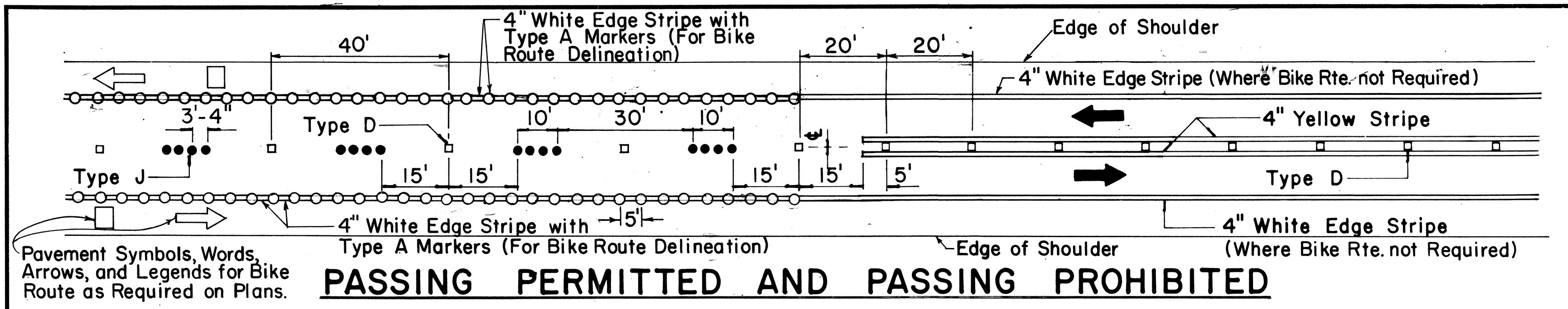
Scale: 1/2" = 1"

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Erich Tanaka
 TRAFFIC ENGINEER
 1/17/78
 DATE

APPROVED:
Robert D. Sakai
 ASSISTANT CHIEF, ENGINEERING
 1/18/78
 DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION	
<u>STANDARD DETAILS</u>	
<u>MILEPOSTS</u>	
SCALE: As Shown	DATE: December, 1977
SHEET NO. 10 OF 18 SHEETS DT 116	



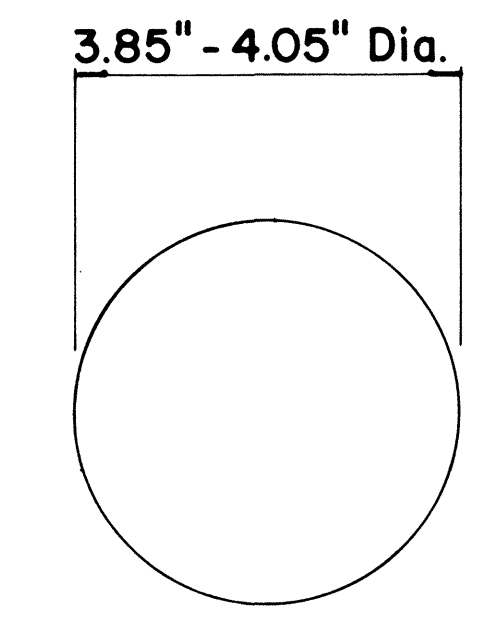
TWO - LANE

MULTI - LANE

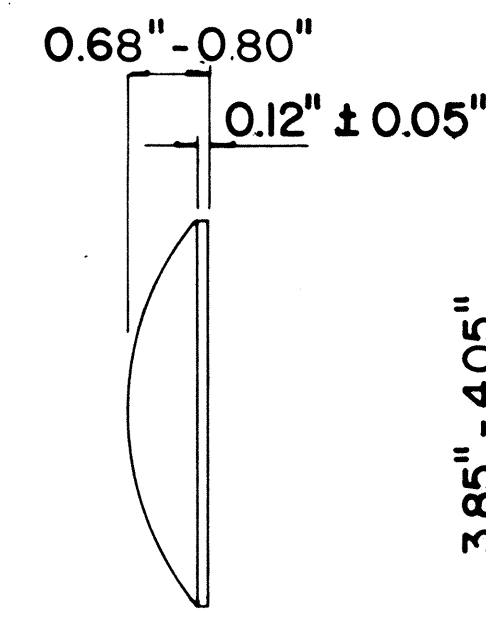
DIVIDED HIGHWAY AND FREEWAY

MISCELLANEOUS

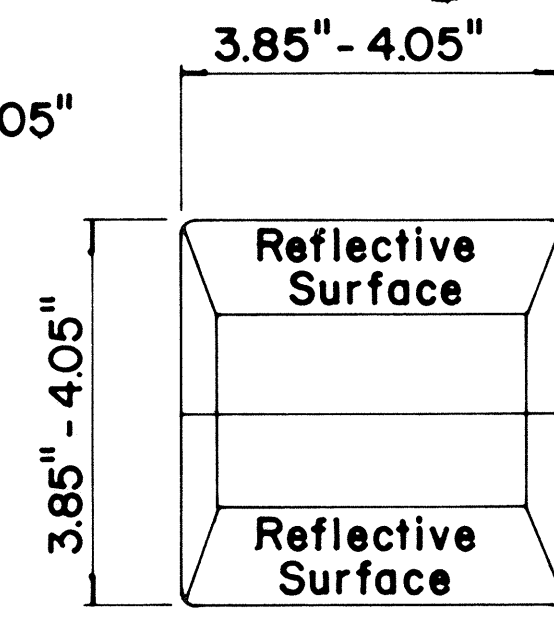
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	103-02-75 UNIT 1	1979	26	42



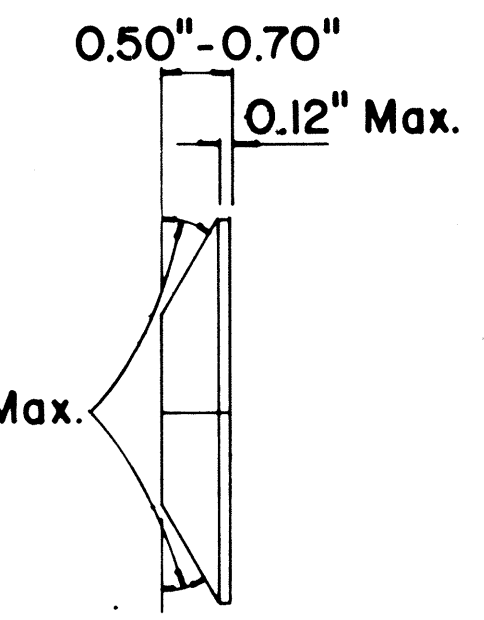
TYPE A
NON-REFLECTIVE WHITE MARKER



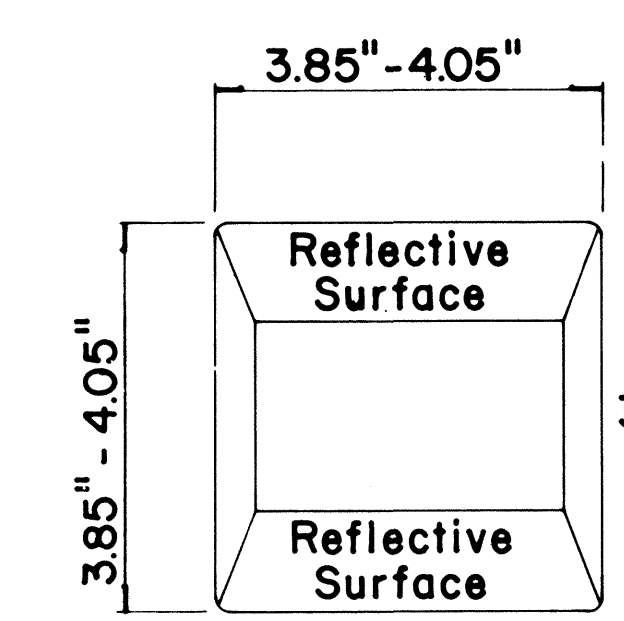
TYPE J
NON-REFLECTIVE YELLOW MARKER



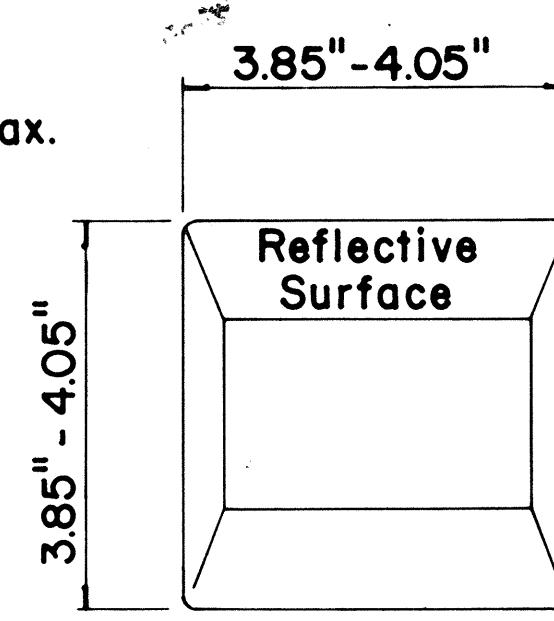
TYPE C
RED-CLEAR REFLECTIVE MARKER



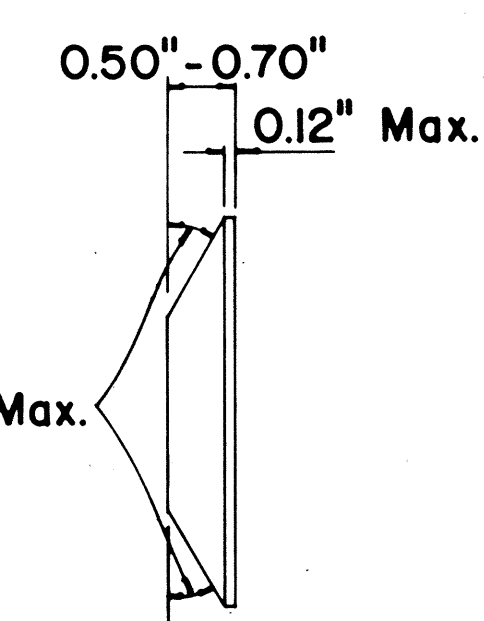
TYPE H
ONE-WAY YELLOW REFLECTIVE MARKER



TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER



TYPE C
RED-CLEAR REFLECTIVE MARKER



TYPE H
ONE-WAY YELLOW REFLECTIVE MARKER

GENERAL NOTES

- Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Layout and installation of pavement marking and striping shall be done by the Contractor. The Contractor shall check the layouts with the Engineer prior to performing work.

LEGEND

- Type A
- Type C
- Type D
- Type H
- Type J

APPROVAL RECOMMENDED:
Ericki Tanaka 7/21/78
TRAFFIC ENGINEER DATE

APPROVED:
Herbert J. Zalewski 1/24/78
ASSISTANT CHIEF, ENGINEERING DATE

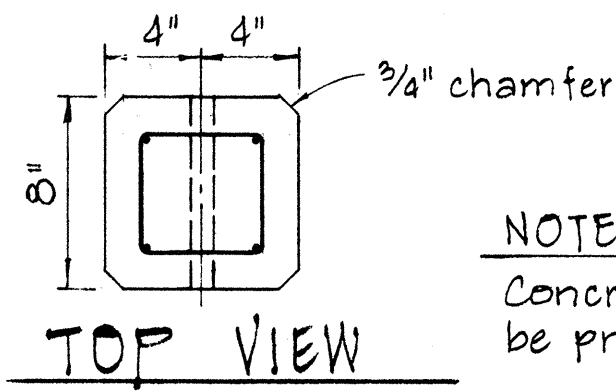
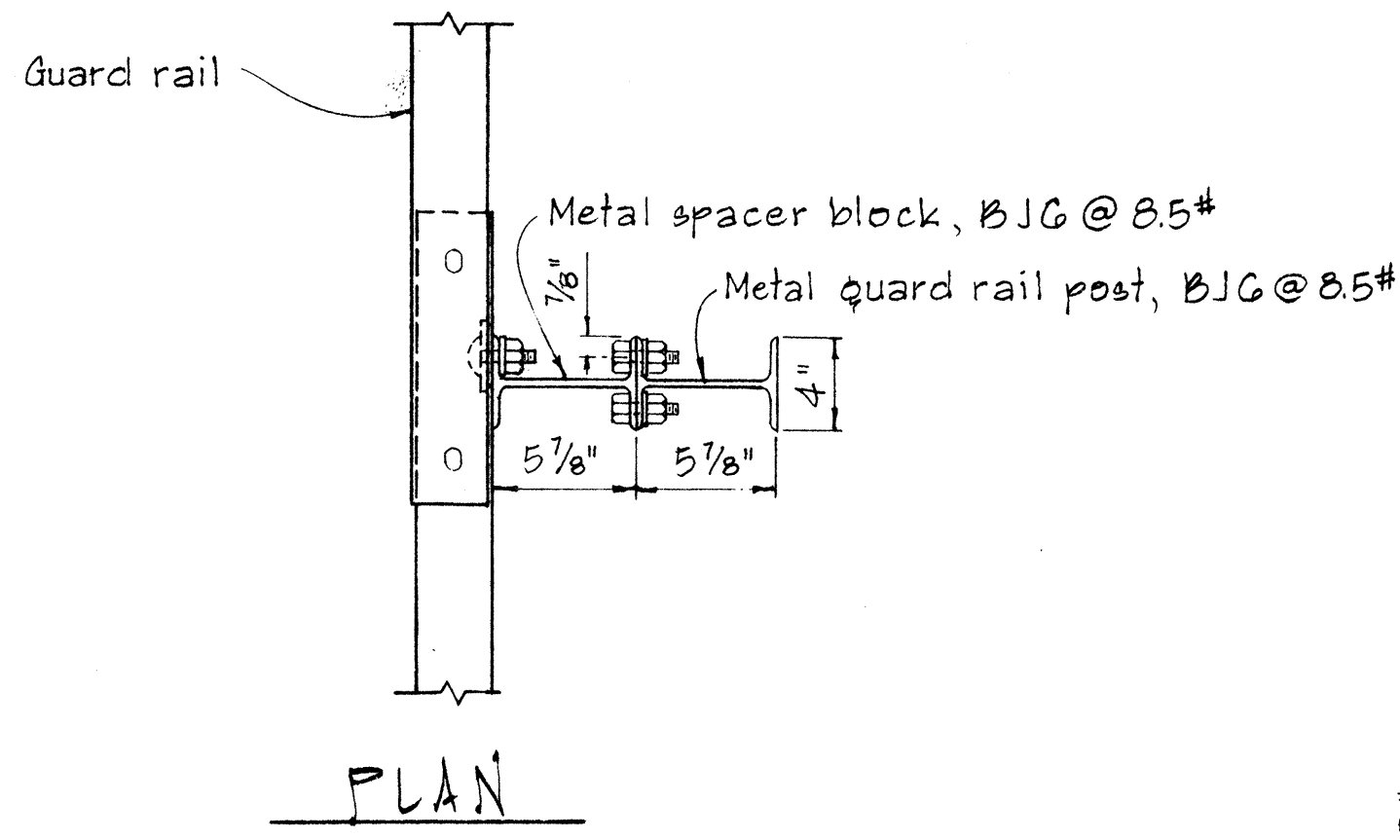
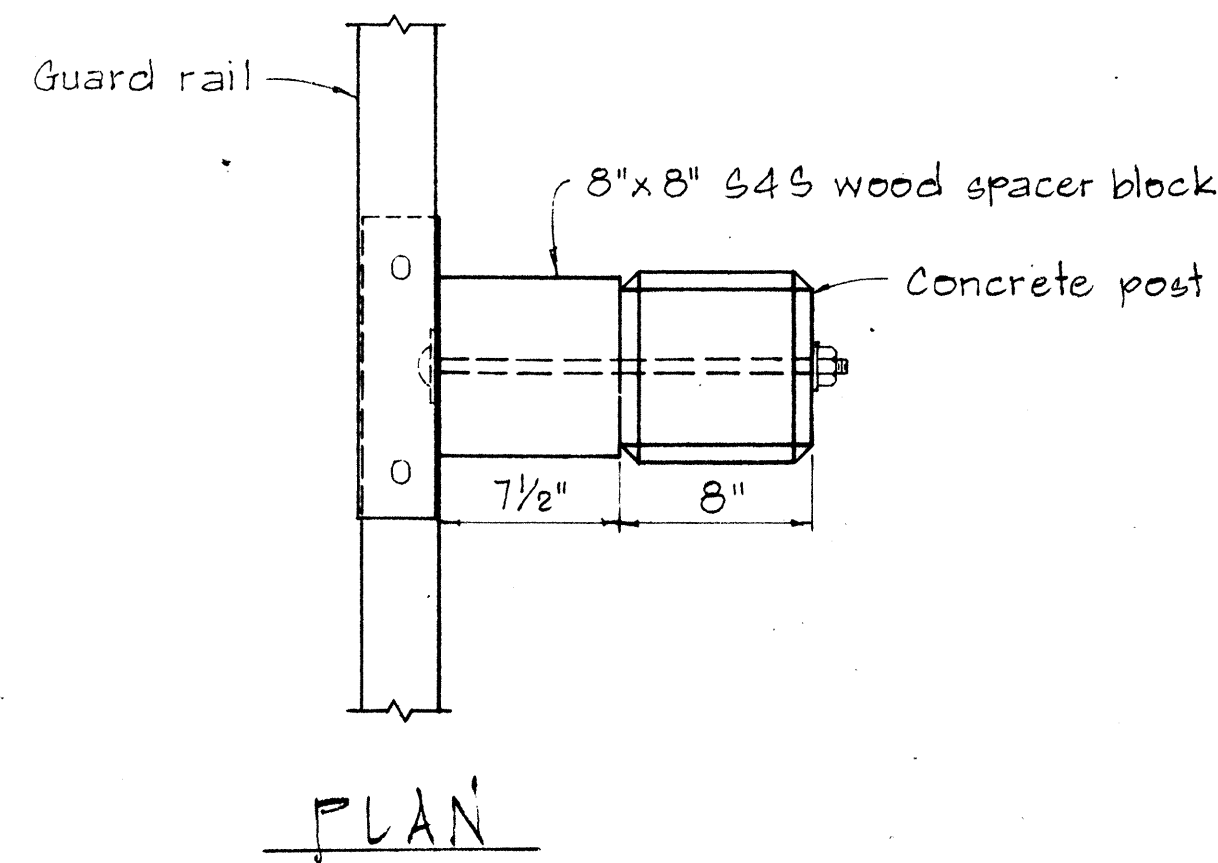
No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	HJ	1/24/78

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

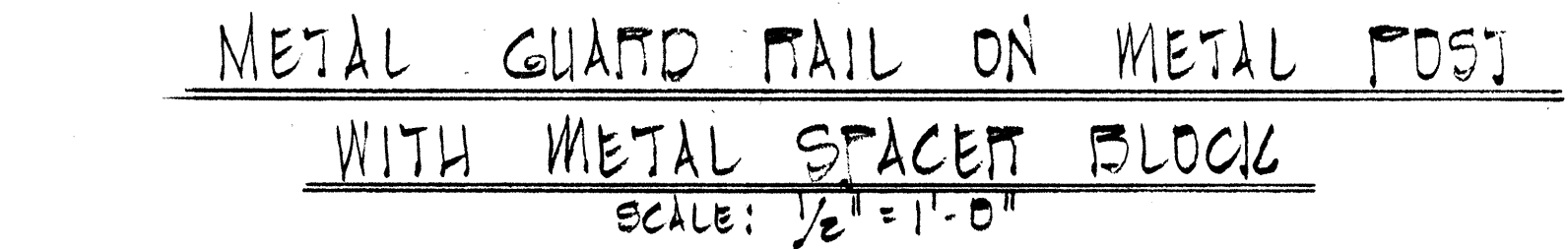
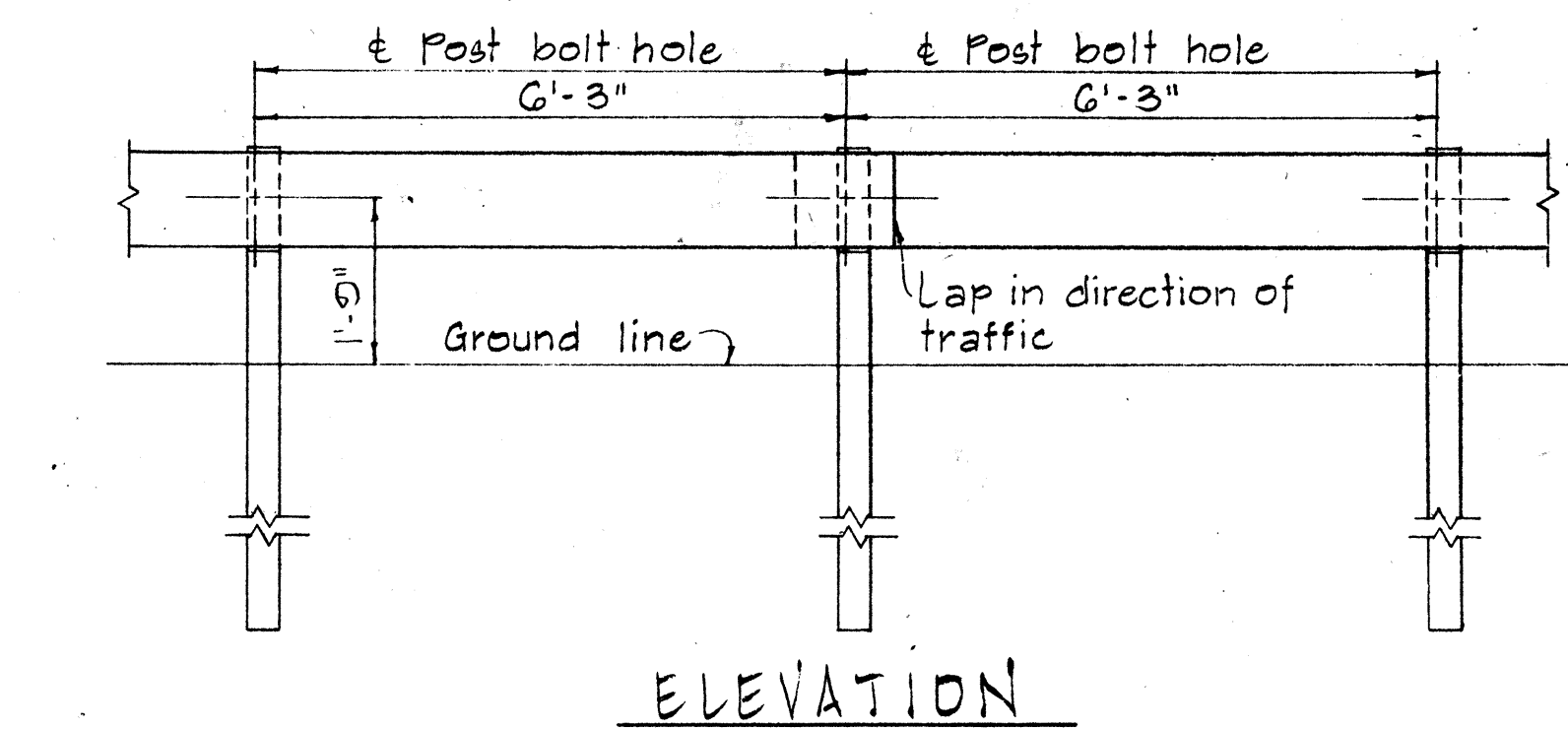
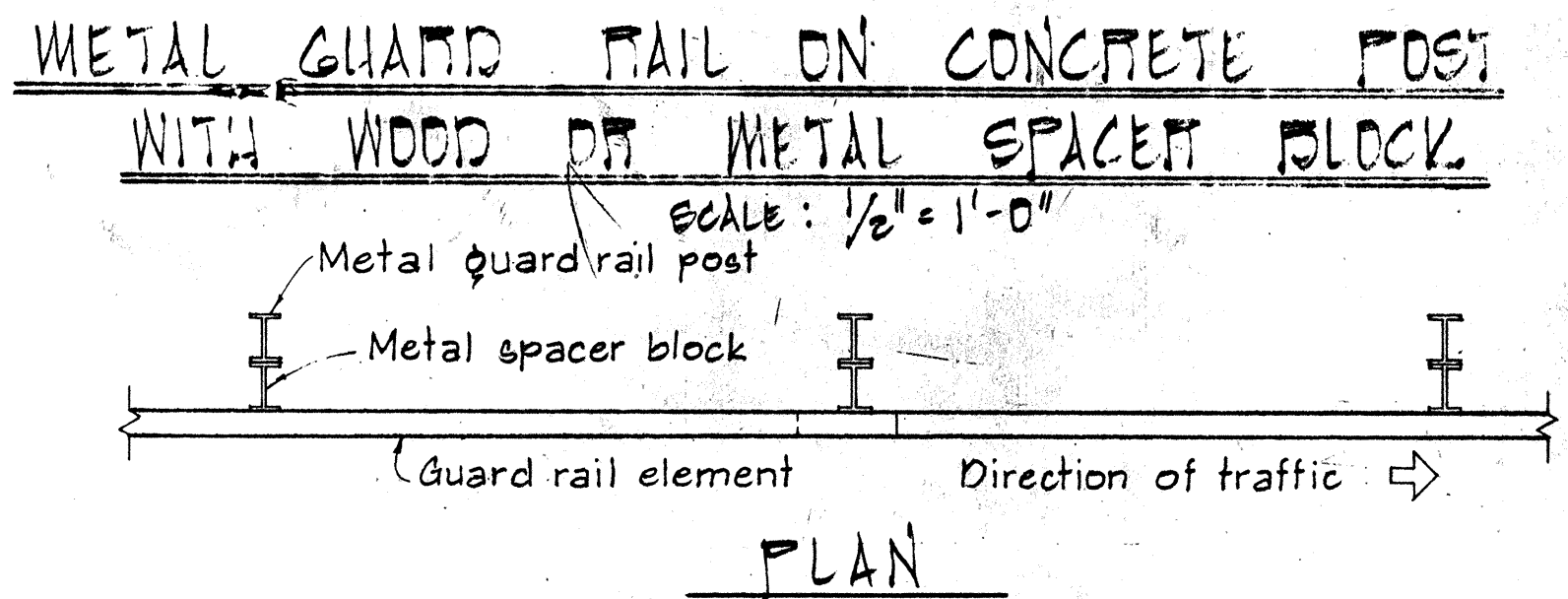
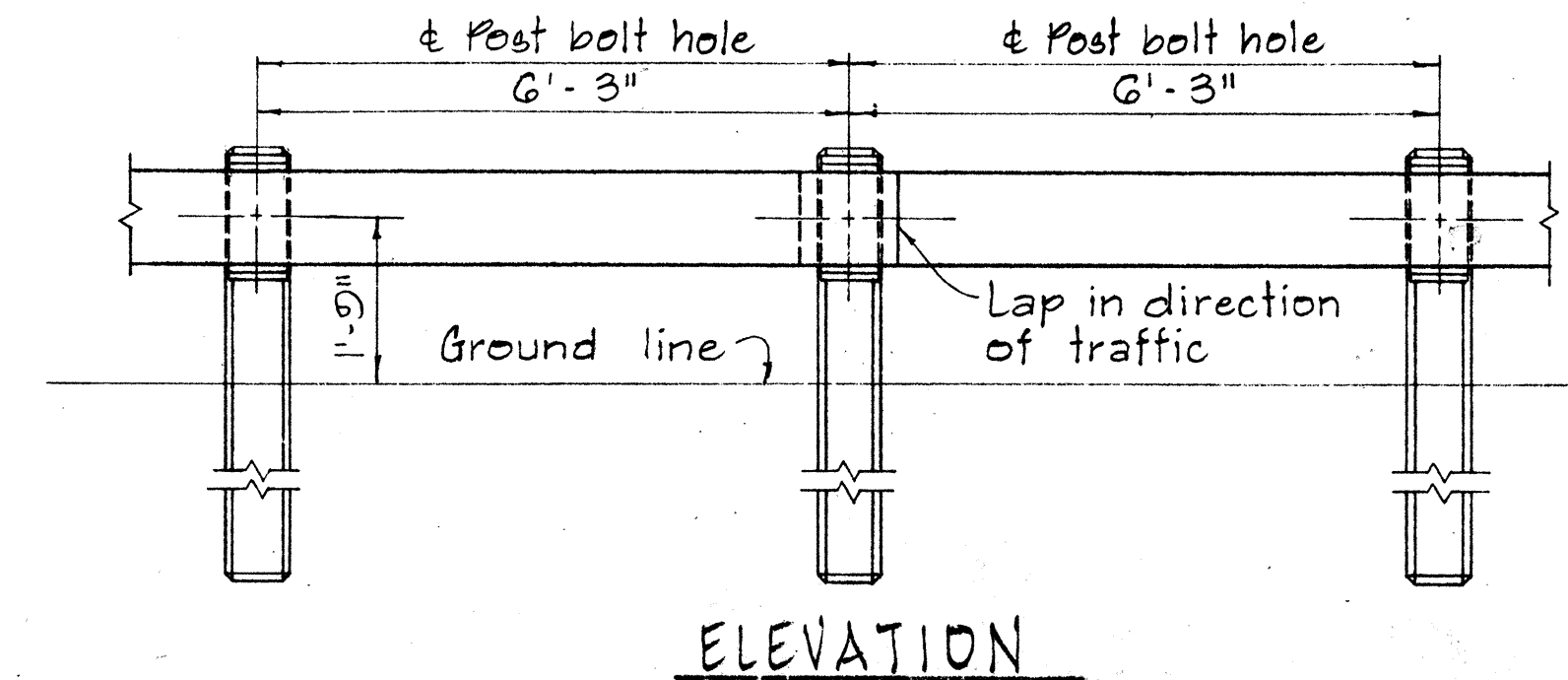
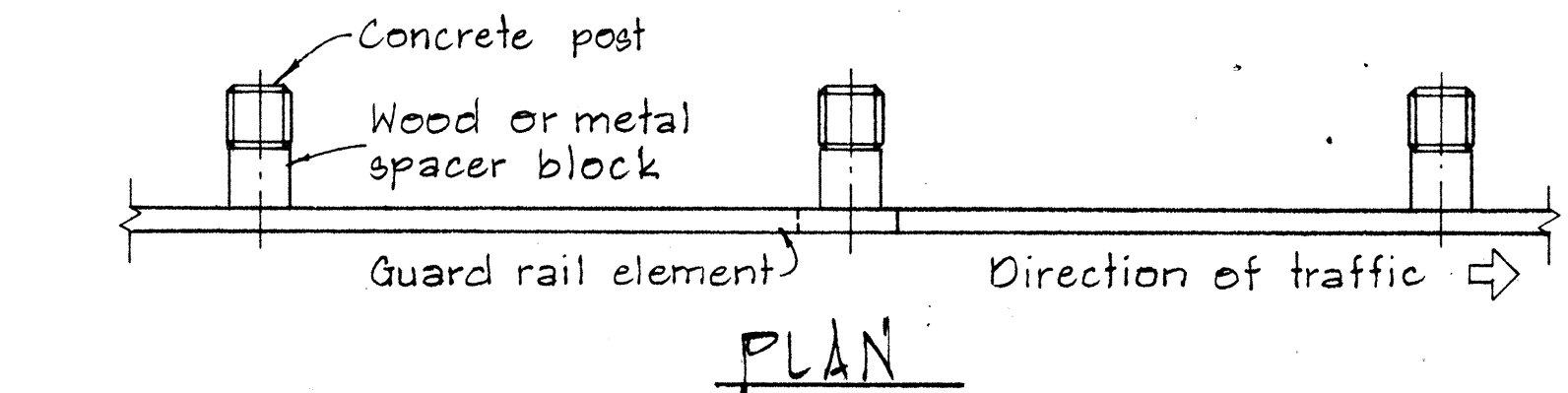
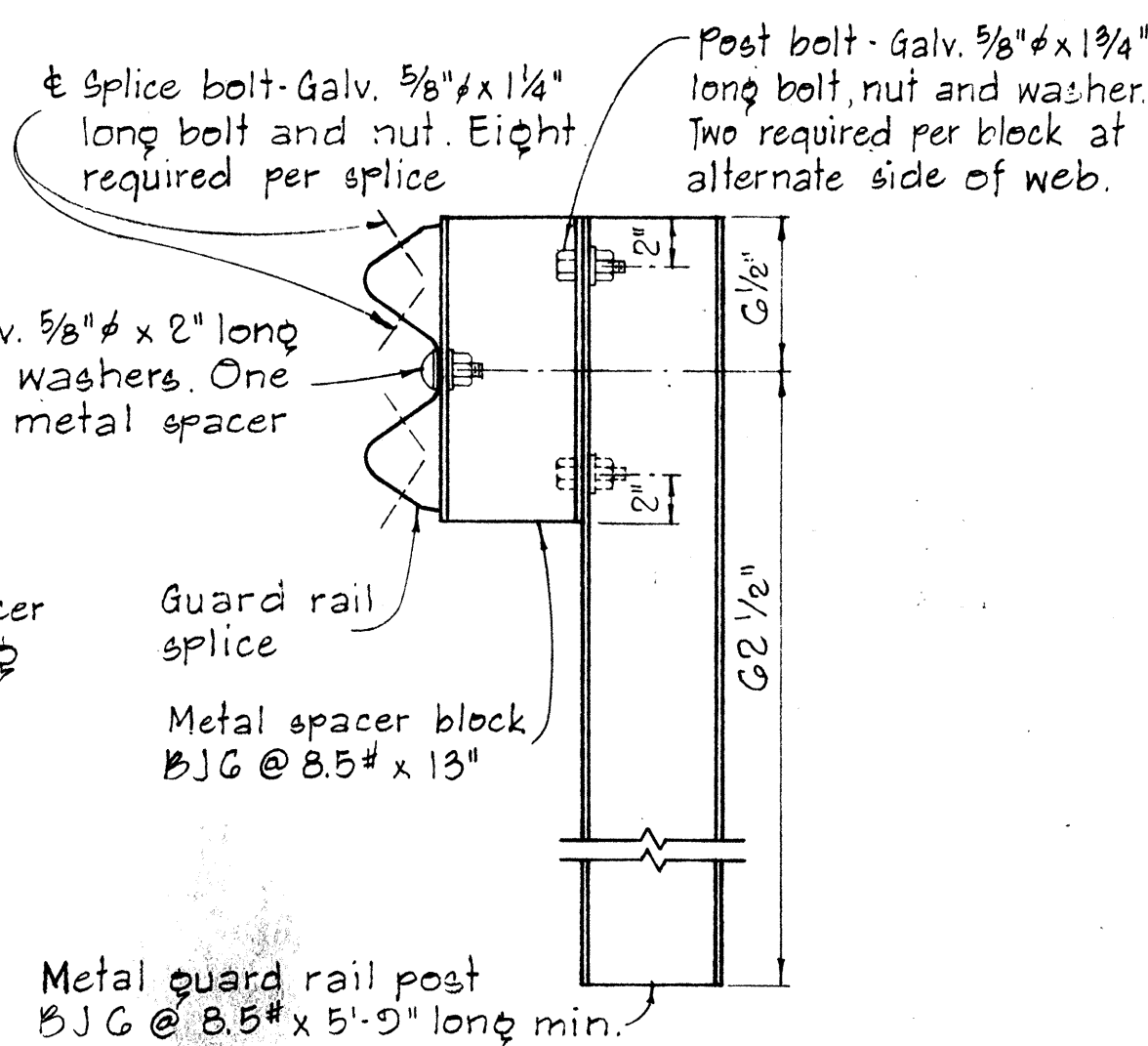
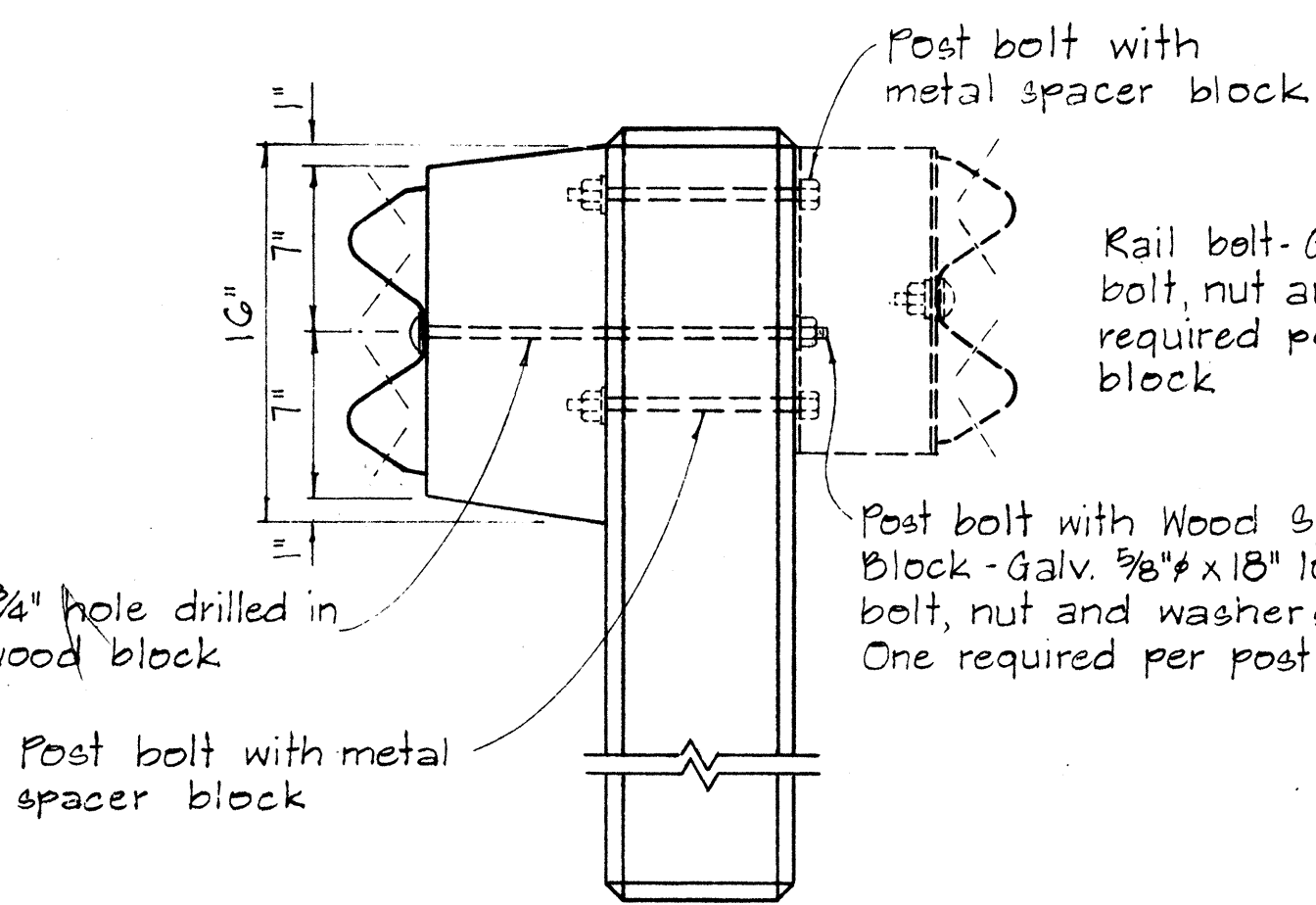
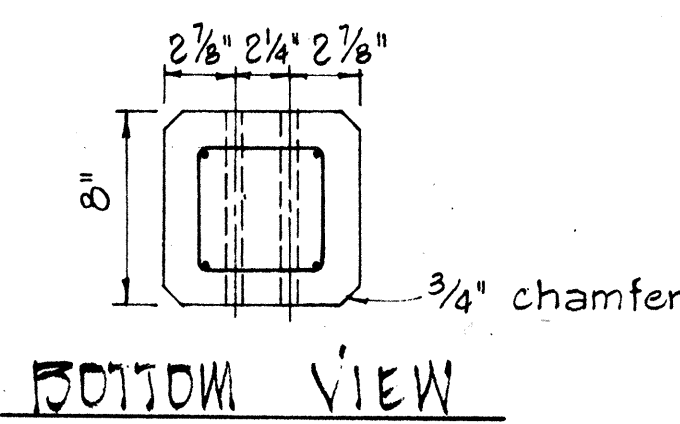
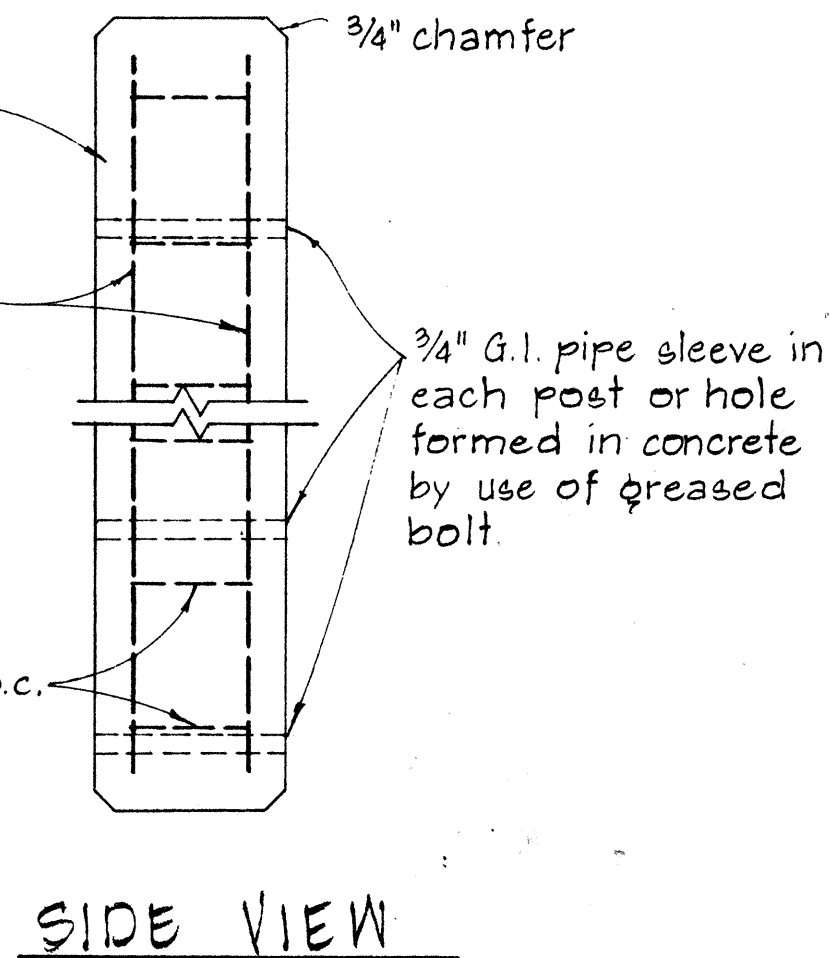
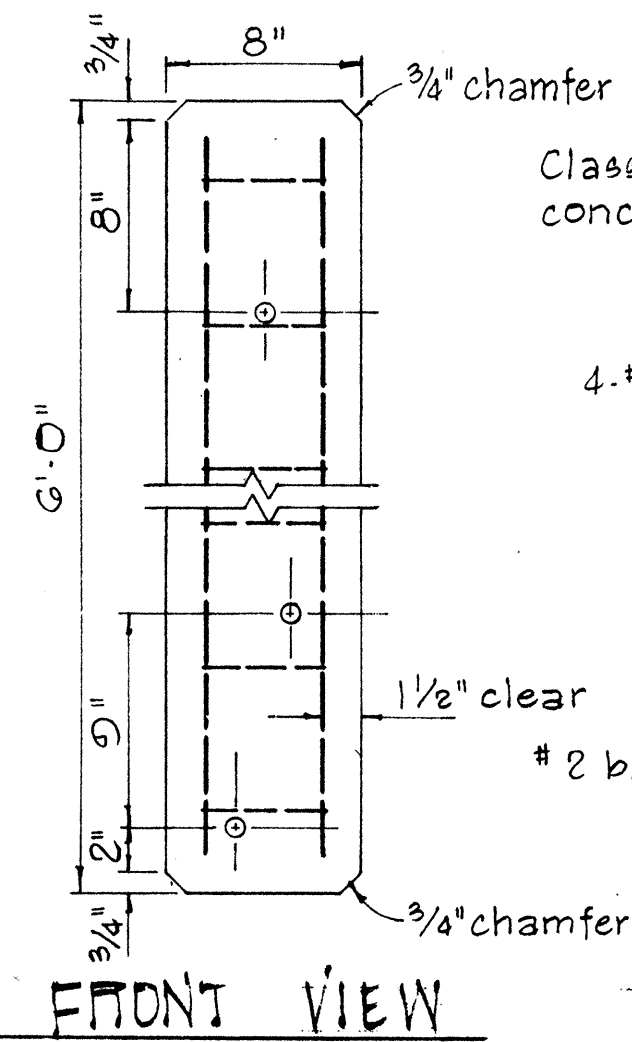
STANDARD DETAILS
RAISED PAVEMENT MARKERS
AND STRIPING

Not to Scale July 1978
SHEET No. 11 OF 18 SHEETS DT 300

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	10J-0275 UNIT 1	1979	28	42

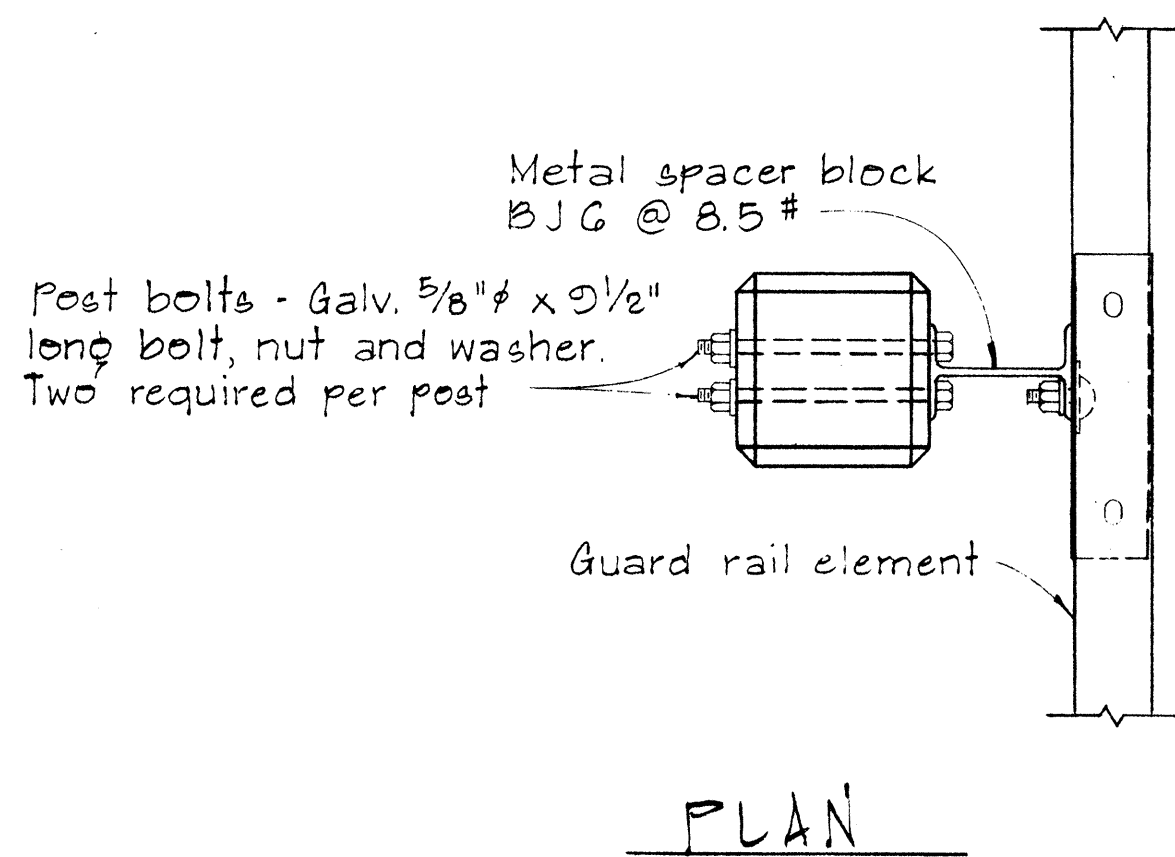


NOTE:
Concrete post shall be precast

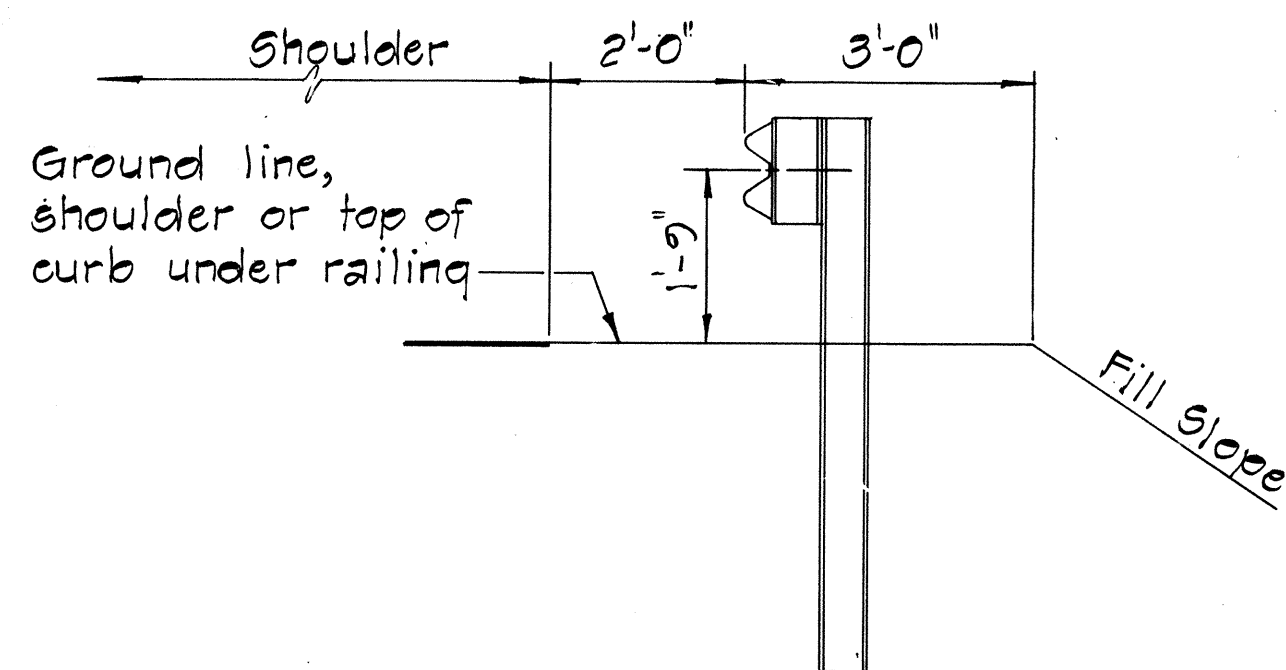


SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

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



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"

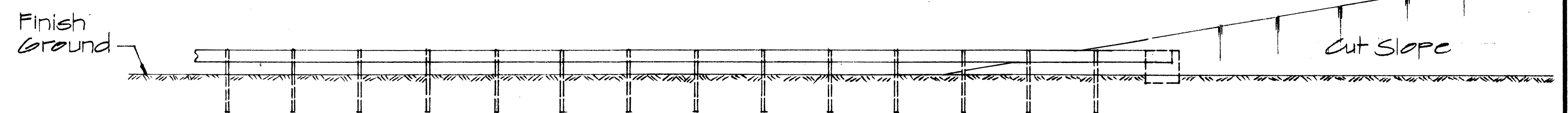
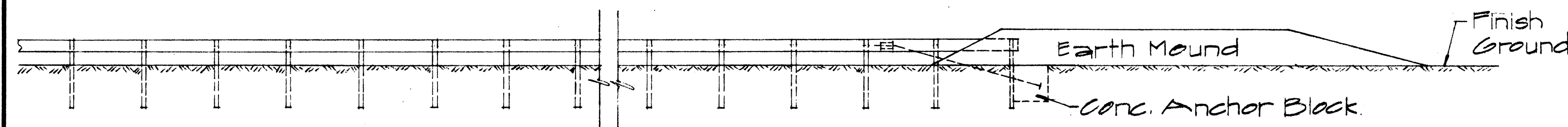
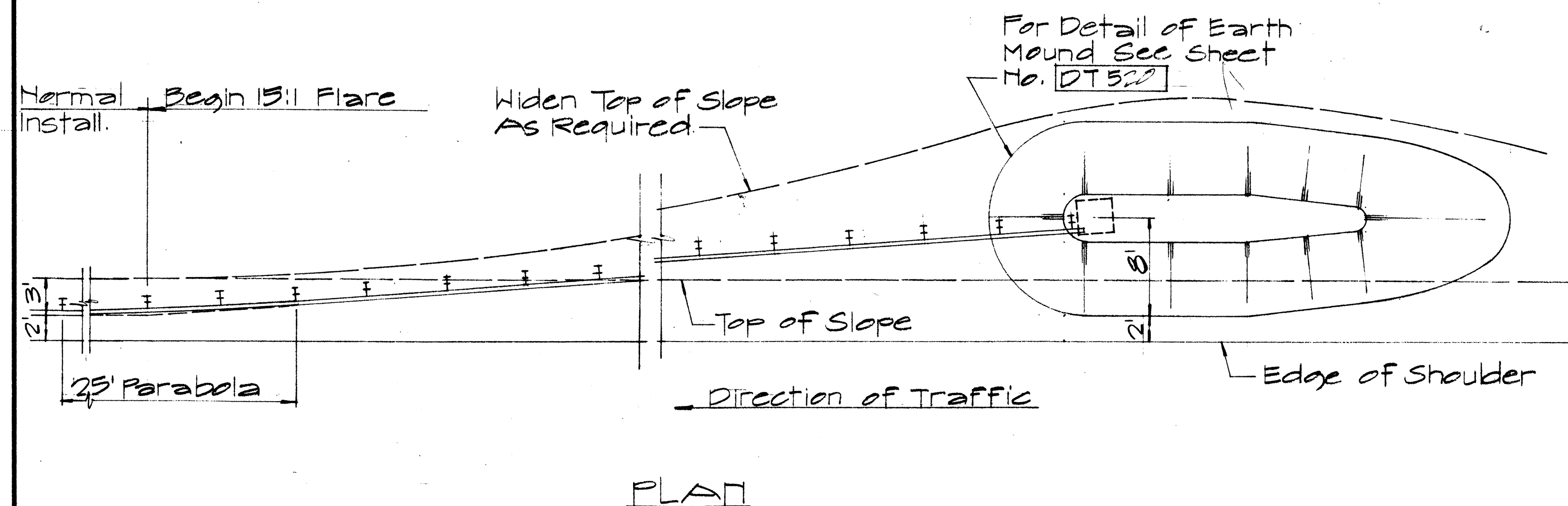
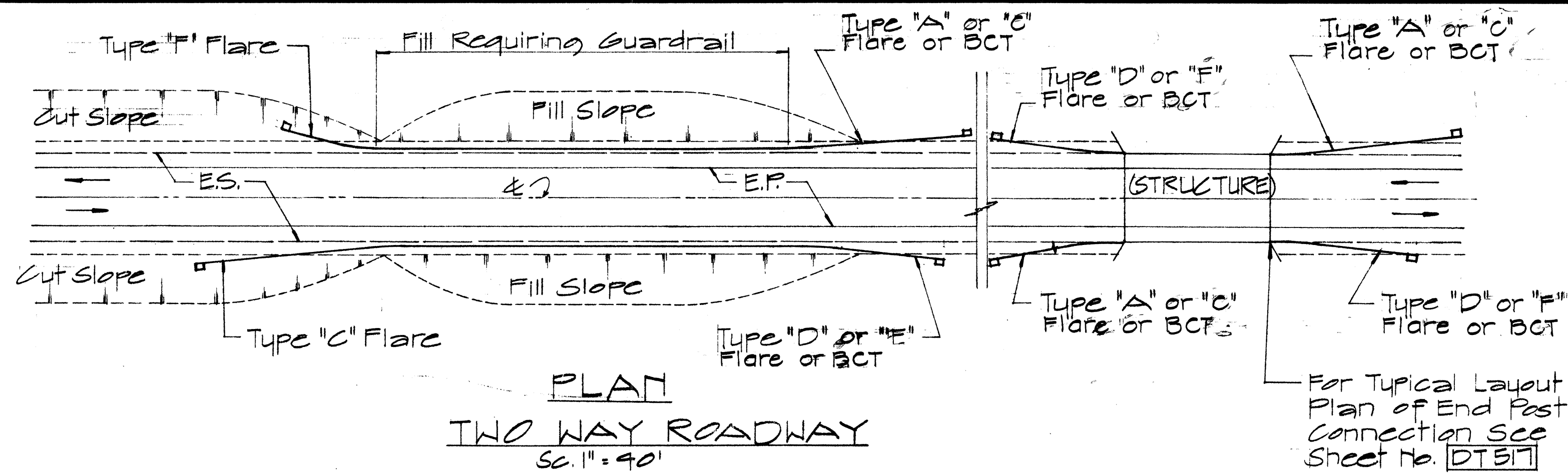
APPROVAL RECOMMENDED:
Evelyn Tanaka
TRAFFIC ENGINEER
12/29/62
DATE

APPROVED:
Robert J. DeZure
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN
NOV. 1968
SHEET No. 13 OF 18 SHEETS DT 500



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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	12J-0275 UNIT 1	1979	30	42

DATE	12/29/62
DESIGNED BY	W. J. ...
CHECKED BY	...
ORIGINAL PLAN	...
NOTE BOOK	...

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

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

NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/68

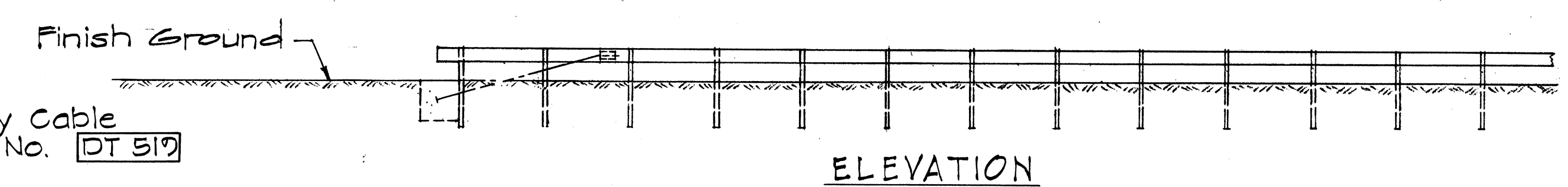
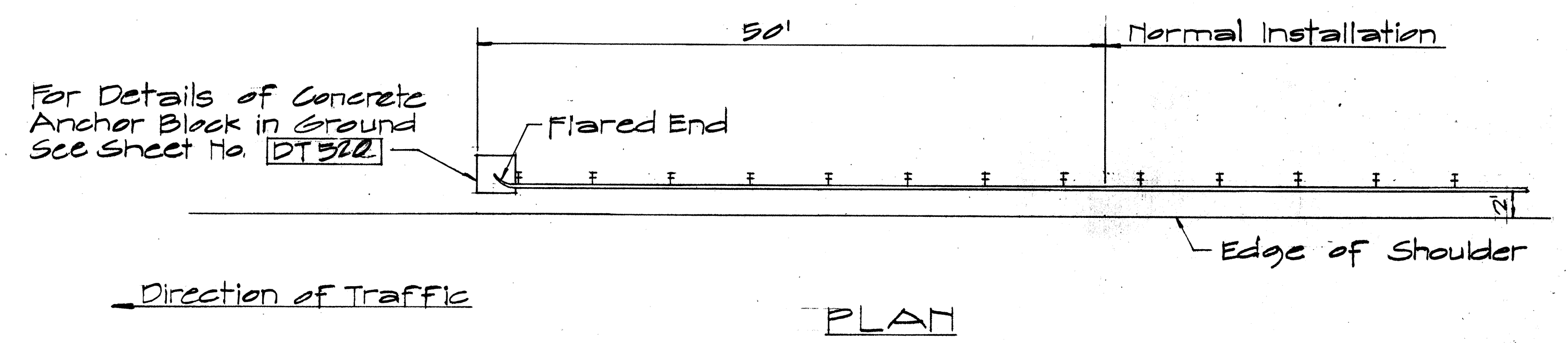
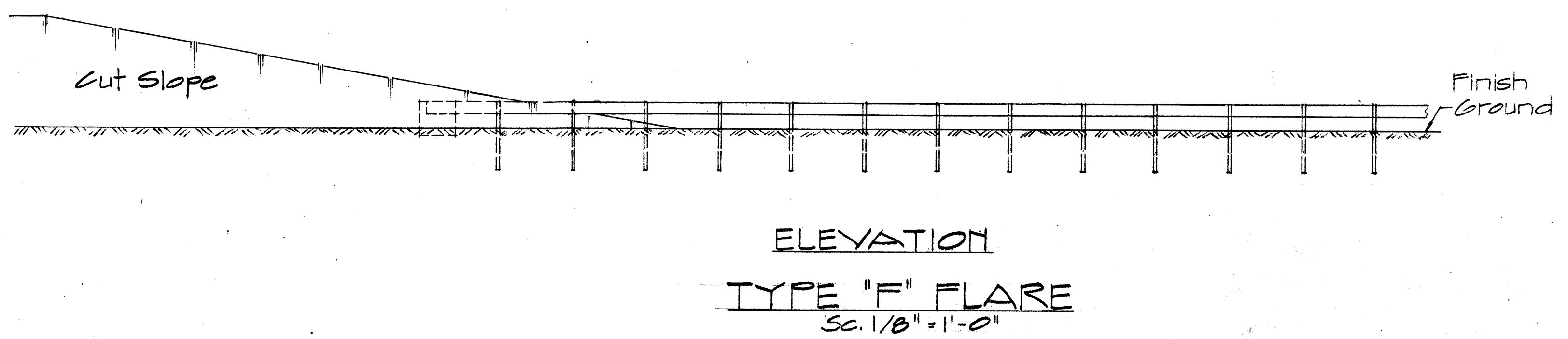
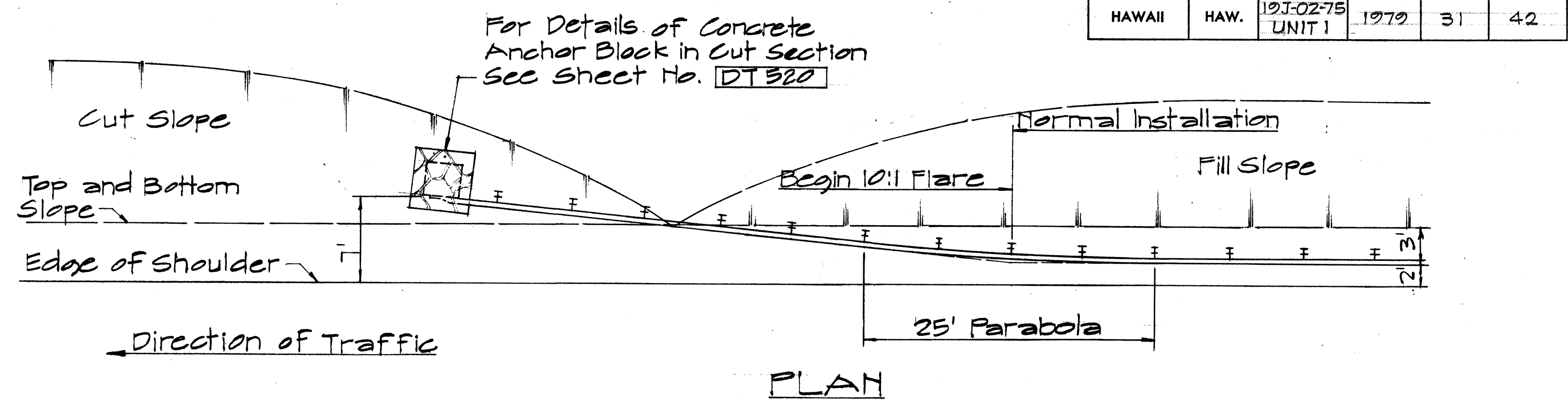
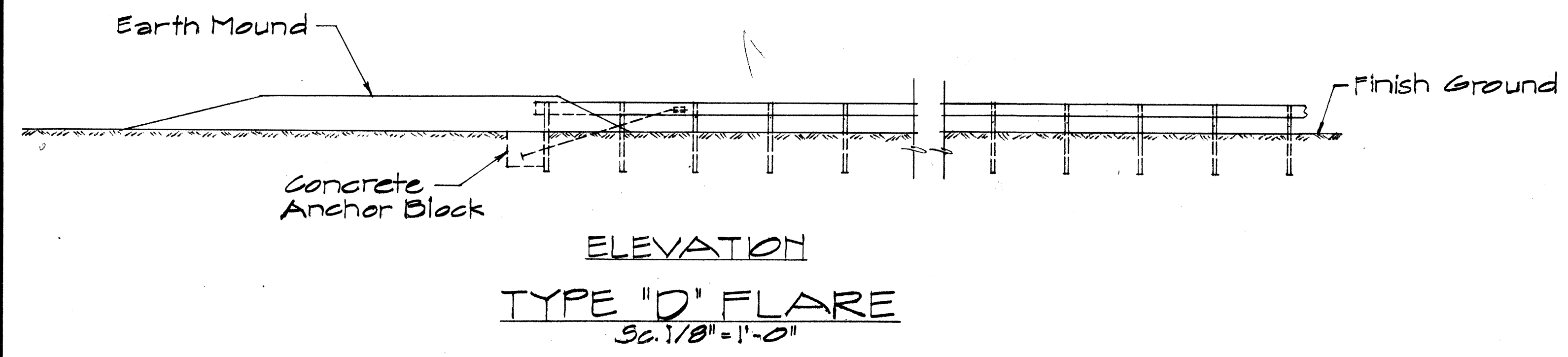
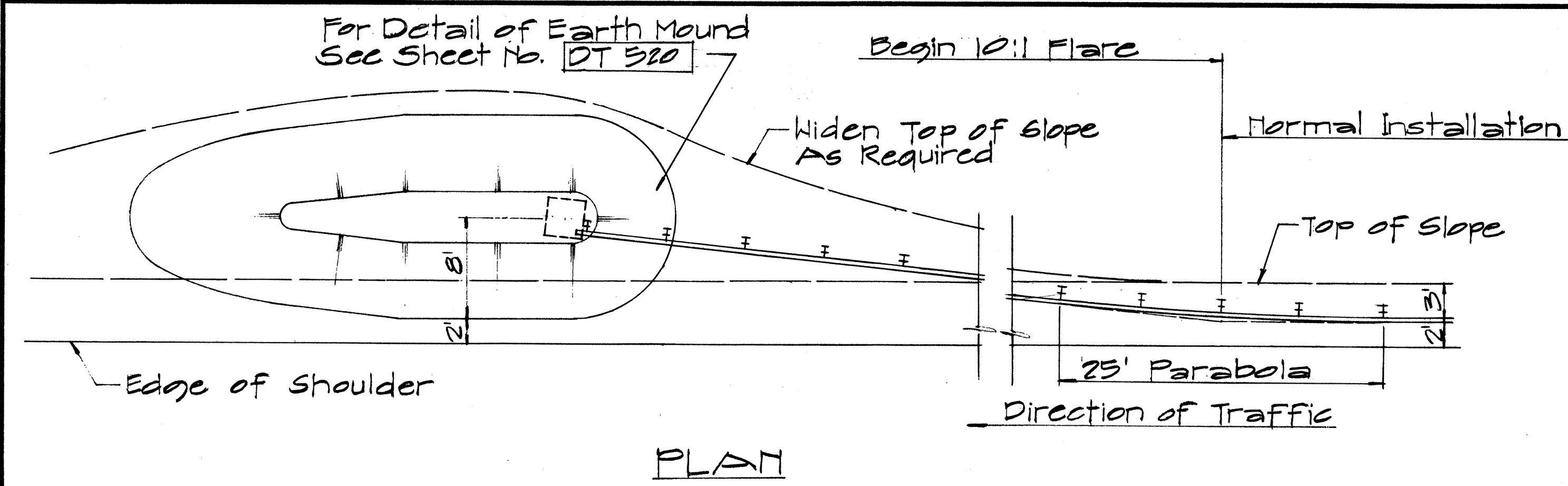
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

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

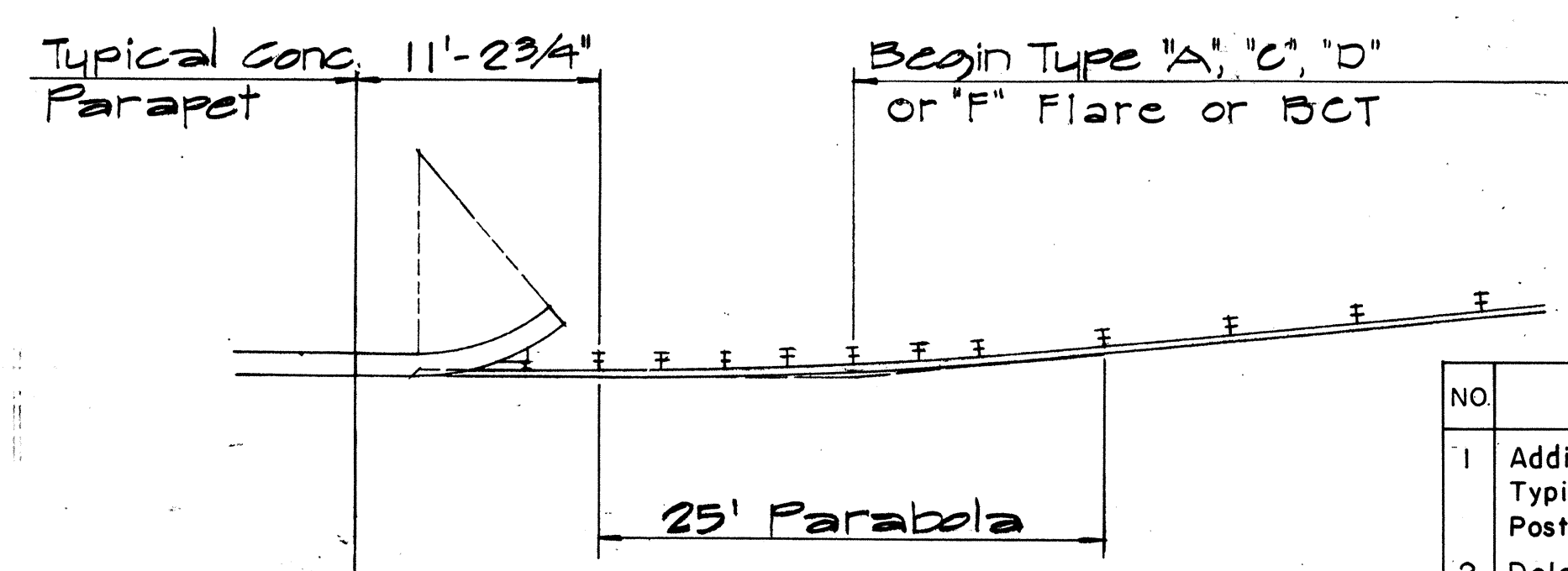
Sc. As Noted APRIL 1969

SHEET No. 15 OF 18 SHEETS DT 516

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	10J-02-75 UNIT 1	1972	31	42



NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 510



TYPICAL LAYOUT PLAN OF END POST CONNECTION

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

NO.	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-78

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

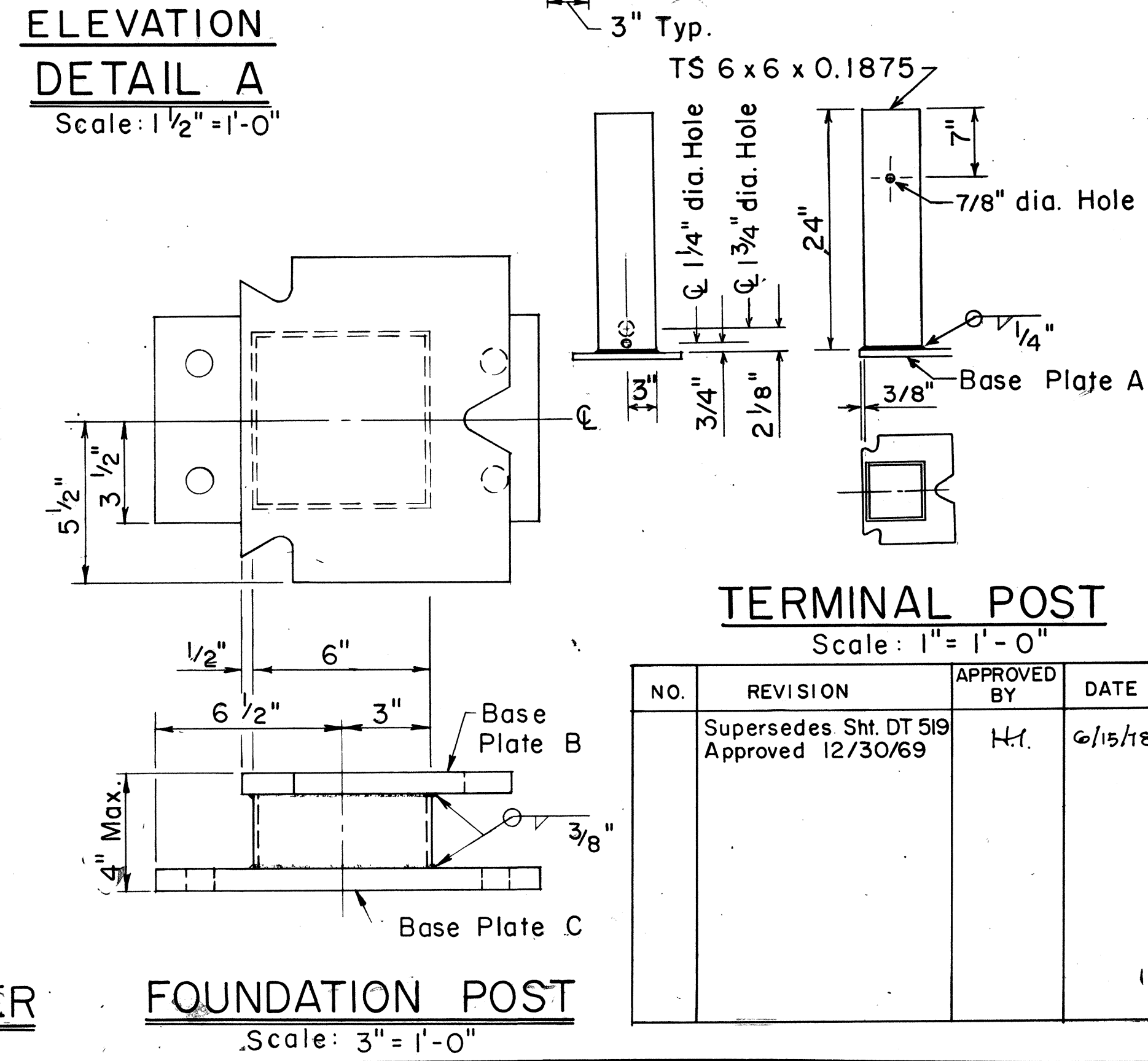
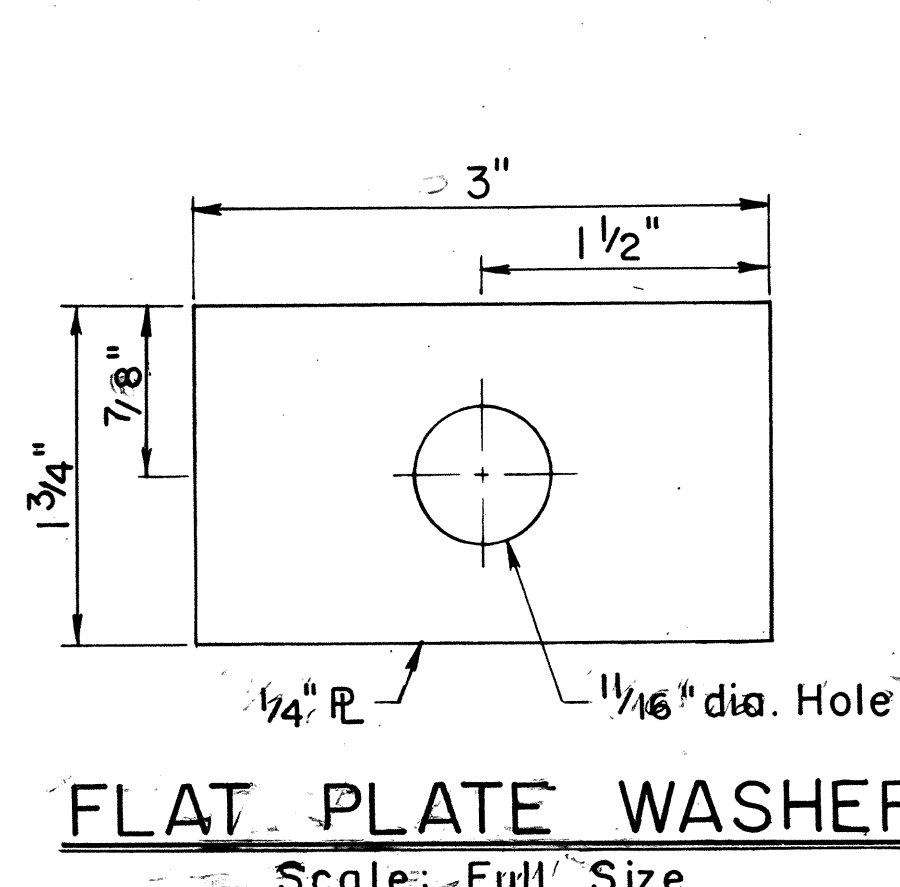
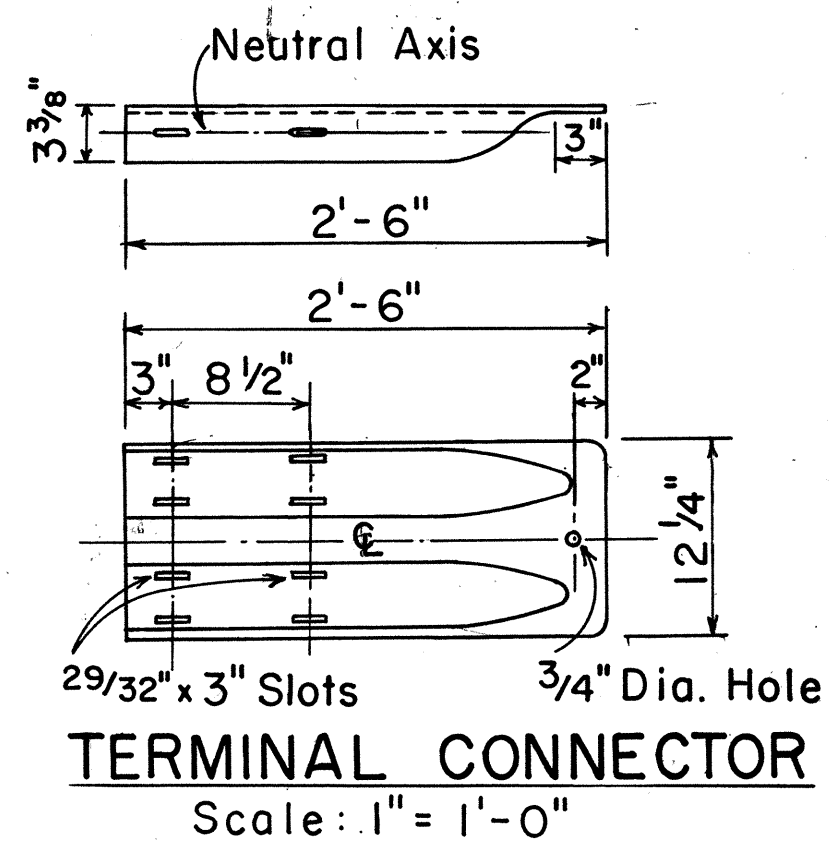
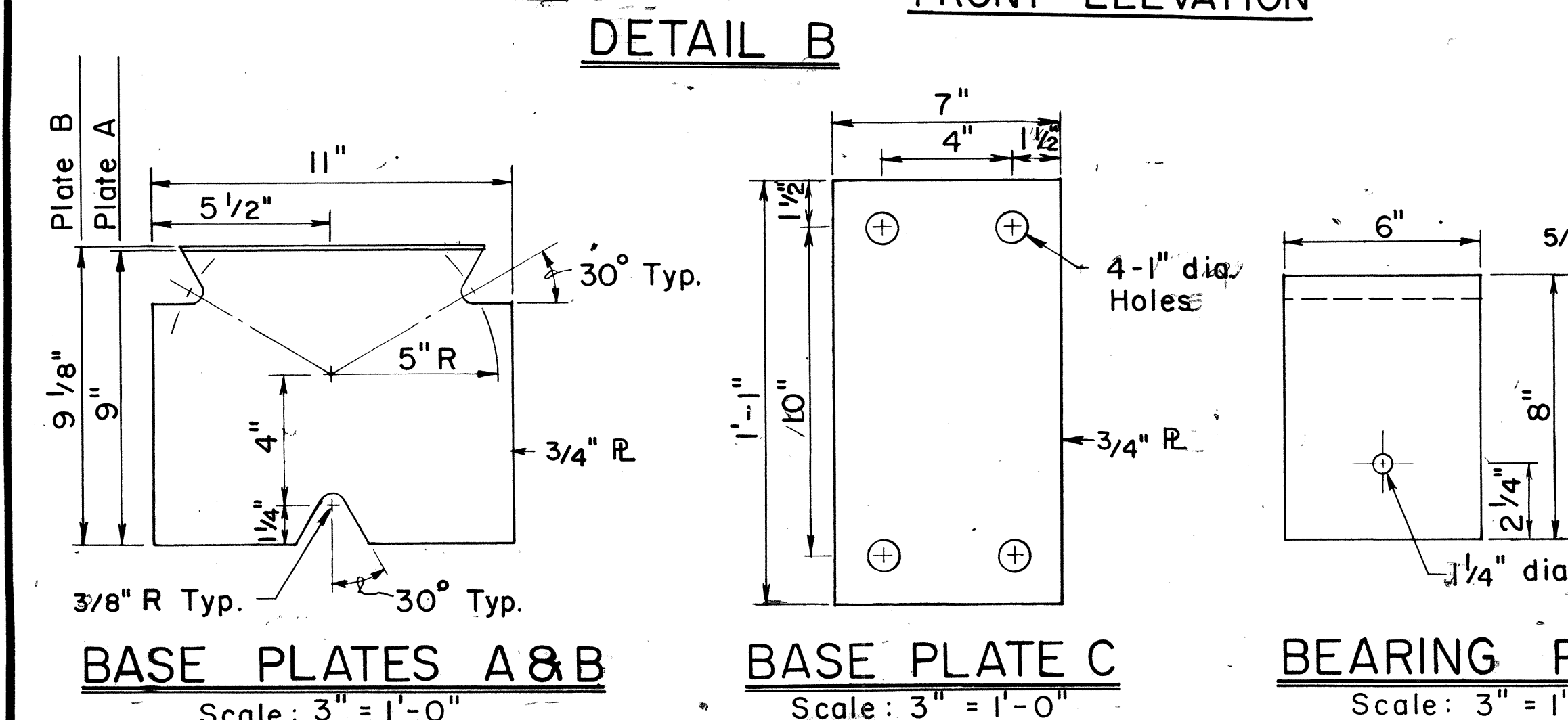
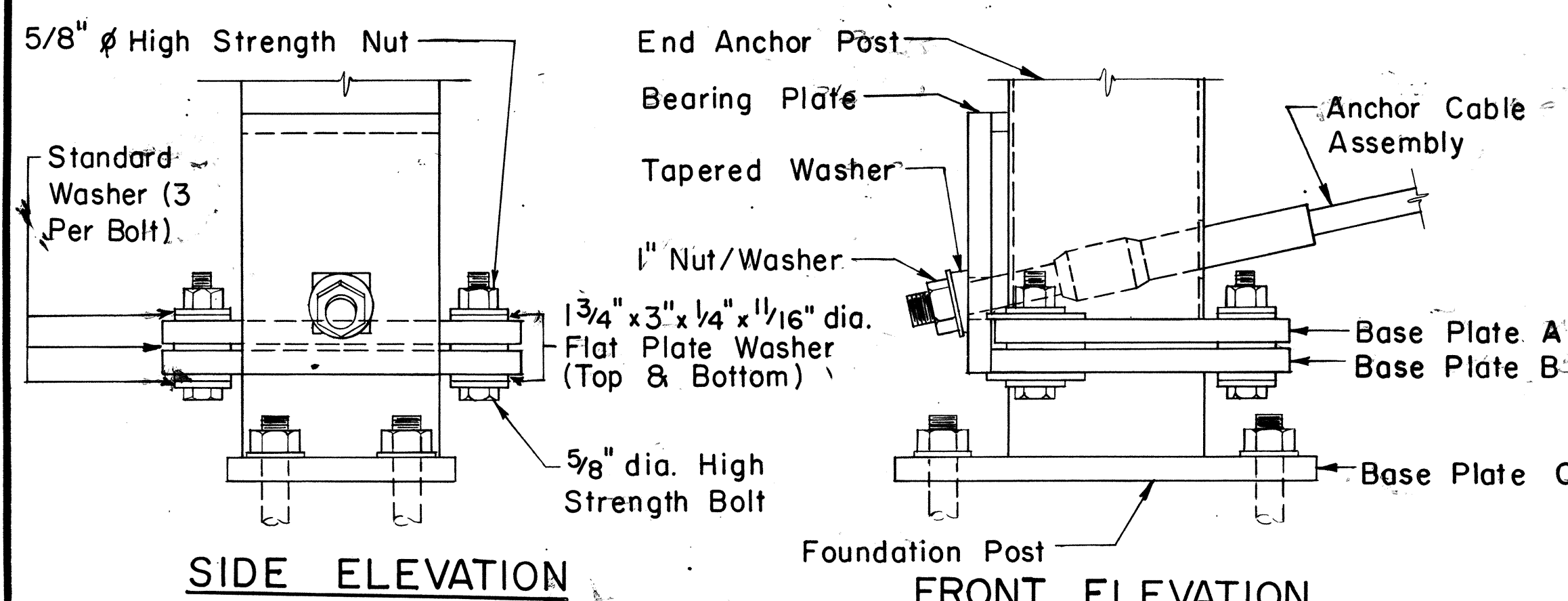
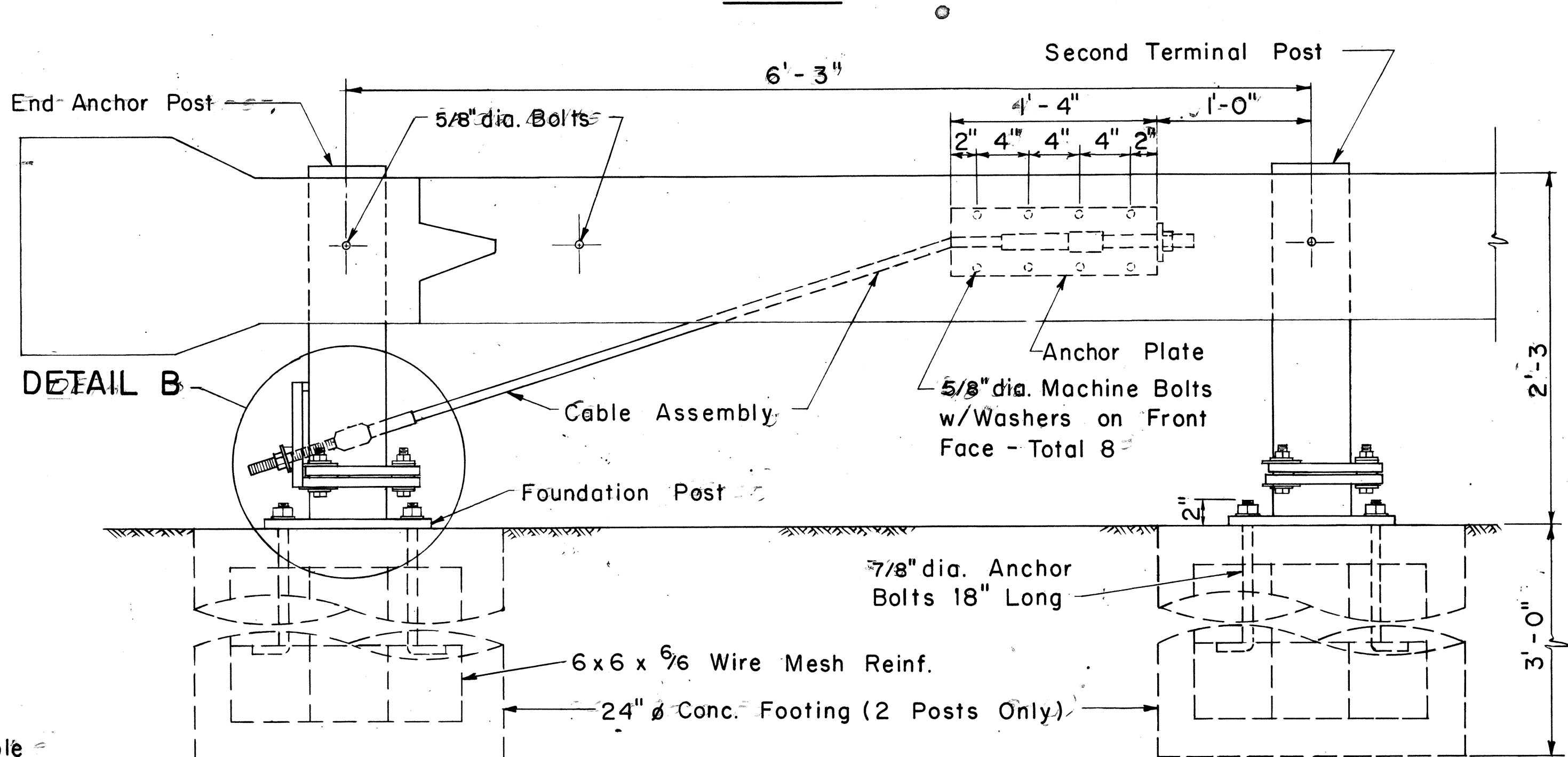
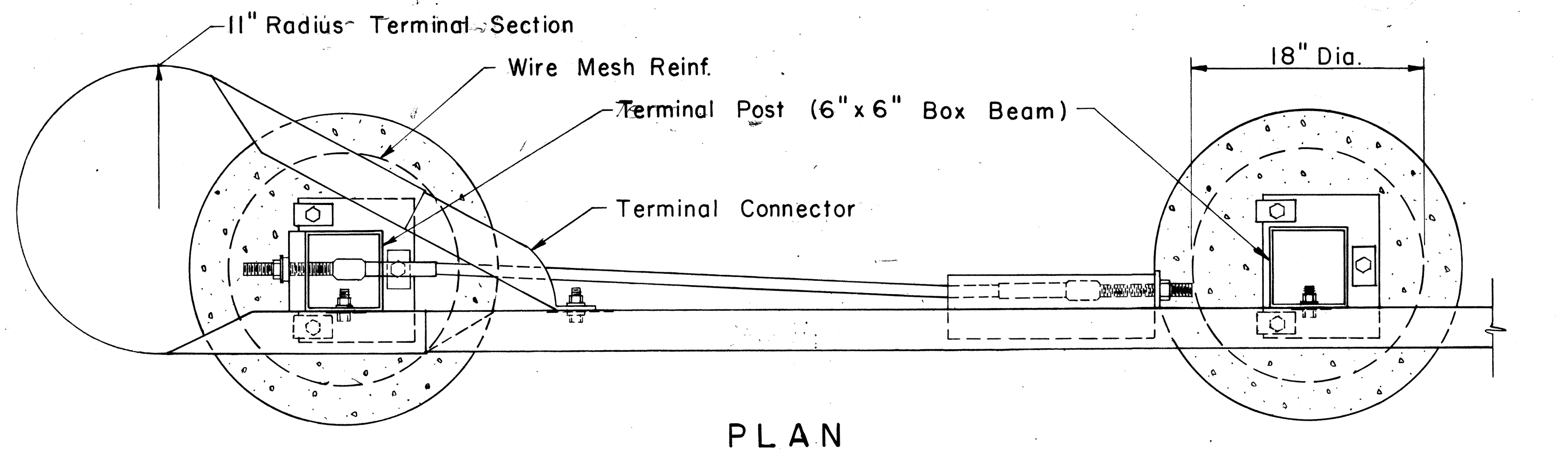
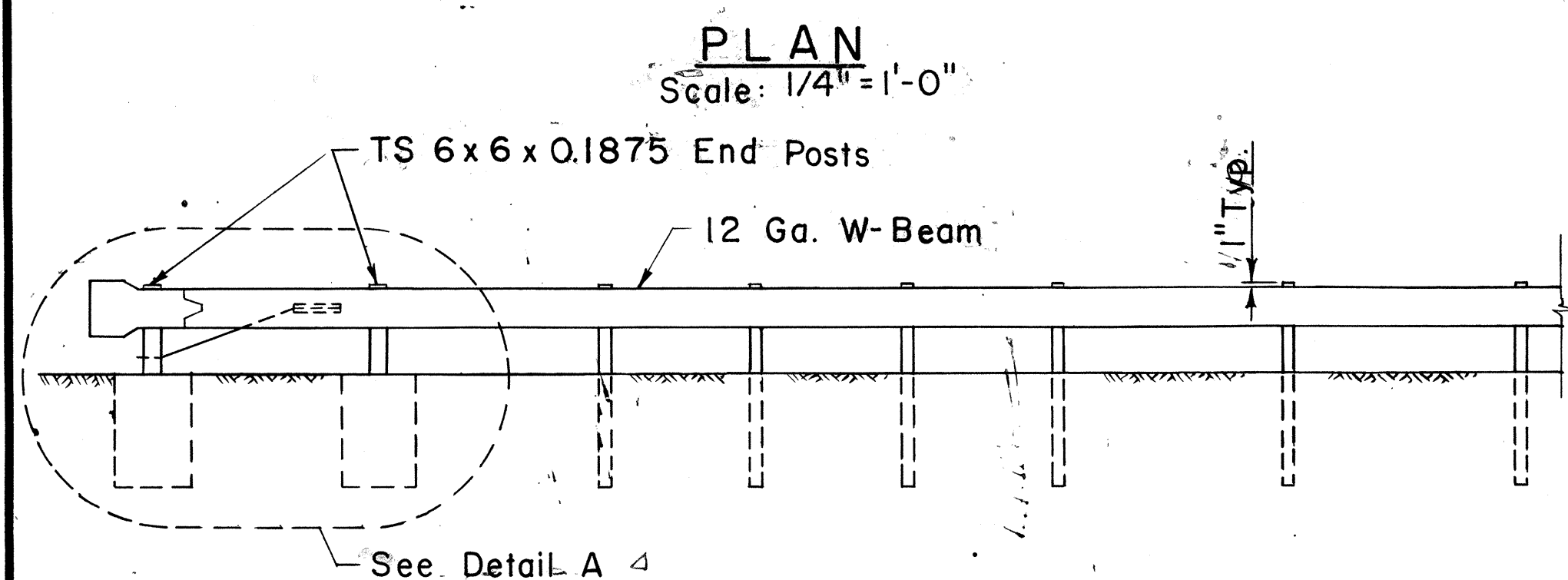
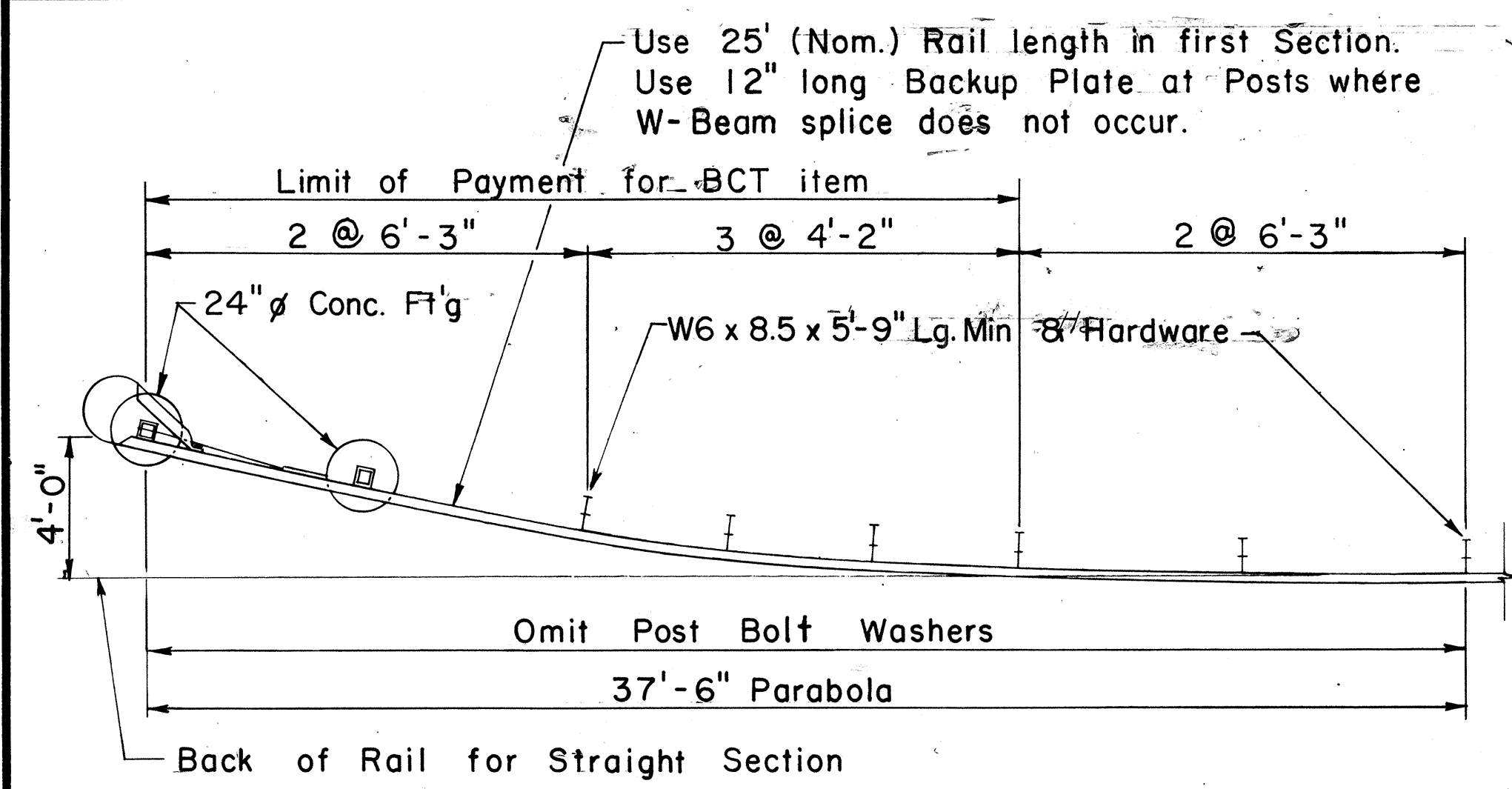
SHEET No. 16 OF 18 SHEETS DT 517

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	12F-02-75 UNIT 1	1979	32	42

NOTES:

1. Anchor Plate and Anchor Cable Assembly (Standard Swaged Fitting and Stud). See Standard Detail Sheet No. DT 520.
2. Other Anchor Cable Assemblies may be used. Minimum breaking strength of assembly should be 40,000 lbs.
3. Second Terminal Post does not require holes to accommodate Anchor Cable.
4. Slip Base Load shall be controlled with a Calibrated Torque Wrench - Torque 155 - 170 ft. lbs.
5. Concrete shall be Class A.



APPROVAL RECOMMENDED:
Eishi Tanaka
TRAFFIC ENGINEER
6/14/78
DATE

APPROVED:
Harbor Zakeishi
ASSISTANT CHIEF, ENGINEERING
6/15/78
DATE

NO.	REVISION	APPROVED BY	DATE
	Supersedes Sht. DT 519 Approved 12/30/69	H.I.	6/15/78

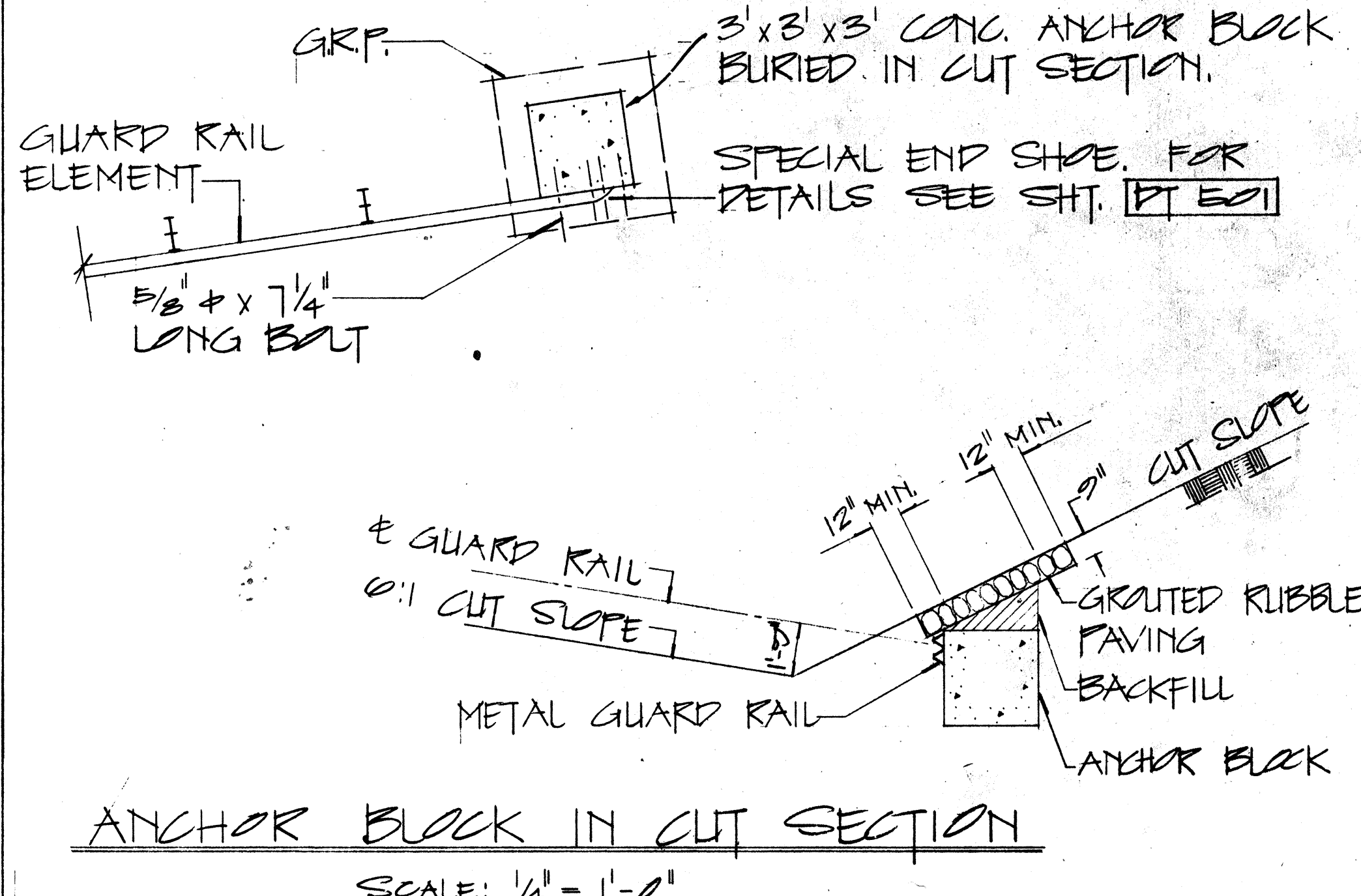
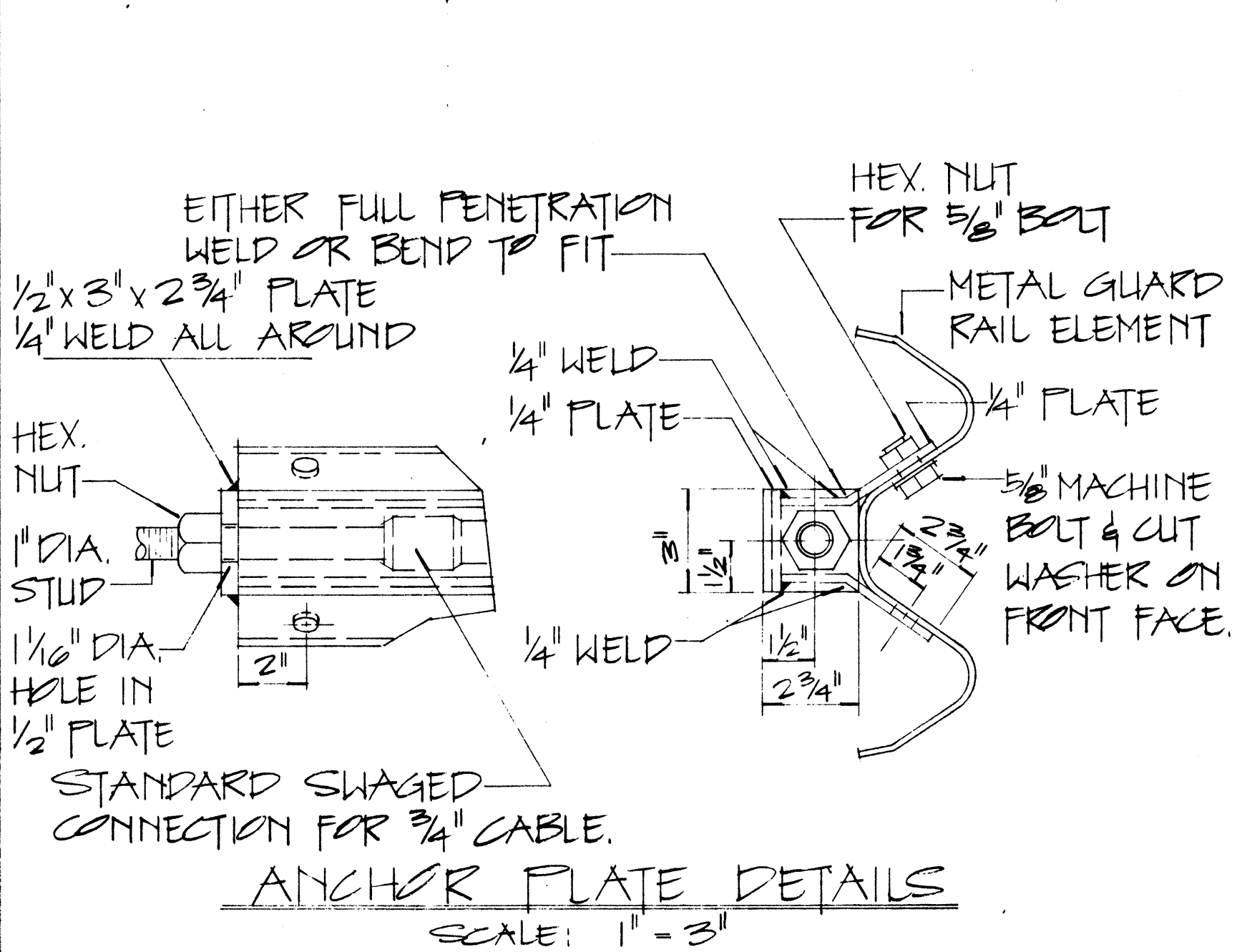
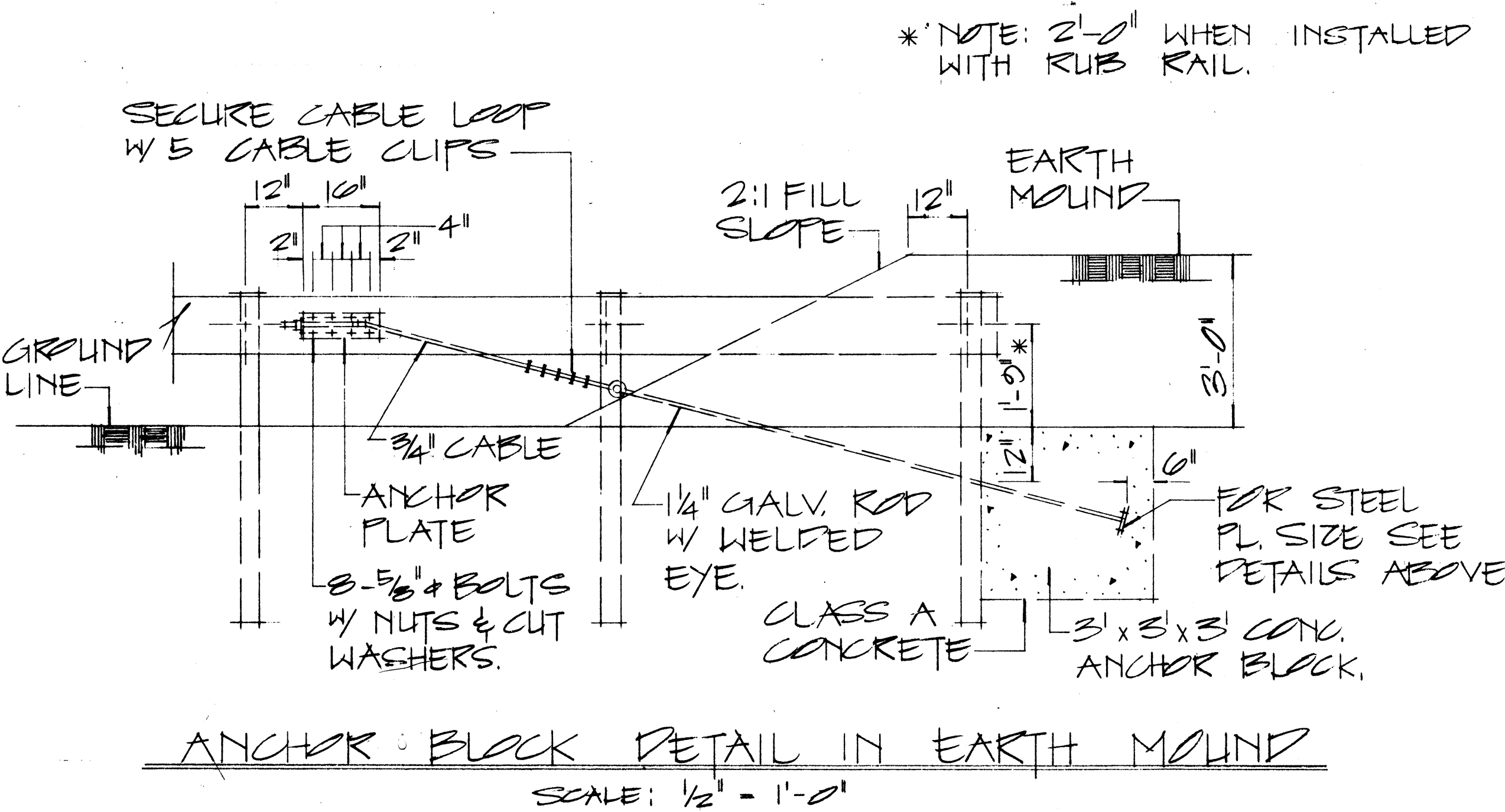
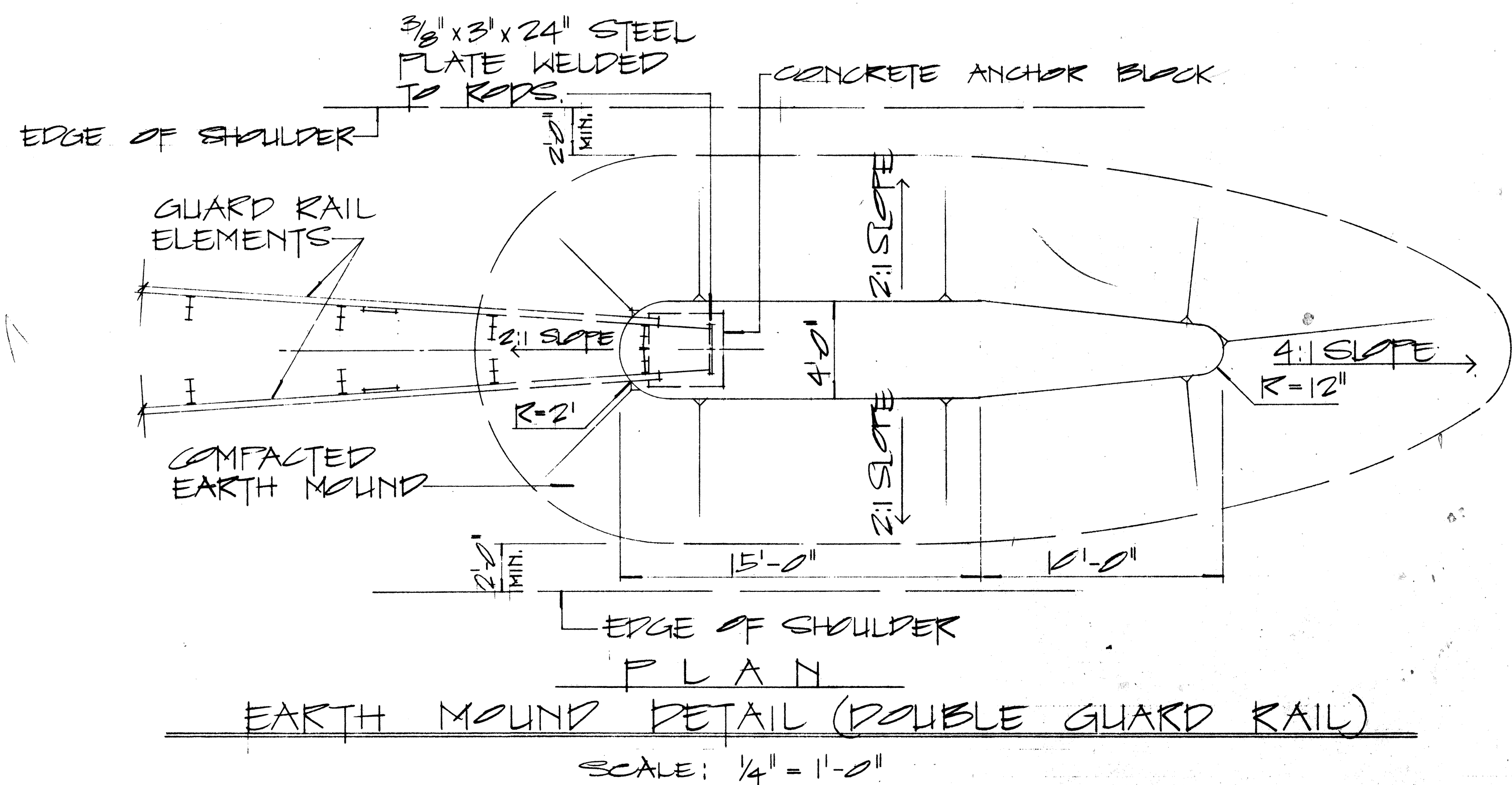
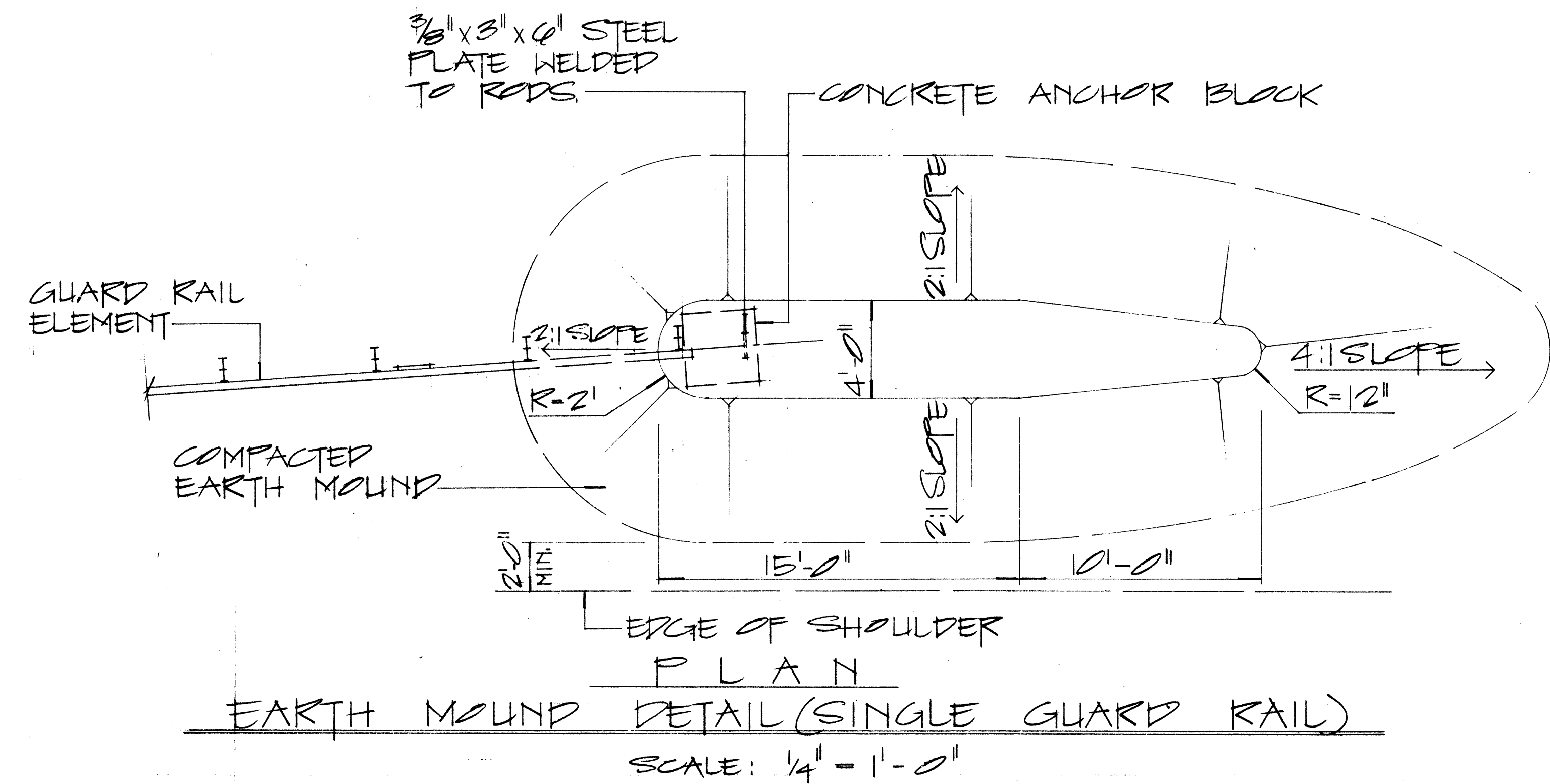
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAIL

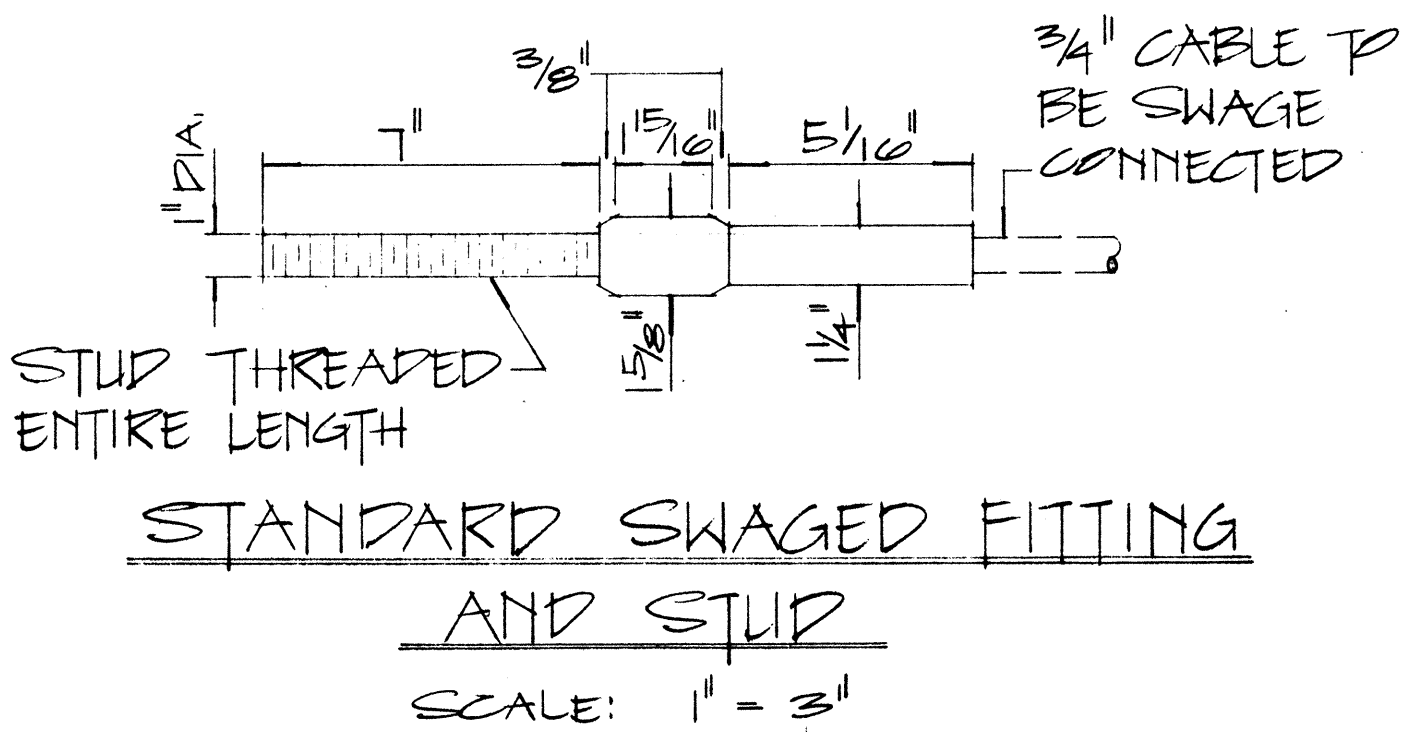
BREAKAWAY CABLE TERMINAL (BCT)

Scale: As Shown Date: June 1978
SHEET No. 17 OF 18 SHEETS DT 519

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	12J-0275 UNIT 1	1979	33	42



- 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.



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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
EARTH MOUND AND ANCHOR BLOCK DETAILS

SCALE: AS SHOWN 12/10/60
 SHEET No. 18 OF 18 SHEETS 12/520

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NOTED BY	
ORIGINAL PLAN	