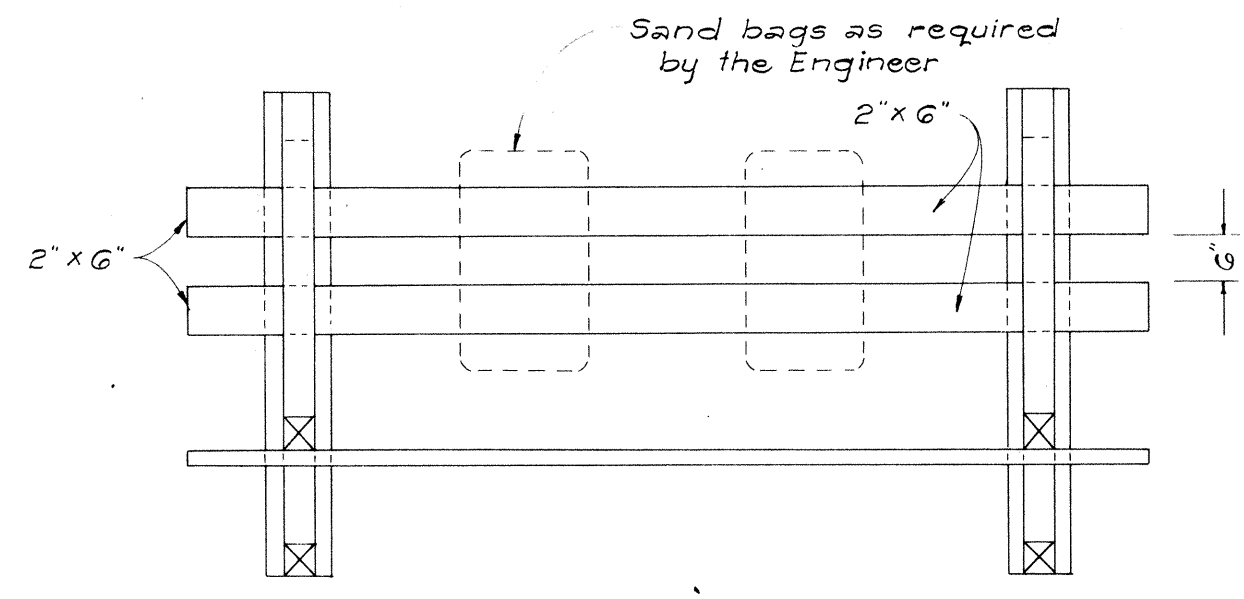
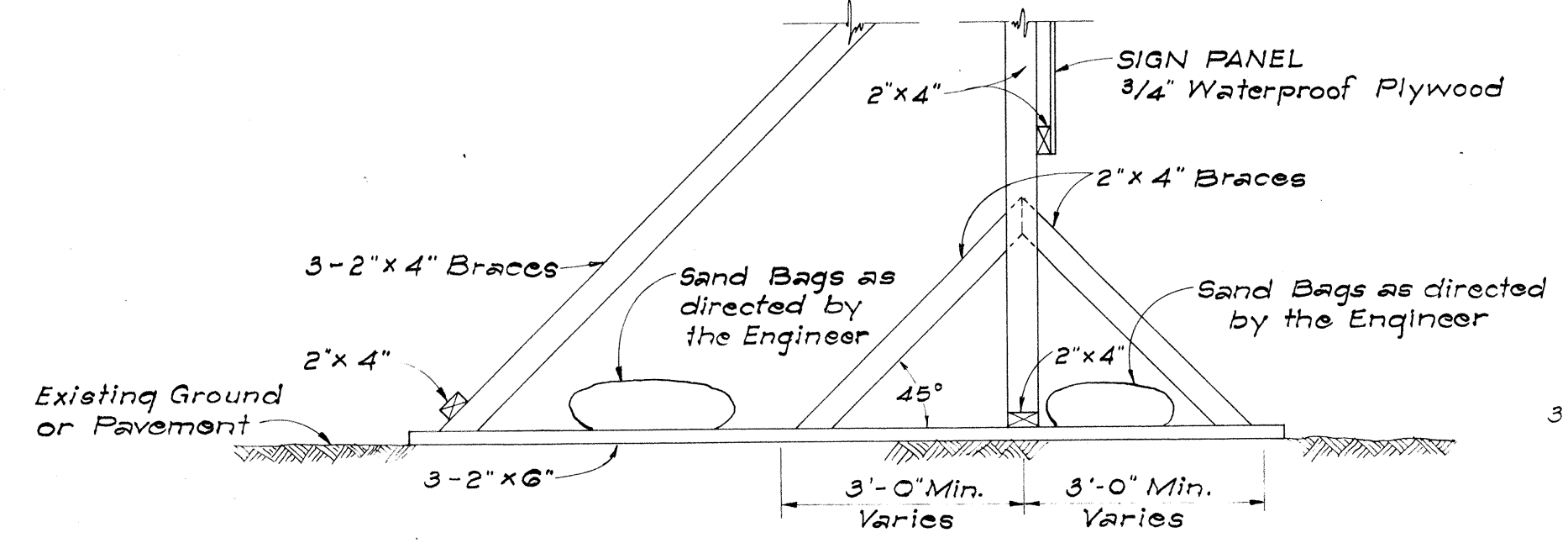
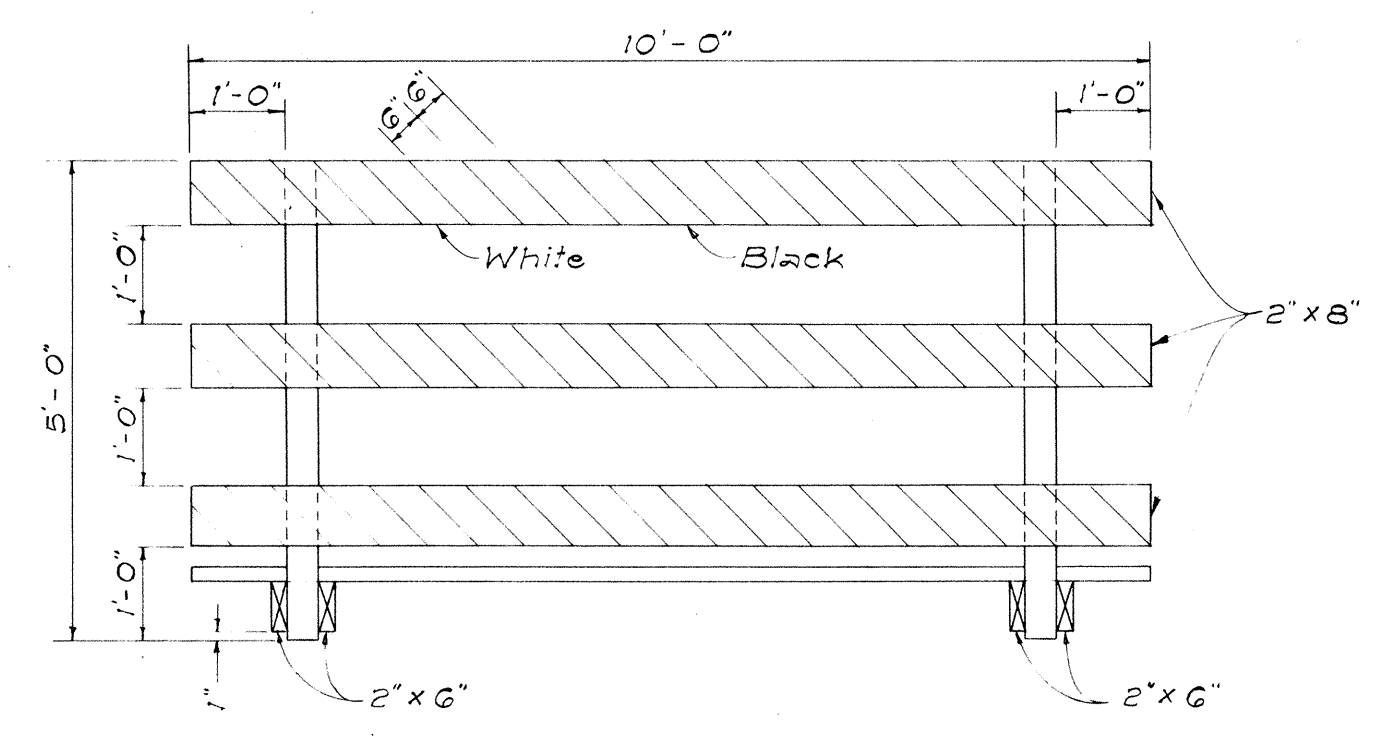




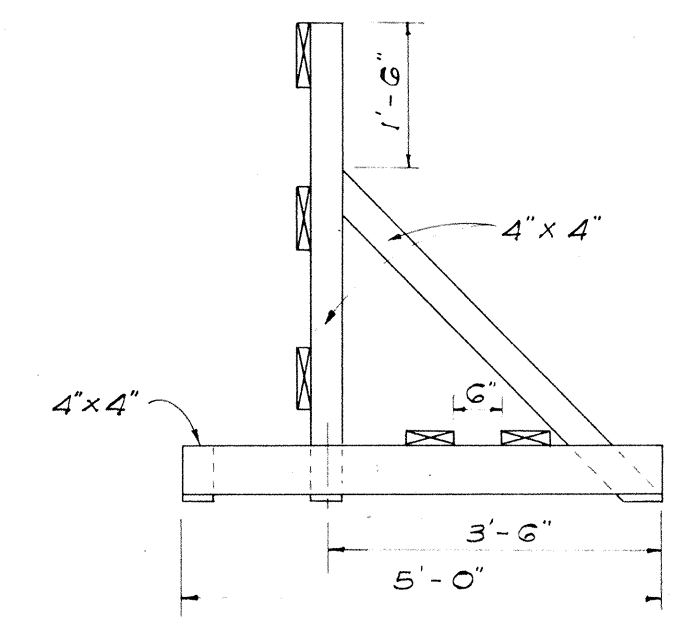
PLAN VIEW



SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)

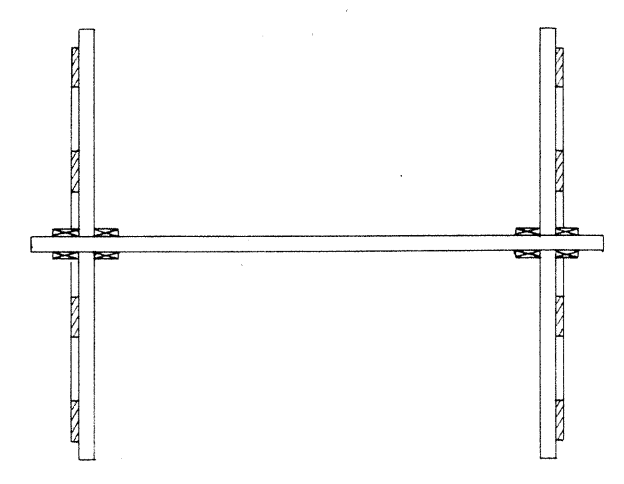


FRONT VIEW

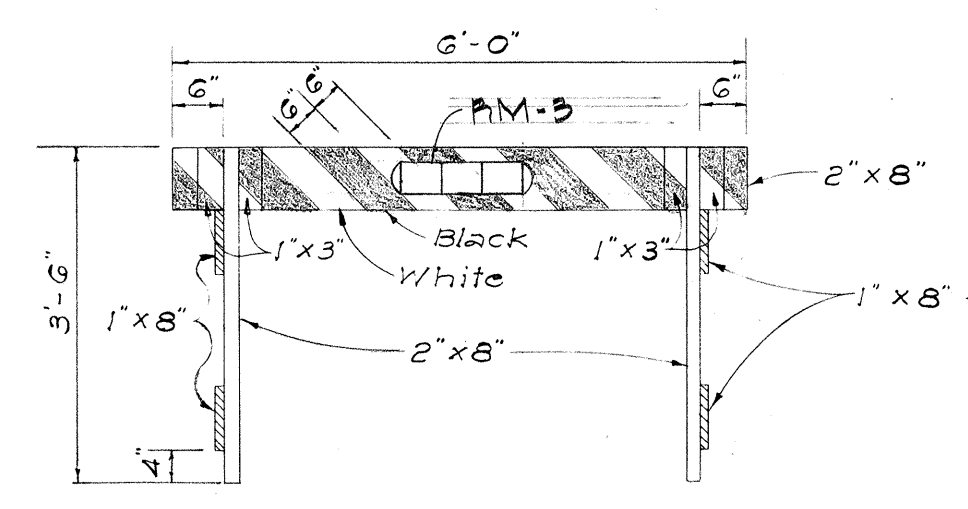


END VIEW

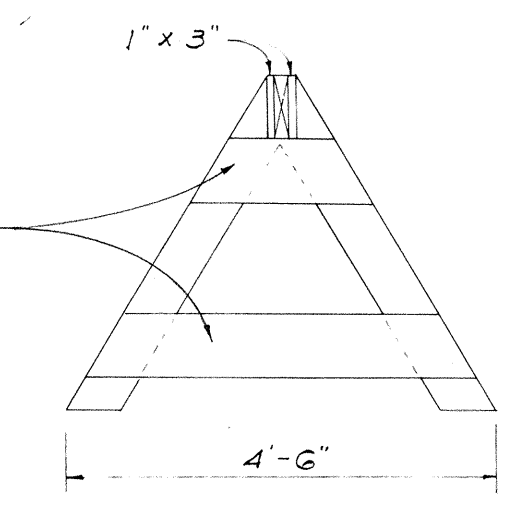
CLASS I BARRICADE



PLAN VIEW



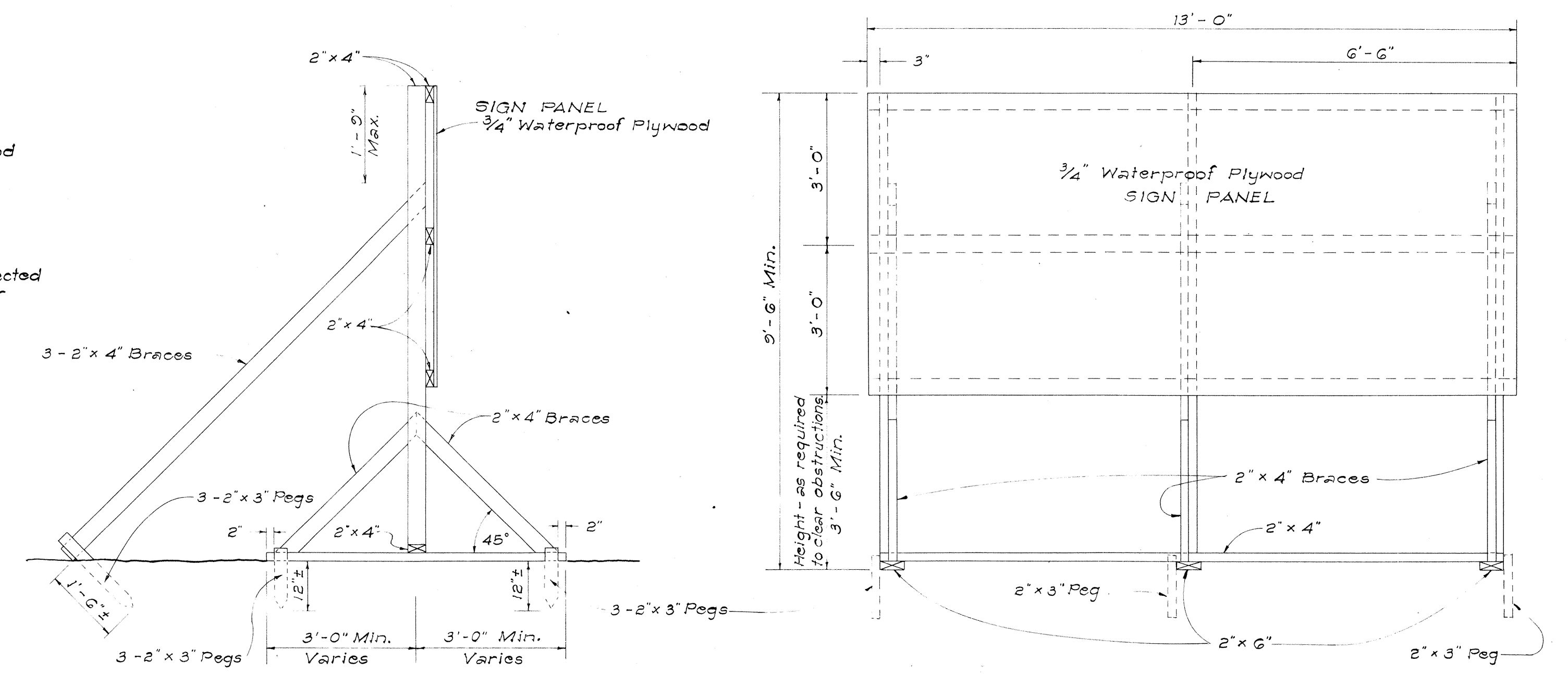
FRONT VIEW



END VIEW

CLASS II BARRICADE

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

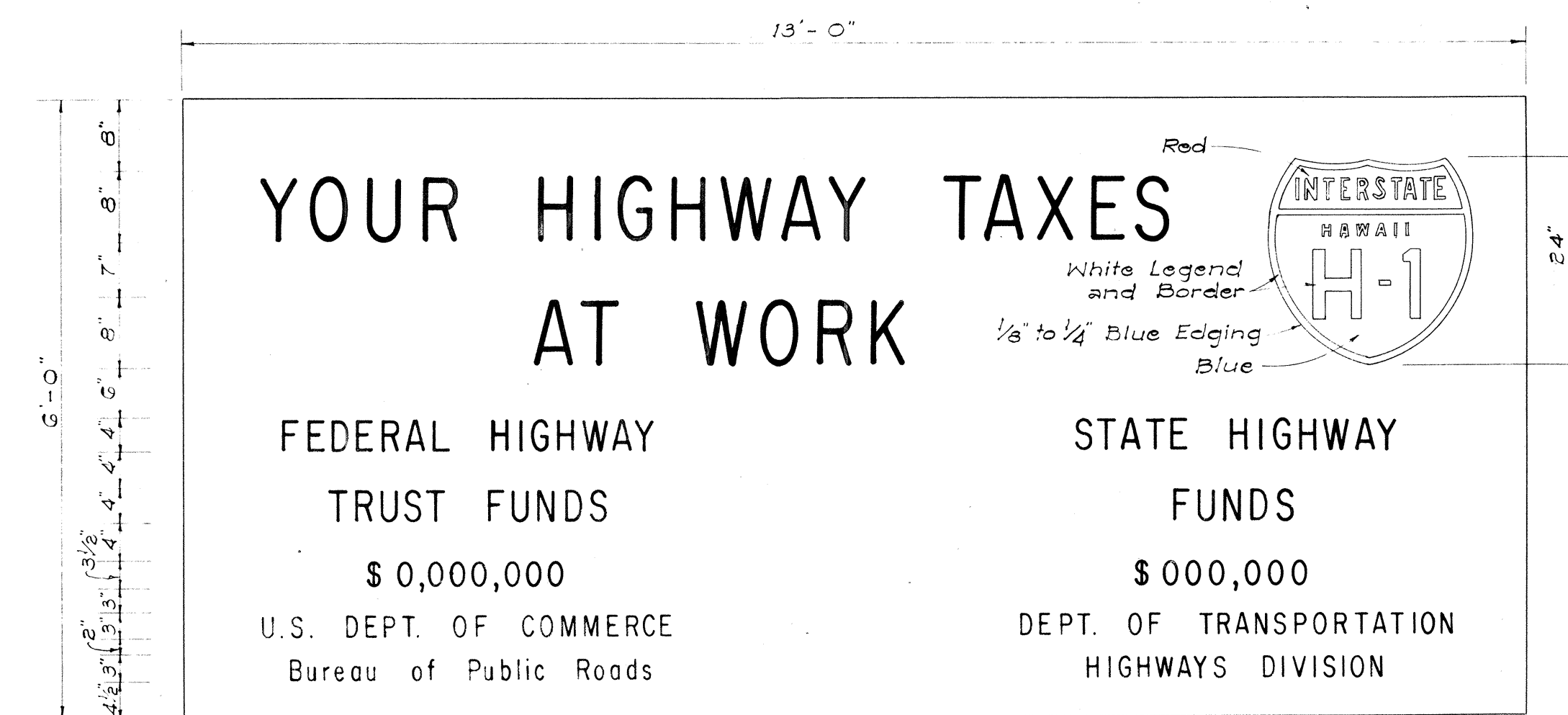


SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

FRONT VIEW

ELEVATIONS

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



SIGN PANEL
Scale: 3/4" = 1'-0"

**INTERSTATE SYSTEM
CONSTRUCTION IDENTIFICATION SIGN**

Scale: As Shown

- NOTES:**
- A. CONSTRUCTION IDENTIFICATION SIGNS**
1. The sign legend shall be black on white background except for the Interstate Route marker which shall be as shown on the plan.
2. The Contractor shall construct, install and maintain the project signs at the locations shown on the Plans and as ordered by the Engineer.
3. The signs shall be removed and stockpiled upon completion of the project as ordered by the Engineer and are to become State property.
4. Letters shall be Series "C" of the sizes shown on the Plan and shall conform with the Standard Alphabet for Highway Signs, Bureau of Public Roads, 1952.
5. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.
 - B. WOOD BARRICADES**
The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

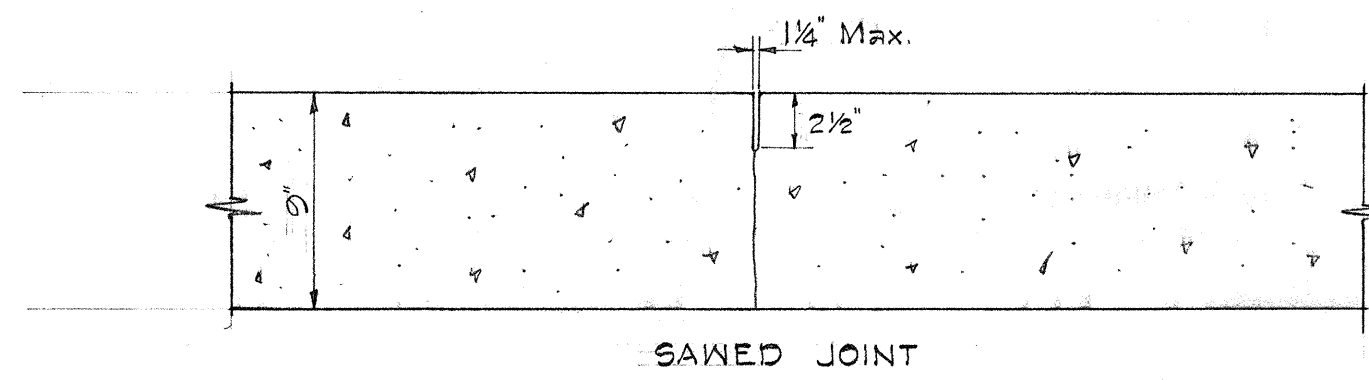
TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

INTERSTATE ROUTE H-1
F.A.I. Proj. I-HI-1(19)

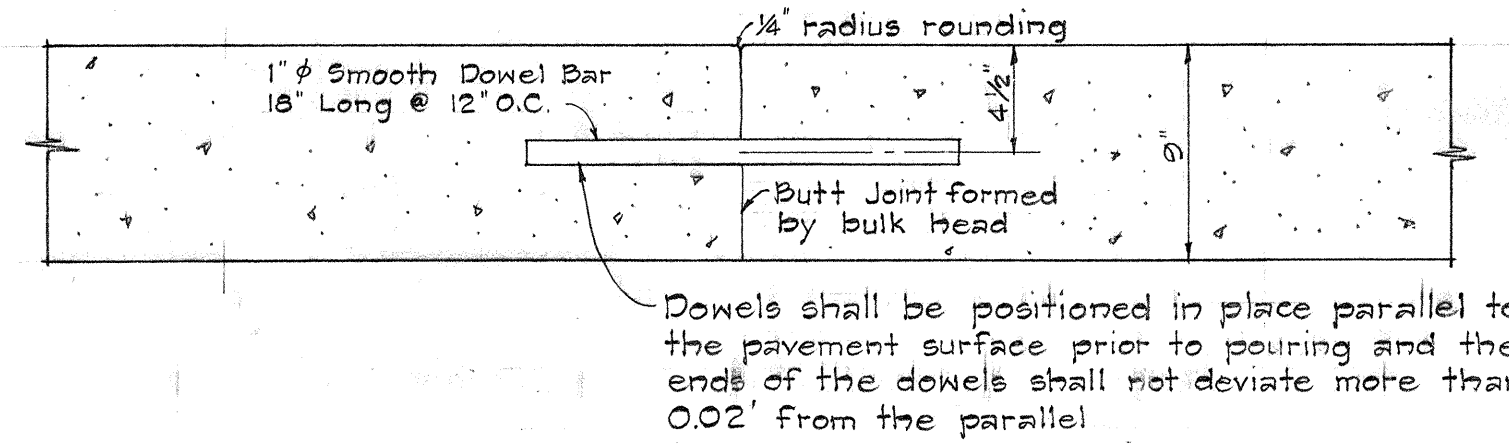
SCALE: As Shown DATE: December 1965

SHEET No. 1 OF 8 SHEETS

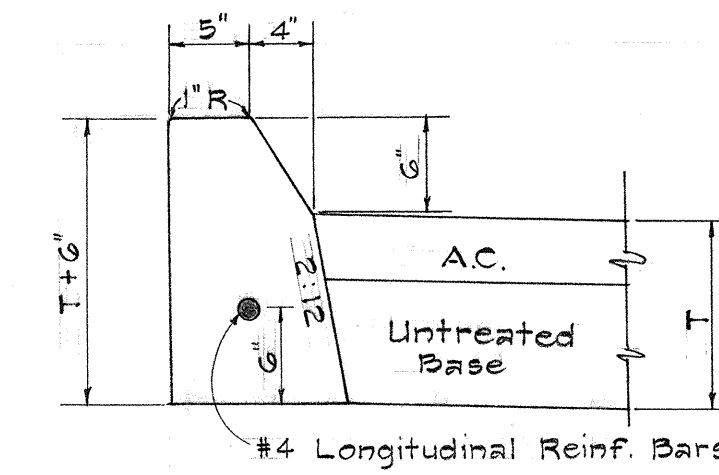
ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	



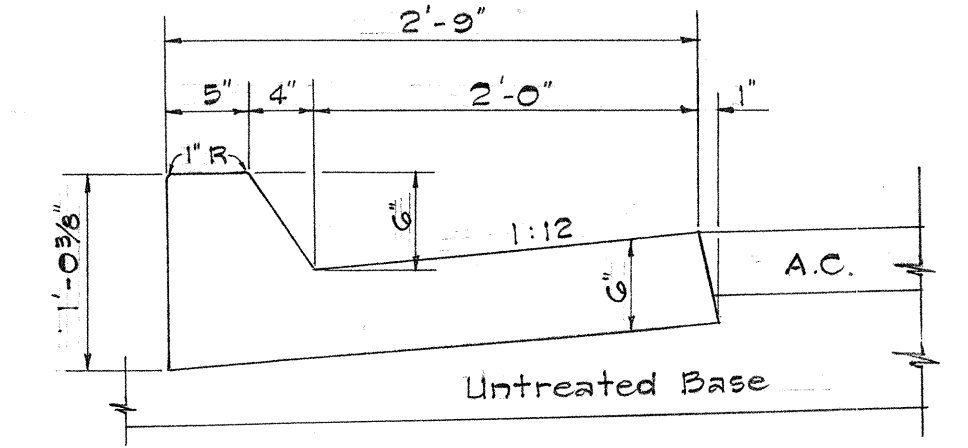
TRANSVERSE WEAKENED PLANE
(CONTRACTION) JOINT
Scale: 1 1/2" = 1'-0"



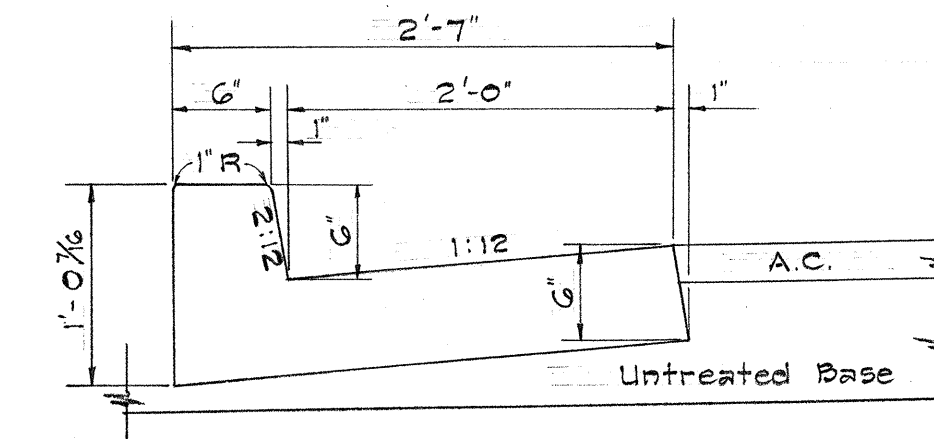
TRANSVERSE CONSTRUCTION (CONTACT) JOINT
Scale: 1 1/2" = 1'-0"



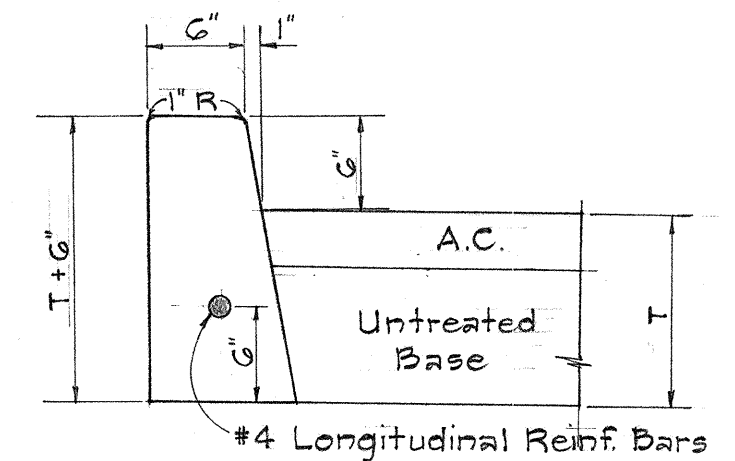
TYPE "A" CURB



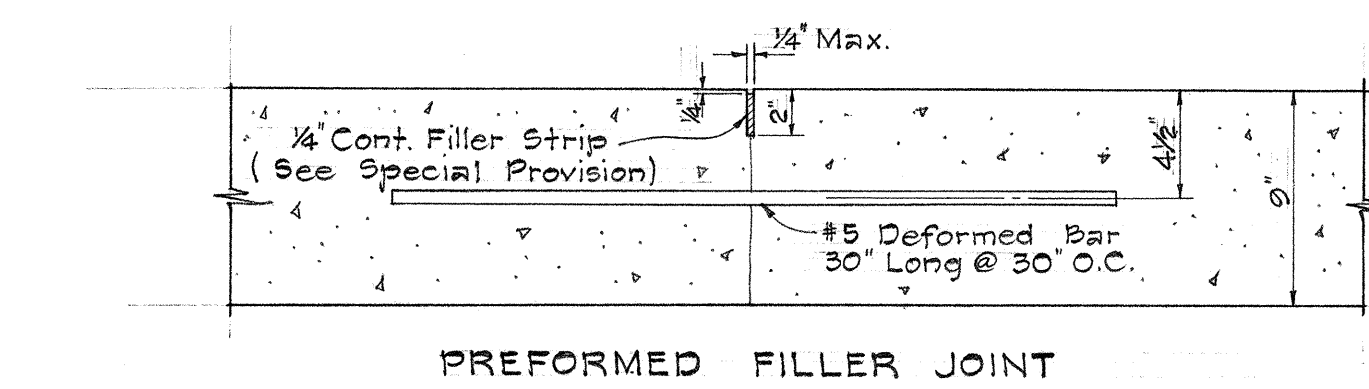
TYPE "AG" CURB & GUTTER



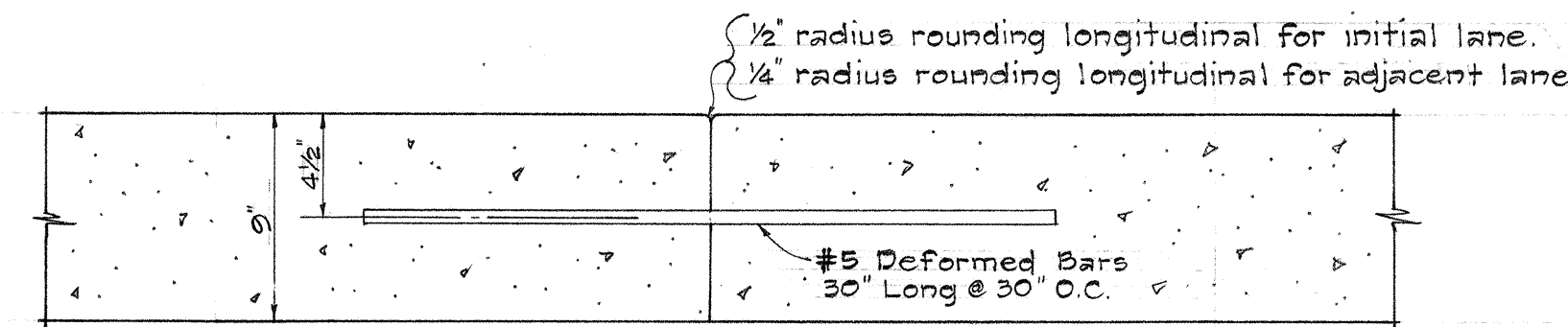
TYPE "DG" CURB & GUTTER



TYPE "D" CURB

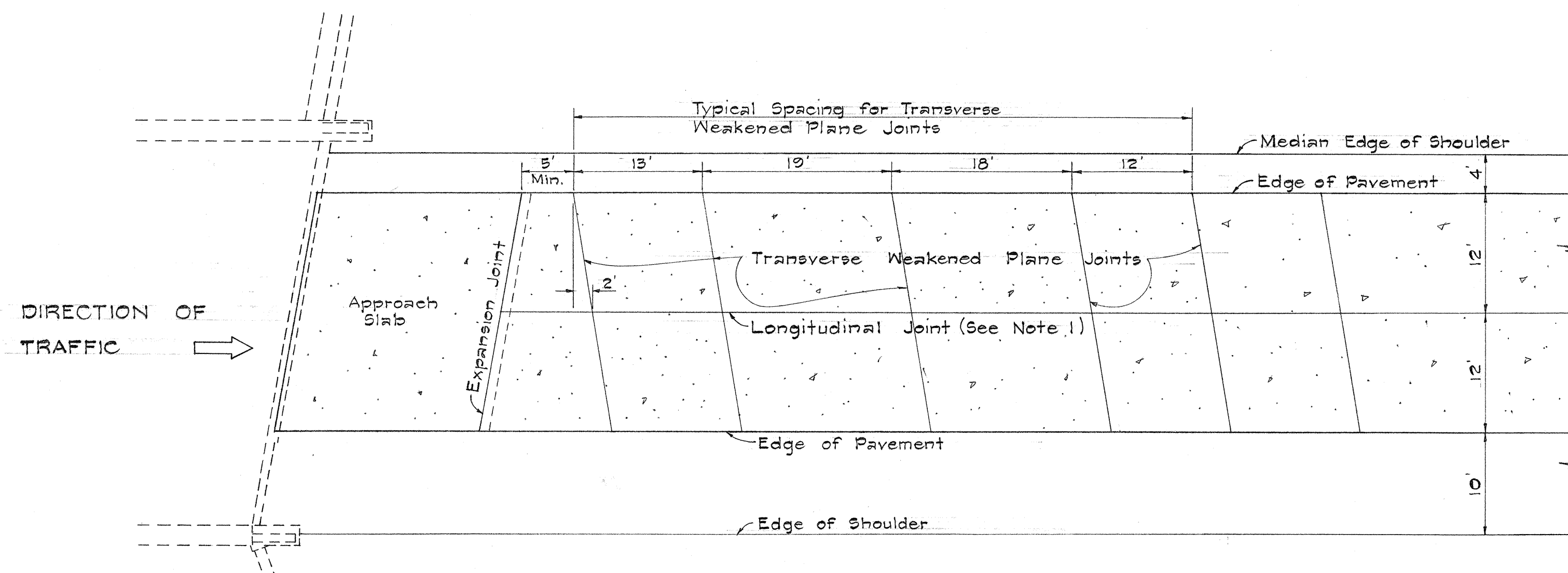


PREFORMED FILLER JOINT

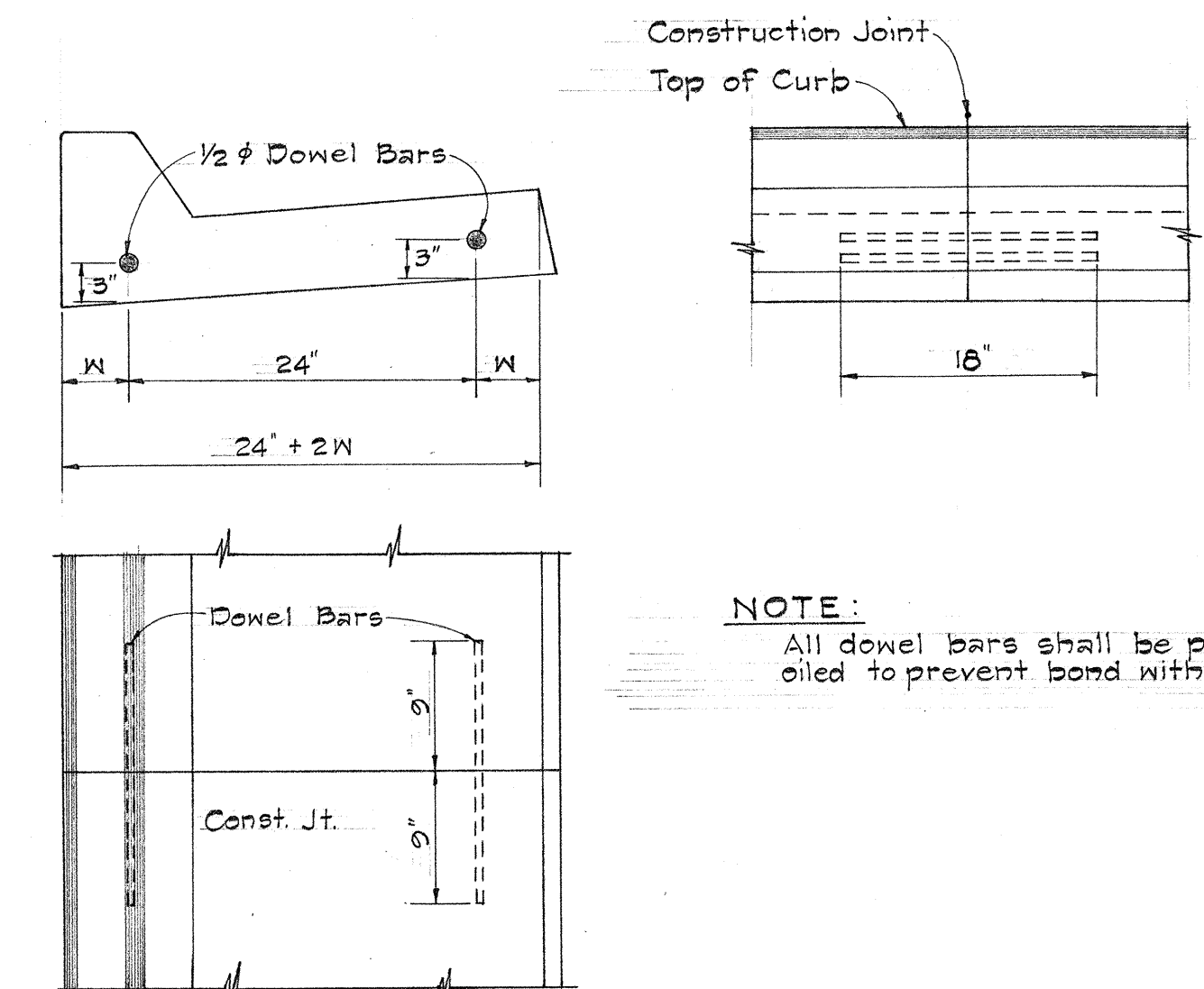


LONGITUDINAL CONSTRUCTION (CONTACT) JOINT
Scale: 1 1/2" = 1'-0"

LONGITUDINAL WEAKENED PLANE
(CONTRACTION) JOINT
Scale: 1 1/2" = 1'-0"



TYPICAL JOINT LOCATION AND LAYOUT PLAN
Scale: 1" = 10'



TYPICAL CONSTRUCTION JOINT
DETAIL FOR CAST-IN-PLACE
CONCRETE CURB & GUTTER

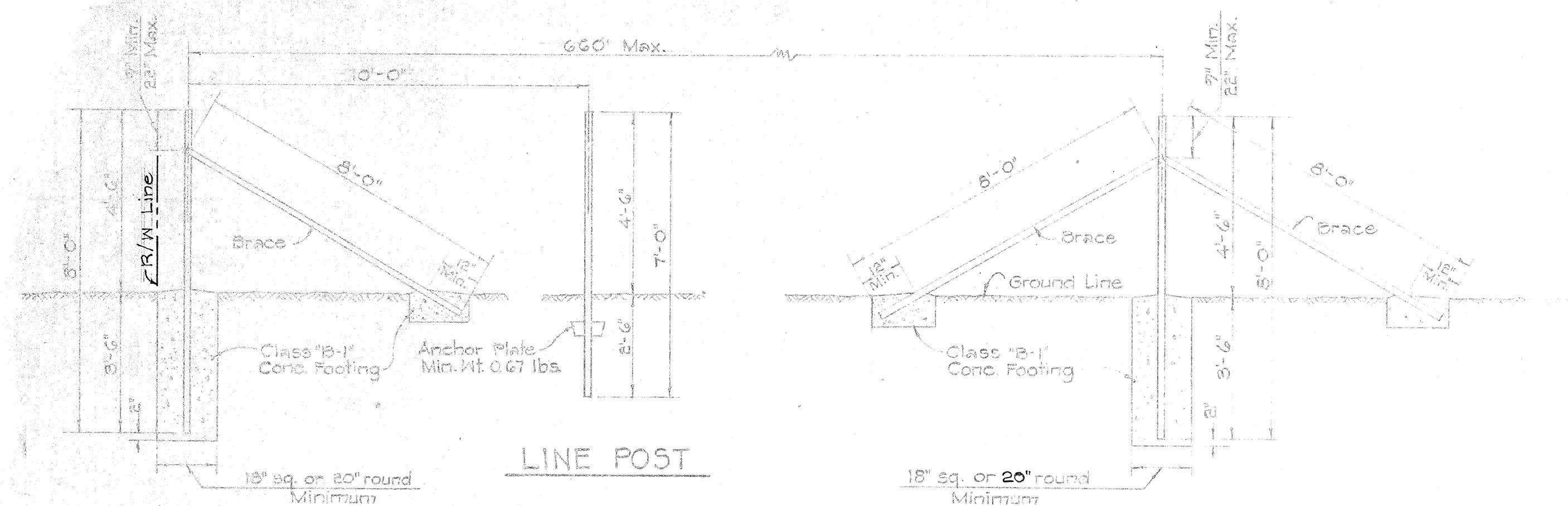
NOTE:
All dowel bars shall be painted and
oiled to prevent bond with concrete.

CURB AND CURB & GUTTER DETAILS
Scale: 1" = 1'-0"

GENERAL NOTES ~ P.C.C. JOINTS

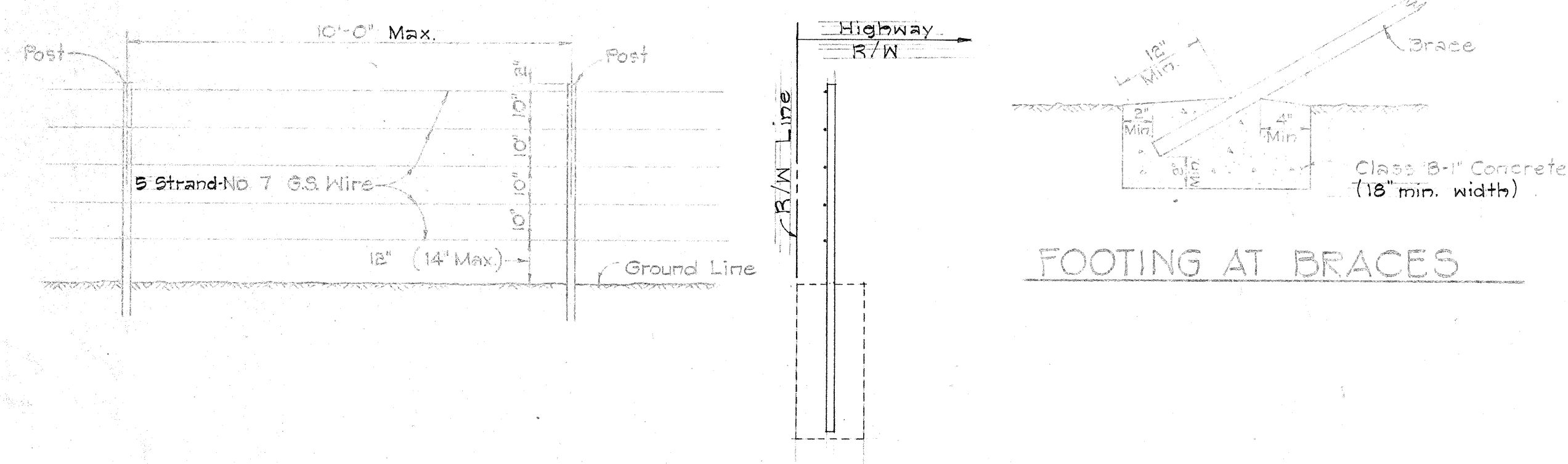
- The longitudinal weakened plane joint detail shall be applicable at the intermediate traffic lane edge when 2 or more lanes are paved in one continuous pour. The straight tie bars shall be placed mechanically to the depth shown on the detail. All other longitudinal joints shall be constructed in accordance with the contact joint detail shown on this plan.
- See plan sheet No. 23 for details for approach slab.
- Transverse weakened plane joints shall be sawed diagonally as shown, unless otherwise directed by the Engineer. Transverse weakened plane joints shall be skewed counter-clockwise with an offset of 2' for every 12' of lane width from the perpendicular to the baseline.
- Transverse weakened plane joints shall be spaced at successive intervals of 13', 19', 18' and 12' in the direction of traffic. Repeat for the remaining joints.
- Transverse contact joints shall be located at a minimum distance of 5' from the nearest planned transverse weakened plane joint.

P.C.C. PAVEMENT JOINT DETAILS



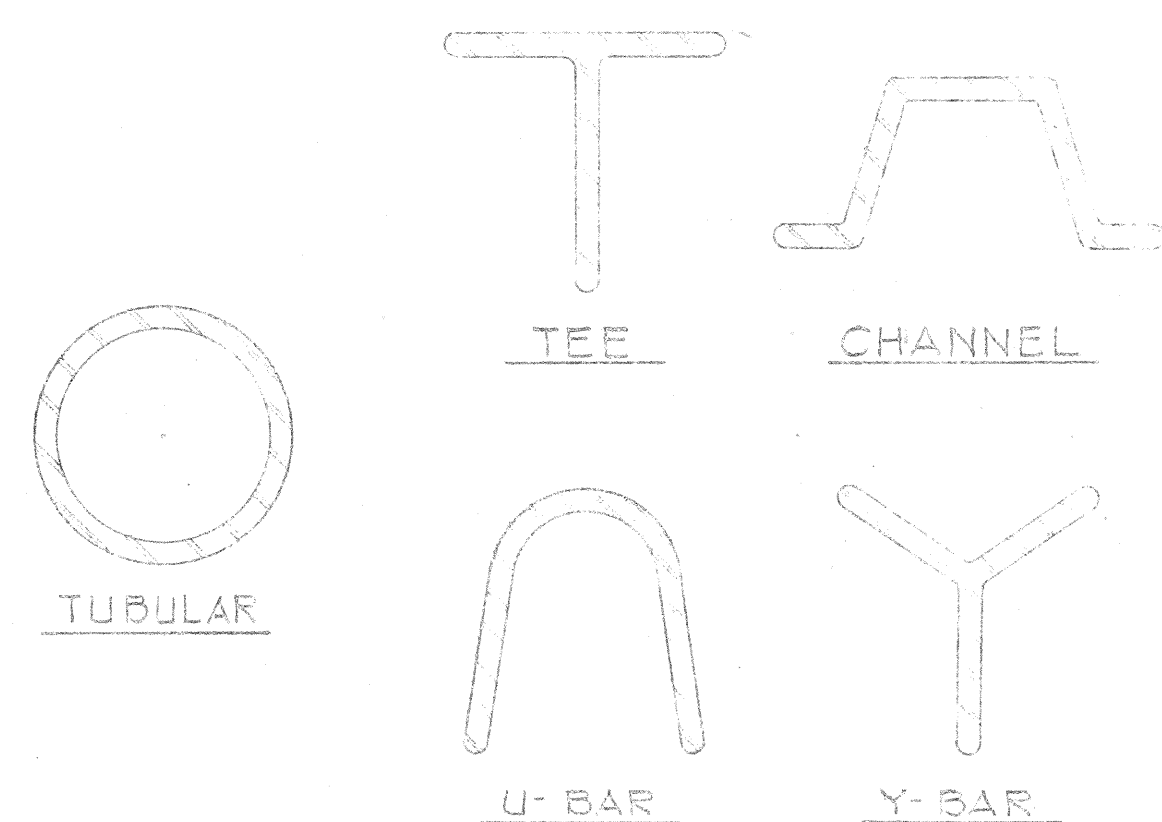
END, GATE OR CORNER POST

INTERMEDIATE POST



DETAILS OF STANDARD WIRE FENCE WITH METAL POSTS

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



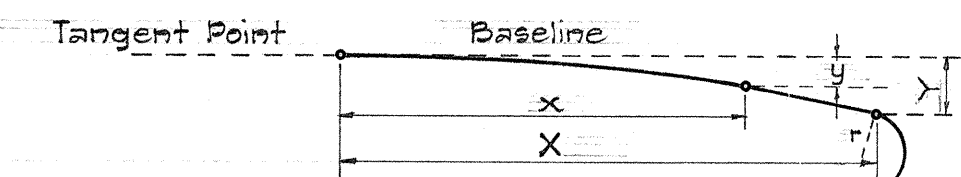
TYPICAL CROSS SECTIONS OF LINE POST

Not to Scale

These Curves are based upon the following formula:

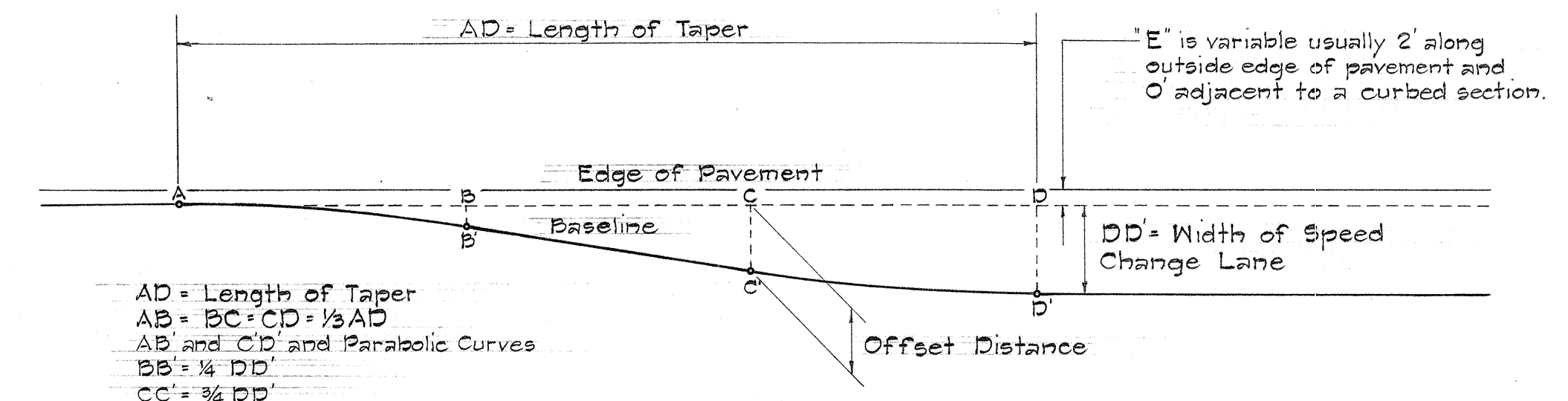
$$y = \frac{Yx^2}{X^2}$$

Where: y = any offset, x = its tangent distance
X = maximum tangent distance
Y = maximum offset



Dist. in ft. (x)	Offset in Feet (y)					
	2:30	3:45	5:30	7:30	9:30	10:100
10	0.22	0.15	0.20	0.14	0.11	0.10
20	0.89	0.59	0.80	0.57	0.44	0.40
30	2.00	1.33	1.80	1.29	1.00	0.90
40		2.37	3.20	2.29	1.78	1.60
50			5.00	3.57	2.78	2.50
60				5.14	4.00	3.60
70				7.00	5.44	4.90
80					7.11	6.40
90					9.00	8.10
100						10.00

NOTE: Any ratio curve in this tabulation is designated by the maximum offset and its tangent distance.



TAPER FOR SPEED-CHANGE LANES

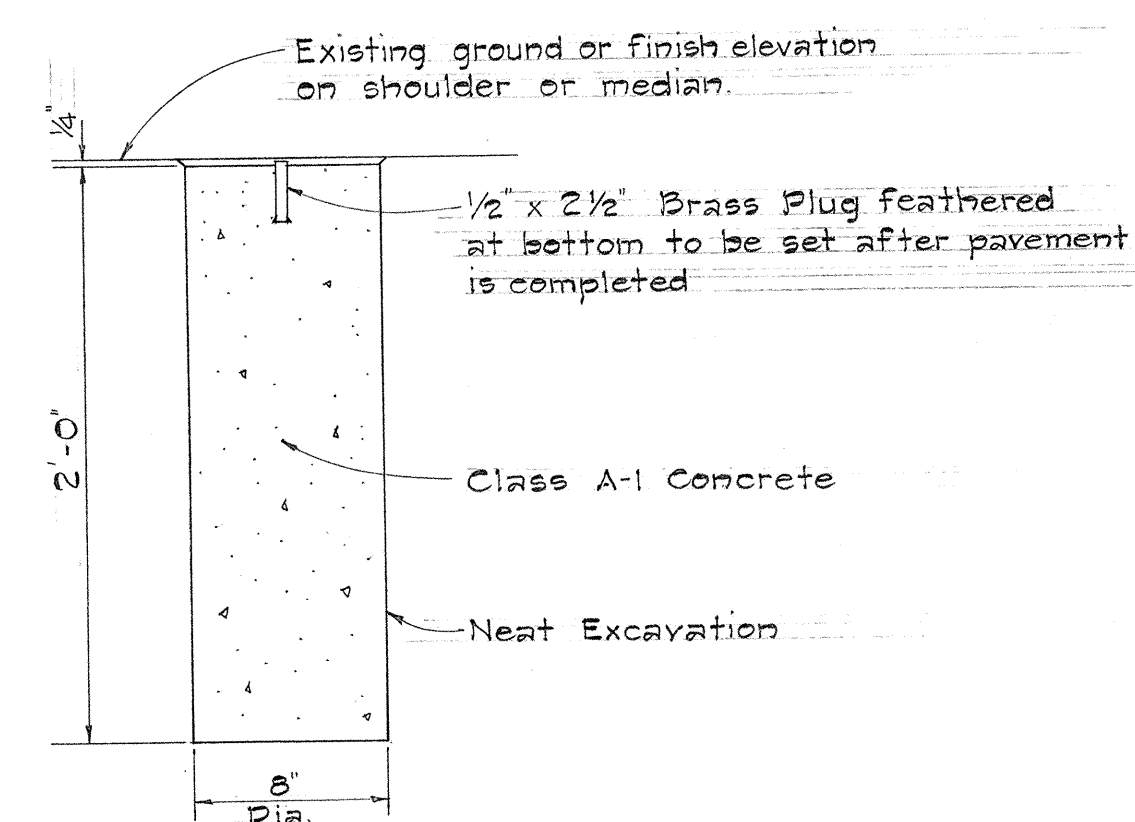
Scale: 1" = 20'-0"

FOLLOWING TABLE GIVES OFFSETS FROM BASELINE PARALLEL TO EDGE OF PAVEMENT AT INTERVALS MEASURED FROM POINT 'A' ADD 'E' FOR MEASUREMENT FROM EDGE OF PAVEMENT.

		LENGTH OF TAPER (FEET) = AD	
		150	300
DD' = 9 FT.	DD' = 12 FT.	DISTANCE FROM POINT 'A' (FEET)	
0	0	0	0
0.14	0.19	12.5	25
0.56	0.75	25	50
1.27	1.69	37.5	75
* 2.25	* 3.00	50	100
* 4.50	* 6.00	75	150
* 6.75	* 9.00	100	200
7.73	10.31	112.5	225
8.44	11.25	125	250
8.86	11.81	137.5	275
9.00	12.00	150	300

* Where edge of pavement is a curve, neither Baseline nor Taper between B and C will be a tangent. Use proportional offset from B to C.

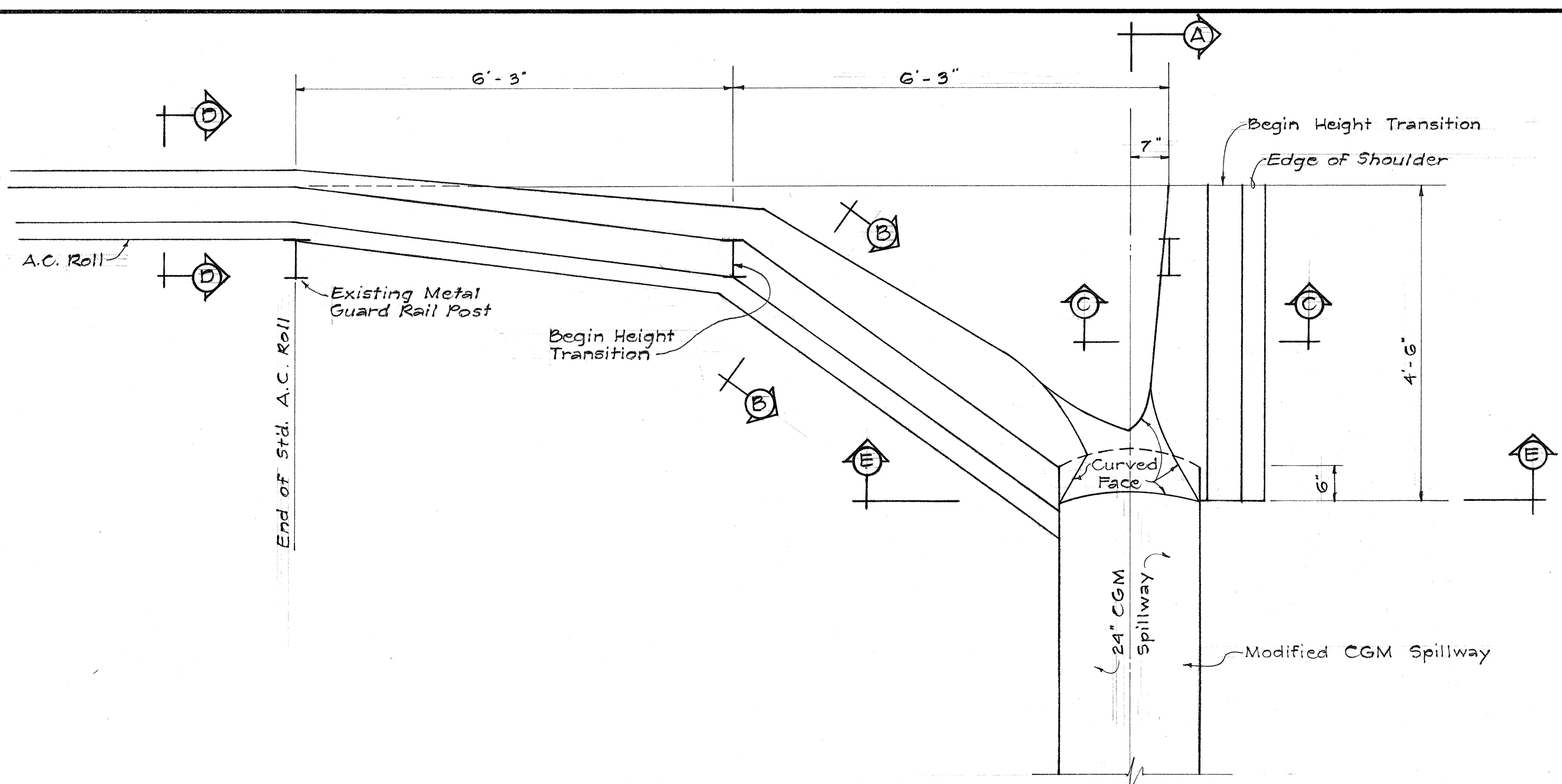
TAPER DETAILS



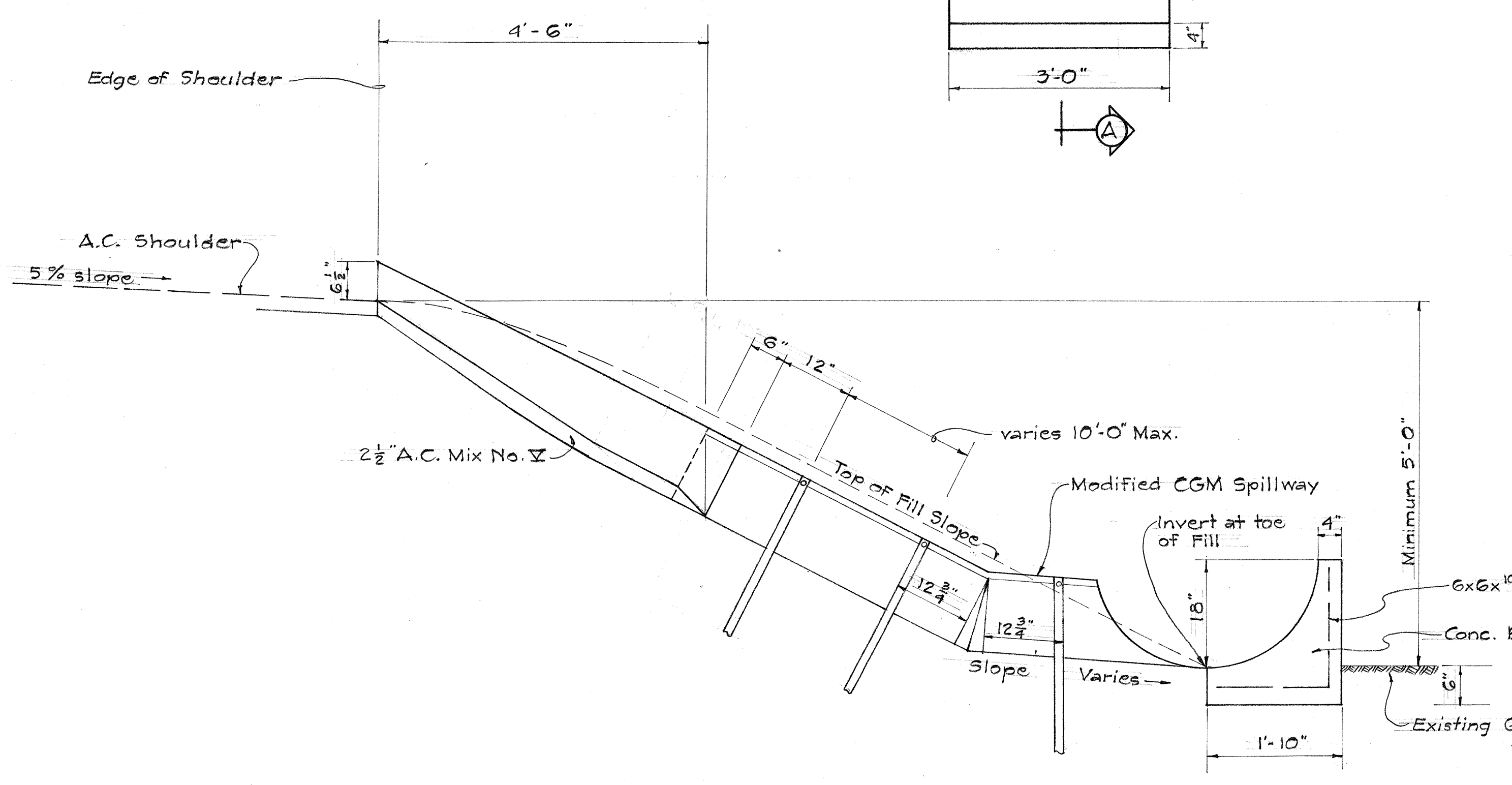
DETAIL FOR SURVEY MONUMENT

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

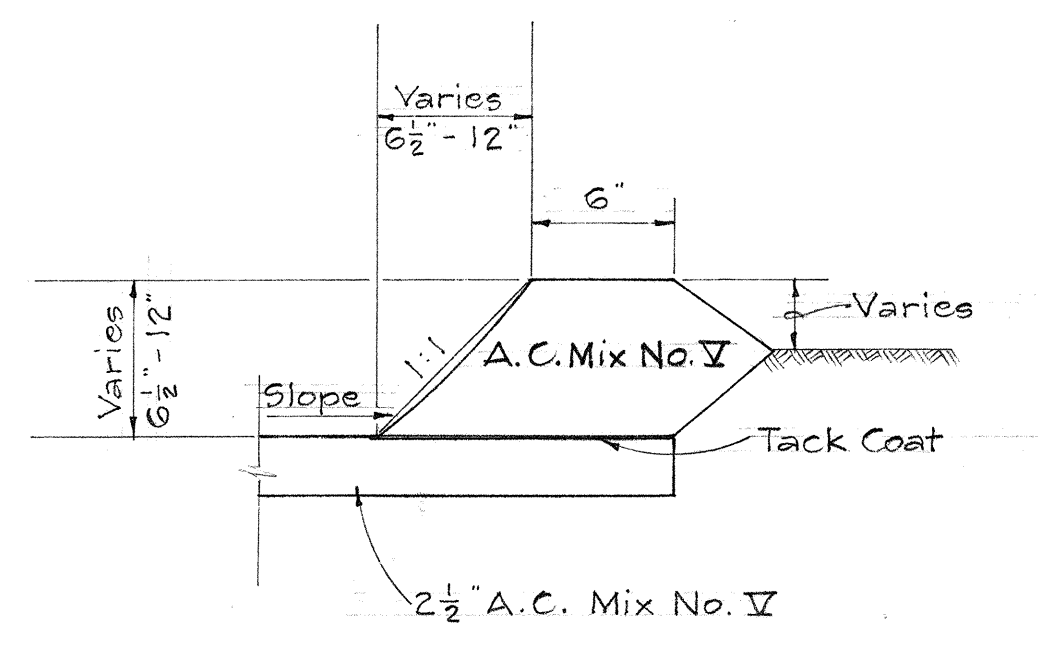


PLAN
Scale: $\frac{3}{4}" = 1'-0"$

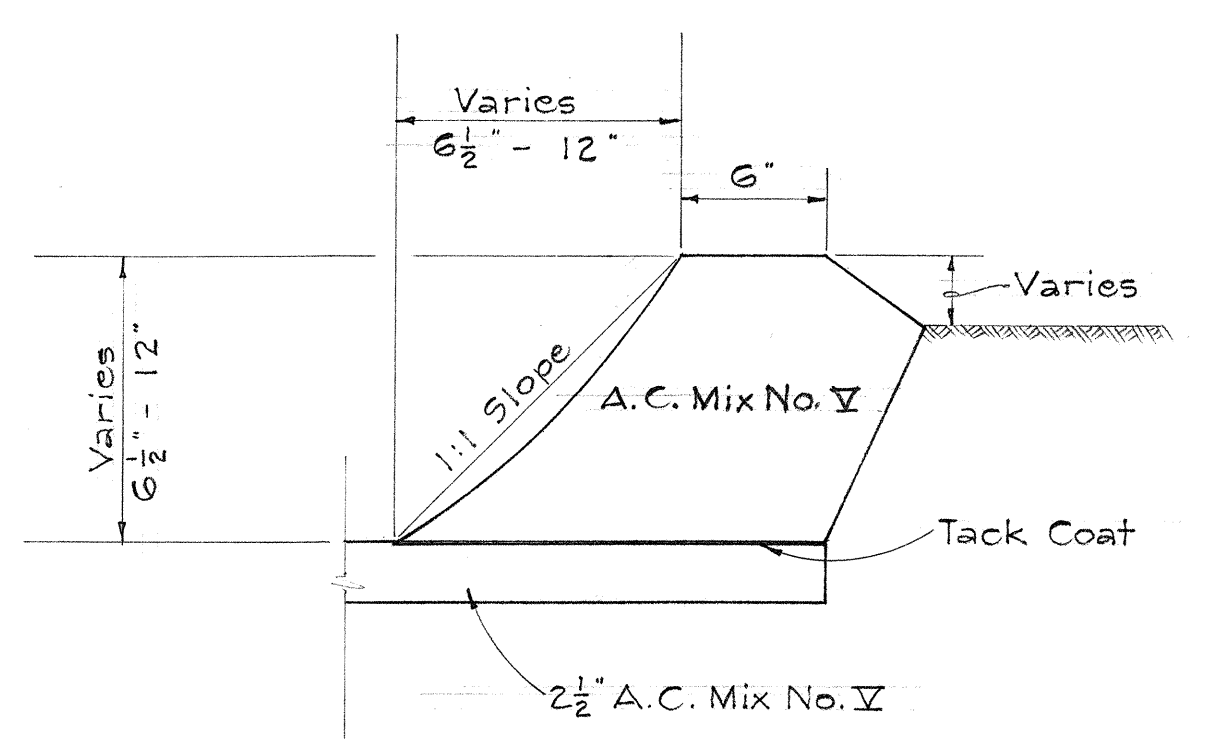


SECTION "A-A"
Scale: $\frac{3}{4}" = 1'-0"$

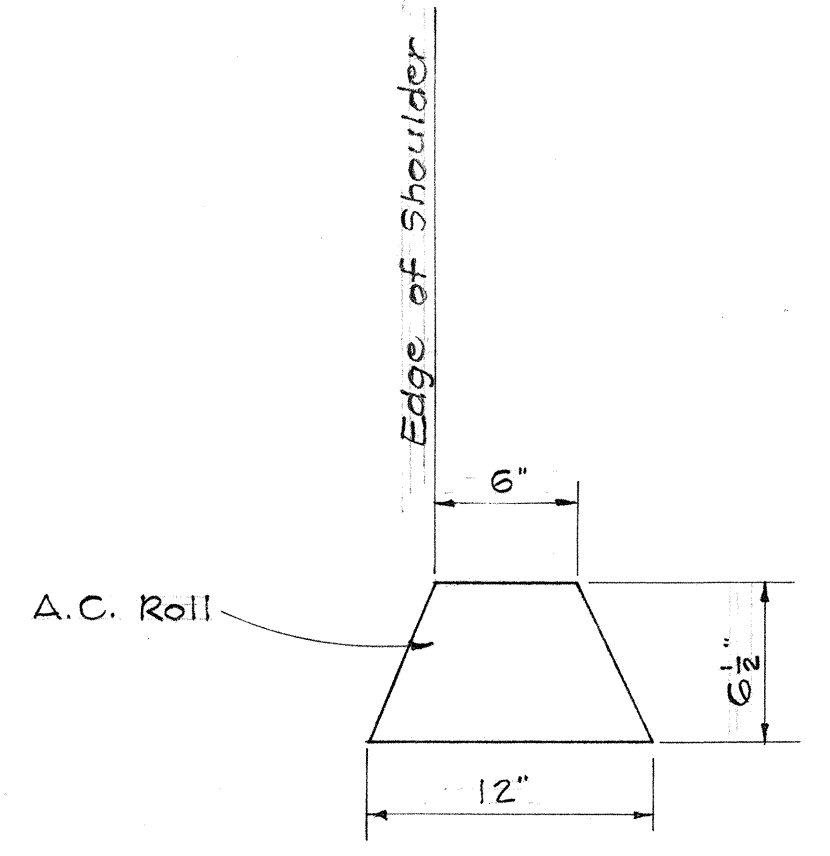
Note: Modified CGM Spillway similar to the Standard CGM Spillway except as shown.



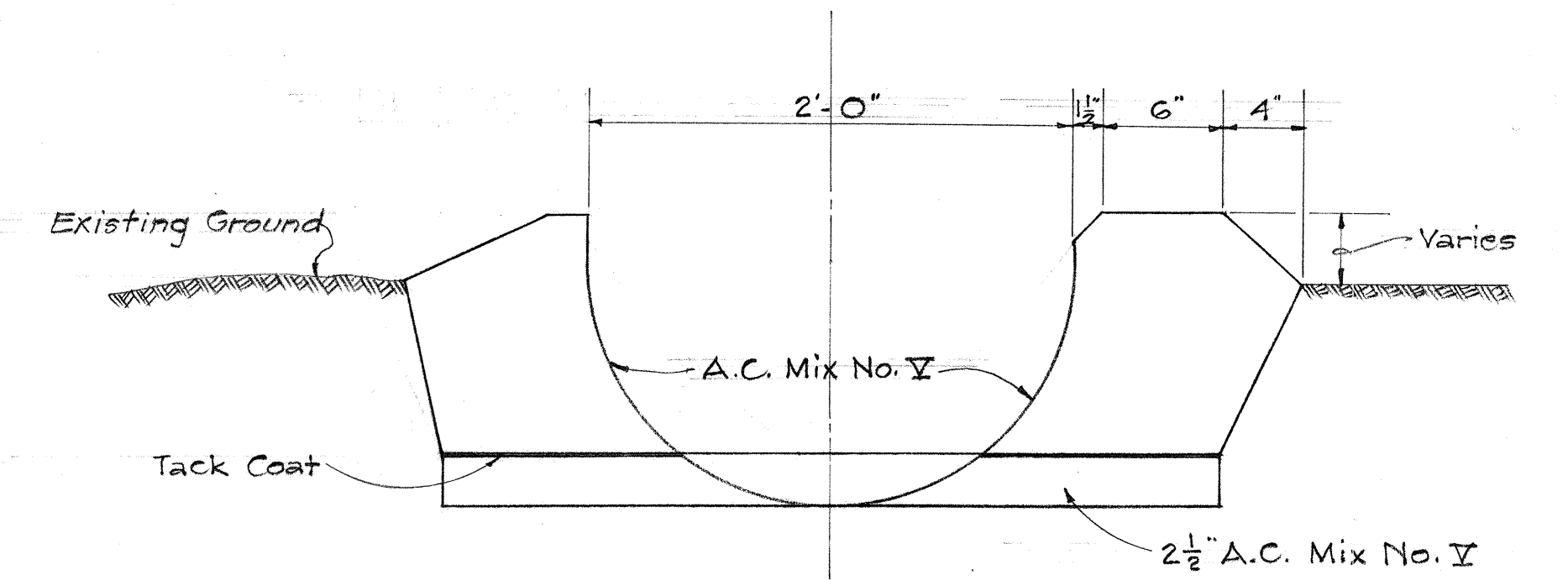
SECTION "B-B"
Scale: $1\frac{1}{2}" = 1'-0"$



SECTION "C-C"
Scale: $1\frac{1}{2}" = 1'-0"$



SECTION "D-D"
Scale: $1\frac{1}{2}" = 1'-0"$



SECTION "E-E"
Scale: $1\frac{1}{2}" = 1'-0"$

DATE	____
DESIGNED BY	____
TRACED BY	____
NOTE BOOK	____
CHECKED BY	____
NO.	____

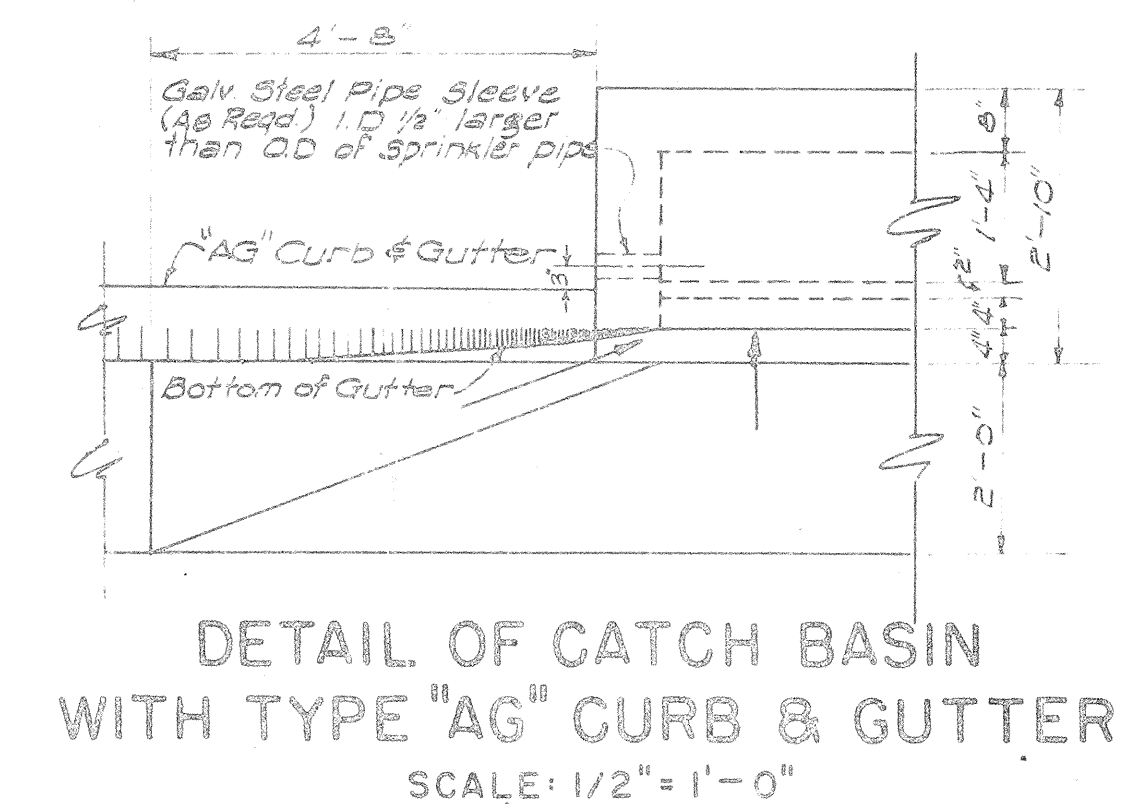
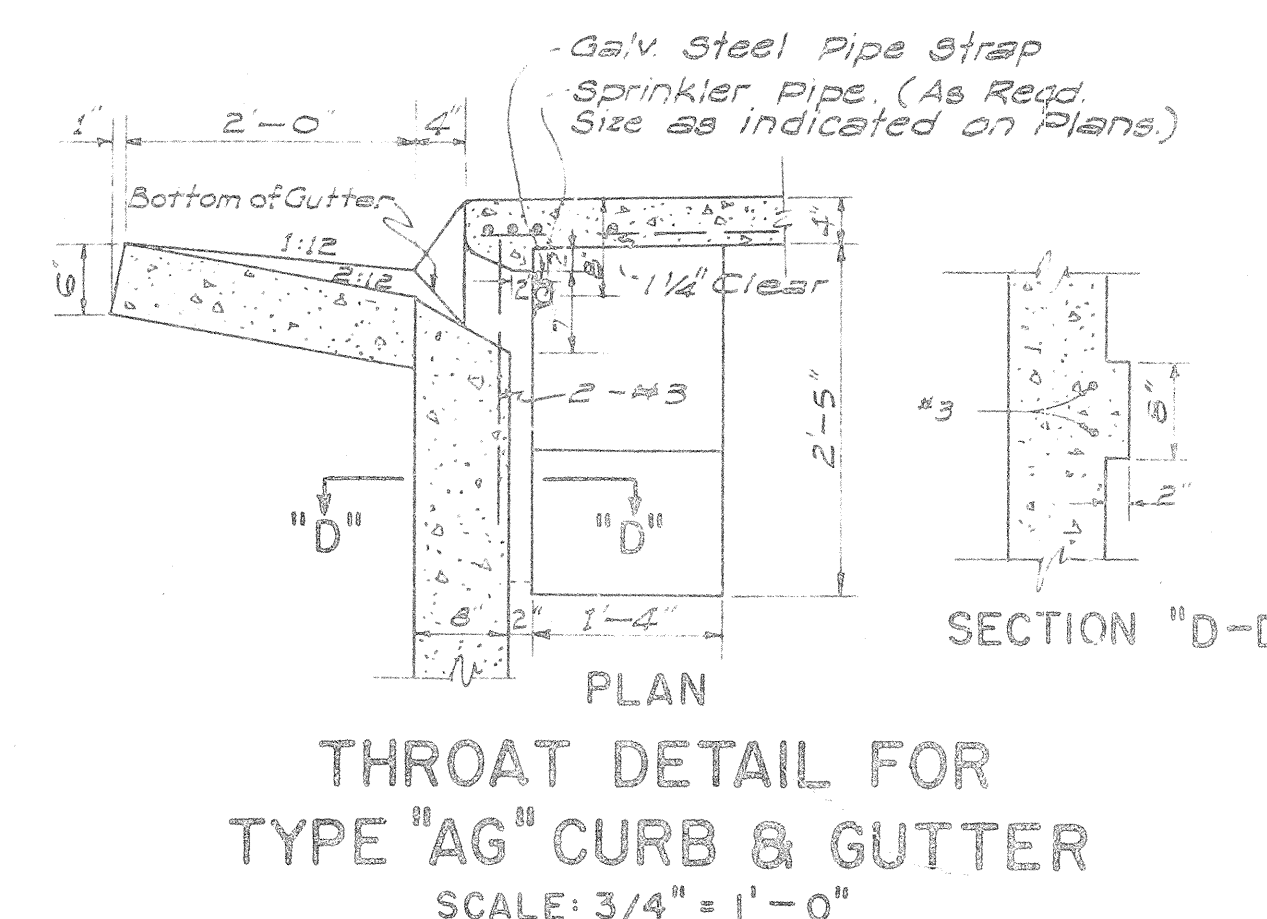
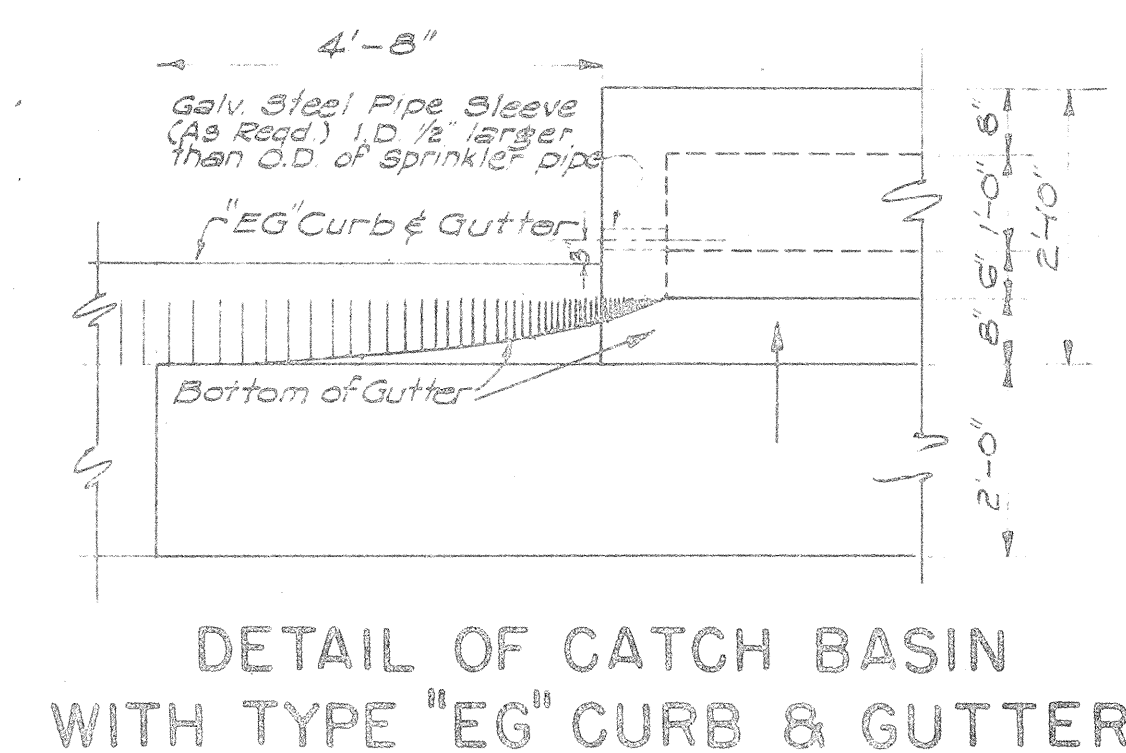
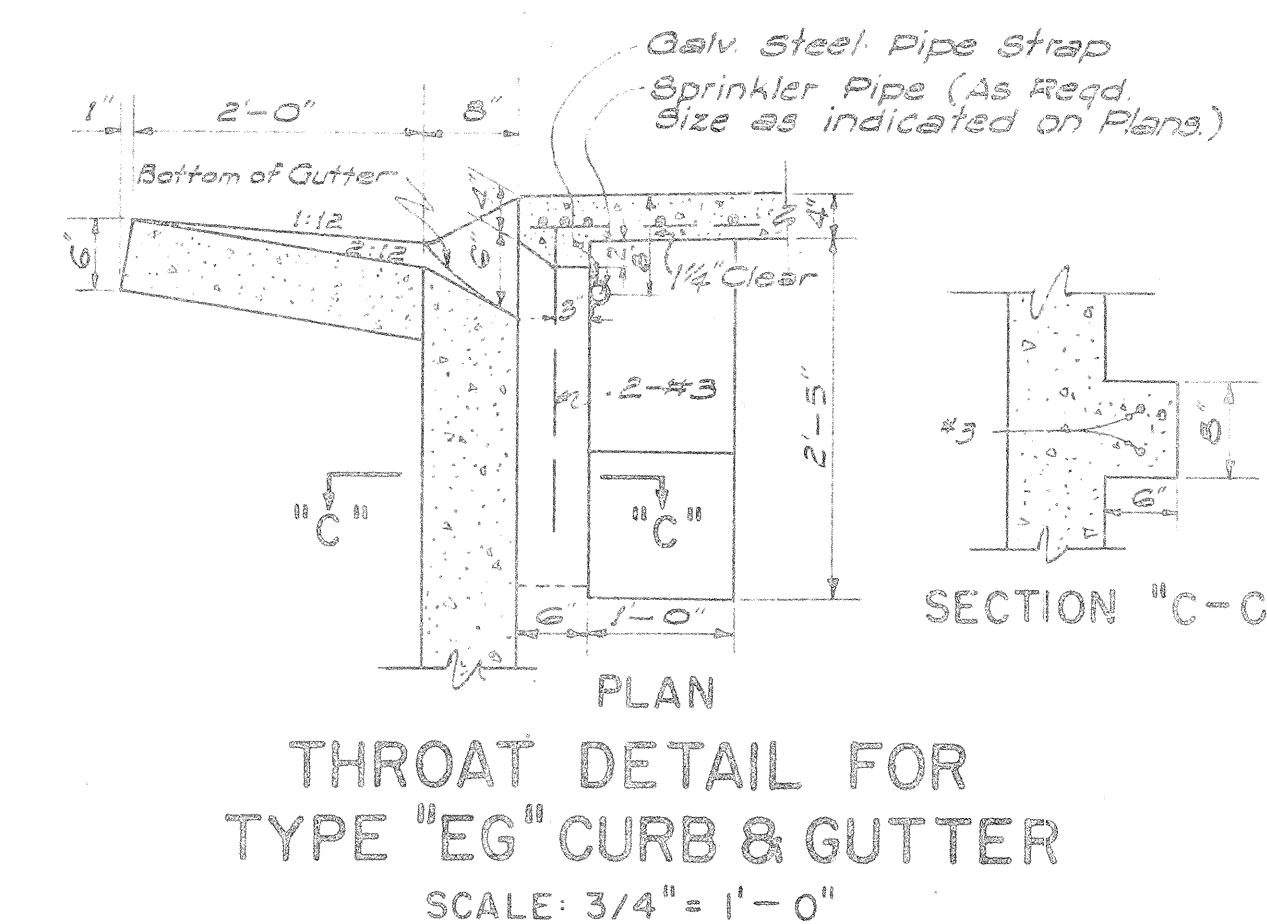
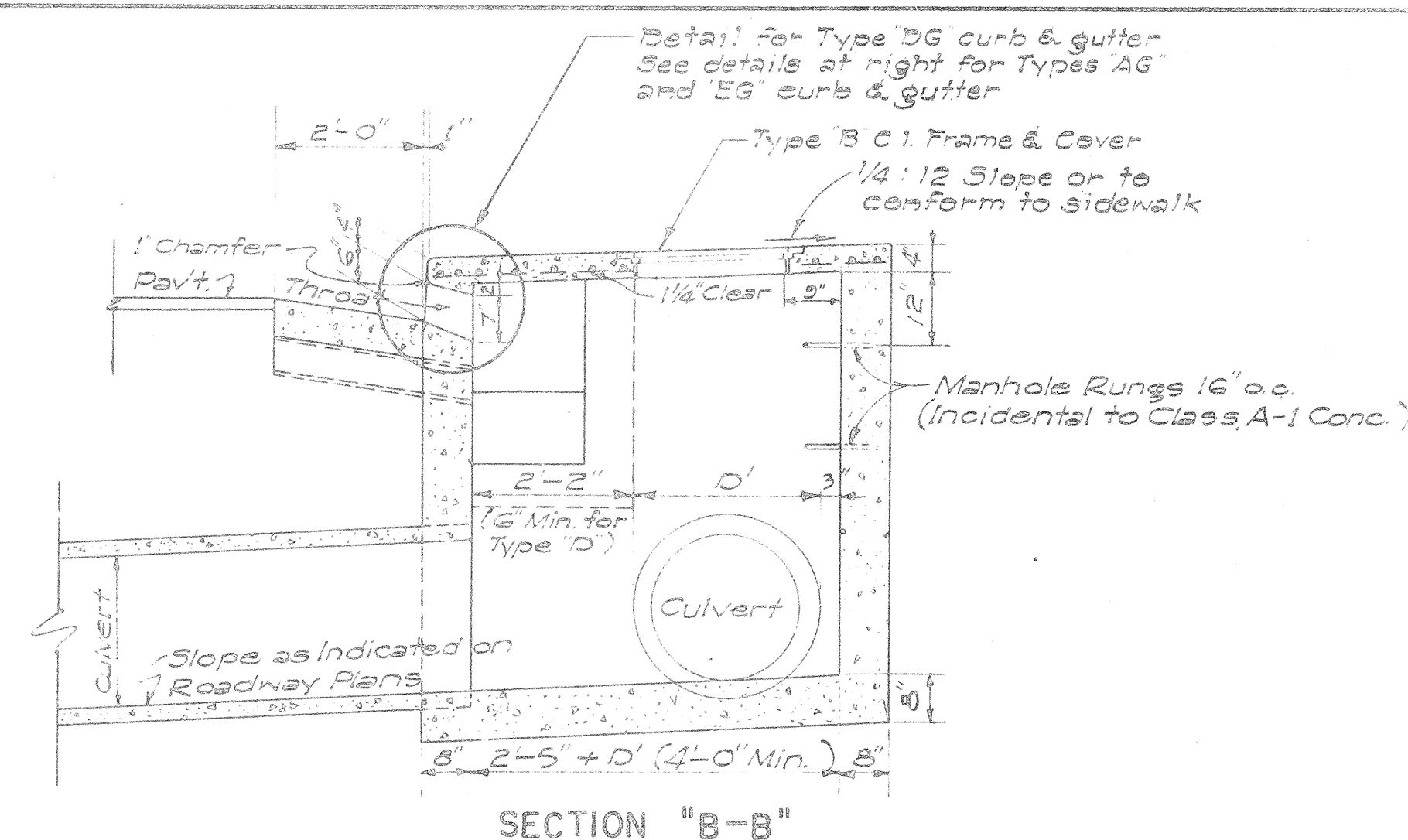
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

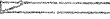
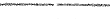
OVERSIDE DRAIN DETAILS

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1 (19)

Scale: As Shown Date: Jan. 1967

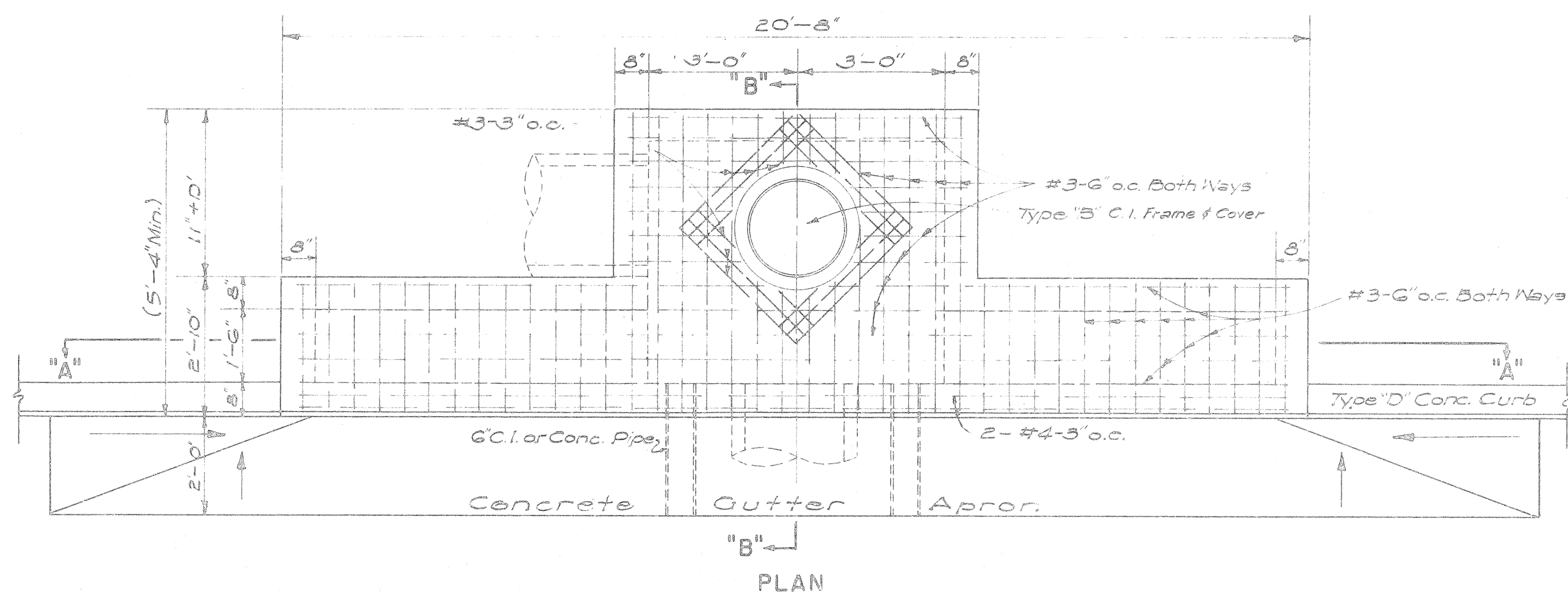
SHEET No. OF SHEETS



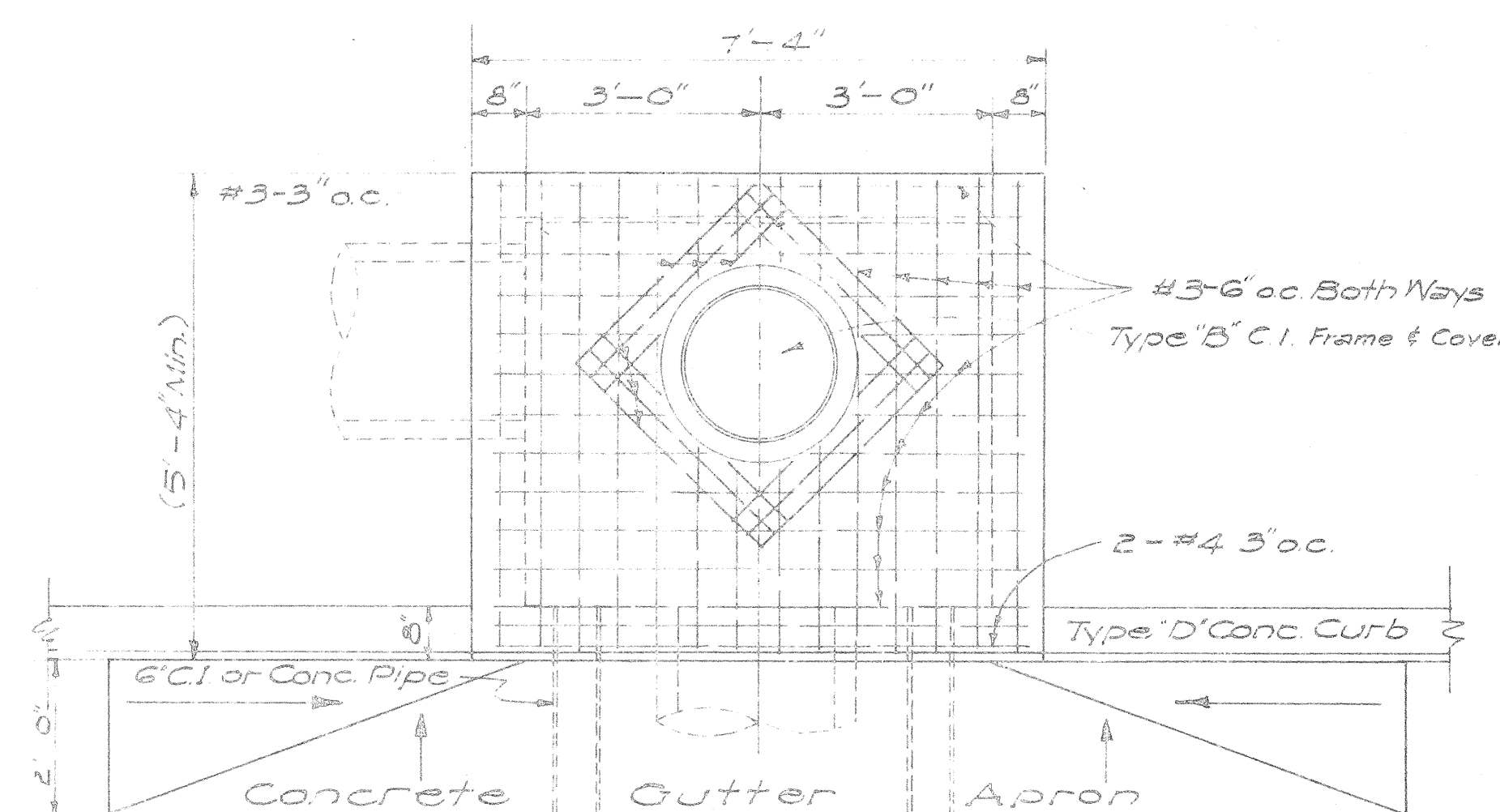
Type	Class A-1 Cond.	Struct. Exc.	Reinf. Steel	Gutter Length
"A" 	7.5 cy	24.7 cy.	145 lb.	30'-0"
"B" 	6.0 cy	21.5 cy.	108 lb.	23'-4"
"C" 	6.0 cy	21.5 cy.	108 lb.	23'-4"
"D" 	4.0 cy.	16.5 cy.	77 lb.	16'-8"

NOTES:

1. Quantities based on $d = 5.75'$ and $P' = 30"$
2. Quantities do not include concrete for Gutter Apron.
3. The Contractor shall install two 6" Cast Iron or Concrete Pipes as incidental to Class A-1 Concrete for Construction Drainage.
4. Culvert shall leave C.B. from any position and any direction indicated by plans or ordered by the Engineer. Culvert may both enter and leave C.B. so that C.B. will also act as Manhole.
5. The Contractor shall install Galvanized Steel Pipe Sleeves and Straps as incidental to Sprinkler System.



DETAIL OF TYPE "A" CATCH BASIN
SCALE: 1/2" = 1'-0"



DETAIL OF TYPE "D" CATCH BASIN
SCALE: 1/2" = 1'-0"

APPROVED: [Signature] DATE Aug 25, 1955
STATE HIGHWAY ENGINEER

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CATCH BASINS

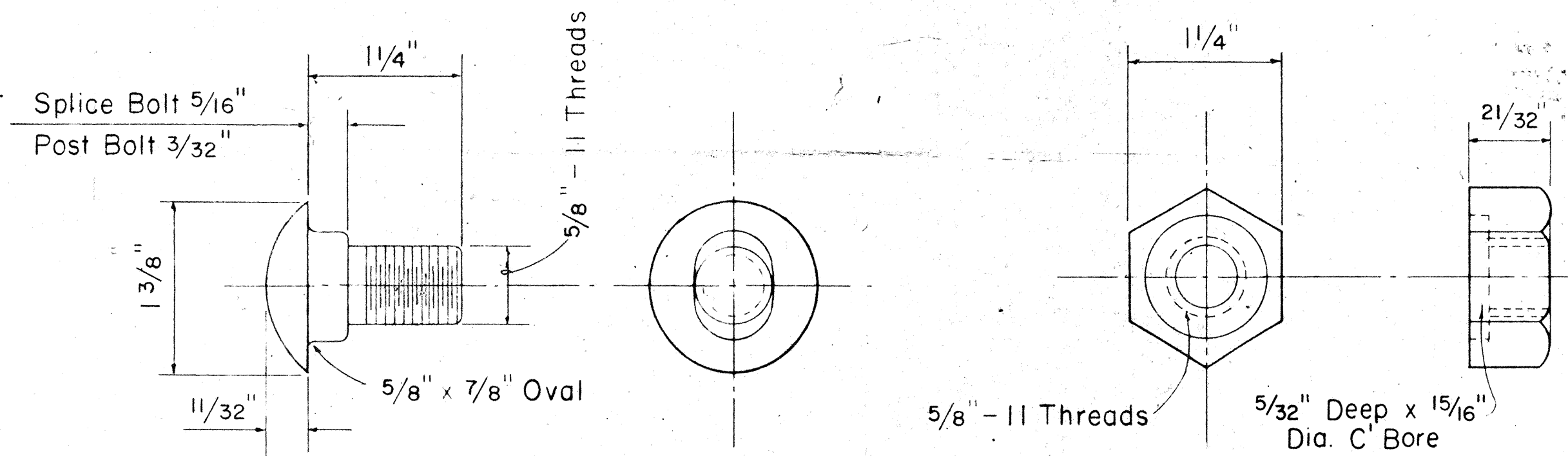
SCALES AS NOTED

SHEET N° 5 OF 8 SHEETS

DETAIL OF TYPE "B" CATCH BASIN
SCALE: 1/2" = 1'-0"
NOTE: TYPE "C" C.B. SIMILAR BUT OPPOSITE HAND

ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY <i>S.M.</i>	DATE
NOTE BOOK	DRAWN BY <i>J.Y.</i>	
No. _____	TRACED BY _____	
	QUANTITIES BY _____	
	CHECKED BY _____	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(19)	1966	27	65



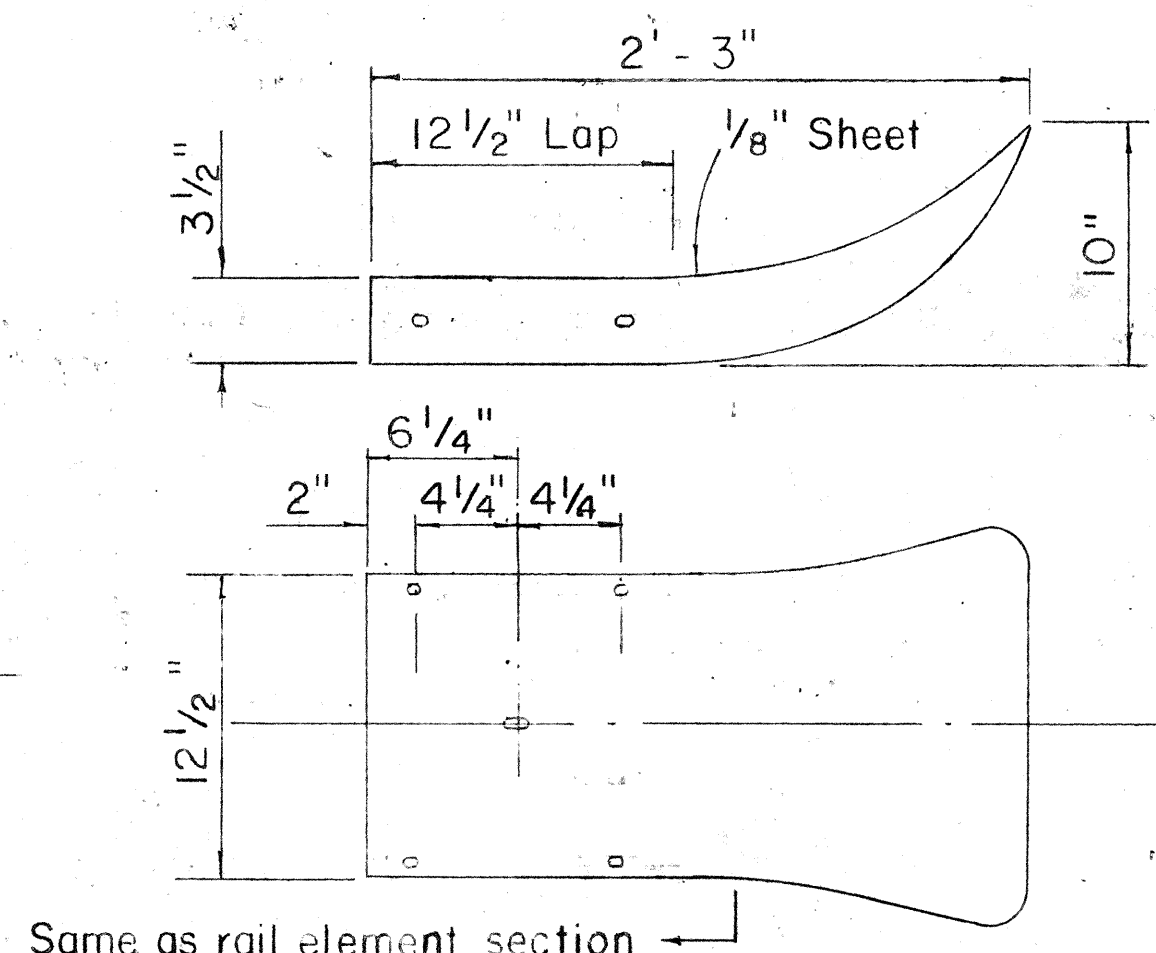
SPLICE BOLT

POST BOLT (Same except for length)

Scale: Full Size

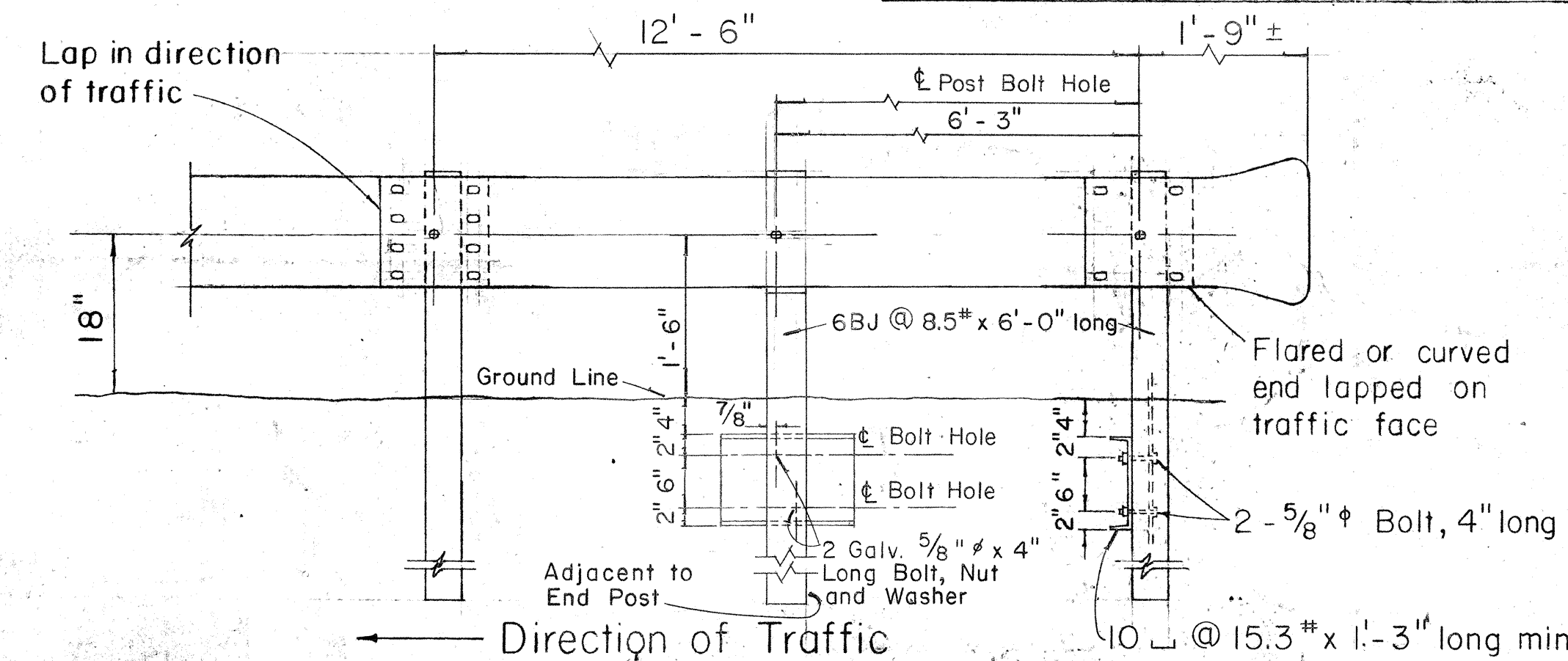
HEXAGON NUT

Scale: Full Size



FLARED END

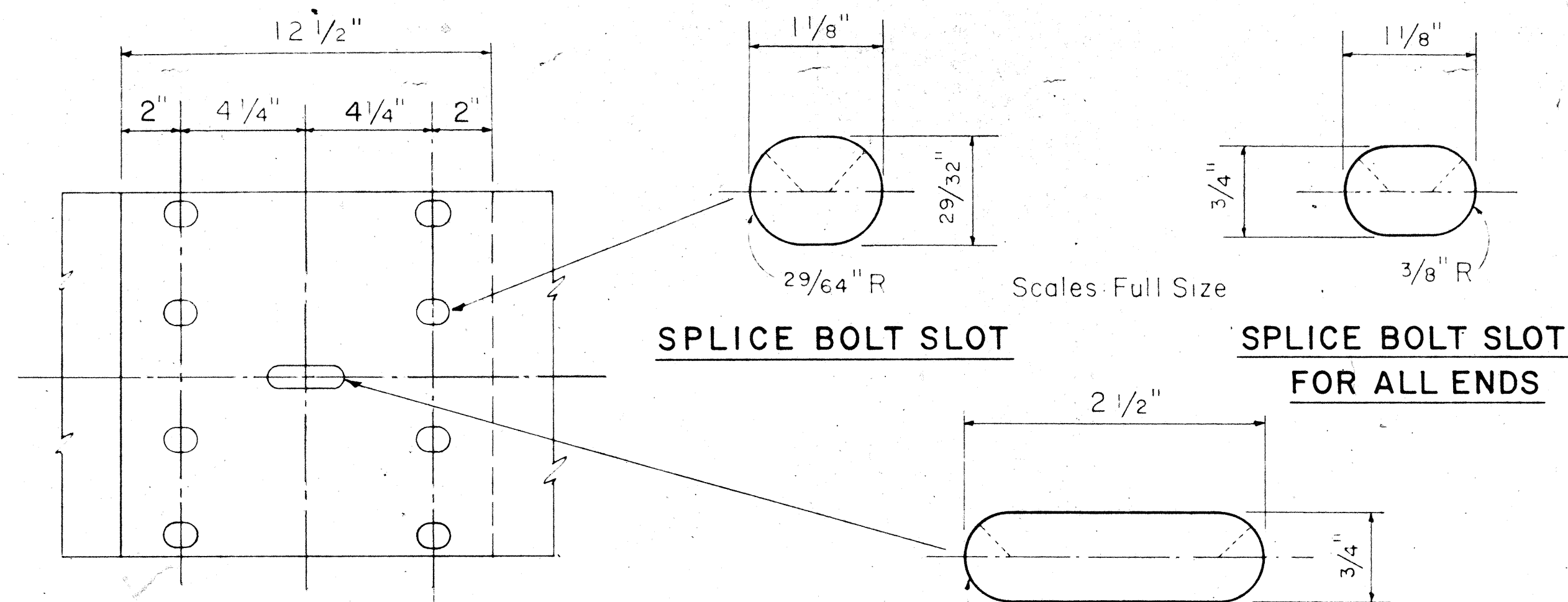
Scale: 1 1/2" = 1'-0"



METAL GUARD RAIL ON METAL POSTS

AND METAL SPACER BLOCKS

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

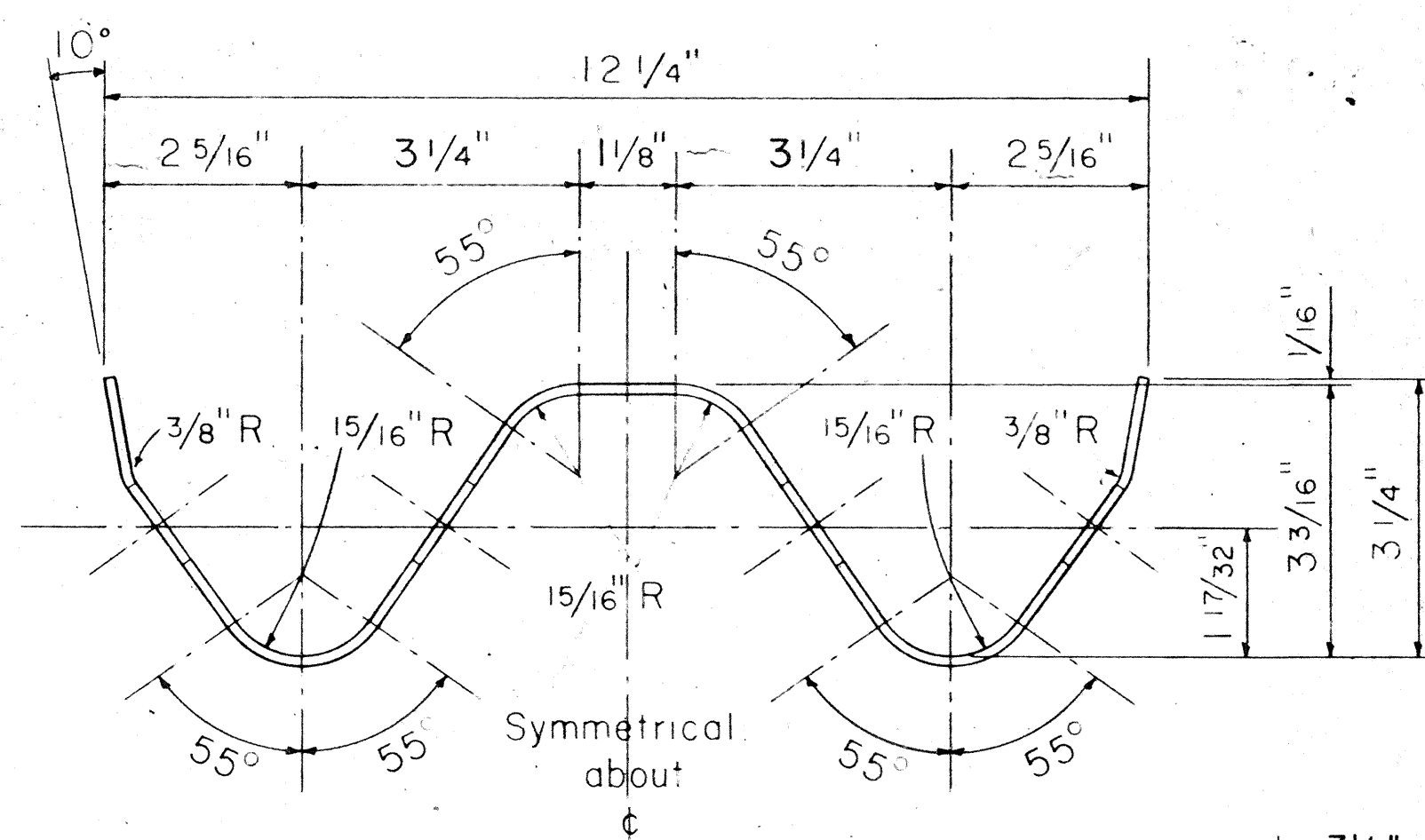


SPLICE BOLT SLOT

Scales: Full Size

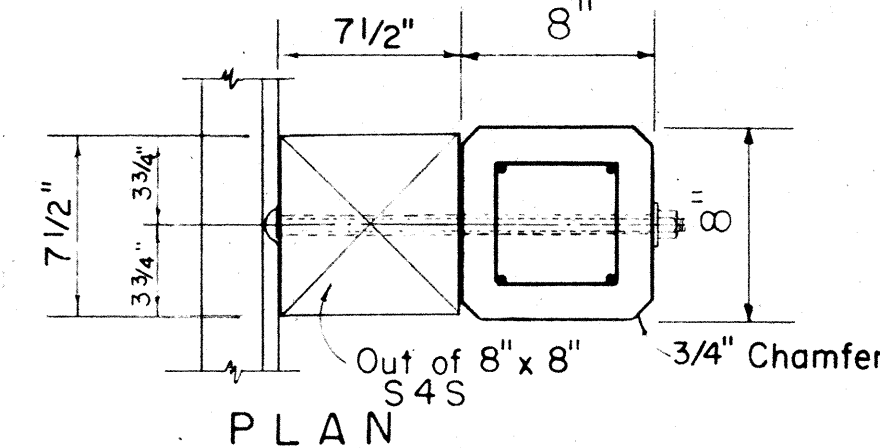
SPLICE BOLT SLOT FOR ALL ENDS

Scale: Full Size



RAIL ELEMENT SECTION

Scale: Half Full Size

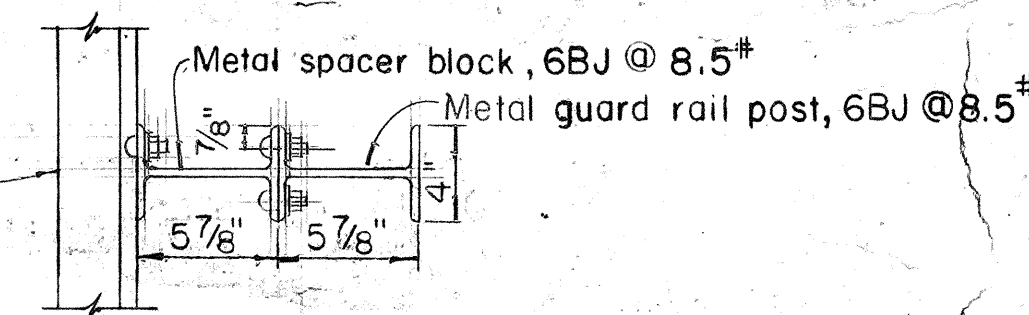


PLAN

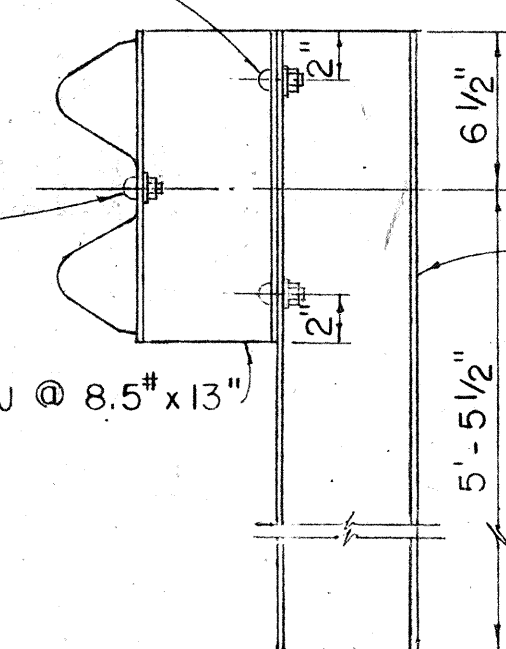
5/8" x 1 3/4" Galv. steel bolt, with galv. nut and washer, two required per block at alternate side of web

5/8" x 2" Galv. steel bolt, with galv. nut and washer, one required per splice

Metal spacer block 6BJ @ 8.5 x 13"

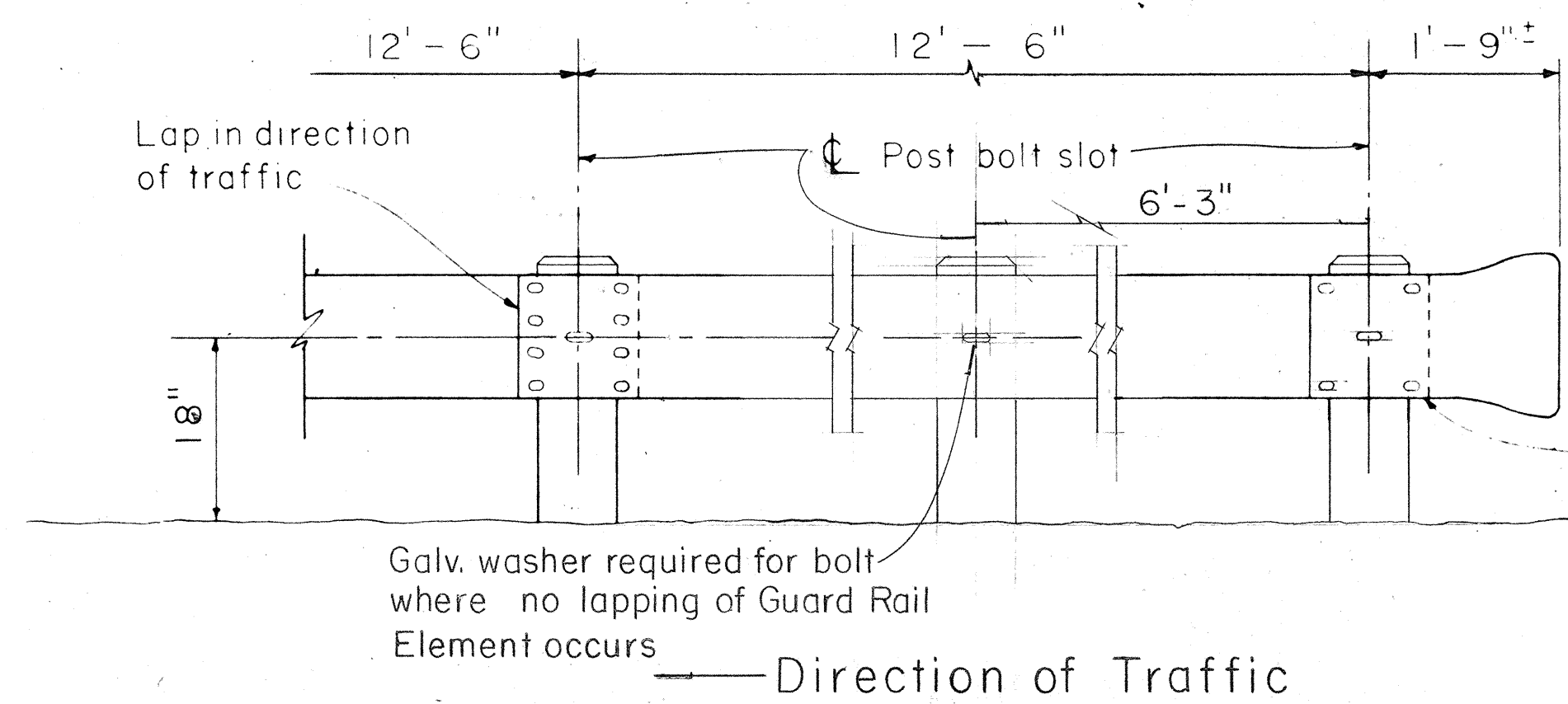


PLAN



DETAIL OF METAL POST AND METAL SPACER BLOCK

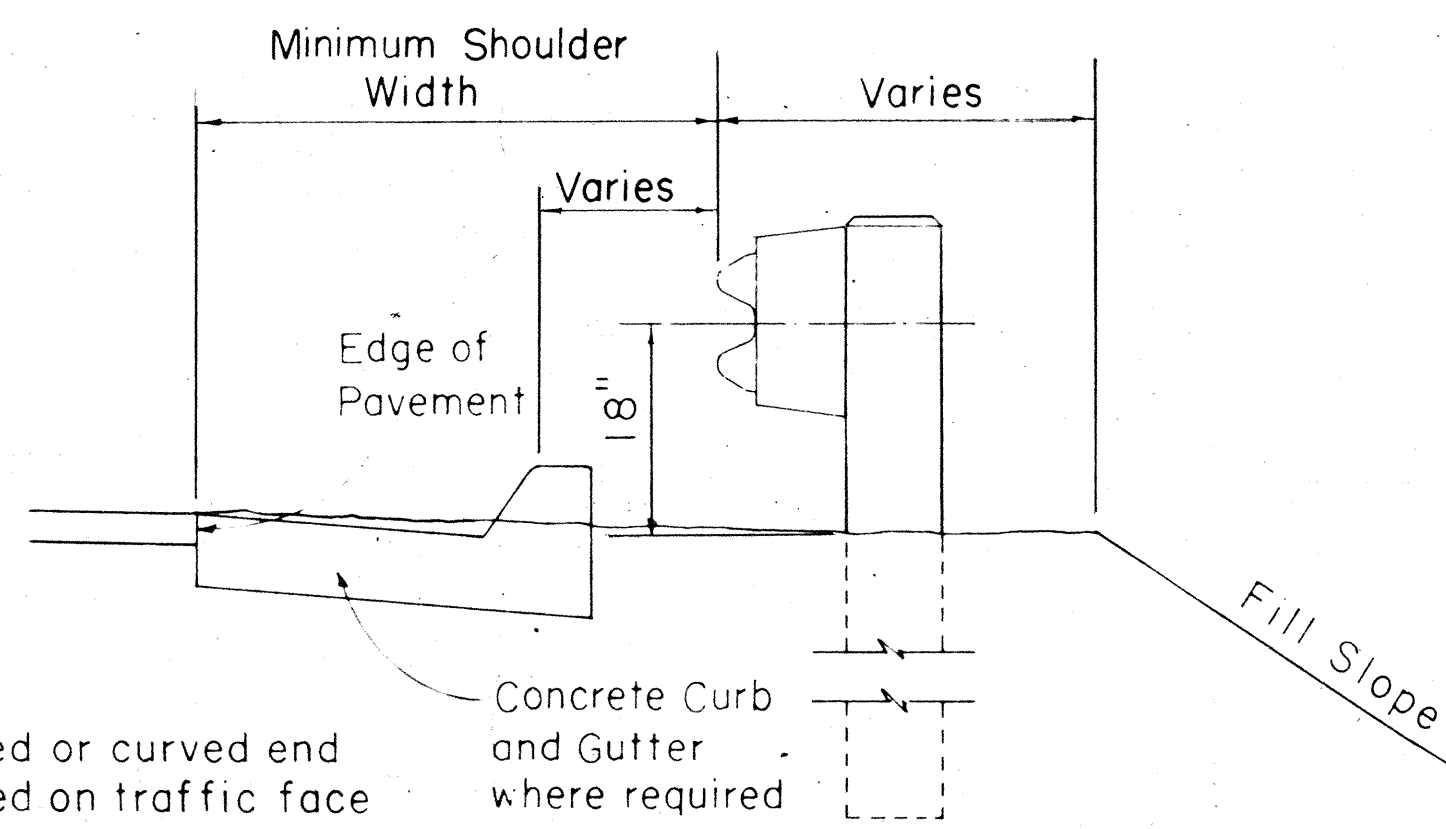
Scale: 1 1/2" = 1'-0"



STANDARD METAL GUARD RAIL ELEMENT

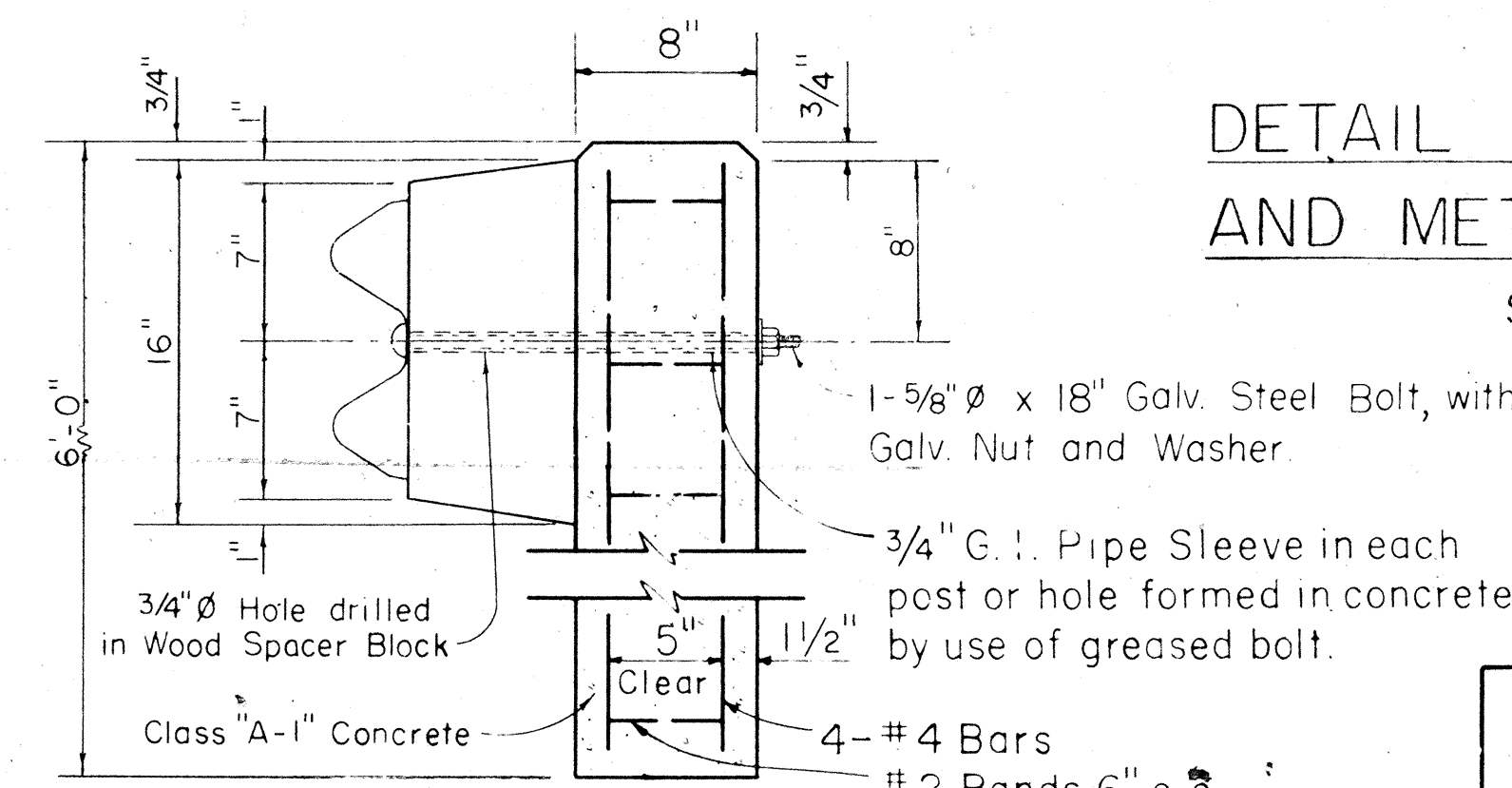
Scale: 3/4" = 1'-0"

NOTE: Guard Rail Element for posts spaced other than 6'-3" o.c. shall be cut and fabricated by the Contractor at no extra cost.



TYPICAL ELEVATION

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



DETAIL OF CONCRETE POST AND WOOD SPACER BLOCK

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

NOTE: 1. Concrete posts shall be precast, except on structures.
2. Concrete posts on structures shall be cast-in-place.
3. See specific Structure Plans for Post Anchorage Detail.
4. Wood Spacer Blocks shall be cut out of 8" x 8" S4S Douglas Fir, Construction Grade, and shall be painted with Creosote according to AASHTO specification No. M-133.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

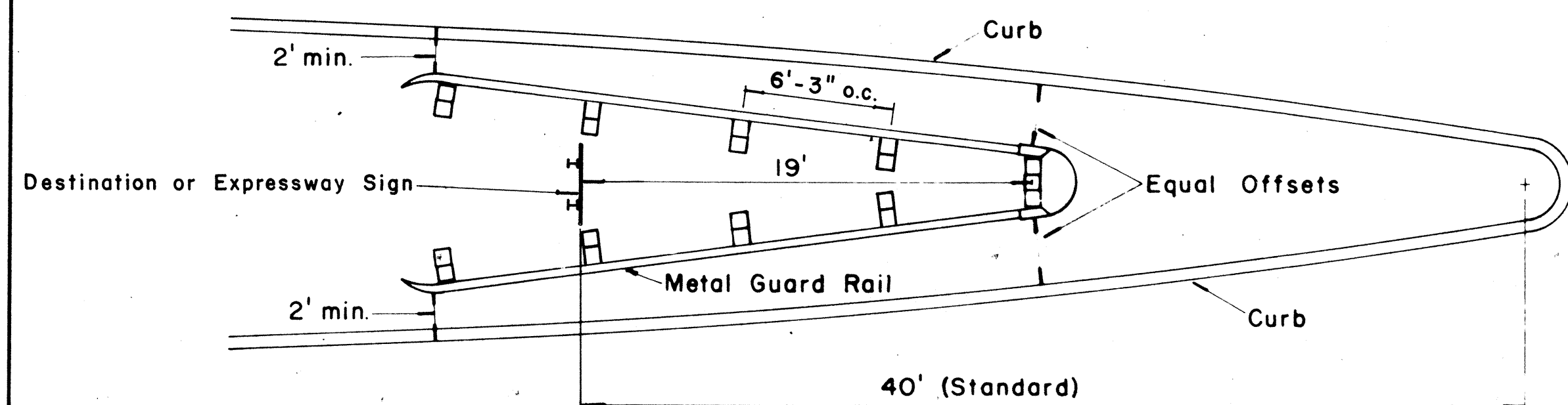
METAL GUARD RAIL

Scales: As Noted

Date: Dec. 1965

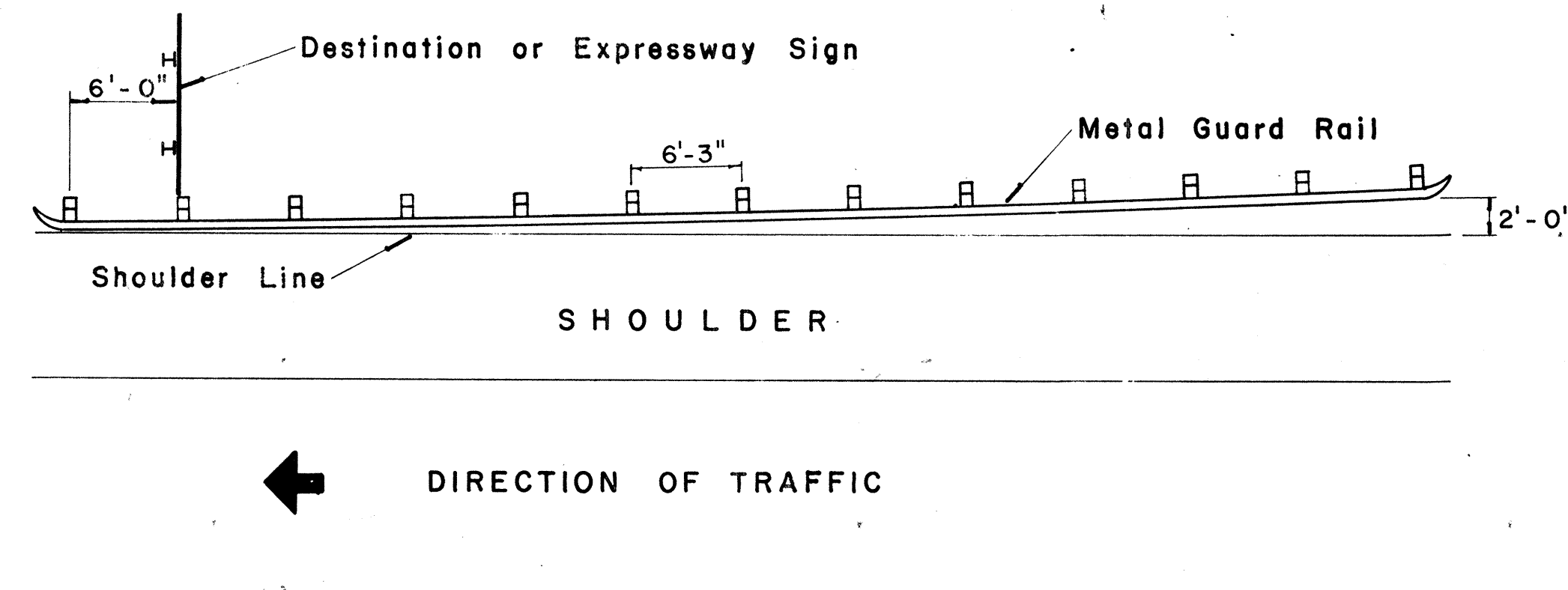
SHEET NO. 6 OF 8 SHEETS

DESIGNED BY
DRAWN BY
CHECKED BY
DATE



GORE MOUNTED SIGN

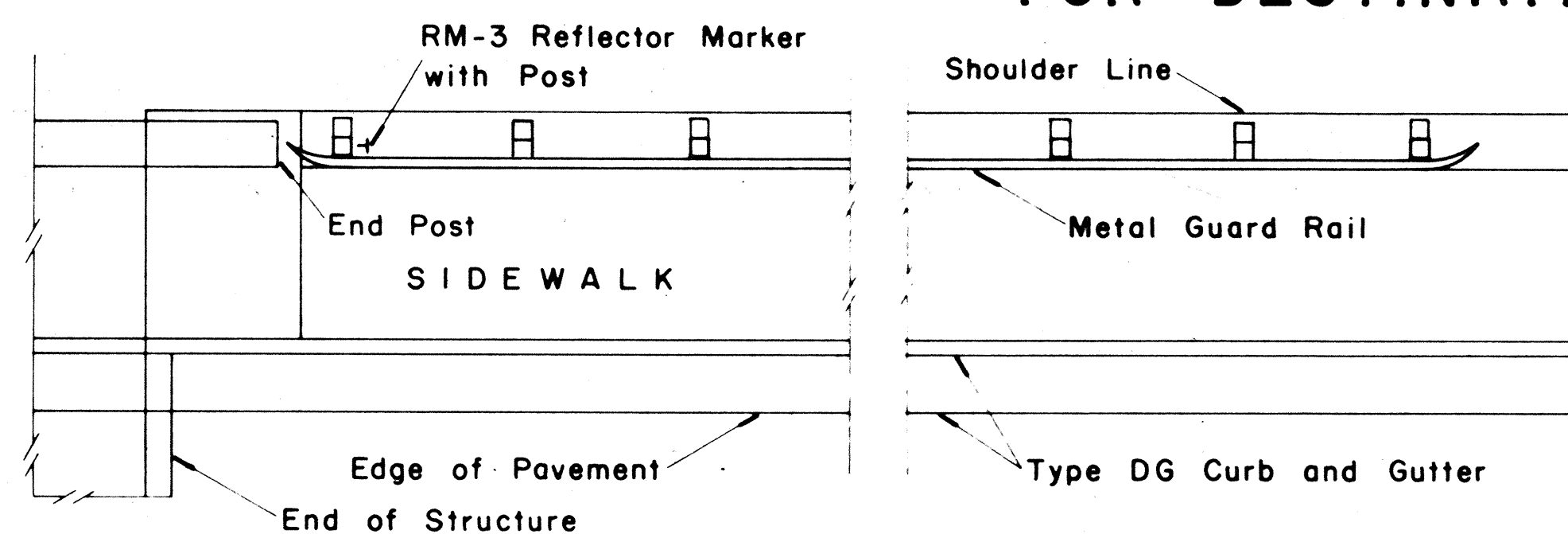
Scale: $\frac{3}{16}'' = 1' - 0''$



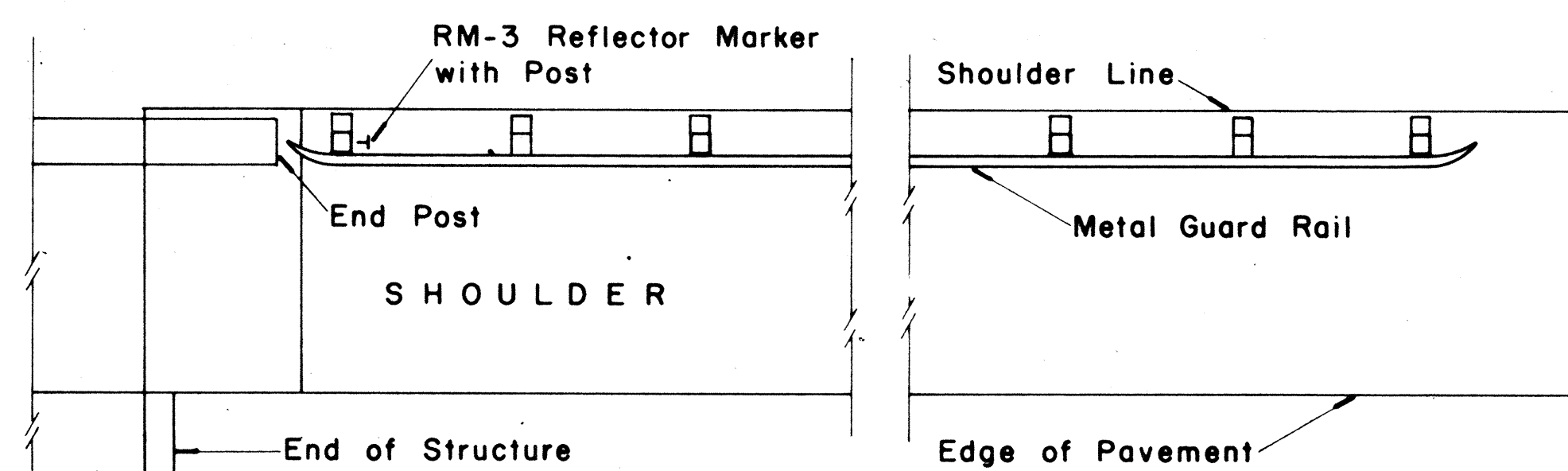
SHOULDER MOUNTED SIGN

Scale: $\frac{1}{8}'' = 1' - 0''$

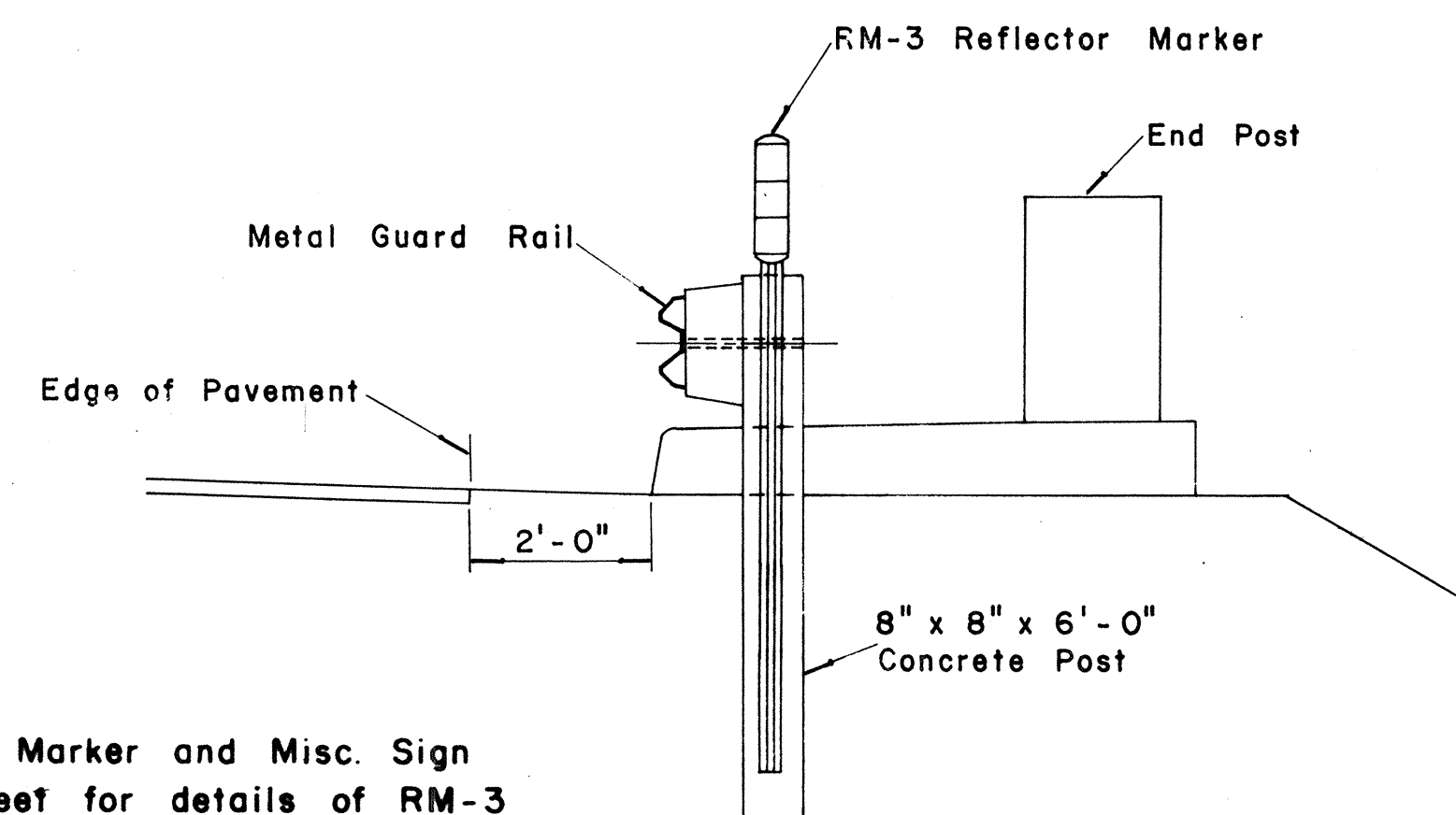
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE



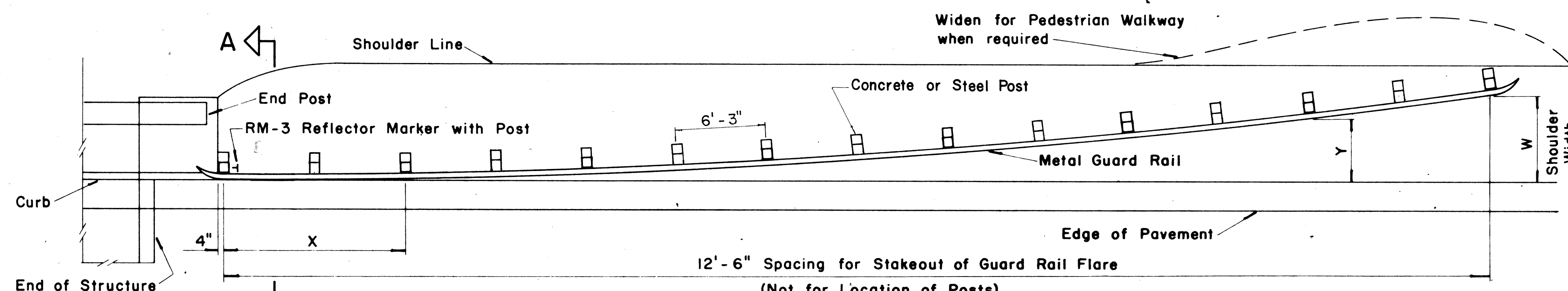
SHOULDER CARRIED THROUGH STRUCTURE



SECTION "A-A"

Scale: $\frac{1}{2}'' = 1' - 0''$

NOTE:
See F.A. Marker and Misc. Sign Detail sheet for details of RM-3 Reflector Marker with Post.



SHOULDER NOT CARRIED THROUGH STRUCTURE
INSTALLATION OF METAL GUARD RAIL FLARE AT STRUCTURES

Scale: $\frac{3}{16}'' = 1' - 0''$

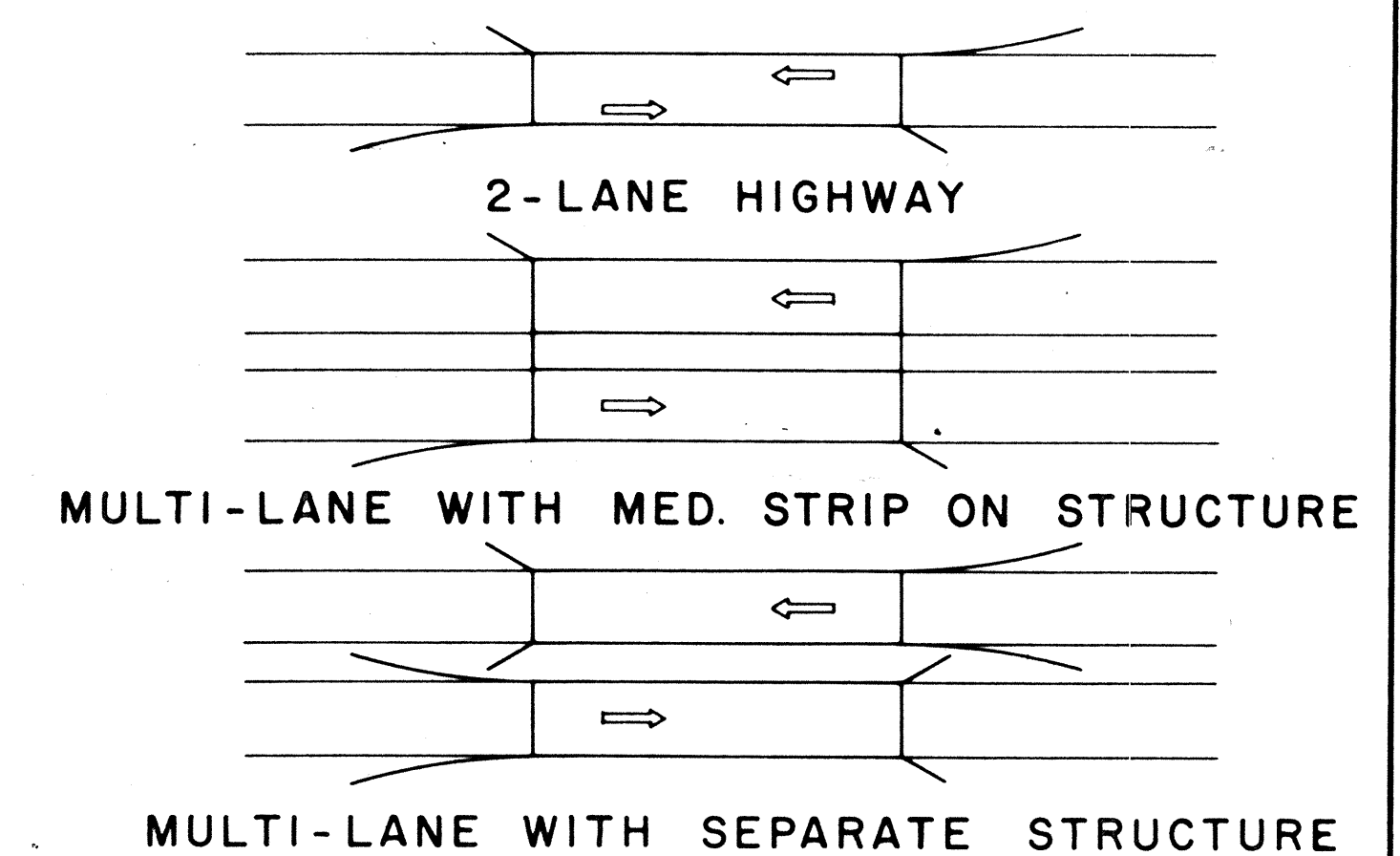
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48
125.0						8.00

W = GUARD RAIL FLARE

X = DISTANCE FROM POST AT BRIDGE TO OFFSET POINTS

Y = GUARD RAIL FLARE OFFSET

GUARD RAIL OFFSET

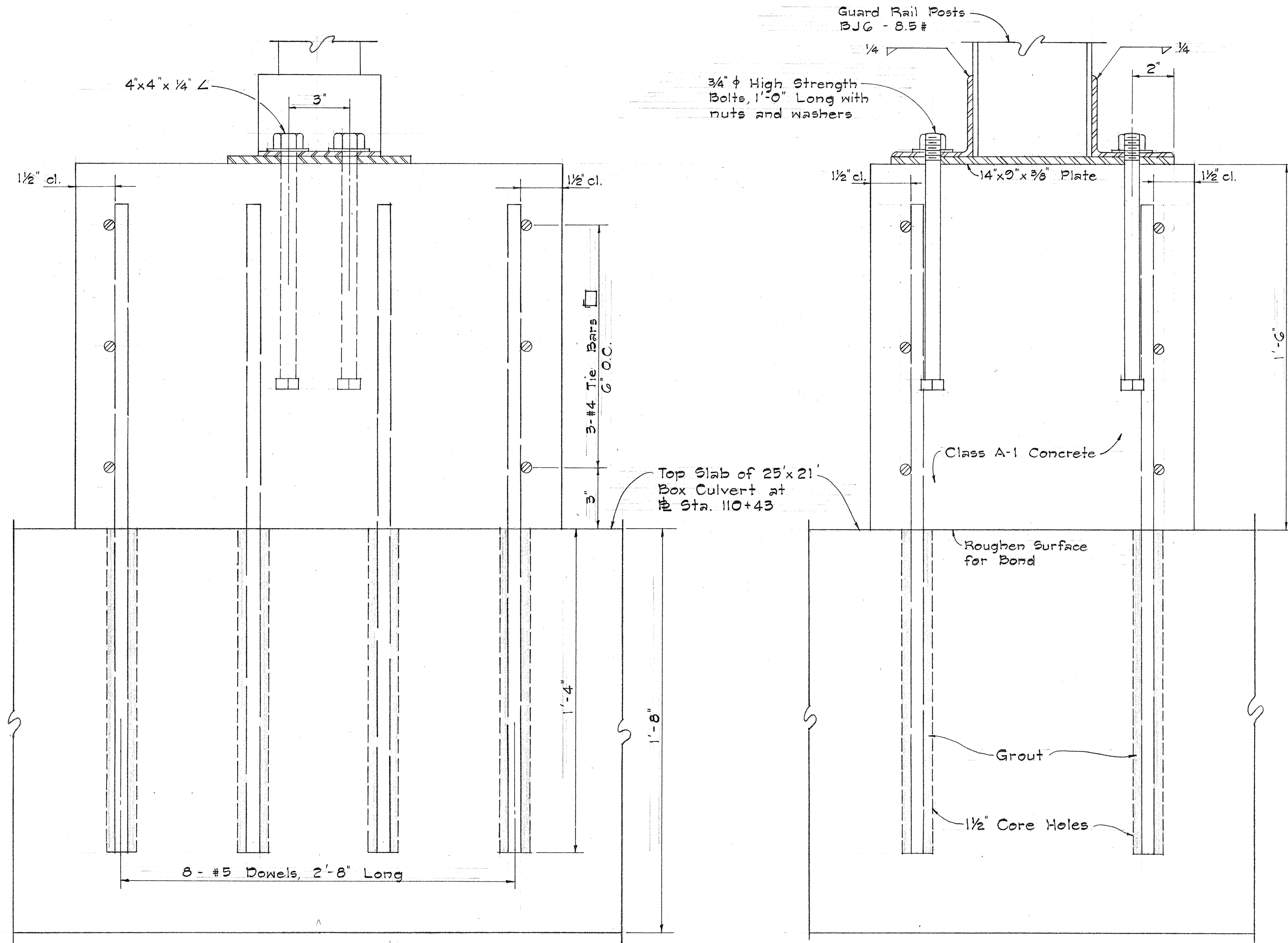
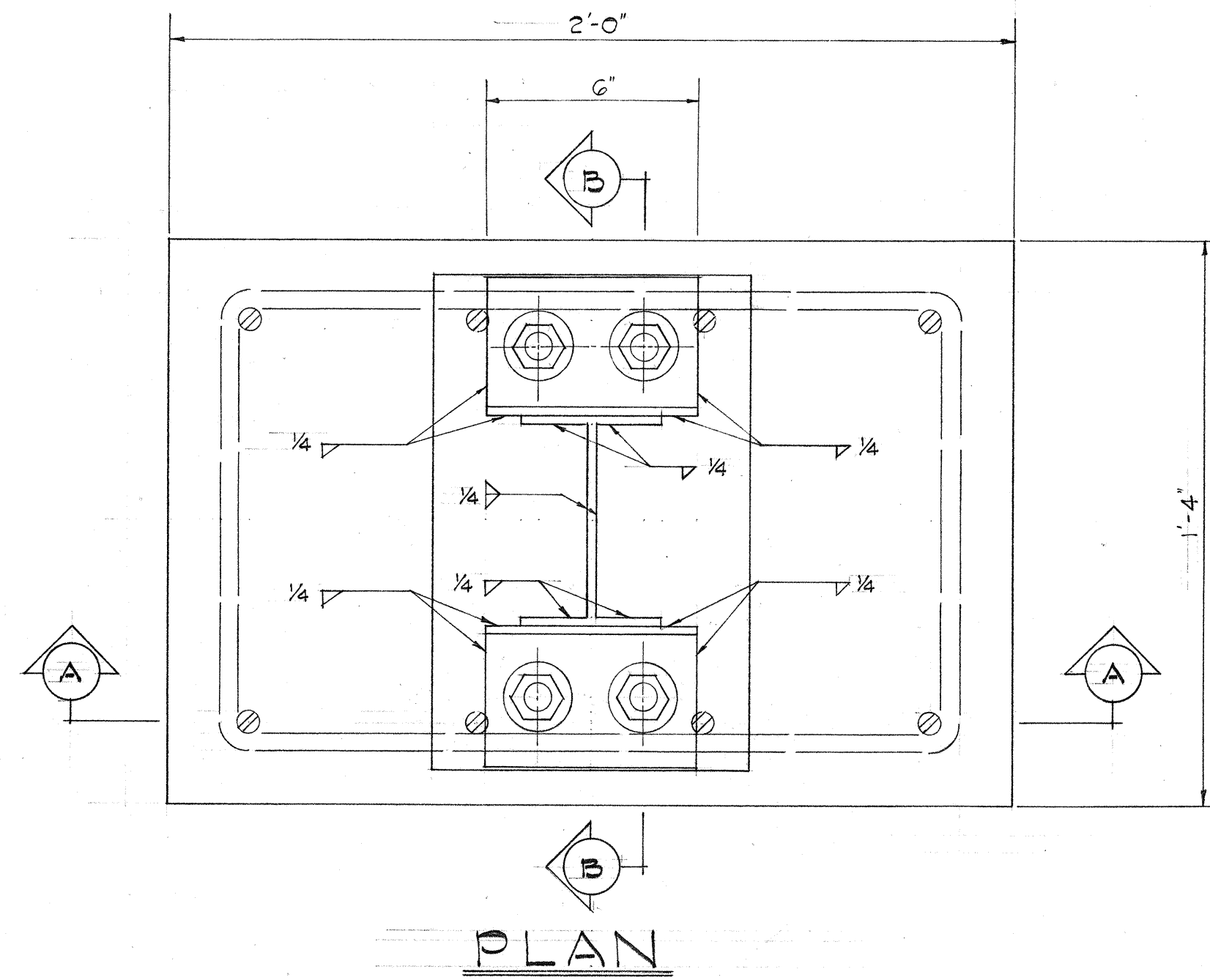


TYPICAL GUARD RAIL FLARES AT STRUCTURE APPROACHES

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS
METAL GUARD RAILS
AT
STRUCTURES & GUIDE SIGNS
Scale: As Noted Date: Dec. 1965
SHEET No. OF SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(19)	1966	29	69



SECTION A-A

SECTION B-B

CONC. FOOTING FOR GUARD RAIL

Scale: 3" = 1'-0"

NOTE:

1. Metal Guard Rail Posts shall be used for the installation of Guard Rail on 25'x21' Box Culvert at Sta. 110+43 Lt.
2. All materials and all work necessary for the installation of metal posts and footings for guard rails on box culvert, shall be considered incidental to Item No. 80(2)B "Metal Guard Rail-Metal Posts" or Item No. 80(2)C "Metal Guard Rail-Precast Concrete Posts."

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARD RAIL DETAIL
ON 25'x21' BOX CULV'T.
AT STA. 110+43

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(19)

Scale: 3" = 1'-0" Date: Dec. 1965

SHEET No. 8 OF 8 SHEETS