

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(64)12 UNIT 2 IHI-1(16)11	1969	21	128

INDEX TO DRAWINGS

KAAMILO ST. GRADE SEPARATION

1. BRIDGE LAYOUT.
2. CROSS SECT., FOUND. PLAN & GEN'L NOTES.
3. FRAMING PLAN & LONGITUDINAL SECTION.
4. NORMAL DECK SECTION & DETAILS.
5. TOP SLAB REINFORCING PLAN.
6. BOTTOM SLAB REINF. PLAN & CAMBER DIAGM.
7. PIER CAP & PIER FTG. REINFORCING.
8. BM. "A" REINF., TYP. PIER & FTG. REINF.
9. ABUTMENT NO. 1 - PLAN & ELEVATIONS.
10. ABUTMENT NO. 1 - ELEV. & SECTIONAL PLANS.
11. ABUTMENT NO. 2 - PLAN & ELEVATIONS.
12. ABUTMENT NO. 2 - ELEV. & SECTIONS.

KAONOHI ST. GRADE SEPARATION

1. BRIDGE LAYOUT.
2. CROSS SECT., FOUND. PLAN & GEN'L NOTES.
3. FRAMING PLAN & LONGITUDINAL SECTION.
4. NORMAL DECK SECTION & DETAILS.
5. TOP SLAB REINFORCING PLAN.
6. BOTTOM SLAB REINFORCING PLAN.
7. PIER CAP & PIER FTG. REINFORCING.
8. BM. "A" REINF., TYP. PIER & FTG. REINF.
9. ABUTMENT PLANS & WING WALL ELEVATIONS.
10. ABUTMENT ELEVATION.
11. ABUTMENT SECTIONS & DETAILS.

DELETE

AIEA HTS. DR. GRADE SEPARATION

1. LAYOUT PLAN & ELEVATION.
2. FRAMING PLAN & SECTION.
3. TOP SLAB REINF. PLAN & CAMBER DIAGM.
4. BOTTOM SLAB REINF. PLAN.
5. NORMAL DECK SECTIONS.
6. PIER CAP & FOUNDATION.
7. BM. "A" & "C" ELEV. & DETAILS.
8. ABUTMENT NO. 1 & DETAILS.
9. ABUTMENT NO. 2 & DETAILS.
10. SECTIONS & DETAILS.
11. SECTIONS & DETAILS.

AIEA HTS. DR. RETAINING WALL

1. LAYOUT PLAN, ELEV. & DETAILS.
2. PLANS OF RETAINING WALL NO. 1 & NO. 2.
3. ELEVATIONS.

MAHIKO PEDESTRIAN OVERPASS

1. LAYOUT PLAN & ELEVATION.
2. ELEVATIONS & HANDRAIL DETAILS.
3. DECK SLAB REINF. & DETAILS.
4. PRESTRESS TEES & DETAILS.
5. PIER DETAILS.
6. RAMP SUPPORTING WALLS & DETAILS.
7. BEARING PLATE DETAILS.

STANDARD DETAIL - DRAWINGS

- SI THRU SID. SII SOIL BORING LOGS.
1. INDEX TO DRWGS, ABBREVIATIONS & GENERAL NOTES.

GENERAL NOTES

SPECIFICATIONS: AASHO.

STANDARD SPECIFICATION FOR HIGHWAY BRIDGES (9TH EDITION) WITH SUBSEQUENT ADDITIONS & MODIFICATIONS.

DESIGN LOADS:

HS-20-44 OR INTERSTATE LOADING.

DESIGN STRESSES:

1. REINFORCED CONCRETE: SEE AASHO SPECIFICATIONS AND GENERAL PROVISIONS, EXCEPT AS OTHERWISE NOTED ON PLAN.

CLASS A-1

$f_c' = 3,000 \text{ PSI}$ $f_c = 1,200 \text{ PSI}$ $n = 10$ $f_s = 20,000 \text{ PSI}$

2. PRESTRESSED CONCRETE GIRDERS

$f_c' = 5,500 \text{ PSI}$ $f_c' = 4,500 \text{ PSI}$

STRANDS = 1/2" DIA. 7 WIRE UNCOATED. TENSIONING LOAD = 25,200 LBS PER STRAND.

DESIGN LOAD = 20,160 LBS PER STRAND.

MATERIALS:

1. CONCRETE: ALL CONCRETE SHALL BE CLASS A-1, EXCEPT AS OTHERWISE NOTED ON PLANS OR INDICATED IN SPECIFICATIONS.

CONCRETE FOR PRESTRESSED CONCRETE GIRDERS SEE SPECIAL PROVISIONS AND ALSO AS NOTED UNDER DESIGN STRESSES.

2. REINFORCING STEEL: ALL REINFORCING STEEL TO BE ASTM DESIGNATION A-15 BILLET STEEL, INTERMEDIATE GRADE, EXCEPT AS OTHERWISE NOTED.

3. ITEMS INCIDENTAL TO CONCRETE WILL NOT BE PAID FOR SEPARATELY.

A. STEEL BEARING PLATES

B. ELASTOMERIC BEARING PADS (HARDNESS ASTM-D576, 60±5)

C. TRENCH GRATING & SUPPORTING ANGLE FRAMING & ASSEMBLY.

D. STEEL ANGLE AND ANCHORAGE AND BOTH SIDES OF EXPANSION JOINTS.

E. ALL PREMOULDED JOINT FILLER AND SEALANT.

F. ALL PREMOULDED ASPHALTIC FILLER AROUND UTILITY LINE THROUGH CONCRETE SECTIONS.

4. ADMIXTURE IN CONCRETE: SEE SPECIAL PROVISIONS.

CONSTRUCTION METHODS:

1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS.

2. SIDE OF FOOTINGS SHALL BE EXCAVATED AND POURED TO NEAT LINES FOR EXCAVATION OF BOTTOM OF FOOTINGS, SEE STANDARD SPECIFICATIONS. IN CASE OF OVER EXCAVATION, SPACE BETWEEN FOOTING & GROUND SHALL BE FILLED WITH CONCRETE AT THE CONTRACTORS EXPENSE, & AS DIRECTED BY THE ENGINEER. THE FILL CONCRETE SHALL HAVE A MINIMUM QUALITY OF CLASS D-1.

3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITY LINES & NOTIFY THE RESPECTIVE OWNERS BEFORE COMMENCING EXCAVATION WORK.

4. BACKFILL BEHIND ROCKER ABUTMENTS TO BE PLACED SIMULTANEOUSLY AT EACH ABUTMENT AFTER SUPERSTRUCTURE FALSE WORK IS RELEASED.

5. IN GENERAL, TOP & EDGE OF CONCRETE DECK OF SUPERSTRUCTURE SHALL BE CONSTRUCTED TO FOLLOW THE FINISH ROADWAY VERTICAL & /OR HORIZONTAL CURVES, GRADES, SLOPES & ELEVATIONS.

6. CONCRETE SEATS & CREEP BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT SECTIONS. SEATS SHALL RECEIVE A HARD TROWEL FINISH, LEVEL & TRUE ELEVATIONS. CLASS 1 SERVICE FINISH 403 (D)(2) SHALL BE APPLIED ONLY TO END POSTS & CURBS.

7. VERTICAL PIER COL BARS SHALL BE ARRANGED IN SUCH A MANNER AS TO MISS PIER CAP REINF BARS ABOVE.

8. WING WALLS ON FILL SHALL BE CONSTRUCTED AFTER THE ROADWAY FILL IS COMPLETED TO REQUIRED FINISH GRADE.

9. FOR CONCRETE FINISHES, SEE SPECIAL PROVISIONS.

CAMBER:

OBTAIN DEAD LOAD CAMBER BY FORMING & SHORING CONCRETE SURFACES ABOVE THE PROFILE GRADES WITH AMOUNT AS SHOWN IN DEAD LOAD CAMBER DIAGRAM.

REFERENCE:

1. REFER TO STANDARD DETAIL DRAWINGS SHTS # 81-S10 INCL., FOR DETAILS NOT COVERED BY THESE DRAWGS.

2. REPORT ON STRUCTURE FOUNDATIONS INTERSTATE PROJECT I-HI-1 (9) WAI'AU TO AIEA STREAM BY HIGHWAYS DIVISION, MATERIALS, TESTING & RESEARCH BRANCH (APRIL 1968).

SYMBOLS & ABBREVIATIONS

Alphabet (A) or numeral (3) indicate sec. or det. designation.
No. (14) indicates sht. no. where sec. or detail is drawn on.

B5 Boring no. and designation.
B-A, B-B Beam designations.
G-1, G-2 Girder designations.
P-1, P-2 Pier designations.
PG-2 Prestressed girder type 2.

(A) ABUT. Abutment.
ADJ. Adjacent.
ALT. Alternate.
AZ. Azimuth.
(B) BAL. Balance.
B.F. Both face.
Base line.
BM. Beam.
B.V.C. Begin vertical curve.
B, BOT, BOT T. Bottom.

(C) Center line.

C.G. Center of gravity.
Change of grade.
C.L. Clear or closed.
COL. column.
CONN. Connection.
CONST. Construction.
CONT. Continuous.

(D) DET. Detail.
DIA., ϕ Diameter.
DIAG. Diagonal.
DIAGM. Diagram.
DRWG. Drawing.

(E) EA. Each.
E.F. Each face.
E.P. Edge of paving.
EL, ELEV. Elevation.
E.V.C. End vertical curve.
EQ. Equal.
EX.P. Expansion.
EXT. Exterior.
(F) F.F. Far face.
FTG. Footing.

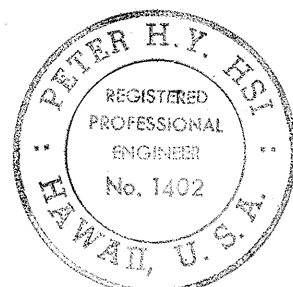
(G) GALV. Galvanized.
(H) HOR. Horizontal.
(I) I.B. Inbound.
INCLU. Inclusive.
I.R. Inner ring (col. bars)
INT. Interior.
(J) JT. Joint.
(L) LG. Long.

LOC. Location.
LONGIT. Longitudinal.
LT.WT. Light weight.
(M) MAX. Maximum.
MIN. Minimum.
(N) N.F. Near face.
NO. Number.
(O) O.C. On center.
OPN'g Opening.
O.B. Outbound.
O TO O. Out to out.

O.R. Outer ring (col. bars)
(P) Plate.
PT. Point.
(R) R. Radius.
REF. Reference.
REINF. Reinforcement.
R.C. Reinforced concrete.
REQ'D Required.
(S) SEC. SECT. section
SHT. Sheet.

SPC. Spaces.
SPCG. Spacing.
STA. Station.
STR. Straight.
STIRR. Stirrup.
STD. standard.
SYMM. Symmetrical.

(T) T. Top.
TYP. Typical.
(V) VERT. Vertical.
V.C. Vertical curve.
(W) W.P. Working point.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INTERSTATE ROUTE H-1

INDEX TO DRAWINGS
ABBREVIATIONS & GENERAL NOTES

F.A.I. PROJ. NO. I-HI-1(64)12, UNIT 2
SCALE: AS NOTED DATE 1969

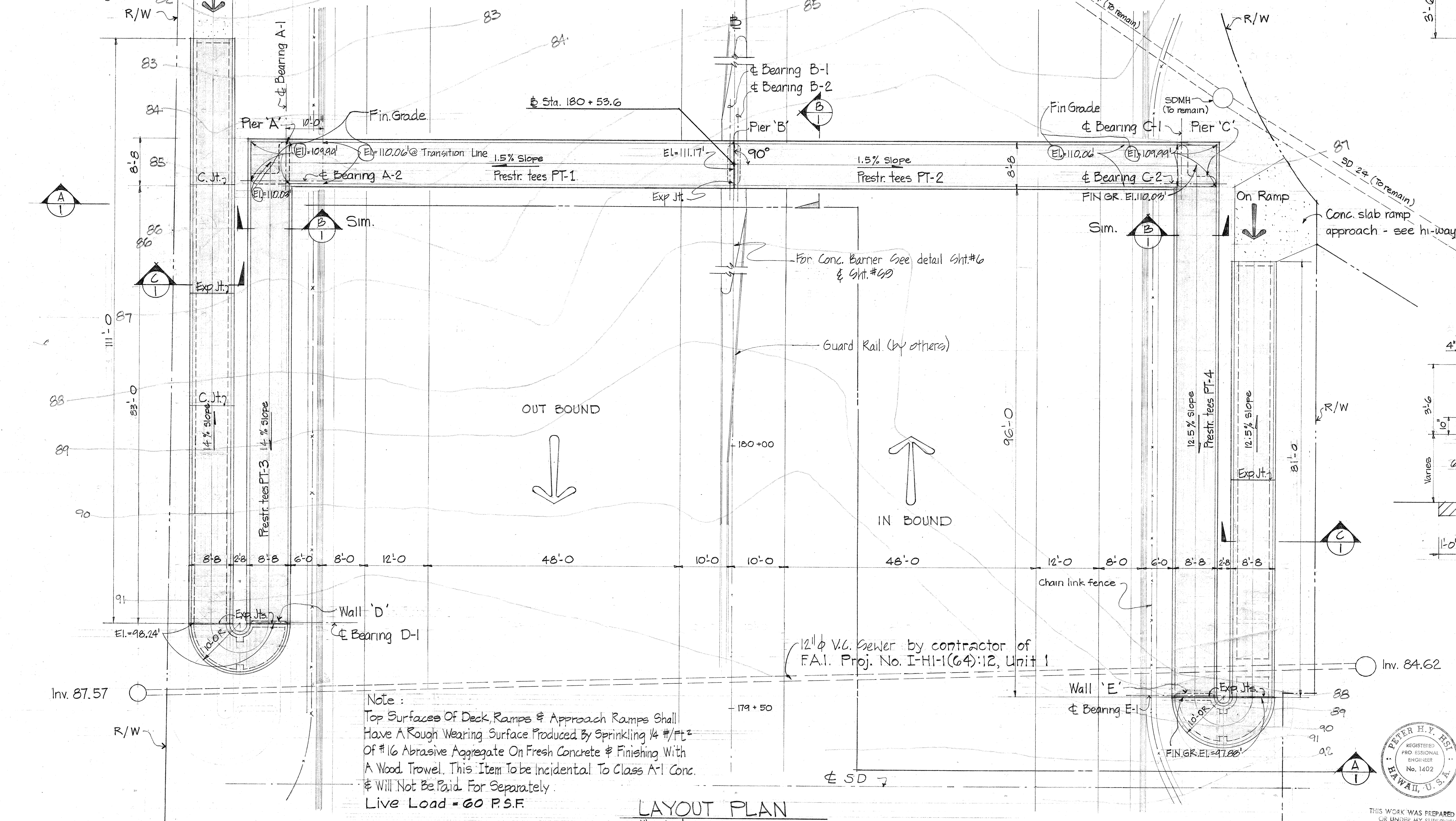
SHEET No. 1 OF 1 SHEETS

ESTIMATED QUANTITY	
1. CLASS A-1 CONC. (EXCL. FTG.) LS.	196 CY.
2. " " (FTG ONLY) LS.	44 CY.
3. REINFORCING STEEL LS.	42,960 LB.
4. PRESTRESSED CONC. T. GIRDER LS.	708 LF.
5. STRUCTURAL EXCAVATION	278 CY.
6. STRUCTURAL STEEL TUBING HANDRAIL	1,185 LF.

For General Notes See Sht. A-1 (132)
Natural & Finish Grade

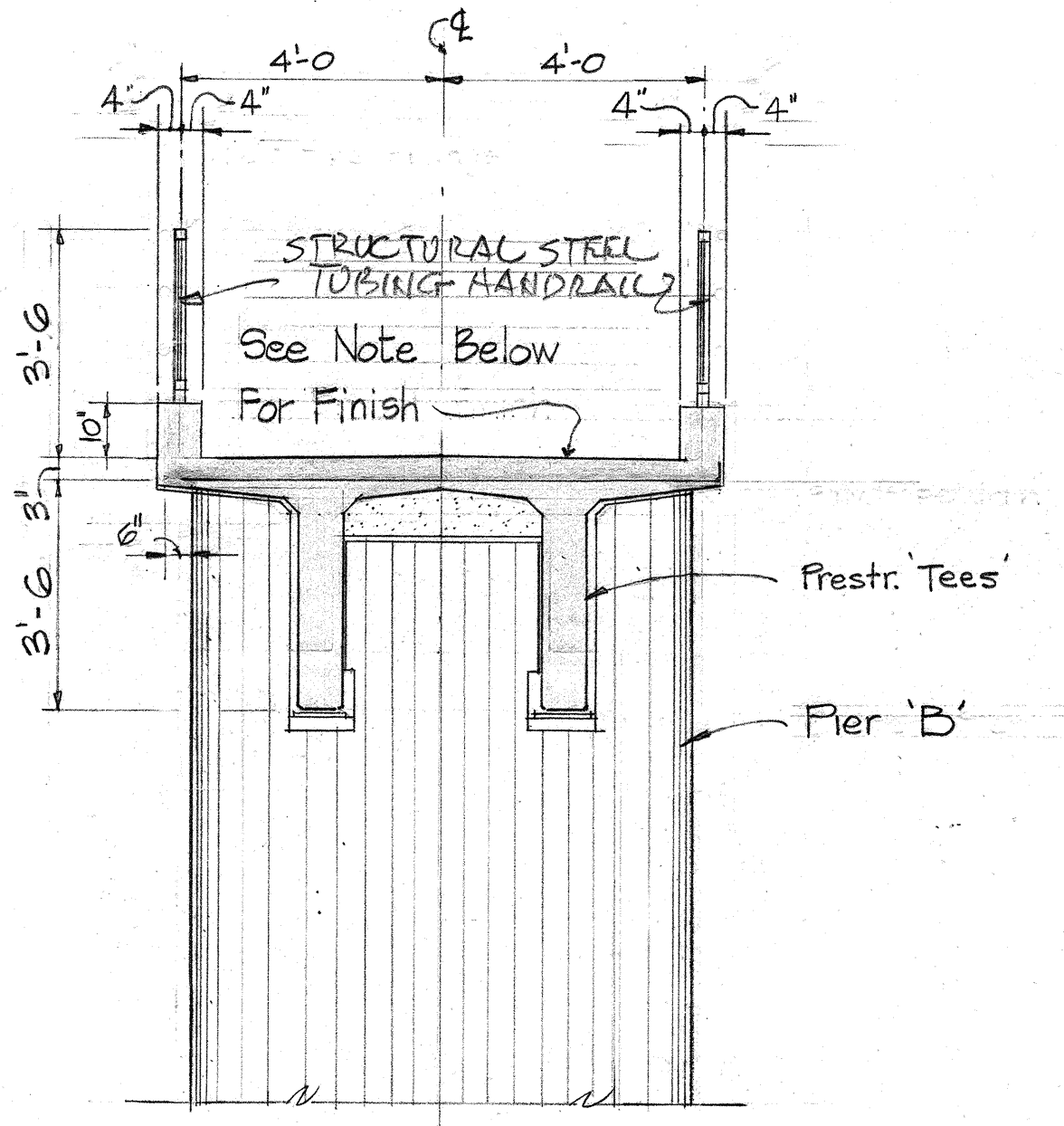
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(64):12 UNIT 2	1969	92	128

Conc. slab ramp approach see hi-way dwgs.
On Ramp
R/W

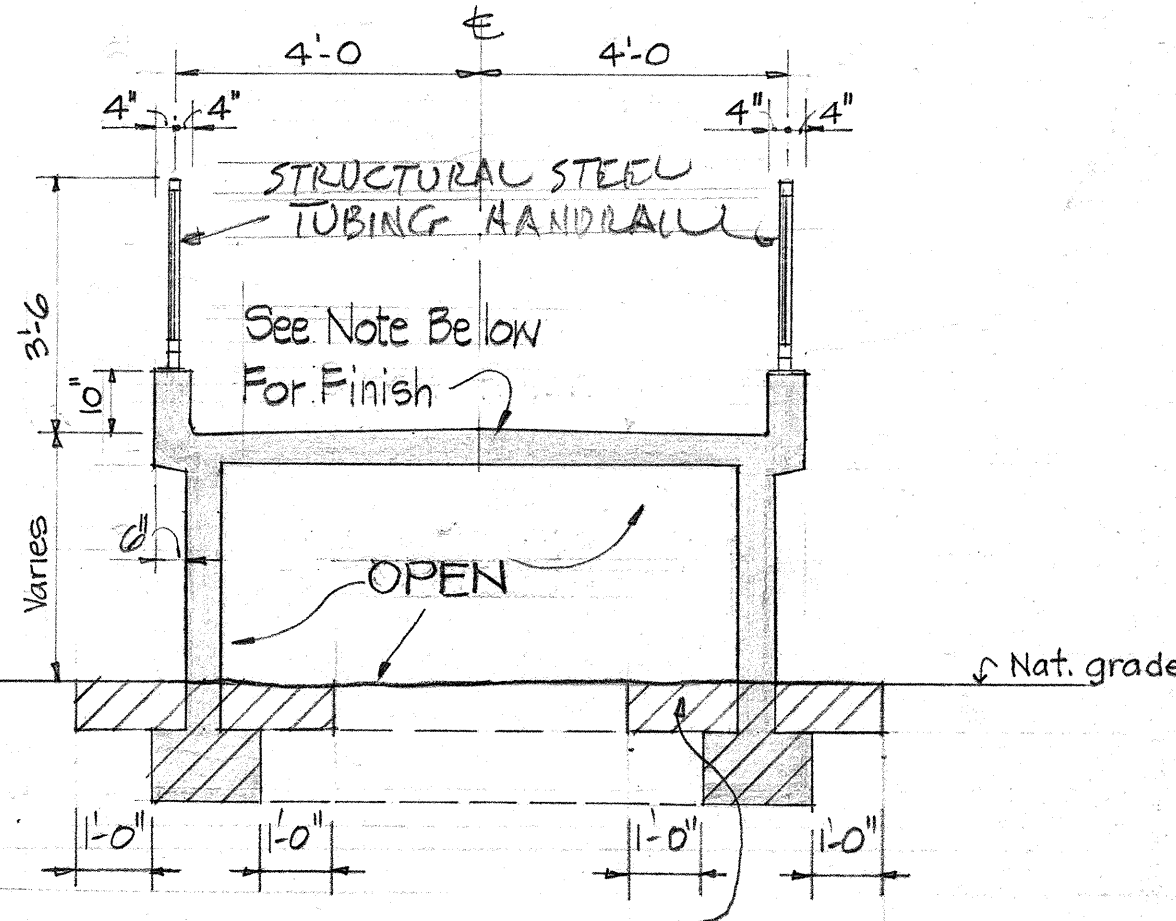


Note:
Top Surfaces Of Deck, Ramps & Approach Ramps Shall Have A Rough Wearing Surface Produced By Sprinkling 1/4 #/Ft² Of #16 Abrasive Aggregate On Fresh Concrete & Finishing With A Wood Trowel. This Item To Be Incidental To Class A-1 Conc. & Will Not Be Paid For Separately.
Live Load = 60 P.S.F.

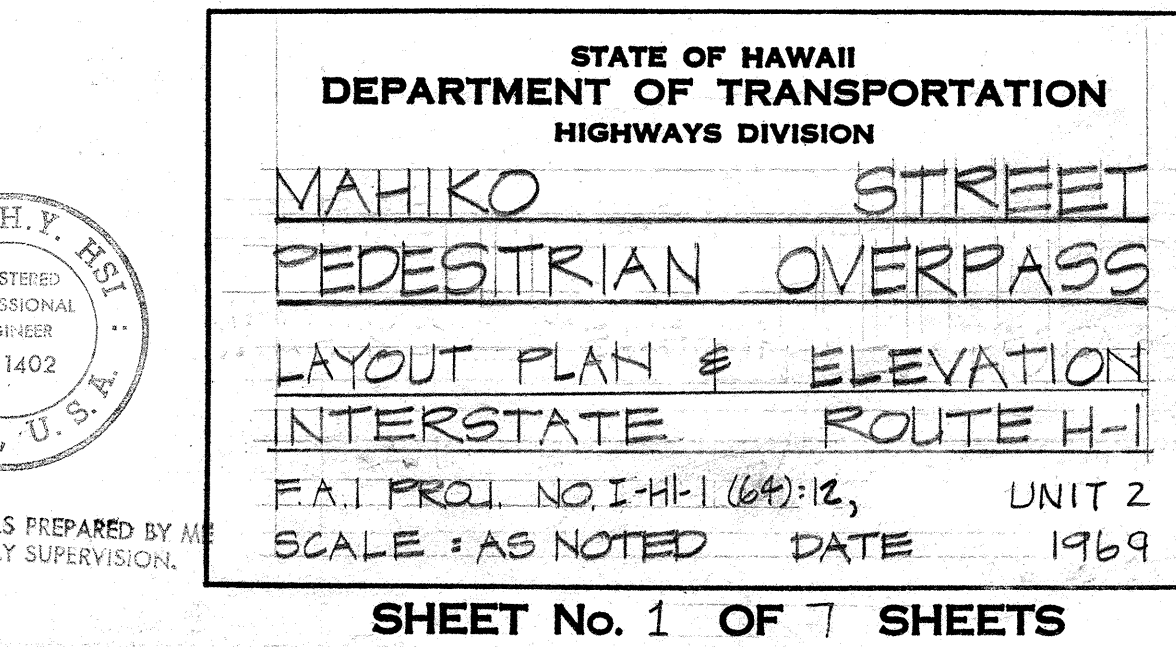
LAYOUT PLAN
1" = 10'-0"



Section A
1" = 10'-0"



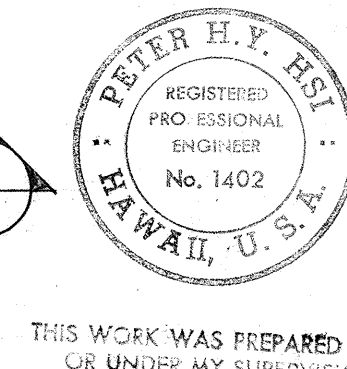
Section B
1" = 10'-0"



Section C
1" = 10'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

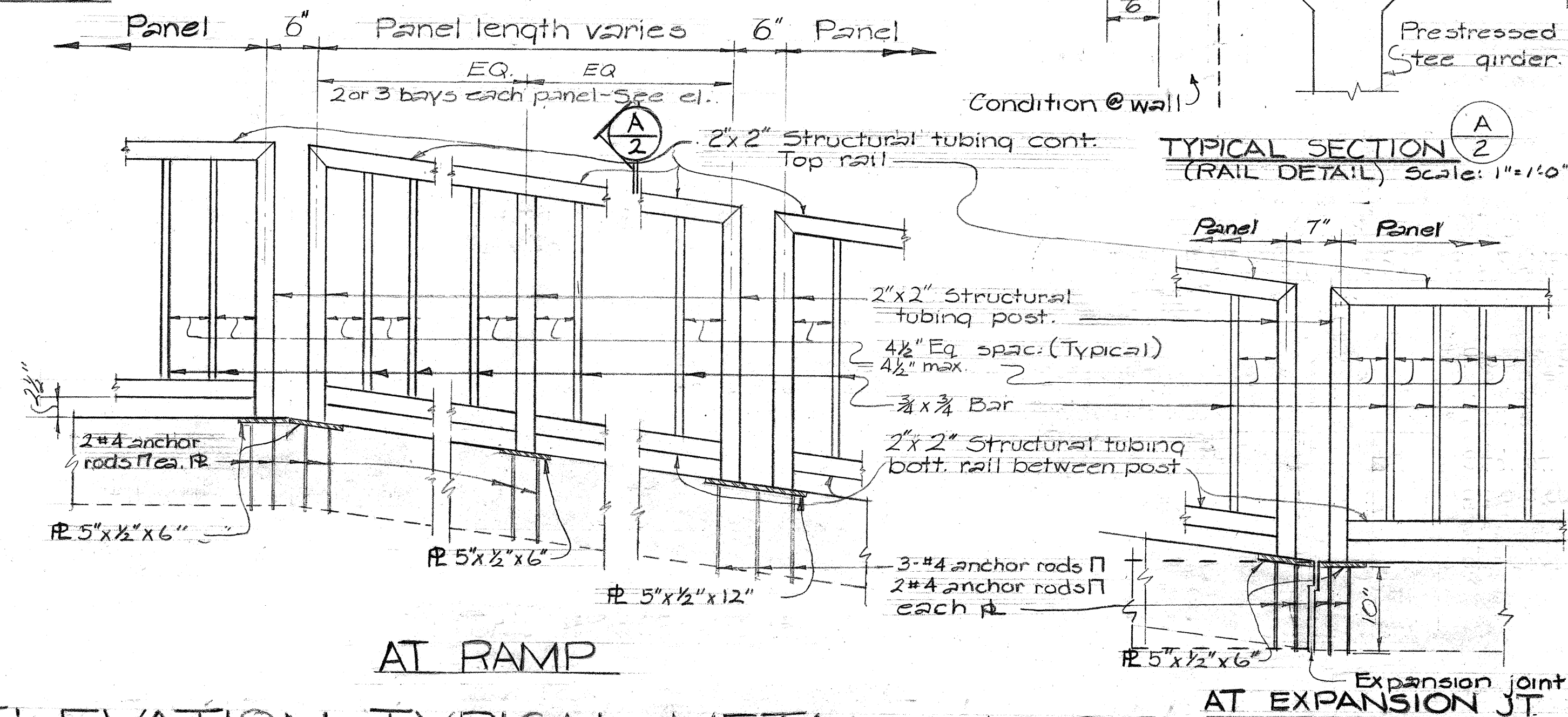
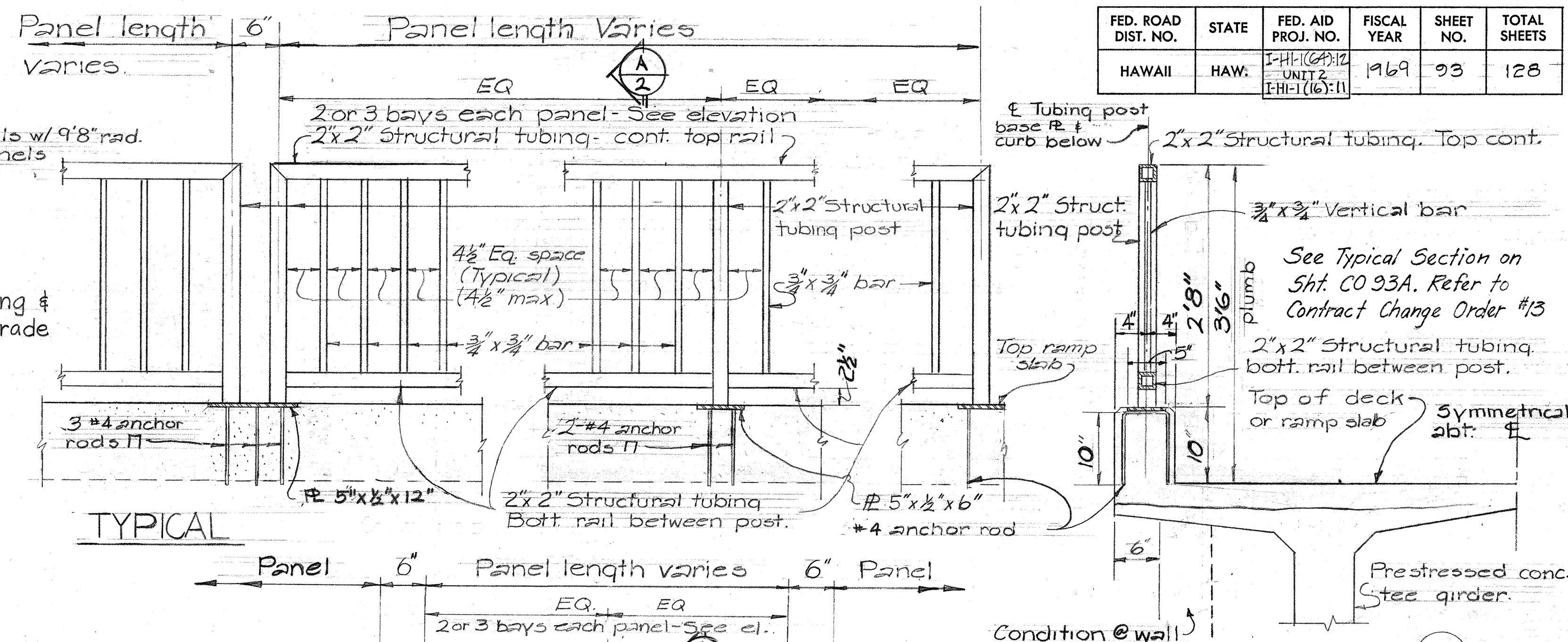
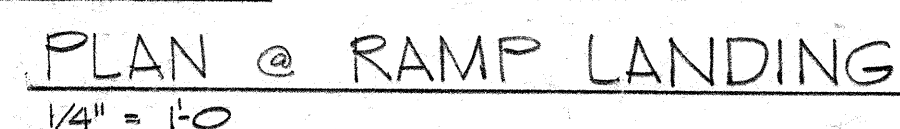
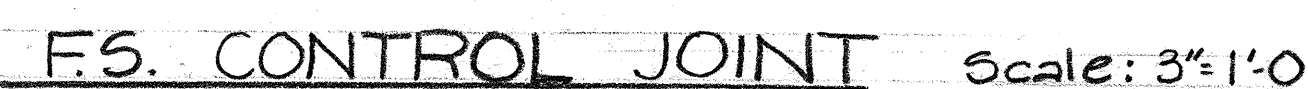
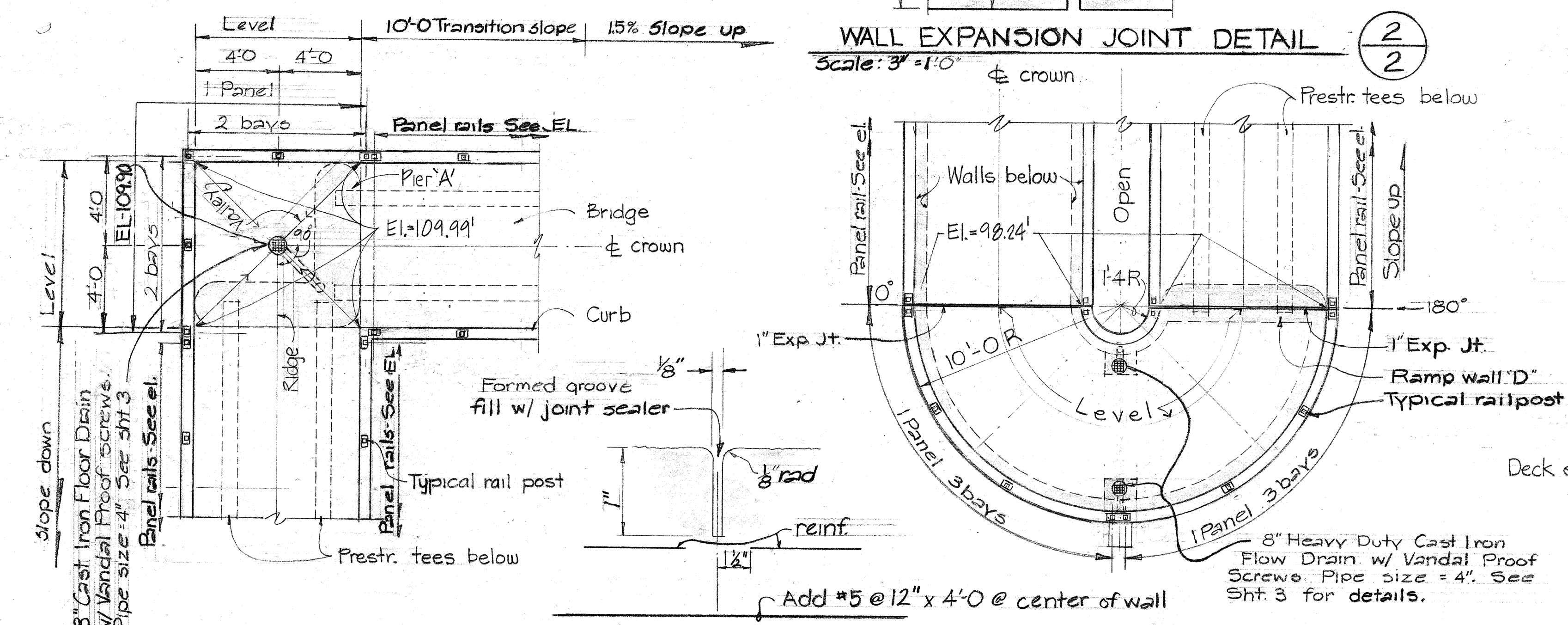
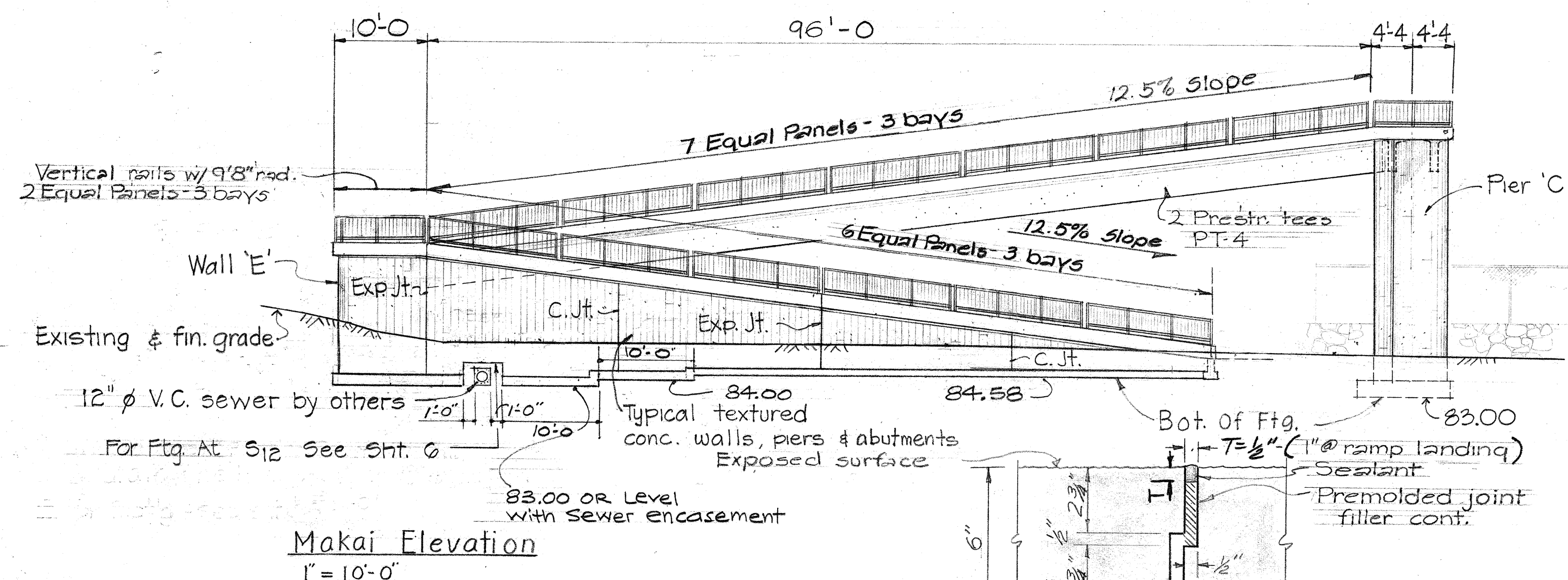
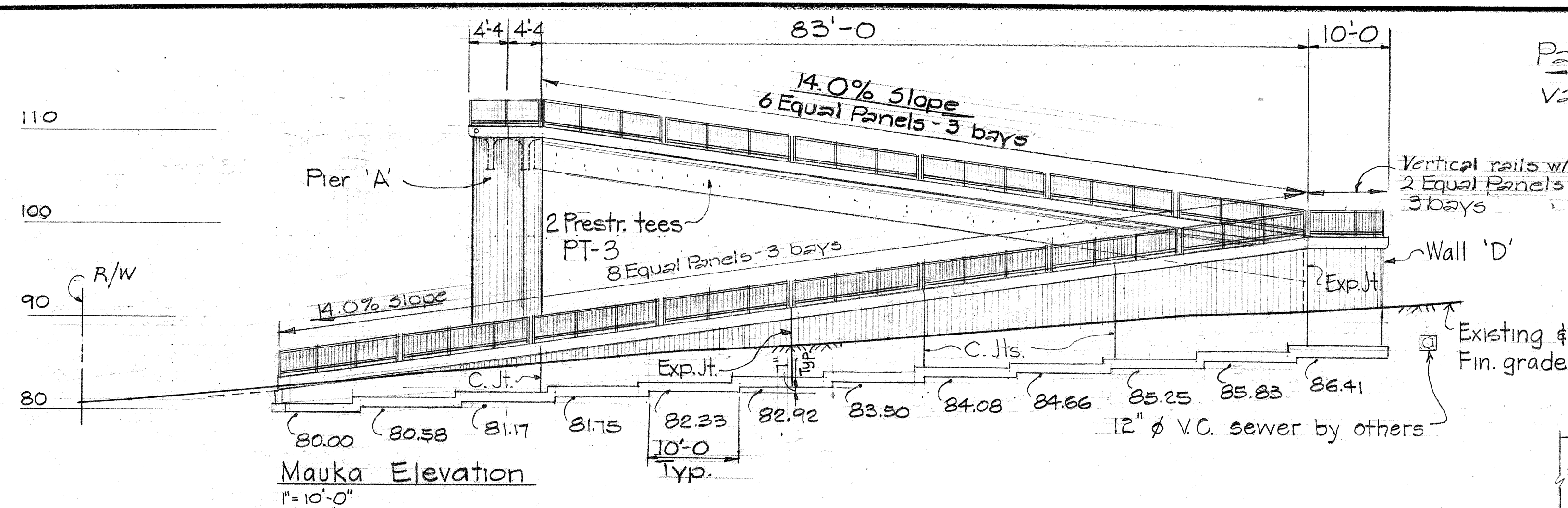
PRINTED ON NO. 1000H CLEARPRINT	DATE	FEB. 23, 1968	APRIL 30, 1968
REMARKS	ARCH. REVIEW	ARCH. REVIEW	
GIVEN TO	PAUL YAMASHITA		



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAHIKO STREET
PEDESTRIAN OVERPASS
LAYOUT PLAN & ELEVATION
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(64):12, UNIT 2
SCALE: AS NOTED DATE 1969
SHEET No. 1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(6)-12 UNIT 2 I-HI-17(6)-11	1969	93	128



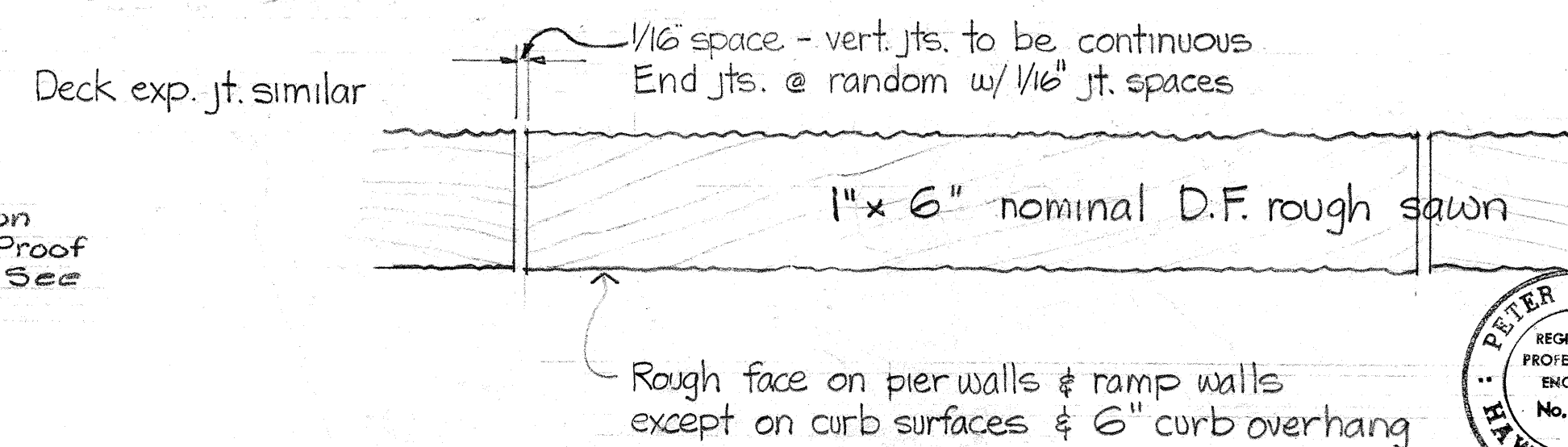
ELEVATION - TYPICAL METAL HANDRAIL AT EXPANSION JT
Scale = 1" = 1'-0"

Notes: All top & bottom rails & posts to be 2"x2" 4.31# Structural Steel tubing
All intersecting bars & tubings to be full weld & grind smooth.
Railing assemblies including base plates and anchor bolts to be galvanized
after fabrication. See Special Provisions.

The contractor shall submit detailed shop drawings for metal handrail.

All rail panel spacing are horizontal measurements. All vertical rail members to be measured plumb.

Except as otherwise noted, rail panels shall be fabricated with 3 bays.



F.S. CONC. FORM

PLAN @ RAMP-BRIDGE INTERSECT

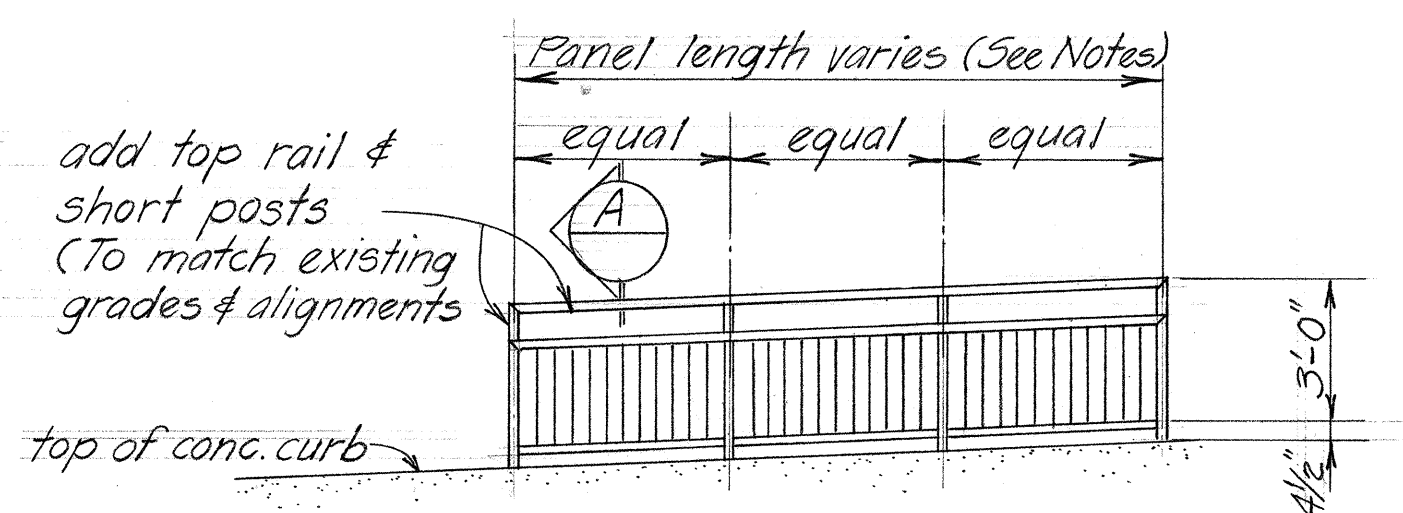
Scale $1/4" = 1'-0"$

Cond. similar @ pier 'C'

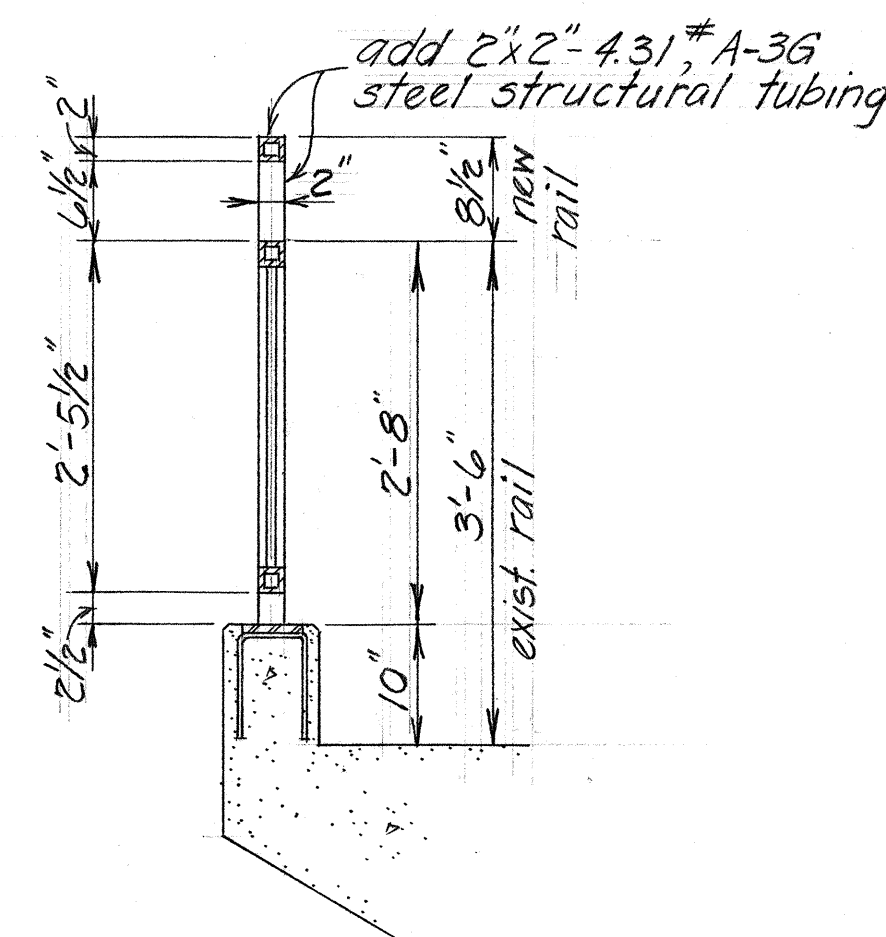
DATE:	FEB. 29, 1968	APRIL 30, 1968
REMARKS	ARCH. REVIEW	ARCH. REVIEW

Feb 23 '68

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(64)-12 UNIT 2 I-HI-1(10)-11	1969	0093A	128



PANEL SECTION (TYP.)
As LEVEL AND ON GRADE
Scale: 1/4"=1'-0"



SECTION A (TYP.)
Scale: 3/4"=1'-0"

NOTES

1. Refer to approved shop drawings for panel lengths and other details
2. Structural tubing shall be galvanized steel A-36
3. Refer to contract Specifications for galvanizing & welding requirements.
4. Existing portions of railings shall be protected from splatter during welding operations. All damage to existing or new galvanizing shall be repaired by applying stick form material on heated surfaces as noted in Specifications.
5. All intersecting tubings to be full weld & grind smooth.

THIS SHEET IS AN
"AS-BUILT" SUPPLEMENT

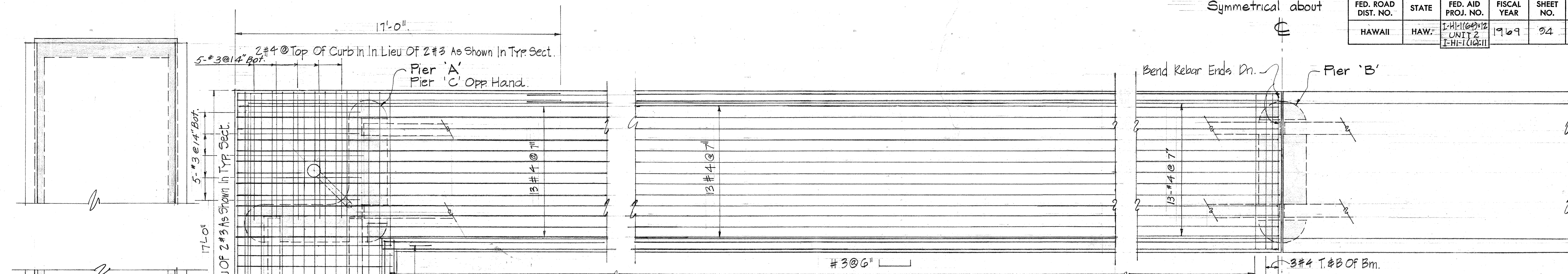
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
MAHIKO STREET	STREET
PEDESTRAIN OVERPASS	
"AS BUILT PLANS"	
INTERSTATE	ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (64)-12	
SHEET No. 2A OF 7 SHEETS	

0093A

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

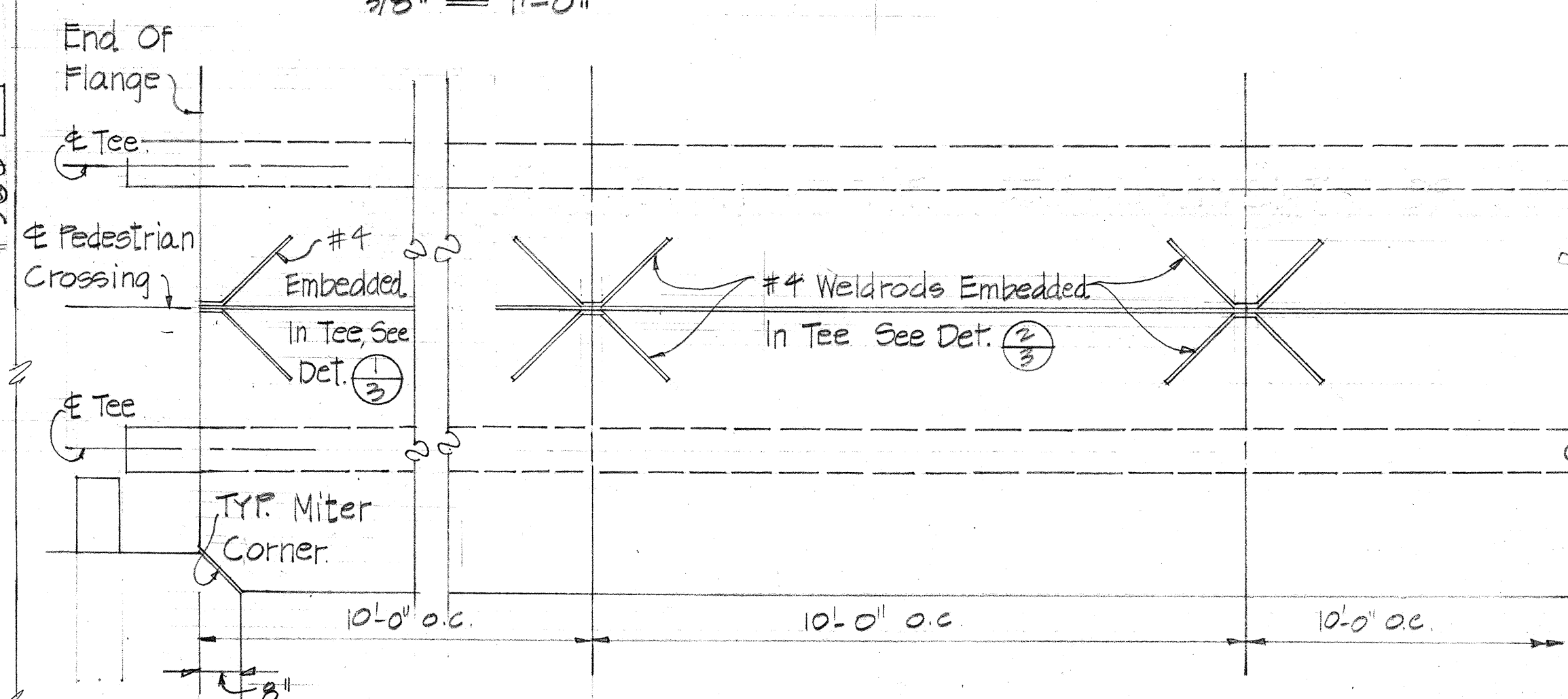
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(64)12 UNIT 2 I-H-1(64)11	1969	94	128

Symmetrical about



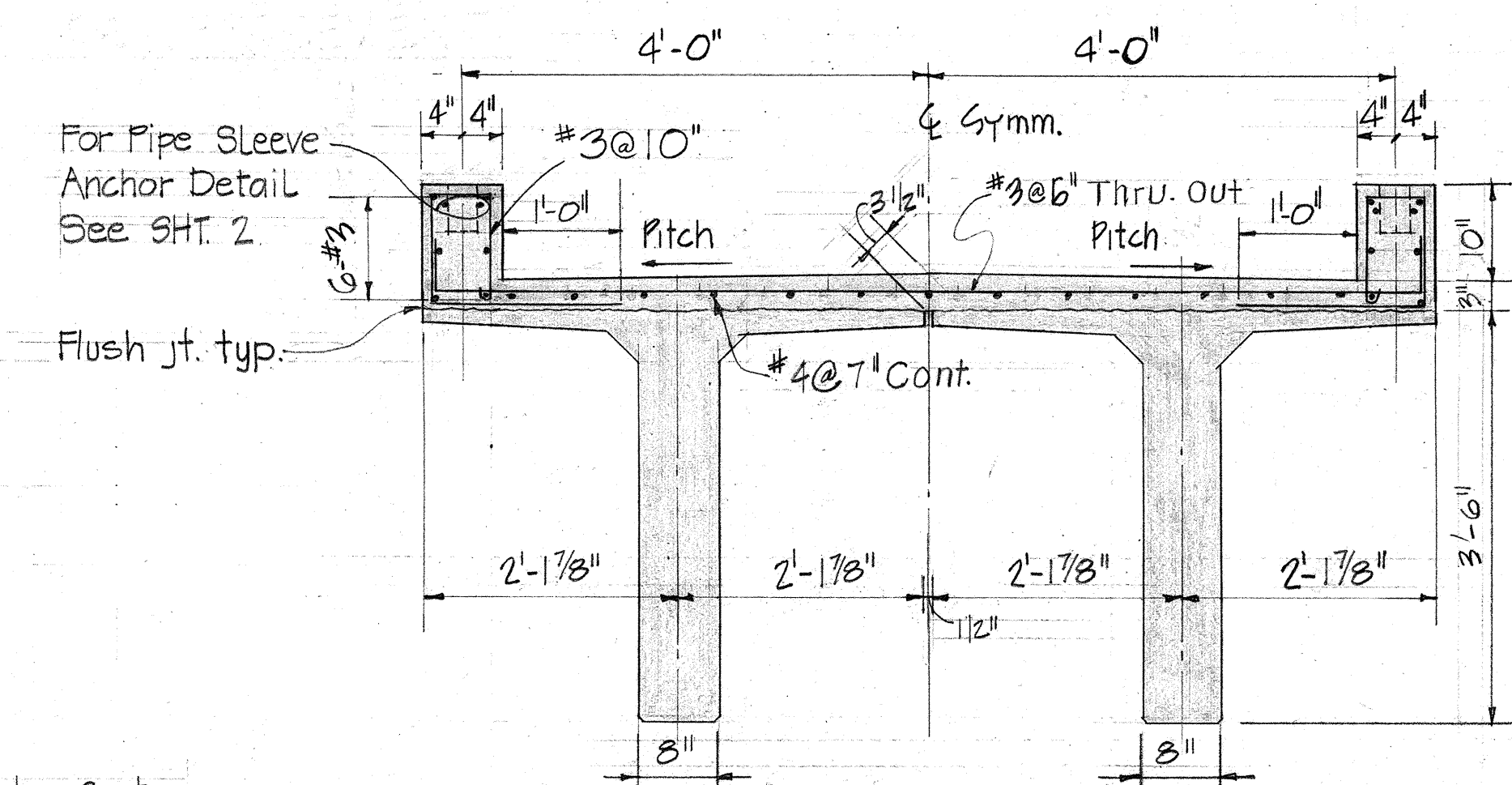
PARTIAL PLAN - TYP. ARRANGEMENT OF DECK SLAB REINFORCEMENT

3/8" = 1'-0"



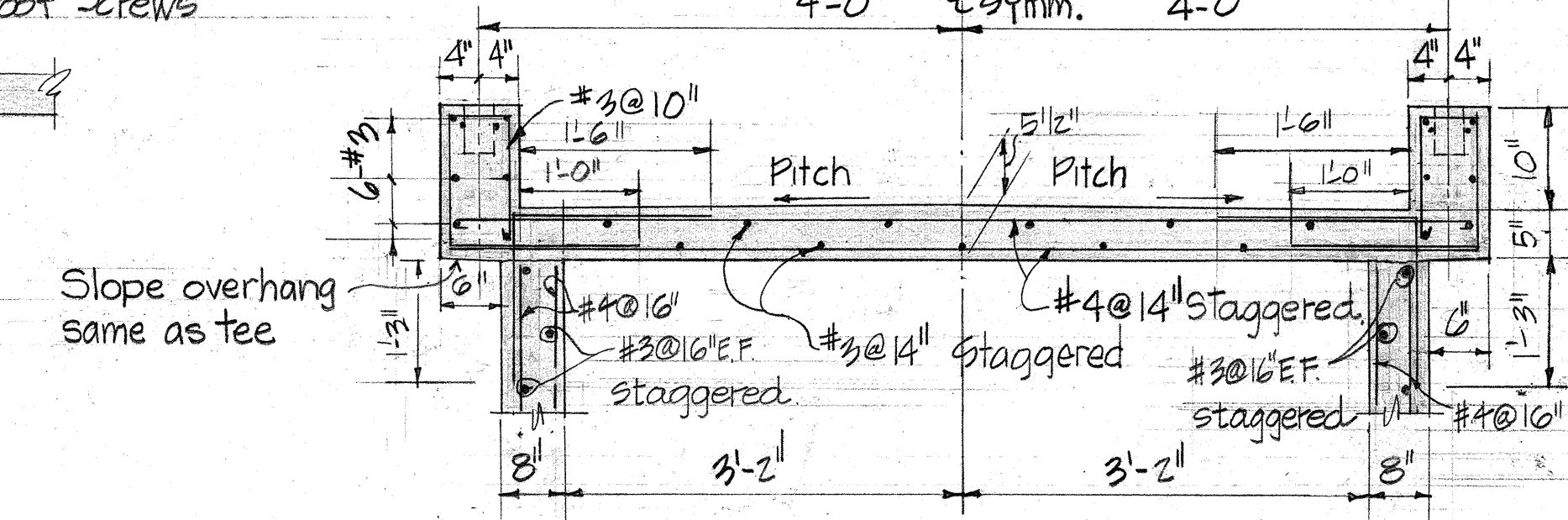
PLAN OF TYP. P.T. FLANGE CONNECTOR

1/2" = 1'-0"



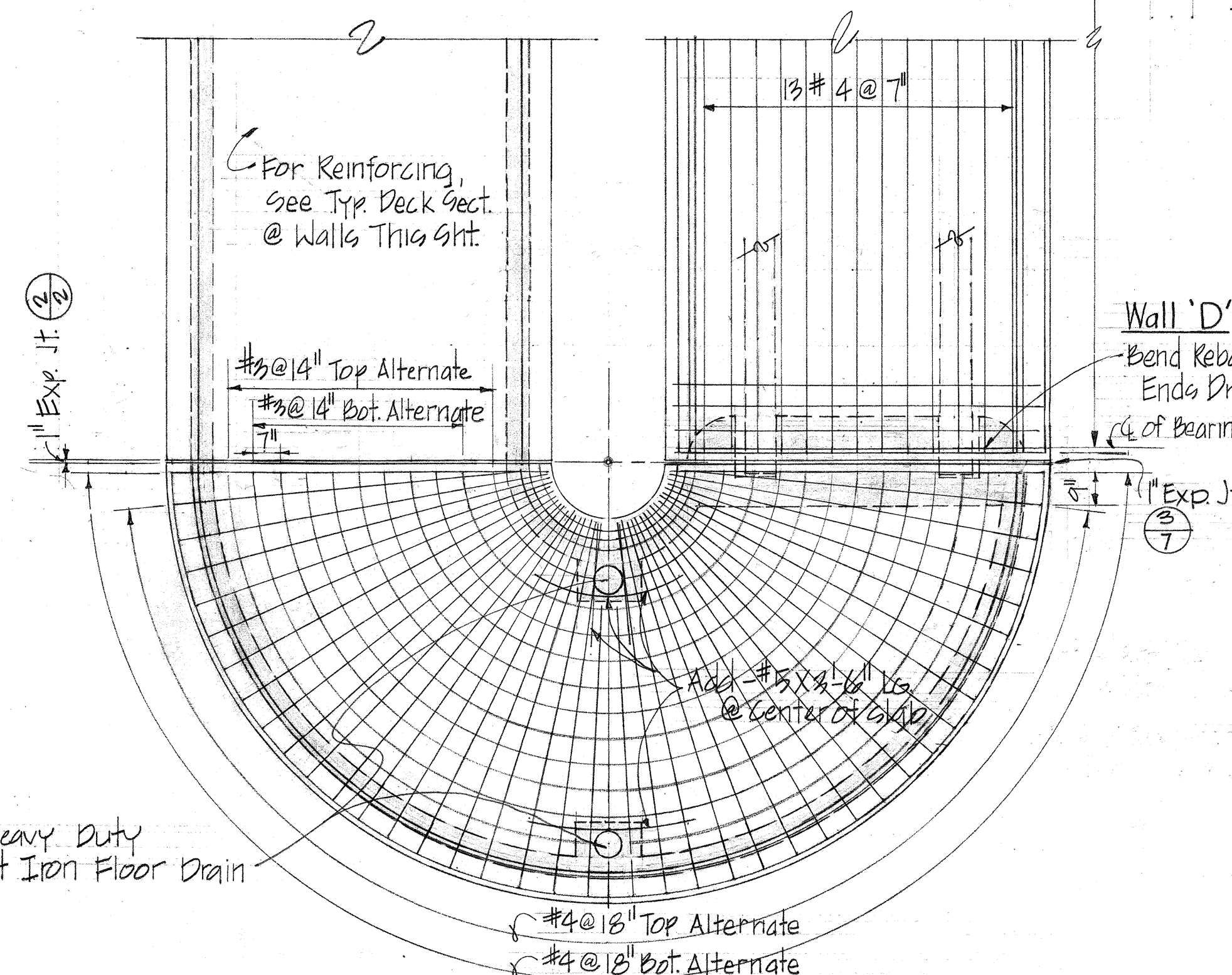
TYP. DECK SECTION @ TEES

3/4" = 1'-0"



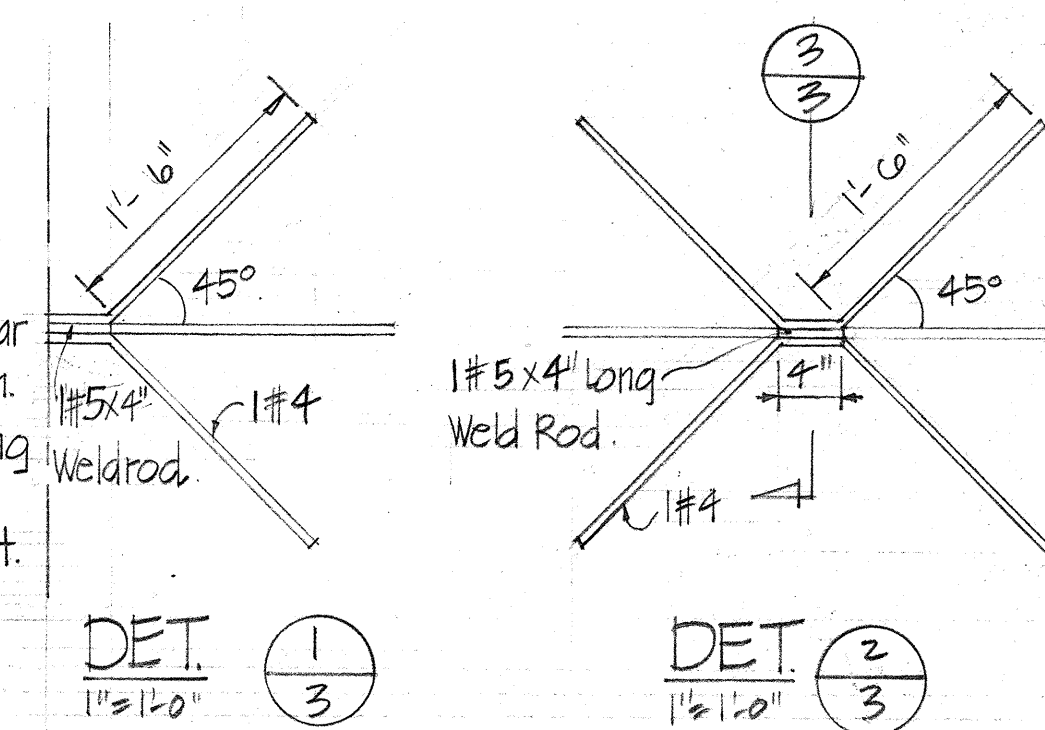
TYP. DECK SECTION @ WALLS

3/4" = 1'-0"



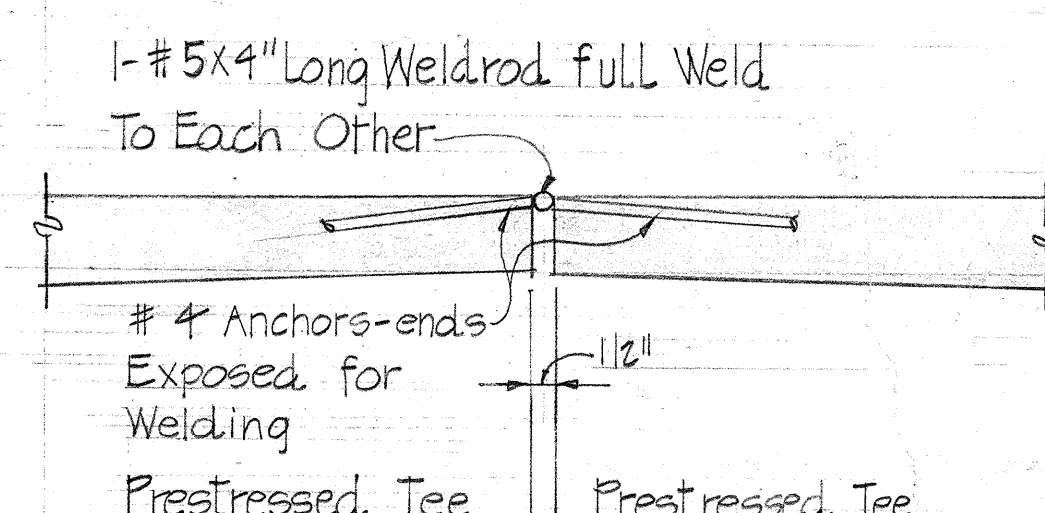
DECK PLAN

3/8" = 1'-0"

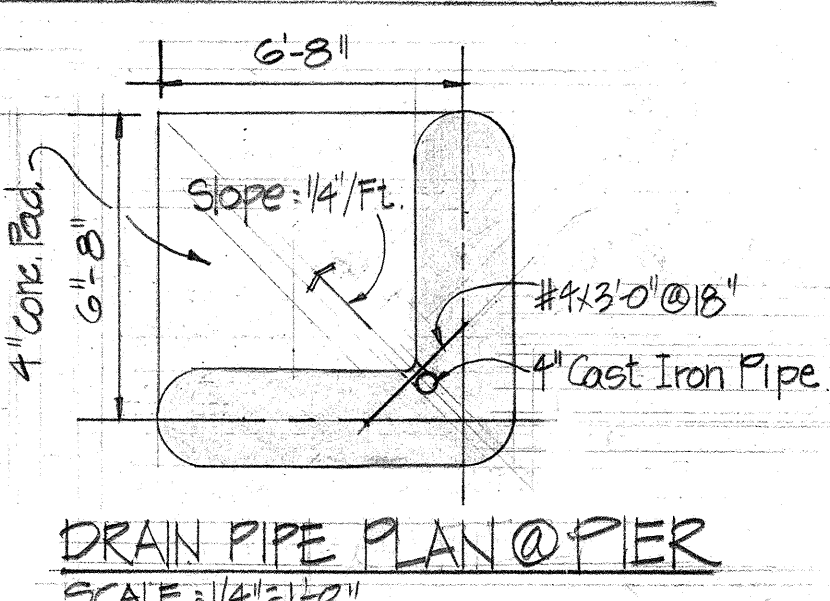


DET. 1
1" = 1'-0"

DET. 2
1" = 1'-0"

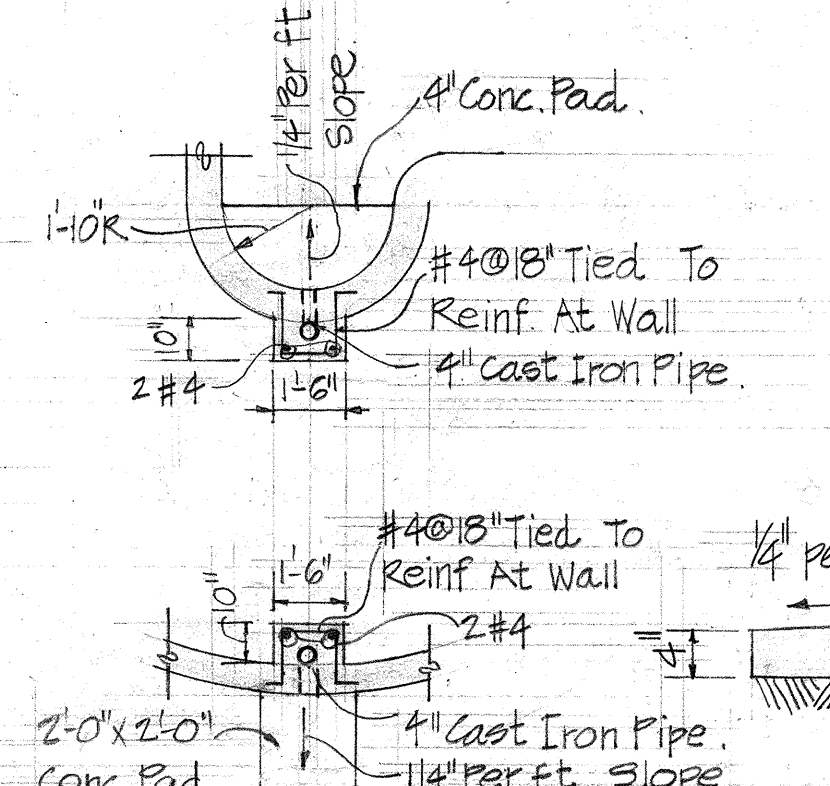


DET. 3
NO. SCALE



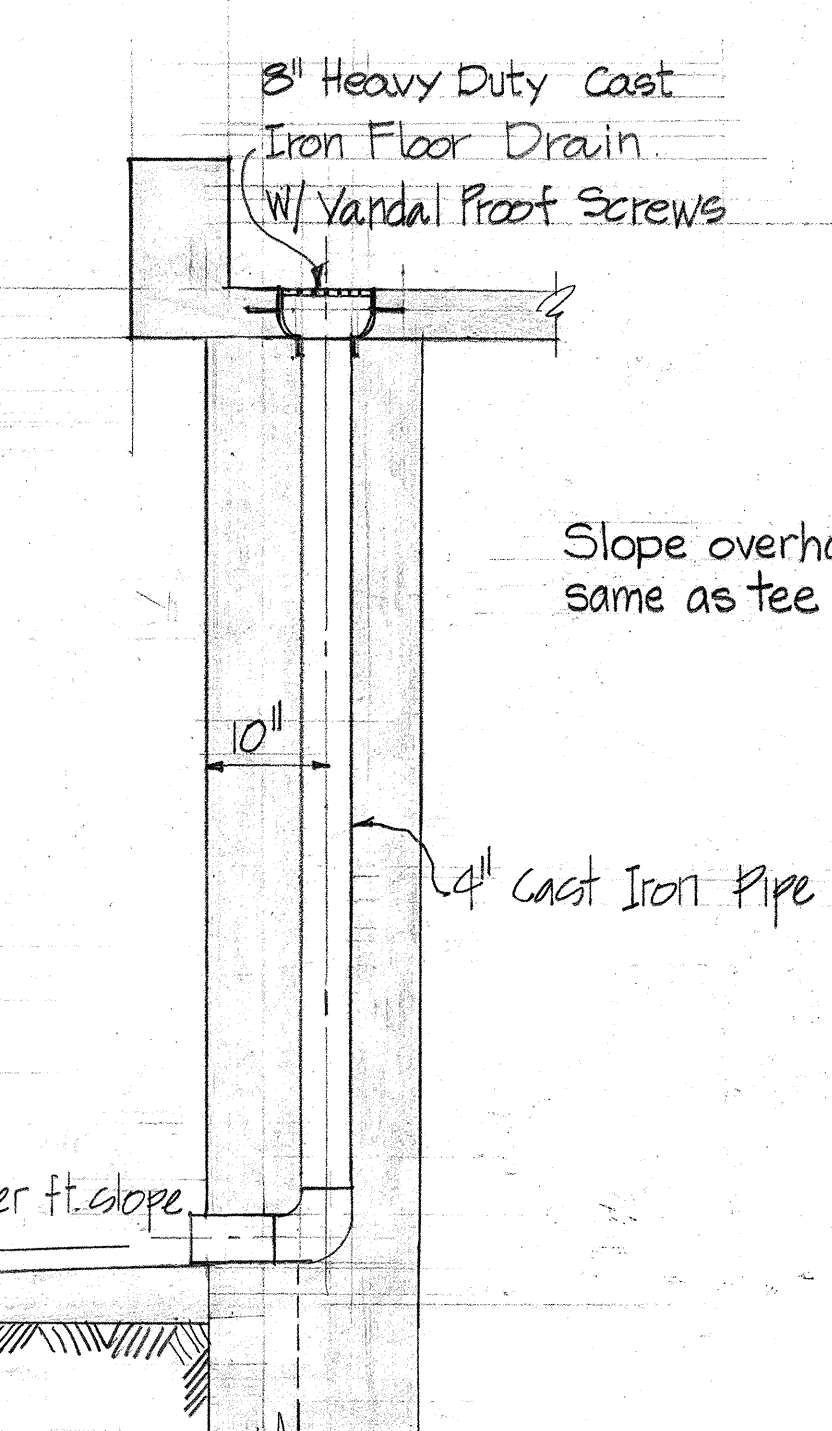
DRAIN PIPE PLAN @ PIER

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



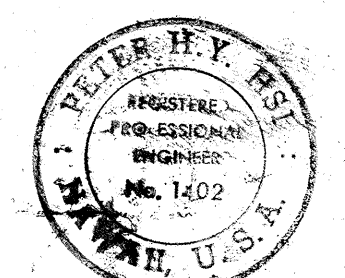
DRAIN PIPE PLAN @ WALL

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



TYP. DRAIN PIPE SECT.

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



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAHIKO STREET
PEDESTRIAN OVERPASS

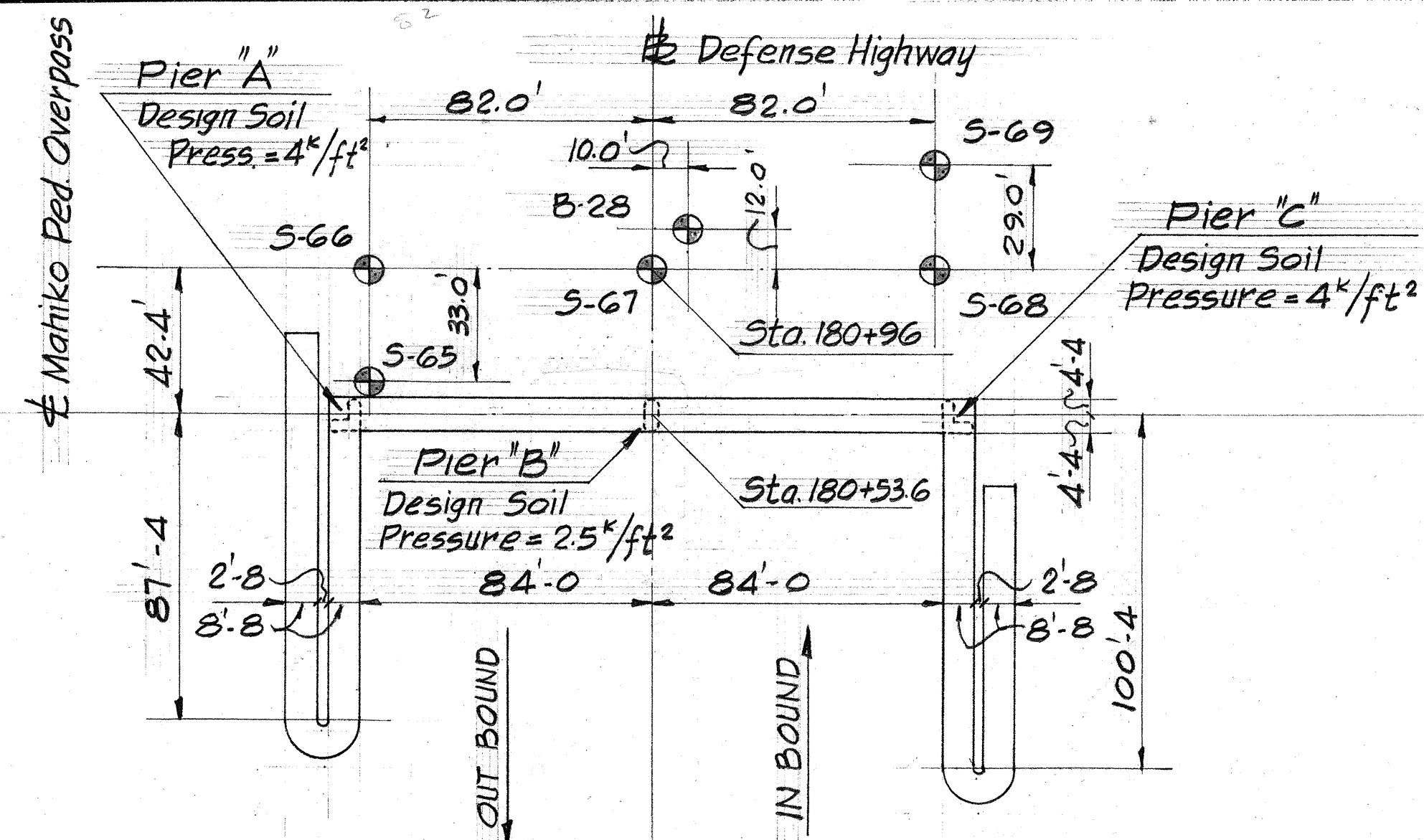
DECK SLAB REINF & DETAILS
INTERSTATE ROUTE H-1

F.A.I. PROJ. NO. I-H-1(64)12 UNIT 2
SCALE: AS NOTED DATE 1969

SHEET No. 3 OF 7 SHEETS

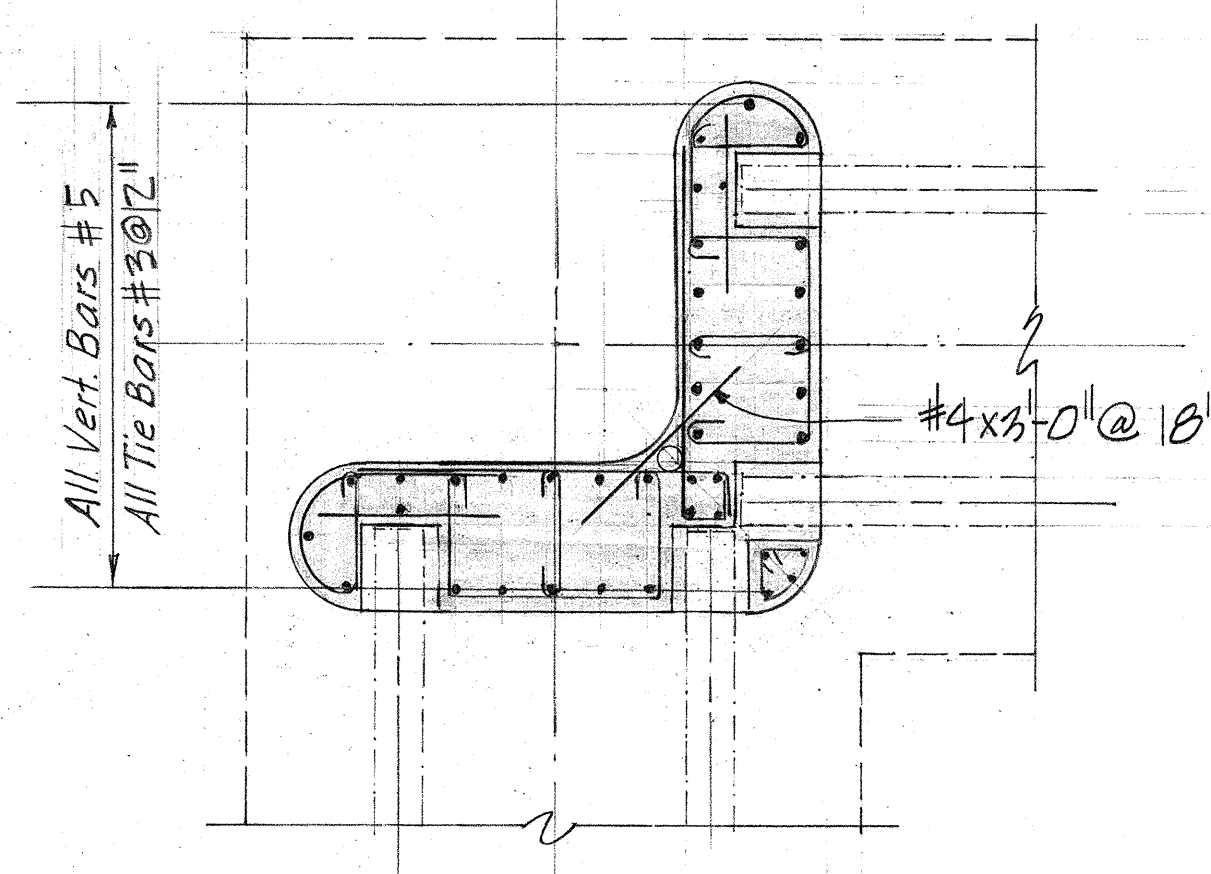
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(64)-12 UNIT 2 I-HI-1(16)-11	1969	96	128

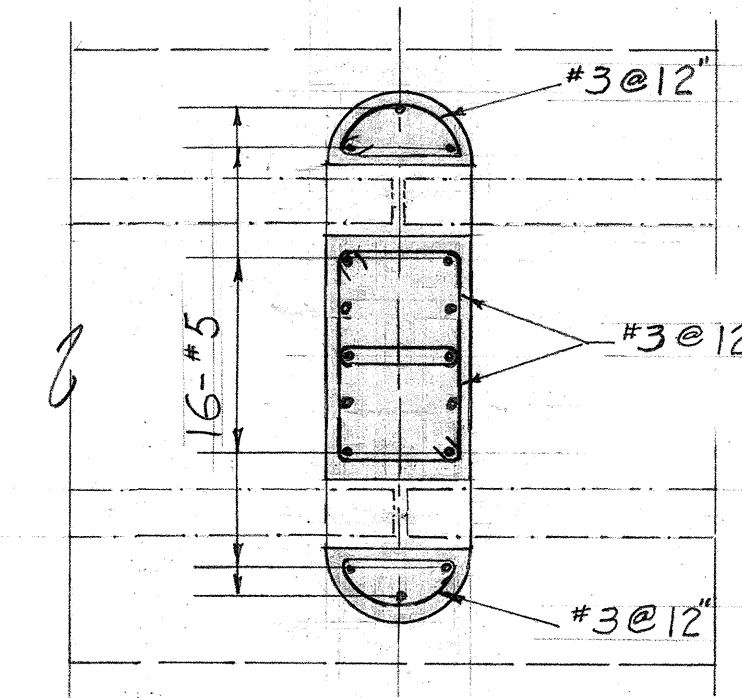


SOIL BORING LOCATION PLAN

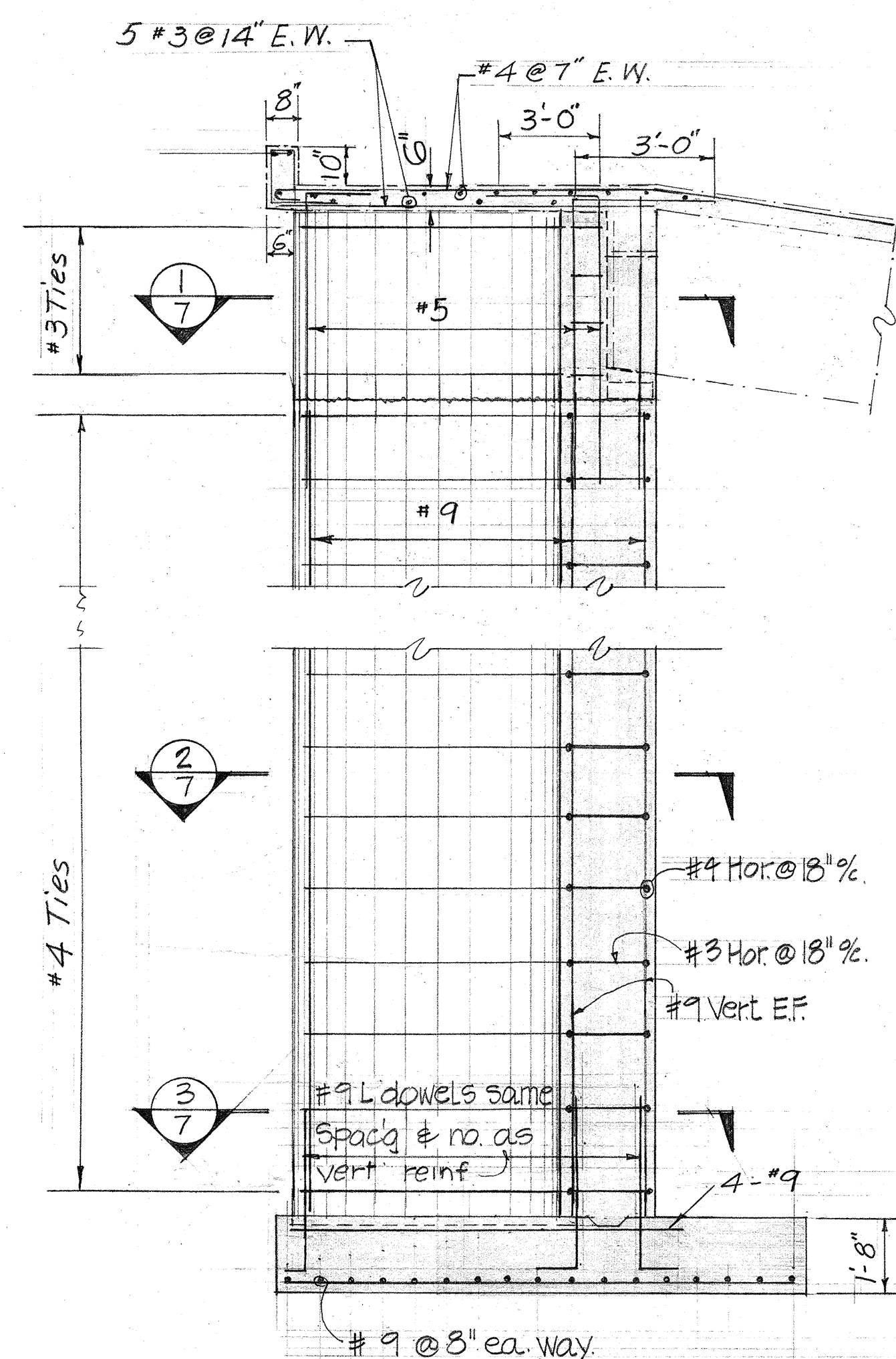
Scale: 1" = 40'



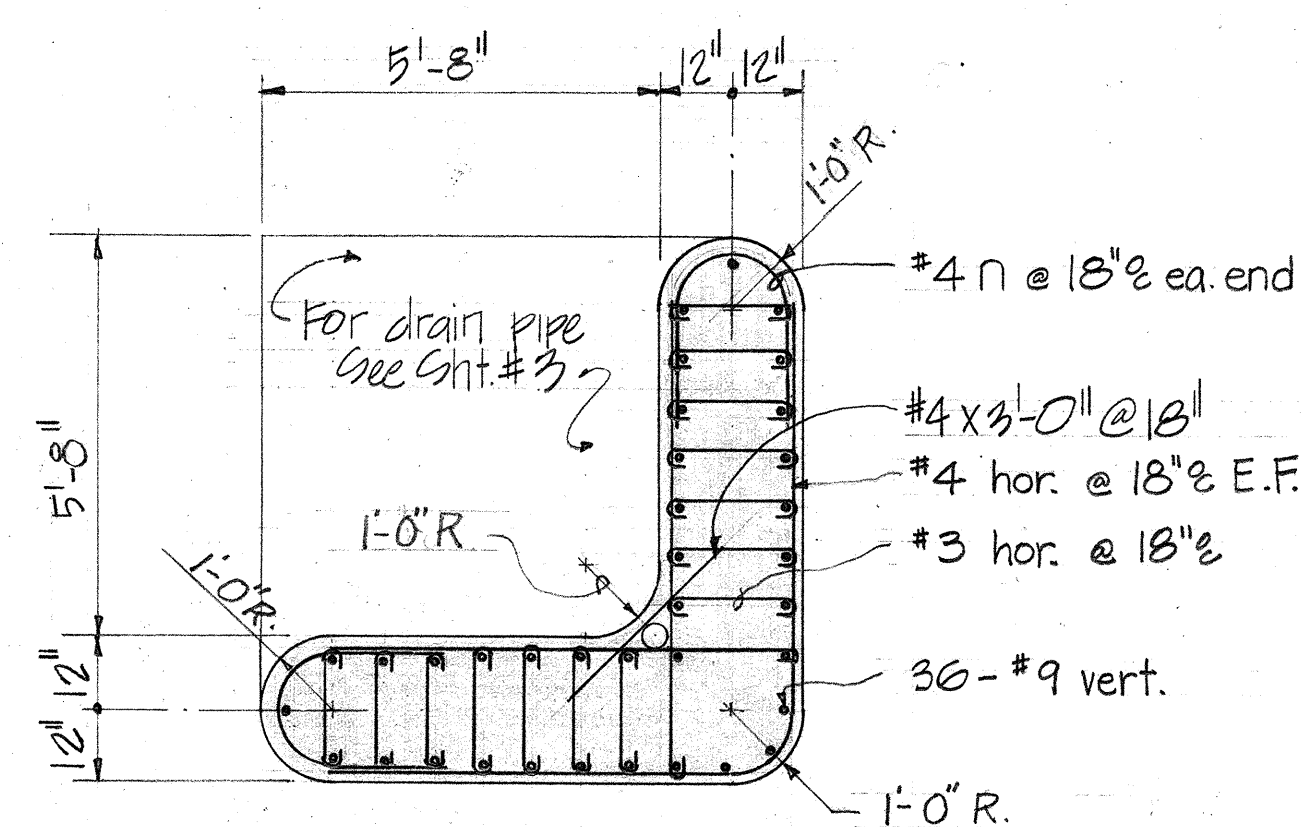
PIER SECTION @ TEES 1
7



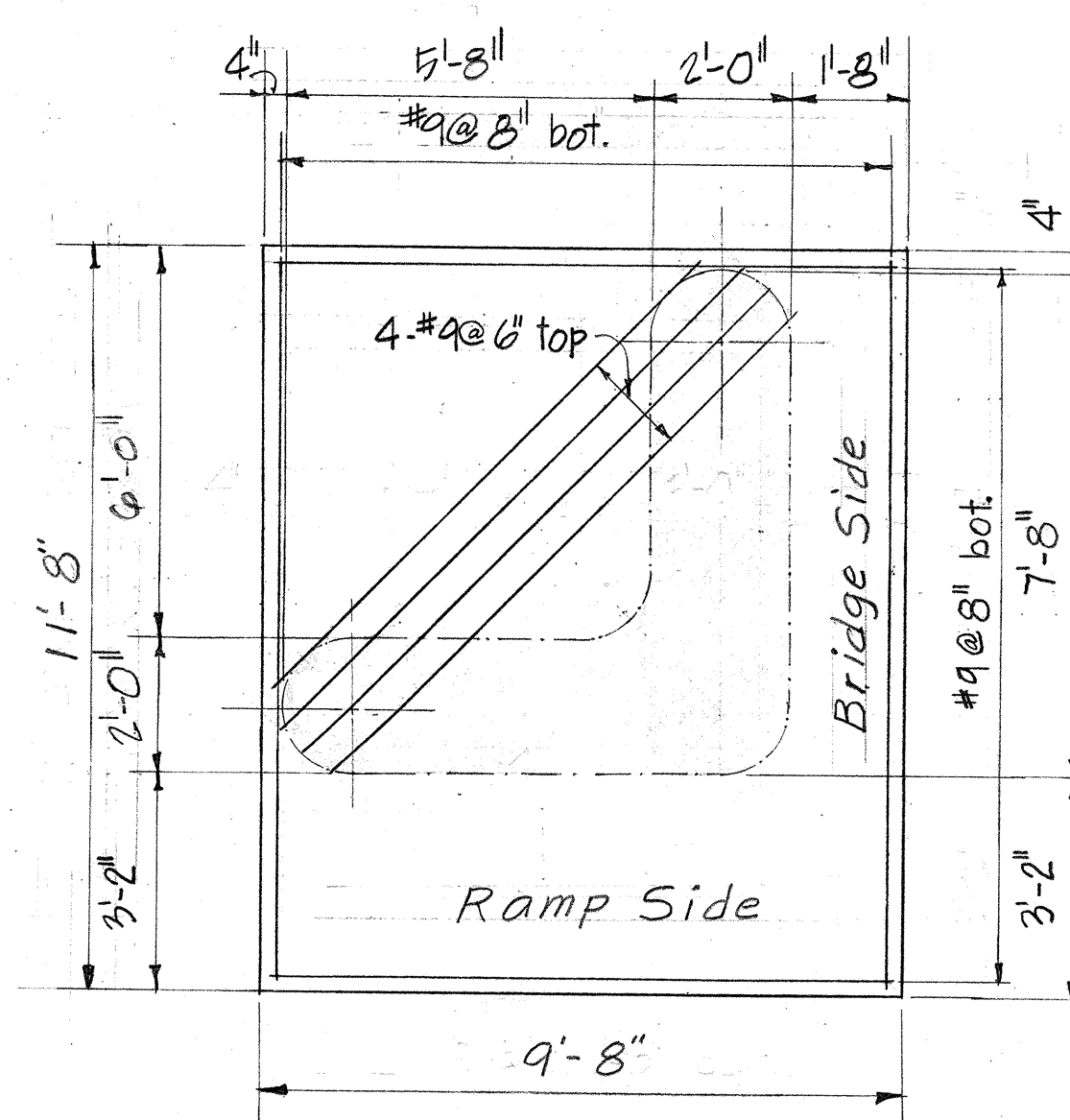
CENTER PIER SECTION @ TEES $\left(\frac{4}{7} \right)$



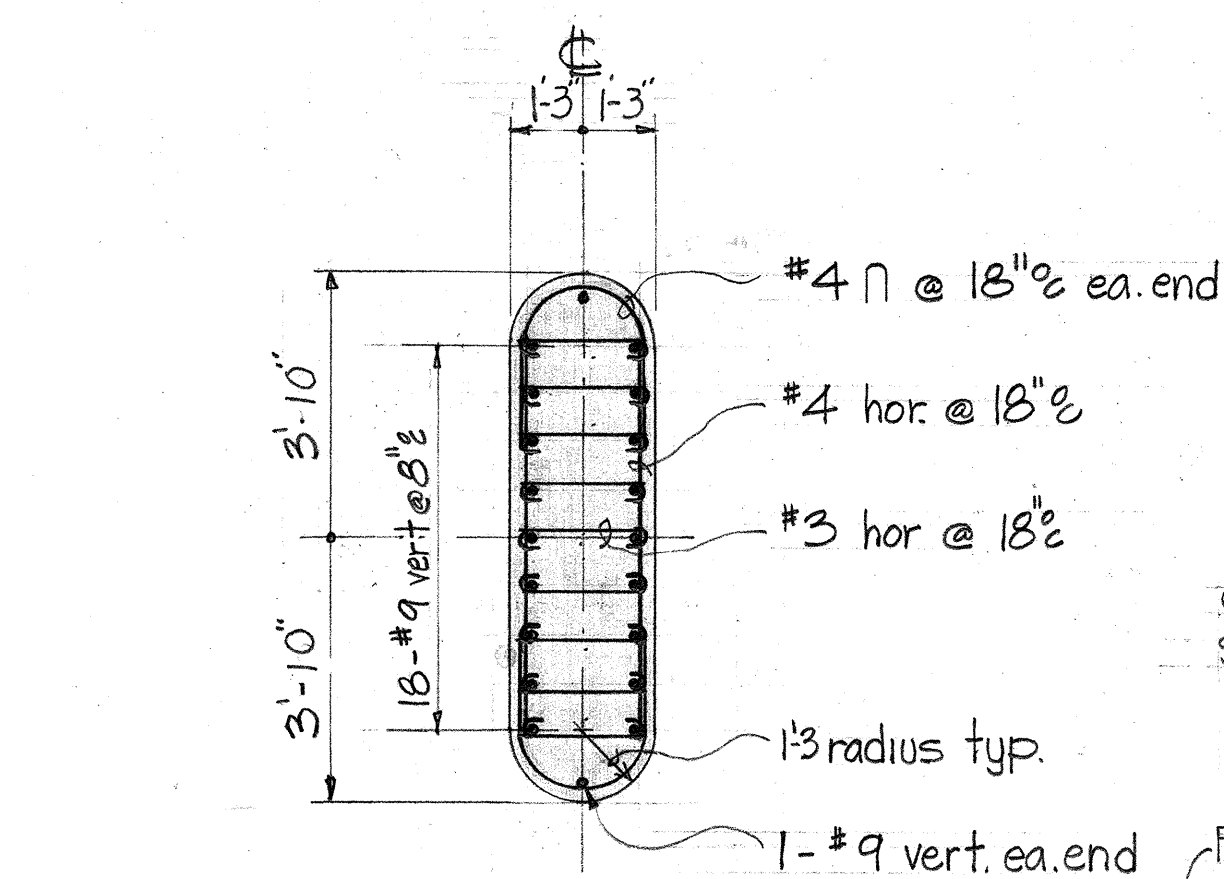
ELEVATION OF PIER 'A' (PIER 'C' OPP. HAND)
 $\frac{3}{8}'' = 1'-0''$



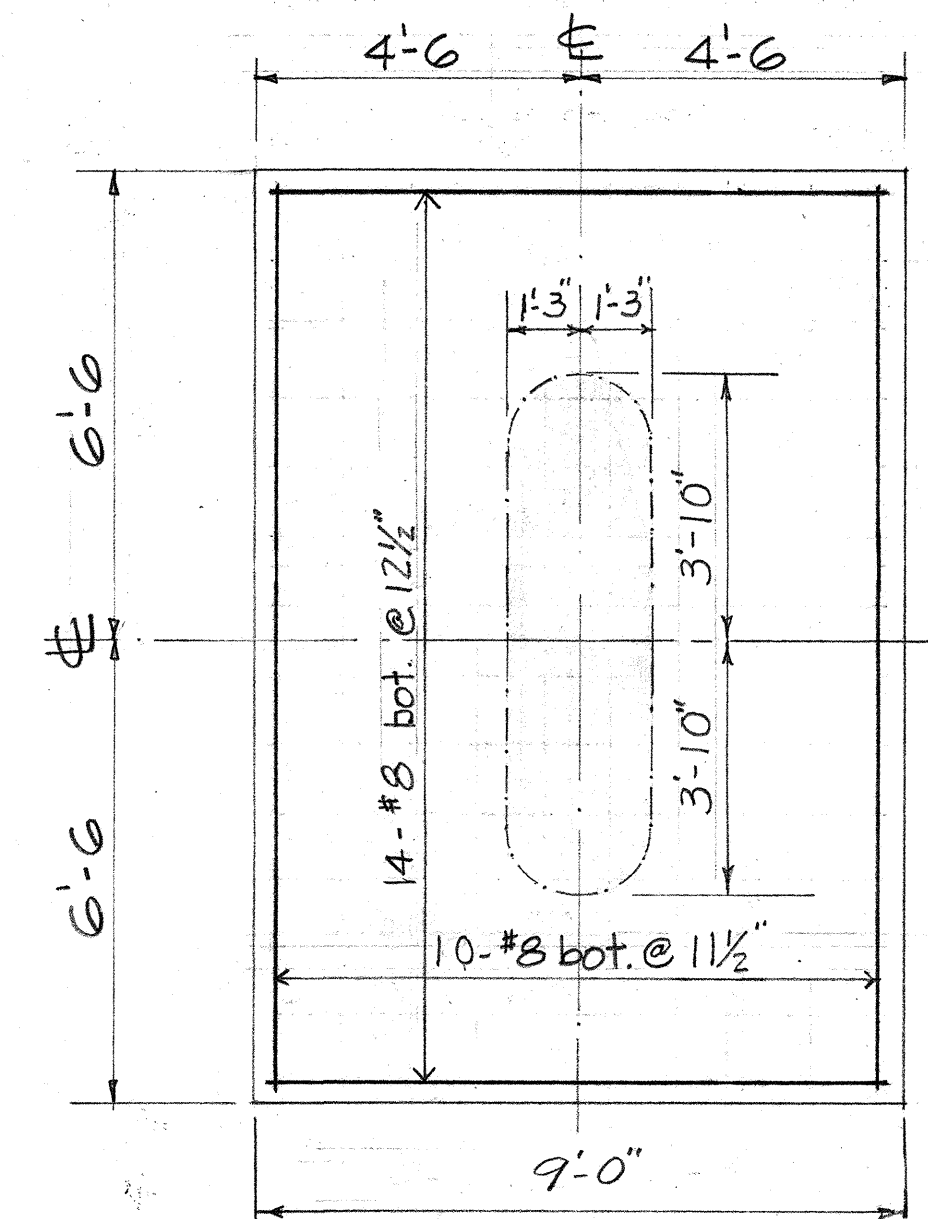
TYPICAL PIER SECTION 2
7



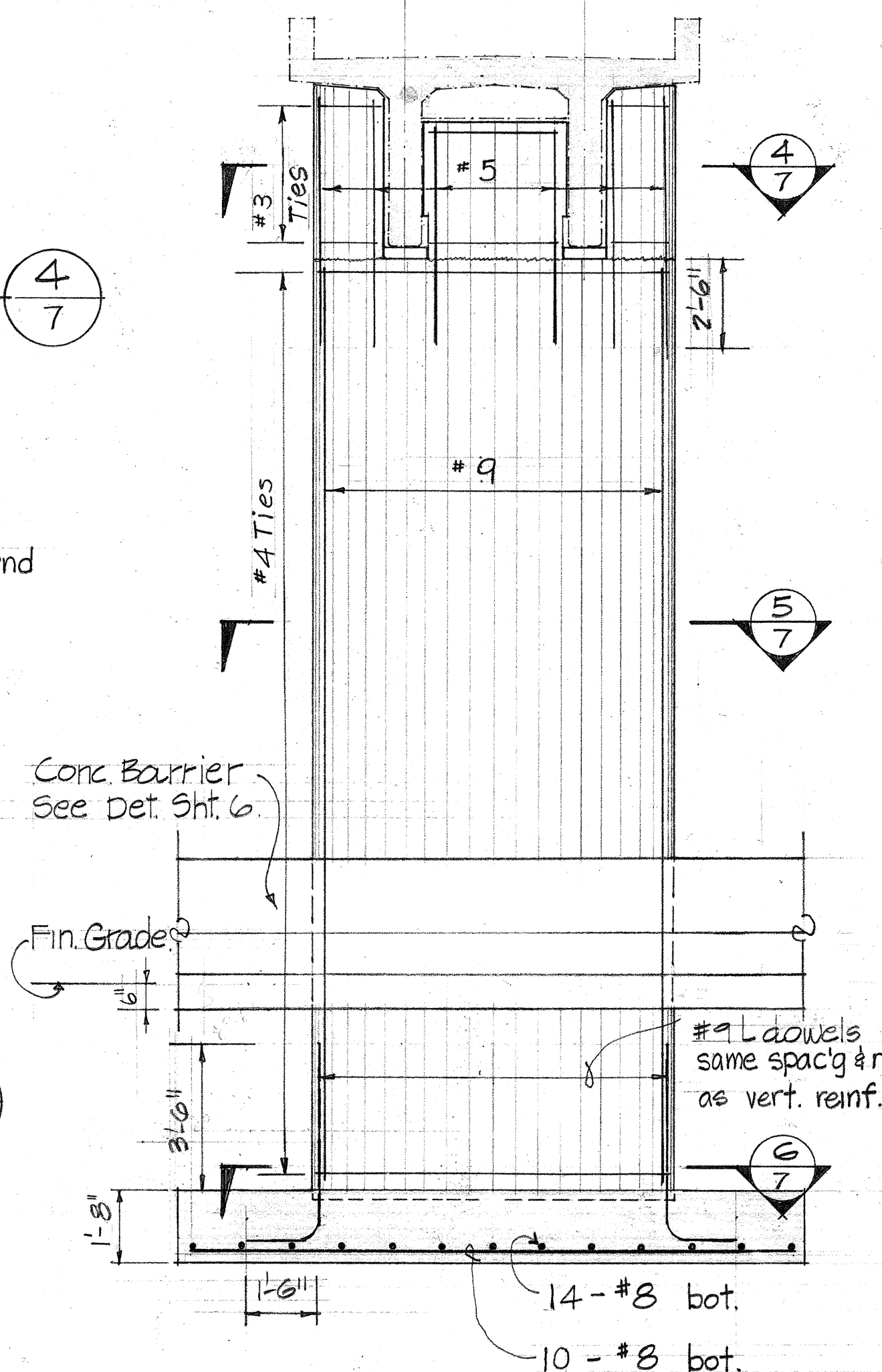
PIER FOOT'G SECTION 3
7



TYP. CENTER PIER SECTION 5
7



CENTER PIER FOOT'G SECTION $\frac{3}{8}'' = 1'-0$ $\frac{6}{7}$



ELEVATION OF PIER 'B'

$3/8" = 1'-0$



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

STATE OF HAWAII	
DEPARTMENT OF TRANSPORTATION	
HIGHWAYS DIVISION	
MAHIKO	STREET
PEDESTRIAN OVERPASS	
PIER	DETAILS
INTERSTATE	ROUTE H-1
F.A.I. PROJ. NO. I-H-1-(64)=12, UNIT 2	
SCALE : AS NOTED DATE 1969	
SHEET No. 5 OF 7. SHEETS	

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

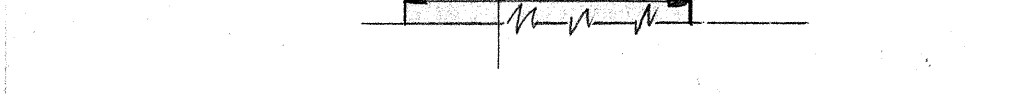
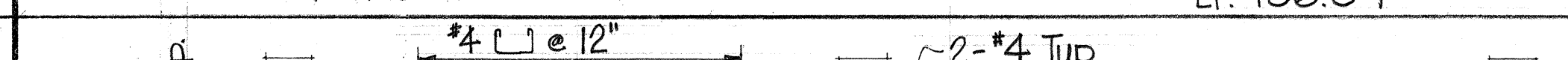
10



© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd



[illegible]

[illegible][illegible]

#4 U @ 12" ~ 2-#4 TUP



12" -2-#4 TYP



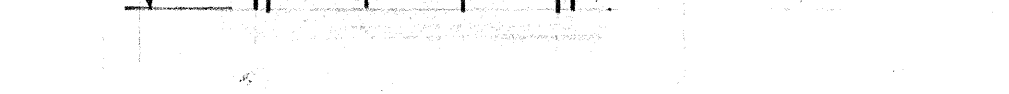
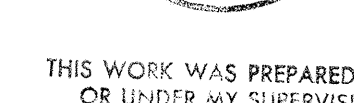
↳ Pier 'B' & Deck transition



100



Figure 1. A schematic diagram of the experimental design. The subjects were divided into two groups: the control group and the experimental group. The control group received a standard 12-week training program, while the experimental group received a modified 12-week training program. The modified program included a 4-week pre-training period followed by an 8-week training period. The subjects were then divided into two subgroups: the control subgroup and the experimental subgroup. The control subgroup received a standard 12-week training program, while the experimental subgroup received a modified 12-week training program. The subjects were then divided into two subgroups: the control subgroup and the experimental subgroup. The control subgroup received a standard 12-week training program, while the experimental subgroup received a modified 12-week training program.



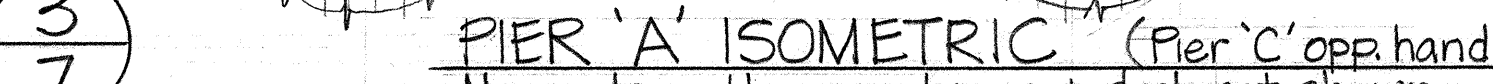
2.



© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd



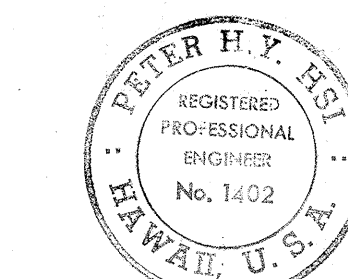
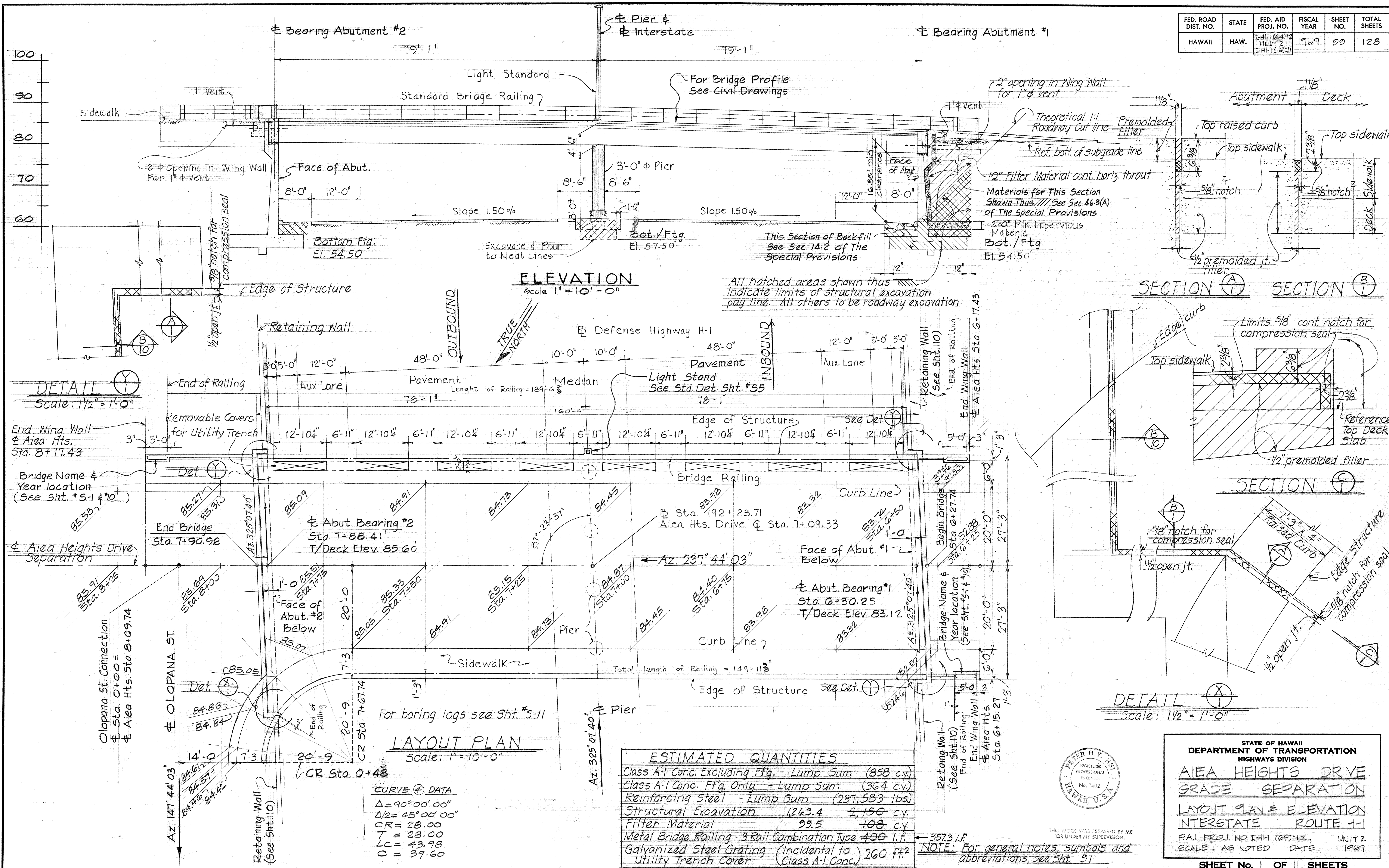
EXPANSION JOINT DET (2)



No scale Upper part pier & deck not shown



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1 (64) 12 UNIT 2 I-H-1 (16) 11	1969	29	128



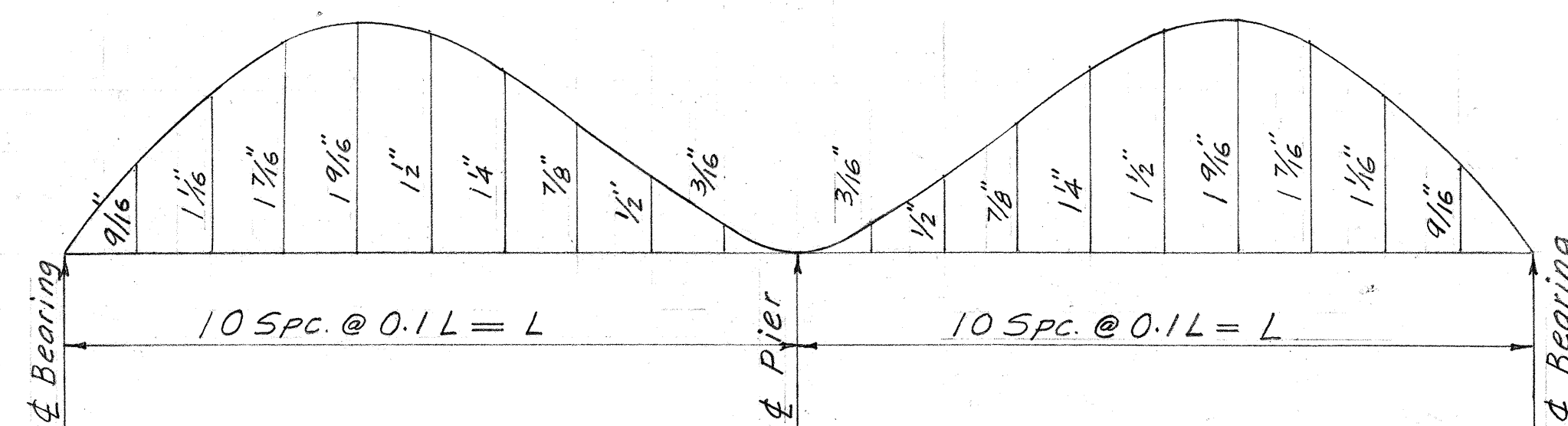
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**AIEA HEIGHTS DRIVE
GRADE SEPARATION**
LAYOUT PLAN & ELEVATION
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-H-1 (64) 12, UNIT 2
SCALE: AS NOTED DATE 1969

SHEET NO. 1 OF 11 SHEETS

9 9

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



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

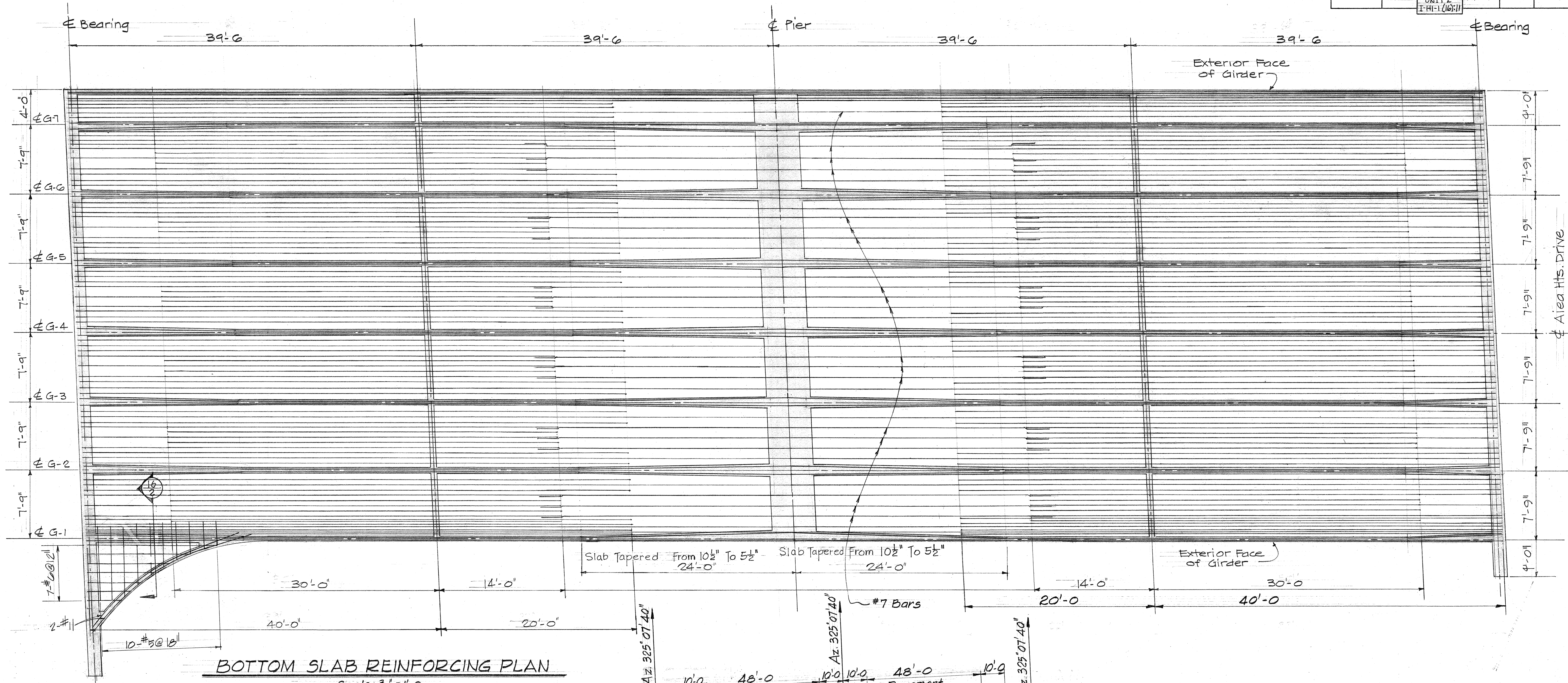
AIEA HEIGHTS DRIVE
GRADE SEPARATION

TOP SLAB REINF. PLAN & CAMBER DIAGM
INTERSTATE ROUTE 4-1

FA.I.: PROJ NO. I-H-11(64):12, 1 UNIT 2
SCALE: AS NOTED. DATE 1969

SHEET No. 3 OF 11 SHEETS

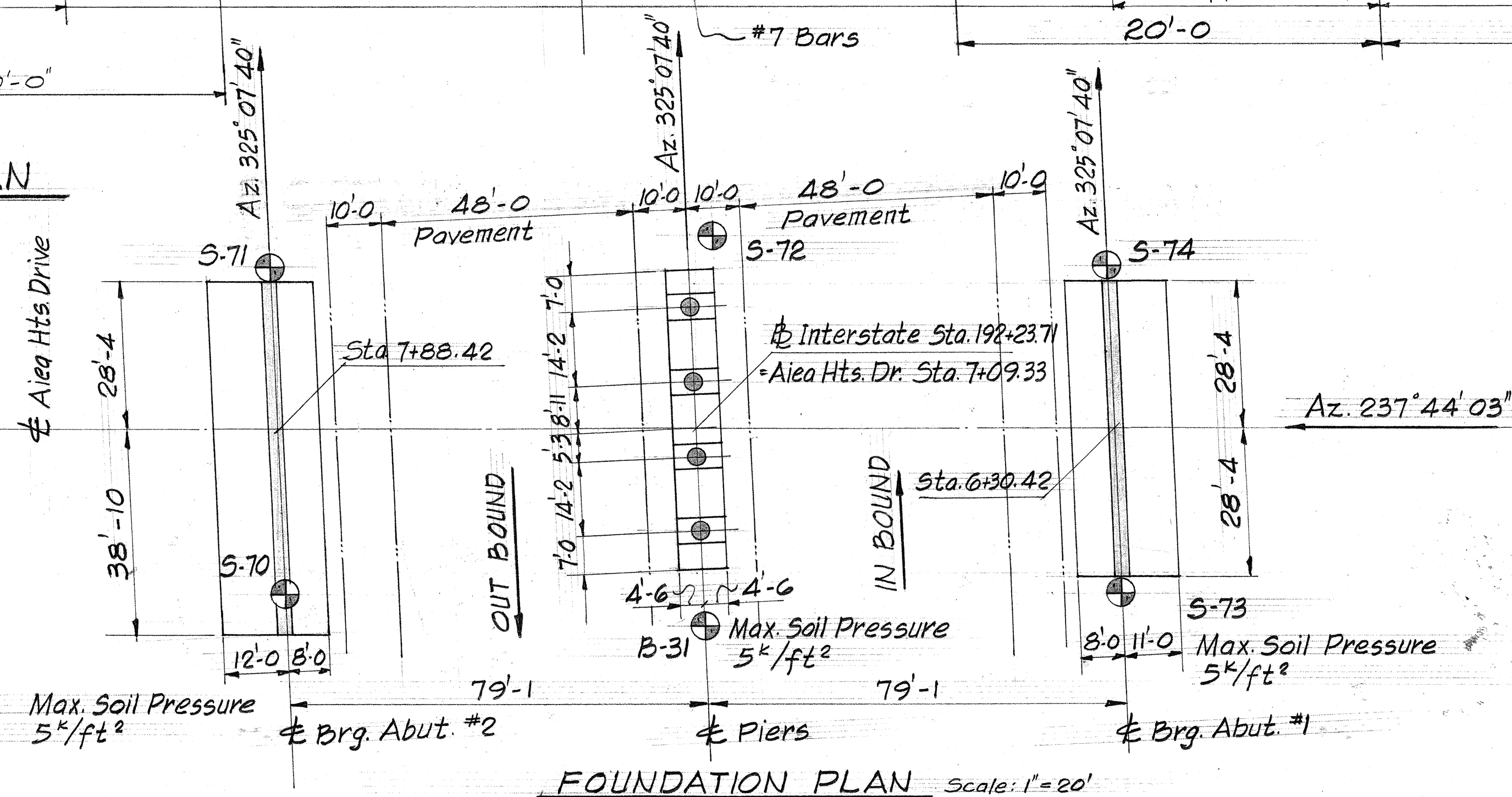
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(4)12 UNIT 2 I-H-1(10)11	1969	102	128



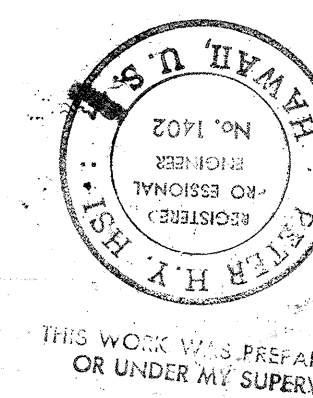
BOTTOM SLAB REINFORCING PLAN
Scale: $\frac{3}{16}'' = 1'-0''$

NOTES:

1. Except as noted otherwise, All Slab Bars to be #11.
2. Where ever Clearances between Main Reinforcing Bars less than Min. Allowed Clearances, Bundle Bars in grouping shall be used.
3. All #5 Bars shall be extended and lapped a min. of 2'-0" with adjacent #11 Bars as shown.
4. All #7 Bars shall be extended and lapped a min. of 2'-6" with adjacent #11 Bars as shown.



FOUNDATION PLAN Scale: $1'' = 20'$



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
AIEA HEIGHTS DRIVE
GRADE SEPARATION
BOTTOM SLAB REIN. PLAN
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-H-1 (4)12, UNIT 2
SCALE: AS NOTED DATE 1969

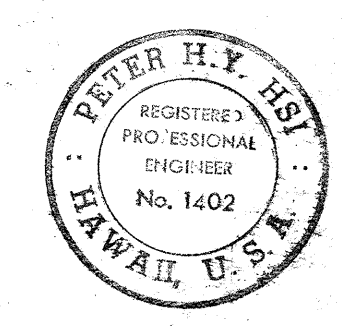
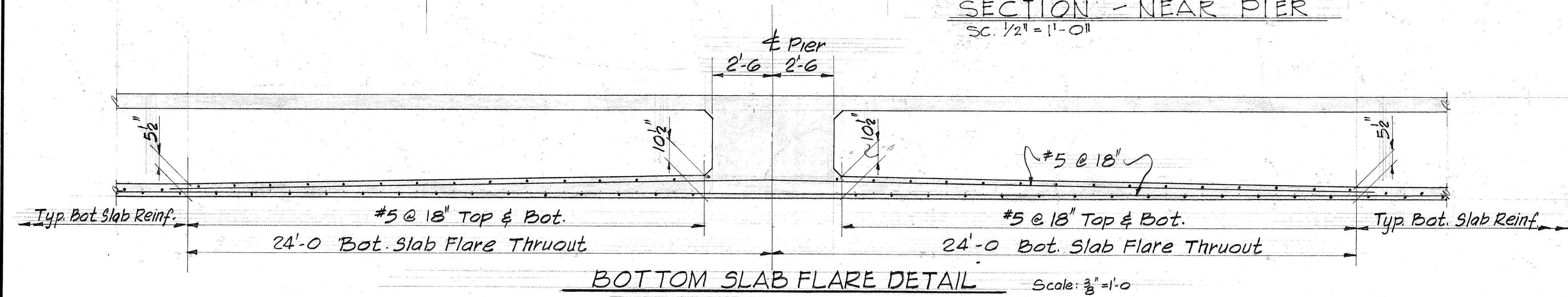
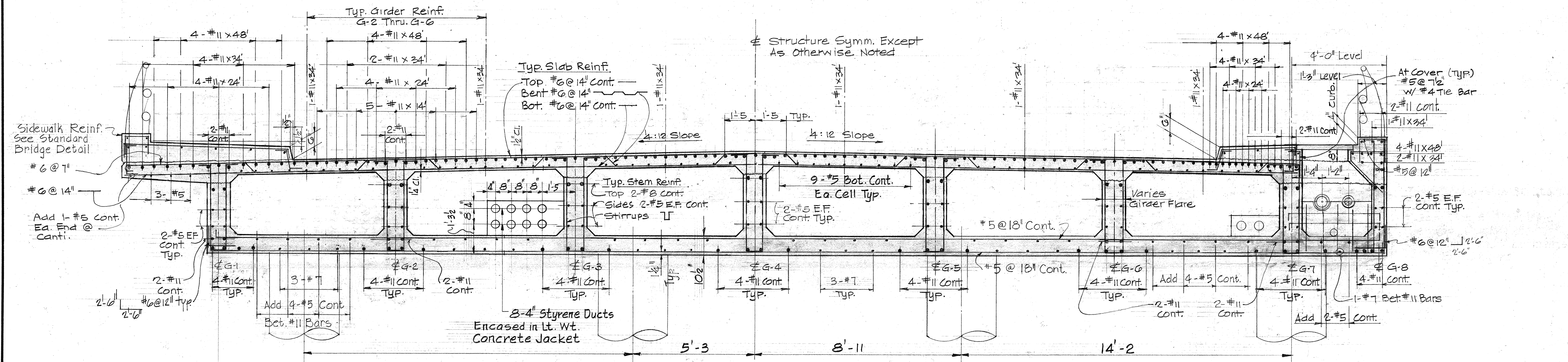
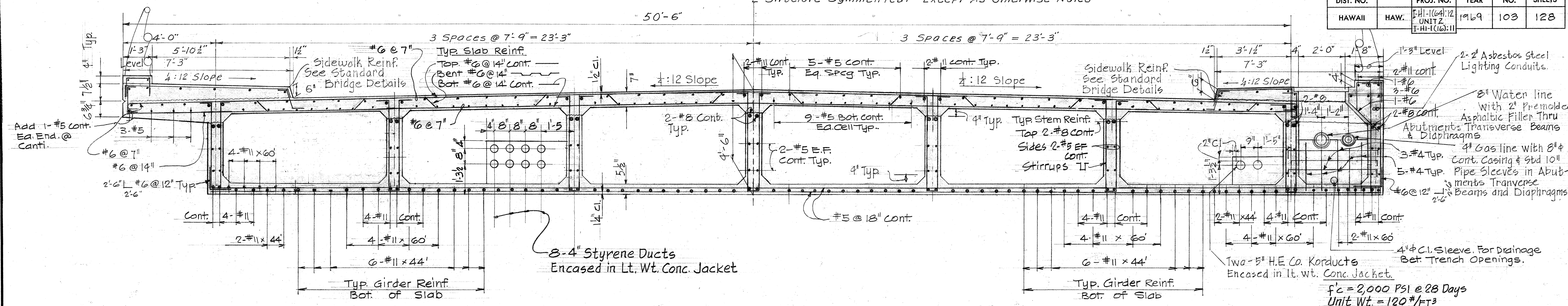
SHEET No. 4 OF 11 SHEETS

102

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(64):12 UNIT 2 HI-1(66):11	1969	103	128

Structure Symmetrical Except As Otherwise Noted

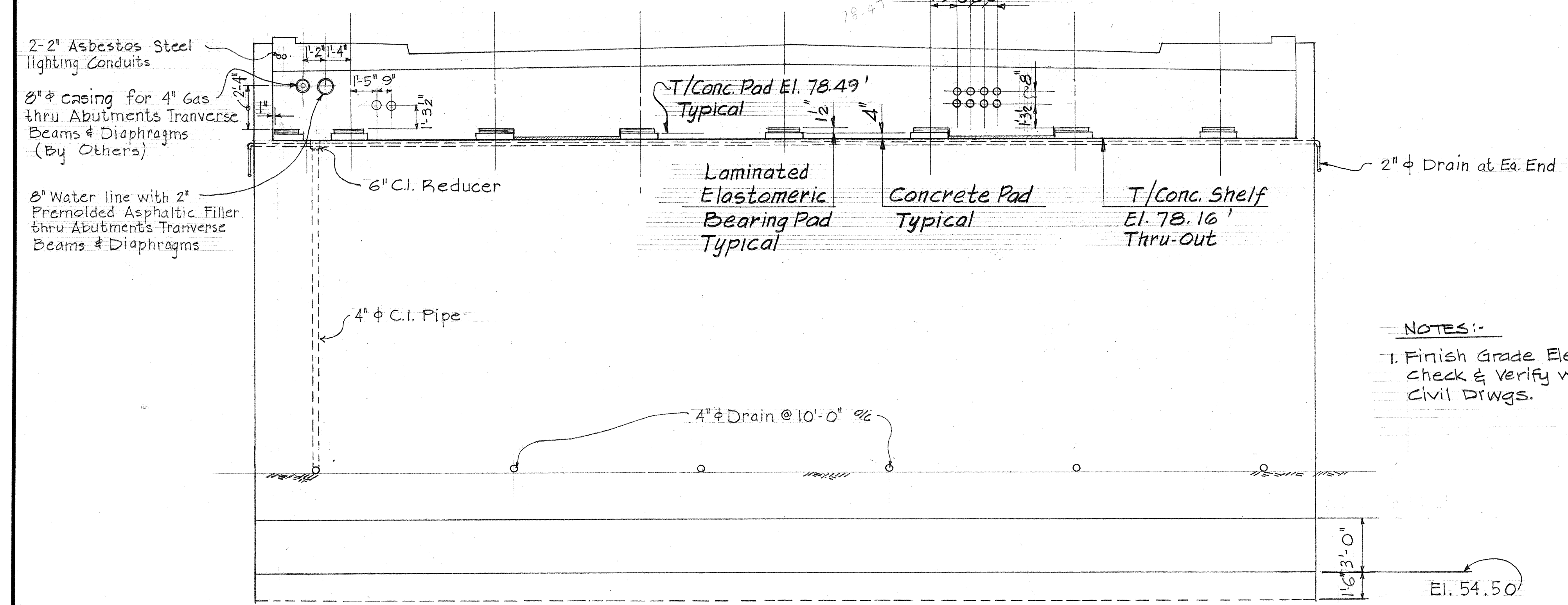


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
AIEA HEIGHTS DRIVE
GRADE SEPARATION
NORMAL DECK SECTIONS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. HI-1(64):12 UNIT 2
SCALE: AS NOTED DATE 1969
SHEET No. 5 OF 11 SHEETS

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
NO.	

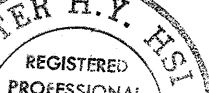
This detailed drawing shows the cross-section and plan view of a bridge deck. Key components include:

- Retaining Wall:** Located on the left side of the deck.
- Drainage:** Features a 4" φ C.I. Drain Pipe, 2" φ Pipe Drain at E.g. End, and 4" Drain.
- Conduits:** Includes 2-2" lighting Conduits, 4" Gas line, 6" Water line, and 2-5" Elec. Ducts.
- Bearing Pads:** 10" x 14" x 1 1/2" Laminated Elastomeric Bearing Pads are shown at various points along the deck.
- Outline Beam:** Labeled as "A" Drop Panel.
- Dimensions:** Various dimensions are provided for the deck width, depth, and component placement.
- Notes:** Includes "See Detail 'A'", "12 Typ. Bevel-All Pads", and "56'-8\"

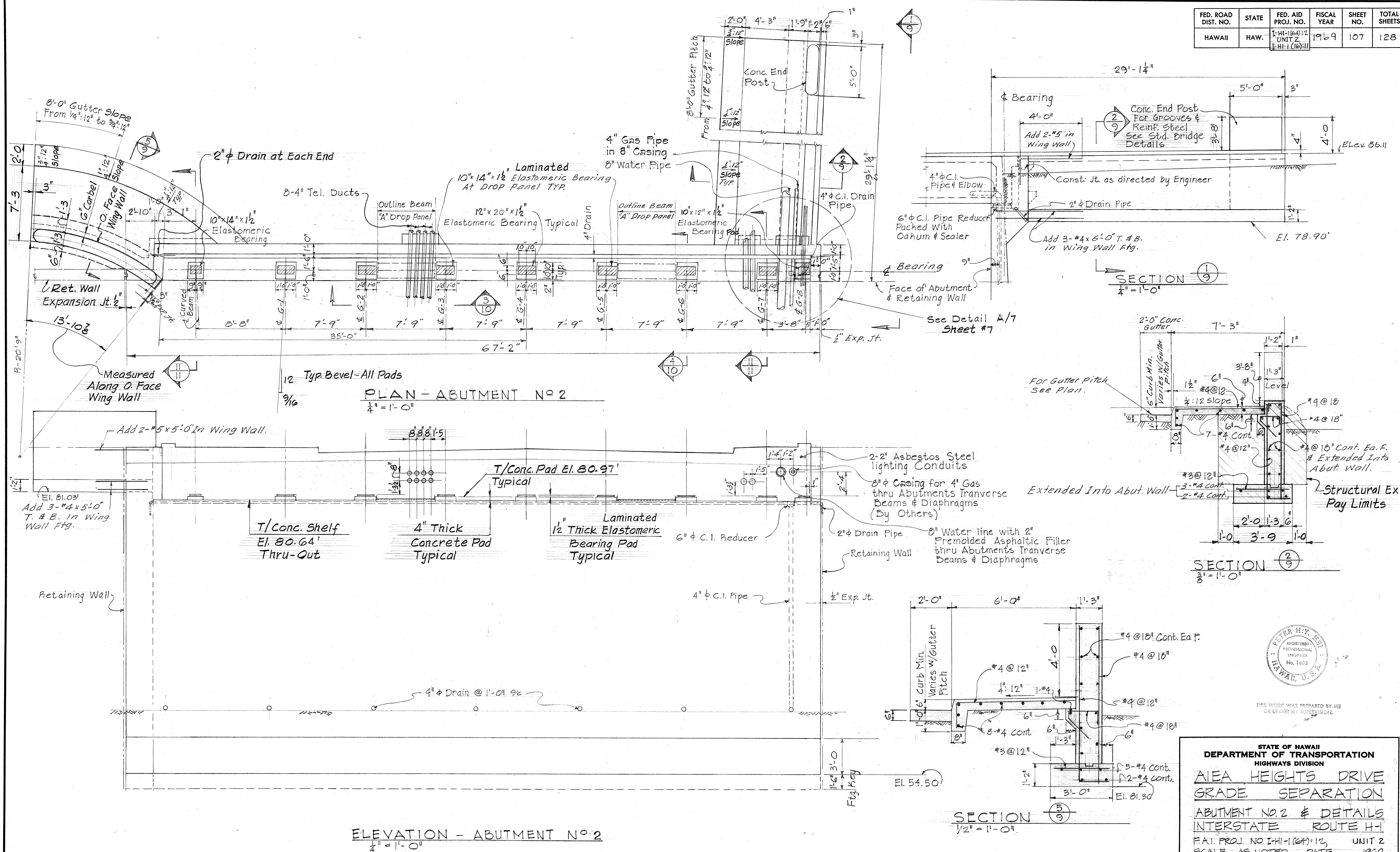


NOTES:-

1. Finish Grade Elevation
check & Verify with
Civil Drwgs.

	DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
	<u>AIEA HEIGHTS DRIVE</u>	
	<u>GRADE SEPARATION</u>	
	<u>ABUTMENT NO. 1 & DETAILS</u> <u>INTERSTATE ROUTE 4-1</u>	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.		
FA PROJ. NO. I-HW-1 (64) 12, SCALE: AS NOTED DATE 1969		UNIT 2 1969
SHEET No. 8 OF 11 SHEETS 106		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(64)12 UNIT 2 I-HI-1(16):11	1969	107	128



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

AIEA HEIGHTS DRIVE
GRADE SEPARATION

ABUTMENT NO. 2 & DETAILS
INTERSTATE ROUTE H-1

F.A.T. PROJ. NO. I-H-1 (24) 12, UNIT 2
SCALE : AS NOTED DATE 1969

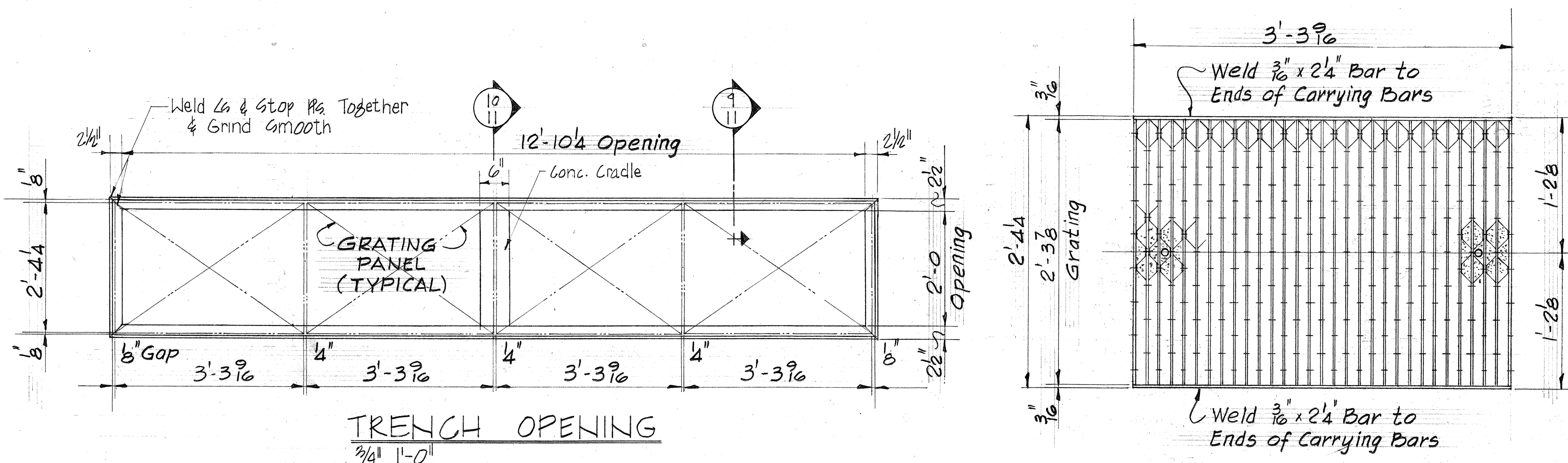
SHEET No. 9 OF 11 SHEETS

107

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

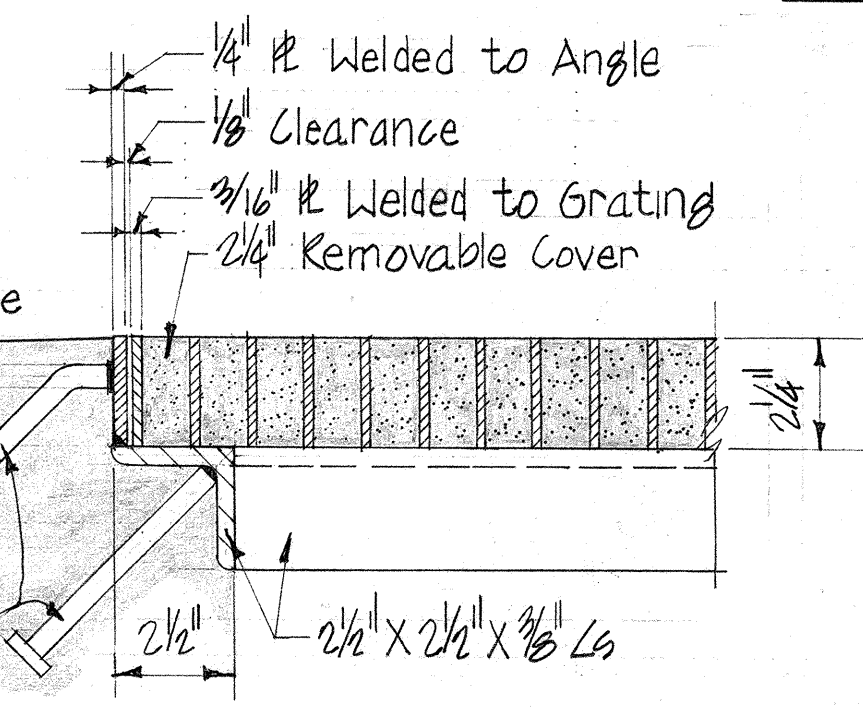
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HA-116A-12 UNIT 2 7-11-11A-11	1969	109	128



NOTE:

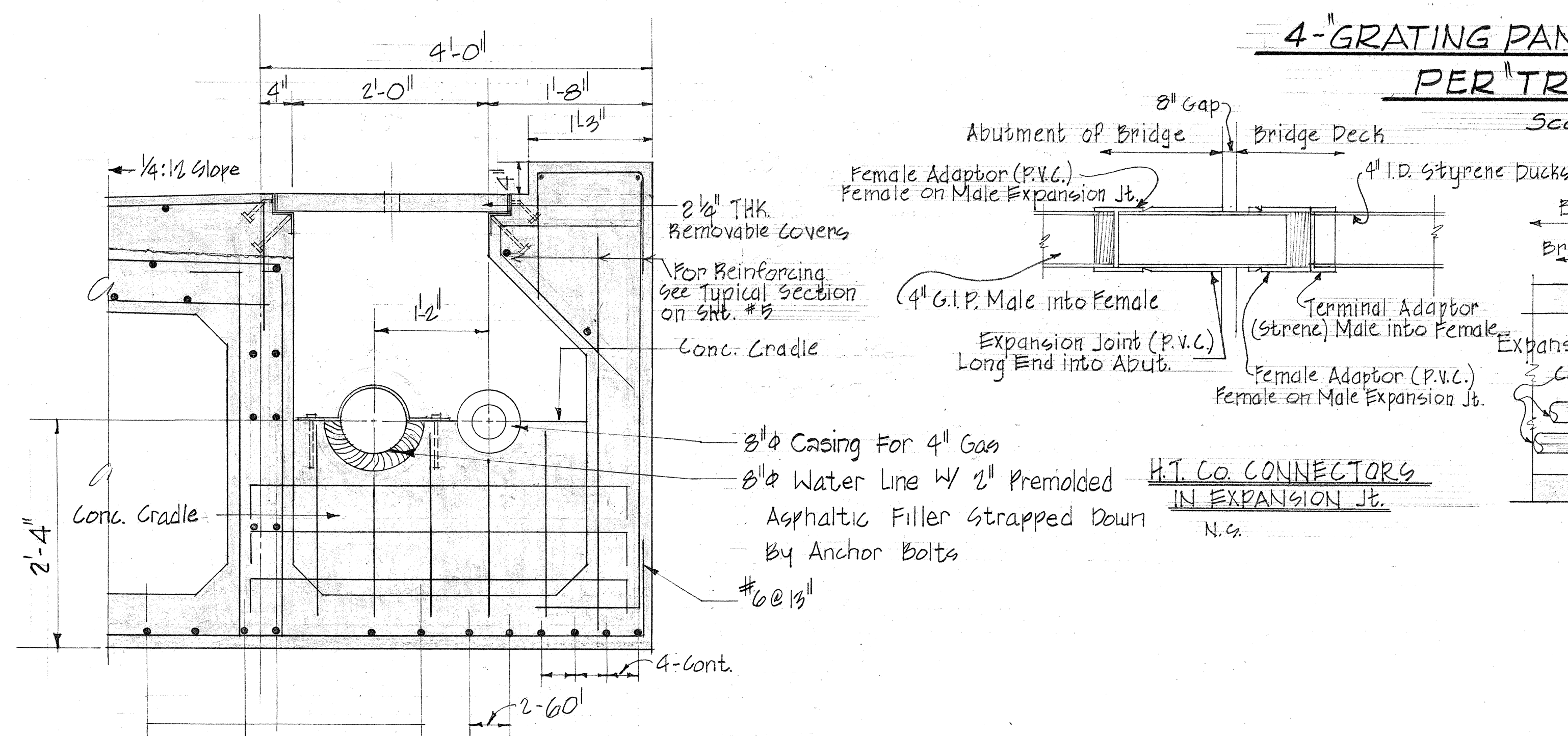
1. Holes in Grating Shall be Filled With Light Wt. Concrete.
 $f_c = 2,000 \text{ PSI @ 28 Days}$
 Unit Wt. = 120 #/FT^3
2. Lt. Wt. Conc. Shall be Incidental to Class A-1 Concrete.
3. For "Stl. Grating" See $\frac{1}{4} \times 12 \text{ G10}$
 See Specs.-Special Provisions
4. Galvanize All Steel Items.
 Shear Studs
 $\frac{1}{2} \times 5 \times 1 \text{ Lg}$
 $@ 10\% \text{ Ea Row}$
 Staggered



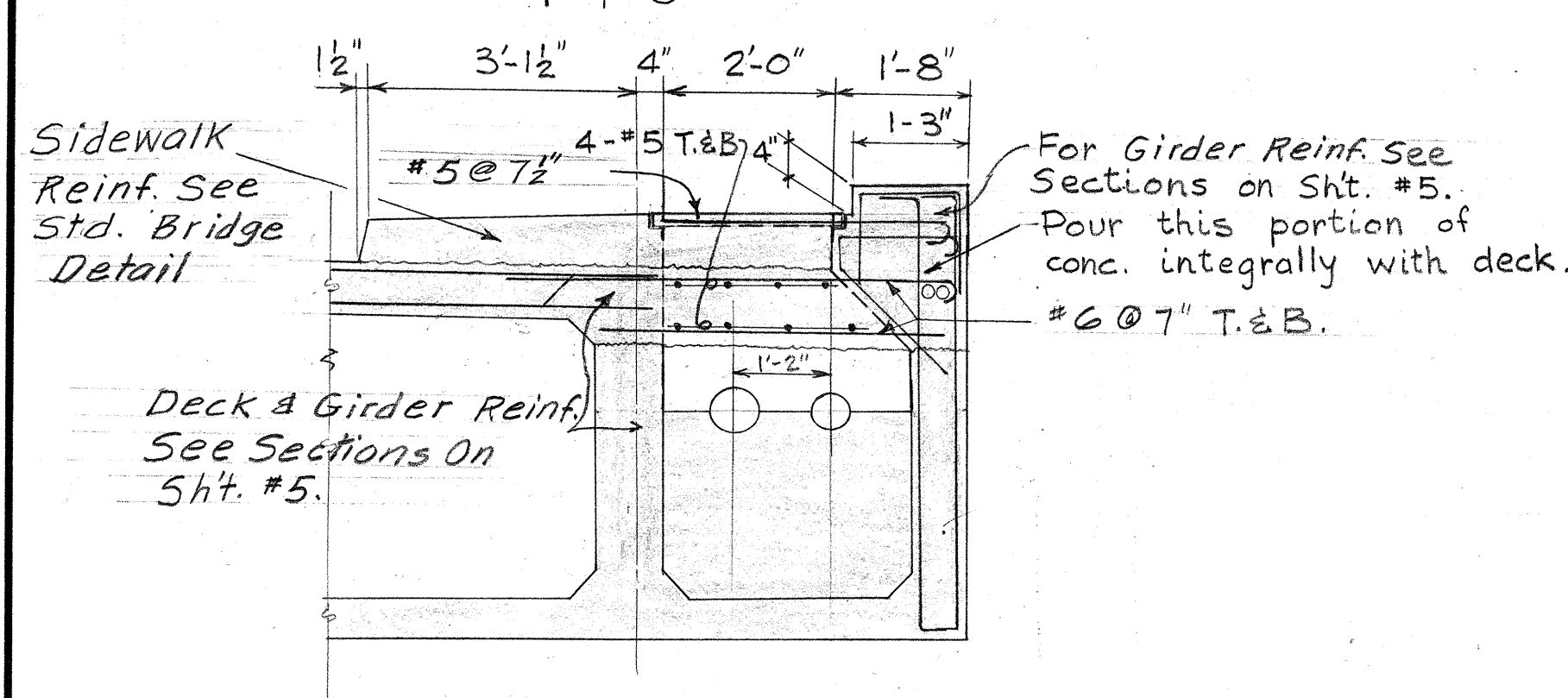
SECTION 9

4-"GRATING PANELS" REQUIRED THUS
PER "TRENCH OPENING"

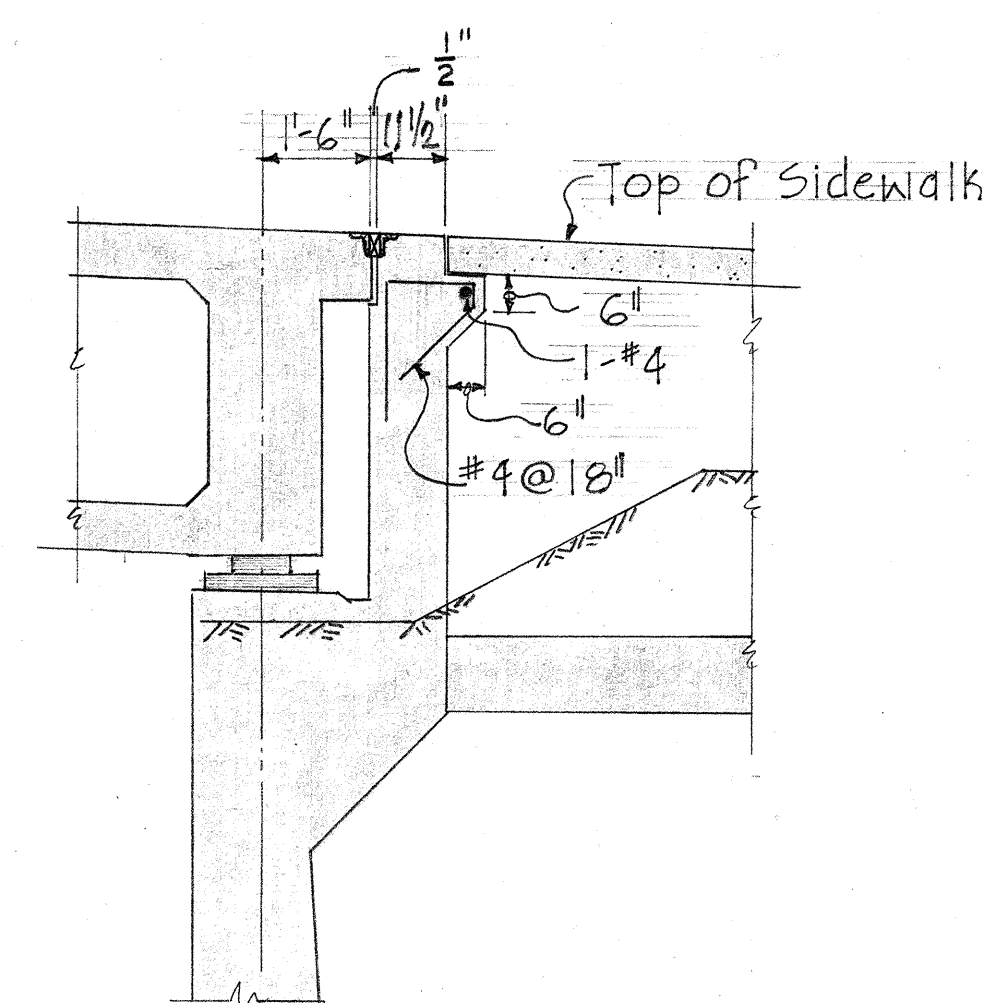
Scale: $1\frac{1}{2}'' = 1'-0''$



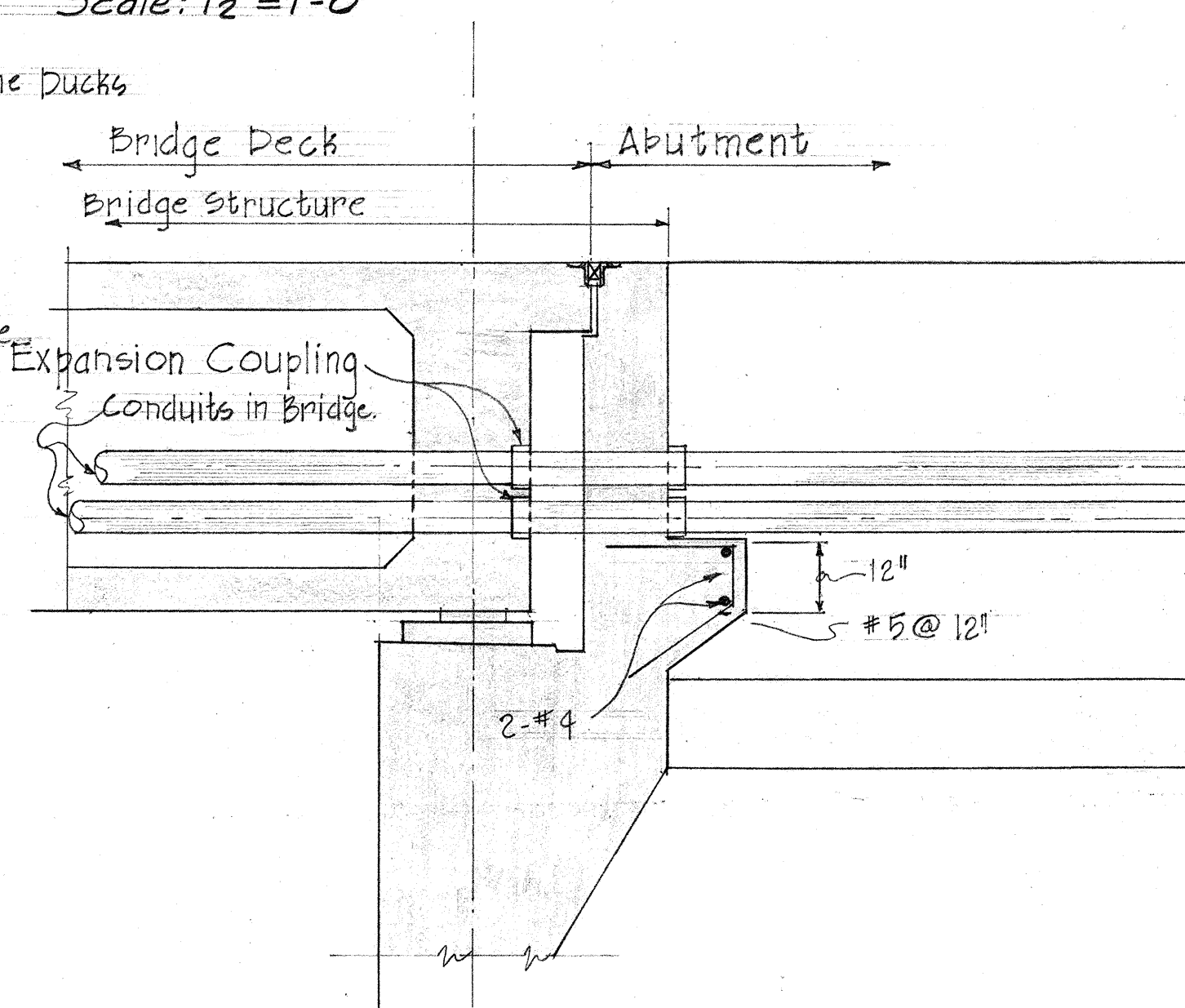
SECTION $\frac{10}{11}$ At Conc. Cradle



SECTION $\frac{1}{2}'' = 1'-0''$ Typ. Reinf. For slabs
Between Trench Op'ngs.



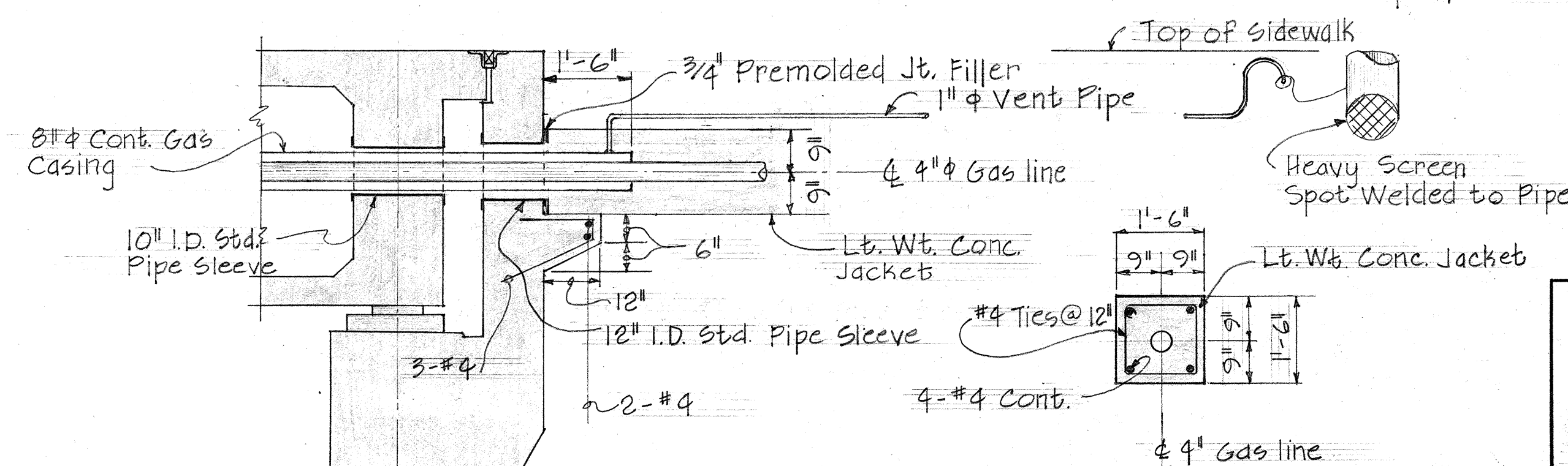
SECTION
3/8" = 1'-0" - TYP. Abut. Wall Bracket
Supporting Sidewalk Slab



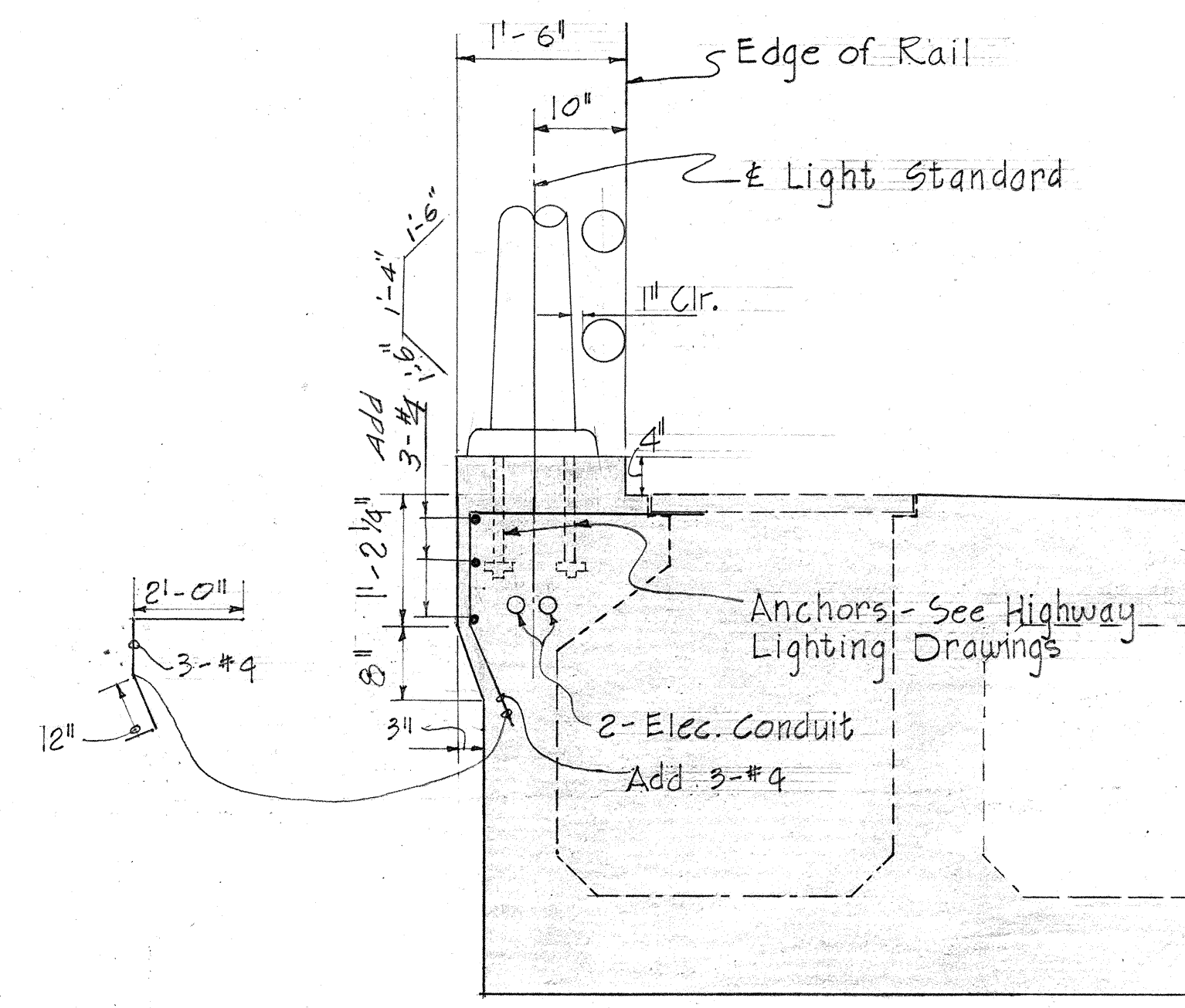
SECTION

13
11

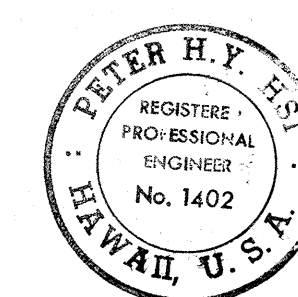
1/2 = 1 - 0



SECTION 14/11



SECTION 12
II



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

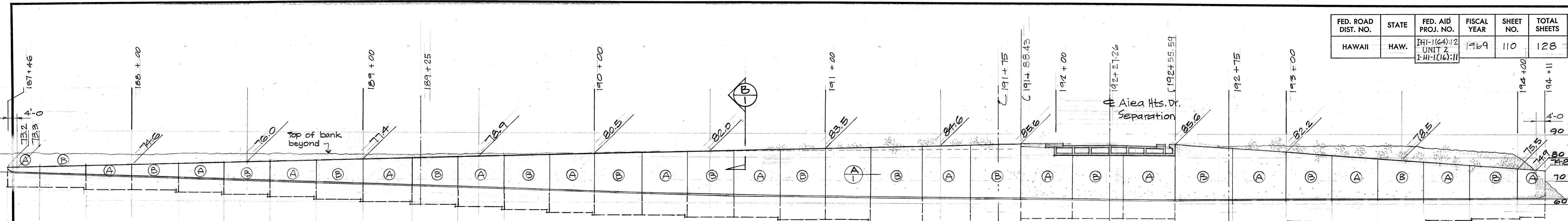
ALFA HEIGHTS DRIVE
GRADE SEPARATION

SECTIONS	&	DETAILS
INTERSTATE		ROUTE H-1

F.A.I. PROJ. NO. I-H-1 (64)=12, UNIT 2
SCALE = AS NOTED DATE 1960

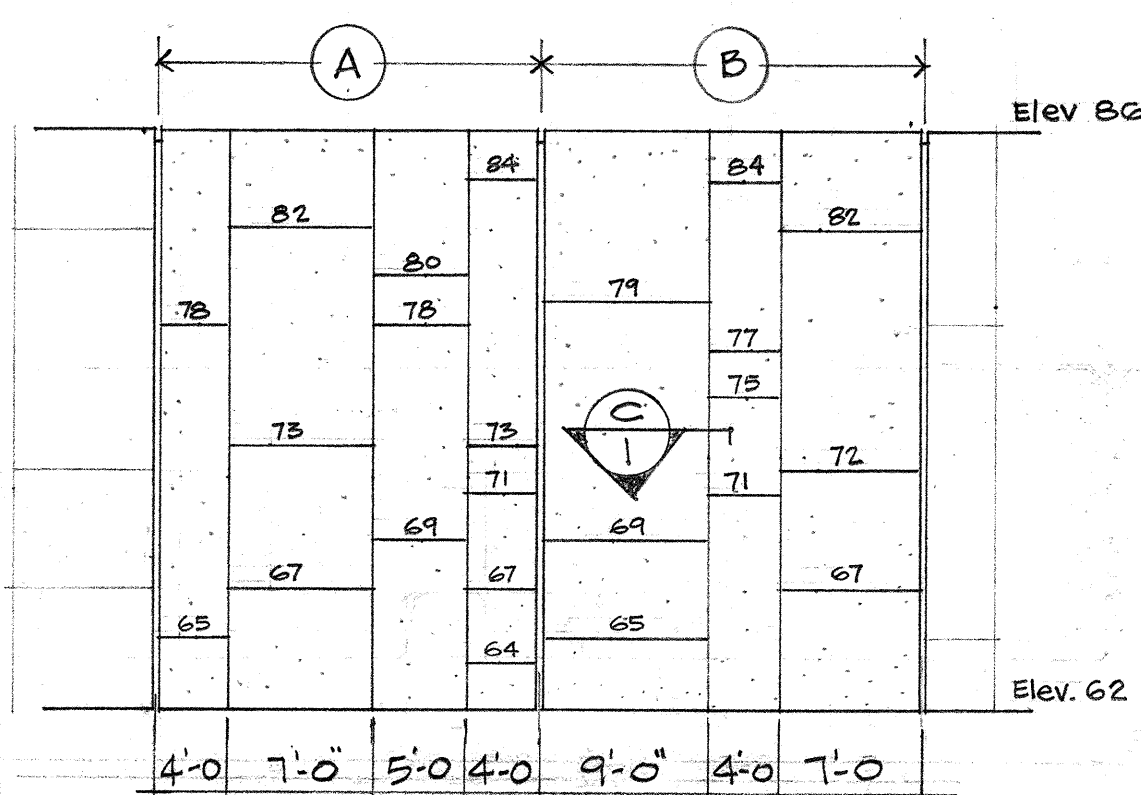
SHEET No. 11 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(64)12 UNIT 2 I-HI-1(16)11	1969	110	128



MAUKA ELEVATION - OUTBOUND TRAFFIC

Scale: 1" = 20'



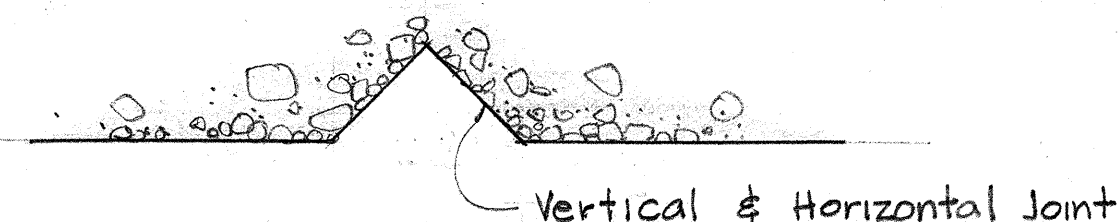
Elevation

Not to Scale

TYPICAL RANDOM PATTERN DET. (C)

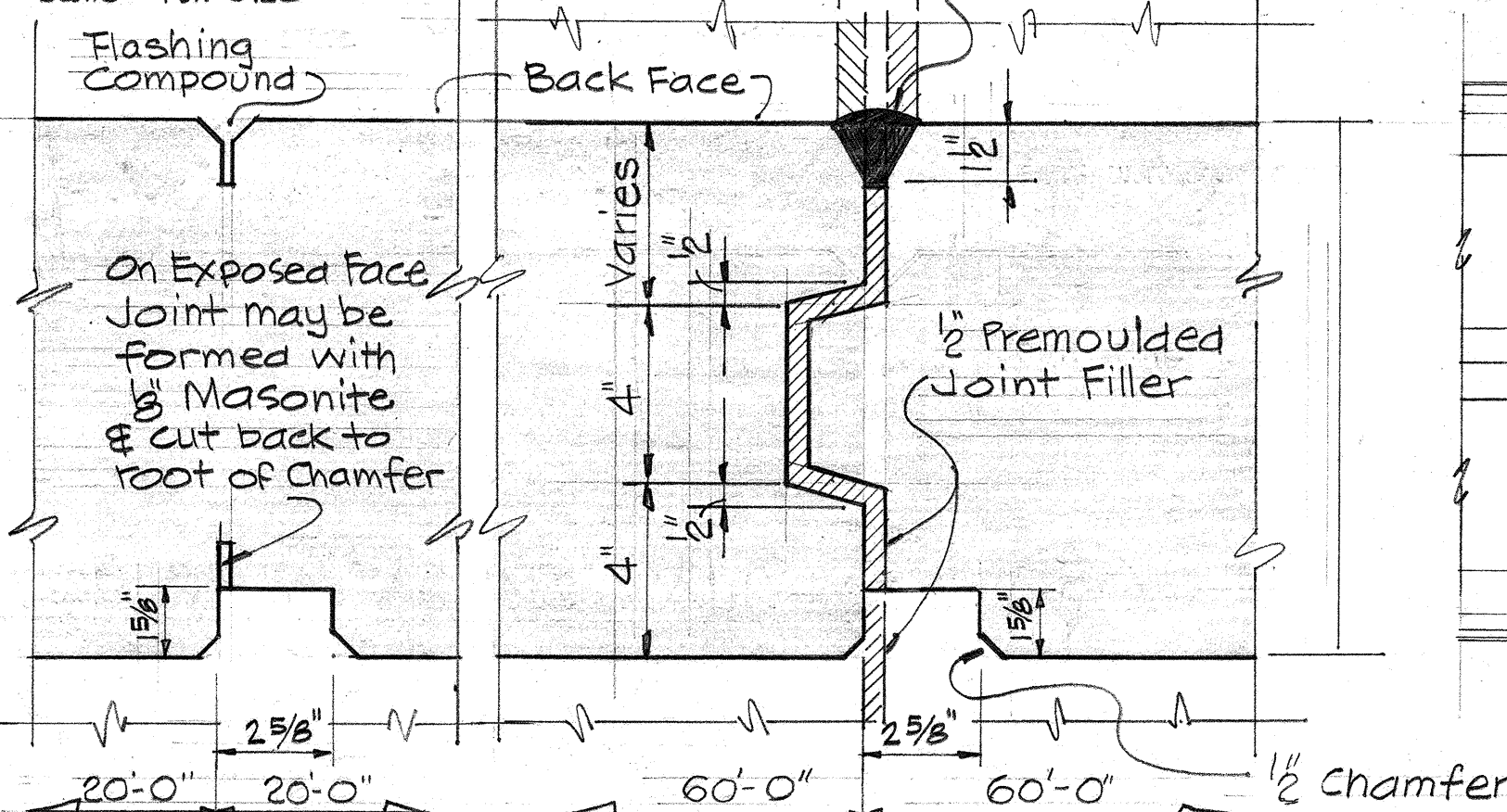
Scale: 1/8" = 1'-0"

Note: - Omit horiz. V-Jt. if less than 12" from top or base of wall. Omit vertical V-Jt. if less than 36" from end wall. Exceptions to vert. V-Jts. only @ Aiea Hts. Drive Sep.



Random Joint

Scale: Full Size



Vertical Contr. Joint

Scale: 3" = 1'-0"

Vertical Expansion Joint

Scale: 3" = 1'-0"

TYPICAL RETAINING WALL JOINTS DETAIL (A)

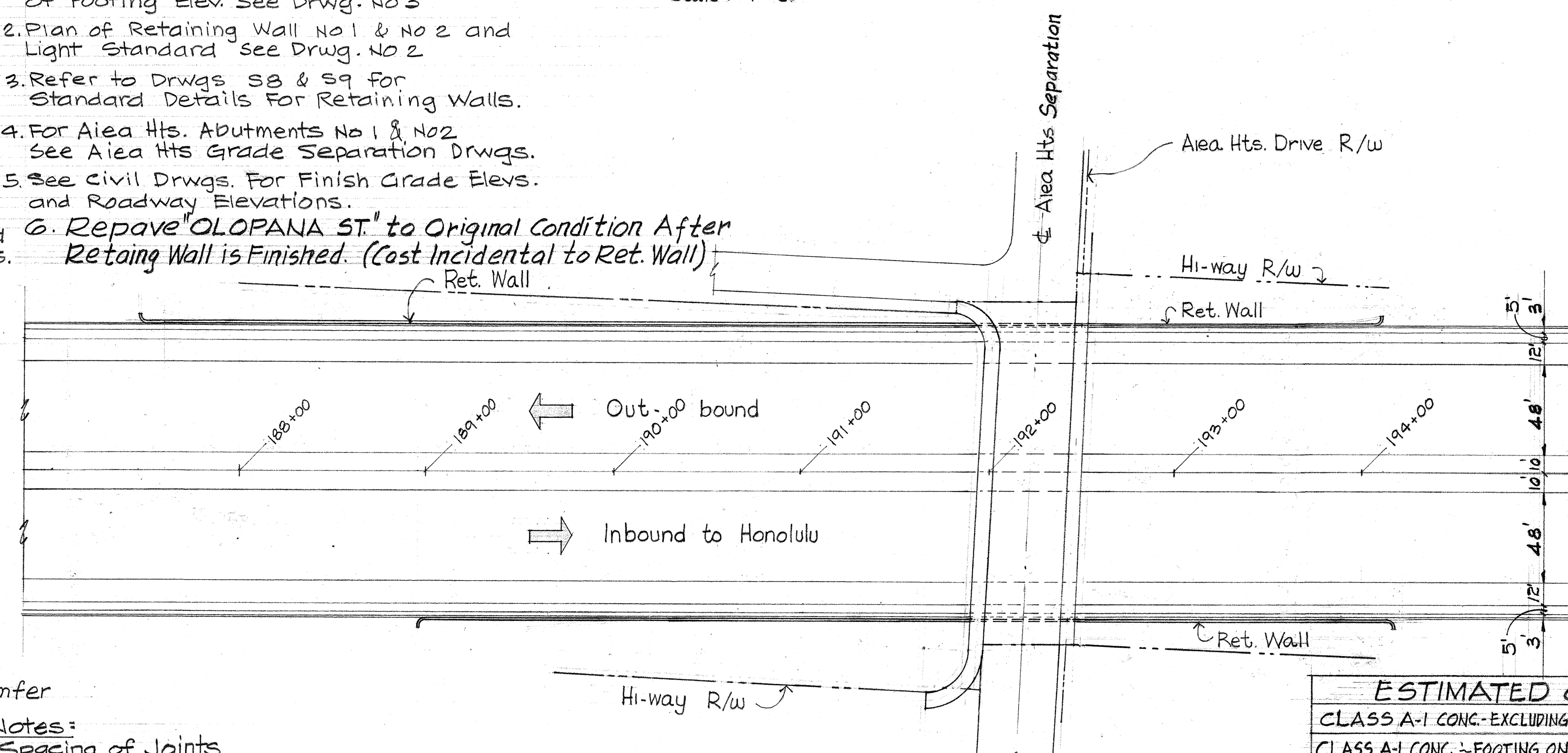
Scale as noted

NOTES:-

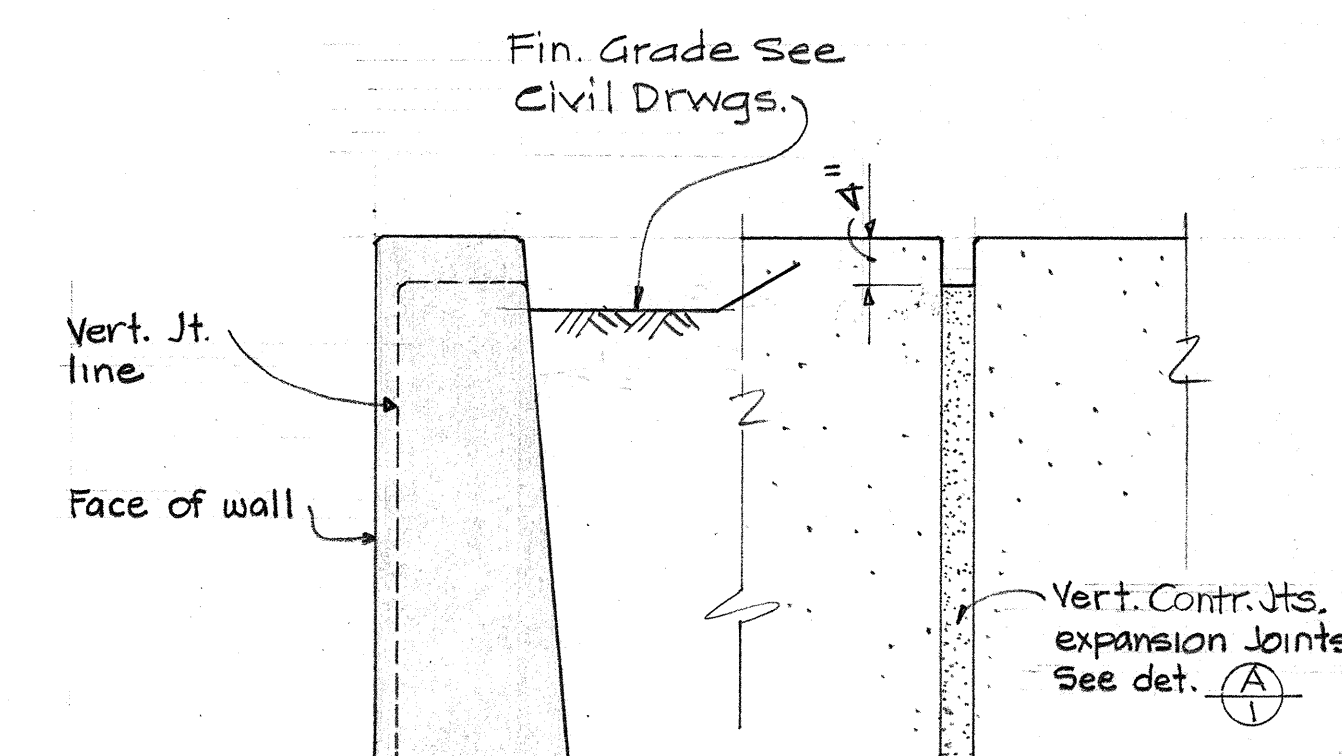
1. Retaining Wall Elevations and Bottom of Footing Elev. see Drwg. No 3
2. Plan of Retaining Wall No 1 & No 2 and Light Standard see Drwg. No 2
3. Refer to Drwgs S8 & S9 for Standard Details for Retaining Walls.
4. For Aiea Hts. Abutments No 1 & No 2 see Aiea Hts. Grade Separation Drwgs.
5. See Civil Drwgs. for Finish Grade Elevs. and Roadway Elevations.
6. Repave "OLOPANA ST." to Original Condition After Retaining Wall is Finished. (Cost Incidental to Ret. Wall)

MAKAI ELEVATION - INBOUND TRAFFIC

Scale: 1" = 20'



Bottom of Footing Elev. See Drwg. No. 3



TOP OF RETAINING WALL DET (B)

TYPICAL

ESTIMATED QUANTITIES	
CLASS A-1 CONC.-EXCLUDING FTG. (LUMP SUM)	1,236 CY.
CLASS A-1 CONC.-FOOTING ONLY (LUMP SUM)	1,199 CY.
REINF. STEEL (LUMP SUM)	278,977 LBS.
STRUCTURAL EXCAVATION	7,709 CY.
FILTER MATERIAL	11,424 CY.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

AIEA HEIGHTS DRIVE
RETAINING WALL

LAYOUT PLAN, ELEV., & DETAILS
INTERSTATE ROUTE H-1

F.A.I. PROJ. NO. I-HI-1(64)12 UNIT 2
SCALE: AS NOTED DATE 1969

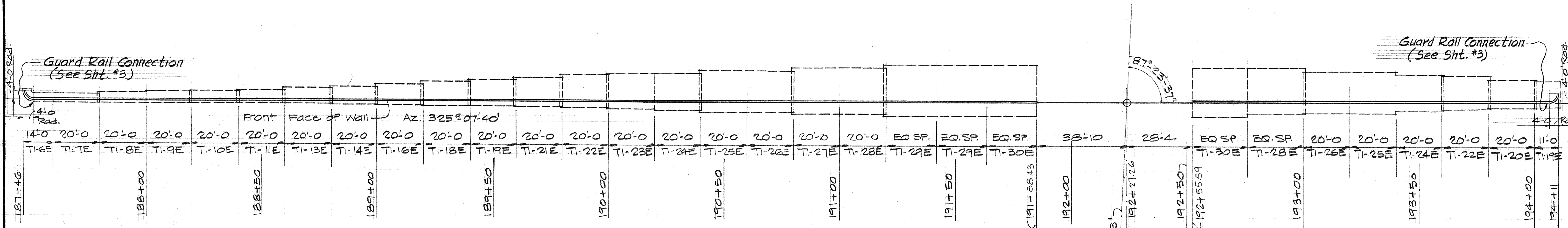
SHEET No. 1 OF 3 SHEETS

110

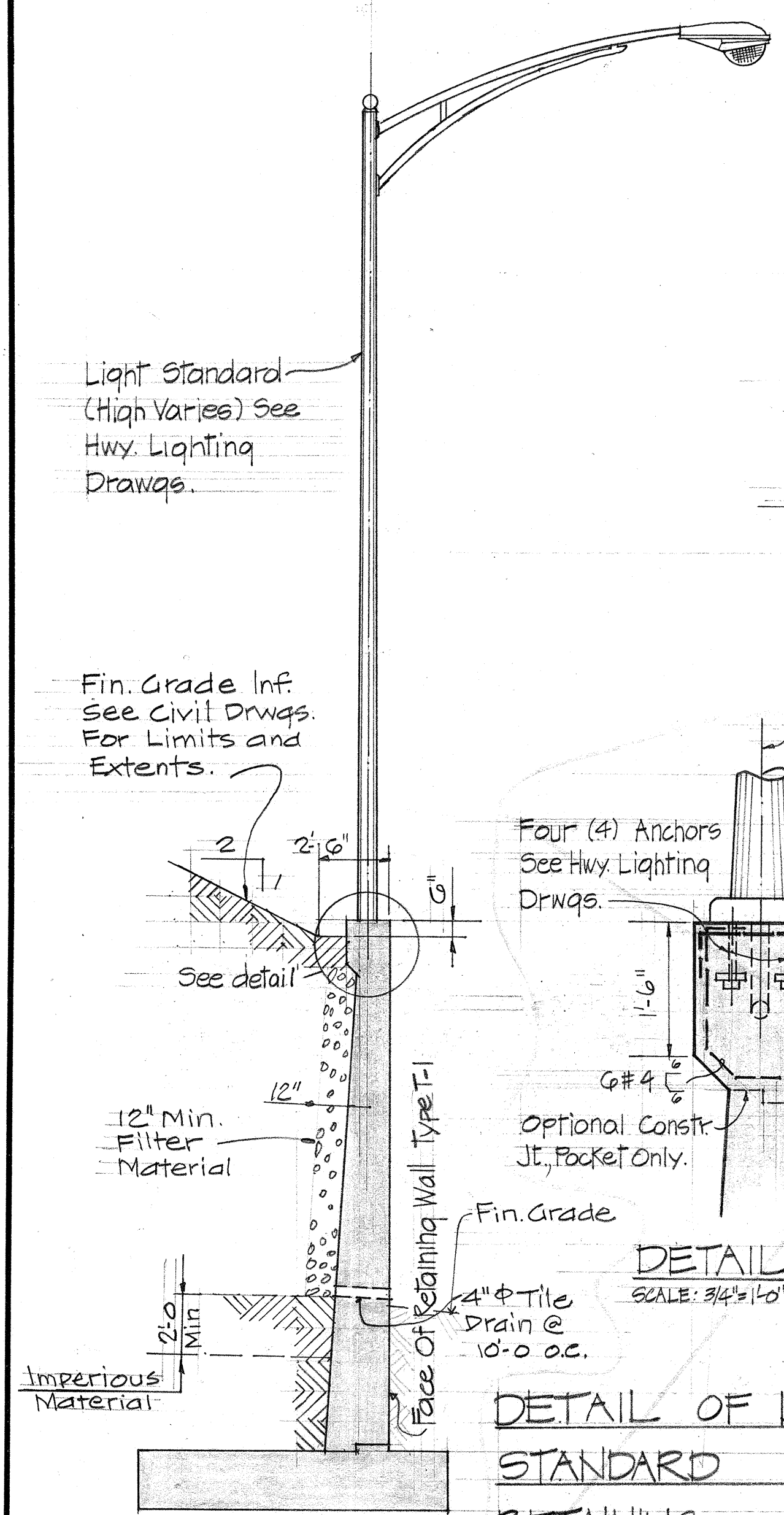
DATE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
ORIGINAL PLAN	
NO.	

DATE	JAN. 30, 1968	FEB. 29, 1968
REMARKS	PRELIM. APPROVAL	ARCH. REVIEW

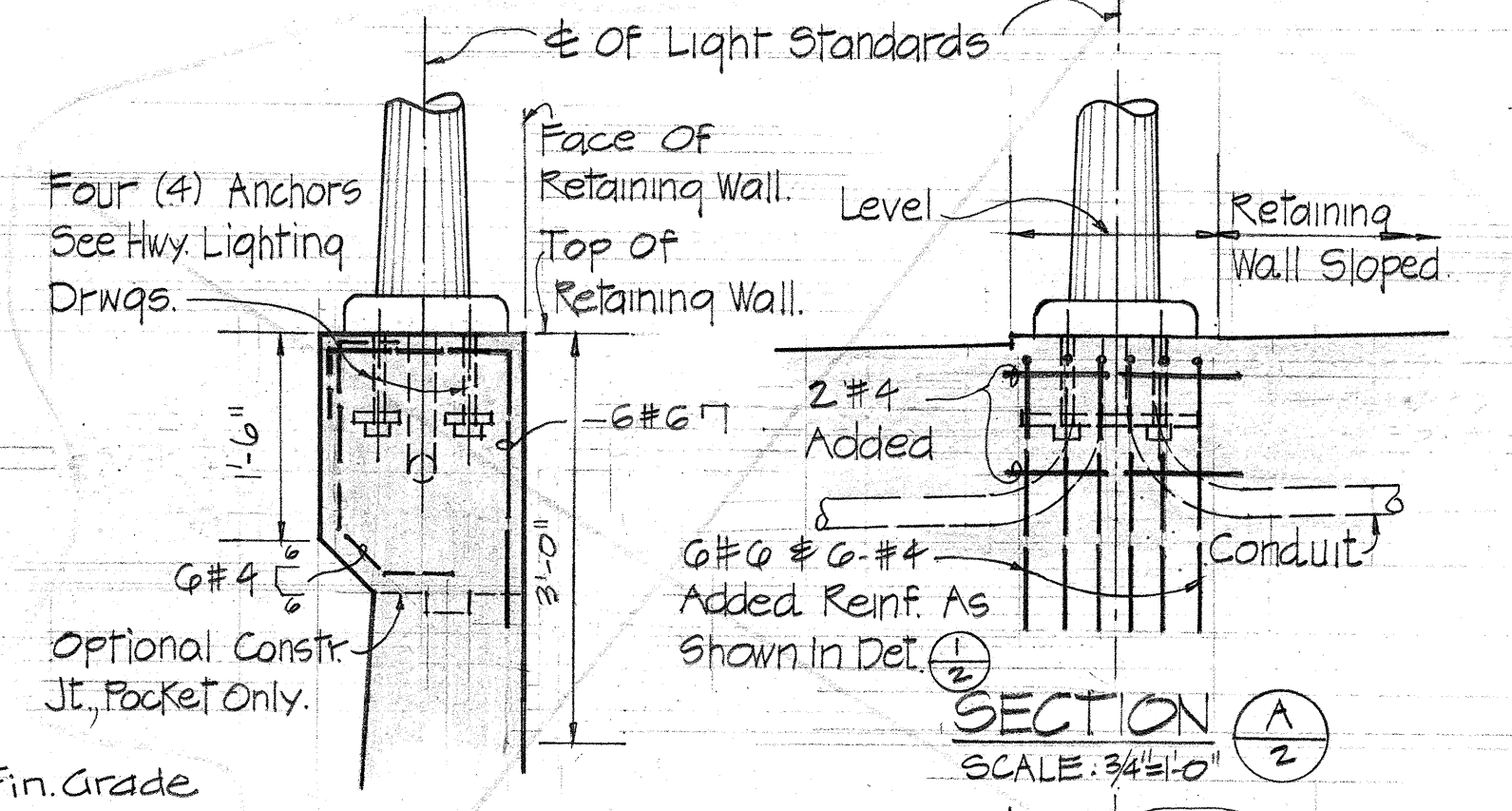
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EH-1(64)12 UNIT 2 E-H-1(16)211	1969	111	128



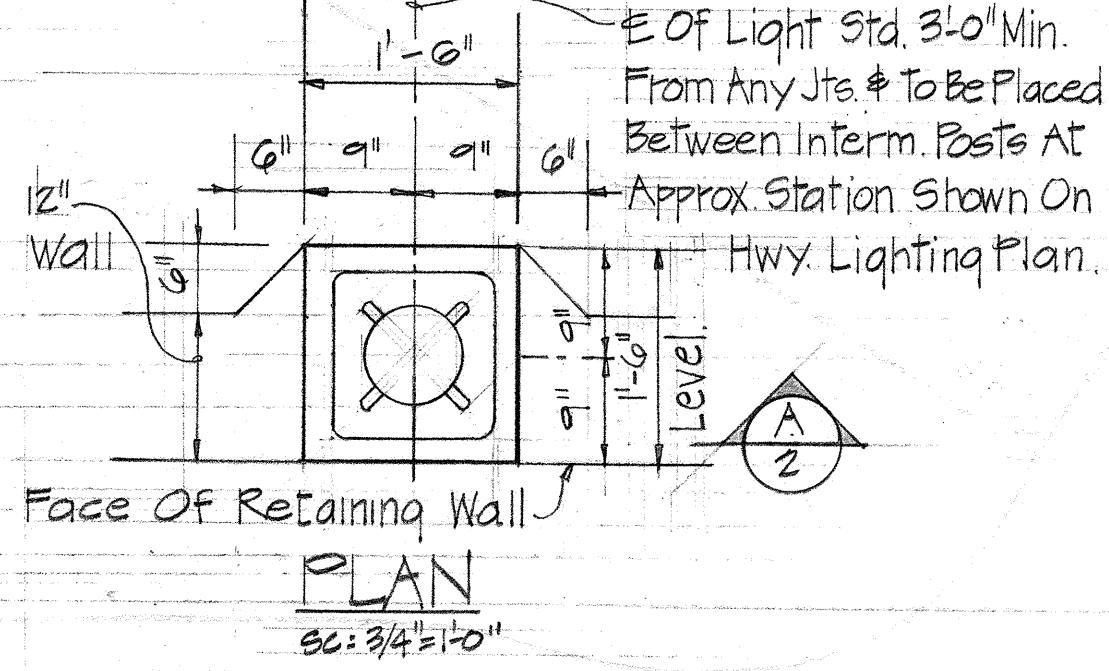
PLAN RETAINING WALL NO 2
Scale 1" = 20'-0"



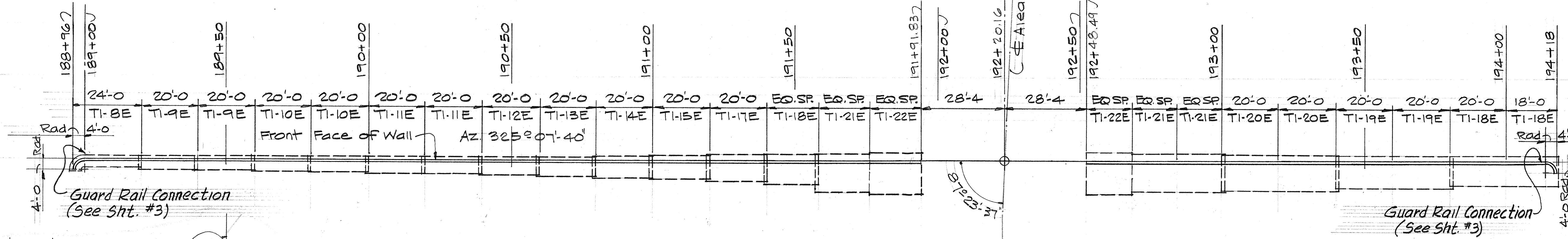
ELEVATION
Scale: 1/4" = 1'-0"



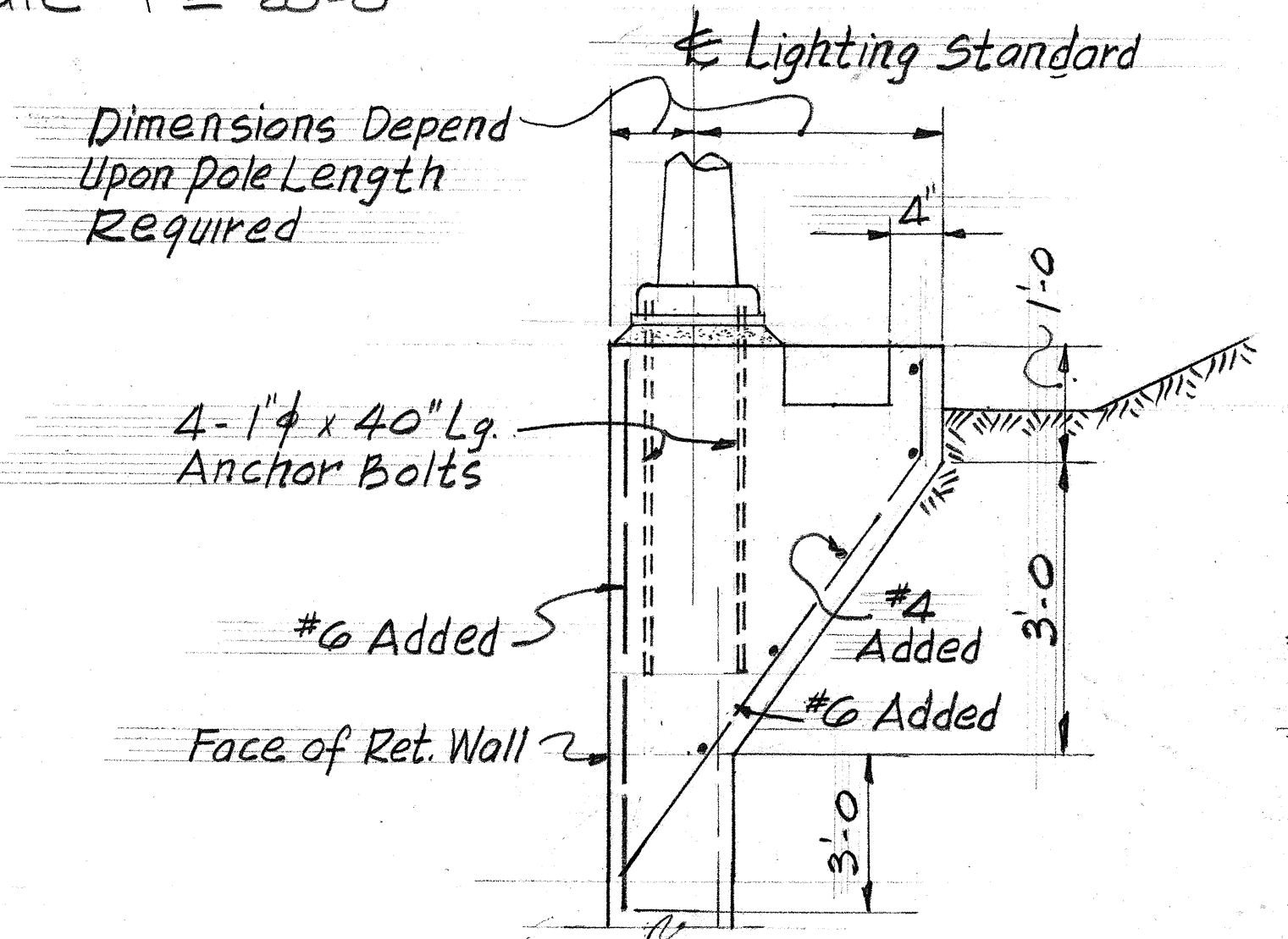
DETAIL OF LIGHT STANDARD AT RETAINING WALL
Scale: AS SHOWN.



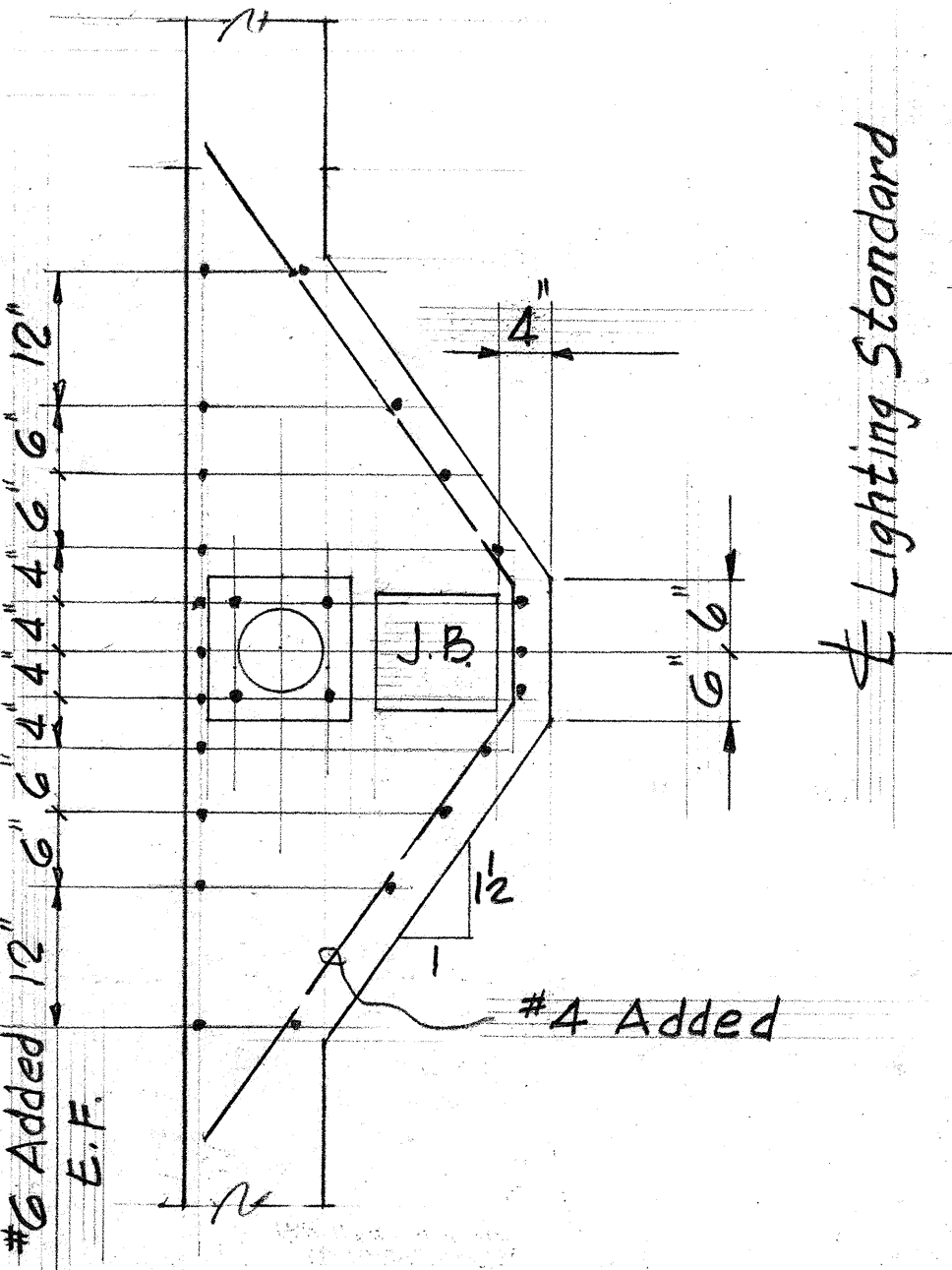
PLAN
Scale: 3/4" = 1'-0"



PLAN RETAINING WALL NO 1
Scale 1" = 20'-0"

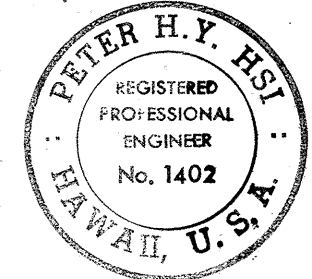


PLAN
DETAIL OF LIGHTING STANDARD ANCHORAGE @ RET. WALL



SECTION

NOTE!
SEE ELECTRICAL DRAWINGS FOR LIGHTING STANDARD BASE DETAIL.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

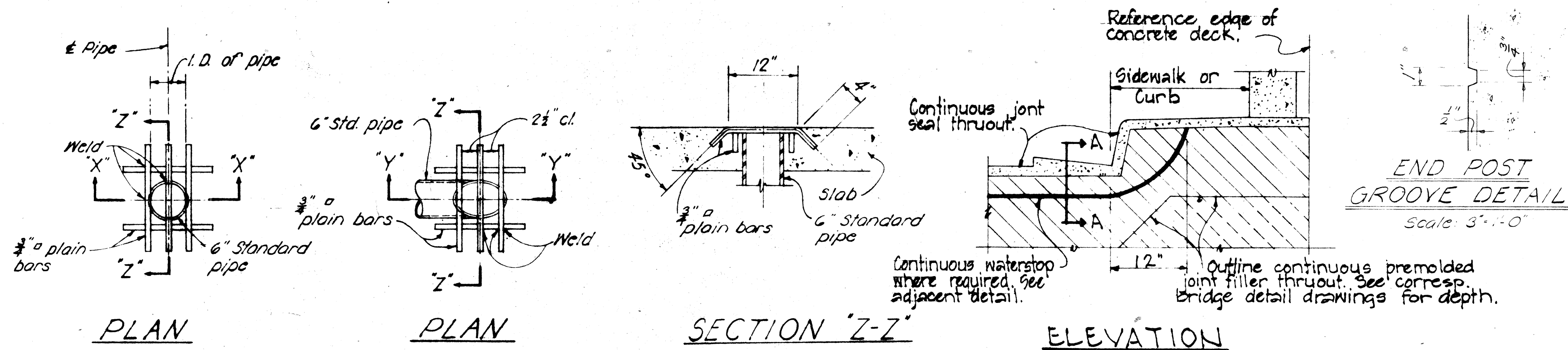
AIEA HEIGHTS DRIVE
RETAINING WALL

PLANS OF RETAINING WALL NO. 1 & NO. 2
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. IHI-1(64)12 UNIT 2
SCALE: AS NOTED DATE 1969

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11(64)12	1969	113	128

REVISION

Jan. '67
Feb. '67
Apr. '67



GENERAL NOTES

Elastomeric Pads: Top & bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.

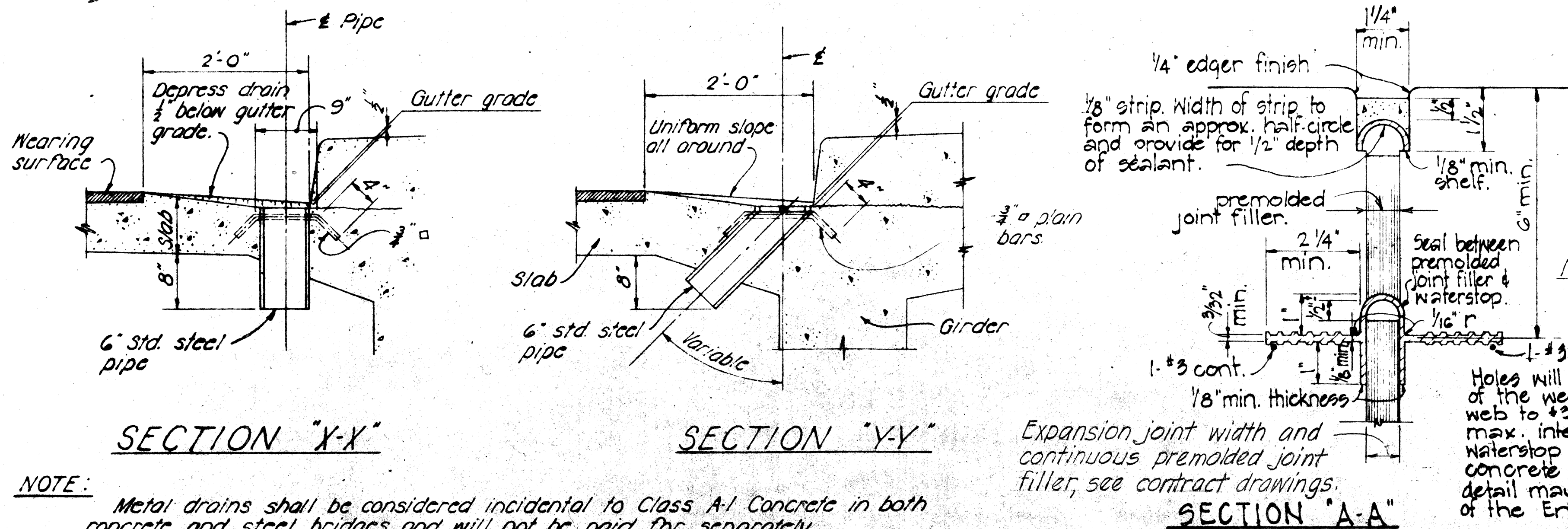
- The Contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation.
- All concrete shall be Class A-1 unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1/2" For stirrups of beams & pier caps.
 - 2" For ties of columns.
 - 2" For formed walls.
 - 3" For footings.
- Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top surfaces of the concrete seats shall be finished with a steel trowel to a smooth level at the elevation shown on the plans.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Reinforcing bars shall be securely tied at all intersections & lap splices & shall be held in place during pouring to maintain their proper locations as shown on plans.
- Splices of reinforcing - See Special Provisions.

Waterstop to have 5 or more pairs of raised ribs to provide 0.1 sq. in. min. rib cross-section area on each half of the waterstop. Height of ribs to be 3/32" min.

Nailing Strip:

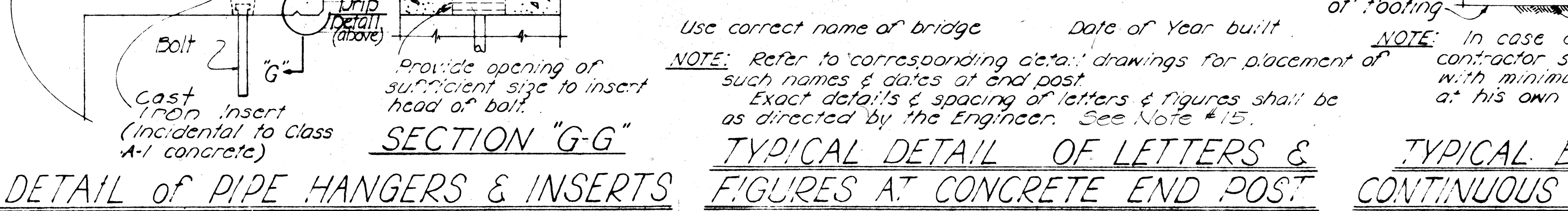
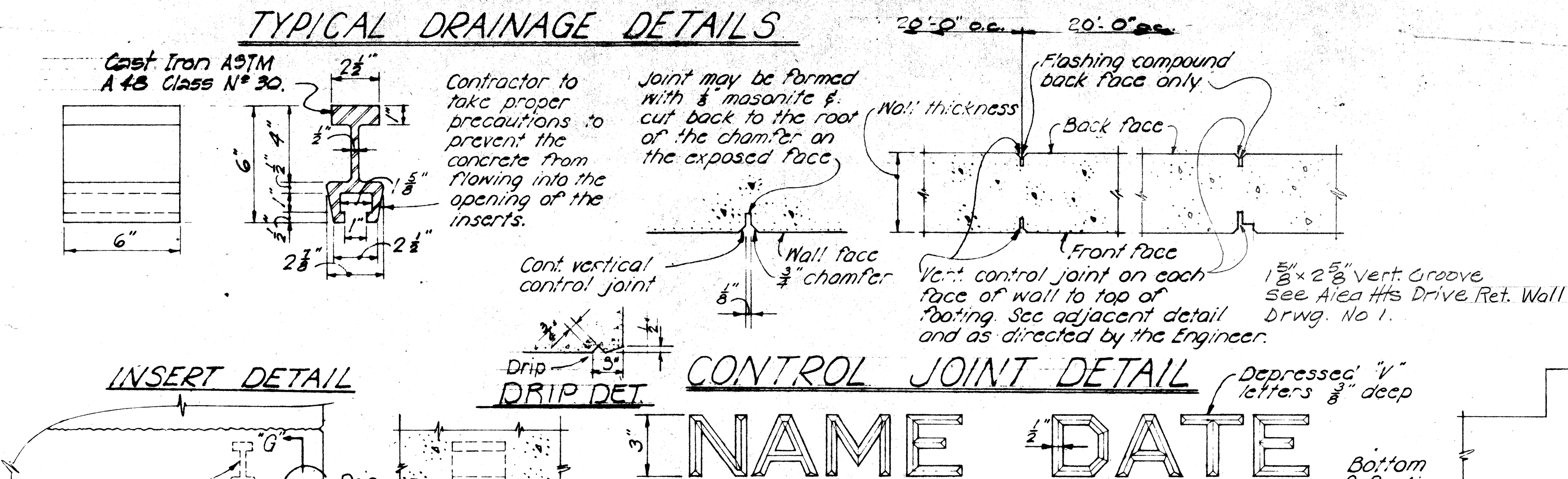
Nail or staple to form or premolded joint filler.

Holes will be permitted in the outer 1/2" of the web for wires, rings, etc. Tie web to #3 reinforcing bars at 12" max. intervals to support the waterstop in proper position during concrete placement. Alternative detail may be submitted for approval of the Engineer.



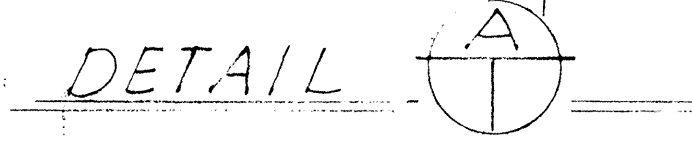
TYPICAL EXPANSION JOINT DETAIL

- Minimum spacing between parallel bars shall be 2 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.
- All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
- Forms for all exposed surfaces of separation structures and surfaces of retaining walls visible from a traveled way or from a populated area shall be plywood except that metal forms may be permitted provided a surface finish satisfactory to the Engineer can be obtained and the use of such forms is approved in writing by the Engineer. Forms for round columns shall be made of materials that will give a smooth finish and true dimensions as given in the plans. Forms for prestressed concrete members shall be either metal or plywood.
- Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
- Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered 3/4" x 3/4". See Standard Specifications.
- Concrete Finish - See Special Provisions.
- All welders and welding procedures shall be qualified according to the requirements of the Special Provisions.
- Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD BRIDGE DETAILS	
INTERSTATE	ROUTE H-1
FAI PROJ NO I-HI-1(64)12 UNIT 2	
Scale as Noted	Date: 1969
SHEET No. 61 OF 11 SHEETS	

Revision
27 Mar 67
13 Feb 68
2 Oct 68
18 Dec '68



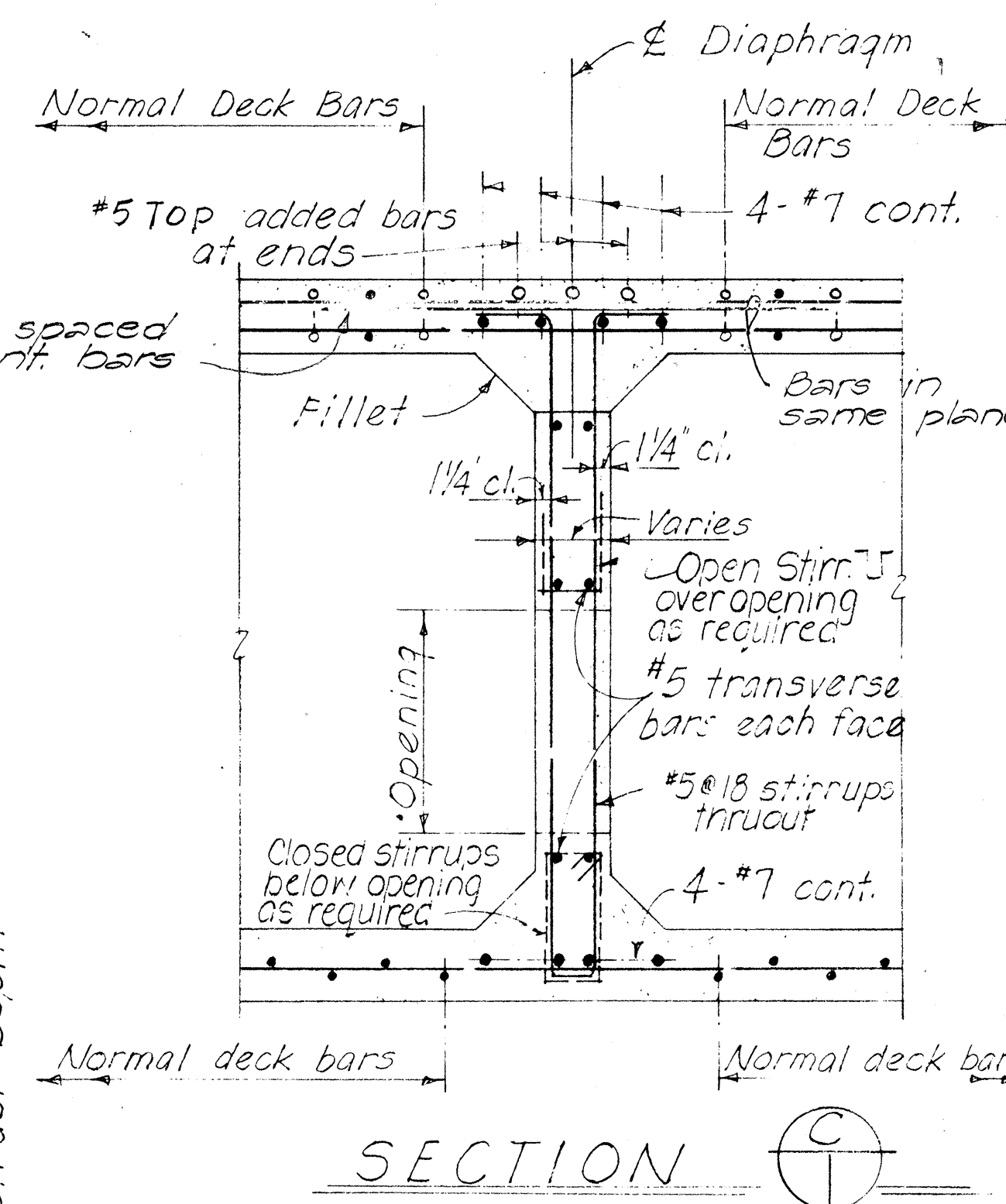
SECTION

TYPICAL SLAB CONSTRUCTION
JOINT DETAIL

AT NON-CONTINUOUS ENDS TYPICAL INTERIOR SPAN
TYPICAL BEAM "B" DETAILS

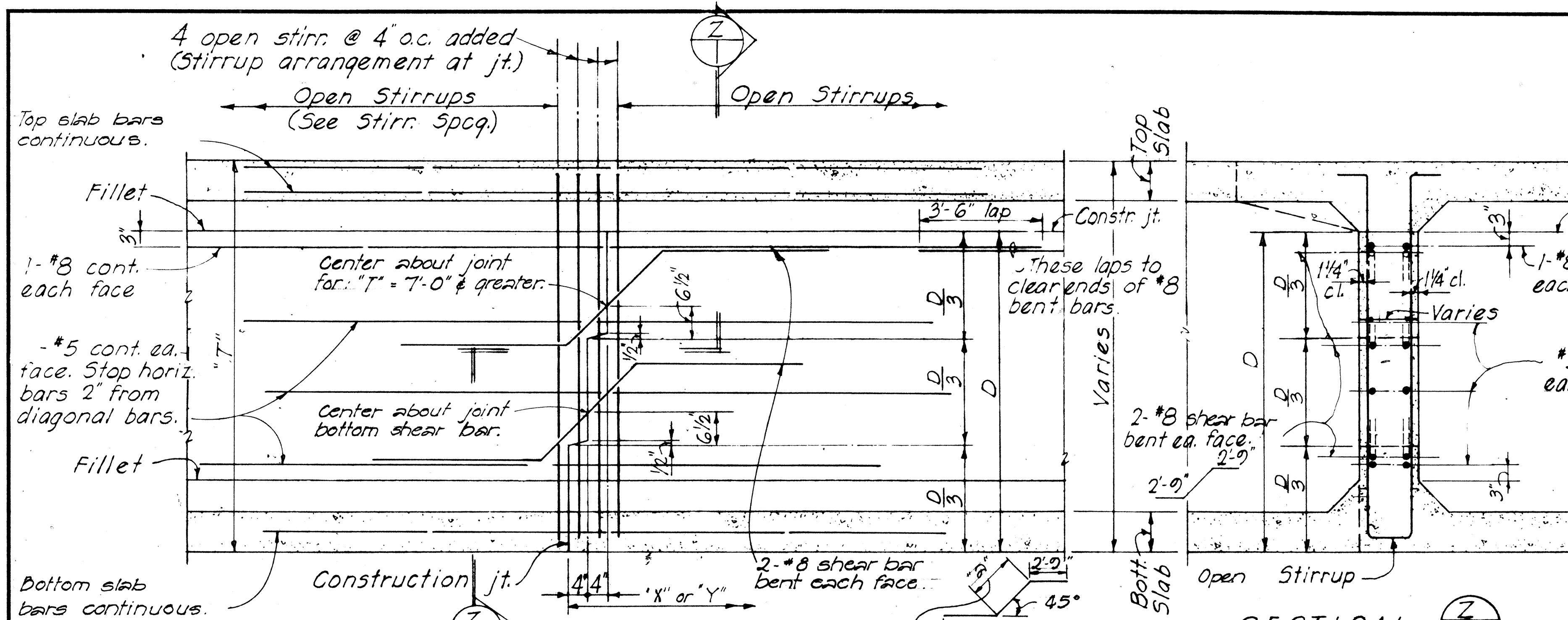
If the Contractor elects to leave top slab forms in place, form removal opening shall be omitted and replaced by -3" vent.

No vertical shoring shall be placed in the center half of top slab span W.



114

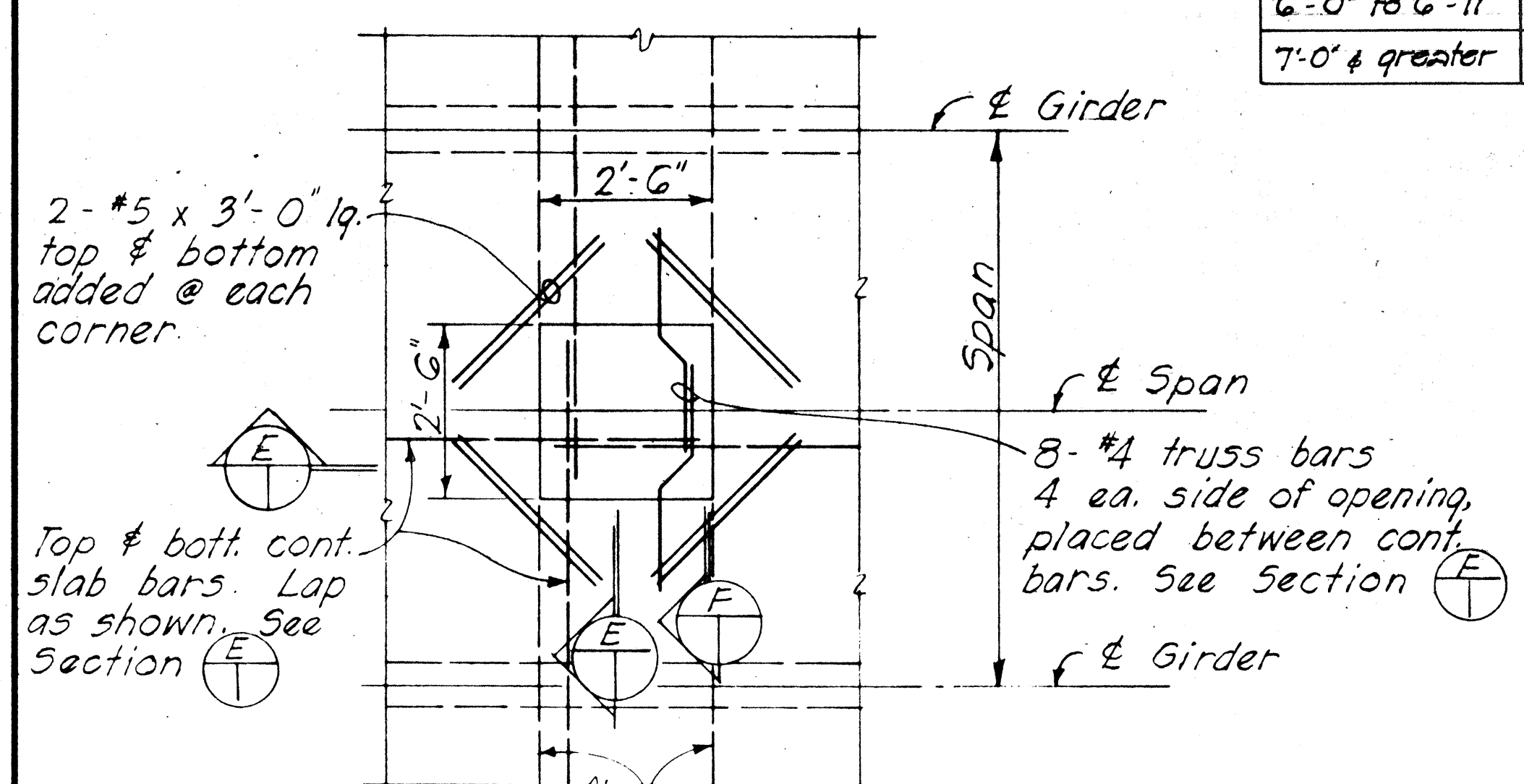
July 1967



GIRDER STEM CONSTRUCTION JOINT

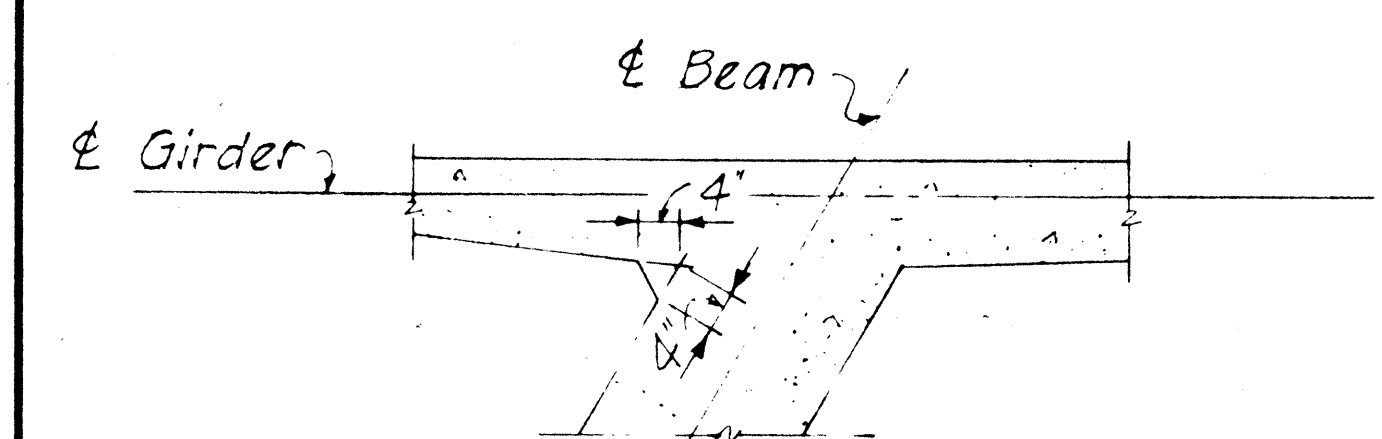
Depth "T"	"a"
4'-11" & smaller	1'-0"
5'-0" to 5'-11"	2'-0"
6'-0" to 6'-11"	2'-3"
7'-0" & greater	3'-0"

NOTE: D = Depth of girder stem to bott. of slab.



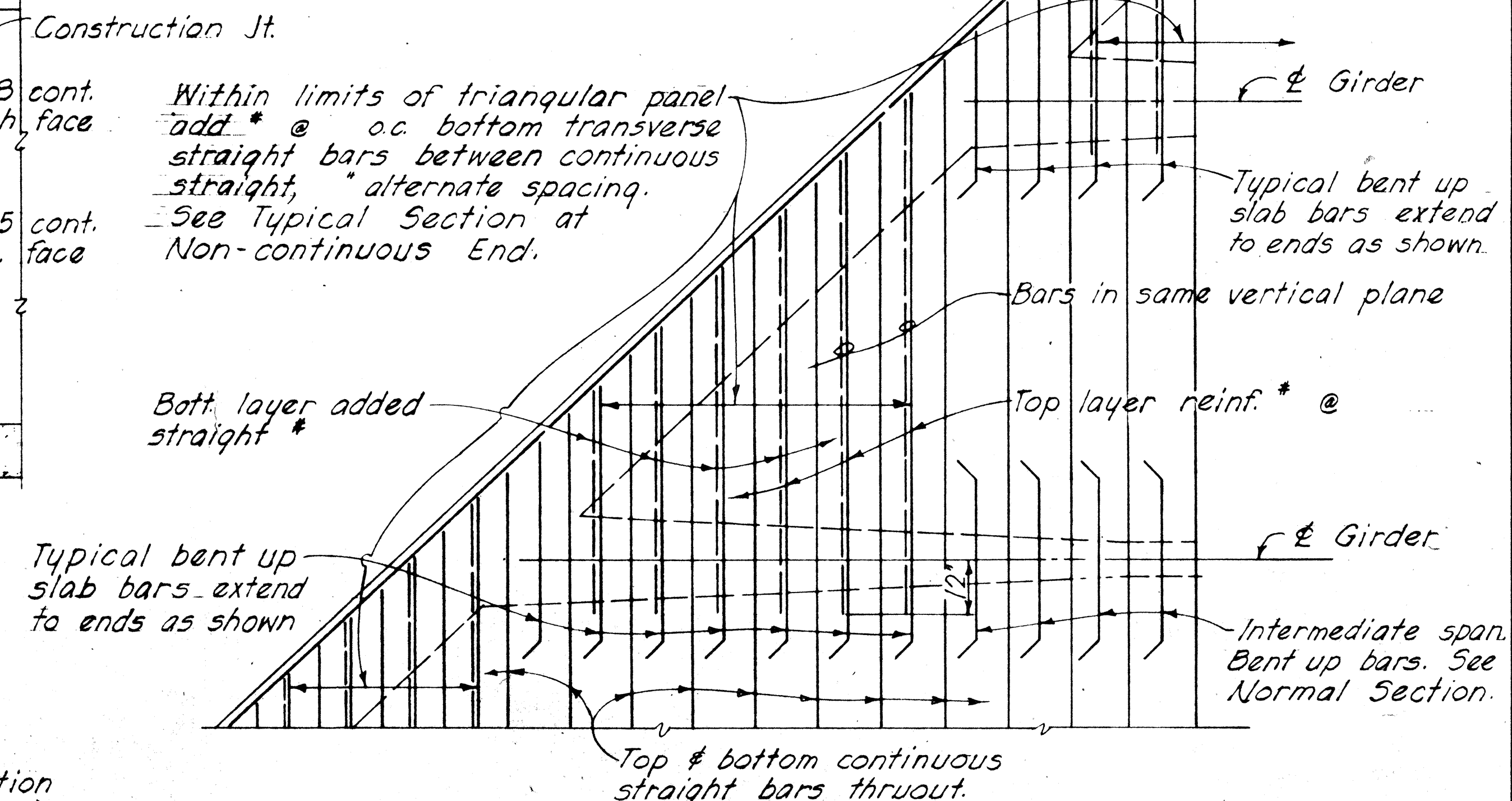
Note: Final location of opening shall be determined by the Engineer. Form removal opening may extend from edge of deck with approval of the Engineer. Lap small longitudinal deck bars as shown on Section E.

PART PLAN - DECK SHOWING FORM REMOVAL OPENING

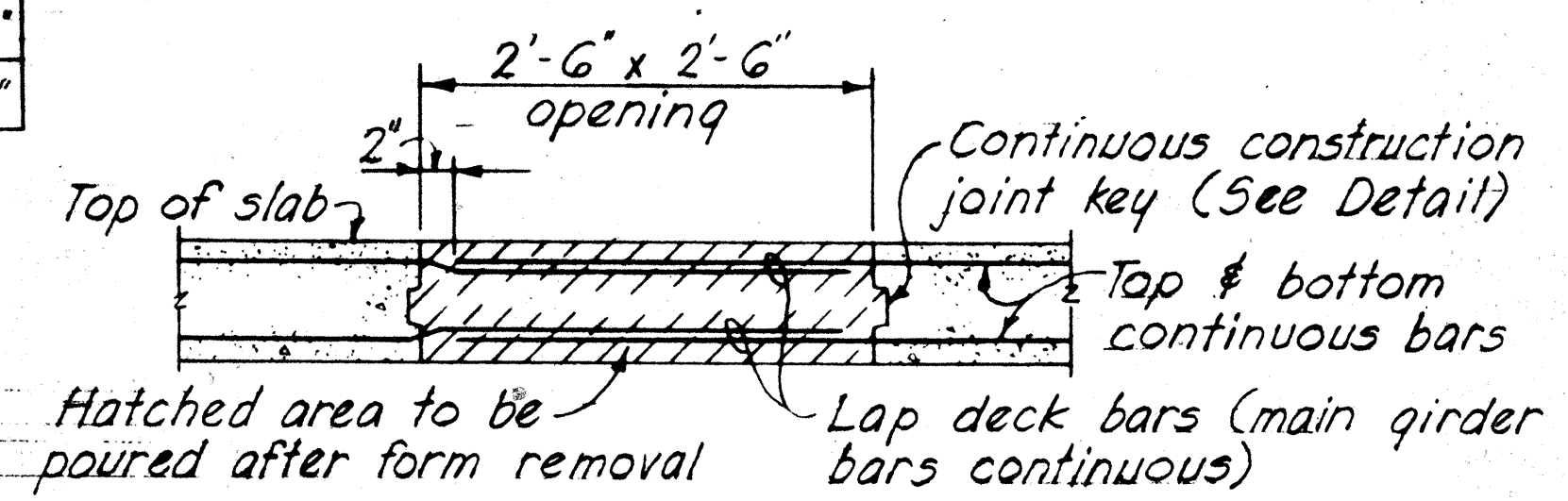


TYPICAL DETAIL OF VERTICAL CHAMFER AT ACUTE INTERSECTION OF SKEWED CONCRETE MEMBER

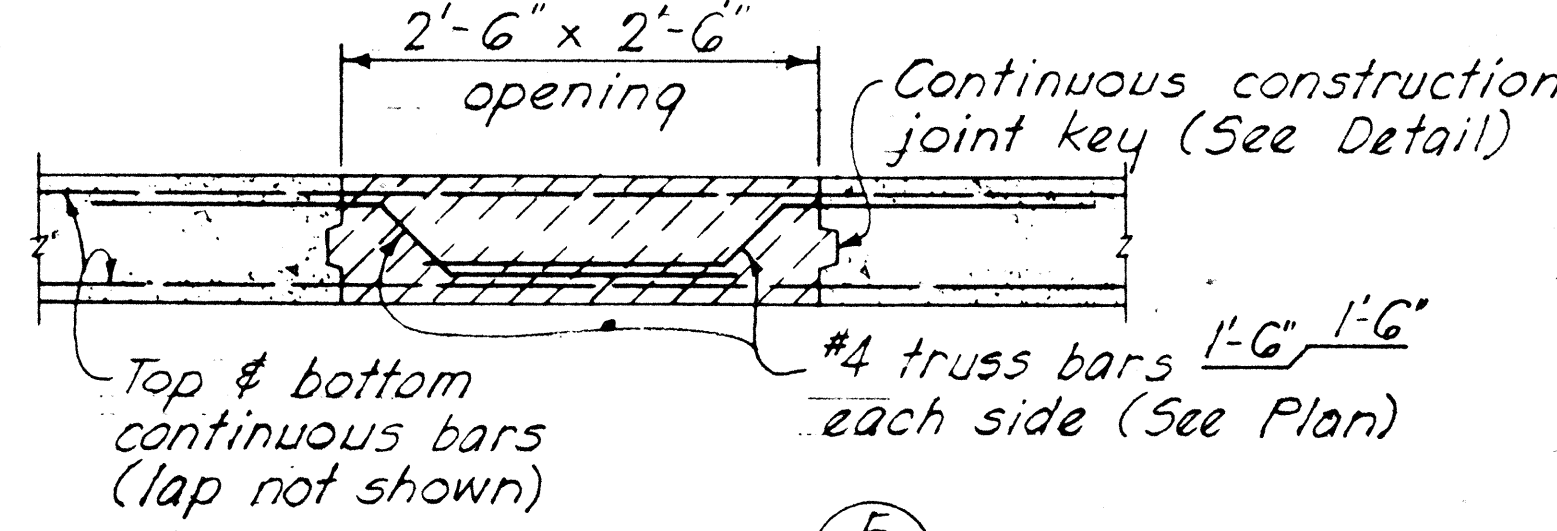
NOTE:
D = Depth of girder stem to bottom of slab.
S = Spacing of #5 cont. girder stem longitudinal bars.
For additional details see Normal Section of the Plans.



PART PLAN - TYPICAL ARRANGEMENT OF TOP SLAB REINFORCEMENT AT SKEWED ENDS

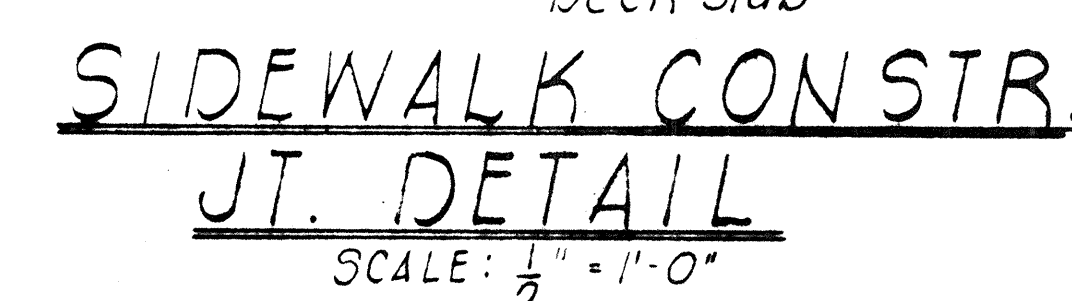


NOTE: Form removal opening at top slab shall not be located where main girder bars occur.



SECTION F

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.



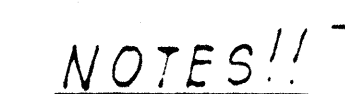
REVISION
28 Mar 67



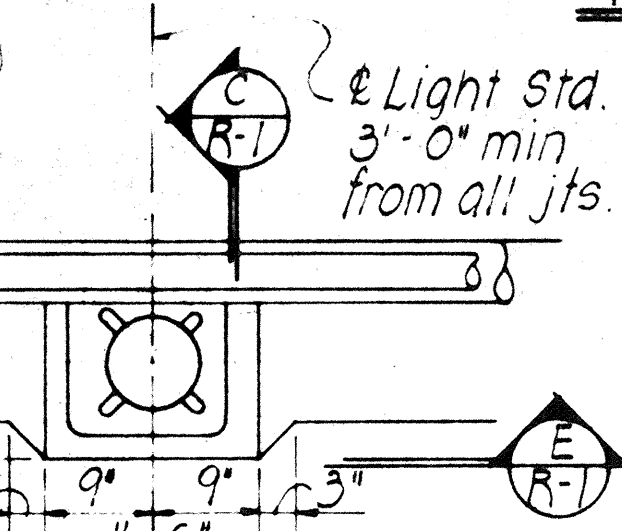
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.



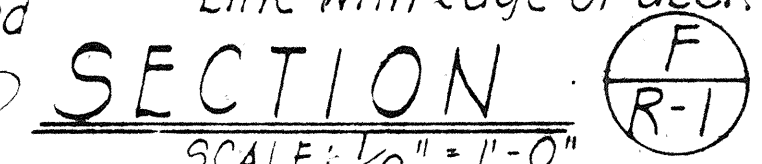
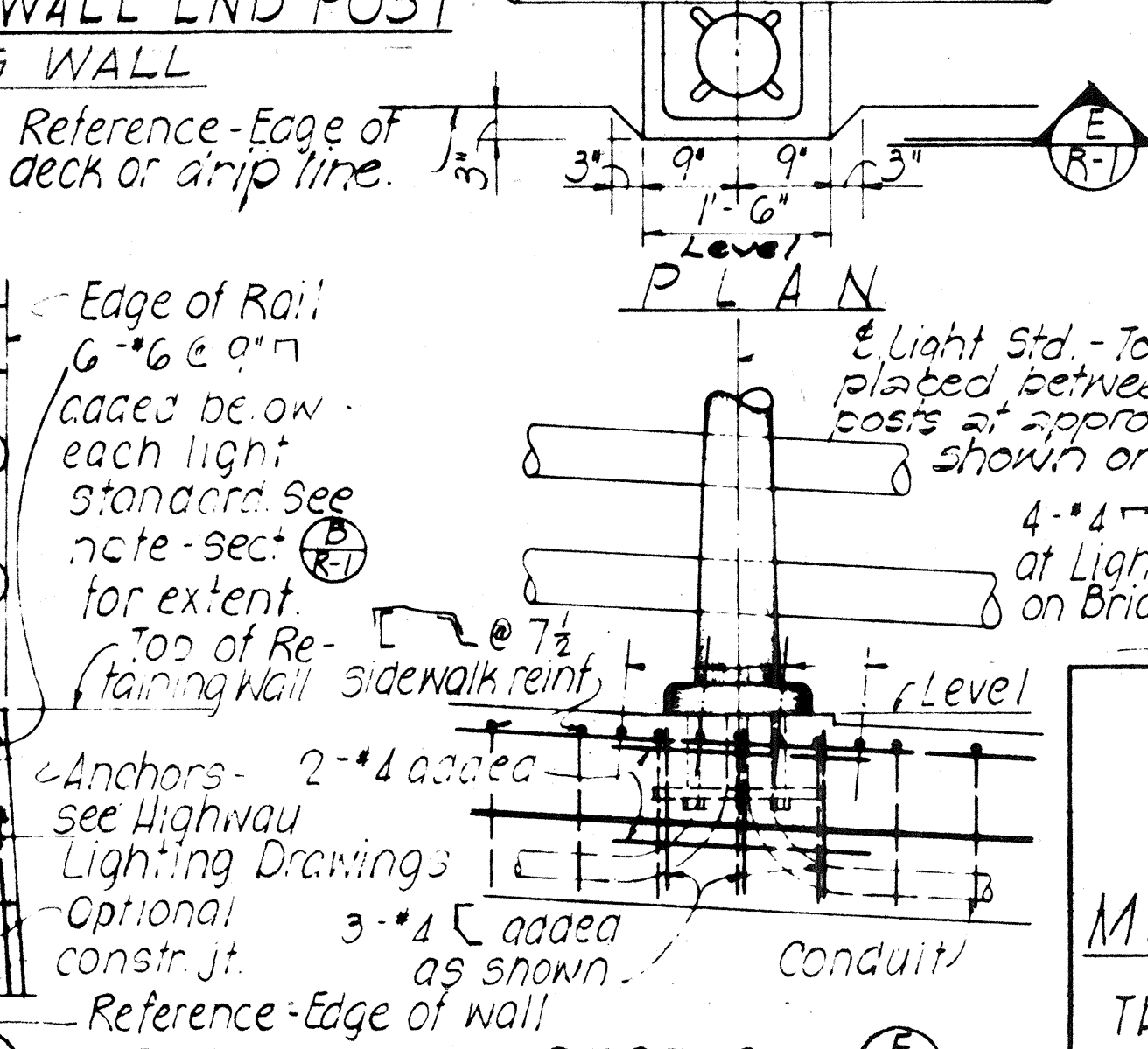
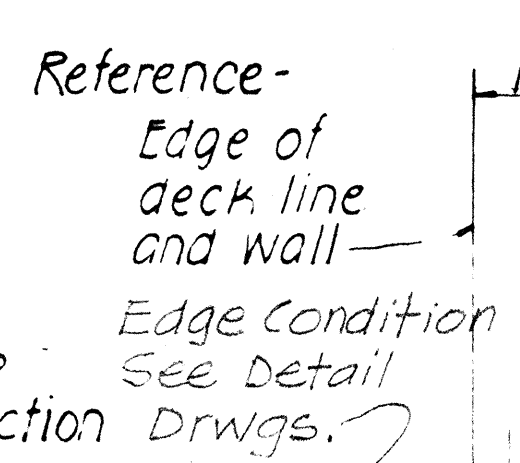
SCALE: $\frac{1}{2}" = 1' - 0"$



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



SCALE: $\frac{3}{8}" = 1'-0"$



THREE RAIL COMBINATION TYPE

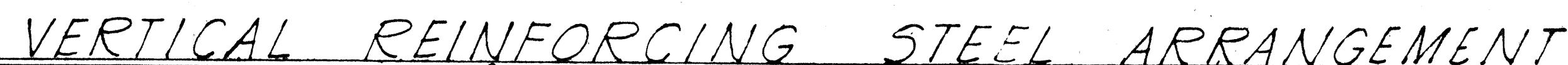
INTERSTATE ROUTE H-1
F.A.I. PROJ NO I-H-1 (GA) = 12, UNIT 2
Scale as Noted Date: 1969

SHEET No. 65 OF 11 SHEETS

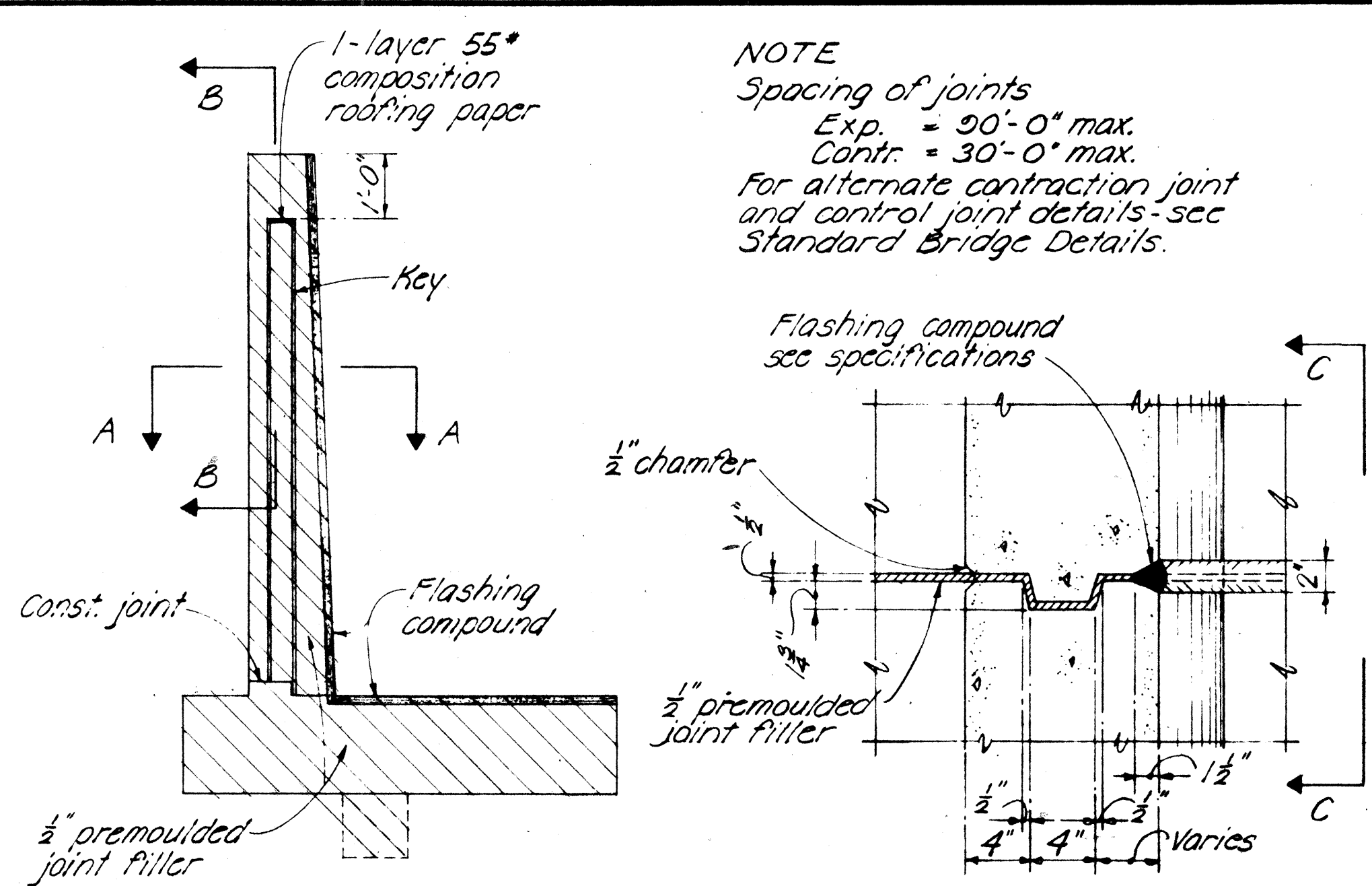
All draft angles = 3°



Maximum "MK"	4R	5R	6R	7R	8R	9R	10R	11R	12R	13R	14R	15R	16R	17R	18R	19R	20R	21R	22R	23R	24R	26R	28R	30R
a	6"	6"	6"	12"	12"	12"	12"	12"	12"	12"	15"	18"	21"	21"	21"	21"	24"	24"	27"	30"	33"	39"	39"	51"
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"	18"	18"	18"	18"	21"	21"	21"	21"	24"	24"	27"	30"	36"
L	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'	5.5'	6.0'	6.5'	6.75'	7.25'	7.75'	8.25'	8.75'	9.25'	9.75'	10.25'	10.5'	11.0'	11.5'	12.0'	13.0'	14.0'	15.0'
"a" bars	*3@12"	*3@12"	*4@12"	*4@9"	*4@5 1/2"	*5@6"	*6@7"	*6@6"	*6@5"	*7@9"	*6@5 1/2"	*7@6"	*8@6"	*8@6"	*9@6"	*9@6"	*10@6"	*10@6"	*10@5 1/2"	*10@6"	*10@5 3/4"	*11@6"	*11@5"	*11@4 1/2"
"b" bars	*3@12"	*3@12"	*3@12"	*3@9"	*4@11"	*4@6"	*5@7"	*5@6"	*5@5"	*7@9"	*6@5 1/2"	*7@6"	*7@6"	*8@6"	*9@6"	*9@6"	*10@6"	*10@6"	*10@5 1/2"	*10@6"	*10@5 3/4"	*10@6"	*10@5"	*10@4 1/2"
"c" bars								*4	*4	*4	*4	*4	*5	*5	*5	*6	*6	*6	*6	*7	*7	*7	*7	*7
"d" bars	*3@12"	*3@12"	*3@12"	*3@12"	*4@18"	*4@15"	*4@15"	*4@12"	*4@11"	*4@9"	*5@12"	*5@12"	*5@10"	*5@9"	*5@9"	*5@8"	*6@10"	*6@9"	*7@12"	*7@11"	*7@10"	*7@9"	*7@9"	*7@6"

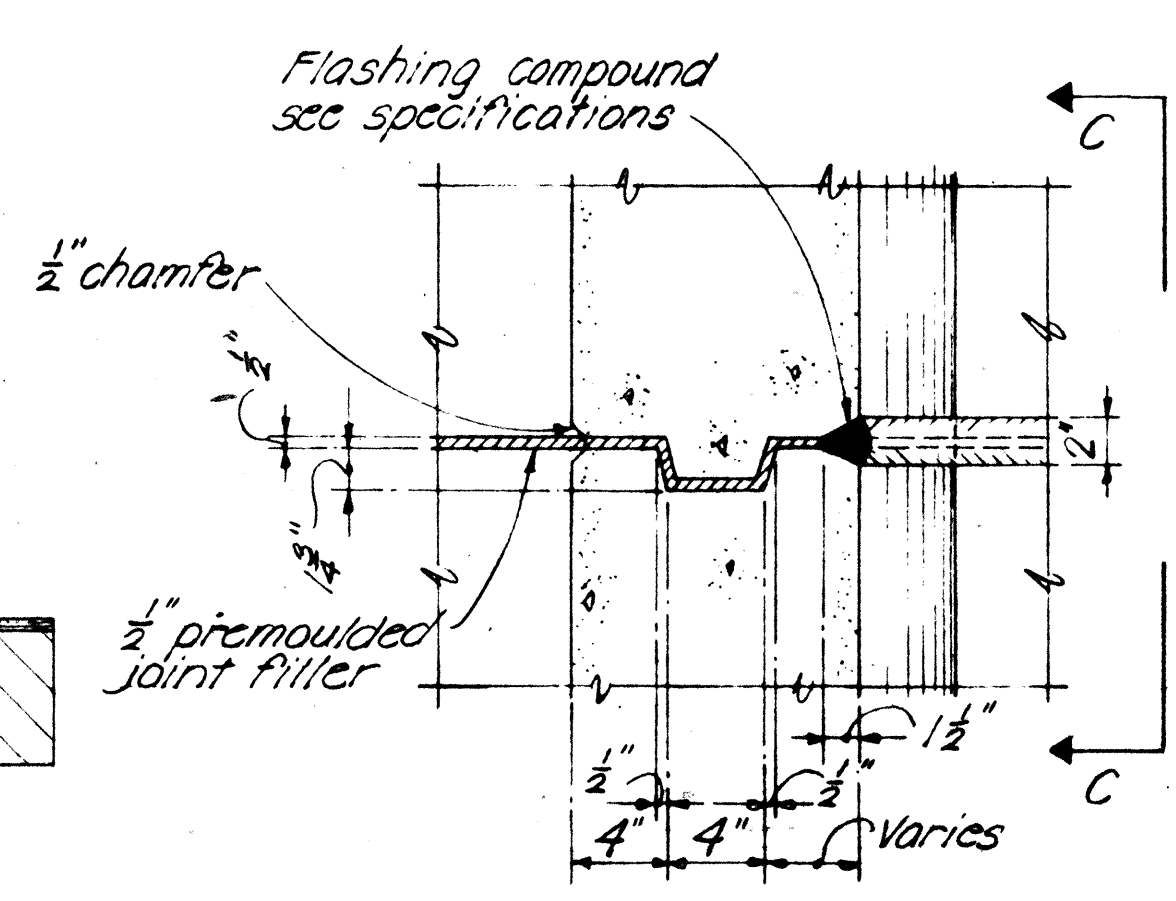


SHEET No. 57 OF 11 SHEETS

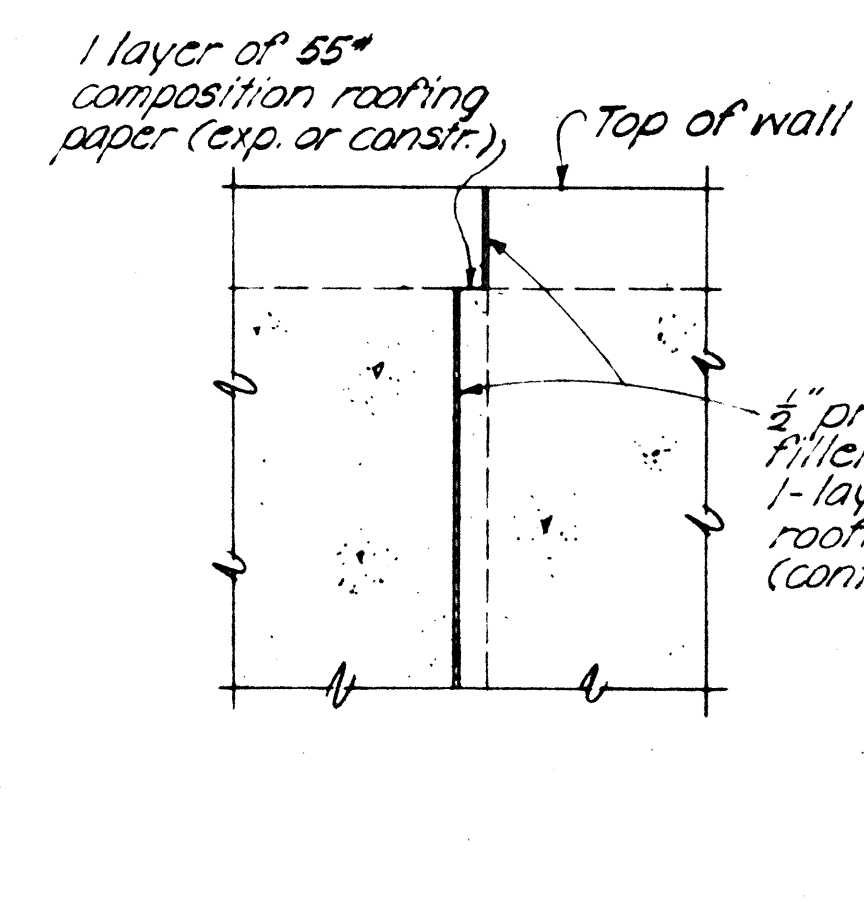


JOINT ELEVATION

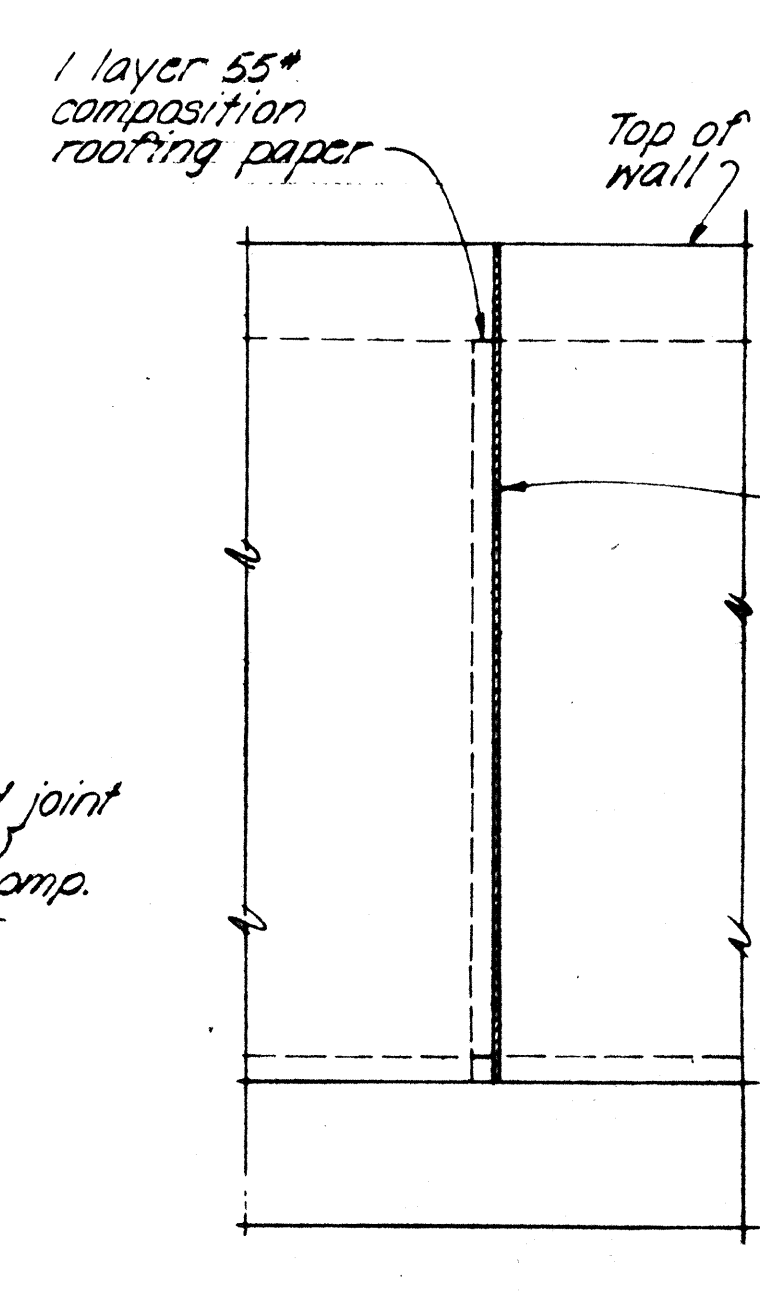
NOTE
Spacing of joints
Exp. = 90'-0" max.
Contr. = 30'-0" max.
For alternate contraction joint and control joint details-see Standard Bridge Details.



SECTION A-A

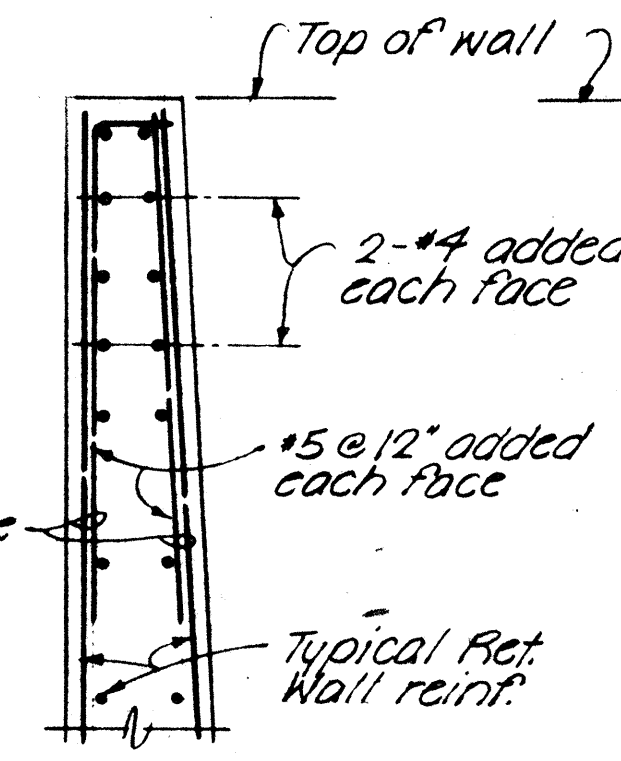


SECTION B-B

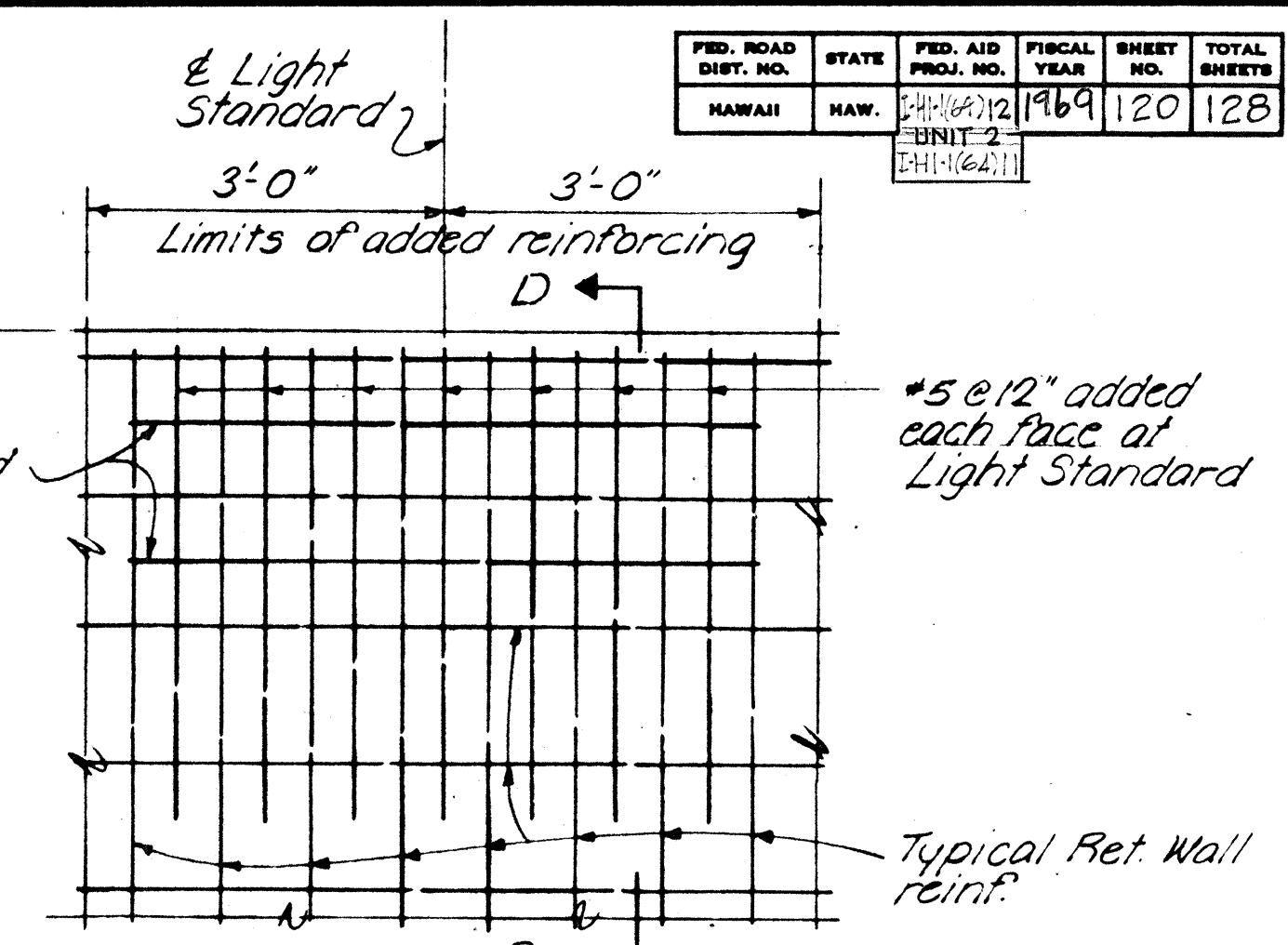


SECTION C-C

NOTE:
Limits of added reinf.
Height 0'-18" L = 3'-0"
Height 19'-30" L = 6'-0"

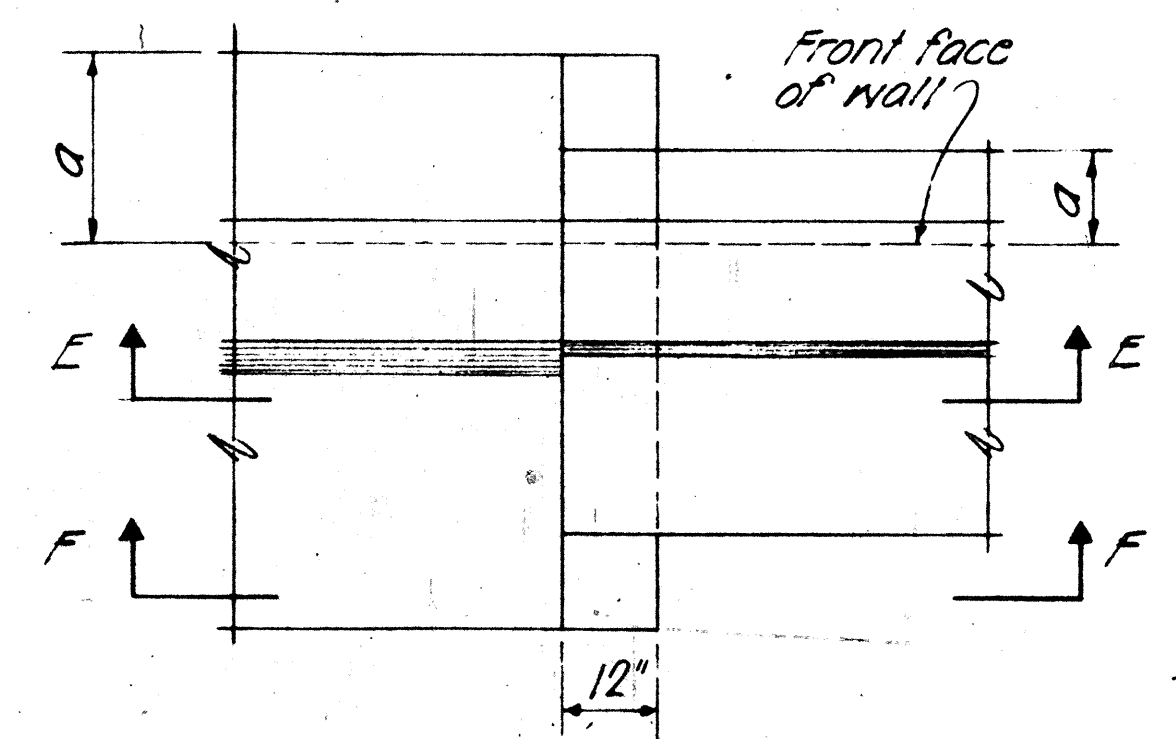


SECTION D-D

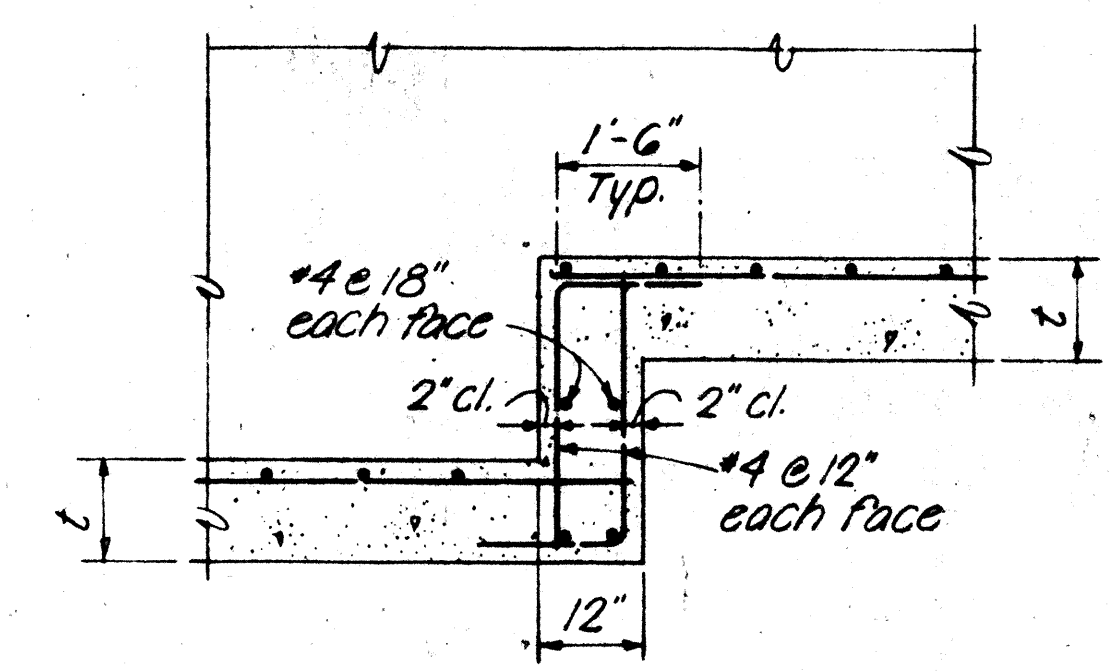


ELEVATION

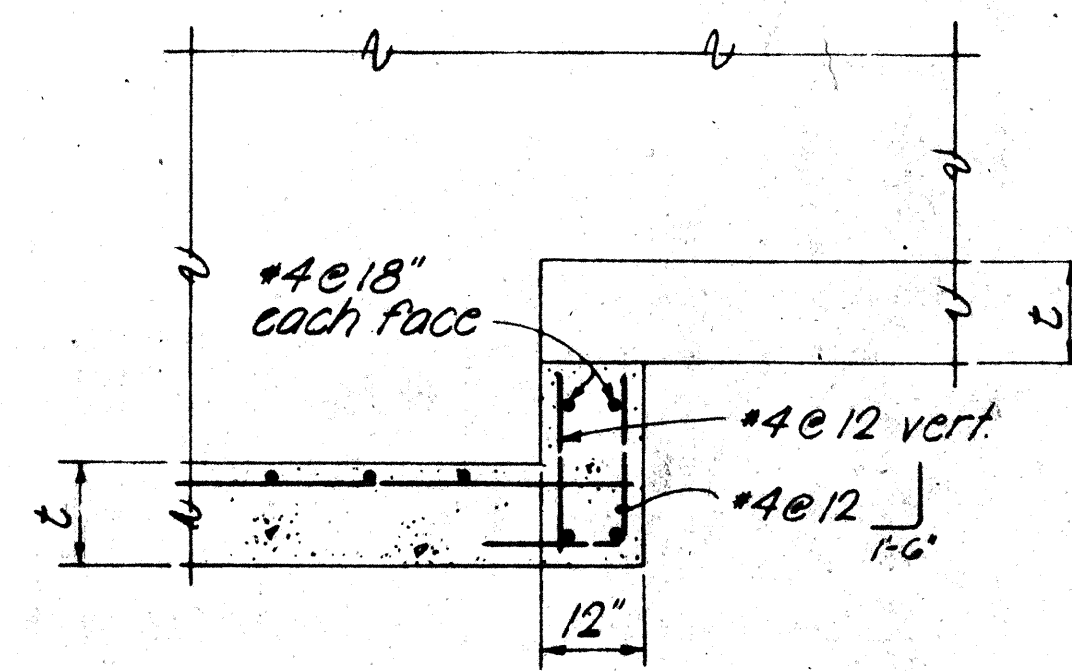
TYPICAL ADDED REINFORCEMENT
AT LIGHT STANDARD BASE No Scale



PLAN

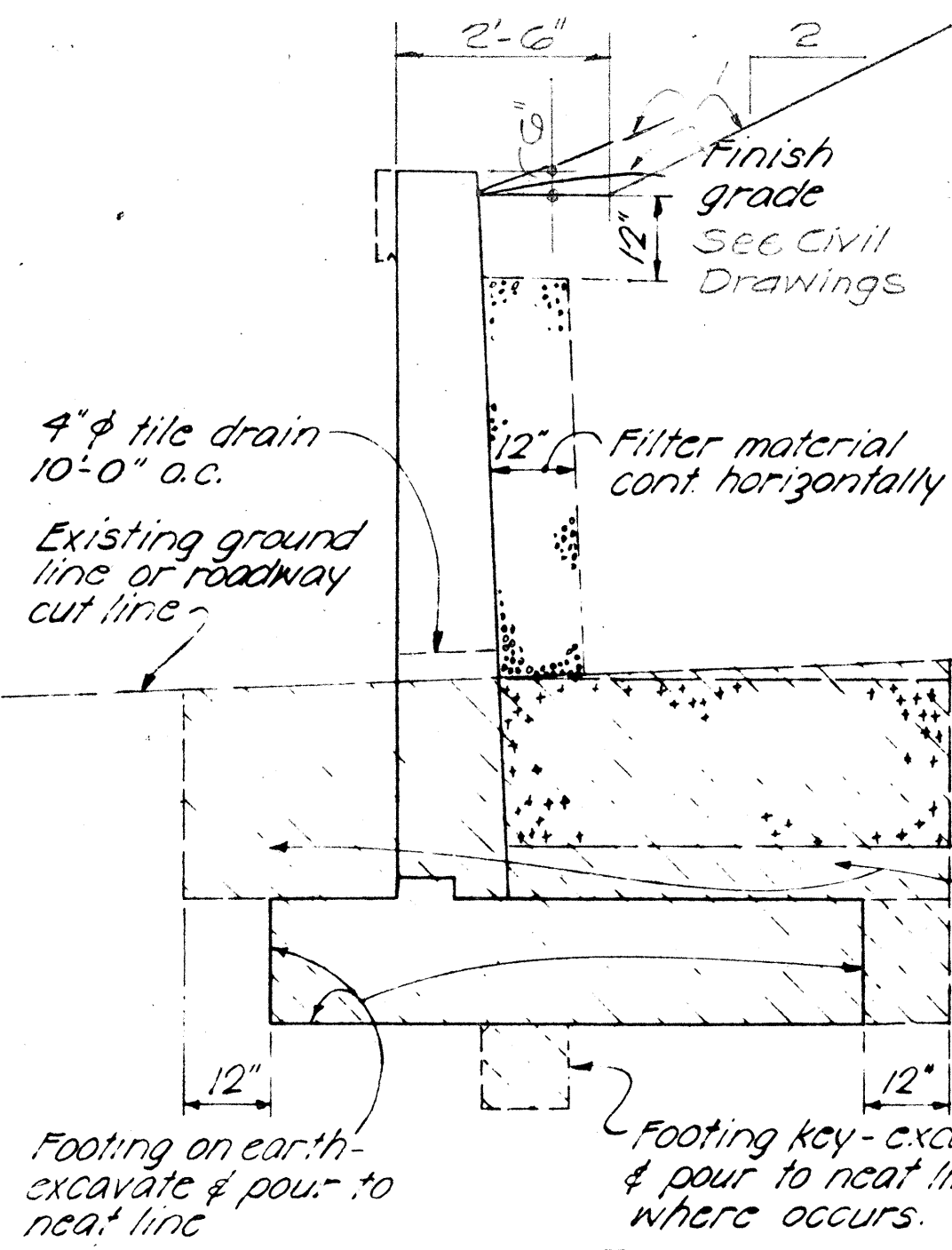


SECTION E-E



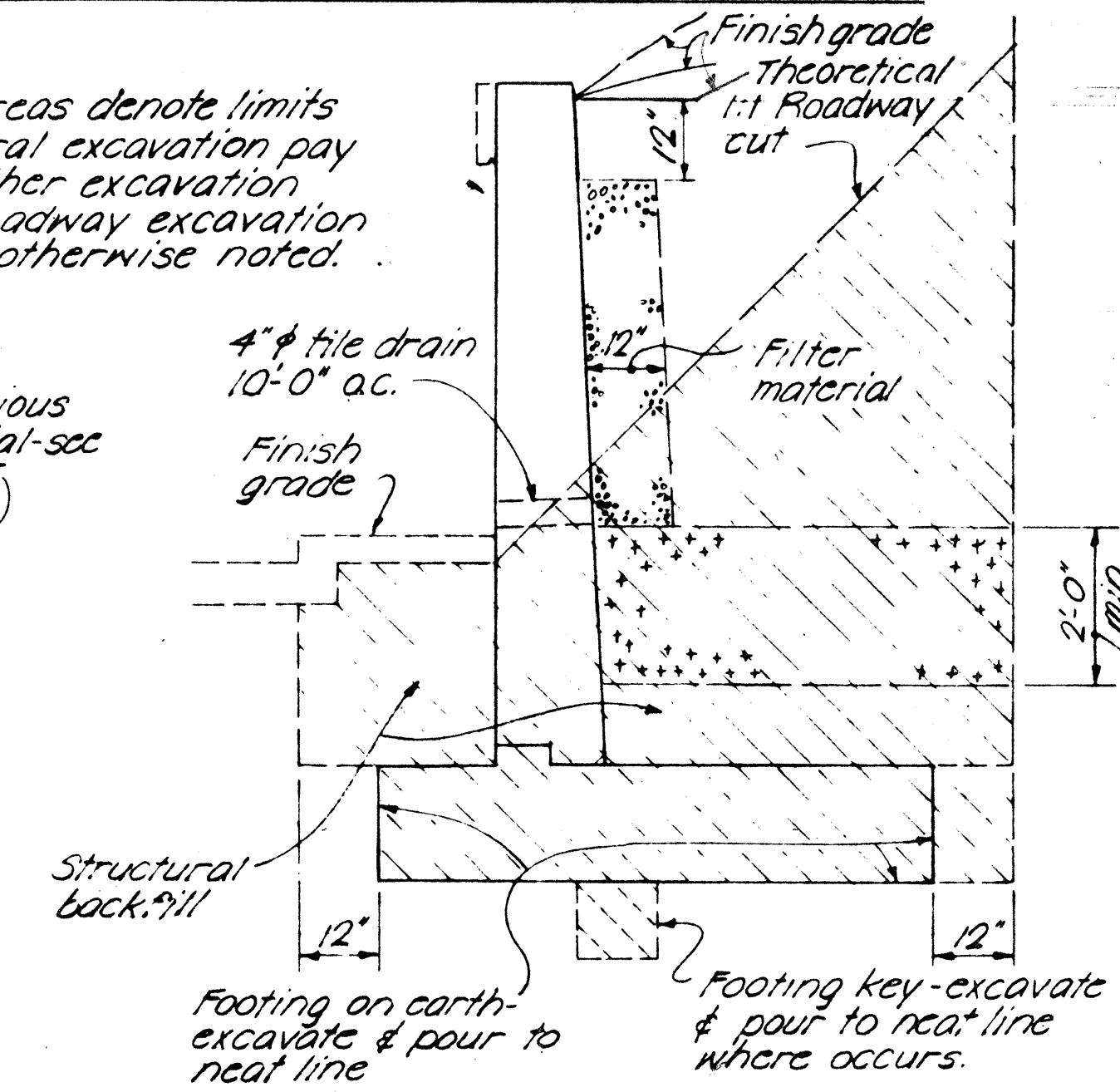
SECTION F-F

FOOTING STEP-UP DETAILS No Scale



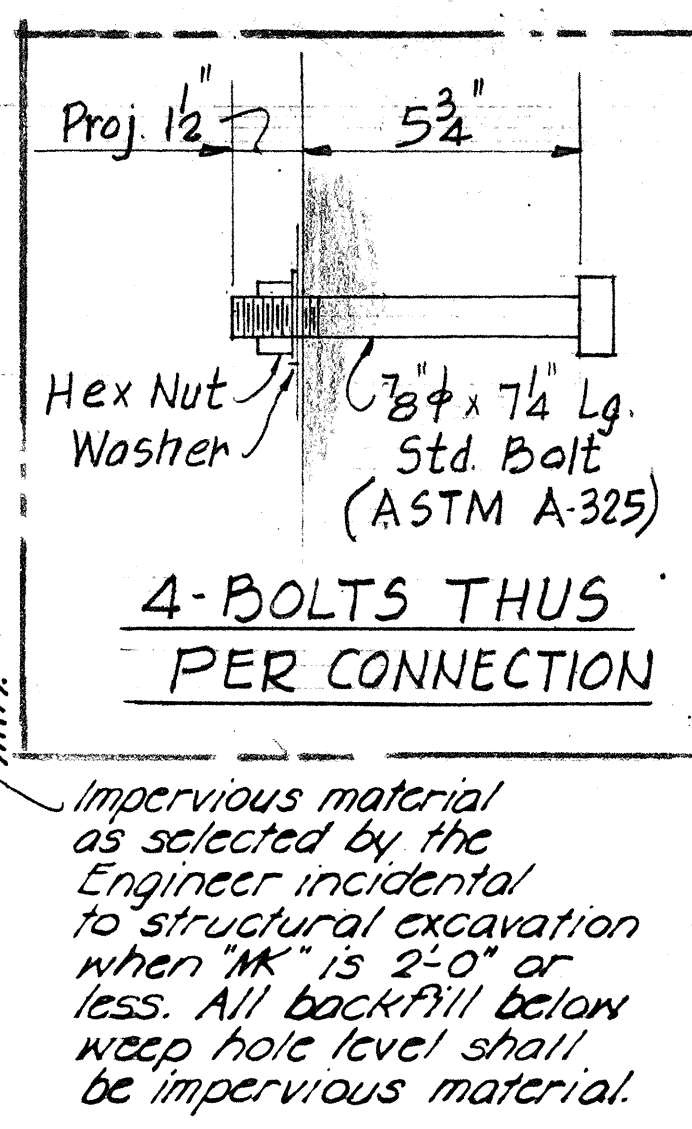
CASE I

NOTE
Hatched areas denote limits of structural excavation pay line. All other excavation shall be roadway excavation except as otherwise noted.



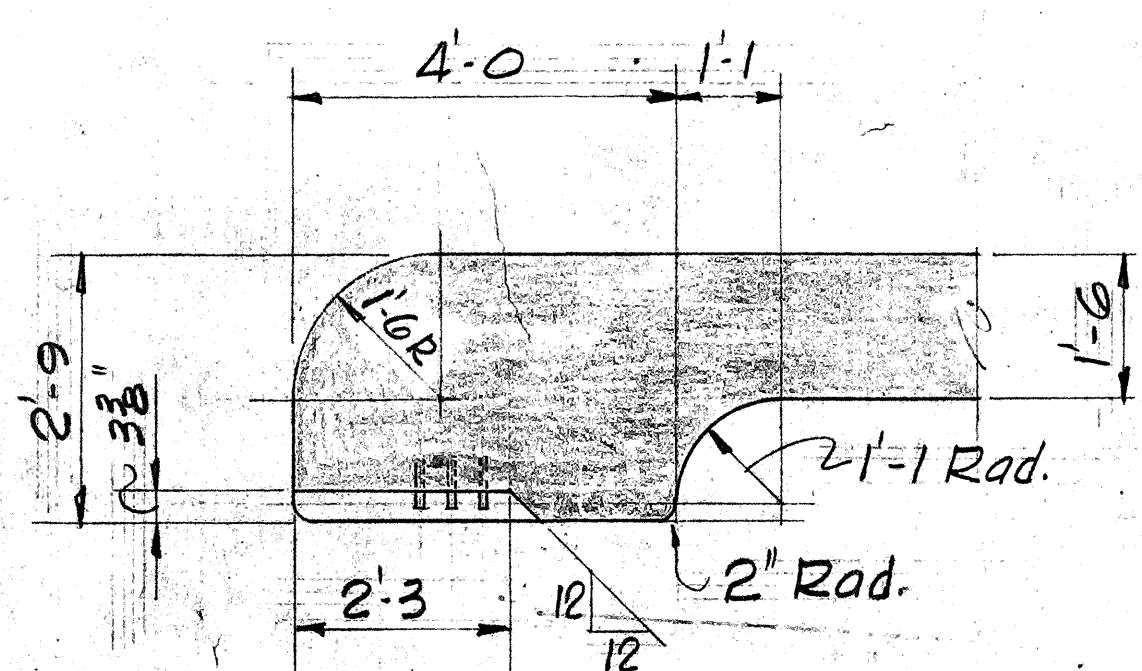
CASE II

STRUCTURAL EXCAVATION & DRAINAGE DETAILS No Scale

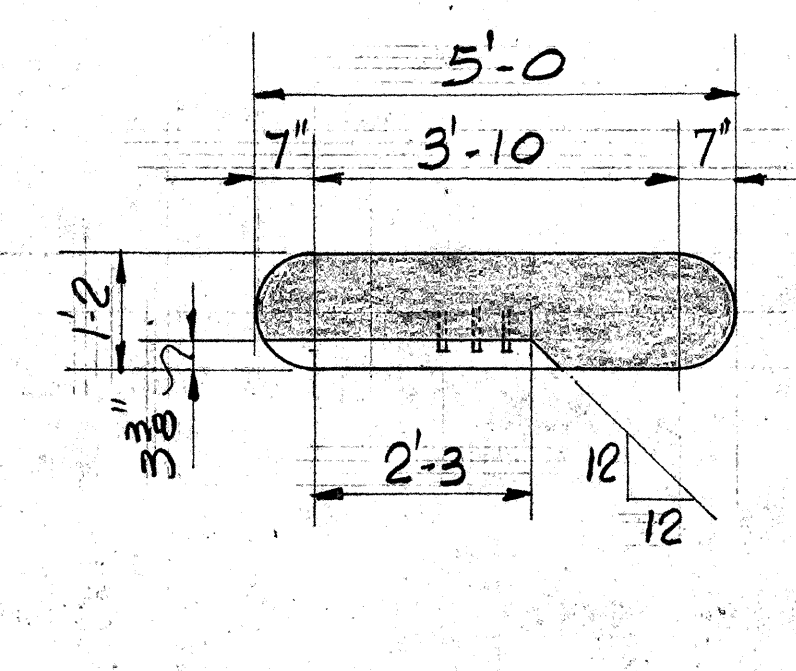


4-BOLTS THUS
PER CONNECTION

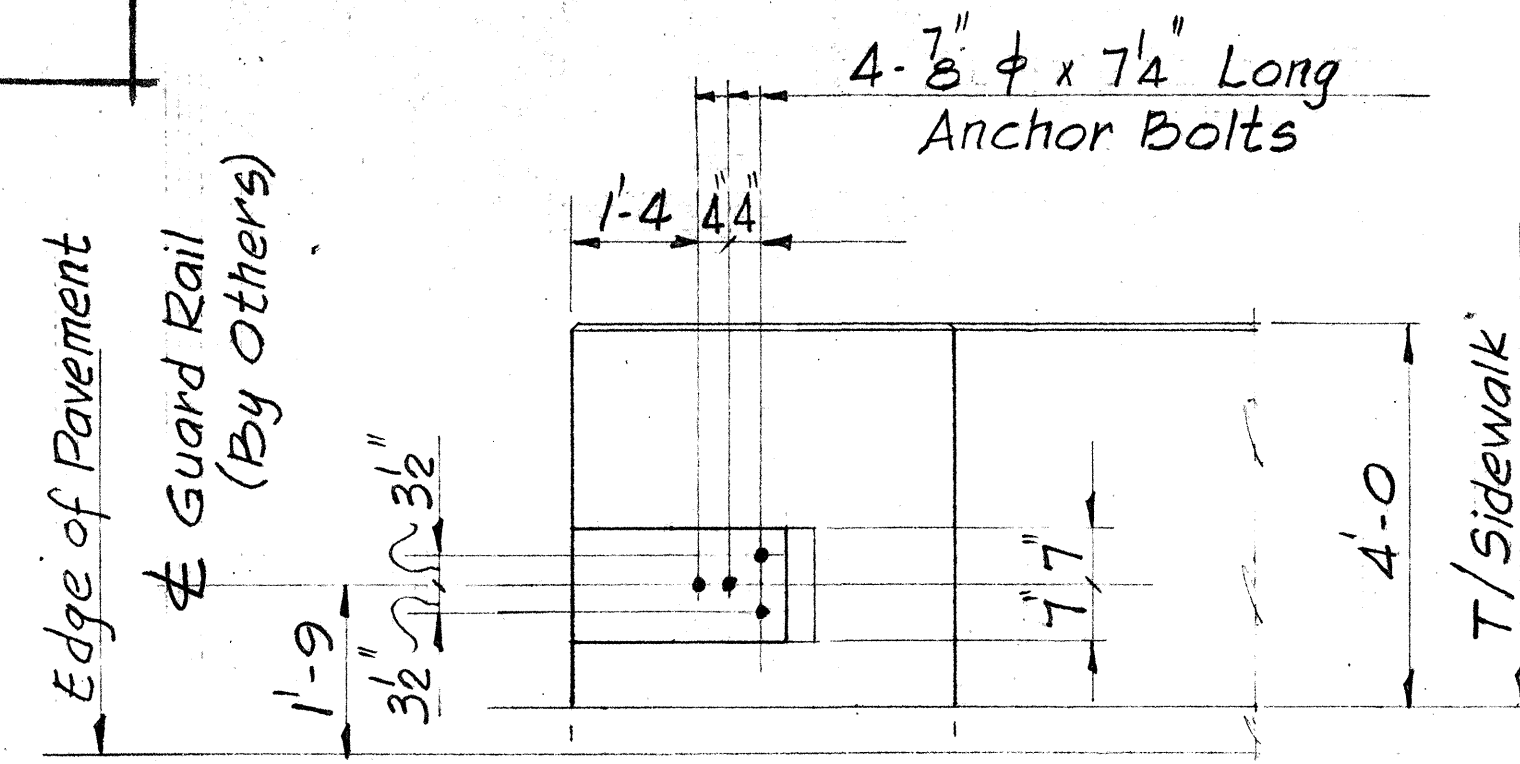
Edge of Pavement
& Guard Rail
(By Others)



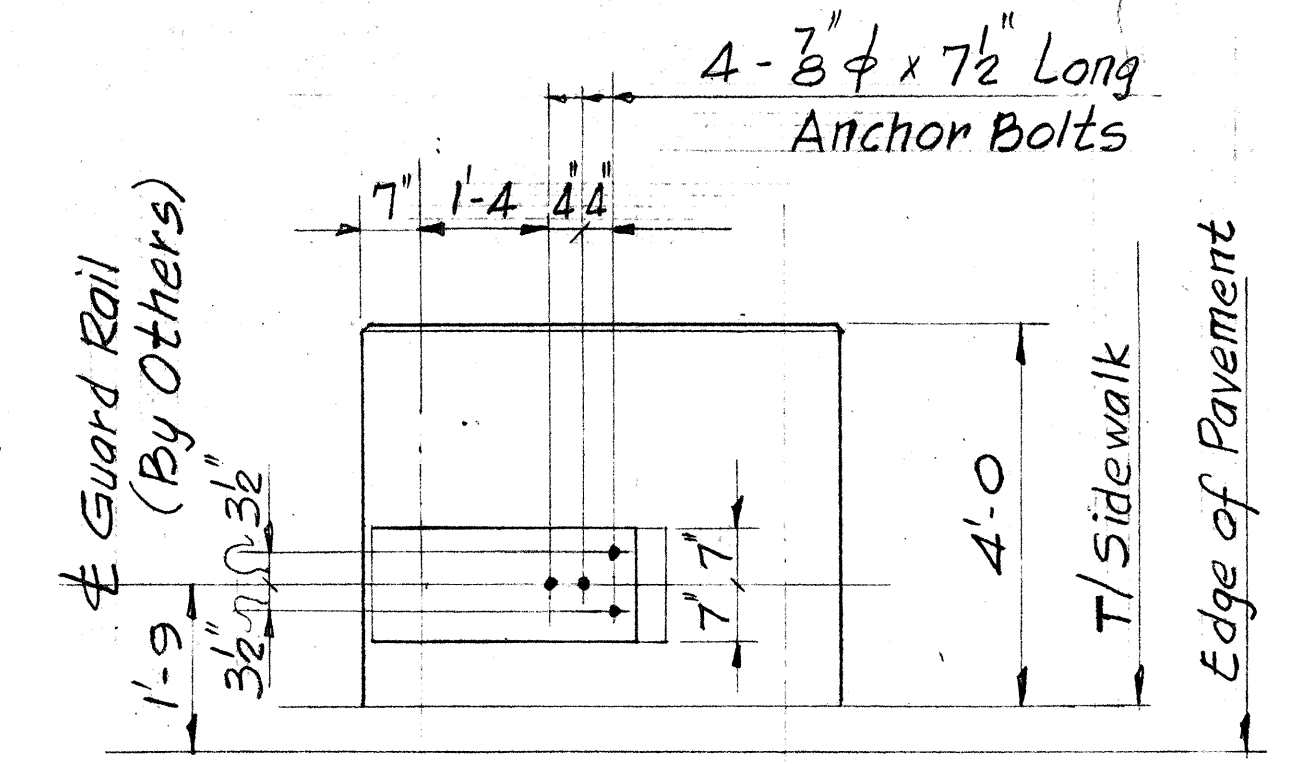
PLAN AT KAONOHI & KAAMILO



PLAN AT AIEA



ELEVATION



ELEVATION

GUARD RAIL CONNECTIONS AT WING WALLS

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

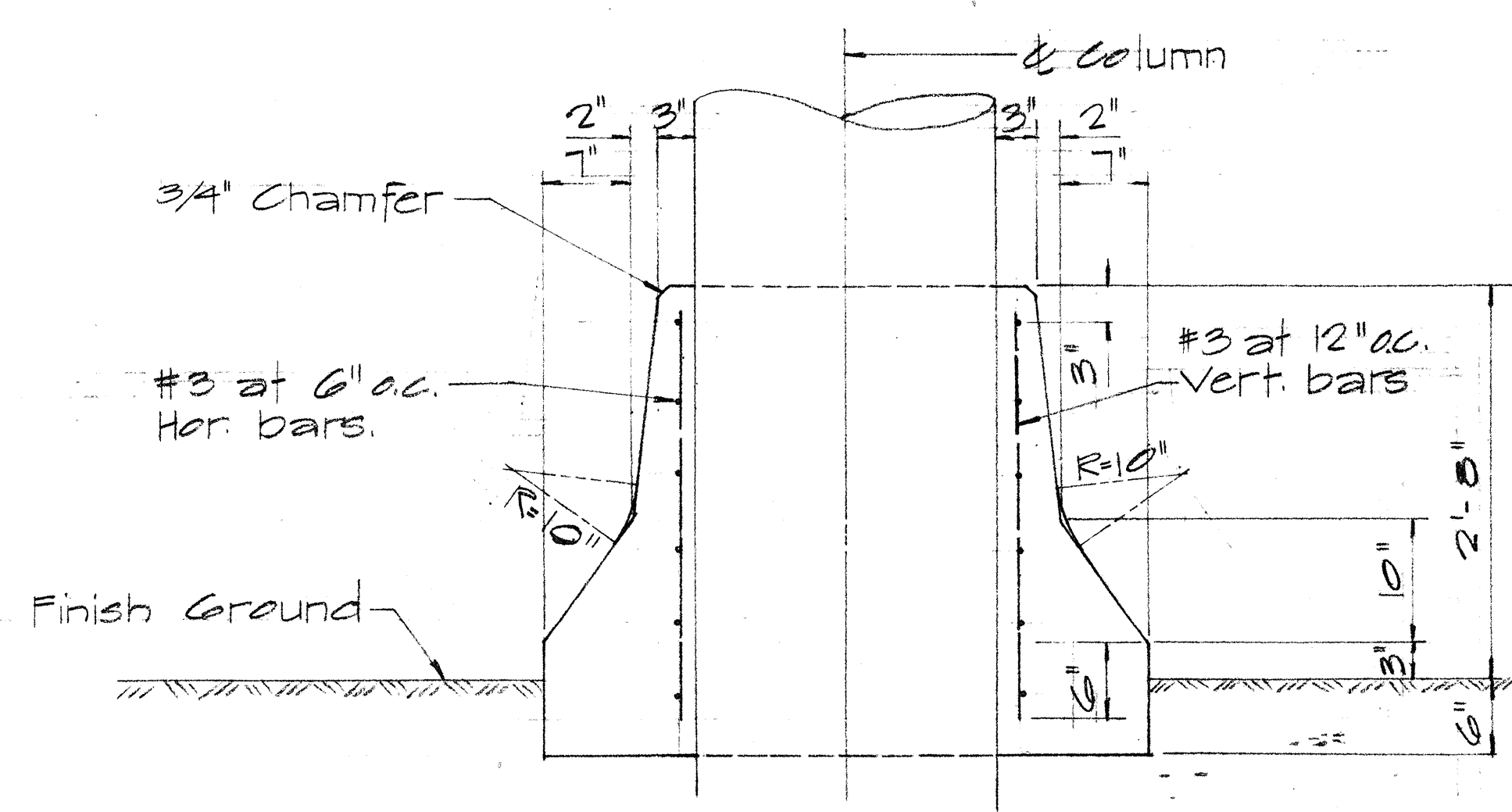
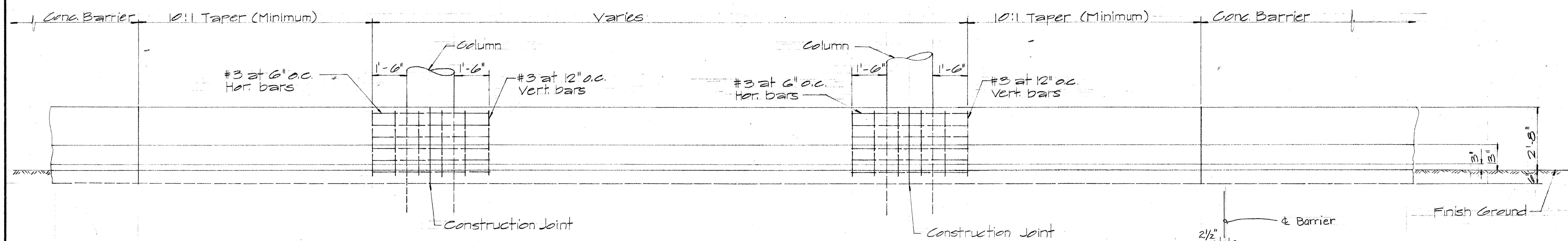
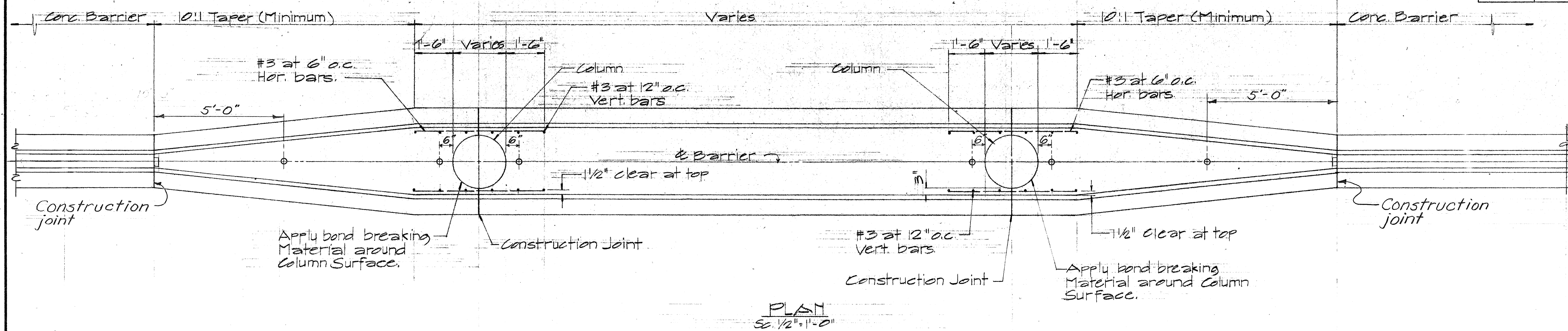
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RETAINING WALL TYPE T-1

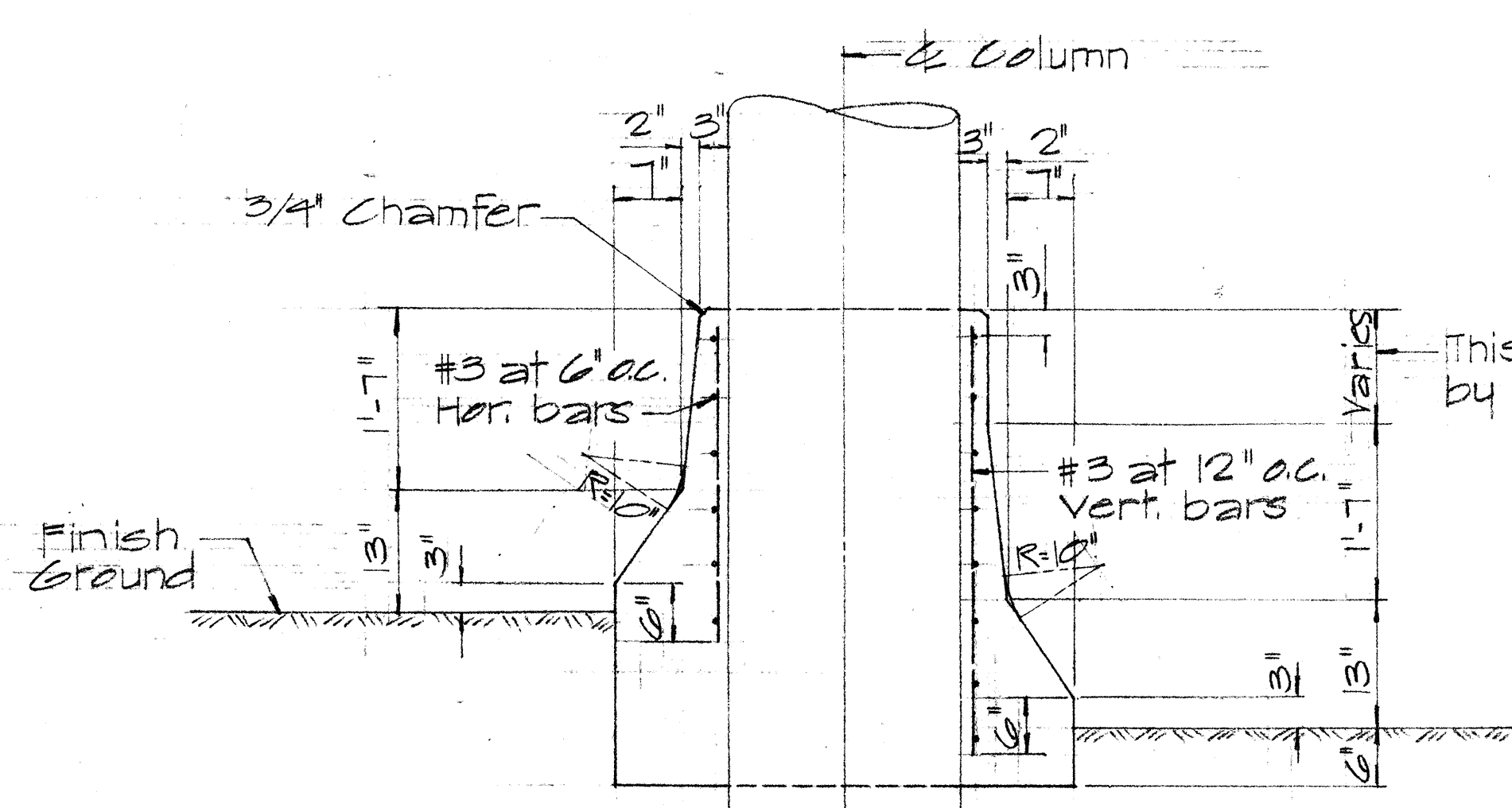
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-H-1(64)12, UNIT 2
SCALE AS NOTED DATE: 1969

SHEET No. 98 OF 11 SHEETS

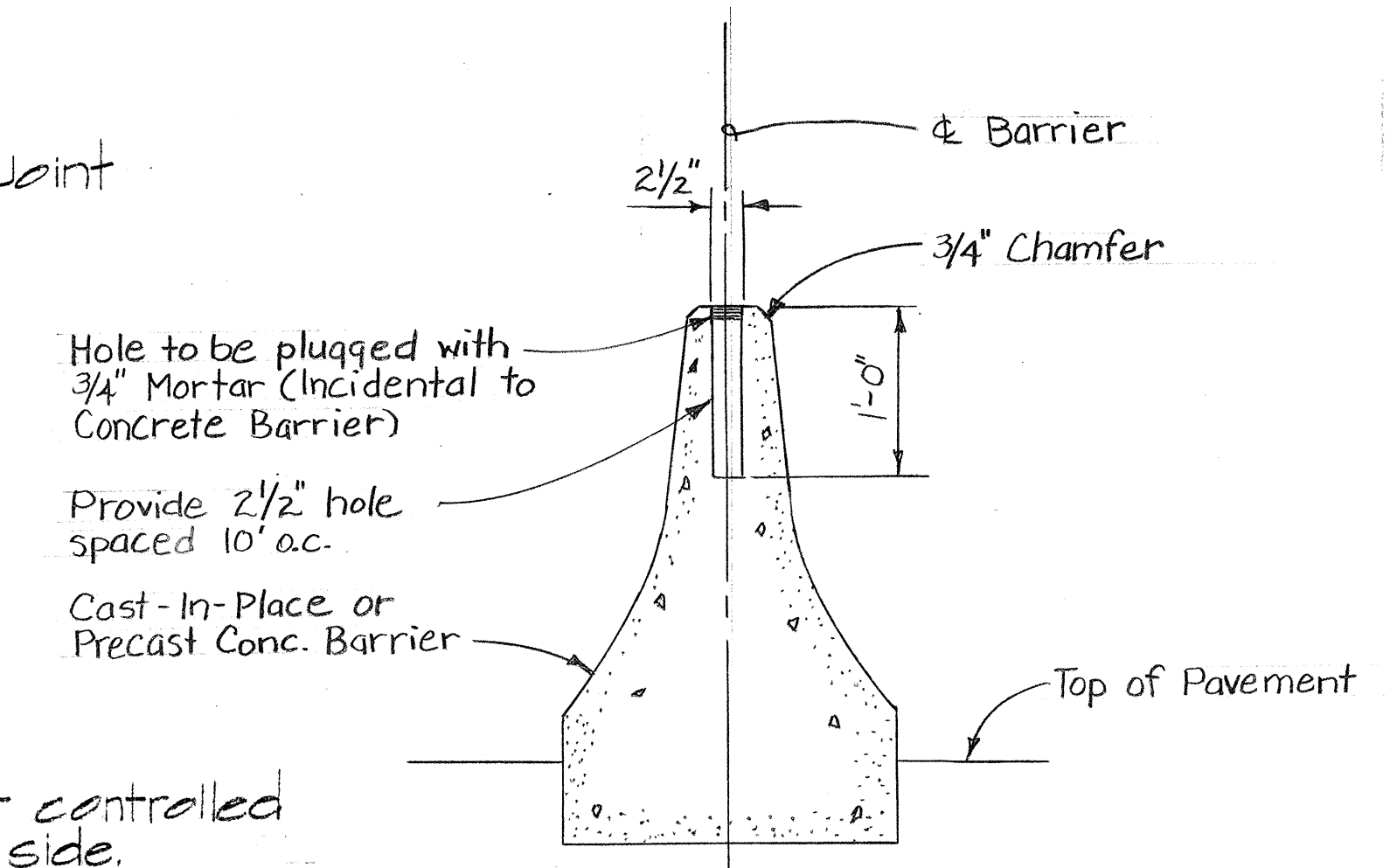
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(64):12 UNIT 2 I-HI-1(16):11	1969	121	128



TYP. SEC. AT TANGENT
Scale: 1" = 1'-0"



TYP. SEC. AT SUPER
Scale: 3/4" = 1'-0"



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

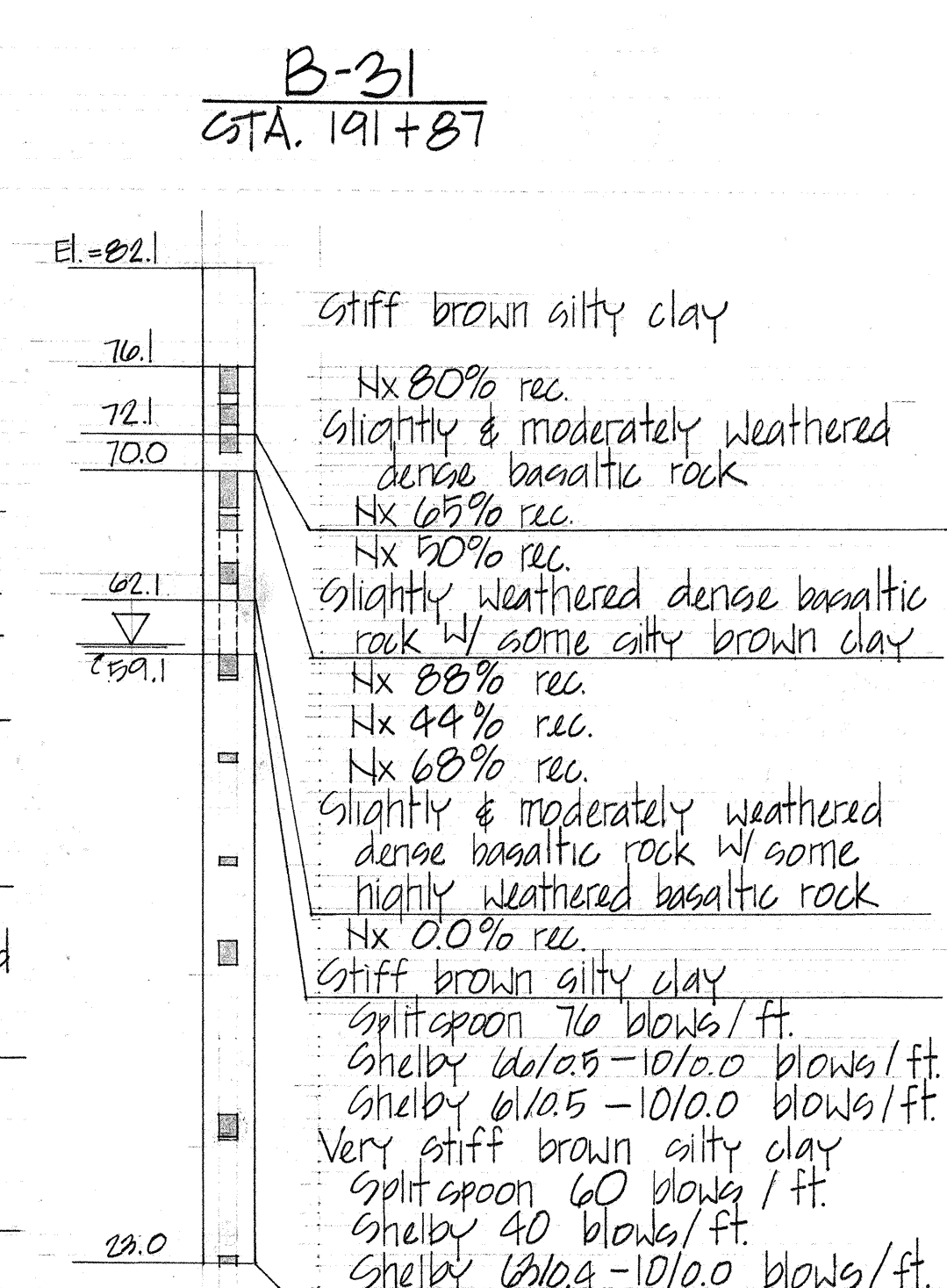
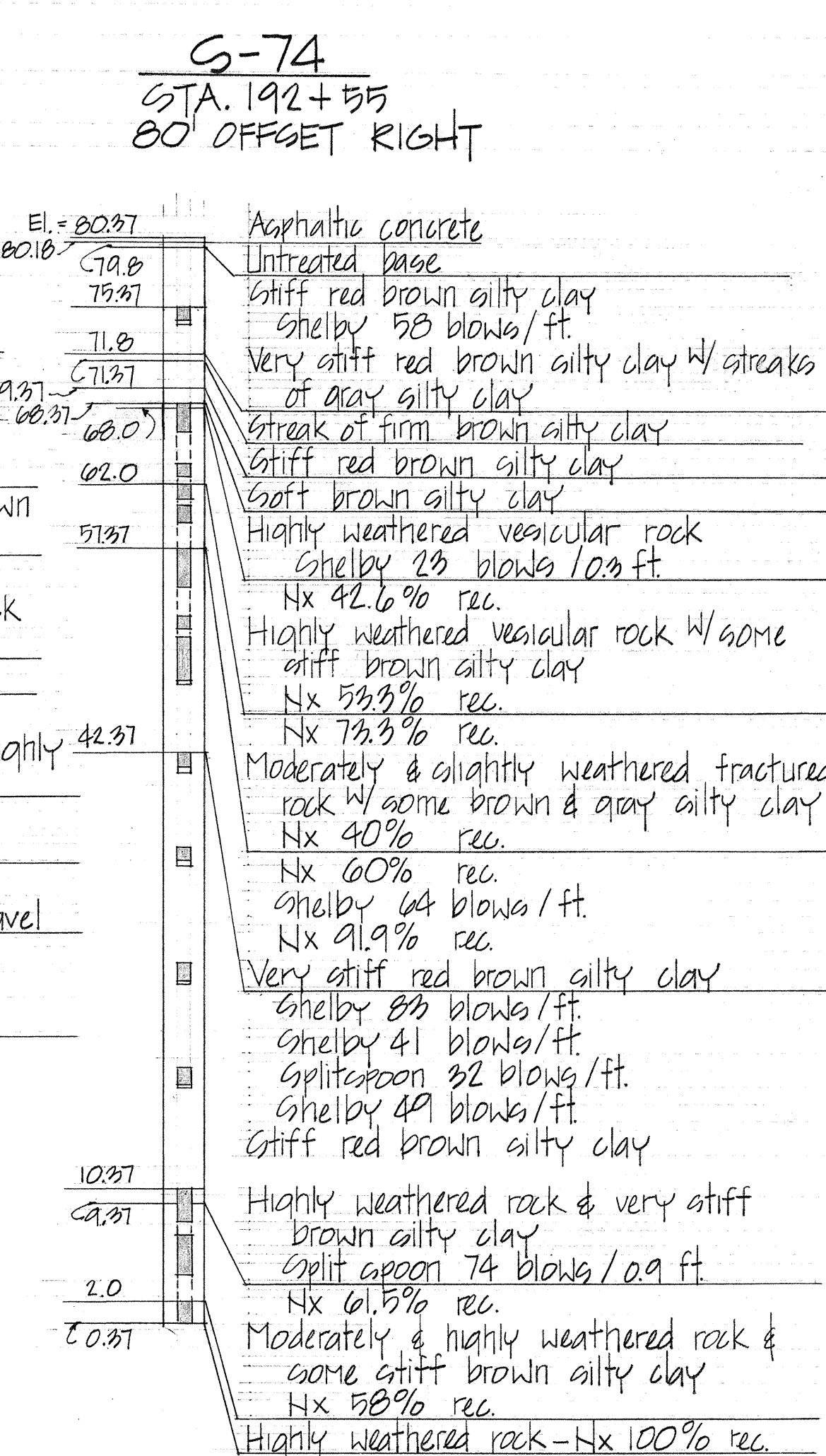
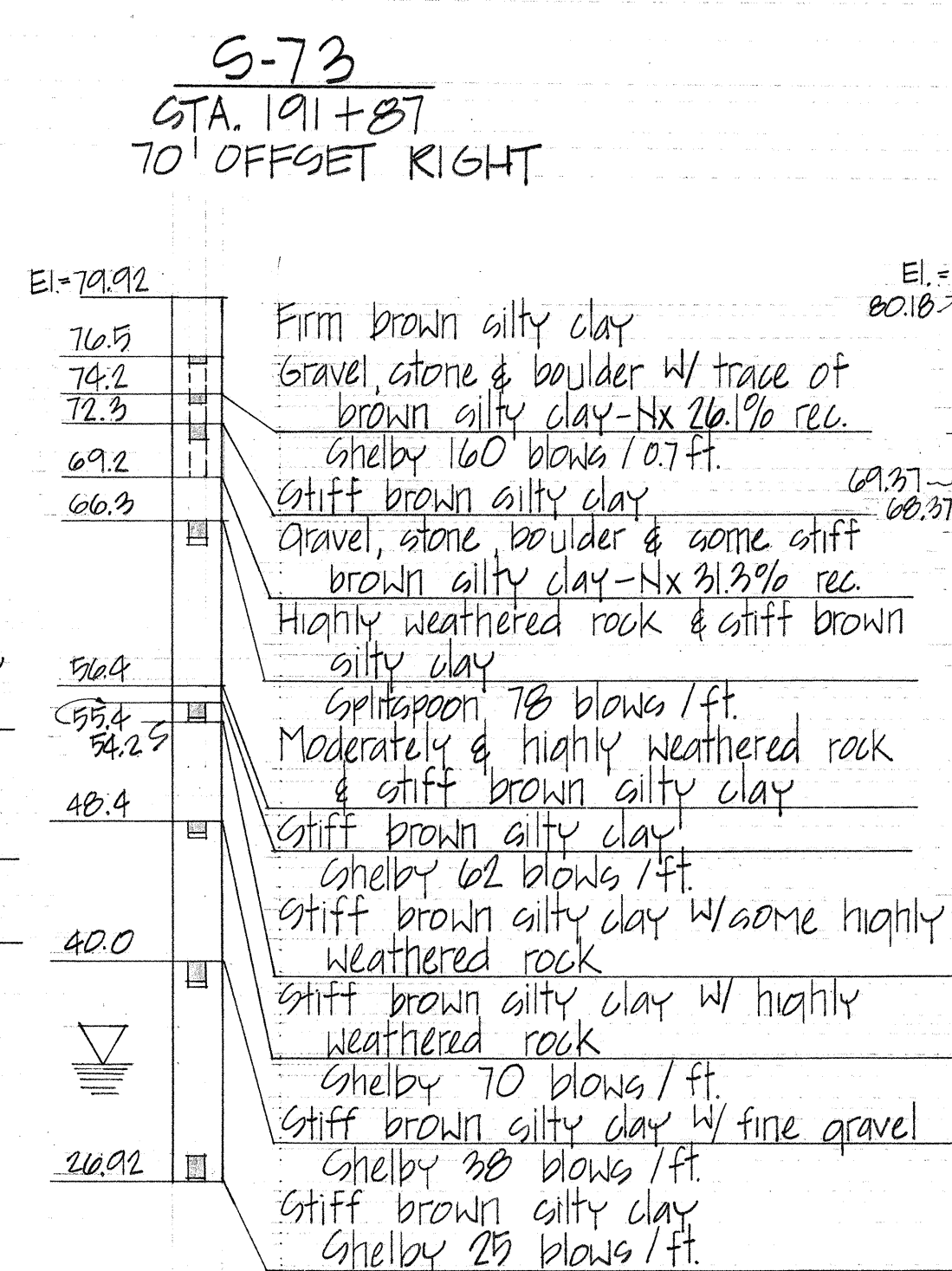
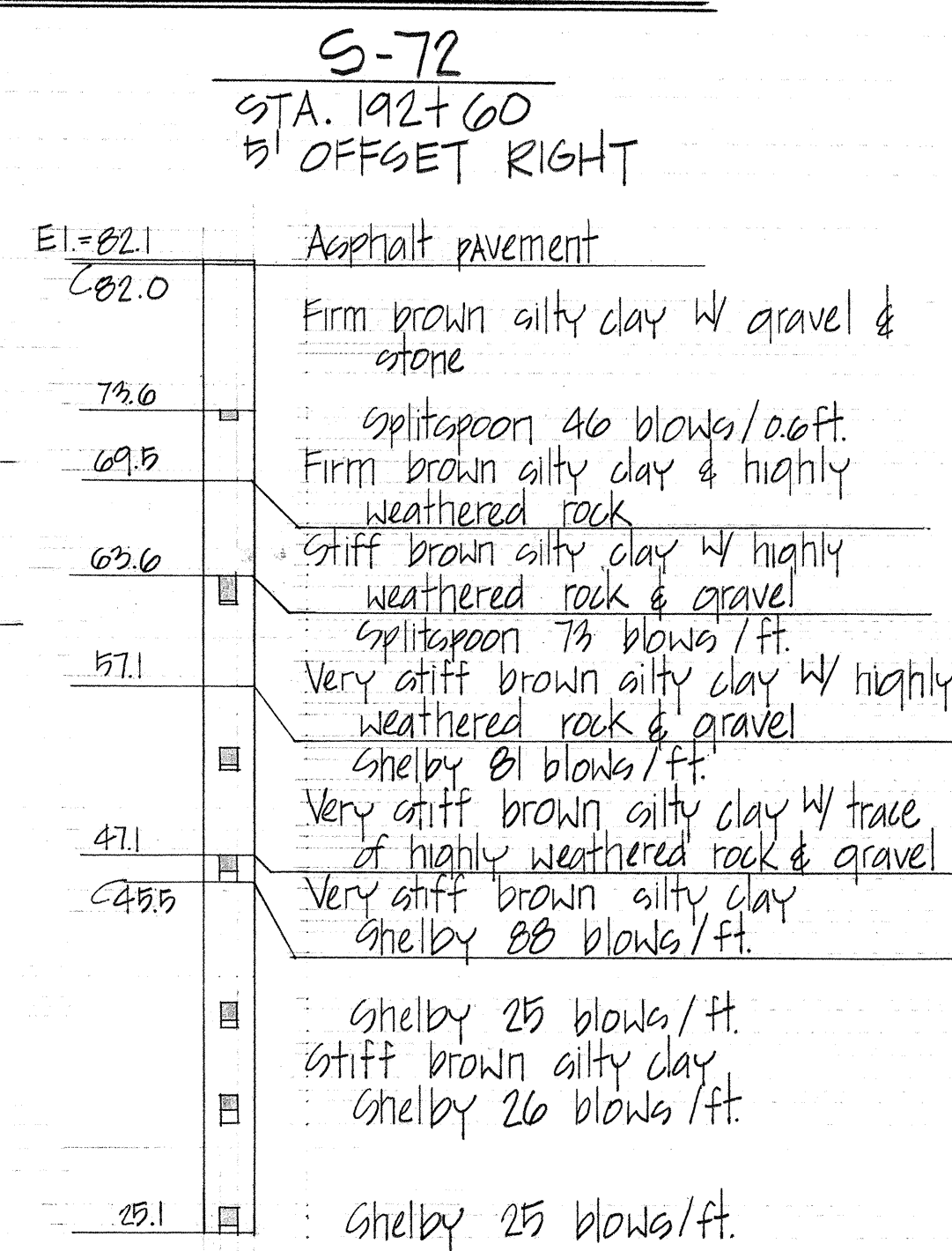
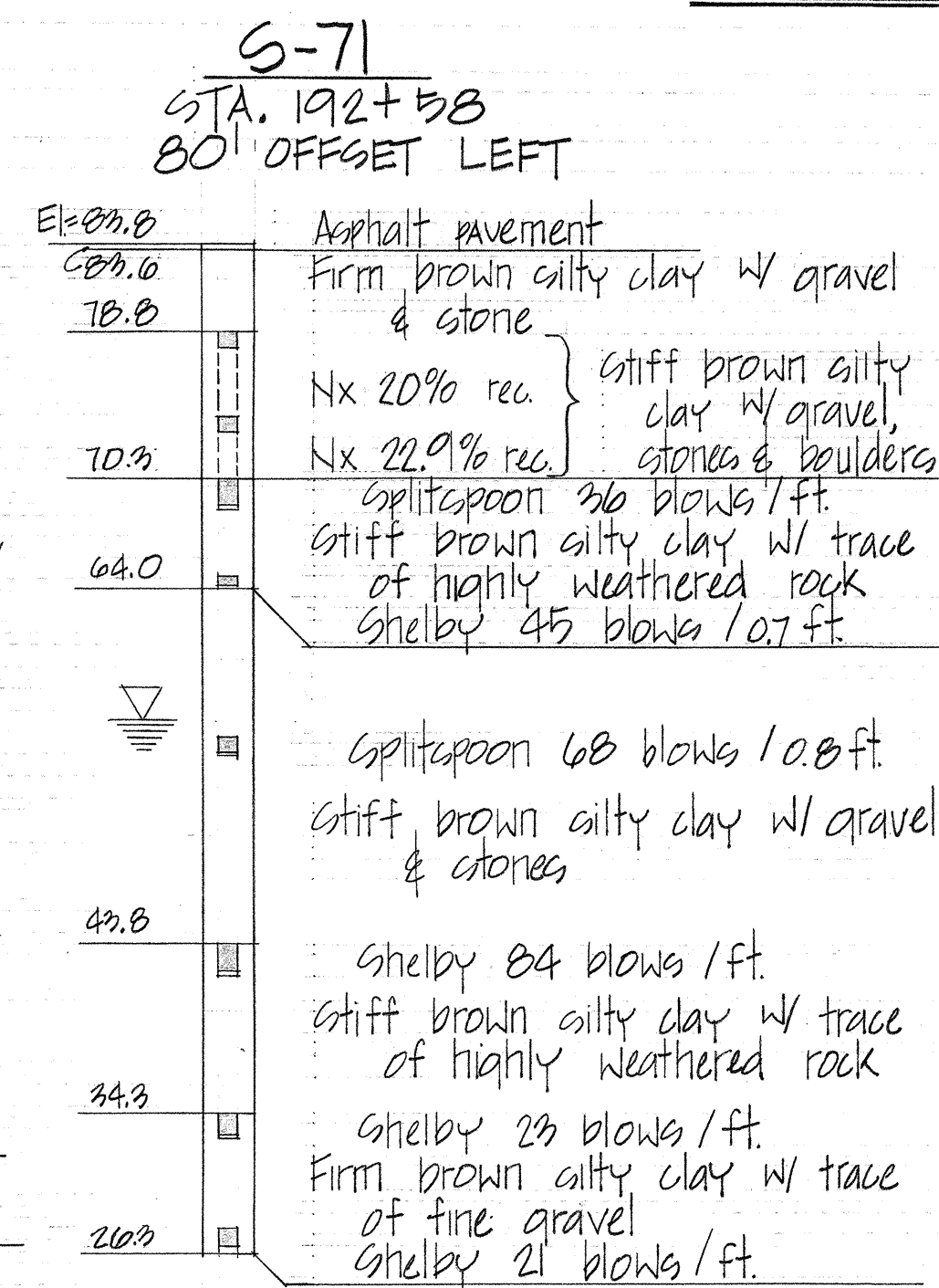
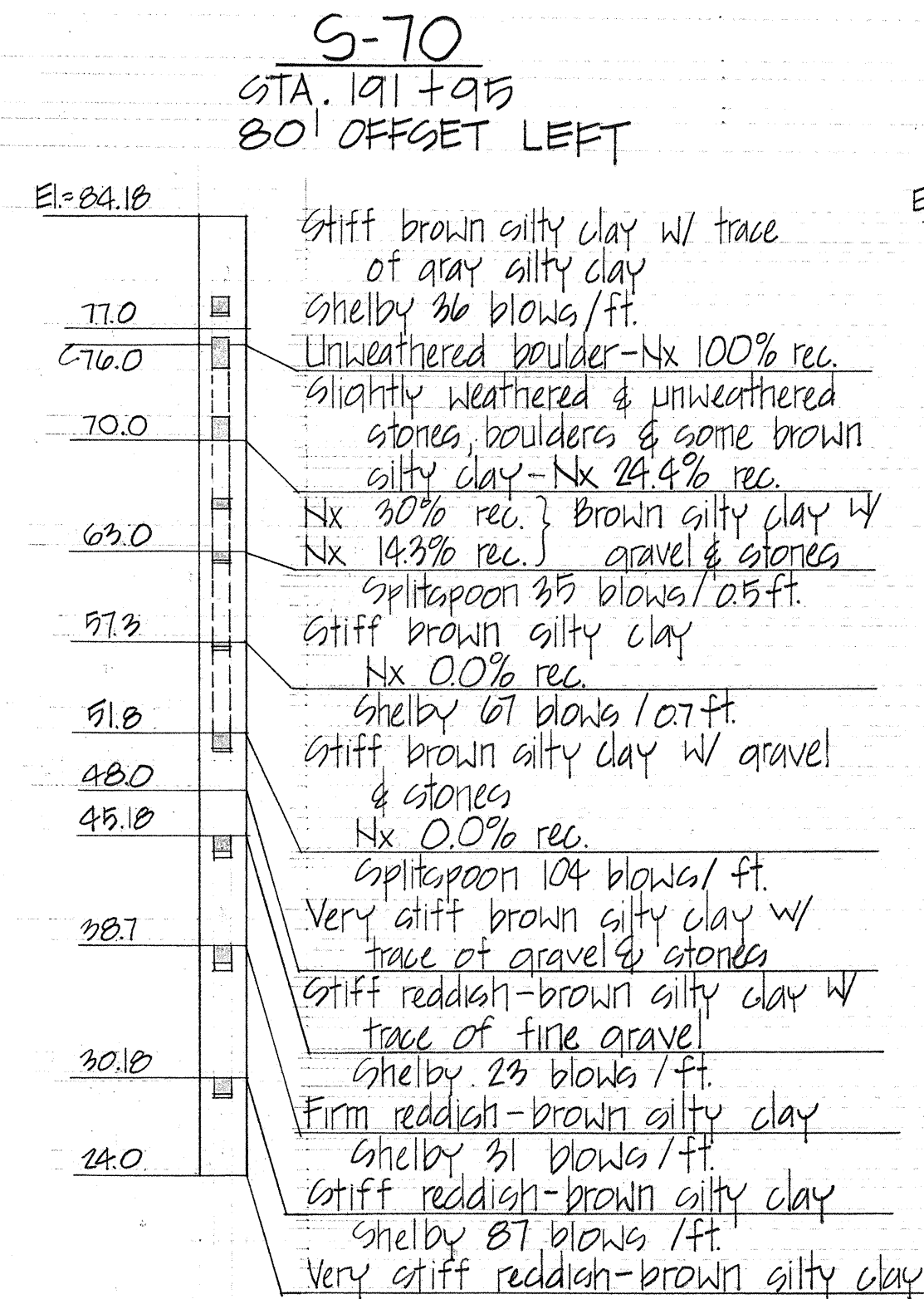
STANDARD DETAIL
CONCRETE BARRIER
TRANSITION

INTERSTATE ROUTE H-1
F.A.T. PROJ. NO. I-HI-1(64):12, UNIT 2
Scale As Noted Feb. 1969

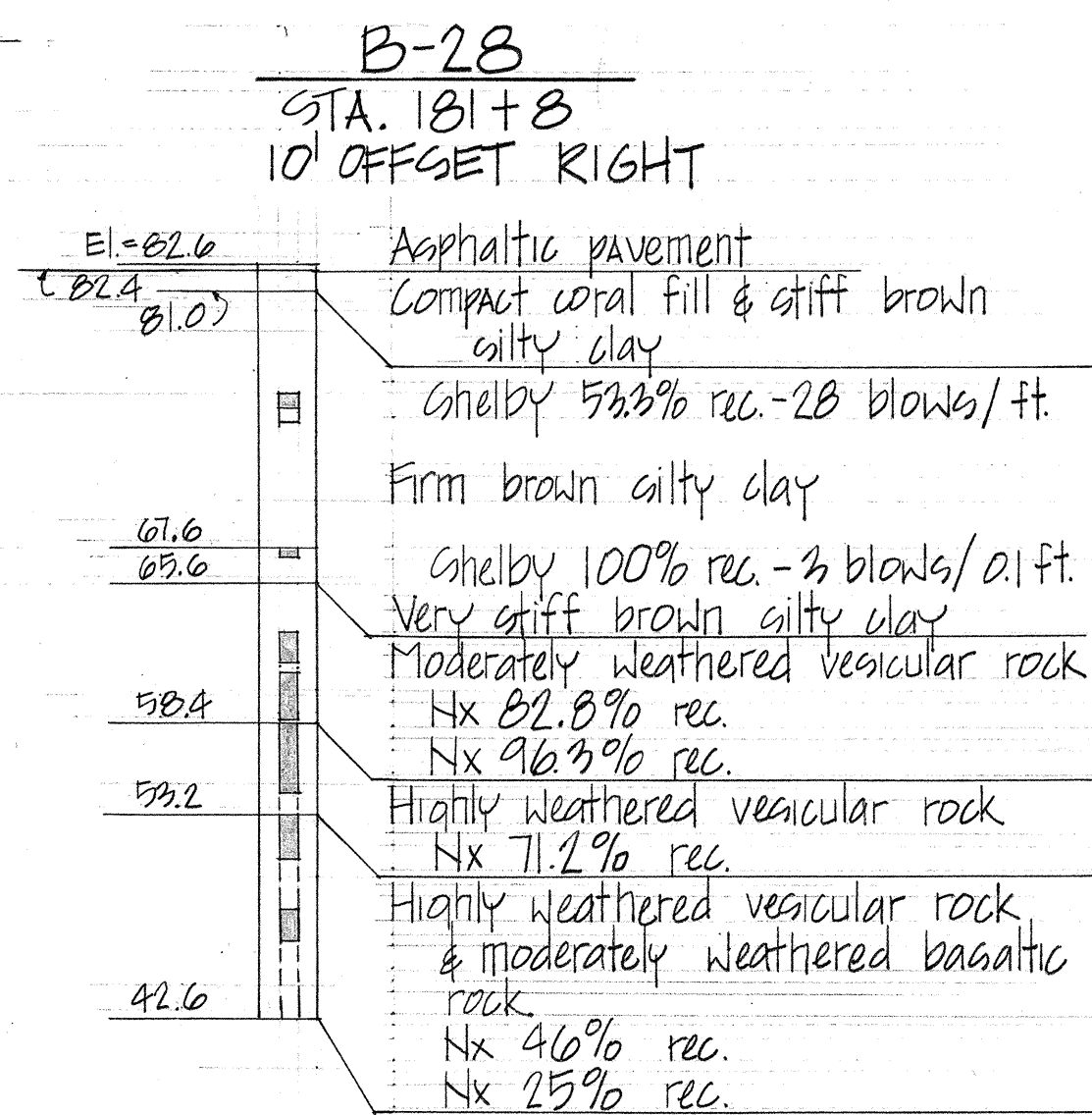
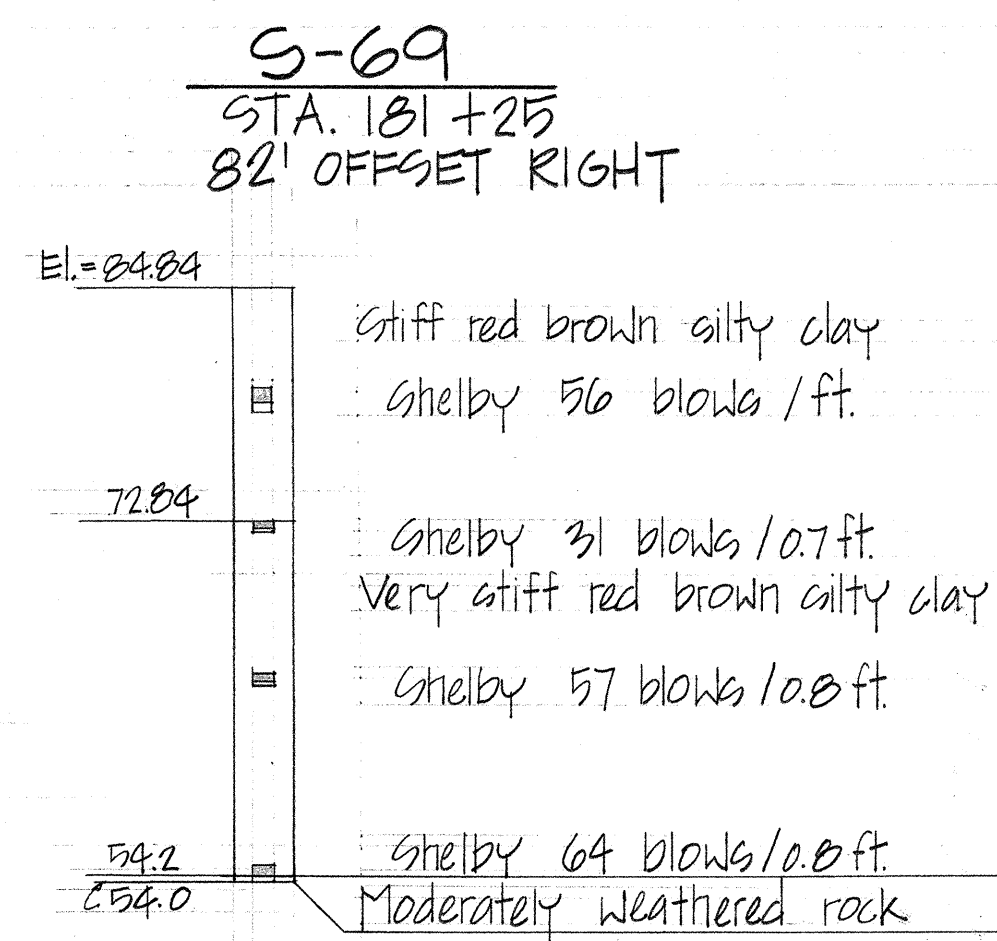
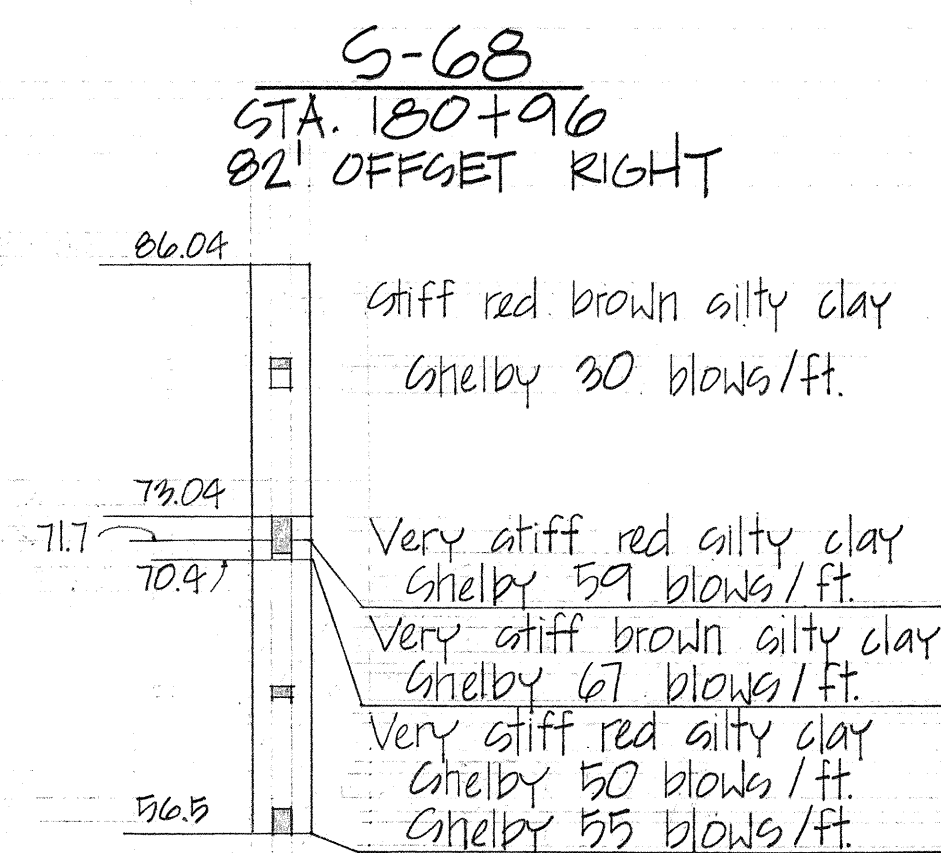
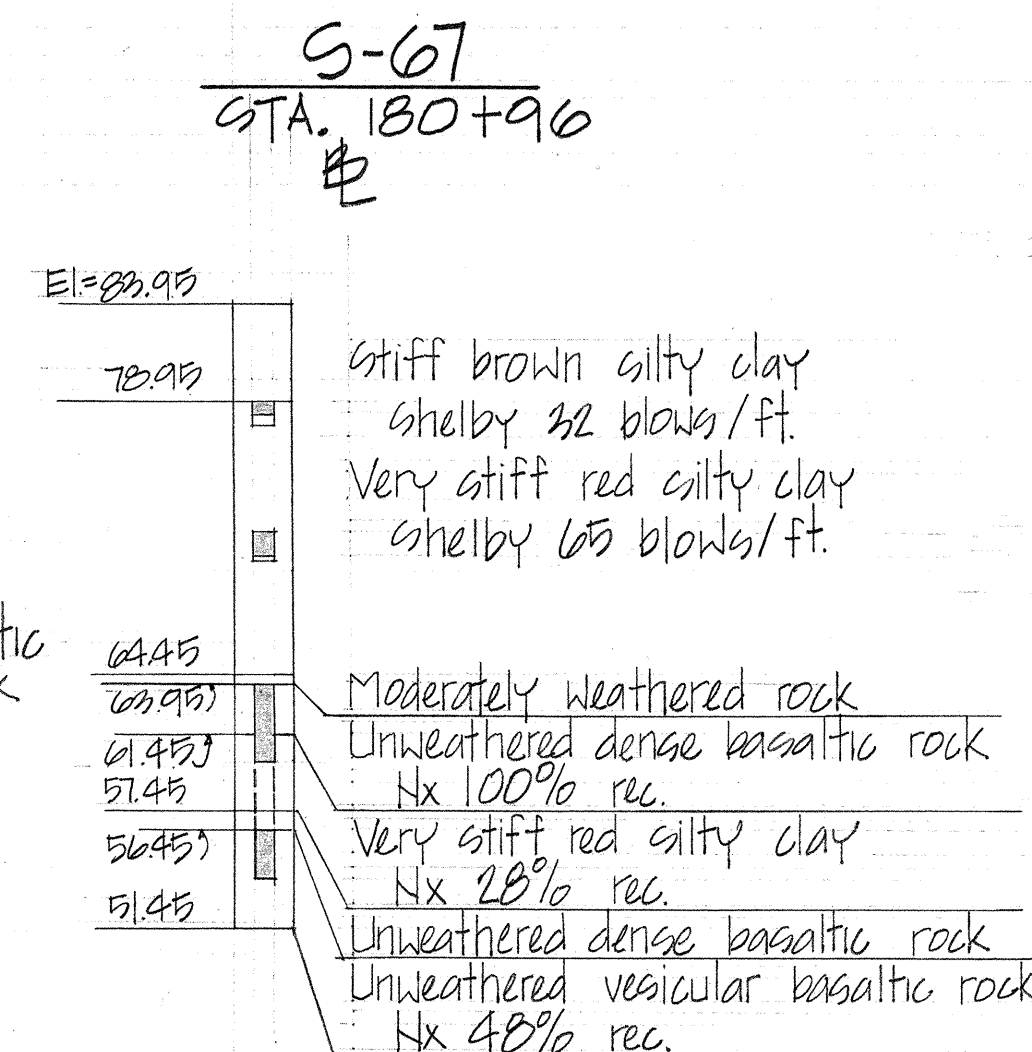
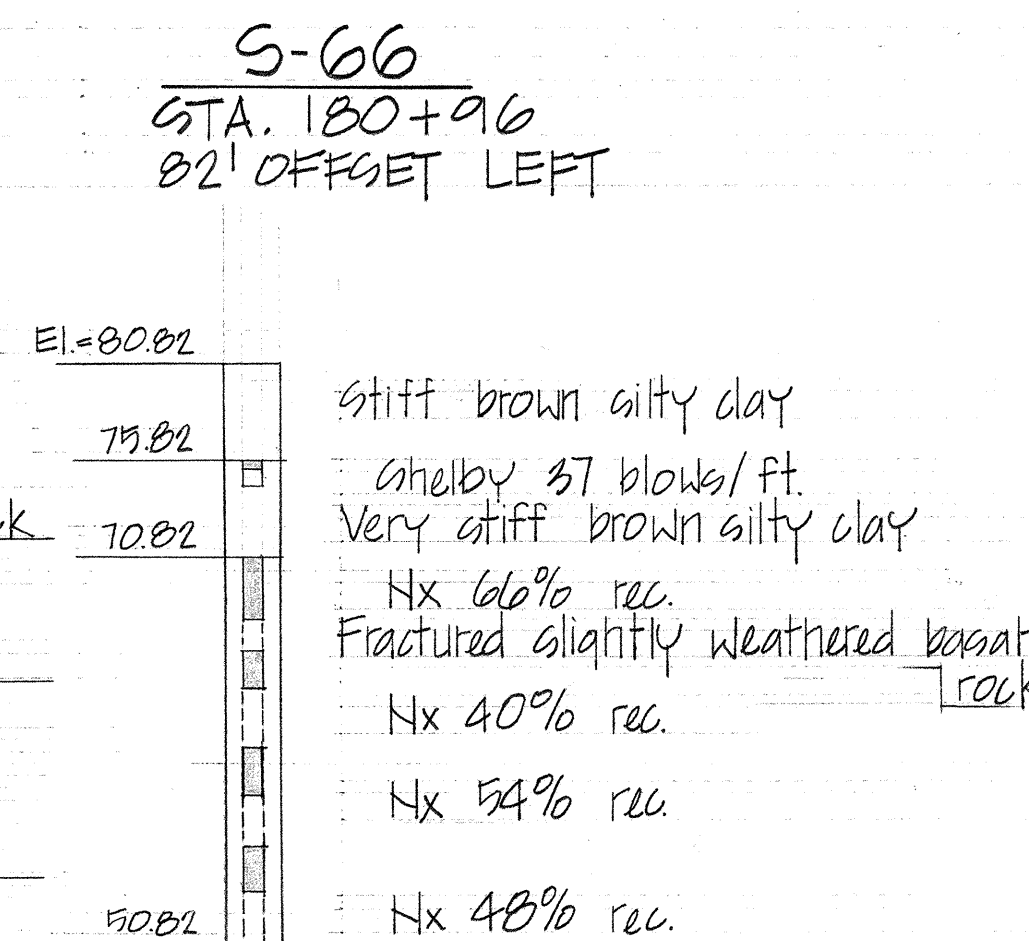
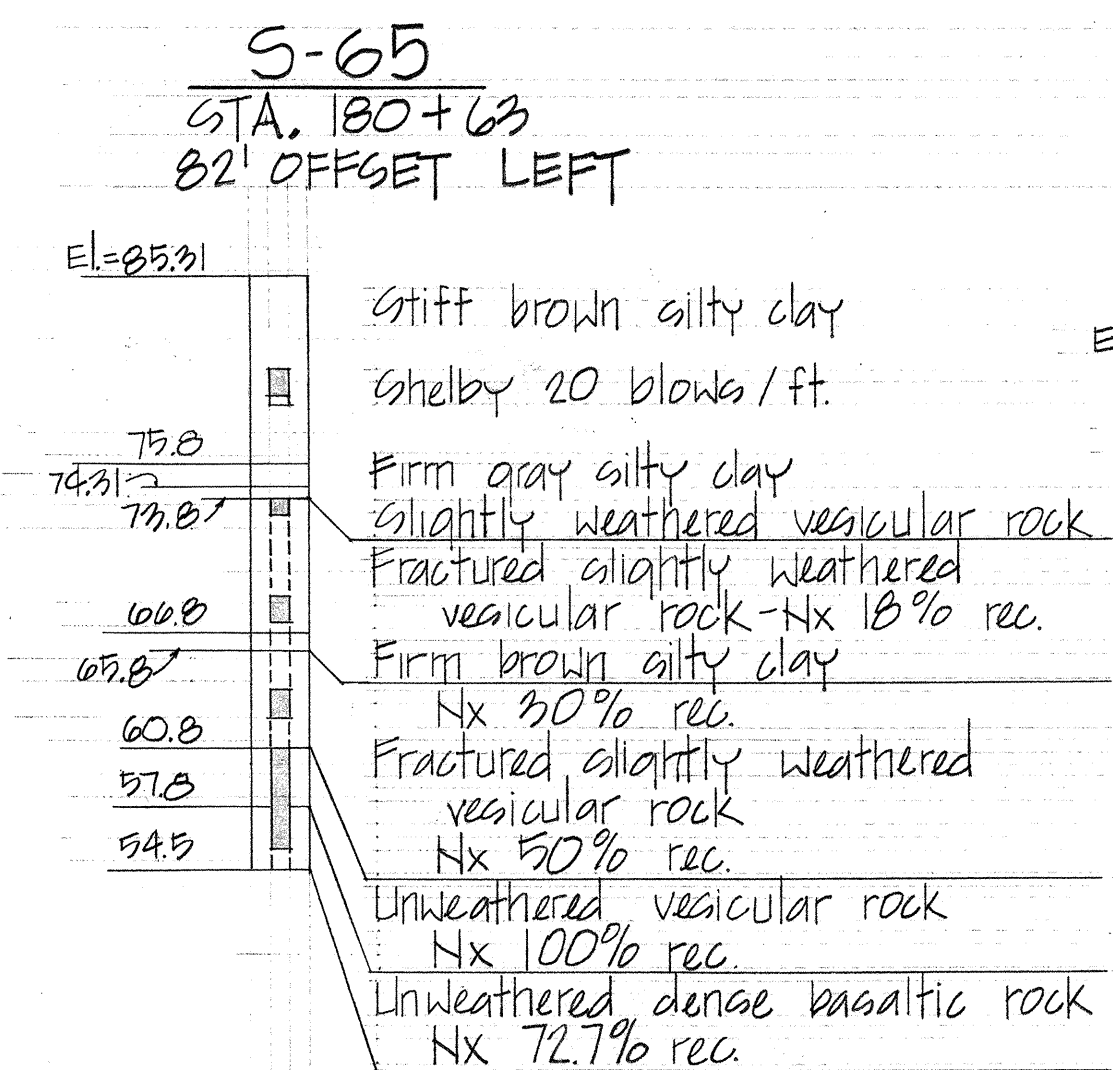
SHEET No. 59 OF 11 SHEETS DT 512

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(64):12 UNIT 2 I-HI-1(16):11	1969	123	128

AIEA HEIGHTS



MAHIKO



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

AIEA HEIGHTS & MAHIKO

BORING LOGS

INTERSTATE ROUTE H-1
F.A.I. PROJECT NO.: I-HI-1(64):12, U2
SCALE: 1"=10'-0" DATE: 1969

SHEET No. 111 OF 11 SHEETS