

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11D-01-81 11GH-01-81 270B-01-81	1981	7	14



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"



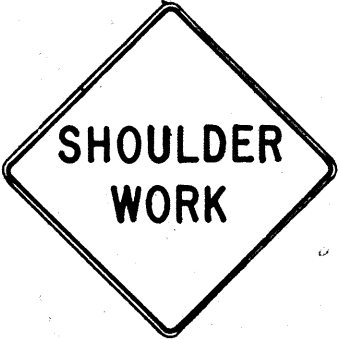
CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



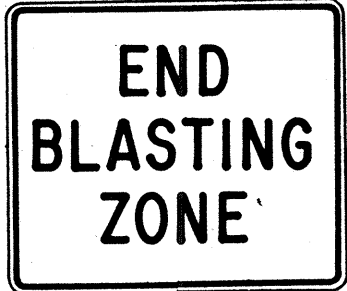
CW21-6 30" x 30"



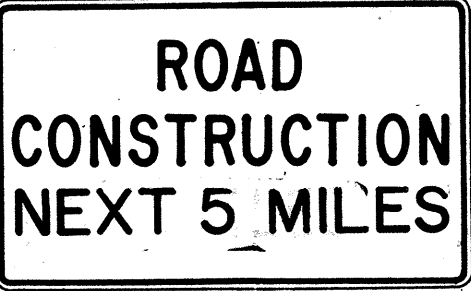
CW22-1b 48" x 48"



CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



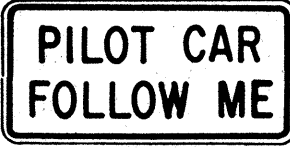
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



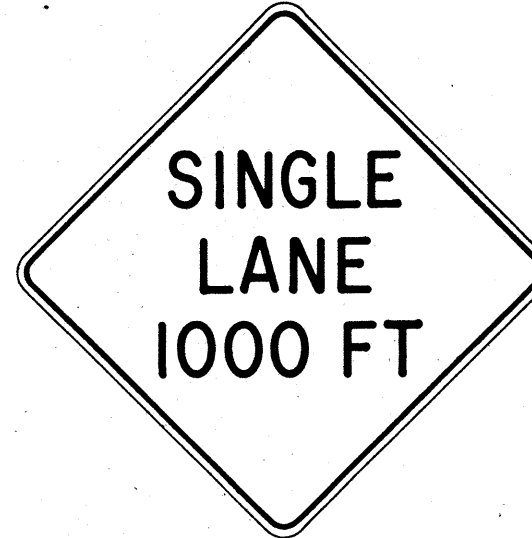
CM4-10(R) 48" x 18"



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.

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

APPROVED:
Andrew S. S. S. 3/23/72
ASSISTANT CHIEF, ENGINEERING DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

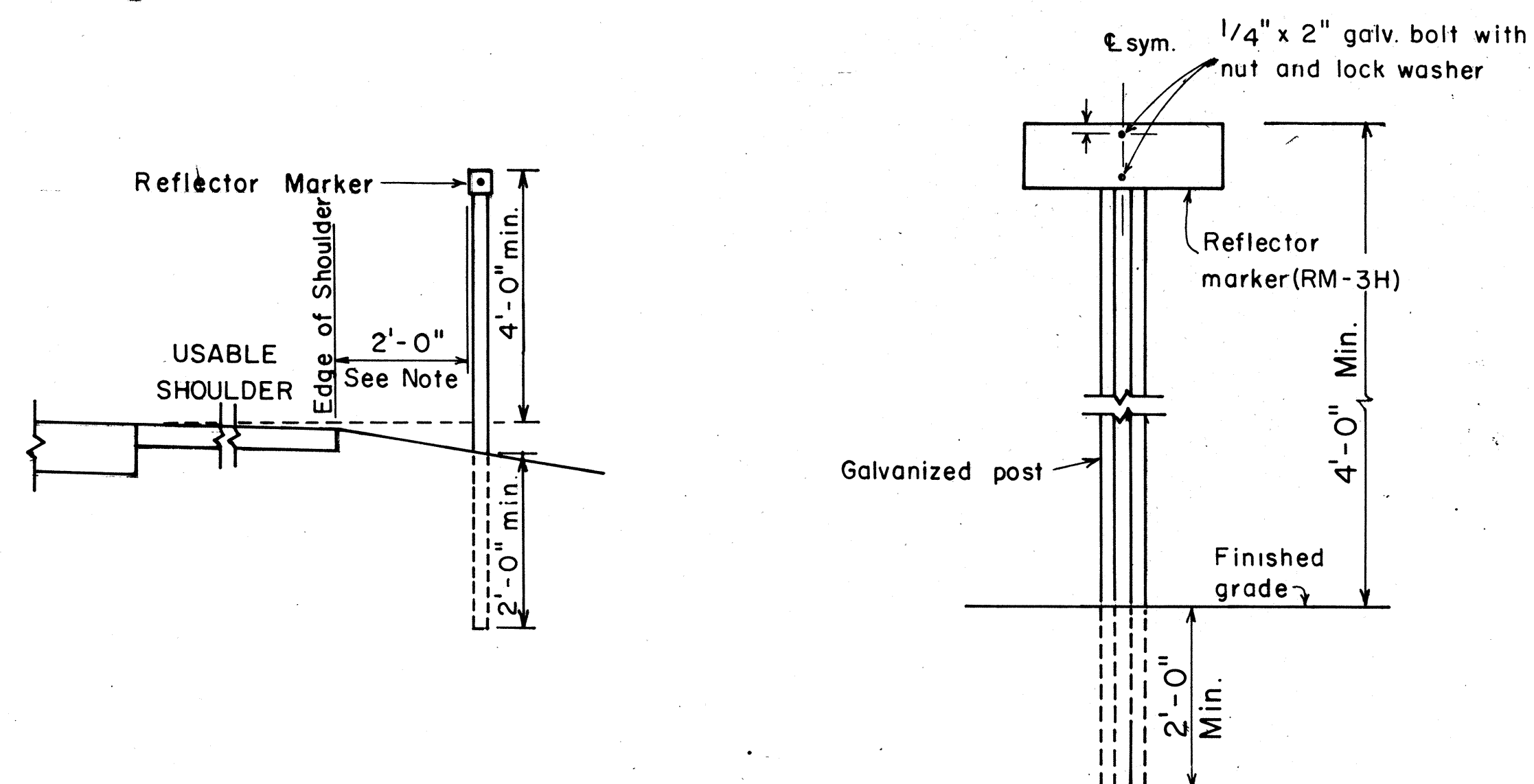
SHEET No. 1 OF 8 SHEETS DT 104

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
NO.	

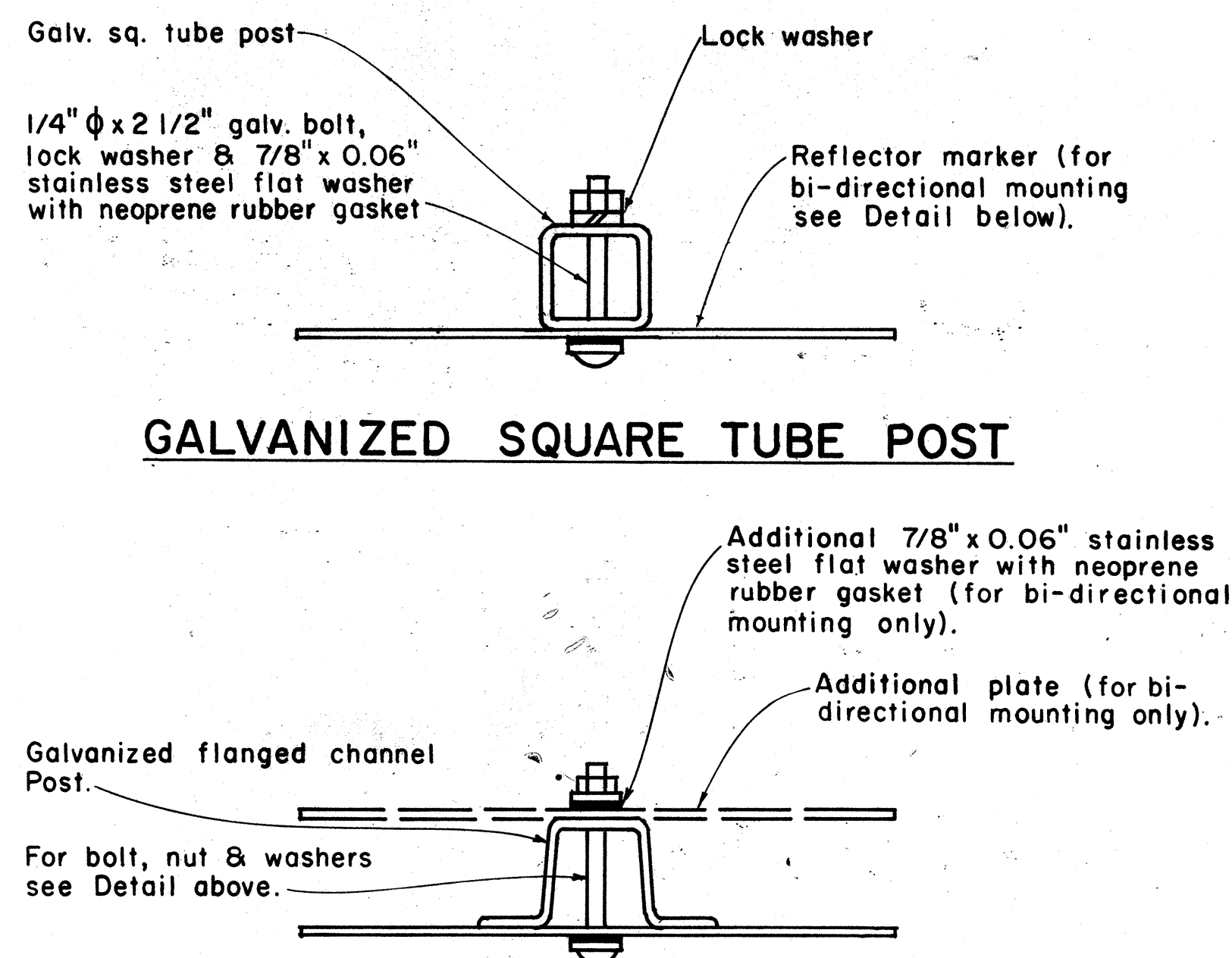
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11D-01-81 11GH-01-81 270B-01-81	1981	8	14

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.



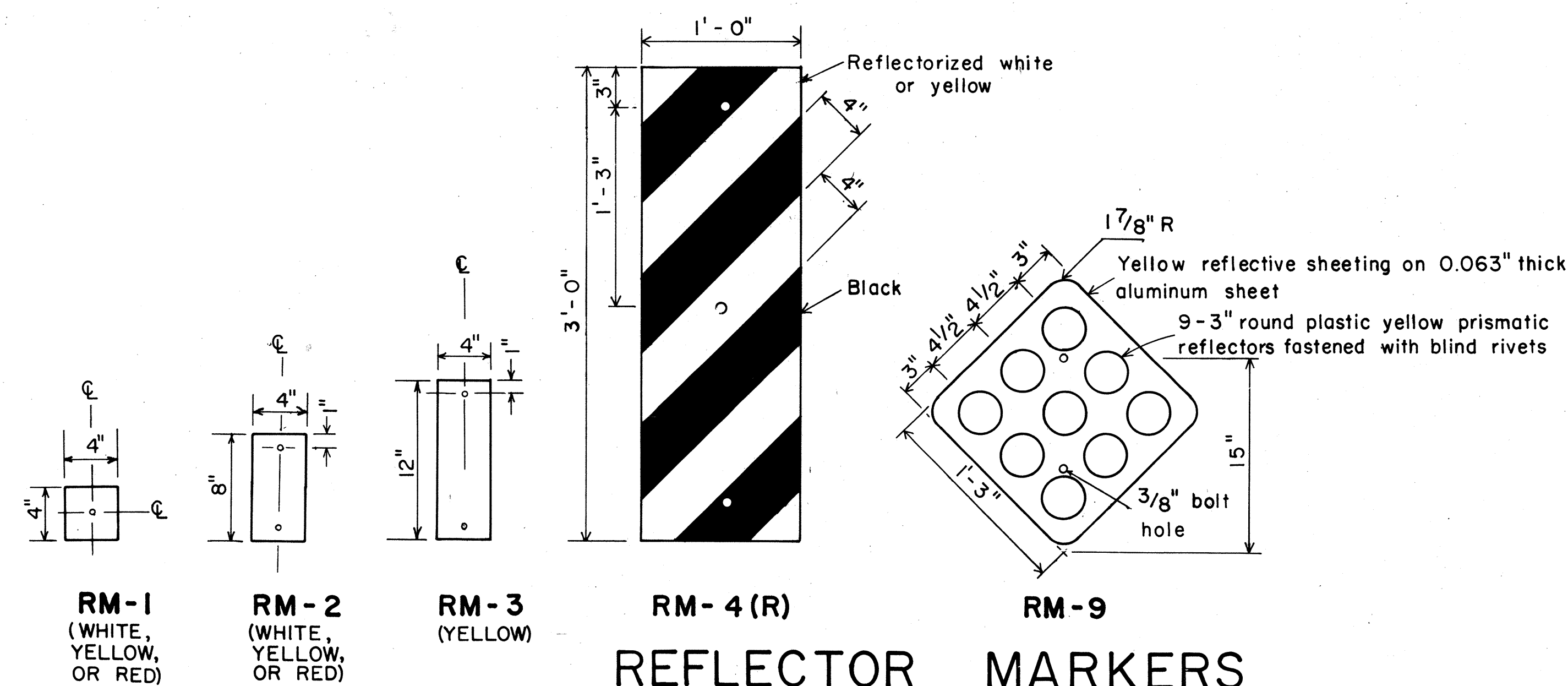
REFLECTOR MARKER MOUNTING DETAIL



GALVANIZED SQUARE TUBE POST

GALVANIZED FLANGED CHANNEL POST

TYPICAL MOUNTING DETAILS



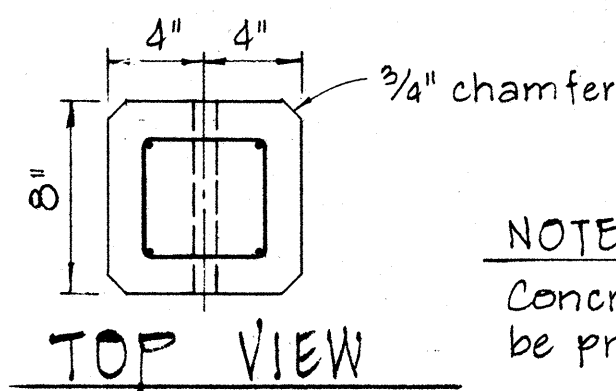
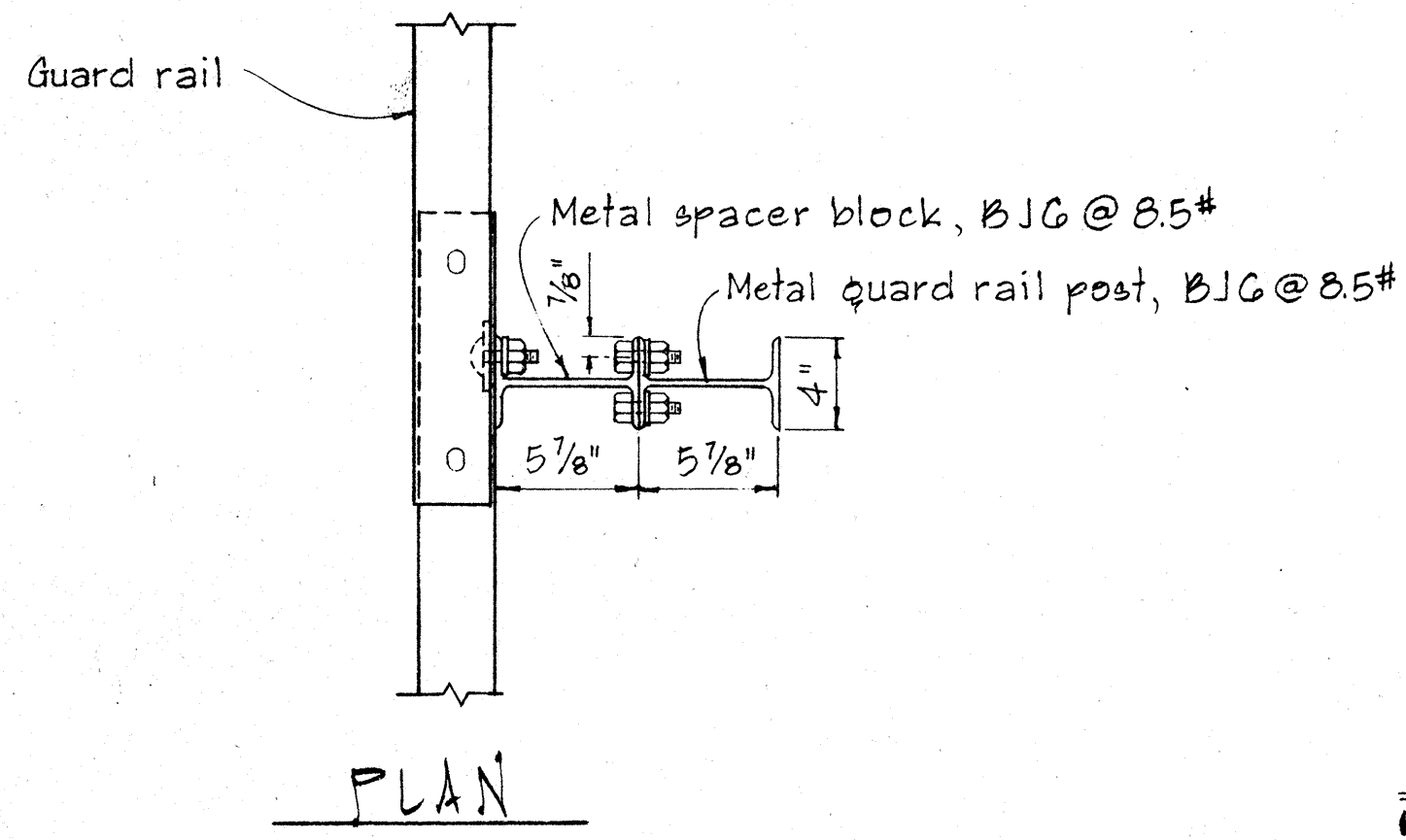
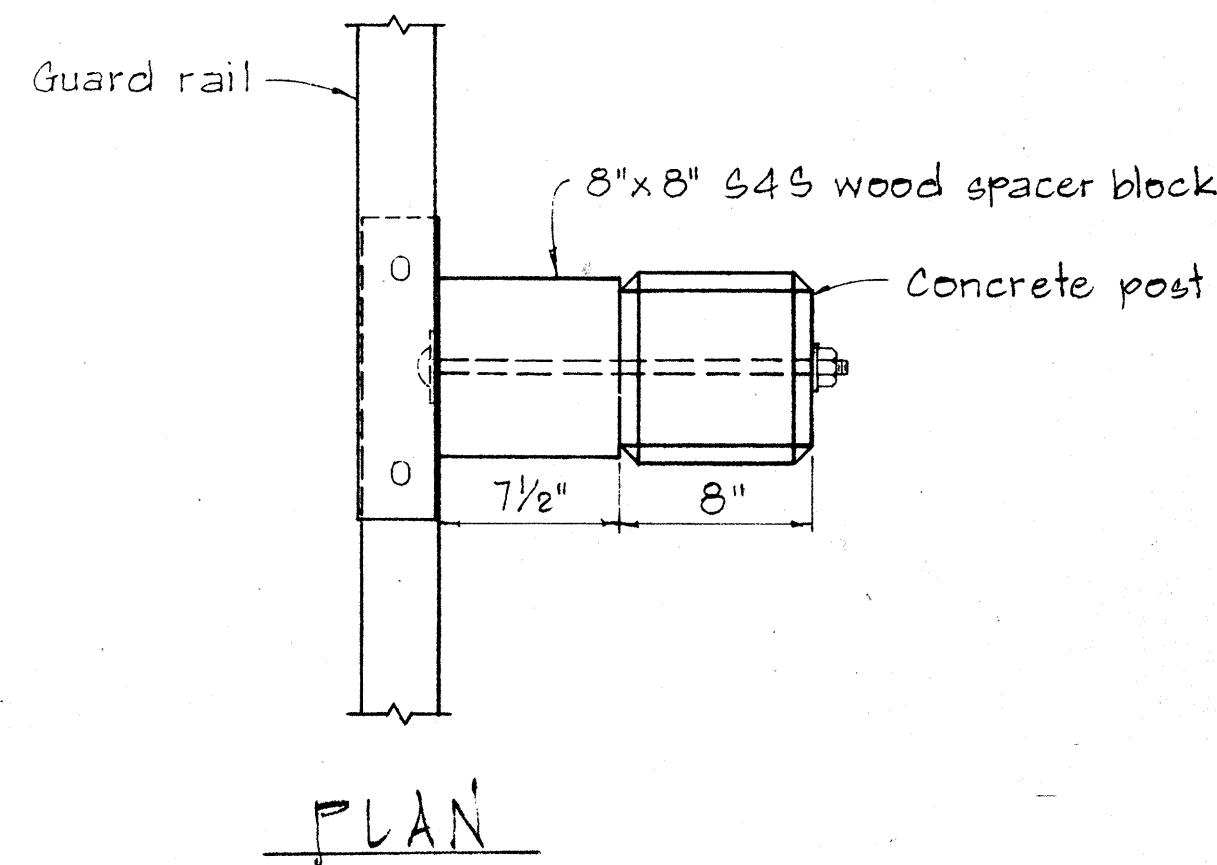
REFLECTOR MARKERS

APPROVAL RECOMMENDED:
Enchi Tanaka 11/1/77
 TRAFFIC ENGINEER DATE
 APPROVED:
Herbert S. Sakai 11/15/77
 ASSISTANT CHIEF, ENGINEERING DATE

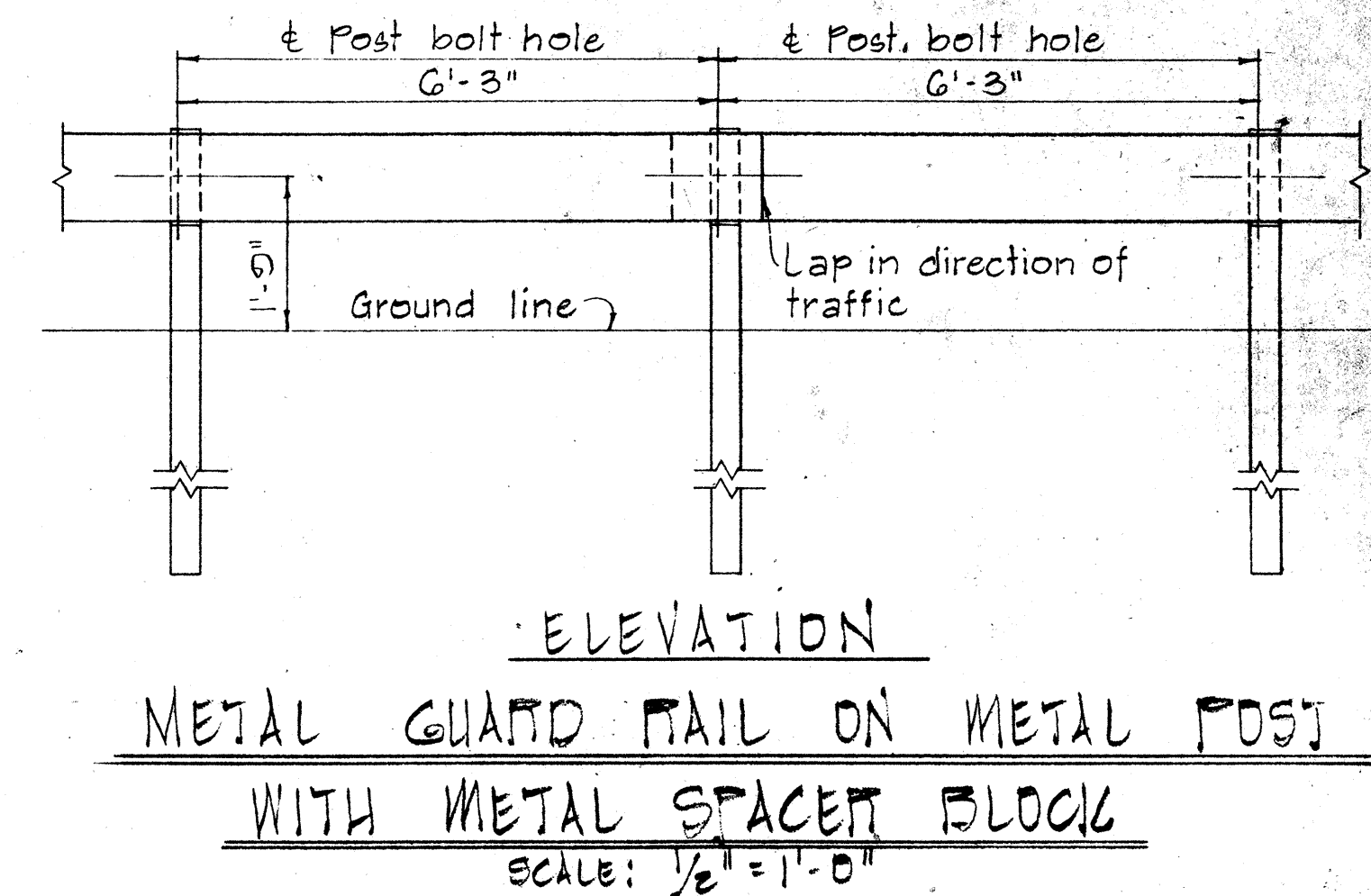
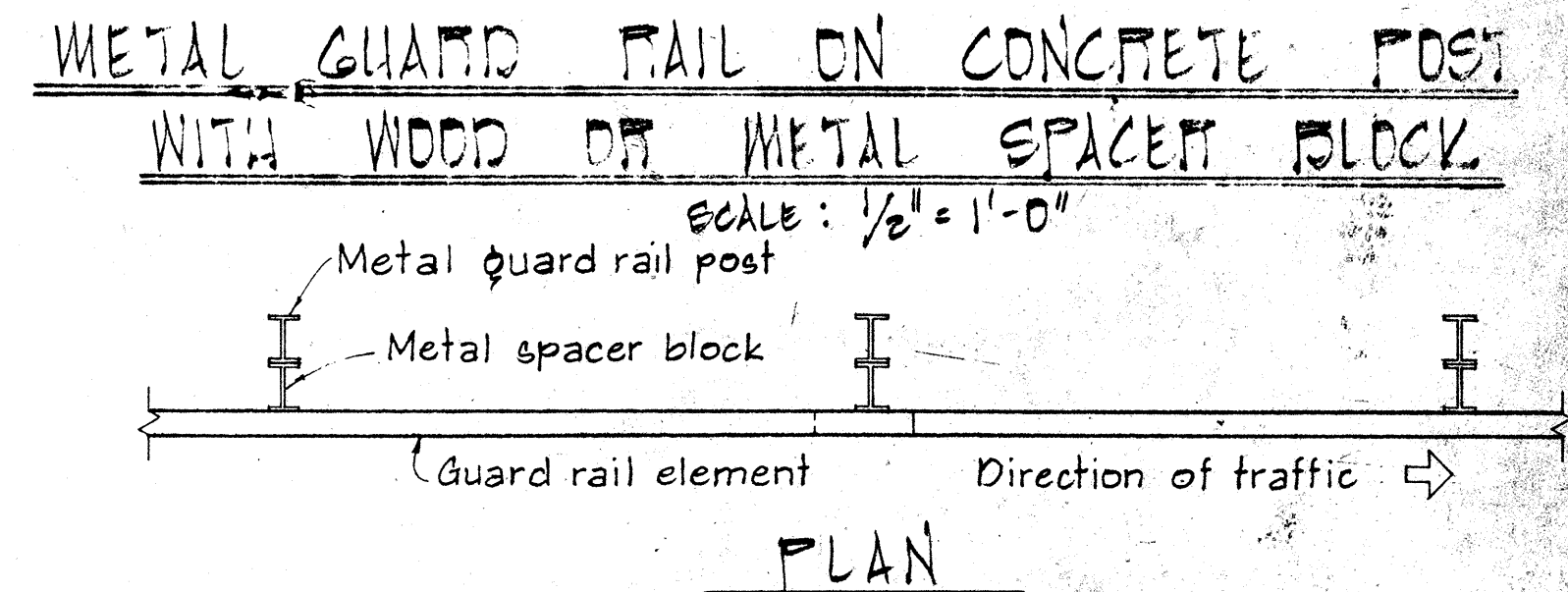
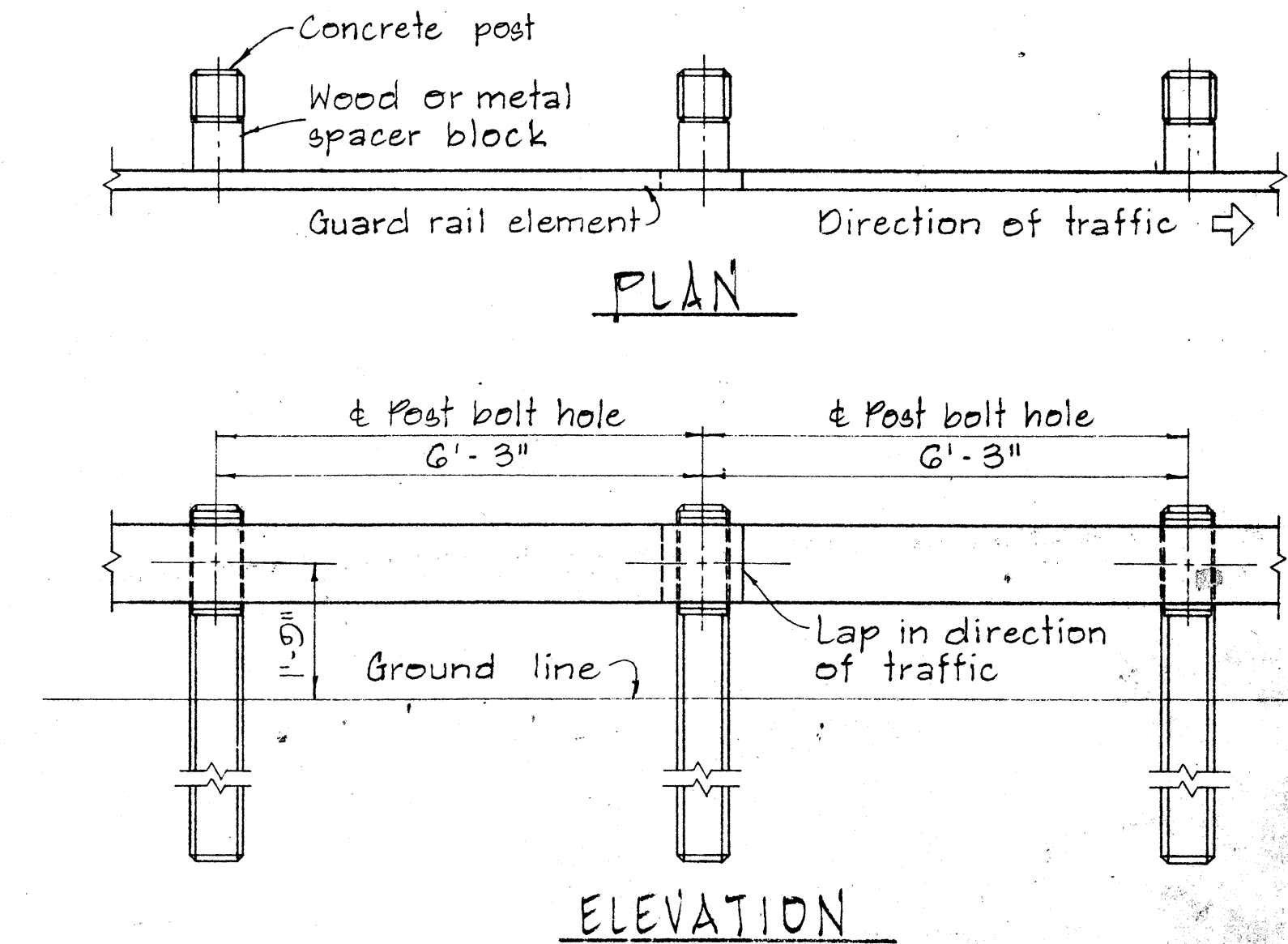
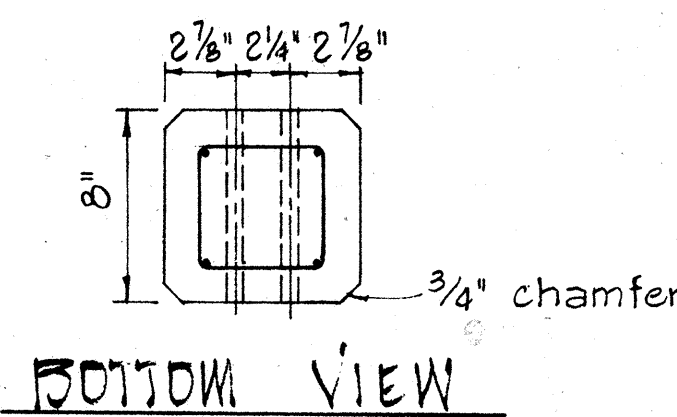
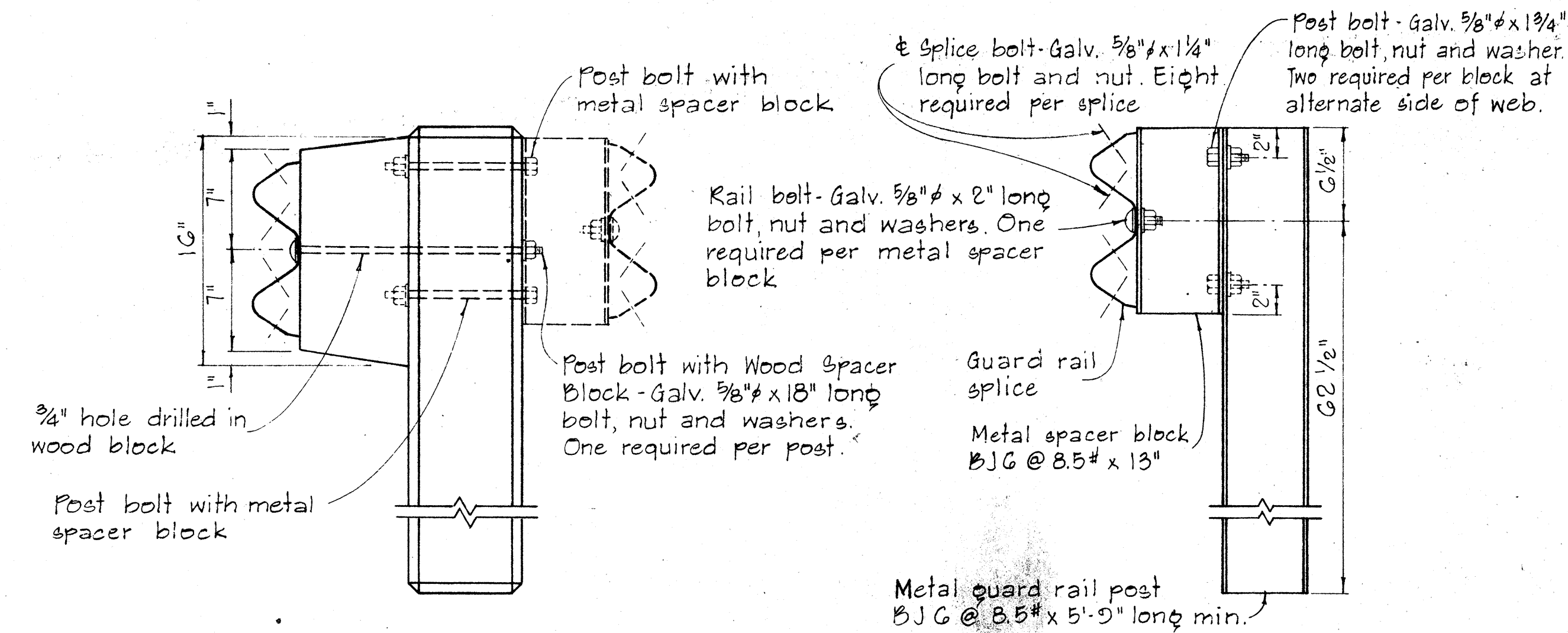
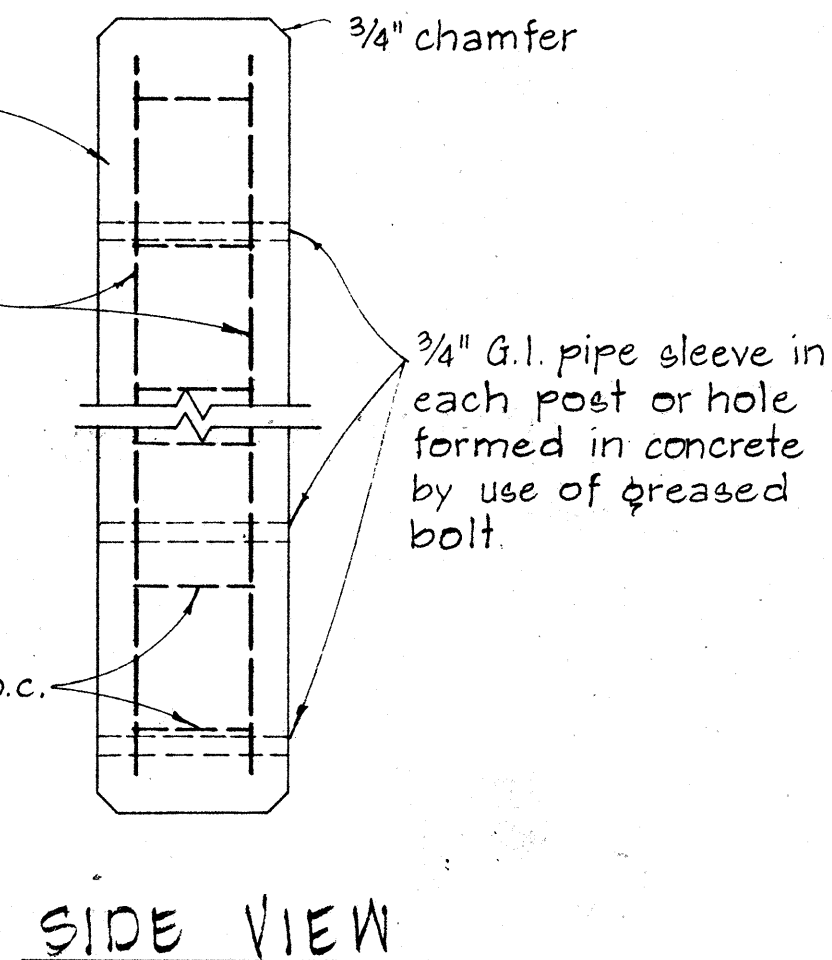
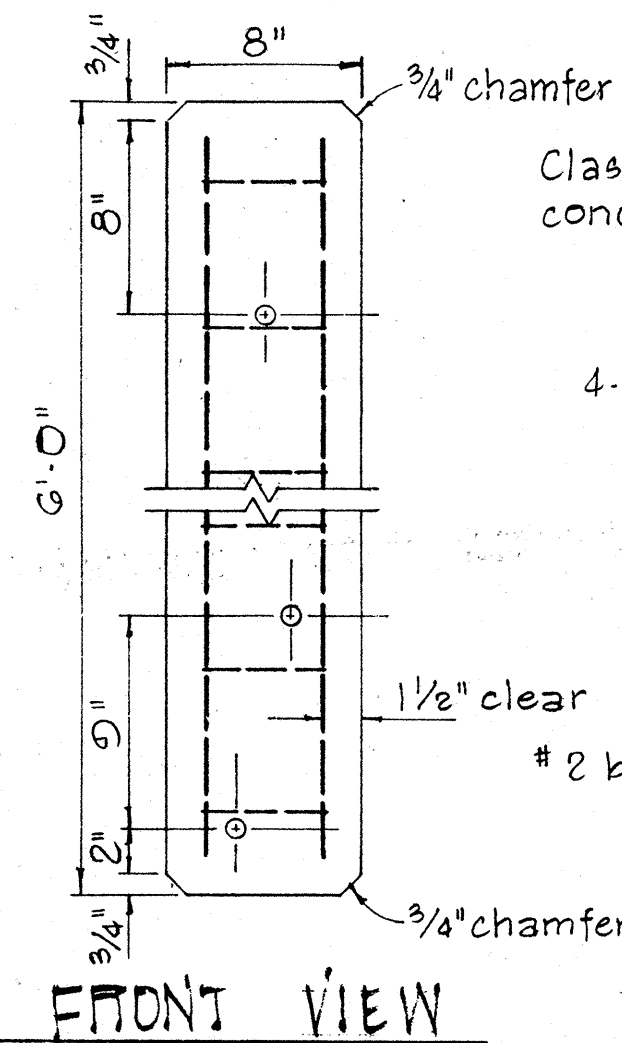
NO.	REVISION	APPROVED BY	DATE
1	Revised Mounting Details	H-1	4/23/80

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
 MISCELLANEOUS REFLECTOR MARKERS
 Not to scale June, 1977
 SHEET NO. 2 OF 8 SHEETS DT 110

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11D-01-81 11GH-01-81 270B-01-81	1981	9	14

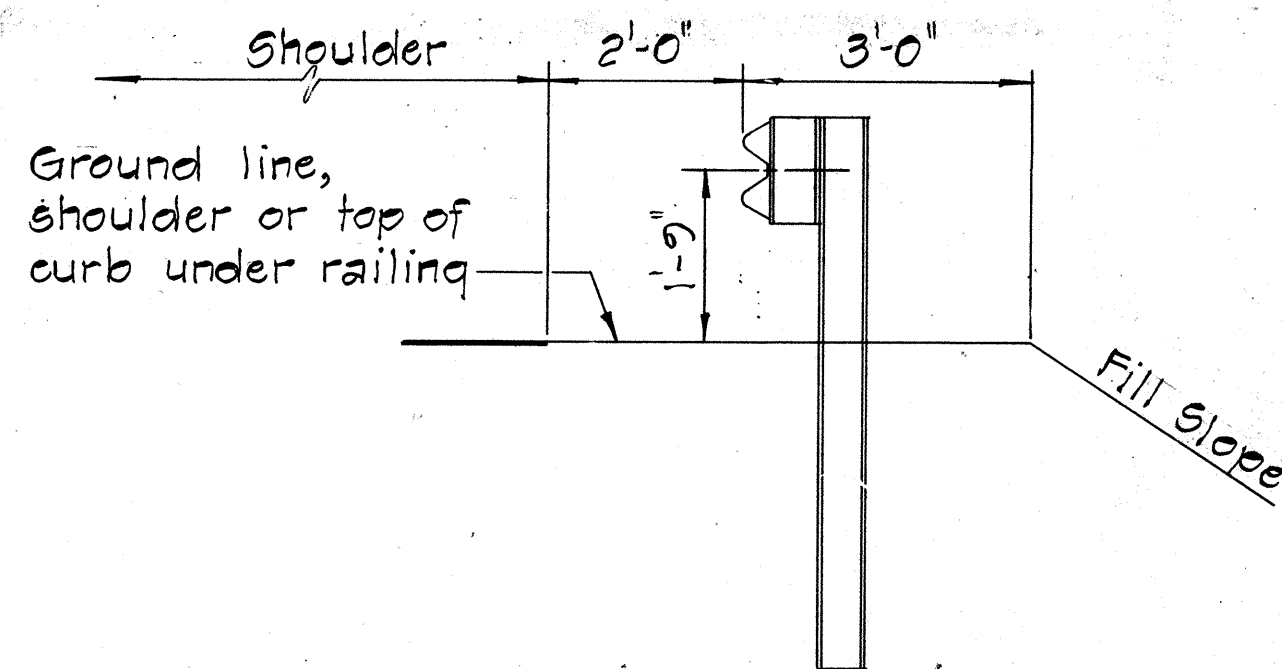
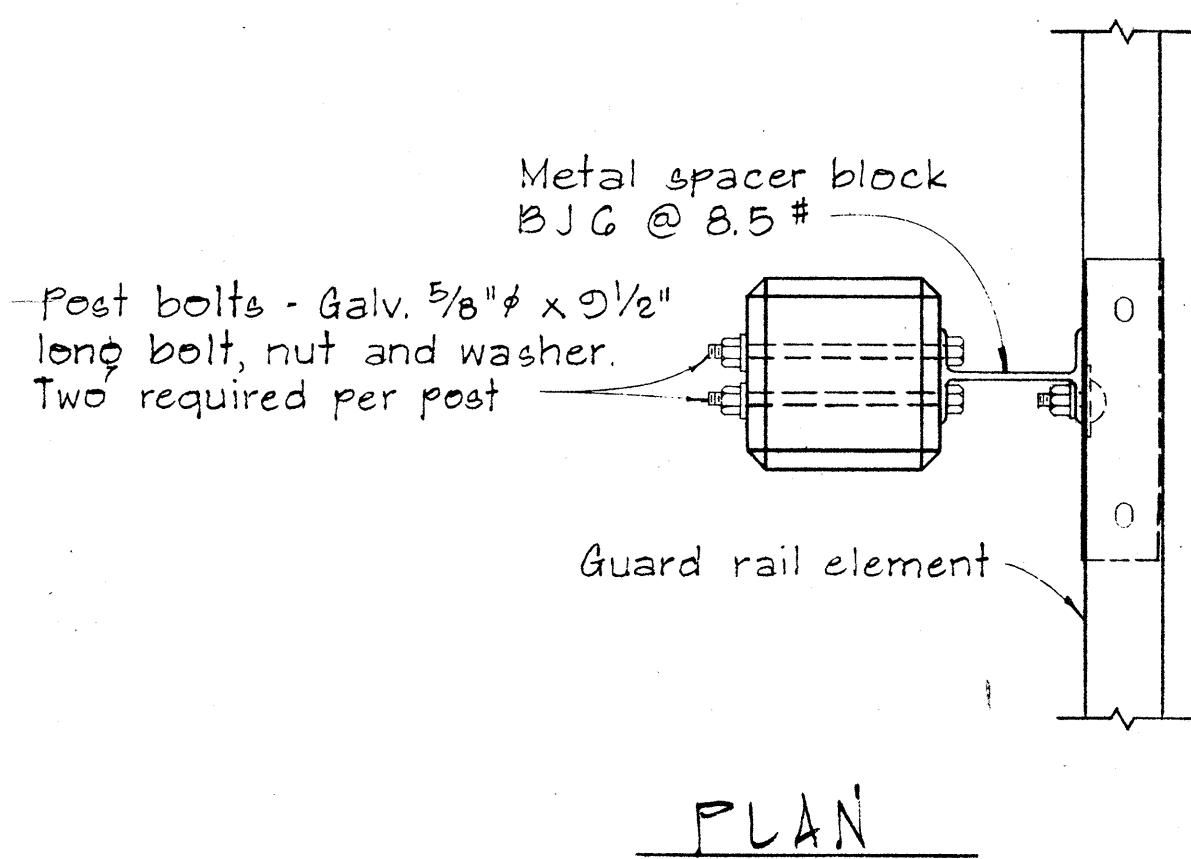


NOTE:
Concrete post shall be precast



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
12/23/62
DATE

APPROVED:
John A. DeLeon
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN
NOV. 1968

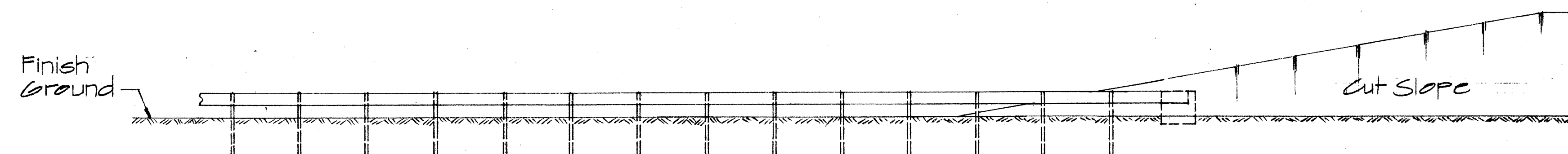
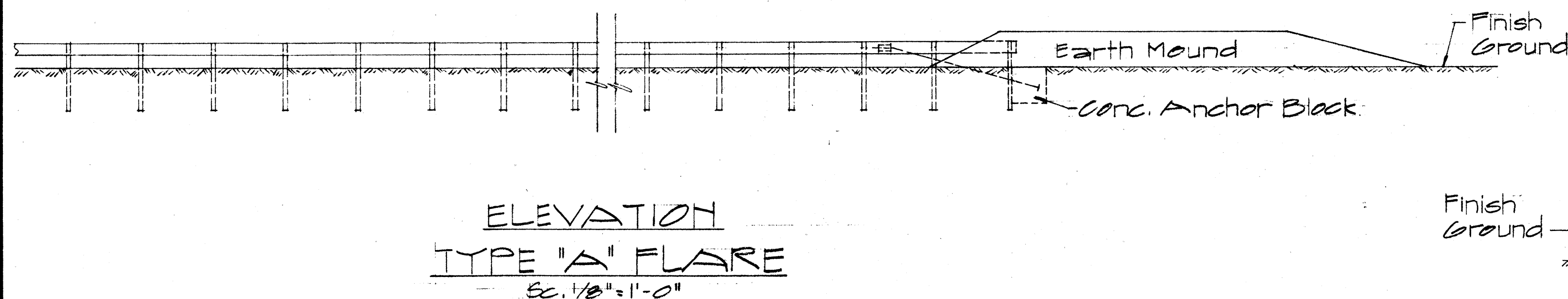
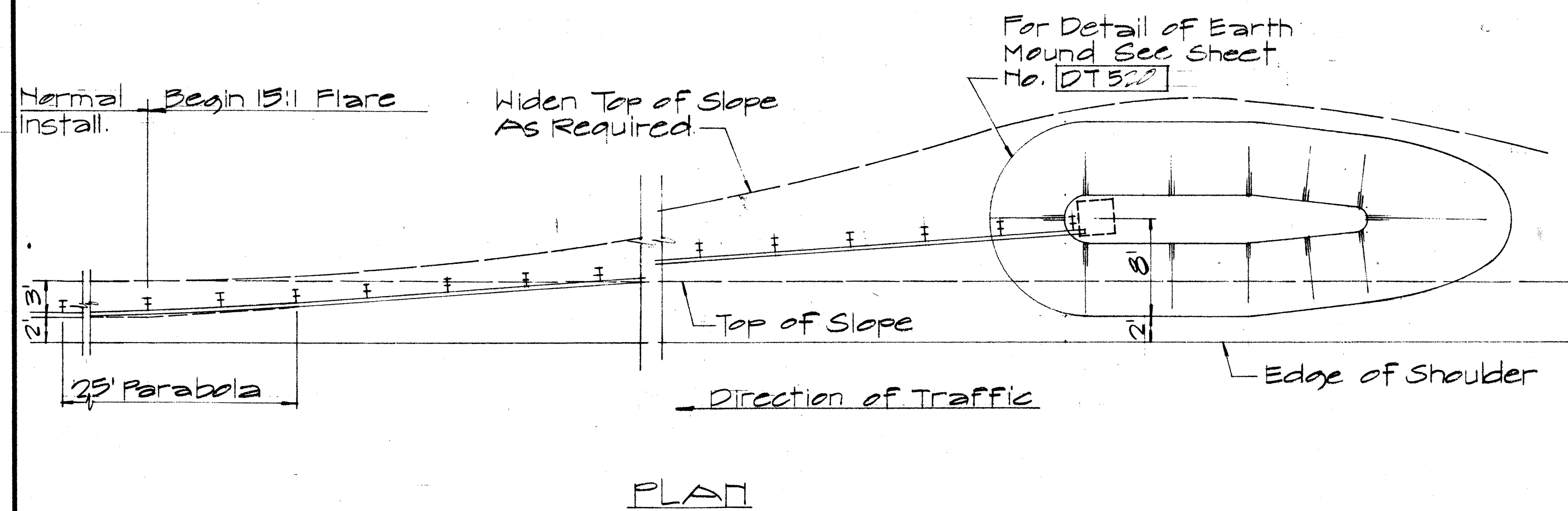
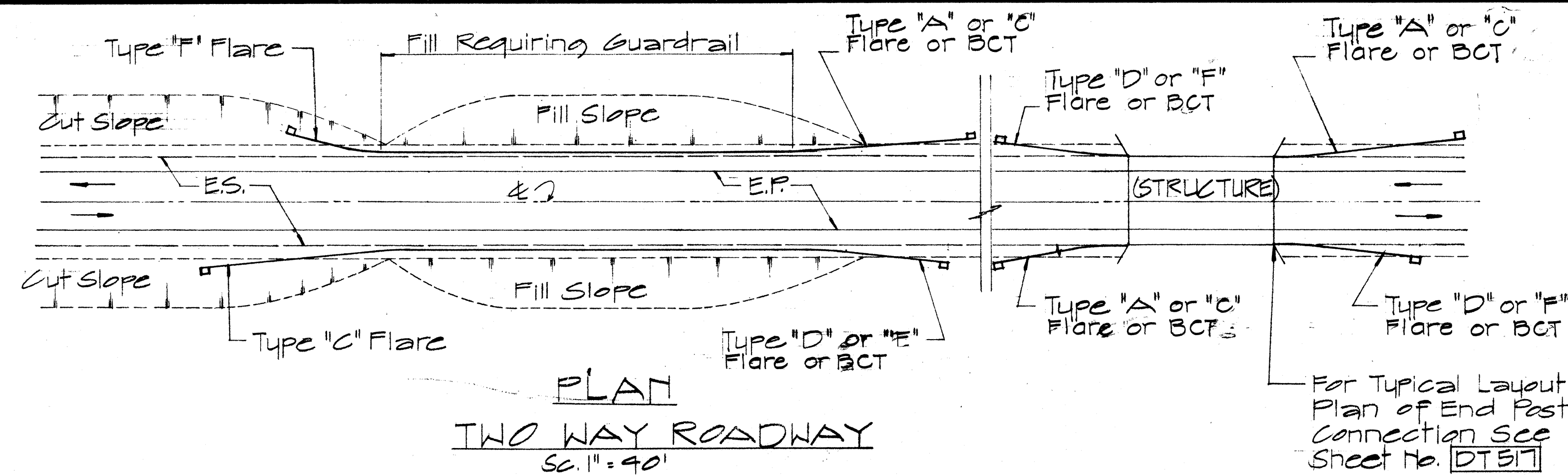
SHEET No. 3 OF 8 SHEETS DT 500

DATE	
SURVEY PLOTTED BY	
PLAN	
DESIGNED BY	
NOTE BOOK	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11D-01-81 11GH-01-81 270B-01-81	1981	11	14

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:
Erich Tanaka 12/29/69
TRAFFIC ENGINEER DATE

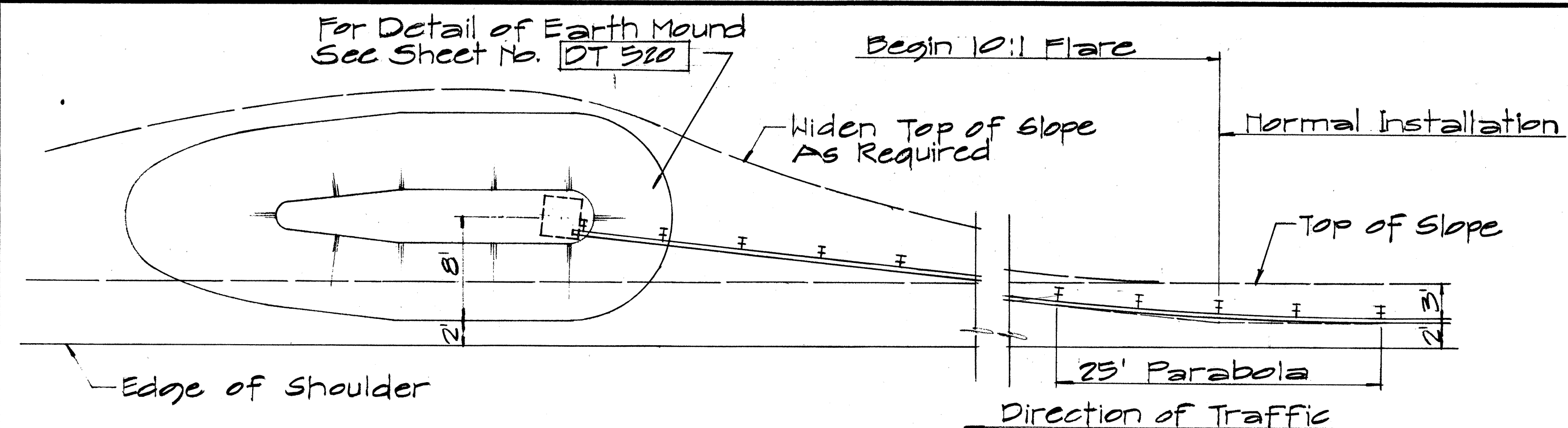
APPROVED:
W. B. Zeller 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

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

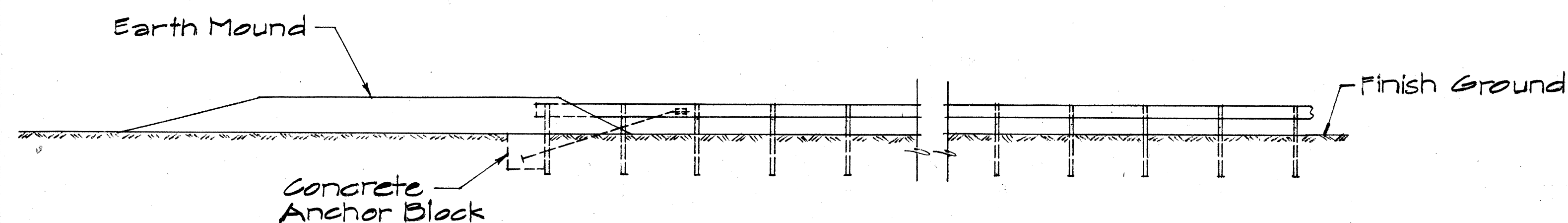
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY
Sc. As Noted April 1969
SHEET No. 5 OF 8 SHEETS DT 516

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.	11D-01-81 11GH-01-81 270B-01-81	1981	12	14



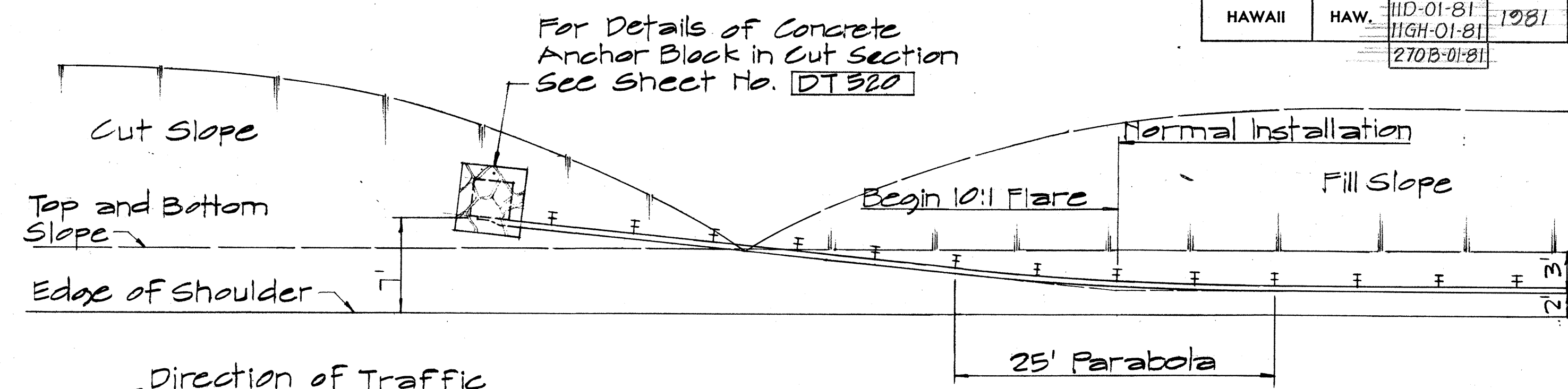
PLAN



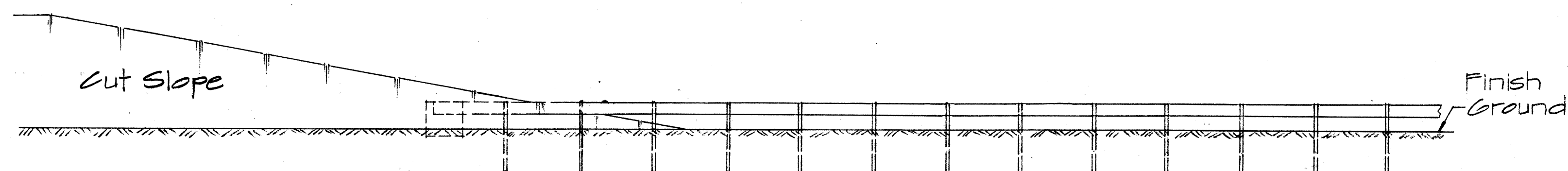
ELEVATION

TYPE "D" FLARE

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



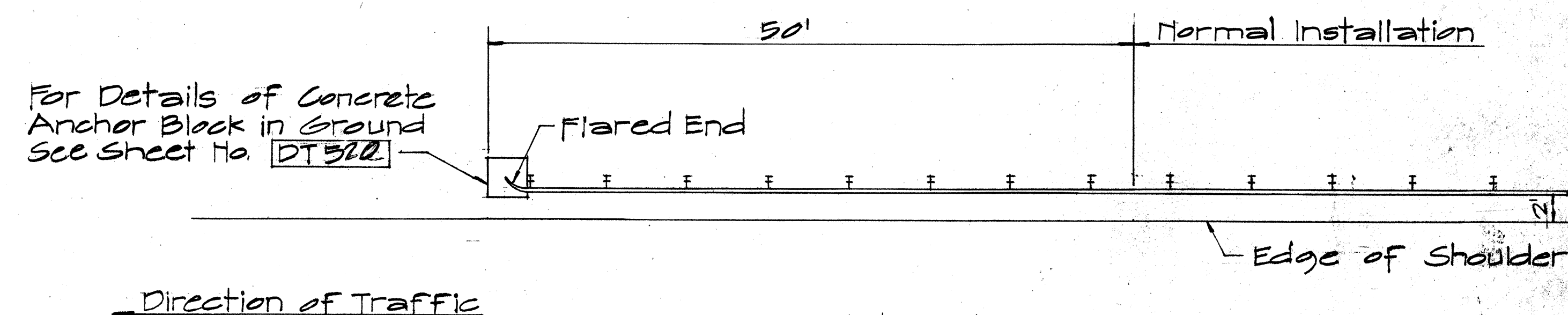
PLAN



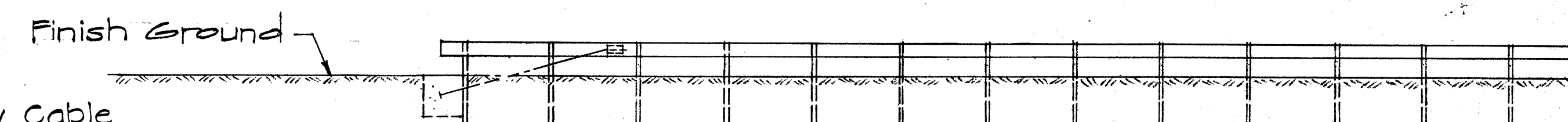
ELEVATION

TYPE "F" FLARE

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



PLAN

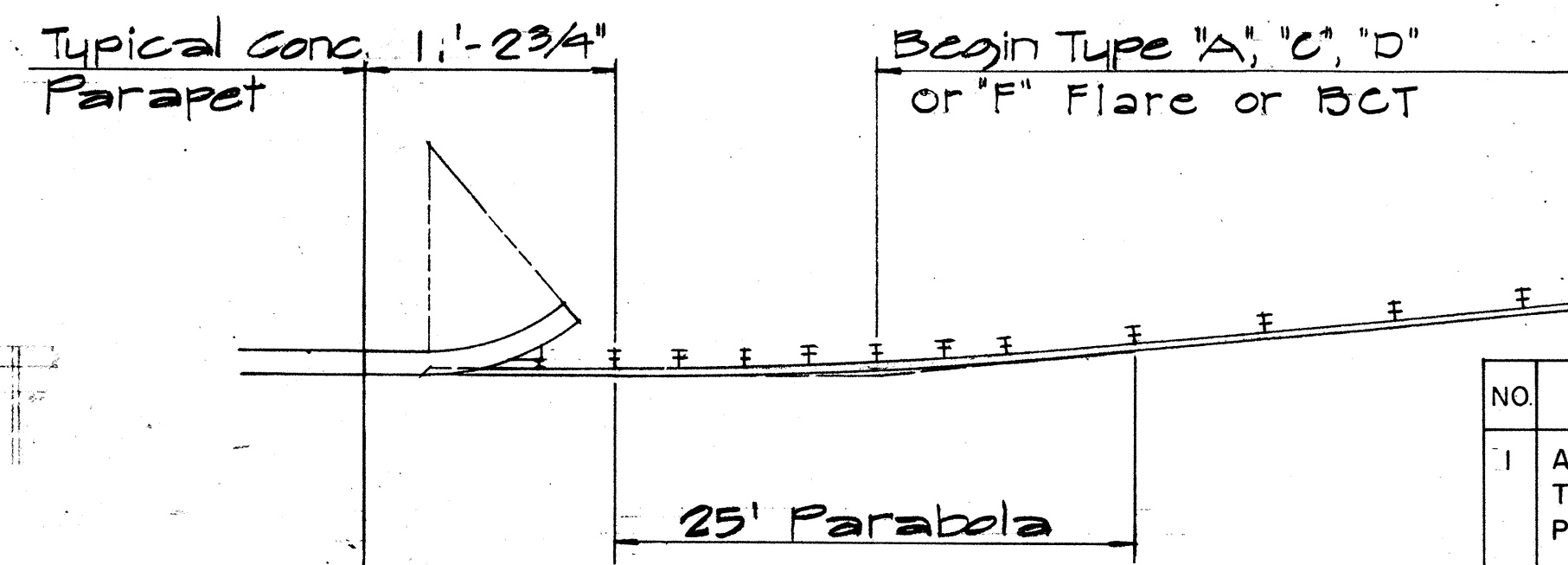


ELEVATION

TYPE "G" FLARE

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

NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 517



TYPICAL LAYOUT PLAN OF END POST CONNECTION

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

APPROVAL RECOMMENDED:
Euske Tanaka 12/29/63
TRAFFIC ENGINEER DATE
APPROVED:
Wm. S. Sal 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

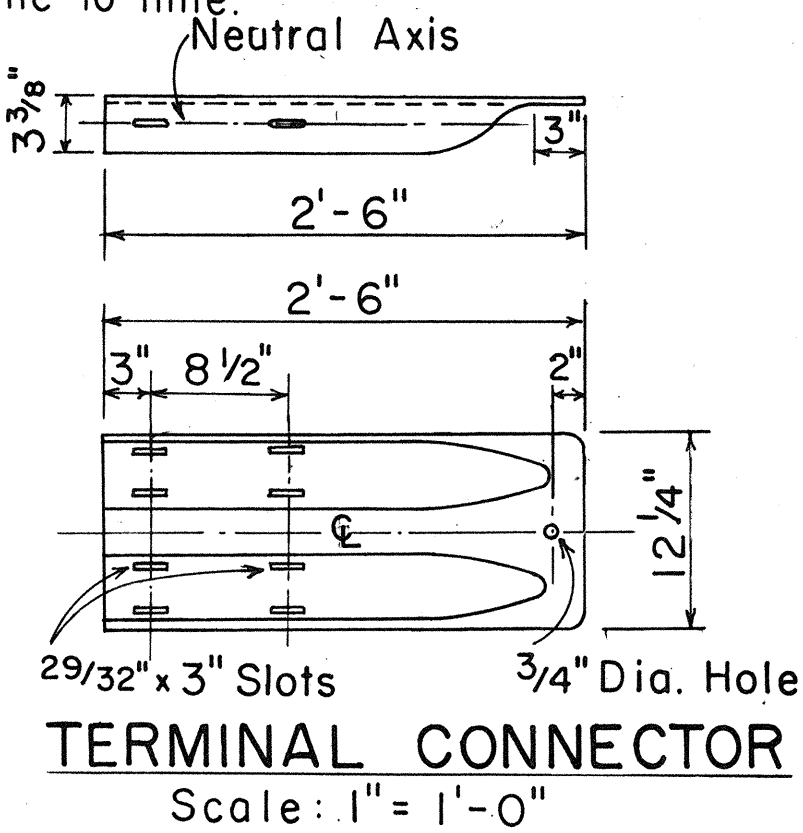
NO.	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-78

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY
Scale: As Noted April 1969
SHEET No. 6 OF 8 SHEETS DT 517

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11D-01-81 11G-01-81 270B-01-81	1981	13	14

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 accomodate 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.
6. 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
6/14/81
DATE

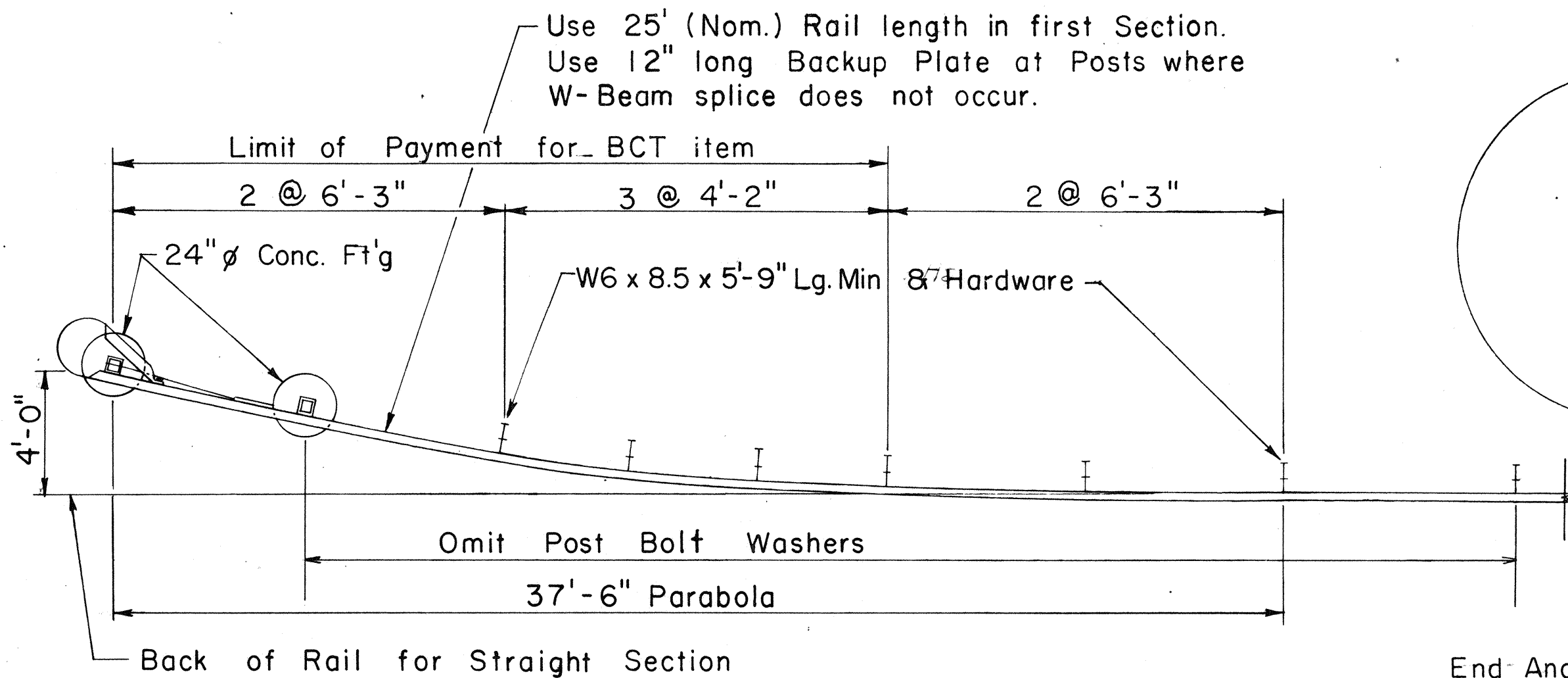
APPROVED:

Shelton Sakai
ASSISTANT CHIEF, ENGINEERING
6/15/81
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

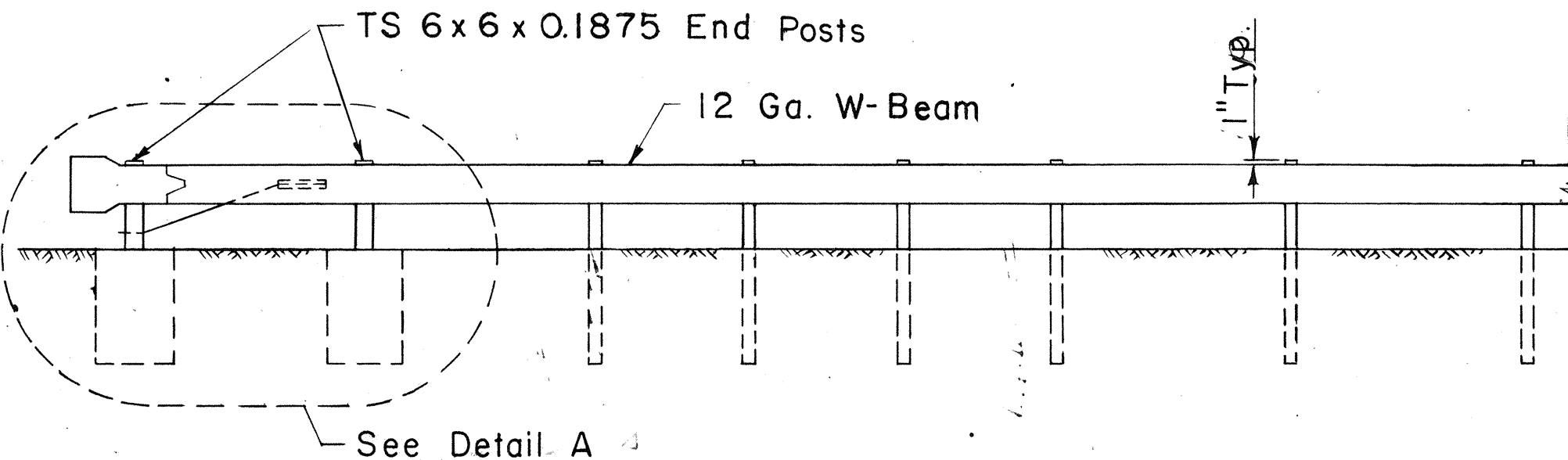
STANDARD DETAIL
BREAKAWAY CABLE TERMINAL (BCT)

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



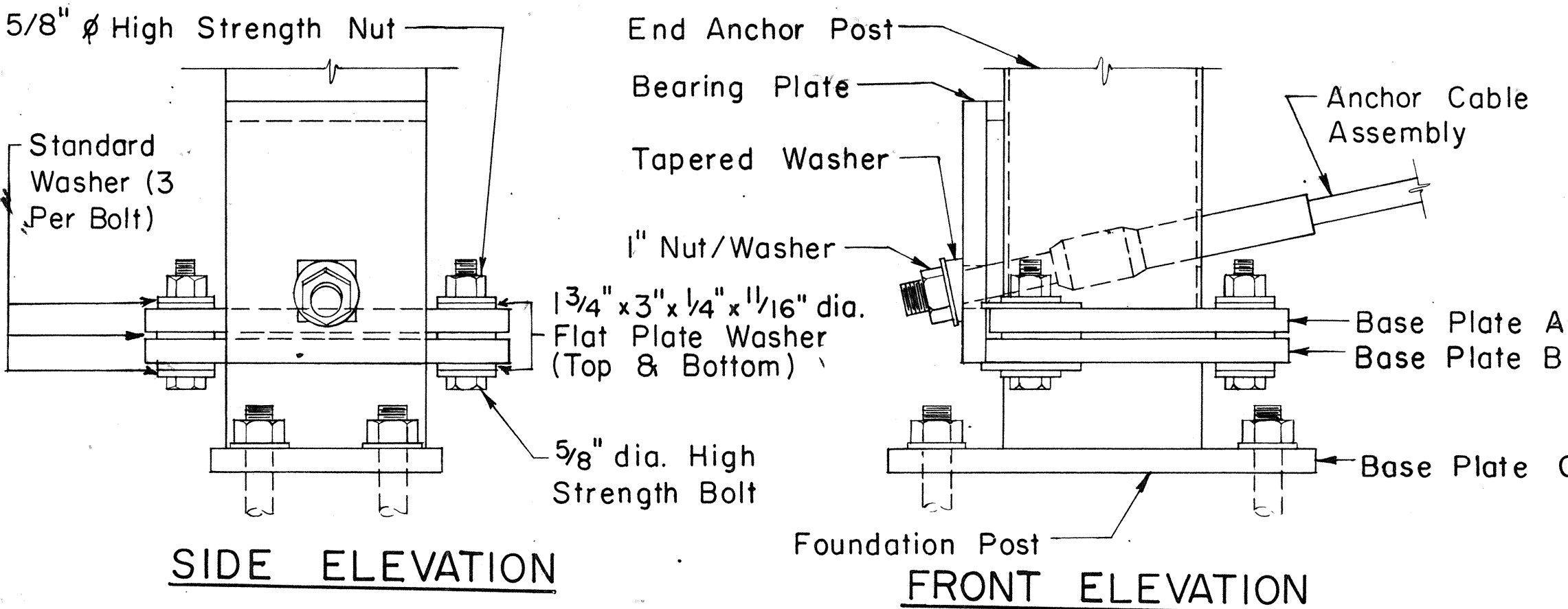
PLAN

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



ELEVATION

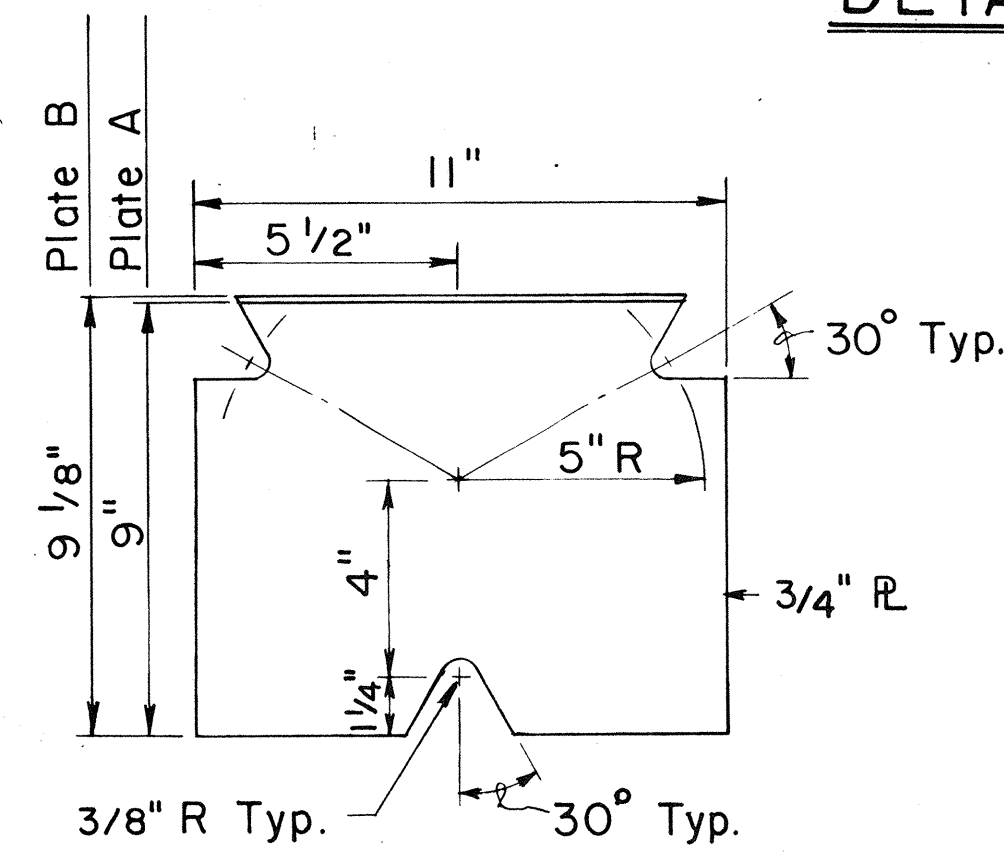
Scale: 1/4" = 1'-0"



SIDE ELEVATION

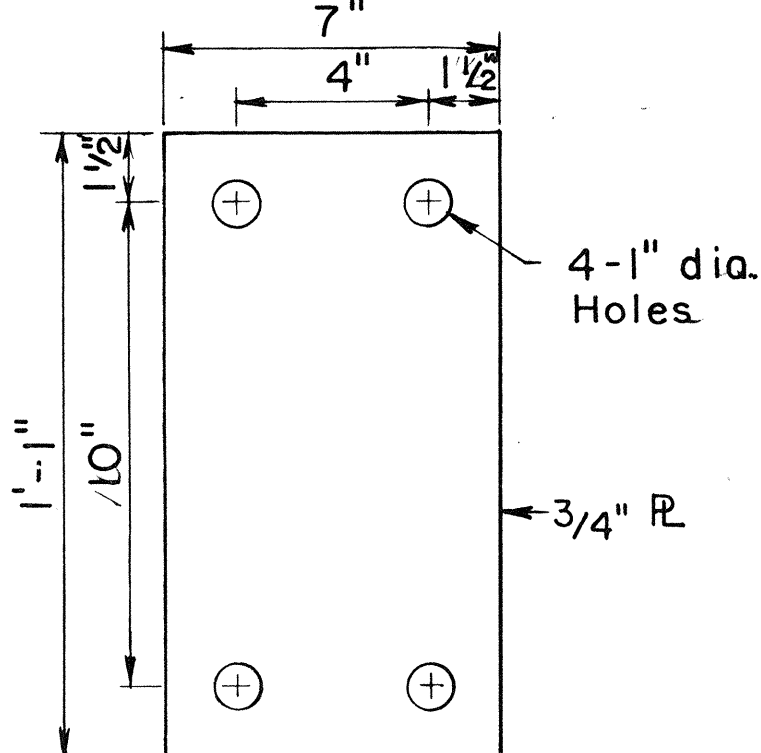
DETAIL B

FRONT ELEVATION



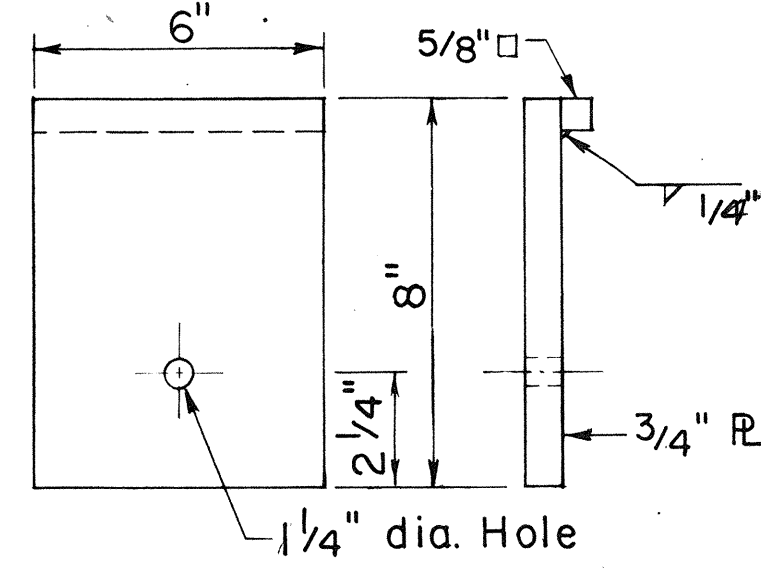
BASE PLATES A & B

Scale: 3" = 1'-0"



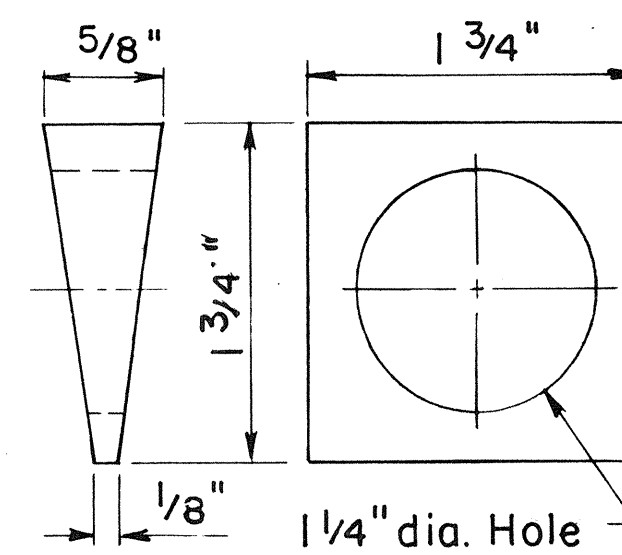
BASE PLATE C

Scale: 3" = 1'-0"



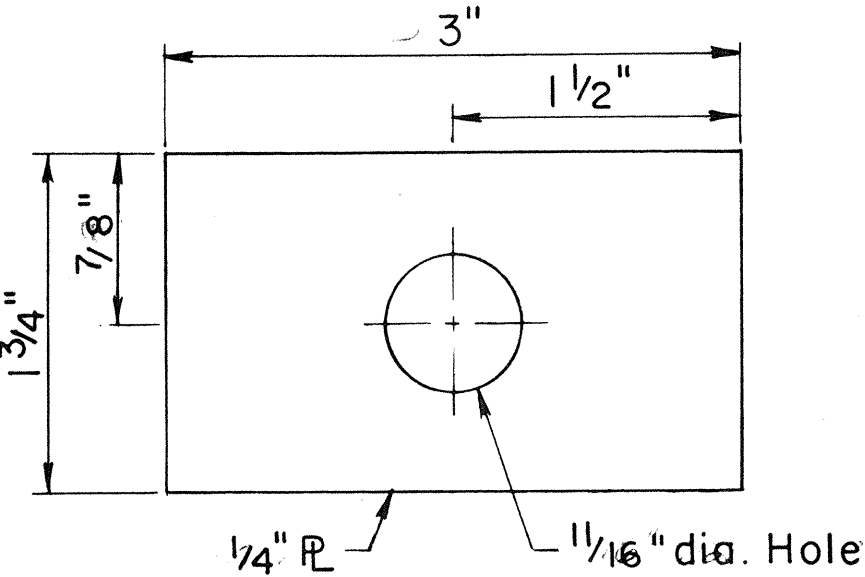
BEARING PLATE

Scale: 3" = 1'-0"



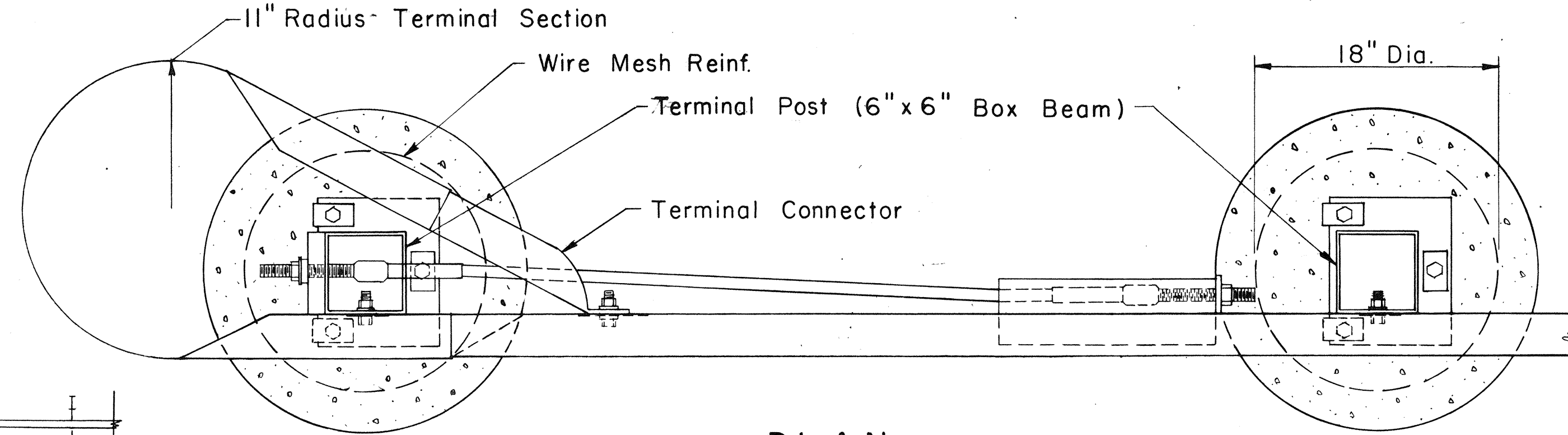
TAPERED WASHER

Scale: Full Size

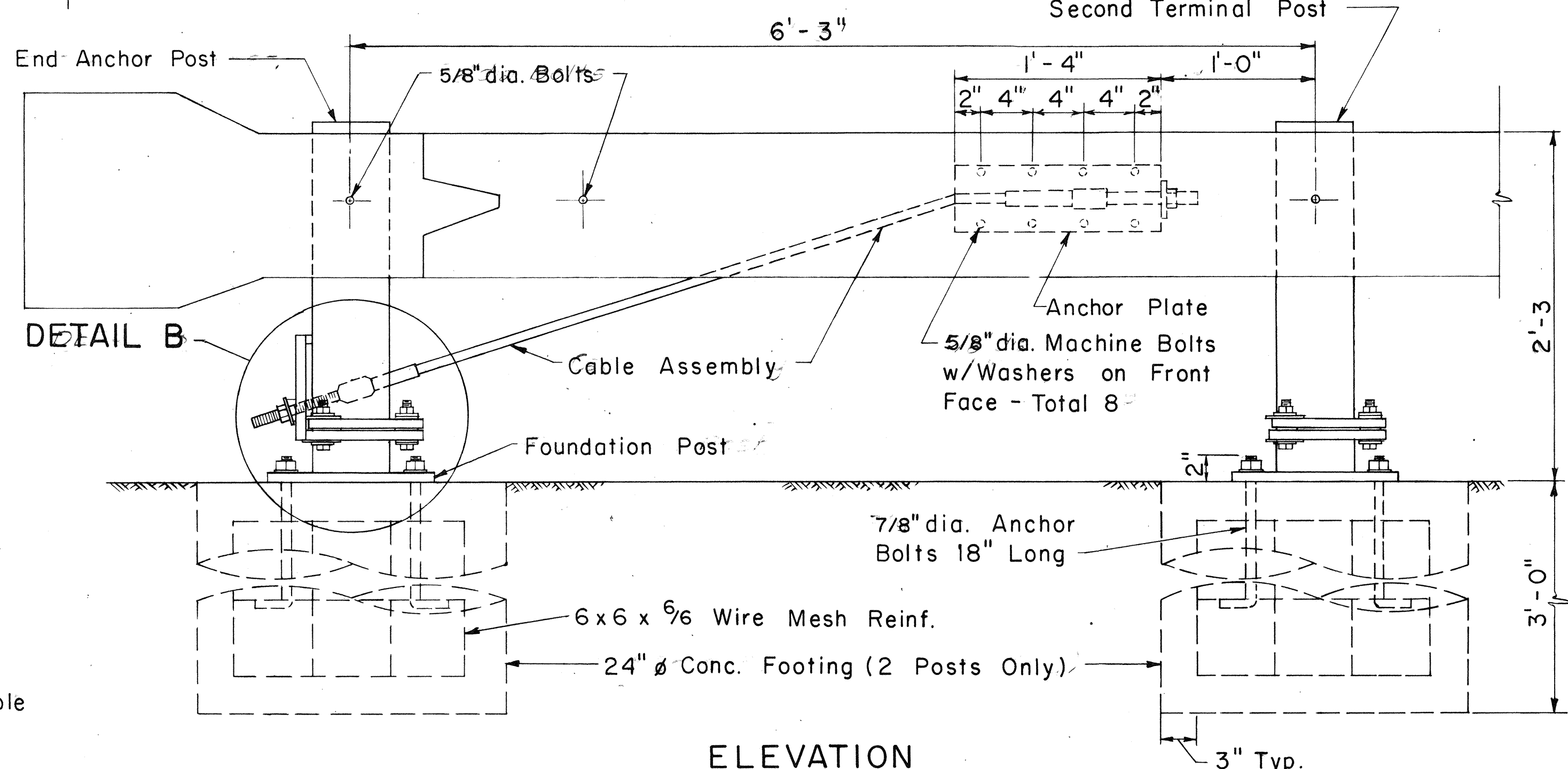


FLAT PLATE WASHER

Scale: Full Size



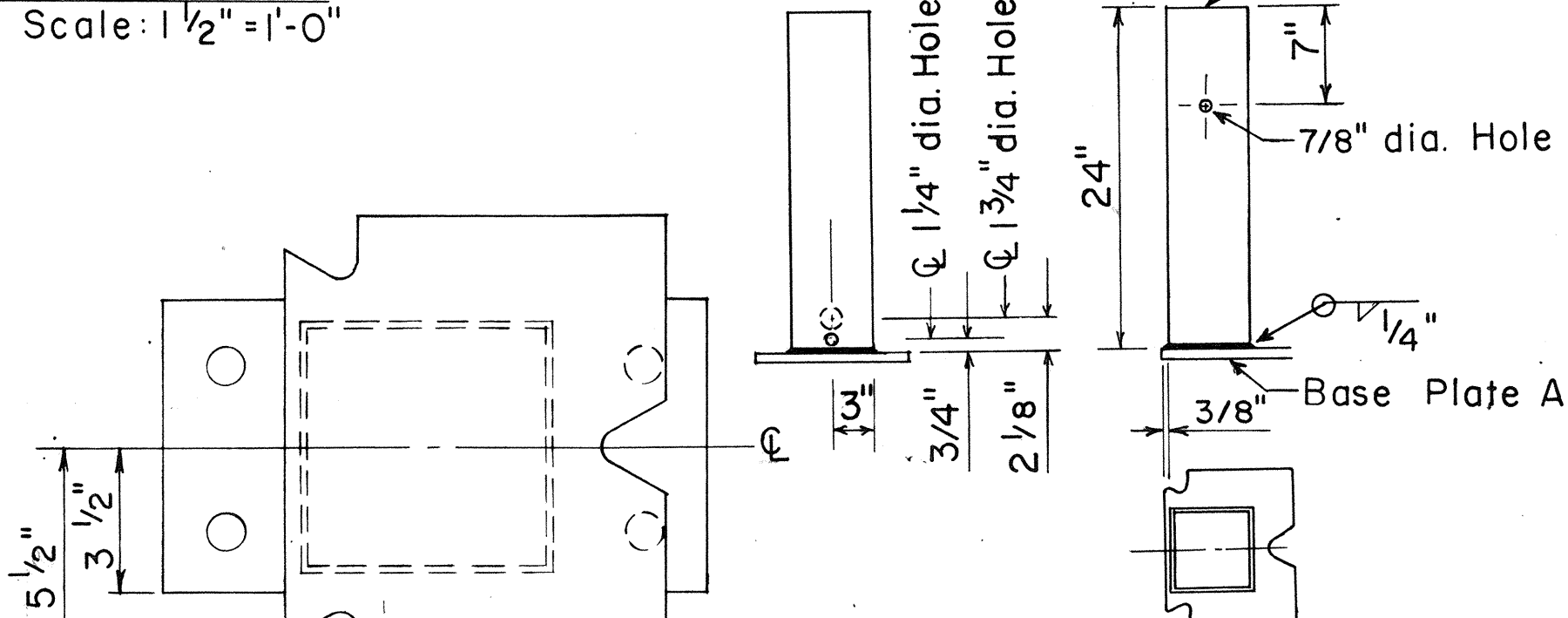
PLAN



ELEVATION

DETAIL A

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



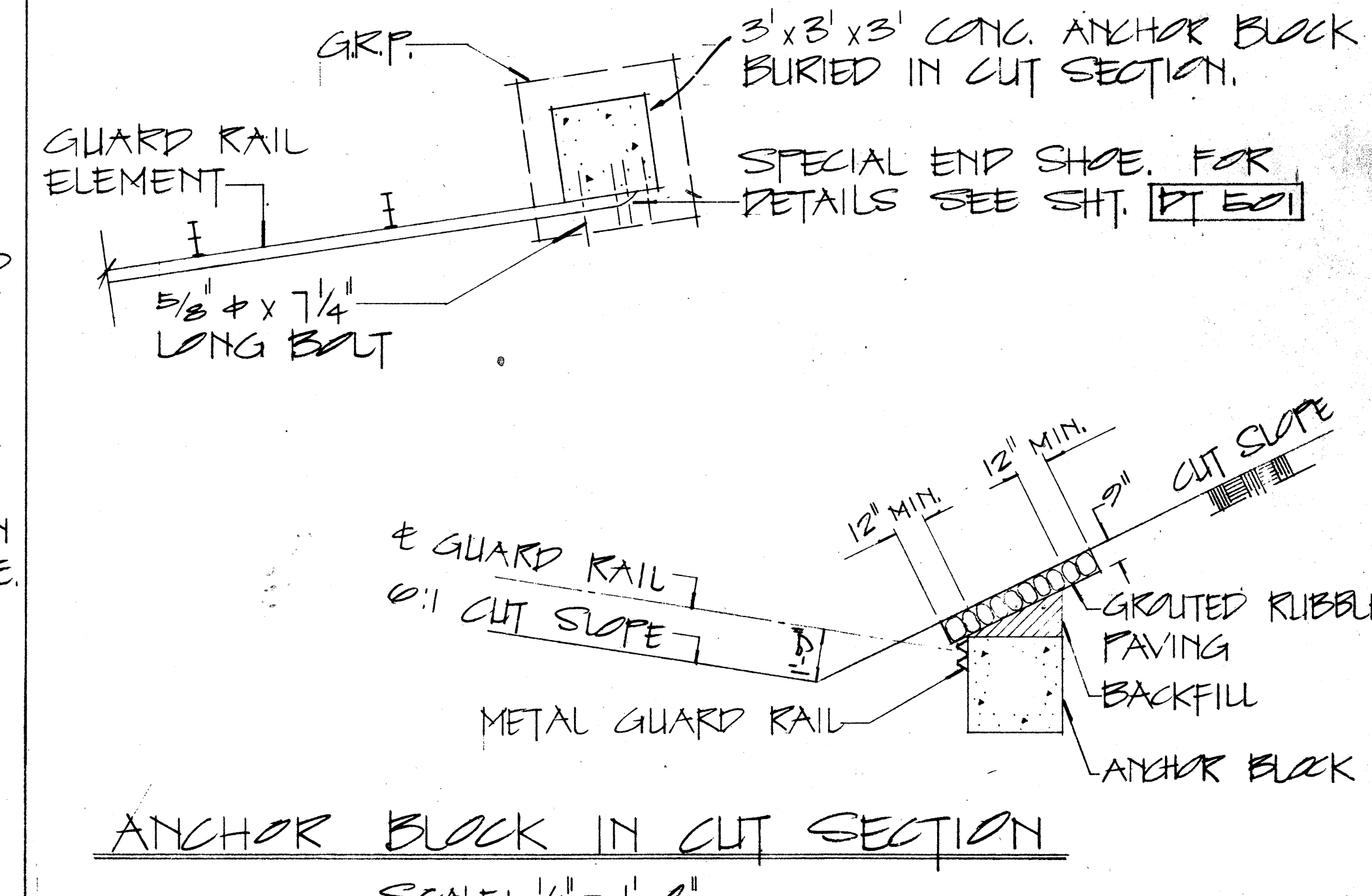
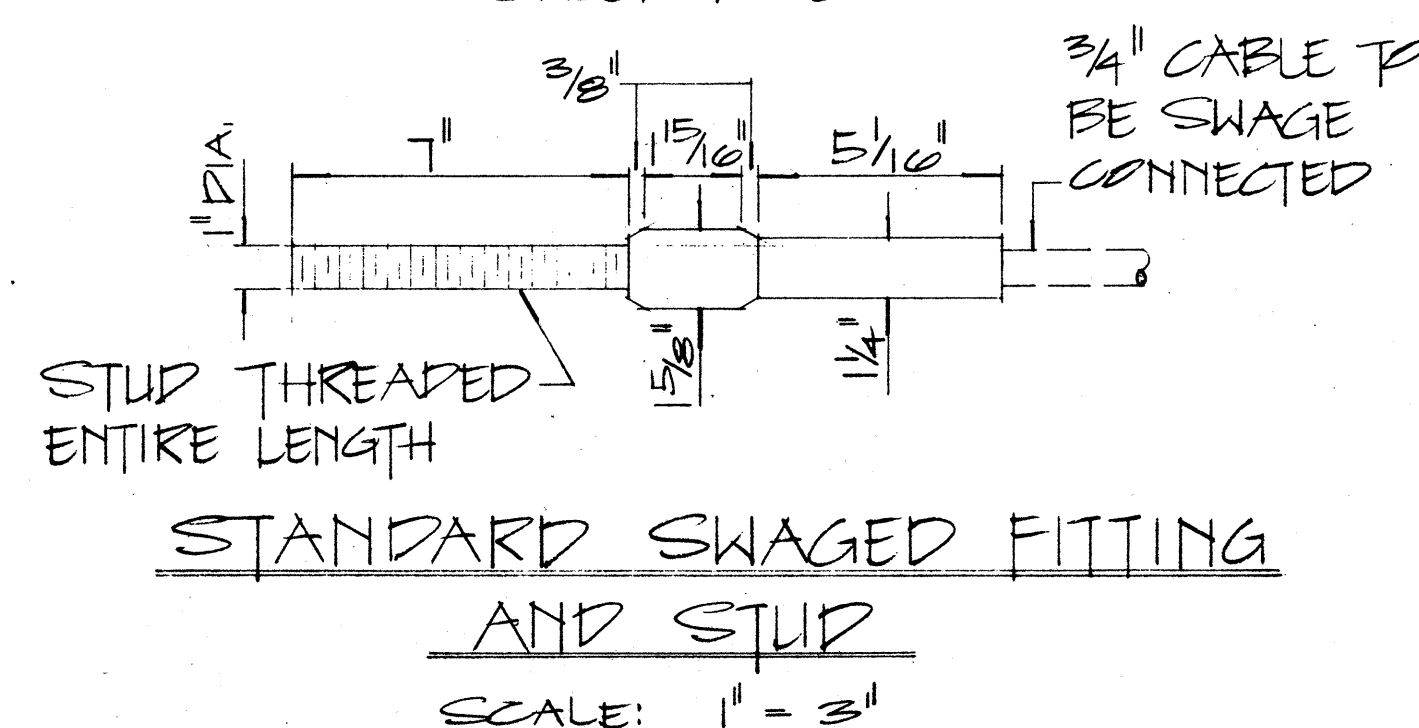
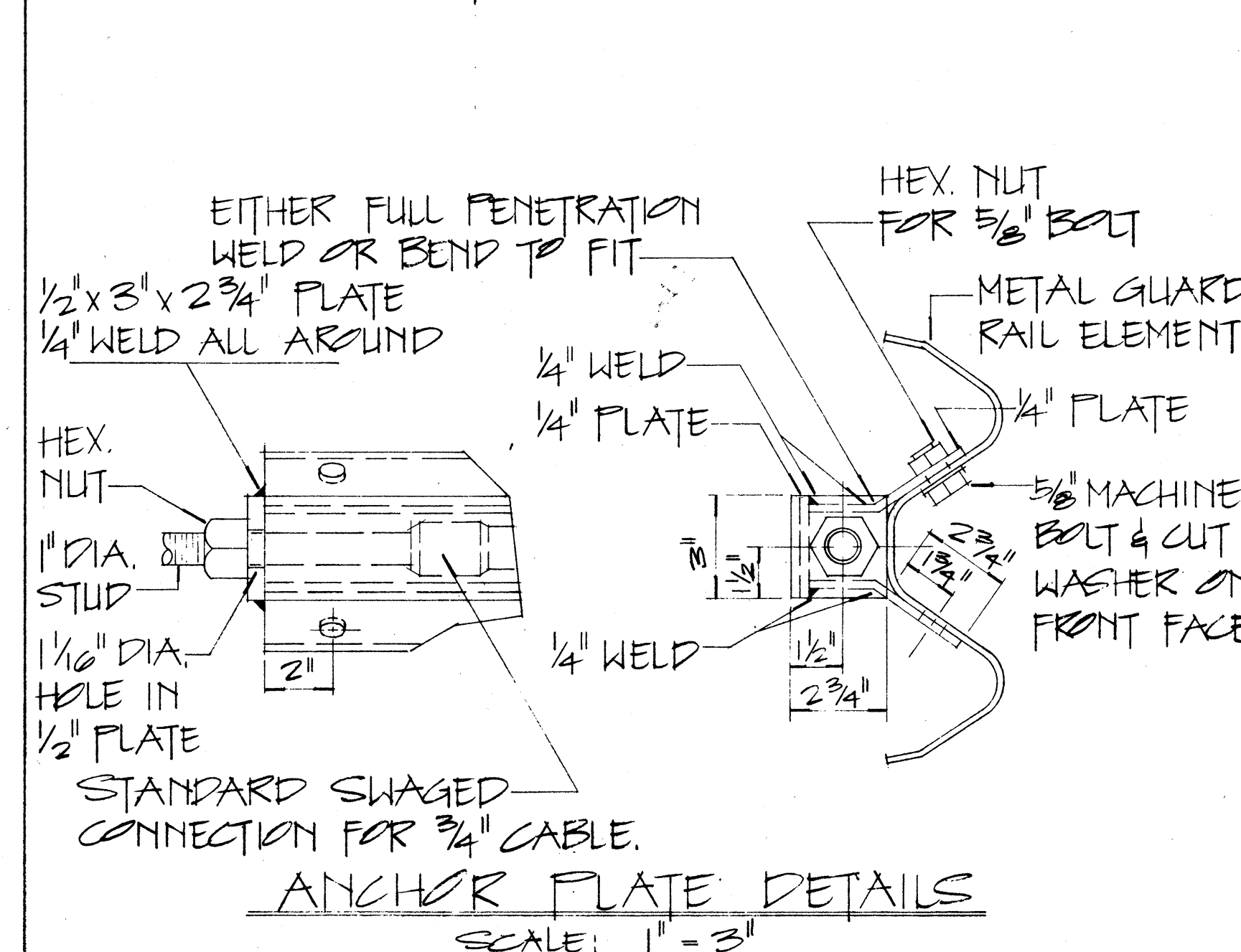
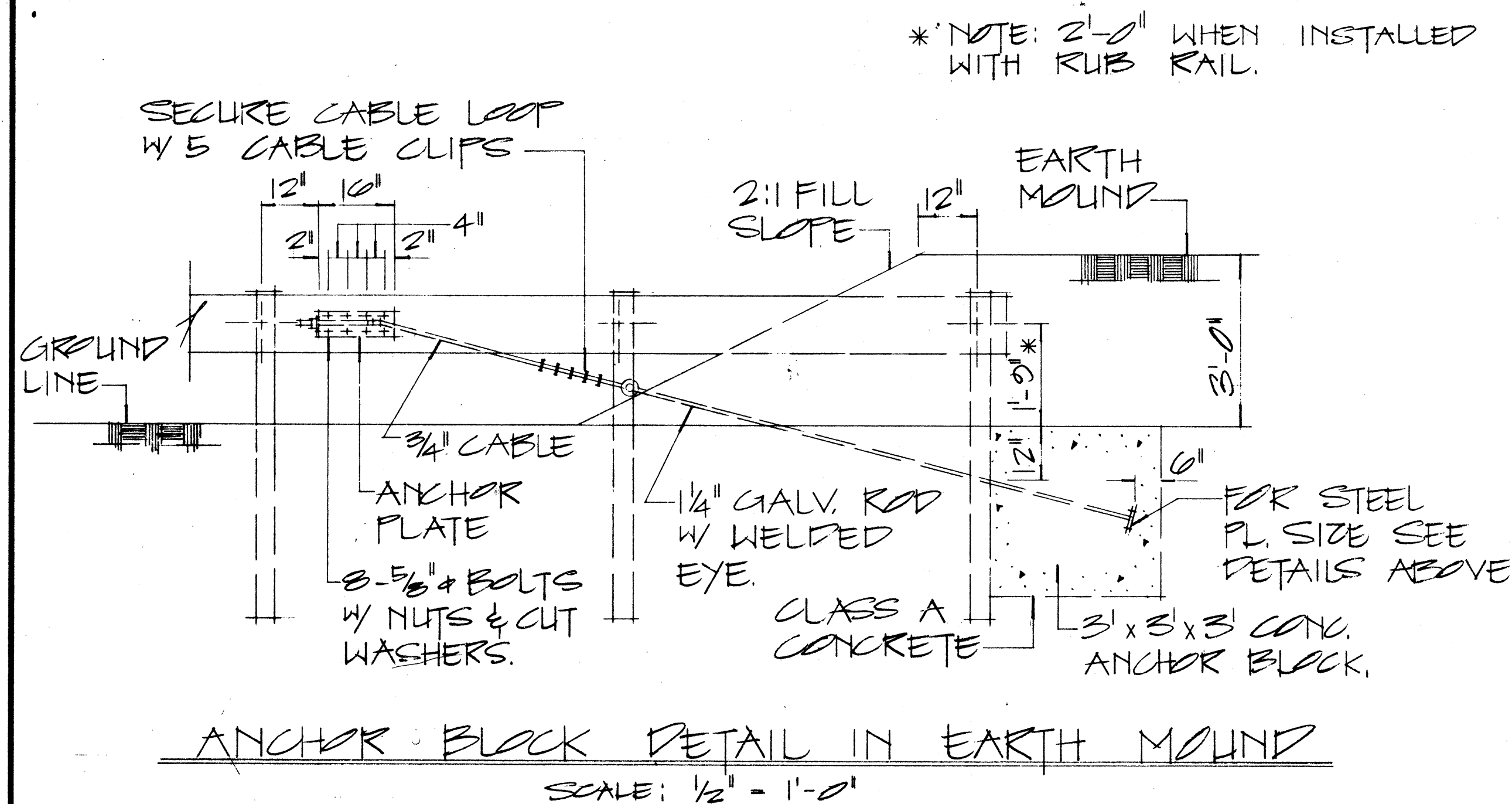
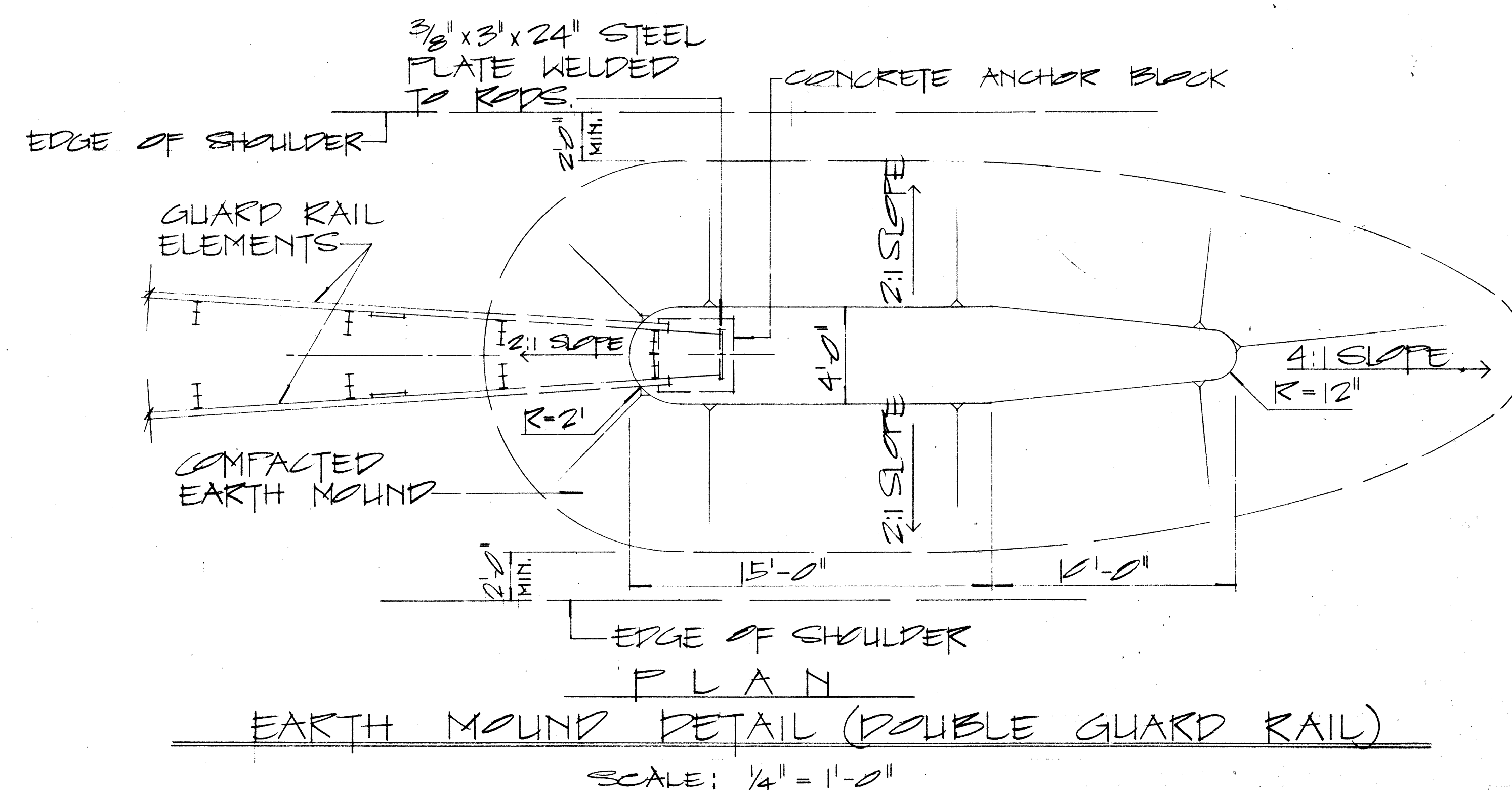
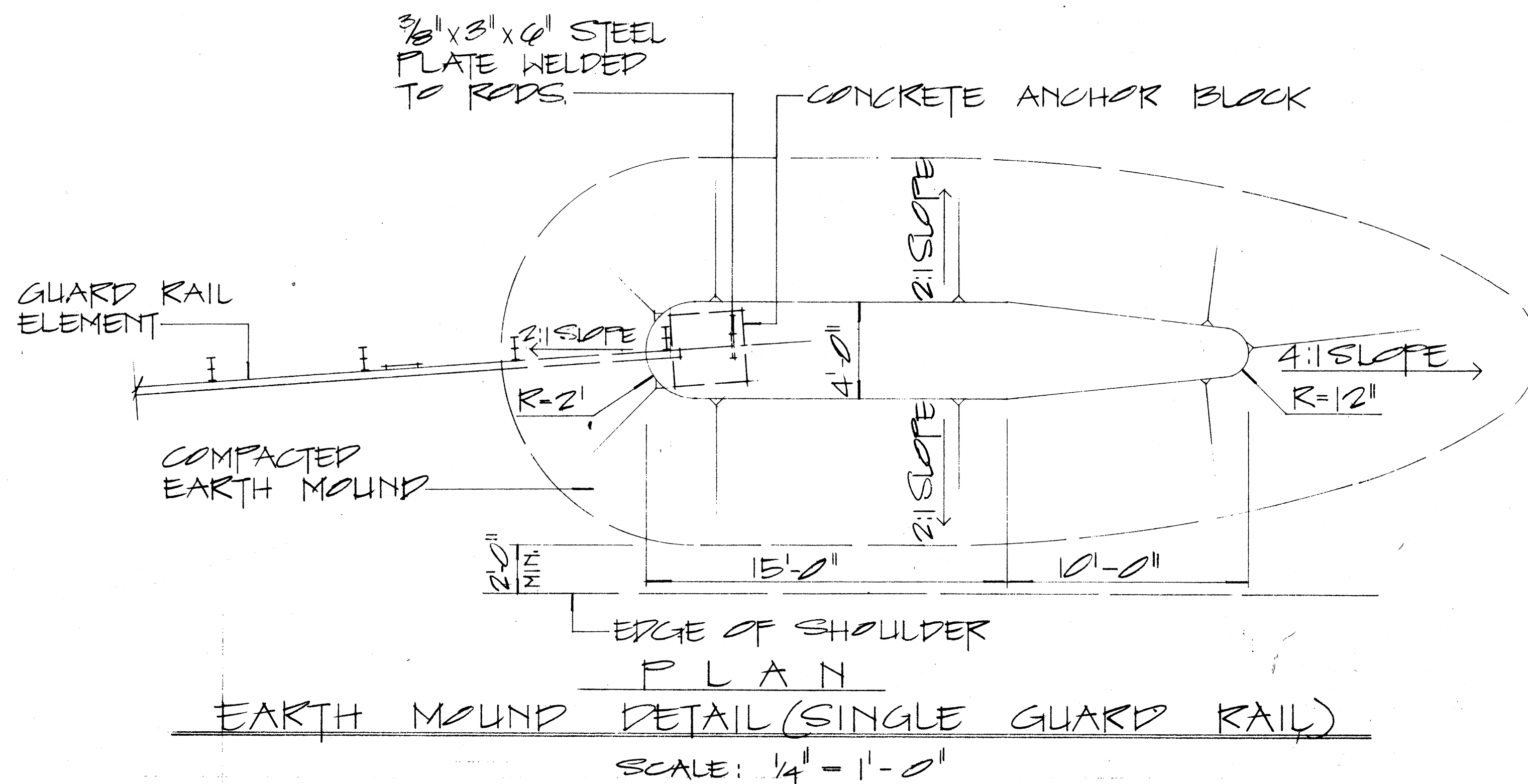
TERMINAL POST

Scale: 1" = 1'-0"

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 519 Approved 12/30/69	H.T.	6/15/81
2	Added Note 6	H.T.	12/1/80

SURVEY PLOTTED BY	DATE
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.	11D-01-81 11GH-01-81 270B-01-81	1981	14	14



APPROVAL RECOMMENDED: *Eishi Tanaka* 12/29/62 DATE

TRAFFIC ENGINEER

APPROVED: *[Signature]* 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. 8 OF 8 SHEETS

DATE: _____

ORIGINAL PLAN: _____

TRACED BY: _____

NOTED BY: _____

CHECKED BY: _____