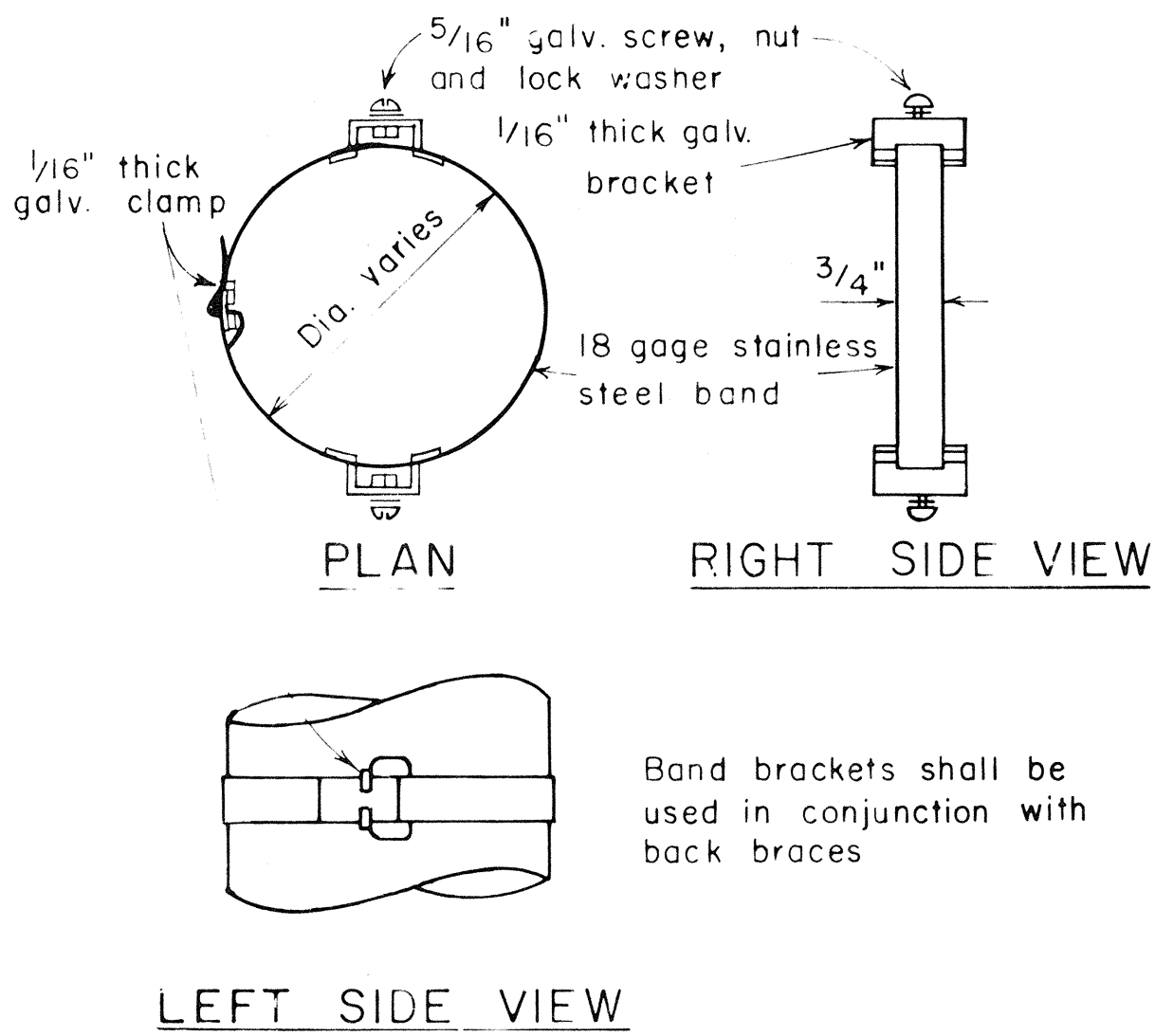
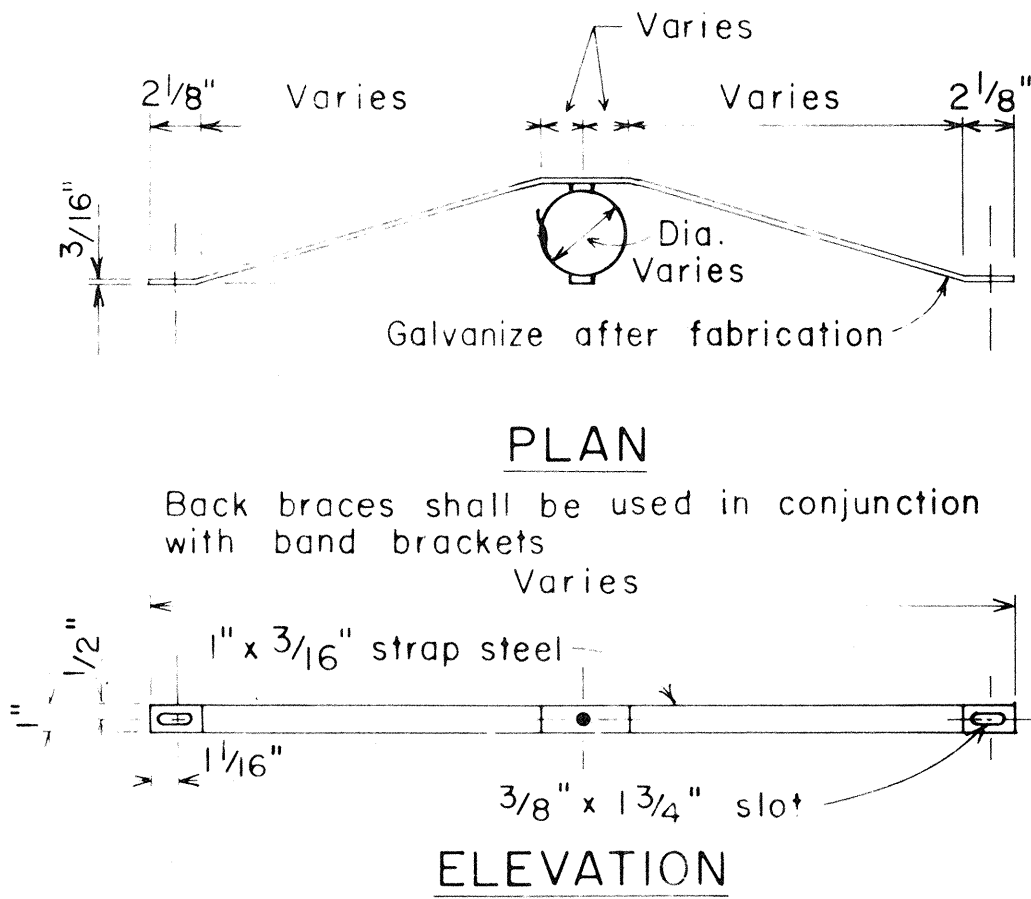


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	5	18

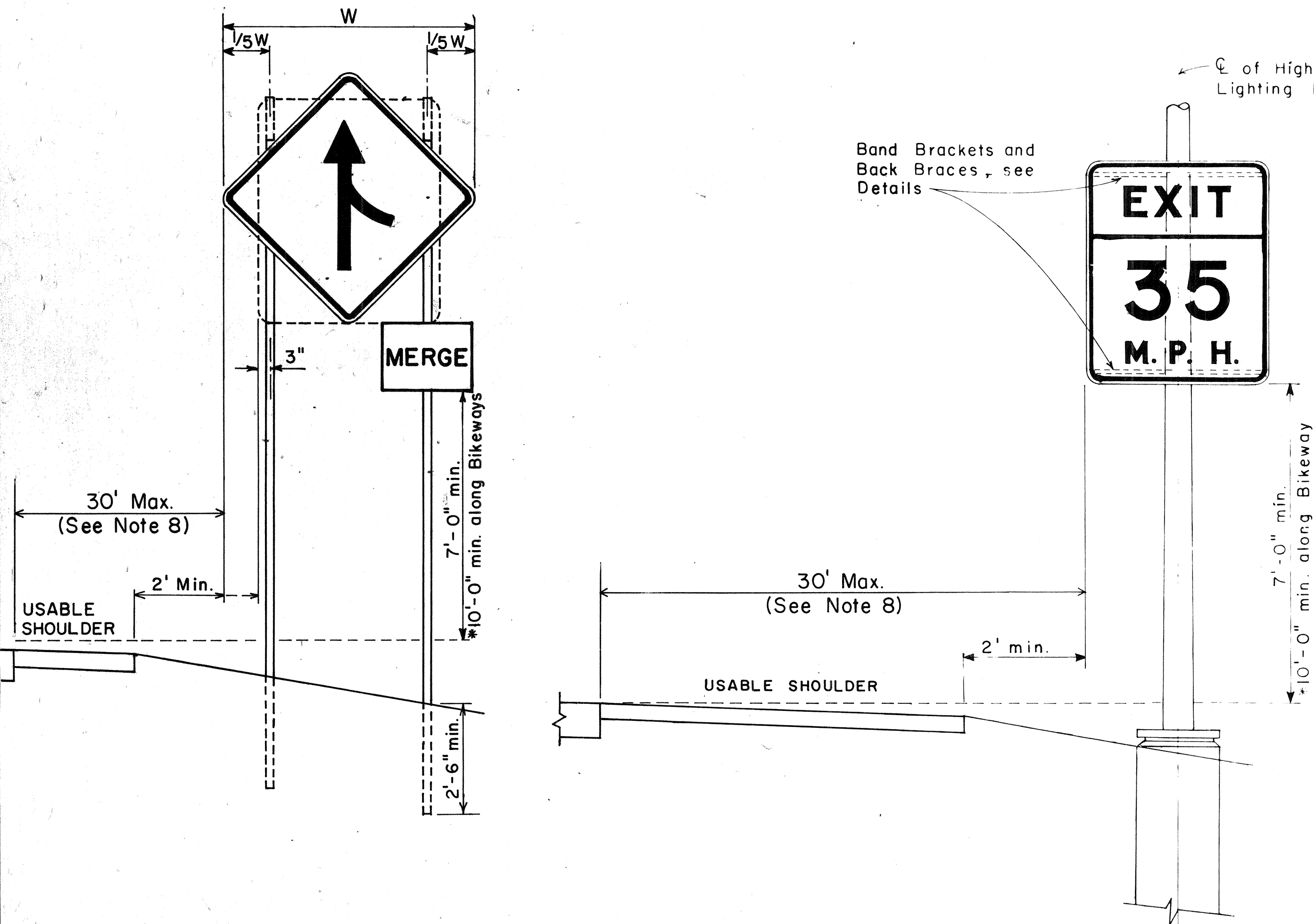
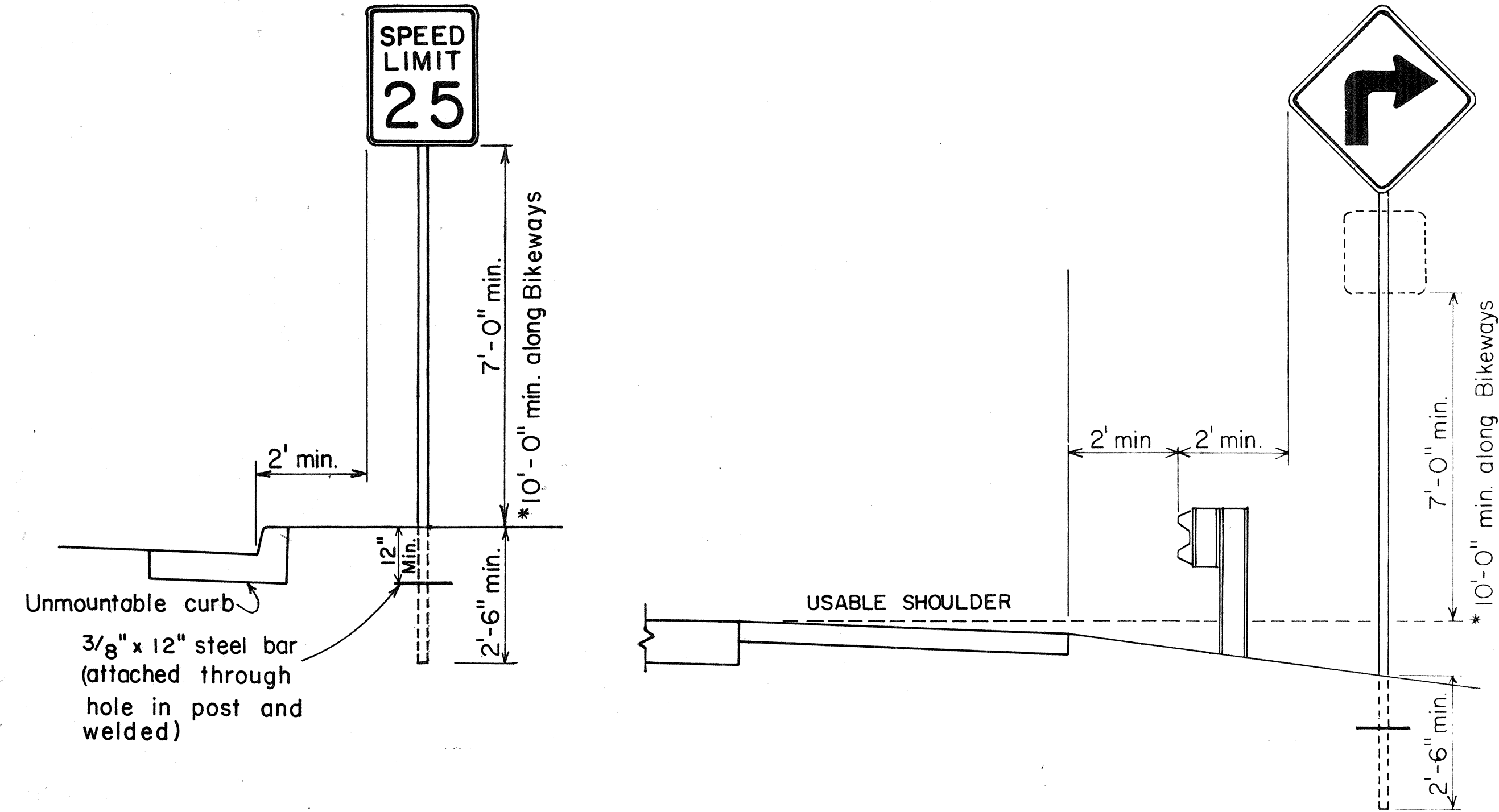
GENERAL NOTES

- 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 3/2" 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.
- See plans for special details.
- When clear roadside recovery areas are provided, Signs shall be placed as far from the edge of traveled way as possible up to a maximum of 30 feet. When possible they shall be placed in protected locations.
- Signs in medians shall be placed at midpoint of median up to a maximum distance of 30 feet from the edge of traveled way. When appropriate, signs for opposing directions shall be placed back to back.

BACK BRACE DETAILS
FOR BALANCED SIGN INSTALLATION



TYPICAL BAND BRACKET FOR
MOUNTING TRAFFIC SIGNS



HEIGHT AND LATERAL LOCATION OF SIGNS
TYPICAL INSTALLATION

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

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77
2	Revised depth of signpost	H.T.	5/13/79
3	Added Notes No. 8 & No. 9	H.T.	5/18/79

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

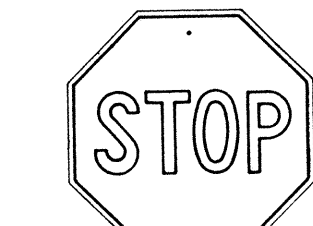
APPROVED:
Harbert S. Sakai 11/15/77
 ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale June, 1977

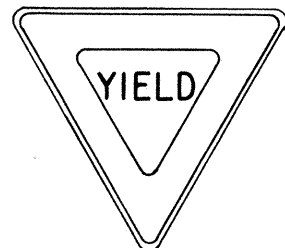
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	6	18



R1-1 30" x 30"
R1-1-A 36" x 36"

4-WAY

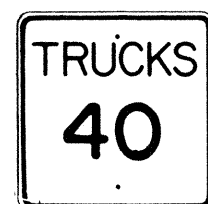
R1-3 12" x 6"
R1-3-A 18" x 9"



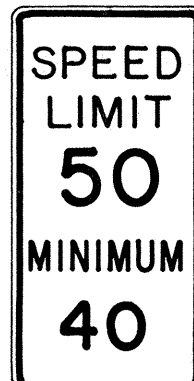
R1-2 36" x 36" x 36"
R1-2-A 48" x 48" x 48"



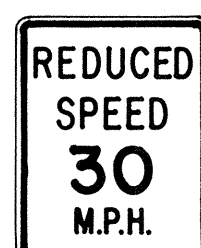
R2-1(50) 24" x 30"
R2-1(50)-A 48" x 60"



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"



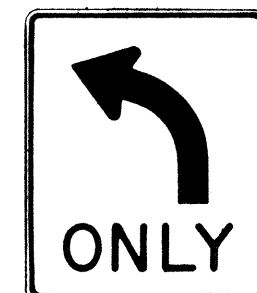
R3-2 24" x 24"
24" x 18"
R3-2-A 48" x 48"
48" x 36"



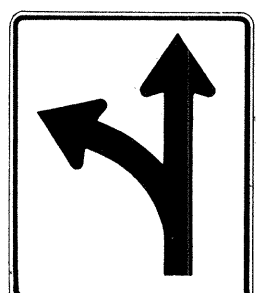
R3-3 24" x 24"
R3-3-A 48" x 48"



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"



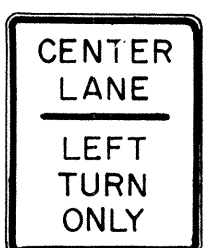
R3-6(L) 30" x 36"
R3-6(L)-A 48" x 60"



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"



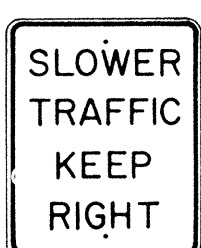
R3-9 24" x 30"



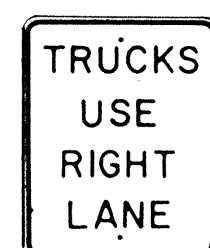
R4-1 24" x 30"



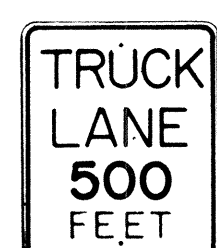
R4-2 24" x 30"



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



R4-5 24" x 30"



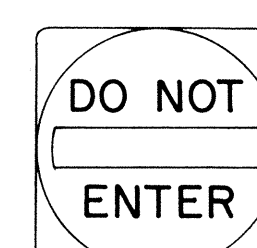
R4-6(500) 24" x 30"



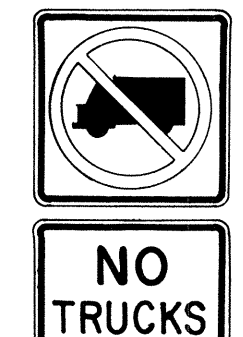
R4-7 24" x 30"
24" x 18"



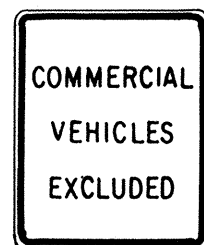
R4-8 24" x 30"
24" x 18"



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



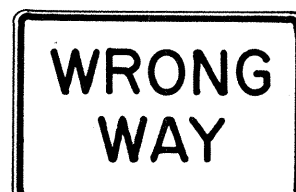
R5-2 24" x 24"
24" x 18"



R5-4 24" x 30"



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



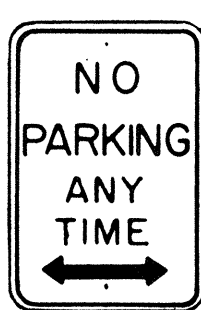
R5-9 36" x 24"



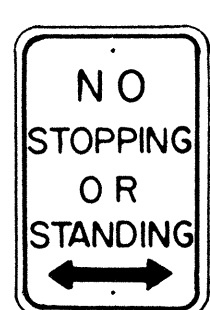
R6-1(R) 36" x 12"



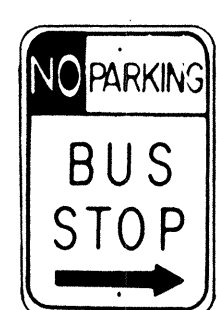
R6-2(R) 18" x 24"



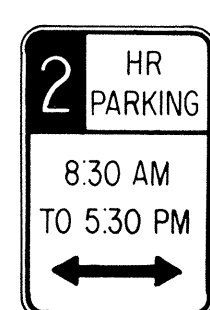
R7-1 12" x 18"
R7-1-A 24" x 30"



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



R7-1-7(R) 12" x 18"



R7-108 12" x 18"



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



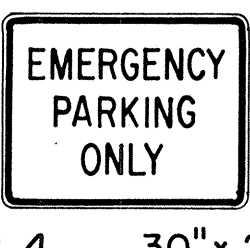
R8-1 24" x 30"



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"



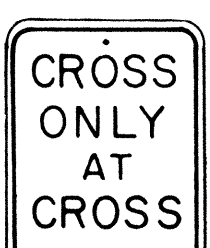
R8-6 24" x 30"



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



R9-1 18" x 24"



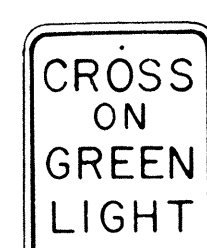
R9-2 12" x 18"



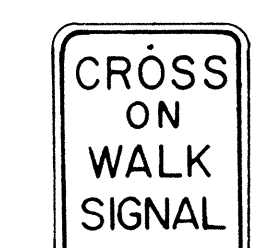
R9-3 12" x 18"



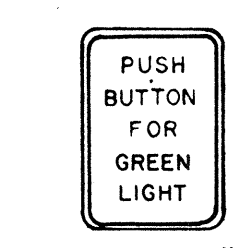
R9-4 18" x 24"



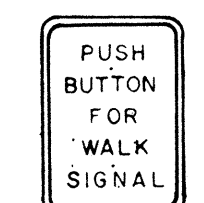
R10-1 12" x 18"



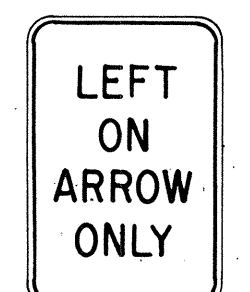
R10-2 12" x 18"



R10-3 9" x 12"



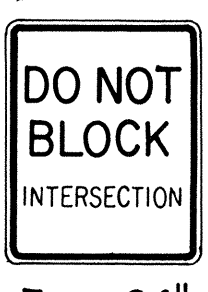
R10-4 9" x 12"



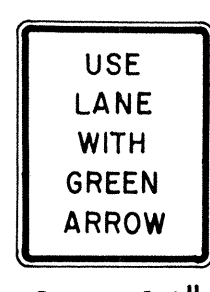
R10-5 24" x 30"



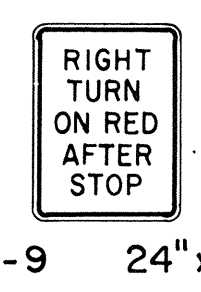
R10-6 24" x 36"



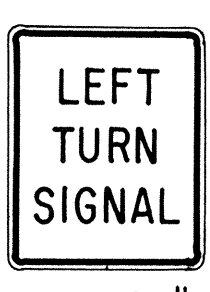
R10-7 24" x 30"



R10-8 24" x 30"



R10-9 24" x 30"



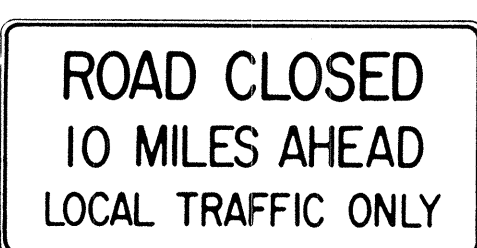
R10-10 24" x 30"



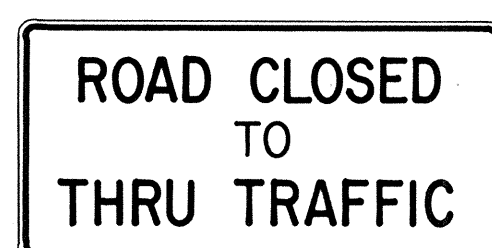
R11-1 24" x 30"



R11-2 48" x 30"



R11-3(10) 60" x 30"



R11-4 60" x 30"



R12-1(10) 24" x 30"

GENERAL NOTES

- 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 regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory 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.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER

3/11/72
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING

3-20-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.I.	3/20/72
2	Revised General Note 1.	H.I.	10/14/74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

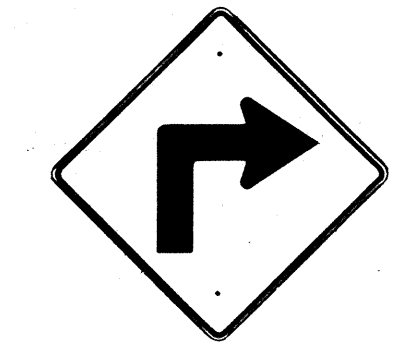
STANDARD DETAILS REGULATORY SIGNS

NOT TO SCALE

SHEET No. 2 OF 13 SHEETS DT 101

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL PLAN	_____

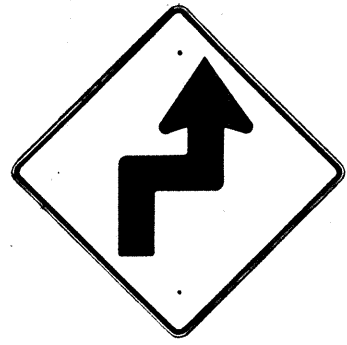
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	270A-01-79 LT-H-01-79	1979	7	18



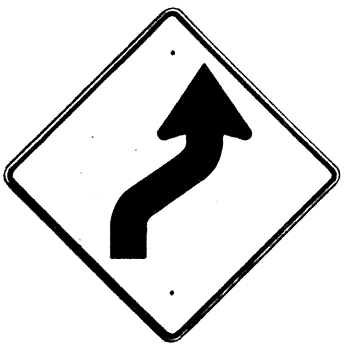
W1-1(R) 30"x 30"
W1-1(R)-A 48"x 48"



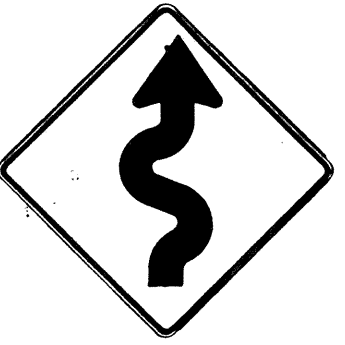
W1-2(R) 30"x 30"
W1-2(R)-A 48"x 48"



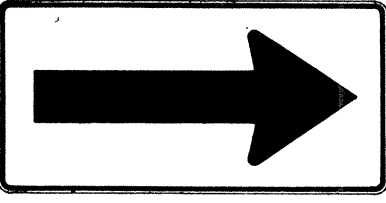
W1-3(R) 30"x 30"
W1-3(R)-A 48"x 48"



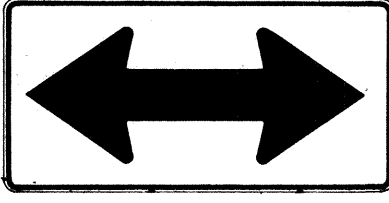
W1-4(R) 30"x 30"
W1-4(R)-A 48"x 48"



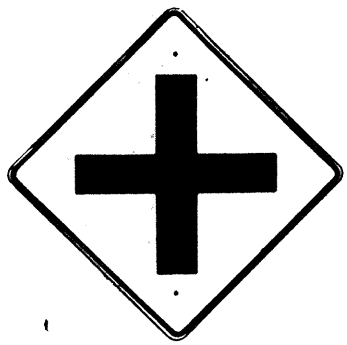
W1-5(R) 30"x 30"
W1-5(R)-A 48"x 48"



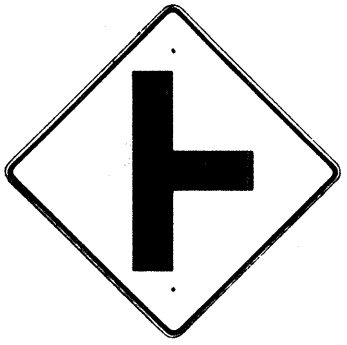
W1-6 48"x 24"



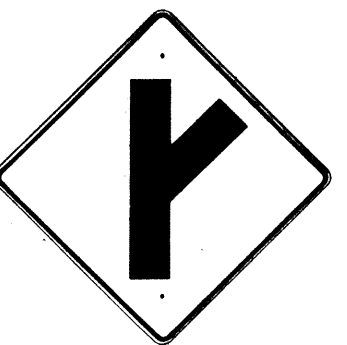
W1-7 48"x 24"



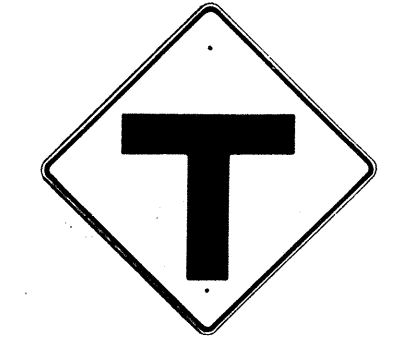
W2-1 30"x 30"
W2-1-A 48"x 48"



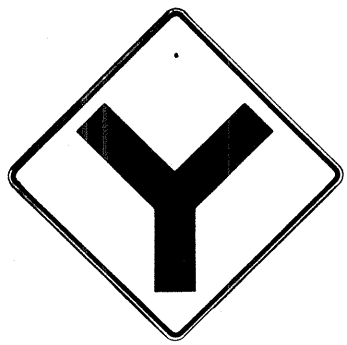
W2-2 30"x 30"
W2-2-A 48"x 48"



W2-3(R) 30"x 30"
W2-3(R)-A 48"x 48"



W2-4 30"x 30"
W2-4-A 48"x 48"



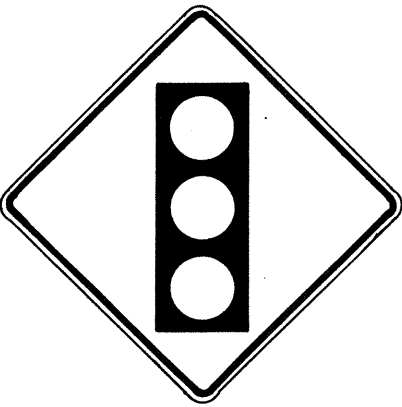
W2-5 30"x 30"
W2-5-A 48"x 48"



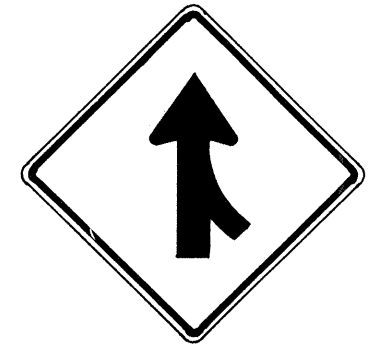
W3-1 30"x 30"
W3-1-A 36"x 36"



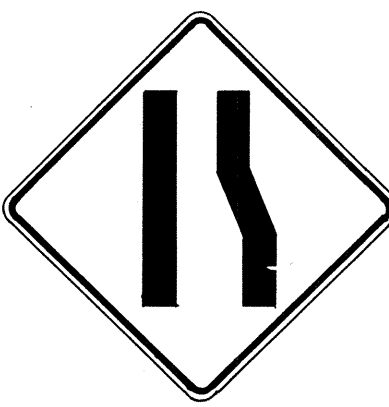
W3-2 30"x 30"
W3-2-A 36"x 36"



SIGNAL AHEAD
W3-3 36"x 36"
24"x 18"



MERGE
W4-1(R) 30"x 30"
24"x 18"
W4-1(R)-A 48"x 48"
24"x 18"



W4-2(R) 36"x 36"
W4-2(R)-A 48"x 48"



W5-1 36"x 36"



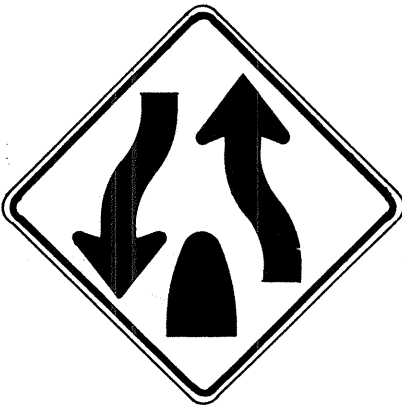
W5-2 30"x 30"
W5-2-A 36"x 36"



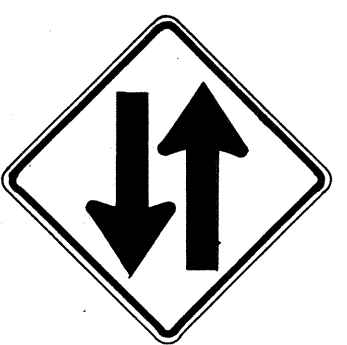
W5-3 36"x 36"



DIVIDED HIGHWAY
W6-1 36"x 36"
24"x 18"



DIVIDED HIGHWAY ENDS
W6-2 36"x 36"
24"x 18"



TWO WAY TRAFFIC
W6-3 30"x 30"
24"x 18"
W6-3-A 36"x 36"
24"x 18"
W6-3-B 48"x 48"
24"x 18"



HILL
W7-1 30"x 30"
24"x 18"
W7-1-A 36"x 36"
24"x 18"



USE LOW GEAR
W7-2 24"x 18"



BUMP
W8-1 30"x 30"
W8-1-A 36"x 36"



DIP
W8-2 30"x 30"
W8-2-A 36"x 36"



PAVEMENT ENDS
W8-3 30"x 30"
W8-3-A 36"x 36"



SOFT SHOULDER
W8-4 30"x 30"
W8-4-A 36"x 36"



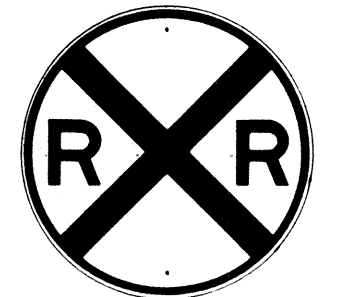
SLIPPERY WHEN WET
W8-5 30"x 30"
24"x 18"
W8-5-A 36"x 36"
24"x 18"



RIGHT LANE ENDS
W9-1(R) 30"x 30"
W9-1(R)-A 36"x 36"
W9-1(R)-B 48"x 48"



LANE ENDS MERGE LEFT
W9-2(L) 36"x 36"
W9-2(L)-A 48"x 48"



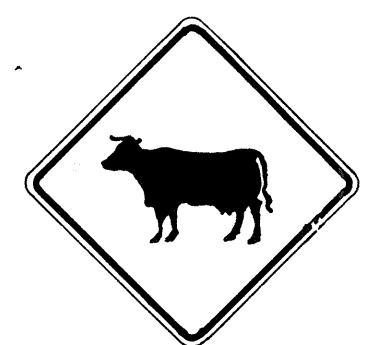
W10-1 36" Diameter



BIKE XING
W11-1 30"x 30"
24"x 18"
W11-1-A 36"x 36"
24"x 18"



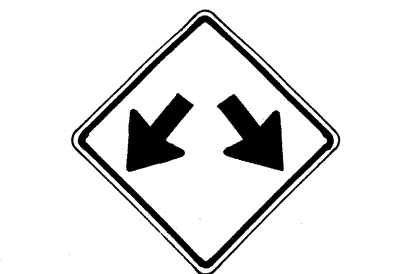
PED XING
W11-2 30"x 30"
24"x 18"
W11-2-A 36"x 36"
24"x 18"



CATTLE XING
W11-4 30"x 30"
24"x 18"
W11-4-A 36"x 36"
24"x 18"



FARM MACHINERY
W11-5 30"x 30"
24"x 18"
W11-5-A 36"x 36"
24"x 18"



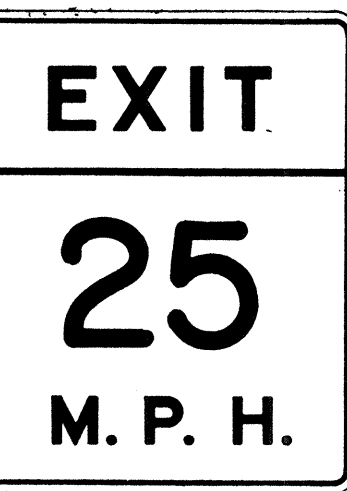
W12-1 24"x 24"
W12-1-A 36"x 36"
W12-1-B 48"x 48"



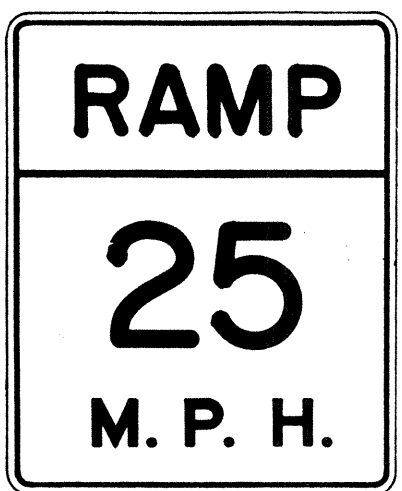
LOW CLEARANCE
W12-2 (12'-6") 36"x 36"
24"x 18"



25 M.P.H.
W13-1(25) 18"x 18"
W13-1(25)-A 24"x 24"



W13-2(25) 48"x 60"



W13-3(25) 48"x 60"



W14-1 30"x 30"



W14-3 36"x 48" x 48"

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:
TRAFFIC ENGINEER
3/17/12
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING
3-20-12
DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS WARNING SIGNS

NOT TO SCALE

SHEET No. 3 OF 13 SHEETS DT 102

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

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	8	18



CW20-1a 48"x 48"



CW20-2d 48"x 48"



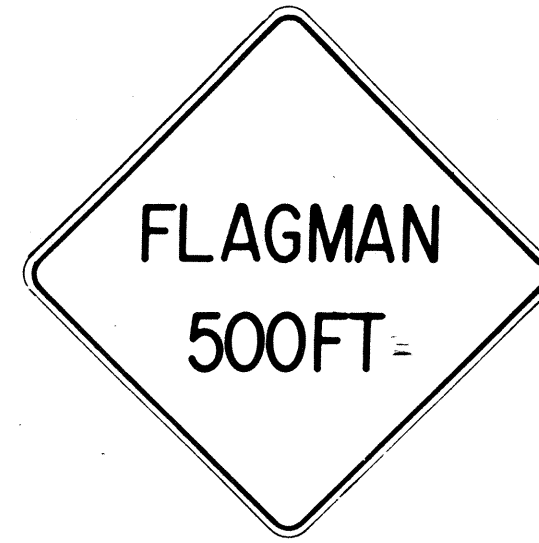
CW20-3b 48"x 48"



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"



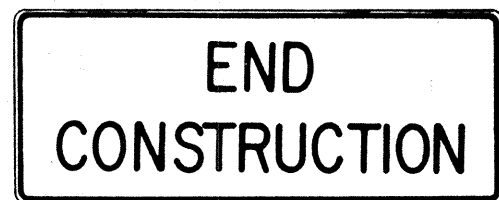
CW22-2 42"x 36"



CW22-3 42"x 36"



CG20-1(5) 60"x 36"



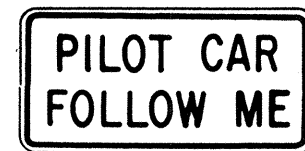
CG20-2 60"x 24"



CM4-9(R) 30"x 24"



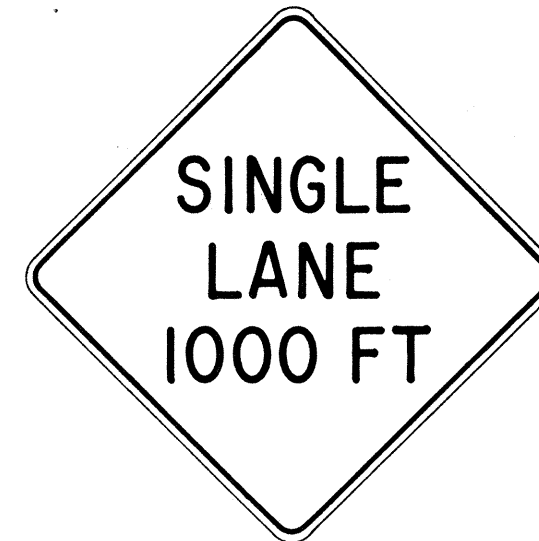
CM4-10(R) 48"x 18"



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.C.	3/23/72
2	Revised General Note 1	H.C.	10/16/74
3	Revised General Note 2	M.H.	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	H.C.	9-14-76

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

APPROVED:
Shirley Salsich 2/23/72
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 4 OF 13 SHEETS DT 104

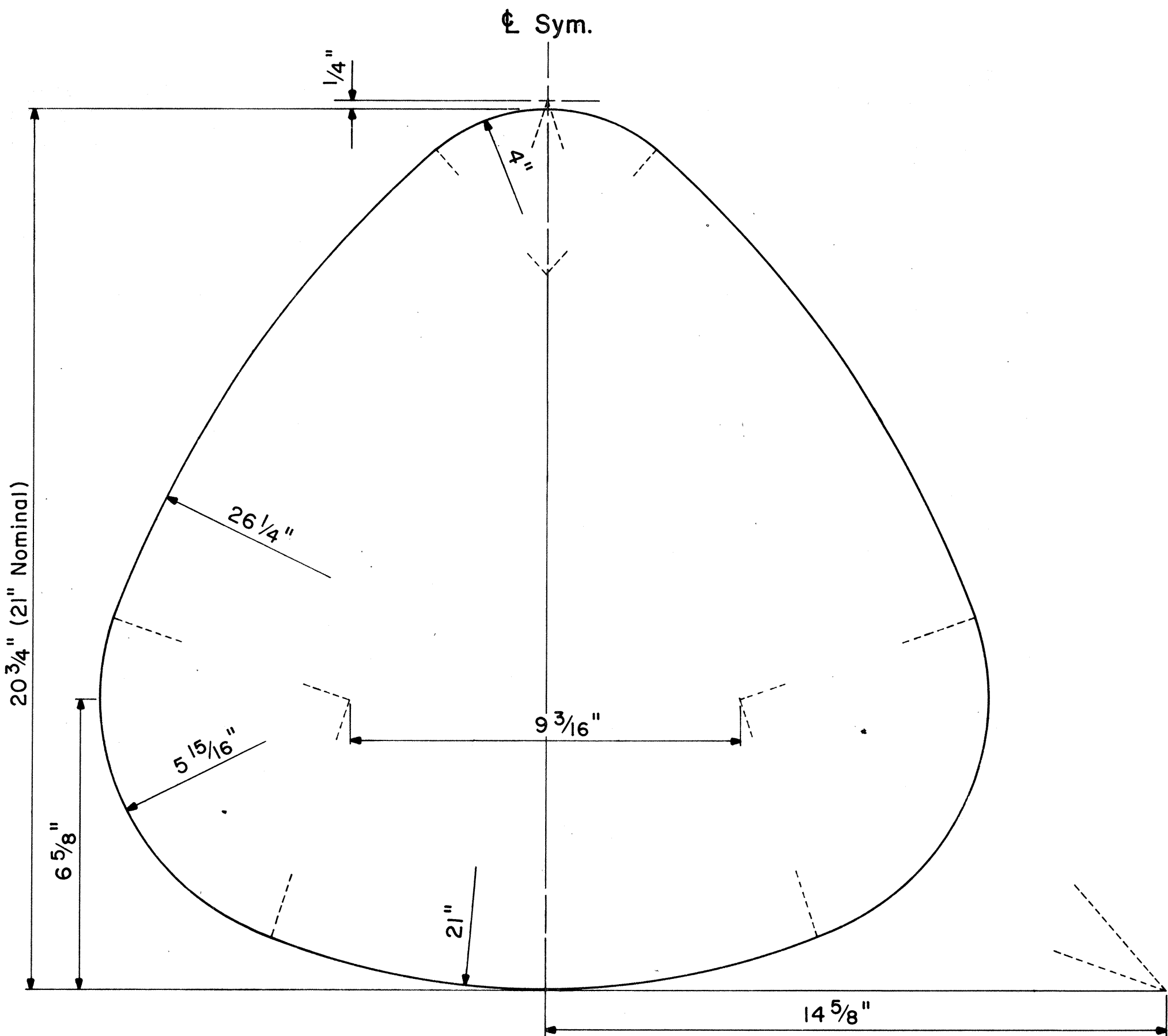
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	9	18

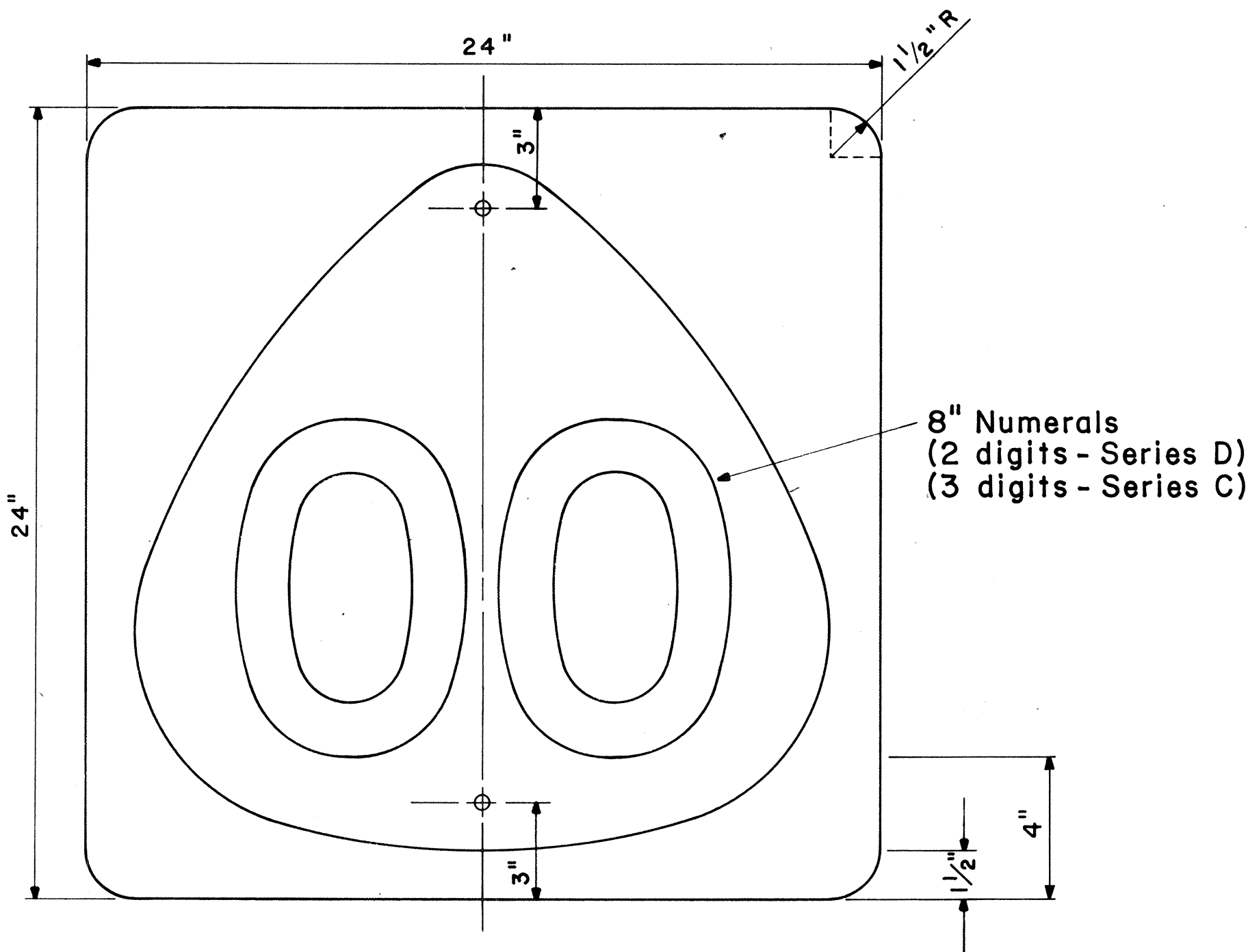
GENERAL NOTES

- Marker details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, "Standard Alphabets for Highway Signs," 1966, and "Standard Highway Signs," 1972, and as amended.
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for marker message. (R) or (L) indicates right or left.
- Sign message of Cardinal Direction Marker (M3 series) shall be denoted by the following:

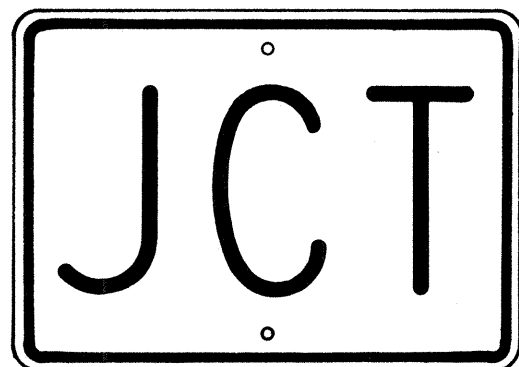
M3-1 : NORTH
M3-2 : EAST
M3-3 : SOUTH
M3-4 : WEST
- Markers prefixed with "IM" on the plans shall have a white legend on a blue background.



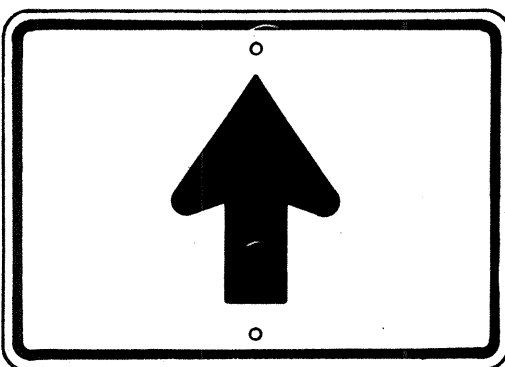
STATE ROUTE MARKER DETAIL
Not to Scale



STATE ROUTE MARKER
M1-6 (00) 24"x 24"
Scale: 1/4" = 1"



M2-1 21"x 15"



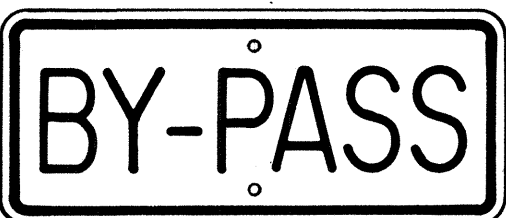
M6-3 21"x 15"



M3-1 24"x 12"
M3-1-A 36"x 18"



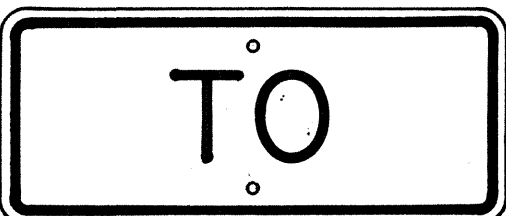
M4-1 24"x 12"



M4-2 24"x 12"



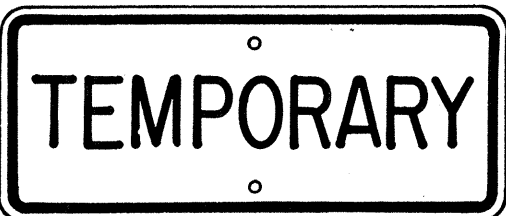
M4-3 24"x 12"



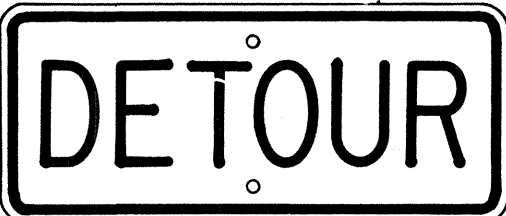
M4-5 24"x 12"



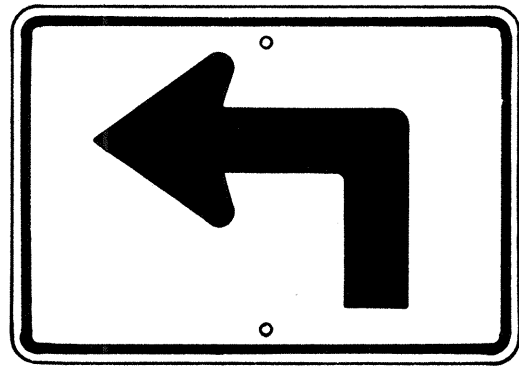
M4-6 24"x 12"



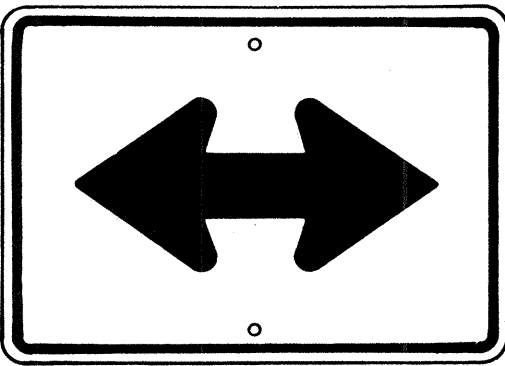
M4-7 24"x 12"



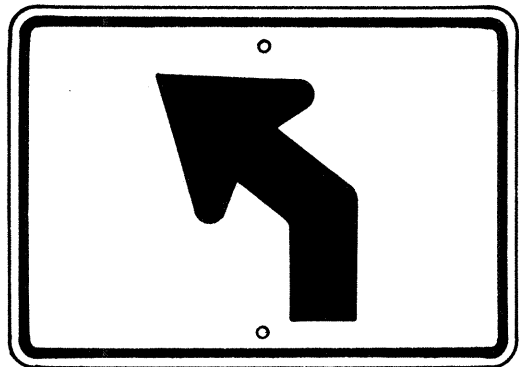
M4-8 24"x 12"



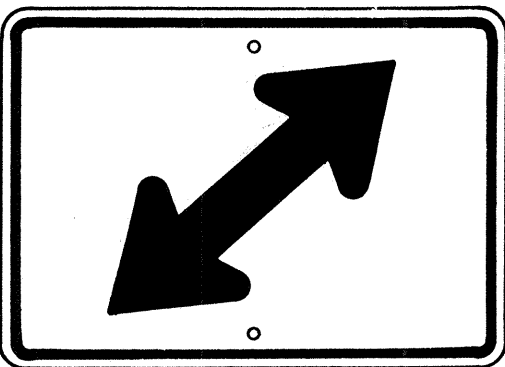
M5-1(L) 21"x 15"



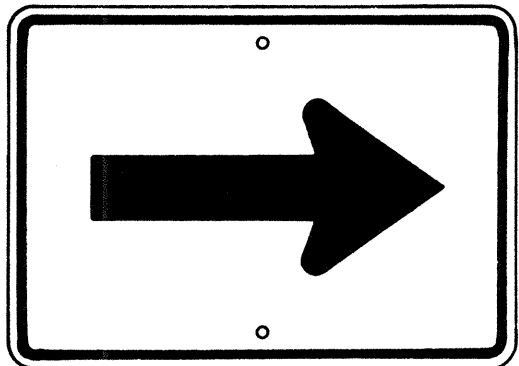
M6-4 21"x 15"



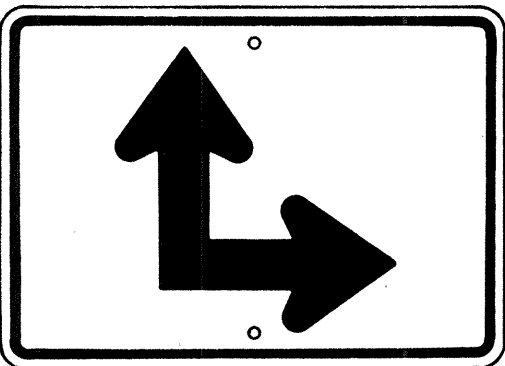
M5-2(L) 21"x 15"



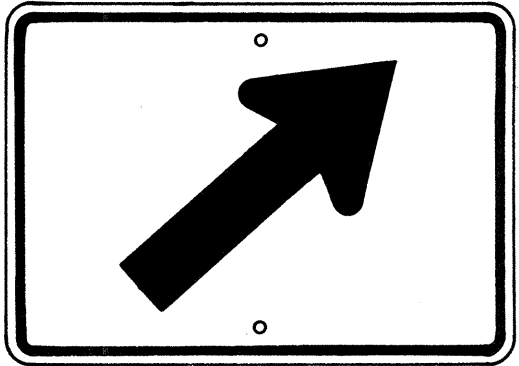
M6-5(R) 21"x 15"



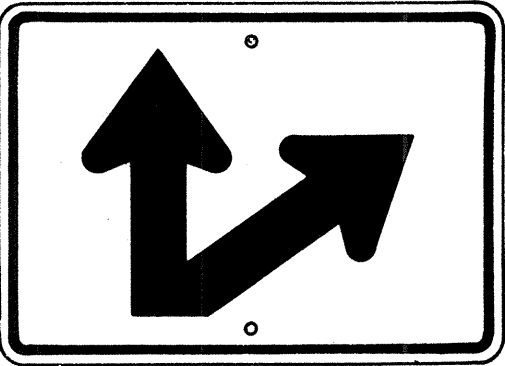
M6-1 21"x 15"



M6-6(R) 21"x 15"



M6-2(R) 21"x 15"



M6-7(R) 21"x 15"

AUXILIARY MARKERS

Not to Scale

APPROVAL RECOMMENDED:

Erich Tanaka
TRAFFIC ENGINEER 6/6/72
DATE

APPROVED:

Arthur S. Sakai
ASSISTANT CHIEF, ENGINEERING 6-7-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 105 Approved 12-30-69	H.C.	6/1/72
2	Revised General Note 1	H.C.	10/16/74

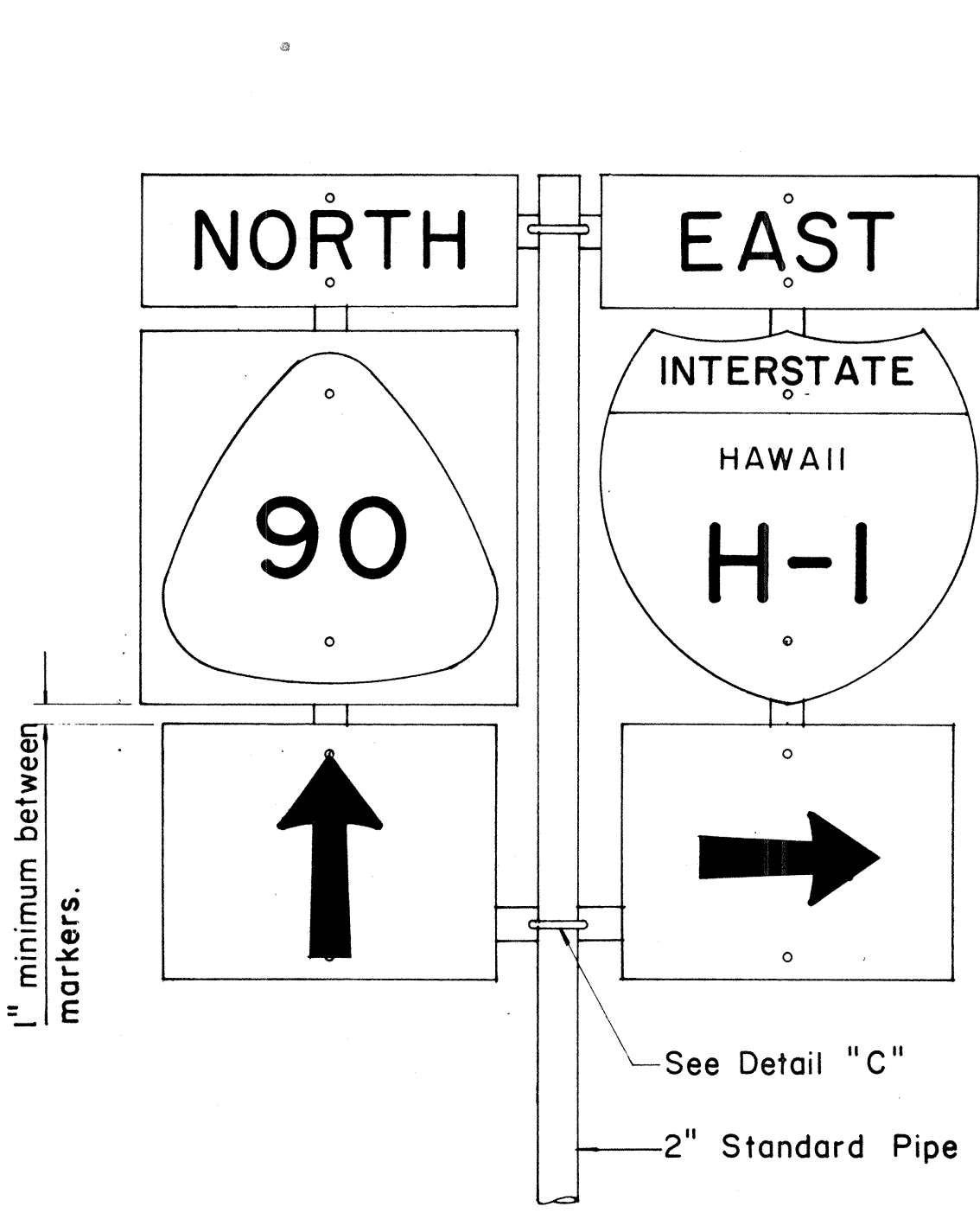
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
STATE ROUTE MARKER
AND AUXILIARY MARKERS

Scale: As Shown
SHEET No 5 OF 18 SHEETS DT 105

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

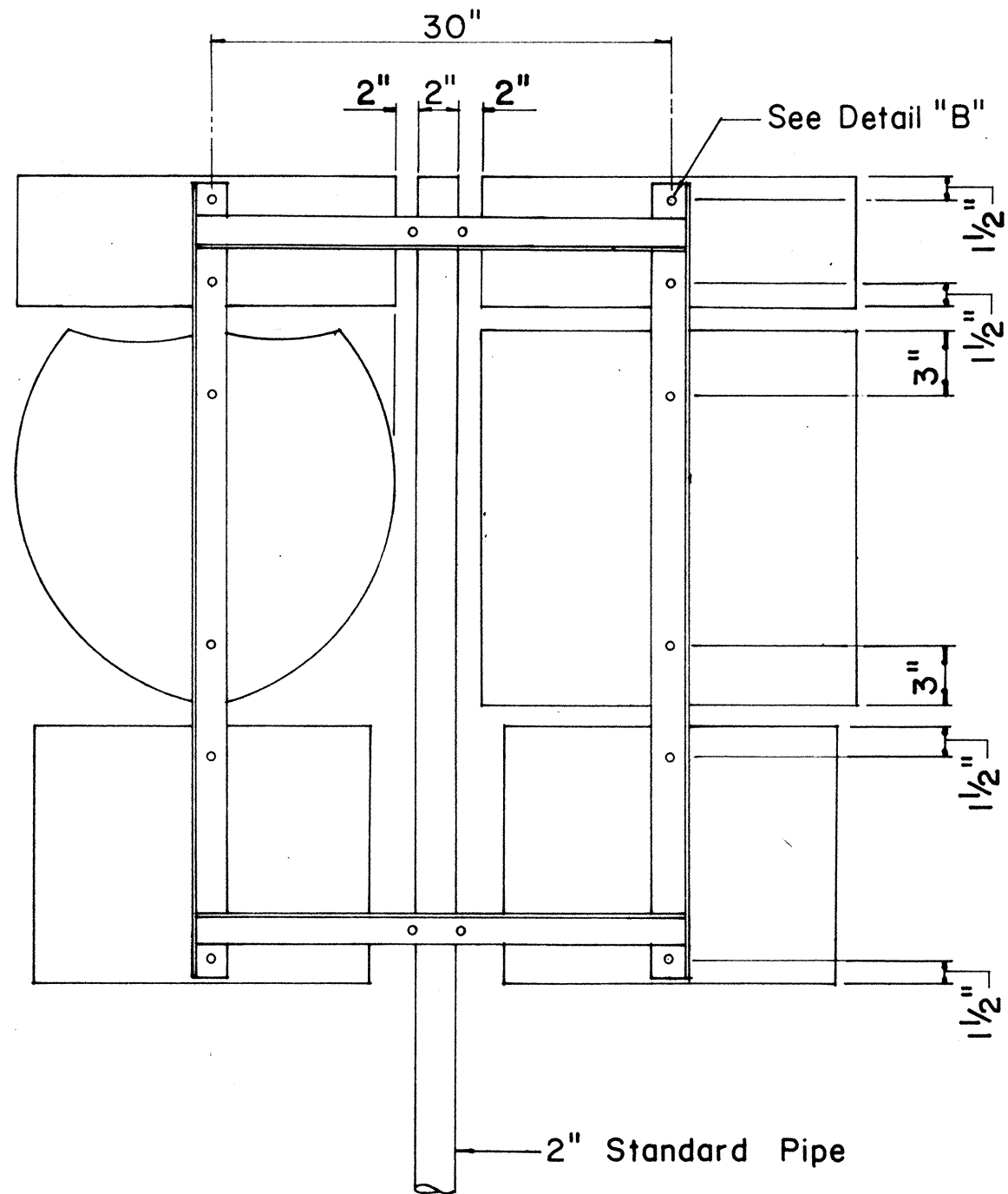
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	10	18



FRONT ELEVATION

TYPE "B" ASSEMBLY

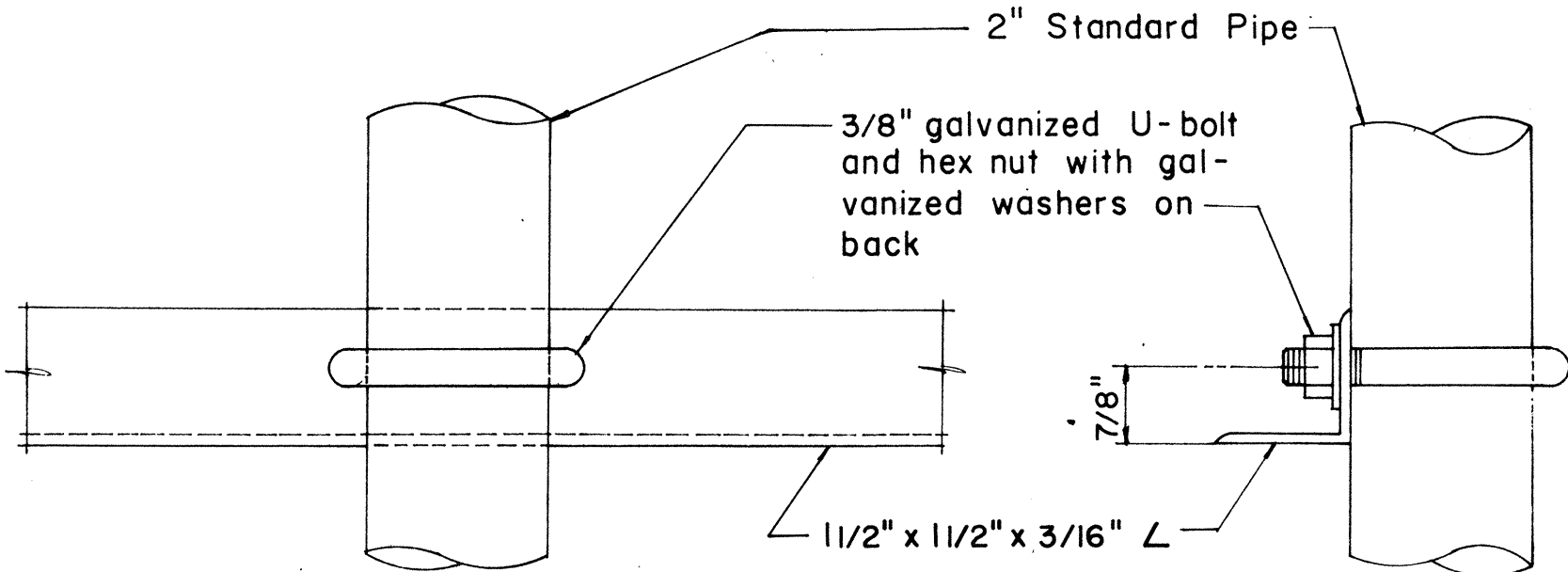
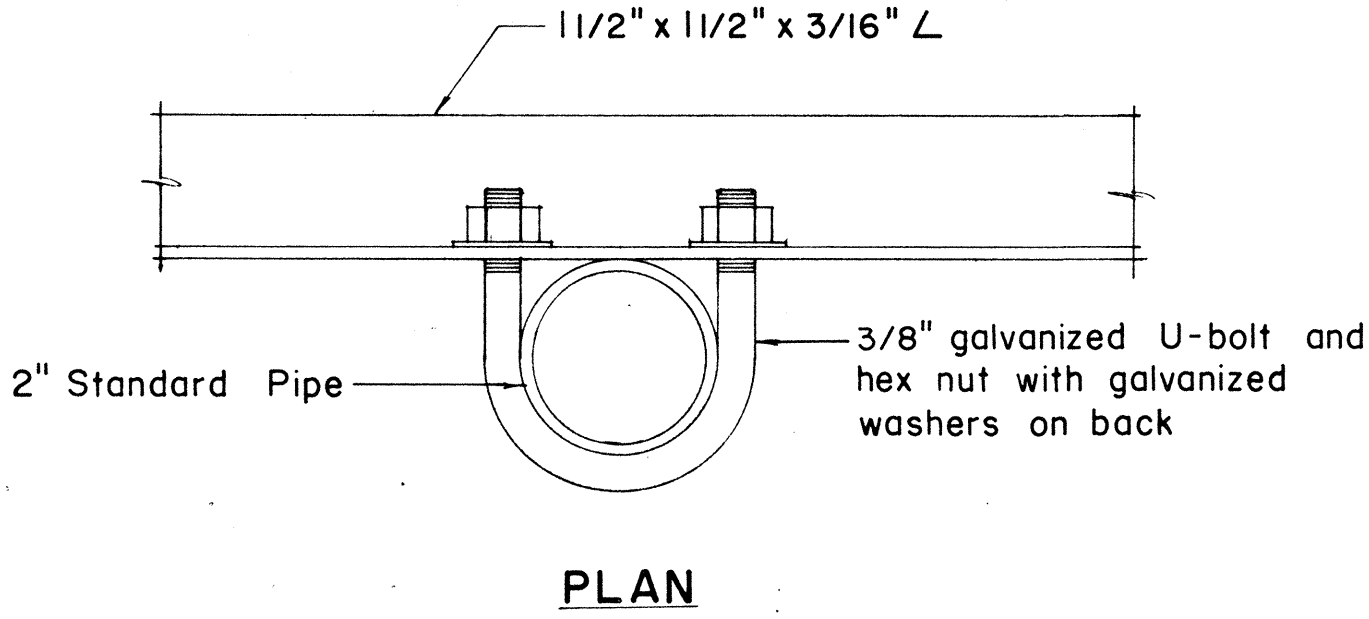
Not to Scale



REAR ELEVATION

NOTE:

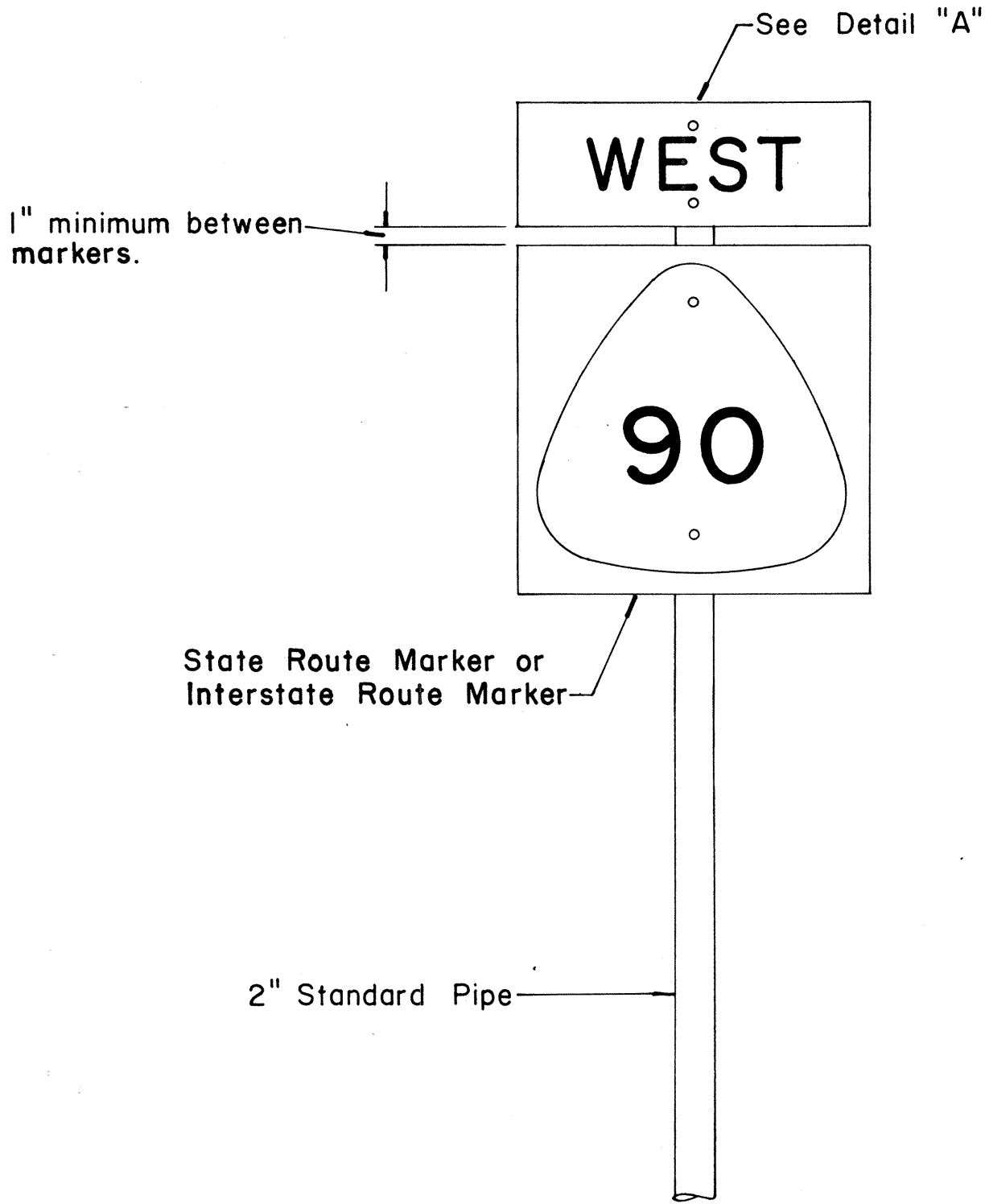
- Minimum clearance between markers shall be one inch. (Larger clearances shall be in multiples of one inch.)
- Pipe post for Type "A" & Type "B" Assembly shall be 2" Standard Pipe.



FRONT ELEVATION

DETAIL "C"

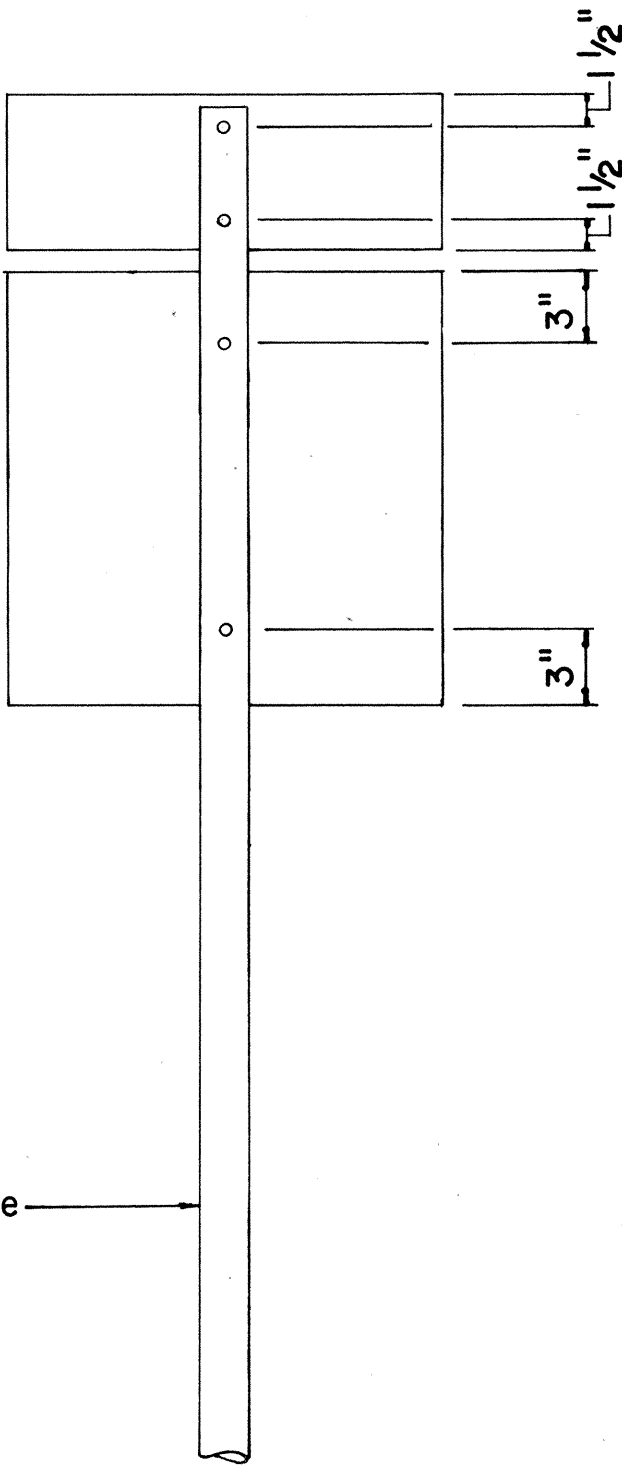
SIDE ELEVATION



FRONT ELEVATION

TYPE "A" ASSEMBLY

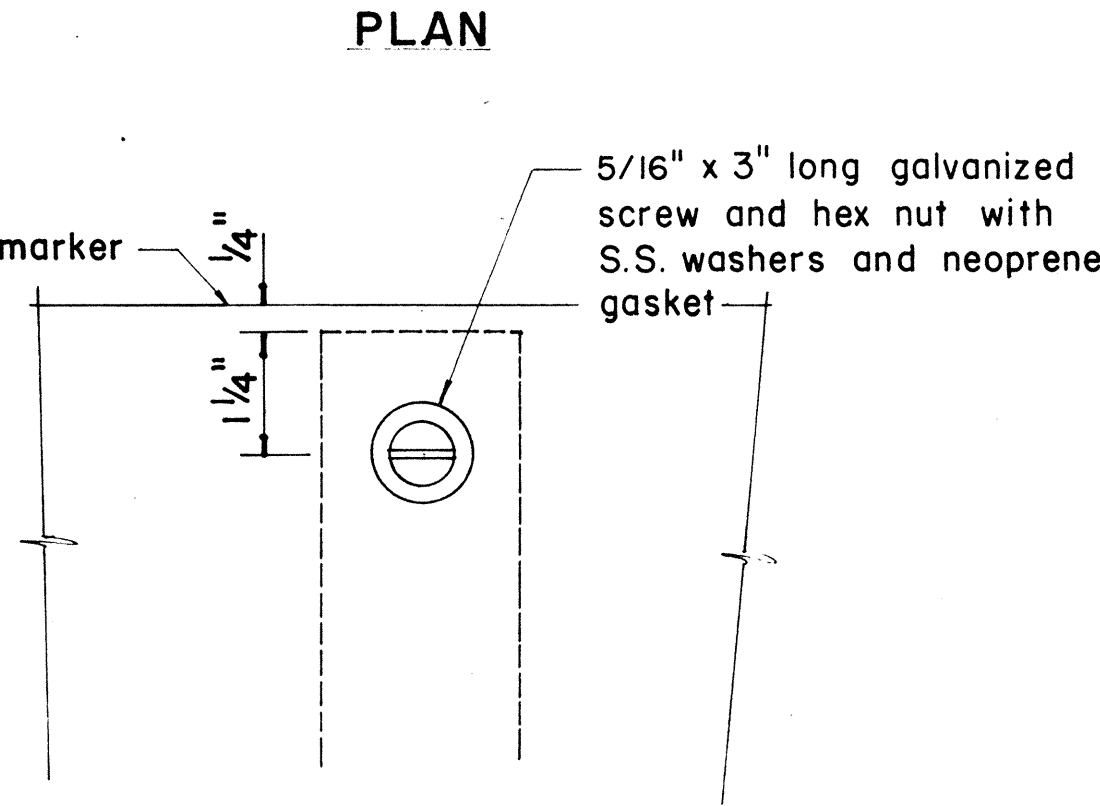
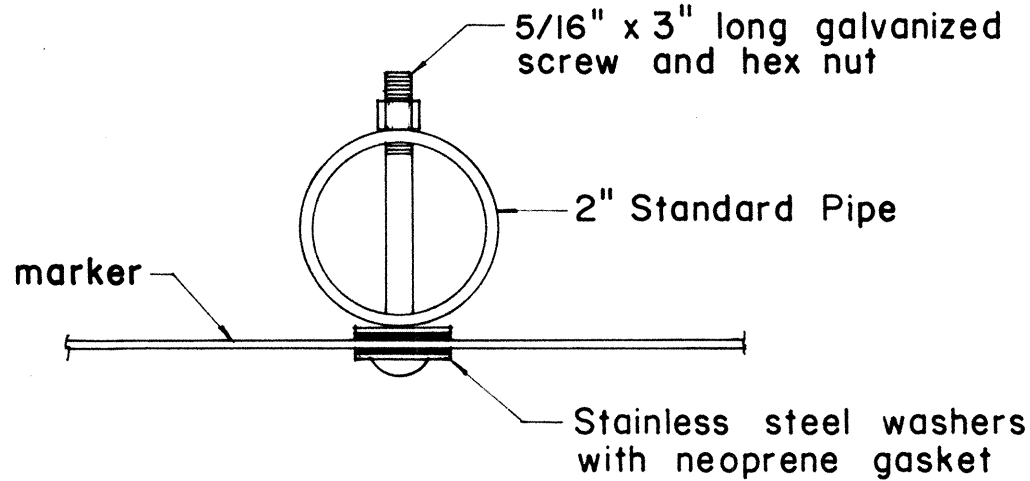
Not to Scale



REAR ELEVATION

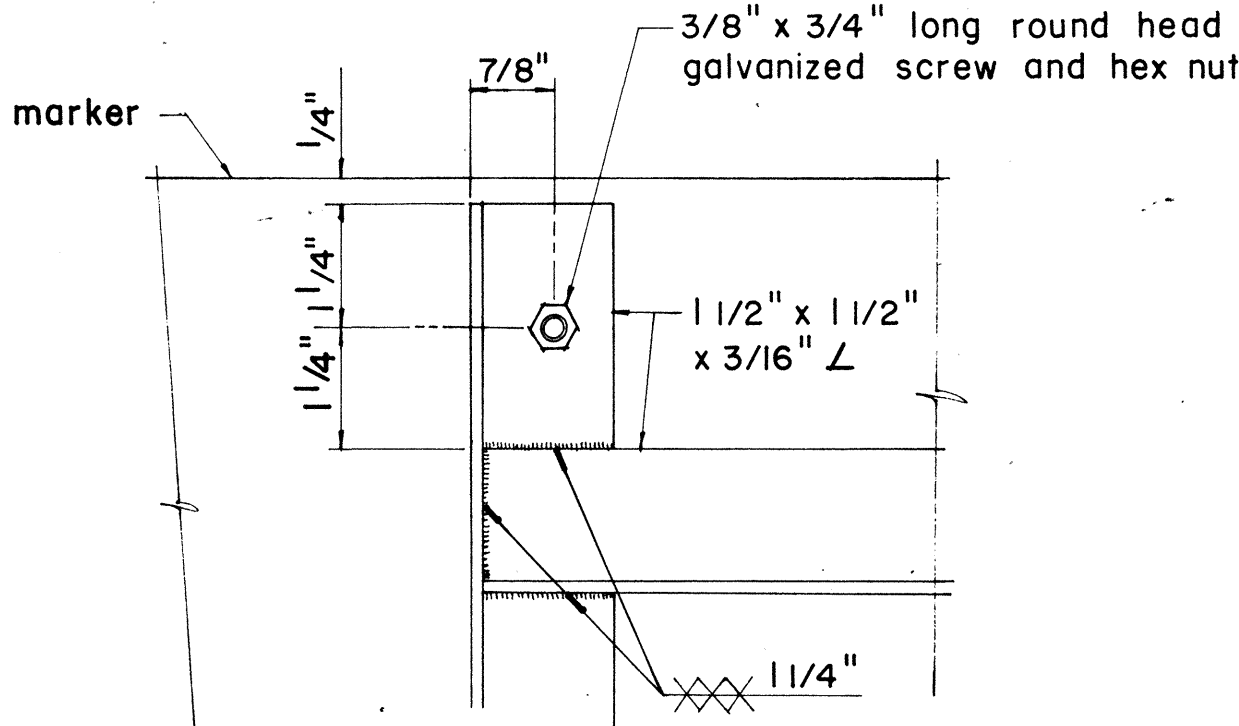
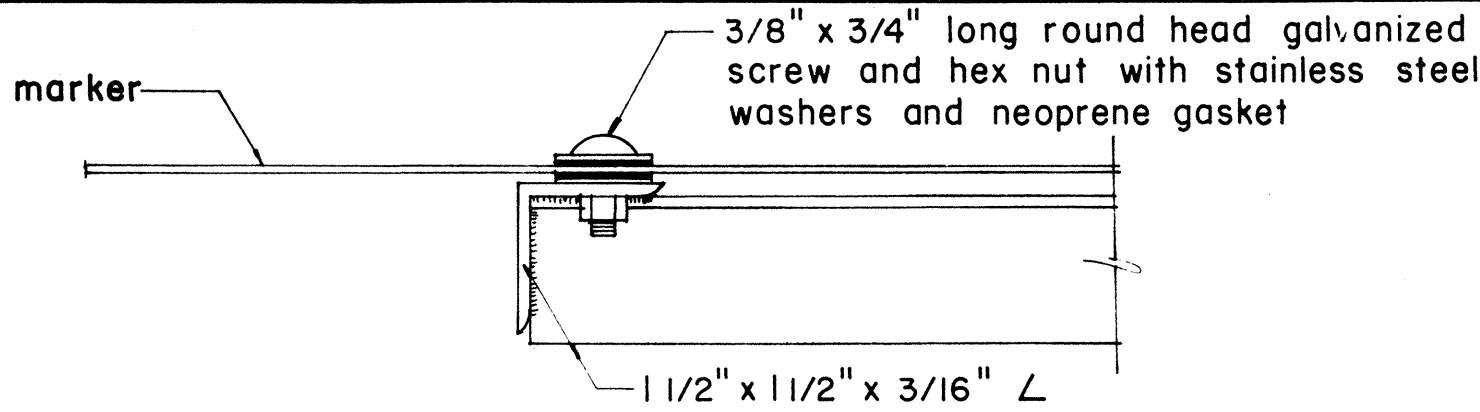
NOTE:

For height and lateral location of Route Marker Assembly, see plan sheet DT 100.



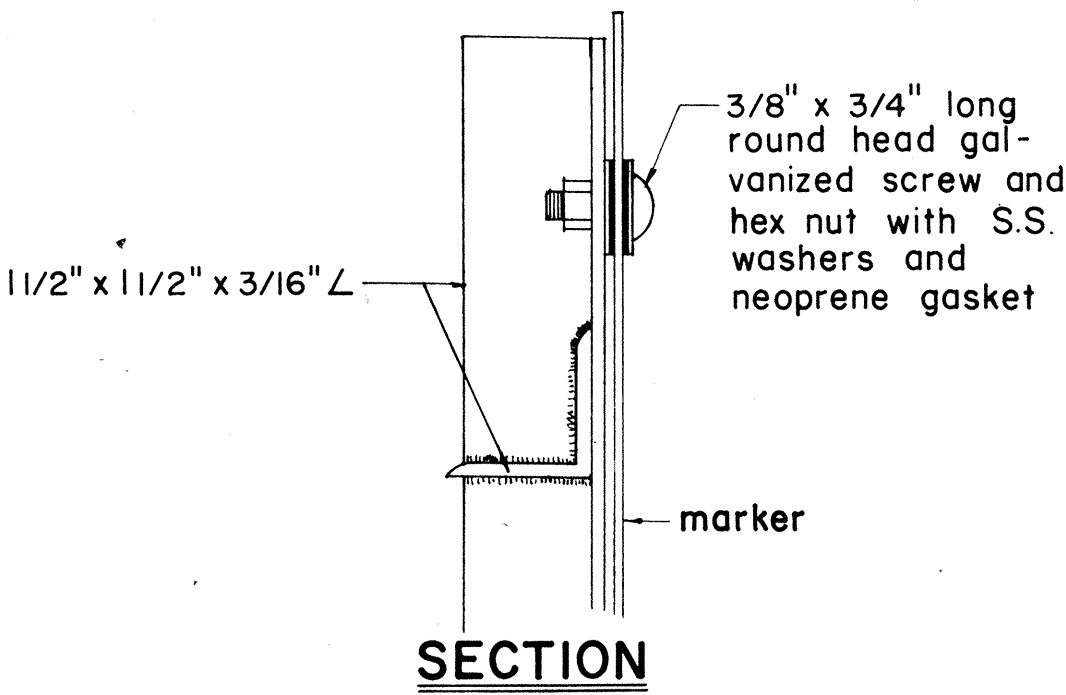
FRONT ELEVATION

DETAIL "A"



ELEVATION

DETAIL "B"



APPROVAL RECOMMENDED:

Etsuko Tanaka 12/23/69
TRAFFIC ENGINEER DATE

APPROVED:

John J. Sefcik 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revisions to Route Marker Assemblies.	H.T.	6/1/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
ROUTE MARKER ASSEMBLIES

Scale: As Shown
SHEET No. 6 OF 13 SHEETS DT 107

DATE	12/23/69
DESIGNED BY	Etsuko Tanaka
CHECKED BY	John J. Sefcik
NO.	6

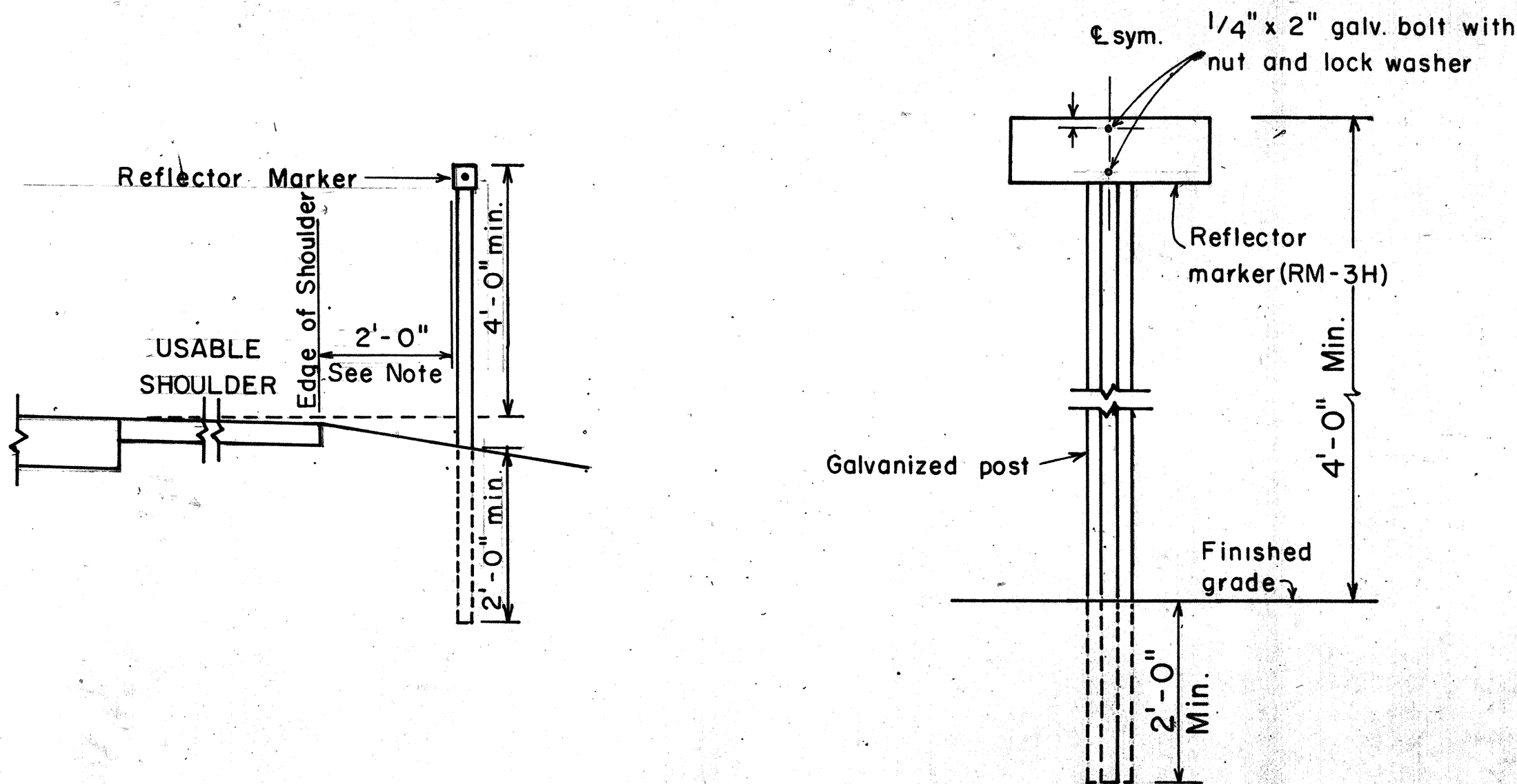
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	11	18

GENERAL NOTES:

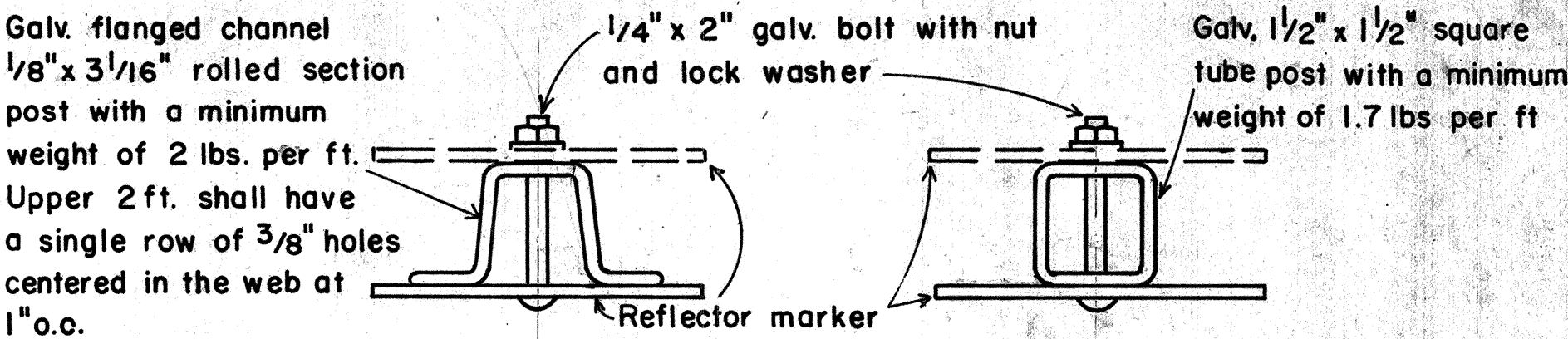
1. Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
2. (R) or (L) indicates right or left and shall be as shown on the plans.
3. Reflector markers RM-1 and RM-2 shall be:

a) Yellow if placed along the left edge of divided roadways, one-way roadways, and ramps in the direction of travel.

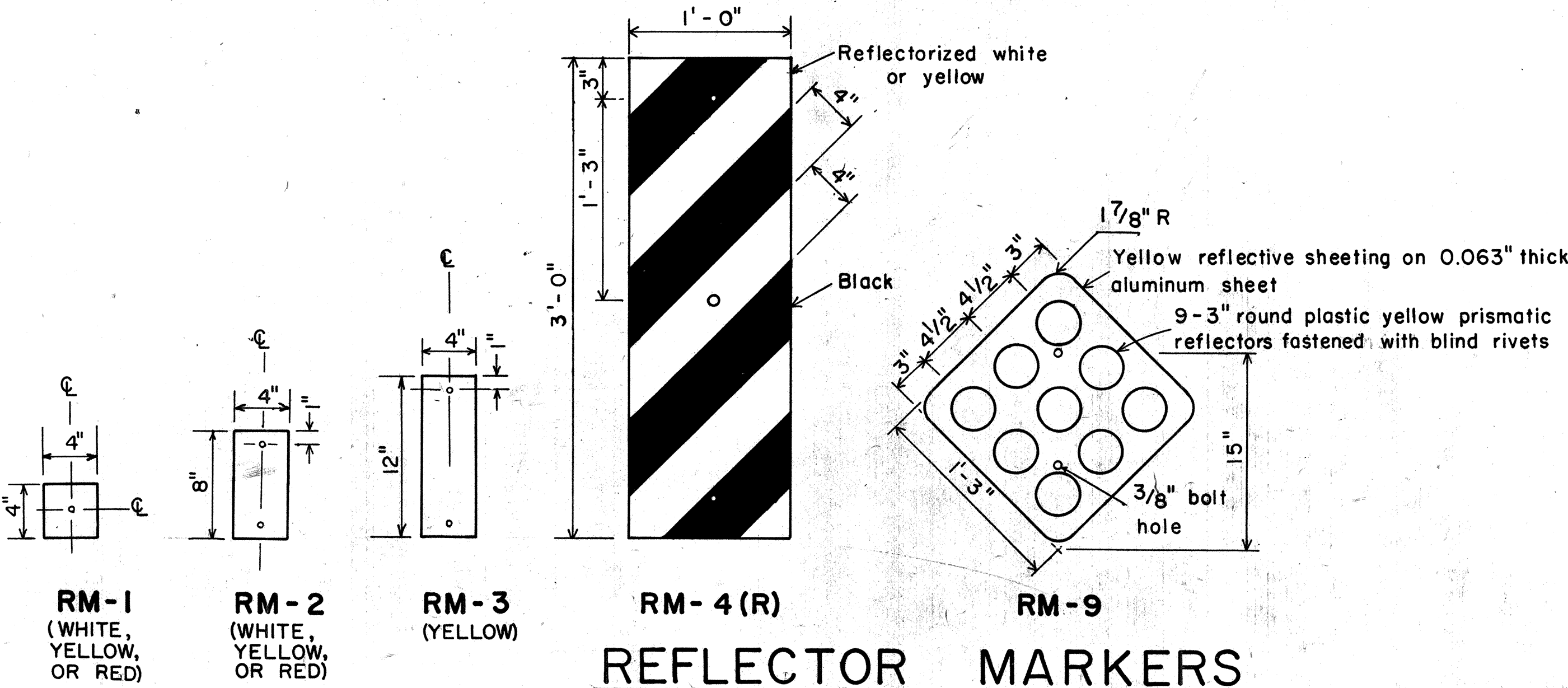
b) White if placed along the right edge of divided roadways, one-way roadways, and ramps in the direction of travel.
4. For reflector marker RM-9, reflective sheeting material may be used as an alternate.
5. For RM-4, the stripes shall slope downward at an angle of 45° in the direction of traffic.



REFLECTOR MARKER MOUNTING DETAIL



TYPICAL SECTION OF ROAD DELINEATOR



APPROVAL RECOMMENDED:
Etsuki Tanaka 11/1/77
TRAFFIC ENGINEER DATE

APPROVED:
Robert B. Sakai 11/15/77
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

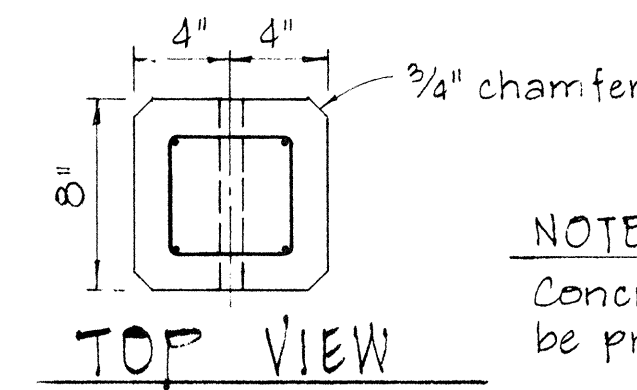
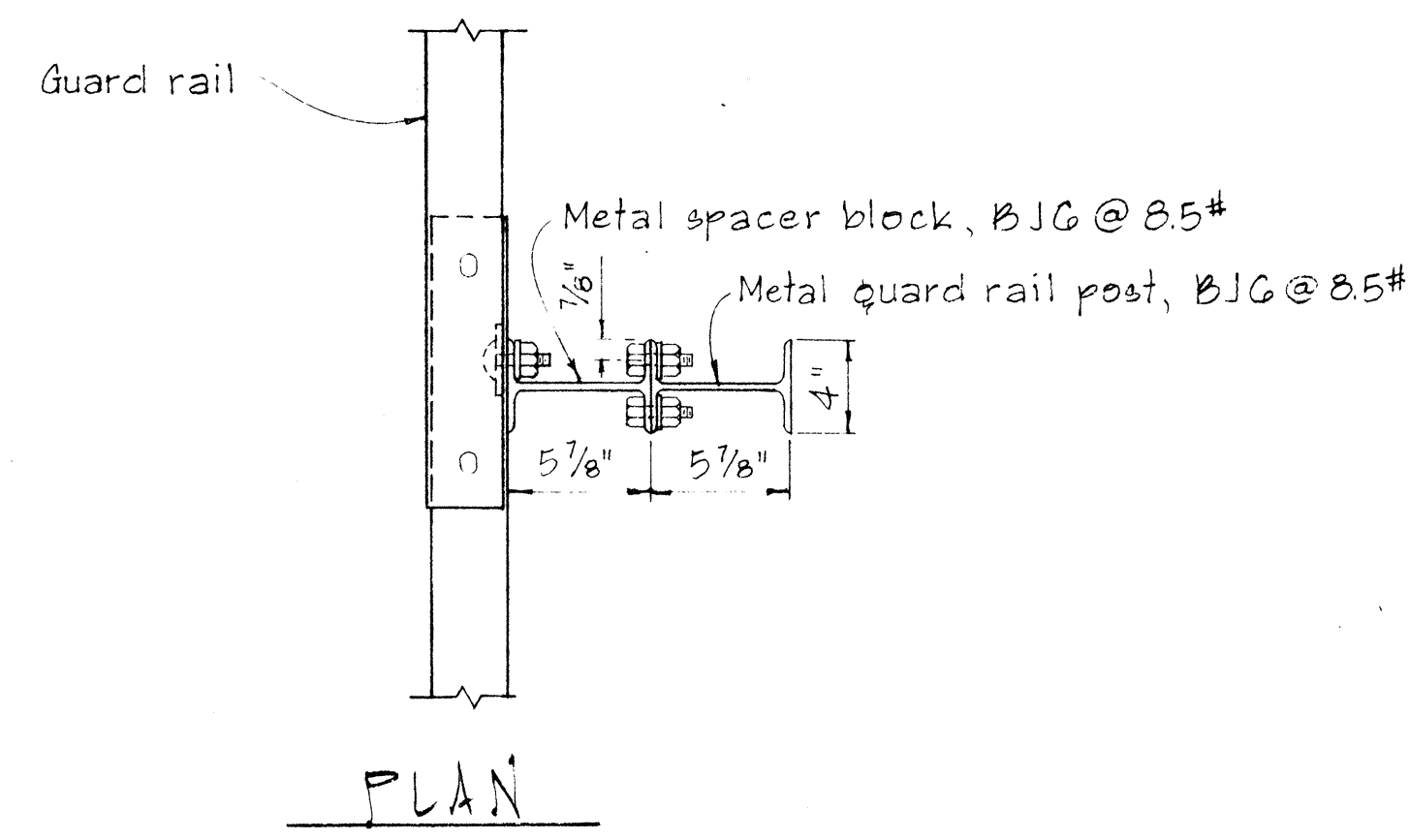
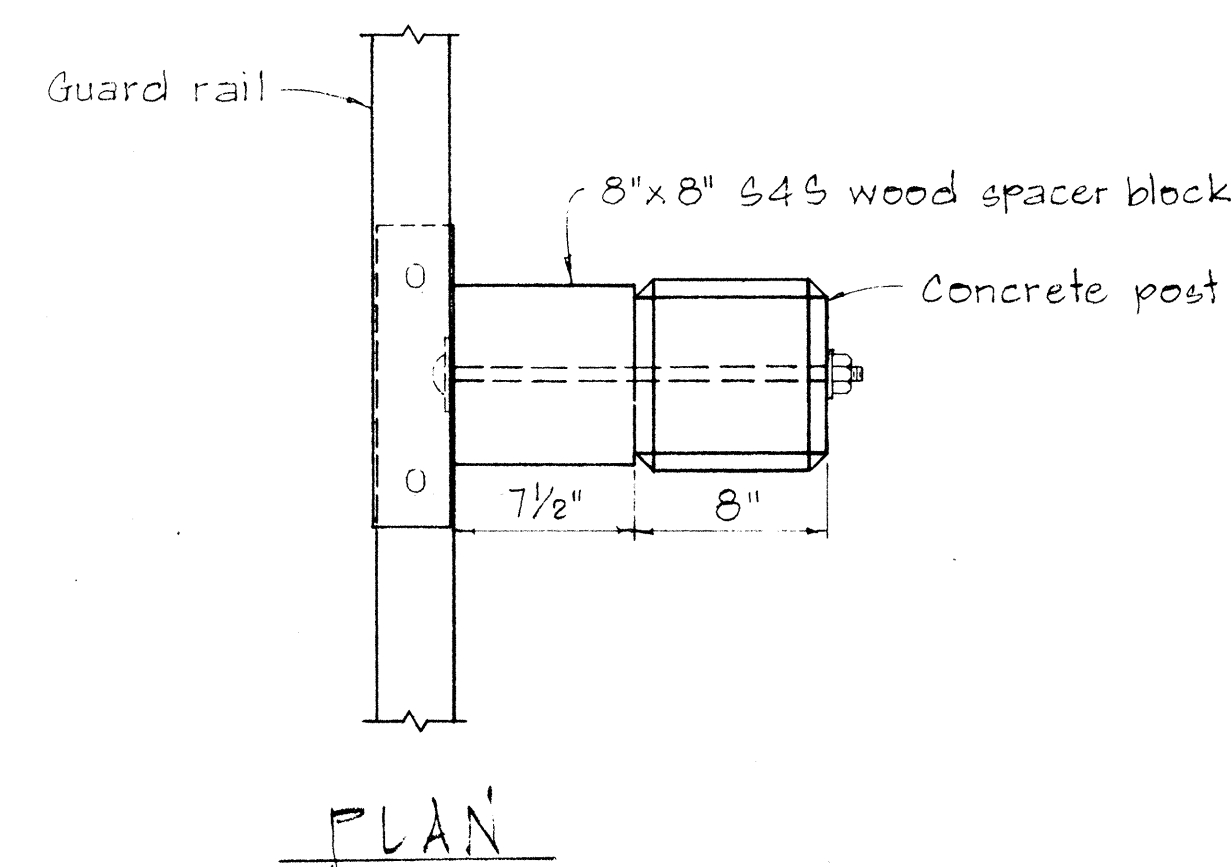
MISCELLANEOUS REFLECTOR MARKERS

Not to scale June, 1977

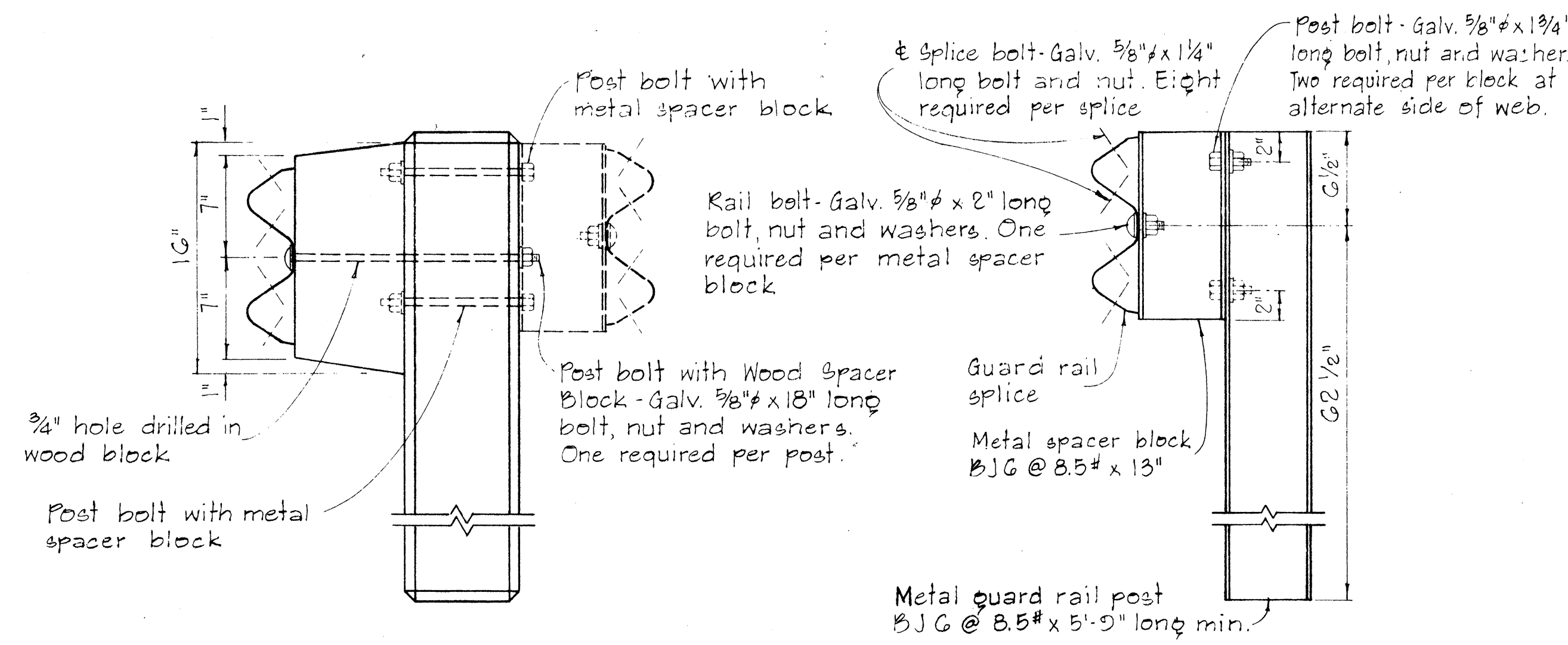
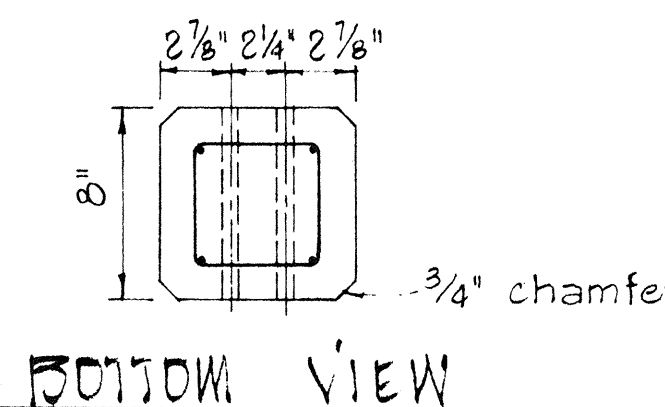
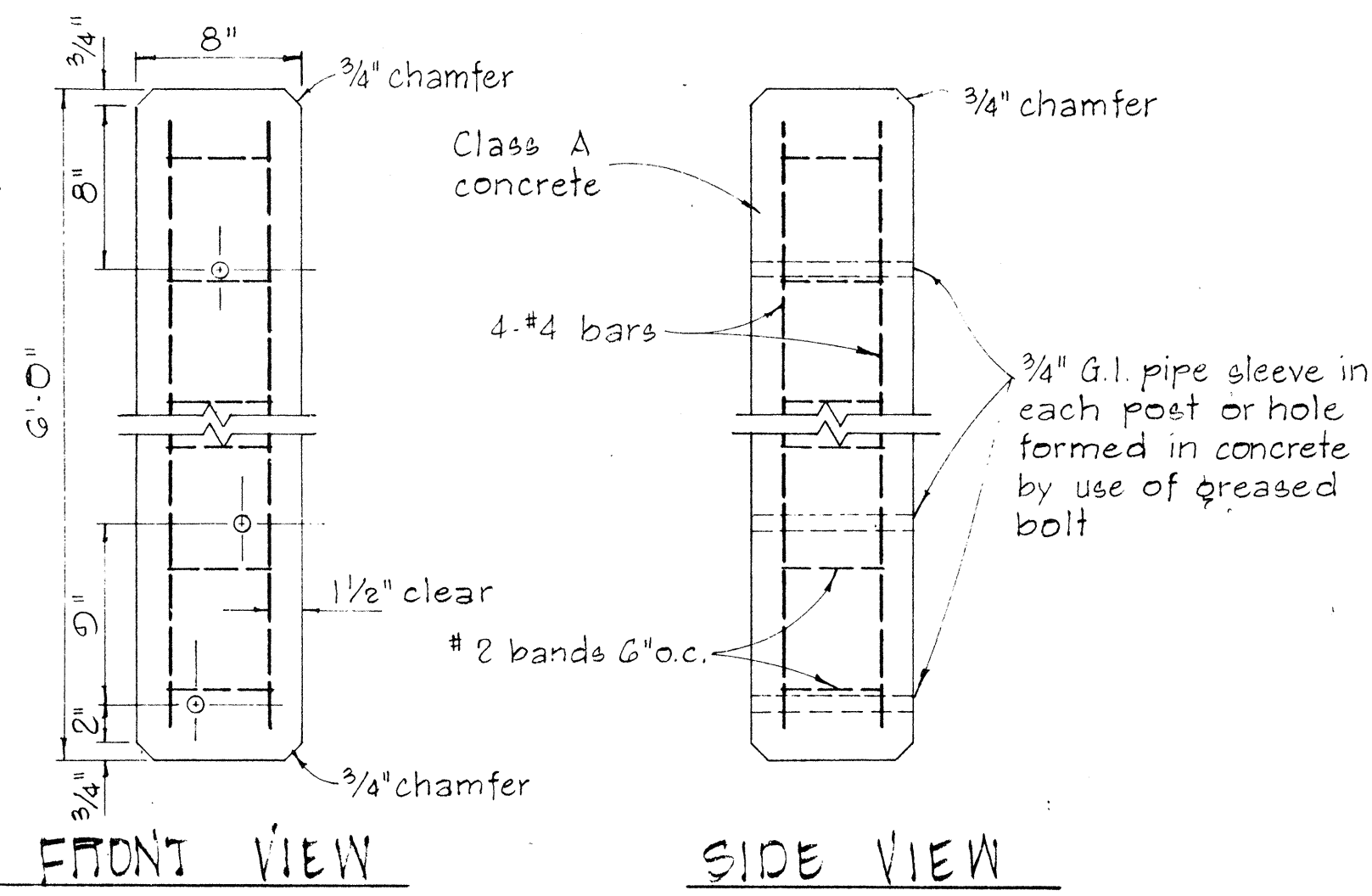
SHEET No. 7 OF 13 SHEETS DT 110

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

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	12	18

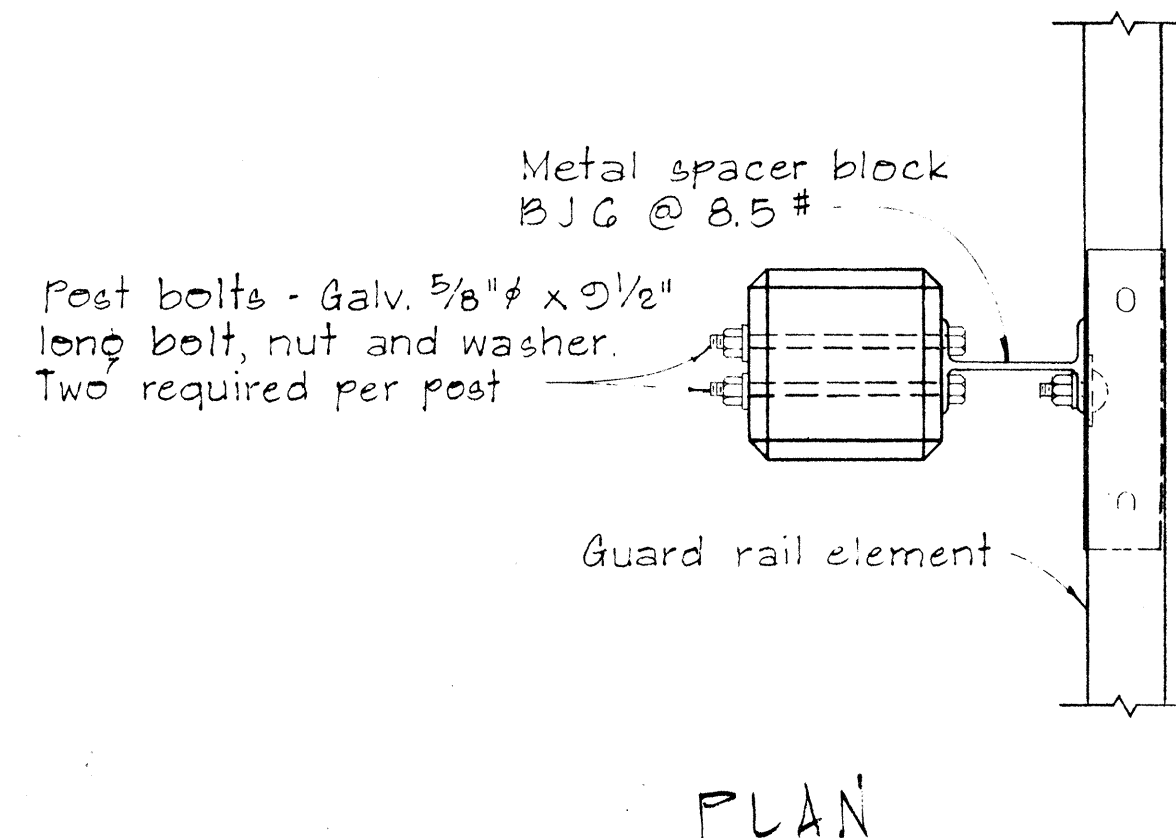


NOTE:
Concrete post shall be precast

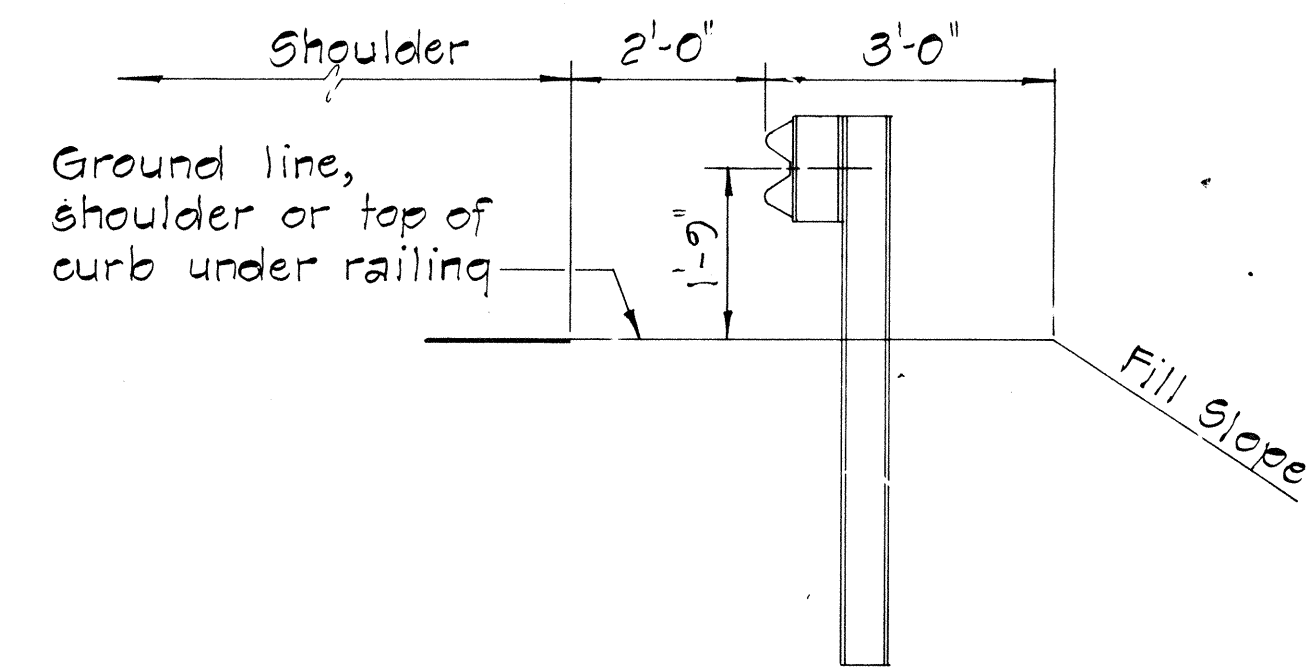


DETAIL OF CONCRETE POST
SCALE: 1 1/2" = 1'-0"

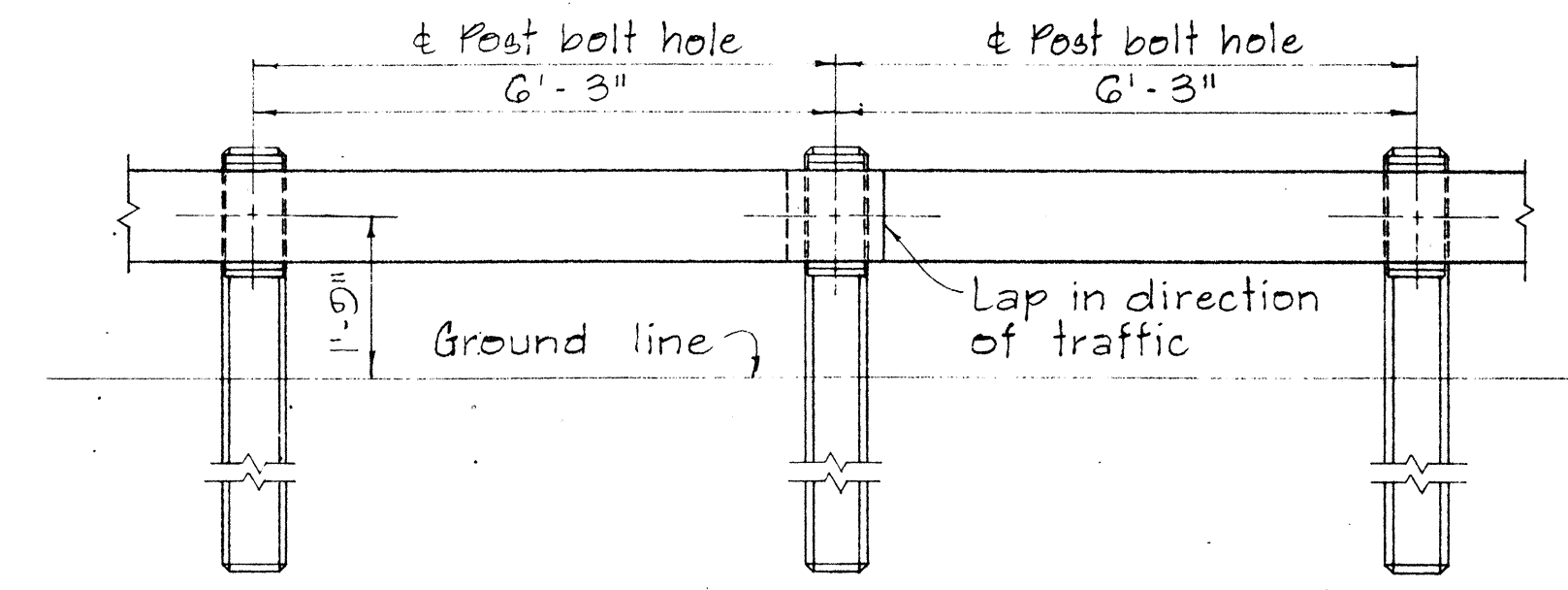
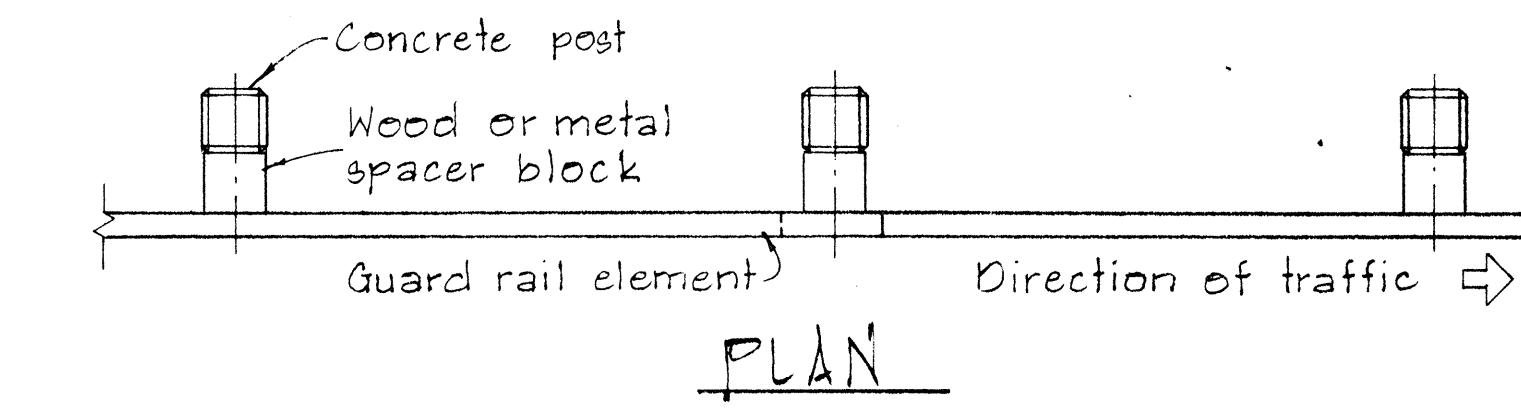
SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



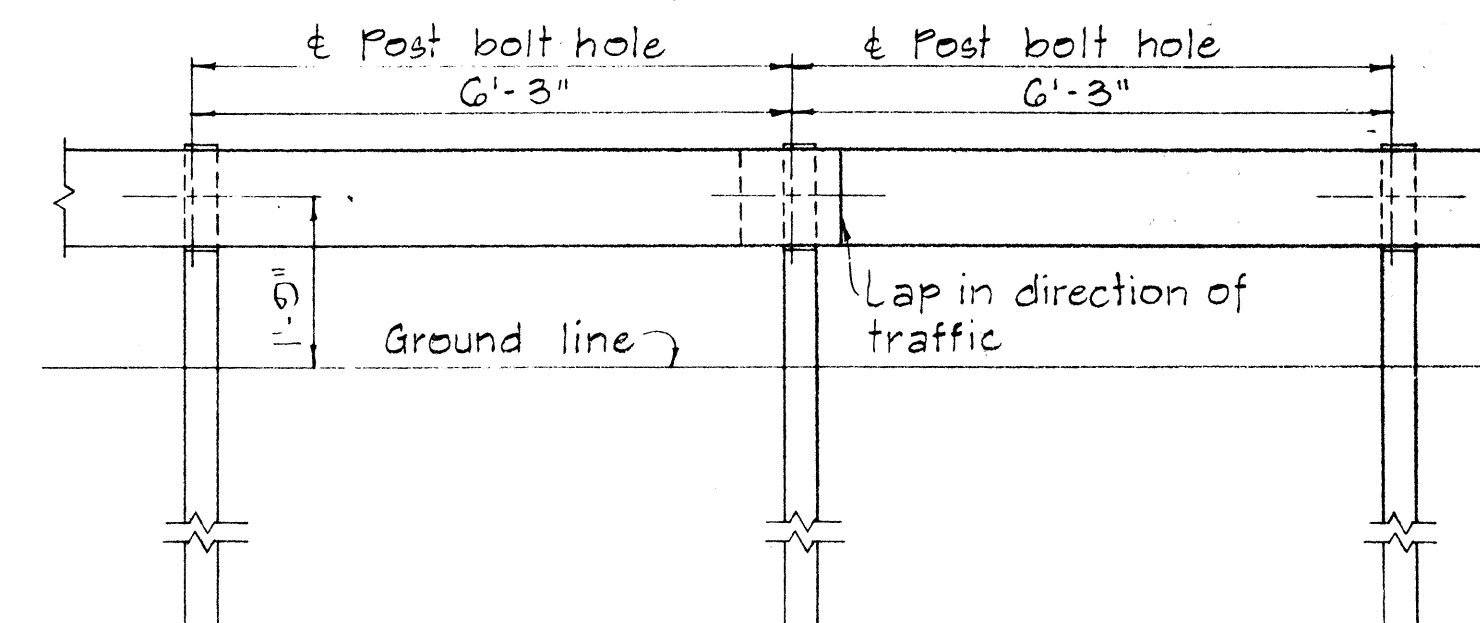
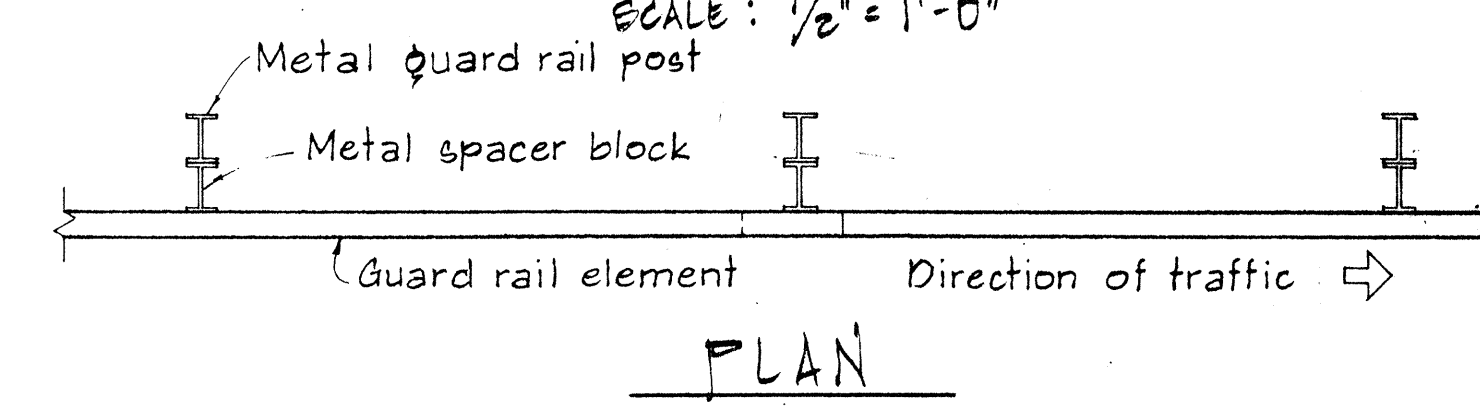
SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



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



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"

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN NOV. 1968

SHEET No. 8 OF 13 SHEETS PT 500

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

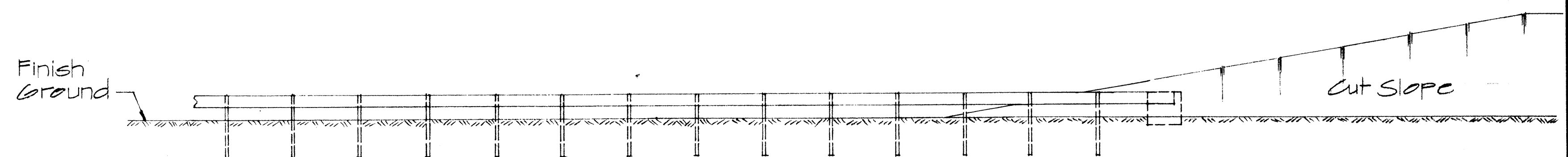
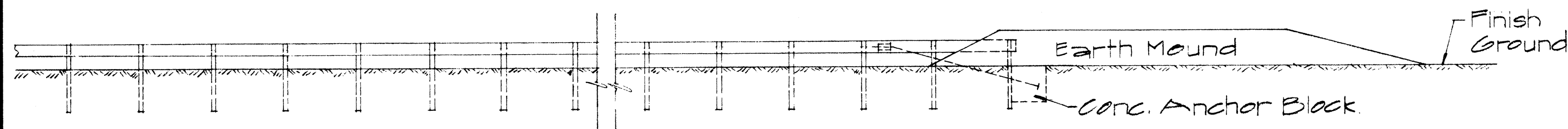
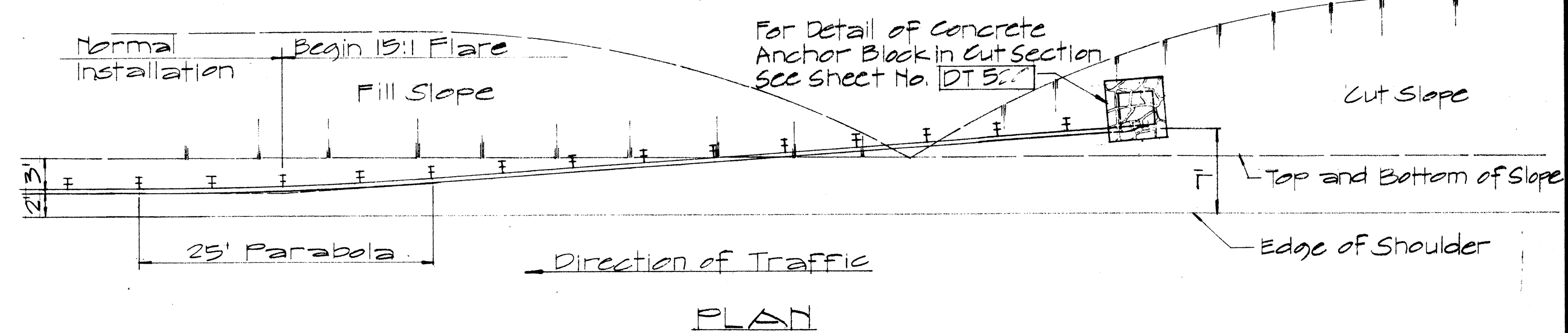
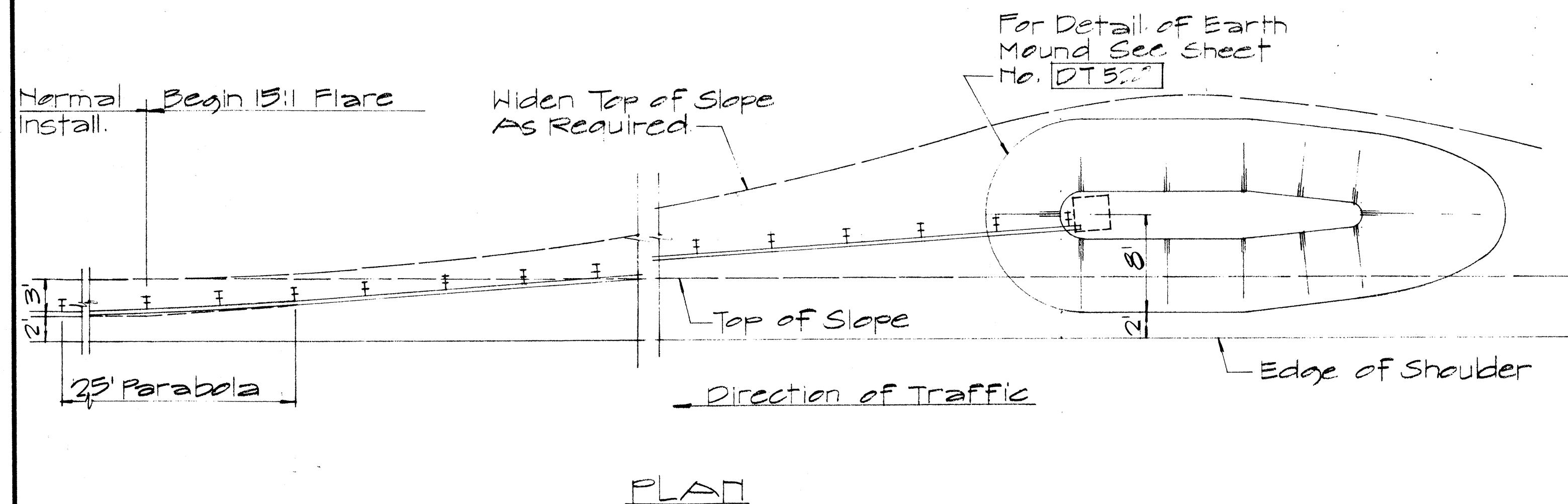
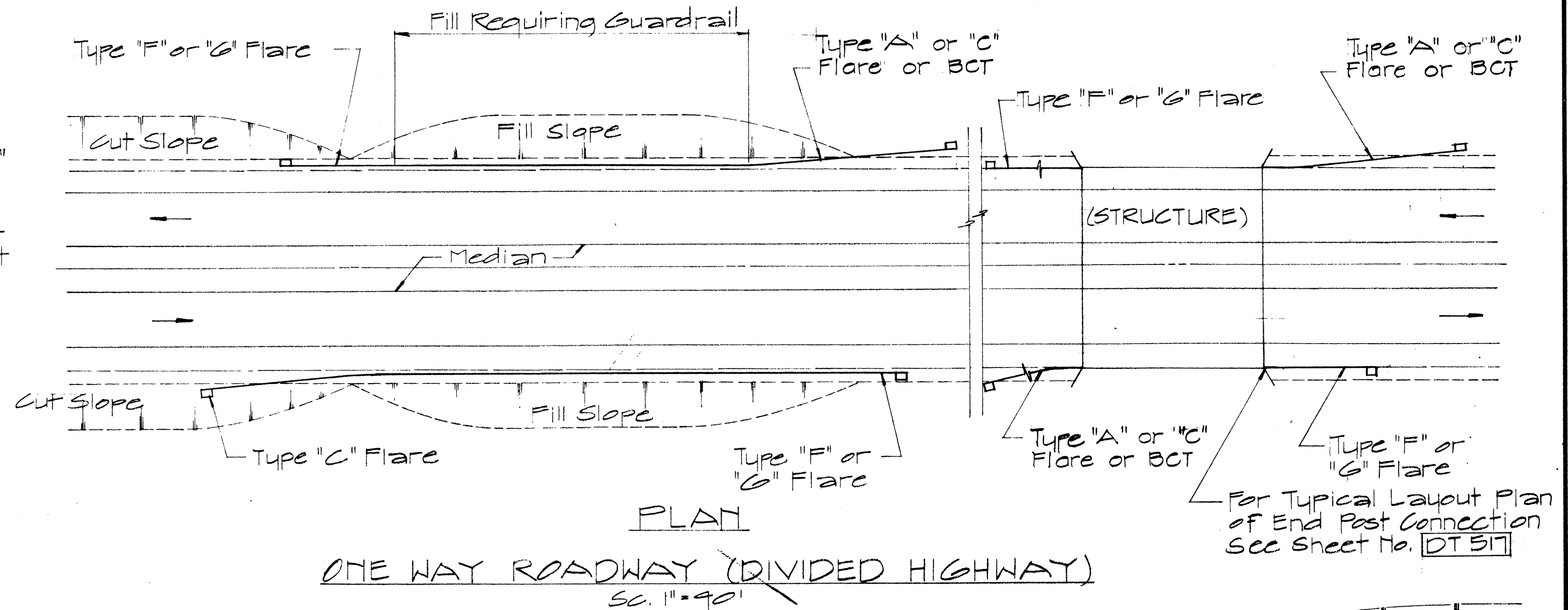
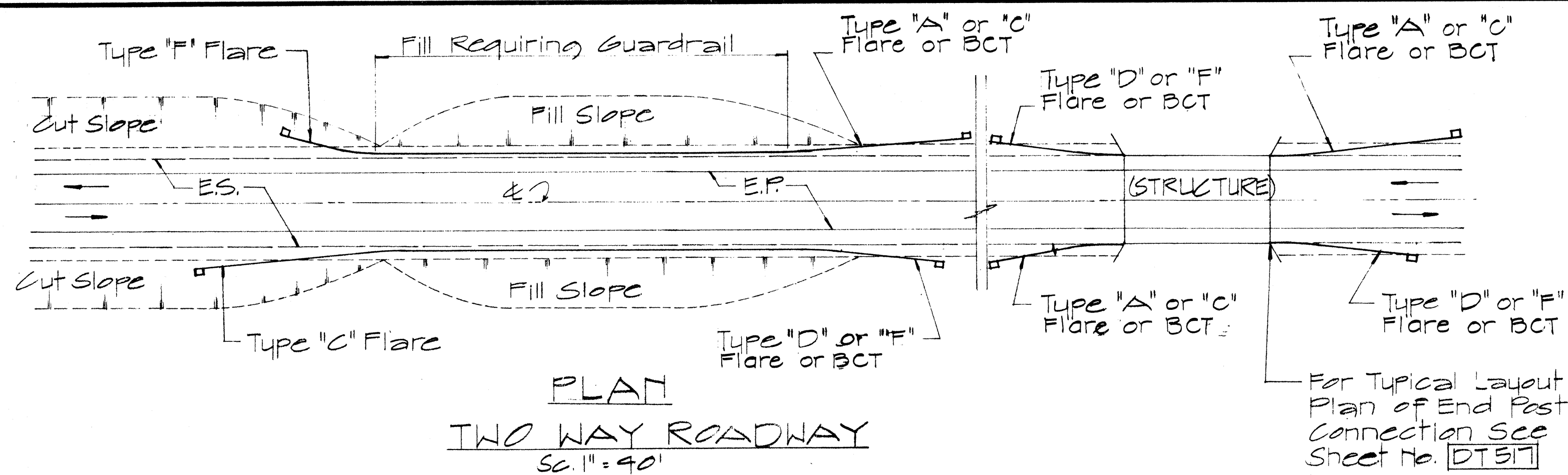
APPROVED:
Robert J. Schuler
ASSISTANT CHIEF, ENGINEERING 12-30-69 DATE

DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	14	18

NOTE:

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



APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
12/23/69
DATE

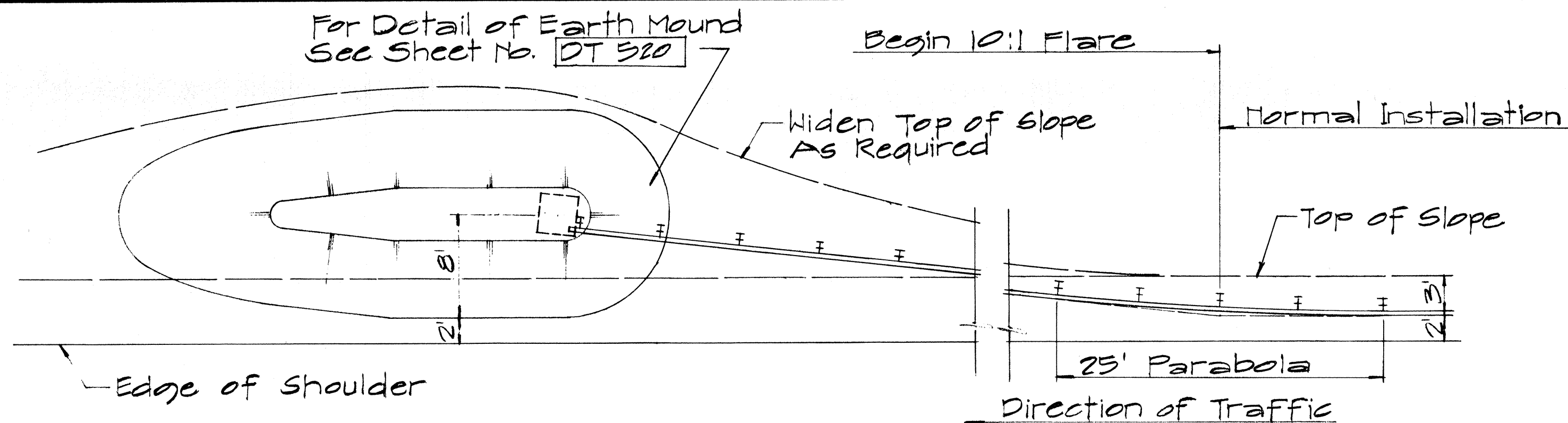
APPROVED:
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

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

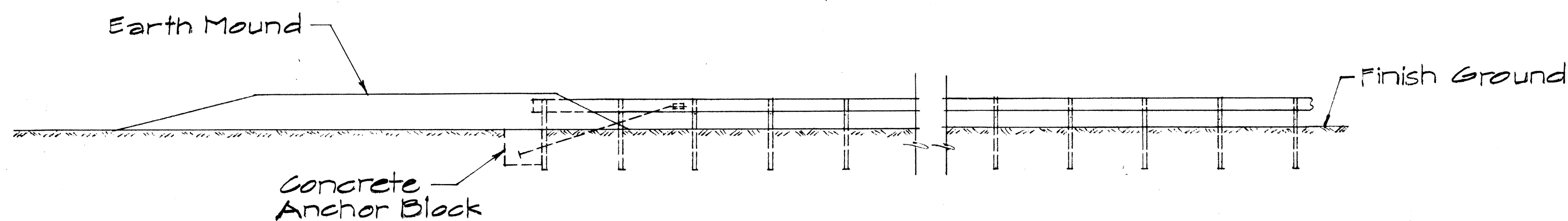
NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/78

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. 10 OF 13 SHEETS DT 516

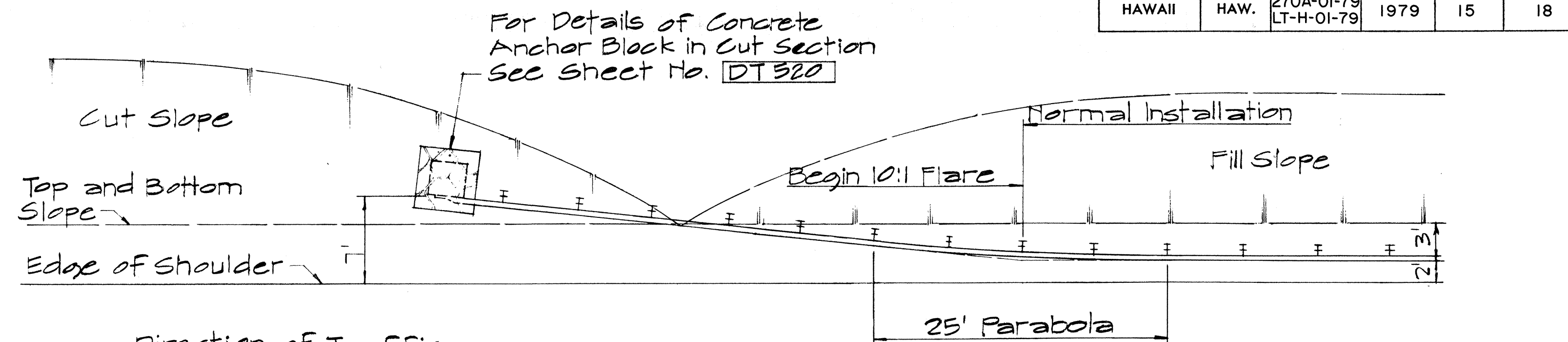
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	15	18



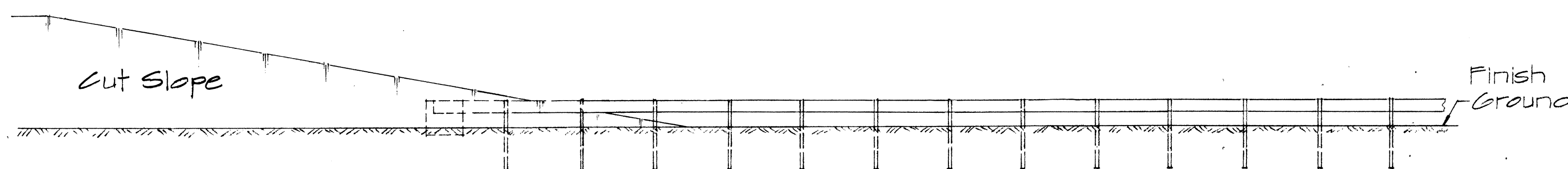
PLAN



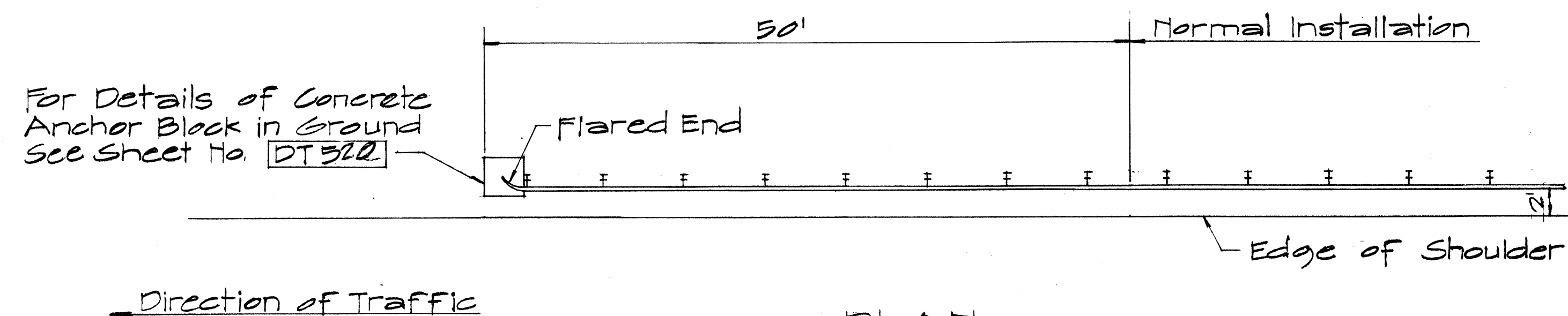
ELEVATION
TYPE "D" FLARE
Sc. 1/8" = 1'-0"



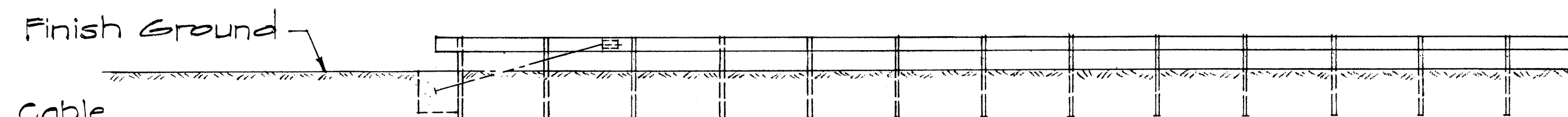
PLAN



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

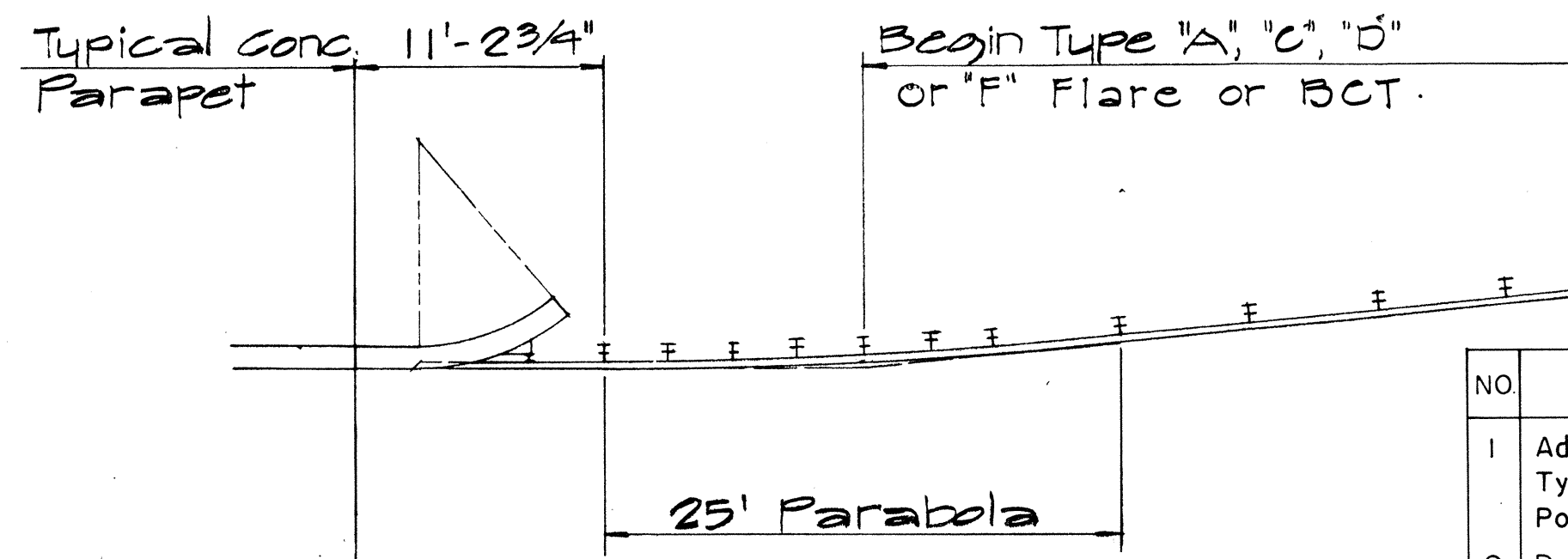


PLAN



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

NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 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:
Eiichi Tanaka 12/29/69
 TRAFFIC ENGINEER DATE

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

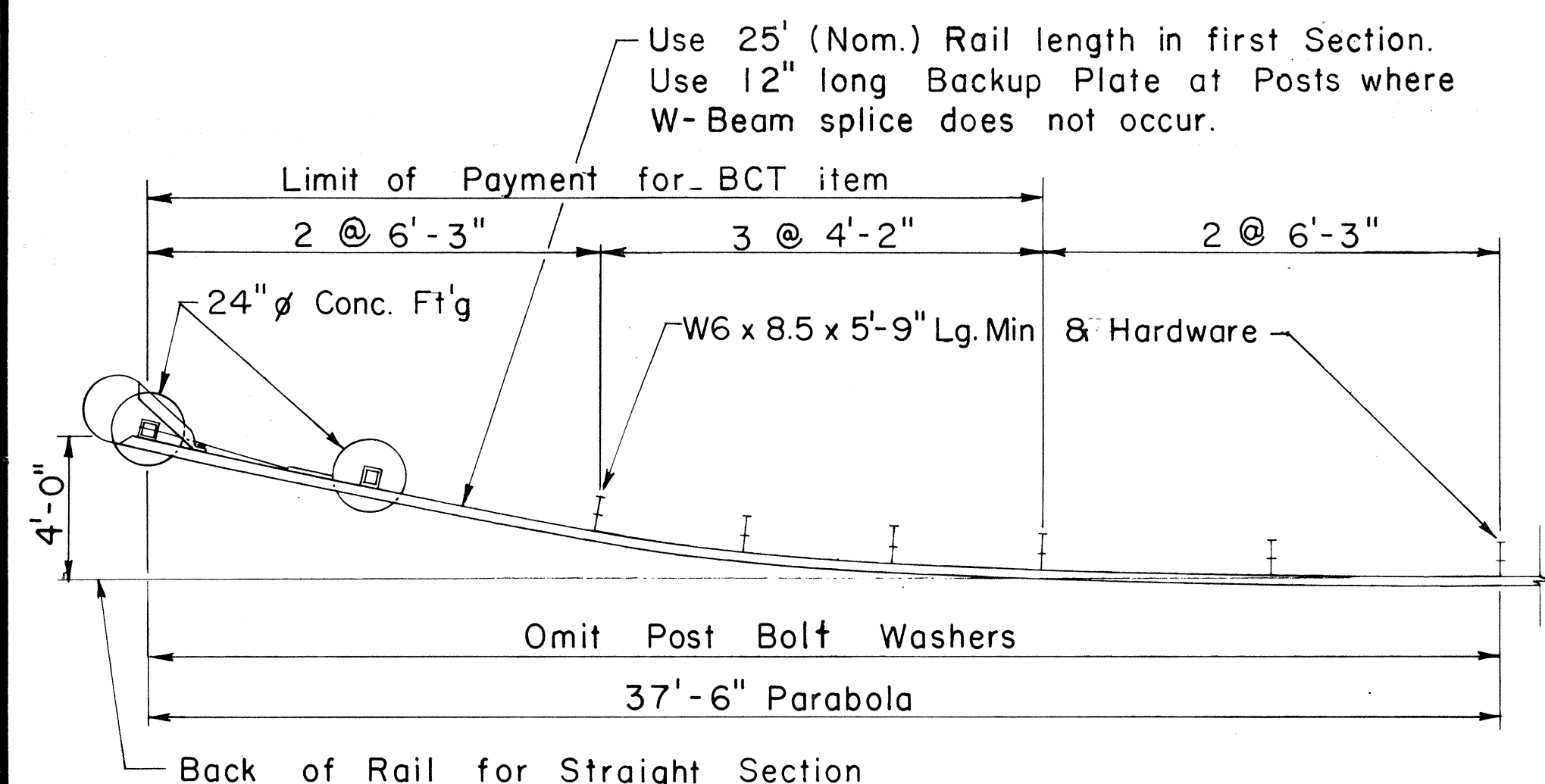
Scale: As Noted April 1969

SHEET No. 11 OF 13 SHEETS DT 517

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	16	18

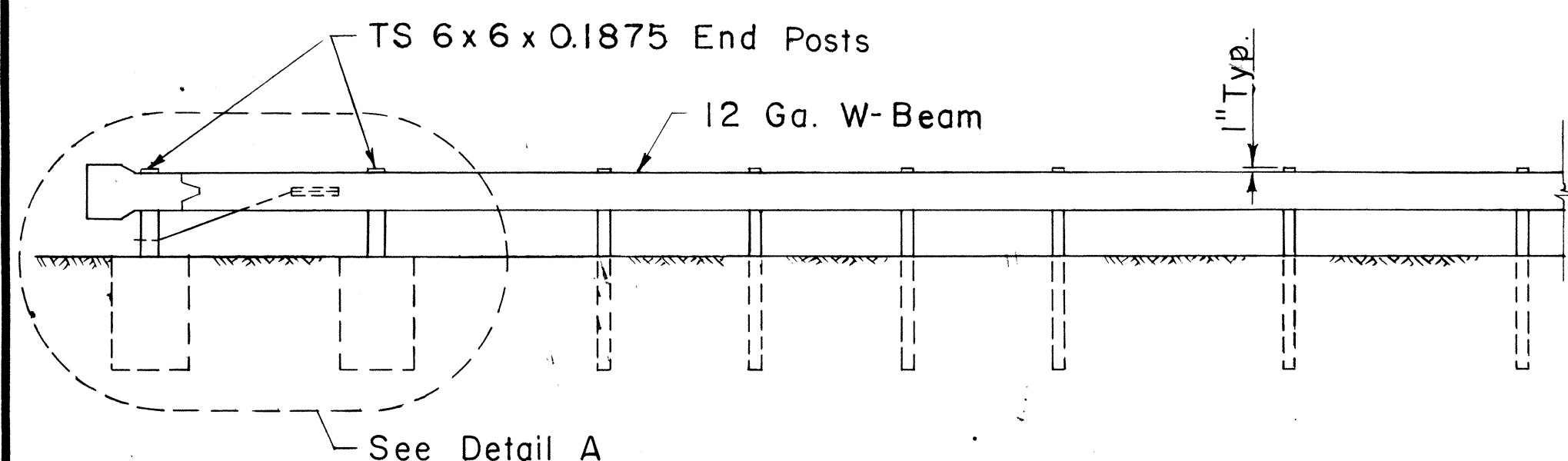
NOTES:

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



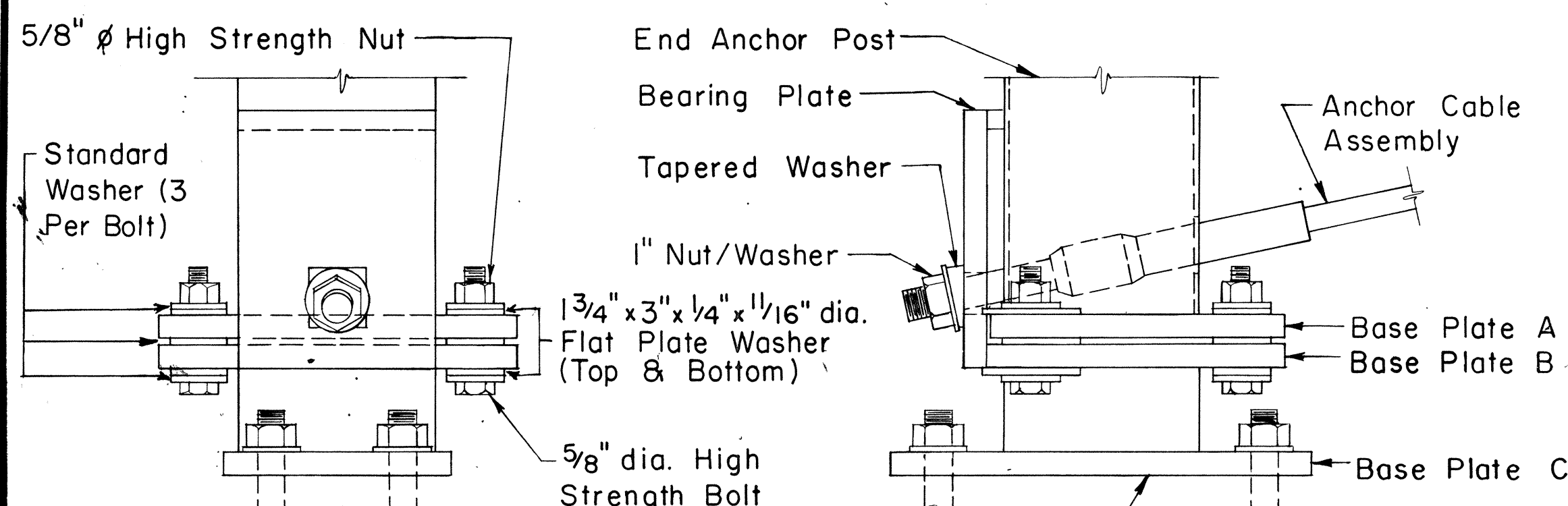
PLAN

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



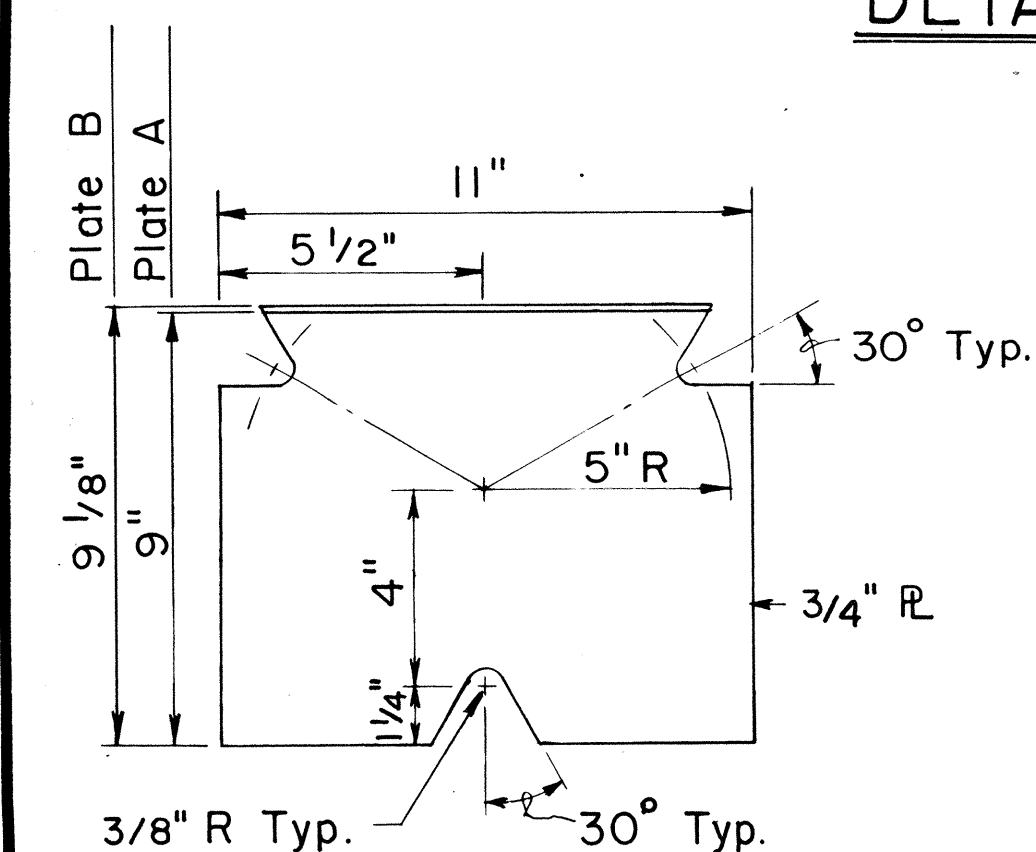
ELEVATION

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



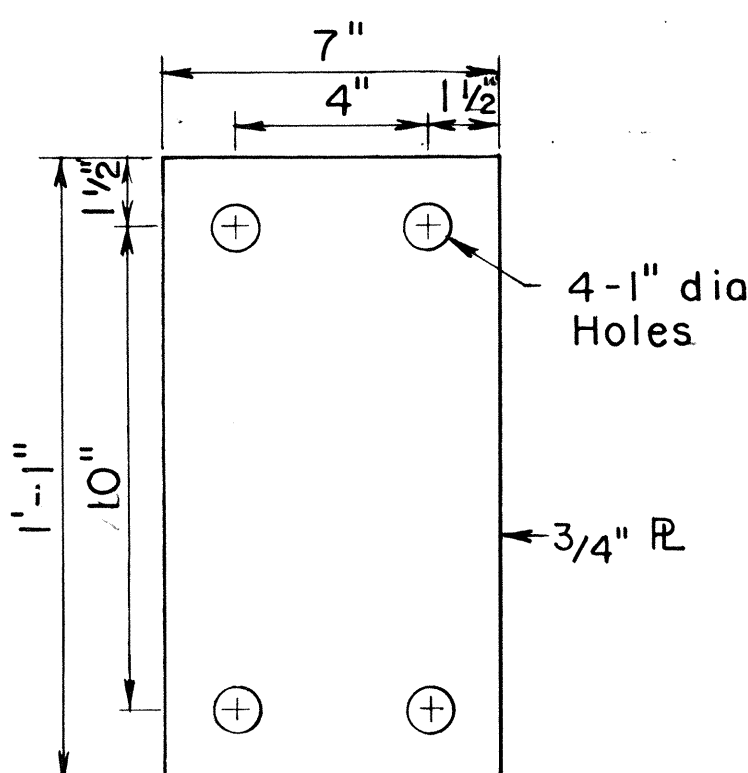
SIDE ELEVATION

DETAIL B



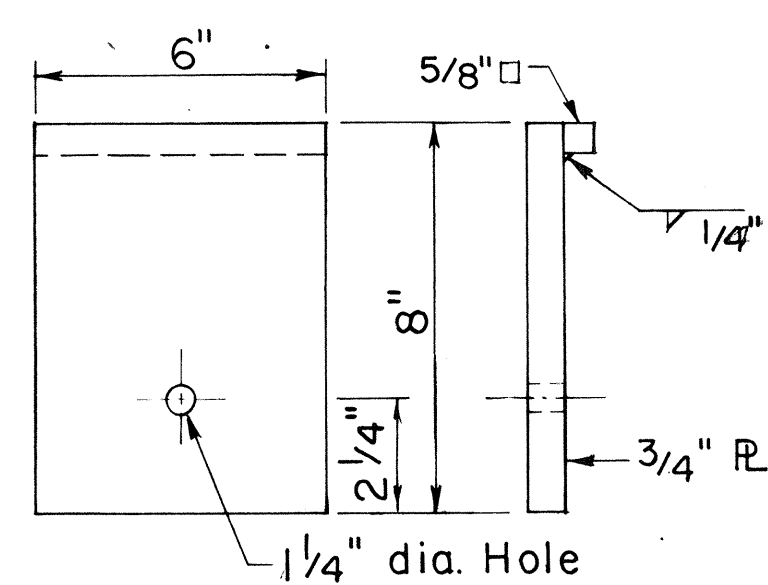
BASE PLATES A & B

Scale: 3" = 1'-0"



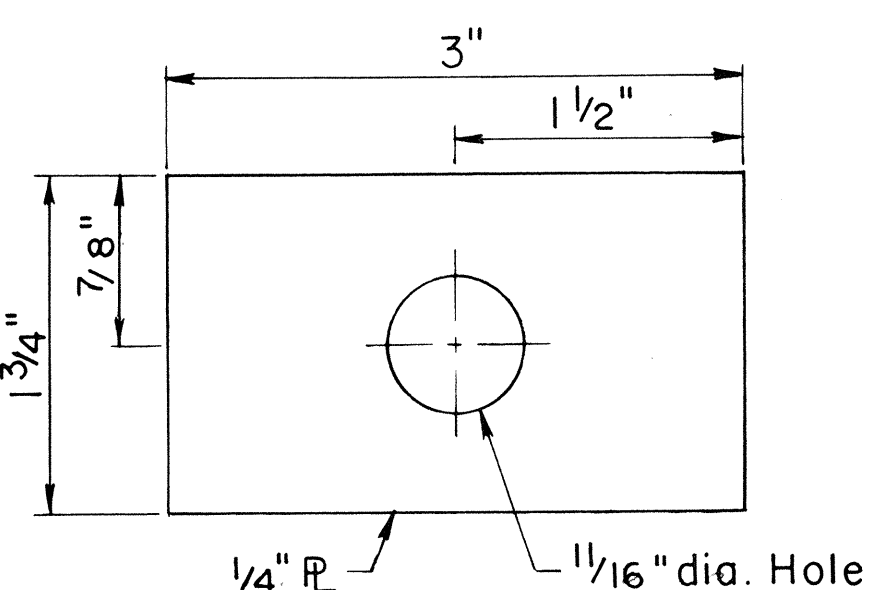
BASE PLATE C

Scale: 3" = 1'-0"



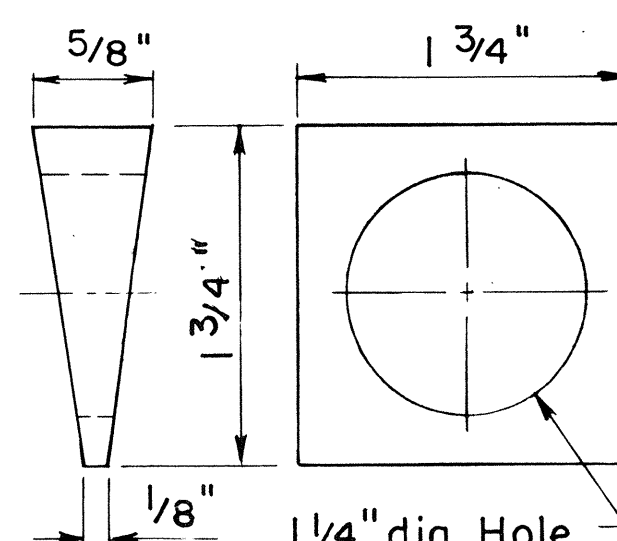
BEARING PLATE

Scale: 3" = 1'-0"



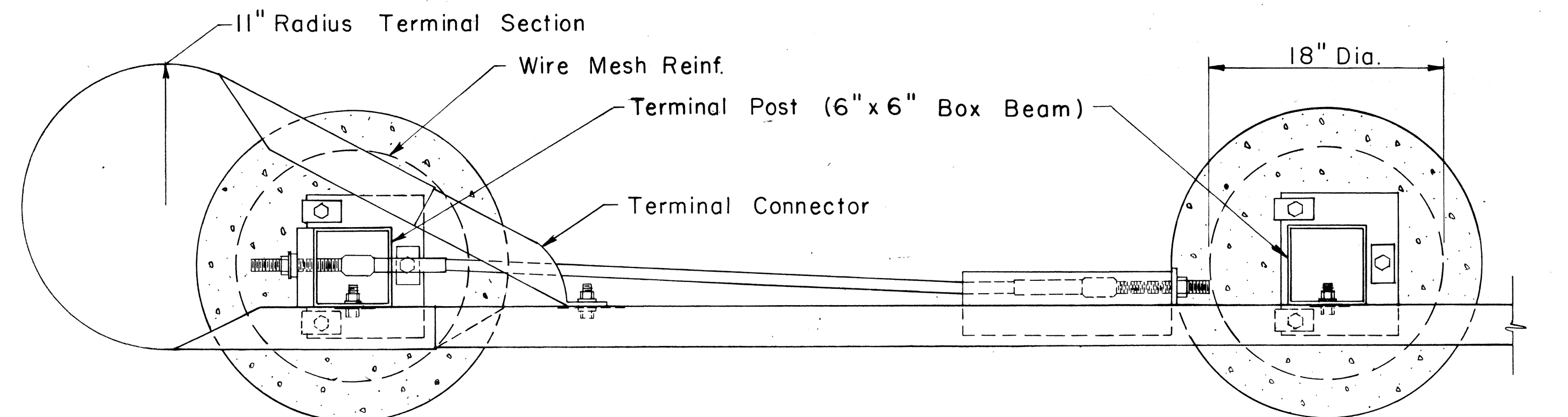
FLAT PLATE WASHER

Scale: Full Size

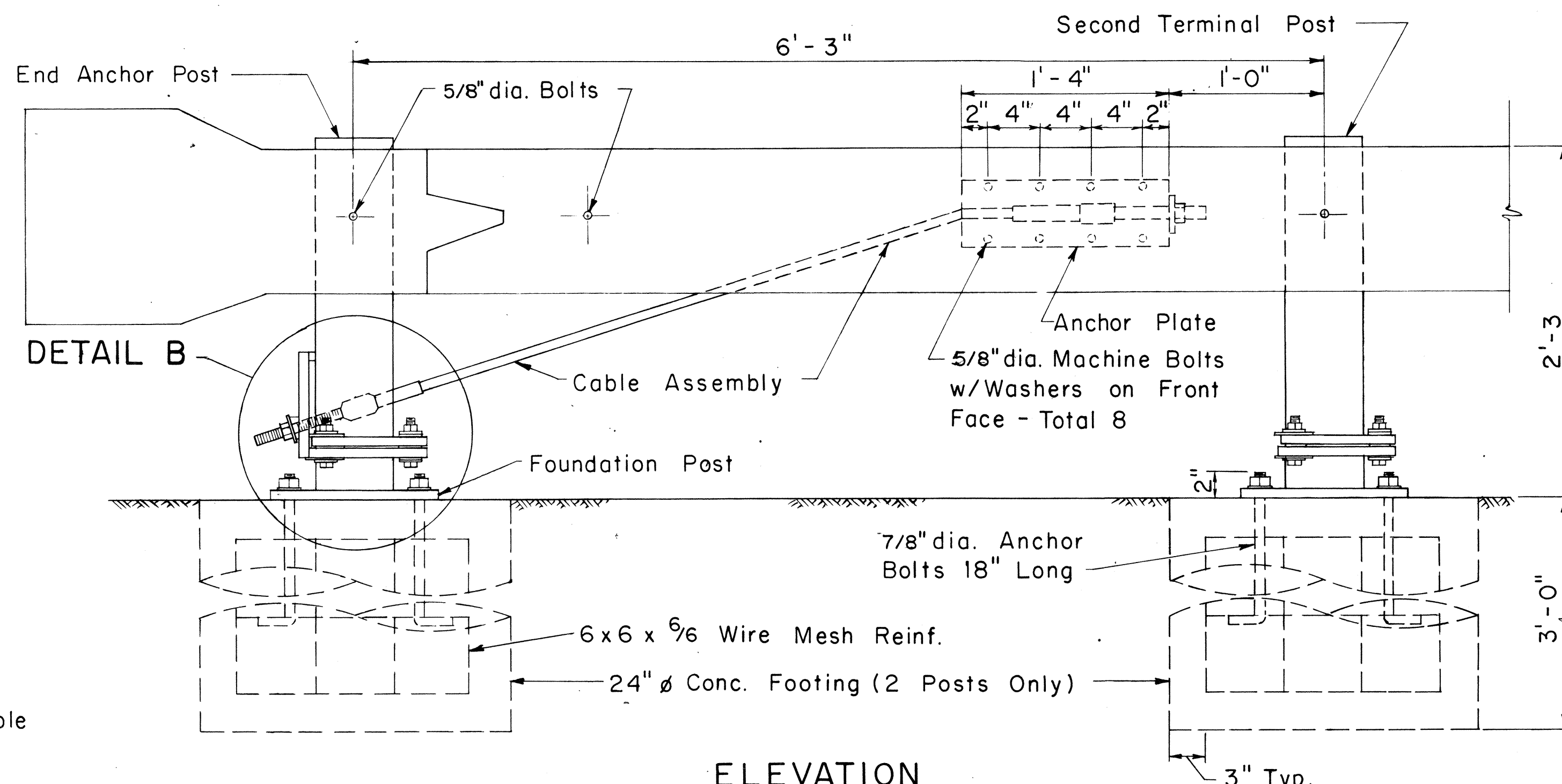


TAPERED WASHER

Scale: Full Size



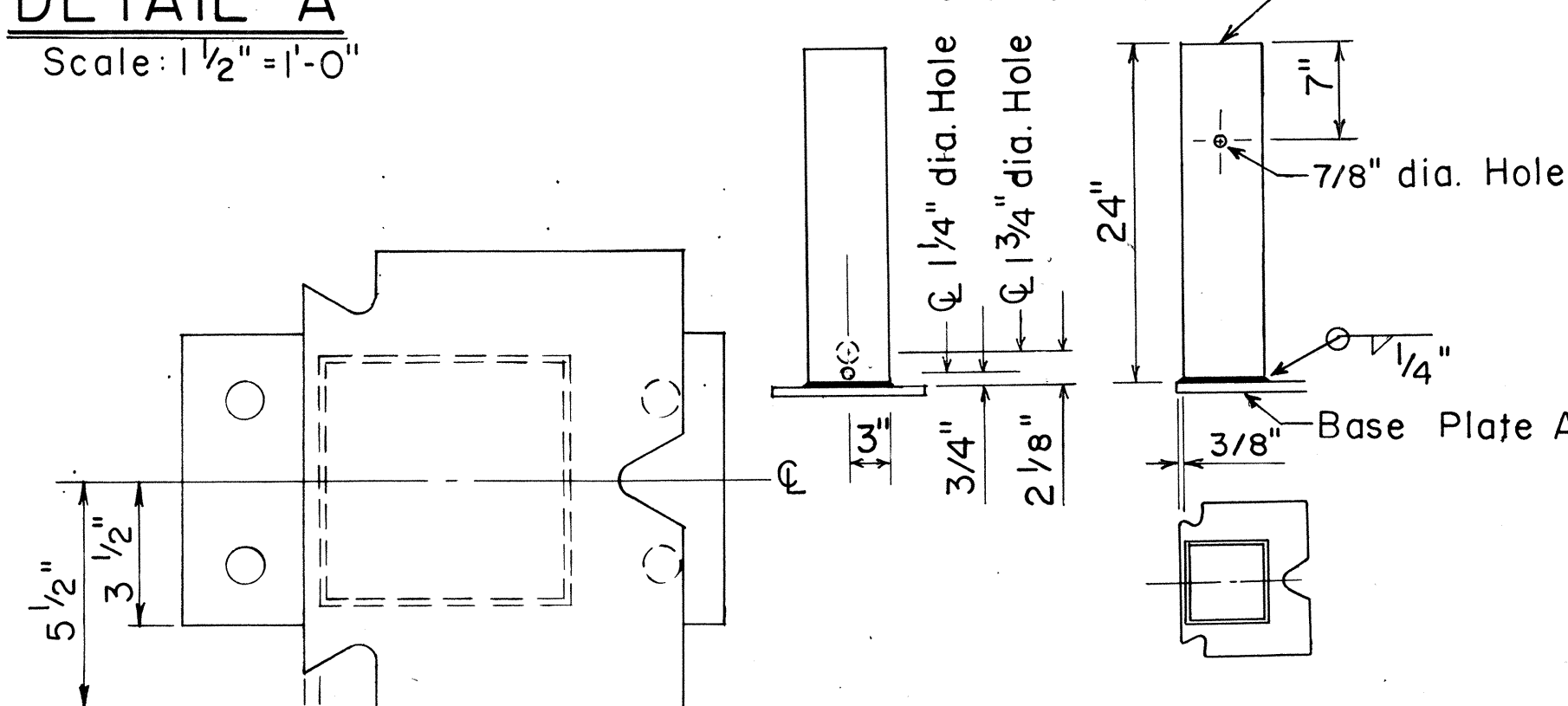
PLAN



ELEVATION

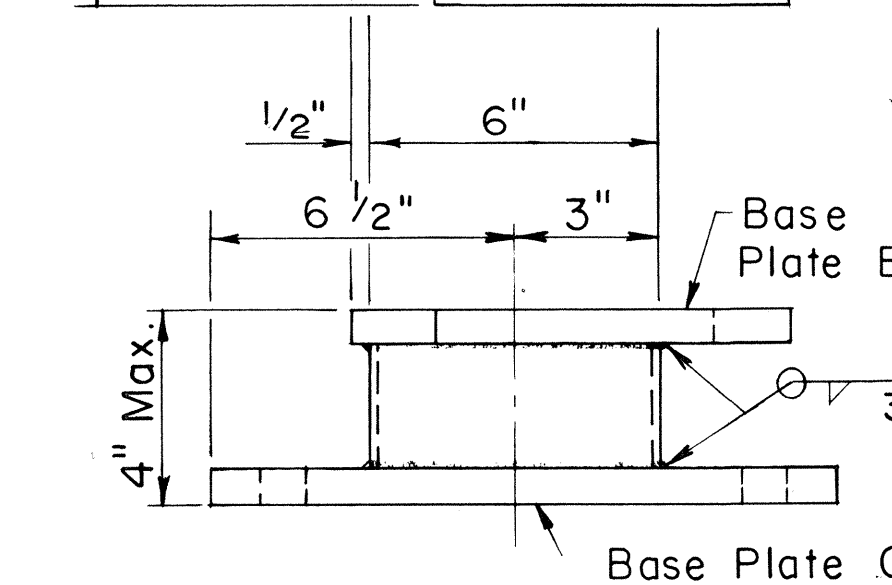
DETAIL A

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



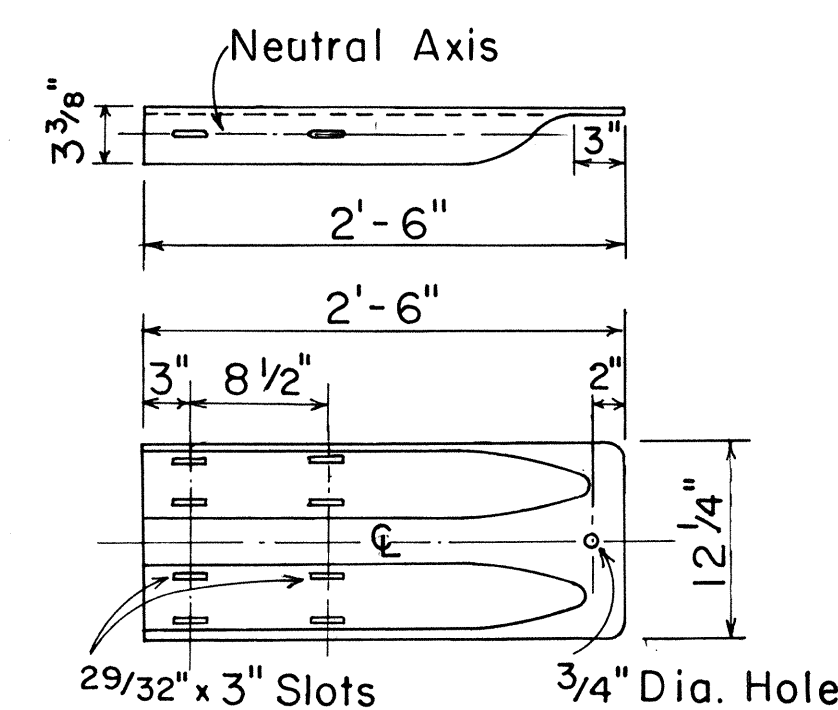
TERMINAL POST

Scale: 1" = 1'-0"



FOUNDATION POST

Scale: 3" = 1'-0"



TERMINAL CONNECTOR

Scale: 1" = 1'-0"

APPROVAL RECOMMENDED:

Eishi Tanaka
TRAFFIC ENGINEER
6/14/78
DATE

APPROVED:

Robert Z. Kishner
ASSISTANT CHIEF, ENGINEERING
6/15/78
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL

BREAKAWAY CABLE TERMINAL (BCT)

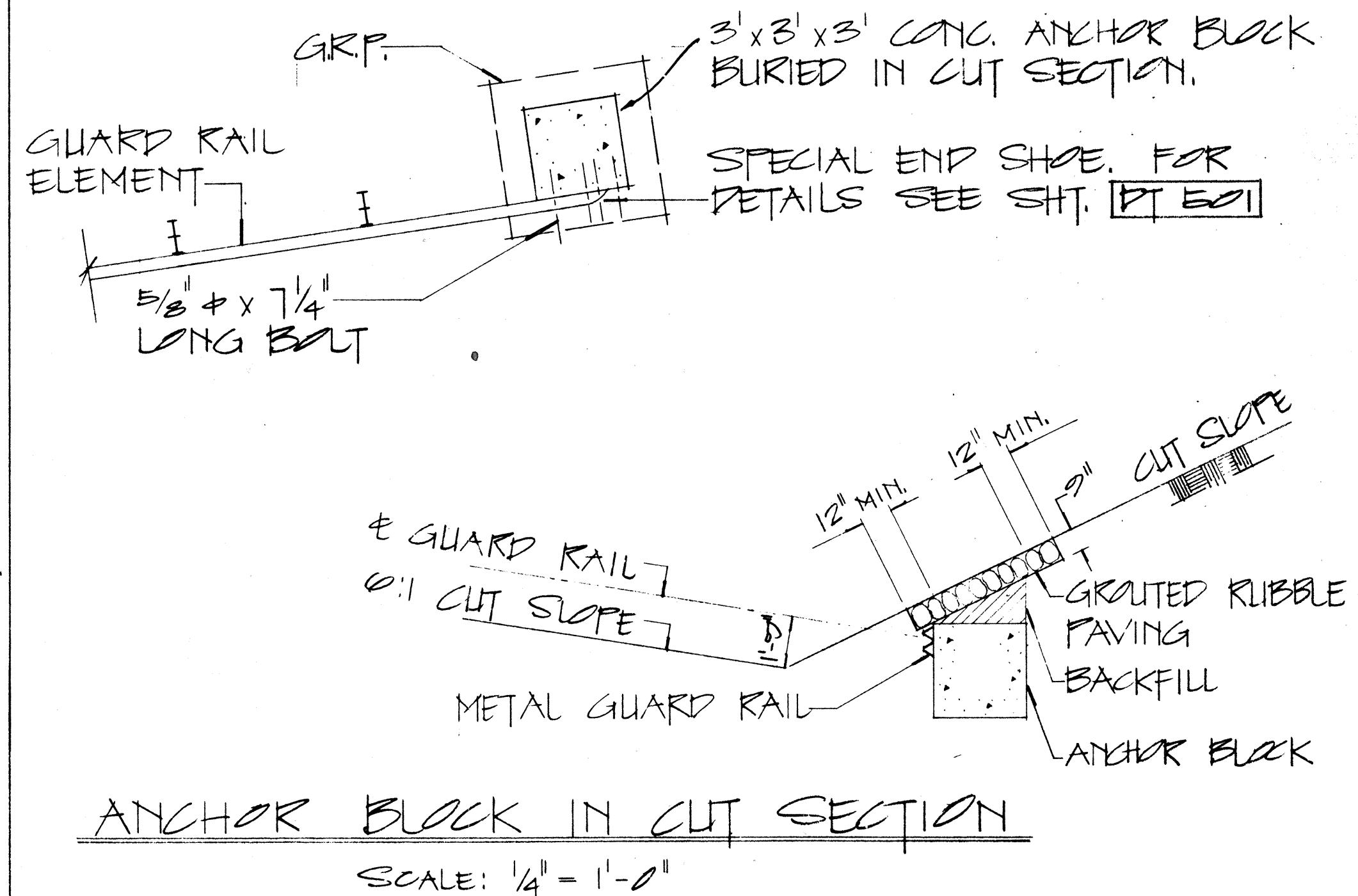
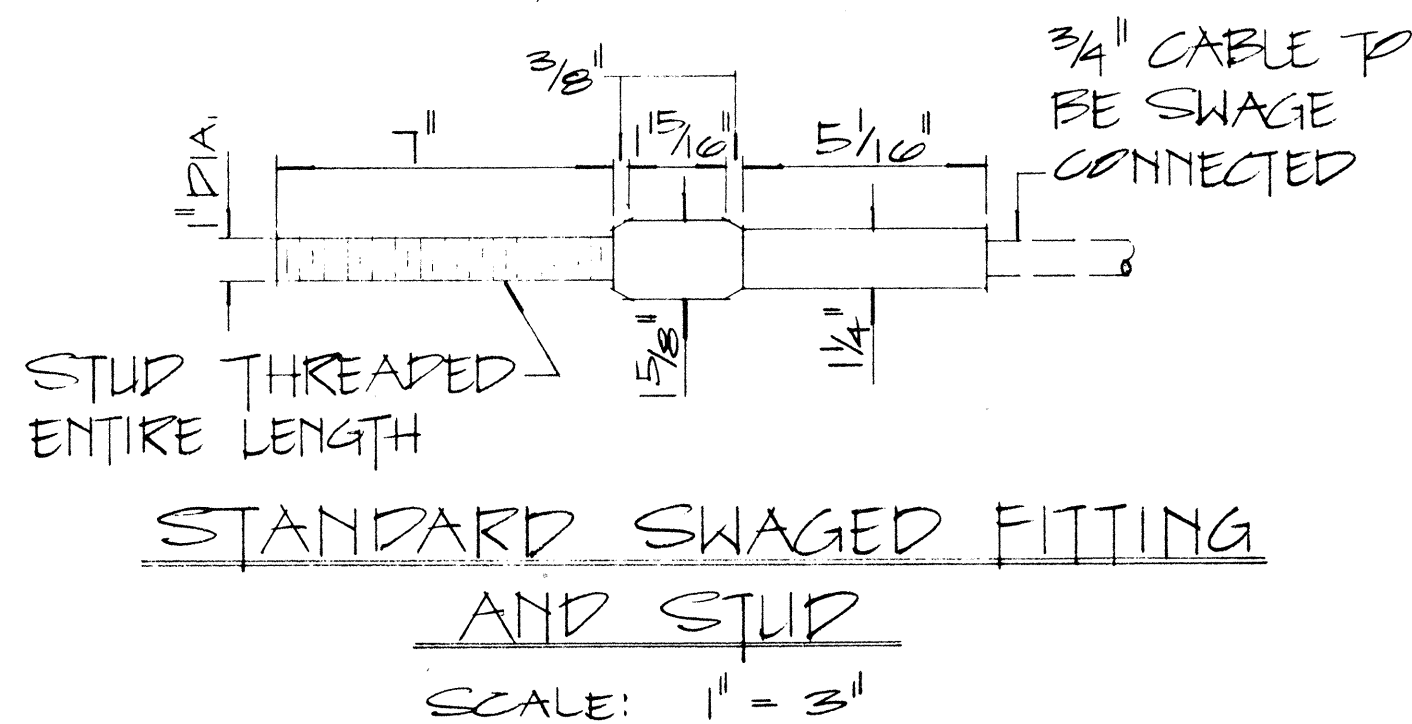
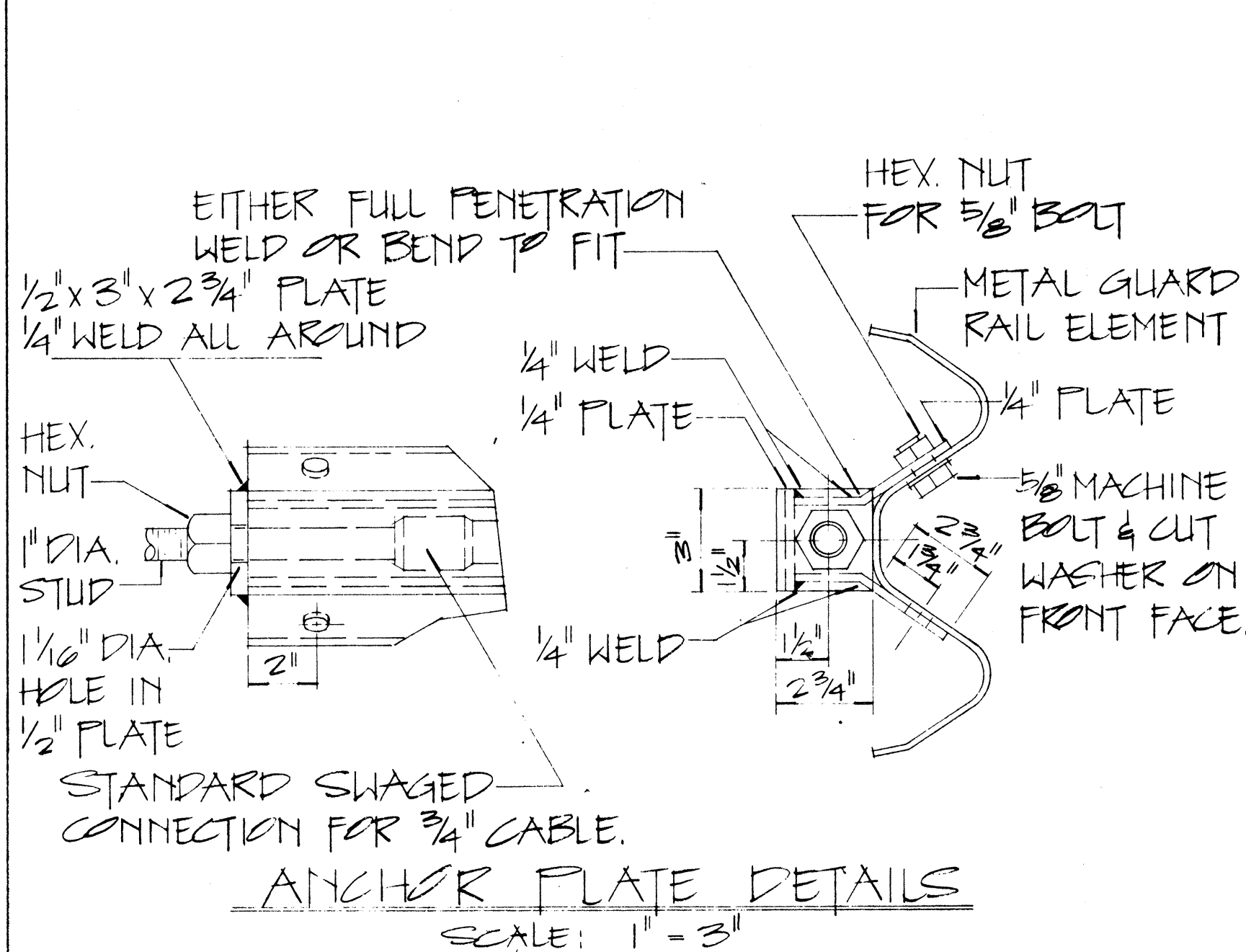
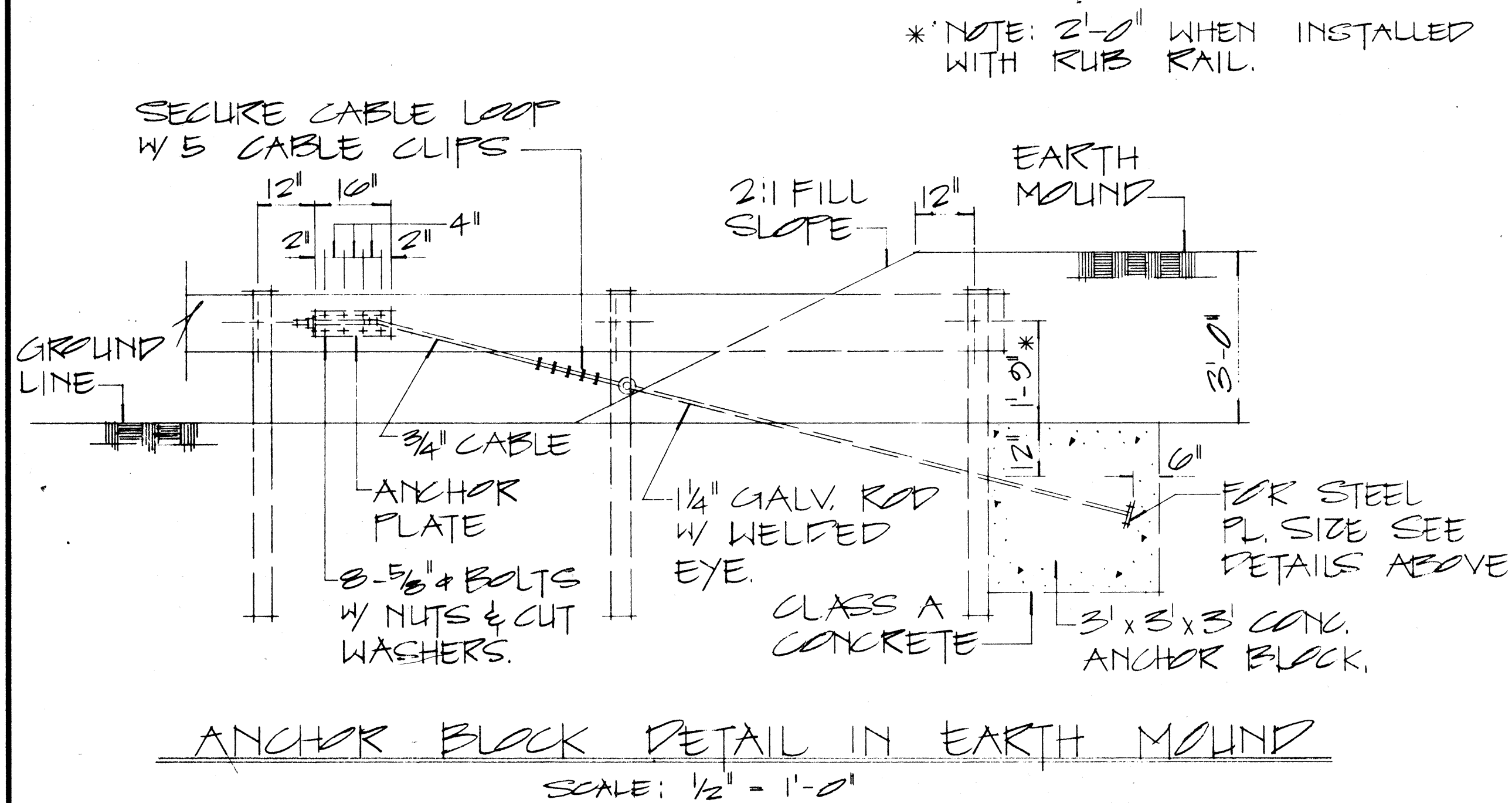
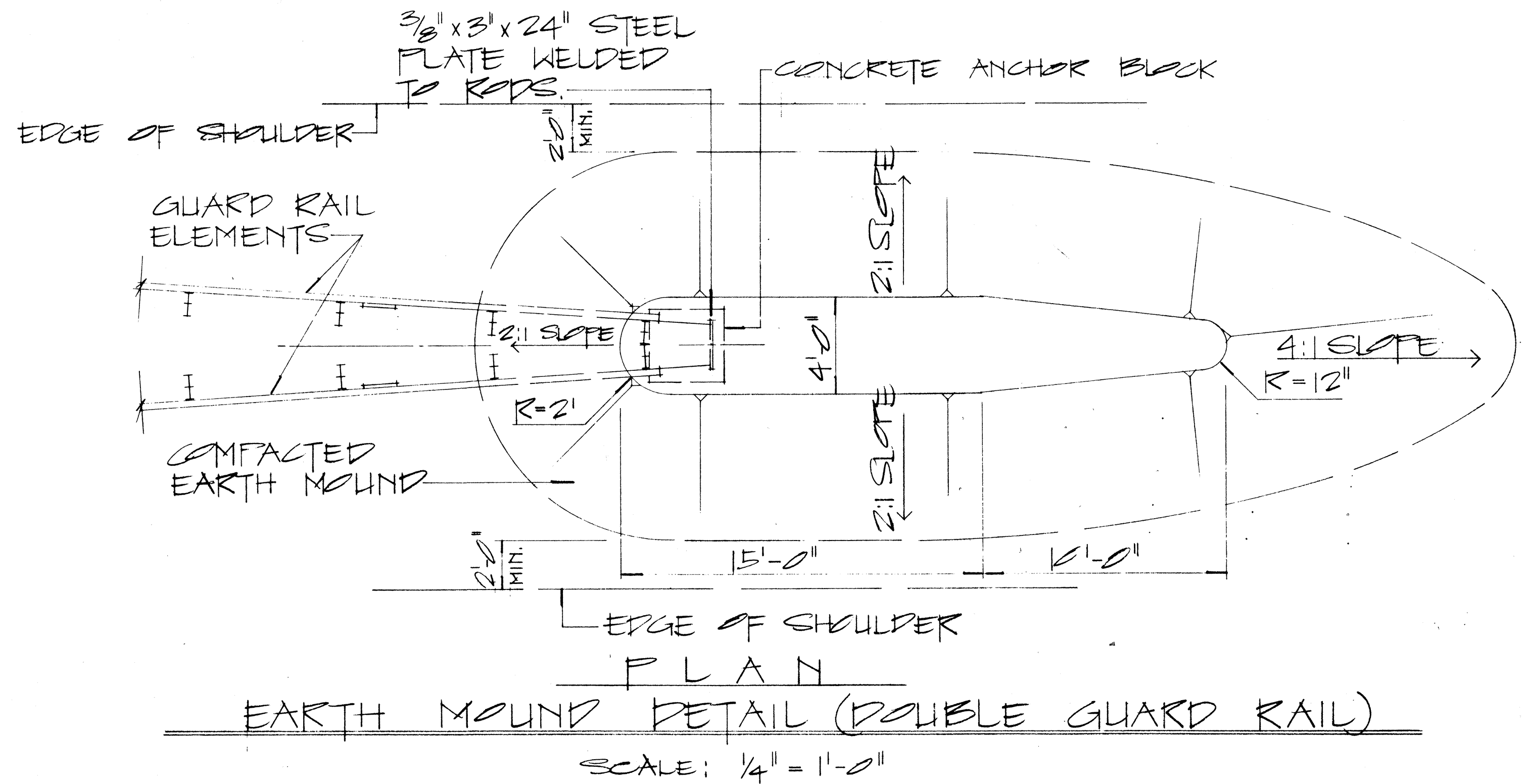
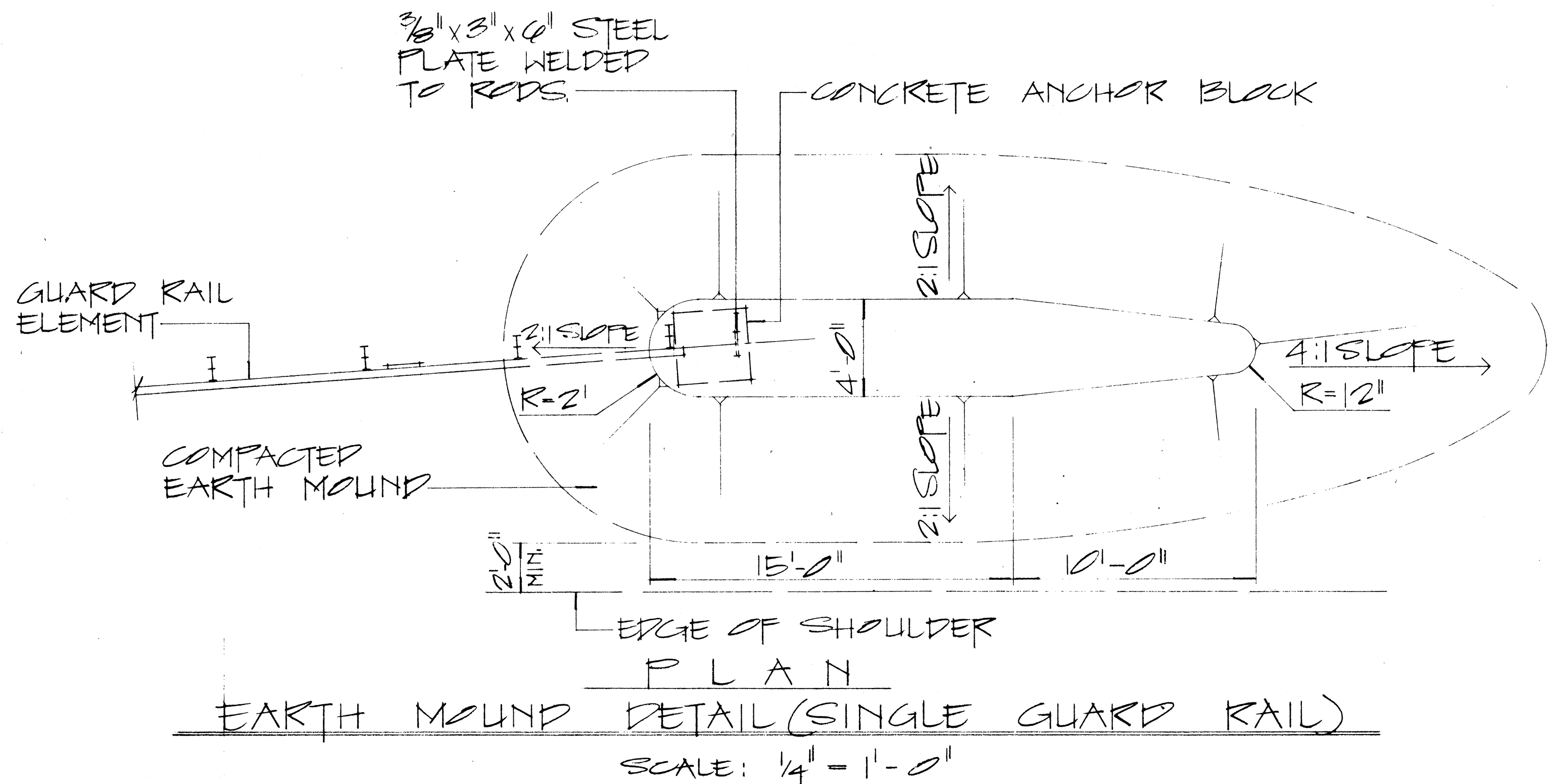
Scale: As Shown

Date: June 1978

SHEET No. 12 OF 13 SHEETS DT 519

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

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	270A-01-79 LT-H-01-79	1979	17	18



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:

Eishi Tanaka 12/22/62 DATE

TRAFFIC ENGINEER

APPROVED:

W. J. O'Sullivan 12-30-69 DATE

ASSISTANT CHIEF, ENGINEERING

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DETAILS

SCALE: AS SHOWN

SHEET No. 13 OF 13 SHEETS

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