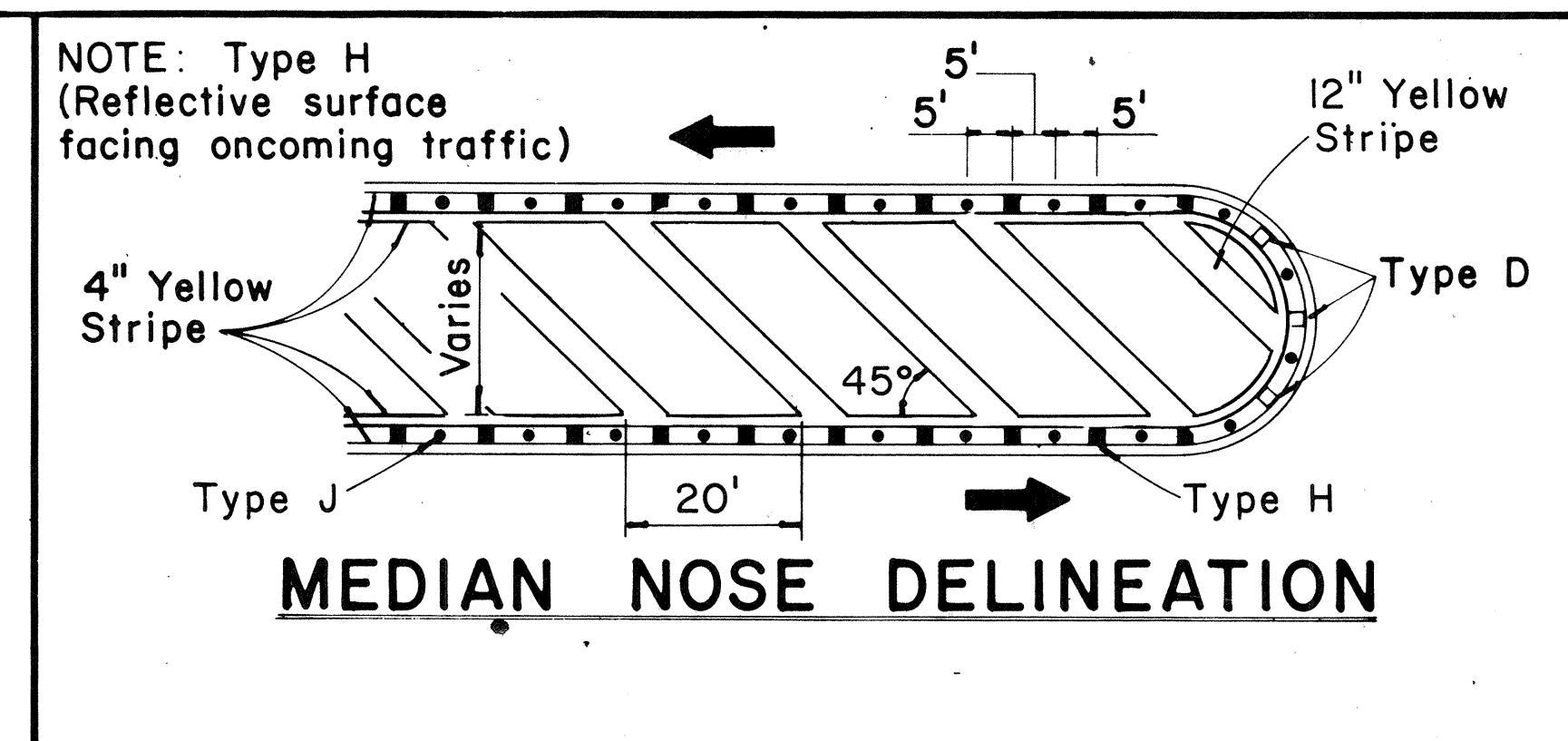
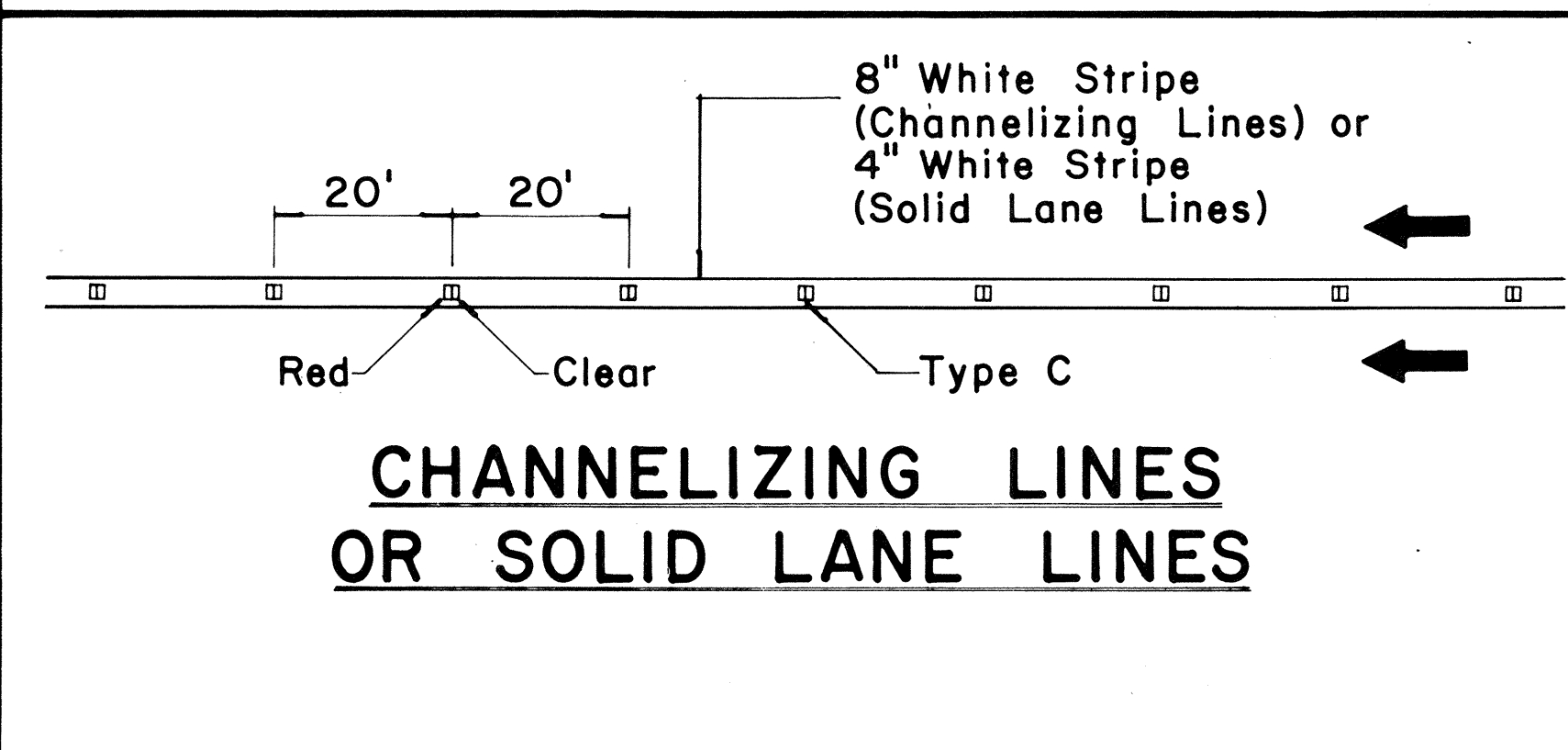
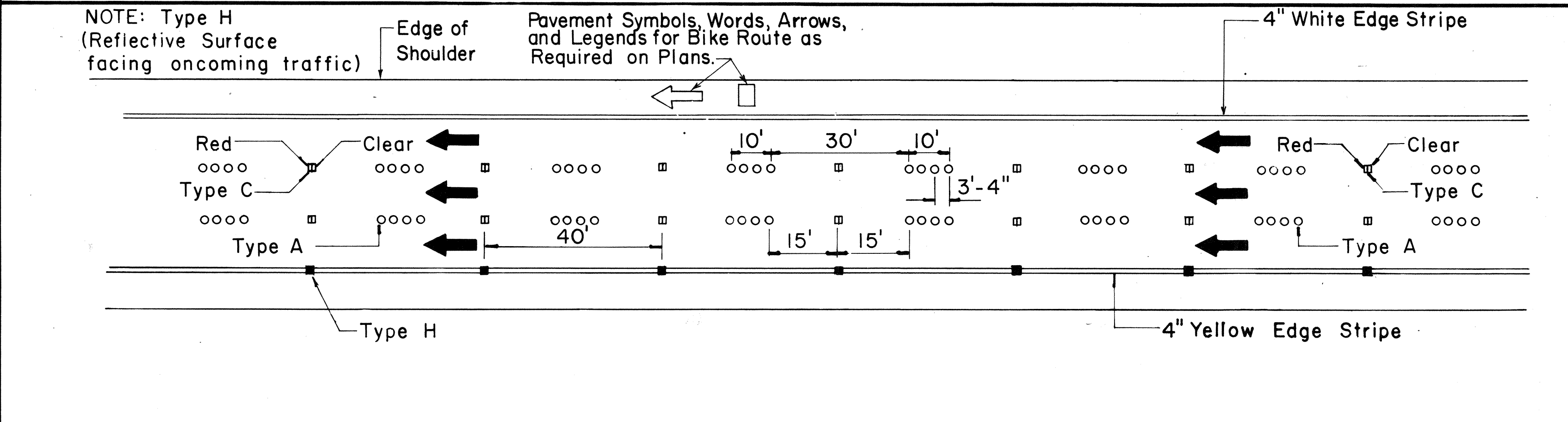
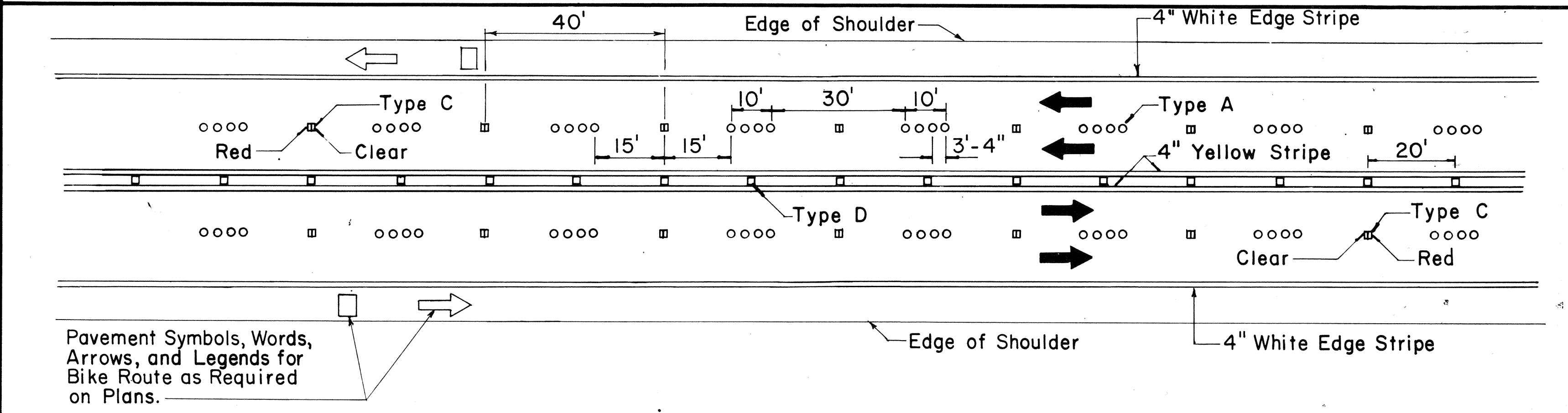
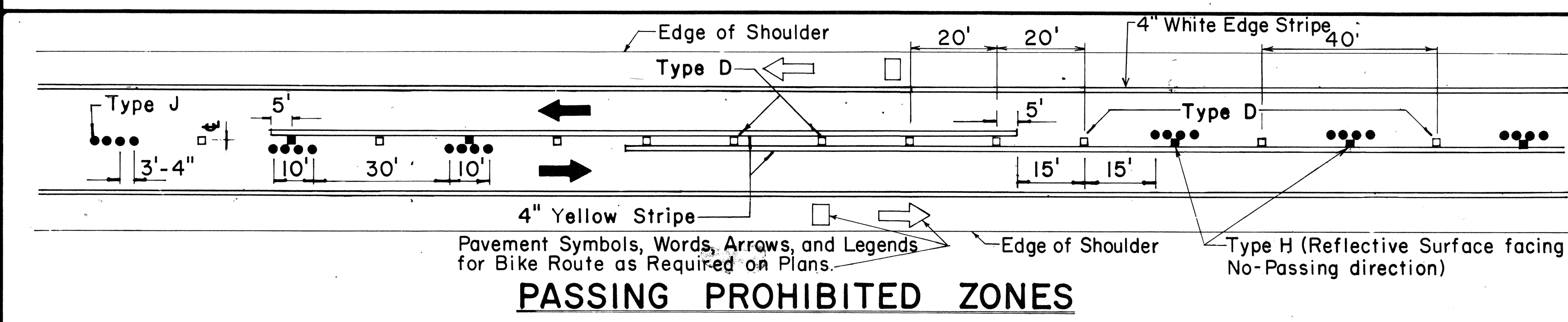
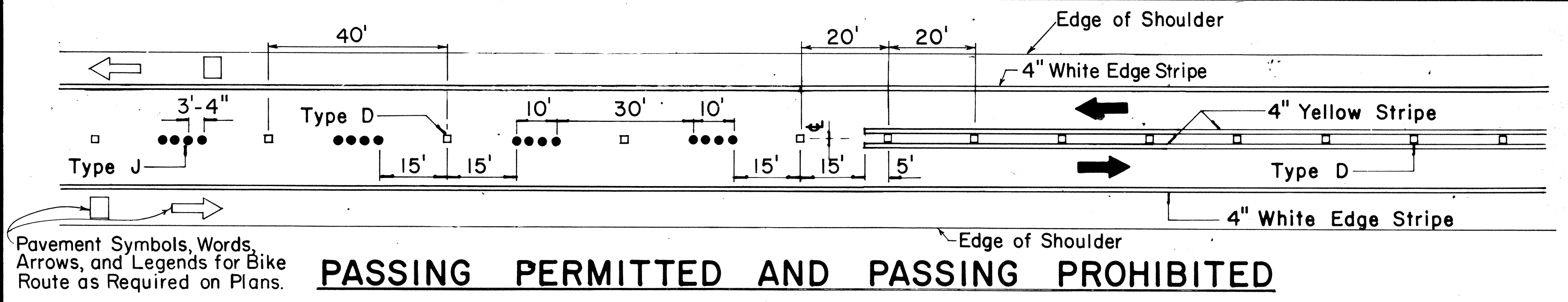


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	12	24

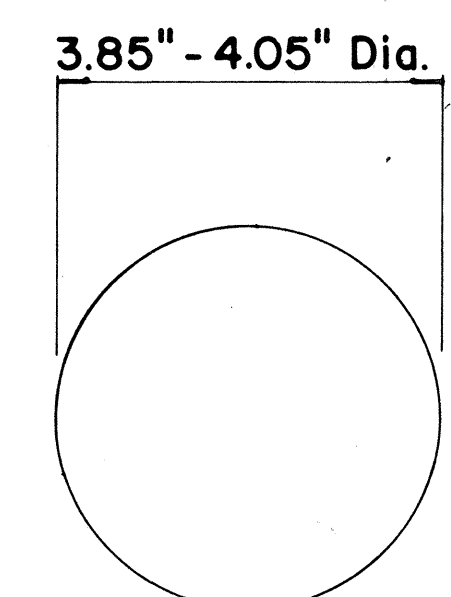


TWO - LANE

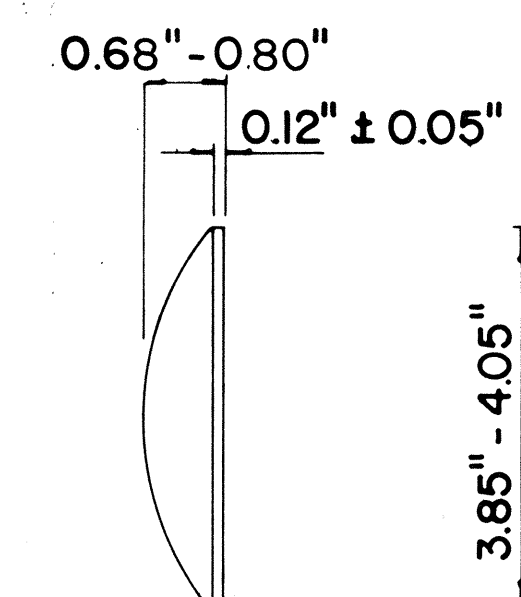
MULTI - LANE

DIVIDED HIGHWAY
AND
FREEWAY

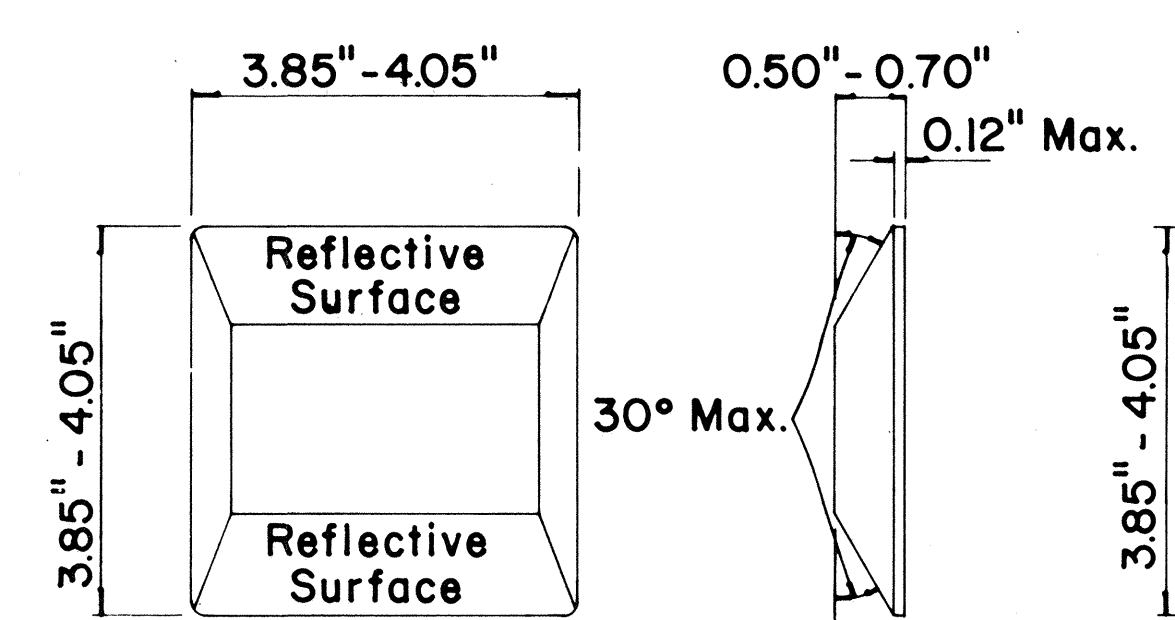
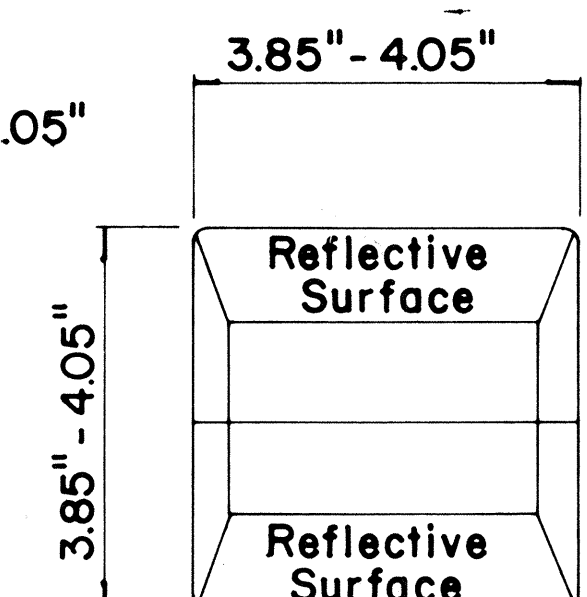
MISCELLANEOUS



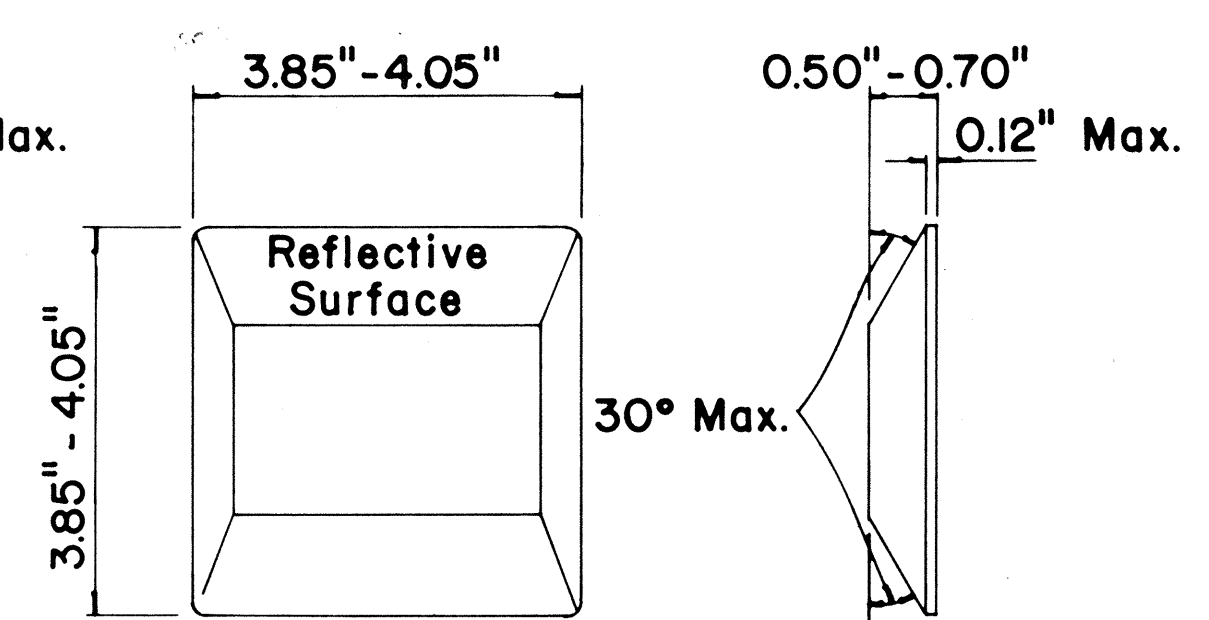
TYPE A
NON-REFLECTIVE WHITE MARKER
TYPE J
NON-REFLECTIVE YELLOW MARKER



TYPE C
RED-CLEAR REFLECTIVE MARKER



TYPE D
TWO-WAY YELLOW 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
TRAFFIC ENGINEER

7/21/78
DATE

APPROVED:

Harold J. Delia
ASSISTANT CHIEF, ENGINEERING

1/24/78
DATE

No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.T.	1/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.T.	10/15/79

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RAISED PAVEMENT MARKERS
AND STRIPING

Not to Scale July 1978
SHEET No. 1 OF 11 SHEETS DT 300

DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
ORIGINAL PLAN	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	13	24

GENERAL NOTES:

1. Pavement marking and striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," by the FHWA, and as amended.
2. Layout of pavement markings and striping shall be done by the Contractor. The Contractor shall check layout of markings and striping with the Engineer prior to performing work.
3. For additional pavement marking details, see sheet DT 300.

APPROVAL RECOMMENDED:
Eusebio Tanaka
TRAFFIC ENGINEER
5/2/78
DATE

APPROVED:
Herbert Z. Zakeiah
ASSISTANT CHIEF, ENGINEERING
5/2/78
DATE

NO.	REVISION	APPROVED BY	DATE

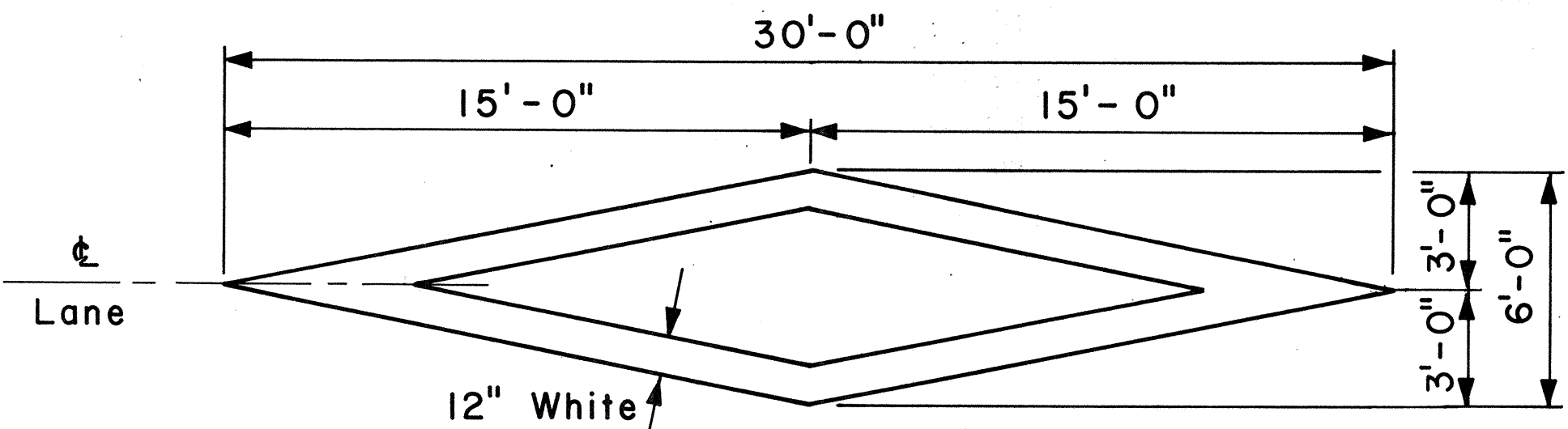
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

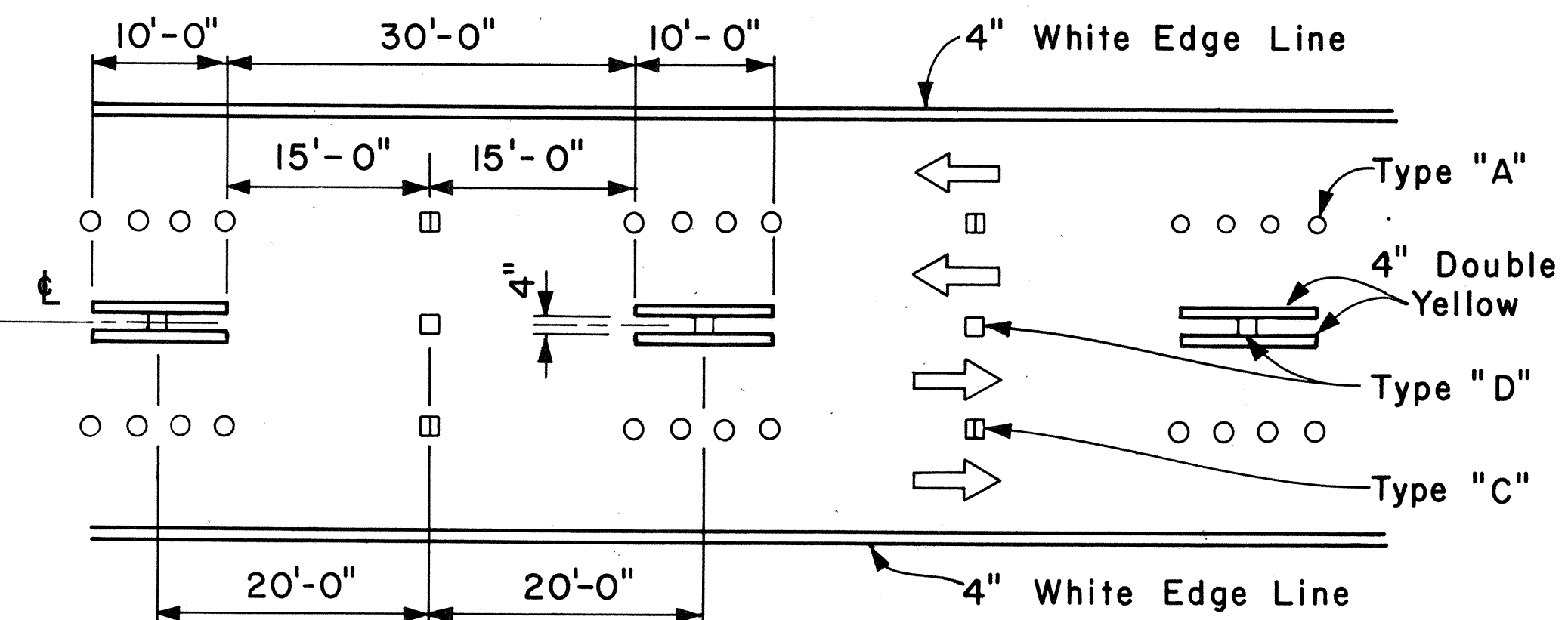
MISCELLANEOUS
PAVEMENT MARKINGS

Scale: Not to Scale Date: April, 1978

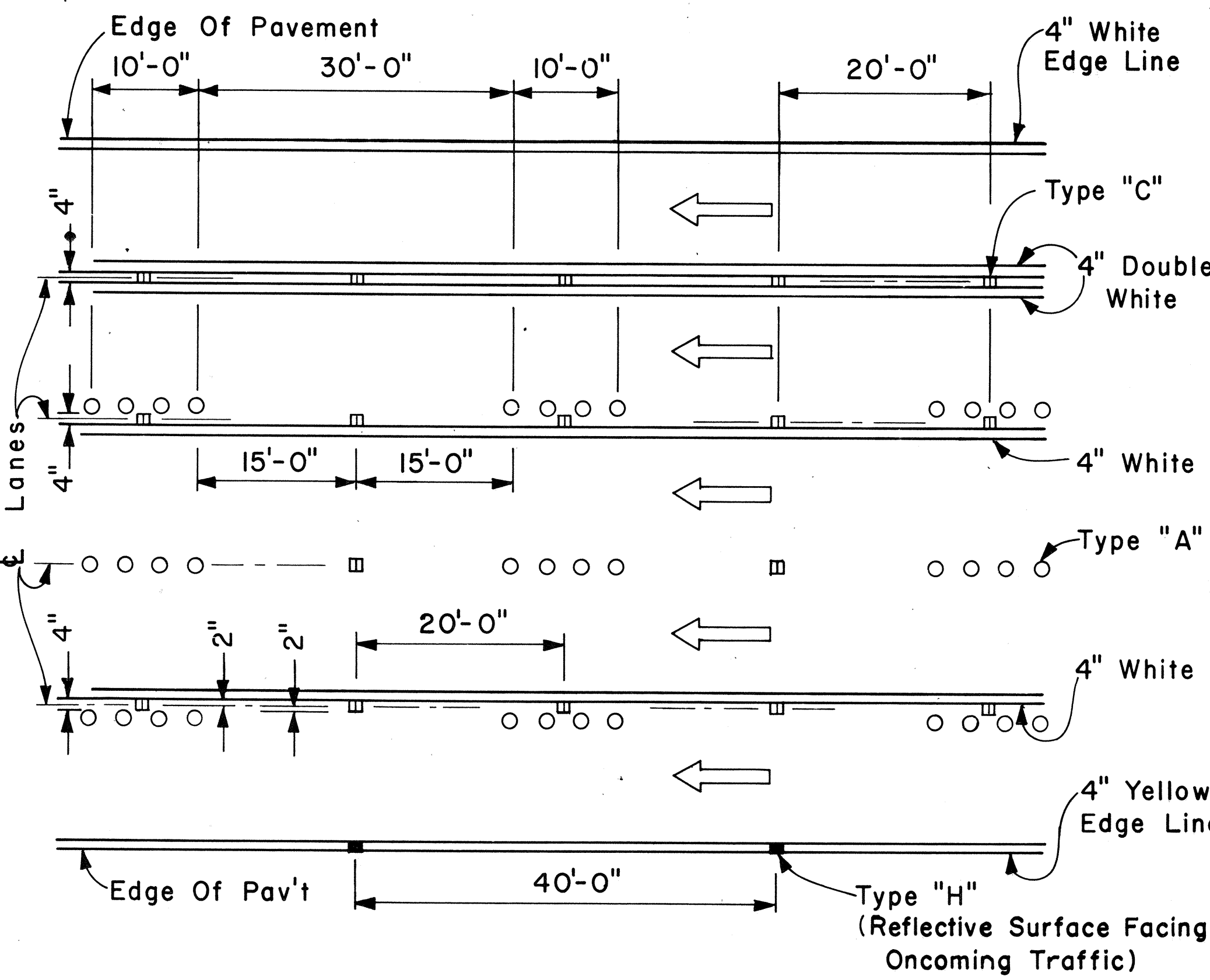
SHEET No. 2 OF 77 SHEETS DT 302



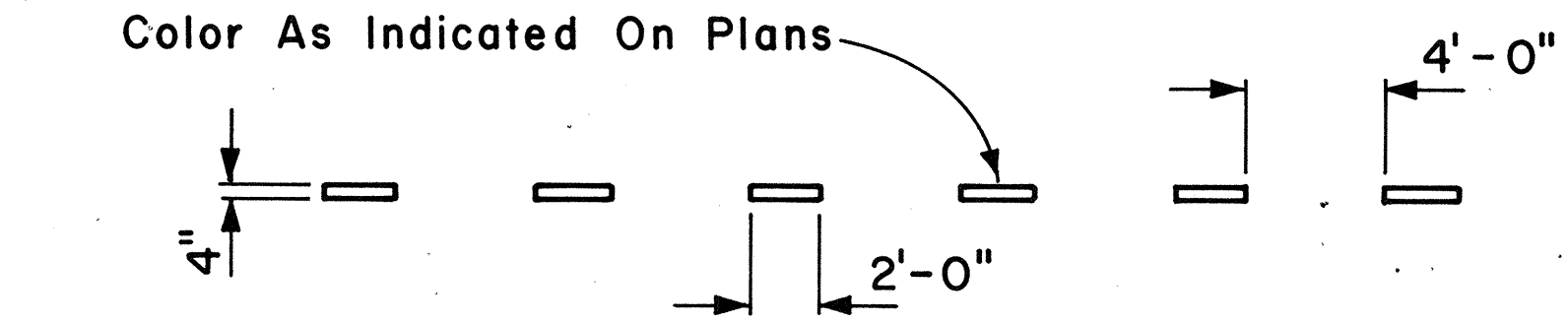
PAVEMENT DIAMOND



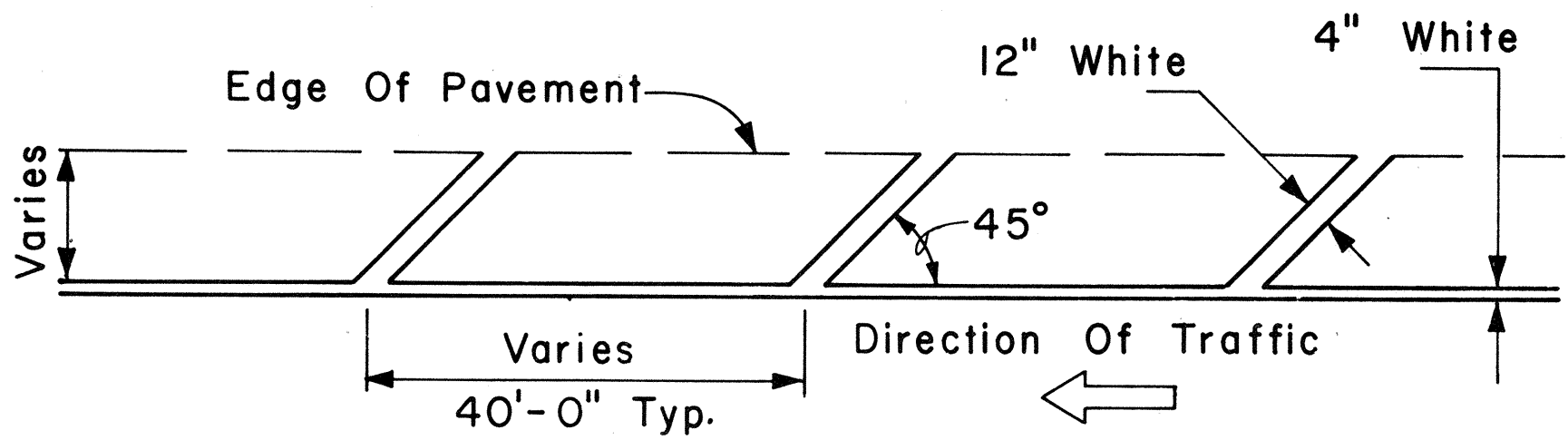
MULTI-LANE REVERSIBLE LANES



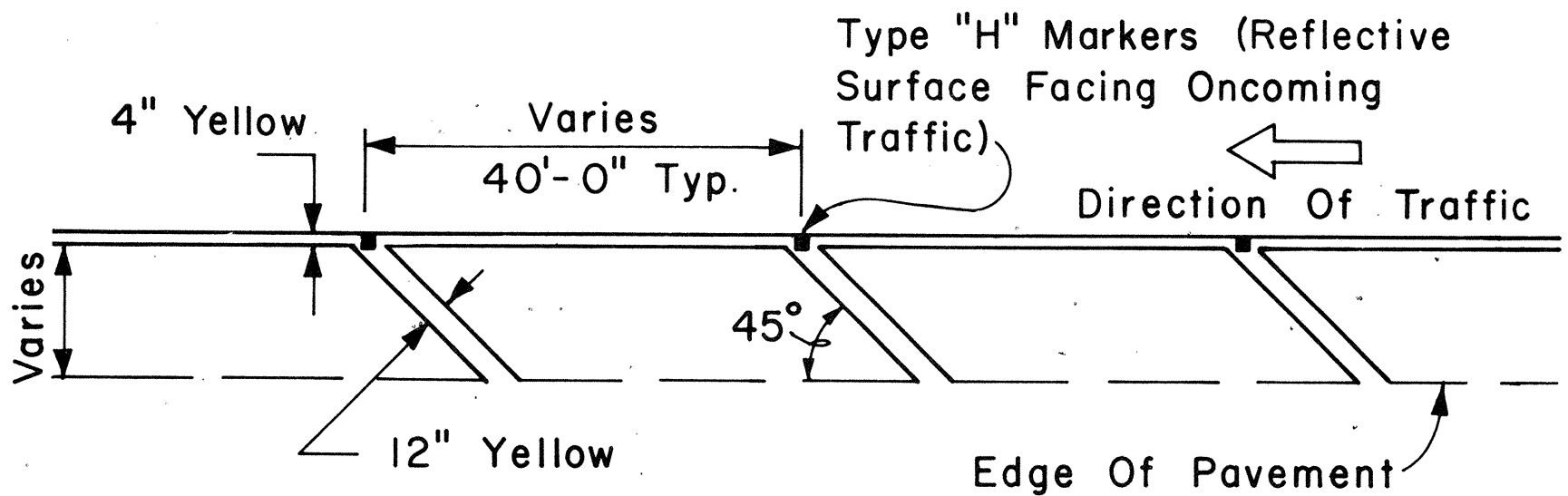
MULTI-LANE LANE CHANGE RESTRICTION ZONES



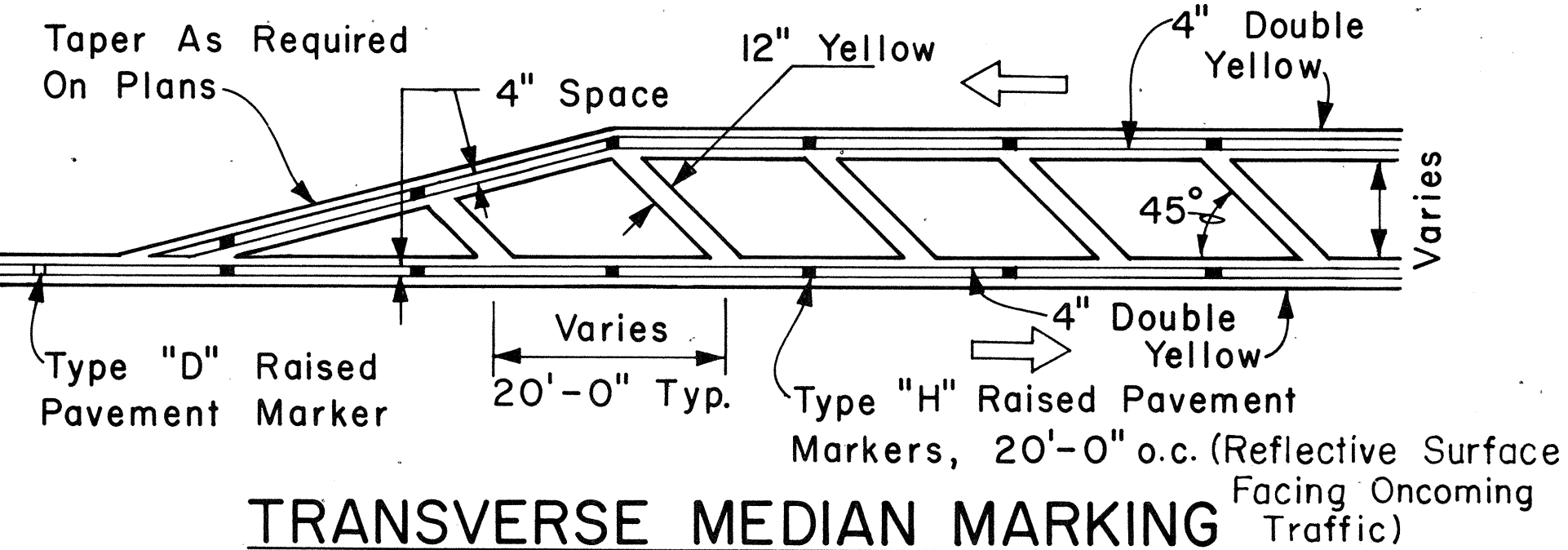
4" GUIDE LINE



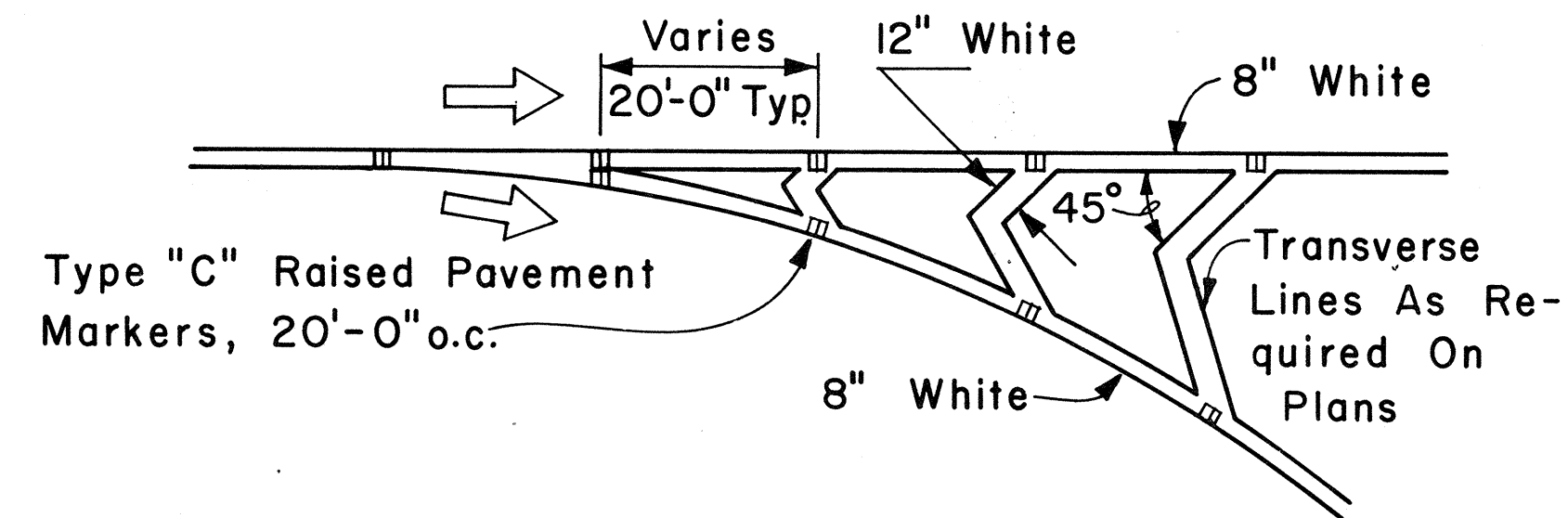
TRANSVERSE RIGHT SHOULDER MARKING



TRANSVERSE LEFT SHOULDER MARKING



TRANSVERSE MEDIAN MARKING



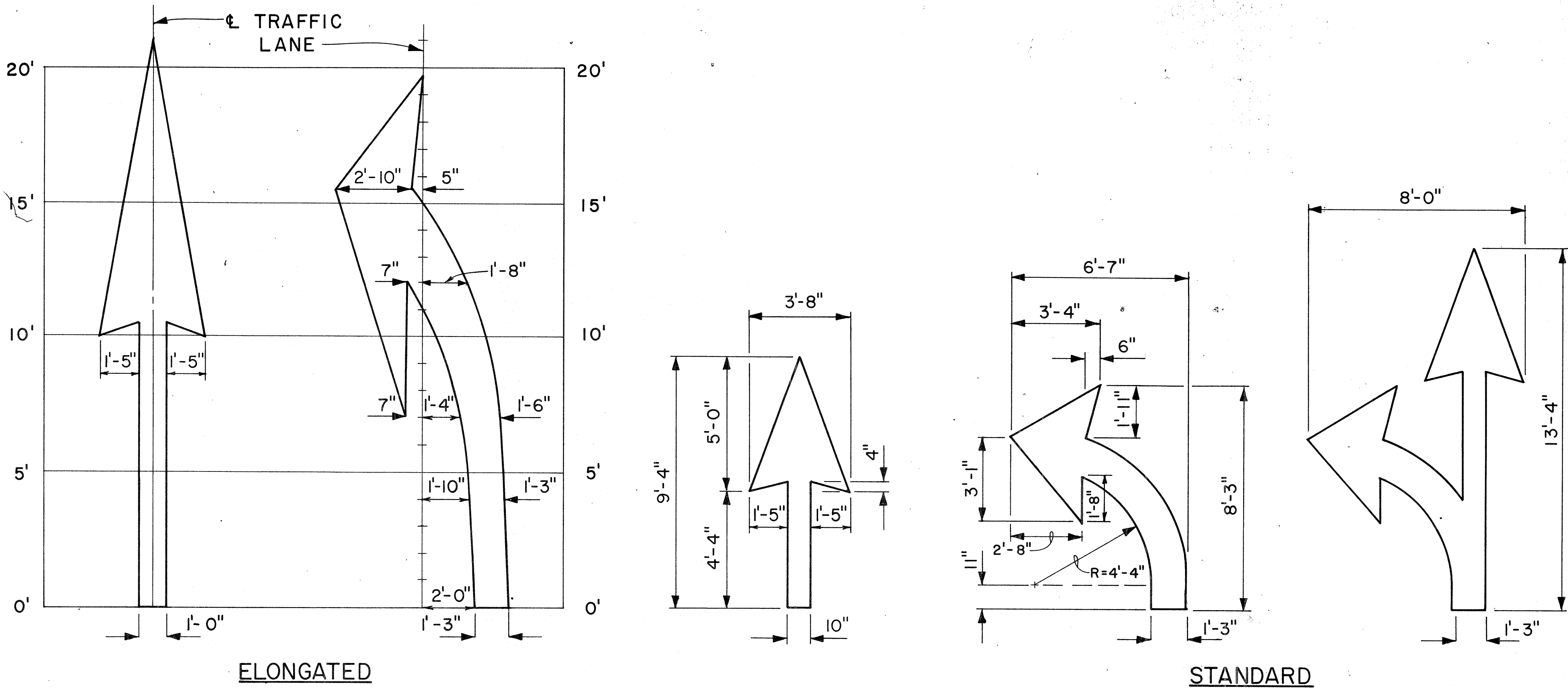
CHANNELIZING ISLAND

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

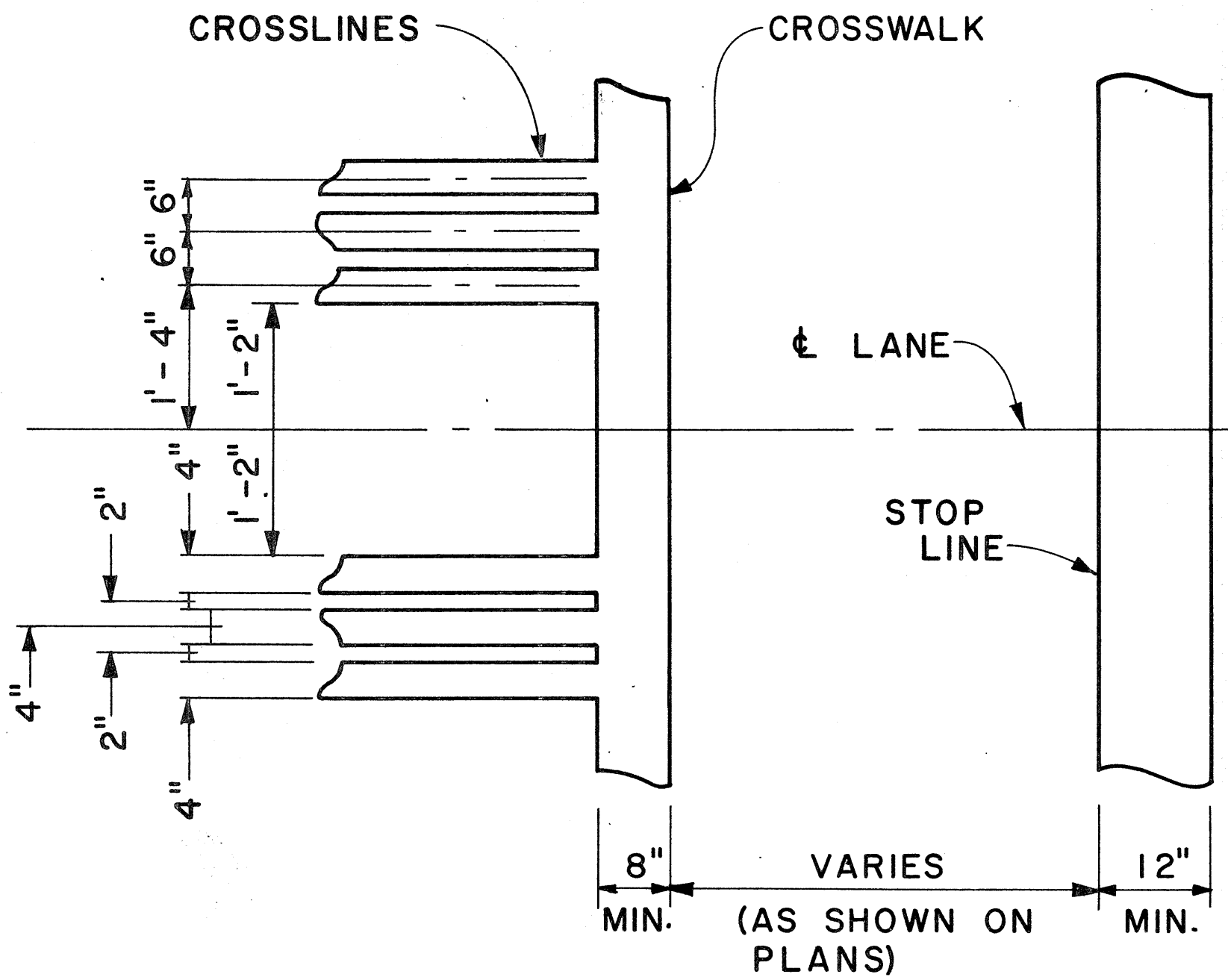
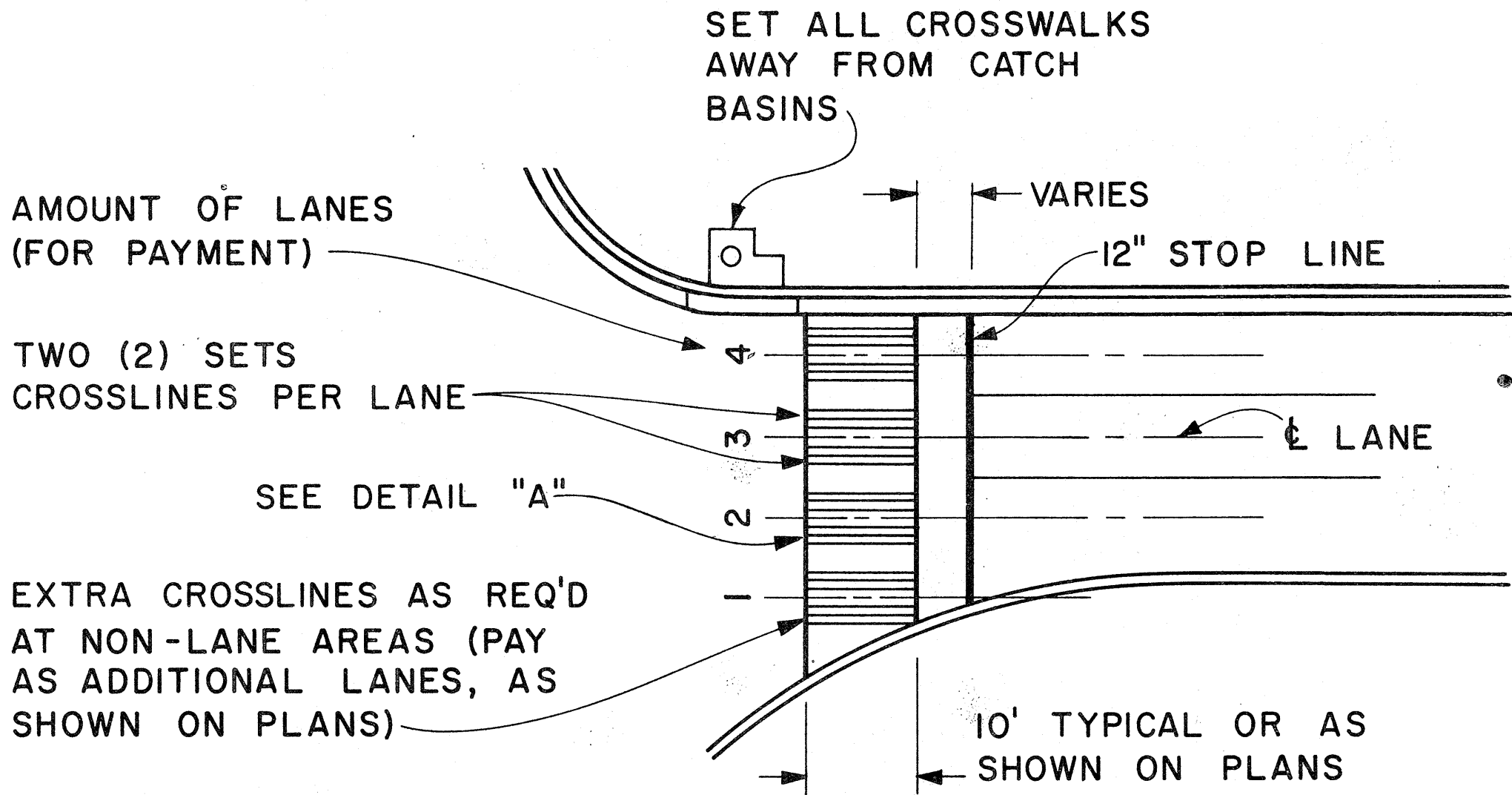
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	14	24

GENERAL NOTES:

- 1. Pavement marking and striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," by the FHWA, and as amended.
- 2. Layout of pavement markings and striping shall be done by the Contractor. The Contractor shall check layout of markings and striping with the Engineer prior to performing work.
- 3. For additional pavement marking details, see sheet DT 300.



PAVEMENT ARROWS
Scale: 3/8" = 1'



CROSSWALK & STOP LINE
Scale: Not to Scale

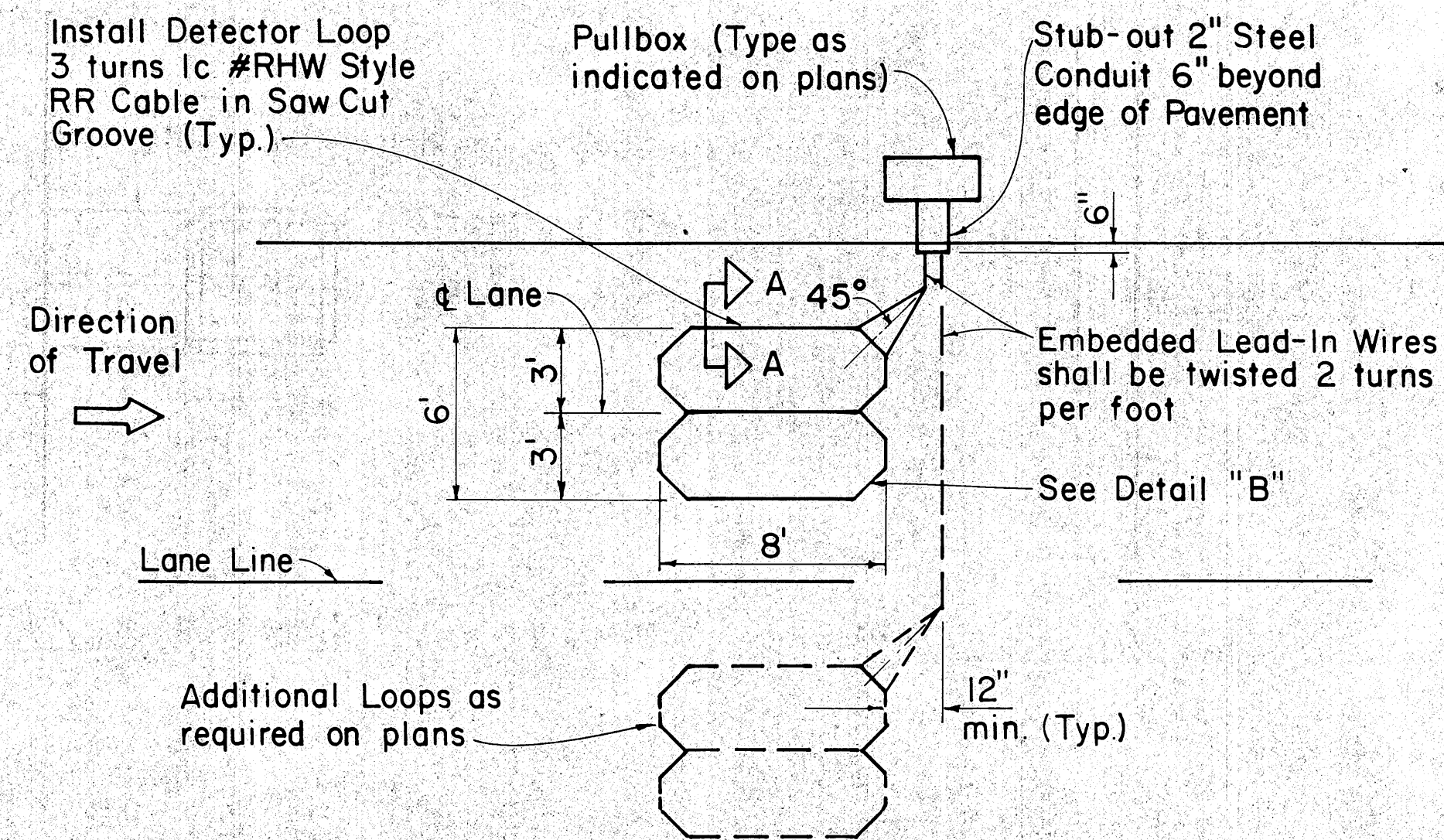
APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
APPROVED:
ASSISTANT CHIEF, ENGINEERING

Table with 4 columns: NO., REVISION, APPROVED BY, DATE.

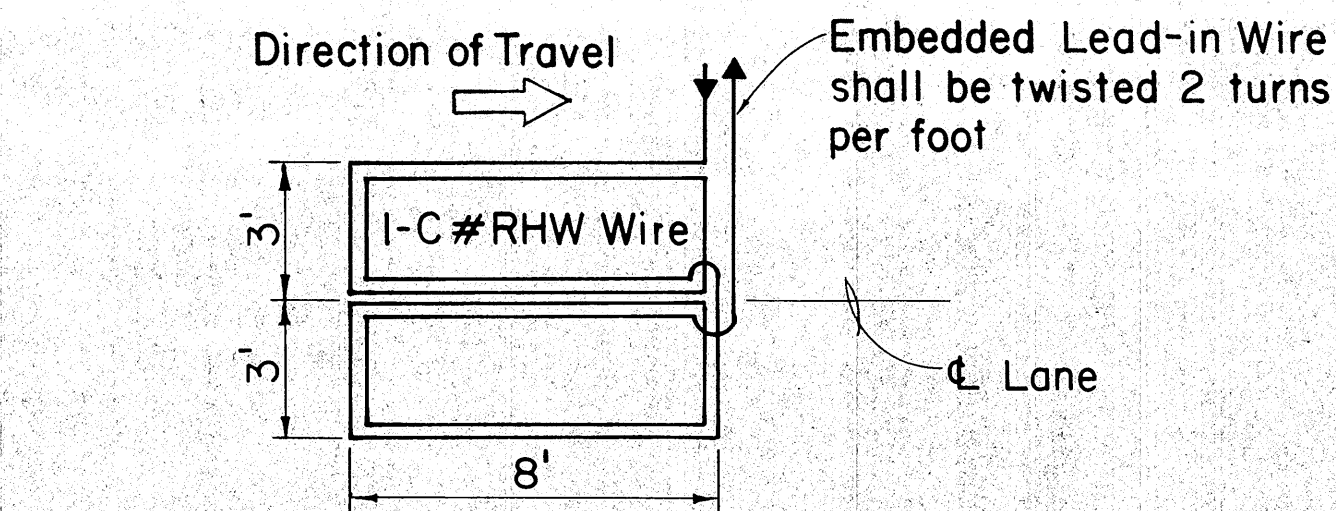
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
MISCELLANEOUS
PAVEMENT MARKINGS
Scale: As Shown Date: March, 1978
SHEET NO. 3 OF 11 SHEETS DT 306

Table with 2 columns: ORIGINAL PLAN, NO.

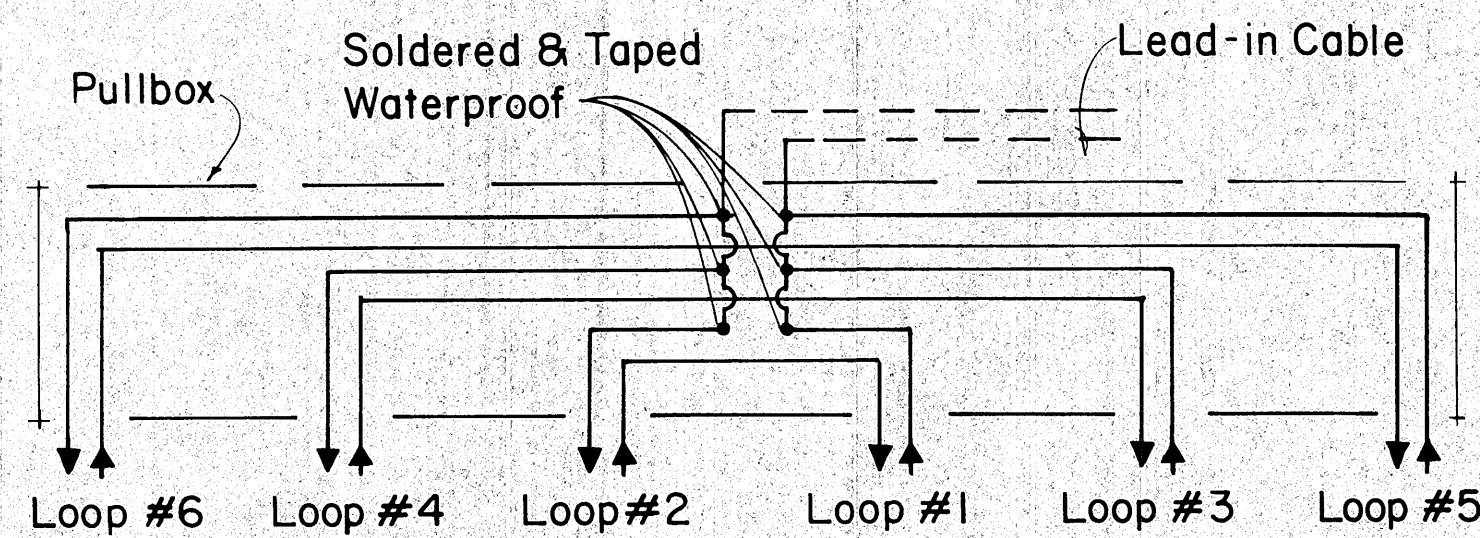
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	15	24



SINGLE LOOP LAYOUT

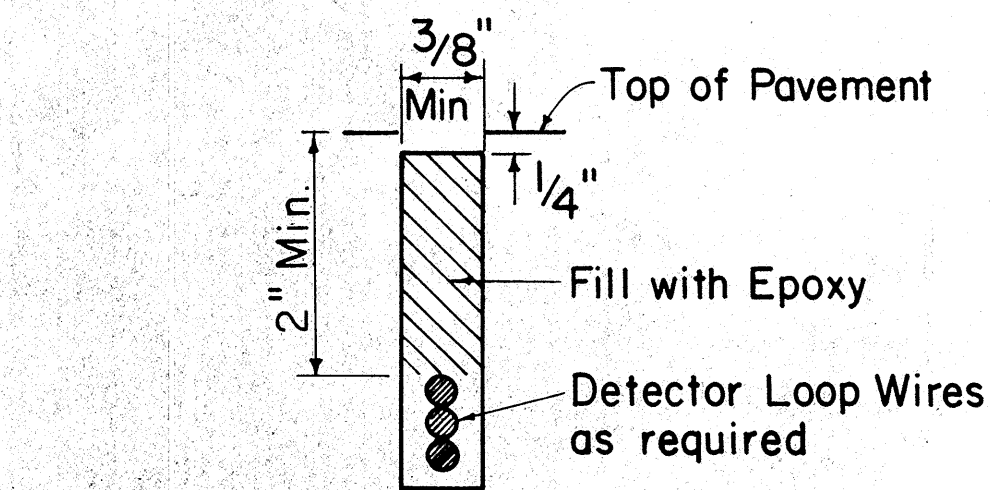


WIRING DIAGRAM



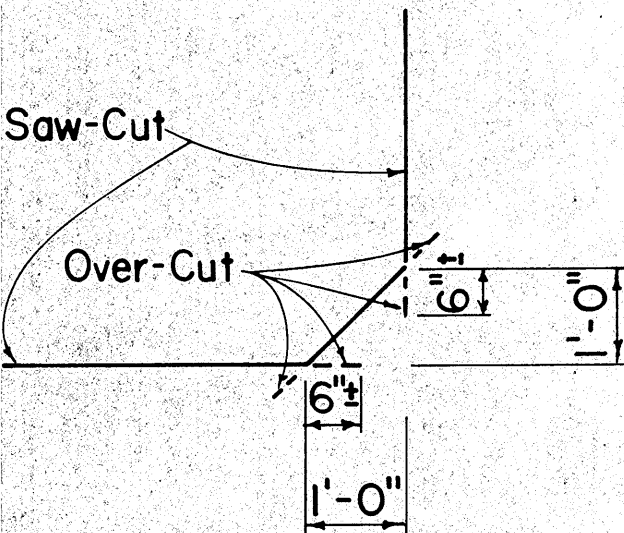
DETAIL "A"

TYPICAL SERIES-PARALLEL LOOP CONNECTION

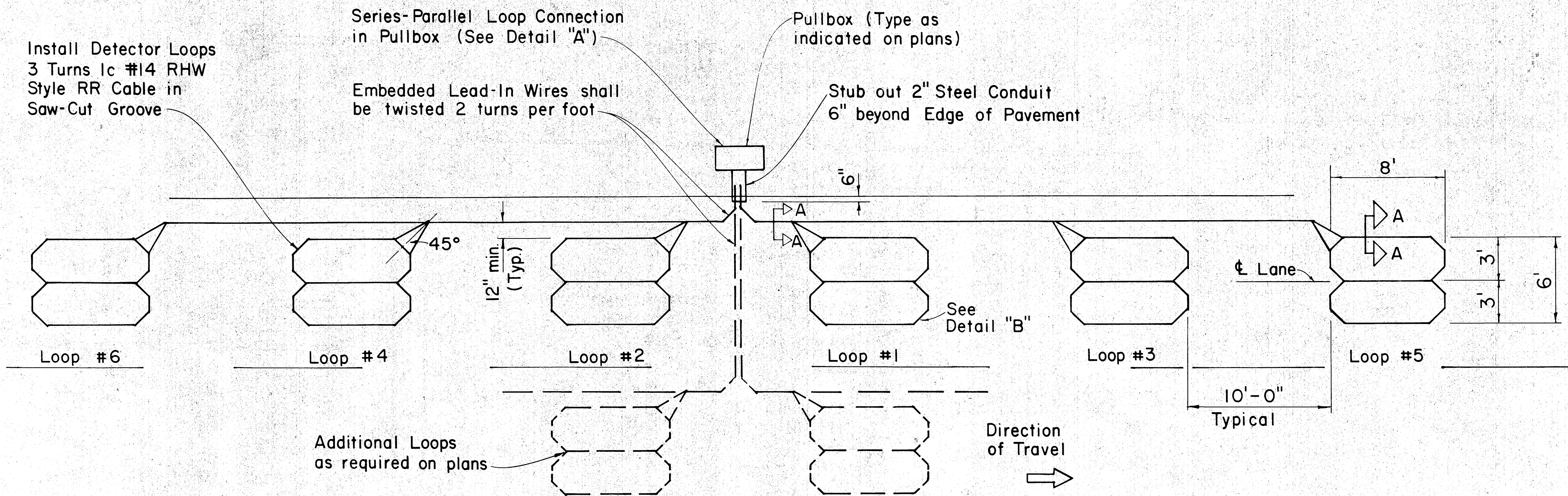


DETECTOR LOOP SAW-CUT SECTION A-A (TYPICAL)

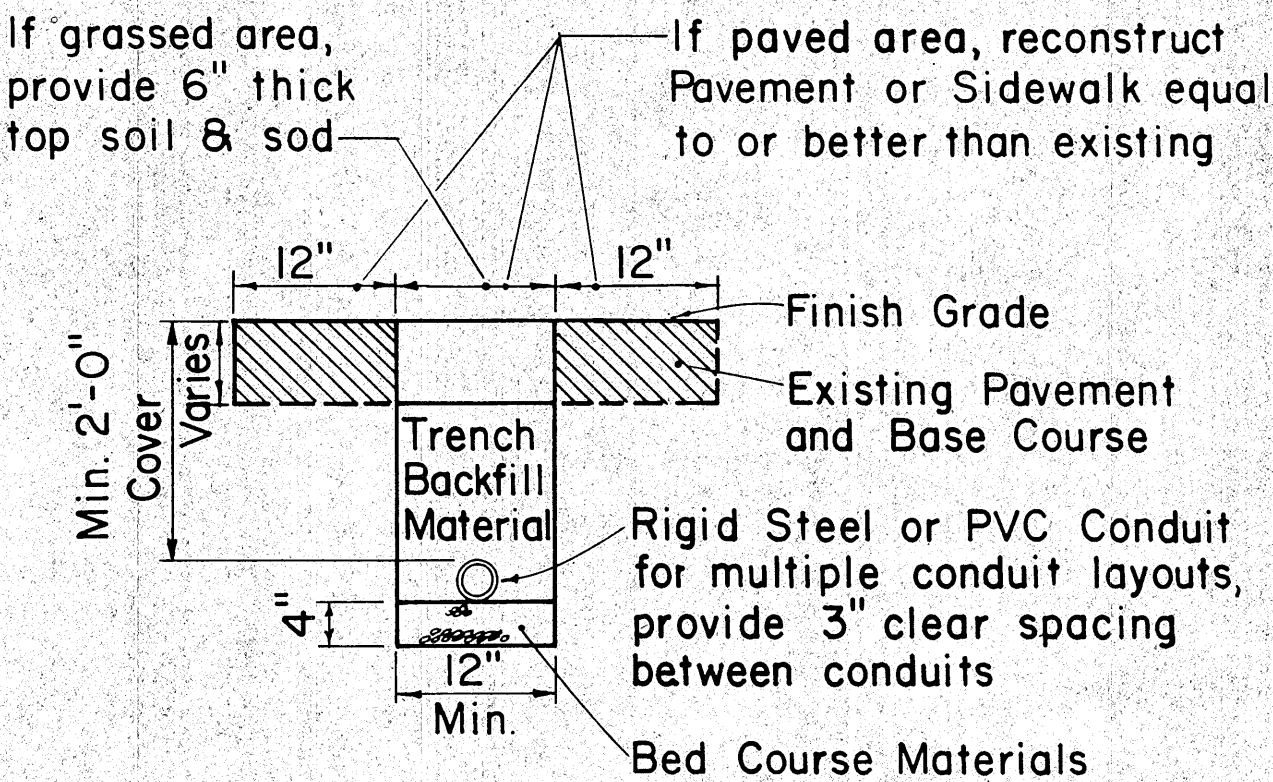
Note: Back-Fill Over-Cuts with Epoxy



DETAIL "B" SAW-CUT AT CORNERS



MULTIPLE LOOP LAYOUT



TYPICAL TRENCH SECTION FOR CONDUIT

NOTE:

- All conduits under roadways shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.

APPROVAL RECOMMENDED:

Erich Tanaka 9/26/80
TRAFFIC ENGINEER DATE

APPROVED:

Shigeru Tanaka 9/30/80
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Replaces Sht. DT 405 dated 3/5/76	H.T.	9/30/80
2	Revised Section A-A	H.T.	5/15/81

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
LOOP DETECTORS

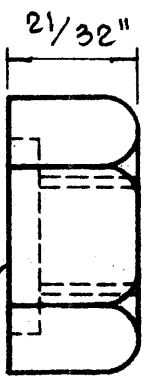
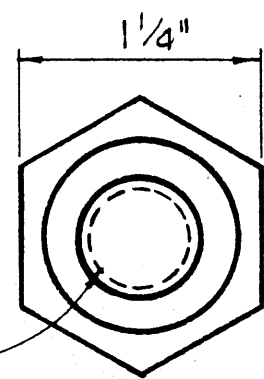
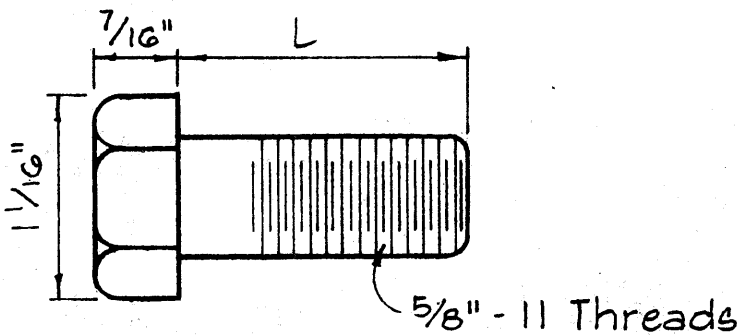
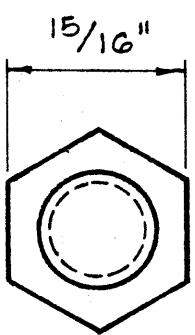
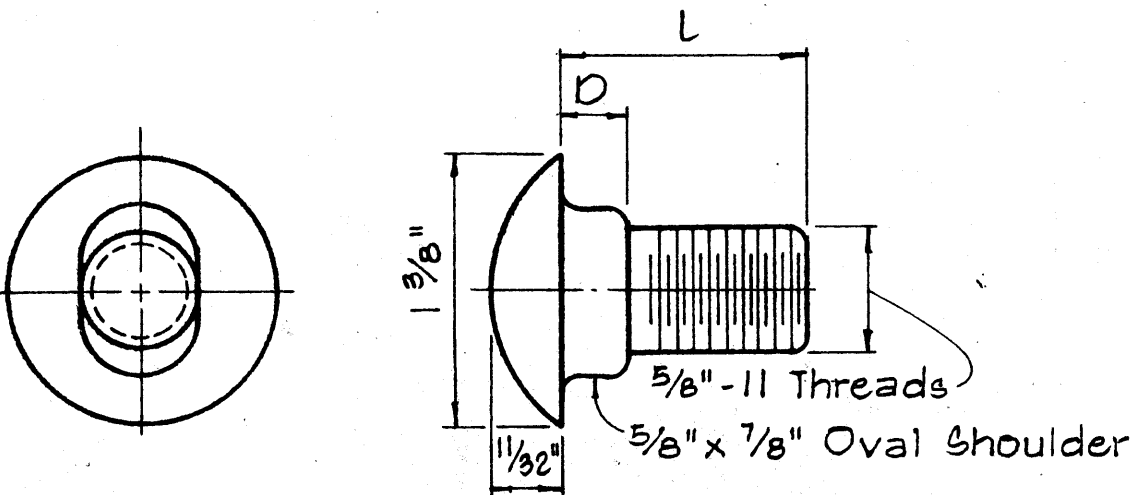
Not to Scale

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
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	HAW.	FR-003-1(15)	1981	17	24

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

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



5/32" Deep x 15/16" Dia. C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.

TYPE A BOLT

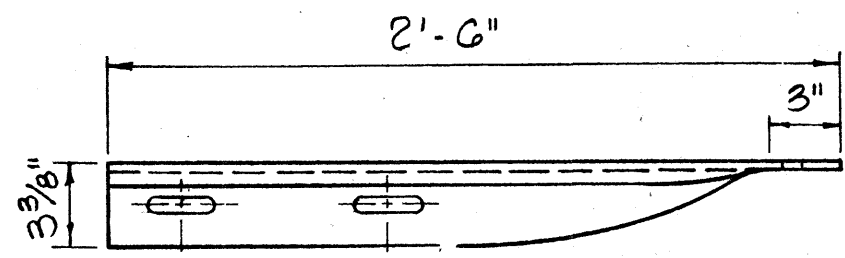
TYPE B BOLT

SPUCE RAIL AND POST BOLTS

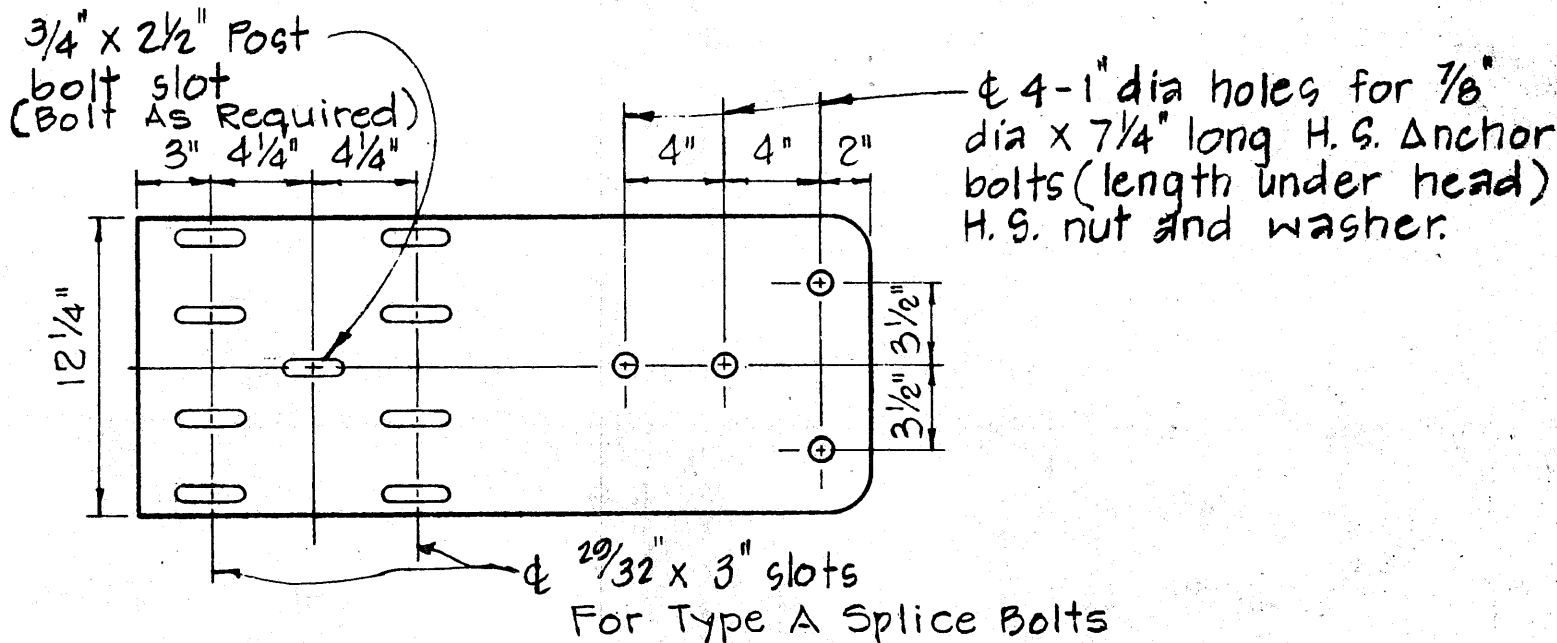
Scale: Full Size

HEXAGON NUT

Scale: Full Size



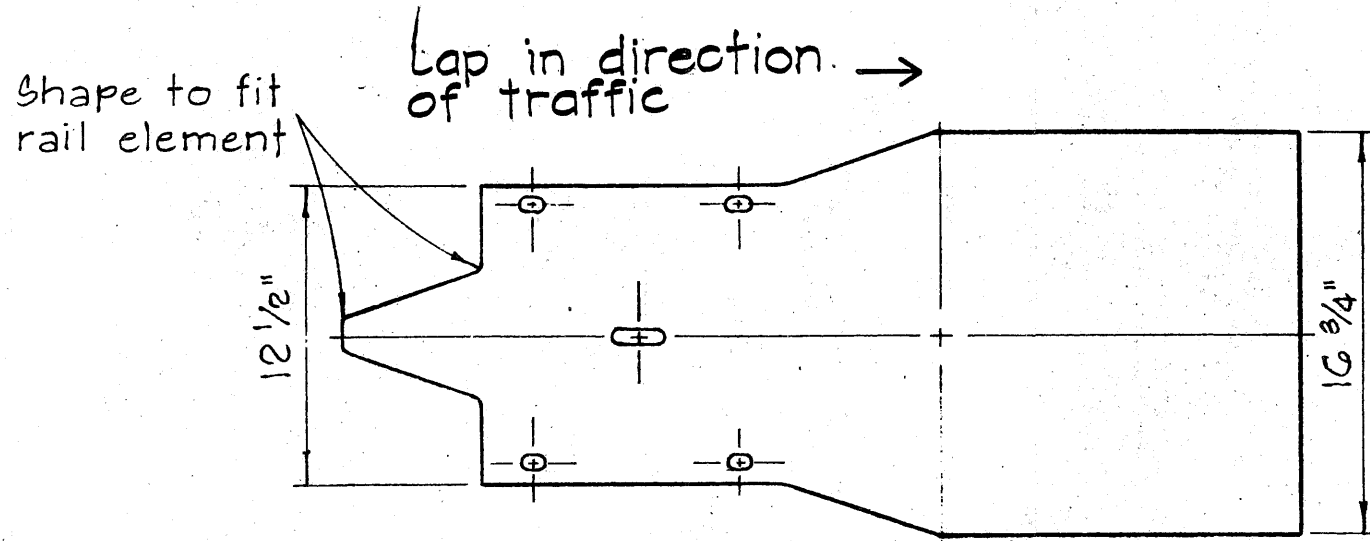
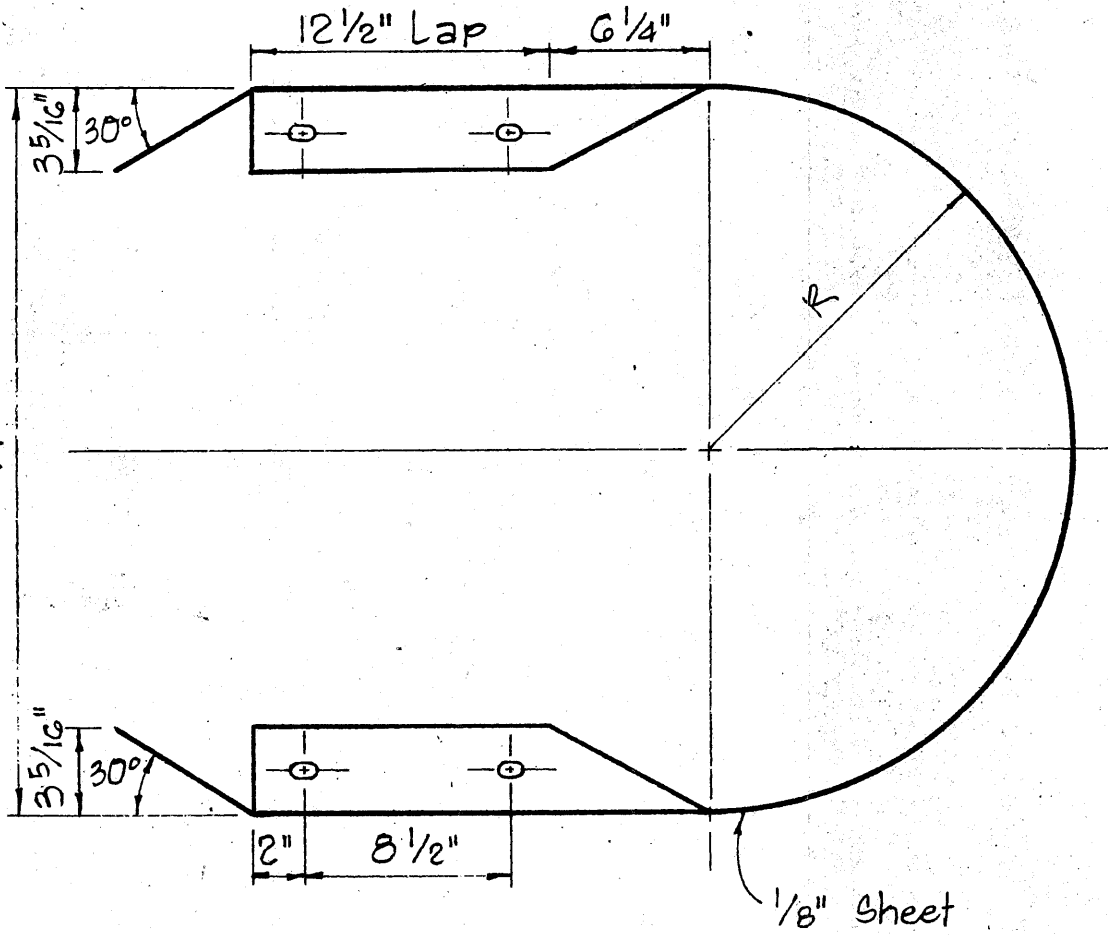
← Lap in direction of traffic



SPECIAL END SHOE

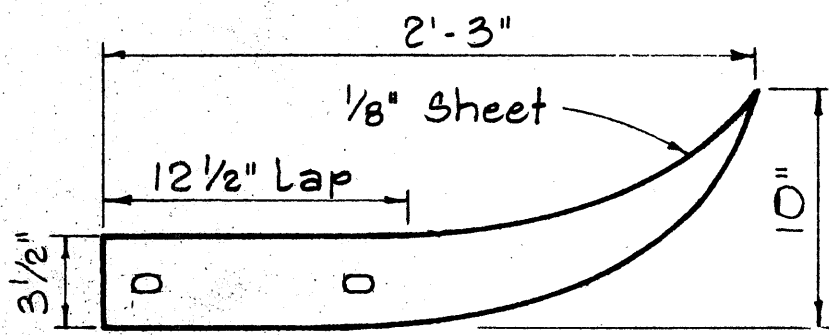
Scale: 1 1/2" = 1'-0"

← Lap in direction of traffic

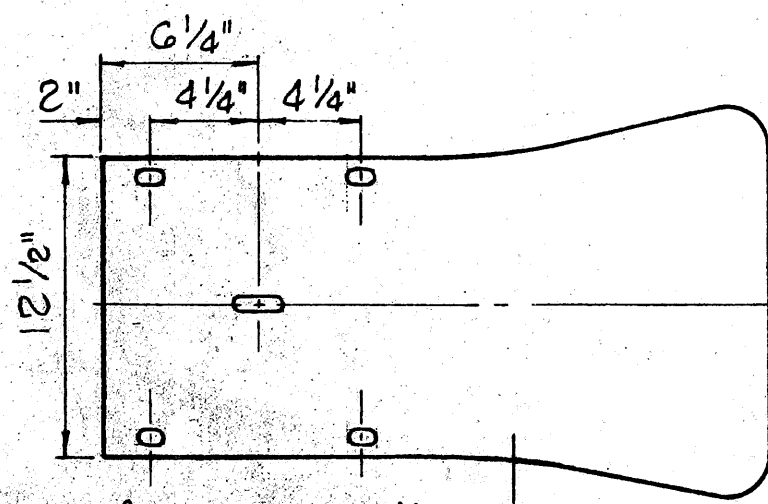


MEDIAN END

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



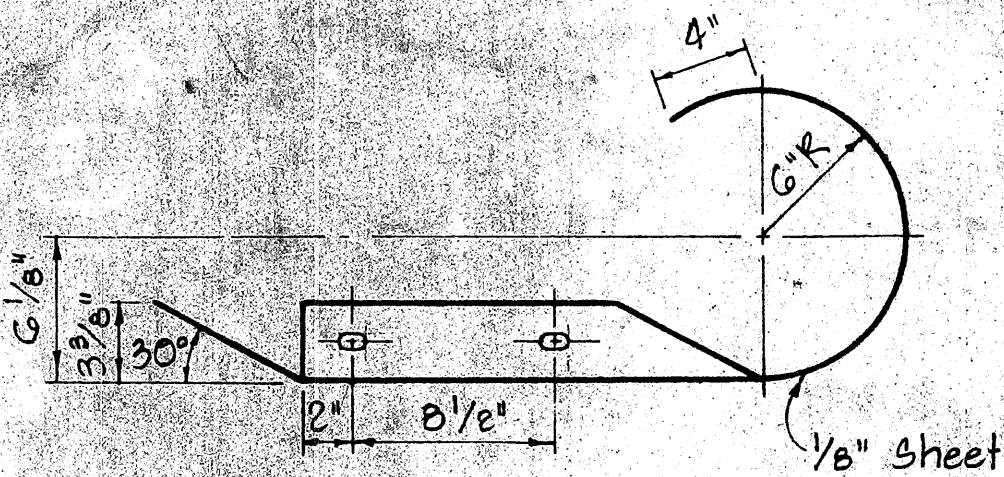
← Lap in direction of traffic



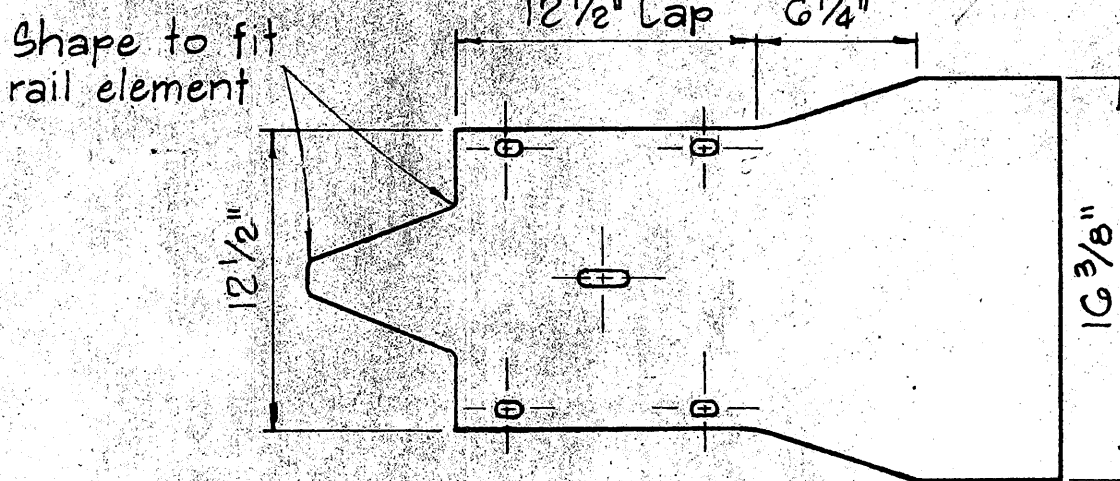
Same as rail element section

FLARED END

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



← Lap in direction of traffic



CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12/29/69
DATE

12-30-69
DATE

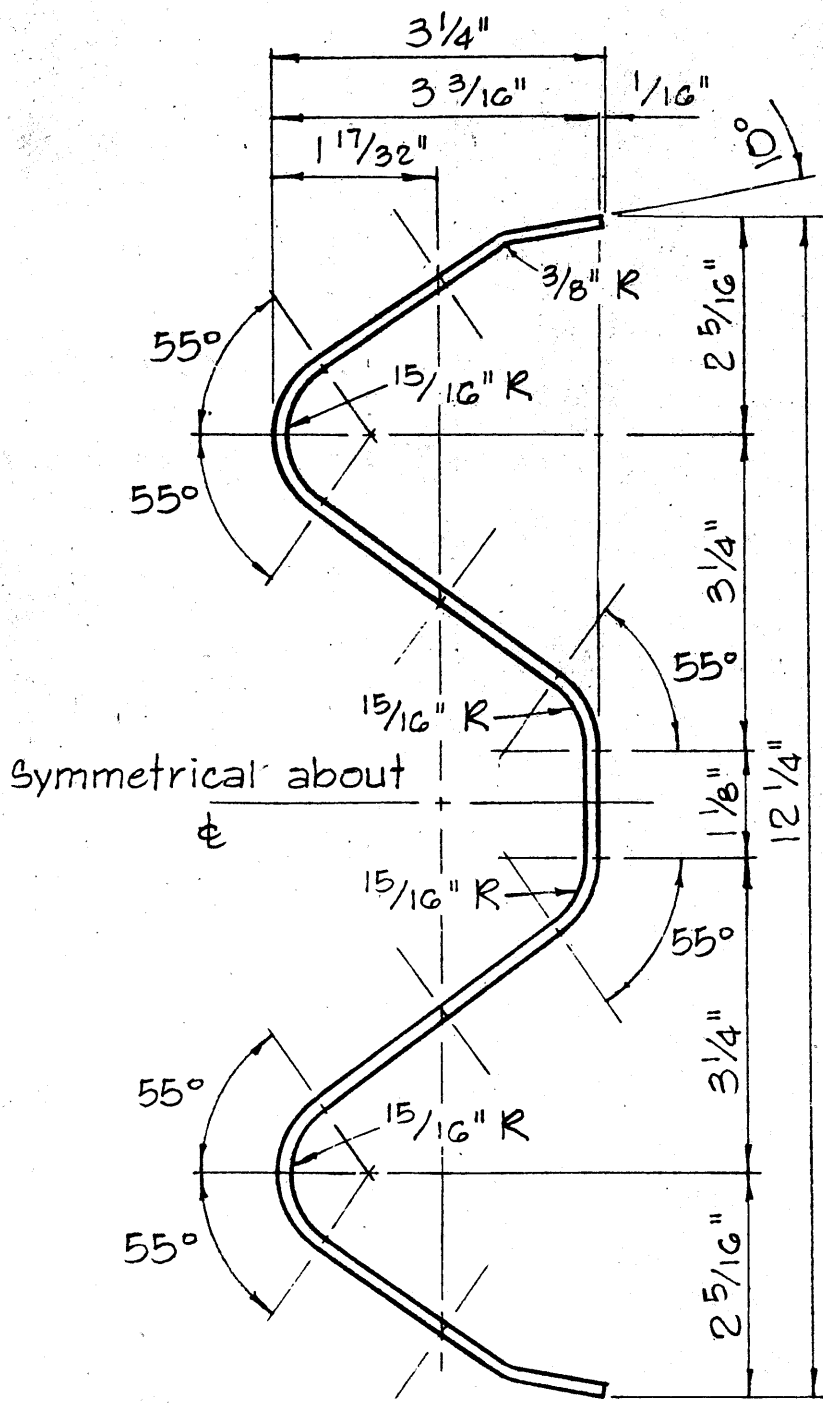
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL GUARD RAIL

Scale As Noted

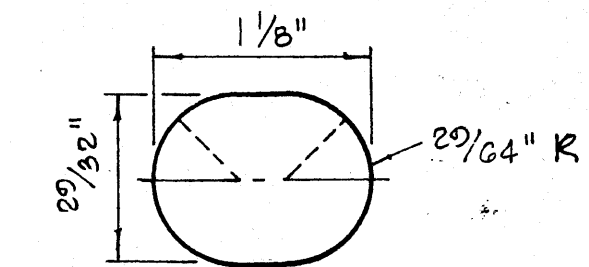
August, 1968

SHEET No. 6 OF 11 SHEETS DT 501



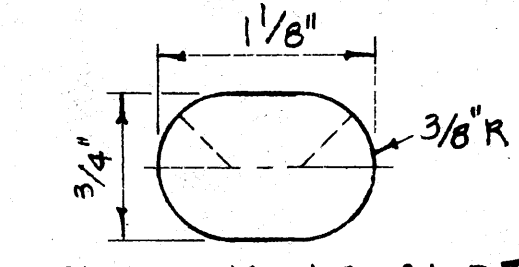
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

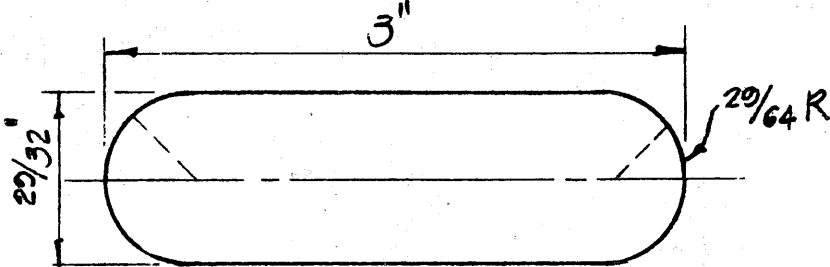


SPUCE BOLT SLOT

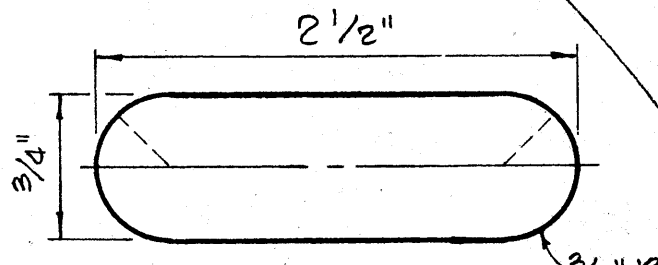
Scale: Full Size



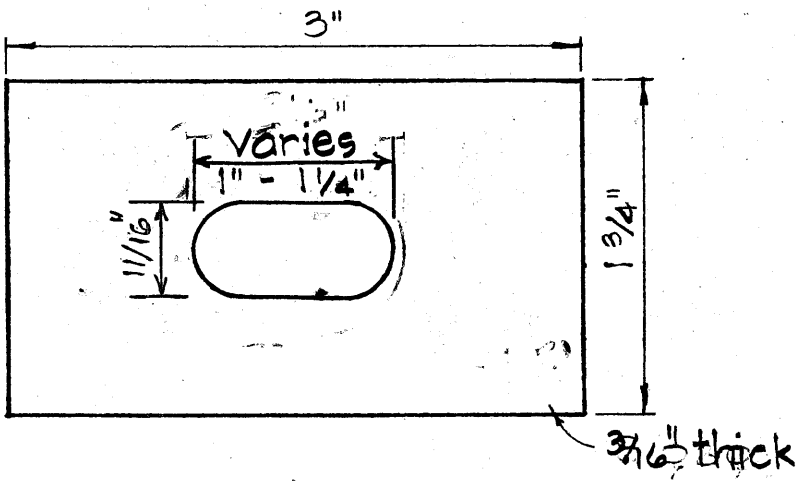
SPUCE BOLT SLOT
FOR ALL ENDS



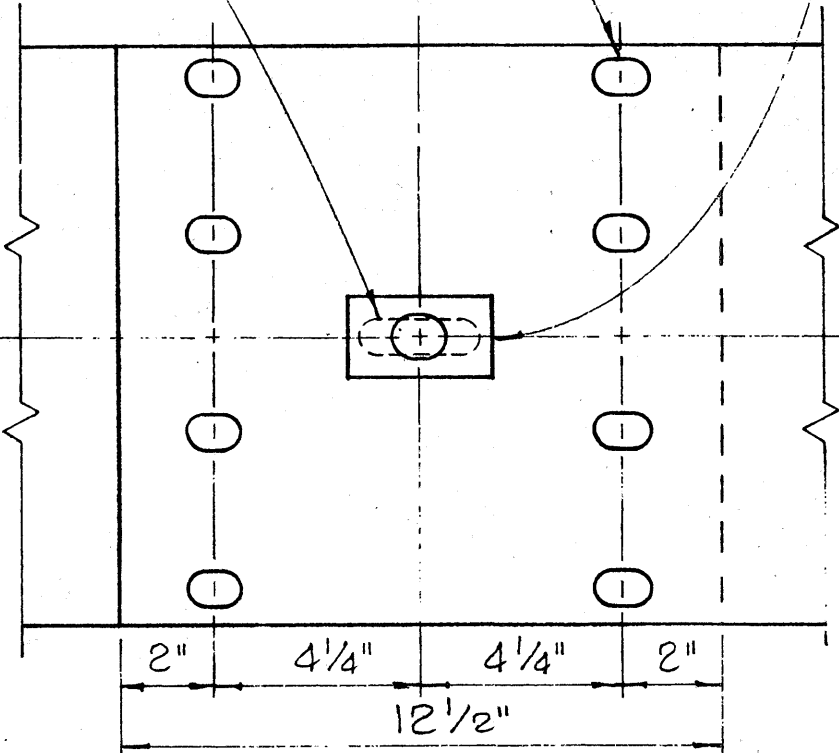
SPUCE BOLT SLOT
FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER



RAIL SPUCE

Scale: 3" = 1'-0"

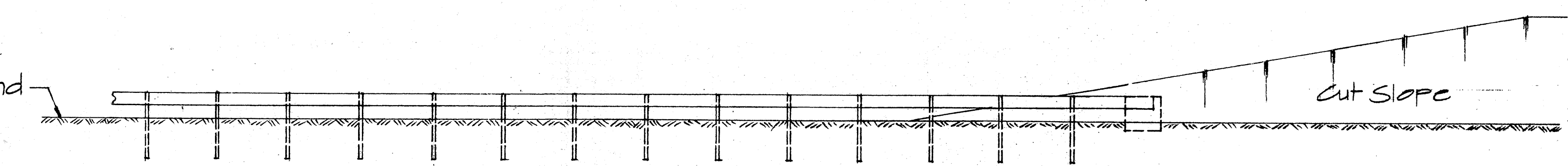
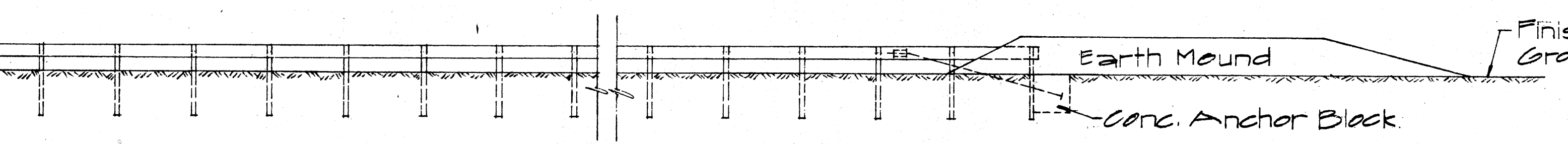
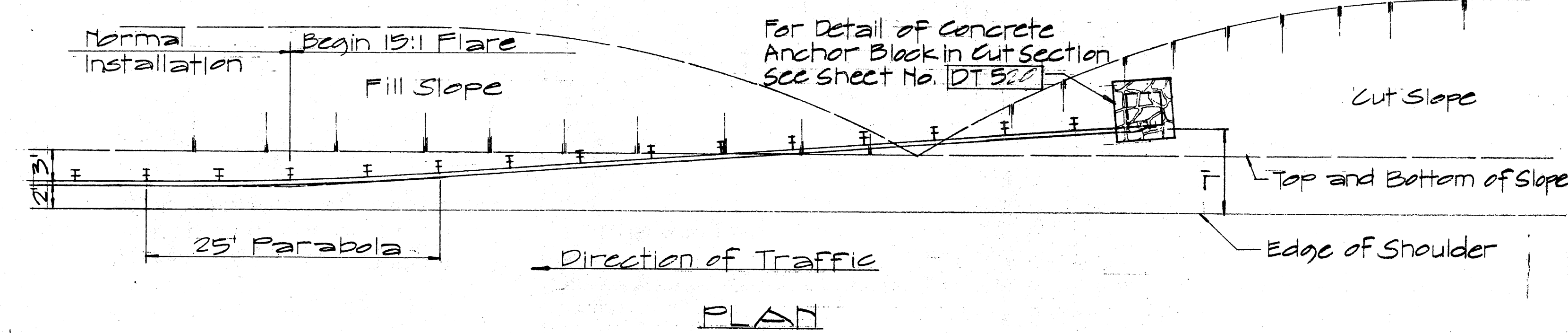
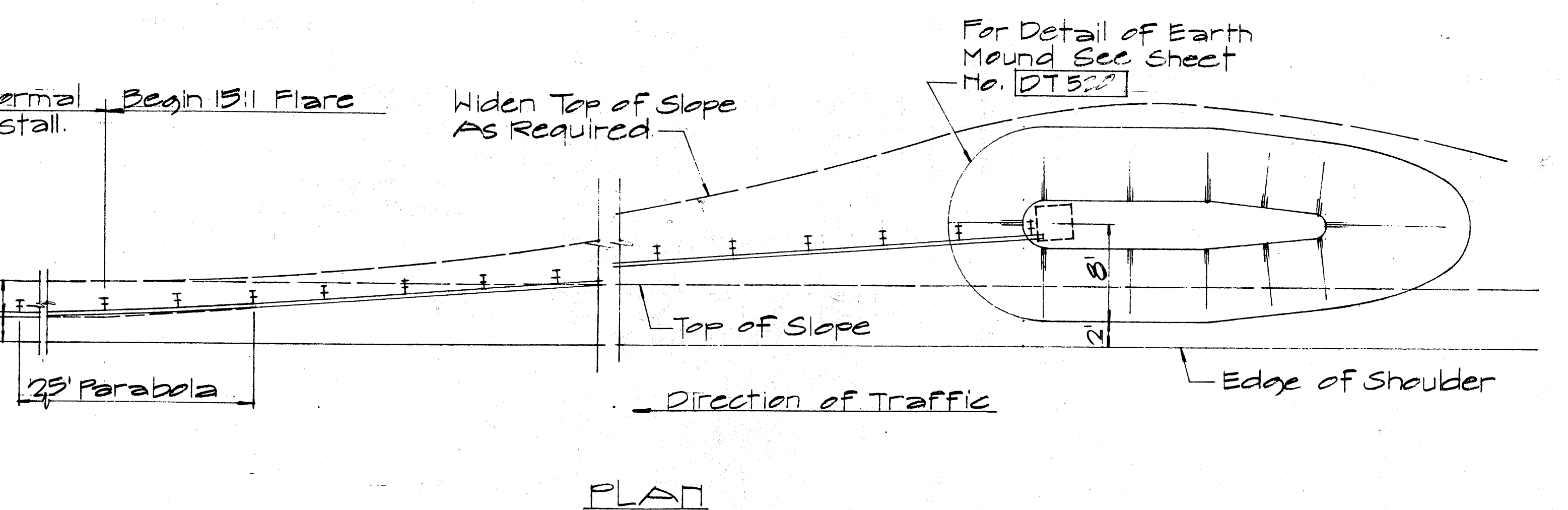
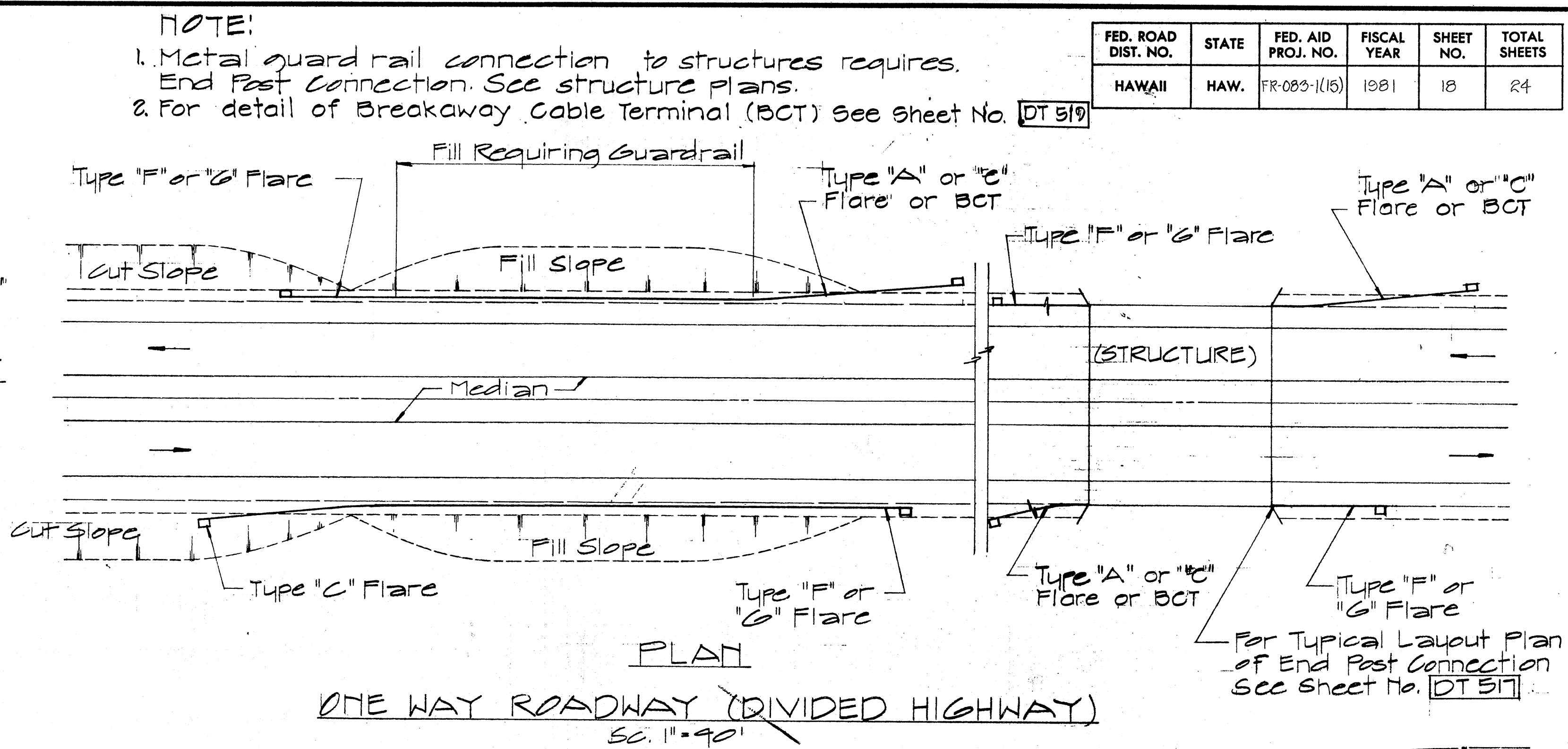
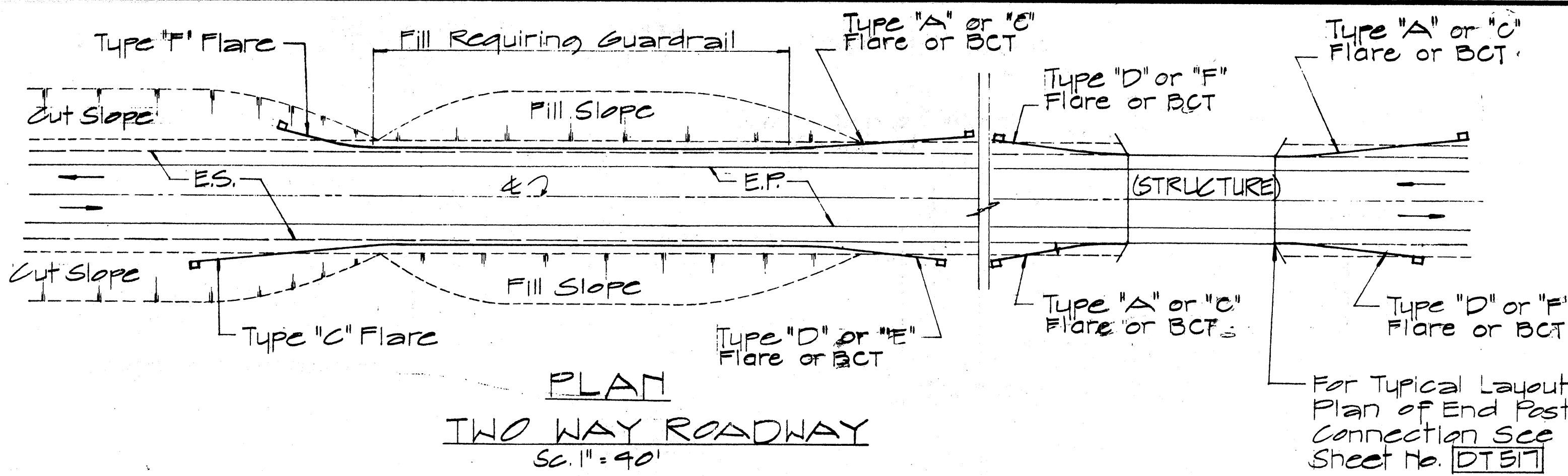
NOTES:

1. H.S. Bolts shall conform to the requirements of ASTM A 325.
2. Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AA6HO 180.

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

NO.	REVISION	APPROVED BY	DATE
1	Revised Hole Size for Rectangular Rail Washer	K.T.	8/16/81

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



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	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-003-1(16)	1981	18	24

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

APPROVAL RECOMMENDED:
Euske Tanaka 12/22/62
TRAFFIC ENGINEER DATE

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

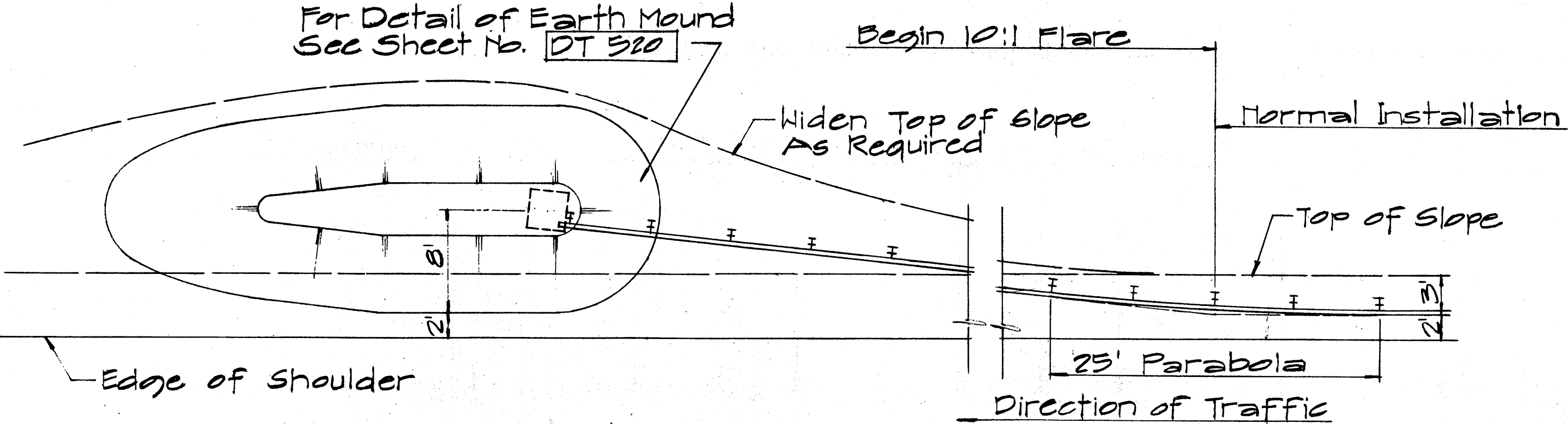
NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

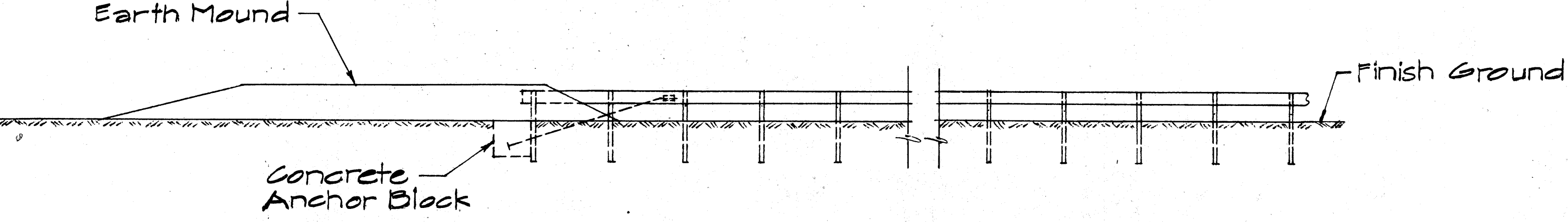
**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

Sc. As Noted April 1969
SHEET No. 7 OF 11 SHEETS DT 516

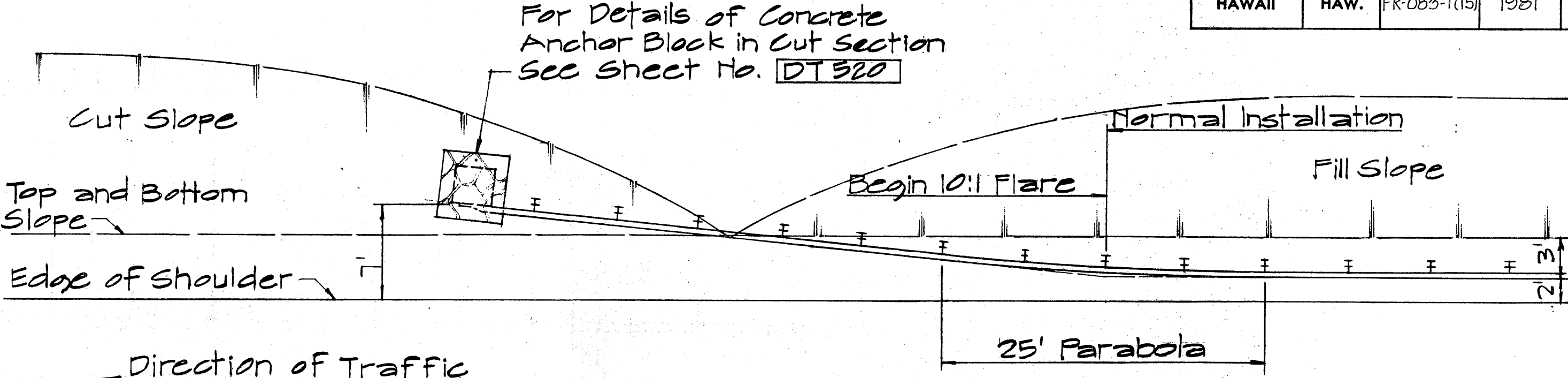
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	19	24



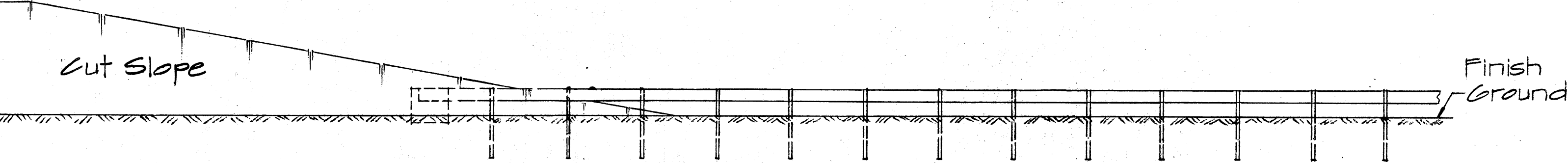
PLAN



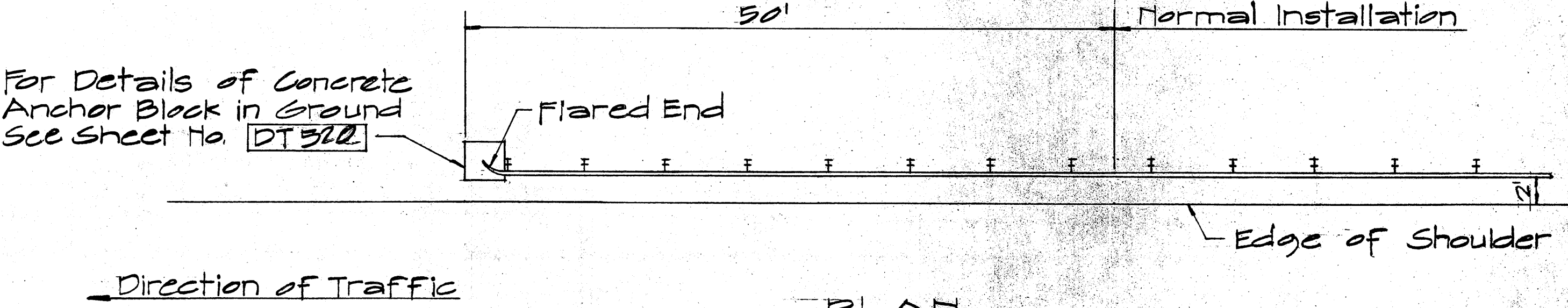
ELEVATION
TYPE "D" FLARE
Sc. 1/8" = 1'-0"



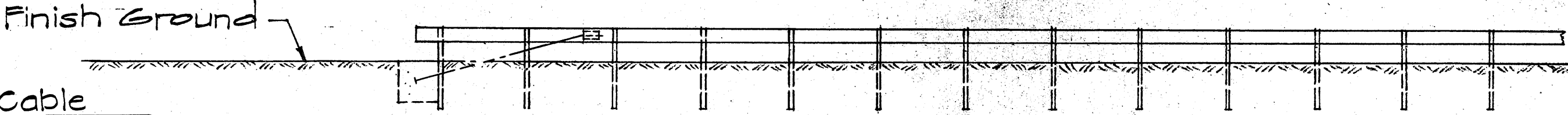
PLAN



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

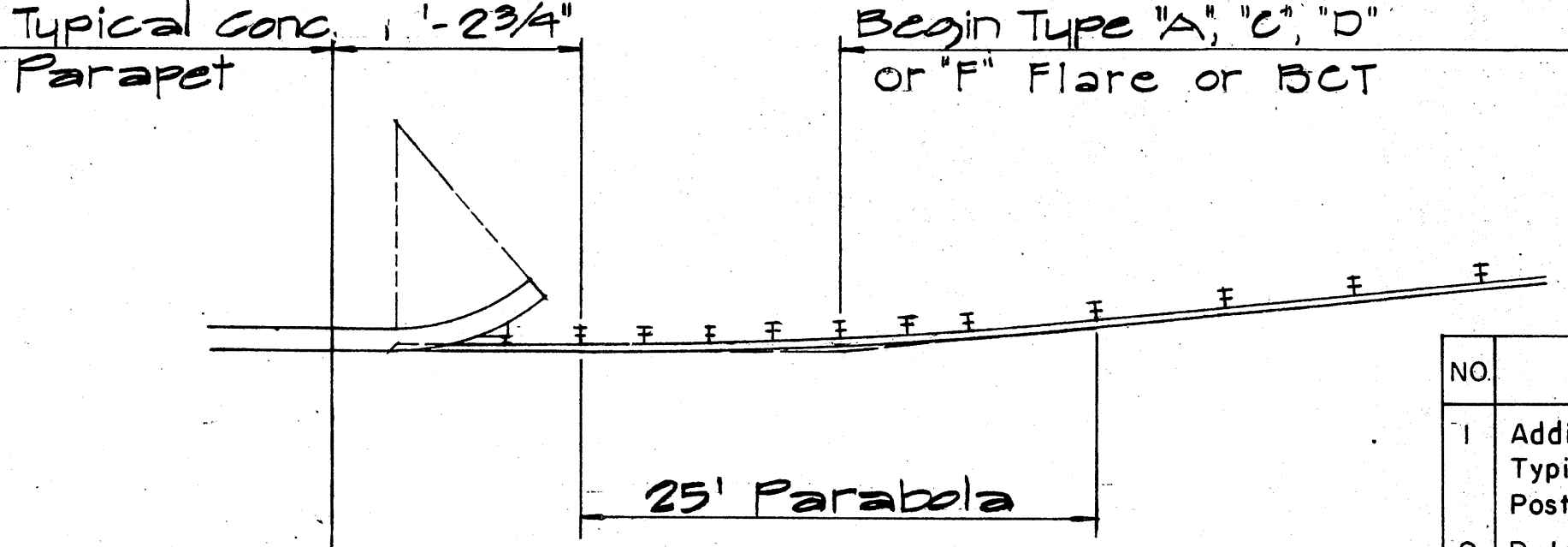


PLAN



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

NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519



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:
Eugene Tanaka 12/29/69
TRAFFIC ENGINEER DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

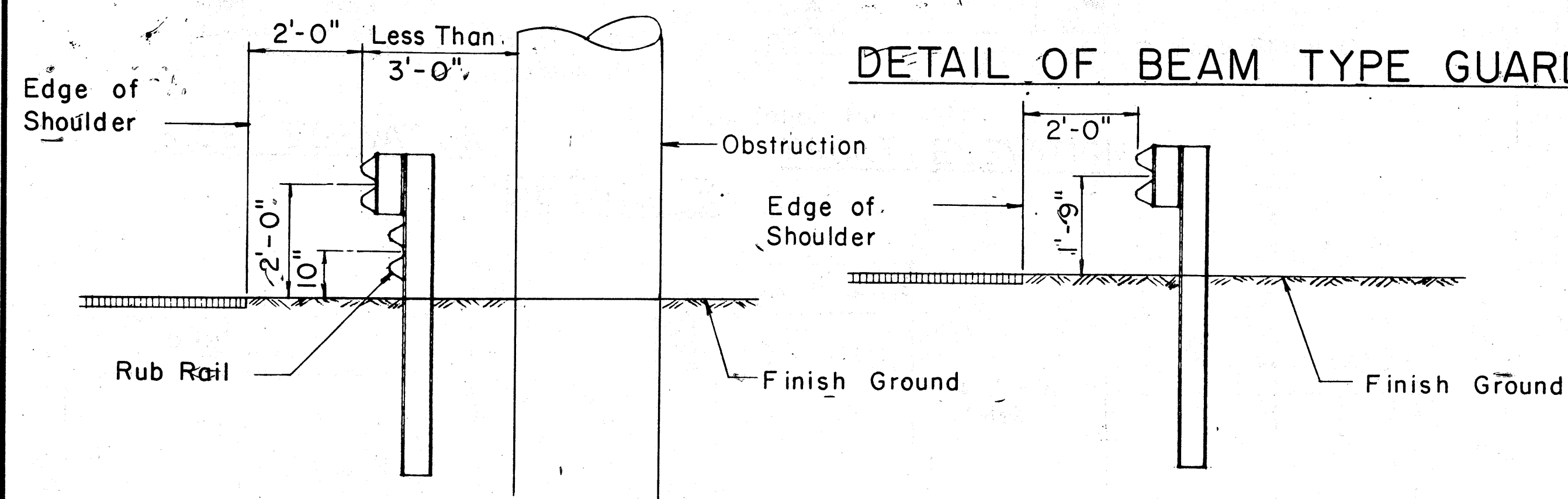
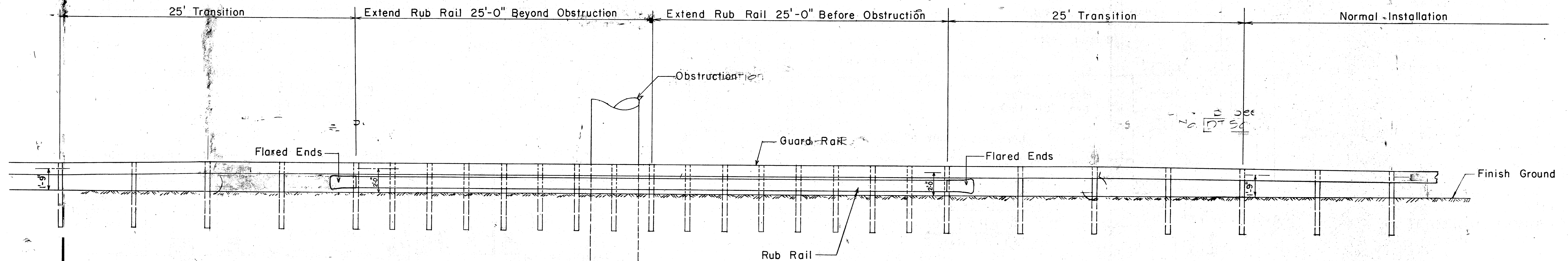
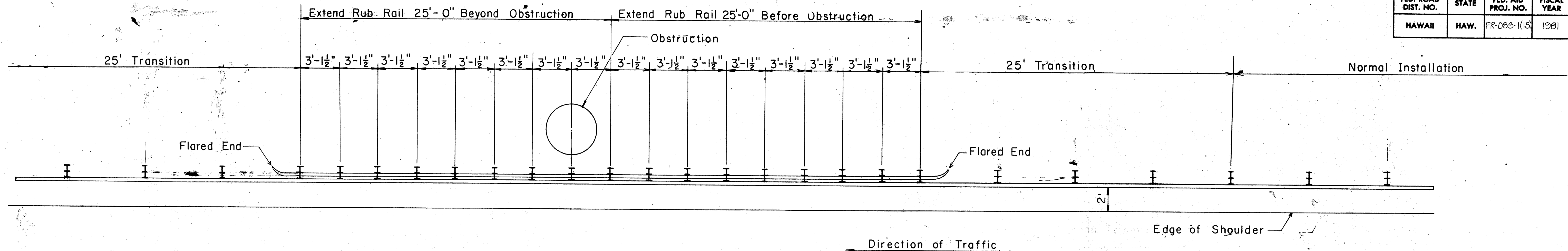
STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

SHEET No. 8 OF 11 SHEETS DT 517

ORIGINAL PLAN	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.	FR-083-1(15)	1981	20	24



TYP. SEC. AT OBSTRUCTION

TYP. SEC. AT NORMAL INSTALLATION

TYP. GUARD RAIL SECTIONS

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

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

APPROVED:
John J. Zales
 ASSISTANT CHIEF, ENGINEERING
 12/30/69
 DATE

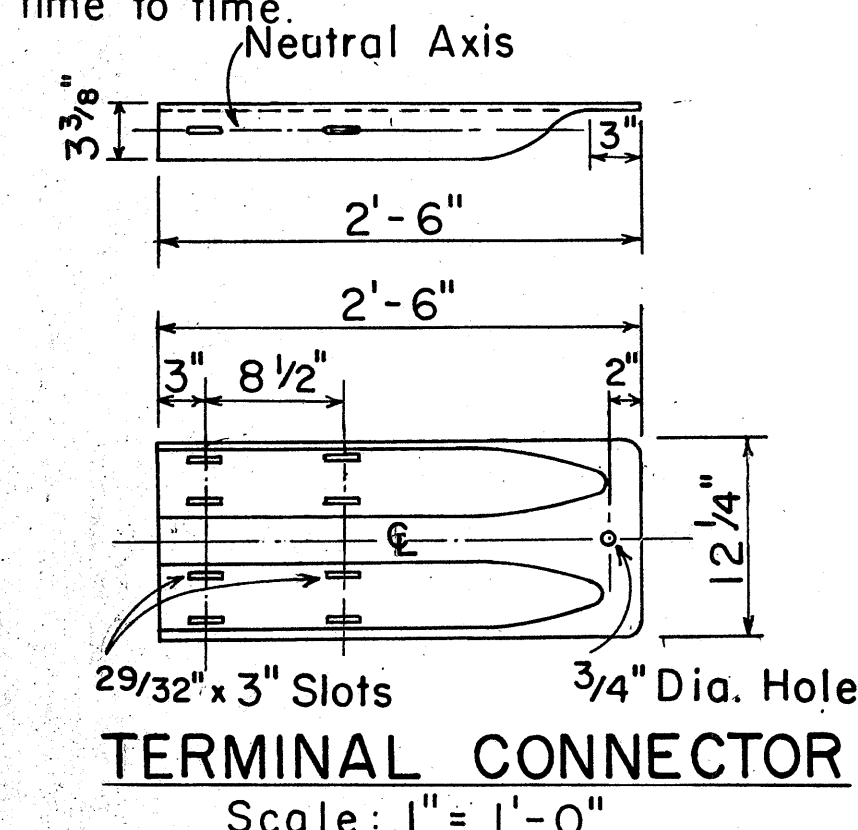
NO.	REVISION	APPROVED BY	DATE
1	Added Additional Guard Rail Posts and Installed Flared Ends at end of Rub Rail	H.T.	5/16/80

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAIL
 BEAM TYPE GUARD RAIL WITH
 RUB RAIL AT OBSTRUCTION
 SHOULDER INSTALLATION
 SCALE: AS SHOWN
 DATE: JUNE, 1969
 SHEET No. 20 OF 24 SHEETS DT 518

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	21	24

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 accommodate Anchor Cable.
- Slip Base Load shall be controlled with a Calibrated Torque Wrench - Torque 155 - 170 ft. lbs.
- Concrete shall be Class A.
- B.C.T. Hardware has been superseded by "A Guide Standardized Highway Barrier Rail Hardware," A report prepared and approved by the AASHTO-AGC-ARTBA joint cooperation committee. All hardware shall conform to above mentioned publication and as revised from time to time.



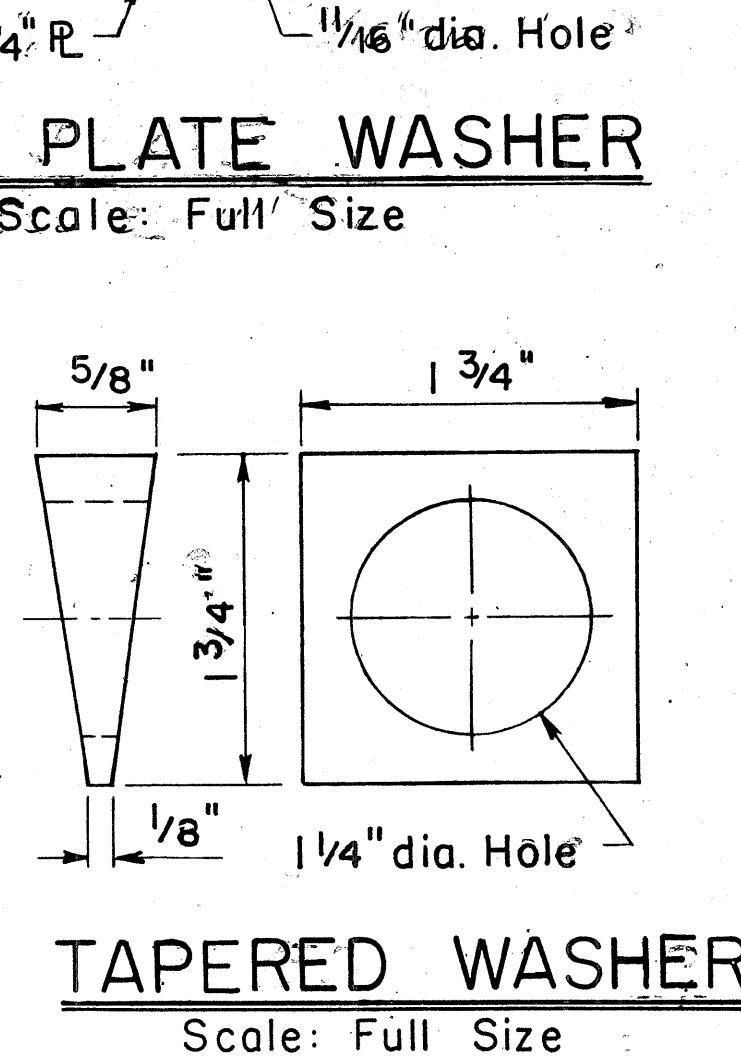
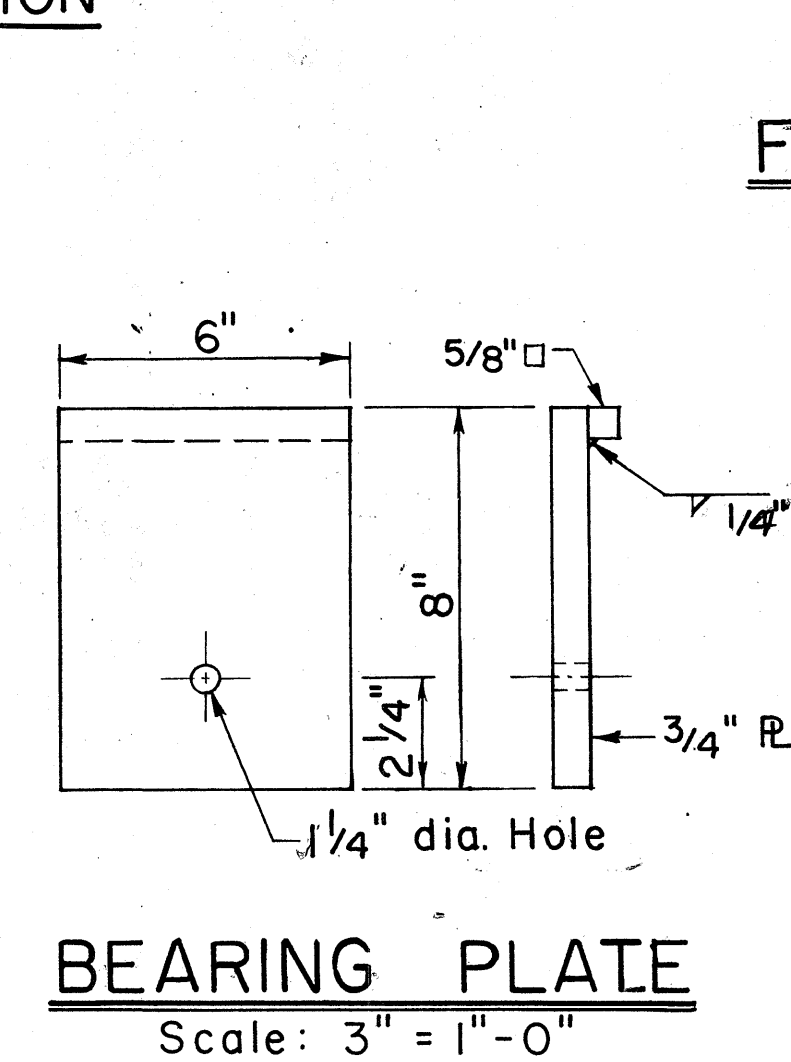
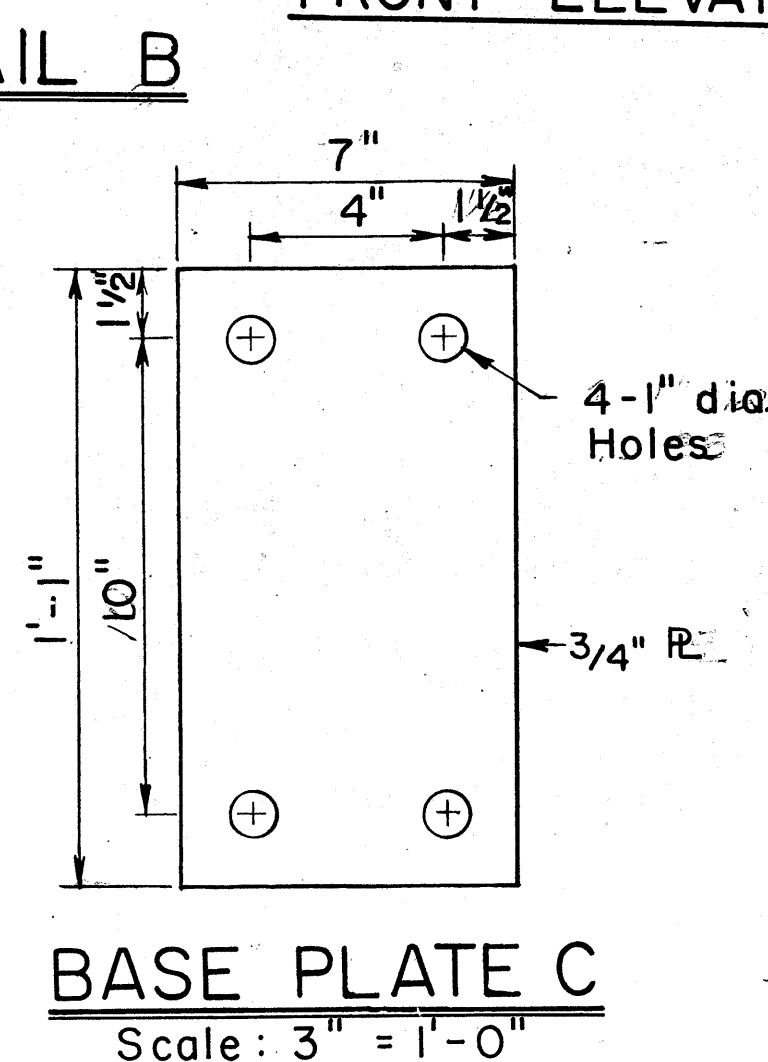
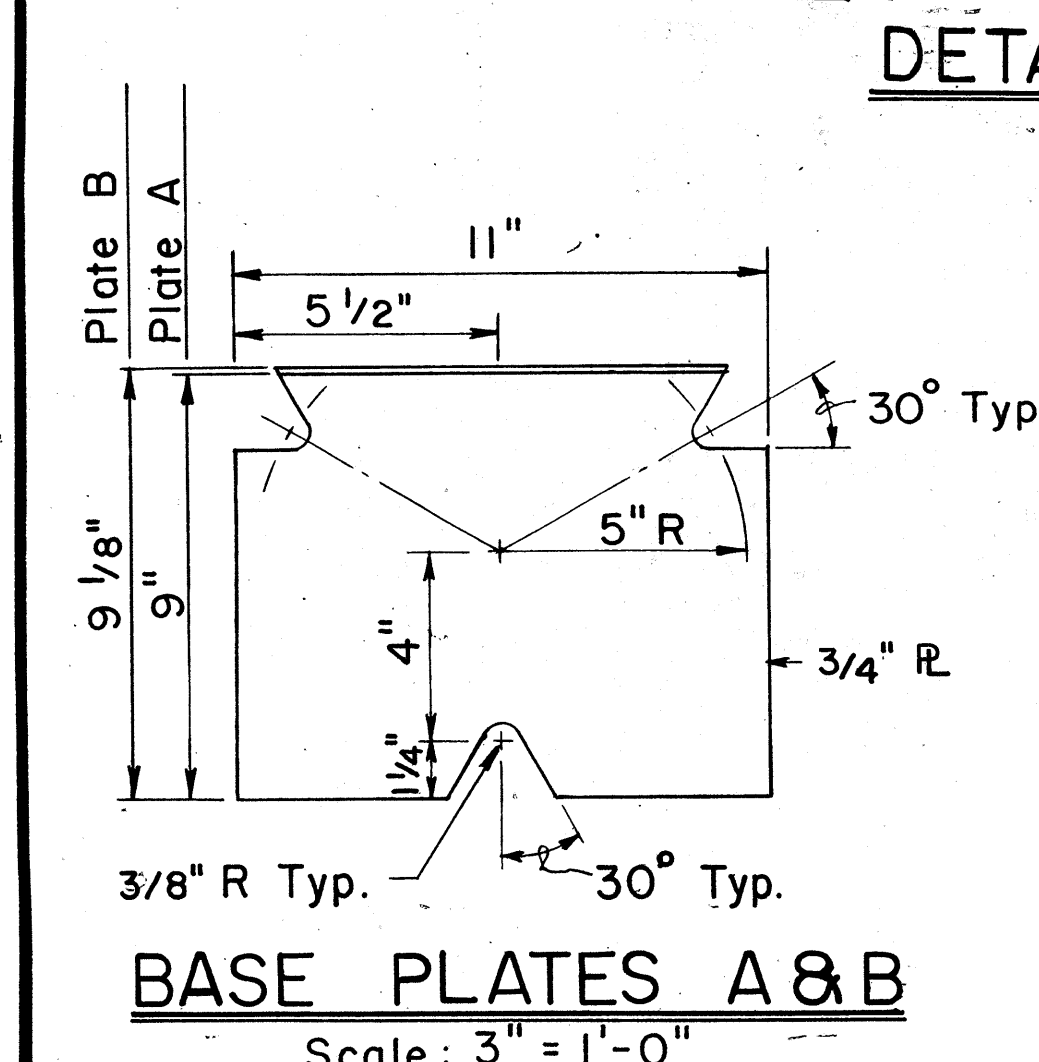
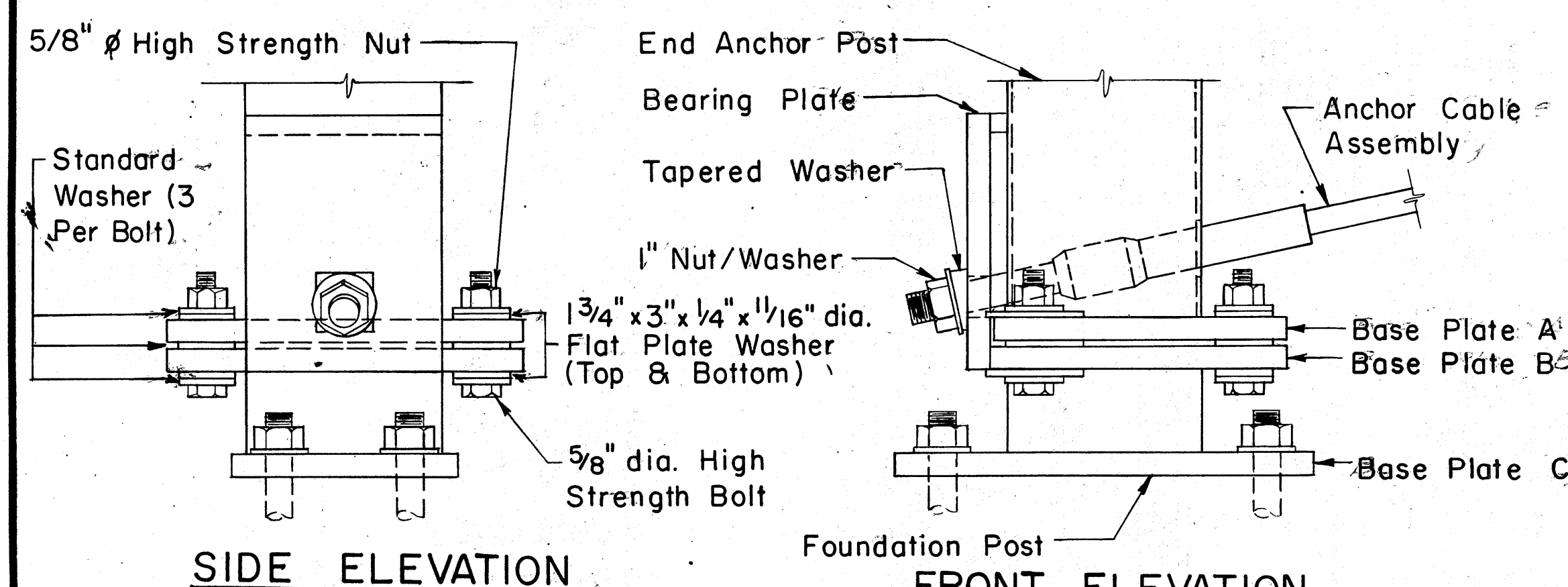
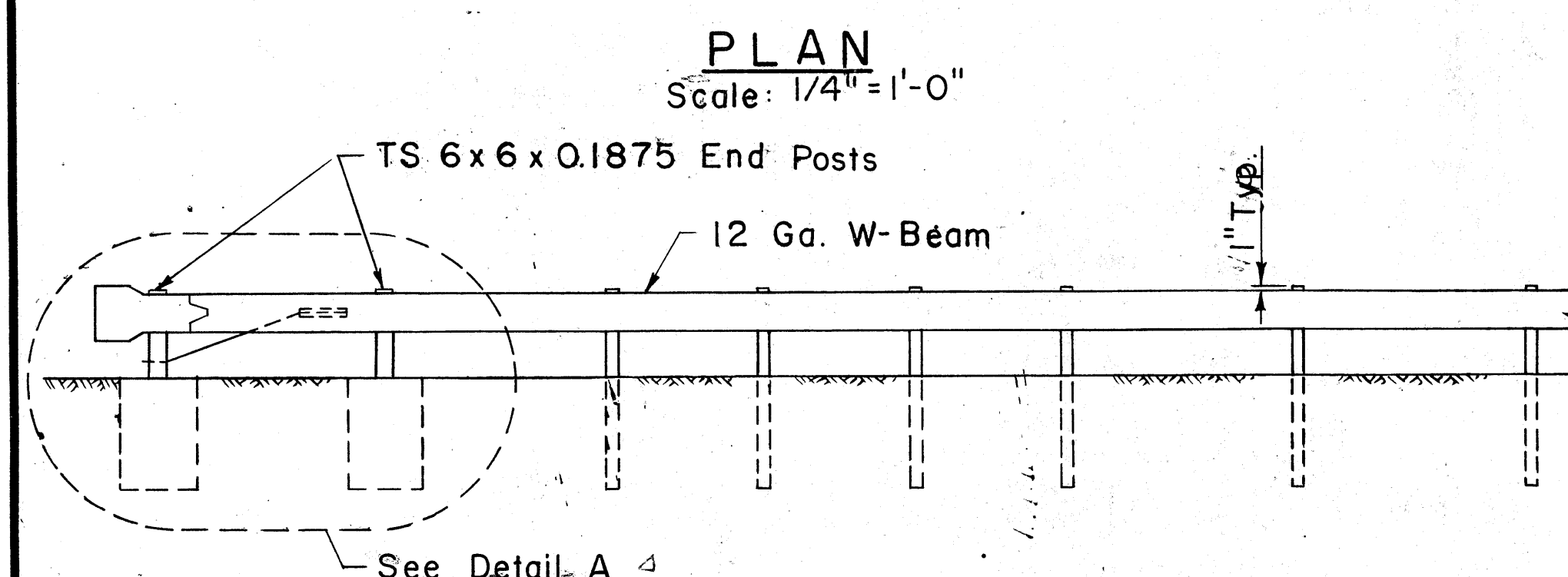
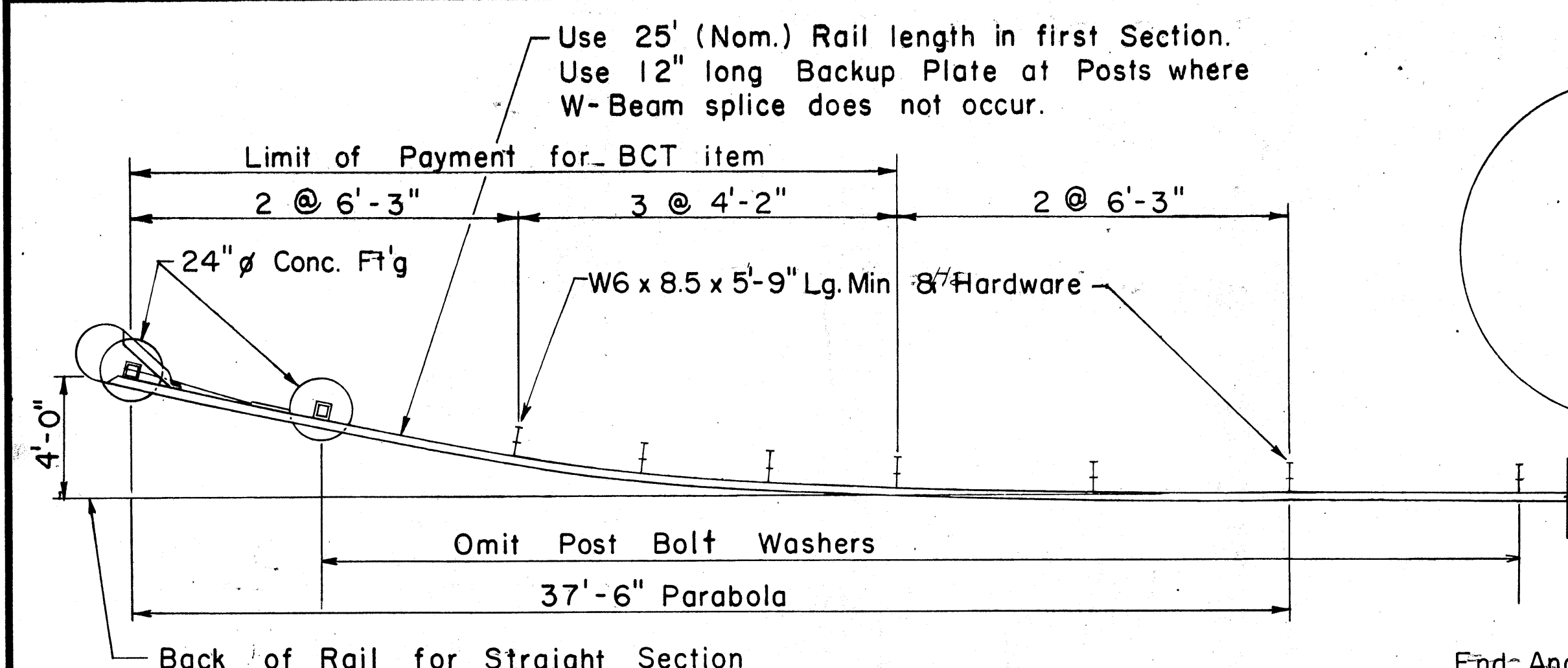
APPROVAL RECOMMENDED:

Erich Tanaka
TRAFFIC ENGINEER 6/14/78
DATE

APPROVED:

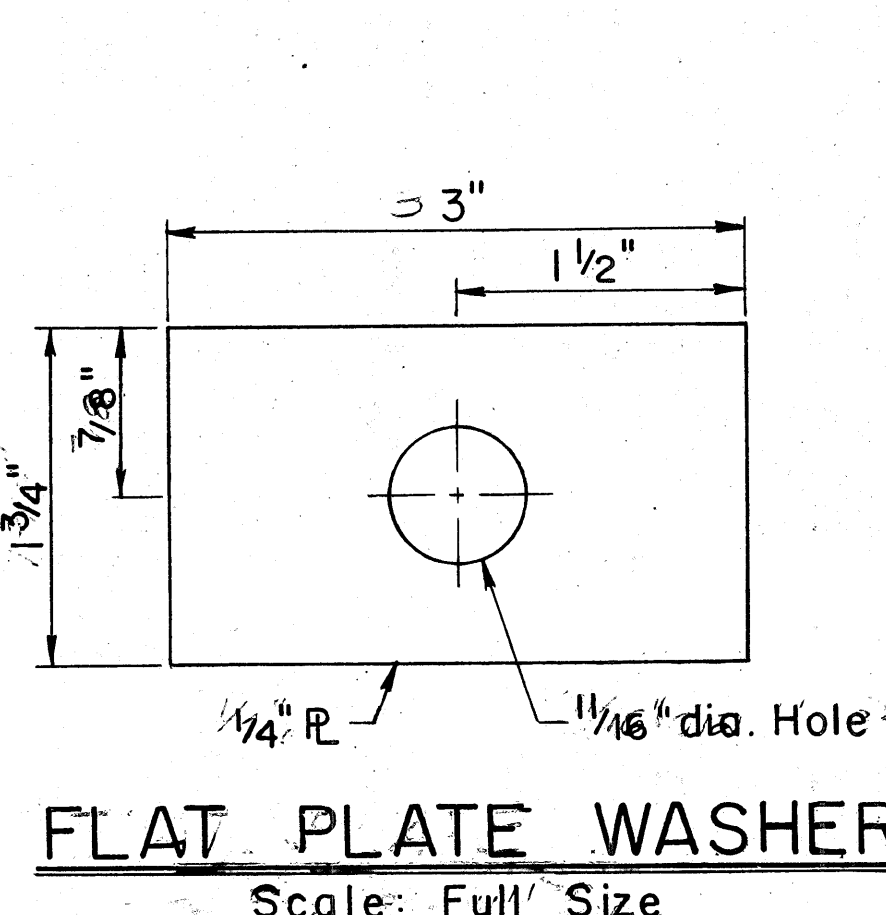
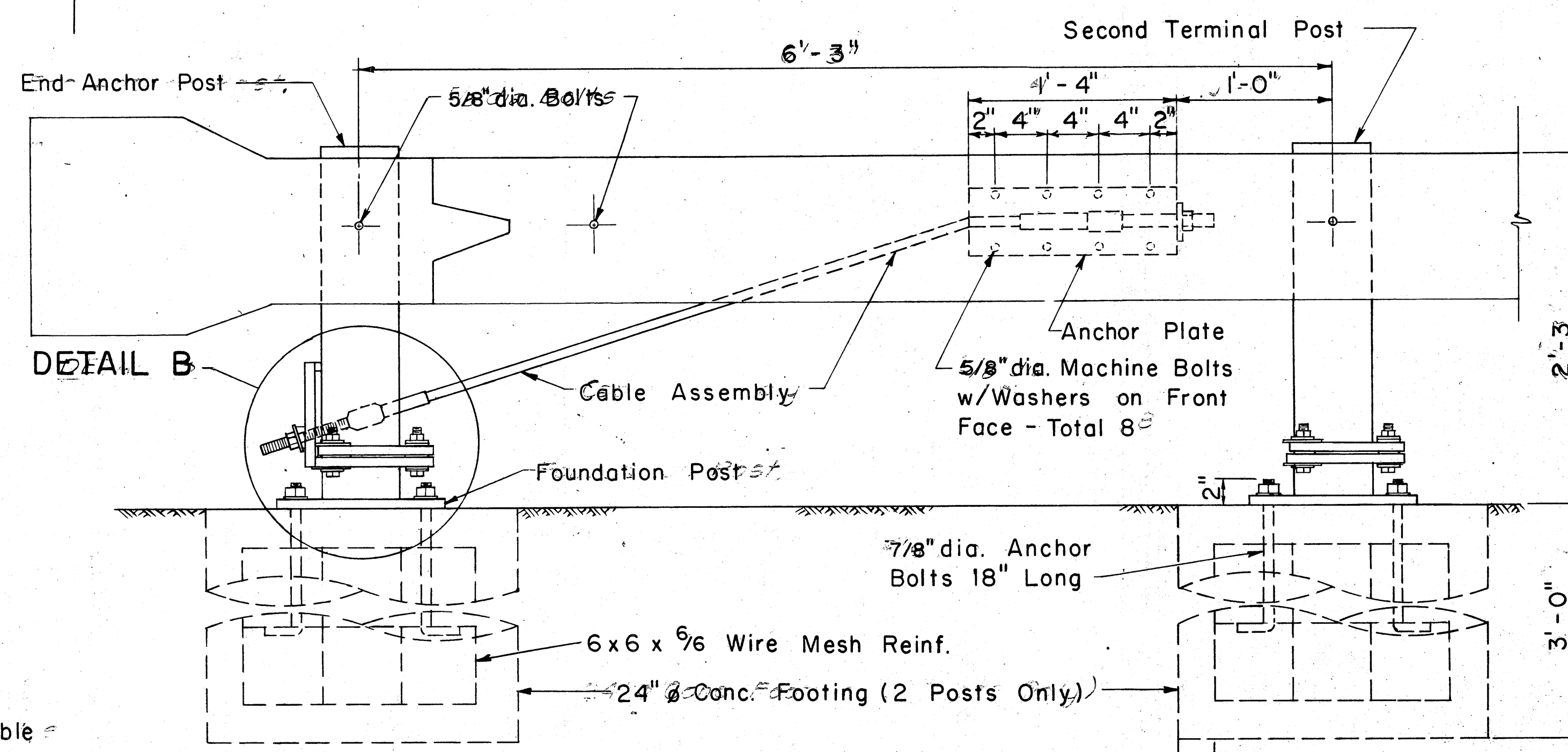
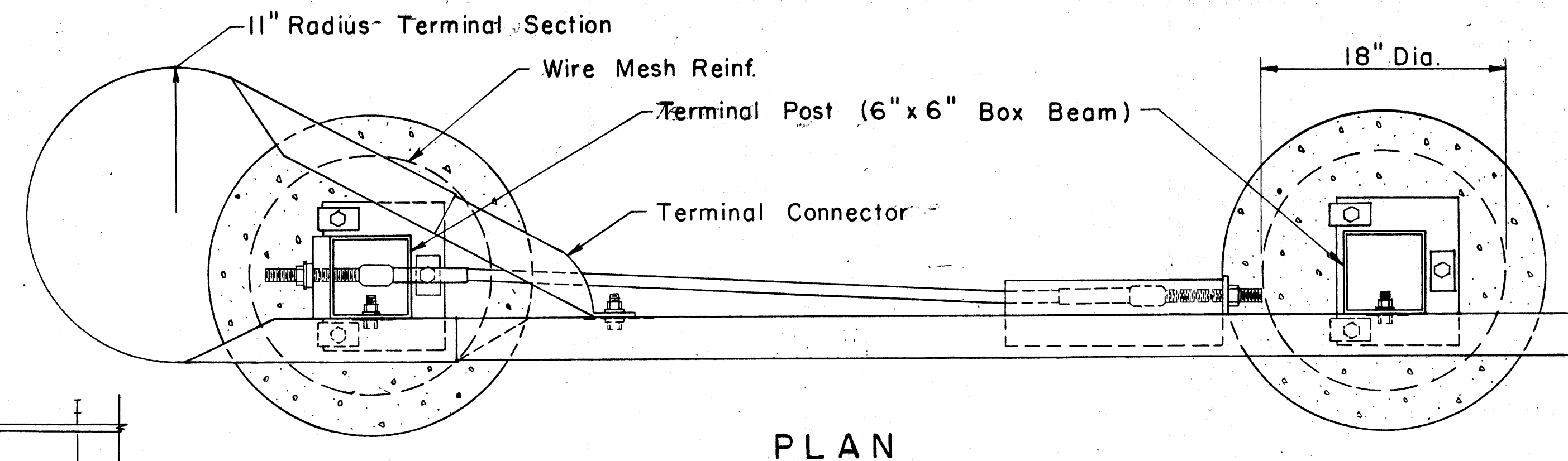
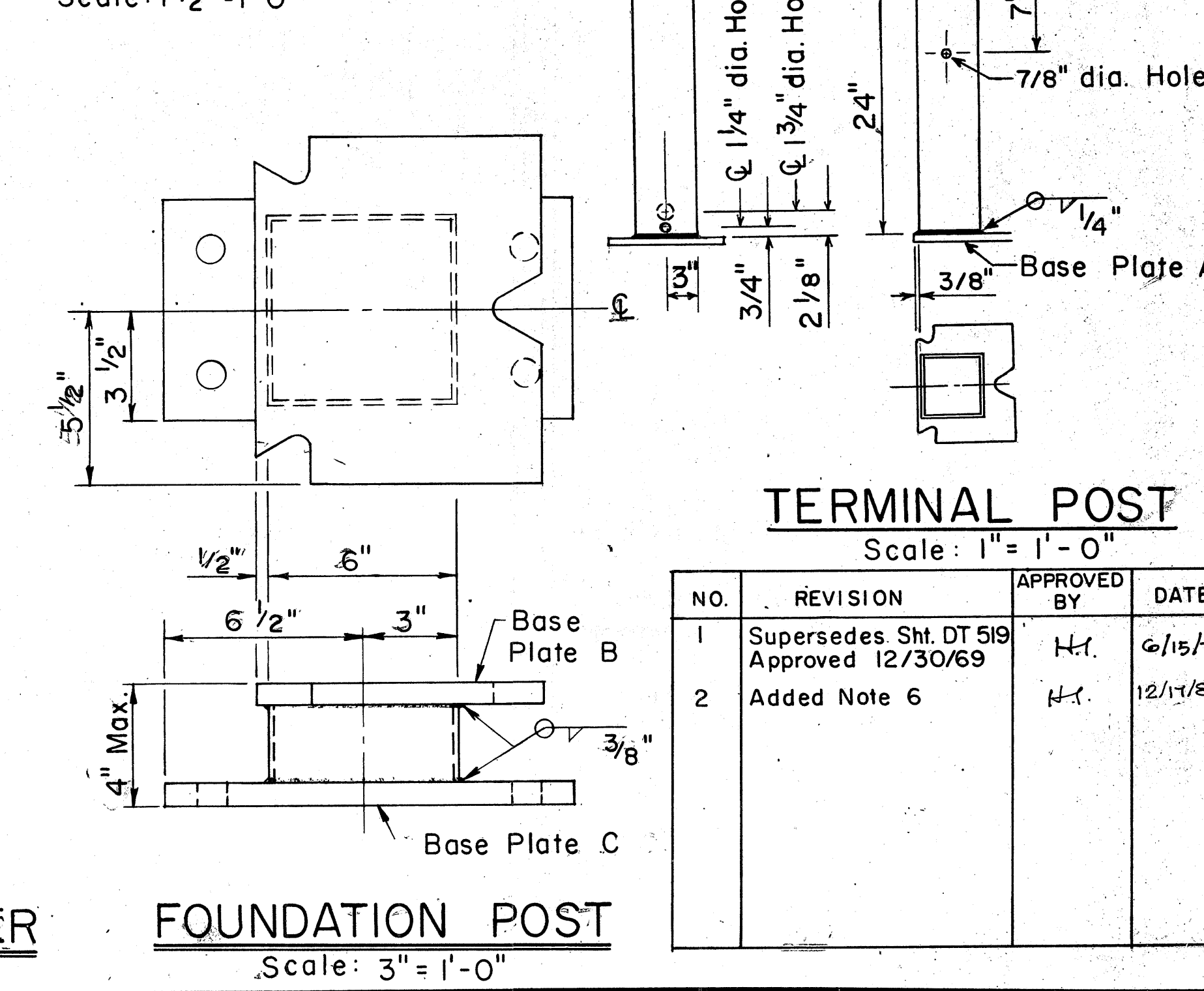
Harbor Sakai
ASSISTANT CHIEF, ENGINEERING 6/15/78
DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAIL	
BREAKAWAY CABLE TERMINAL (BCT)	
Scale: As Shown	Date: June 1978
SHEET No. 21 OF 11 SHEETS DT 519	



ELEVATION DETAIL A

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

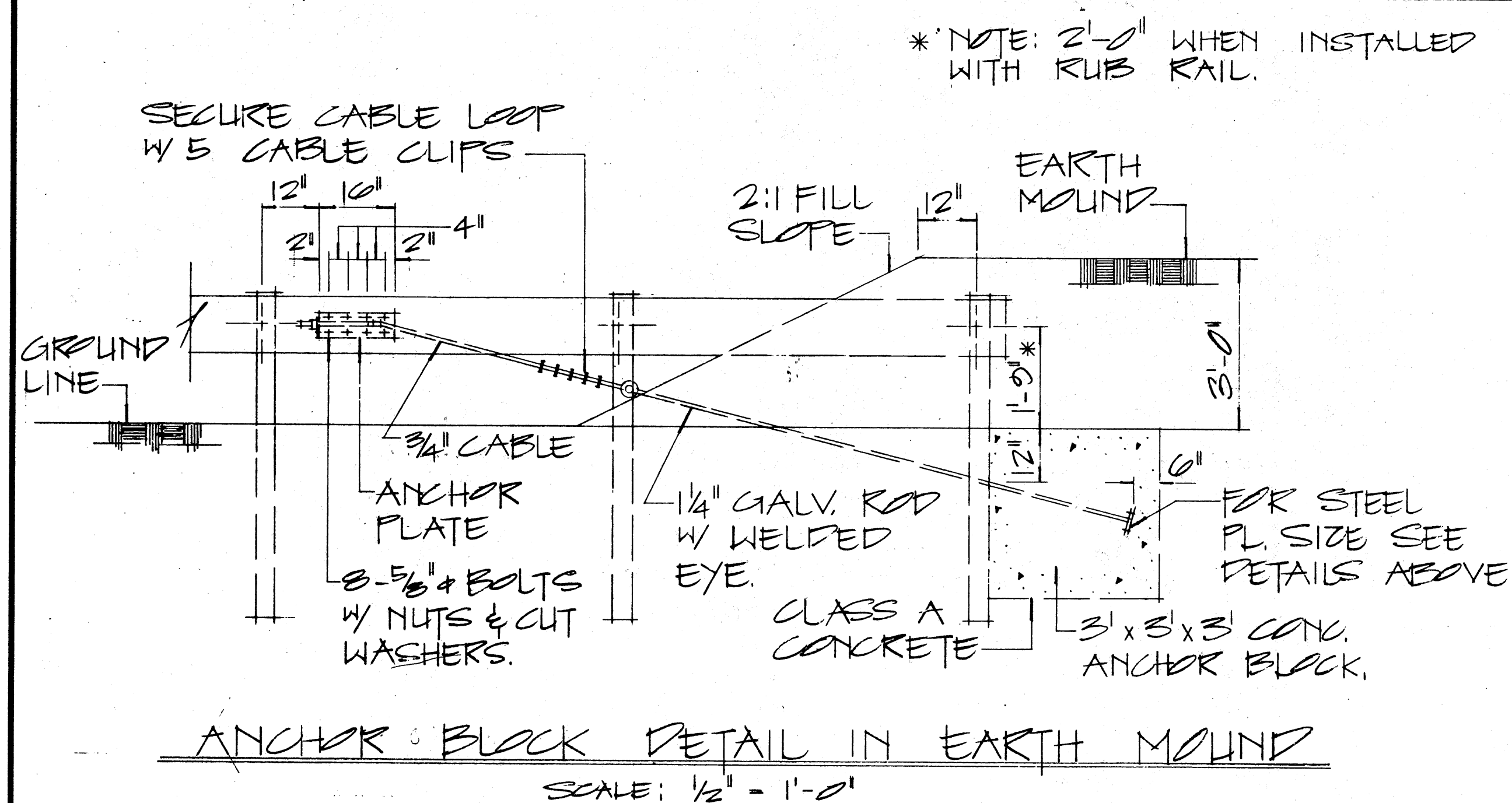
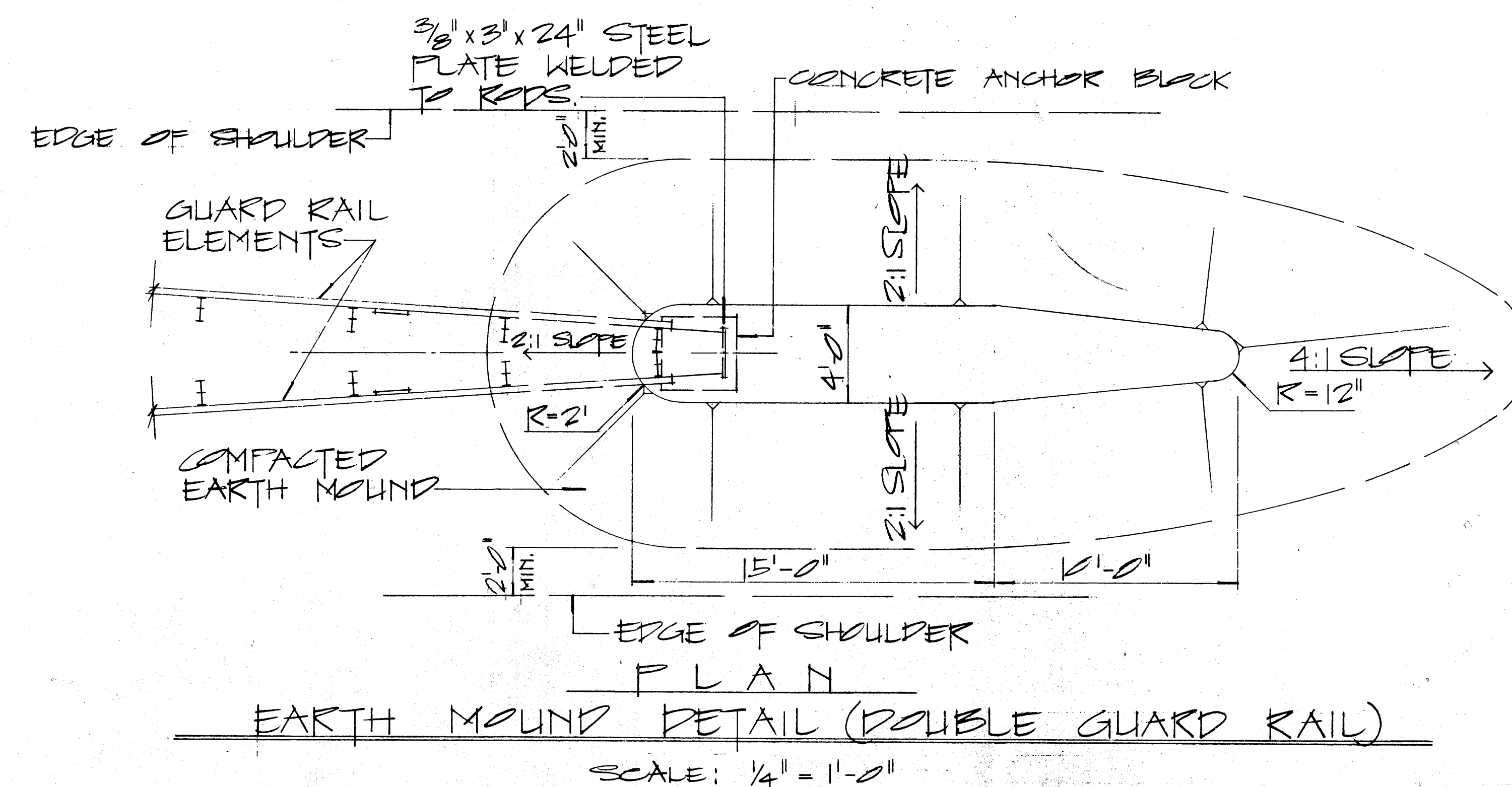
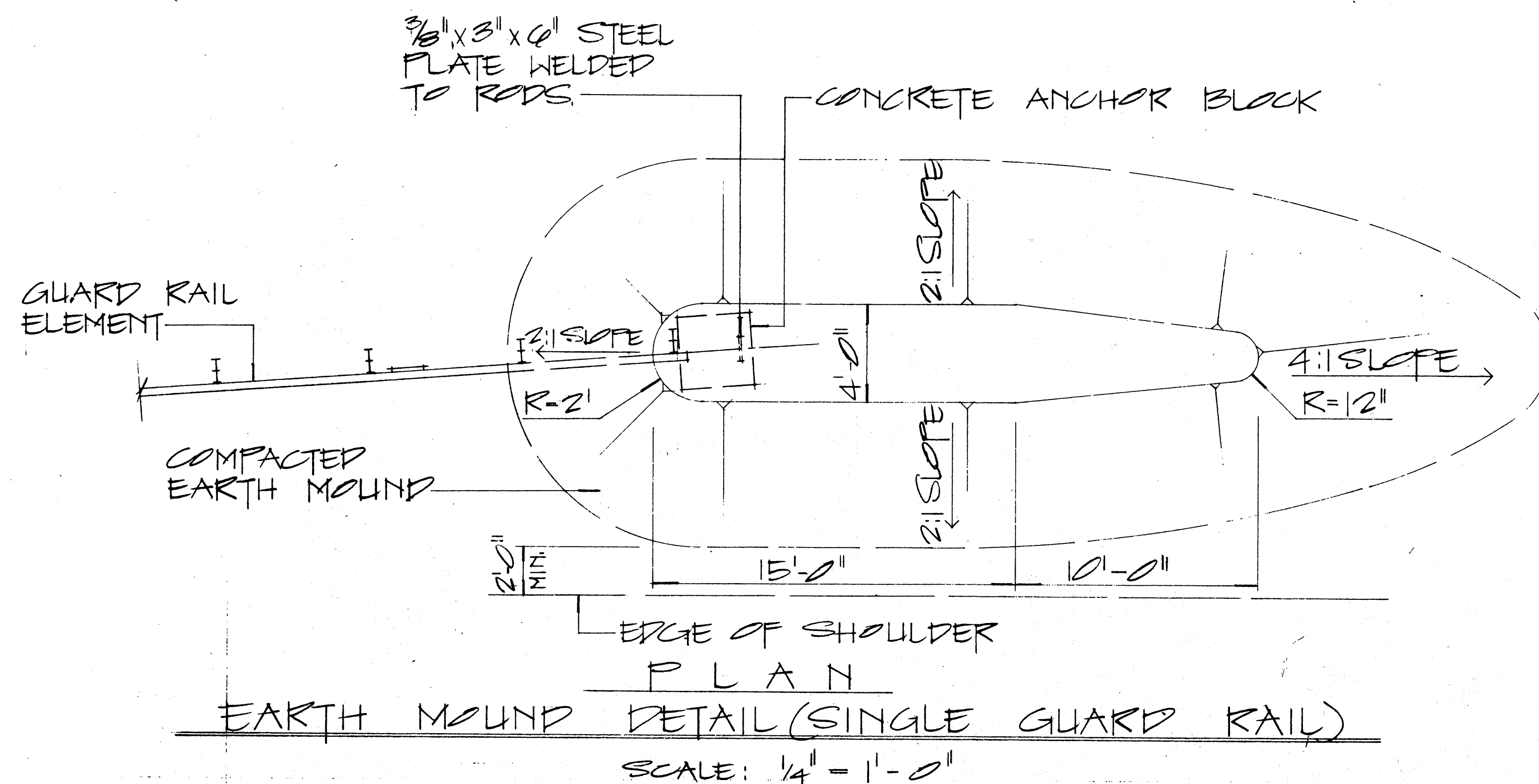


TERMINAL POST

Scale: 1" = 1'-0"

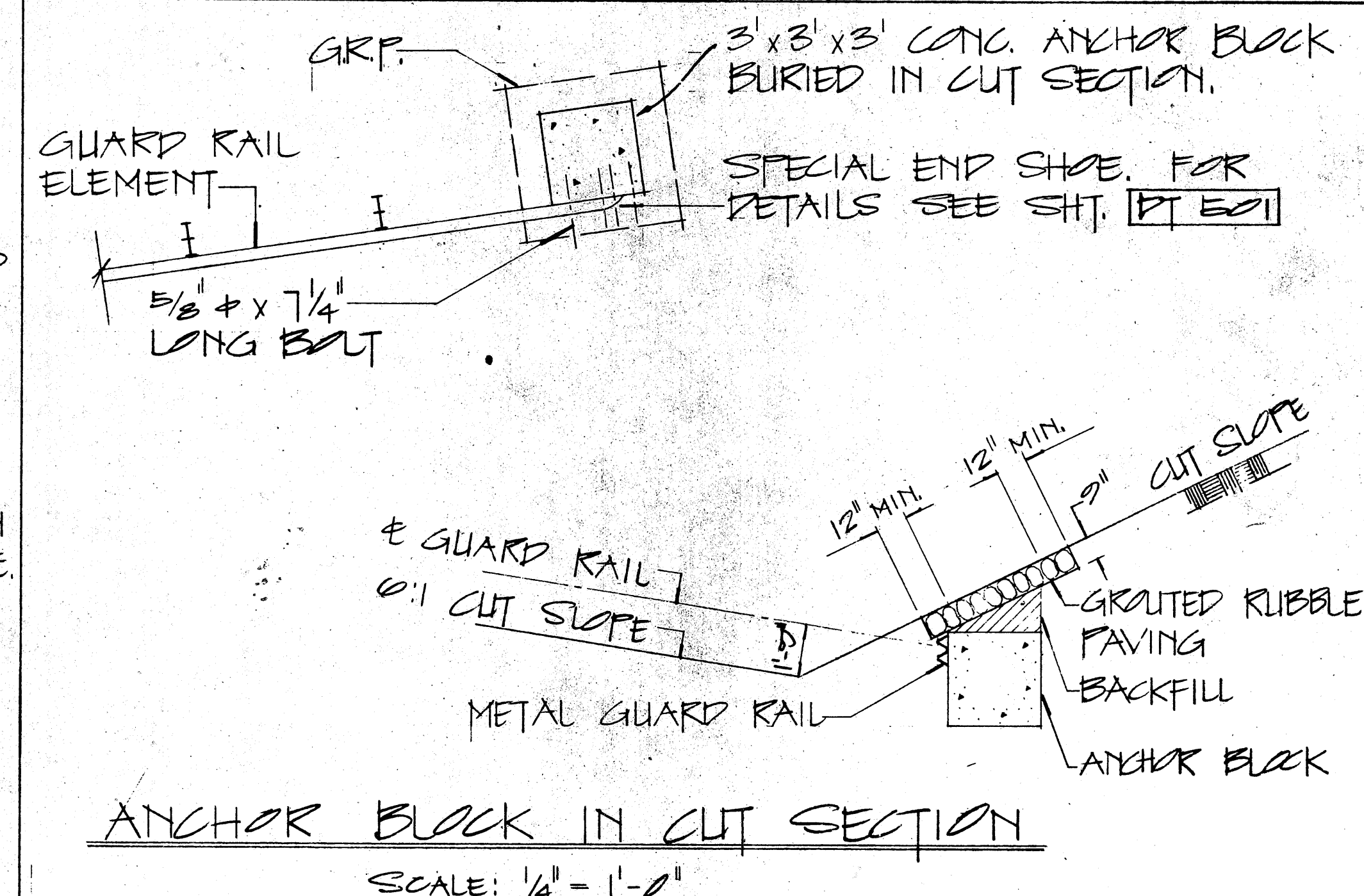
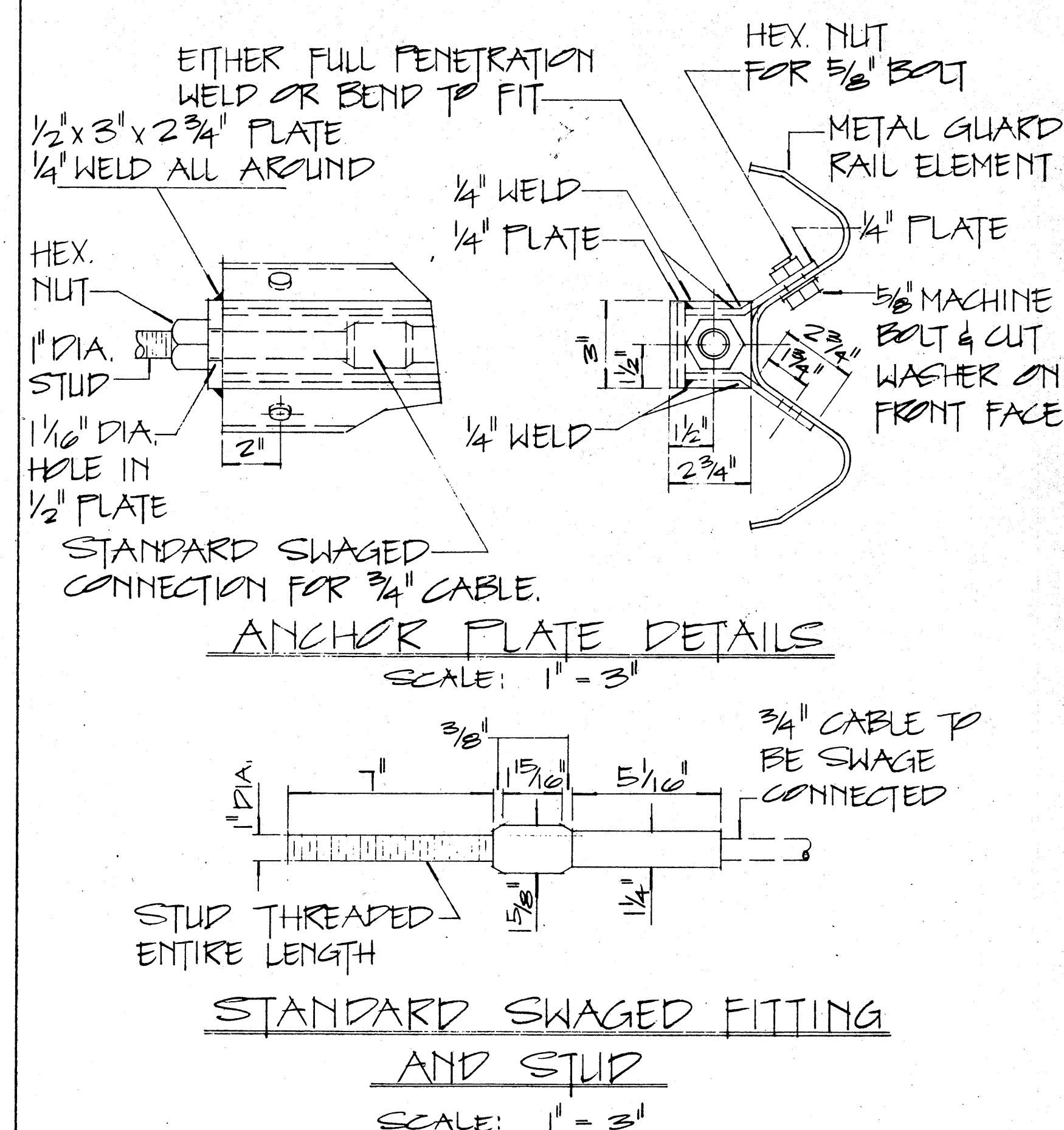
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 519 Approved 12/30/69	H.T.	6/15/78
2	Added Note 6	H.T.	12/11/80

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	22	24



NOTE:

1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND FAST BURIED IN GROUND SHALL BE COVERED WITH a Min. 20-Mil Thickness of Coal TAR ENAMEL, conforming to AWWA standard: C 203
2. CONCRETE, GRP, EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.



APPROVAL RECOMMENDED:
Enishi Tanaka 12/22/69
TRAFFIC ENGINEER DATE

APPROVED:
[Signature] 12-20-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

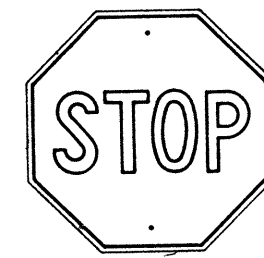
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BULK DETAILS

SCALE: AS SHOWN OCT 1960

SHEET No. // OF // SHEETS 1752

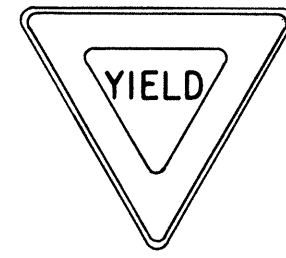
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-(15)	1981	C.O. 225-2	24



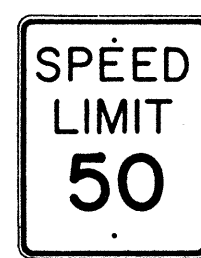
R1-1 30" x 30"
R1-1-A 36" x 36"

4-WAY

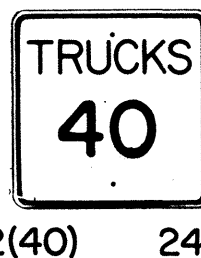
R1-3 12" x 6"
R1-3-A 18" x 9"



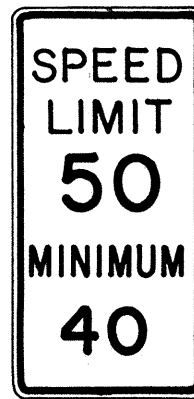
R1-2 36" x 36" x 36"
R1-2-A 48" x 48" x 48"



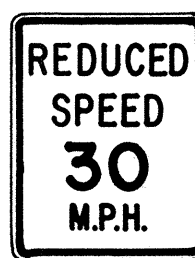
R2-1(50) 24" x 30"
R2-1(50)-A 48" x 60"



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"



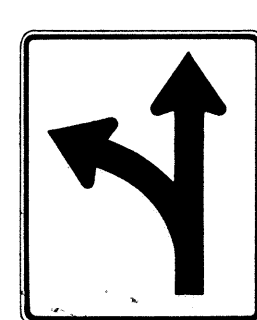
R3-3 24" x 24"
R3-3-A 48" x 48"



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



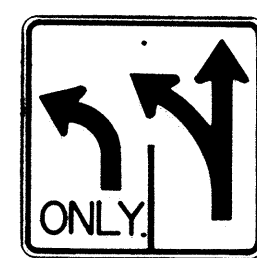
R3-5(L) 30" x 36"
R3-5(L)-A 48" x 60"



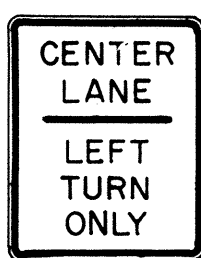
R3-6(L) 30" x 36"
R3-6(L)-A 48" x 60"



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"



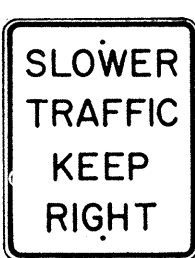
R3-9 24" x 30"



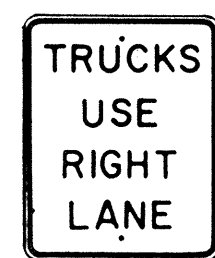
R4-1 24" x 30"



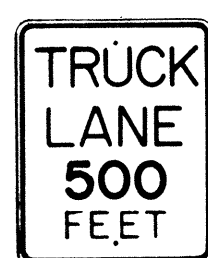
R4-2 24" x 30"



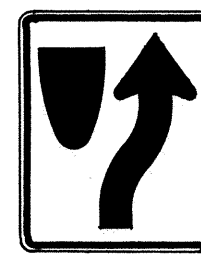
R4-3 24" x 30"
R4-3-A 48" x 60"



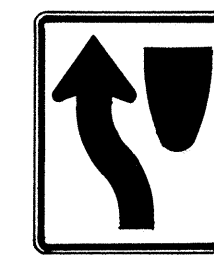
R4-5 24" x 30"



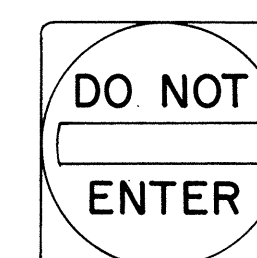
R4-6(500) 24" x 30"



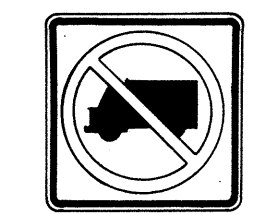
R4-7 24" x 30"
24" x 18"



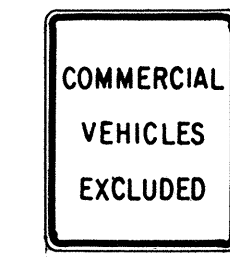
R4-8 24" x 30"
24" x 18"



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"



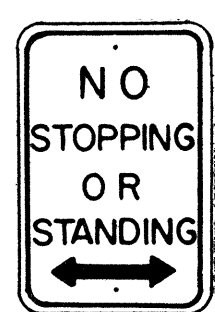
R6-1(R) 36" x 12"



R6-2(R) 18" x 24"



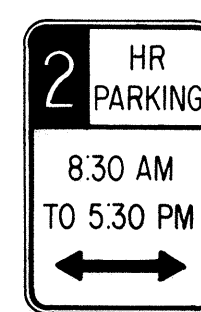
R7-1 12" x 18"
R7-1-A 24" x 30"



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"



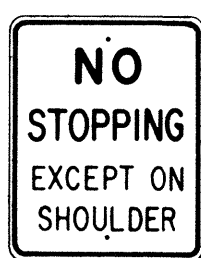
R8-3 24" x 30"



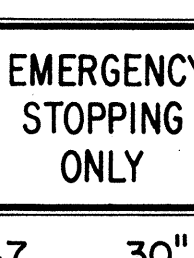
R8-4 30" x 24"
R8-4-A 48" x 36"



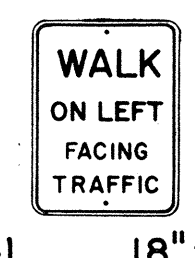
R8-5 24" x 30"



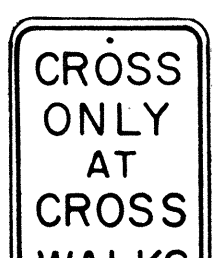
R8-6 24" x 30"



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



R9-1 18" x 24"



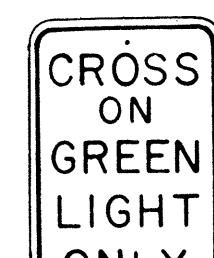
R9-2 12" x 18"



R9-3 12" x 18"



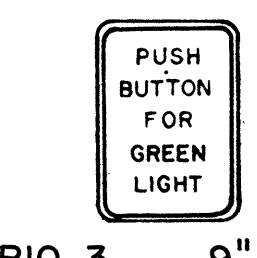
R9-4 18" x 24"



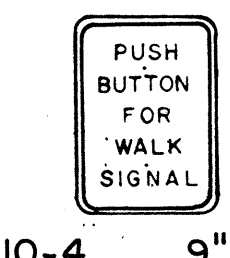
R10-1 12" x 18"



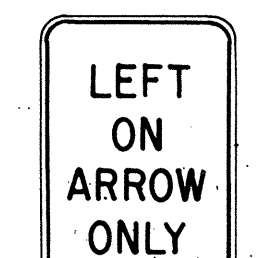
R10-2 12" x 18"



R10-3 9" x 12"



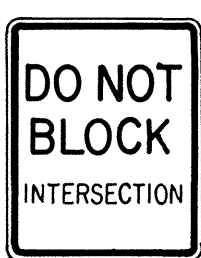
R10-4 9" x 12"



R10-5 24" x 30"



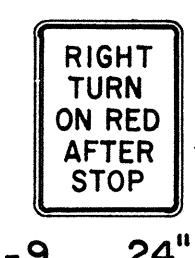
R10-6 24" x 36"



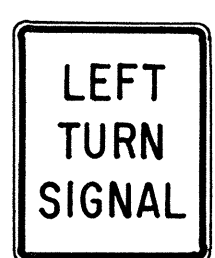
R10-7 24" x 30"



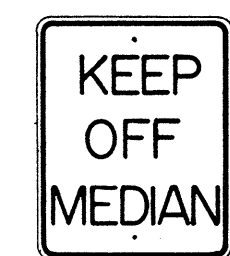
R10-8 24" x 30"



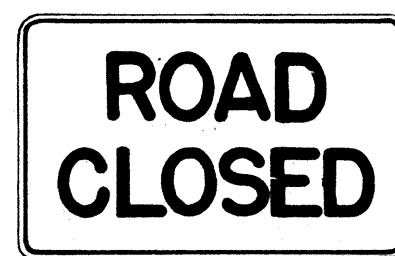
R10-9 24" x 30"



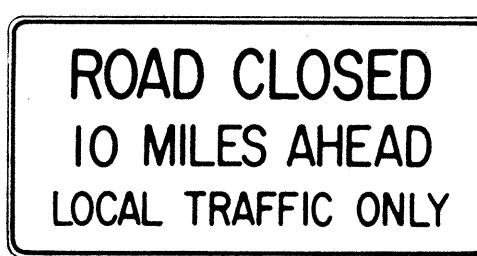
R10-10 24" x 30"



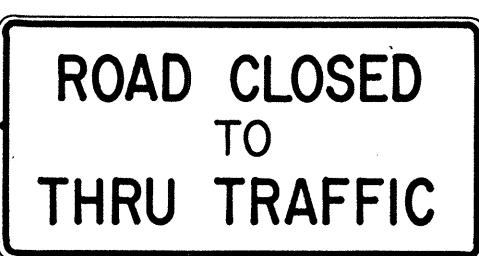
R11-1 24" x 30"



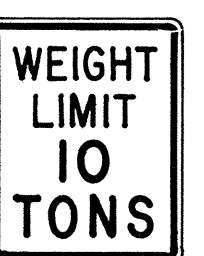
R11-2 48" x 30"



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.
- All signs shall be erected without educational plaques unless called for in the plans.

APPROVAL RECOMMENDED:
Erich Tanaka 3/17/72
TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.C.	3/20/72
2	Revised General Note 1.	H.C.	10/10/74
3	Added General Note 5	H.C.	8/9/79

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS REGULATORY SIGNS
NOT TO SCALE

SHEET No. OF SHEETS DT 101

C.O. 225-2

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

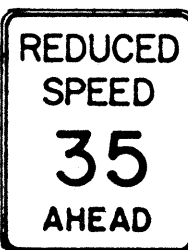
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FR-083-1(15)	1981	C.O. 225-3	24

General Notes

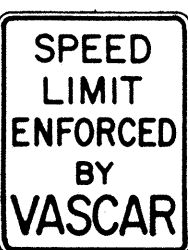
1. Sign details shall conform to the latest editions of the following FHWA publications:
a. "Standard Alphabets for Highway Signs," and as amended.
b. "Standard Highway Signs," and as amended.
c. "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
2. All signs shall be reflectorized with reflective sheeting, unless otherwise specified.
3. All signs shall have 3/8" bolt holes drilled at appropriate locations.
4. Numerals in () indicate 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 with reflective sheeting.
6. All signs shall be erected without educational plaques unless called for in the plans.

ALL WAY

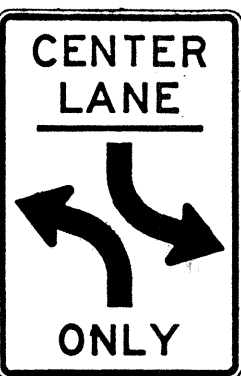
R1-4 18" x 6"



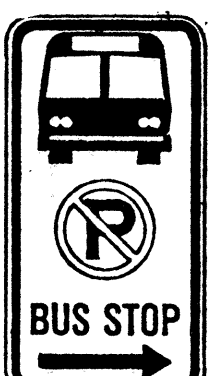
R2-5d(35) 24" x 30"
R2-5d(35)-A 48" x 60"



R2-10 24" x 30"



R3-9b 24" x 36"



R7-107(R) 12" x 24"



R7-8 12" x 18"
R7-8-A 24" x 30"



ANY TIME - 4" Series C
1 1/2"
R8-3a 24" x 24"
24" x 18"
R8-3a-A 48" x 48"



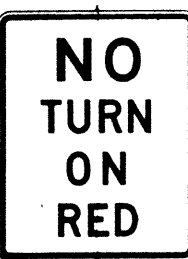
R9-3a 18" x 18"
18" x 12"
R9-3a-A 24" x 24"
24" x 18"



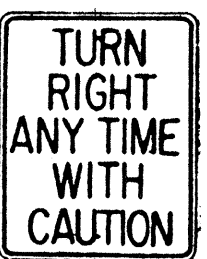
R9-3b(R) 18" x 12"



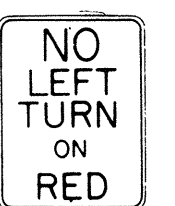
R9-3b(L) 18" x 12"



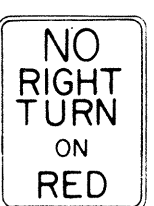
R10-11a 24" x 30"



4" Series C
R16-1 24" x 30"



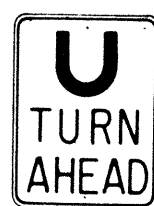
- 4" Series D -
- 3" Series D -
- 2" Series D -
- 3" Series D -
R16-3 18" x 24"



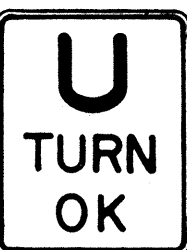
R16-4 18" x 24"



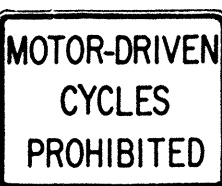
3" Series C
4" Series E
R16-5 36" x 42"



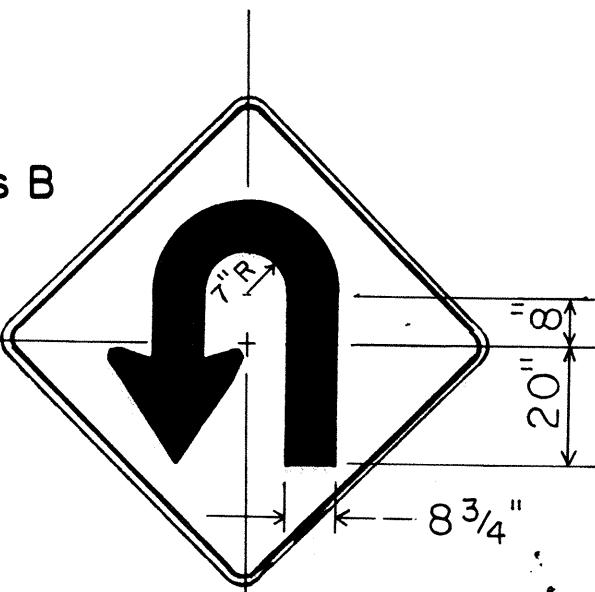
- 8" Series F
- 5" Series D
R16-6 24" x 30"



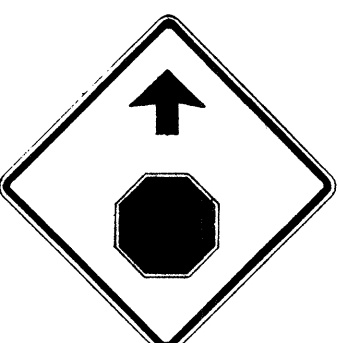
- 8" Series F
- 5" Series D
R16-7 24" x 30"



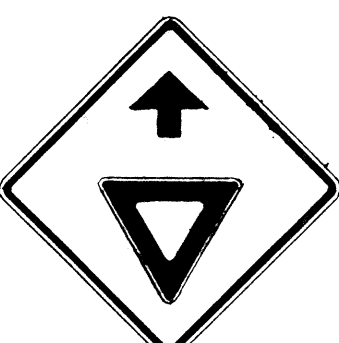
4" Series B
R5-8 30" x 24"



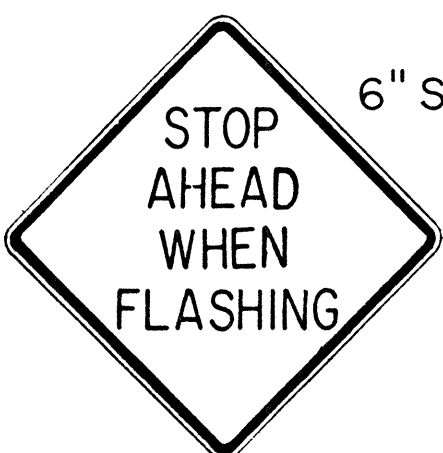
W17-1(L) 60" x 60"



W3-1a 36" x 36"
24" x 18"
W3-1a-A 48" x 48"
24" x 18"



W3-2a 36" x 36"
24" x 18"
W3-2a-A 48" x 48"
24" x 18"



6" Series C
W3-4 48" x 48"



W8-6 30" x 30"
W8-6-A 36" x 36"



6" Series E
W9-3(L) 48" x 48"



W11-7 36" x 36"
24" x 18"
W11-7-A 48" x 48"
24" x 18"



W11-8 36" x 36"
24" x 18"
W11-8-A 48" x 48"
24" x 18"



W11-9 36" x 36"
W11-9-A 48" x 48"



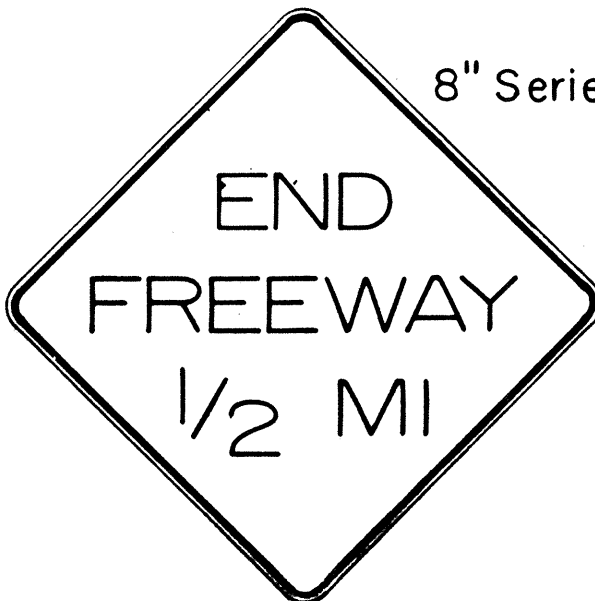
W14-4 36" x 36"
W14-4-A 48" x 48"



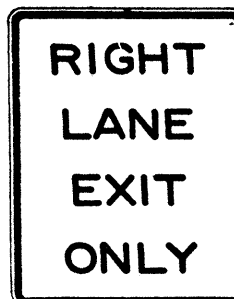
- 4" Series C -
W15-1 24" x 24"



W15-2 24" x 24"



8" Series E
CW16-1(1/2) 60" x 60"



8" Series E
W18-1 48" x 60"



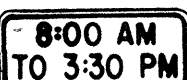
SI-1 36" x 36"



S2-1 36" x 36"



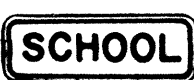
S3-1 30" x 30"



S4-1 24" x 10"



S4-2 24" x 10"



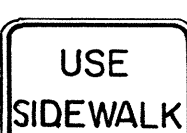
S4-3 24" x 8"



S4-4 24" x 10"



7" Series D
CW23-4 48" x 48"



4" Series C
R18-1 24" x 18"

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht.DT103 approved 3/20/72	H.T.	5/3/78
2	Added General Note 6	H.T.	11/9/78

APPROVAL RECOMMENDED:
Eusku Tanaka 5/2/78
TRAFFIC ENGINEER DATE

APPROVED:
Robert Z. Zakeishi 5/3/78
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

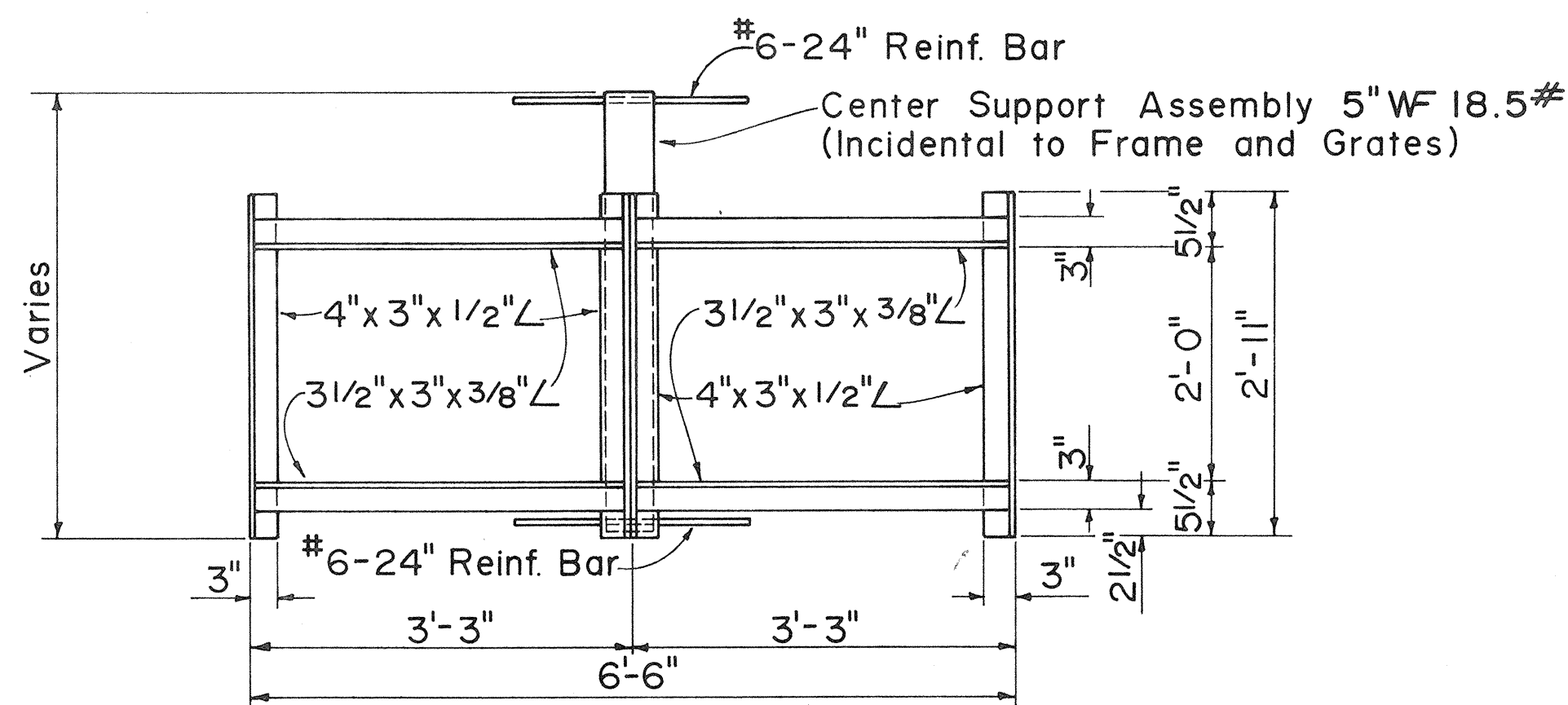
MISCELLANEOUS SIGNS

NOT TO SCALE DATE: MAY, 1978

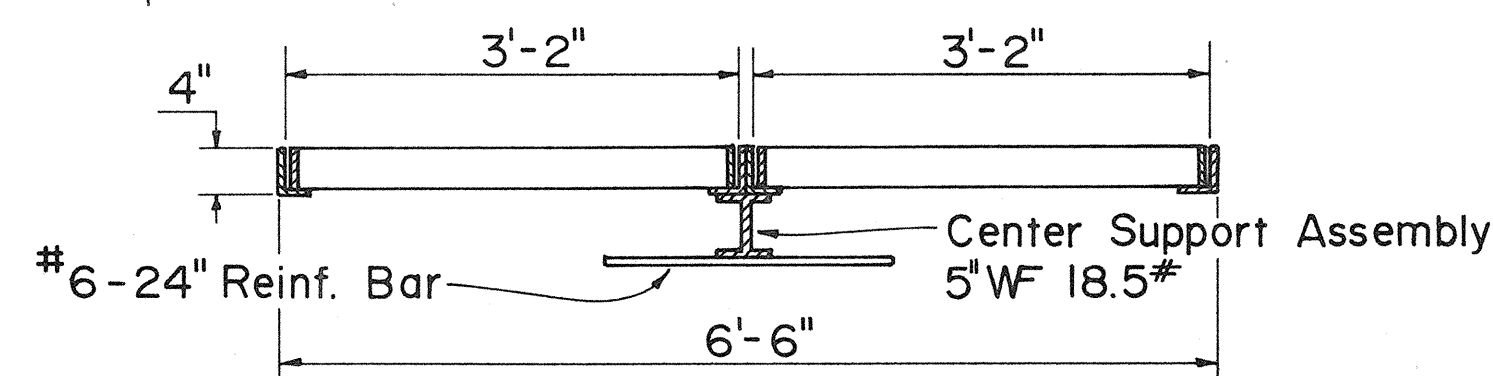
SHEET NO. OF SHEETS DT 103

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

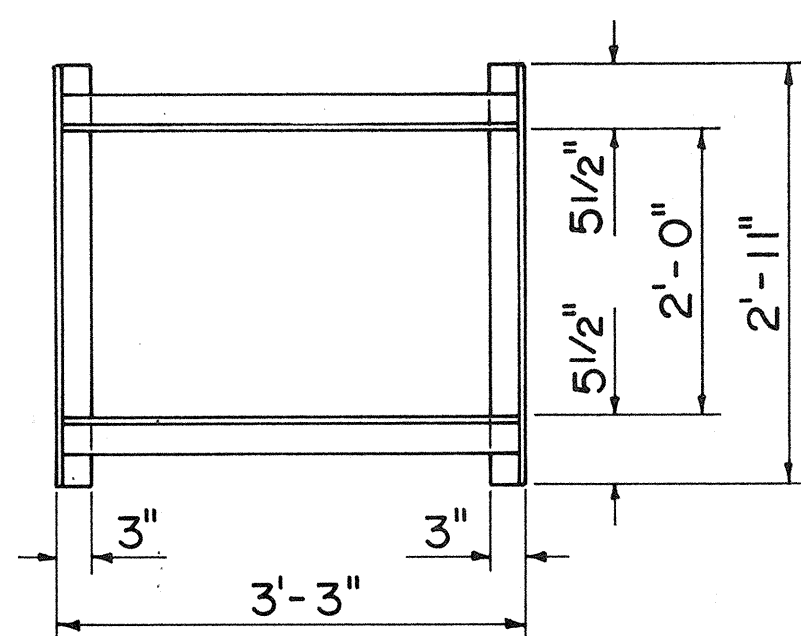
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PR-083-1(15)	1981	C.O. 225-4	24



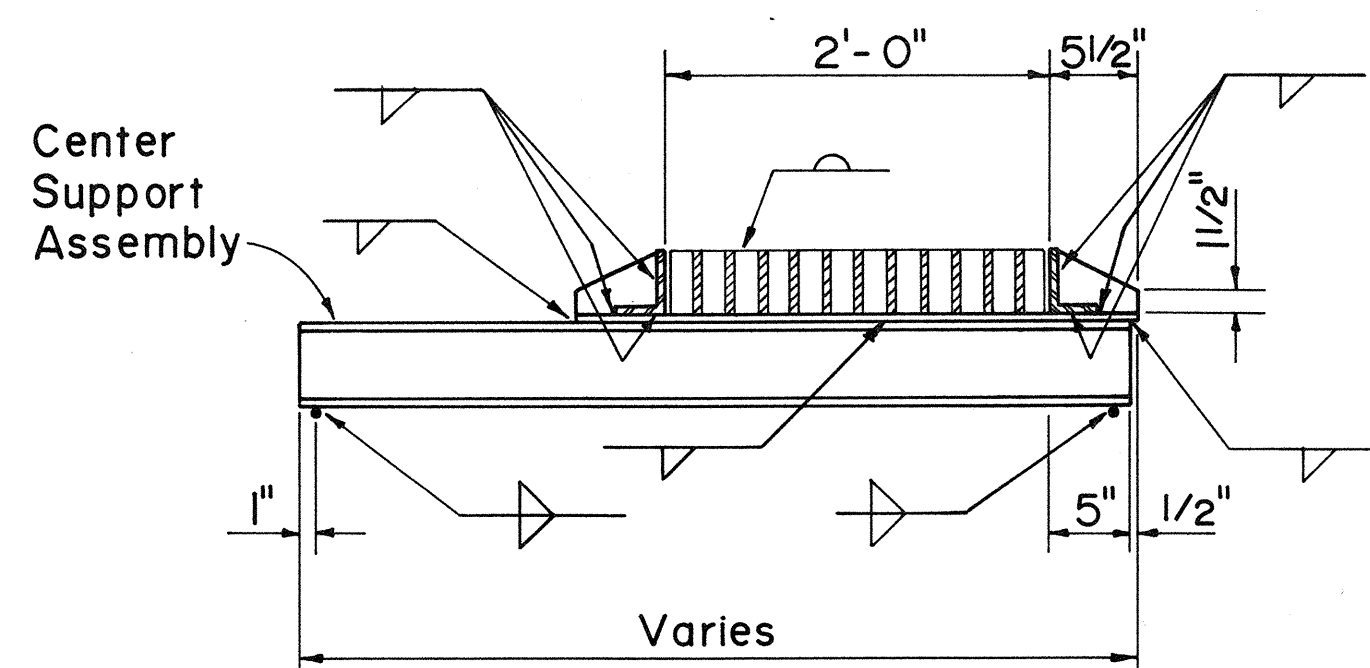
PLAN
(Two or More Grates)



LONGITUDINAL SECTION
(Thru Frame & Grate)

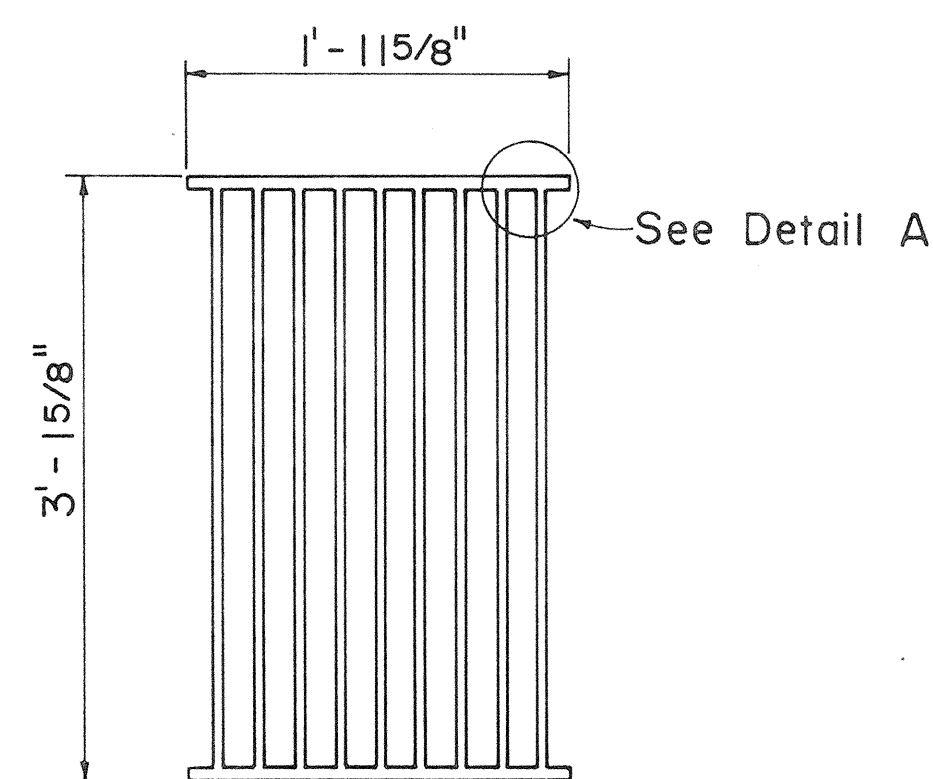


PLAN
(Single Grate)

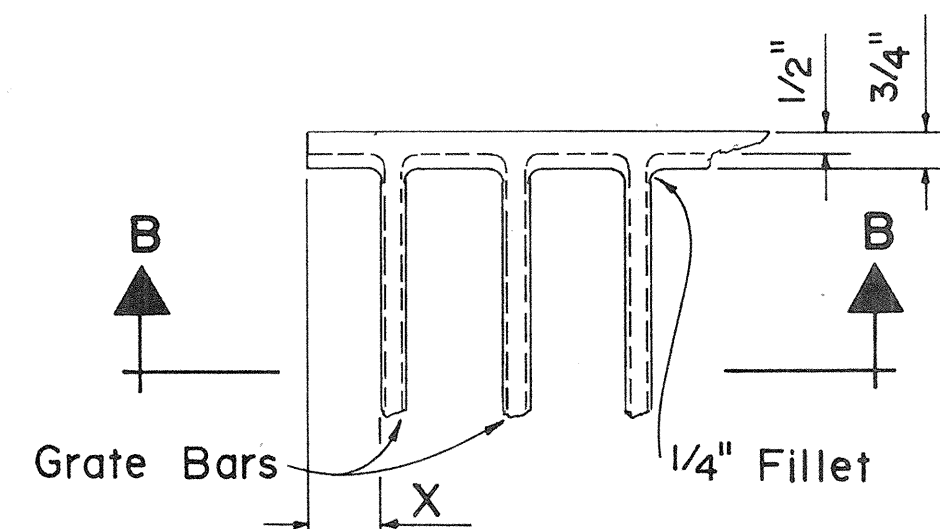


CROSS SECTION
(Thru Frame & Grate)

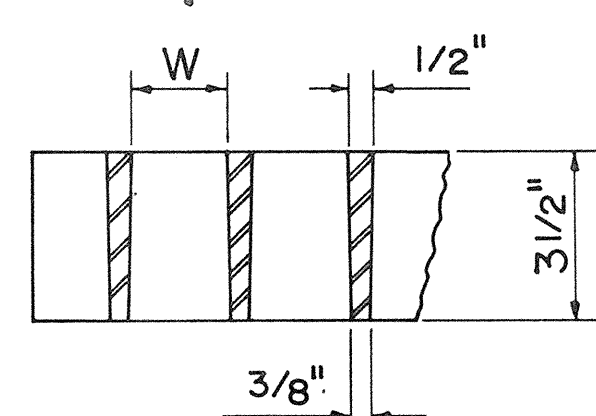
FRAME DETAILS



PLAN

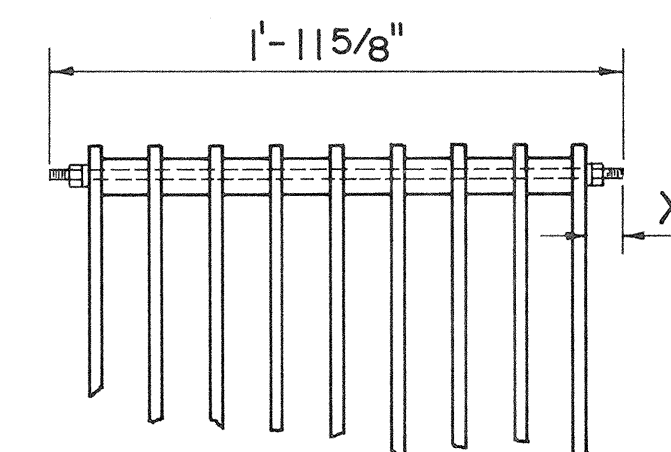


DETAIL A

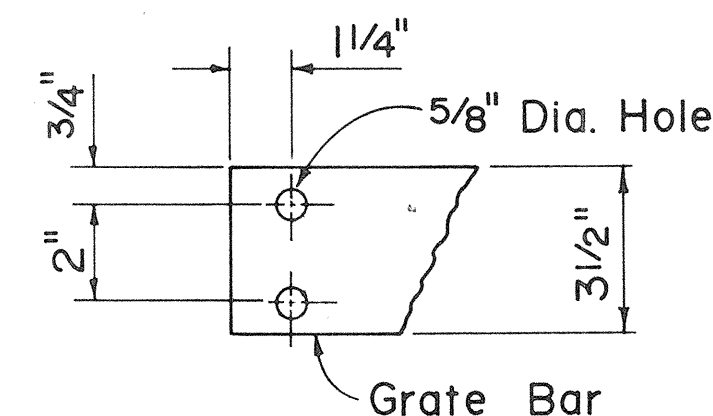


SECTION B-B

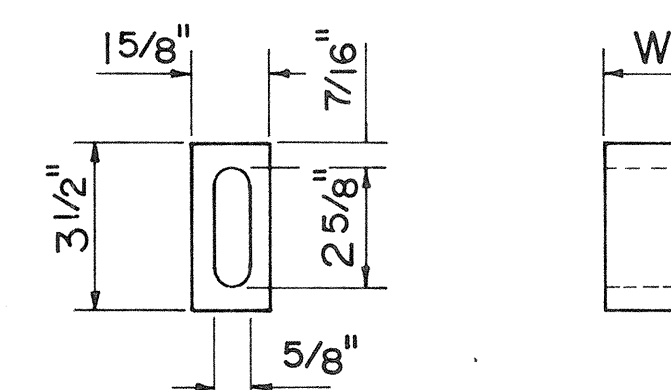
ALTERNATIVE CAST MALLEABLE IRON
OR CAST STEEL GRATE



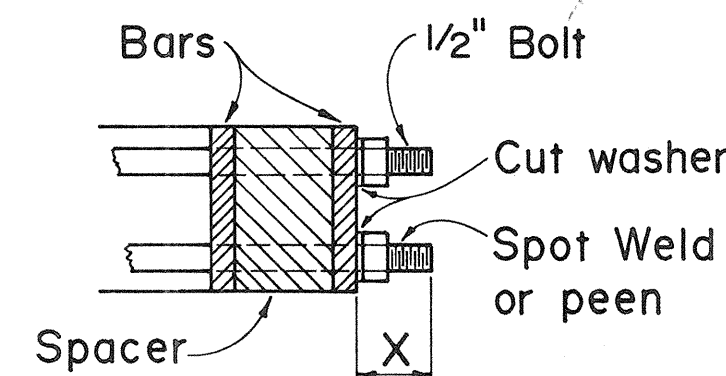
BOLTED END BLOCK



END OF BAR

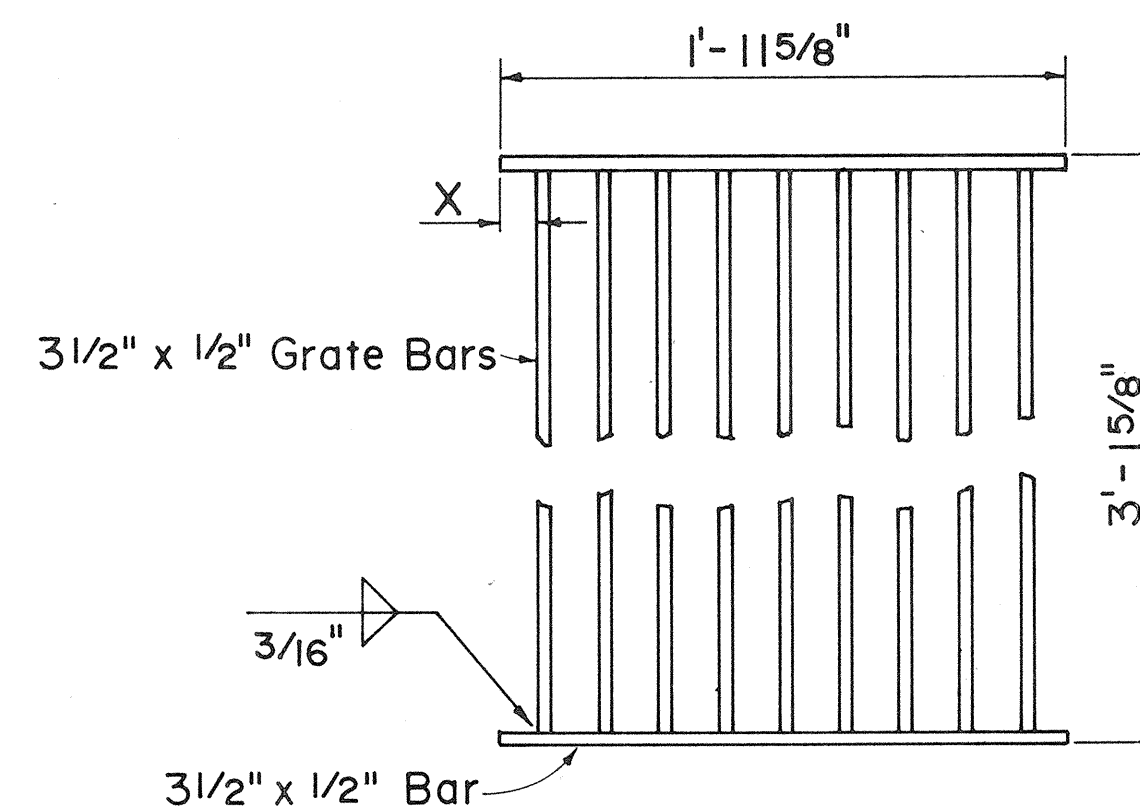


BAR SPACER

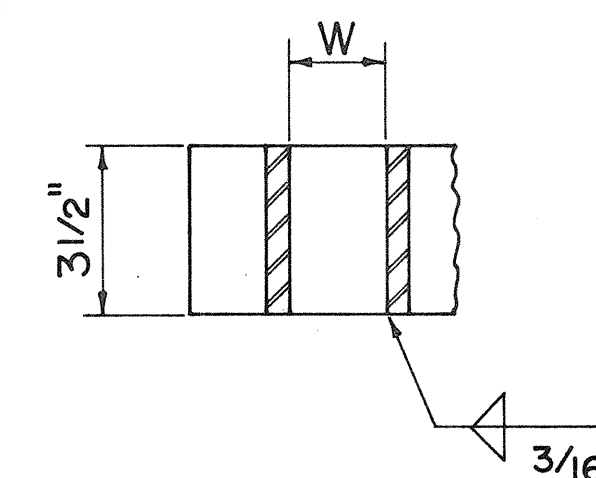


BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



PLAN



SECTION

ALTERNATIVE WELDED GRATE

GRATE BAR SPACING TABLE			
TYPE	NO. BARS	CLEAR BAR SPACING-W	X
A-9	9	2"	1 9/16"
A-12	12	1 3/8"	1 1/4"

NO.	REVISION	APPROVED BY	DATE
1.	Supersedes Sht. DH 7 approved 12-17-69	H.T.	6/22/19

APPROVAL RECOMMENDED:
P. J. J. J.
 HYDRAULIC DESIGN ENGINEER 6-19-79 DATE
 APPROVED:
Herbert Daleishi
 ASSISTANT CHIEF, ENGINEERING 6-22-79 DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAILS	
TYPE A-9 AND A-12 FRAMES AND GRATES	
Not To Scale	Date: Dec. 1977
SHEET NO. OF SHEETS DH 7	

ORIGINAL PLAN	NO.
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	