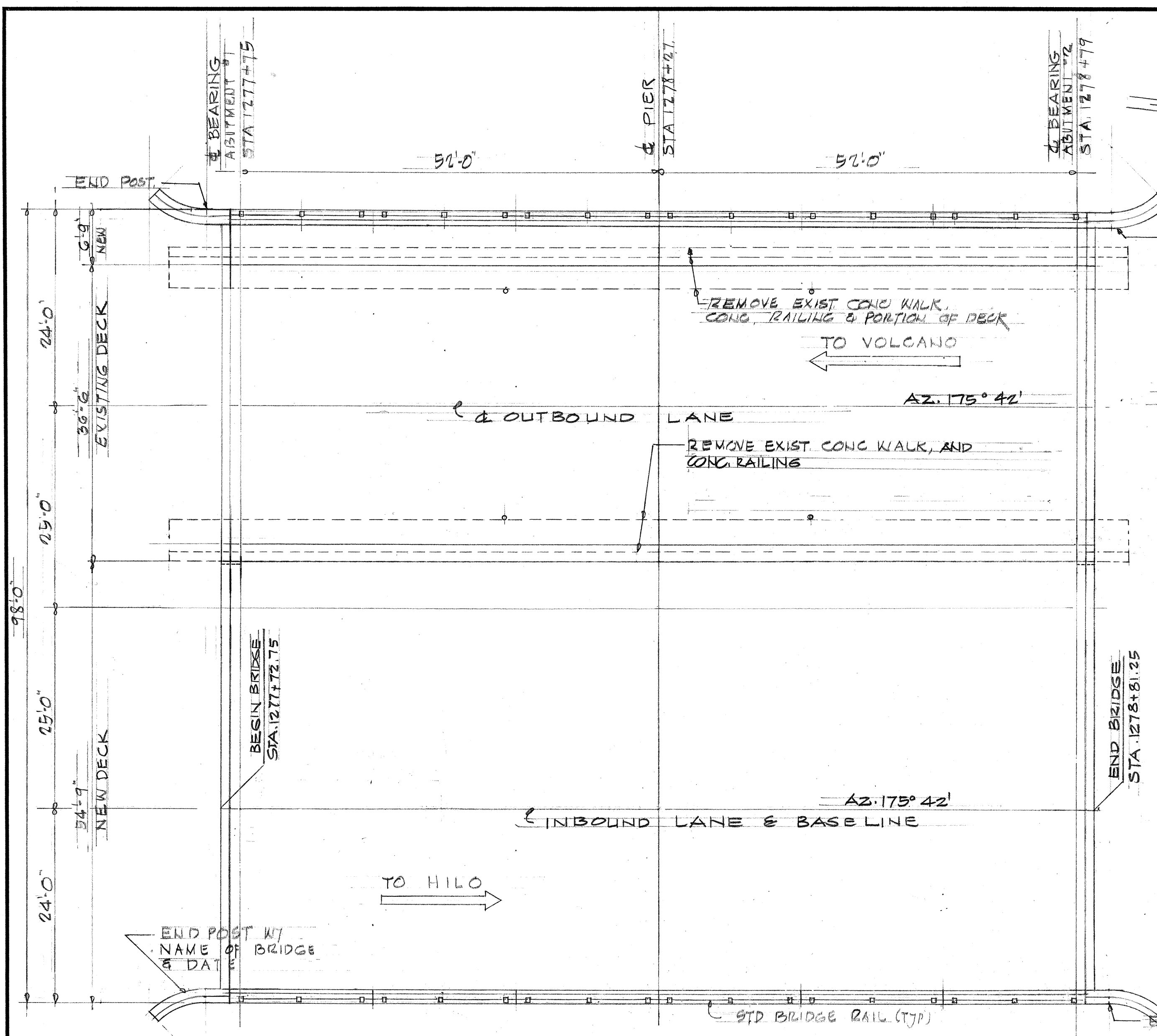


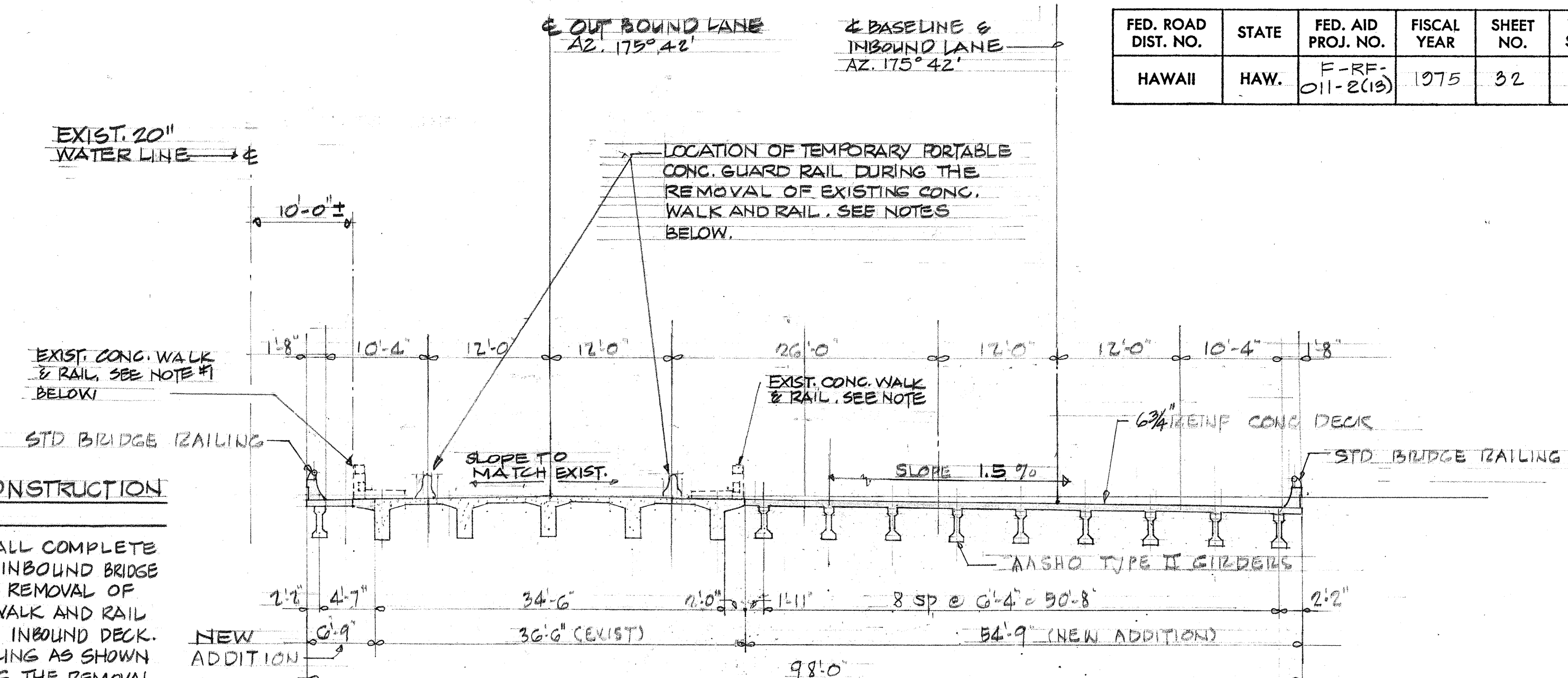
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF- 011-2(19)	1975	32	126



SEQUENCE OF CONSTRUCTION

NOTES:

1. THE CONTRACTOR SHALL COMPLETE CONSTRUCTION OF THE INBOUND BRIDGE WIDENING PRIOR TO THE REMOVAL OF EXISTING CONCRETE WALK AND RAIL ADJACENT TO THE NEW INBOUND DECK. PLACE TEMPORARY RAILING AS SHOWN ON THE PLANS DURING THE REMOVAL OF EXISTING CONCRETE WALK AND RAILING. AFTER COMPLETING WORK REMOVE TEMPORARY CONCRETE RAILING.
2. THE CONTRACTOR SHALL THEN CONSTRUCT OUTBOUND BRIDGE WIDENING, PRIOR TO CONSTRUCTION OF NEW DECK, THE CONTRACTOR SHALL PLACE TEMPORARY RAILING AS SHOWN ON THE PLANS AND REMOVE EXISTING CONC. WALK AND RAILING ON OUTBOUND SIDE.



TYP. TRANSVERSE DECK SECTION

SCALE: 1" = 10'-0"

NOTES:

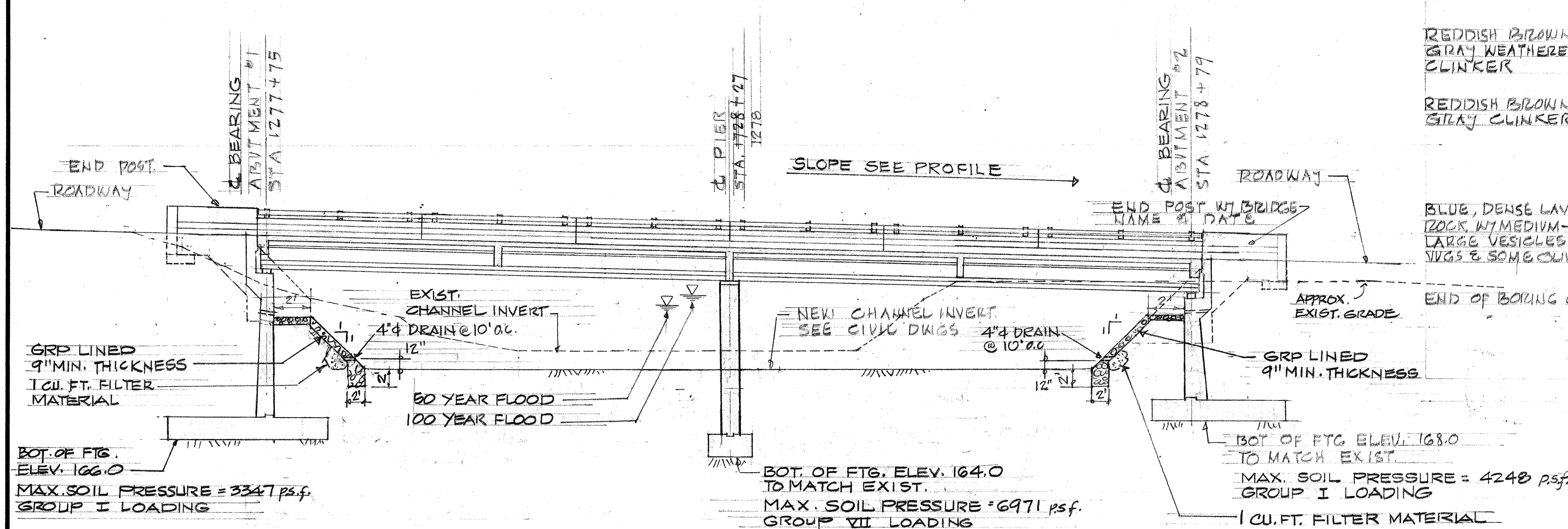
1. REMOVE EXIST. CONC. WALK, CONC. RAILING, MET. RAILING & PORTION OF DECK, SEE SEQUENCE OF CONSTRUCTION NOTES.
2. THE TEMPORARY CONC. RAILING SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVE FROM THE SITE UPON COMPLETION OF PROJECT.
3. THE CONTRACTOR SHALL DURING THE CONSTRUCTION OF THE BRIDGE WIDENING CONSTRUCT, INSTALL AND MAINTAIN THE TEMPORARY PORTABLE CONC. GUARD RAIL CONTINUOUSLY THROUGHOUT THE BRIDGE LENGTH. SEE DETAIL FOR TEMPORARY PORTABLE CONC. GUARD RAIL ON SHT. 41D.
4. ALL HORIZONTAL AND VERTICAL GRADE CONTROL FOR CONNECTION OF EXIST. BRIDGE AND NEW BRIDGE SECTIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.

ITEM NO.	ESTIMATED QUANTITIES
206.61	STRUCTURAL EXCAVATION FOR BRIDGE (FTG.) 1880 CY
	FILTER MATERIAL (INCIDENTAL TO CONC. IN BRIDGE) 32 CY
503.071	CONCRETE IN BRIDGE (EXCEPT FTG.) L.S. (417 CY)
602.010	REINFORCING STEEL IN BRIDGE L.S. (105,000 lbs)
504.13	PRESTRESSED GIRDERS TYPE II. L.S. (1050 LF)
507.10	METAL BRIDGE RAILING - ONE RAIL TYPE 212 LF
507.60	CONCRETE BRIDGE RAILING AND END POST 272 LF
401.05	ASPHALT CONCRETE PAVEMENT MIX NO. III V 18 TON
207.01	DITCH AND CHANNEL EXC. 1720 CY
612.01	GRP LINING 109 CY.
503.072	CONCRETE IN BRIDGE FOOTINGS L.S. (211 CY)
645.01	PORTABLE CONCRETE GUARD RAIL 160 LF

PLAN

SCALE: 1" = 10'-0"

FOR CONSTRUCTION NOTES SEE SHT. 37



BORING LOGS

SEE SHEET # 3 FOR LOCATIONS

4-11-75	1. ADD. CONTRUCTION SEQUENCE NOTES AND TEMPORARY PORTABLE CONC. GUARD RAIL.
	2. CHANGED GRP LINING FOR CHANNEL 3. ADDED NOTES 4. CHANGED ESTIMATED QUANTITIES.
DATE	REVISION

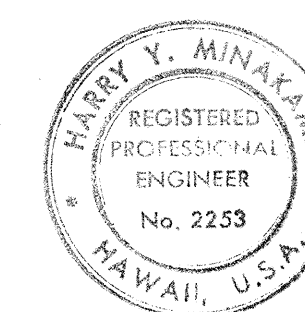
**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

PANAewa BRIDGE WIDENING

KANOELEHUA AVE.
MAKALIKA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-RF-011-2(13)
Scale: As Shown

SHEET No. 2 OF 15 SHEETS

AIDID.32



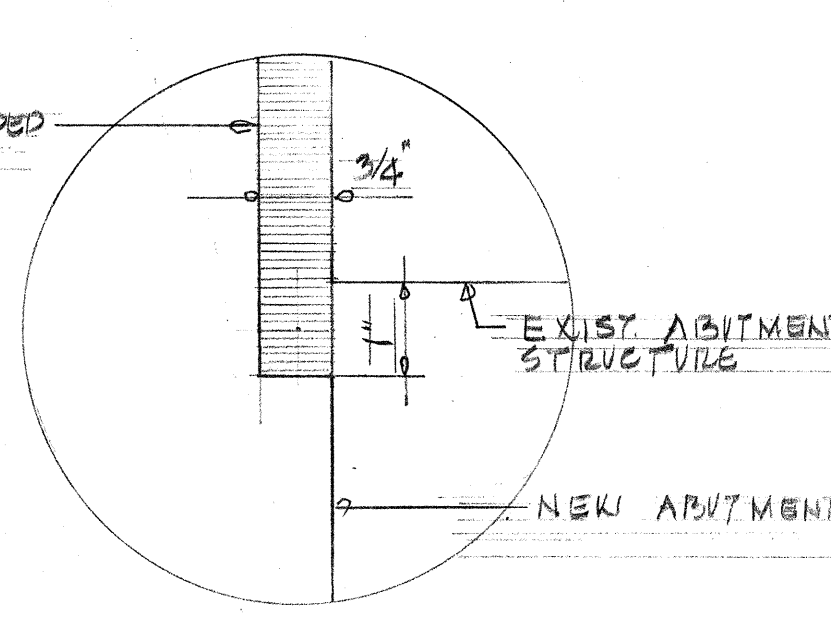
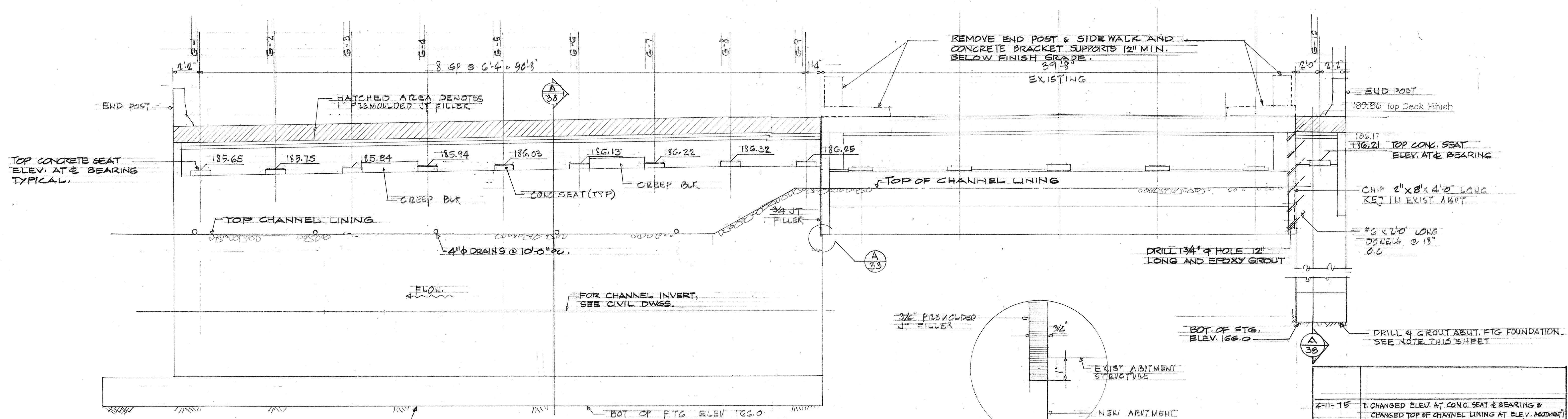
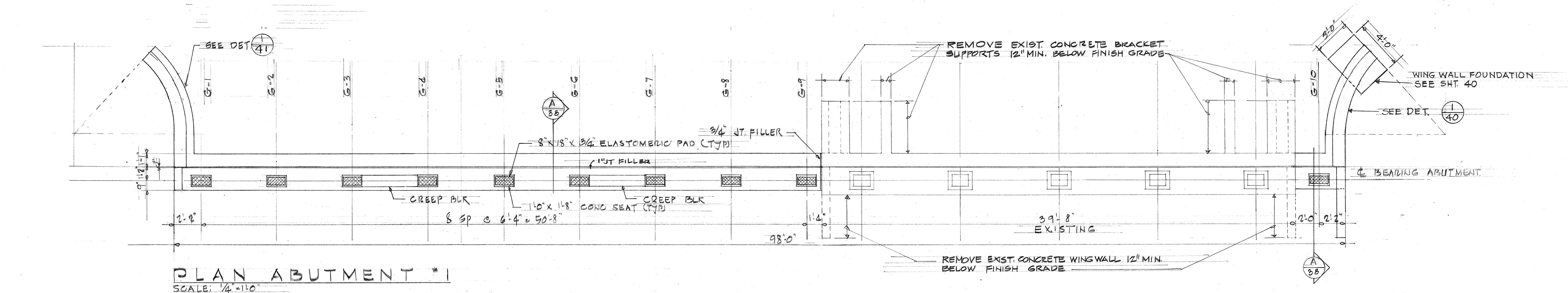
This work was prepared by

Harry M. M. M. M.

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

K&F CRYSTALINE® LA 388

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF-011-2(13)	1975	33	120



NOTE: DRILL & CEMENT GROUT ABUTMENT #1 & 2 FOOTING FOUNDATION

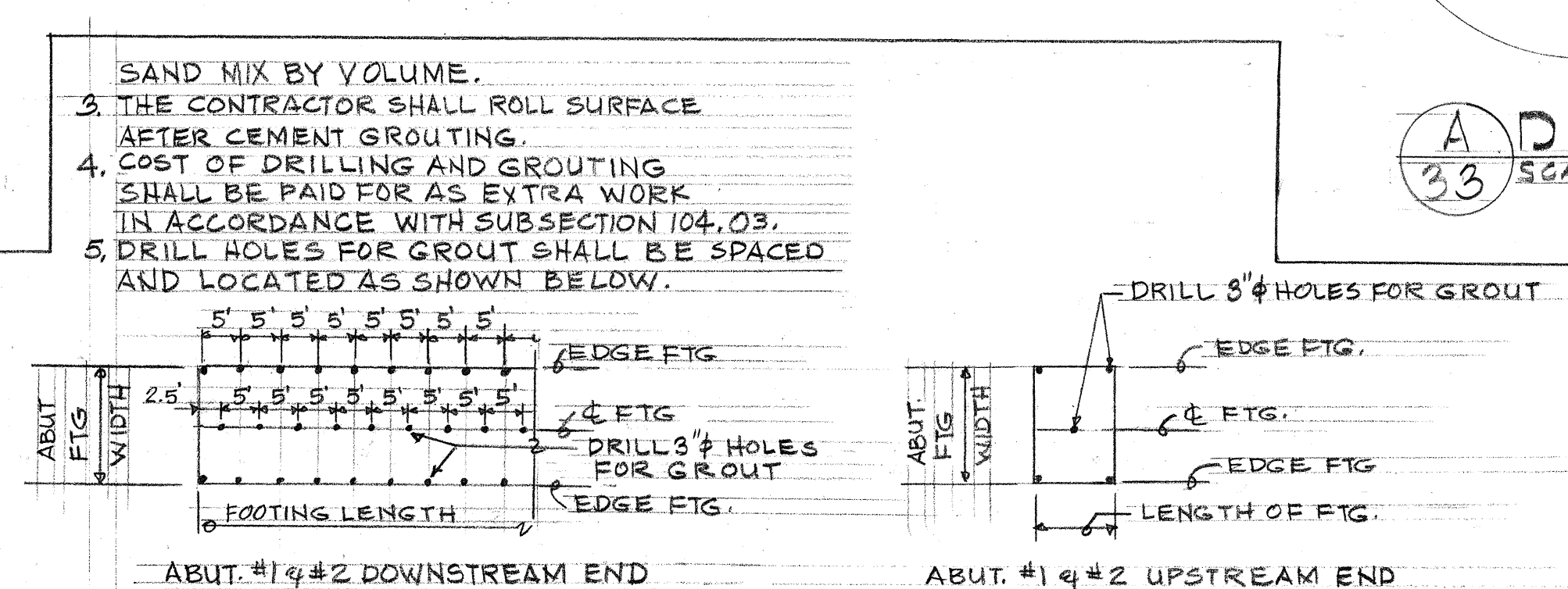
1. THE CONTRACTOR SHALL EXCAVATE FOOTINGS TO ELEVATIONS SHOWN ON THE PLANS. BOTTOM OF FOOTINGS SHALL REST ON LAVA FORMATION. WHERE FOOTING REST ON CLINKER OR CLINKER POCKETS, THE CONTRACTOR SHALL DRILL 8" DIA HOLES FROM THE BOTTOM OF THE FOOTING EXCAVATION TO A MAXIMUM DEPTH EQUAL TO THE WIDTH OF THE FOOTING OR UNTIL DENSE LAVA ROCK IS ENCOUNTERED OR AS DIRECTED BY THE ENGINEER.

2. DRILL HOLES SHALL BE GROUTED WITH LOW PRESSURE CEMENT GROUT. GROUT SHALL BE ONE PART PORTLAND CEMENT TO ONE PART SAND MIX BY VOLUME.

3. THE CONTRACTOR SHALL ROLL SURFACE AFTER CEMENT GROUTING.

4. COST OF DRILLING AND GROUTING SHALL BE PAID FOR AS EXTRA WORK IN ACCORDANCE WITH SUBSECTION 104.03.

5. DRILL HOLES FOR GROUT SHALL BE SPACED AND LOCATED AS SHOWN BELOW.



HARRY Y. MINAKAWI
REGISTERED PROFESSIONAL ENGINEER
No. 2253
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

Harry Y. Minakawi

DATE	REVISION
4-11-75	1. CHANGED ELEV. AT CONC. SEAT & BEARING & CHANGED TOP OF CHANNEL LINING AT ELEV. ABUTMENT #2. 2. ADDED NOTES DRILL & GROUT ABUTMENT #1 & 2. 3. ADDED NOTES AT PLAN, ABUTMENT #1.
DATE	REVISION

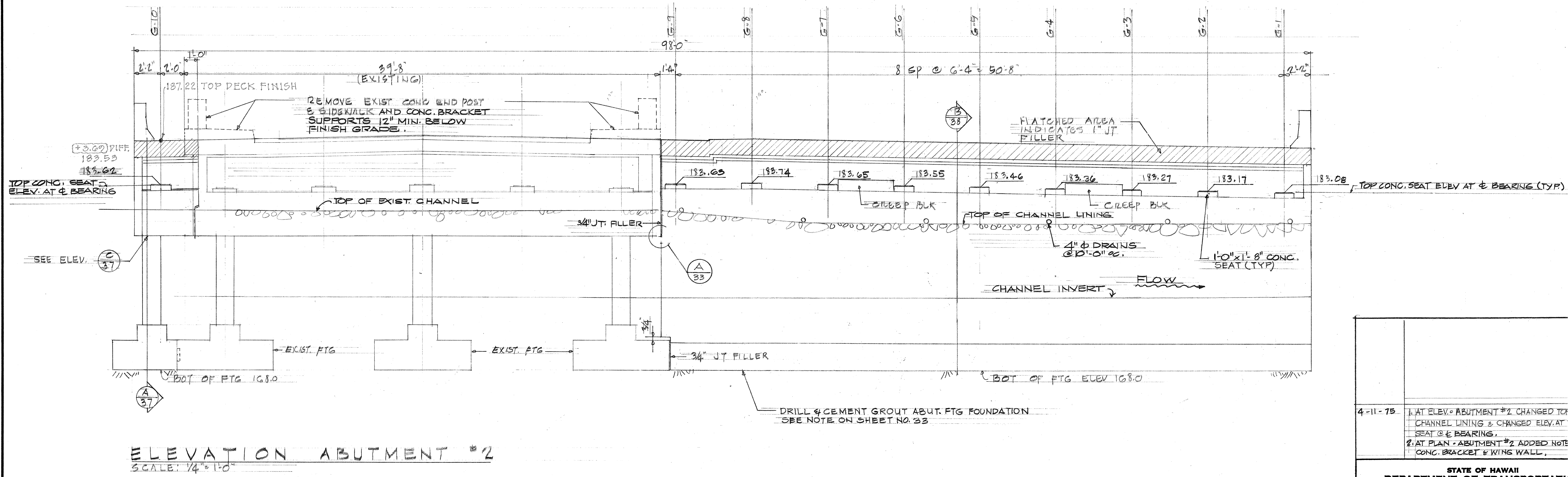
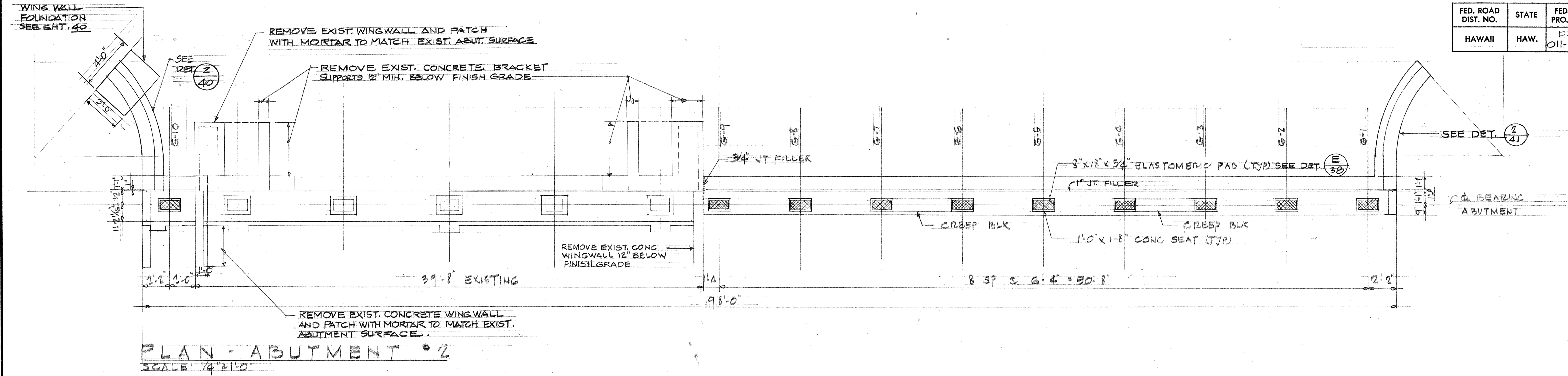
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PANAEWA BRIDGE WIDENING

KANOELEHUA AVE.
MAKALIIKA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-RF-011-2(13)
Scale: AS SHOWN

SHEET No. 3 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF-011-2(13)	1975	34	120



DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

4-11-75

1. AT ELEV. ABUTMENT #2 CHANGED TOP OF CHANNEL LINING & CHANGED ELEV. AT TOP CONC. SEAT @ & BEARINGS.

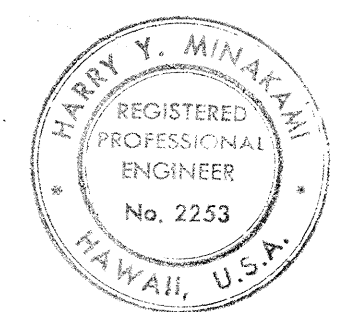
2. AT PLAN - ABUTMENT #2 ADDED NOTES ON CONC. BRACKET & WING WALL.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PANAHEWA BRIDGE WIDENING

KANOELEHUA AVE.
MAKALIKA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-RF-011-2(13)
Scale: As Shown

SHEET No. 4 OF 15 SHEETS



This work was prepared by me or under my supervision.

Harry Y. Minakawa

TYP. BEAM "C" ELEVATION
SCALE: $\frac{1}{2}'' = 1'-0''$

TYP. SECTION-BM. "C" (BETW. GIRDERS)
SCALE: 1/2" = 1'-0"

35 TYP. SECTION - (AT GIRDERS)
SCALE: 1/2" = 1'-0"

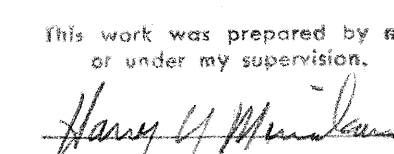


**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

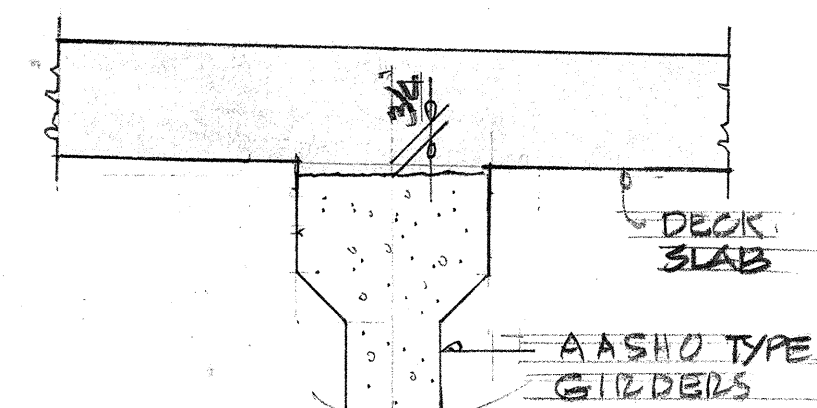
KANOOLEHUA AVE.
MAKALIKA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-R-F-011-2(13)
Scale: AS Shown

SHEET No. 5 OF 15 SHEETS

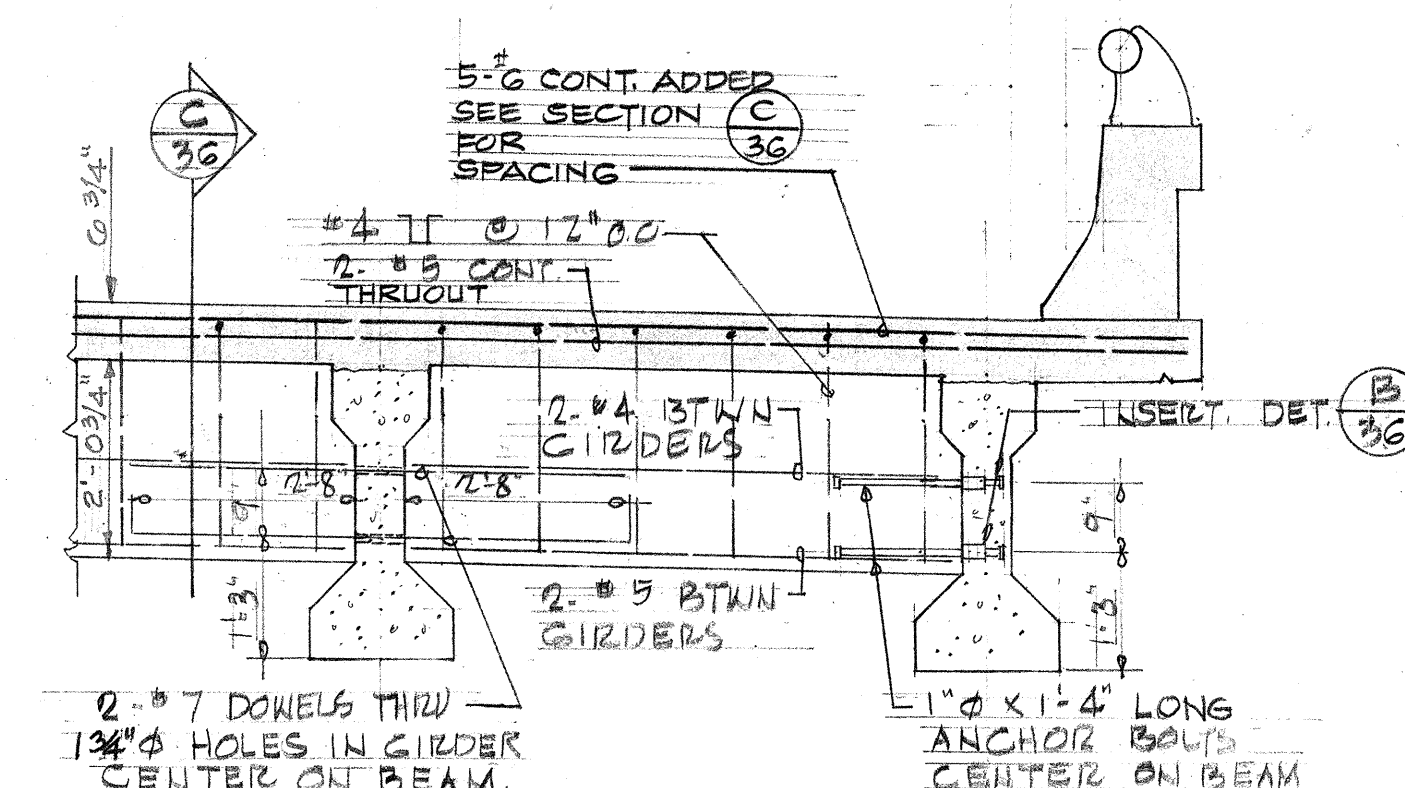
AIDD. 35



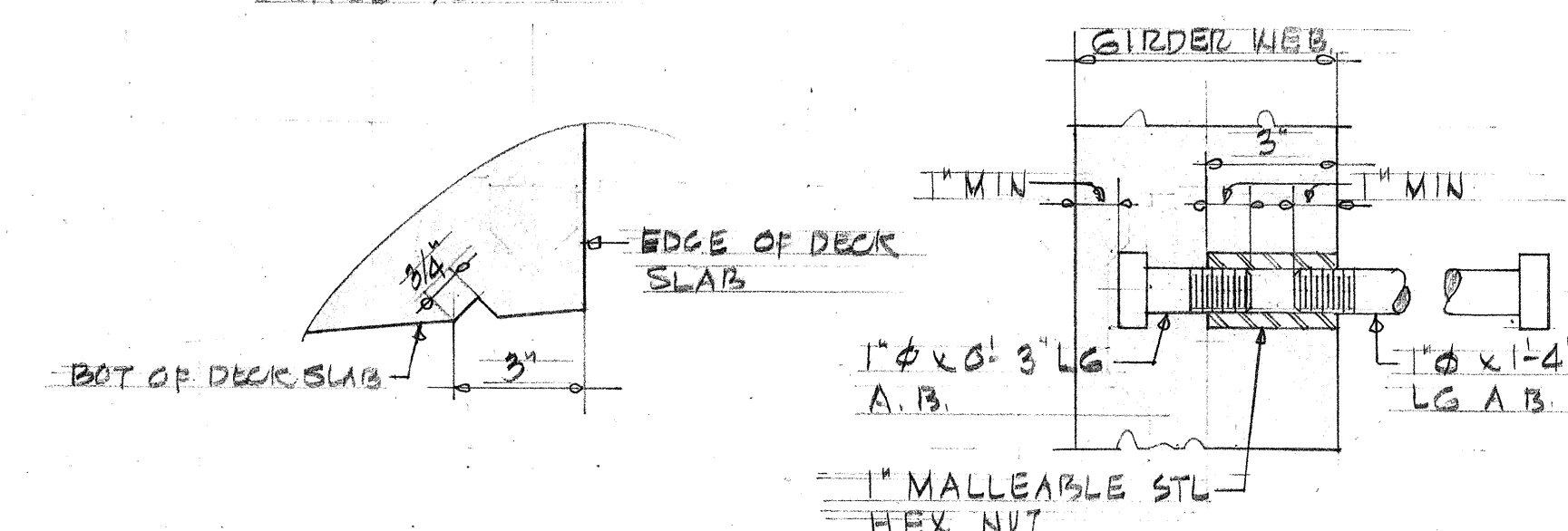
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF. 011-2(13)	1975	36	126
DATE REVISION					
4-11-75	1. ADD. GRADING PLAN. 2. OMITTED AC. PAYMT. ON NEW DECK SECTION.				
II					



DETAIL
SCALE: 1/2"=1'-0"

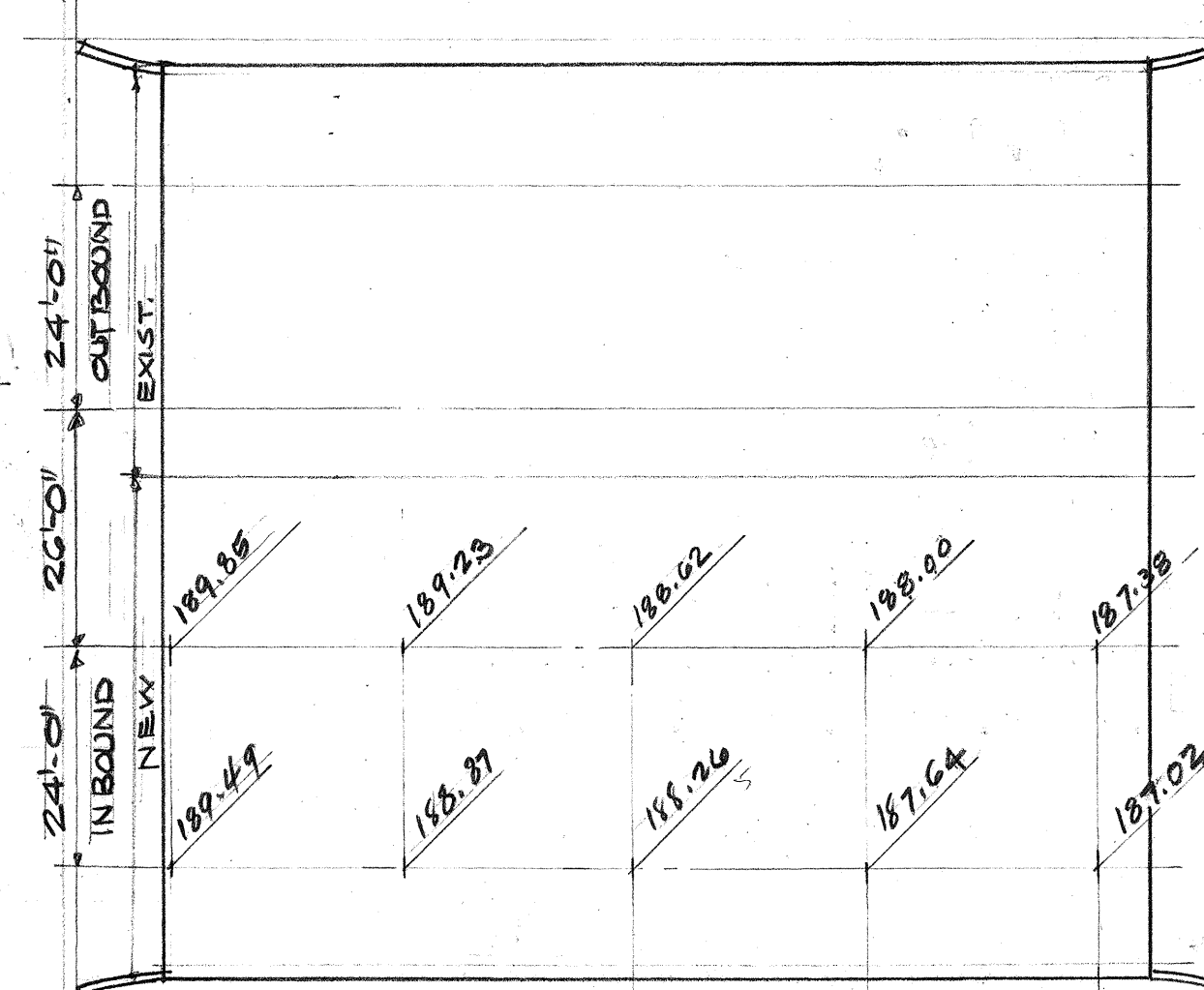


ELEVATION BEAM B



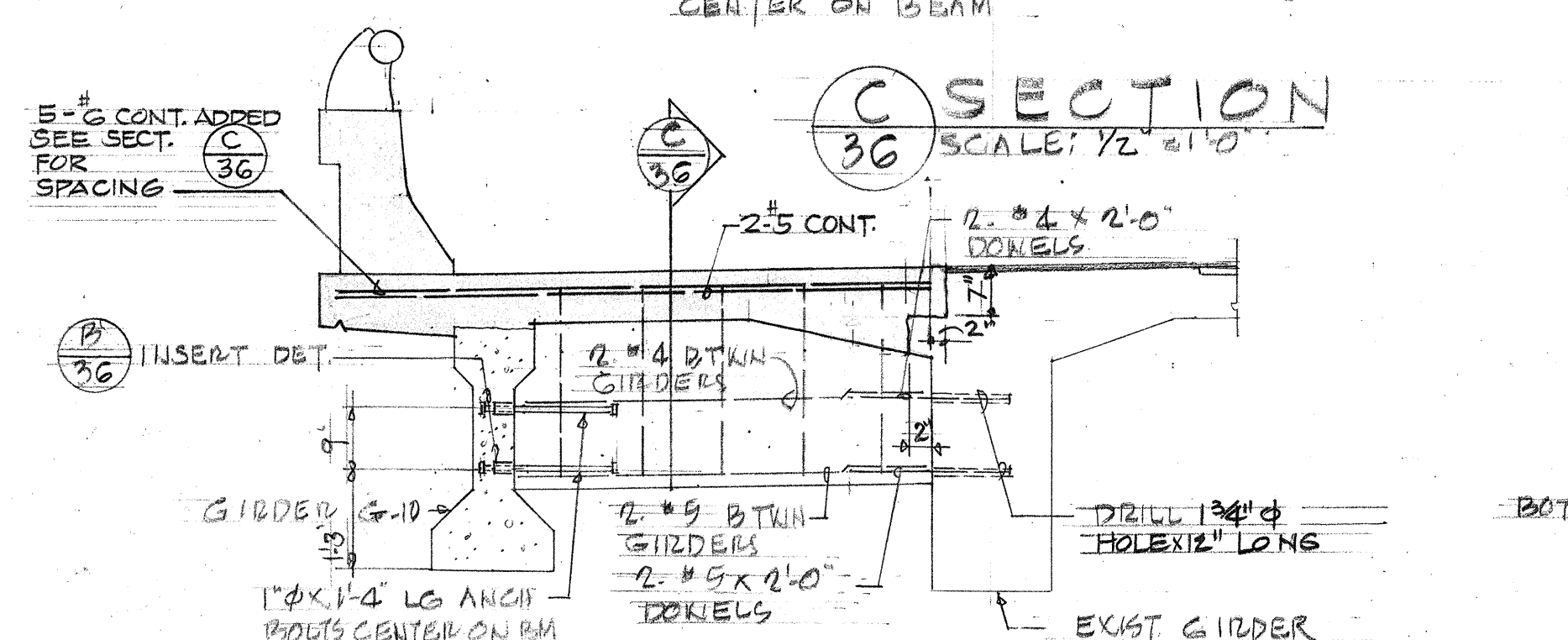
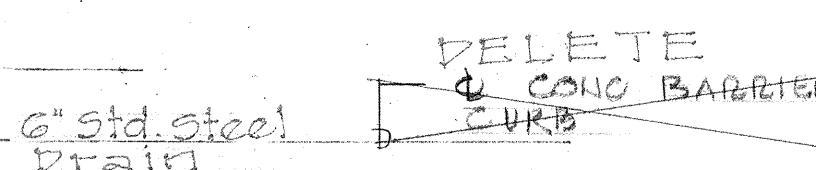
TYP Drip DET

36 INSERT DET SCALE: 3"=10'

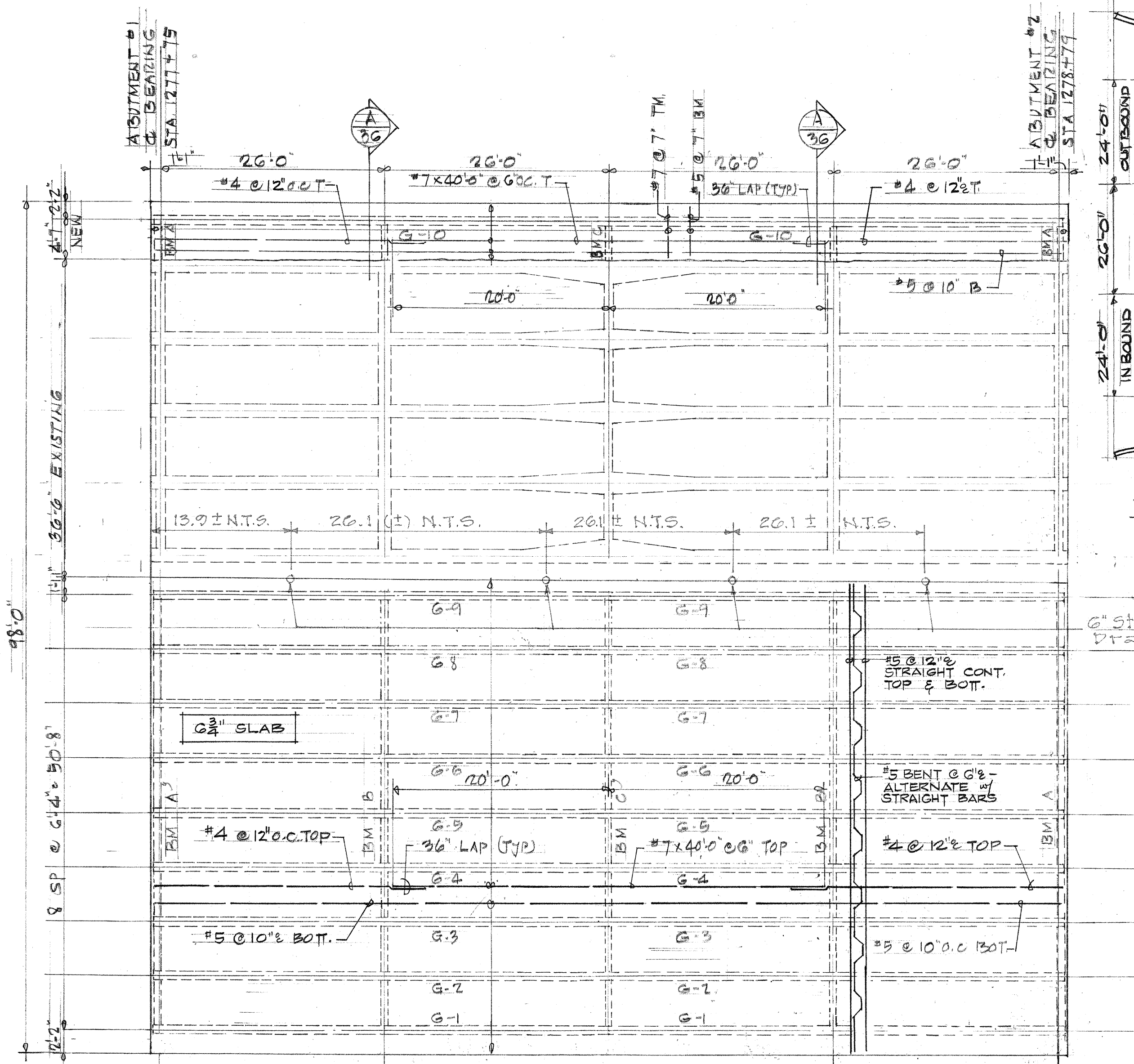


GRADING PLAN

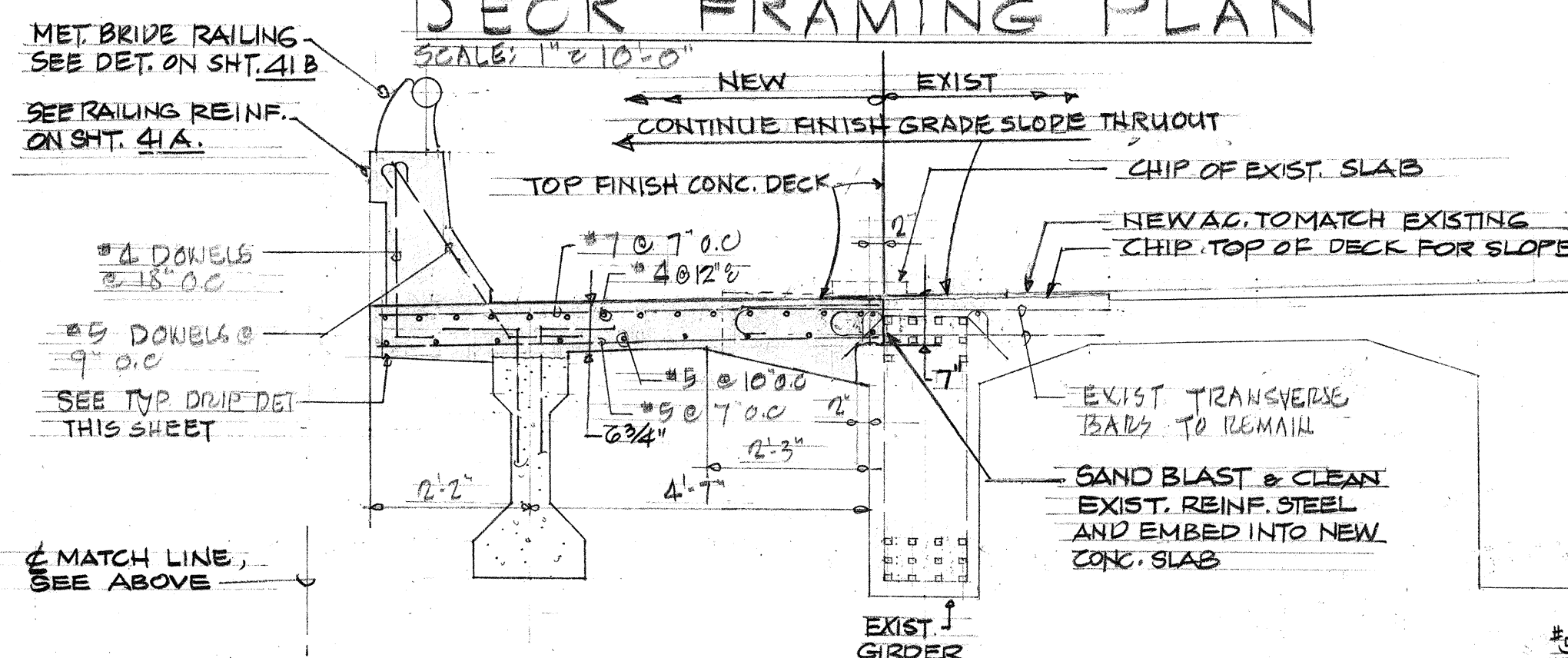
SCALE: 1" = 20'-0"



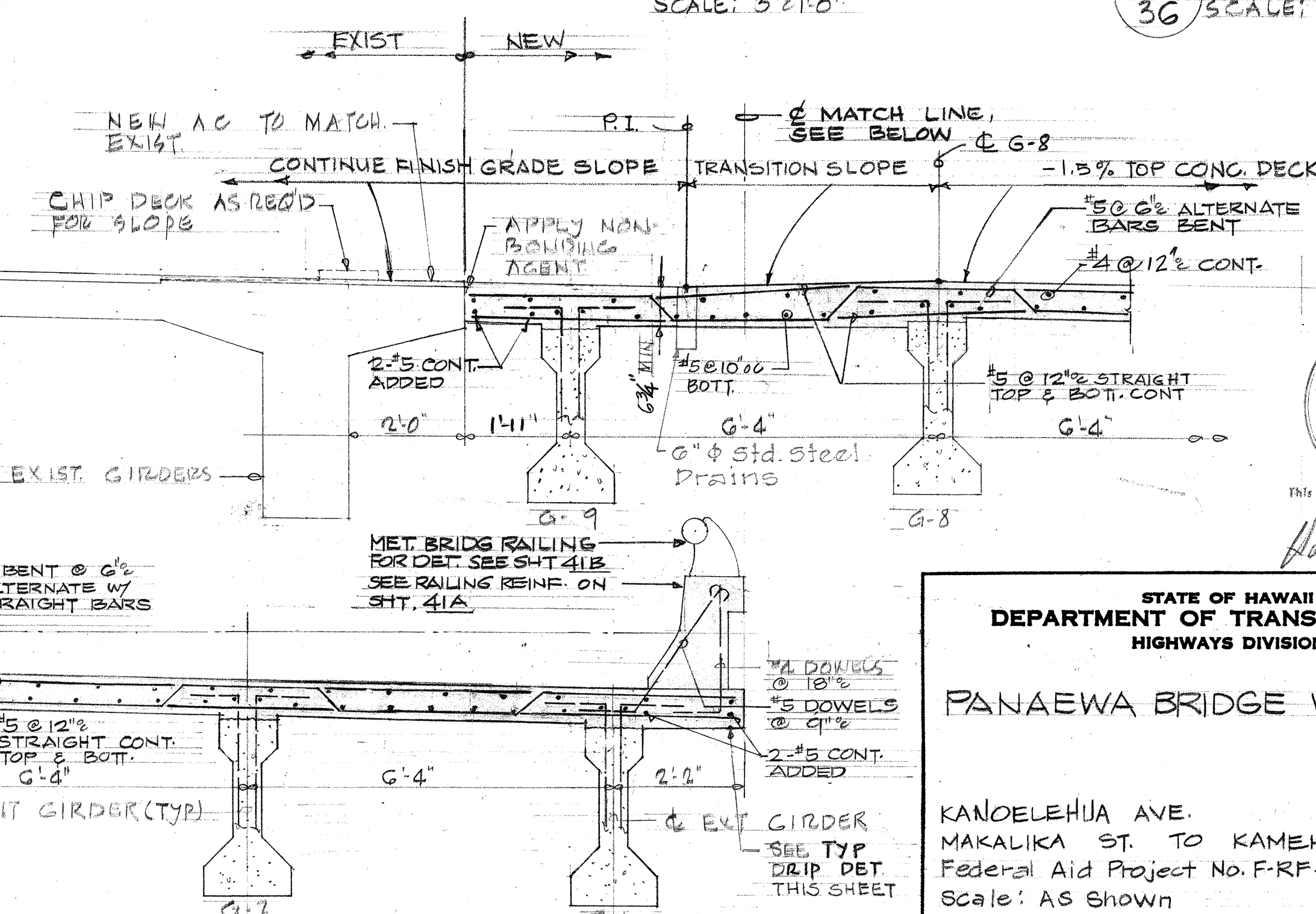
A SECTION
36 SCALE: 1/2" = 1' 0"



DECK FRAMING PLAN



TRANSVERSE DECK SECTION
SCALE: 1/2" = 1'-0"



**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

PANAewa BRIDGE WIDENING

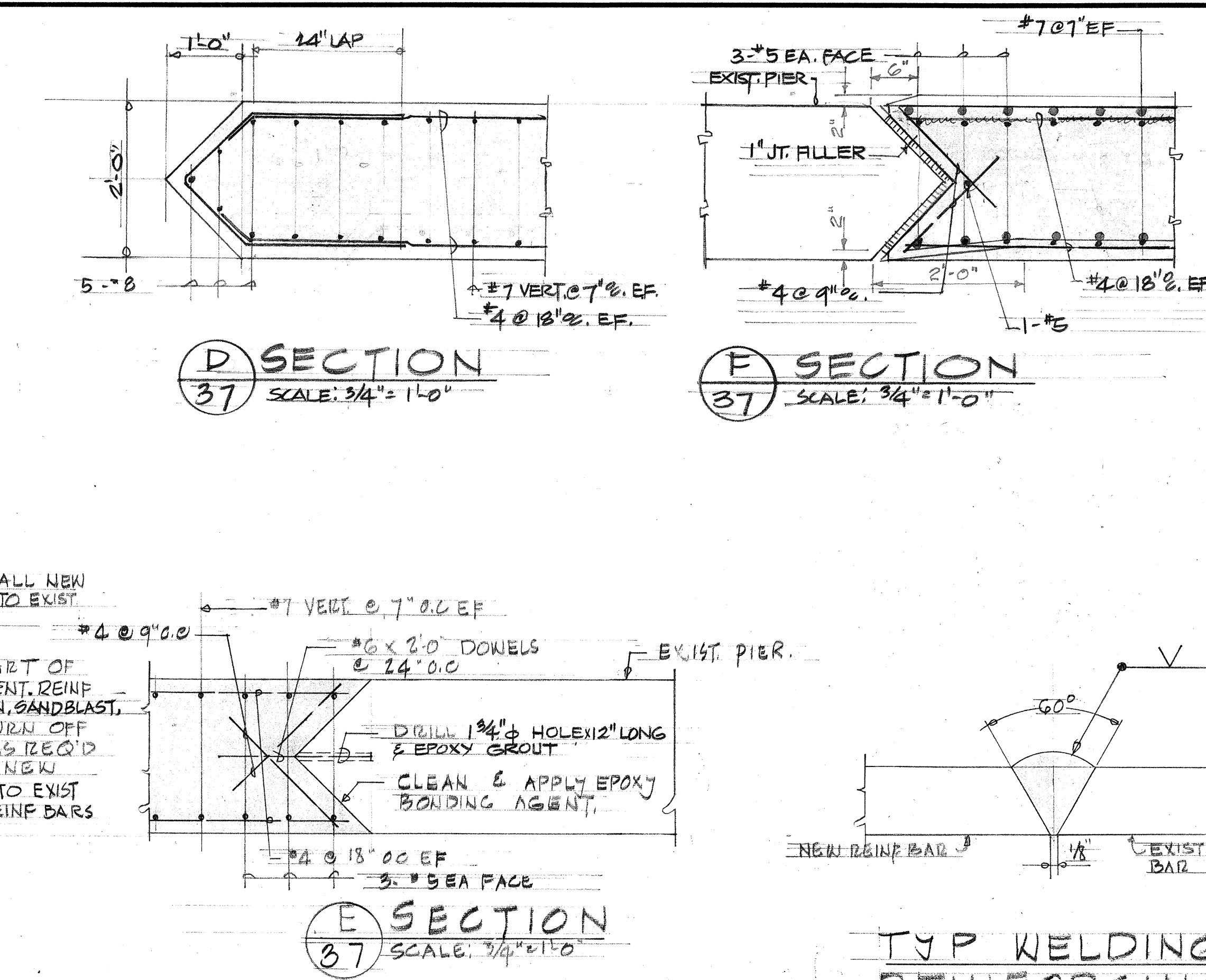
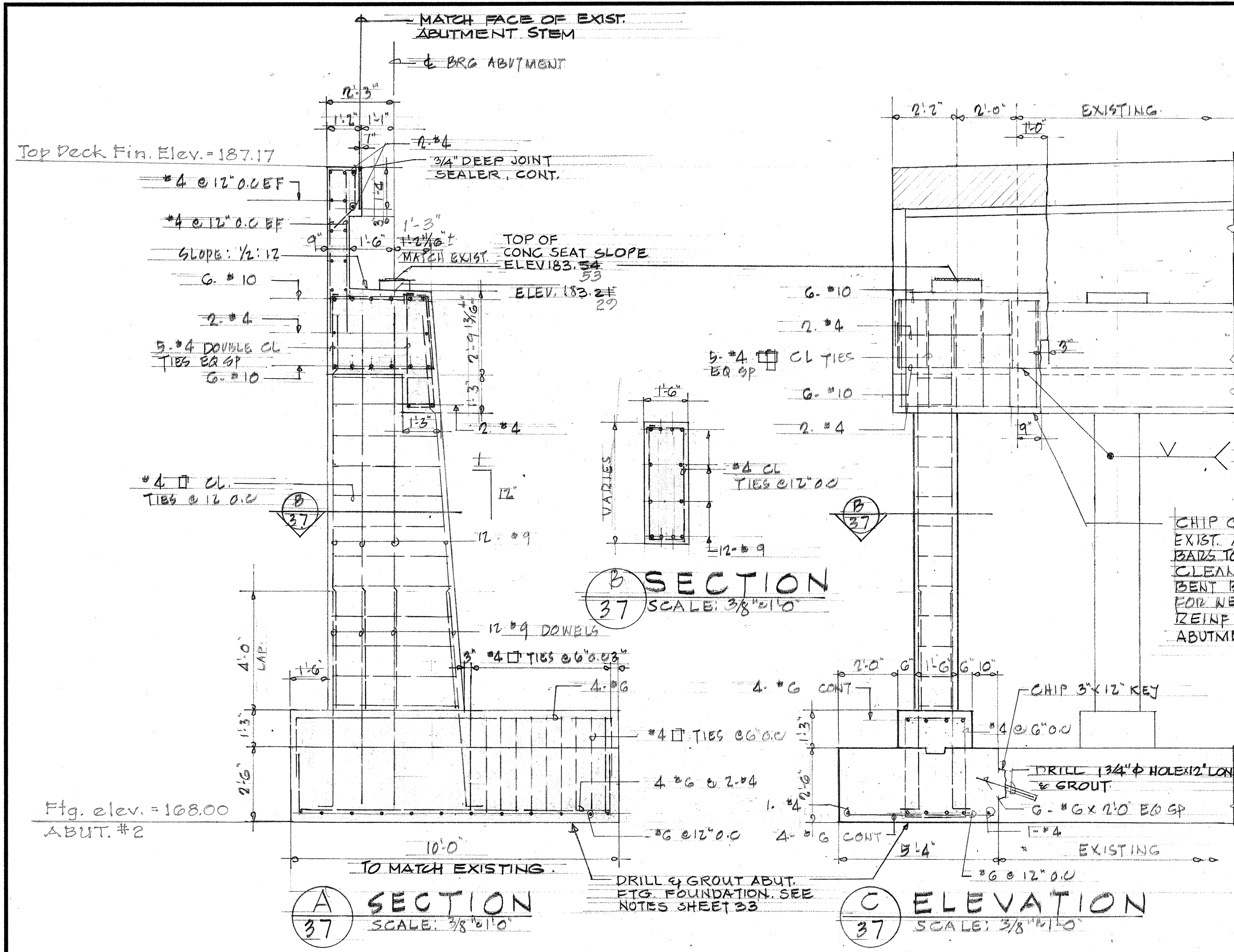
KANOELEHUA AVE.
MAKALIKA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-RF-011-2(13)
Scale: AS SHOWN

SHEET No. 6 OF 15 SHEETS



This work was prepared by n

Harry G. Munroe



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF-011-2(13)	1975	37	126
DATE 4-11-75					
REVISION ADDED JOINT SEALER NOTE					

TYP WELDING DET FOR ABUTMENT REINFORCING BARS
NO SCALE

GENERAL NOTES

DESIGN SPECIFICATIONS: AASHTO

- STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (10th EDITION - 1973) WITH SUBSEQUENT ADDITIONS AND MODIFICATIONS.
- LIVE LOAD HS20-44

DESIGN STRESSES

- REINFORCED CONCRETE 28 DAY COMPRESSIVE STRENGTH
ABUTMENTS, PIER, DECK SLAB, DIAPHRAGMS, WING WALLS, $f'_c = 3,000$ PSI, $f'_c = 1,000$ PSI, $n=10$
RAILINGS, MEDIAN BARRIER CURBS, SIDEWALK AND ALL OTHERS $f'_c = 3,000$ PSI, $f'_c = 1,200$ PSI, $n=10$
- PRESTRESSED PRECAST CONCRETE GIRDERS
 $f'_c = 5,500$ PSI
 $f'_c = 4,000$ PSI
1/2" DIAMETER, 7 WIRE STRESS-RELIEVED STRANDS 270K
ULTIMATE STRENGTH:
TENSIONING LOAD = 28,910 LBS PER STRAND
DESIGN LOAD = 23,550 LBS PER STRAND
FORMS MUST BE REMOVED AND THE BEAMS INSPECTED BEFORE STRANDS ARE CUT.
- REINFORCING STEEL
a. FOOTINGS, ABUTMENTS, ABUTMENT COLUMNS, BEAMS, AND WING WALLS, ASTM A615 GRADE 60 KSI, $f_s = 24,000$ PSI TENSION
b. DECK SLAB, DIAPHRAGMS, RAILINGS, BARRIER RAILS, STIRRUPS TIES AND ALL OTHERS EXCEPT AS OTHERWISE NOTED ON THE PLANS, ASTM A615 GRADE 40 KSI $f_s = 20,000$ PSI TENSION

MATERIALS

- ELASTOMERIC BEARING PADS AND PREFORMED PADS ARE INCIDENTAL TO CONCRETE GIRDERS AND WILL NOT BE PAID FOR SEPARATELY.
- SEE SPECIAL PROVISIONS FOR ADMIXTURE IN CONCRETE

CONCRETE PROTECTION FOR REINFORCEMENT

FOOTINGS	3" CLEAR
ABUTMENTS, WING WALLS	2" CLEAR
COLUMNS, BEAMS	2" CLEAR
STIRRUPS	1/2" CLEAR
DECK SLAB	
TOP	1/2" CLEAR
BOTTOM	1/4" CLEAR

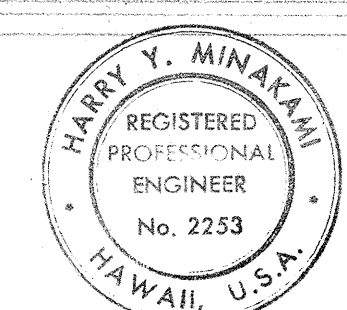
GENERAL

REMOVAL OF EXISTING CONCRETE STRUCTURES SHALL BE INCIDENTAL TO CONCRETE & WILL NOT BE PAID FOR SEPARATELY.

CONSTRUCTION METHODS

- SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS
- IN GENERAL, TOP OF CONCRETE DECK OF STRUCTURE SHALL BE CONSTRUCTED TO FOLLOW THE FINISH ROADWAY VERTICAL AND HORIZONTAL CURVES AND GRADES
- ALL FILL BEHIND ABUTMENTS AND WING WALLS SHALL BE COMPLETE IN PLACE BEFORE PLACING PRESTRESSED PRECAST CONCRETE GIRDERS
- FOR CONCRETE FINISH SEE SPECIFICATIONS, CONCRETE SEATS AND CURB BLOCKS TO BE POURED MONOLITHICALLY WITH PIER OR ABUTMENT SECTIONS. SEATS SHALL RECEIVE A HARD TROWEL FINISH, LEVEL AND TO BE TIE TO ELEVATIONS.
- ELASTOMERIC PADS SHALL BE SECURED AGAINST DISPLACEMENT BY ADHESIVE WHICH SHALL BE APPROVED BY THE ENGINEER.
- RAILS, SIDEWALK AND MEDIAN BARRIER CURBS SHALL NOT BE PLACED UNTIL THE DECK HAS GAINED SUFFICIENT STRENGTH AS DETERMINED BY THE ENGINEER.
- PRESTRESSED GIRDERS SHALL BE SHORED AT ABUTMENT AND PIERS POINTS ONLY.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING FOR THE EXISTING ABUTMENTS AND SUPERSTRUCTURE WHILE EXCAVATING ADJACENT TO THE EXISTING BRIDGE ABUTMENTS. THE SHORING SHALL BE SUCH THAT IT WILL NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE EXISTING BRIDGE. THE CONTRACTOR'S METHOD OF SHORING SHALL BE APPROVED BY THE ENGINEER PRIOR TO EXCAVATION. THE TEMPORARY SHORING IS INCIDENTAL TO THE BRIDGE CONSTRUCTION AND WILL NOT BE PAID FOR SEPARATELY.
- BOTTOM OF FOOTINGS TO REST ON FIRM UNDISTURBED SOIL. ANY IRREGULARITIES NOTED IN THE FOUNDATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- THE CONTRACTOR SHALL SHORE THE EXISTING UPSTREAM EXTERIOR GIRDER TO PREVENT SLAB AND GIRDER DEFLECTION DURING THE CONCRETE POUR AND SUBSEQUENT CONCRETE SETTING. SHORING OF EXISTING GIRDER IS INCIDENTAL TO COST OF BRIDGE AND WILL NOT BE PAID FOR UNDER A SEPARATE ITEM.

- SIZE OF DOWEL HOLE DRILLED INTO EXIST. CONCRETE SHALL BE MINIMUM OF 3/8" DIAMETER LARGER THAN DOWEL. DOWEL TO BE GROUTED WITH APPROVED NEAT EPOXY GROUT. NEW CONCRETE SHALL BE BONDED TO EXIST. CONCRETE WITH APPROVED EPOXY BONDING AGENT.
- IN GENERAL WHERE EXIST. REINF. BARS ARE CUT, ALL EXPOSED ENDS SHALL BE UNDER CUT A MINIMUM OF 1" BELOW THE SURFACE OF THE CONCRETE & PATCHED WITH MORTAR. CUTTING REINF. BARS AND PATCHING WITH MORTAR IS INCIDENTAL TO CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.
- WELDING SHALL BE DONE BY CERTIFIED WELDERS & CONFORM TO THE A.W.S. CODE. ELECTRODES SHALL BE EXX 70.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PANAHEWA BRIDGE WIDENING

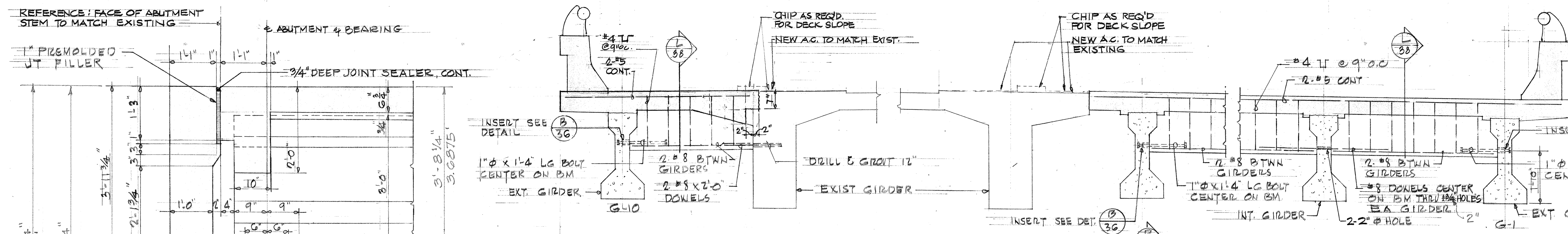
KAOUELEHUA AVE.
MAKALIKUA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-RF-011-2(13)
Scale: AS SHOWN

SHEET No. 7 OF 15 SHEETS

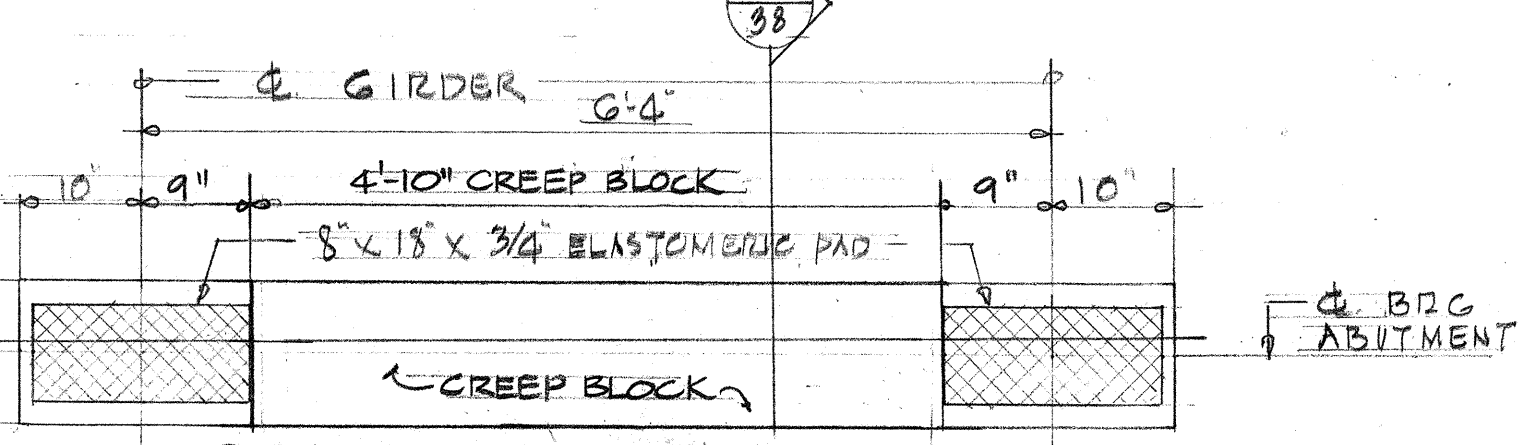
ADD. 37

DATE	_____
DESIGNED BY	_____
DRAWN BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____

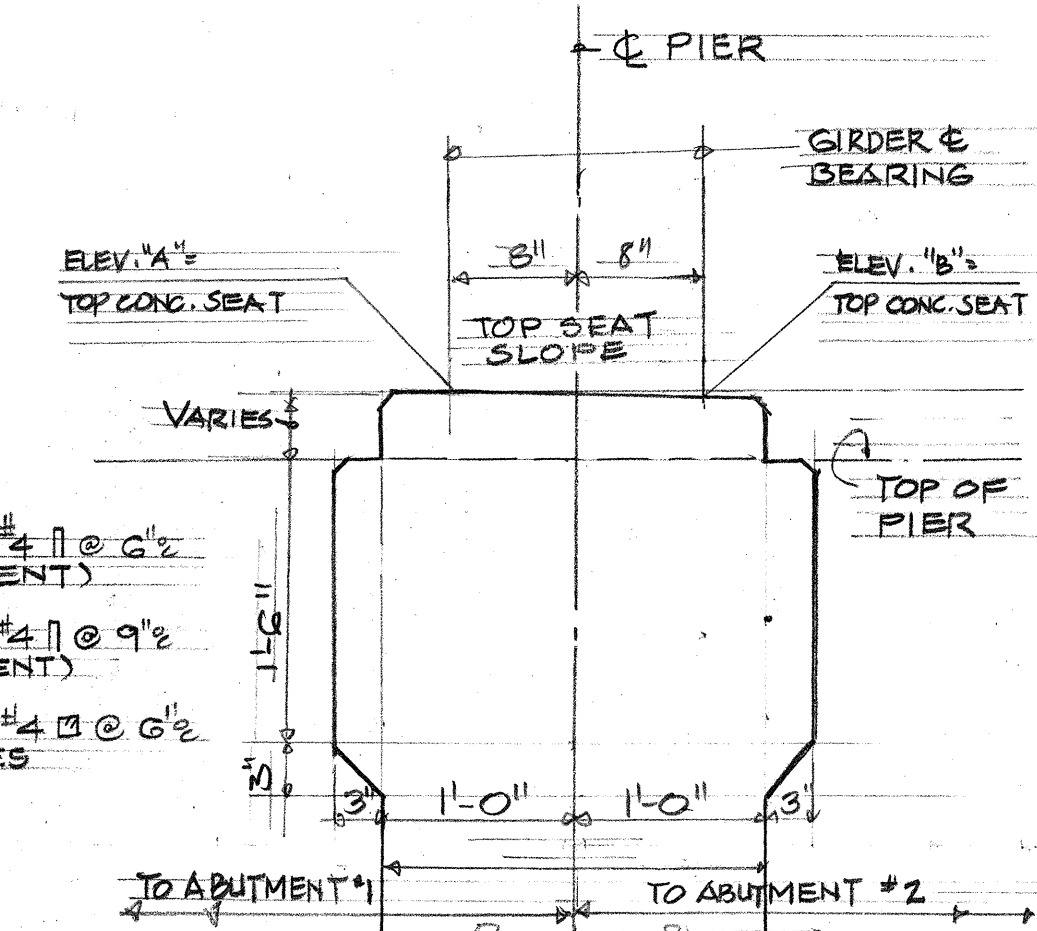
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF-011-2(13)	1975	88	126



BEAM "A" ELEVATION
SCALE: 1/2" = 1'-0"



CONCRETE SEAT AT CREEP BLOCK DETAIL
SCALE: 3/4" = 1'-0"



DETAIL
SCALE: 1" = 1'-0"

K SECTION
38 SCALE: 3/4" = 1'-0"

L SECTION
38 SCALE: 1/2" = 1'-0"

M SECTION
38 SCALE: 3/4" = 1'-0"

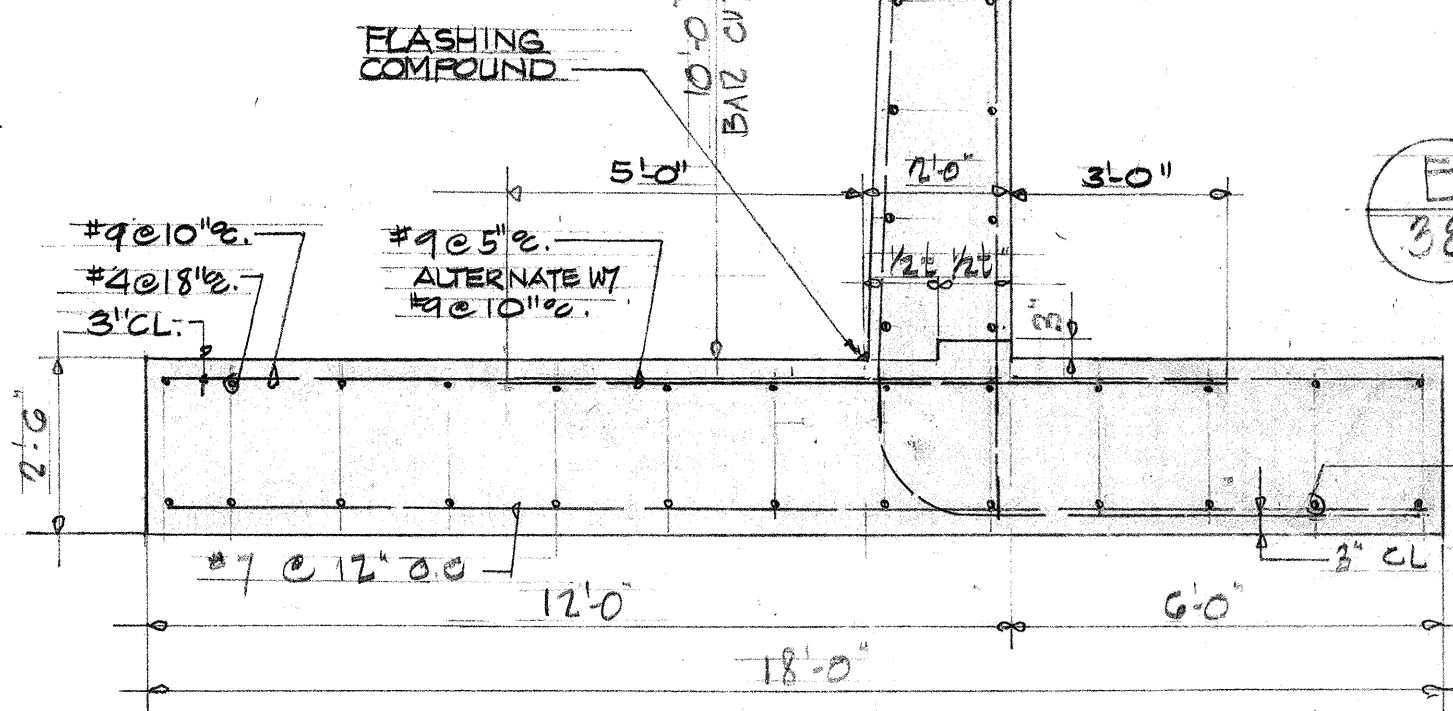
P SECTION
38 SCALE: 3/4" = 1'-0"

D SECTION
38 SCALE: 3/4" = 1'-0"

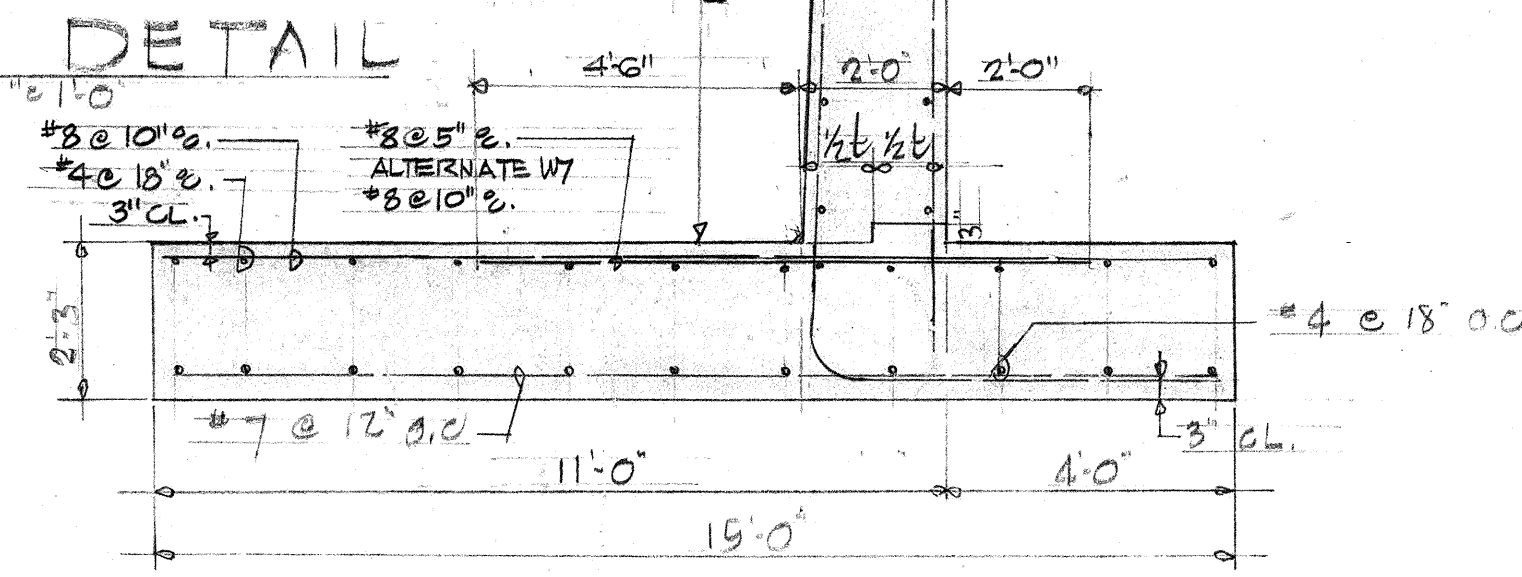
F SECTION
38 SCALE: 3/4" = 1'-0"

H SECTION
38 SCALE: 3/4" = 1'-0"

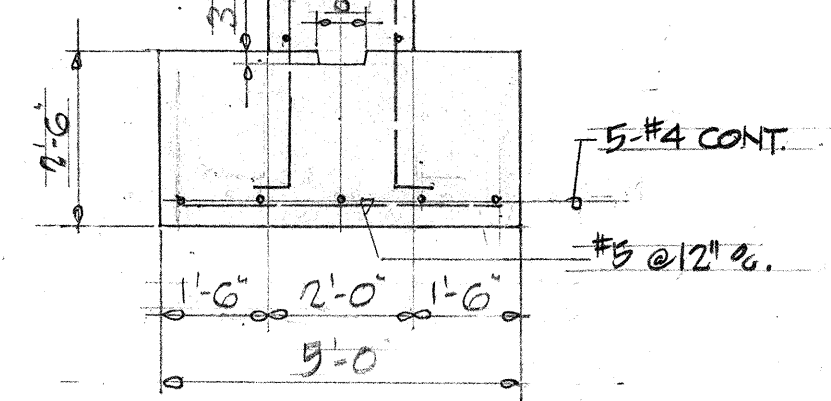
J SECTION
38 SCALE: 3/4" = 1'-0"



A SECTION ABUTMENT #1
38 SCALE: 3/8" = 1'-0"

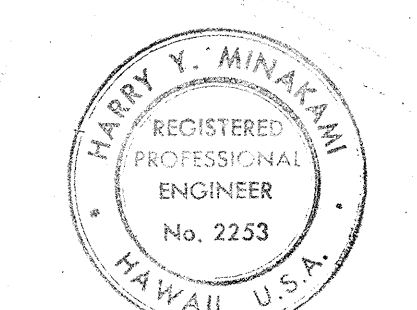


B SECTION ABUTMENT #2
38 SCALE: 3/8" = 1'-0"



C SECTION PIER
38 SCALE: 3/8" = 1'-0"

G PIER SEAT
38 SCALE: 3/4" = 1'-0"

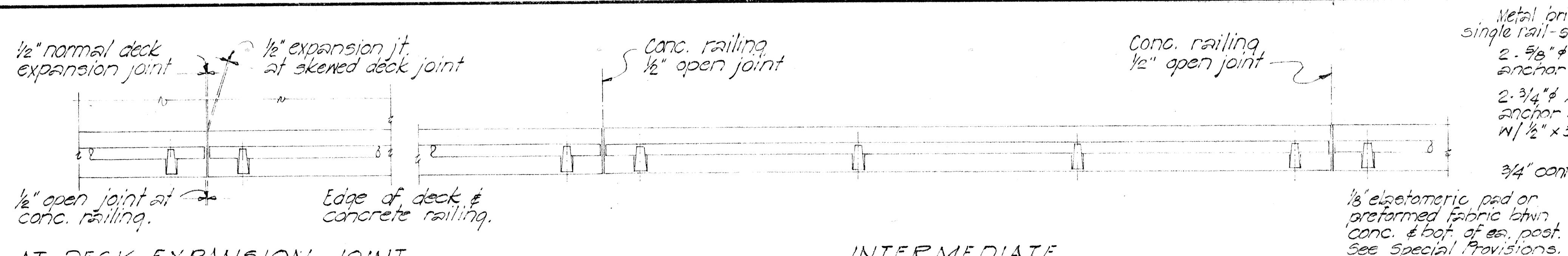


This work was prepared by me or under my supervision.

4-11-75	LAPPED JOINT SEALER NOTE
	2. CHANGED ABUTMENT #1 & #2 REIN. BARS DETAILS.
	3. CHANGED PIER ABUTMENT SECTIONS.
	4. ADDED DETAIL (G/38)
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION PANAHEWA BRIDGE WIDENING KAOEHEHUA AVE MAKALIKAI ST. TO KAMEHAMEHA AVE. Federal Aid Project No. F-RF-011-2(13) Scale: As Shown	
SHEET No. 8 OF 15 SHEETS	

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
No.	_____

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



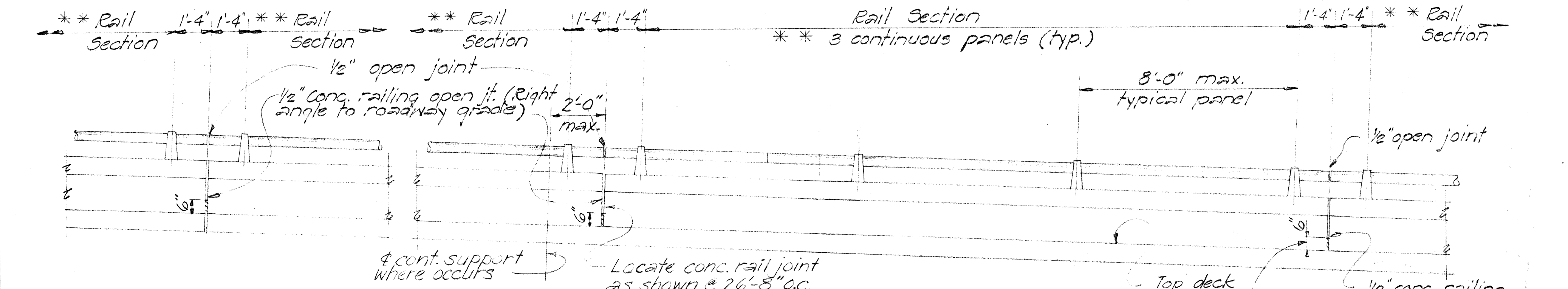
AT DECK EXPANSION JOINT

Note!!

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

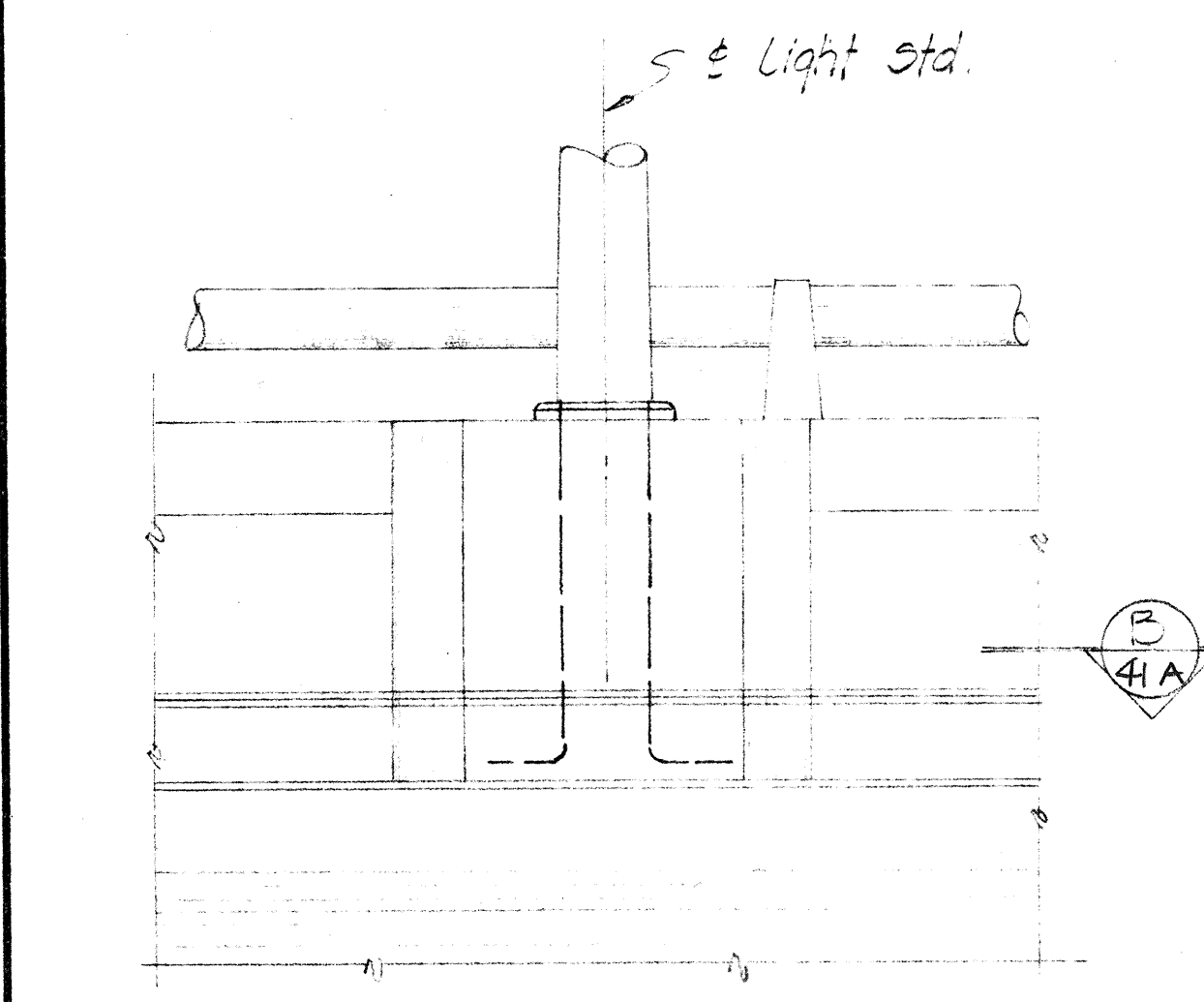
INTERMEDIATE RAILING PLAN SCALE 3/8" = 1'-0"

- Rail Posts shall be normal to grade.
- Provide double posts at each expansion jt., fixed bridge jt., continuous support, and as shown on detailed drawing.

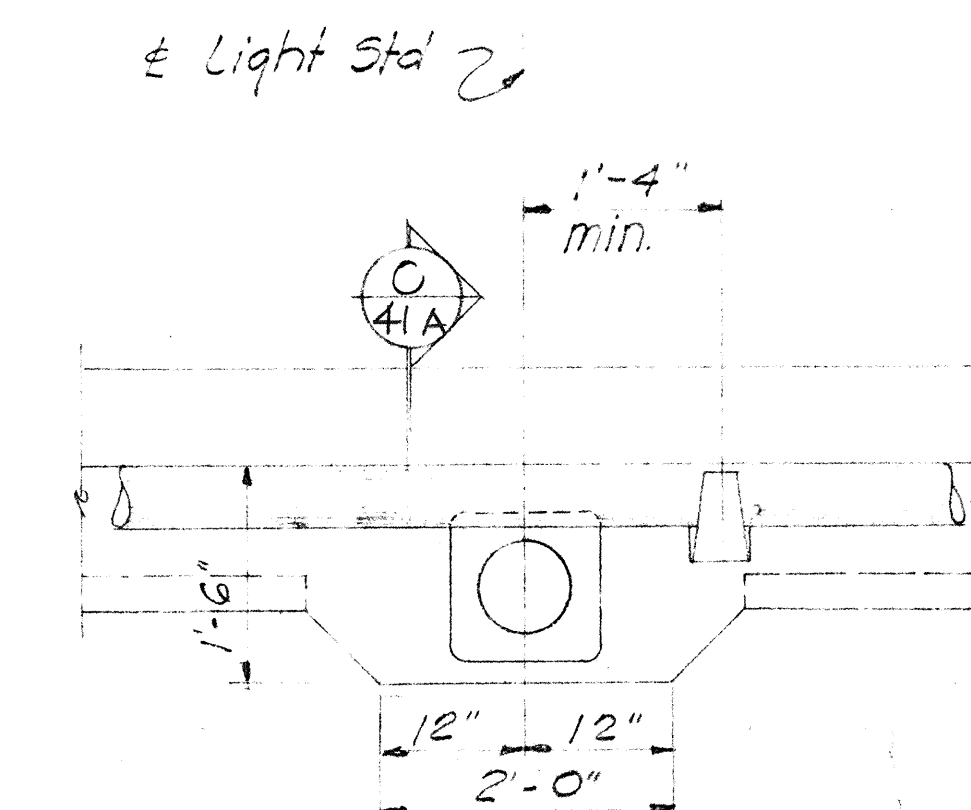


AT DECK EXPANSION JOINT

EXTERIOR RAILING ELEVATION SCALE: 3/8" = 1'-0"

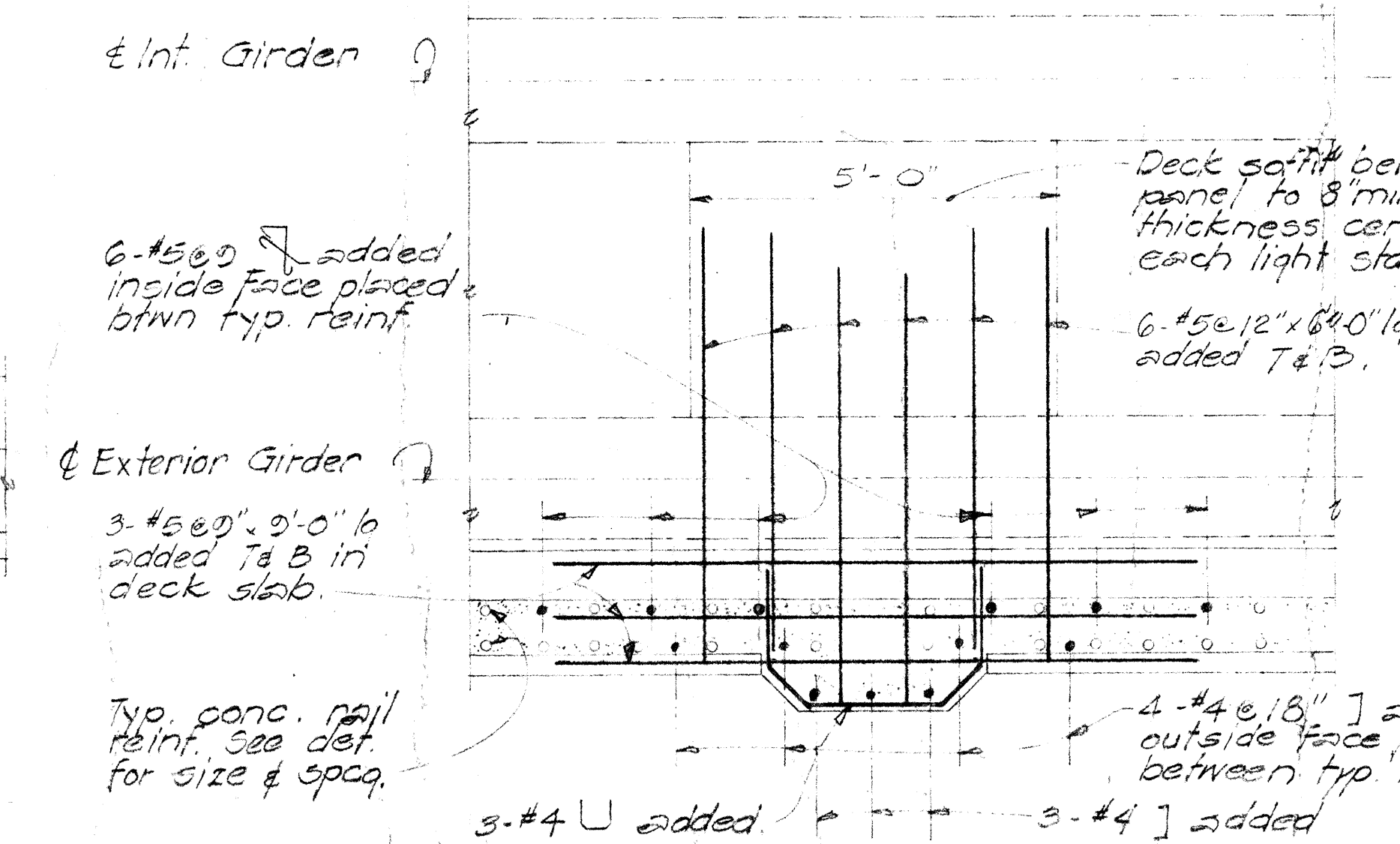


PART ELEVATION
SCALE: 3/4" = 1'-0"

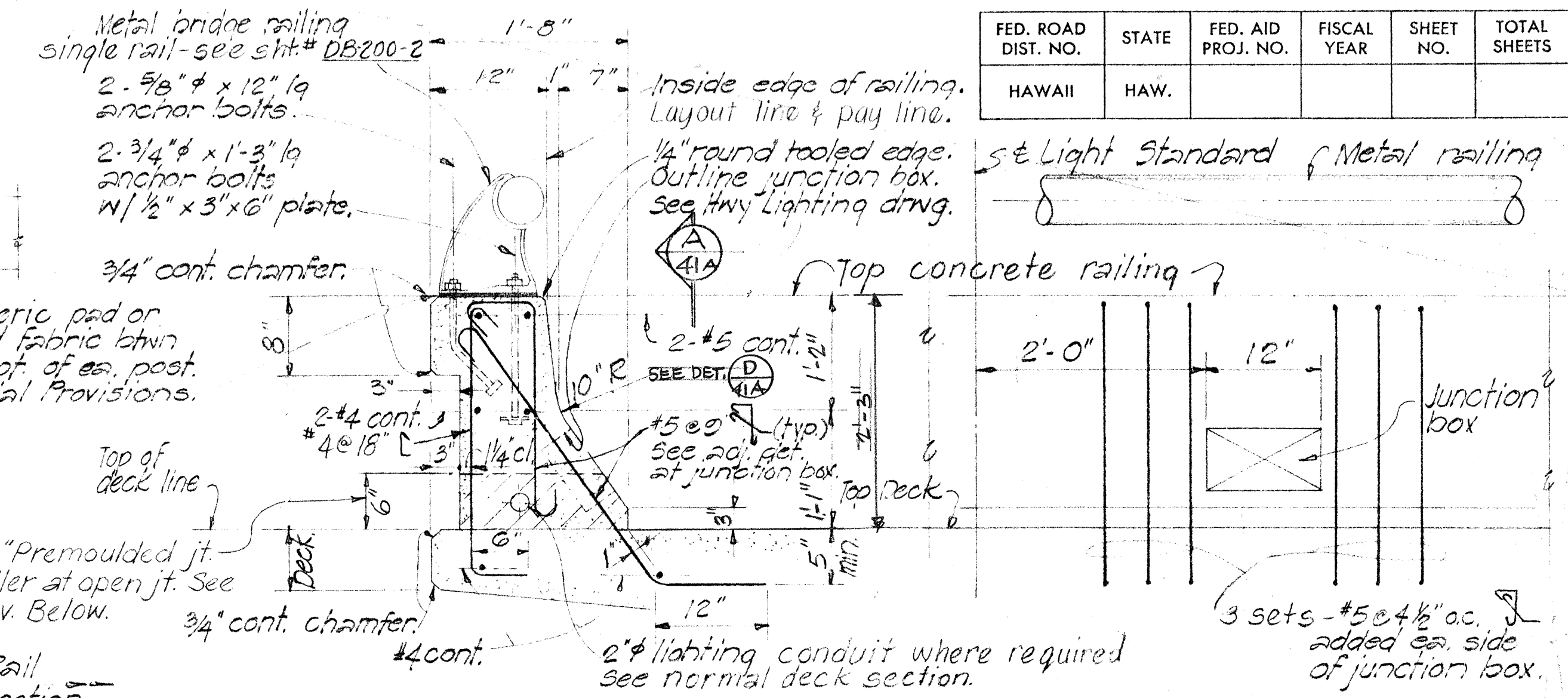


PART PLAN
SCALE: 3/4" = 1'-0"

DETAILS OF RAILING AT LIGHT STANDARD SCALE AS NOTED

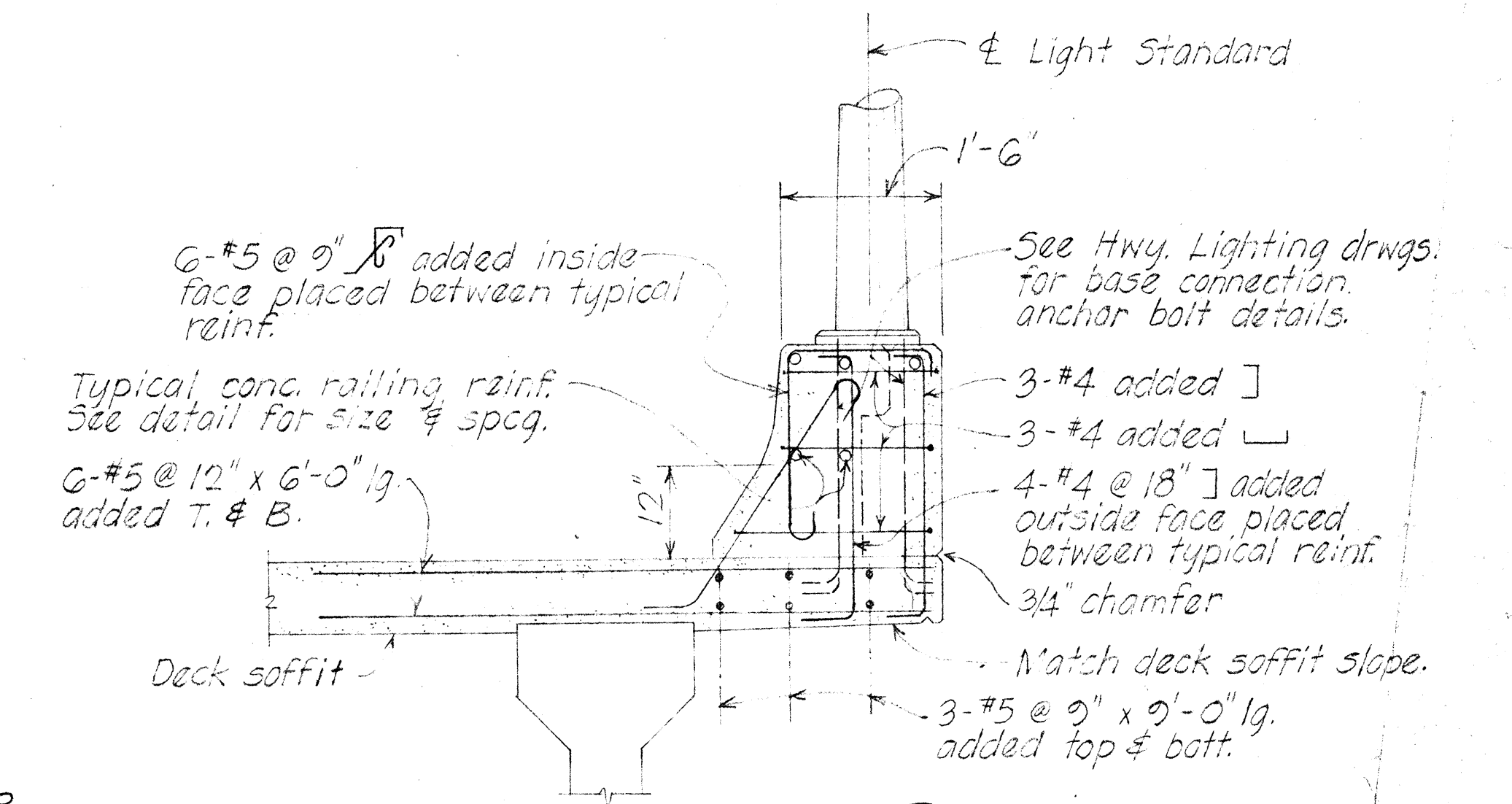


SECTION (B) 41A
SCALE: 1/2" = 1'-0"

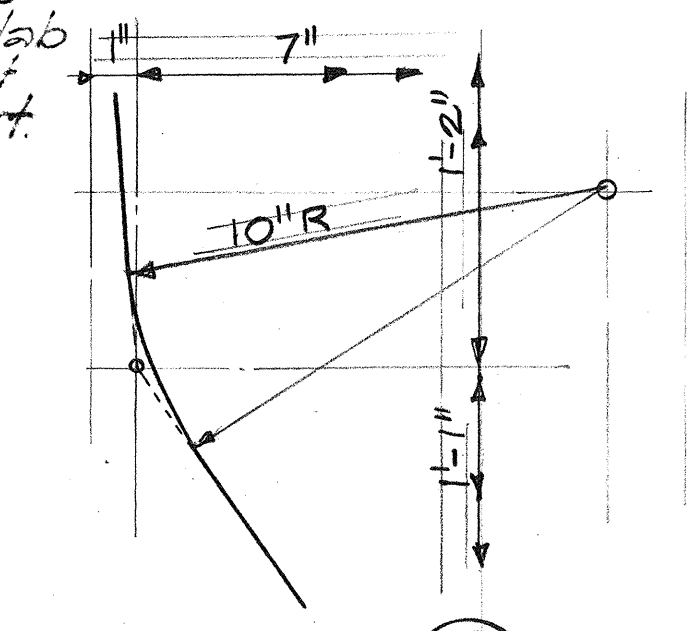


(X) 41A TYPICAL CONCRETE RAILING SECTION
SCALE: 1" = 1'-0"

ELEVATION (A) 41A SHOWING SPECIAL REINFORCEMENT AT JUNCTION BOX
SCALE: 1" = 1'-0"



SECTION (C) 41A
SCALE: 3/4" = 1'-0"



DETAIL (D) 41A
SCALE: 3" = 1'-0"



This work was prepared by me or under my supervision.

Harry Y. Minatari

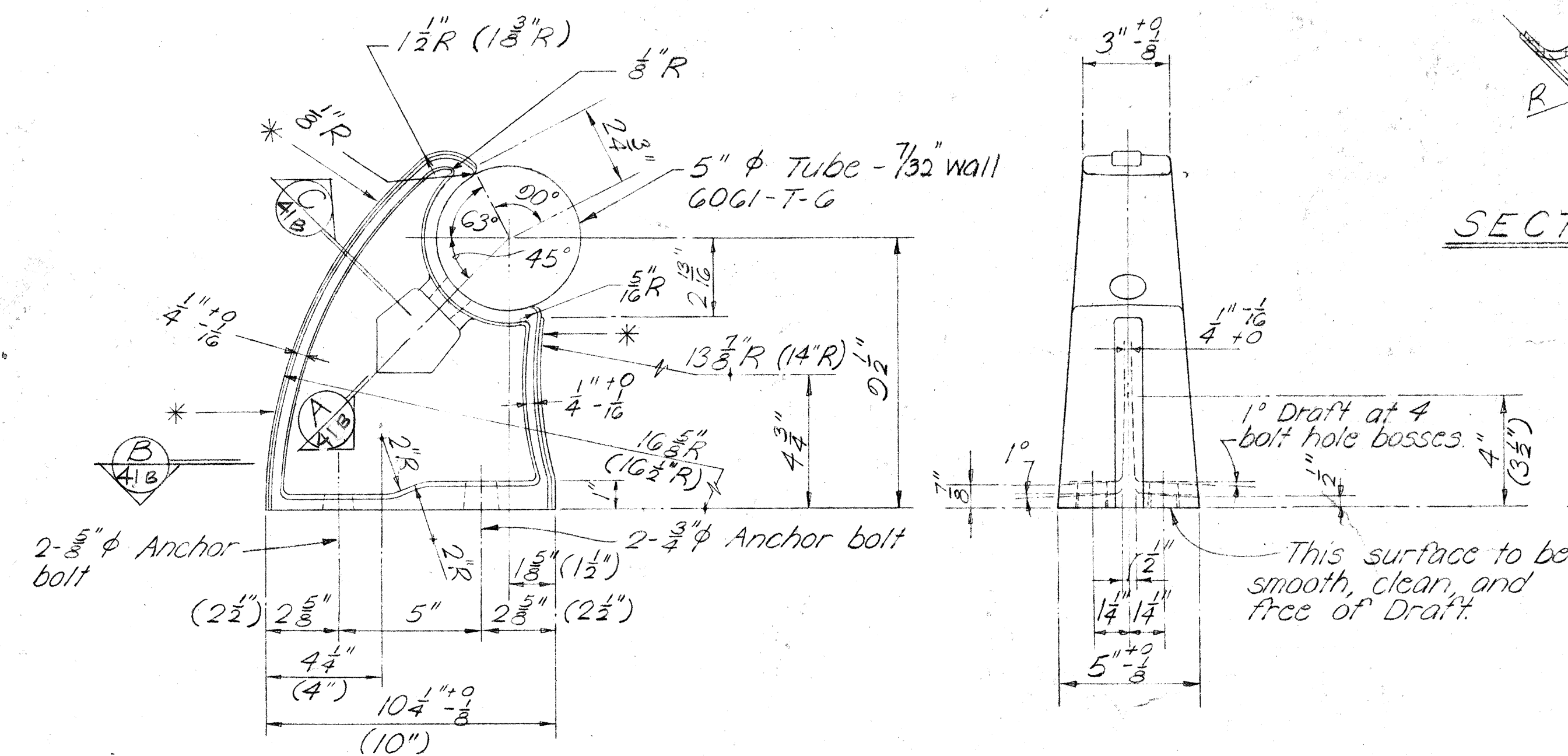
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
ALUMINUM BRIDGE RAILING
ONE RAIL COMBINATION TYPE
ON PARAPET

Date April 1975

SHEET No. 12 OF 15 SHEETS

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



SIDE ELEVATION

END ELEVATION

NOTE:

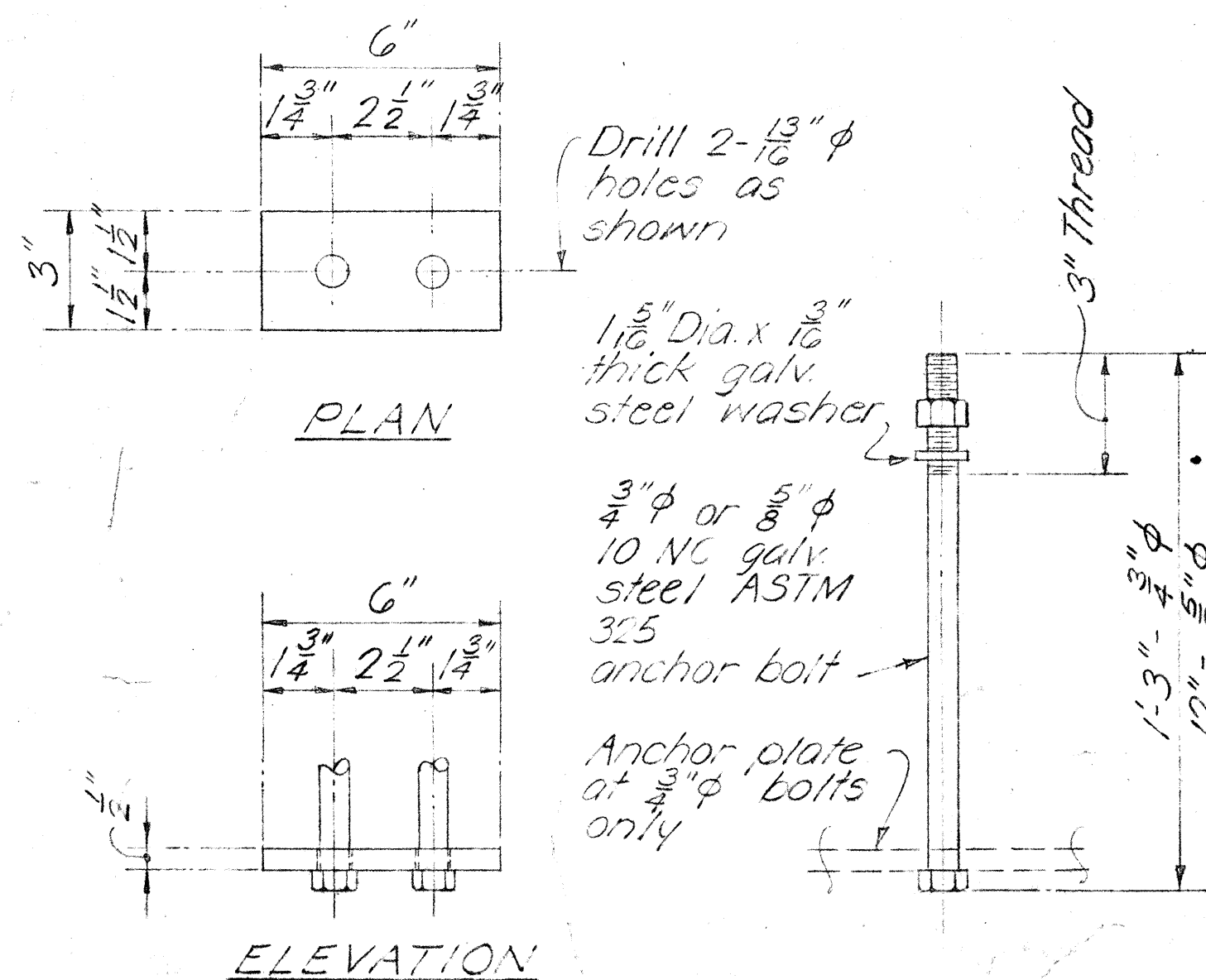
* Casting to be supplied with a standard scratch brush finish on entire gating rib surface and as indicated by an asterisk (*). Finish shall be approved by the Engineer.

Casting to be neatly trimmed and any protruding flash to be broken off. Unless otherwise specified, draft angles to be 3°, corner radii to be 3/32" R, fillet radii to be 3/8" R, casting tol to be ±1/16", wall thickness to be ±1/32".

Dimensions may be as shown or as shown in parenthesis ().

TYPICAL RAIL POST DETAILS

Scale: 3" = 1'-0"



PLAN

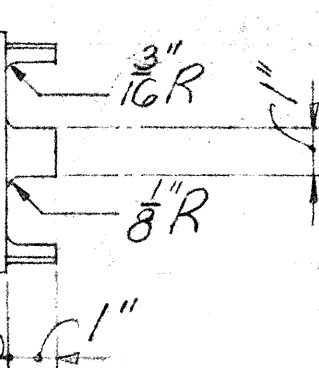
ELEVATION

ANCHOR BOLT DETAIL ANCHOR BOLT

TYPICAL RAIL POST

STEEL ANCHOR BOLT ASSEMBLY

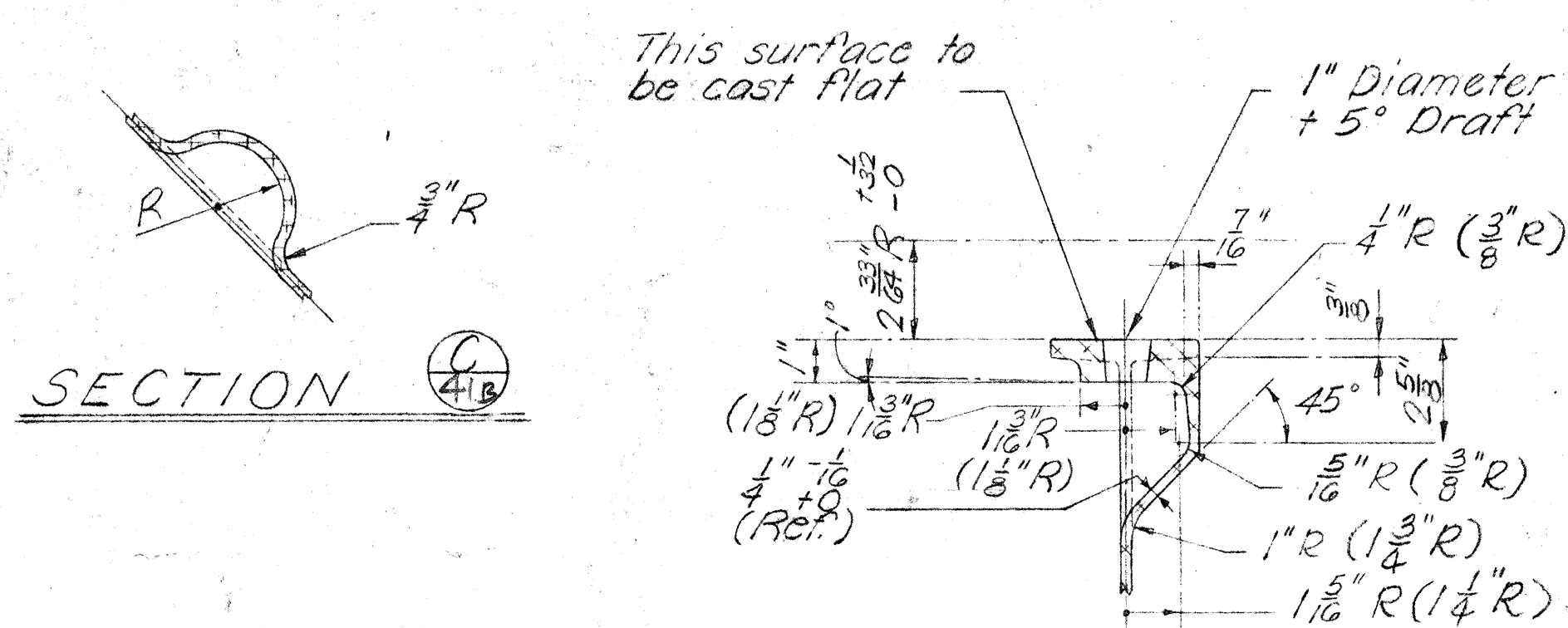
Scale: 3" = 1'-0"



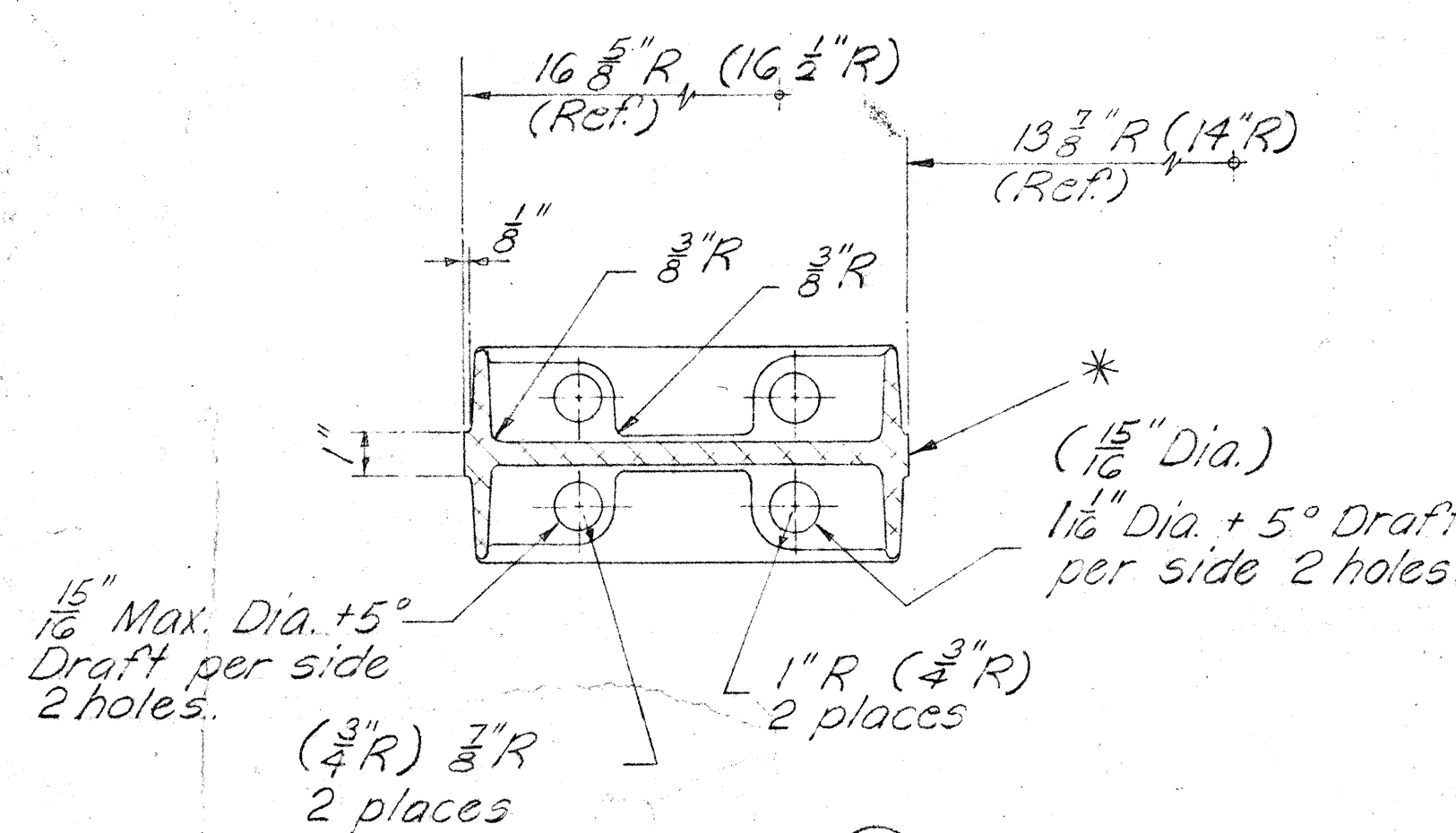
All draft angles = 3°

RAIL CAP DETAIL

Scale: 3" = 1'-0"



SECTION A-A

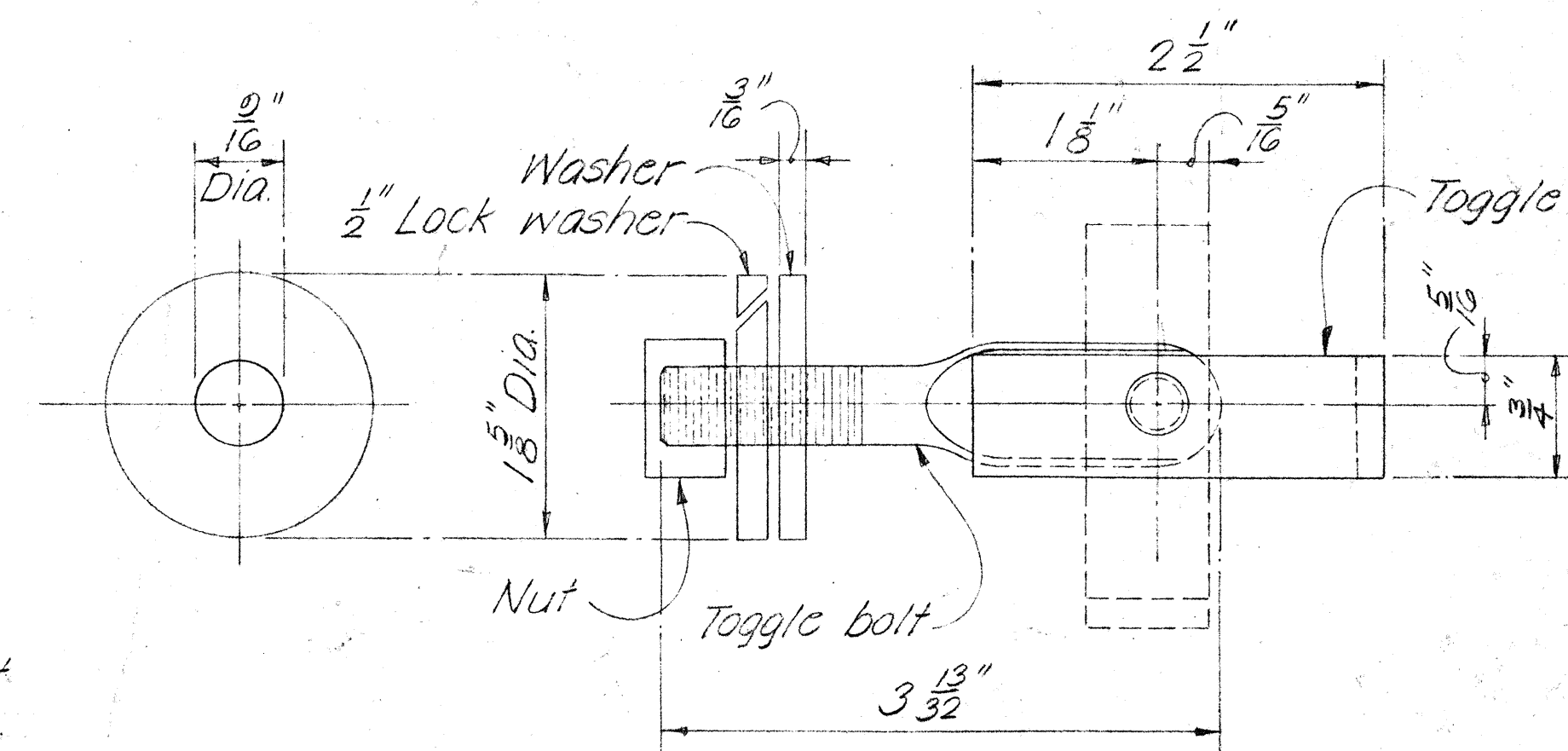


SECTION B-B

NOTE:

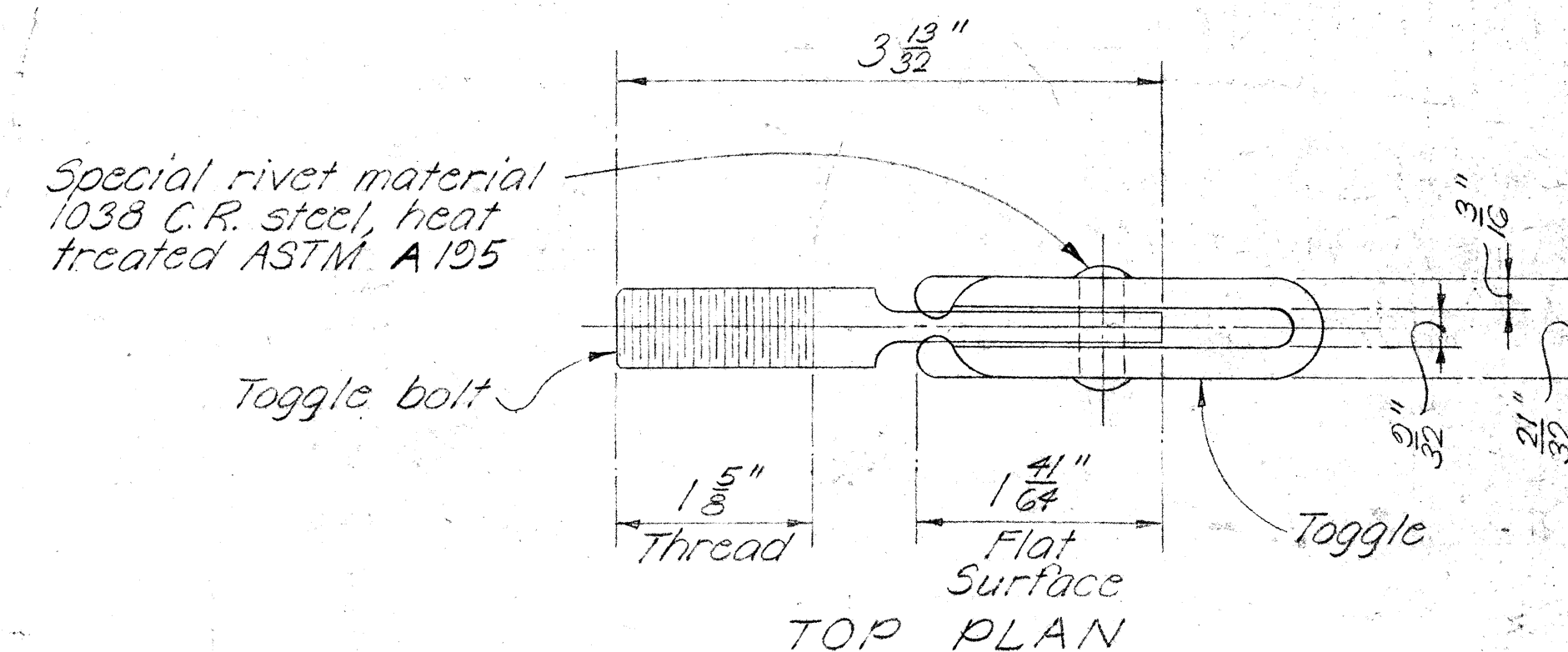
TOGGLE BOLT

Cadmium plating on steel-Type N5 0.0005" thick ASTM-A165. (all parts).



WASHER

SIDE ELEVATION ASSEMBLY



TOP PLAN

1/2" Φ STEEL TOGGLE BOLT DETAILS

Full Scale



This work was prepared by me or under my supervision.

Harry Y. Minakami

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

ALUMINUM BRIDGE RAILING

ONE RAIL COMBINATION TYPE

ON PARAPET

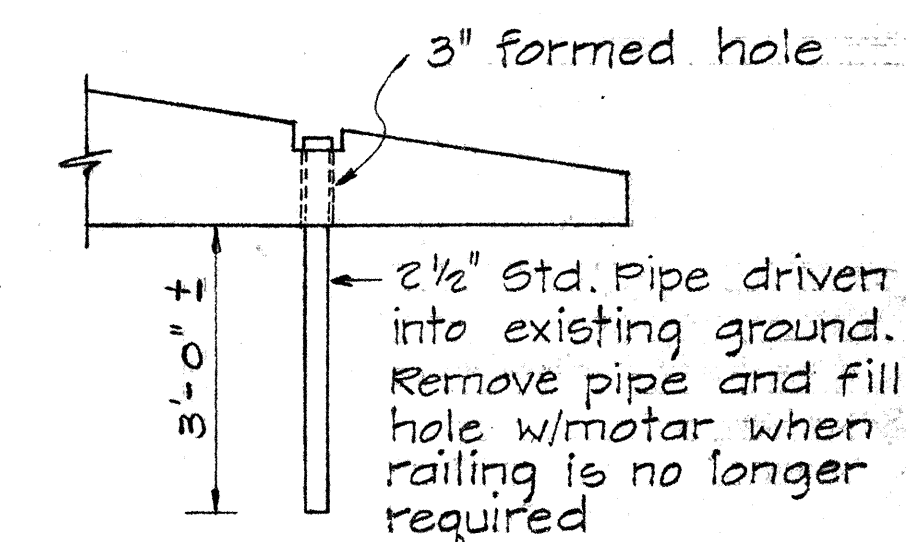
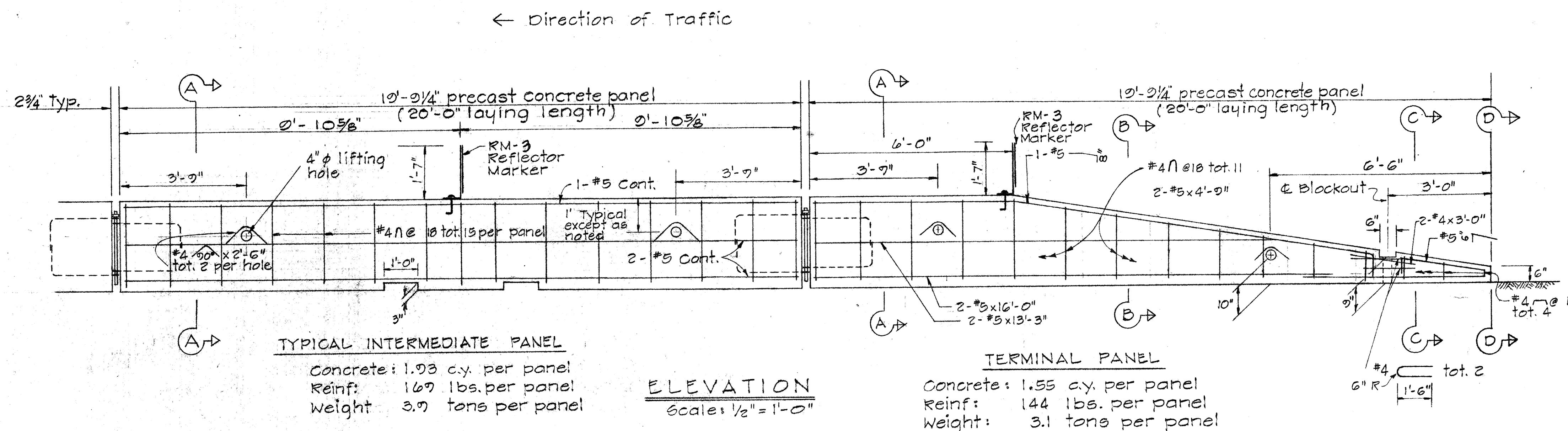
Scale as noted

Date: APRIL 1975

SHEET No. 13 OF 15 SHEETS

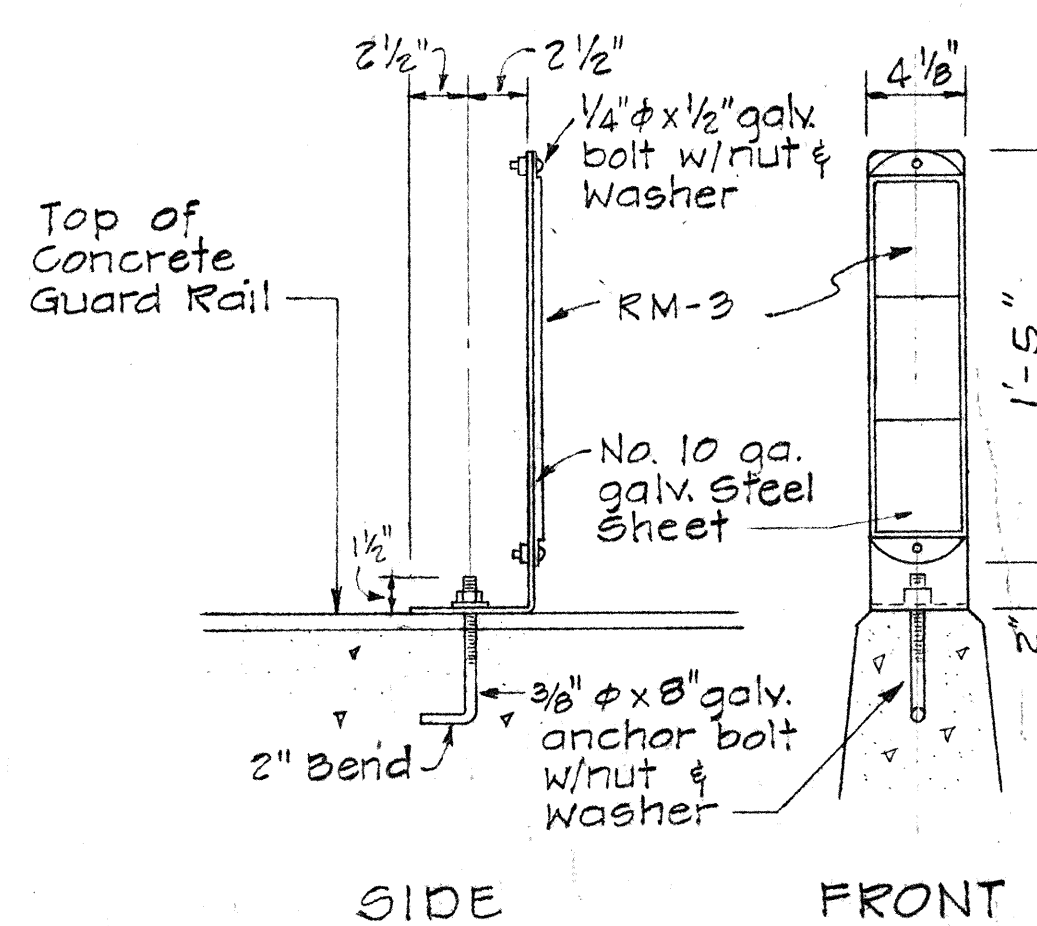
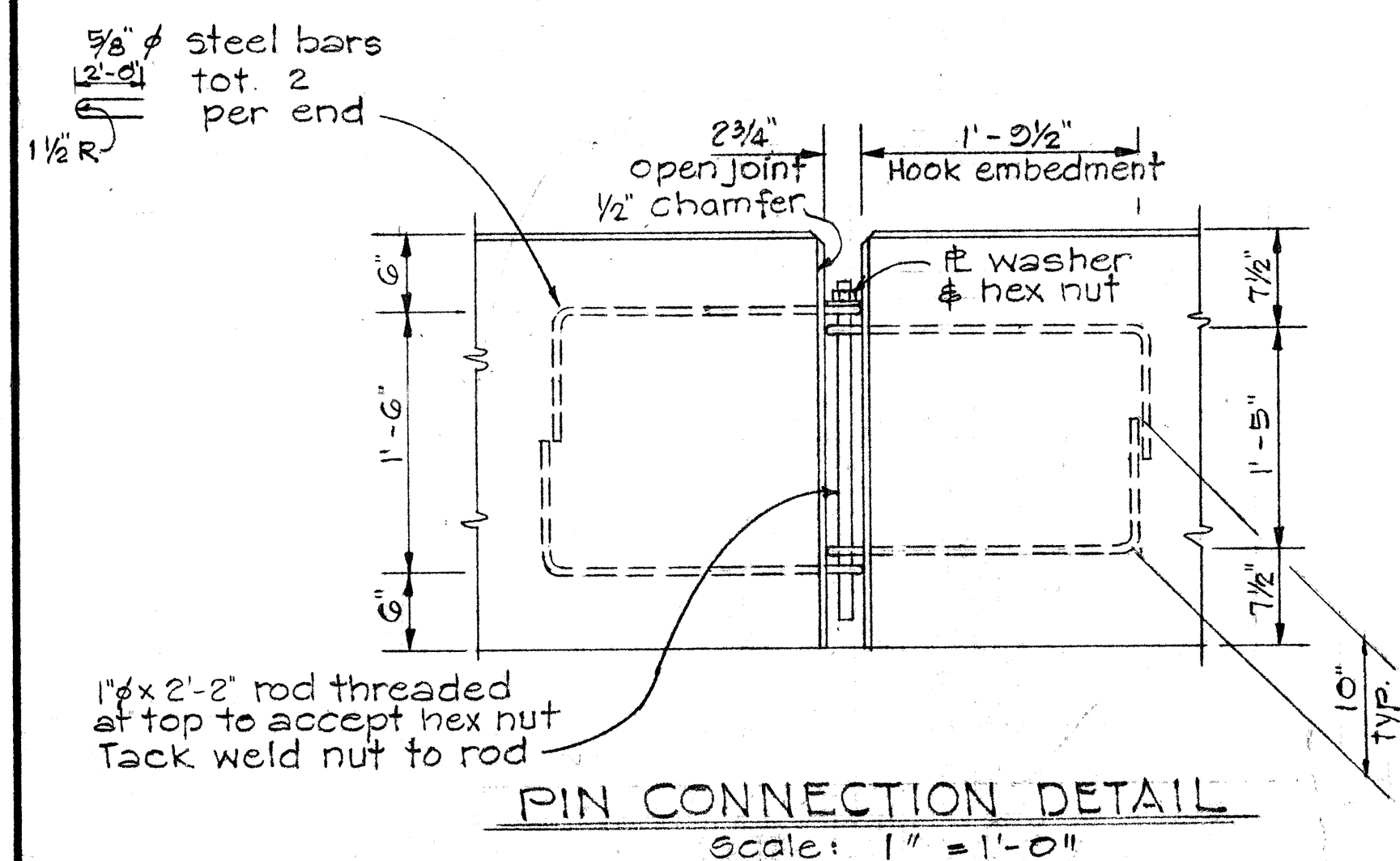
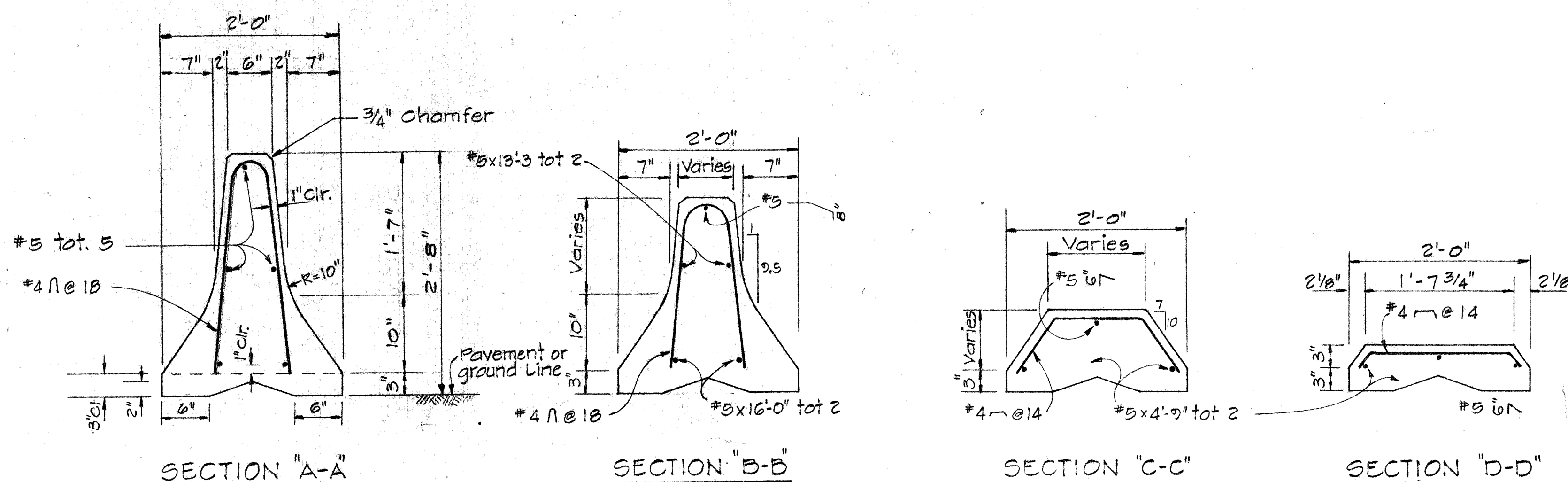
ADD. 41 B

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-R-F-011-2(13)	1975	41D	126



NOTES

- For details not shown in Sections BB, C-C, & D-D, see Section A-A
- Reflector Marker shall not be paid for separately but shall be considered incidental to Portable Concrete Guard Rail.
- Concrete shall be Class "A".
- All bolts to have cut washers unless otherwise noted.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE GUARD RAIL TYPICAL DETAILS

KANOELEHUA AVENUE
MAKALIKA ST. TO KAMEHAMEHA AVE
FEDERAL AID PROJ. NO. F-R-F-011-2(13)

Scale: As Noted Date: _____

SHEET No. 15 OF 15 SHEETS

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