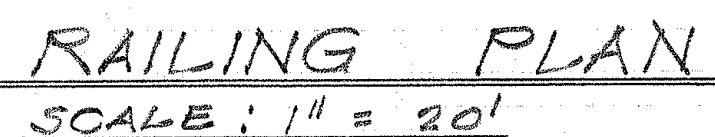
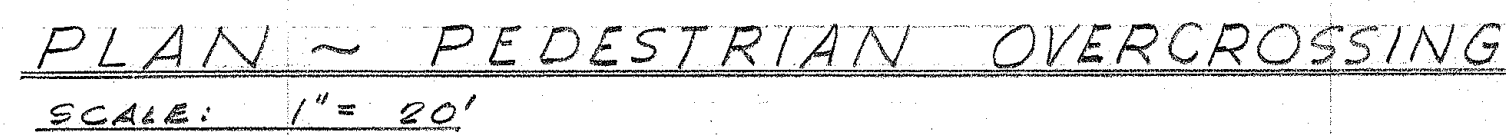


Revision: April 21, 1969



NOTE: FOR TYPICAL RAIL DETAILS, SEE "MILLER STREET
PEDESTRIAN OVERCROSSING", SHT. 5

BORING NO B-4A

BORING NO B-17

ABUT. NO. 2 FOOTING FOR EXISTING BRIDGE 2

TUFF WITH STREAKS
OF CINDERS

BOULDERS

1. *Chlorophyll a* (Chl a) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl a is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy in the form of ATP and NADPH.

PUNCHBOW.
STREAKS OF

STREAKS OF

116 110 E

149 NCO E

1

1

ALAPAI ST. PEDESTRIAN OVERCROSSING

PEDESTRIAN OVERPASSES OVER INTERSTATE H-1
AT MILLER STREET & ALAPAI STREET

FEDERAL AID INTERSTATE PROJECT NO. I-HI-1(31) 21 UNIT 4

DATE 1-30-69

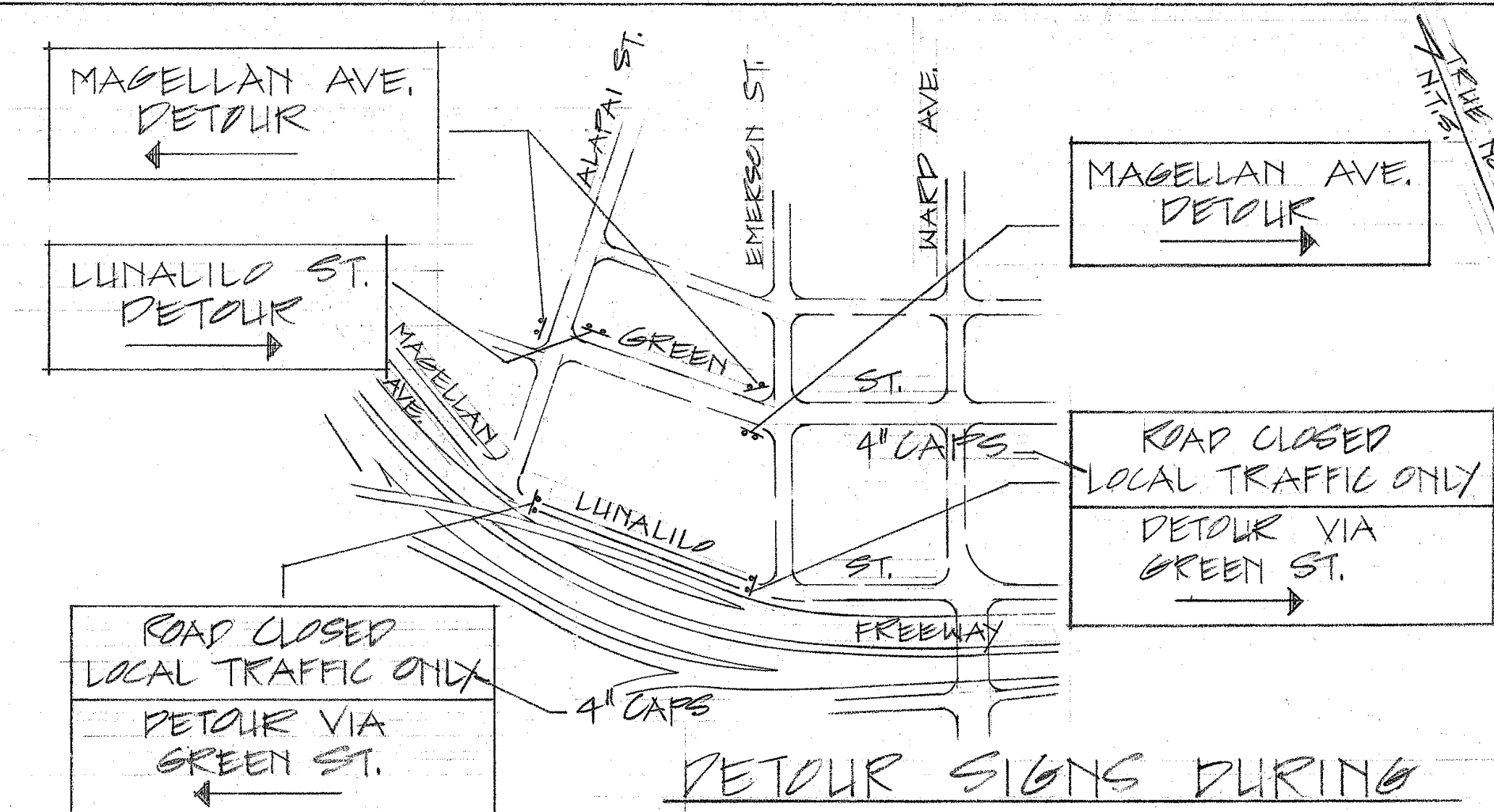
SHEET No. 1 OF 14 SHEETS

Revision: April 21, 1969

JOINT AT THIS PIER ONLY. OMIT SLEEVES
RS. OMIT 4" GROUT JOINT & POUR PIER
& PROVIDE 4"x 3/4" DEEP CONTINUOUS
T. OTHER DETAILS & REINFORCEMENT
TAIL (E/4).

The Contractor shall furnish certified test results for the coupler to show compliance with the specifications and plans.

- (A) CONSTRUCT FOOTINGS & PIERS AS REQ'D AND APPROVED BY THE ENGINEER
- (B) CONSTRUCT DECK FROM 14 TO 22 & POST TENSION SIMULTANEOUSLY FROM EA. END.
- (C) CONSTRUCT DECK FROM 6 TO 14 & 22 TO 30 & POST TENSION. $f_{ci} = 4500$ PSI
- (D) CONSTRUCT DECK FROM 0 TO 6 & 30 TO 35 & POST TENSION. MIN - TYP
- (E) GROUT GAP AT TOP OF COLUMN.
- (F) POST TENSION FIER VERTICALLY AFTER GROUT HAS DEVELOPED A MIN. COMP. STRENGTH OF 4,500 PSI.
- (G) GROUT ALL TENDONS.
- (H) GROUT ALL SLEEVES.
- (I) BACK-FILL AROUND PIERS & REMOVE FORMS & SHORING. EXACT DETAILS OF METHOD OF CONSTRUCTION SHALL BE DEVELOPED BY THE CONTRACTOR & SUBMITTED TO THE ENGINEER FOR APPROVAL. NO TENSIONING SHALL BE DONE UNTIL THE CONCRETE HAS DEVELOPED A MINIMUM COMPRESSIVE STRENGTH OF 4,500 P.S.I.



DETOUR SIGNS DURING
EXCAVATION FOR FOOTING
ON LUNALILO STREET

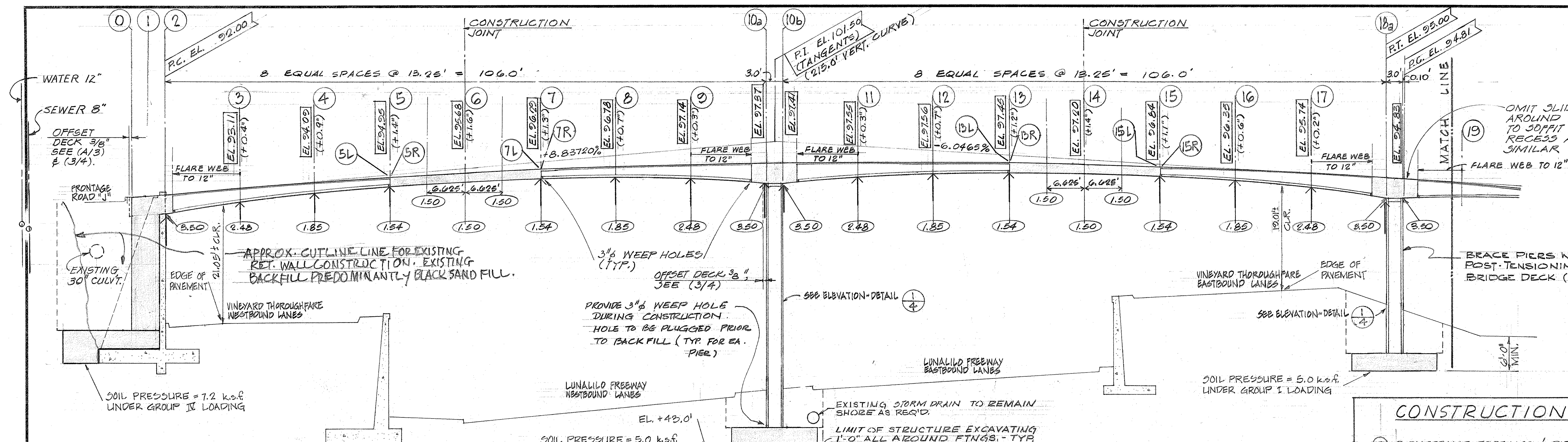
ALAPAI ST. PEDESTRIAN OVERCROSSING

PEDESTRIAN OVERPASSES OVER INTERSTATE H - I
AT MILLER STREET & ALAPAI STREET

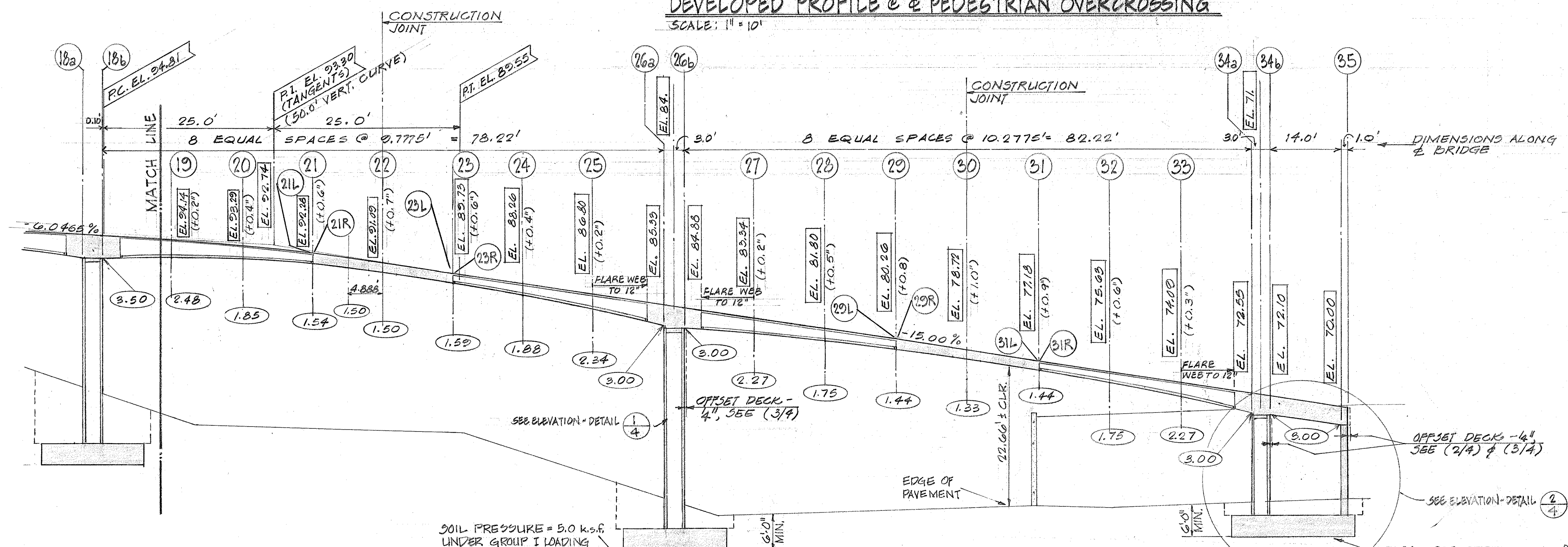
FEDERAL AID INTERSTATE PROJECT NO. I-HI-1(31):21 UNIT 4

DATE 1-30-69

SHEET No. 2 OF 4 SHEETS



SCALE: 1" = 10'



SCALE: 1" = 10'

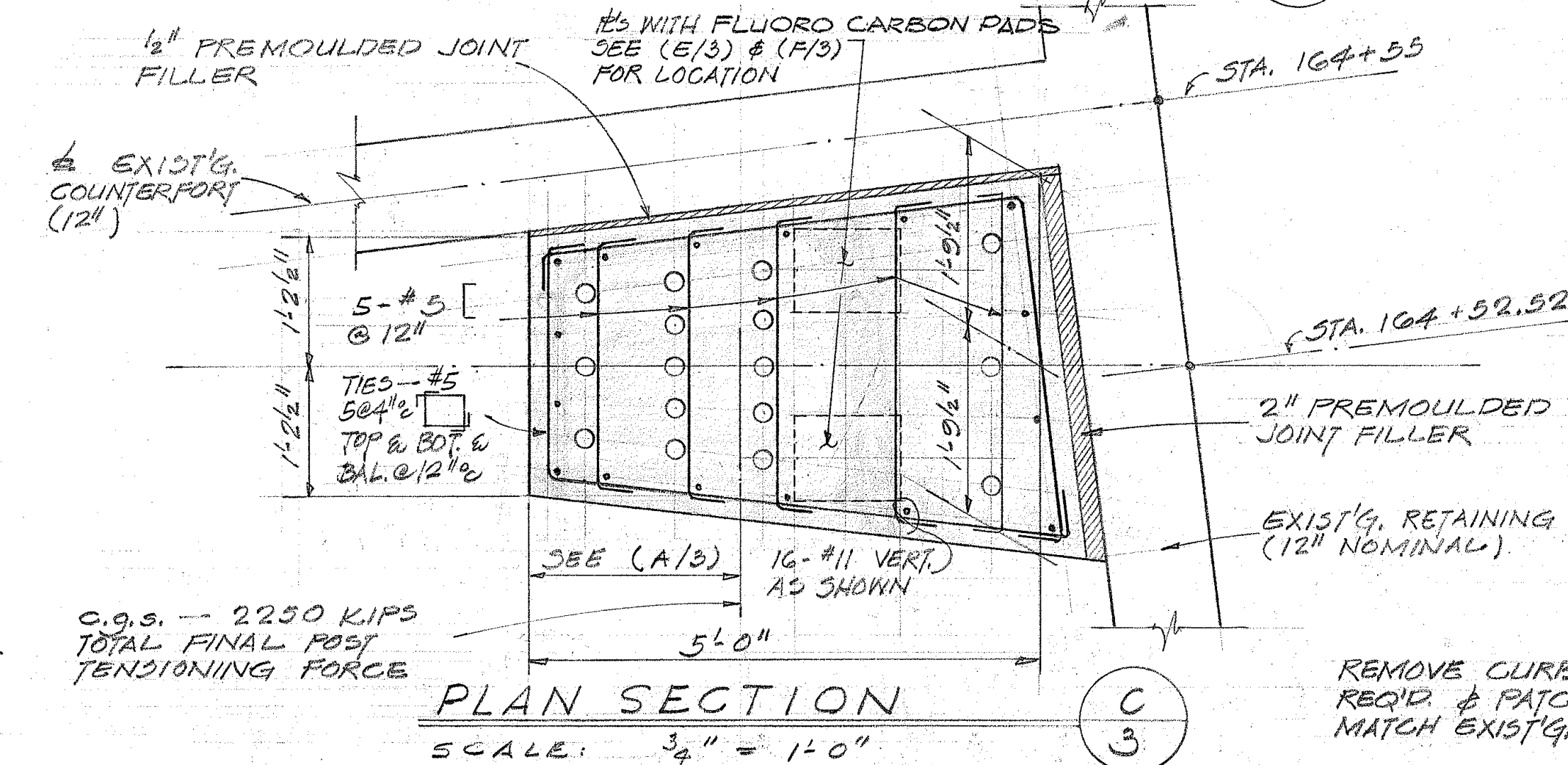
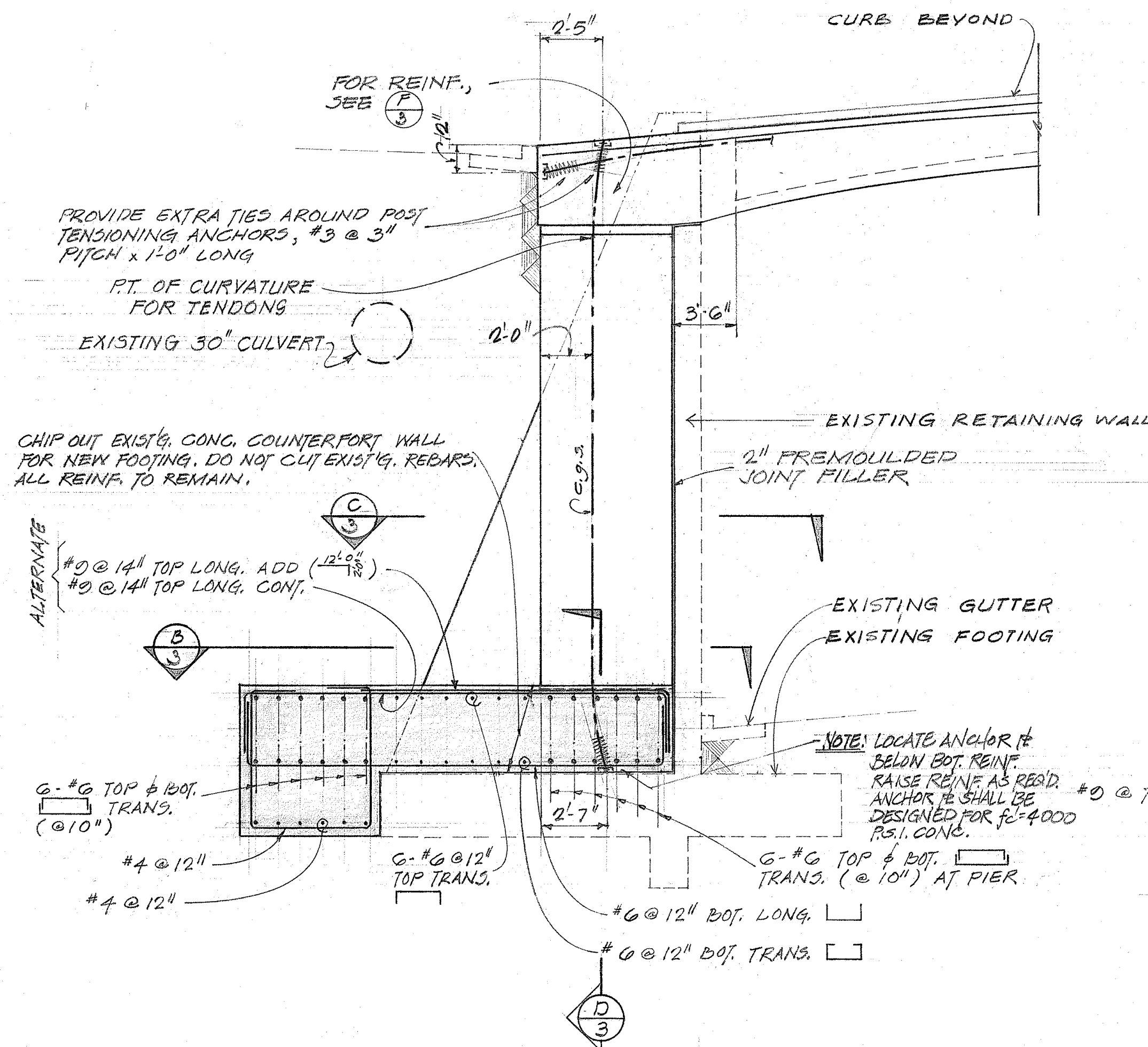
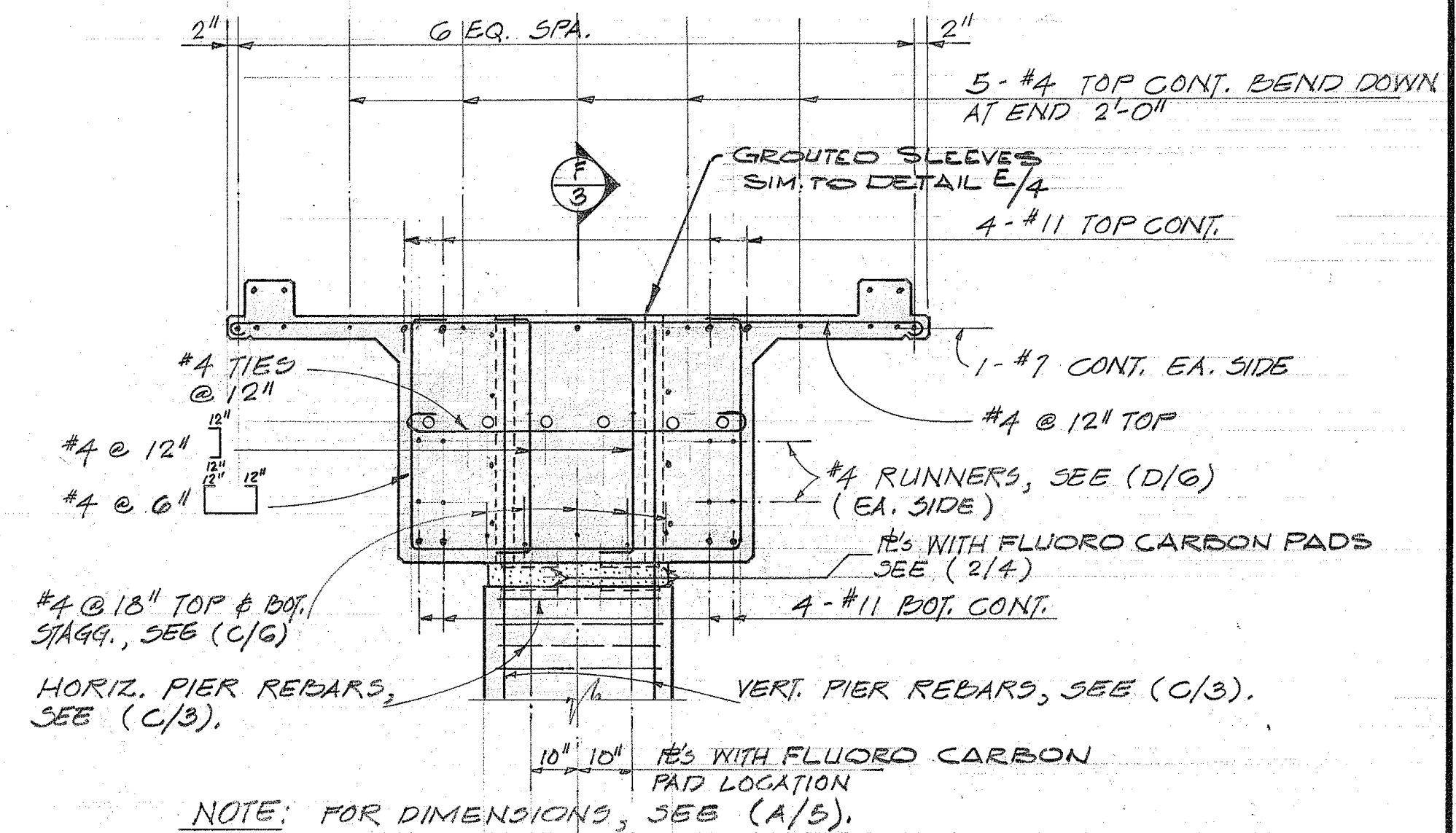
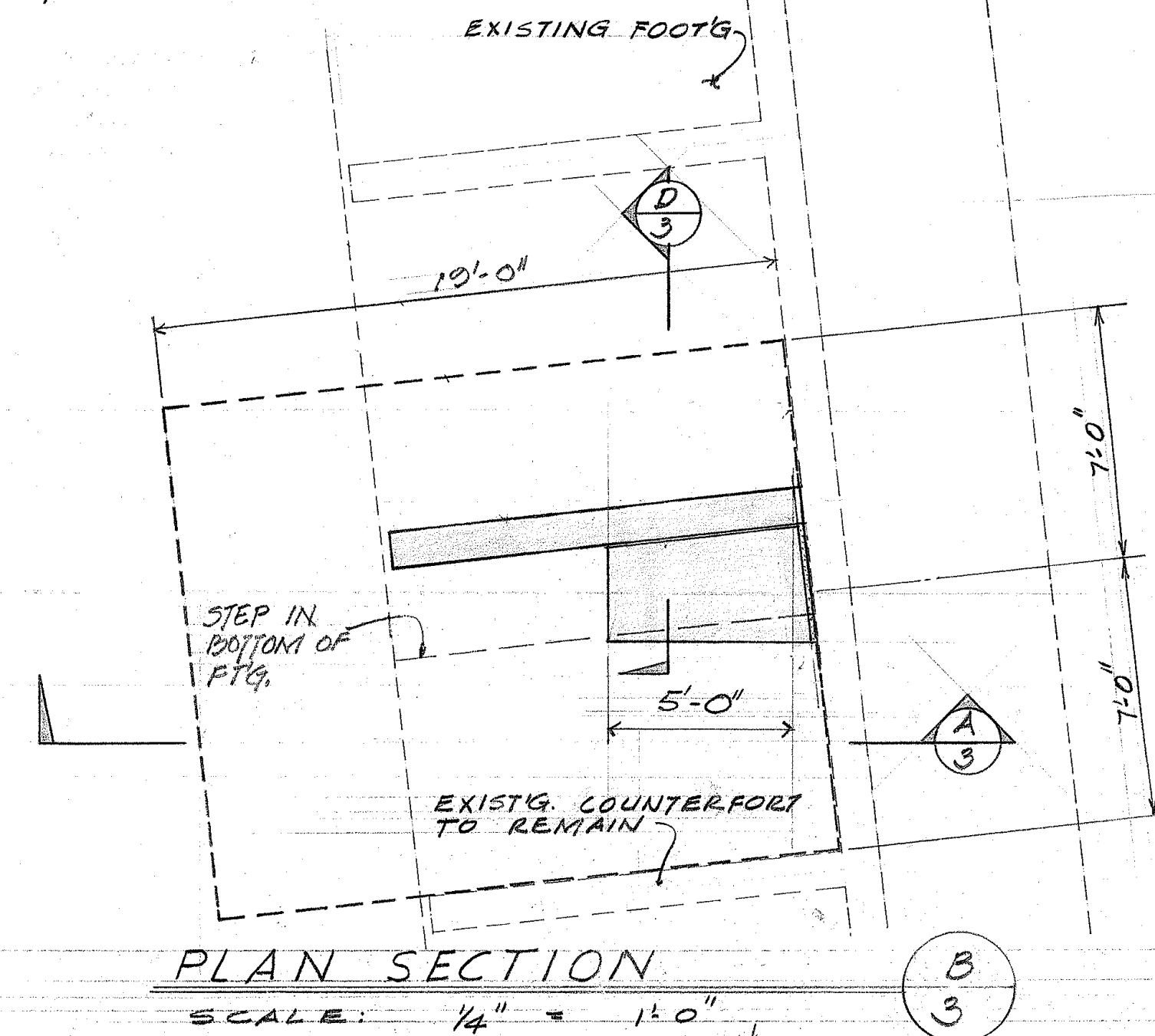
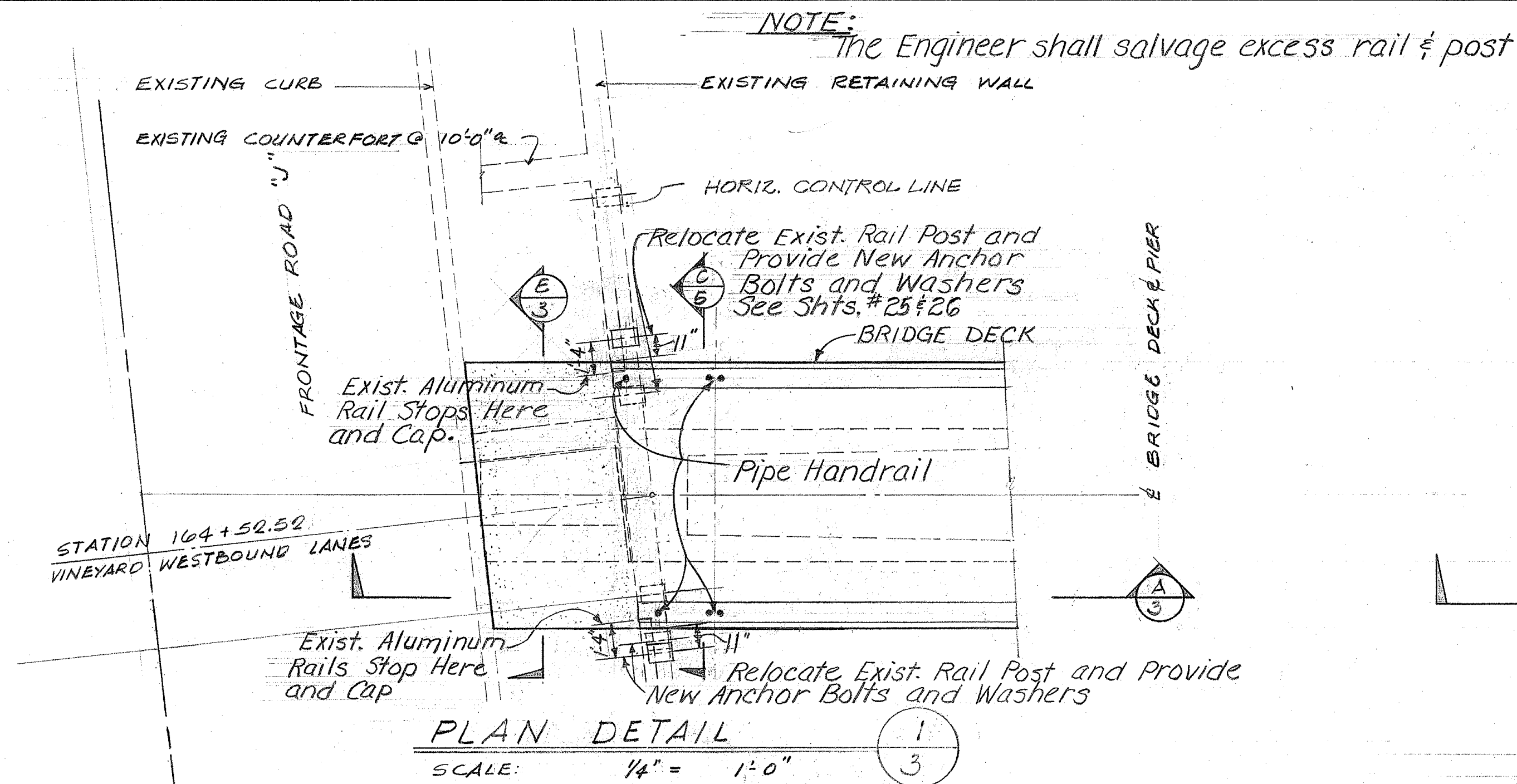
- NOTES: 1. DEPTH OF MEMBER AT STATIONS INDICATED BY , IN. FT.
2. ELEV. OF TOP OF DECK (AT W.P.) INDICATED BY  (FINISH ELEVATION), IN. FT. SEE SECT A/S
3. STATIONS INDICATED BY .
4. CAMBER, (ABOVE FINISH ELEVATION), INDICATED BY { + }, IN. INCHES.
5. ALL FOOTINGS TO BE EXCAVATED AND POURED NEAT.

NOTE:

1. DETOUR SIGNS SHALL BE OF BLACK LEGEND ON WHITE REFLECTORIZED BACKGROUND.
2. LETTERS SHALL BE 6" CAPS UNLESS NOTED OTHERWISE.

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(3)21 Unit 4	1969	15	34



REMOVE CURB WHERE REQ'D. & PATCH TO MATCH EXISTG.

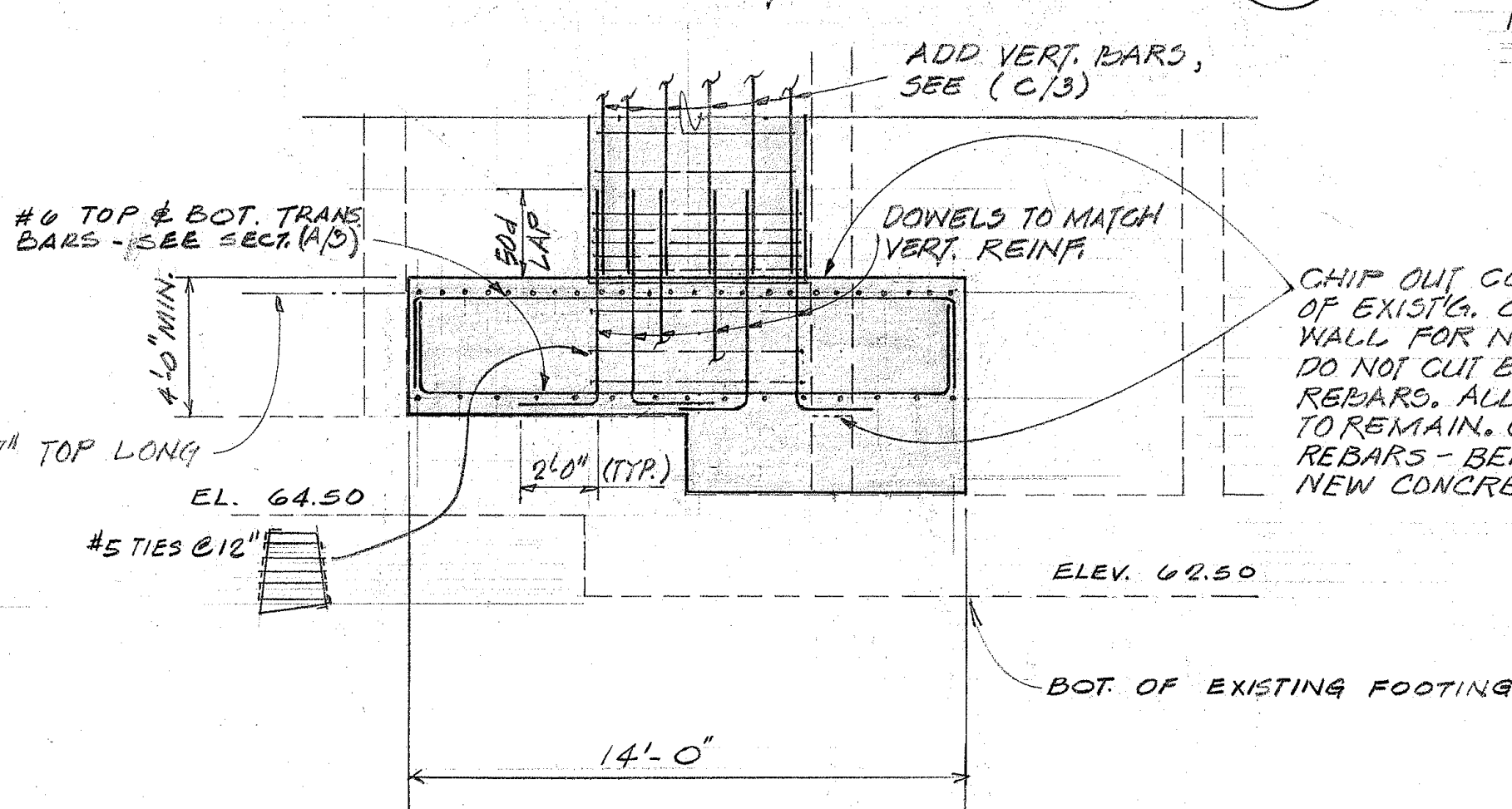
INCREASE TENDON DUCT SIZE 1/2" ABOVE SLIDING JOINT

PROVIDE EXTRA TIE AROUND POST TENSIONING ANCHORS, #3 @ 3" PITCH x 1'-0" LONG (TYP.)

GROUT JOINT SIM. DETAIL E/4

CHIP OUT CONCRETE OF EXISTG. COUNTERFORT WALL FOR NEW FOOTING. DO NOT CUT EXISTING REBARS. ALL REINF. TO REMAIN. CLEAN ALL REBARS - BEFORE PLACING NEW CONCRETE.

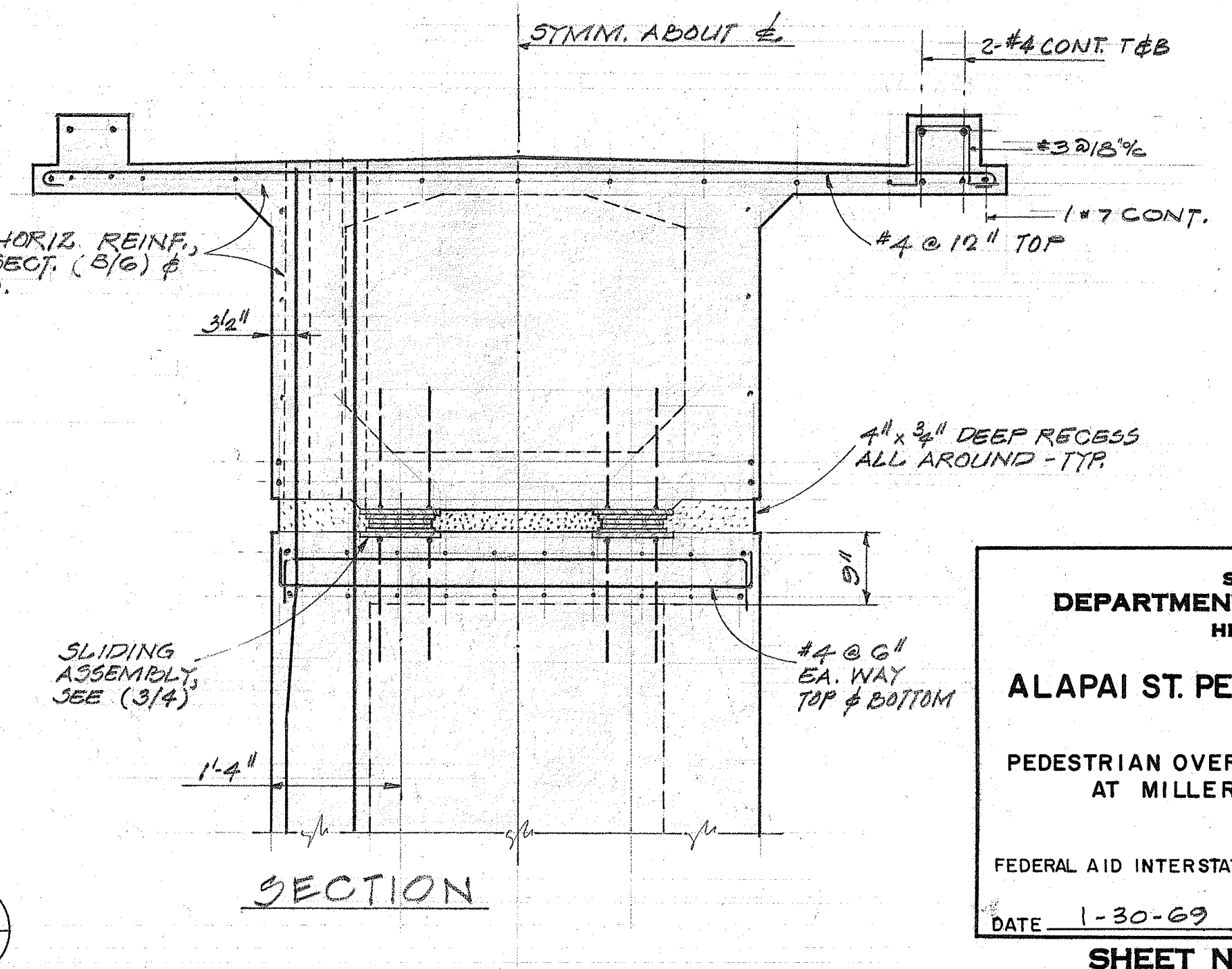
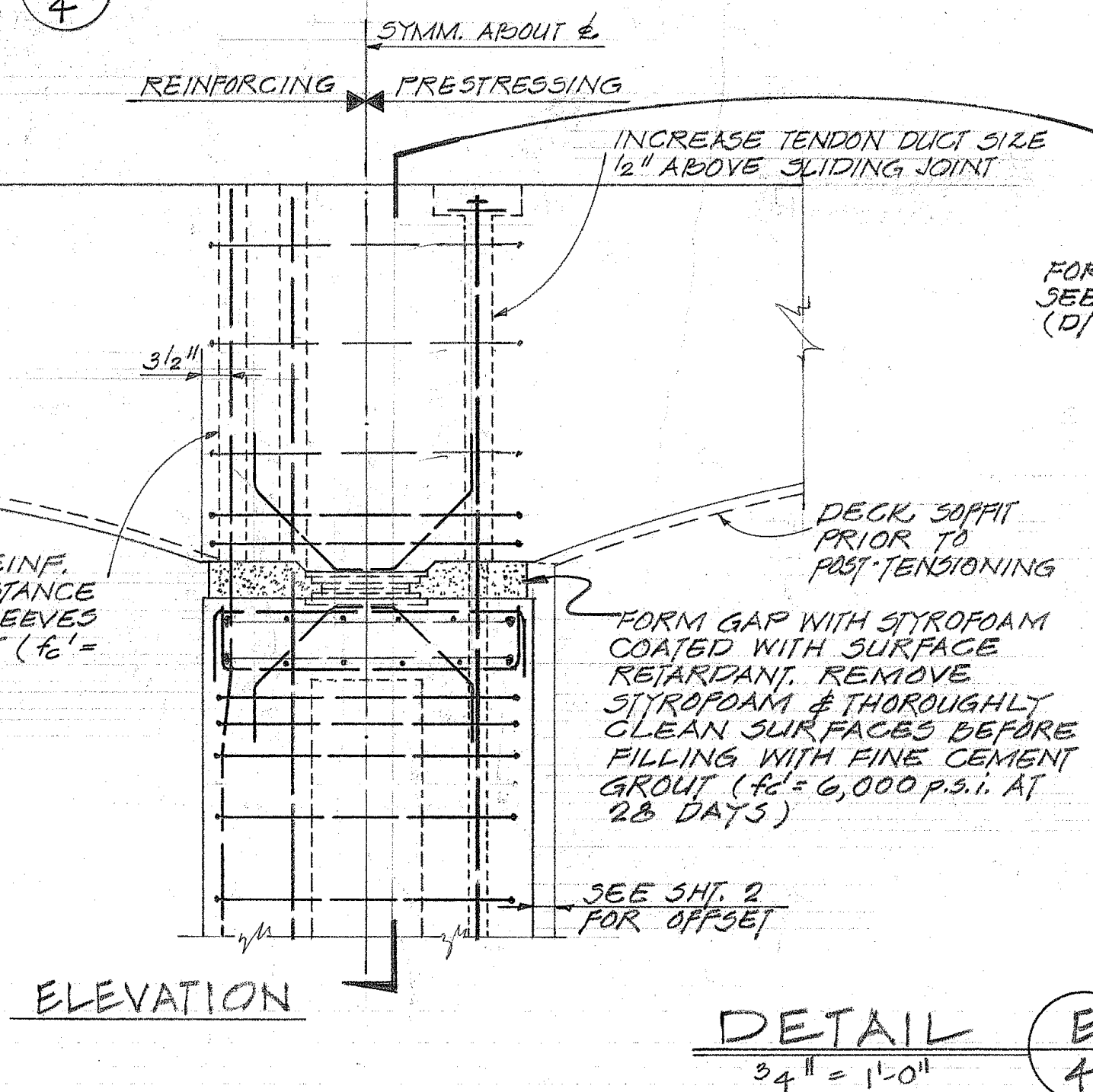
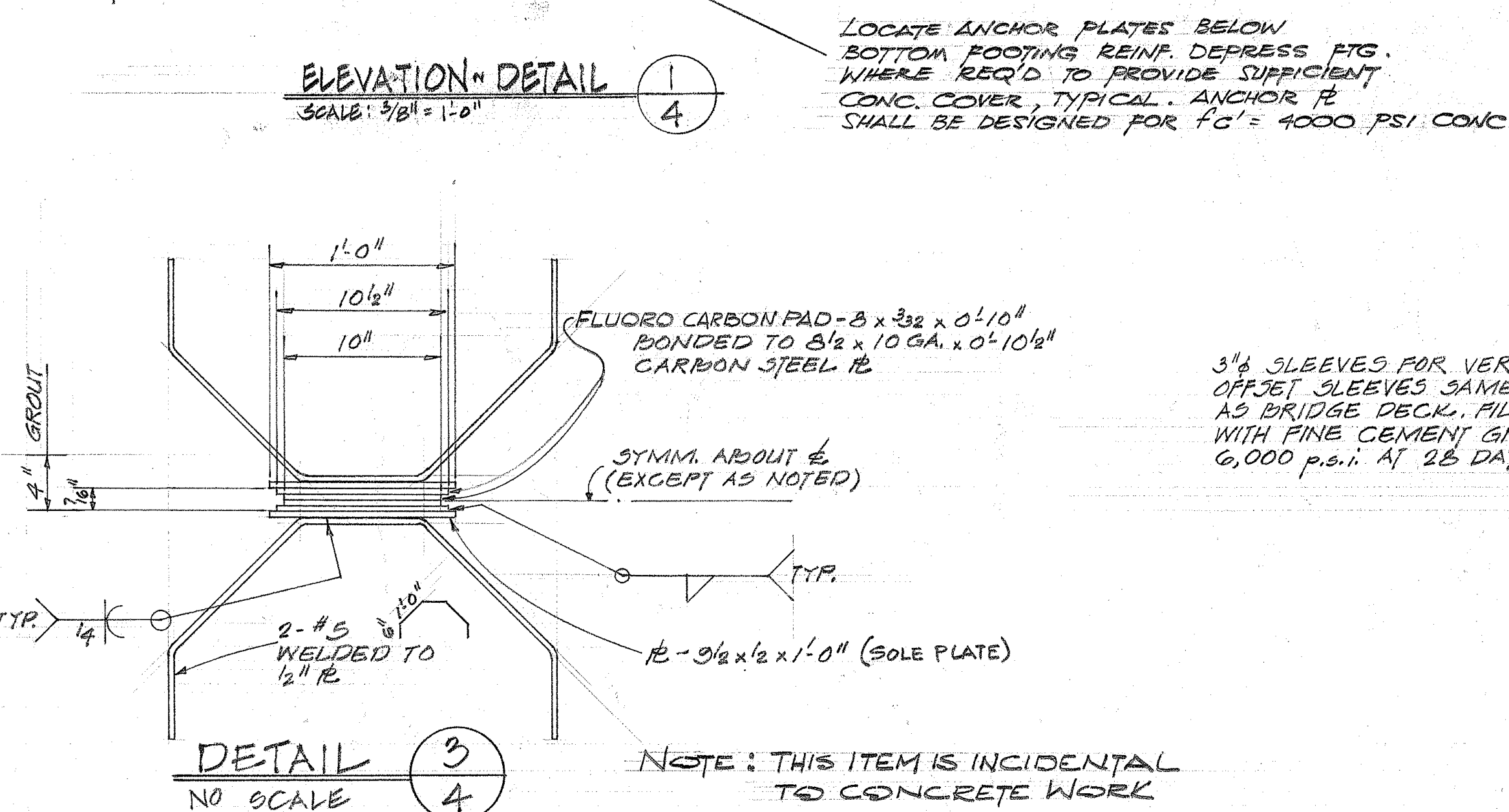
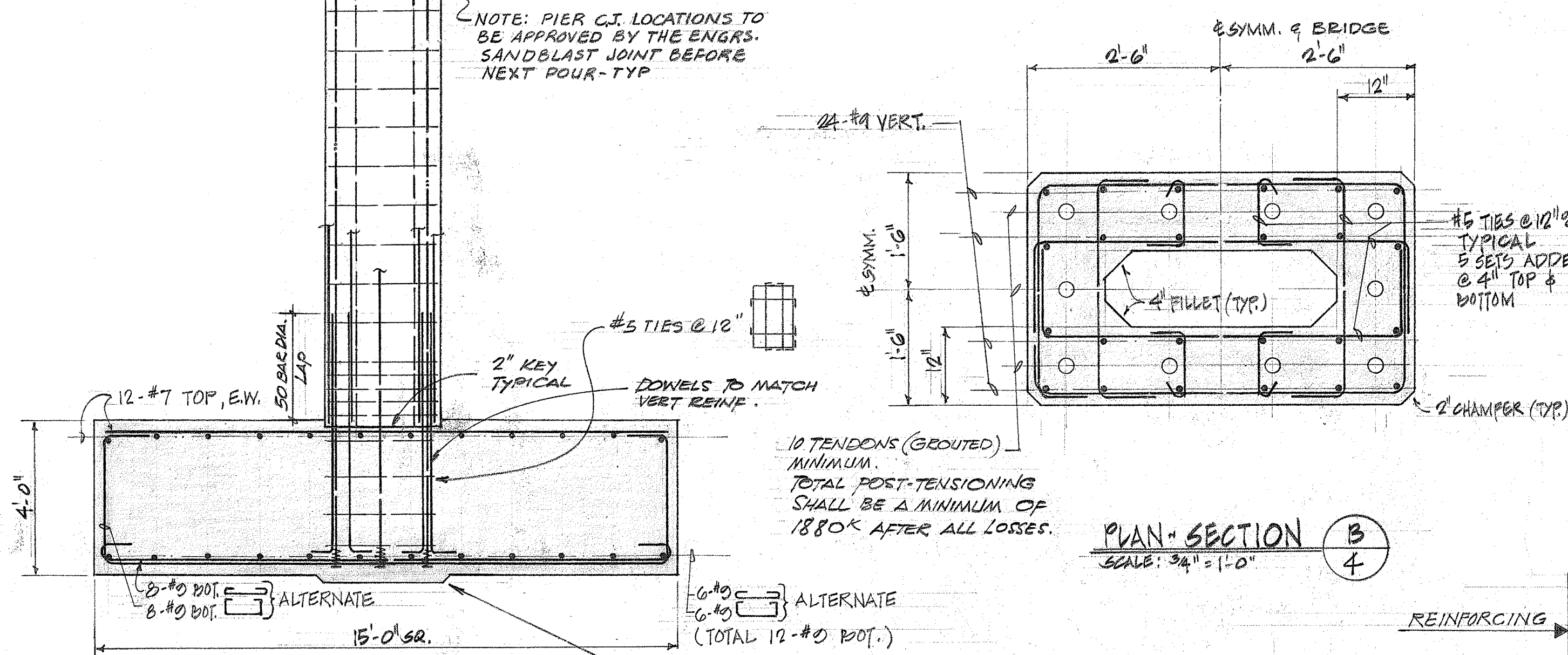
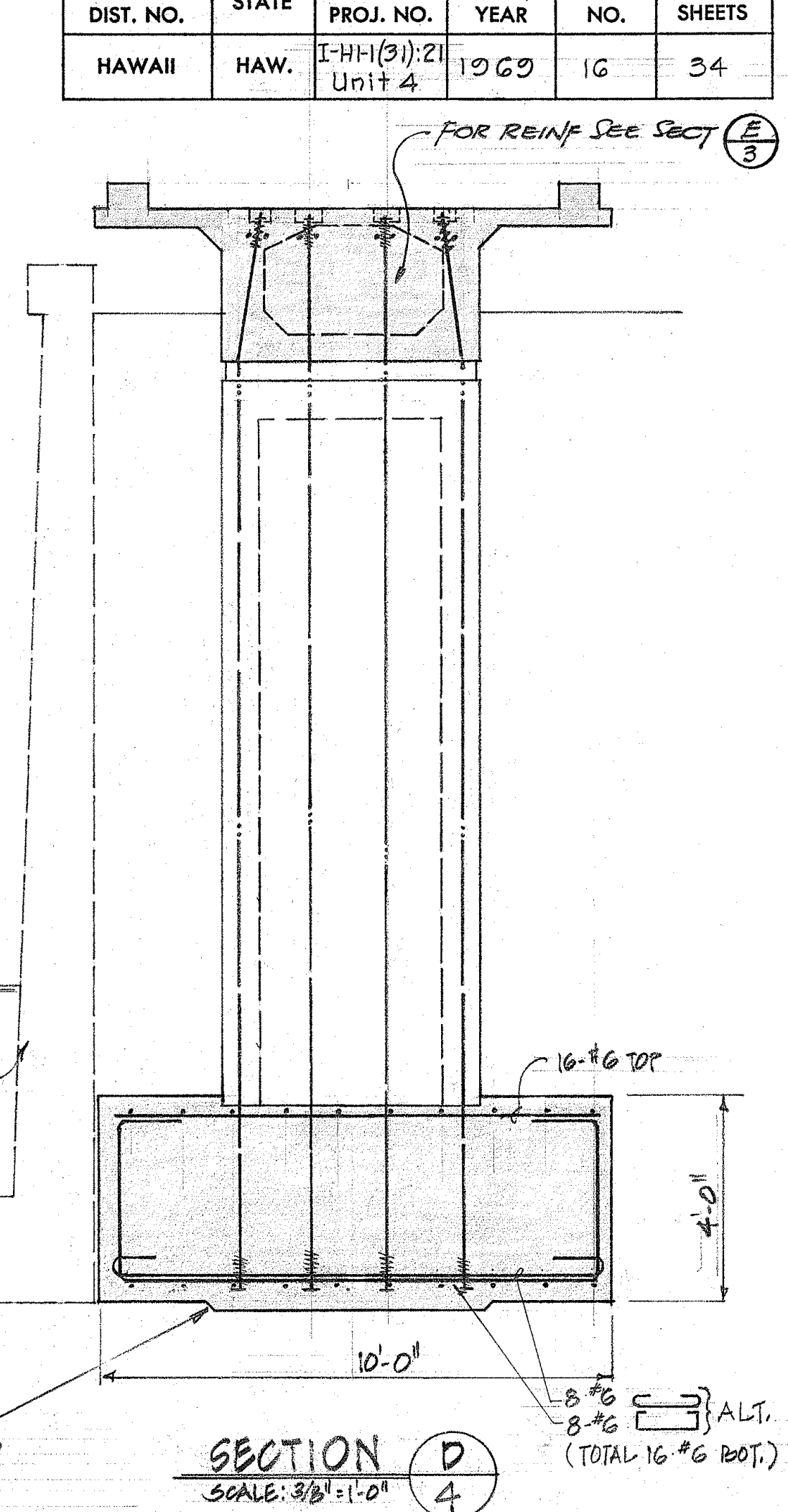
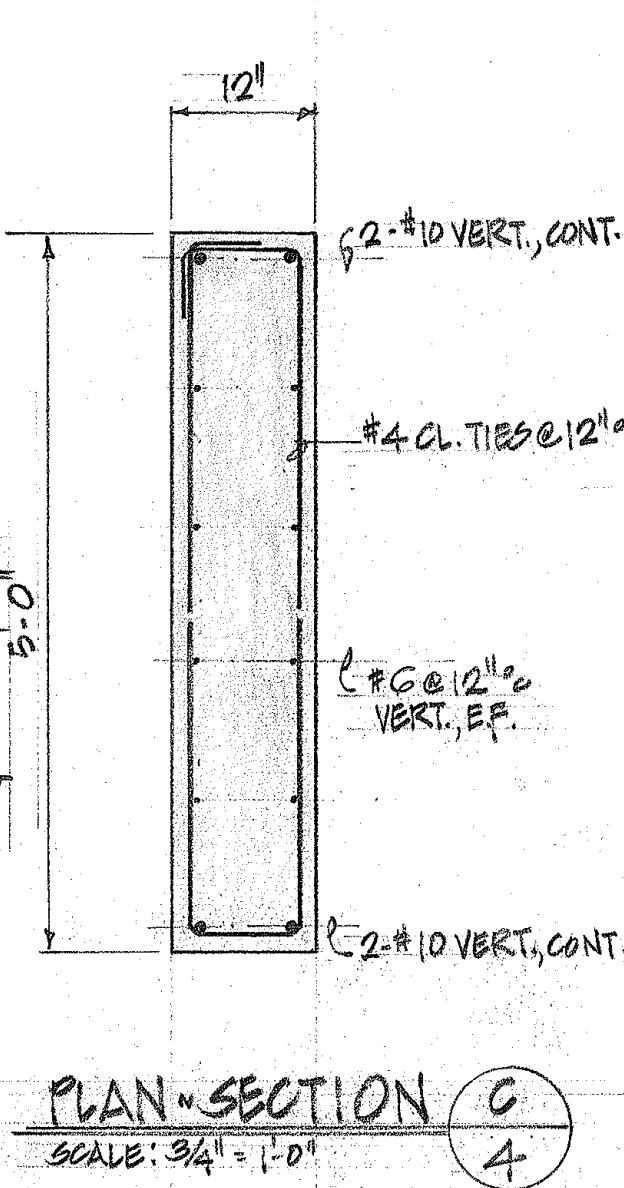
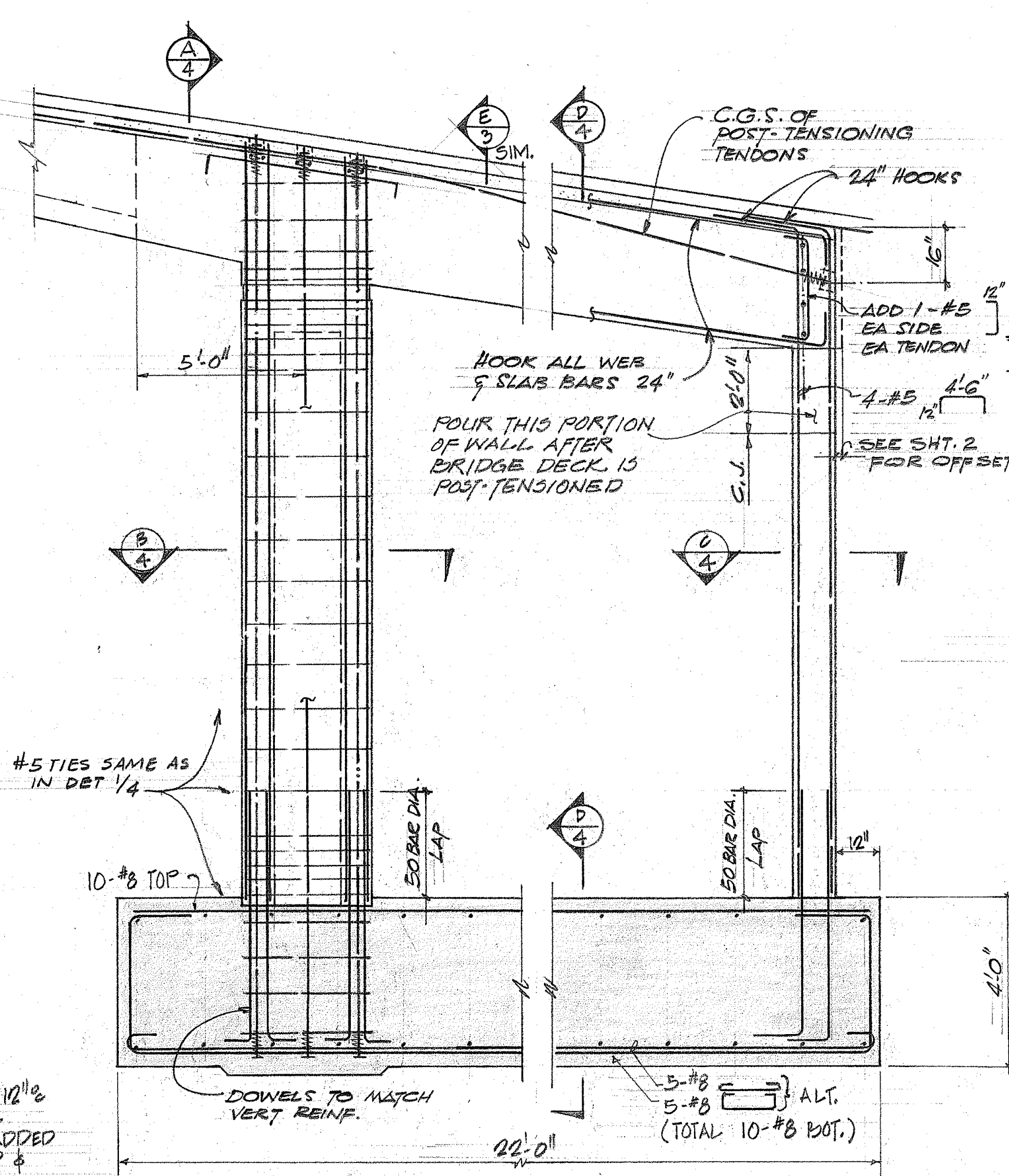
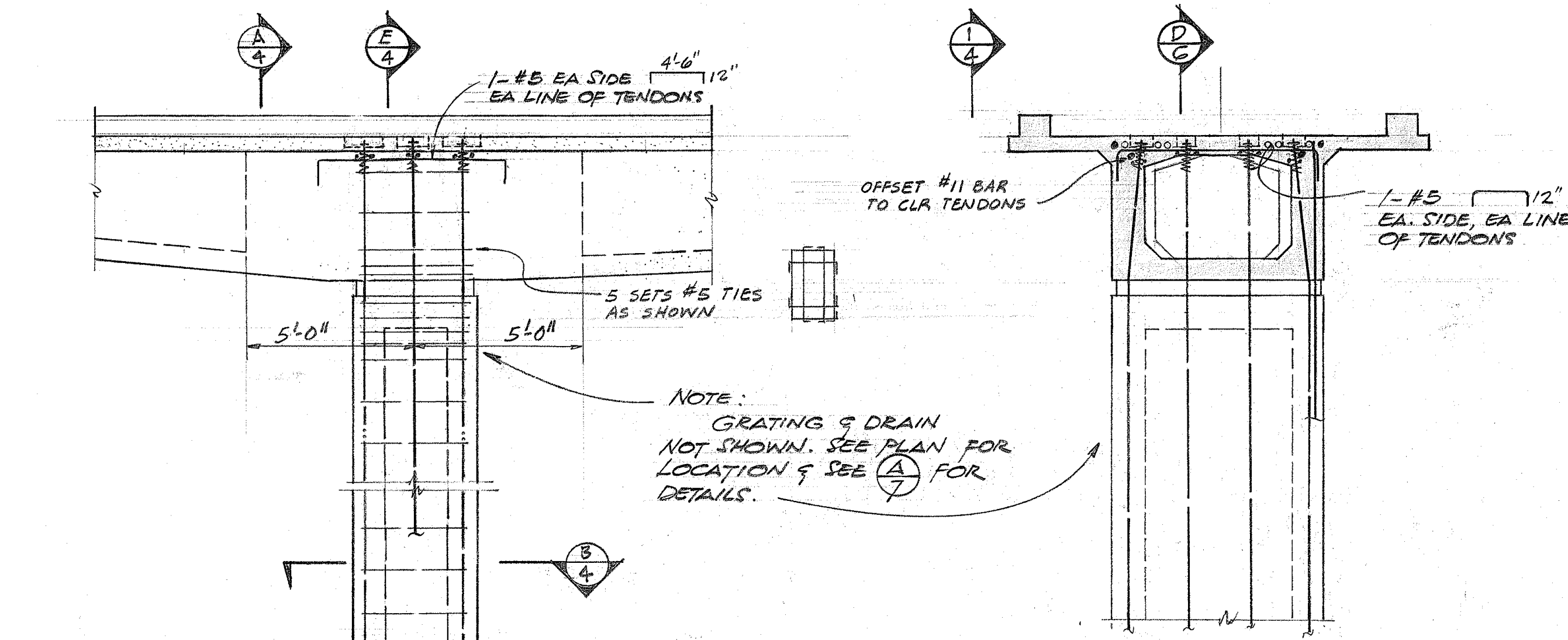
PIER REINF. NOT SHOWN, SEE (E/3)



NOTE:
THE CONTRACTOR MAY BE REQUIRED TO PROVIDE SHEET PILING TO PREVENT EXCESSIVE EROSION TO THE EXCAVATION SLOPE TO AVOID UNEARTHING & DISTURBING EXISTING UTILITY LINES. SHOULD THE UTILITY LINES BE UNEARTHED OR DISTURBED, THE CONTRACTOR SHALL TAKE NECESSARY CORRECTIVE MEASURES AS REQUIRED BY EACH RESPECTIVE UTILITY COMPANY.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ALAPAI ST. PEDESTRIAN OVERCROSSING
PEDESTRIAN OVERPASSES OVER INTERSTATE H-1
AT MILLER STREET & ALAPAI STREET
FEDERAL AID INTERSTATE PROJECT NO. 1-HI-1(3)21 UNIT 4
DATE: 1-30-69
SHEET No. 3 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31):21 Unit 4	1969	16	34



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ALAPAI ST. PEDESTRIAN OVERCROSSING

PEDESTRIAN OVERPASSES OVER INTERSTATE H-1
AT MILLER STREET & ALAPAI STREET

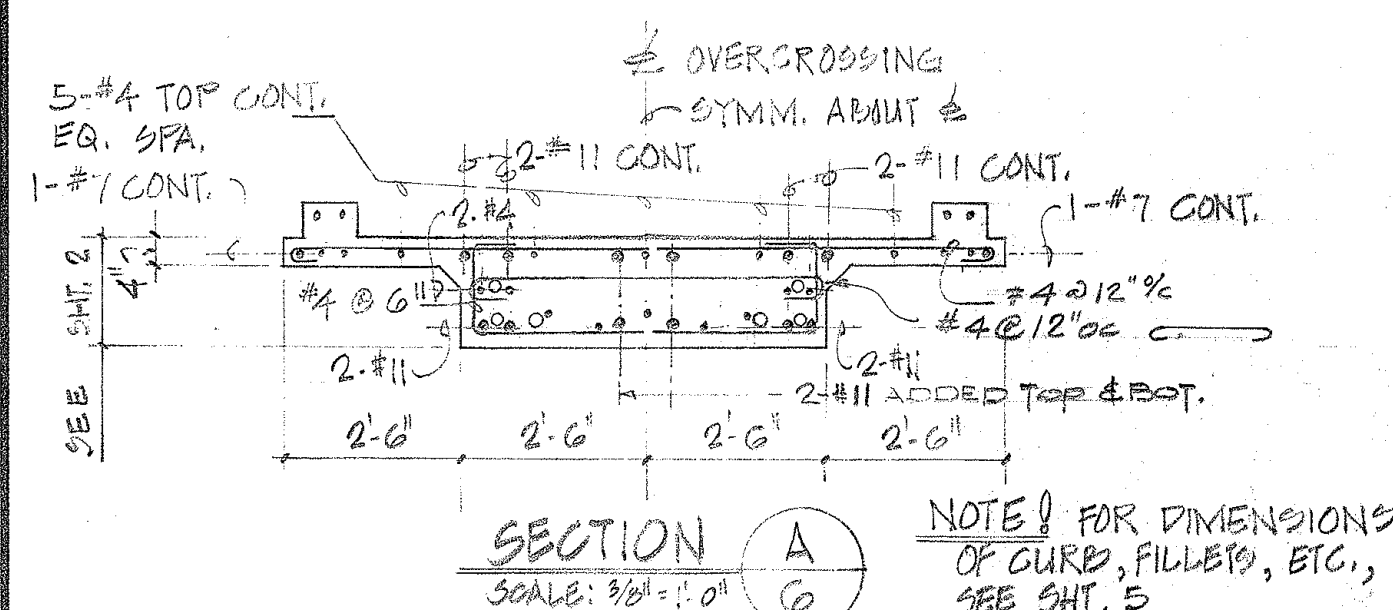
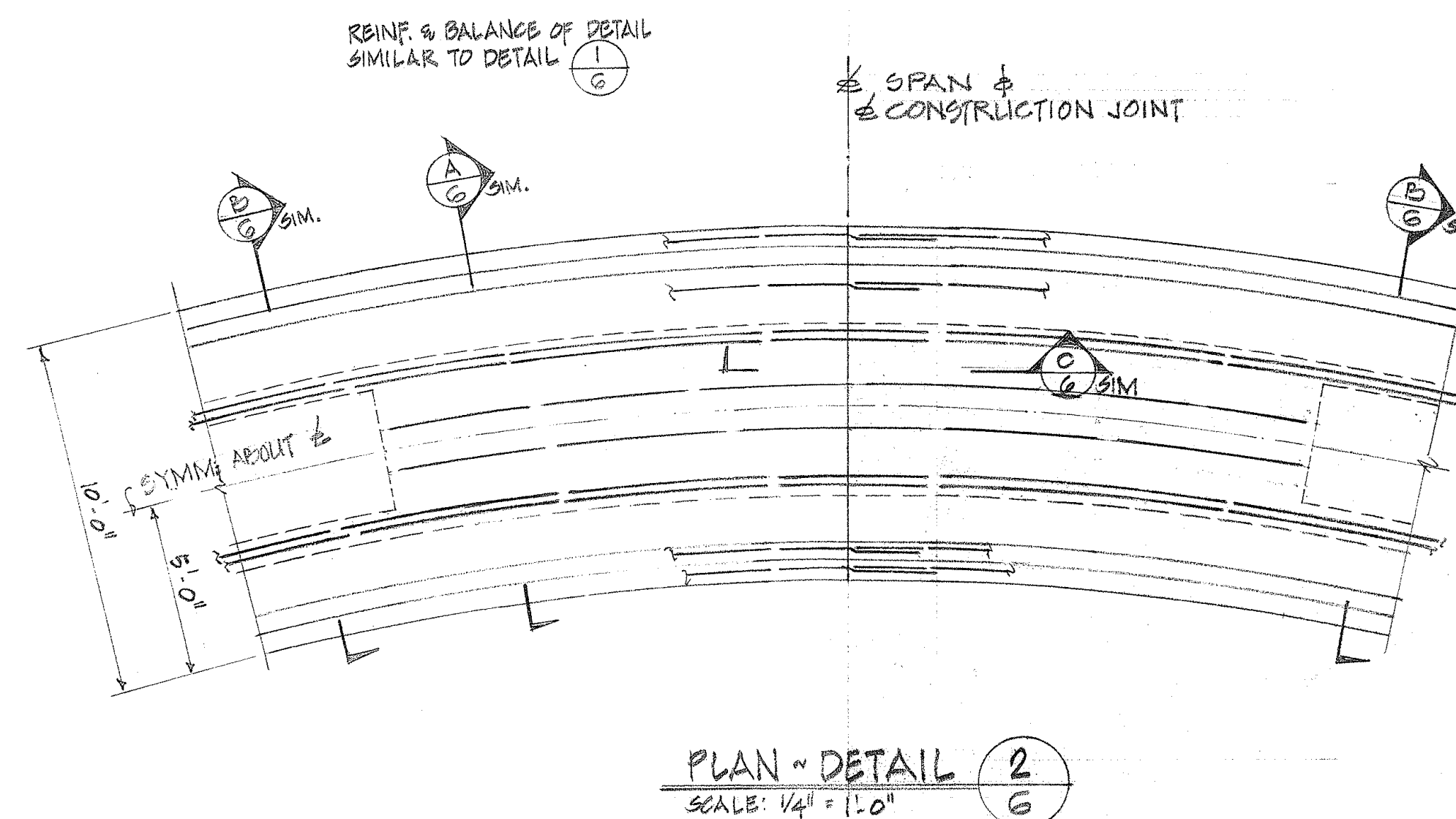
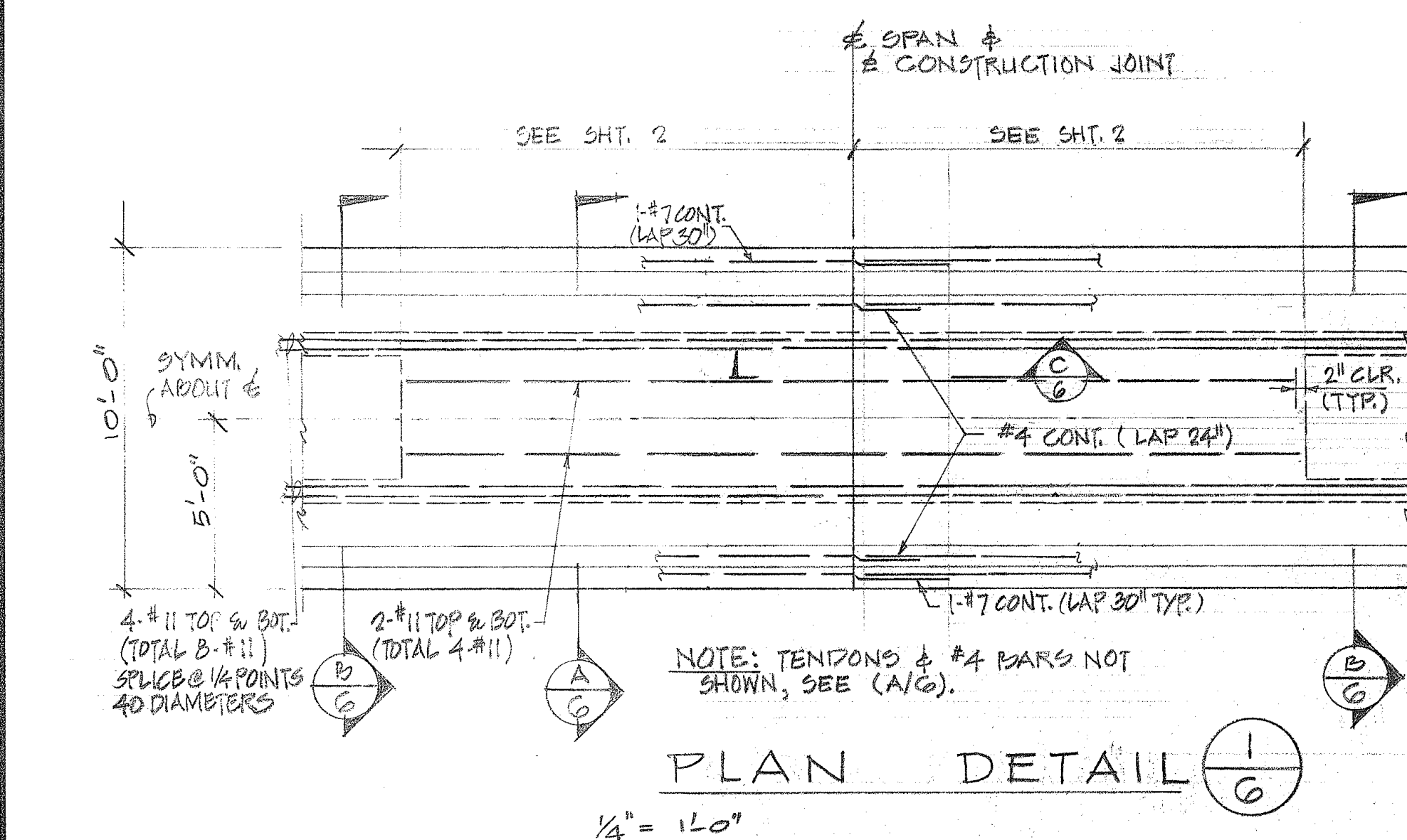
FEDERAL AID INTERSTATE PROJECT NO. I-HI-1(31):21 UNIT 4

DATE 1-30-69

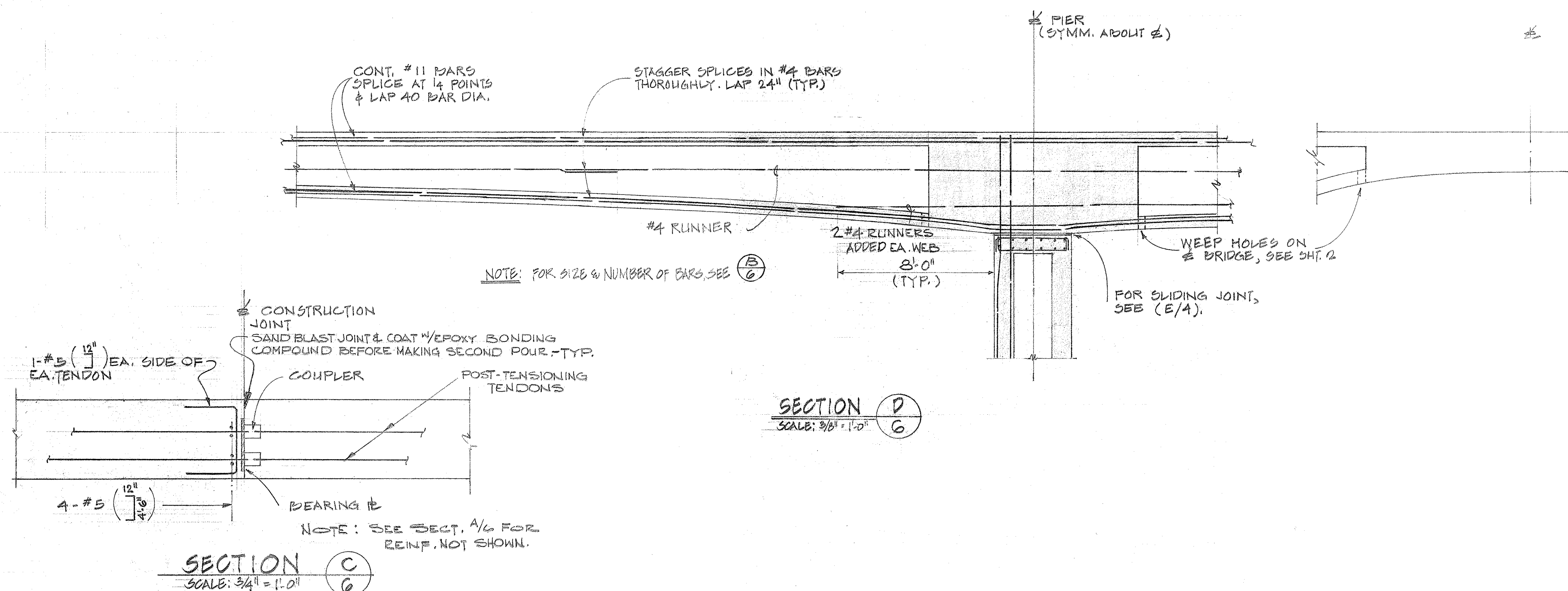
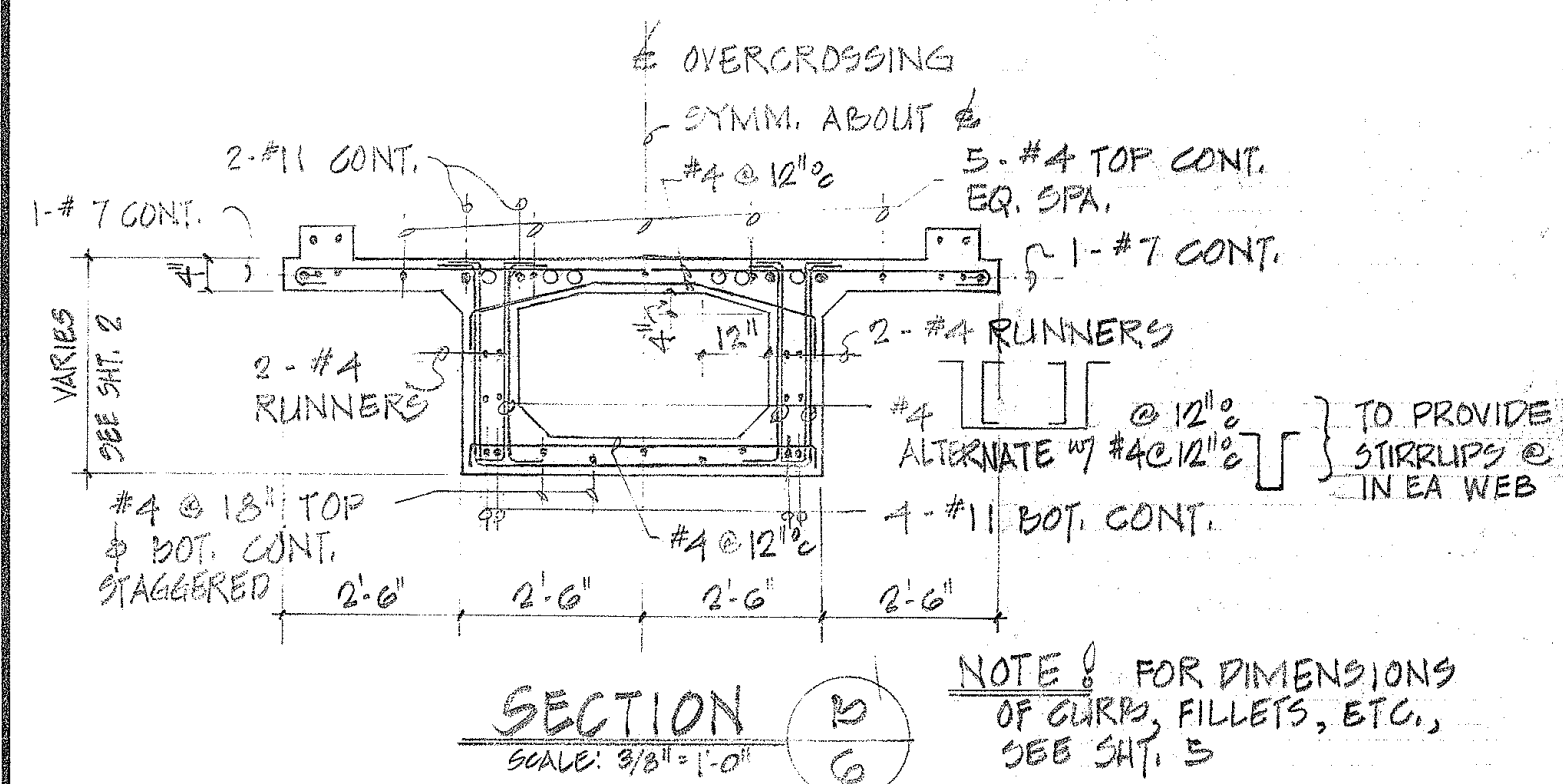
SHEET No. 4 OF 14 SHEETS

DATE	1-30-69
DESIGNED BY	W. J. HARRIS
CHECKED BY	W. J. HARRIS
NOTED BY	W. J. HARRIS
NO.	1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(3):21 Unit 4	1969	18	34



NOTE!
For additional reinf. to Sect. (A) & (B),
See details - Sht. #C018.



ITEMS	ESTIMATED QUANTITIES	LUMP SUM
CONCRETE	380 CY.	
REINF.	36 TONS	
STRUCTURAL EXCAVATION	856 CY.	
METAL RAILING	792 L.F.	
POST TENSION OPERATION	—	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ALAPAI ST. PEDESTRIAN OVERCROSSING

PEDESTRIAN OVERPASSES OVER INTERSTATE H-1
AT MILLER STREET & ALAPAI STREET

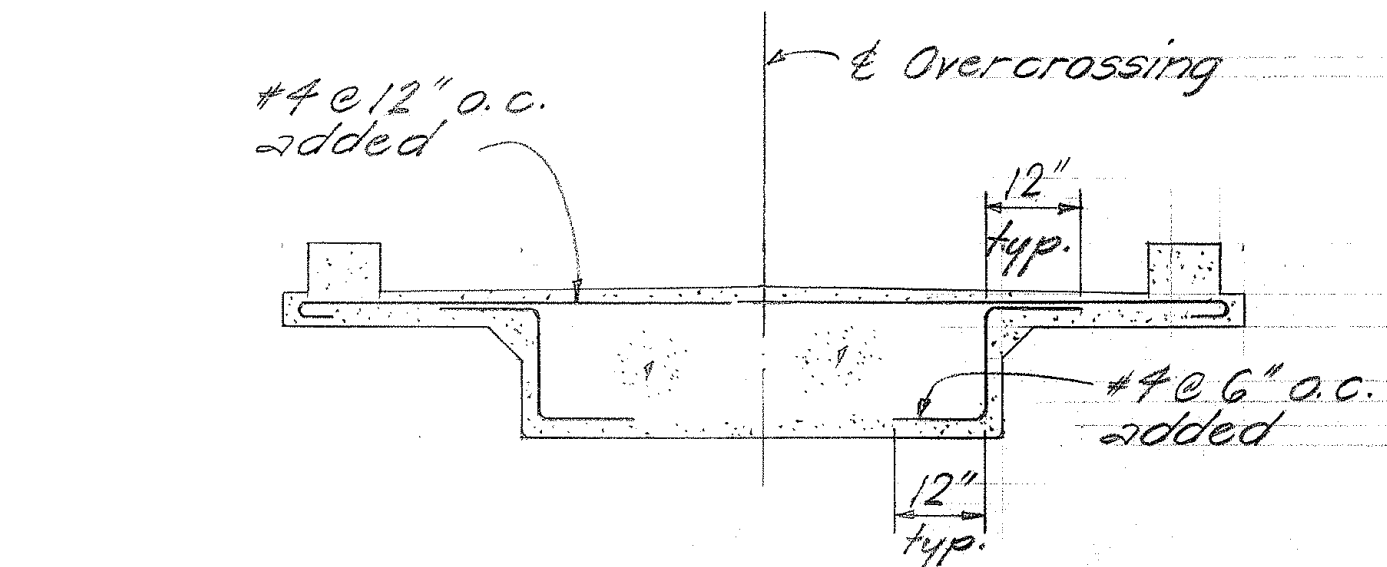
FEDERAL AID INTERSTATE PROJECT NO. I-HI-1(31):21 UNIT 4

DATE 1-30-69

SHEET No. 6 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31)21 Unit 4	1969	CO-185	34

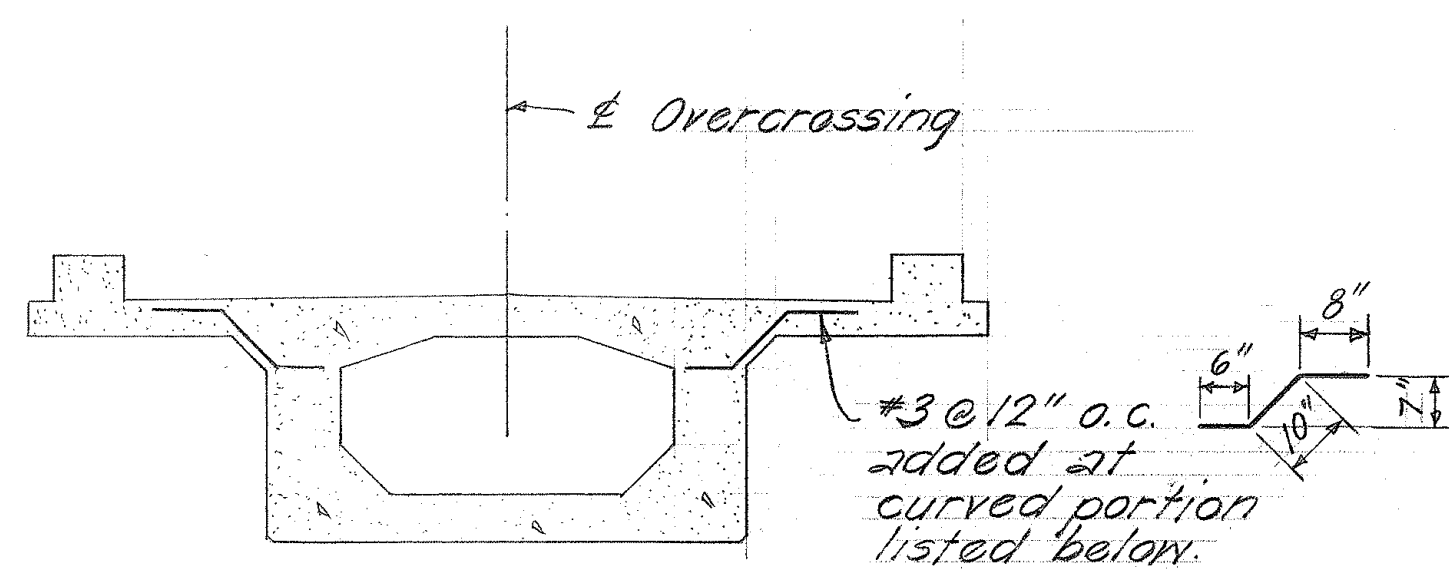
NOTE!
Add the following reinforcement to Section (A), only at those sections listed below.



Between: (5) & (7)
(13) & (14)
(22) & (23)
(29) & (31)
(32) & (33)

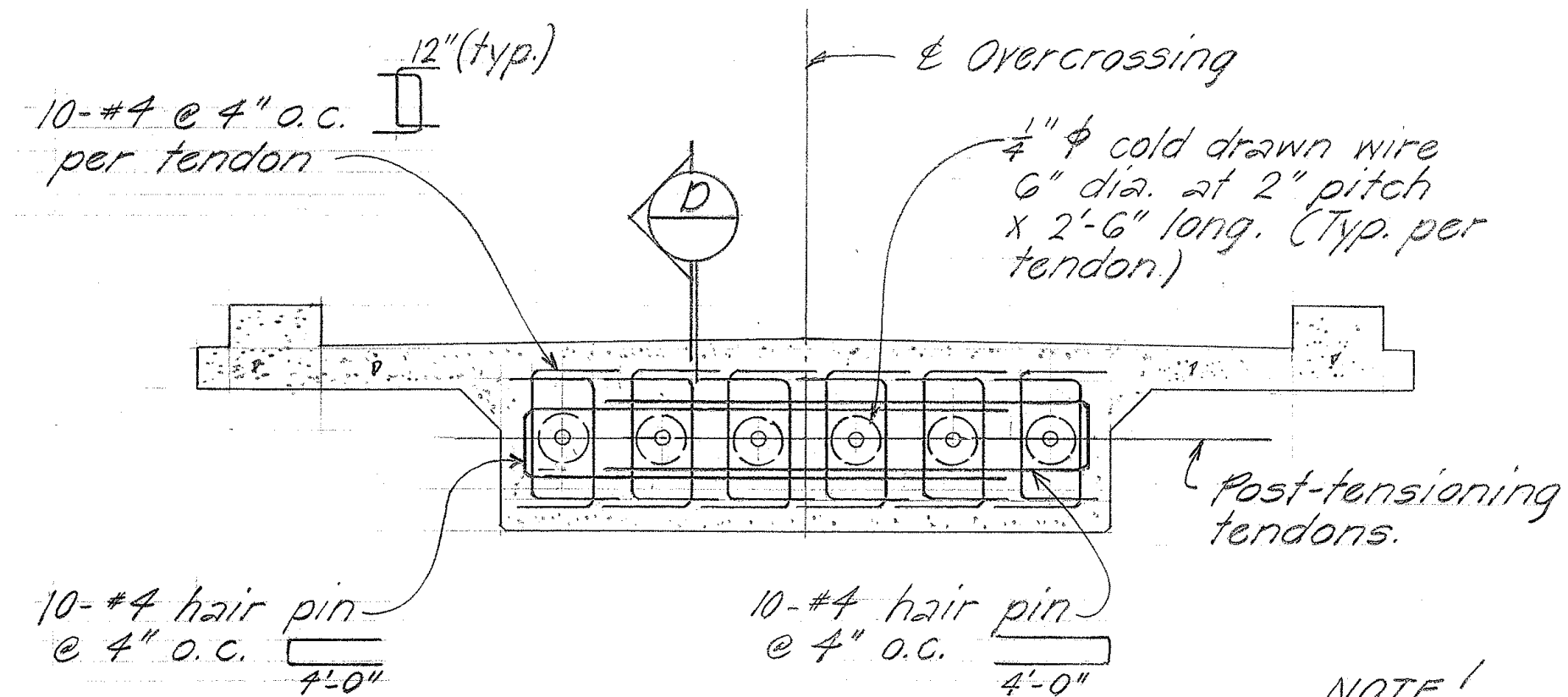
SECTION (A)
Scale: 1/2" = 1'-0"

NOTE!
Add the following reinforcement to Section (B), only at the section listed below.



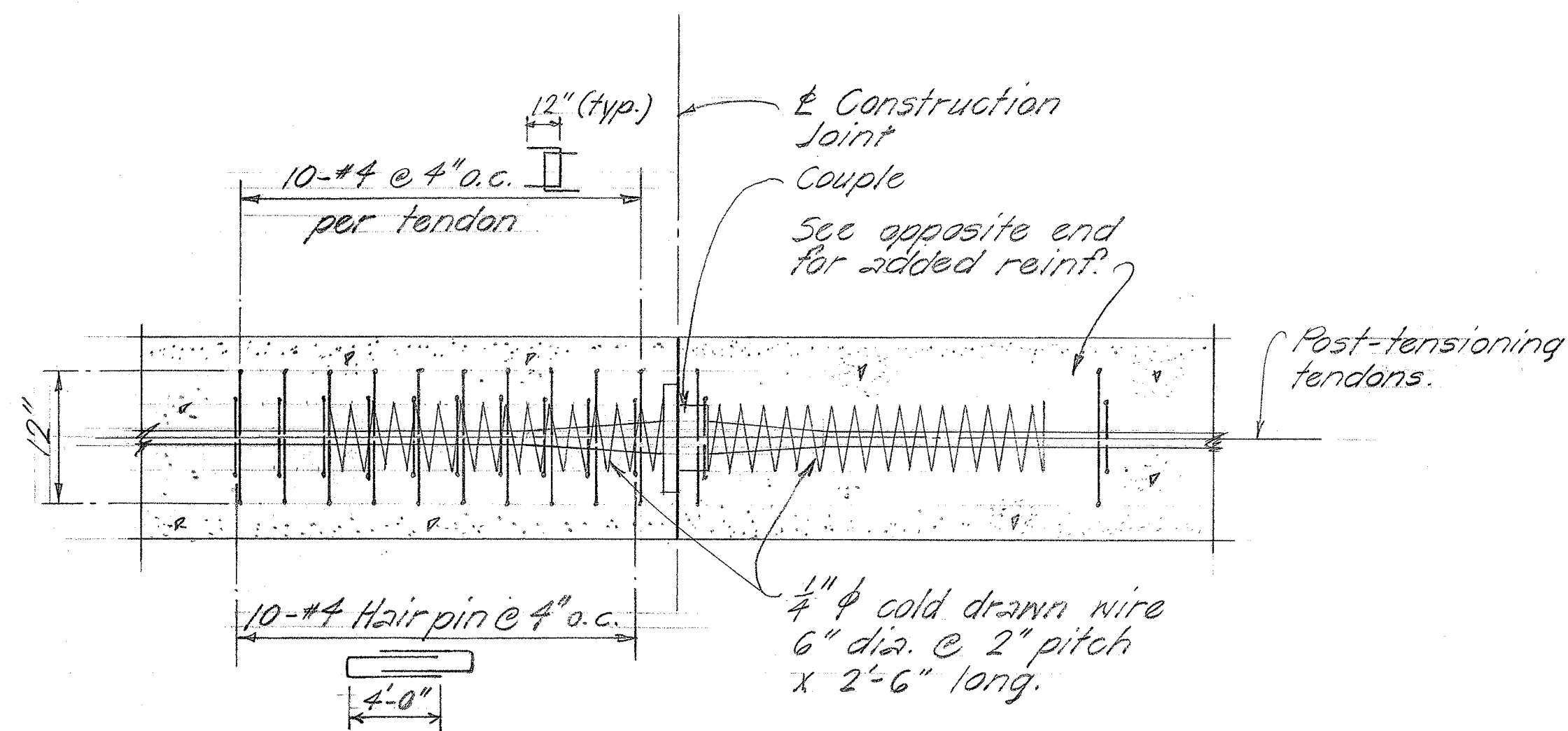
Between: (18) & (19)

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

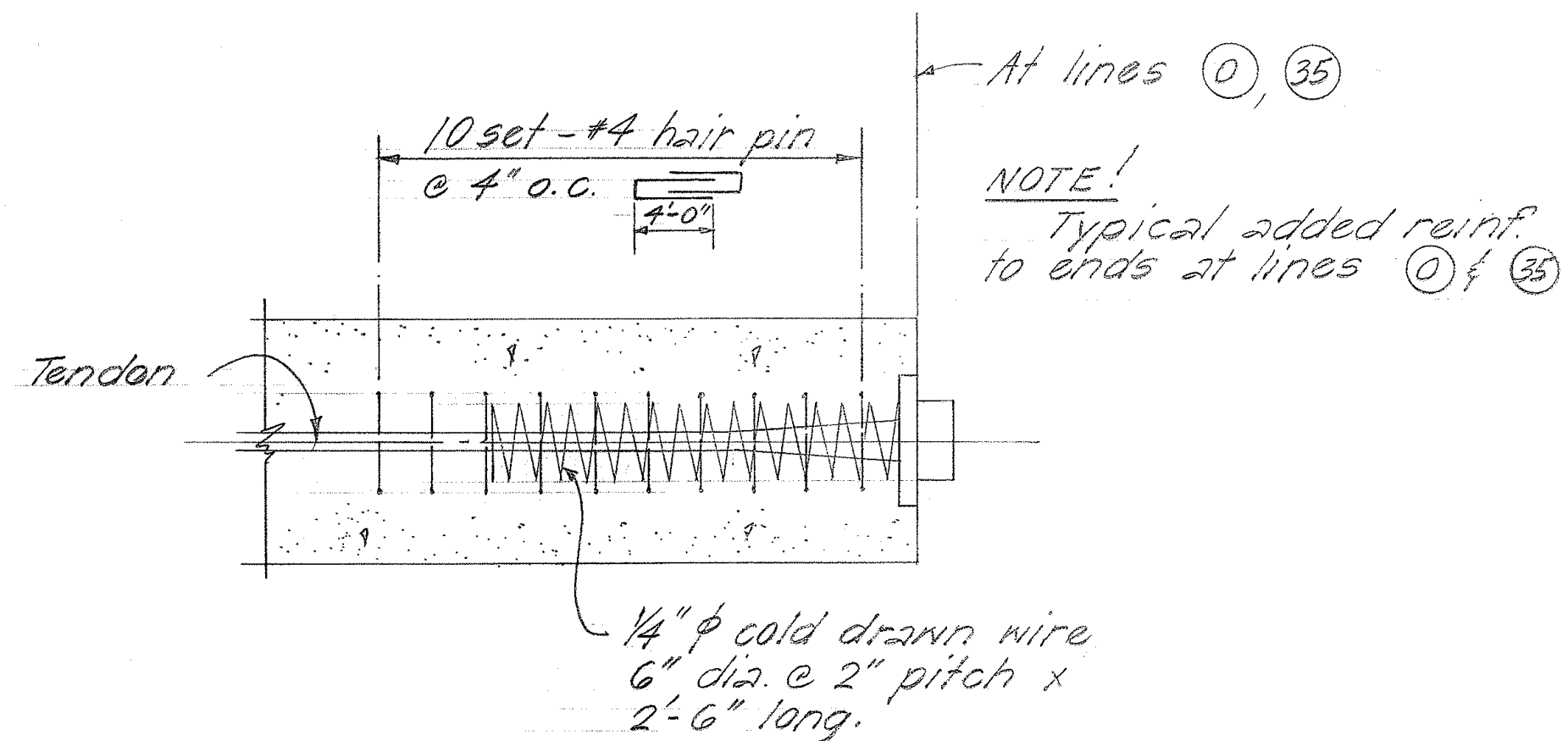


SECTION (C)
Scale: 3/4" = 1'-0"

NOTE!
Reinf. shown in Sect. (D) & Sect. (E) are additional reinforcement to Section (C).



SECTION (D)
Scale: 1" = 1'-0"



SECTION (E)
Scale: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED BY	DRAWN BY	
CHECKED BY	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ALAPAI STREET
PEDESTRIAN OVERCROSSING

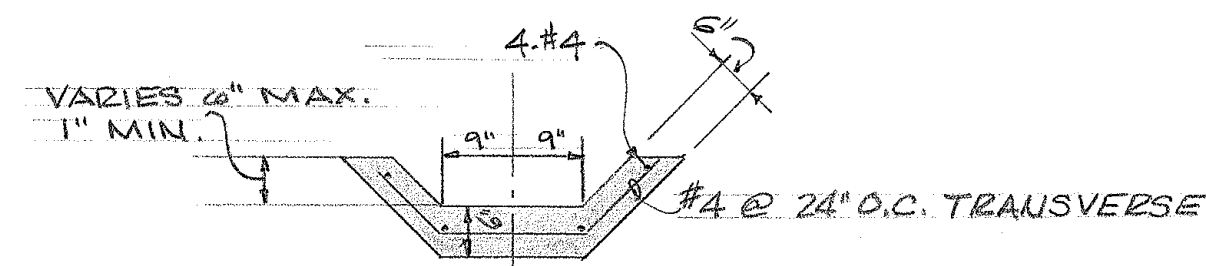
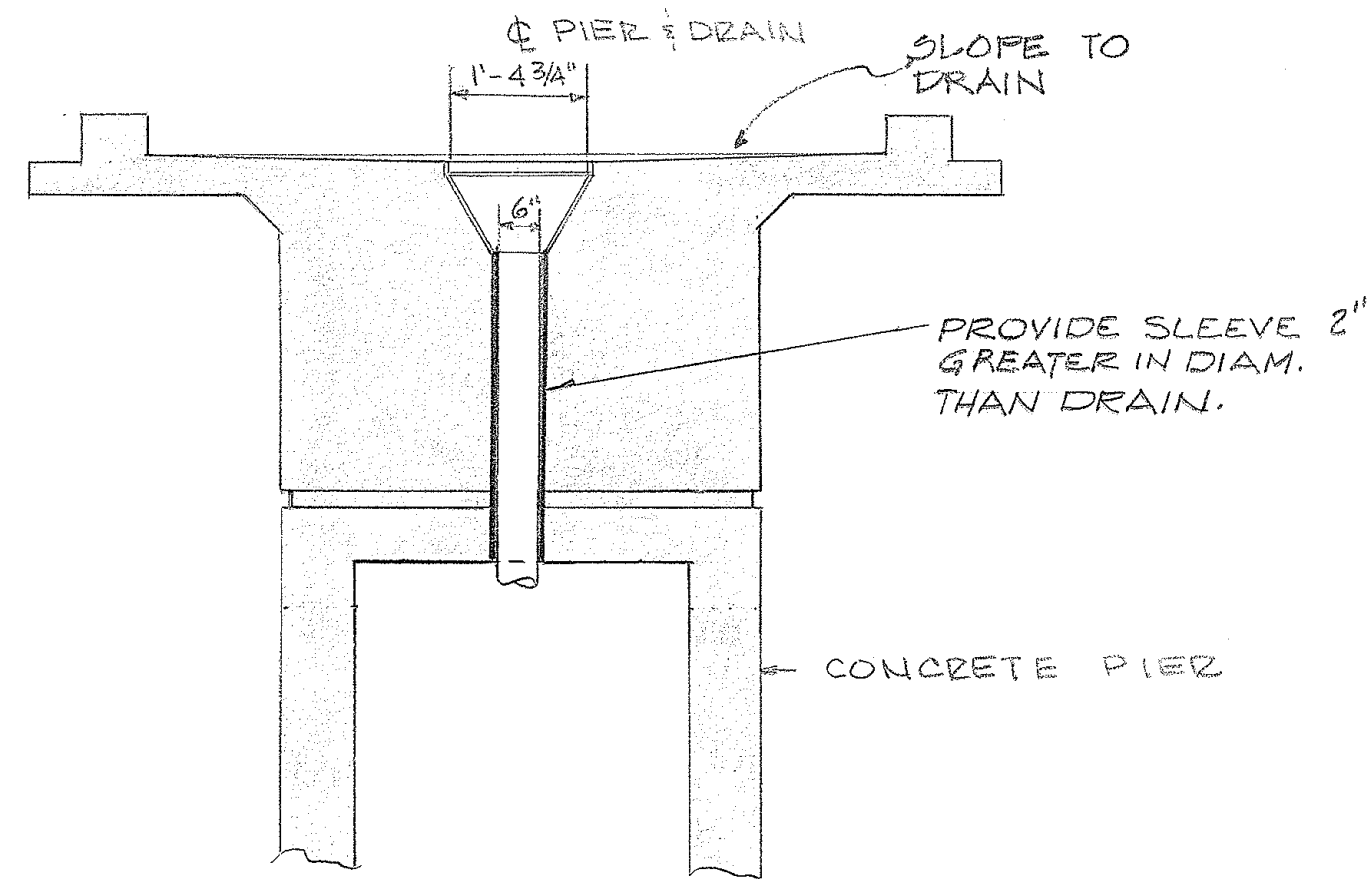
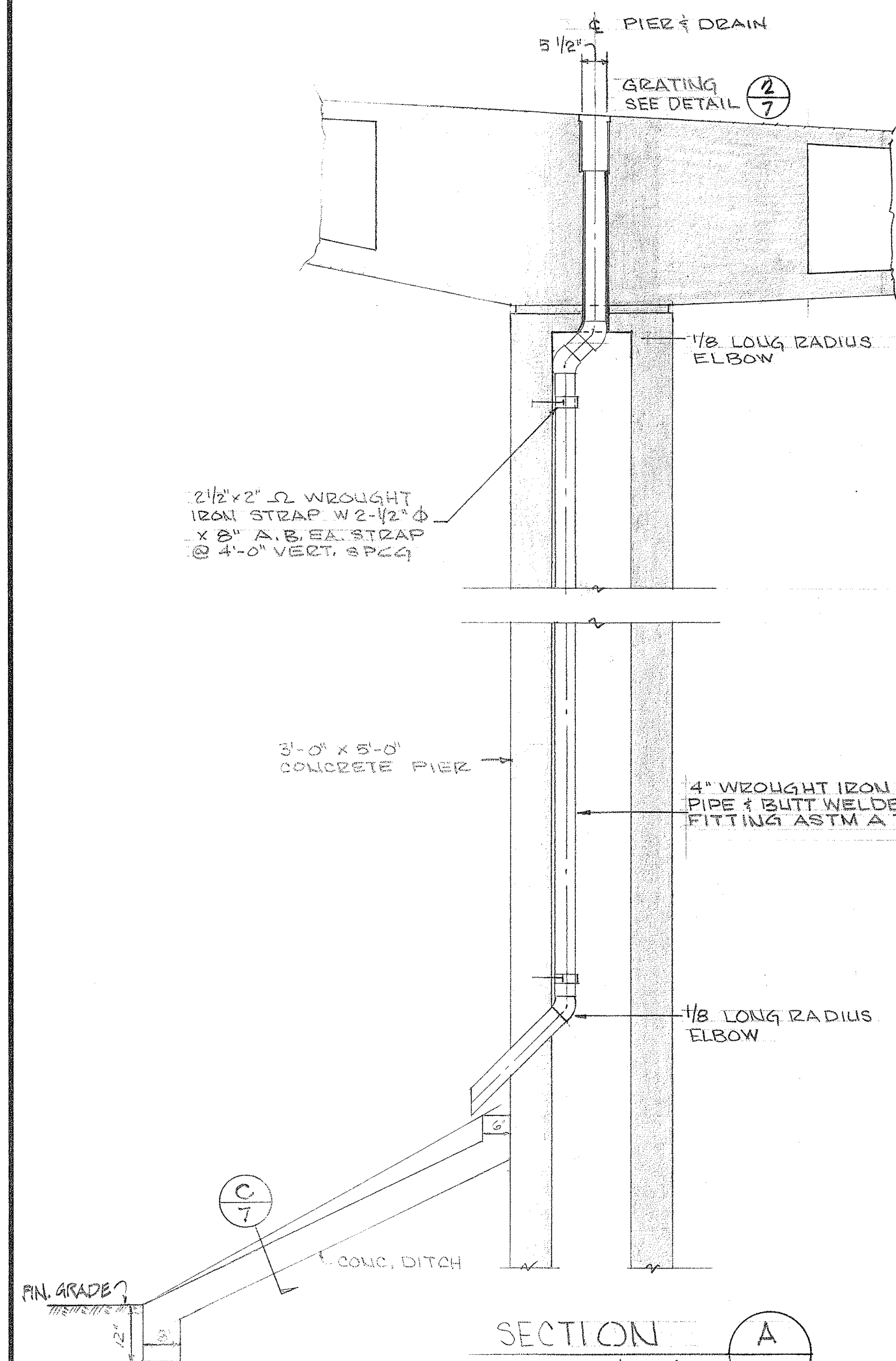
Proj. No. I-HI-1(31):21 Unit 4

SHEET No. OF SHEETS

CO 185

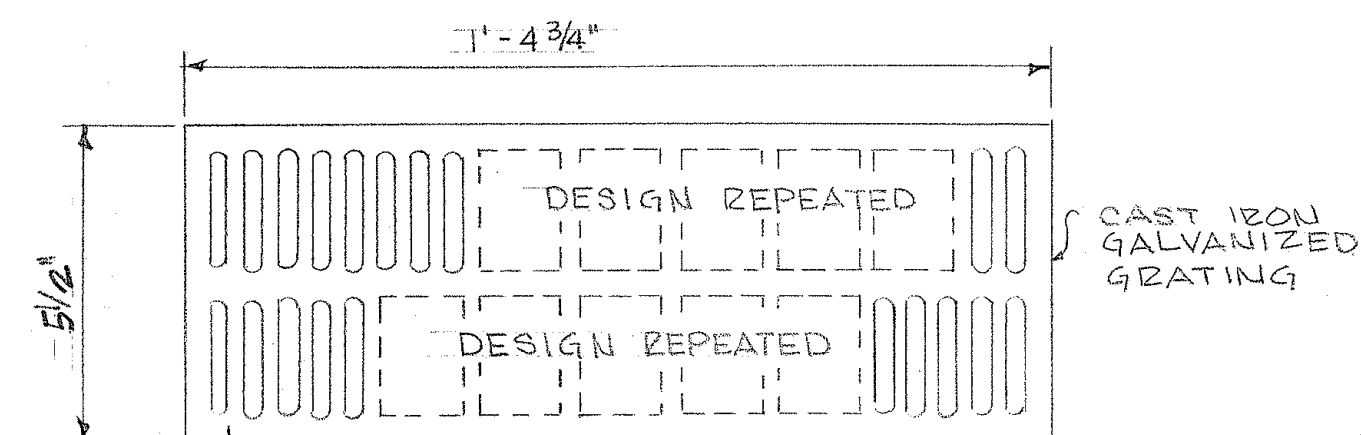
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	111(31)21 Unit 4	1969	19	34

REV. APRIL 29, 1969



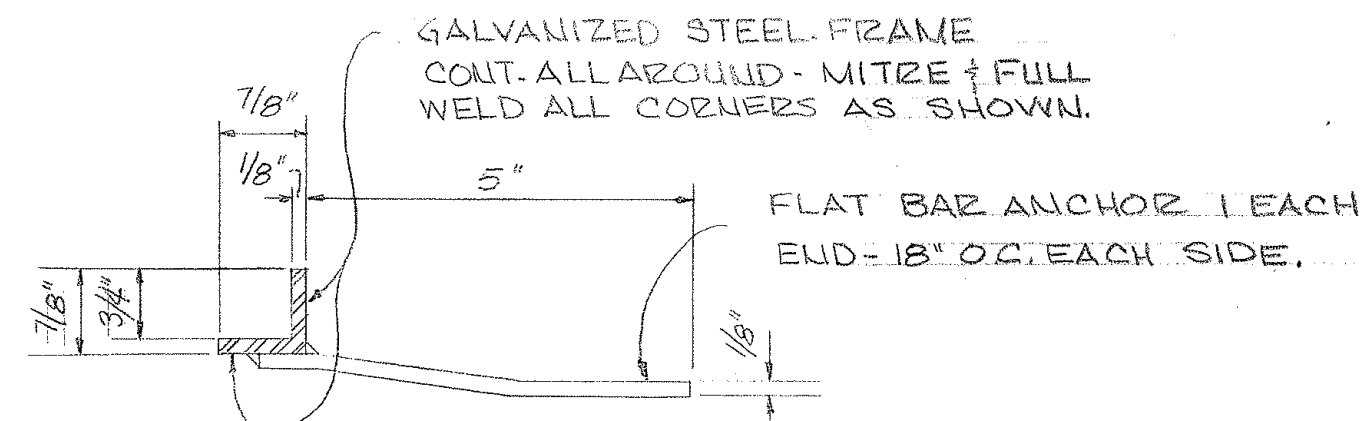
SECTION C
SCALE: 1/2" = 1'-0"

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



PLAN OF GRATING

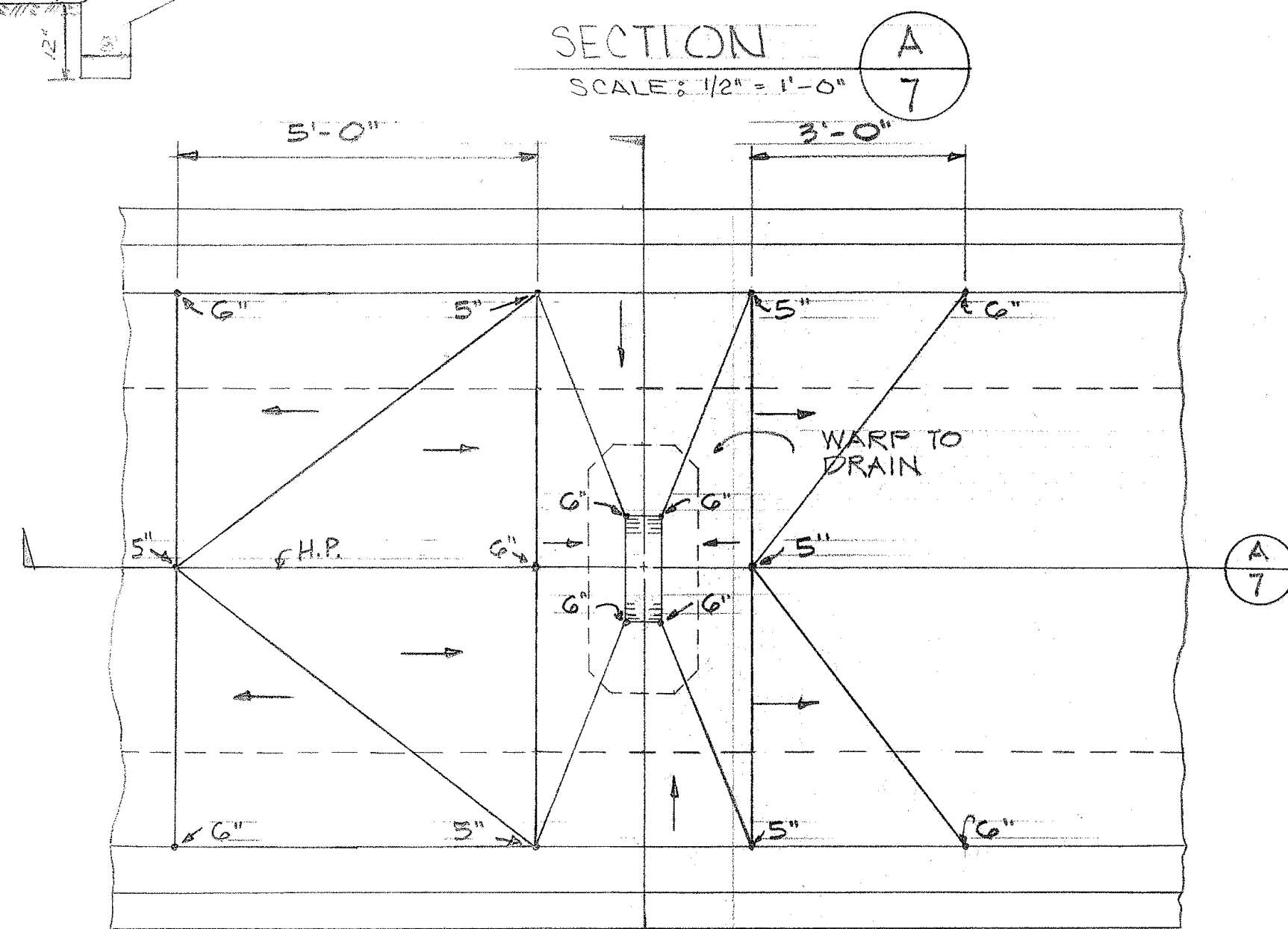
NOTE: DRAIN FRAME GRATING & DRAIN PIPE ASSEMBLY SHALL BE INCIDENTAL TO CLASS B-1 CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.



TYPICAL SECTION THRU FRAME AND ANCHOR LUG

SECTION D
7

TYPICAL DRAIN FRAME AND GRATING DETAILS
2/7



PLAN

DETAIL 1/7
NOT TO SCALE

NOTE: DIMENSIONS 5" & 6" ARE MEASUREMENTS FROM TOP OF CURB LINE FOR TOP SLAB TRANSITION TO DRAIN. SEE SECT. 2 MILLER ST. PED. OVERCROSSING.

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ALAPAI ST. PEDESTRIAN OVERCROSSING

PEDESTRIAN OVERPASSES OVER INTERSTATE H-1
AT MILLER STREET & ALAPAI STREET

FEDERAL AID INTERSTATE PROJECT NO. I-HI-1(31)21 UNIT 4

DATE 1-30-69

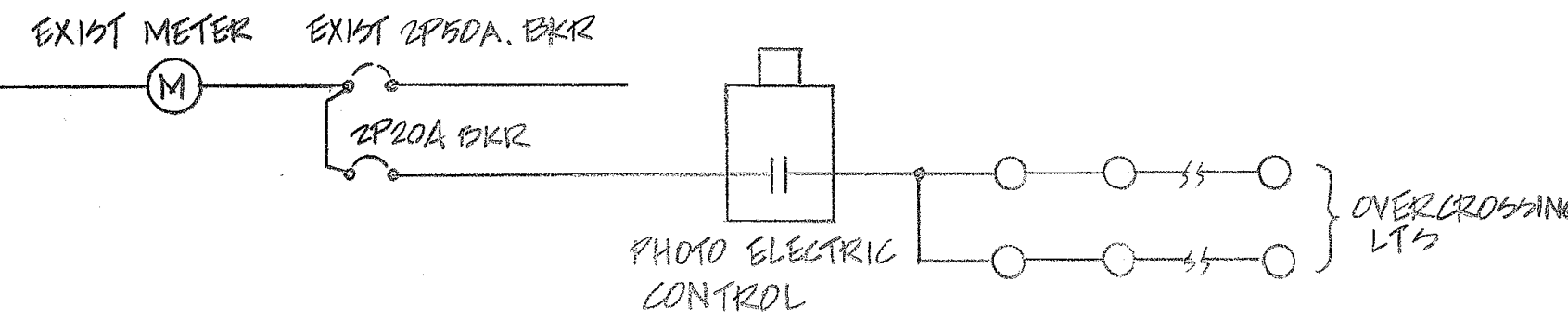
SHEET No. 7 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31):21 Unit 4	1969	20	34

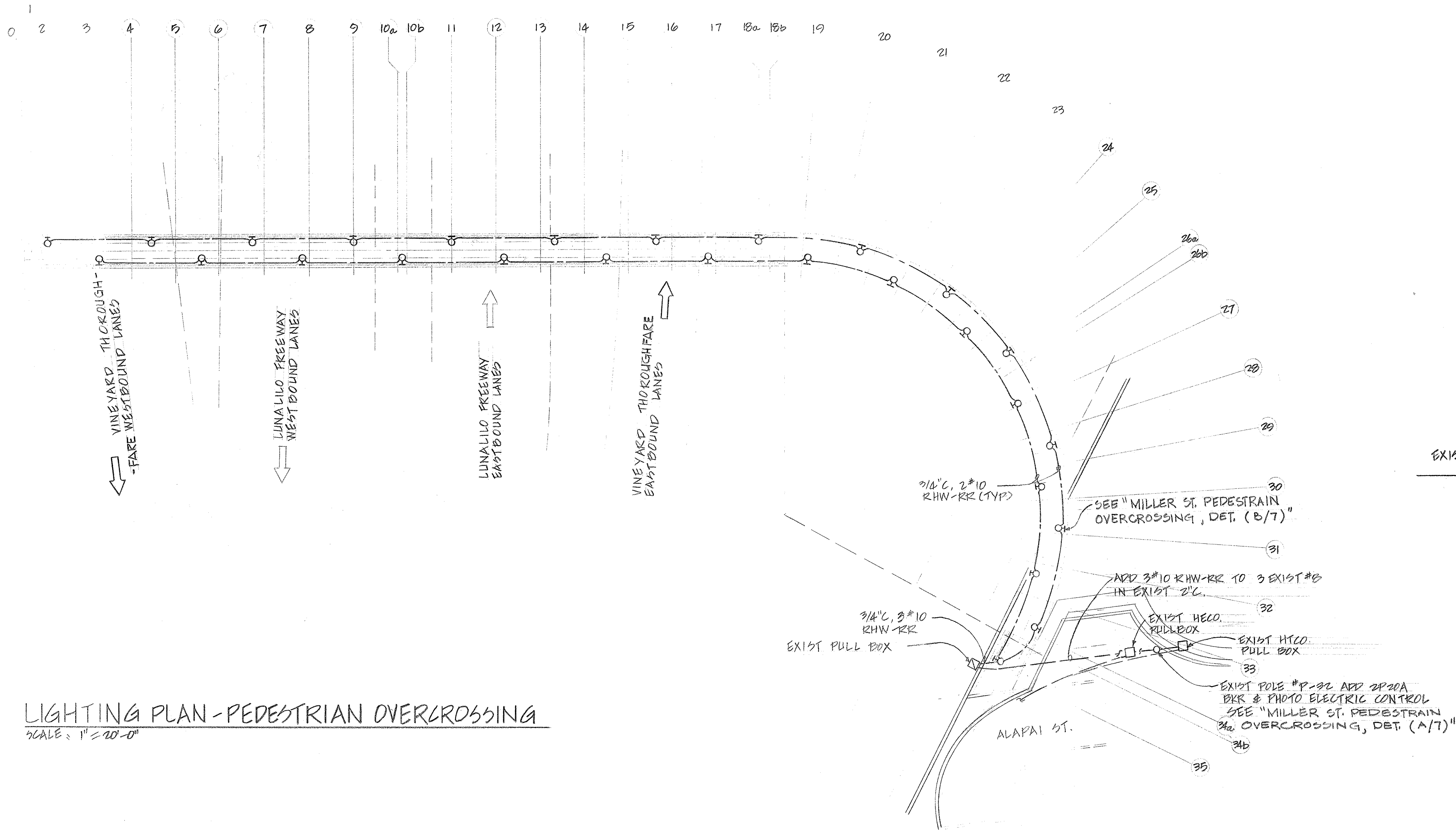
SYMBOLS

- TO STEP LIGHT, ABOVE CONCRETE CURB
- TO JUNCTION BOX, CAST STEEL, FLUSH IN CURB
- EXIST. PULL BOX

- EXIST 2" CONDUIT
- NEW UNDERGROUND CONDUIT OR CONDUIT IN CURB



SINGLE LINE DIAGRAM



LIGHTING PLAN - PEDESTRIAN OVERCROSSING
SCALE: 1" = 10'-0"

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

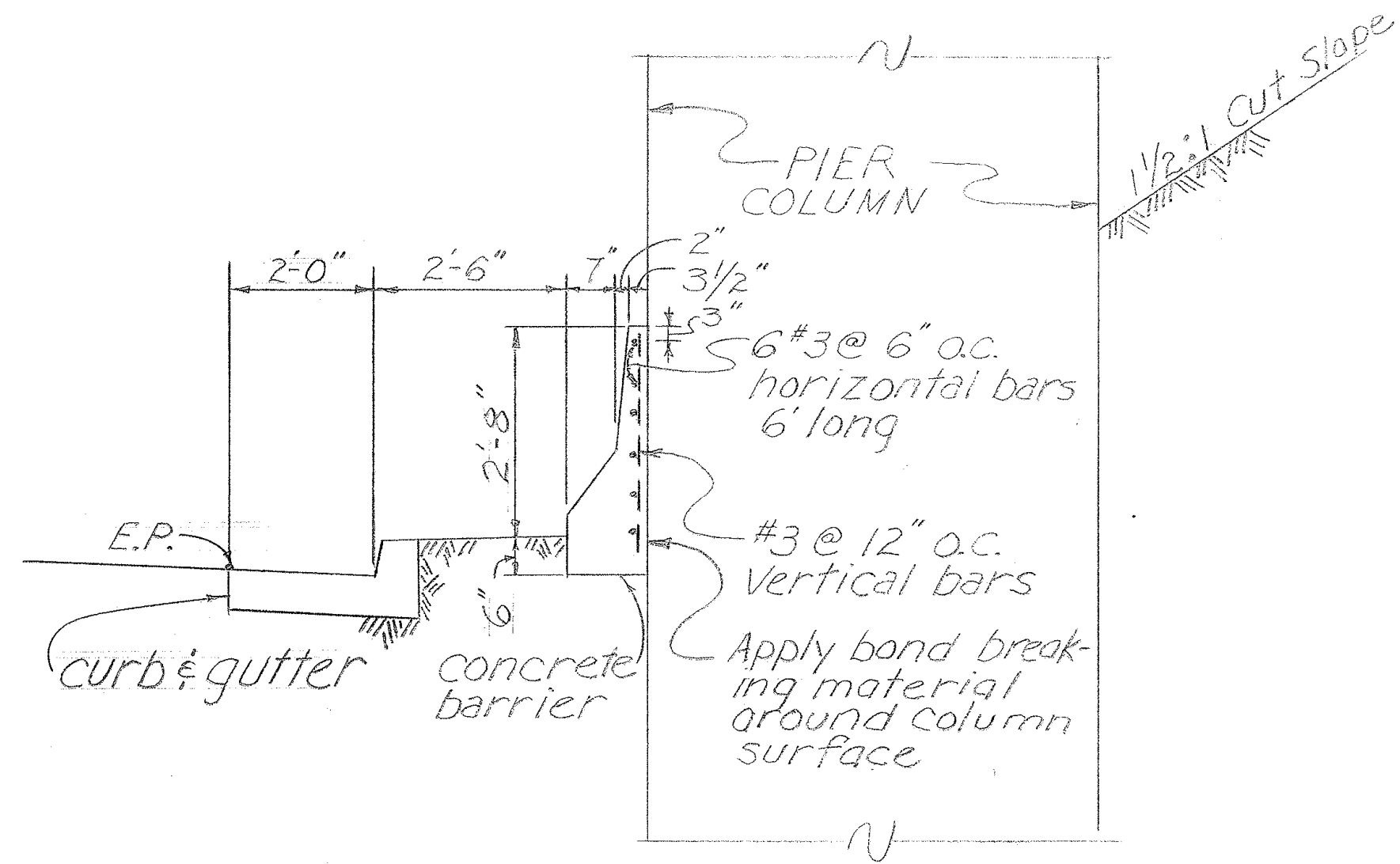
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ALAPAI ST. PEDESTRIAN OVERCROSSING

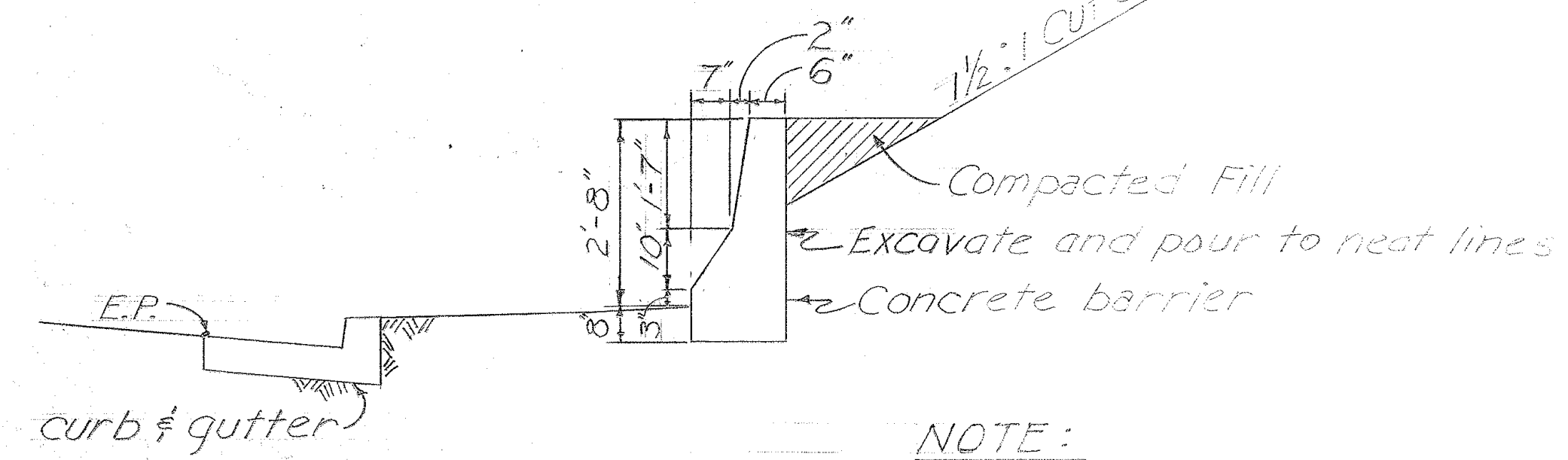
PEDESTRIAN OVERPASSES OVER INTERSTATE H-1
AT MILLER STREET & ALAPAI STREET

FEDERAL AID INTERSTATE PROJECT NO. I-HI-1(31):21 UNIT 4
DATE 1-30-69
SHEET No. 20 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HA-100-01 Unit 4	1962	22	34

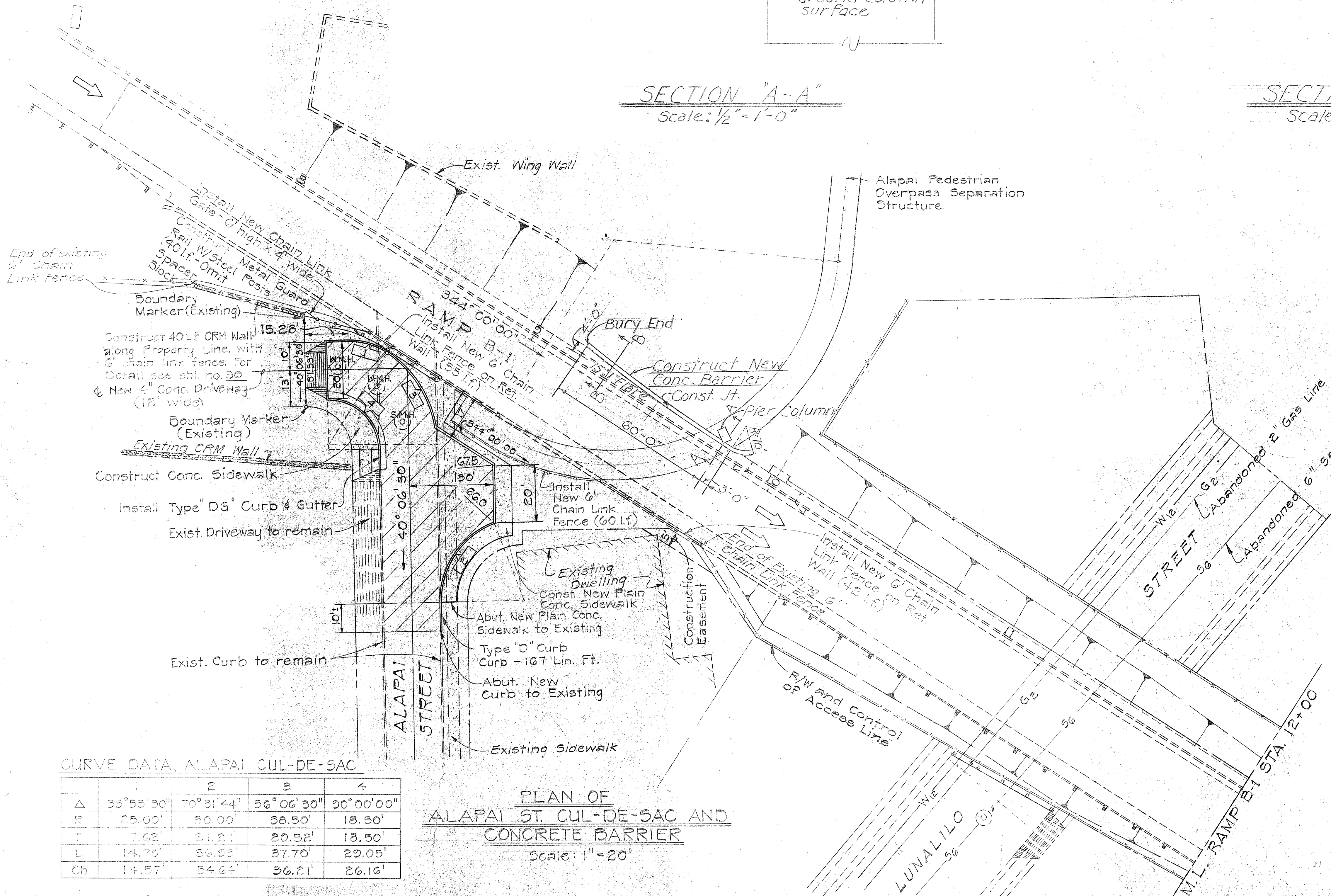


SECTION "A-A"
Scale: 1/2" = 1'-0"



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

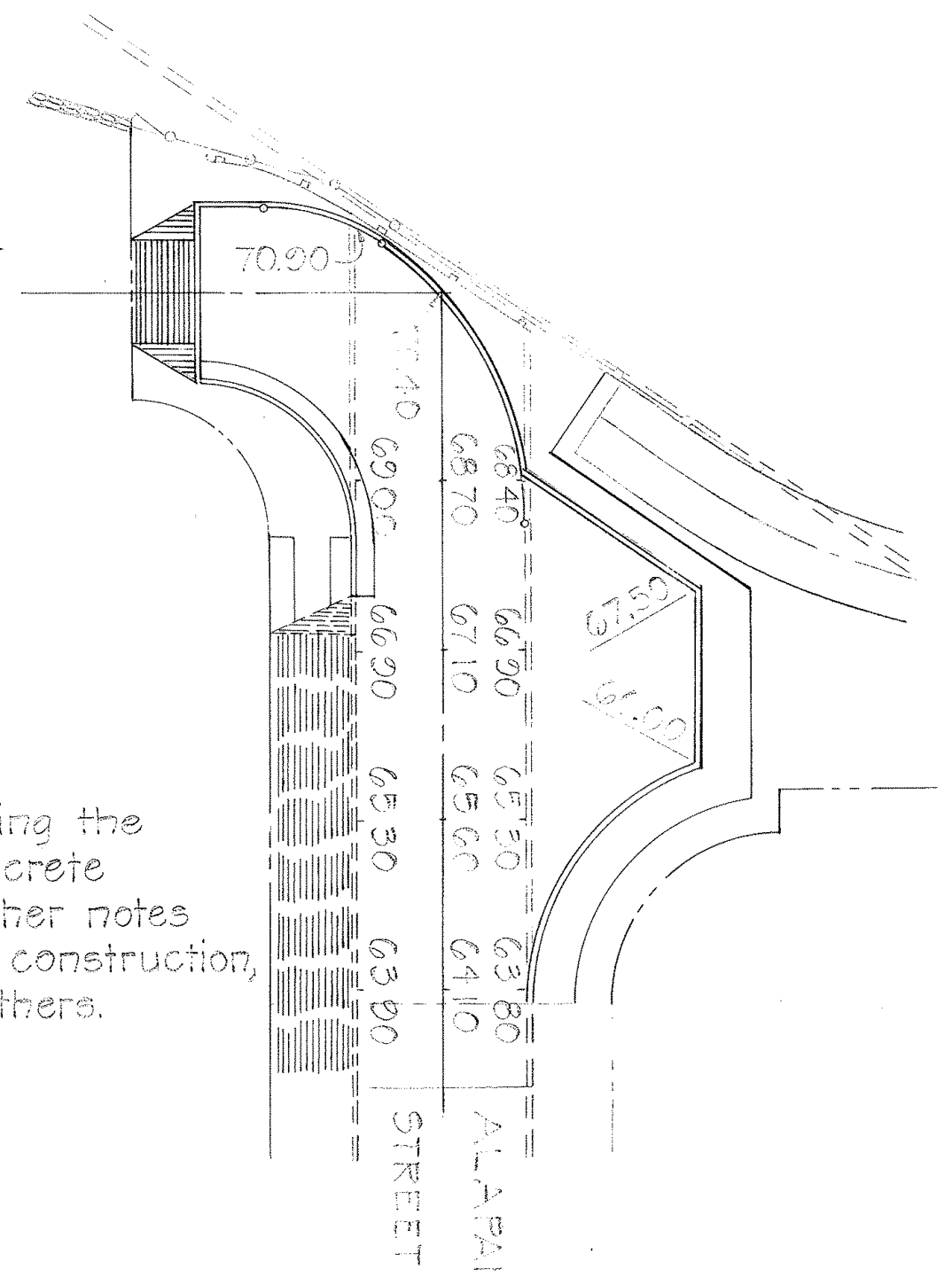
NOTE:
Payment for structure excavation and compacted fill shall be considered incidental to item 80A.02 - Concrete Barrier along Ramp B-1 at overpass plus.



CURVE DATA, ALAPAI CUL-DE-SAC

	1	2	3	4
Δ	33°53'30"	70°31'44"	56°06'30"	90°00'00"
R	25.00'	30.00'	38.50'	18.50'
T	7.62'	21.21'	20.52'	18.50'
L	14.70'	36.83'	37.70'	29.05'
Ch	14.57'	34.64'	36.21'	26.16'

PLAN OF
ALAPAI ST. CUL-DE-SAC AND
CONCRETE BARRIER
Scale: 1" = 20'



NOTE:
Except for details involving the construction of New Concrete Barrier, disregard all other notes and details for roadway construction, which will be done by others.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

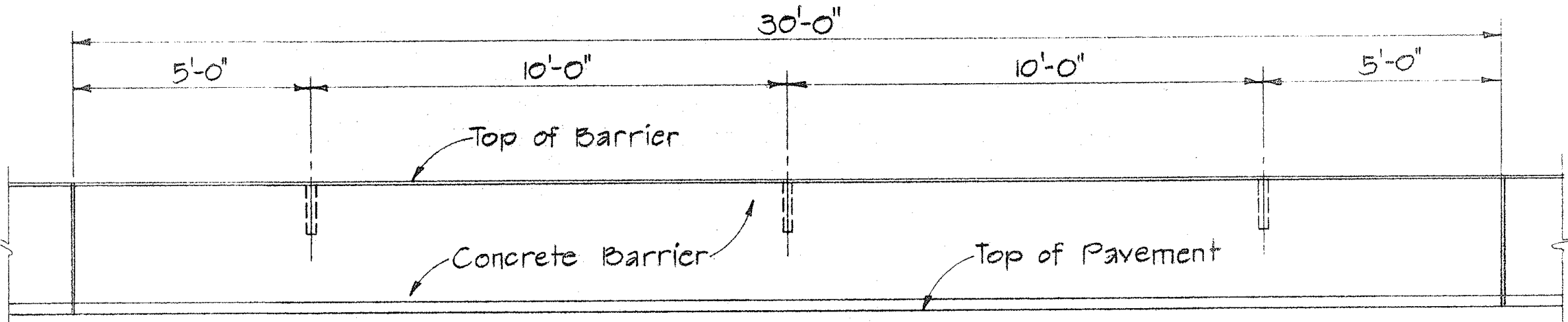
DETAIL OF CONCRETE BARRIER
AT ALAPAI ST. PEDESTRIAN OVERPASS
AND ALAPAI ST. CUL-DE-SAC

EAL Proj. No. HA-100-01 Unit 4
Scale: As shown Date: Mar. 13, 1962

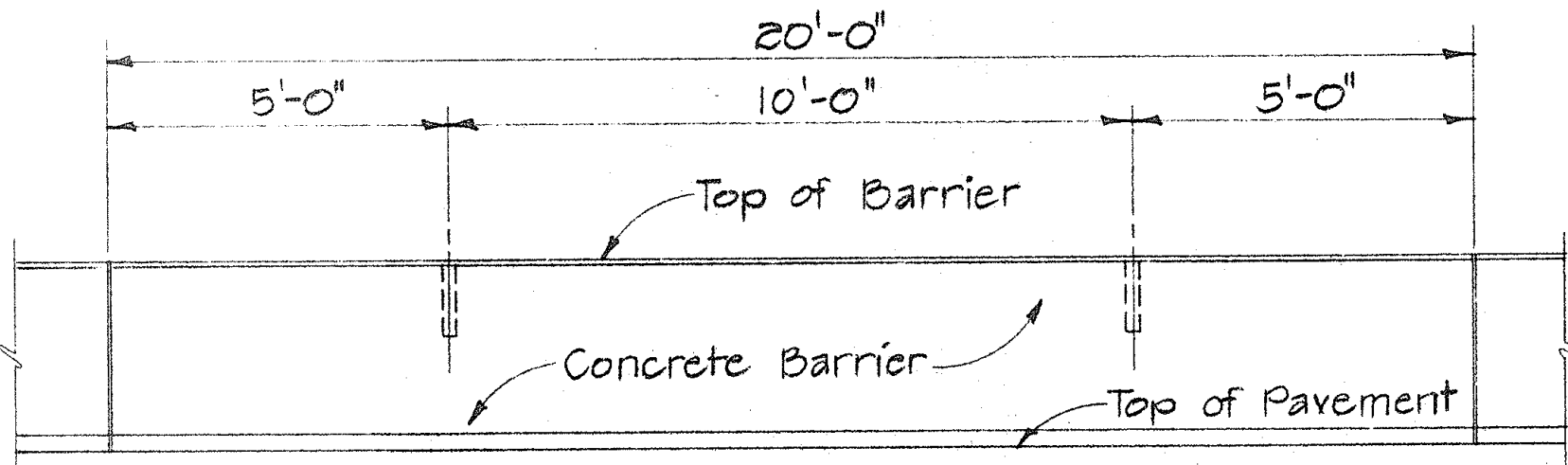
SHEET No. 10 OF 14 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
NOTE BOOK	
DESIGNED BY	
CHECKED BY	

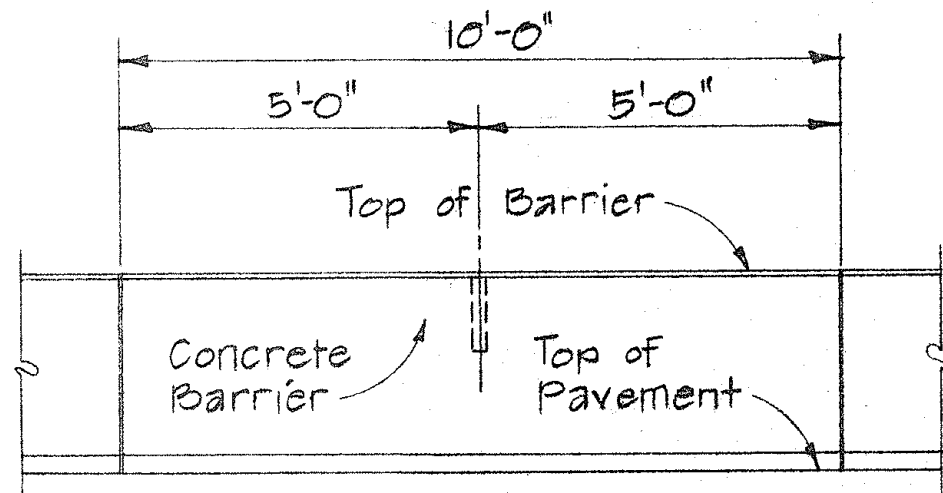
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HA-1-58-2 Dist 4	1968	24	34



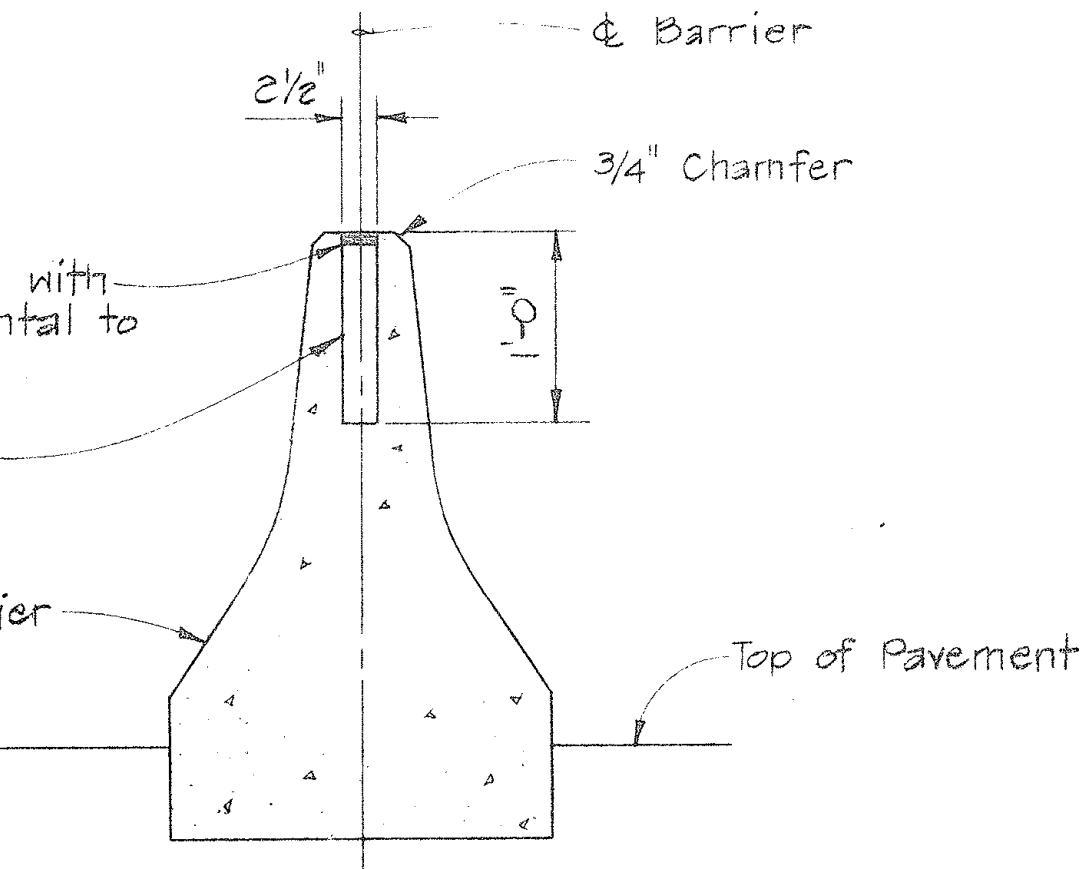
ELEVATION
30' LENGTH CONCRETE BARRIER
Scale: 3/8"=1'-0"



ELEVATION
20' LENGTH CONCRETE BARRIER
Scale: 3/8"=1'-0"



ELEVATION
10' LENGTH CONC. BARRIER
Scale: 3/8"=1'-0"



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

Hole to be plugged with 3/4" Mortar (Incidental to Concrete Barrier)
Provide 2 1/2" hole spaced 10' o.c.
Cast-In-Place or Precast Conc. Barrier

HOLE SPACING DETAIL FOR CONCRETE BARRIER

SURVEY PLOTTED BY	DATE
DRAWN BY	"
CHECKED BY	"
NOTES BY	"
CHECKED BY	"
ORIGINAL PLAN	No.

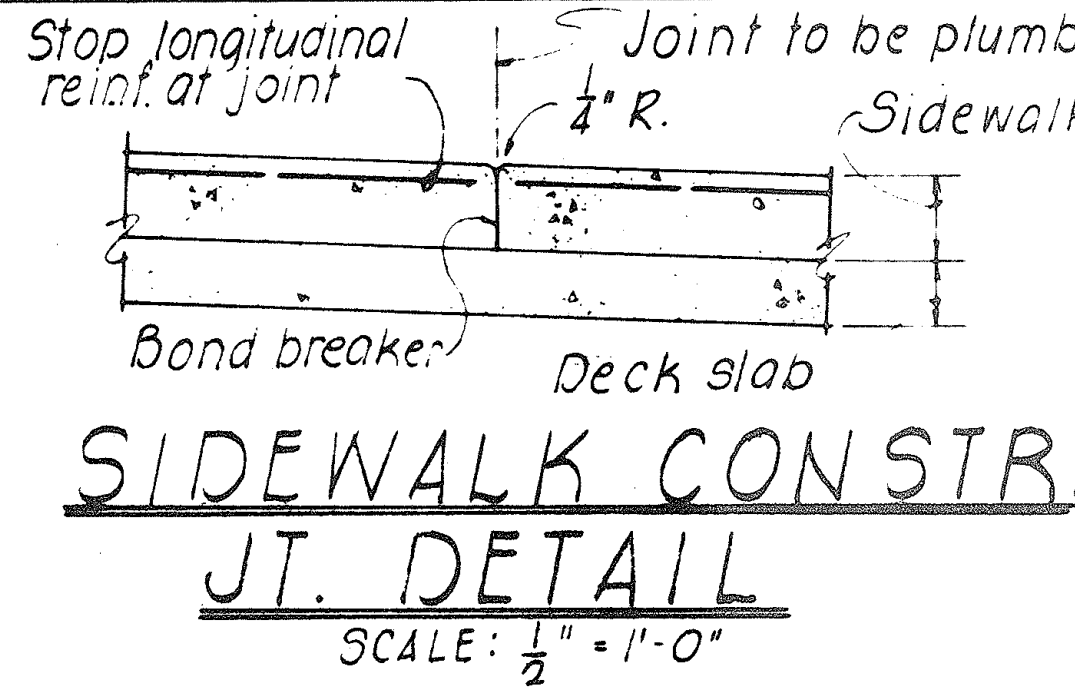
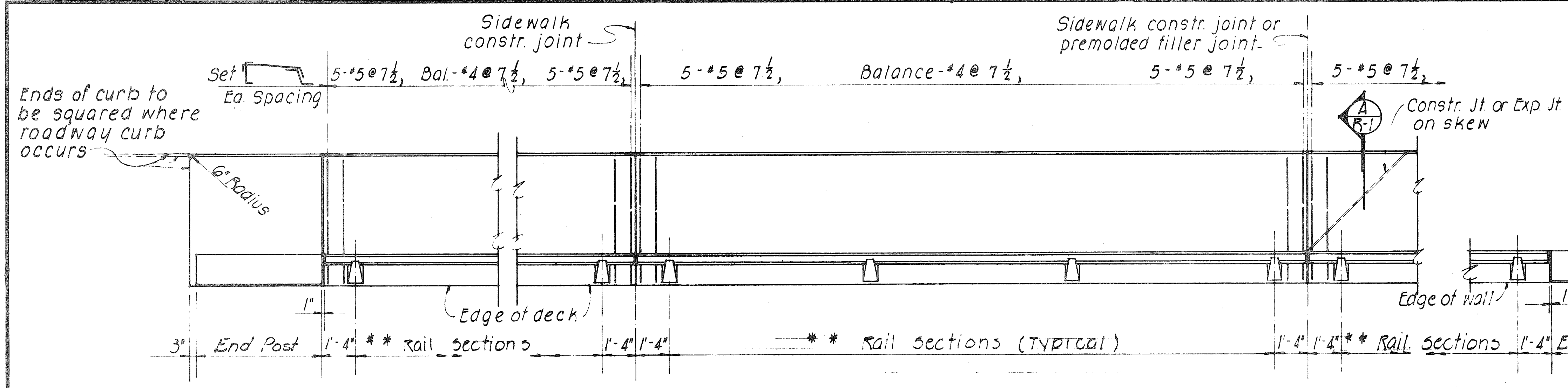
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HOLE SPACING DETAILS
FOR CONC. BARRIER

Scale: As Shown
Nov. 1968

SHEET No. 12 OF 14 SHEETS
DT 507

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	100-1000	1969	15	34



NOTE!
Details shown on this sheet are standard details except for modifications as may be required for special conditions. For such conditions, refer to corresponding details shown on the plans.

Revision
28 Mar 67

AT BRIDGE END POST

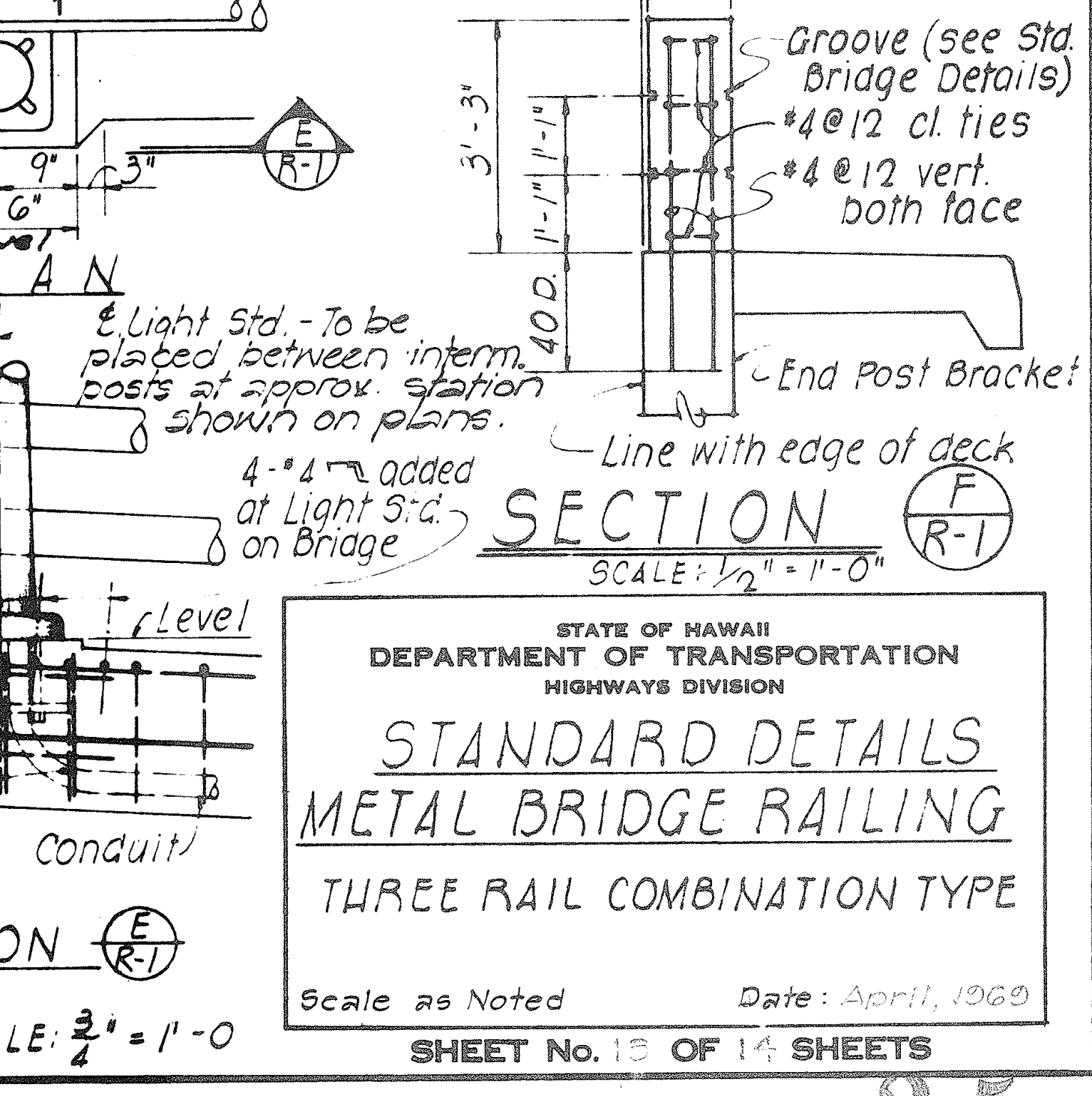
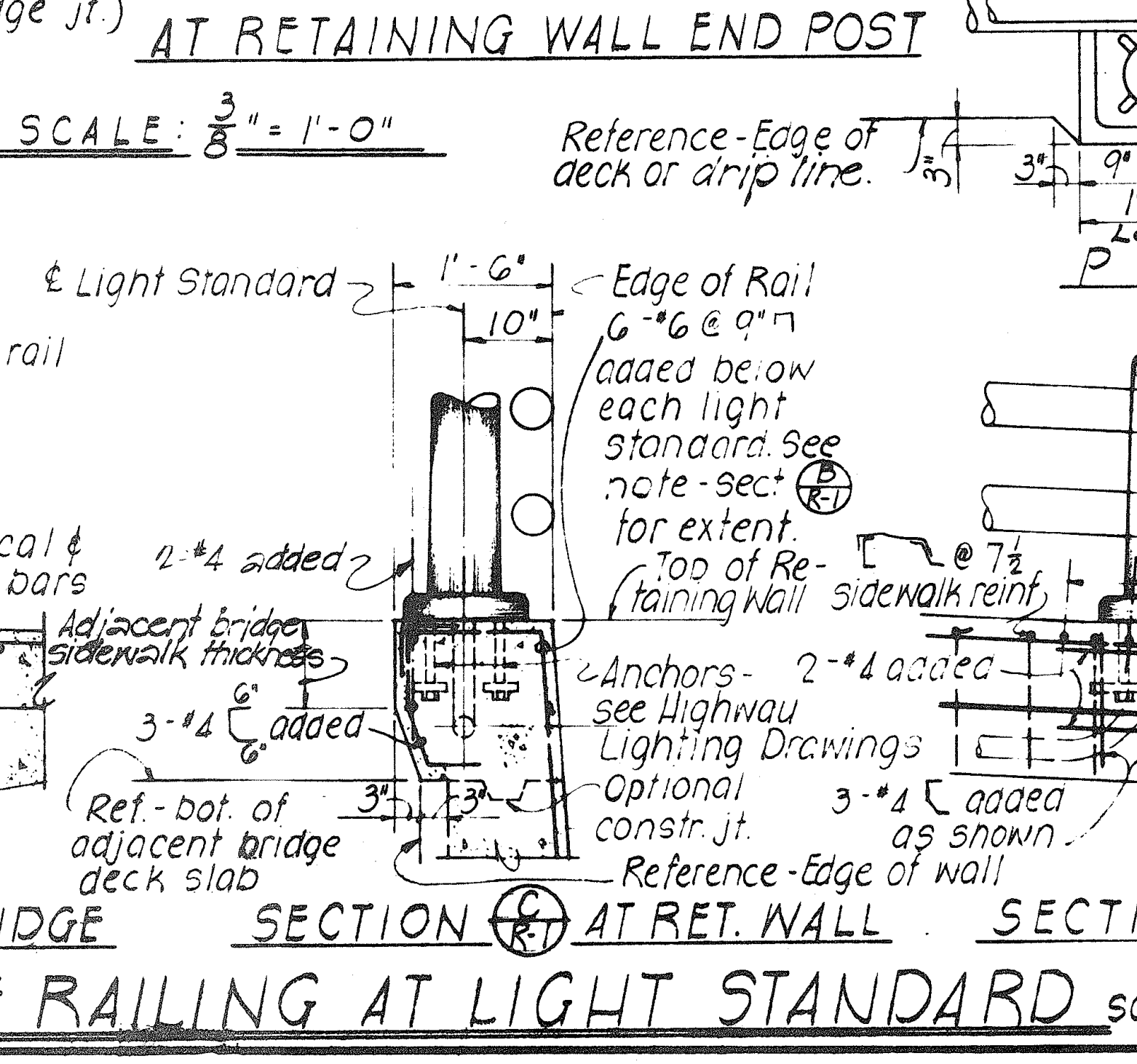
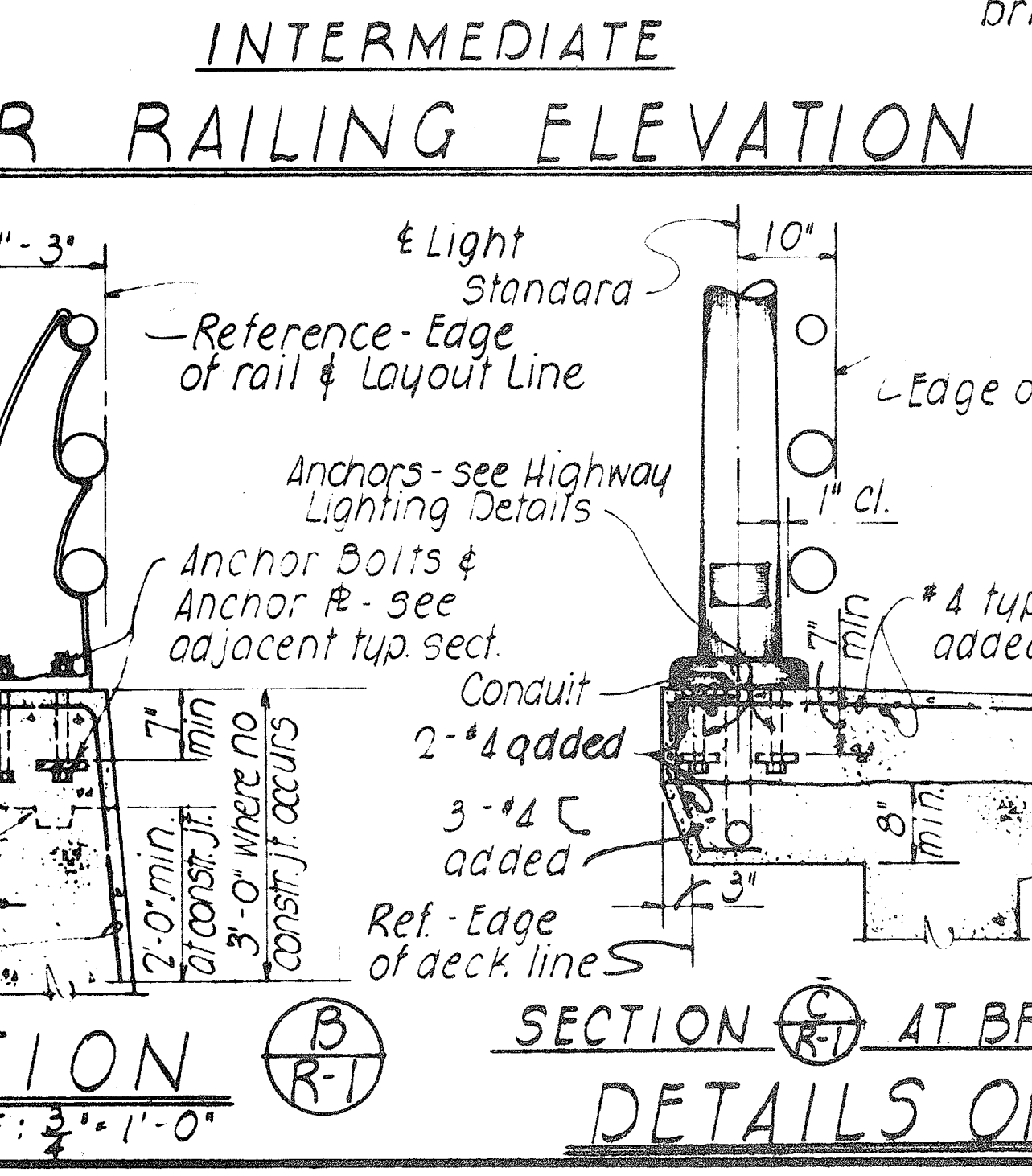
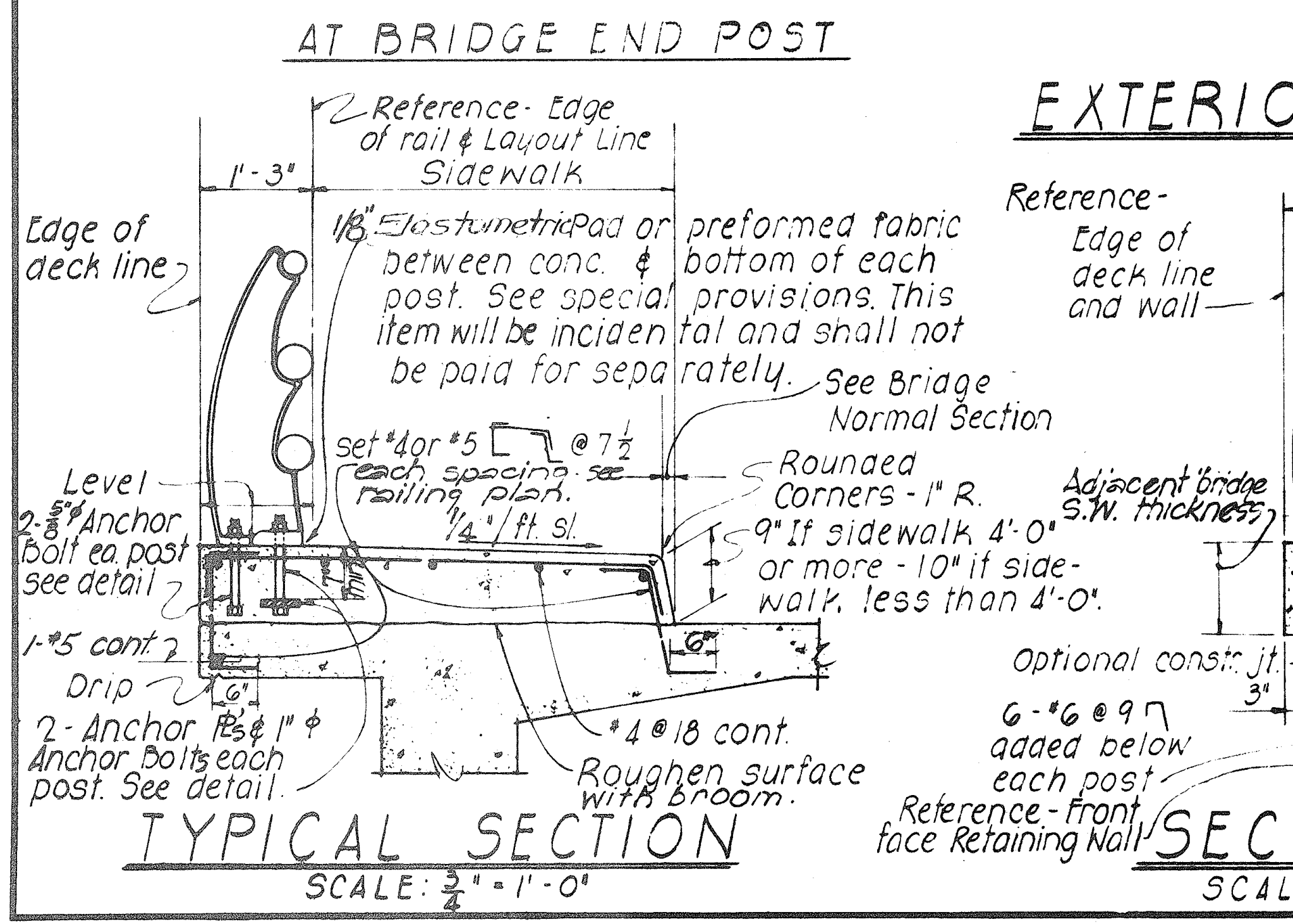
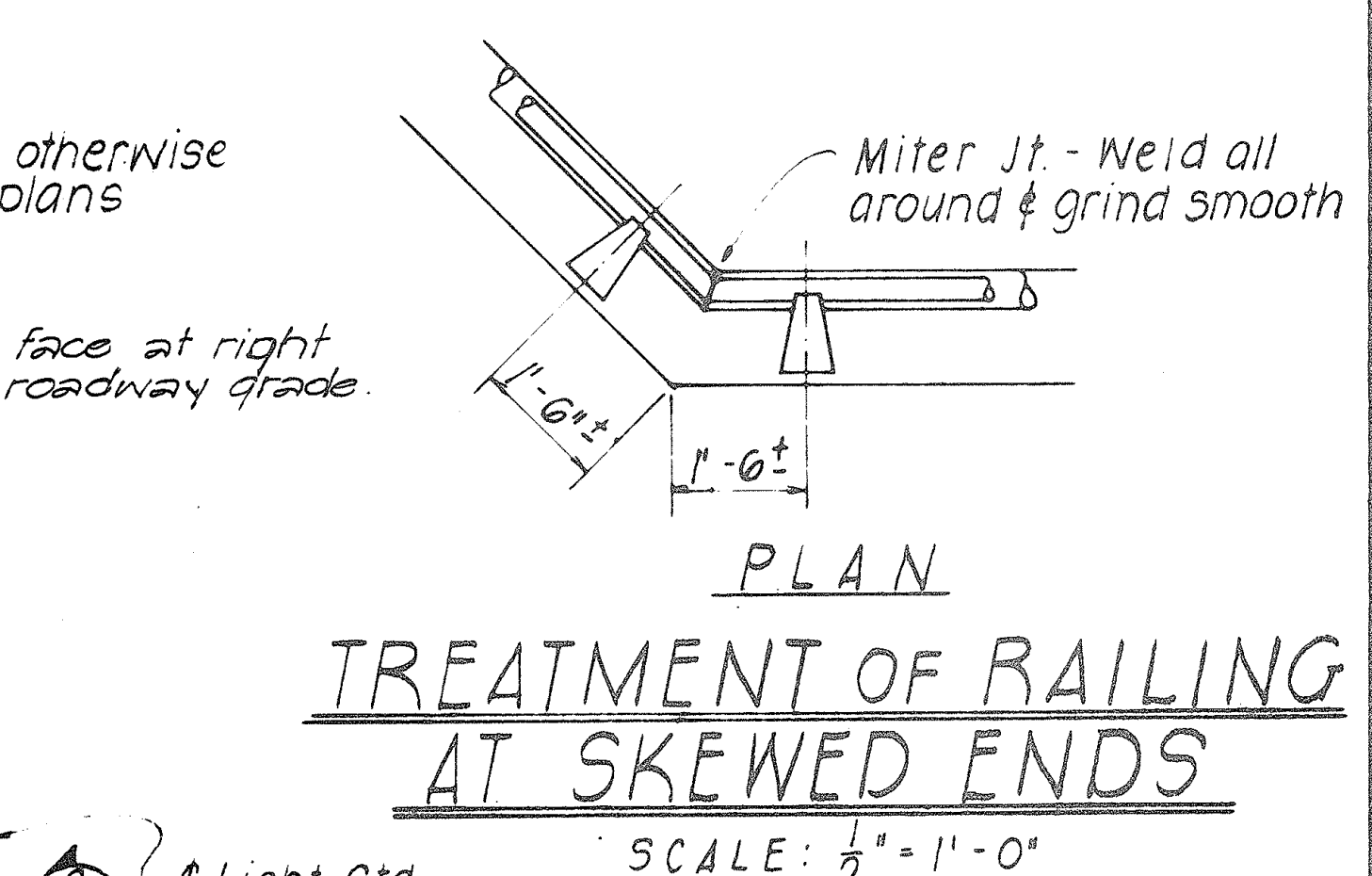
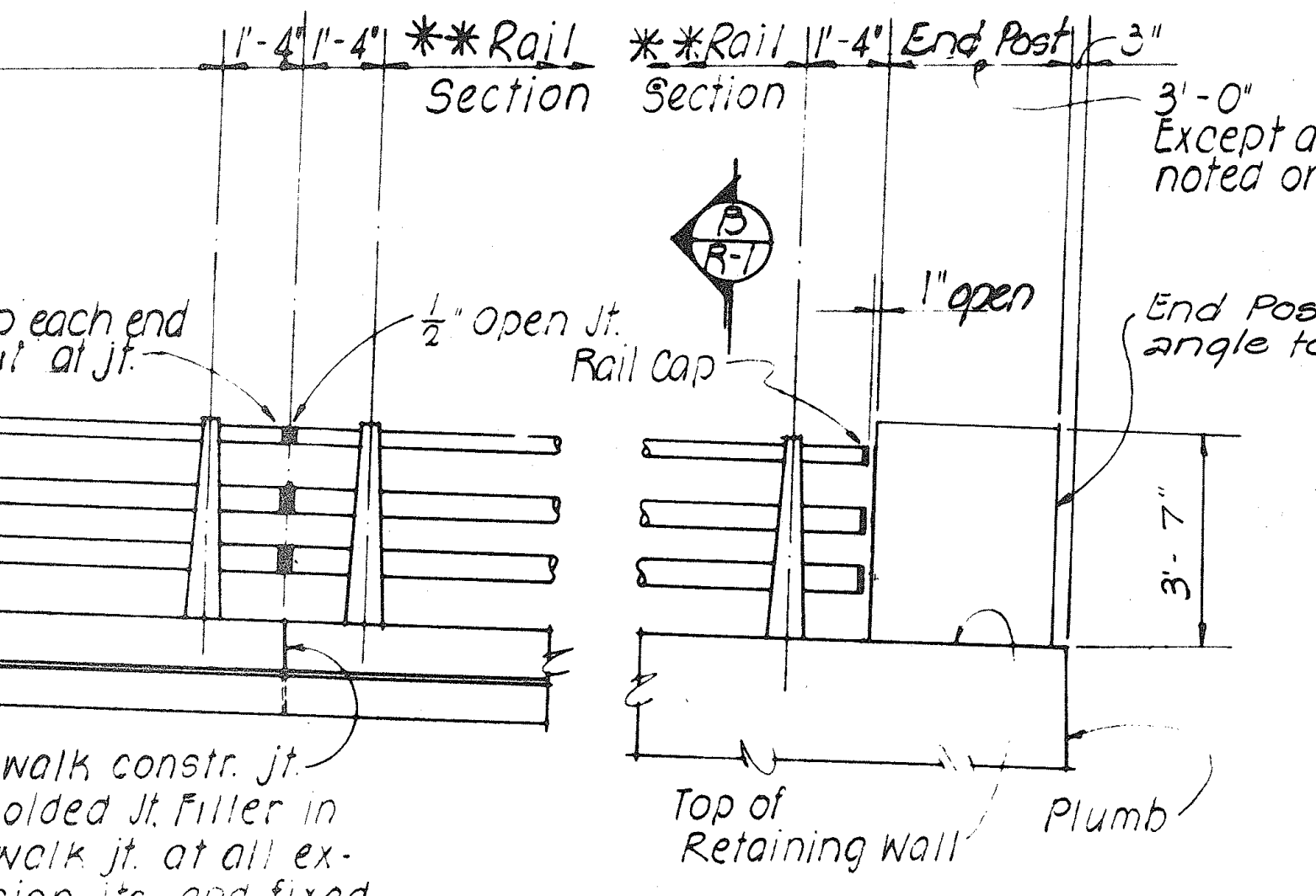
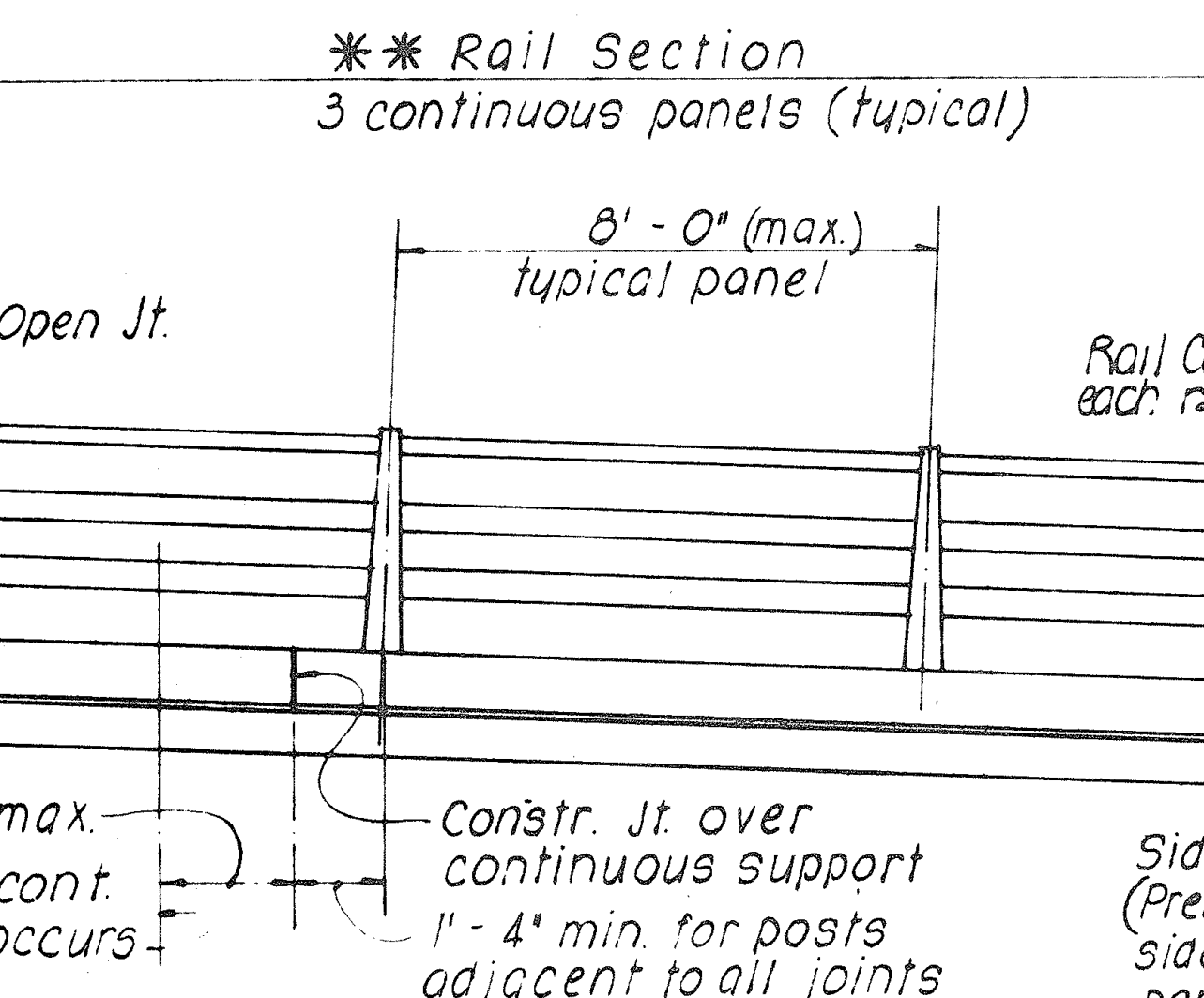
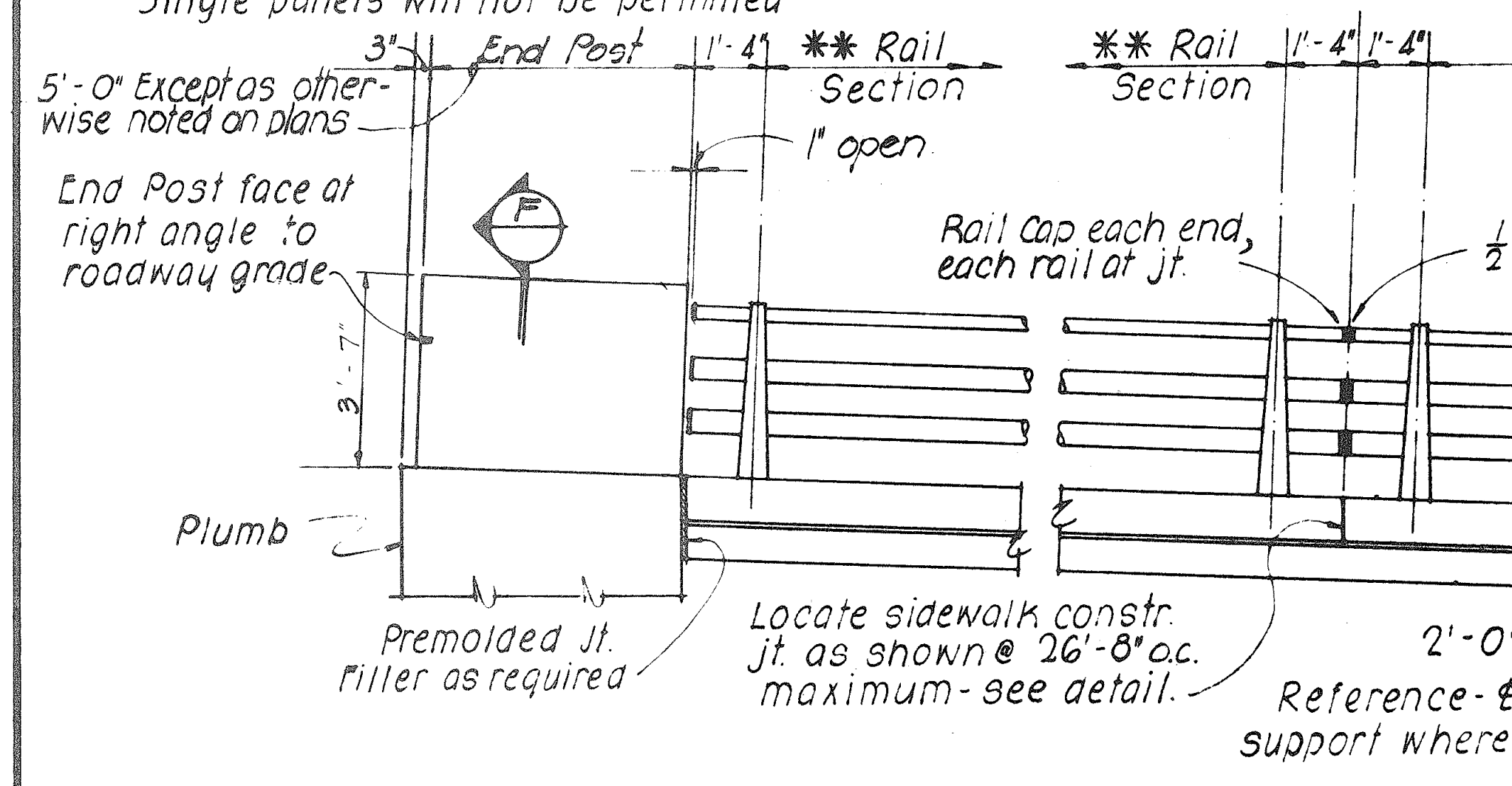
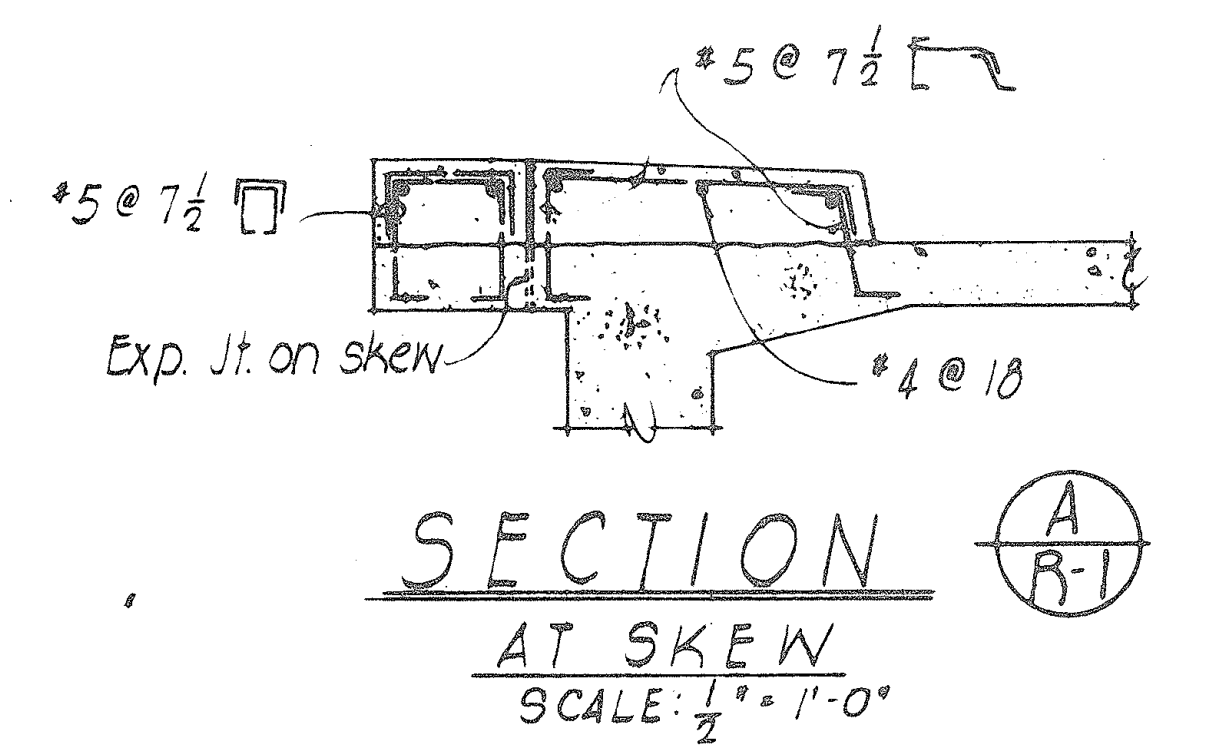
**** NOTE!!**
The contractor shall layout the railing to provide 3 continuous panels whenever possible. 2 or 4 continuous panels will be permitted to complete the layout when 3 continuous panels cannot be made. Single panels will not be permitted.

INTERMEDIATE RAILING PLAN

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

AT RETAINING WALL END POST

NOTES!!
1. Rail Posts shall be normal to grade.
2. Provide double posts at each expansion jt., fixed bridge jt. & as shown on detailed drawings.

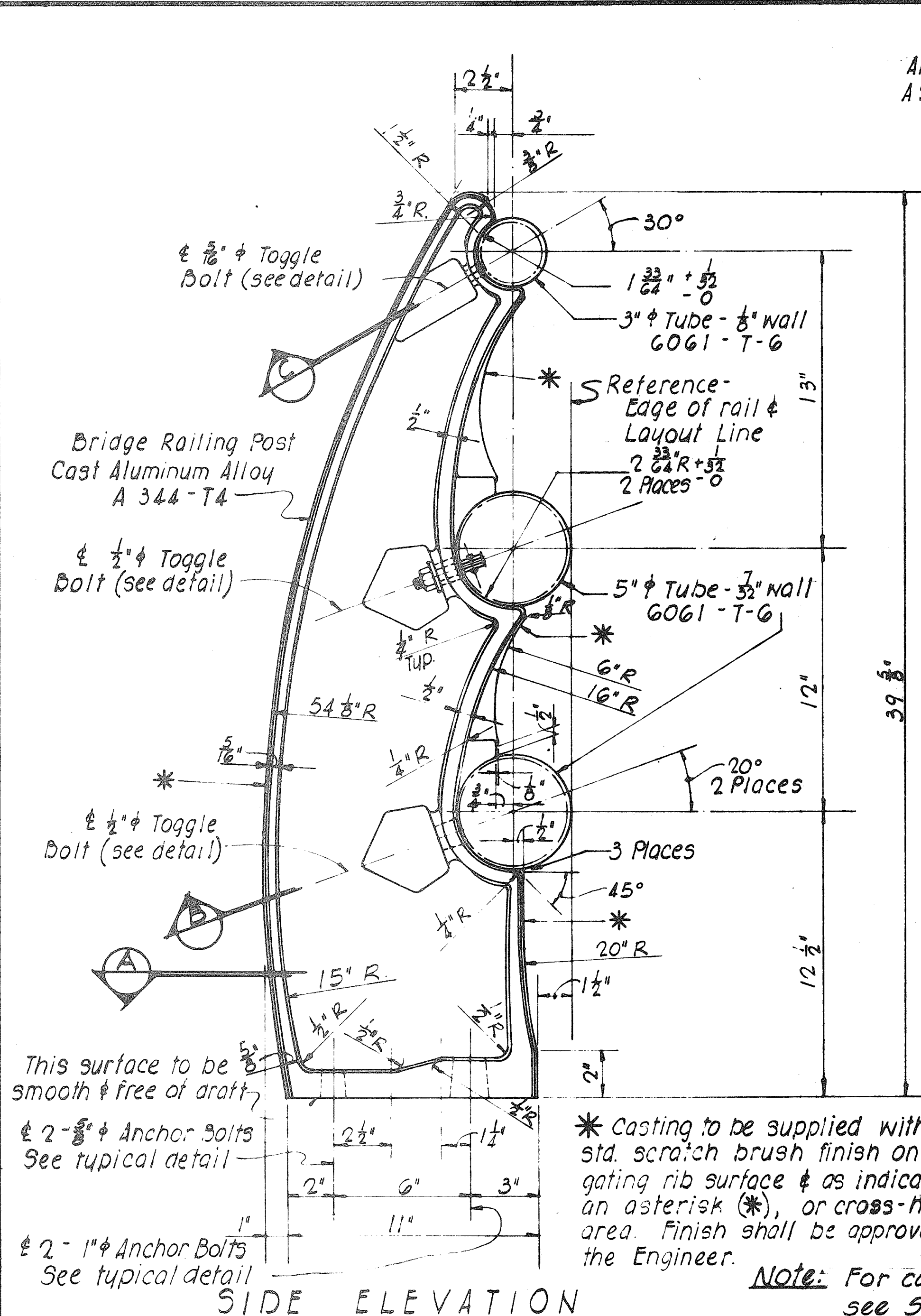


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

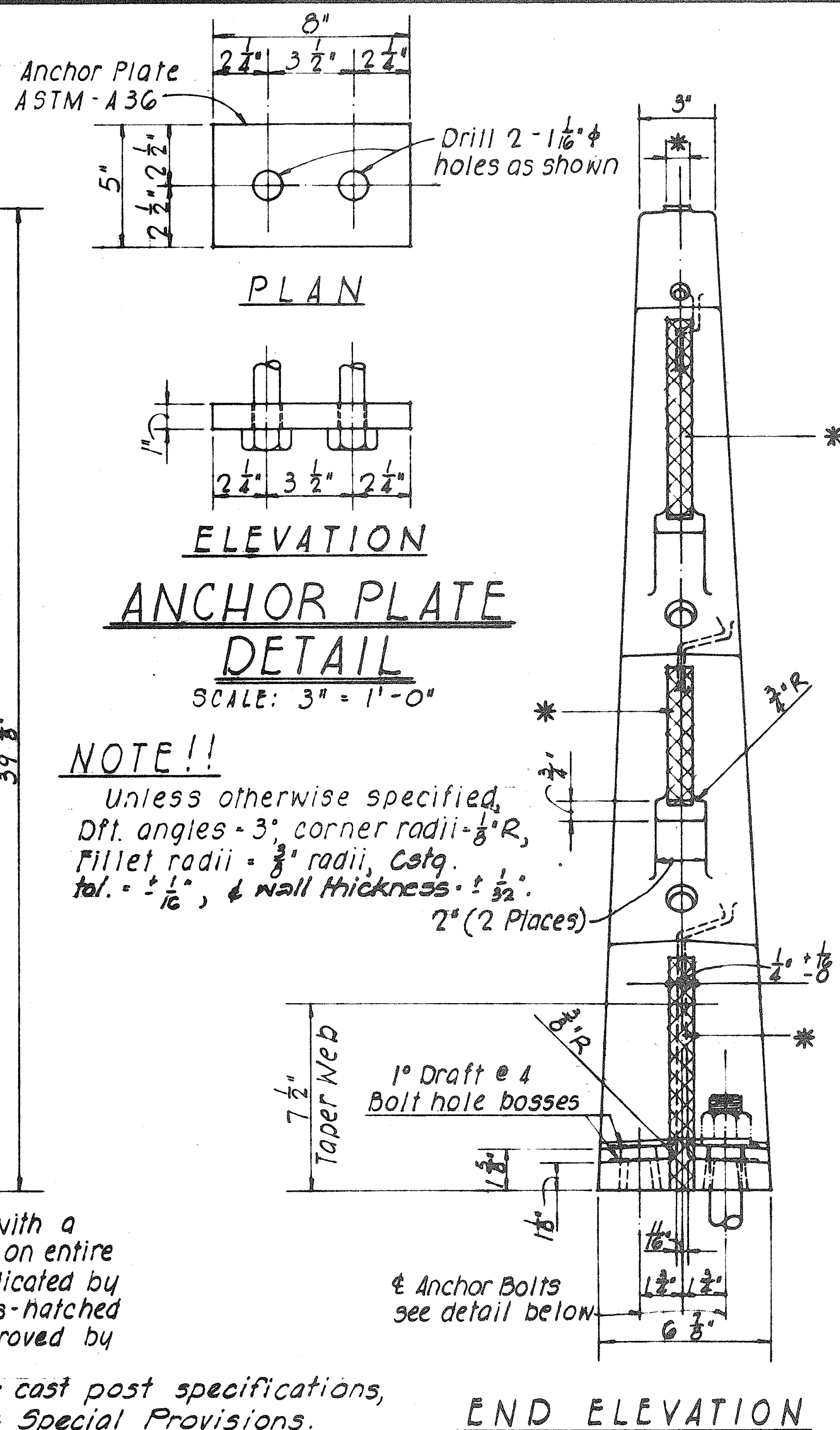
STANDARD DETAILS
METAL BRIDGE RAILING
THREE RAIL COMBINATION TYPE

Scale as Noted Date: April, 1969
SHEET No. 15 OF 14 SHEETS

DATE	DESIGNED BY	CHECKED BY
NO.	NO.	NO.



SIDE ELEVATION



PLAN

ELEVATION

ANCHOR PLATE DETAIL

SCALE: 3" = 1'-0"

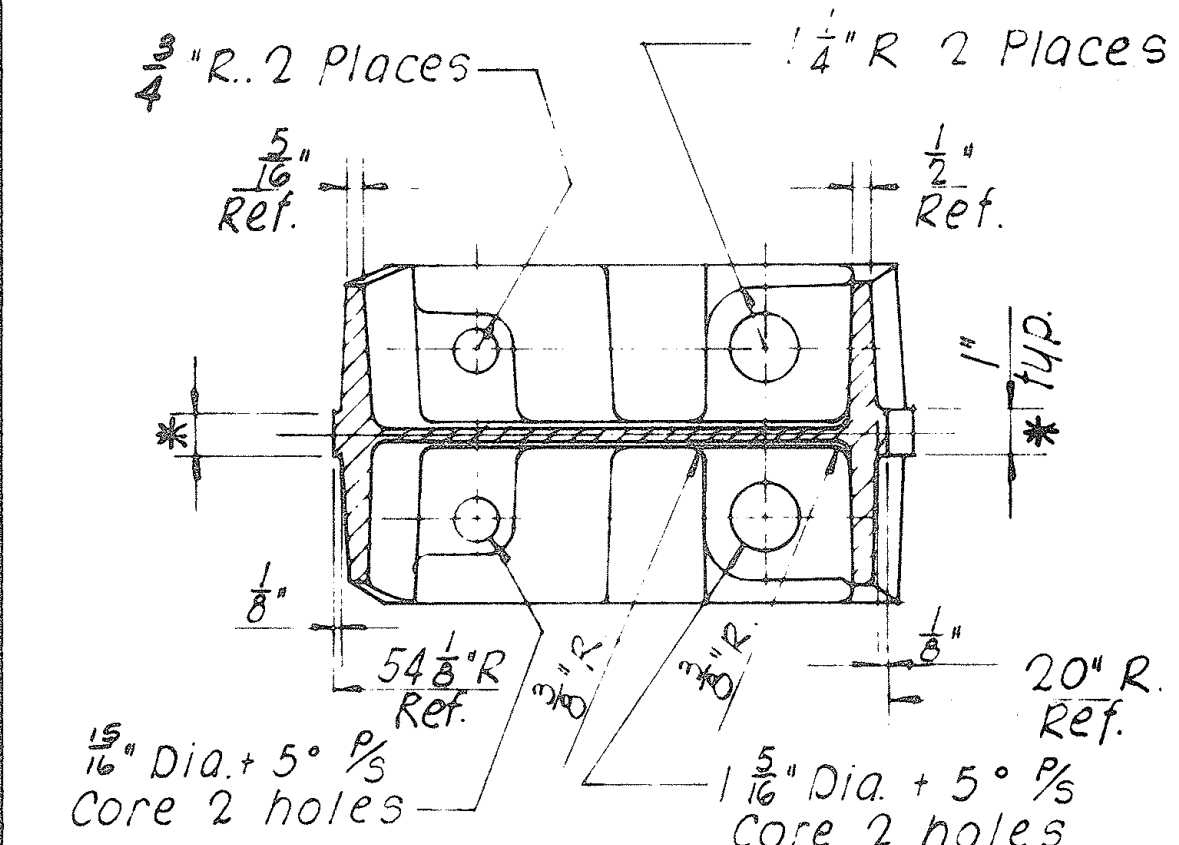
NOTE!!

Unless otherwise specified, Dft. angles - 3°, corner radii - 1/8" R, Fillet radii - 3/8" radii, Castg. tol. - ± 1/16", & wall thicknesses - ± 1/32".

END ELEVATION

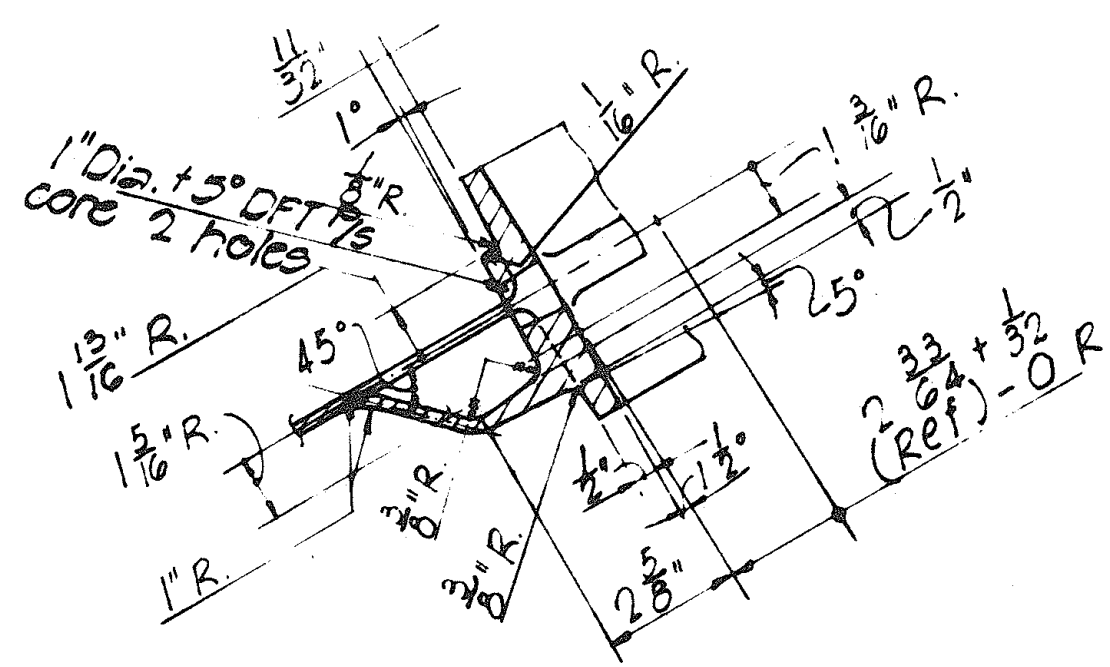
TYPICAL RAIL POST DETAILS

SCALE: 3" = 1'-0"



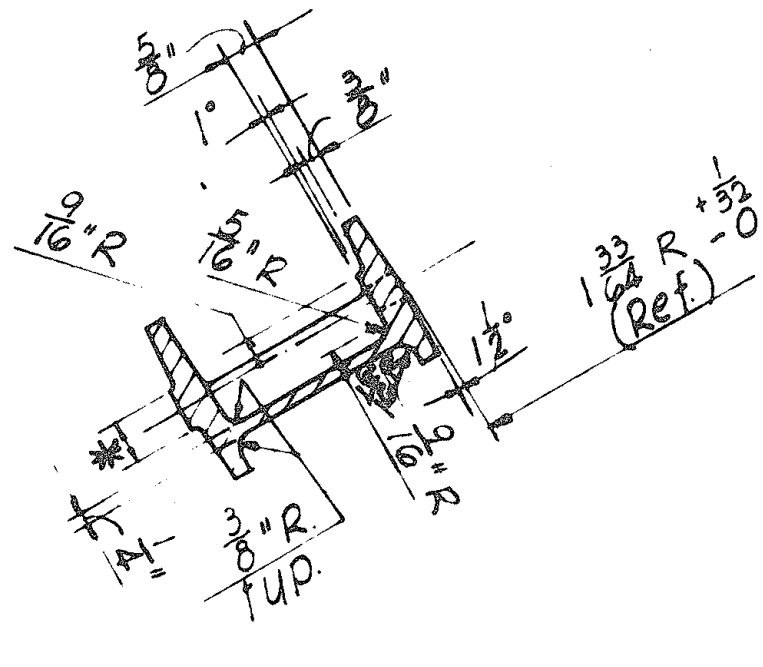
SECTION A

SCALE: 3" = 1'-0"



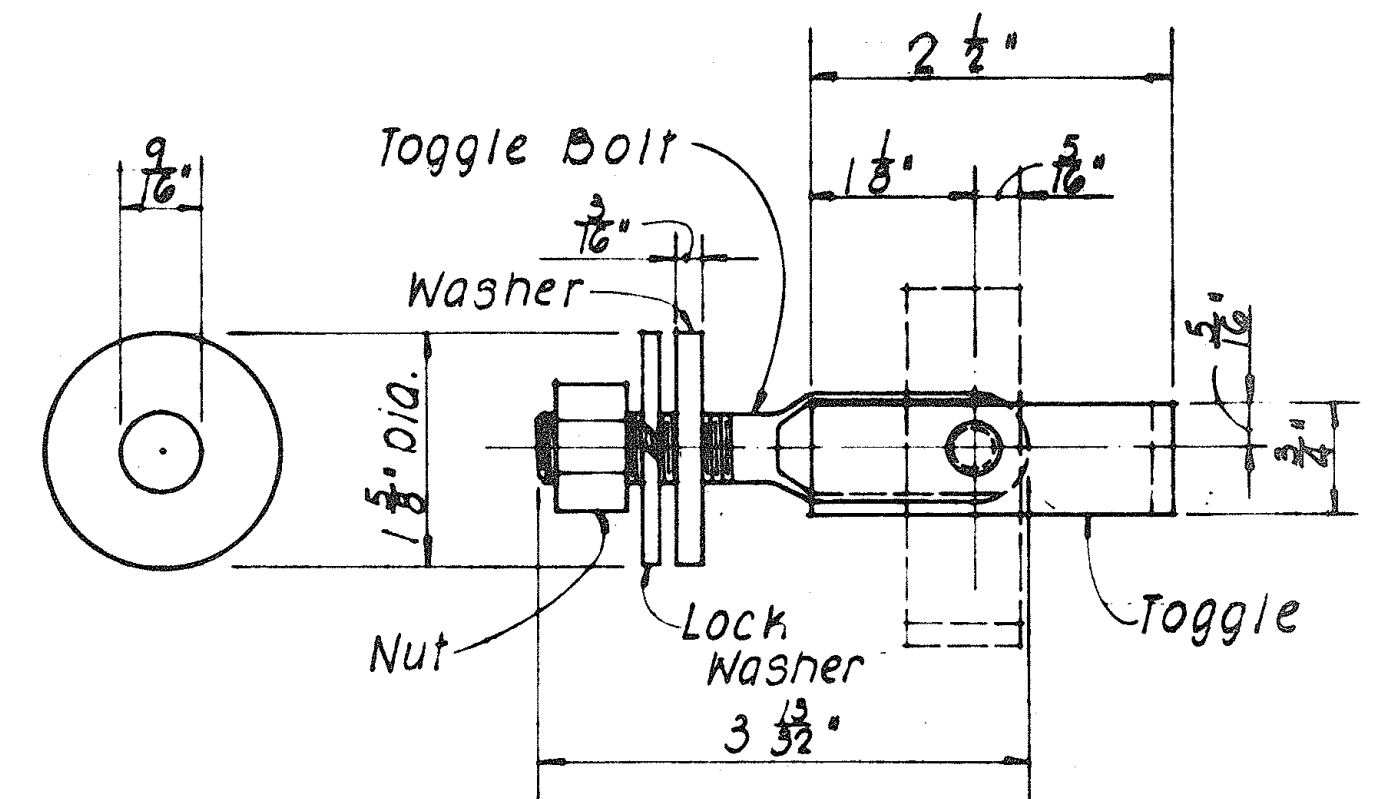
SECTION B

SCALE: 3" = 1'-0"



SECTION C

SCALE: 3" = 1'-0"

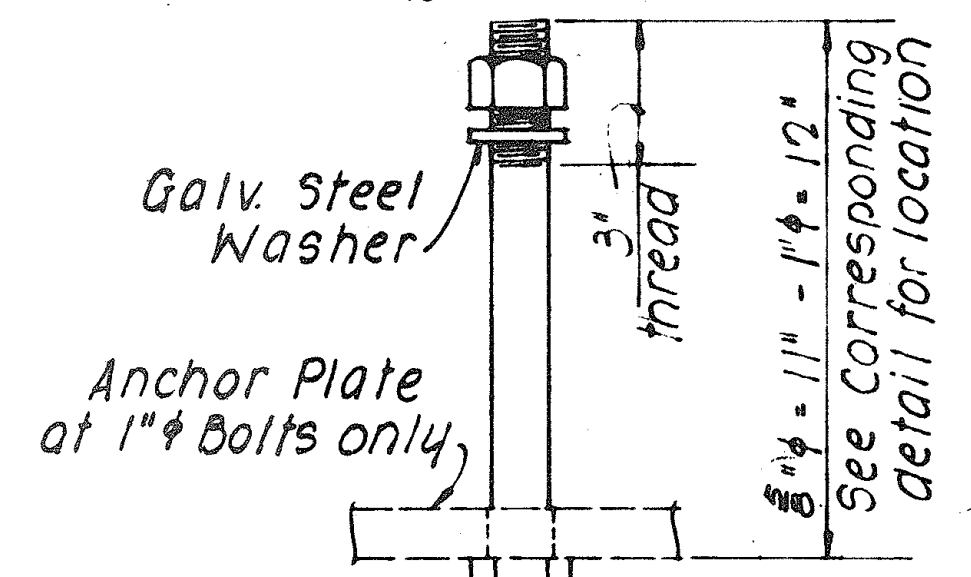


WASHER SIDE ELEVATION ASSEMBLAGE

Special rivet-material 1038 C.R. steel, heat treated ASTM-A195

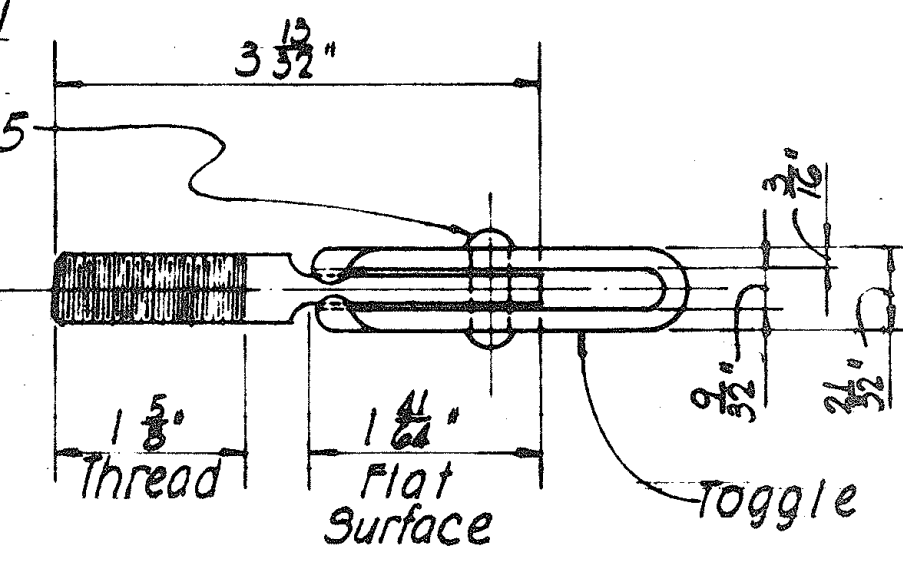
NOTE!!

1" dia. bolt washer size 2 1/2" o.d. x 1 1/8" i.d. x 1/4" thick. 3/4" dia. bolt washer size 1 3/4" o.d. x 1 1/8" i.d. x 1/4" thick



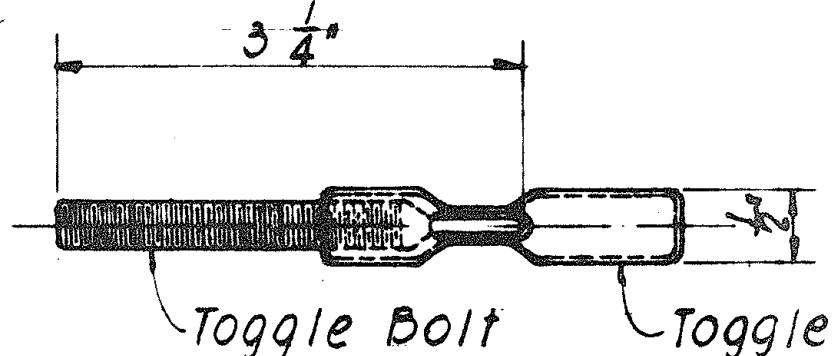
TYPICAL ANCHOR BOLT DETAIL

SCALE: 3" = 1'-0"

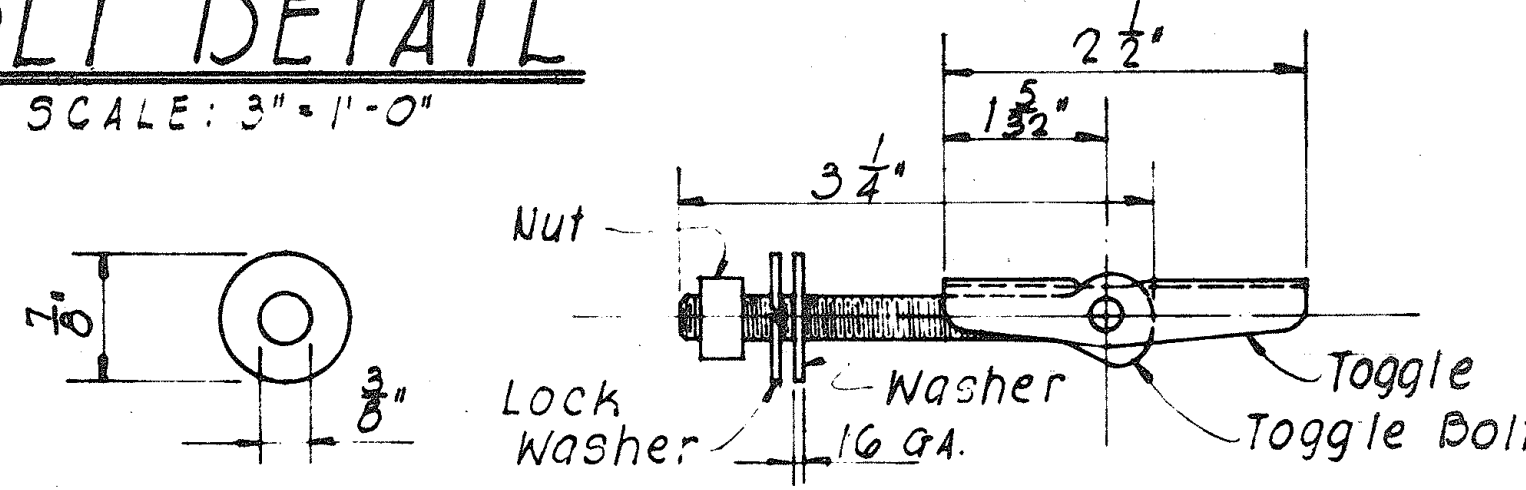


1/2" TOGGLE BOLT DETAIL

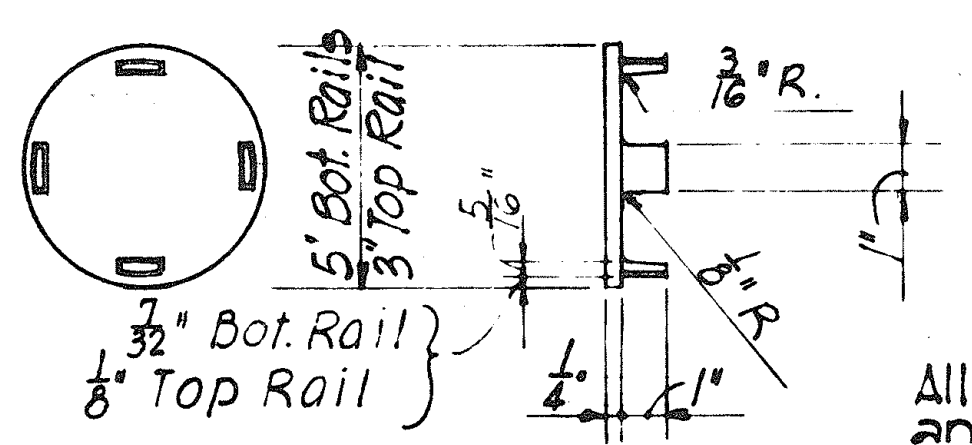
SCALE:



TOP PLAN



5/16" TOGGLE BOLT DETAIL



RAIL CAP DETAIL

SCALE: 3" = 1'-0"

NOTE!!

Toggle Bolt Material - 1/2" - 13 N.C. 1335 C.R. - Steel heat treated R.C. 32 - 38 ASTM - A354 Toggle Material - 1015 H.R. steel pickled and oiled. Round edges ASTM - A 303. Washer Material - SAE 1020 H.R. steel plates. ASTM - A-7 Break sharp edges. Nut - 1/2" - 13 Amer. hex. nut - Heavy Mat'l. 1035 C.R. 911 - Heat treated ASTM A 325 Cadmium plating on steel - Type N.S. .0005 thick ASTM - A165. (All parts) For cast post specifications, see special provisions.

NOTE!!

Toggle Bolt Mat'l. - 5/16" - 18 N.C. SAE 1020 C.R. Steel unannealed after forming Toggle Mat'l. - H.R. steel pickled and oiled Washer Mat'l. - C.R. steel (1020) Nut Mat'l. - 5/16" - 18 N.C. Amer. std. hex. nut cold punched (1020 stl) Cadmium plating on steel. Type N.S. .0005 thick - ASTM - A165. (All parts)

General Note: Metal bridge railing shown is for aluminum bridge railing. See Special Provisions for alternate railing in steel.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL BRIDGE RAILING

THREE RAIL COMBINATION TYPE

Scale as Noted Date: April, 1960

SHEET No. 14 OF 14 SHEETS

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