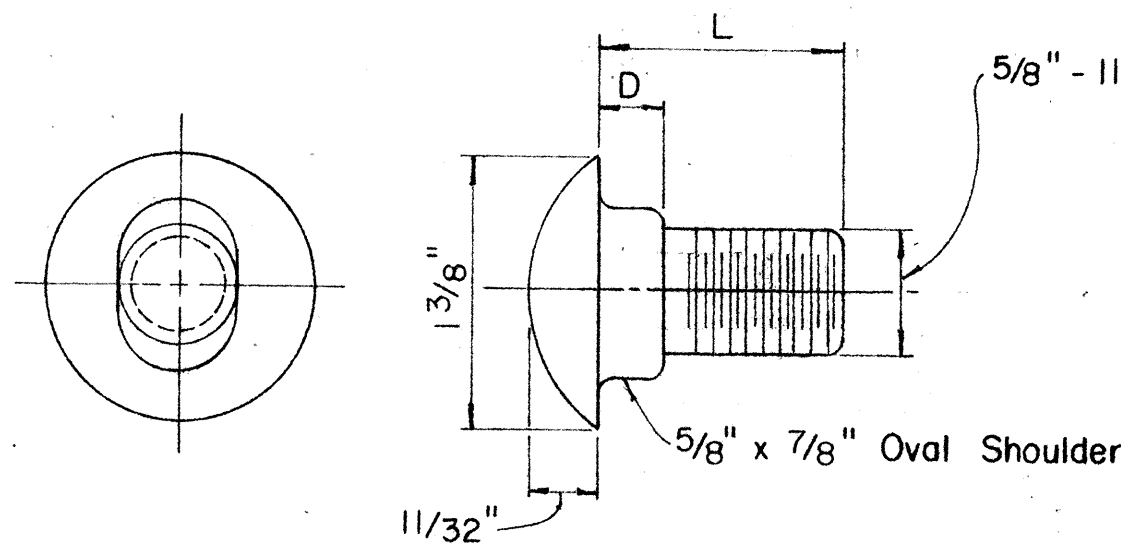
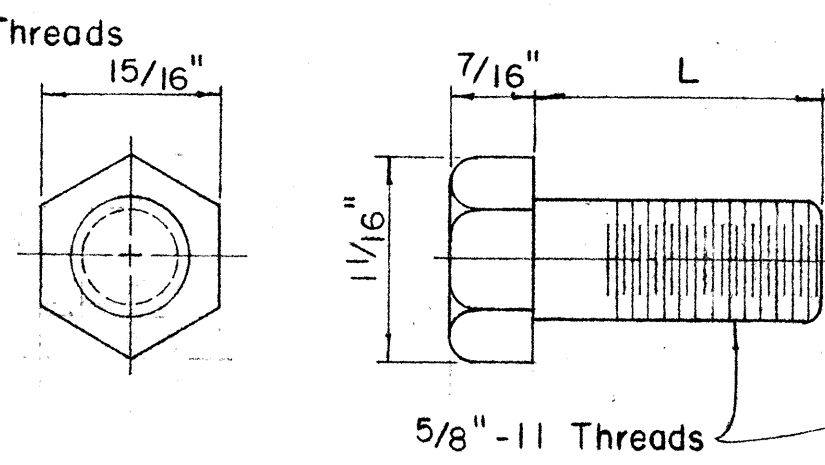


BOLT DIMENSIONS TYPE A BOLT		
	D	L
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	25"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	18"
Rail Bolt for Metal Block	3/32"	2"

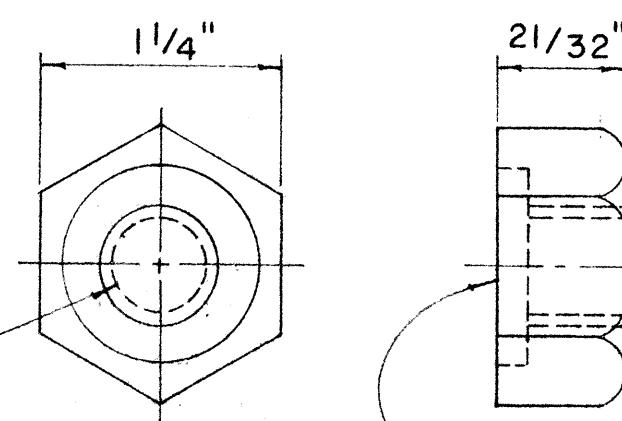
BOLT DIMENSIONS TYPE B BOLT		L
Post Bolt for Conc. Post w/ Metal Blocks		9 1/2"
Post Bolt for Metal Post w/ Metal Block		13 3/4"



TYPE A BOLT



TYPE B BOLT



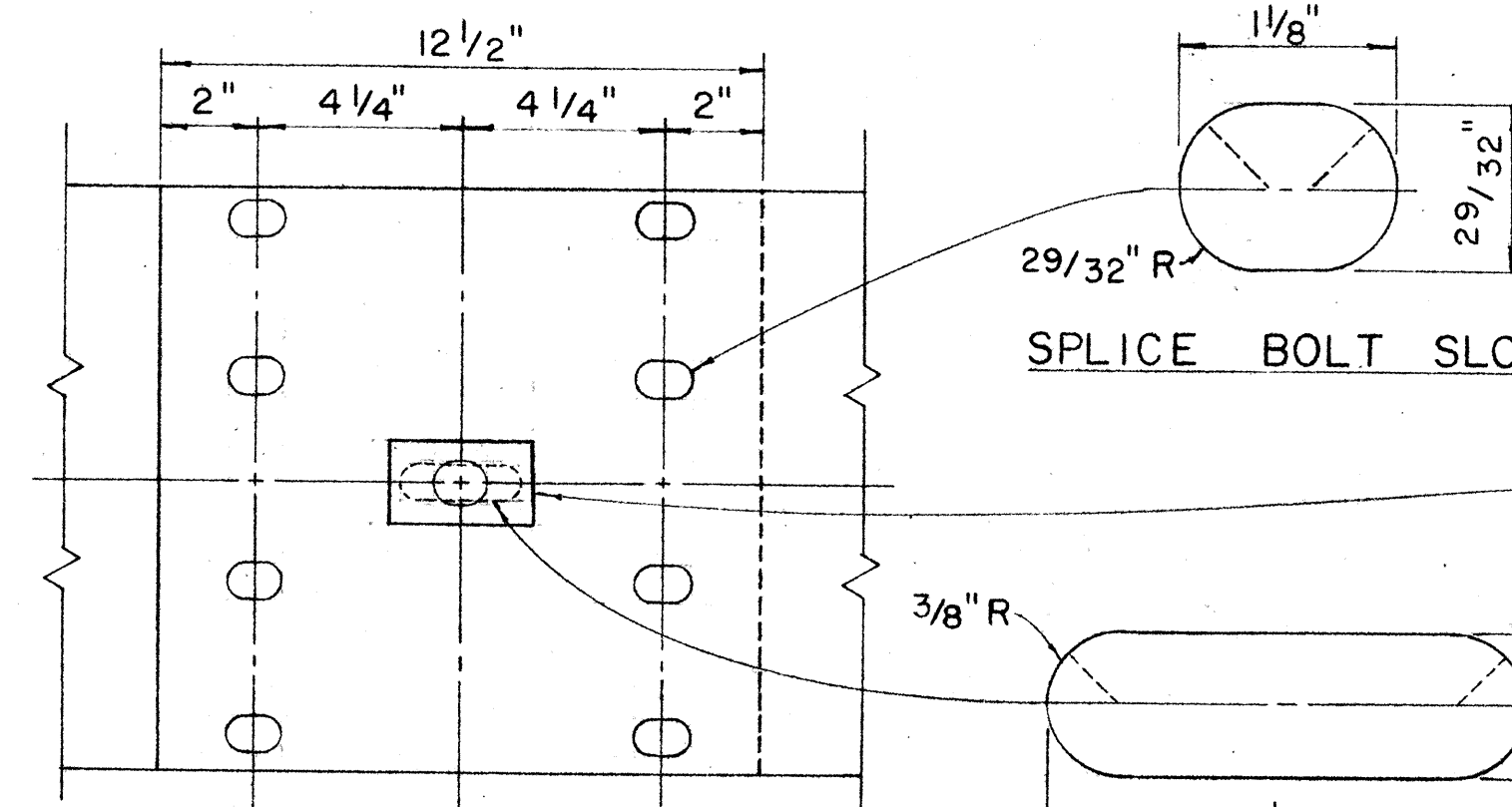
HEXAGON NUT

Scale: Full Size

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

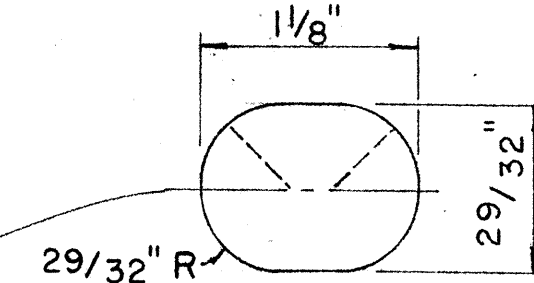
SPLICE RAIL AND POST BOLTS

Scale: Full Size



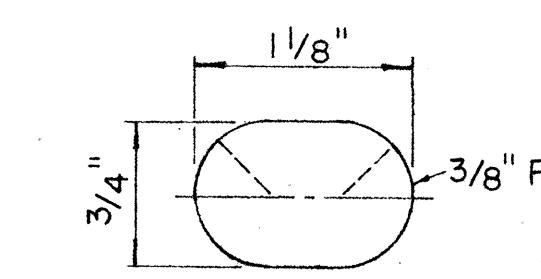
RAIL SPLICE

Scale: 3" = 1'-0"

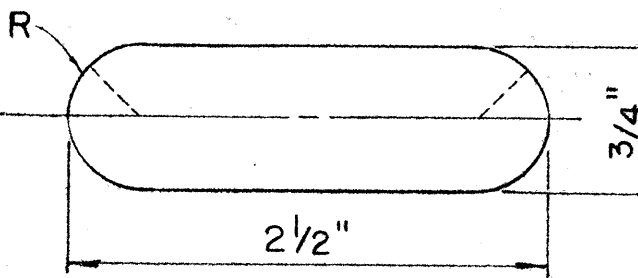


SPLICE BOLT SLOT

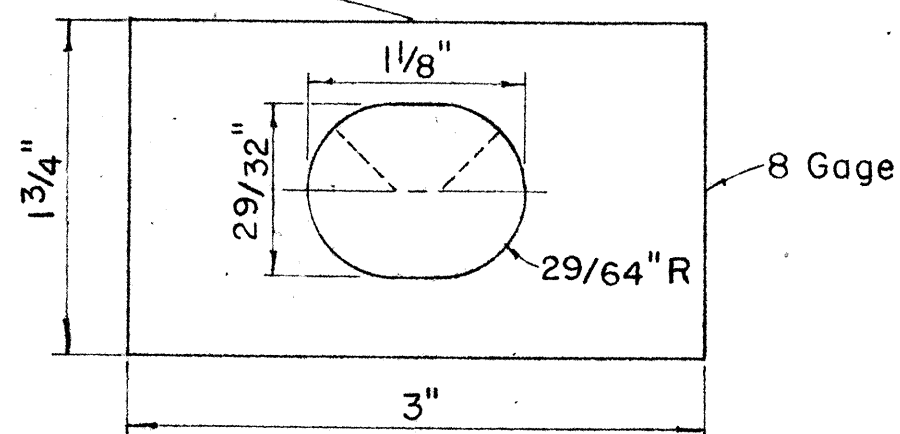
Scale: Full Size



SPLICE BOLT SLOT
FOR ALL ENDS

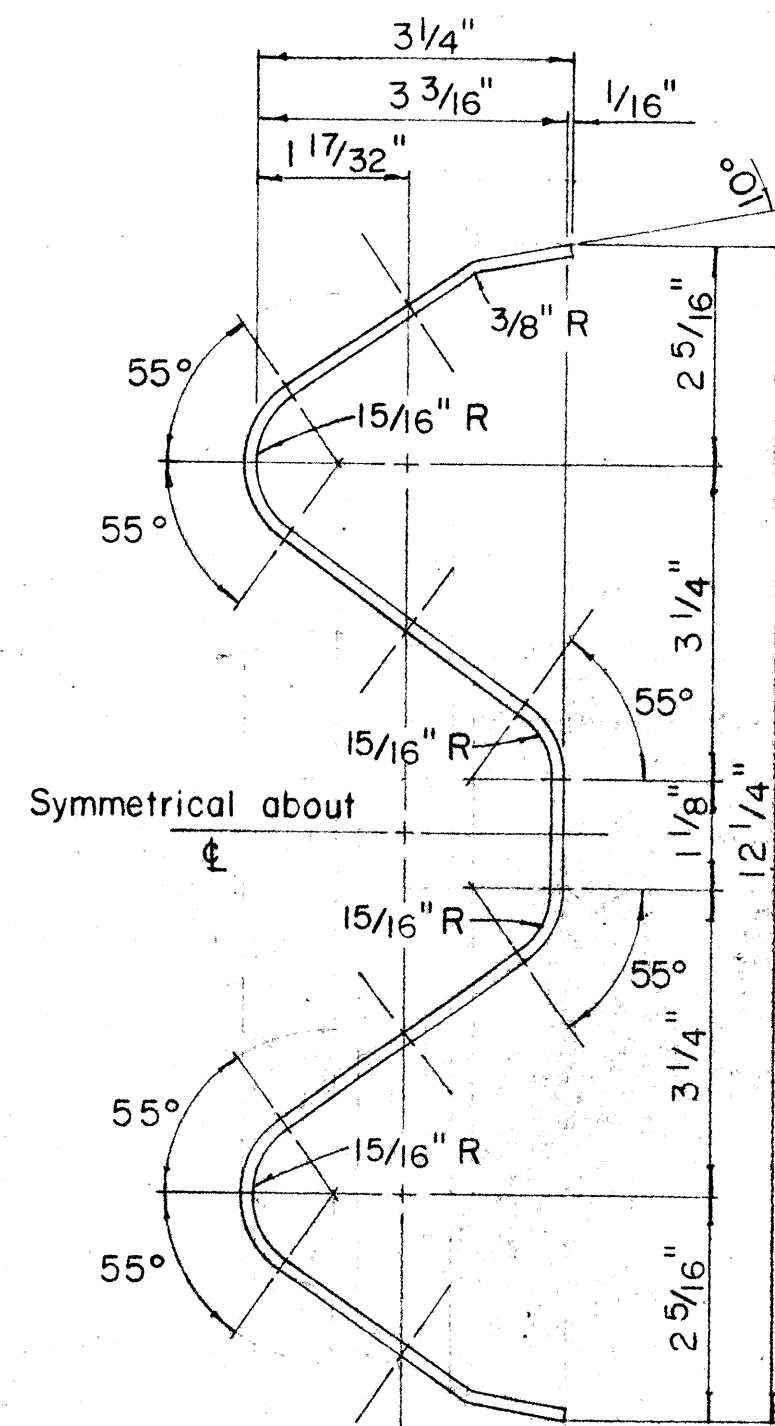


POST BOLT SLOT



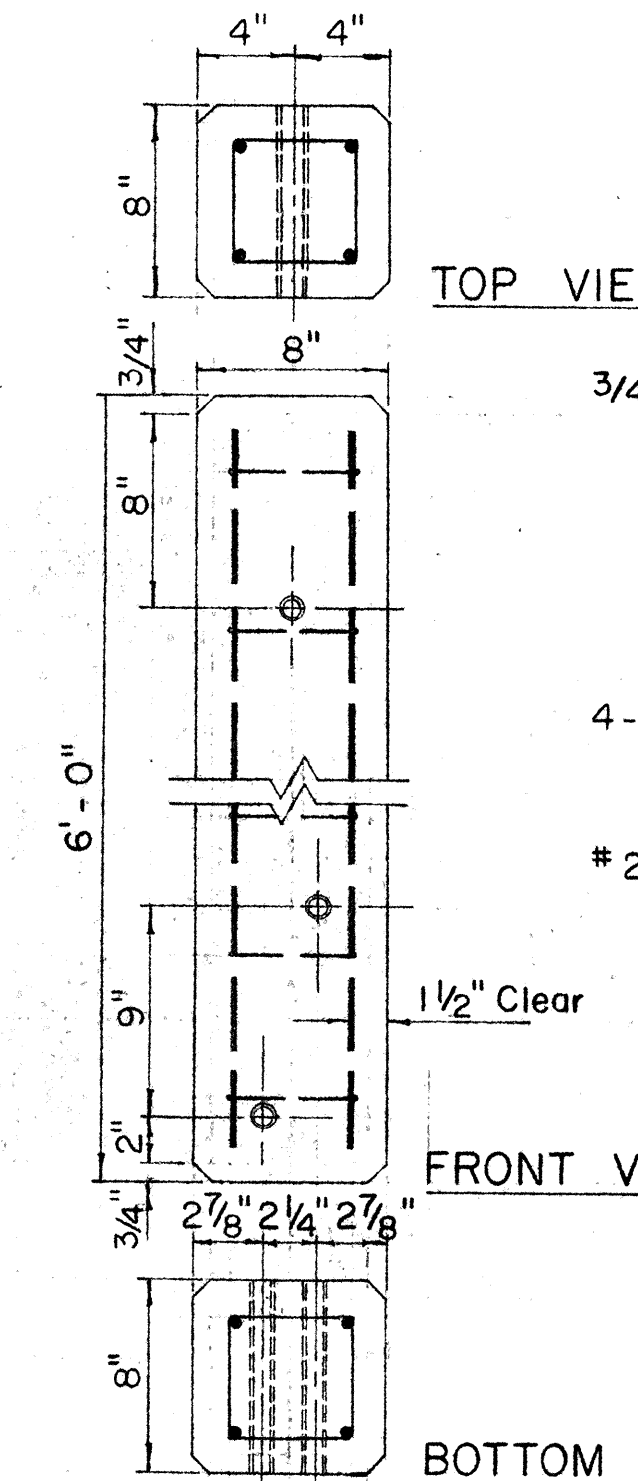
RAIL WASHER

NOTE:
Concrete post shall be precast



RAIL ELEMENT SECTION

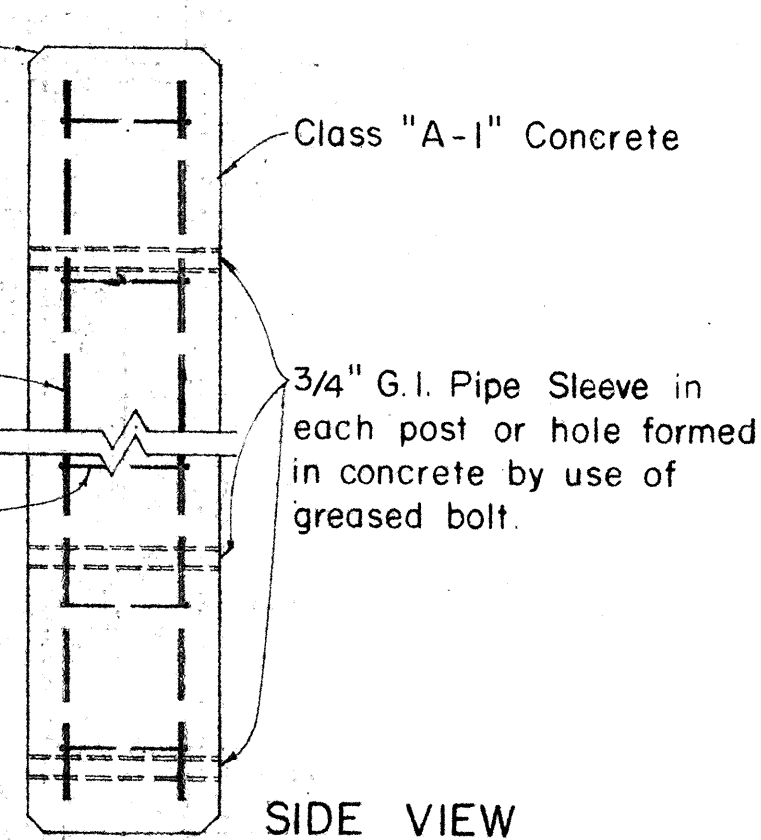
Scale: 6" = 1'-0"



TOP VIEW

FRONT VIEW

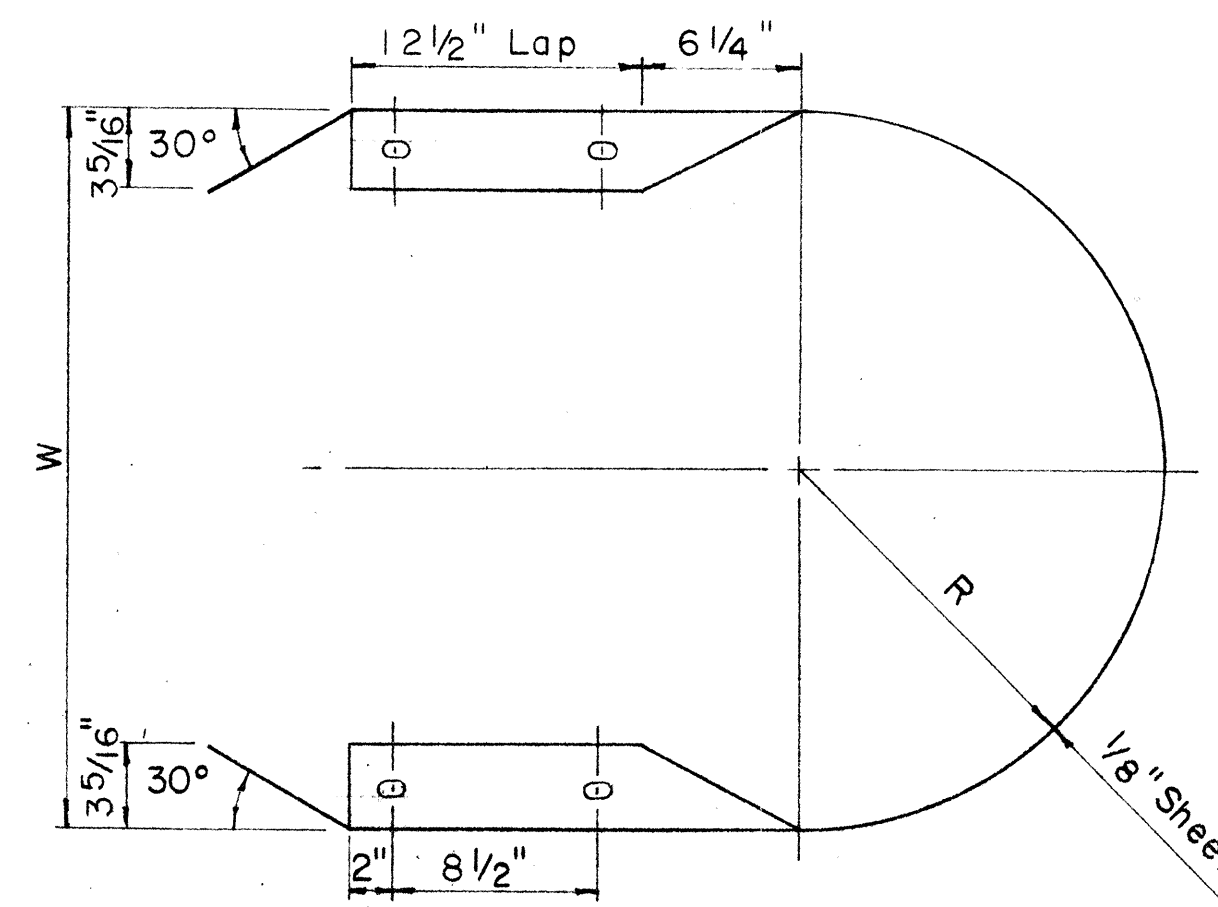
BOTTOM VIEW



SIDE VIEW

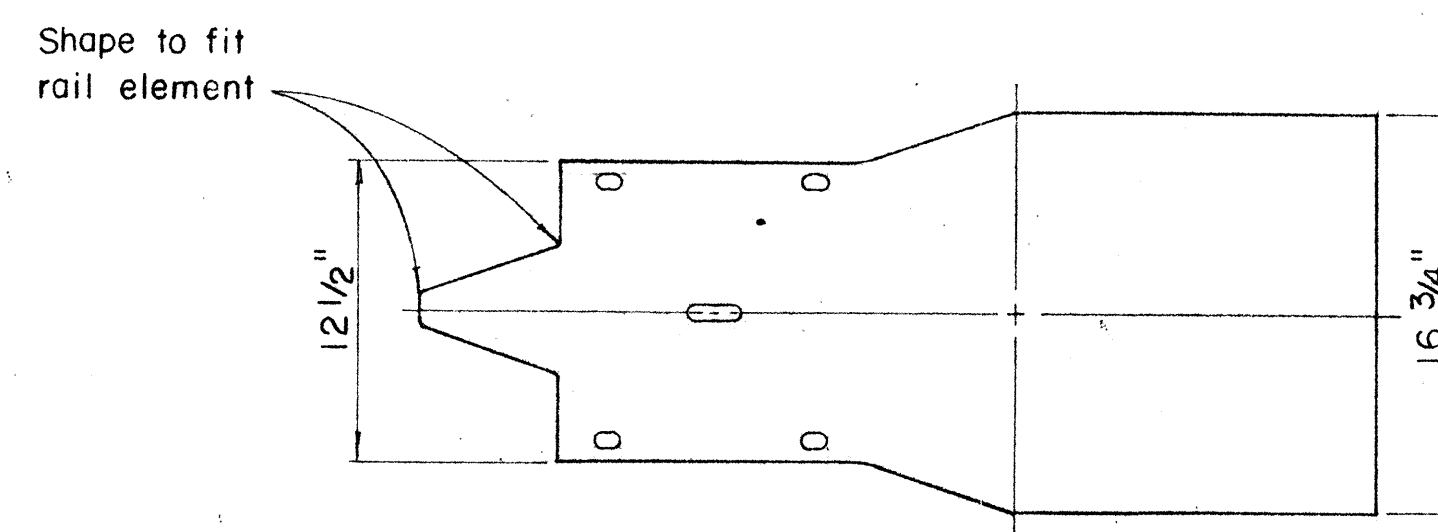
DETAIL OF CONCRETE POST

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



FLARED END

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

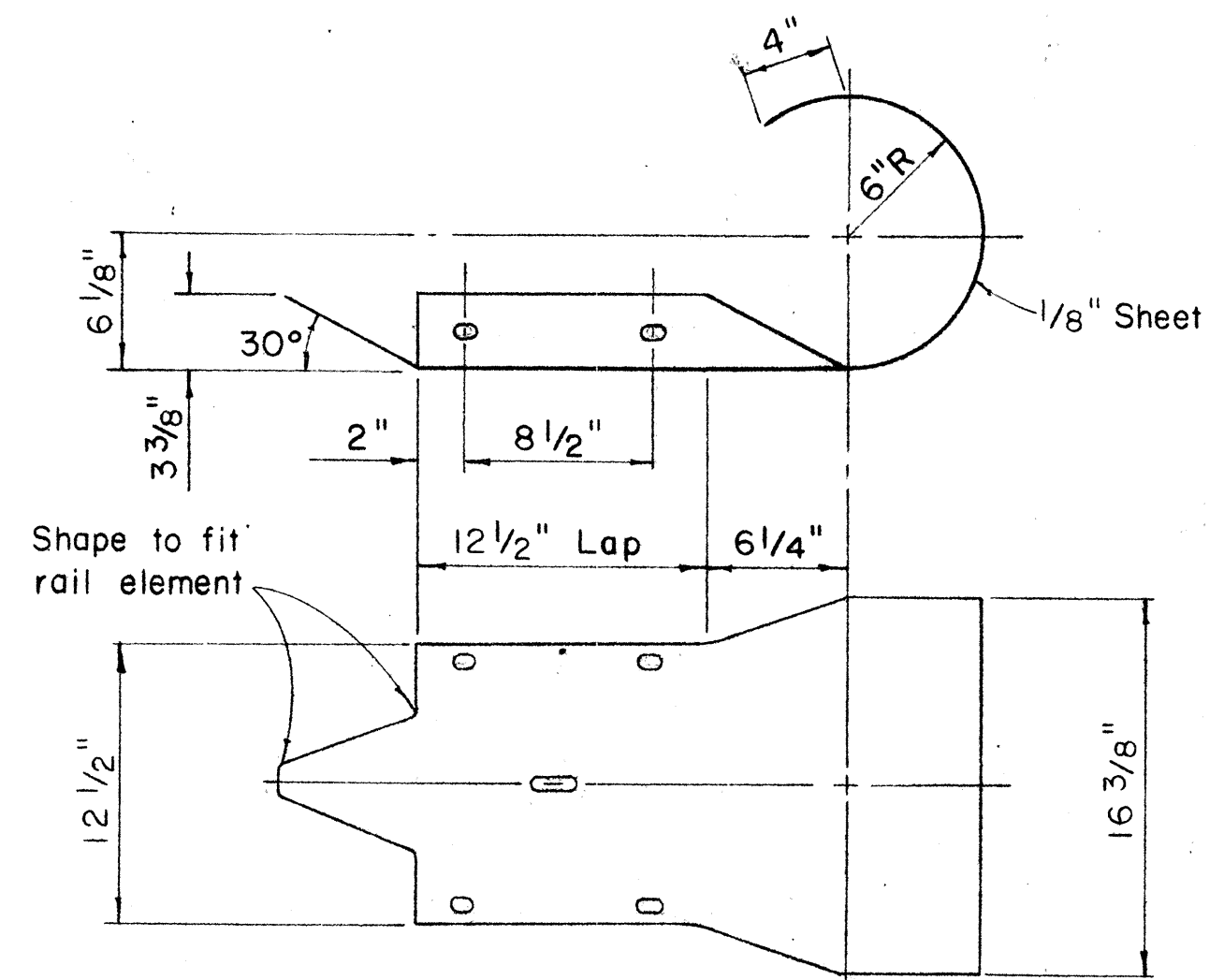


MEDIAN END

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

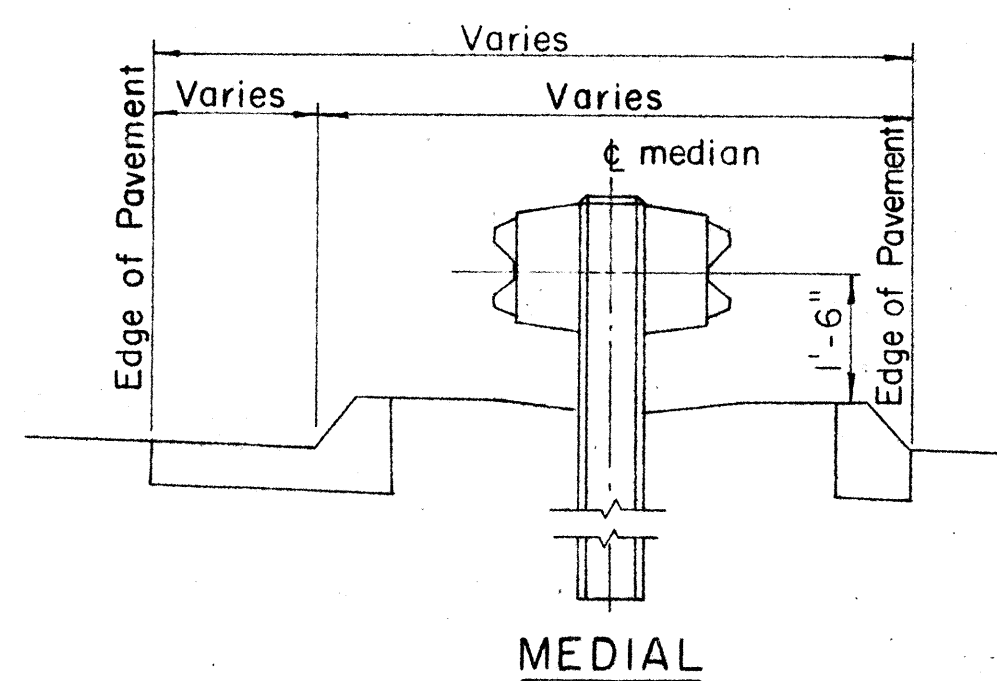
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJ6)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJ6)	24 3/8"	12 3/16"

MEDIAN END DIMENSIONS



CURVED END

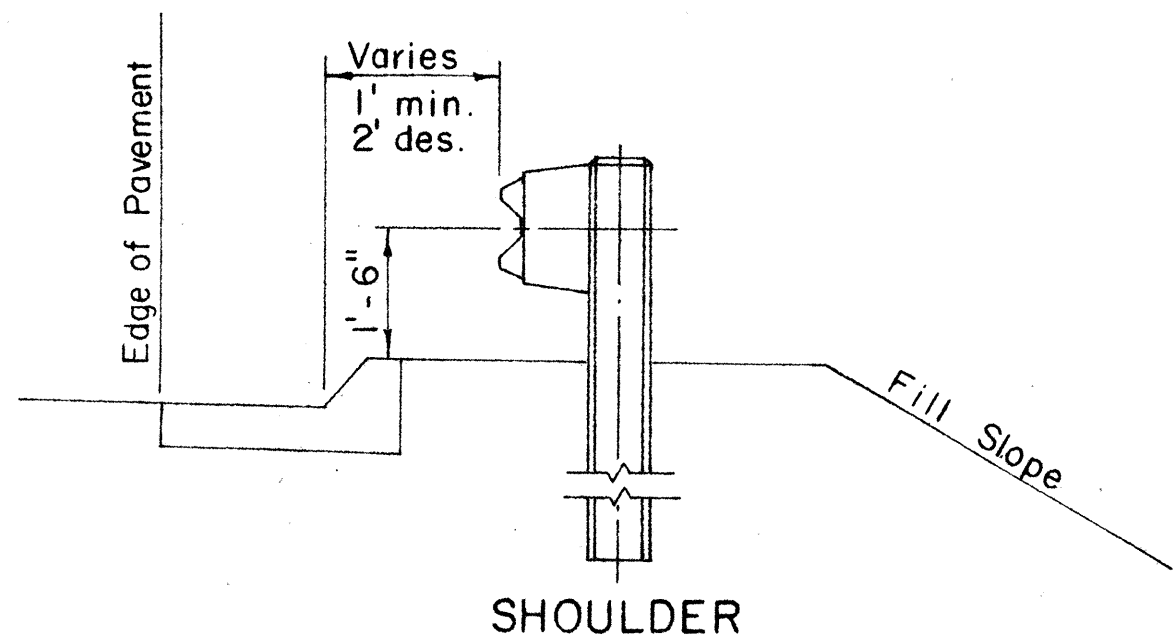
Scale: 1 1/2" = 1'-0"



MEDIAL

TYPICAL GUARD RAIL DETAIL

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



SHOULDER

REVISED: June 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

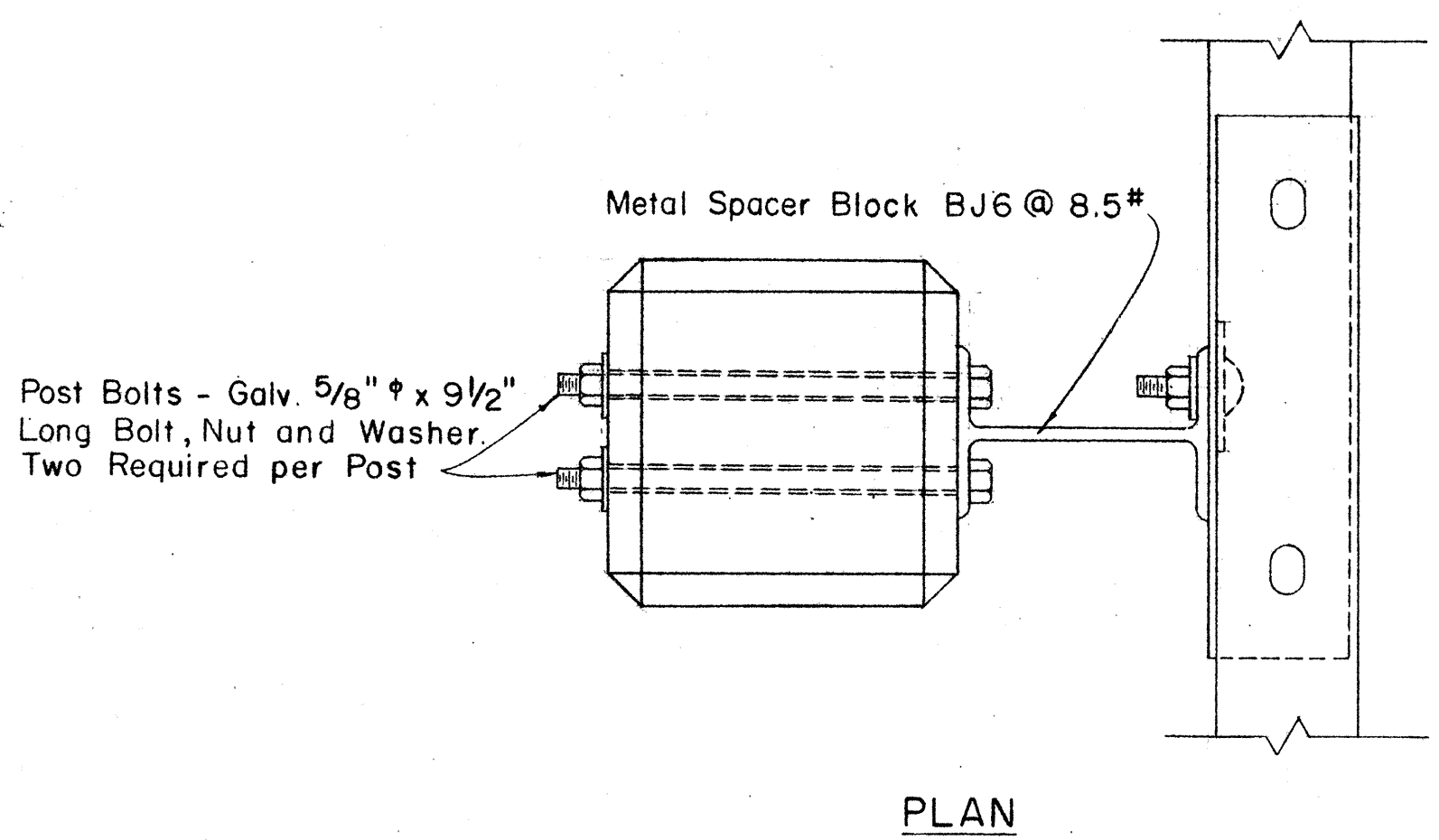
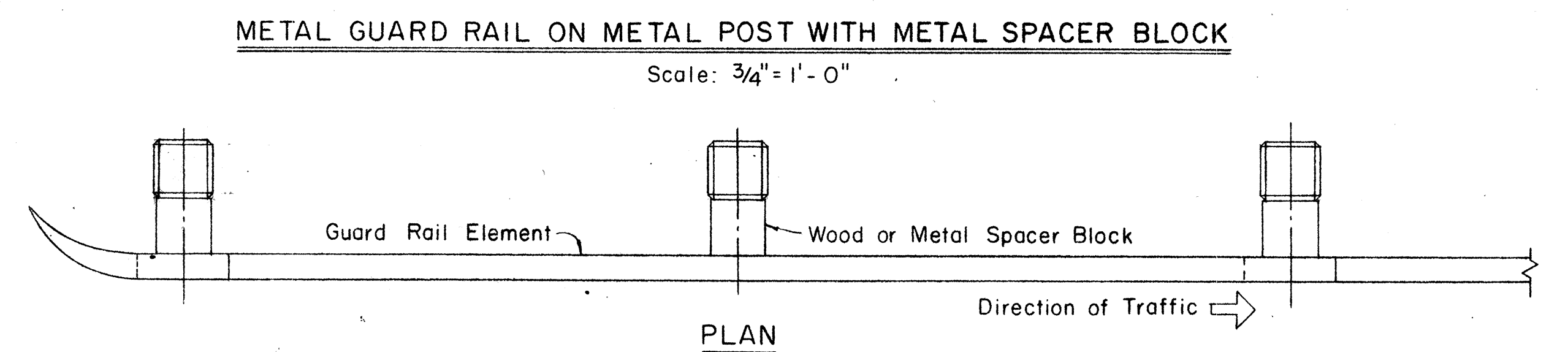
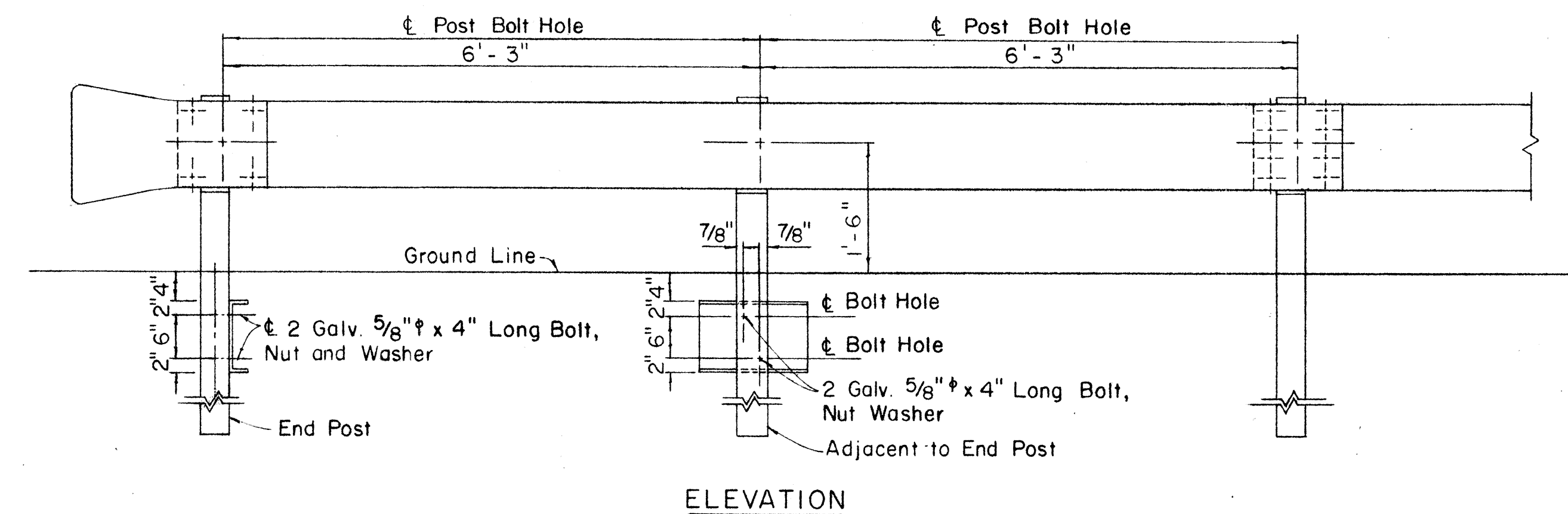
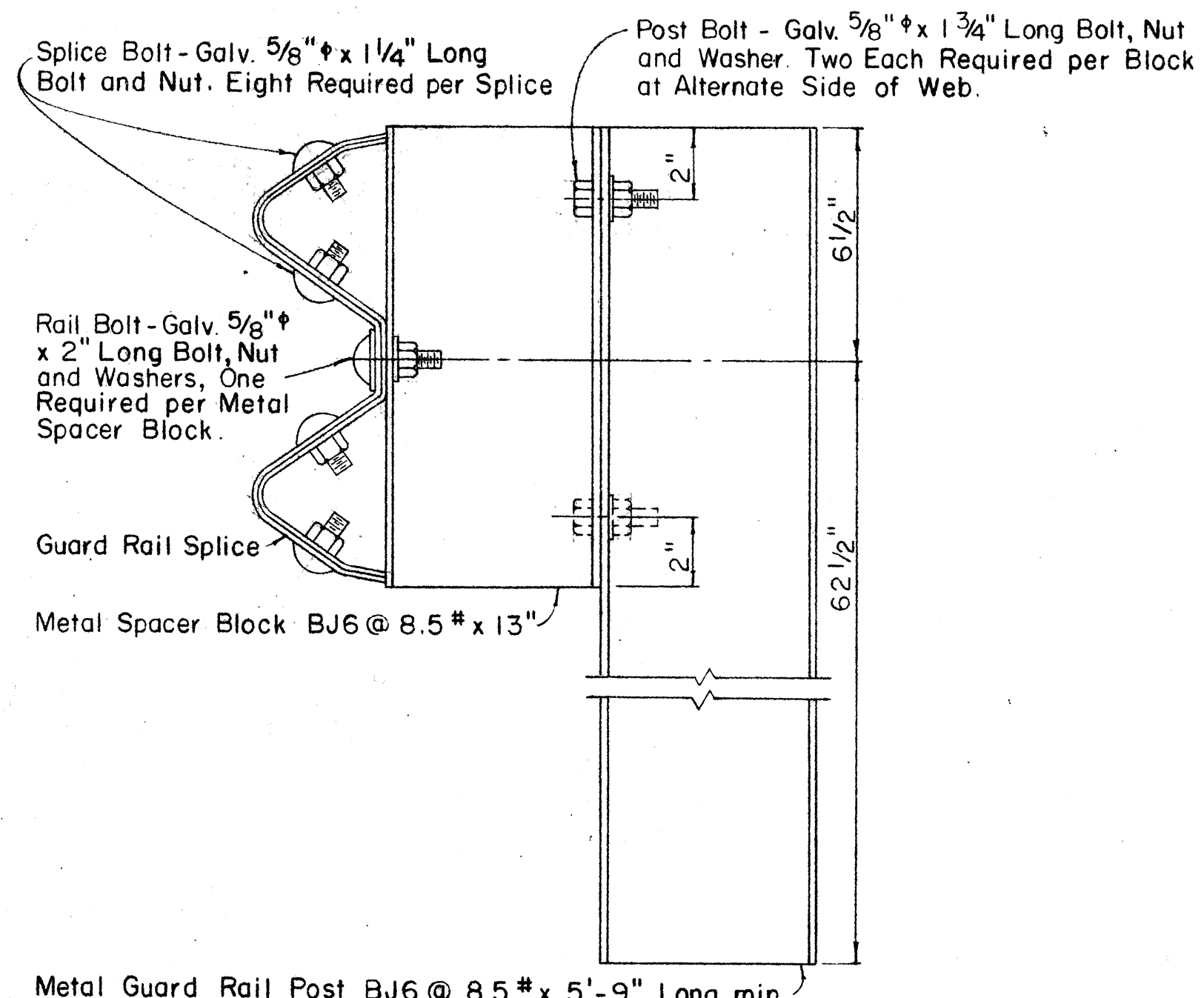
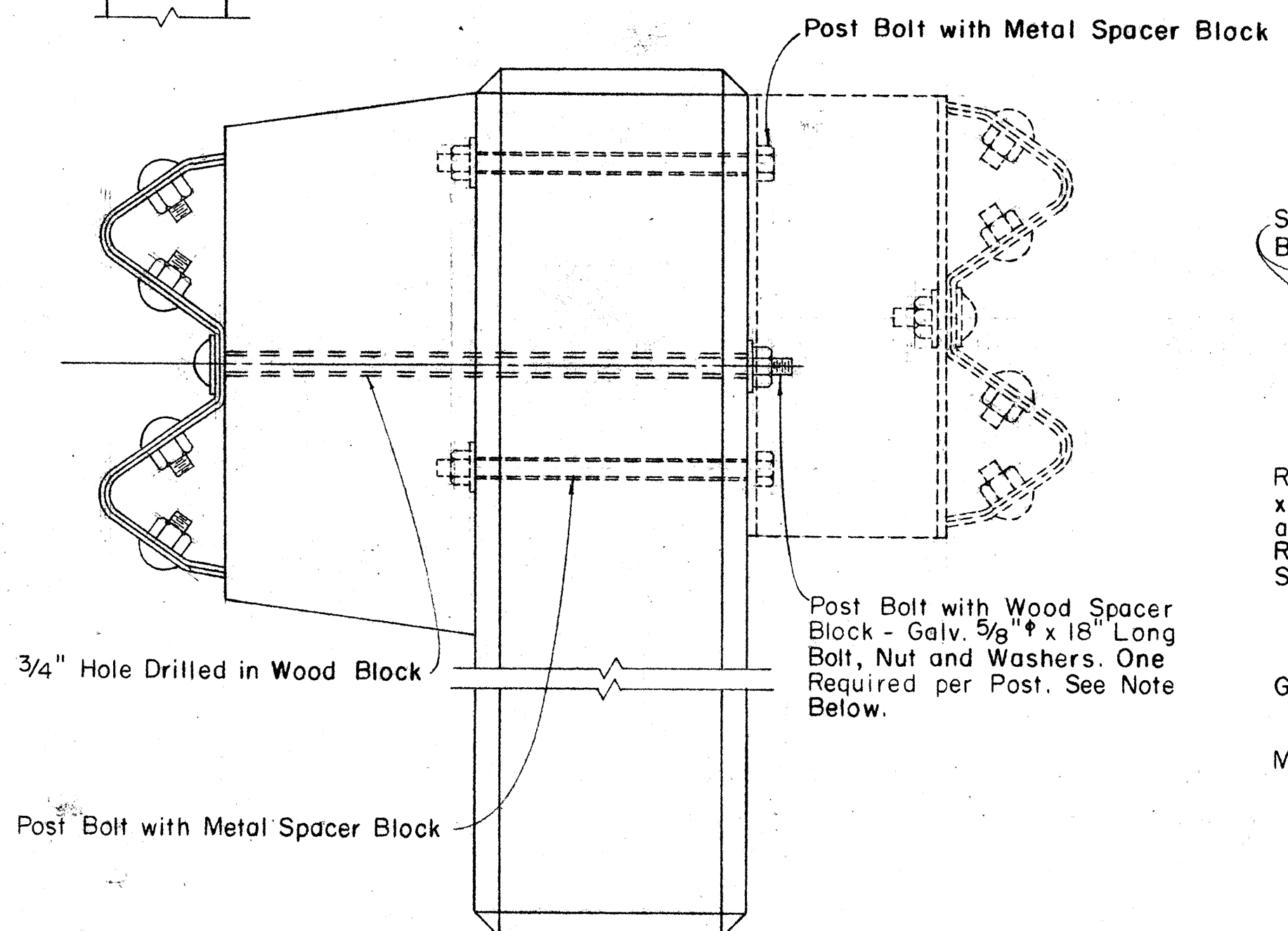
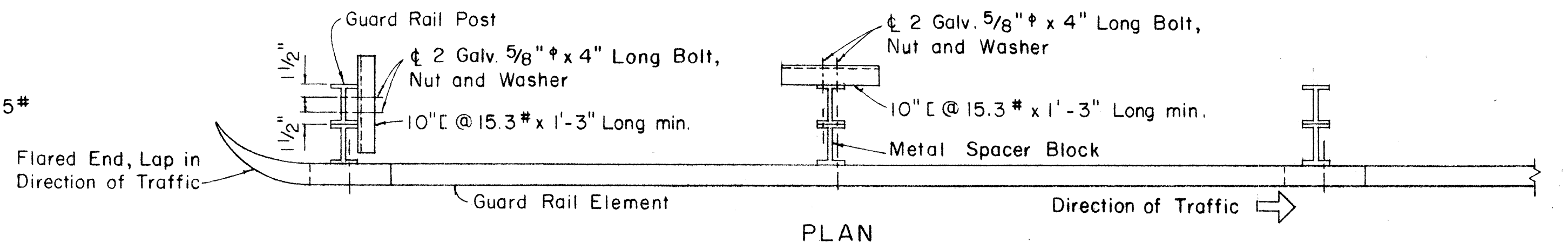
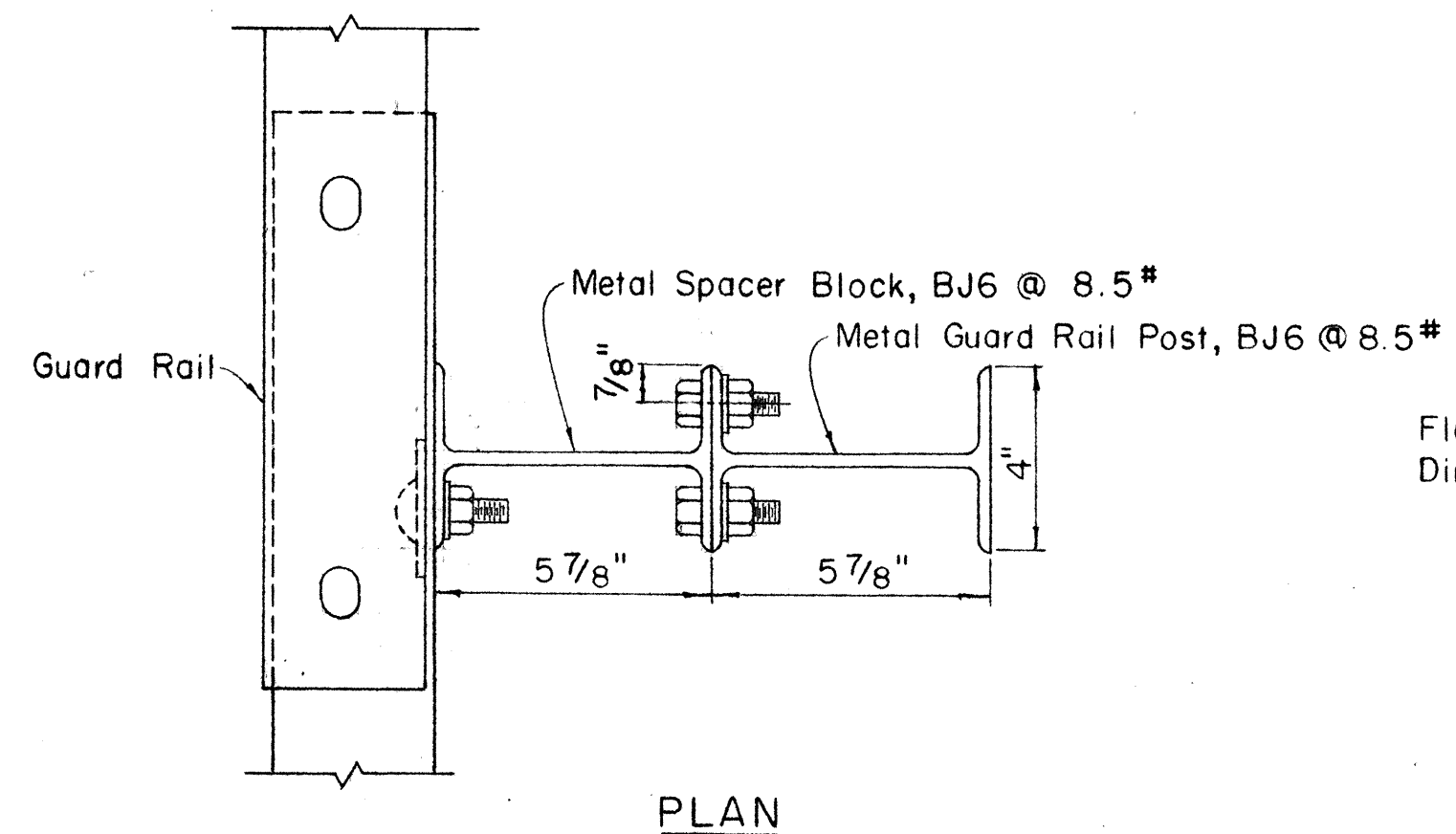
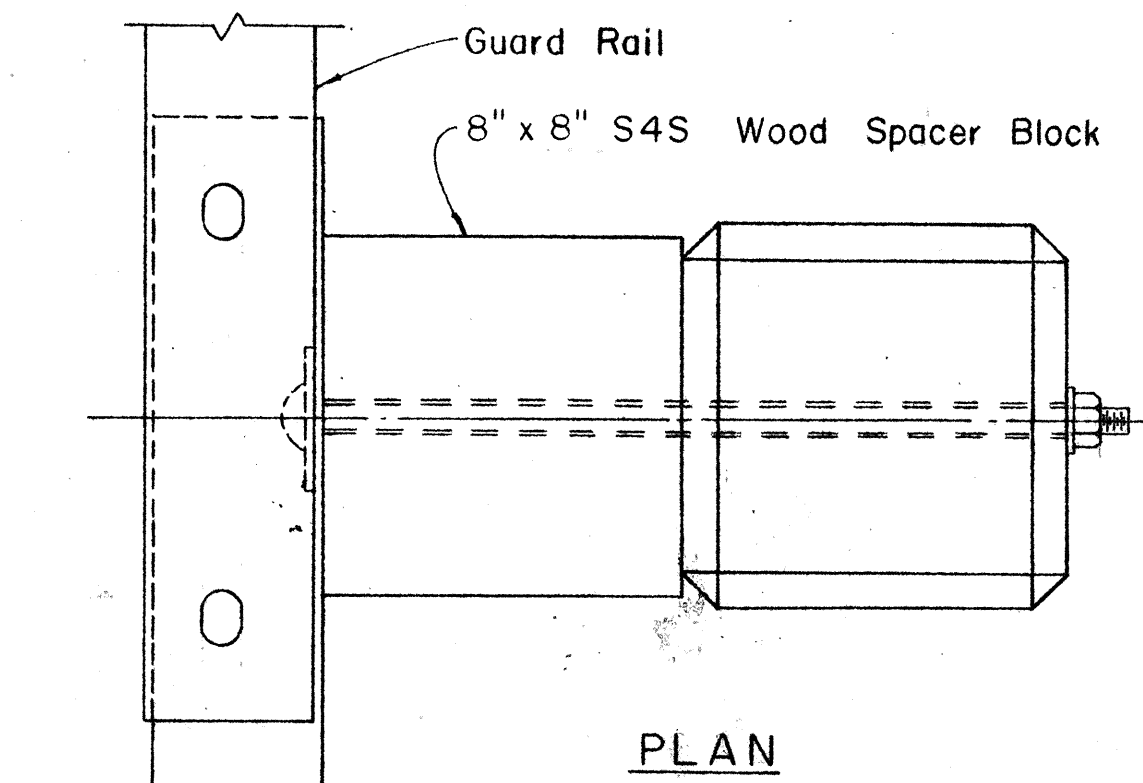
STANDARD DETAILS

METAL GUARD RAIL

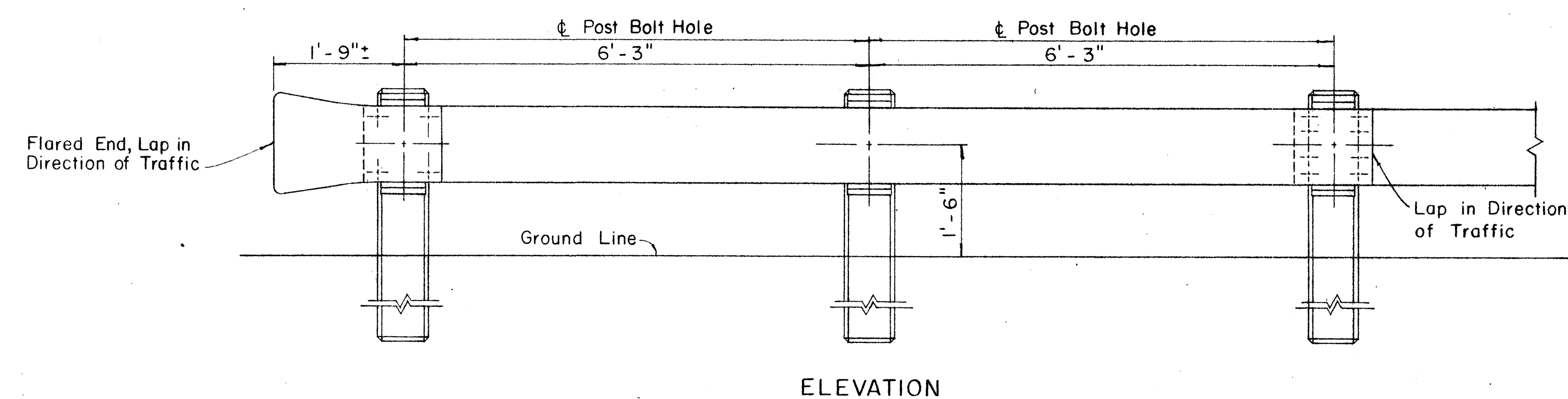
Scale: as noted

SHEET No. 1 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-053-1(2) Unit 2	1967	14	83



SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK
Scale: 3" = 1' - 0"



METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
Scale: 3/4" = 1' - 0"

SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
Scale: 3" = 1' - 0"

NOTE:
Single Guard Rails Shown. For Double Guard Rails Additional Spacer Blocks and Rail Elements Required on Opposite Side of Posts. See Bolt Schedule for Required Bolt Lengths.

DETAILS FOR SINGLE GUARD RAIL

STATE OF HAWAII

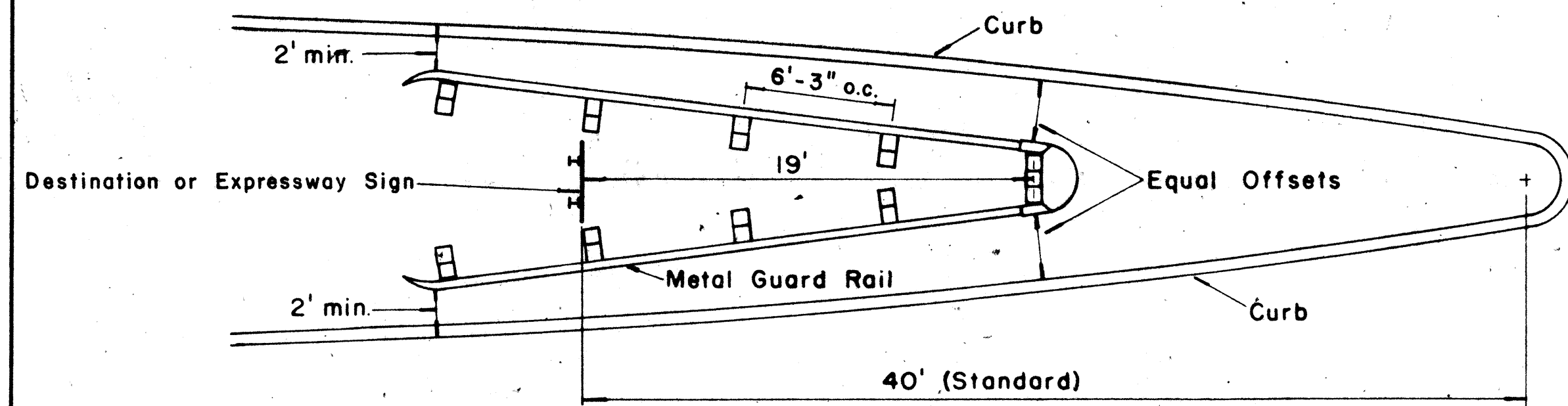
DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STANDARD DETAILS

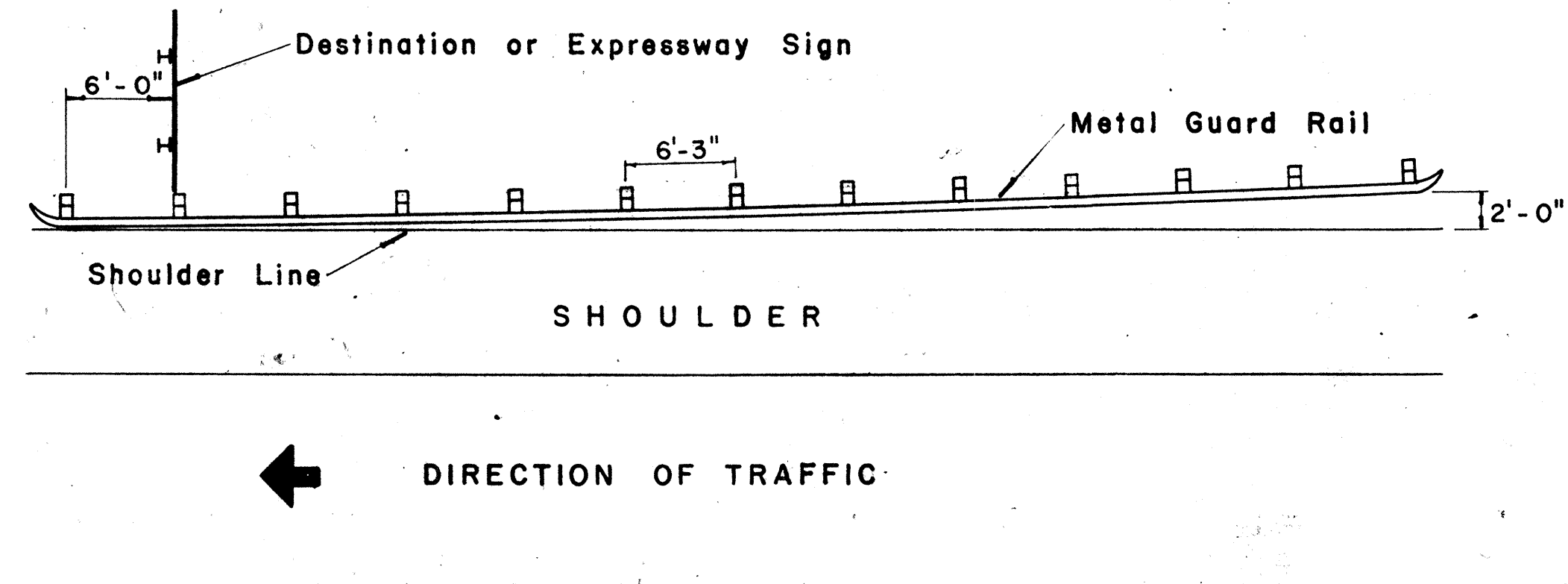
METAL GUARD RAIL

Scale: as noted



GORE MOUNTED SIGN

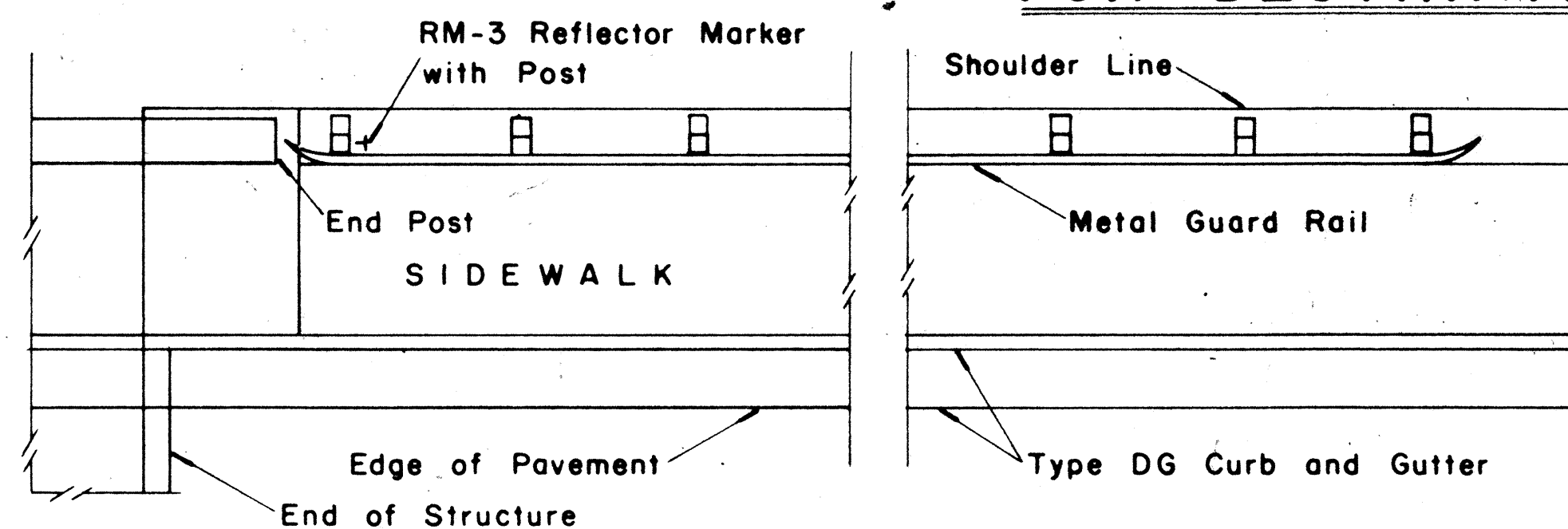
Scale: $\frac{3}{16}" = 1' - 0"$



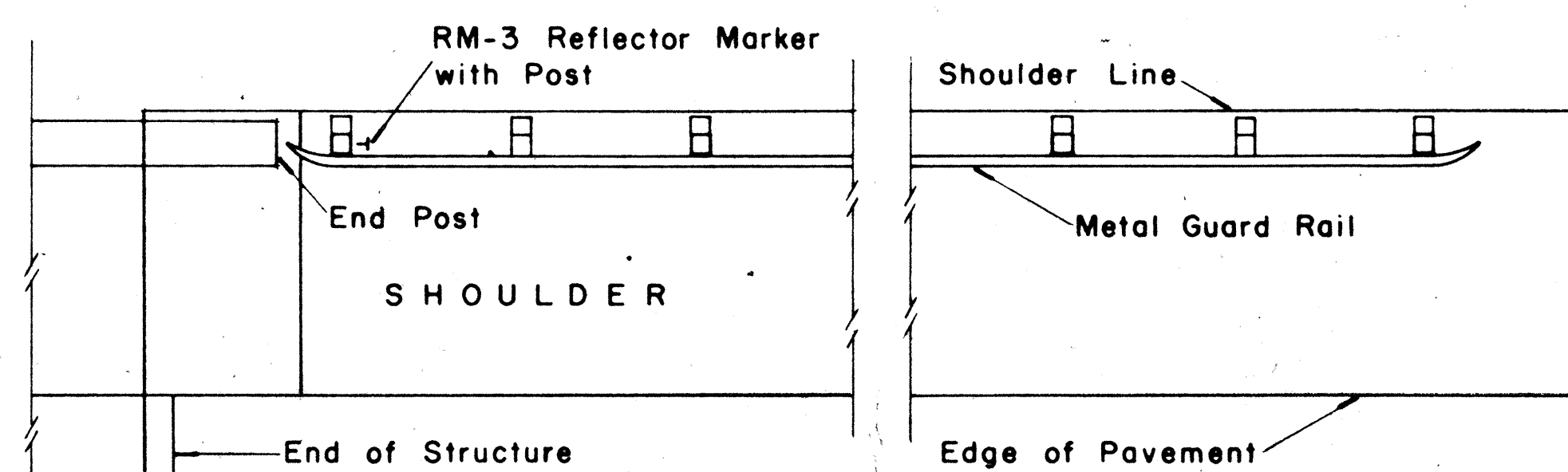
SHOULDER MOUNTED SIGN

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

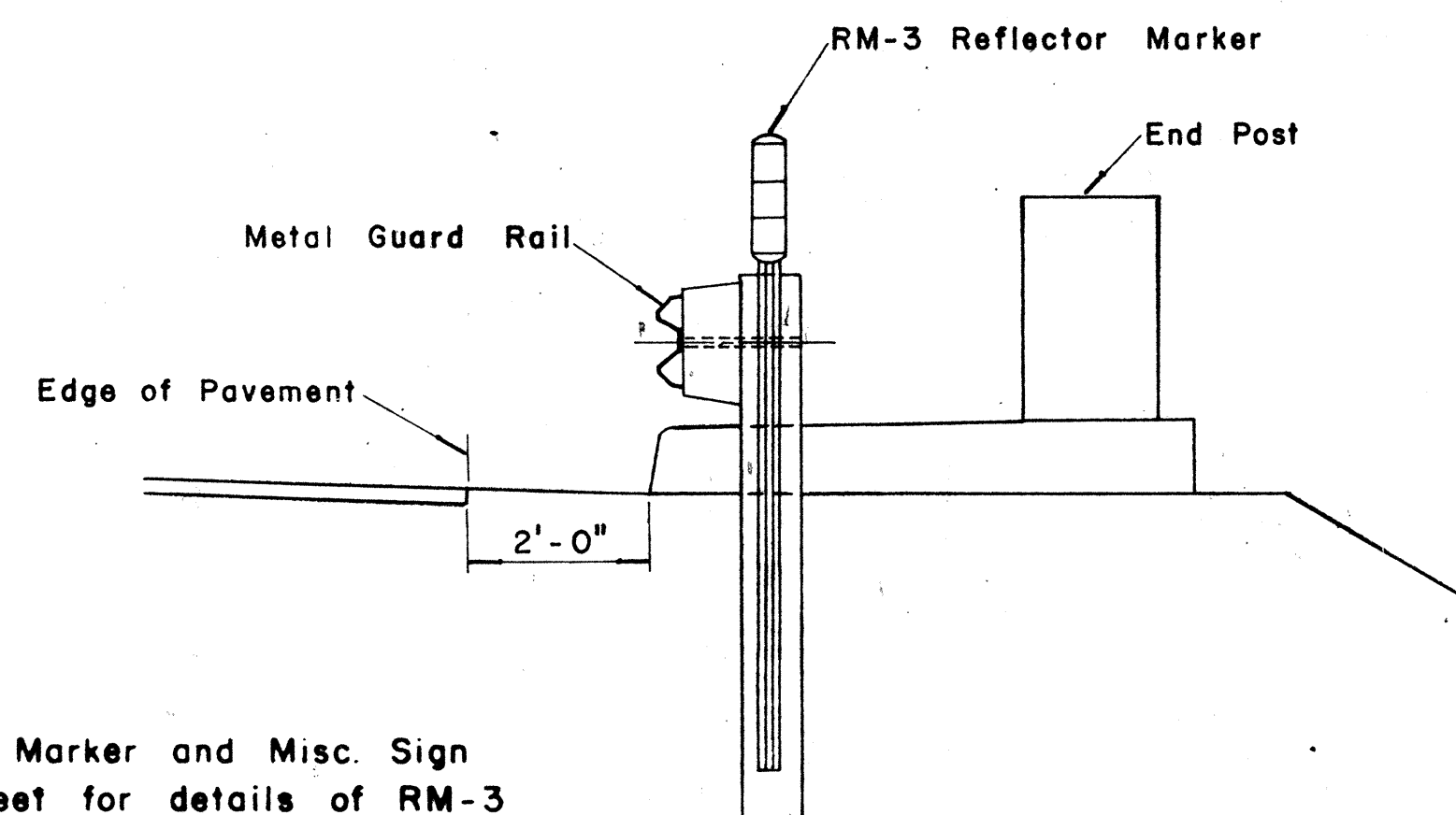
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE



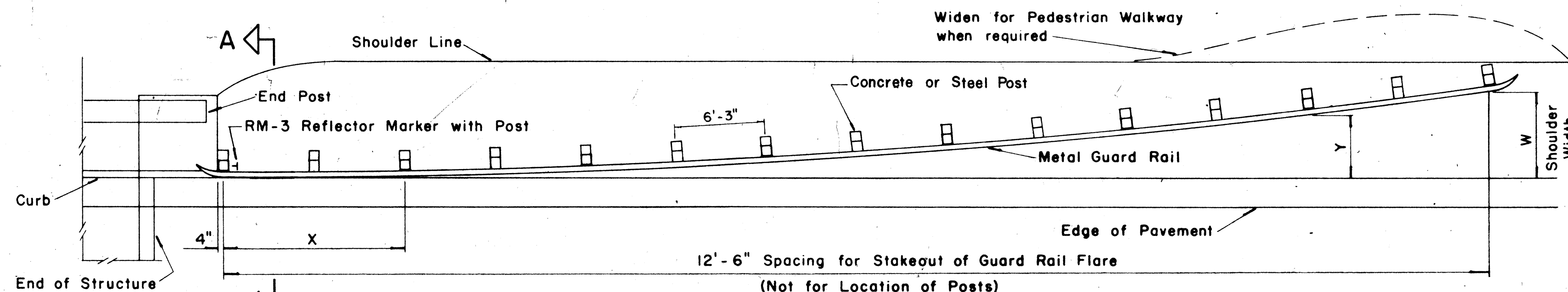
SHOULDER CARRIED THROUGH STRUCTURE



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

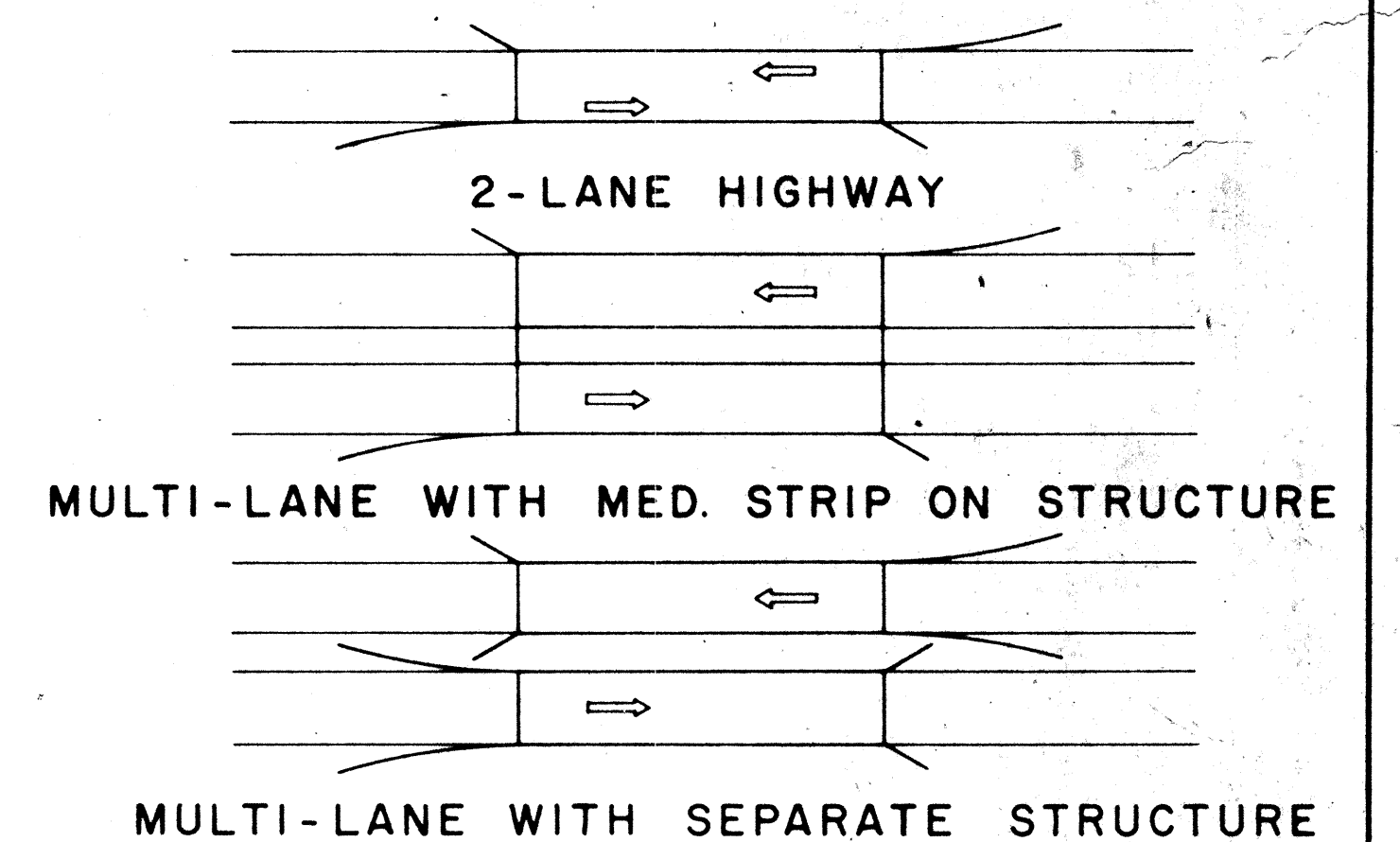
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48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

STANDARD DETAILS
METAL GUARD RAILS
AT
STRUCTURES & GUIDE SIGNS

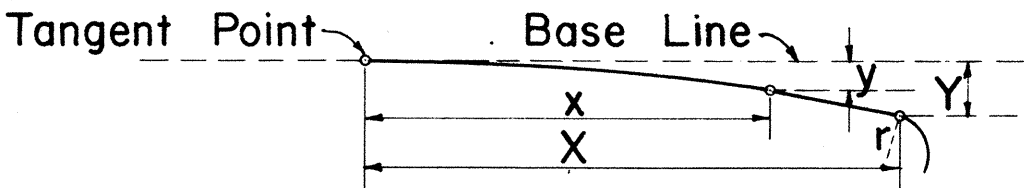
Scale: As Noted

SHEET No. 3 OF 10 SHEETS

These Curves are based up the following formula:

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

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

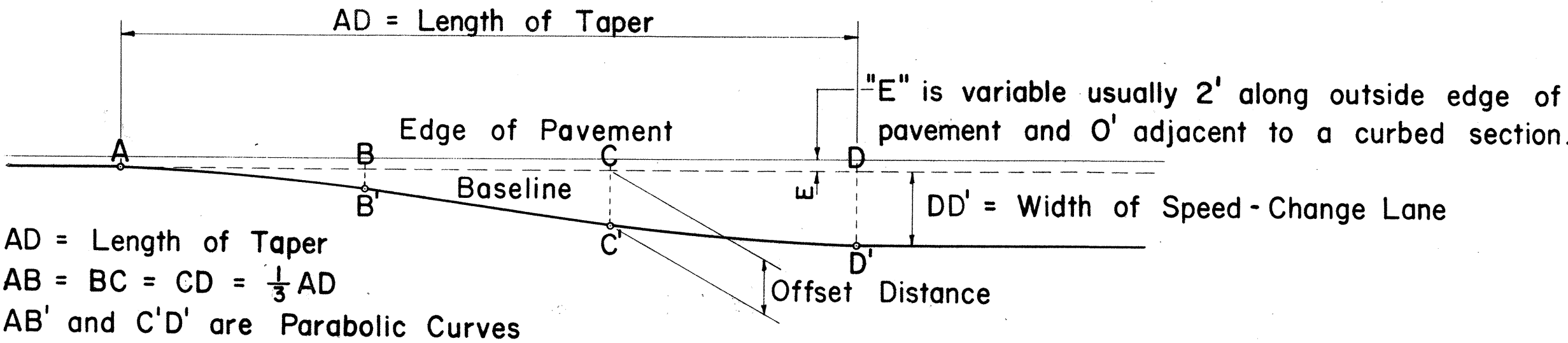


PLAN

SCHEDULE						
RATIO CURVE DATA						
Dist. in ft.(x)	Offset in Feet (y)					
	2:30	3:45	5:50	7:70	9:90	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 the tabulation is designated by the maximum offset and its tangent distance.

PARABOLIC CURVE OFFSETS

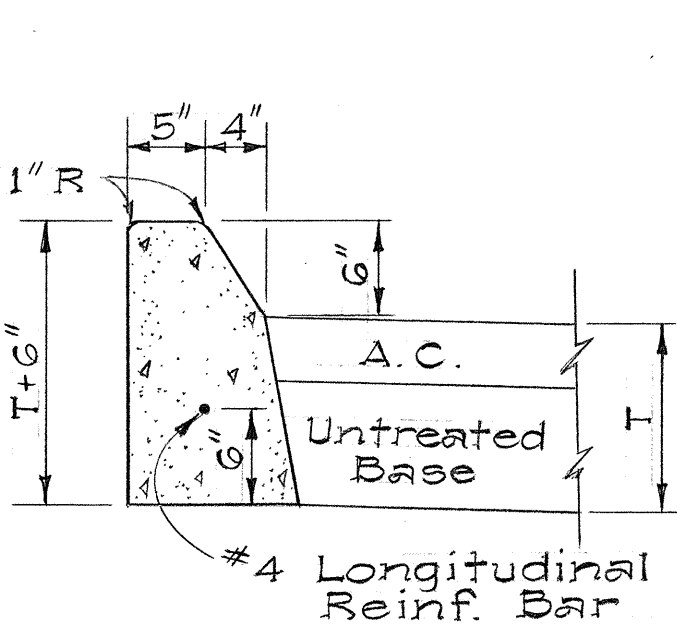


PLAN
Scale: 1" = 20'

SCHEDULE											
FOLLOWING TABLE GIVES OFFSETS FROM BASELINE PARALLEL TO EDGE OF PAVEMENT AT INTERVALS MEASURED FROM POINT "A" ADD "E" FOR MEASUREMENT FROM EDGE OF PAV'T.											
OFFSET FROM BASELINE (FEET)				LENGTH OF TAPER (FEET) = AD							
				90	120	150	180	210	240	270	300
DD=10' DD=11' DD=12' DD=14'				DISTANCE FROM POINT "A" (FEET)							
0	0	0	0	0	0	0	0	0	0	0	0
0.16	0.17	0.19	0.22	7.5	10	12.5	15	17.5	20	22.5	25
0.62	0.69	0.75	0.88	15	20	25	30	35	40	45	50
1.41	1.55	1.69	1.97	22.5	30	37.5	45	52.5	60	67.5	75
*2.50	*2.75	*3.00	*3.50	30	40	50	60	70	80	90	100
*5.00	*5.50	*6.00	*7.00	45	60	75	90	105	120	135	150
*7.50	*8.25	*9.00	*10.50	60	80	100	120	140	160	180	200
8.59	9.45	10.31	12.03	67.5	90	112.5	135	157.5	180	202.5	225
9.38	10.31	11.25	13.13	75	100	125	150	175	200	225	250
9.84	10.83	11.81	13.78	82.5	110	137.5	165	192.5	220	247.5	275
10.00	11.00	12.00	14.00	90	120	150	180	210	240	270	300

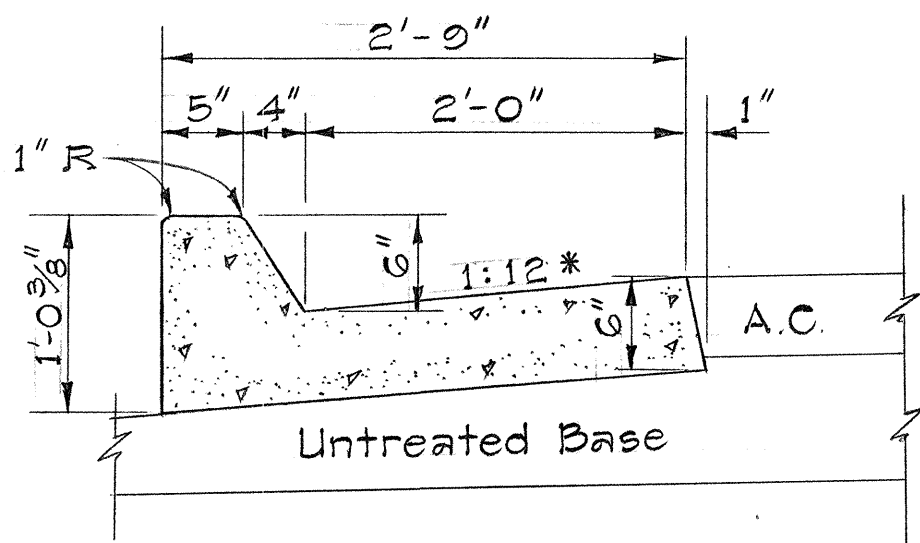
* Where edge of pavement is a curve, neither Baseline nor Taper between B' and C' will be a tangent. Use proportional offset from B' to C'

TAPER FOR SPEED - CHANGE LANES



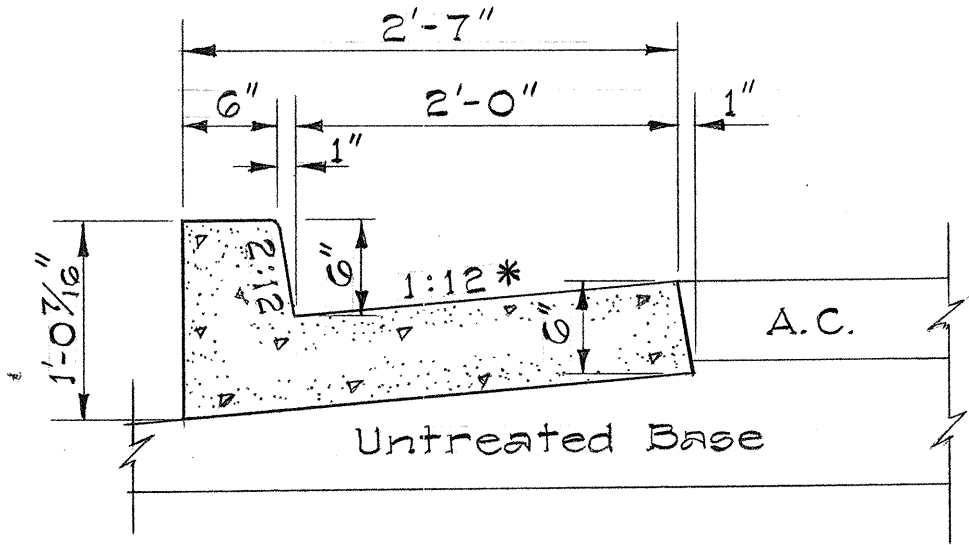
TYPE "A" CURB

T = Thickness of Untreated Base

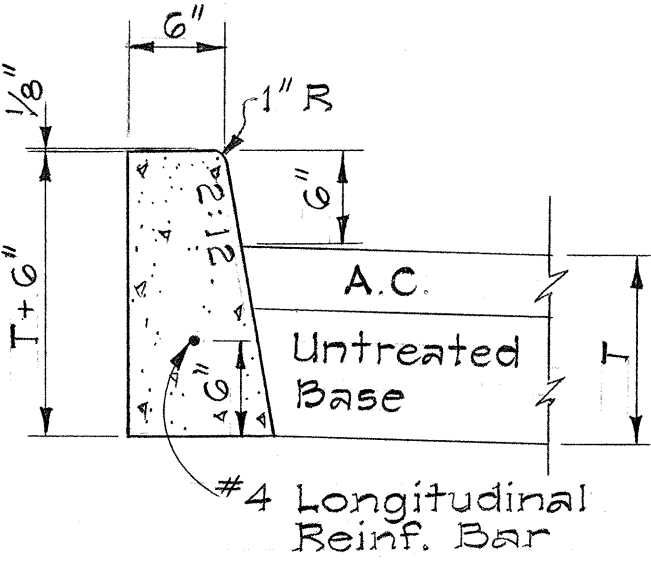


TYPE "AG" CURB & GUTTER

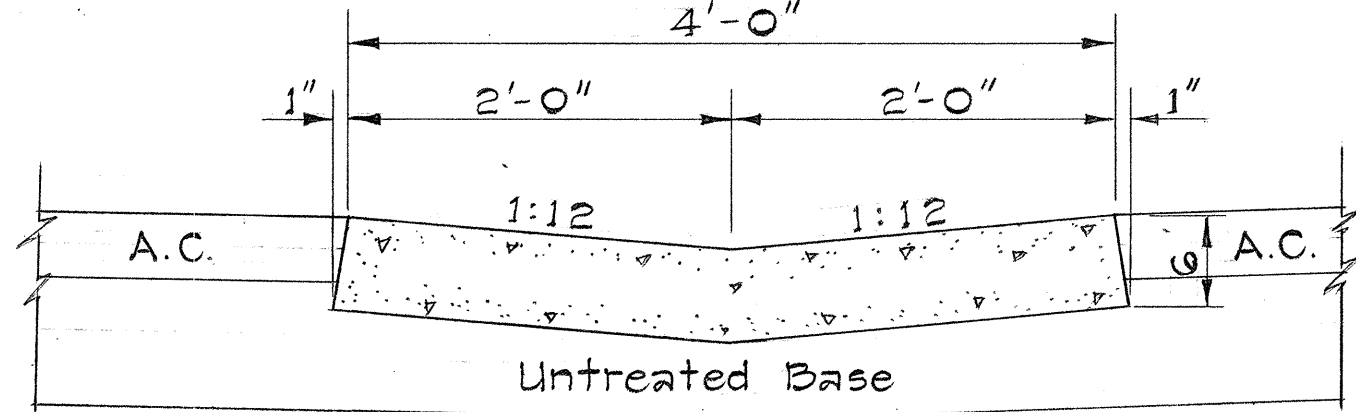
* Superelevation shall continue through the gutter section when the cross over crown between the pavement slope and gutter slope is greater than 0.0833 /ft.



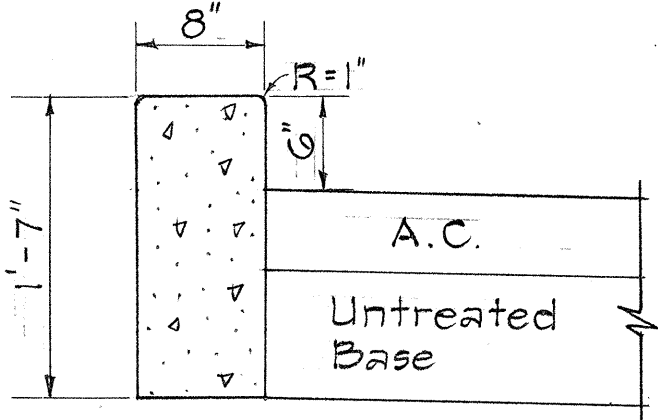
TYPE "DG" CURB & GUTTER



TYPE "D" CURB

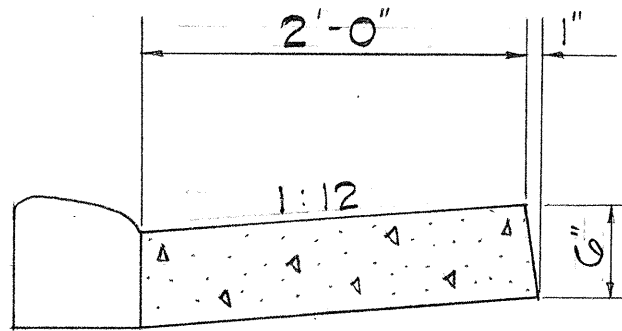
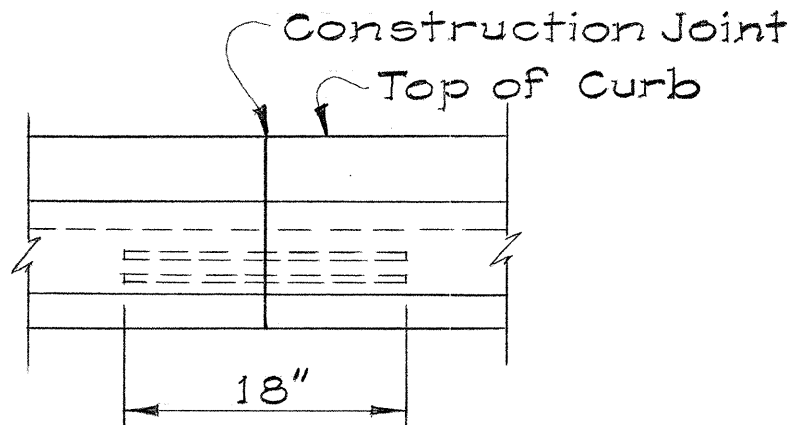
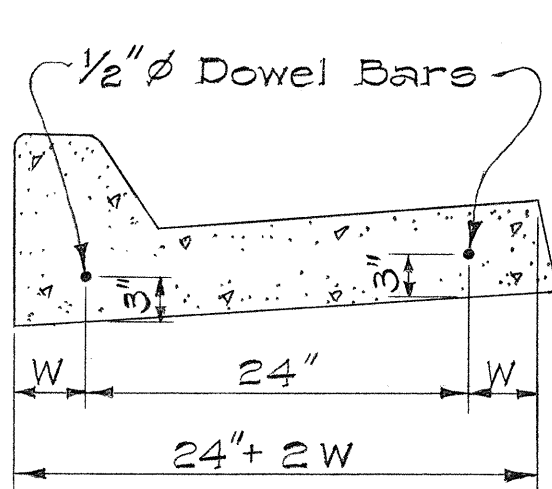


TYPE "G" GUTTER

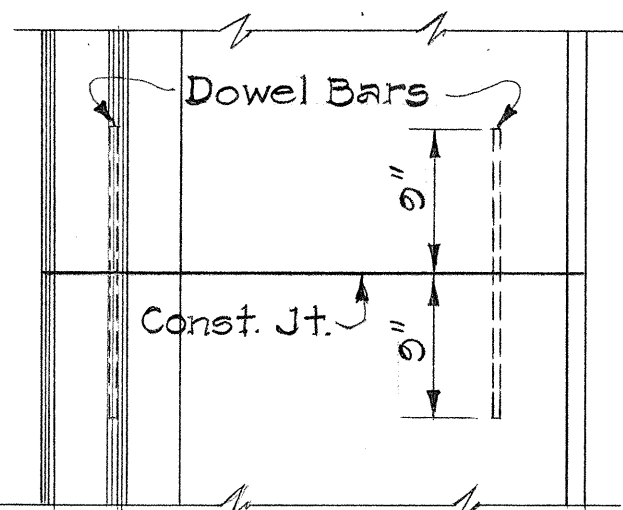


TYPE "H" CURB

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



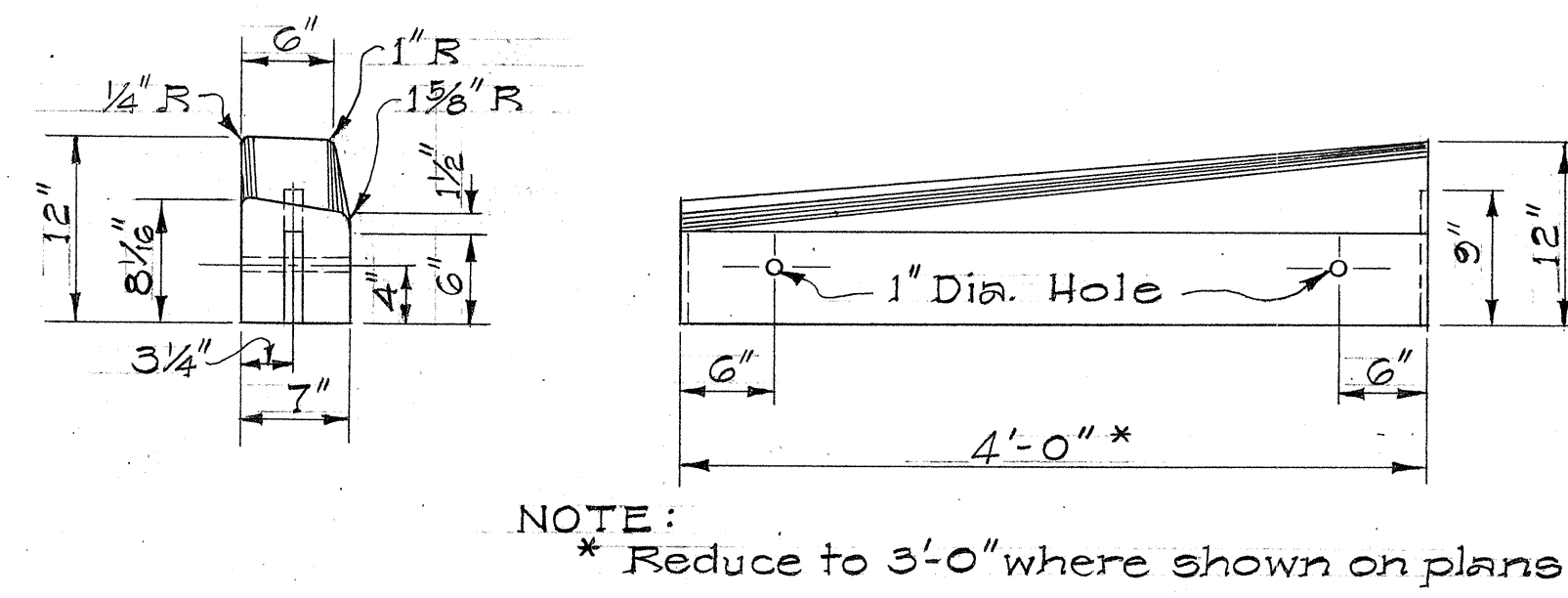
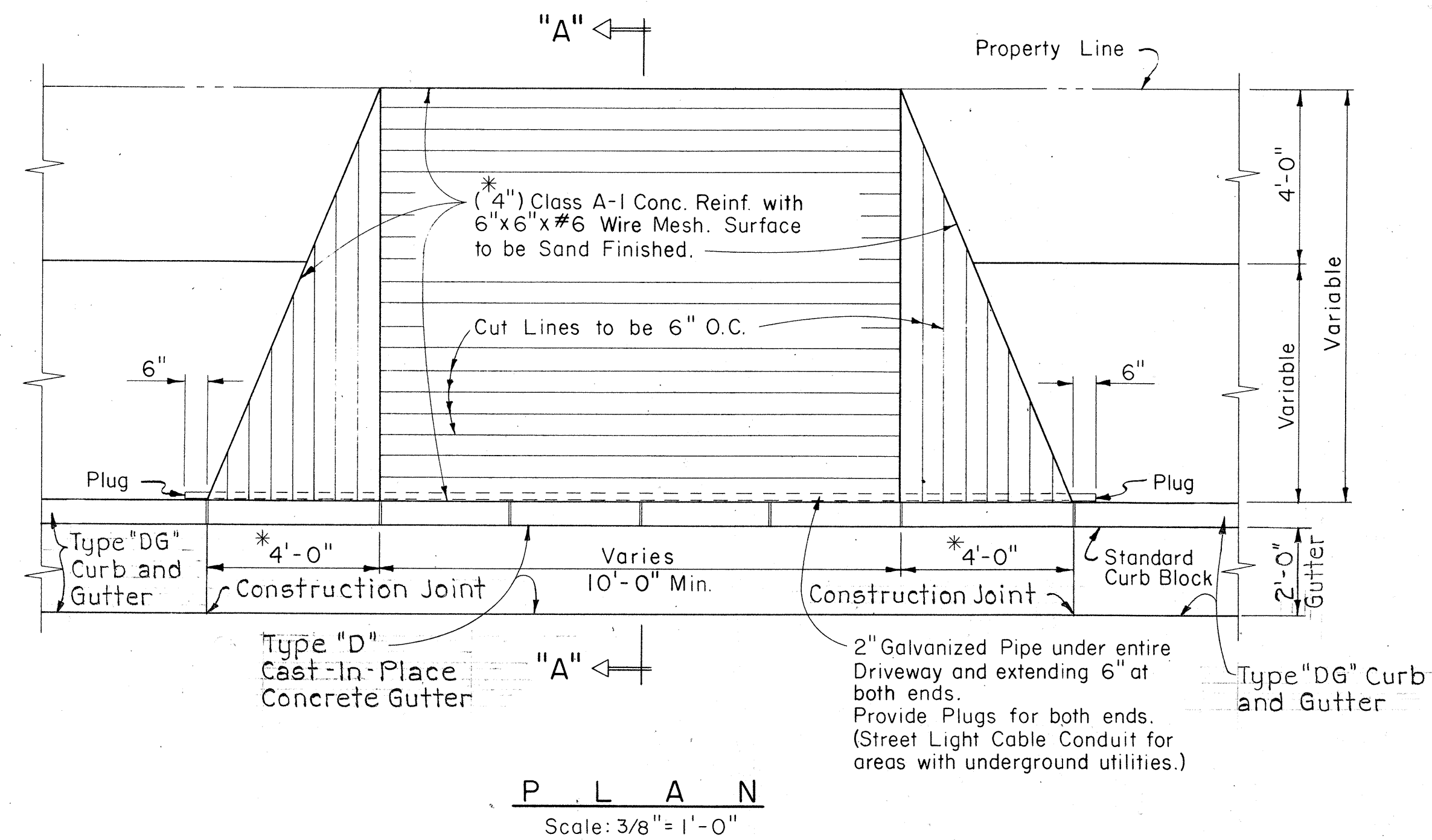
TYPE D GUTTER



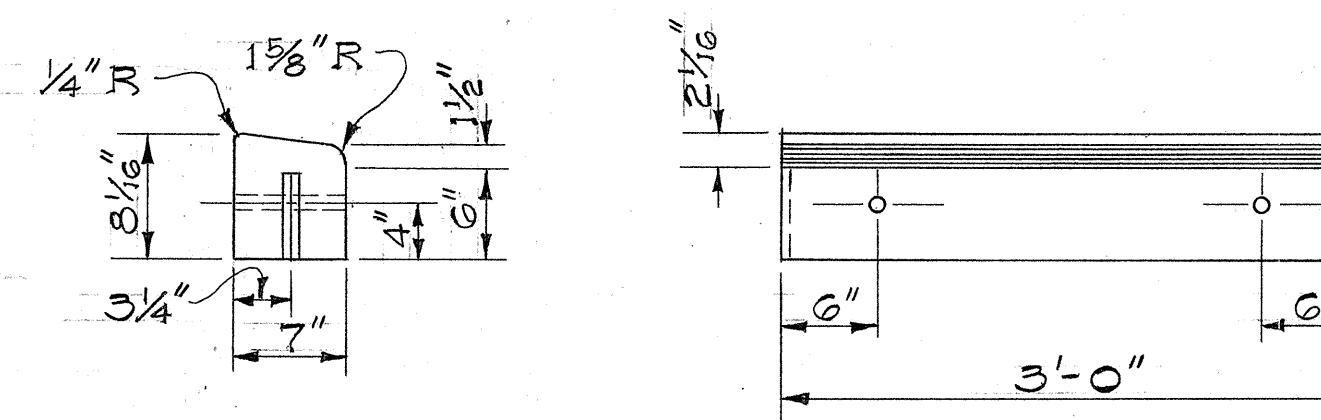
NOTE:
All dowel bars shall be painted and oiled to prevent bond with concrete.

TYPICAL CONSTRUCTION JOINT DETAIL FOR CAST-IN-PLACE CONCRETE CURB AND GUTTER Scale: 1" = 1'-0"

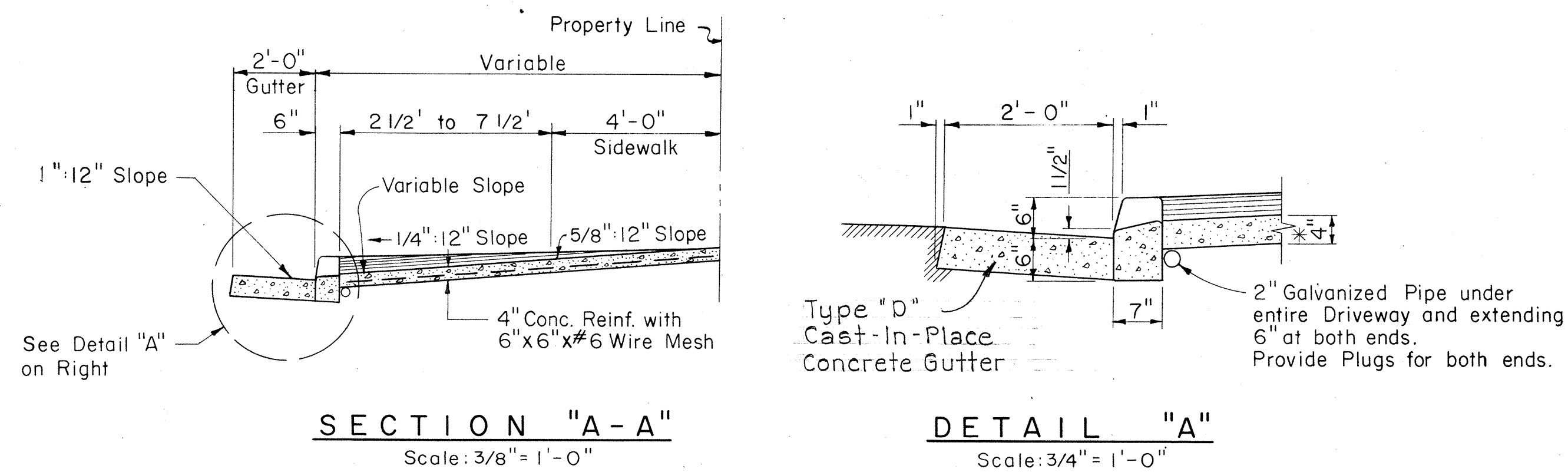
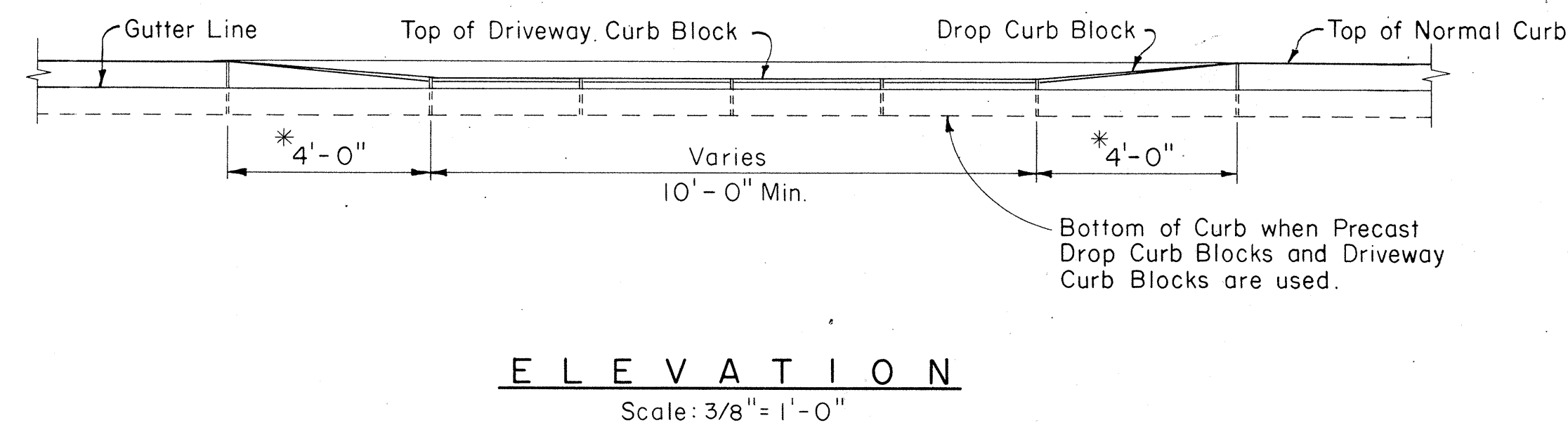
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-083-1(2)	1967	18	83
		Unit 2			



PRECAST CONCRETE DROP CURB



PRECAST CONCRETE DRIVEWAY CURB
PRECAST CONCRETE CURBS
Scale: 1" = 1'-0"



TYPICAL DETAIL OF REINF. CONC. DROP DRIVEWAY

Scale: As Noted

* Use dimension shown unless otherwise noted on the plans.

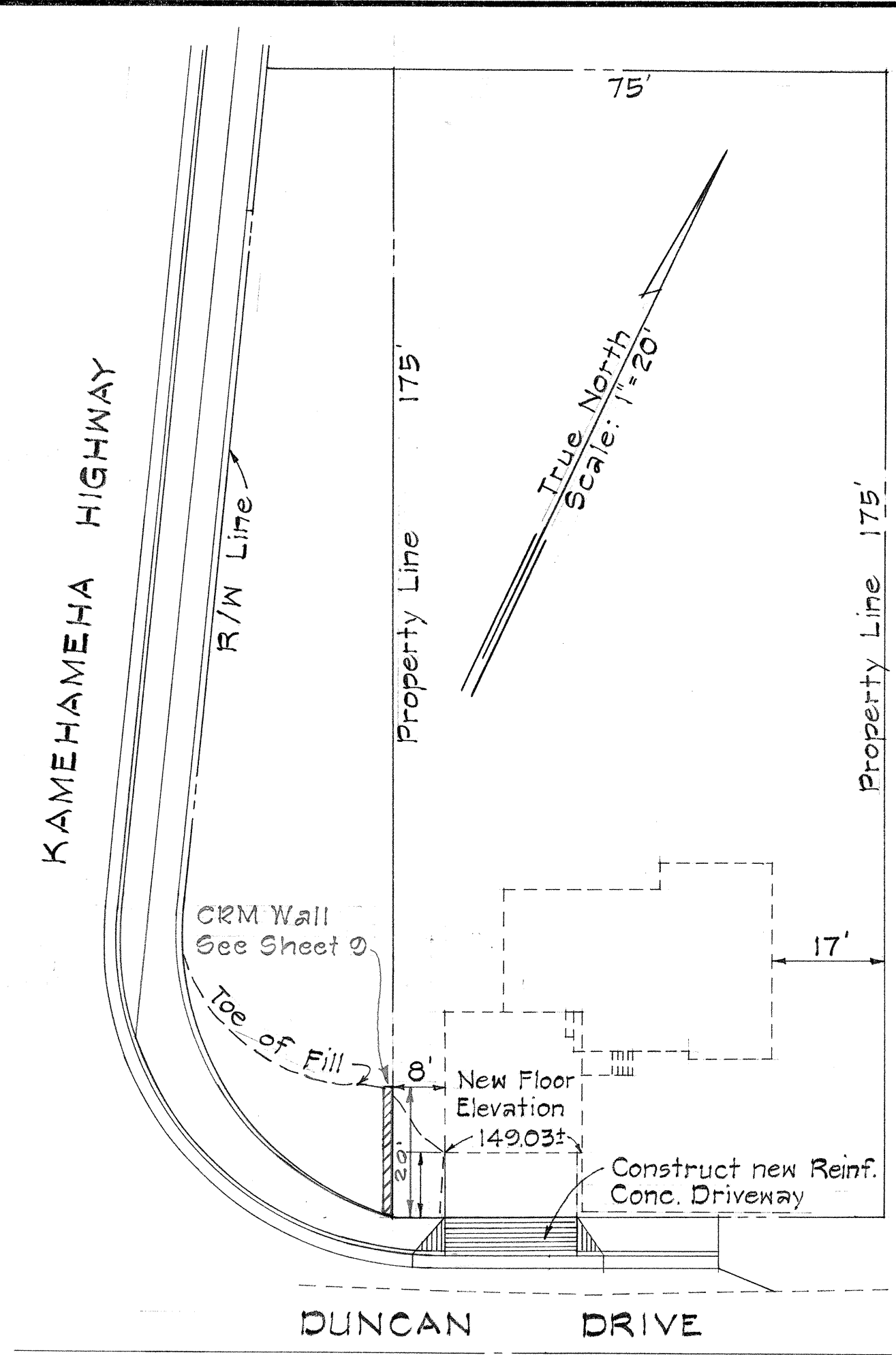
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REINFORCED CONCRETE
DROP DRIVEWAY DETAILS

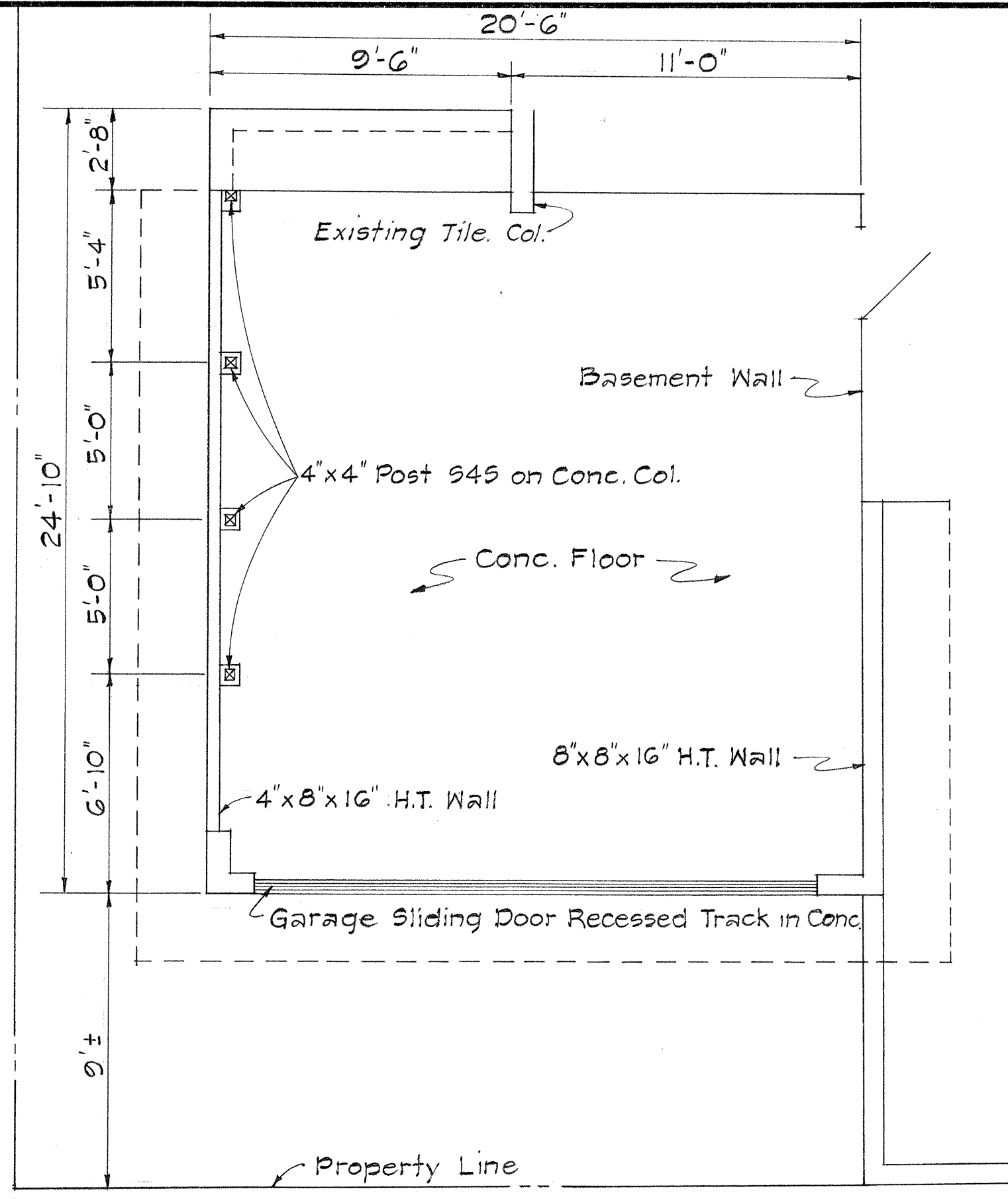
KAMEHAMEHA HIGHWAY
F.A.P. No. F-083-(12), UNIT 2

Scale: As Noted. Date: May - 1967

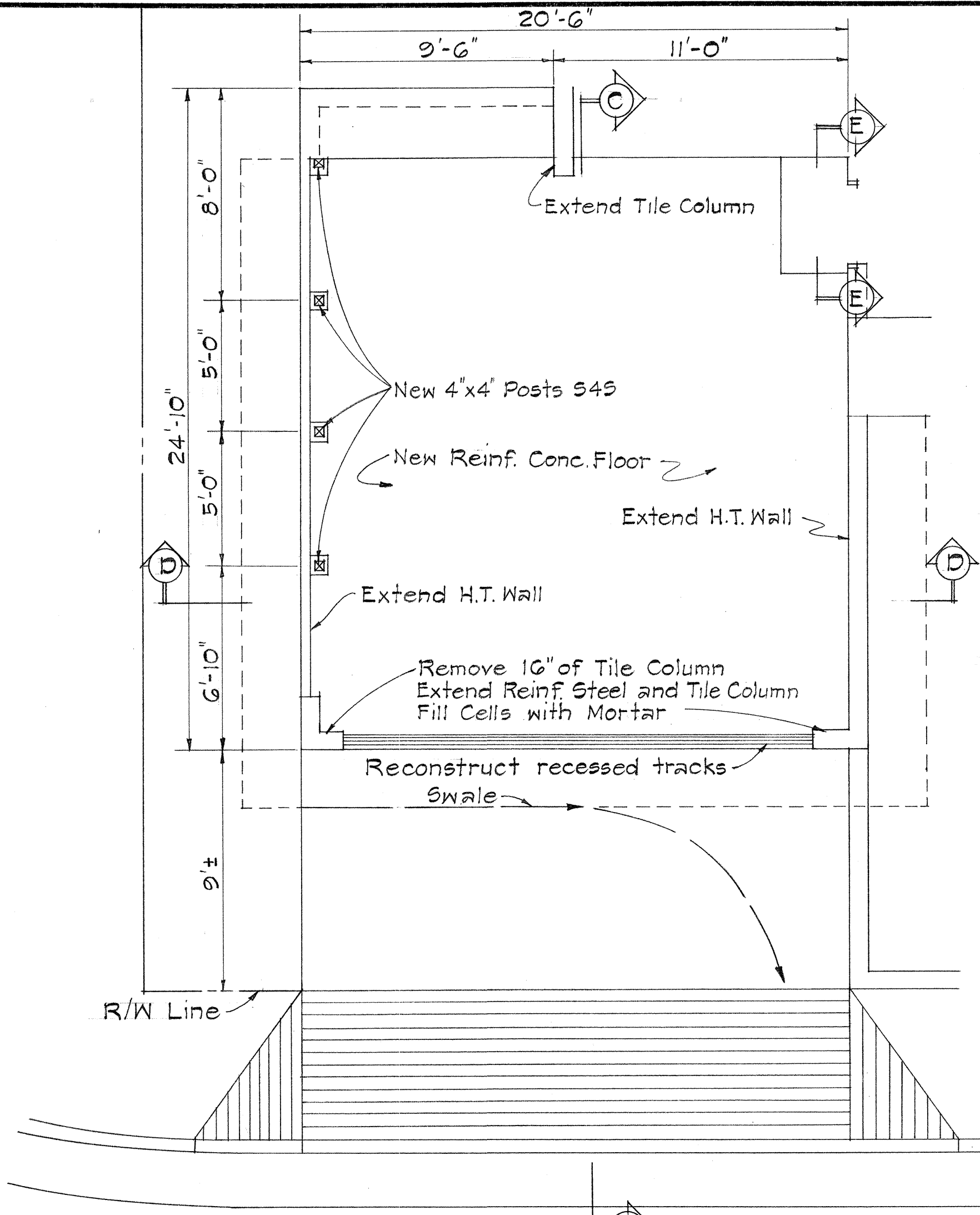
SHEET No. 6 OF 10 SHEETS



PLOT PLAN
Scale: 1" = 20'



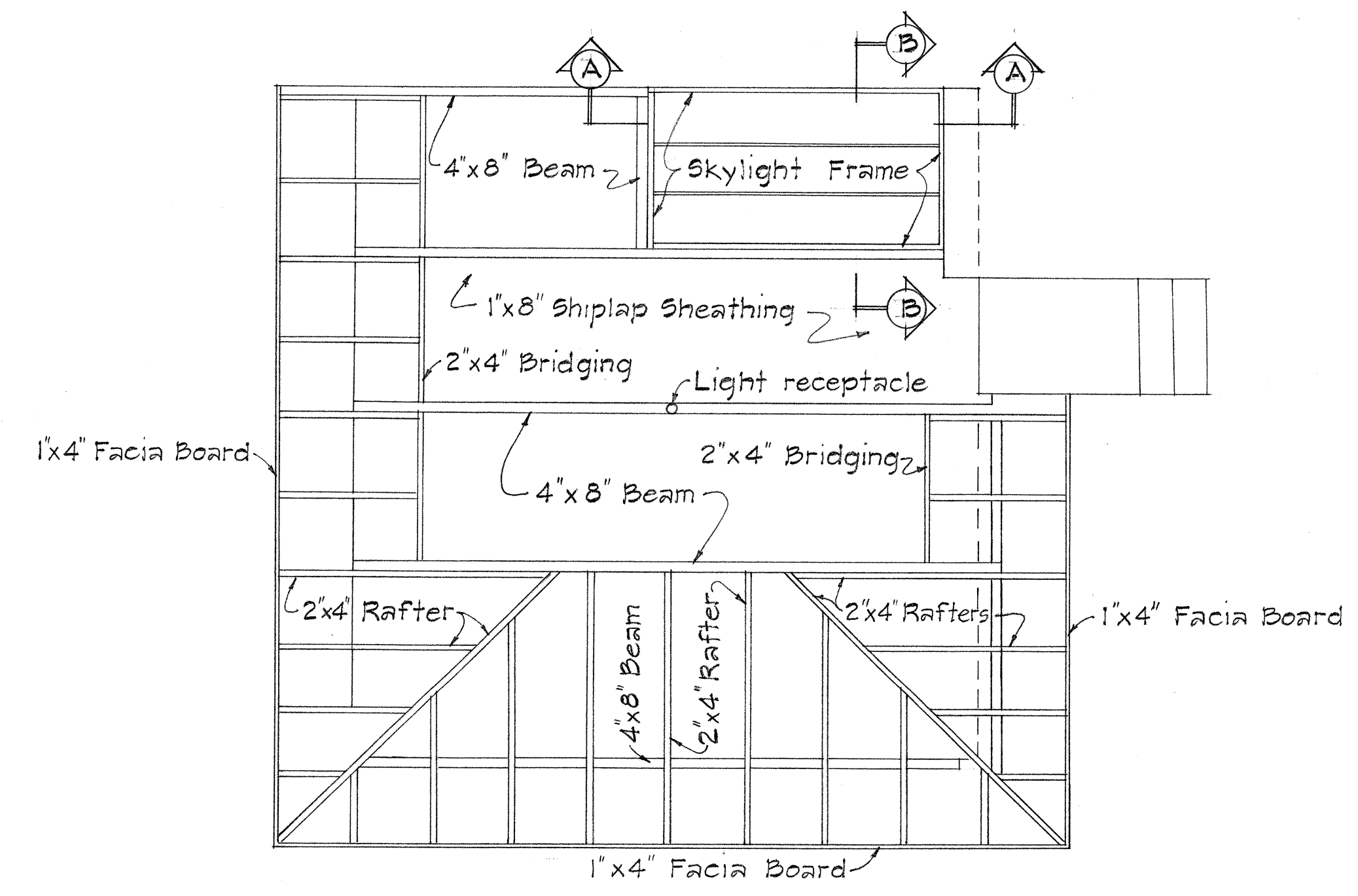
GARAGE PLAN (EXISTING)
Scale: 1/4" = 1'-0"



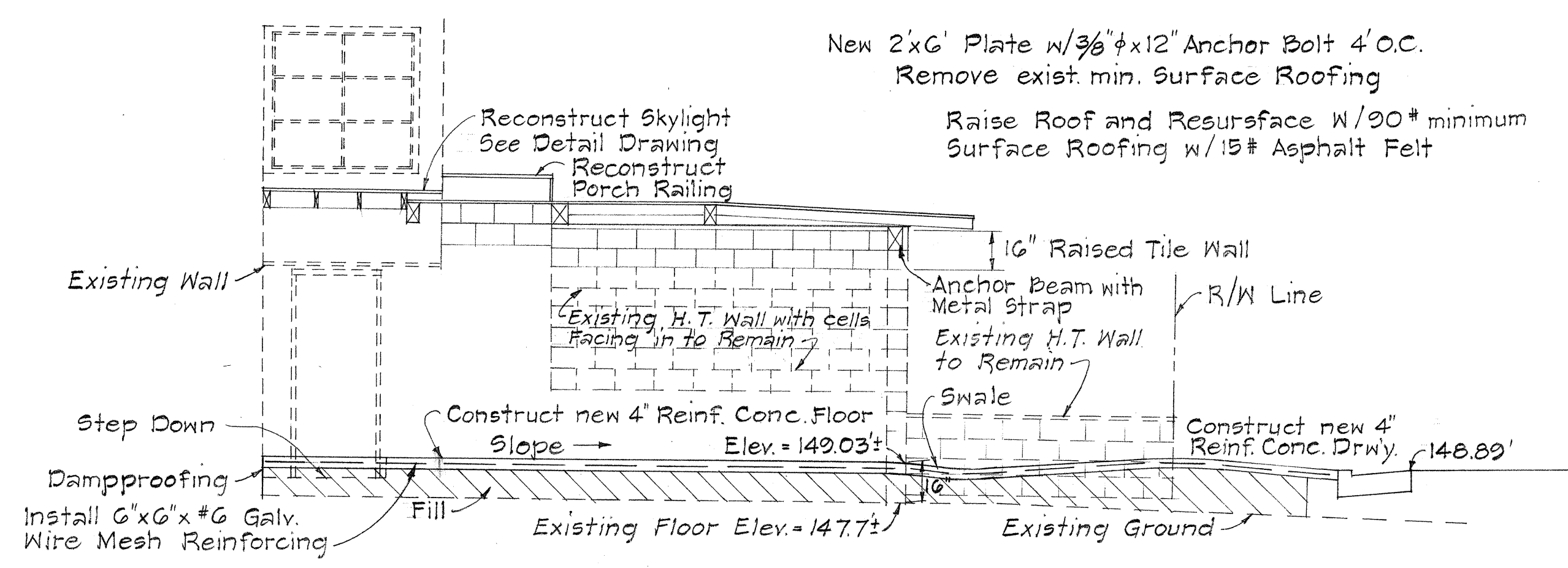
GARAGE PLAN (RAISED)
Scale: 1/4" = 1'-0"

SCOPE OF WORK:

1. Raise existing garage roof intact
2. Construct garage wall and column to new height.
3. Attach roof columns.
4. Attach garage to building and weather proof as shown
5. Construct reinforced concrete floor and driveway as shown
6. Remove existing Mineral Surfaced Roofing and resurface with new Mineral Surfaced Roofing paper of the same weight and color as existing.
7. Maintain same slope on roof
8. Reconstruct garage door.
9. Fill low area and top with 6" layer of top soil.
10. Plant same type of grass as existing.
11. Reconstruct garage to new grade as shown.
12. Existing material damaged through contractor's operations shall be replaced with material in kind
13. New material required and used shall be equal to existing in type and grade.
14. New and repaired wood surfaces shall be painted to match existing as closely as possible in color and texture.
15. Extend electrical wire for light receptacle.
16. At the end of each work day, work area shall be removed of debris and kept in presentable condition.
17. Clean up all debris in work area after completion of work.
18. All work shown within the highway rights of way will be performed under respective contract item of work and are not included in the scope of work under this item.
19. Maintain continuous utility service and access to dwelling during contractor's entire operation.
20. All work shown within the highway right-of-way will be performed under the respective contract items of work for the roadway and are not included in the scope of work under this Item No. 123.01



ROOF FRAMING PLAN (EXISTING)
Scale: 1/4" = 1'-0"



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

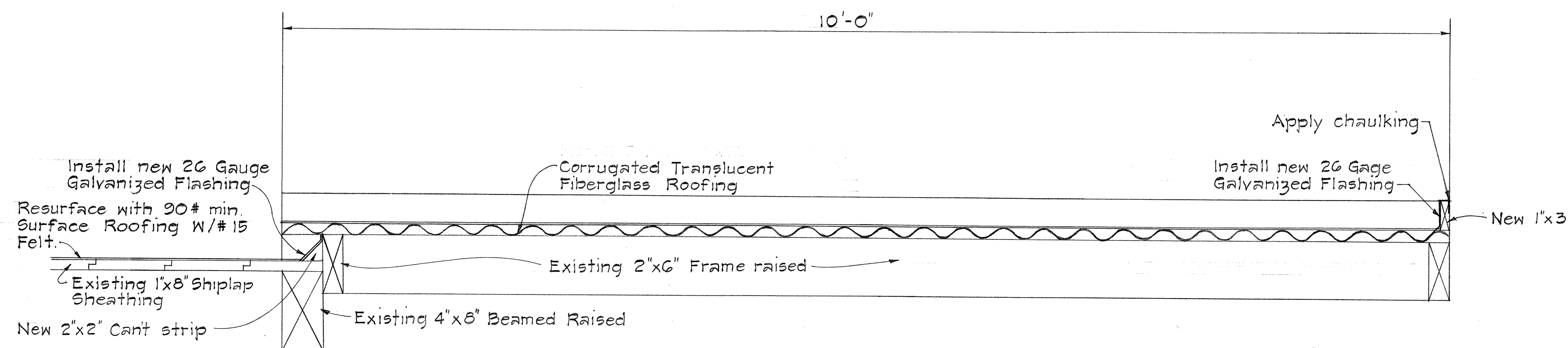
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REHABILITATION PLANS
FOR LOT TAX KEY 4-5-43:10

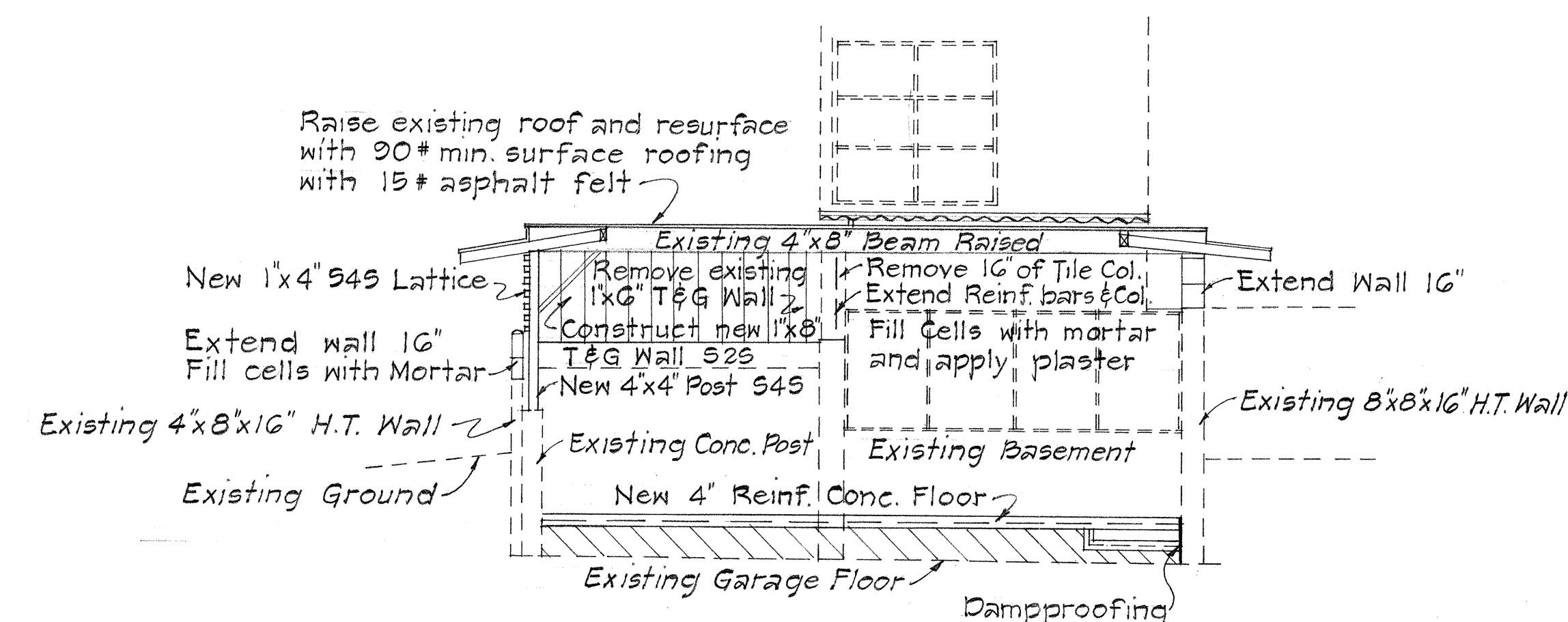
KAMEHAMEHA HIGHWAY
F.A.P. No. F-083-1(2) Unit 2

Scale: As Noted Date: May, 1967
SHEET No. 7 OF 10 SHEETS

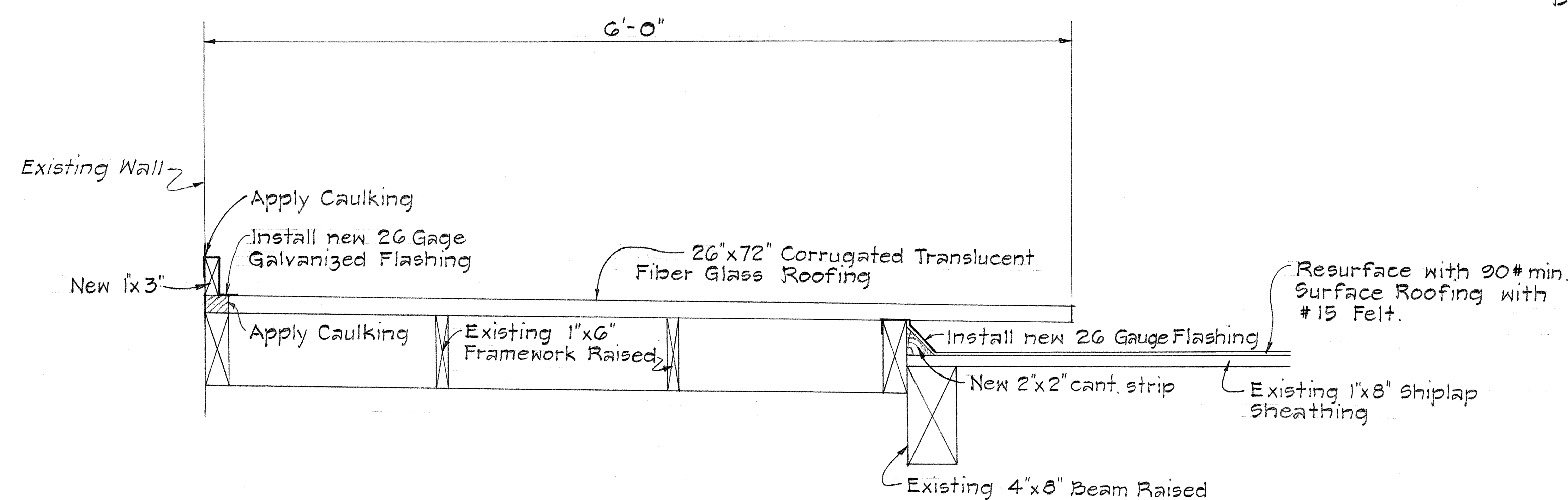
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-083-1(2) Unit 2	1967	20	83



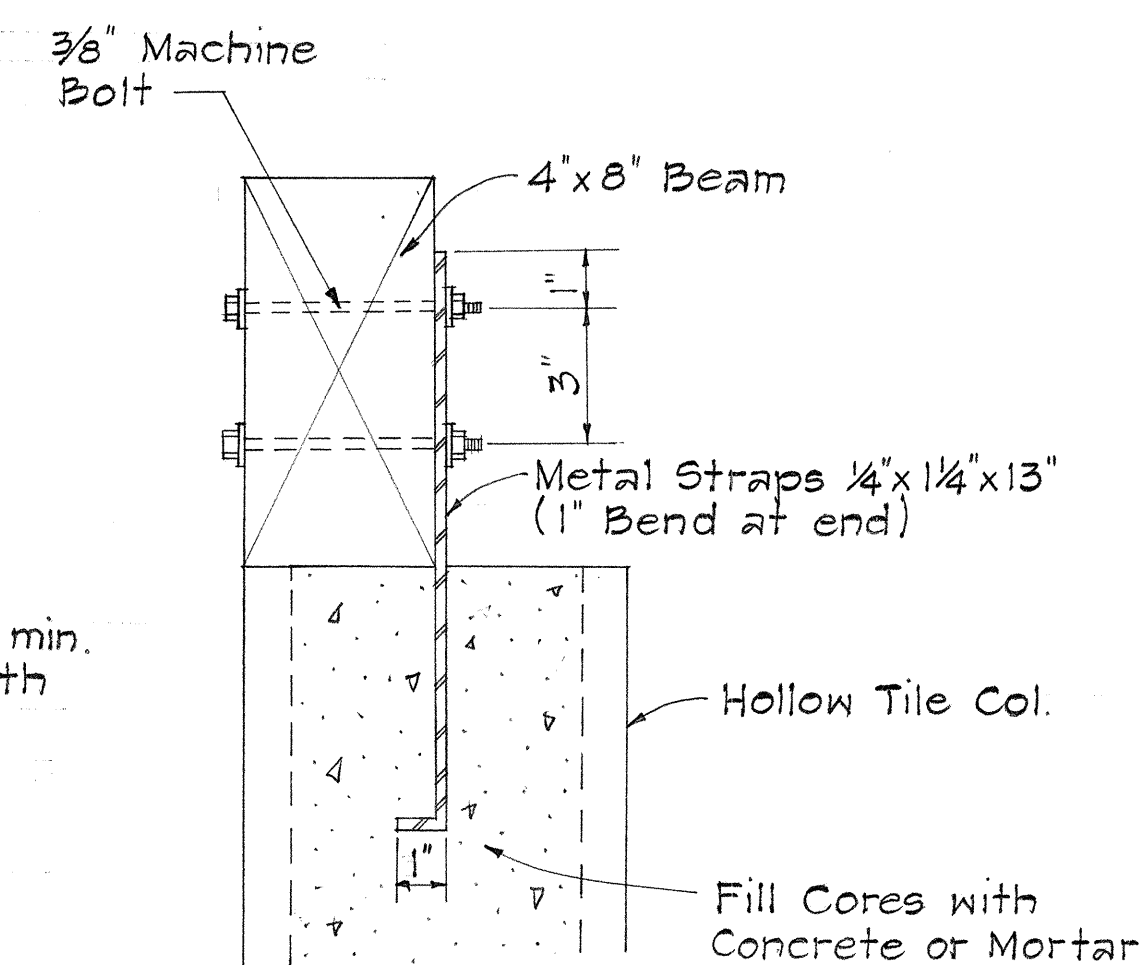
SECTION A-A
Scale: 1 1/2" = 1'-0"



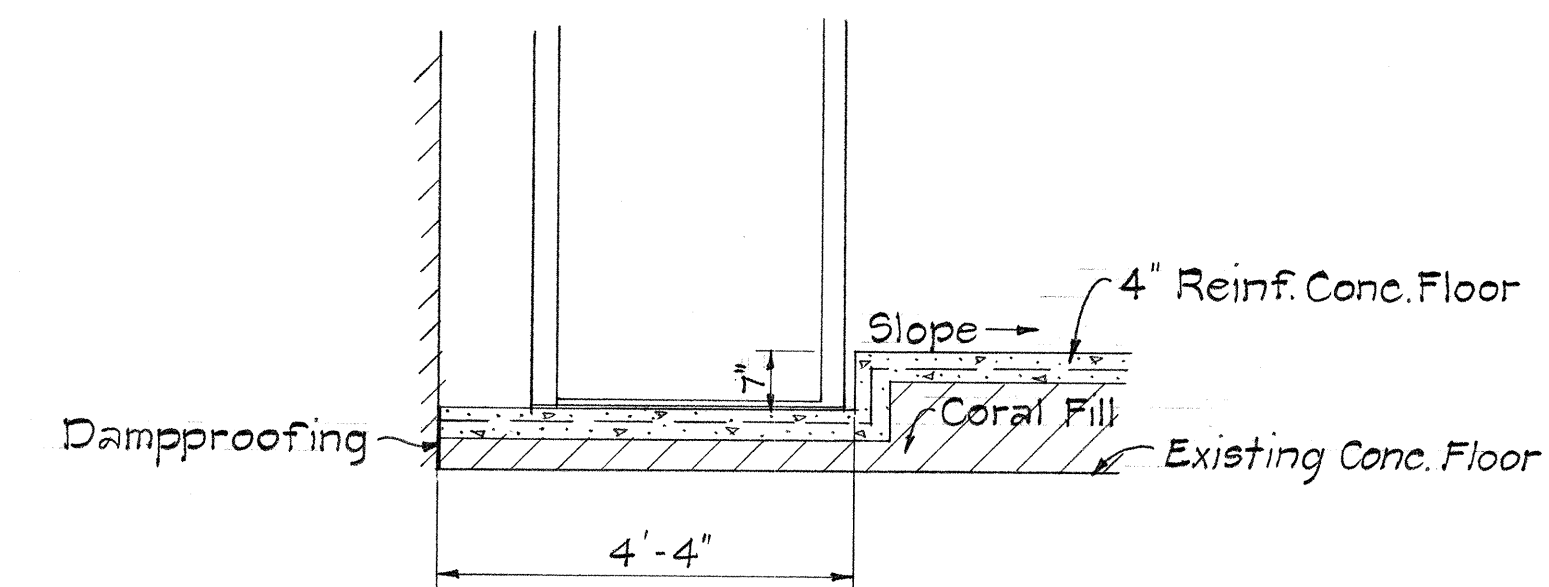
SECTION D-D
Scale: 1/4" = 1'-0"



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



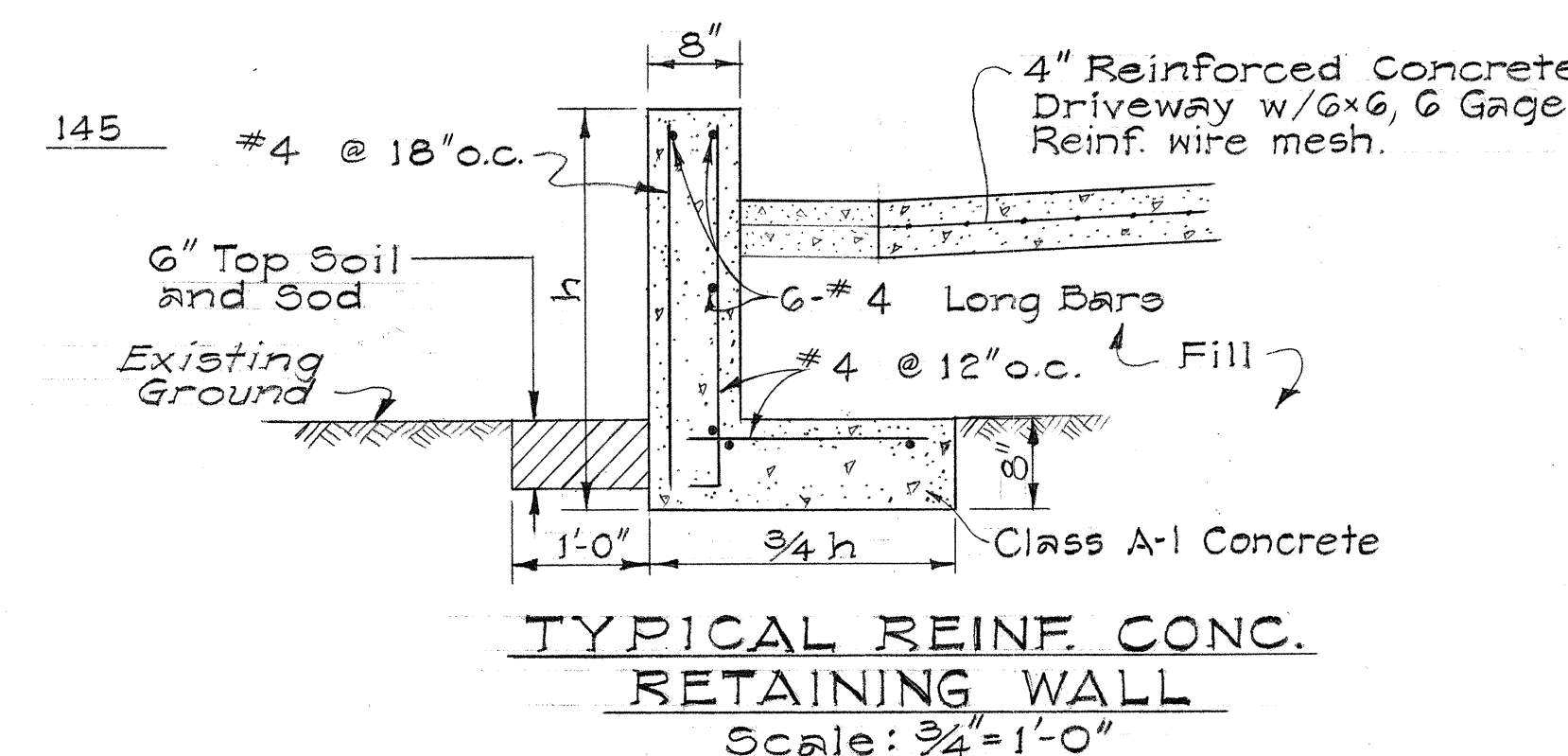
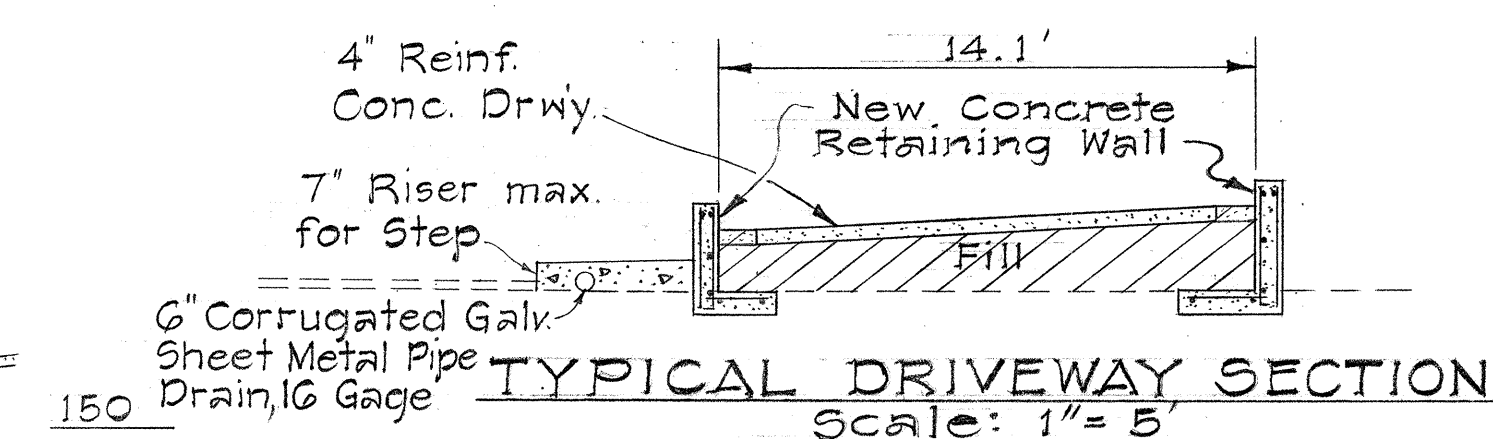
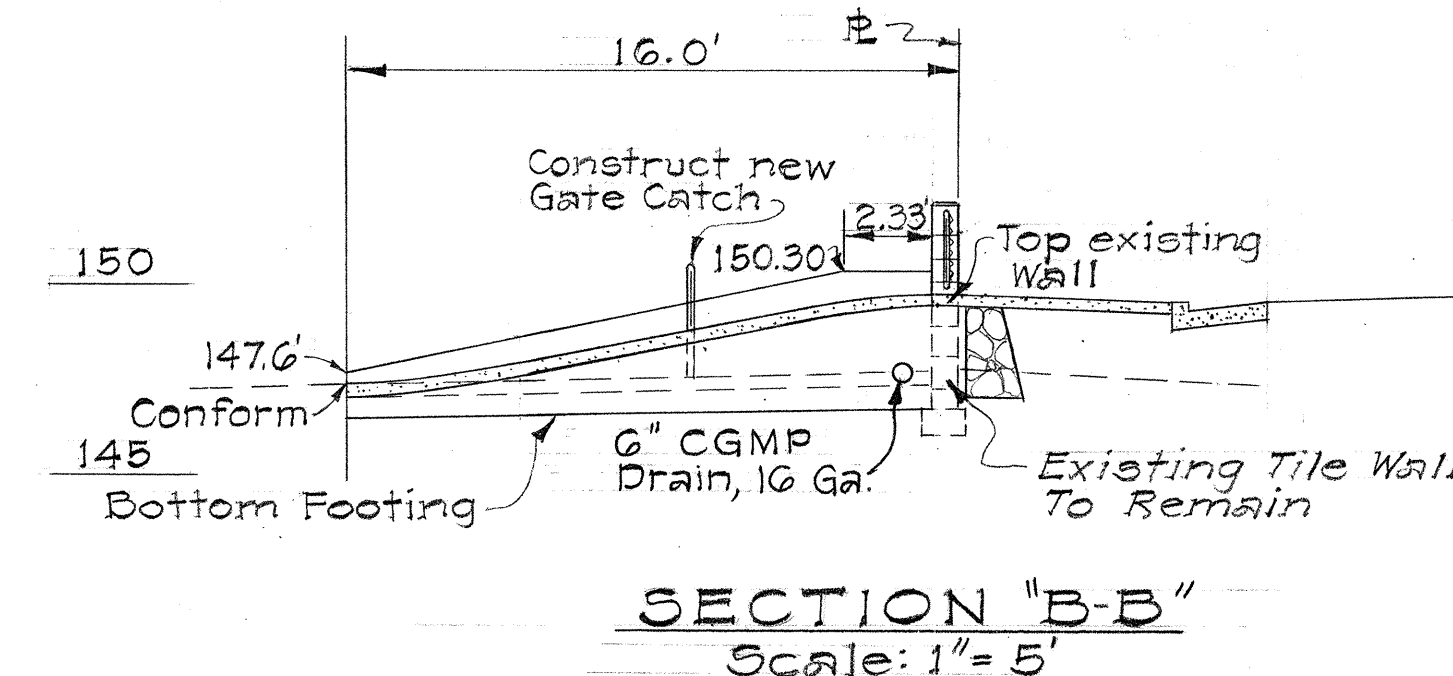
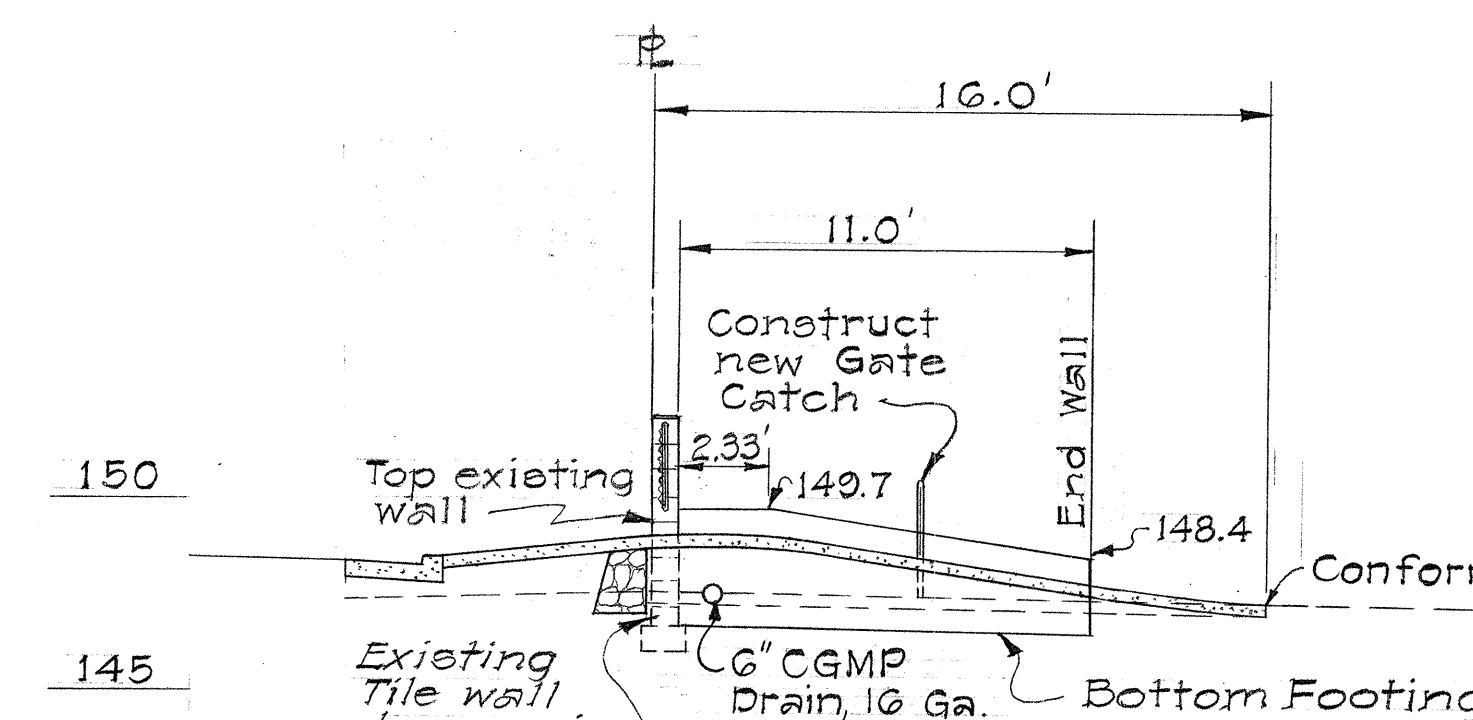
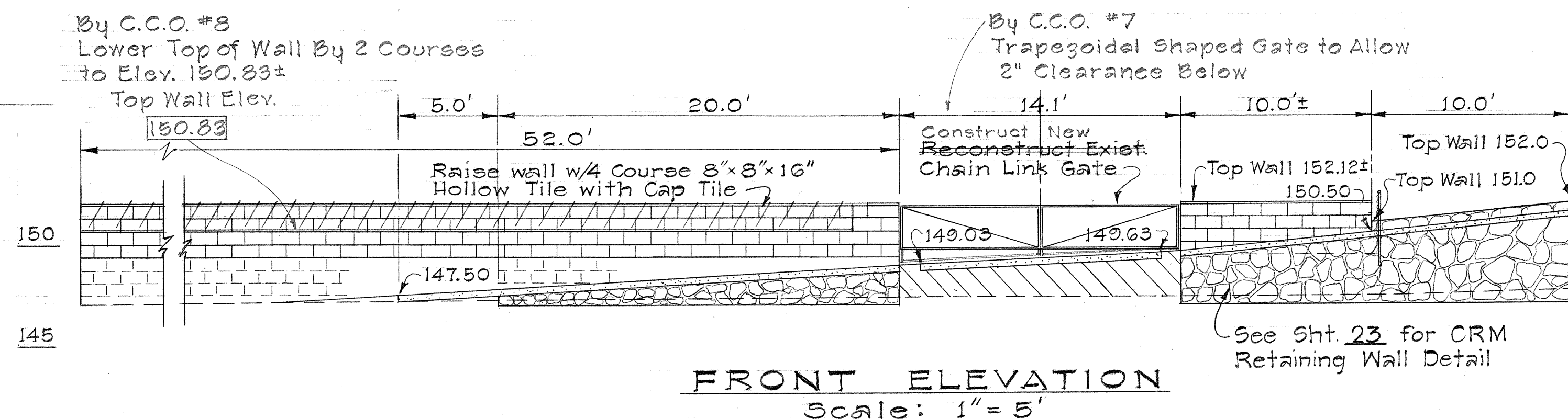
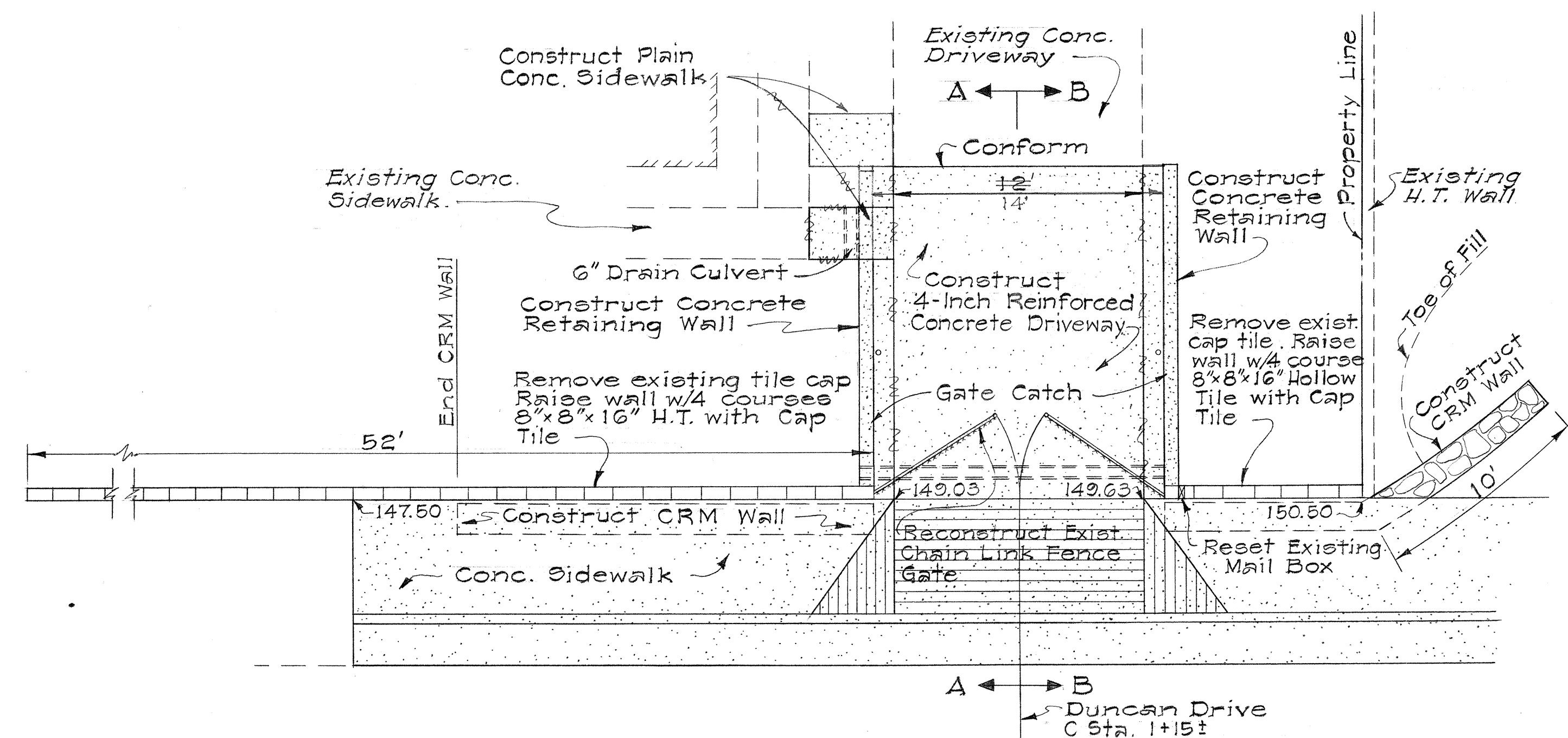
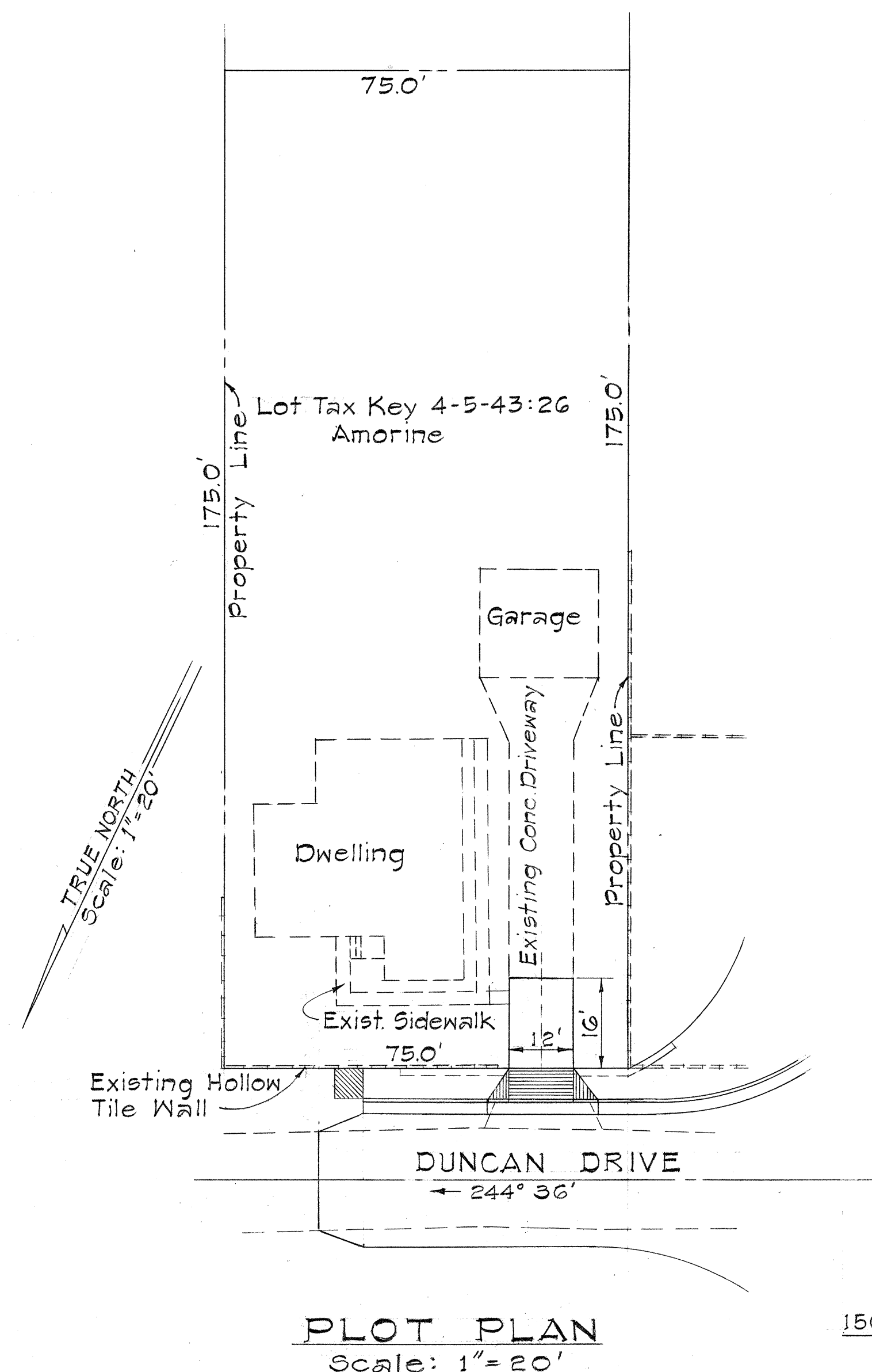
METAL STRAP DETAIL FOR ANCHORING BEAMS
Scale: 3" = 1'-0"



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REHABILITATION PLANS
FOR LOT TAX KEY 4-5-43:10
KAMEHAMEHA HIGHWAY
F.A.P. No. F-083-1(2), Unit 2
Scale: As Noted Date: May, 1967
SHEET No. 8 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-083-1(2) Unit 2	1967	21	83



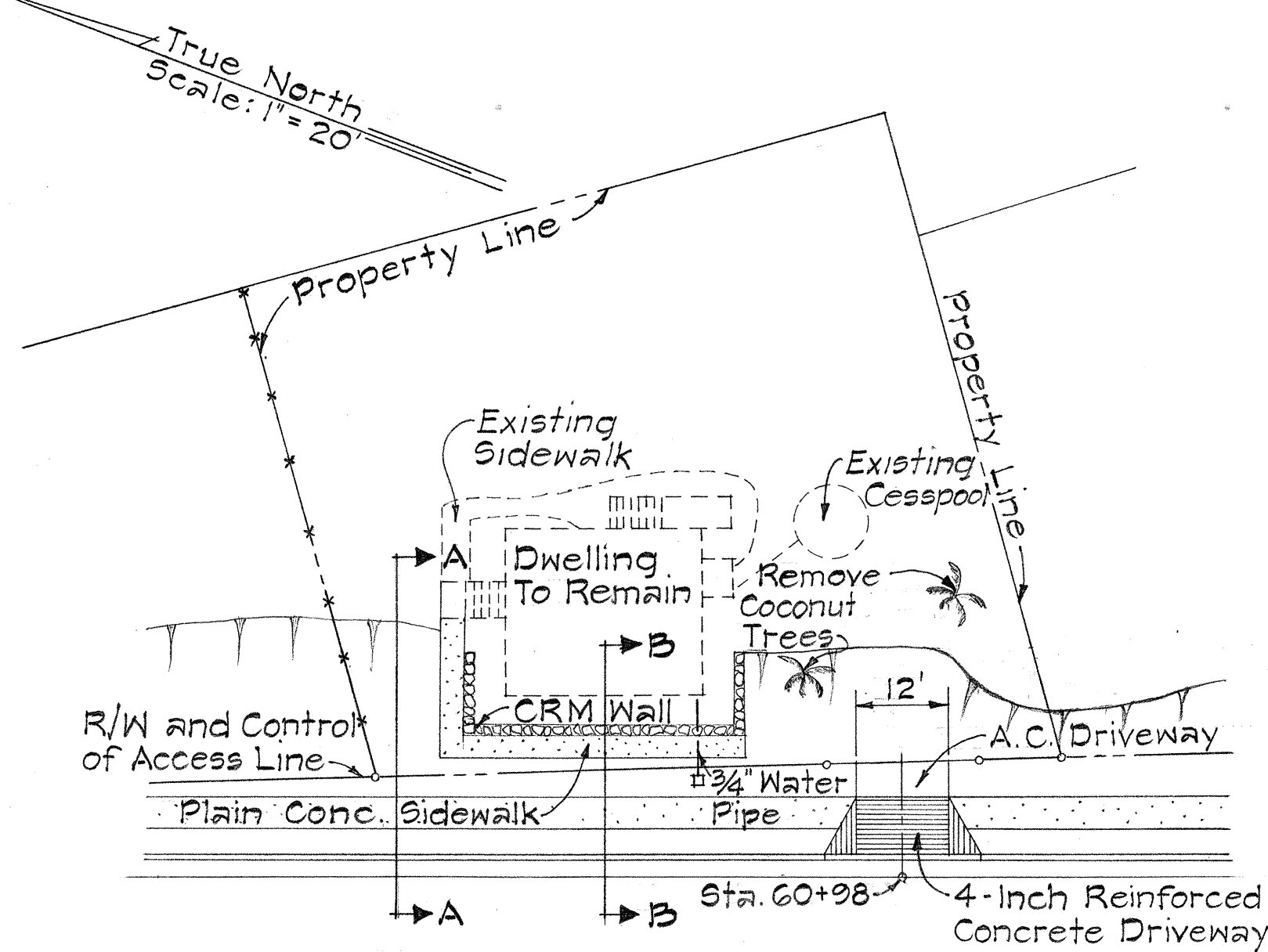
SCOPE OF WORK:

- All work shown within the highway right of way will be performed under the respective contract items of work for the roadway and are not included in the scope of work under this Item No. 123.02.
- Saw neat cut at conform Line and remove existing concrete driveway within the limits of the new concrete driveway.
- Construct concrete retaining wall as shown. Construct 12" wide 4" reinforced concrete driveway to new grade as shown.
- Remove stepping stone and construct concrete walkway with 6" CGMP drain.
- Remove existing cap tile and raise 8"x8"x16" hollow tile wall as shown.
- Reconstruct existing chain-link gate and gate catch to new grade.
- Reset mail box on wall as shown.
- Existing material damaged through contractor's operations shall be replaced with material in kind.
- New material required and used shall be equal to existing in type and grade.
- At the end of each work day, work area shall be removed of debris and kept in a presentable condition.
- Clean up all debris in work area after completion of work.
- All sodded areas affected by the contractor shall be resodded.
- During construction, property owner shall be provided with access to the dwelling.

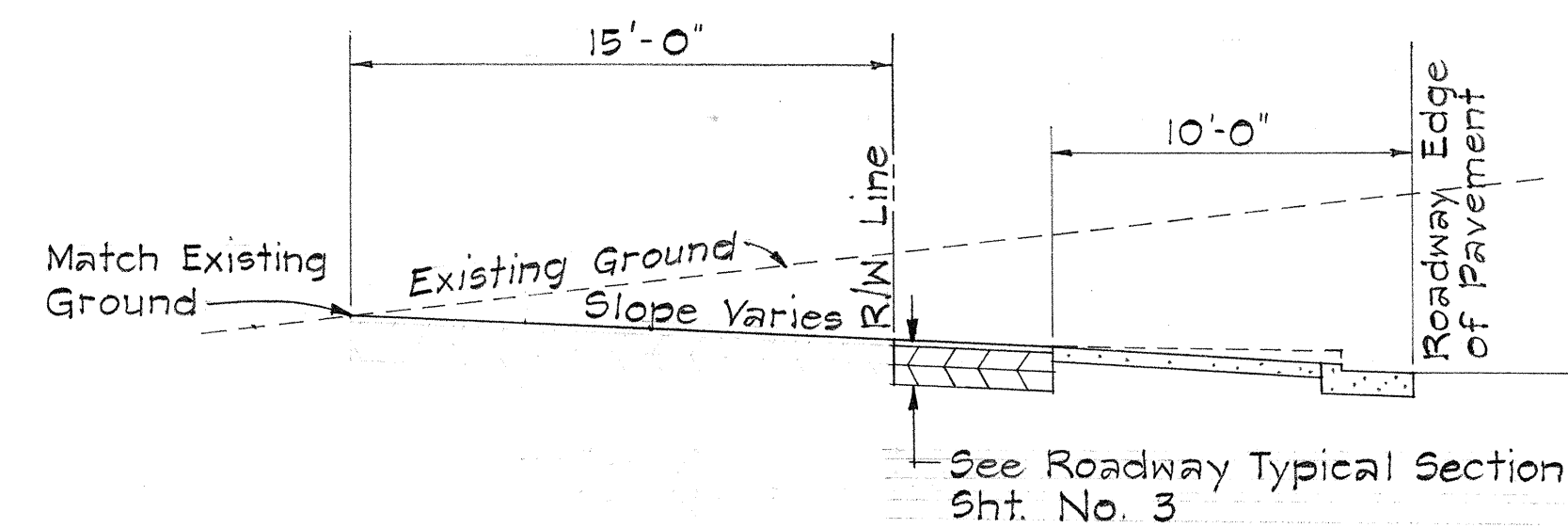
- Damage to existing property caused by contractor shall be restored to its original condition.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REHABILITATION PLANS
FOR LOT TAX KEY 4-5-43:26
KAMEHAMEHA HIGHWAY
F.A.P. No. F-083-1(2), Unit 2
Scale: As Noted June 1967
SHEET No. 9 OF 10 SHEETS

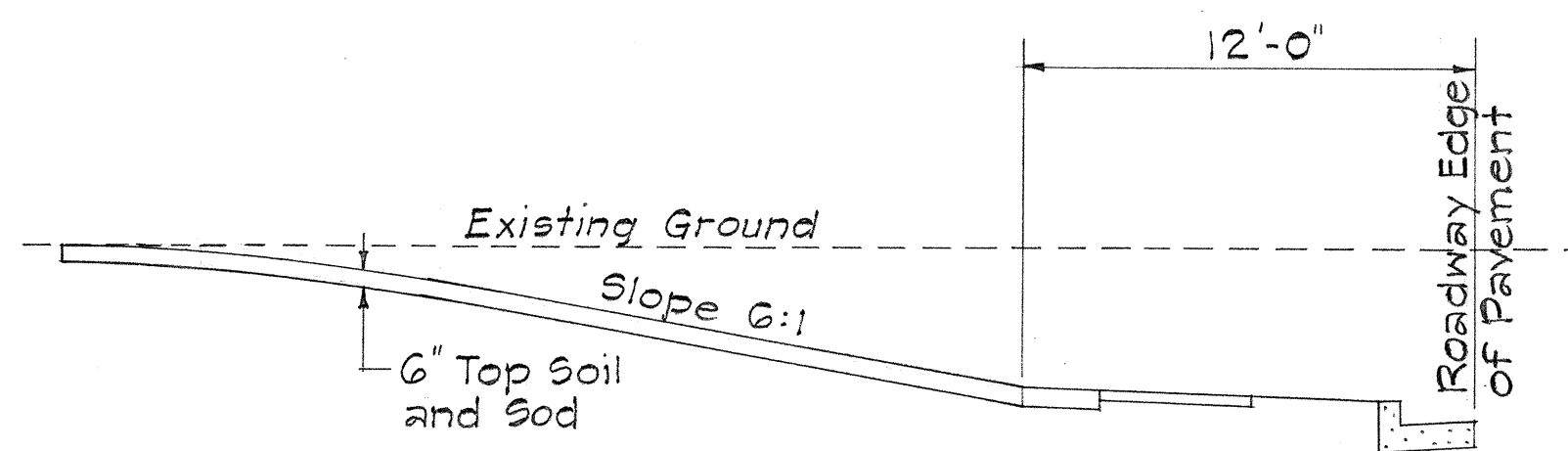
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-083-1(2) Unit 2	1967	22	83



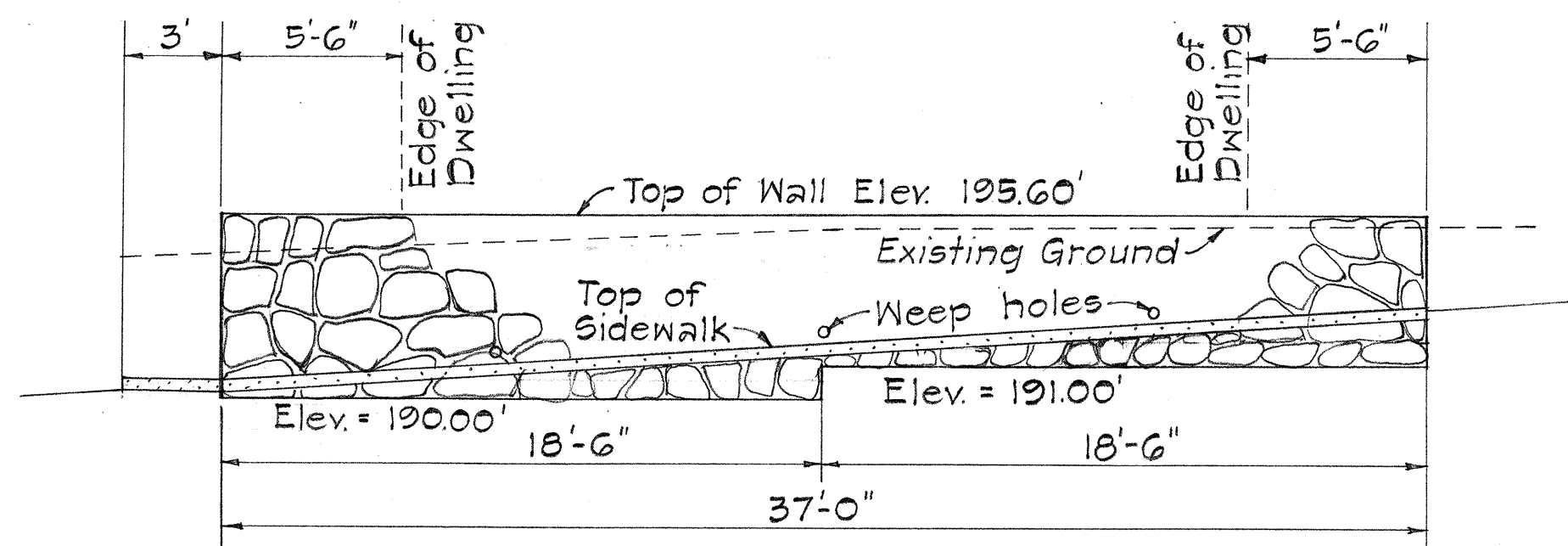
PLOT PLAN
Scale: 1"=20'



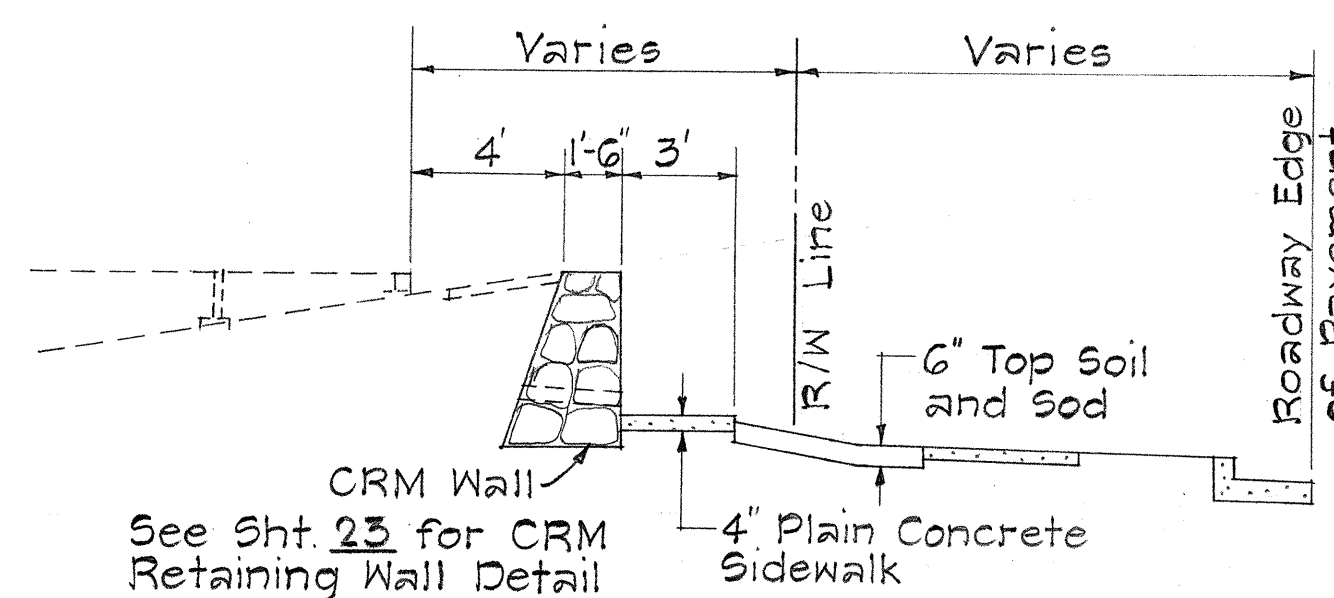
DRIVEWAY PROFILE STA. 60+98
Scale: 1"=5'



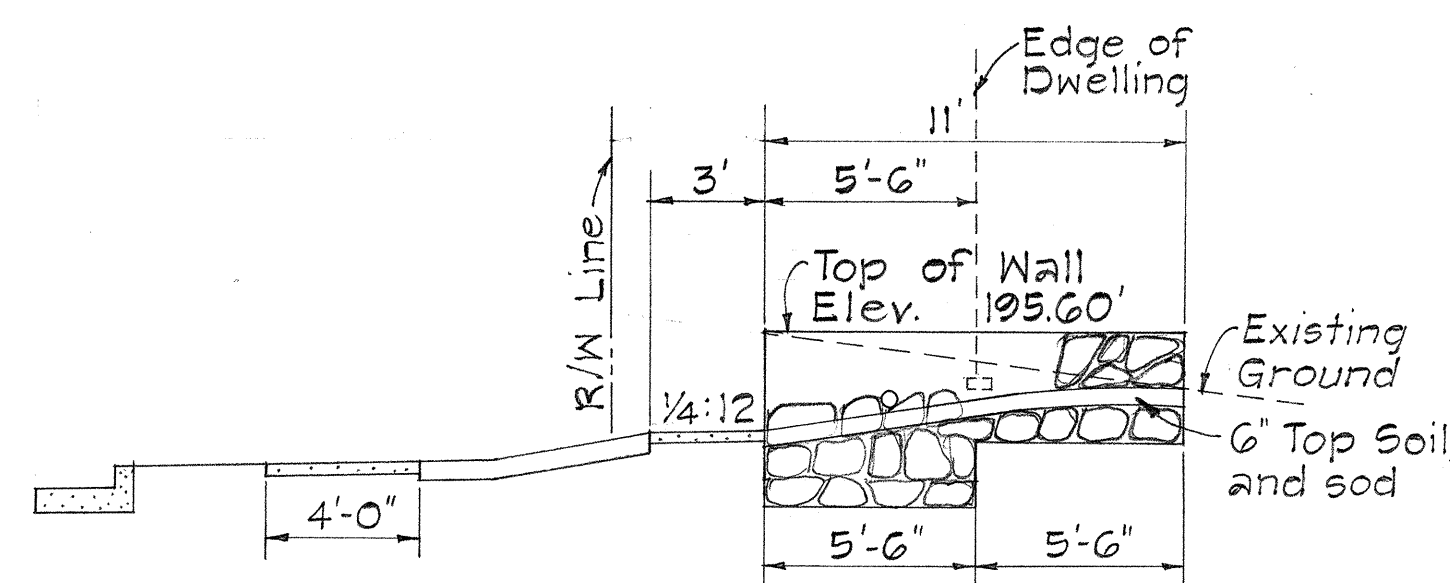
SECTION "A-A"
Scale: 1"=5'



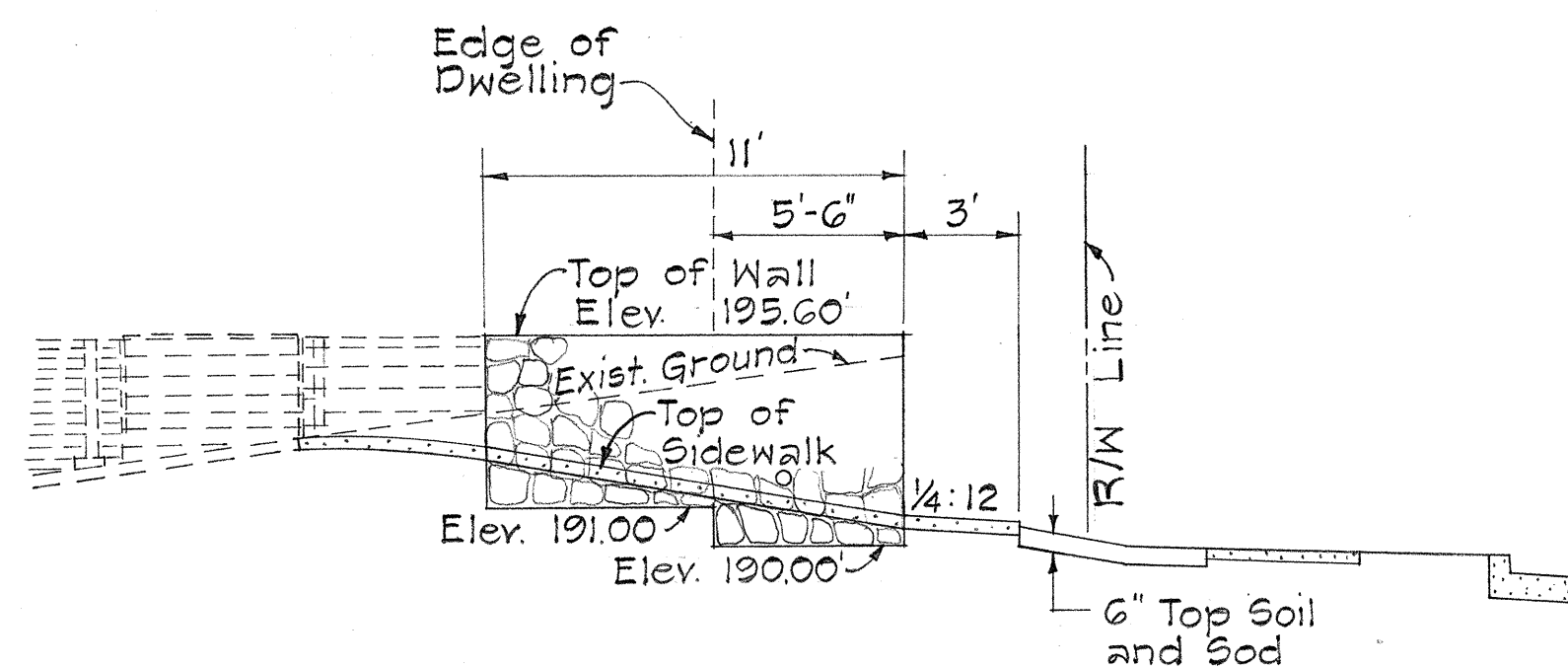
FRONT ELEVATION
Scale: 1"=5'



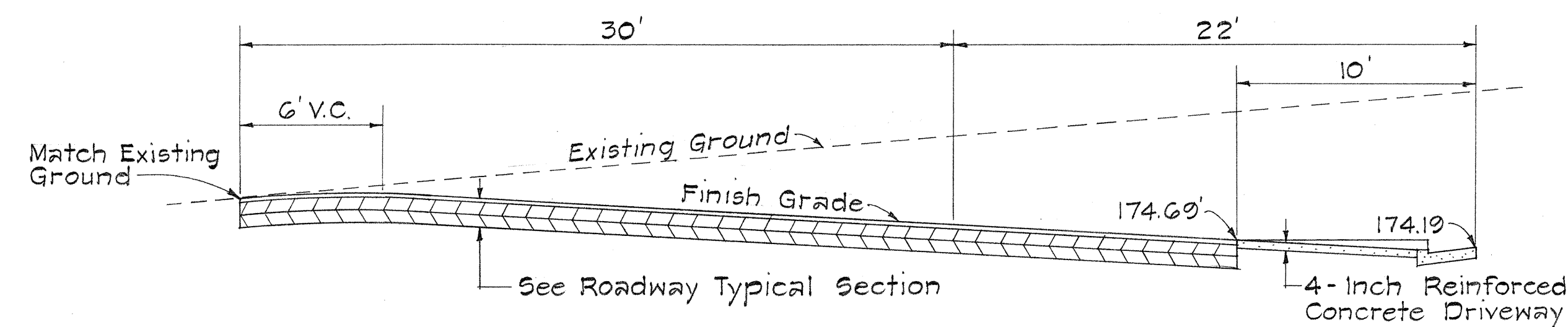
SECTION "B-B"
Scale: 1"=5'



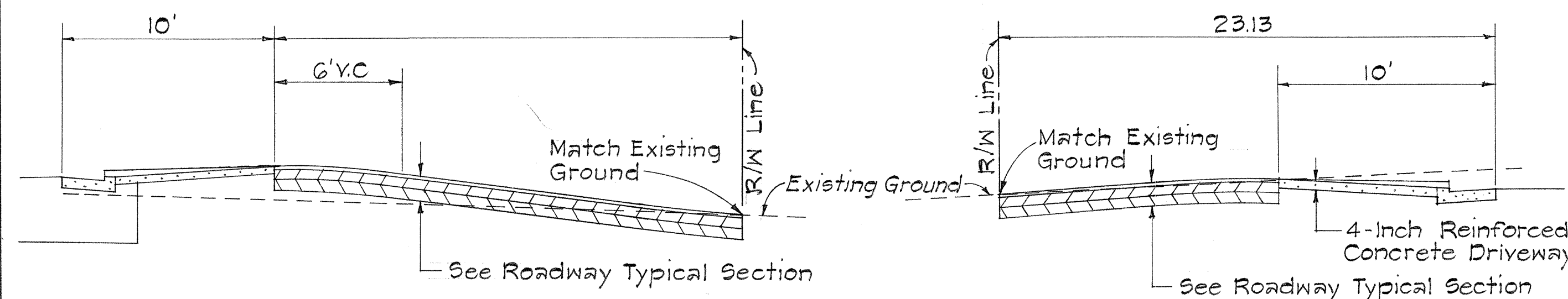
RIGHT SIDE ELEVATION
Scale: 1"=5'



LEFT SIDE ELEVATION
Scale: 1"=5'



DRIVEWAY PROFILE STA. 58+11.92
Scale: 1"=5'



DRIVEWAY PROFILE STA. 56+46.25
Scale: 1"=5'

DRIVEWAY PROFILE STA. 64+60.01
Scale: 1"=5'

DRIVEWAY ADJUSTMENTS

SCOPE OF WORK :

1. Lower existing 3/4" galvanized water pipe. (Incidental to "Roadway Excavation")
2. Grade area as shown in the cross sections.
3. Remove coconut tree and portion of the existing sidewalk (Incidental to "Roadway Excavation")
4. Construct cement rubble masonry wall and plain concrete sidewalk as shown.
5. Construct 12 feet wide 4-Inch reinforced Concrete drop driveway with a 12 feet wide asphalt concrete driveway as shown.
6. Fill with 6-Inch layer of top soil and sod area affected by construction.
7. Maintain continuous utility services during contractor's entire operations.
8. Maintain access to dwelling during contractor's entire operations.
9. Contractor shall take precautionary measures to prevent settlement of dwelling during construction.
10. Existing material damaged through contractor's operations shall be replaced with material in kind.
11. Reconstruct mail box, location to be determined by the owner. (Incidental to various contract items)

STATE OF HAWAII	
DEPARTMENT OF TRANSPORTATION	
HIGHWAYS DIVISION	
REHABILITATION PLANS	
FOR LOT TAX KEY 4-5-43:1	
AND DRIVEWAY ADJUSTMENTS	
KAMEHAMEHA HIGHWAY	
F.A.P. No. F-083-1(2), Unit 2	
Scale: As Noted	Date: May 1967
SHEET No. 10 OF 10 SHEETS	

REHABILITATION OF LOT TAX KEY 4-5-43:1