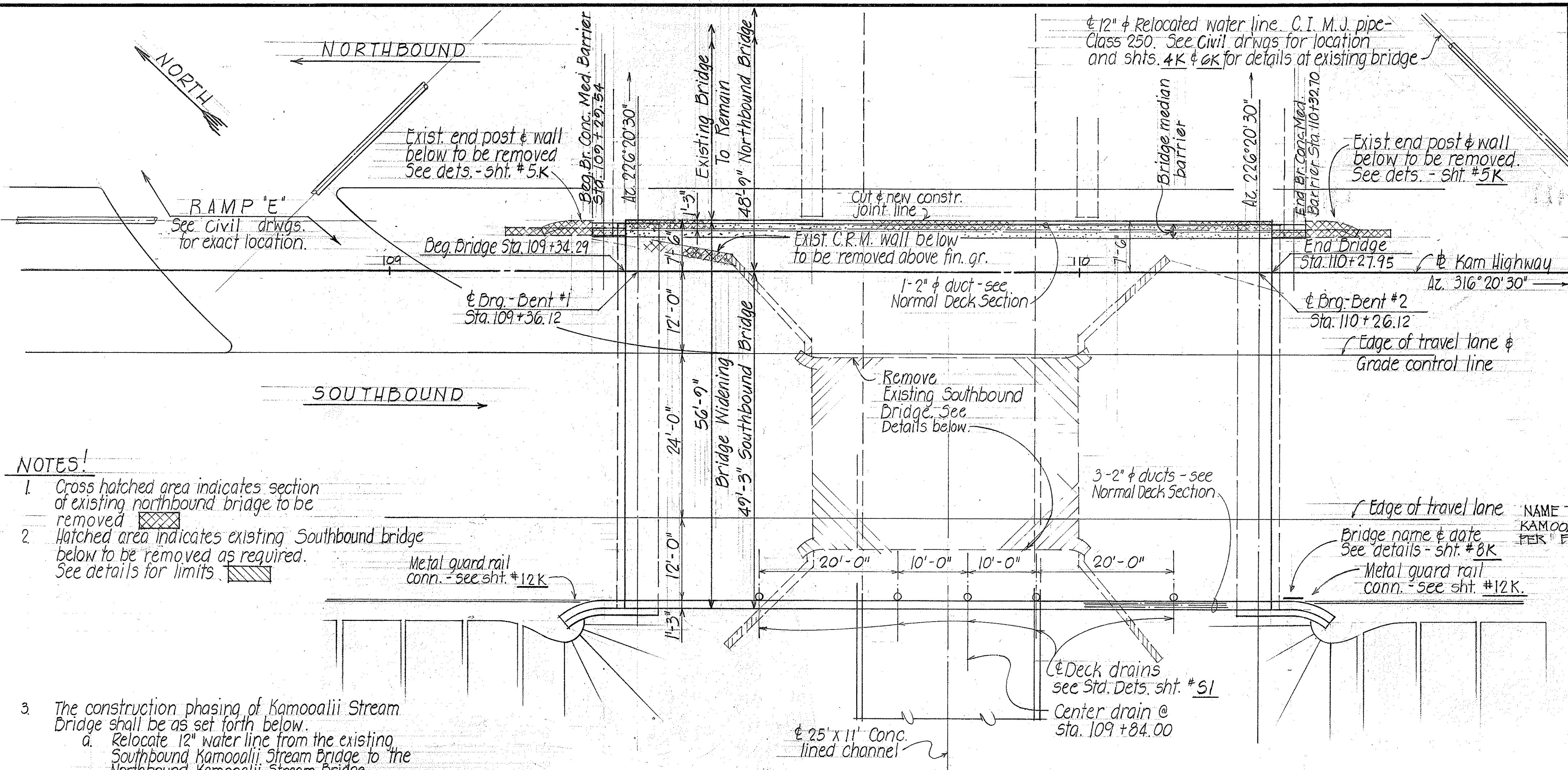
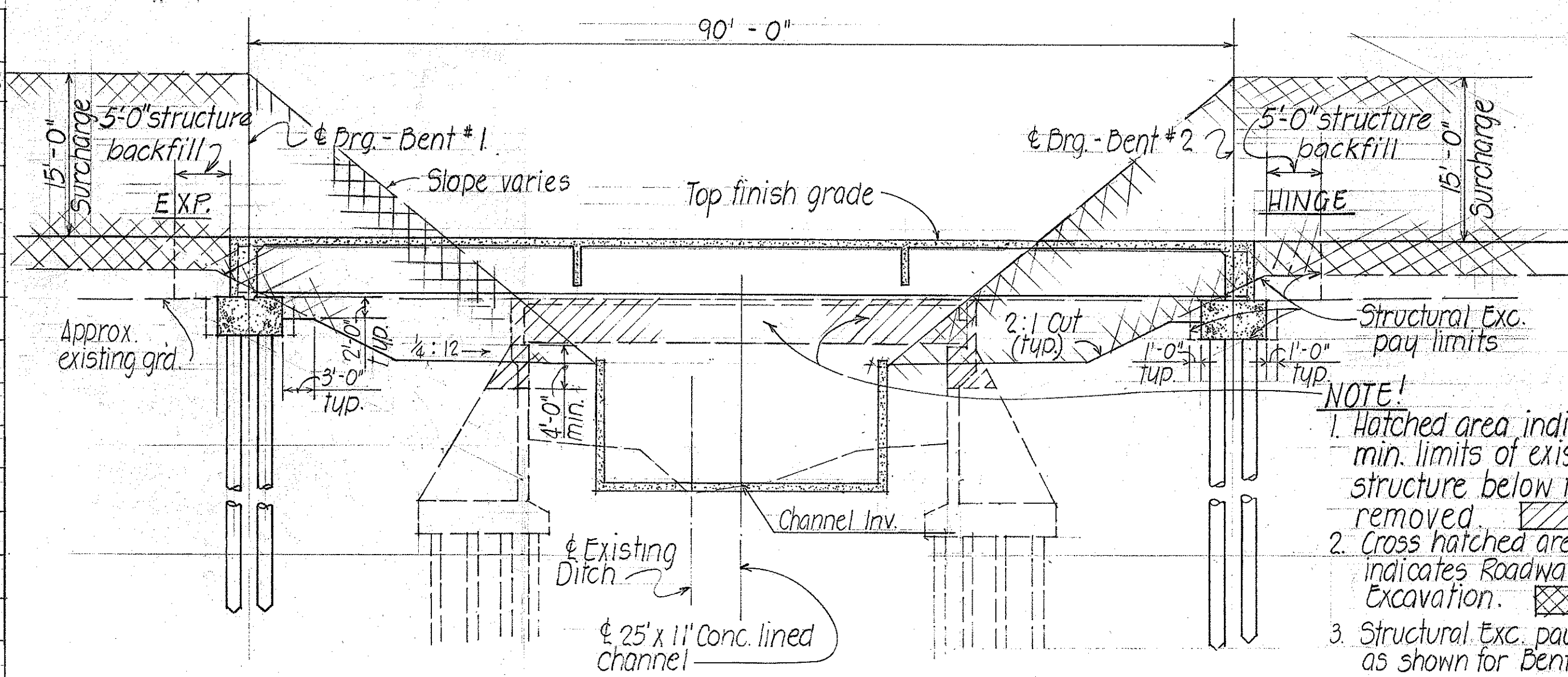




LAYOUT PLAN - BRIDGE WIDENING

SCALE: 1" = 10' - 0"



LONGITUDINAL SECTION ALONG SOUTHBOUND BRIDGE

SCALE: 1" = 10' - 0"

DECK SLAB CAMBER DIAGRAM

APPROVED: *[Signature]*
ASSISTANT CHIEF ENGINEER
BOARD OF WATER SUPPLY

DATE: 9/15/85

"AS BUILT"

DATE	REVISION
12/22/82	Deleted the words "By others" regarding 25"x11" conc. lined channel per Addendum No.1.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	143-1(24)11	1983	222	328

GENERAL NOTES

DESIGN SPECIFICATIONS:
AASHTO specifications for Highway Bridges (12th Edition) with subsequent interim specifications.

DESIGN LOAD:
HS 20-44

- DESIGN STRESSES:**
- Reinforced concrete beams & slabs - See AASHTO specifications & special provisions except as otherwise noted.
Class "A" $f'_c = 3,000$ psi
 $f_c = 1,200$ psi $f_s = 20,000$ psi tension
 - Prestressed Concrete Girders:
 $f'_c = 5,500$ psi @ 28 days; $f_{ci} = 4,000$ psi @ transfer.
 - Prestressed Strands:
 $\frac{1}{2}$ " ϕ 270 ksi, 7 wire stressed-relieved strands (ASTM A416)
Total losses other than friction = 45,000 psi.
 - Pile Capacity:
32 tons.

MATERIALS:

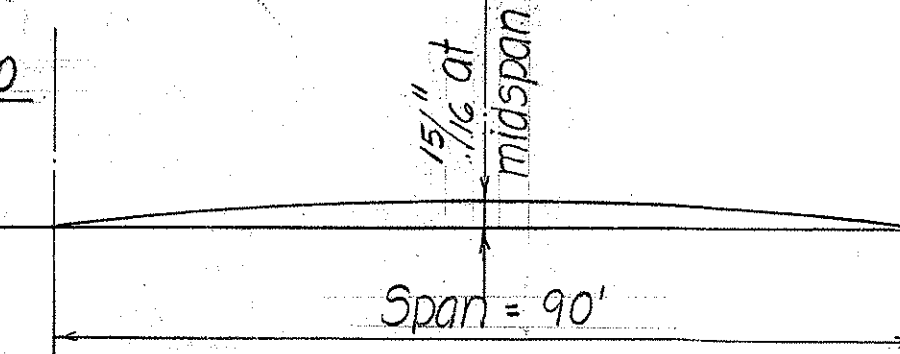
- All concrete shall be Class "A" except deck slabs & as otherwise noted on plans. Concrete for prestressed girders - see Special Provisions, and as noted under Design Stresses.
- Preformed fabric bridge bearing pads are incidental to concrete and will not be paid for separately.
- See Special Provisions for admixture in concrete.
- All piles to be prestressed concrete piles - Type I. See Standard Details sht. #55 & #56.
- All reinforcing steel to be ASTM Designation A-615 grade 40 except as otherwise noted.

CONSTRUCTION METHODS

- See Standard Specifications and Special Provisions.
- See Special Provisions for concrete finish. Concrete seats shall be poured monolithically with bent cap sections. Seats shall receive a hard trowel finish, level & true to elevations.
- If settlement occurs in excess of the plan grade, the Contractor shall backfill to grade at his own expense.
- Temporary surcharge shall be placed after existing structure is removed.
- Piles shall not be driven until the temporary surcharge is completely removed.
- In general where existing reinf. bars are cut, all exposed ends shall be under cut a minimum of 1" below the surface of the concrete and patched with mortar. Cutting reinf. bars and patching with mortar is incidental to concrete and will not be paid for separately.

12" WATER LINE

- All materials and labor for hanging 12" water line on existing Northbound Bridge shall be incidental to the 12" pipe, and will not be paid for separately. Ribbed aluminum siding and supports shall also be incidental to 12" pipe.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LAYOUT PLAN, LONGIT. SECT
AND GENERAL NOTES
KAMOOLII STREAM BRIDGE
HALEKOU INTERCHANGE
F.A.I. Proj. No. I-H3-1(24)11

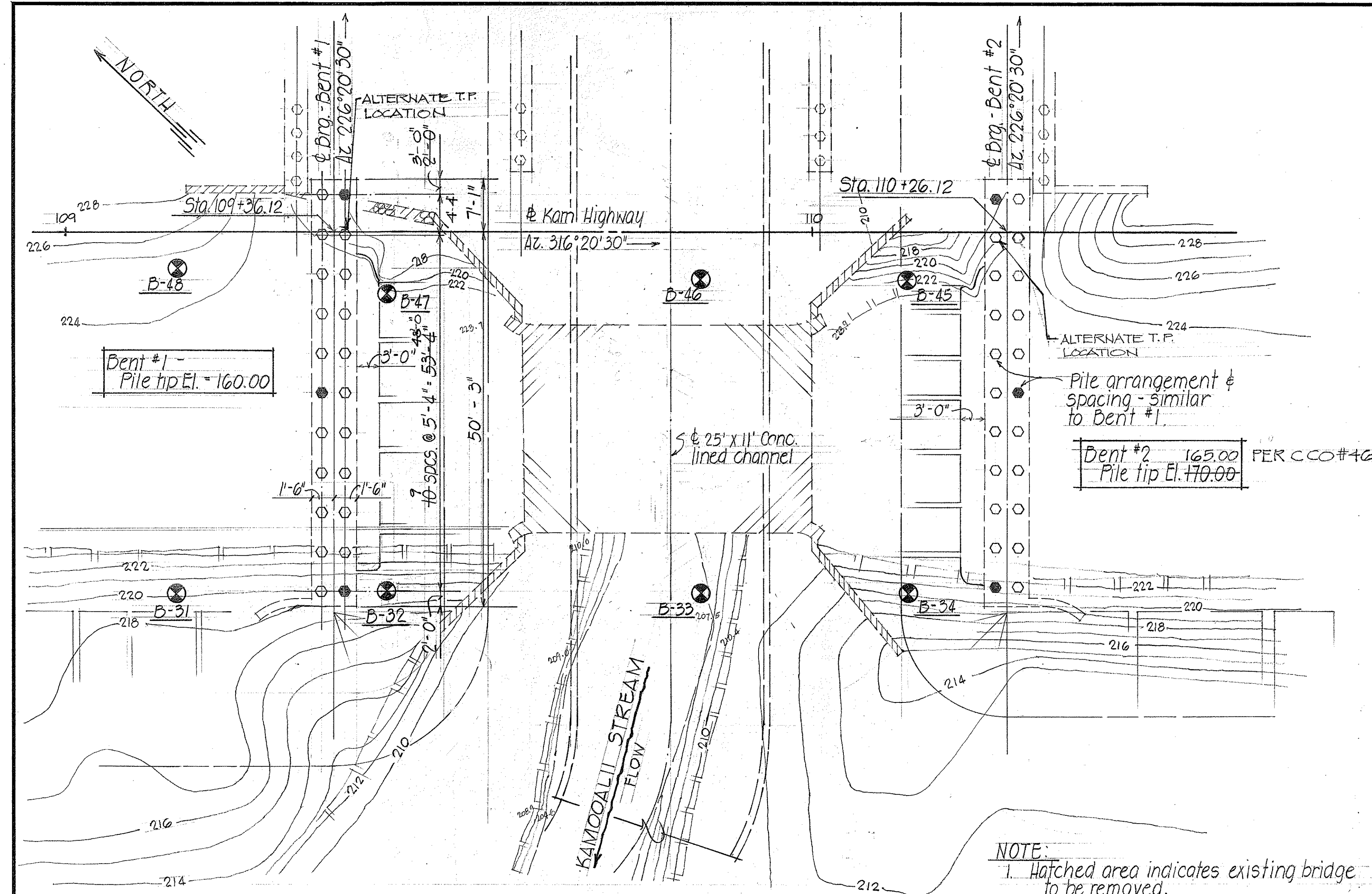
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SHEET No. 1K OF 12 SHEETS

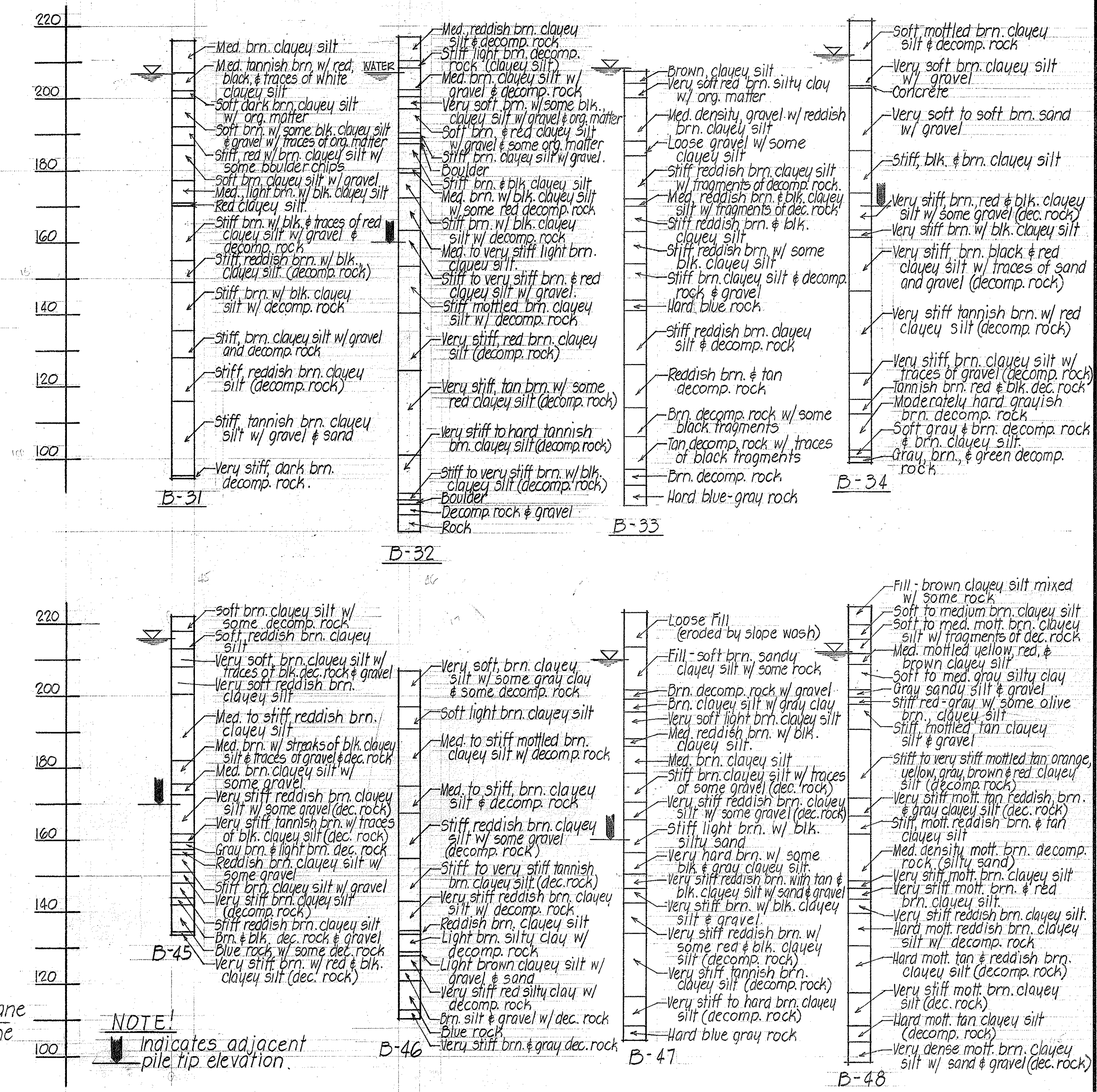
ITEM NO.	ITEM	UNIT	QUANTITIES
202.2200	REMOVAL OF S.B. AND PORTION OF N.B. KAMOOLII STREAM BRIDGE	L.S.	(LUMP SUM)
206.6000	STRUCTURE EXCAVATION FOR BRIDGES	C.Y.	198 C.Y.
206.7010	STRUCTURE BACKFILL FOR BRIDGES	C.Y.	131 C.Y.
503.1094	CONCRETE IN BRIDGE NO. 4 (KAMOOLII BRIDGE) EXCEPT FOOTING	L.S.	(200 C.Y.)
503.1096	CONCRETE IN BENT FOOTING FOR BRIDGE NO. 4 (KAMOOLII BRIDGE)	L.S.	(90 C.Y.)
504.4102	TYPE IV PRESTRESSED CONCRETE GIRDERS FOR BRIDGE NO. 4	L.S.	(130 L.F.)
505.0023	TEST PILE, DRIVEN, BRIDGE NO. 4	L.F.	333 L.F.
505.0410	TYPE I - PRESTRESSED CONCRETE PILES, FURNISHED	L.F.	2,583 L.F.
505.4100	TYPE I - PRESTRESSED CONCRETE PILES, DRIVEN	L.F.	2,110 L.F.
505.7100	PILE DRIVING EQUIPMENT EXPENSE (NOT TO EXCEED \$8,000)	L.S.	
507.0300	REMOVAL, MODIFICATION AND INSTALLATION OF EXISTING ALUMINUM BRIDGE RAILING	L.S.	(LUMP SUM)
507.7600	BRIDGE CONCRETE MEDIAN BARRIER	L.F.	103 L.F.
602.0093	REINFORCING STEEL IN BRIDGE NO. 4 (KAMOOLII)	L.S.	(53,100 LBS)
507.7510	CONCRETE END POST BRIDGE NO. 4	L.F.	20 L.F.

DATE: 12/22/82	DESIGNED BY: [Signature]	CHECKED BY: [Signature]
ORIGINAL PLAN	TRACED BY: [Signature]	NOTE BOOK

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(24)11	1983	223	328

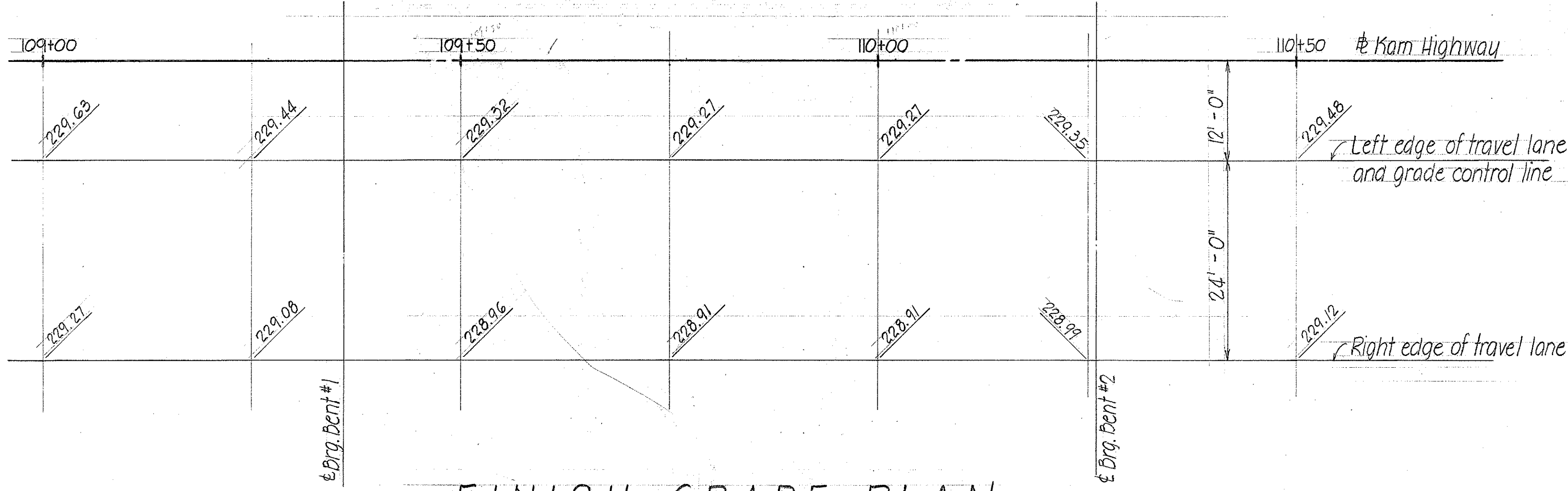


FOUNDATION PLAN
SOUTHBOUND BRIDGE
 Scale: 1" = 10'-0"



NOTE!
 Indicates adjacent pile tip elevation.

NOTE!
 Complete Soil Report available at State of Hawaii DOT Materials Testing Office.



FINISH GRADE PLAN - SOUTHBOUND BRIDGE
 Scale: 1" = 10'-0"

DATE	REVISION
12/22/82	Deleted the words "By Others" regarding 25'x11' conc. lined channel per Addendum No. 1.

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

FOUNDATION PLAN, FINISH GRADE PLAN & BORING DATA
KAMOQALII STREAM BRIDGE
HALEKOU INTERCHANGE
 F.A.I. Proj. No. I-H3-1(24)11

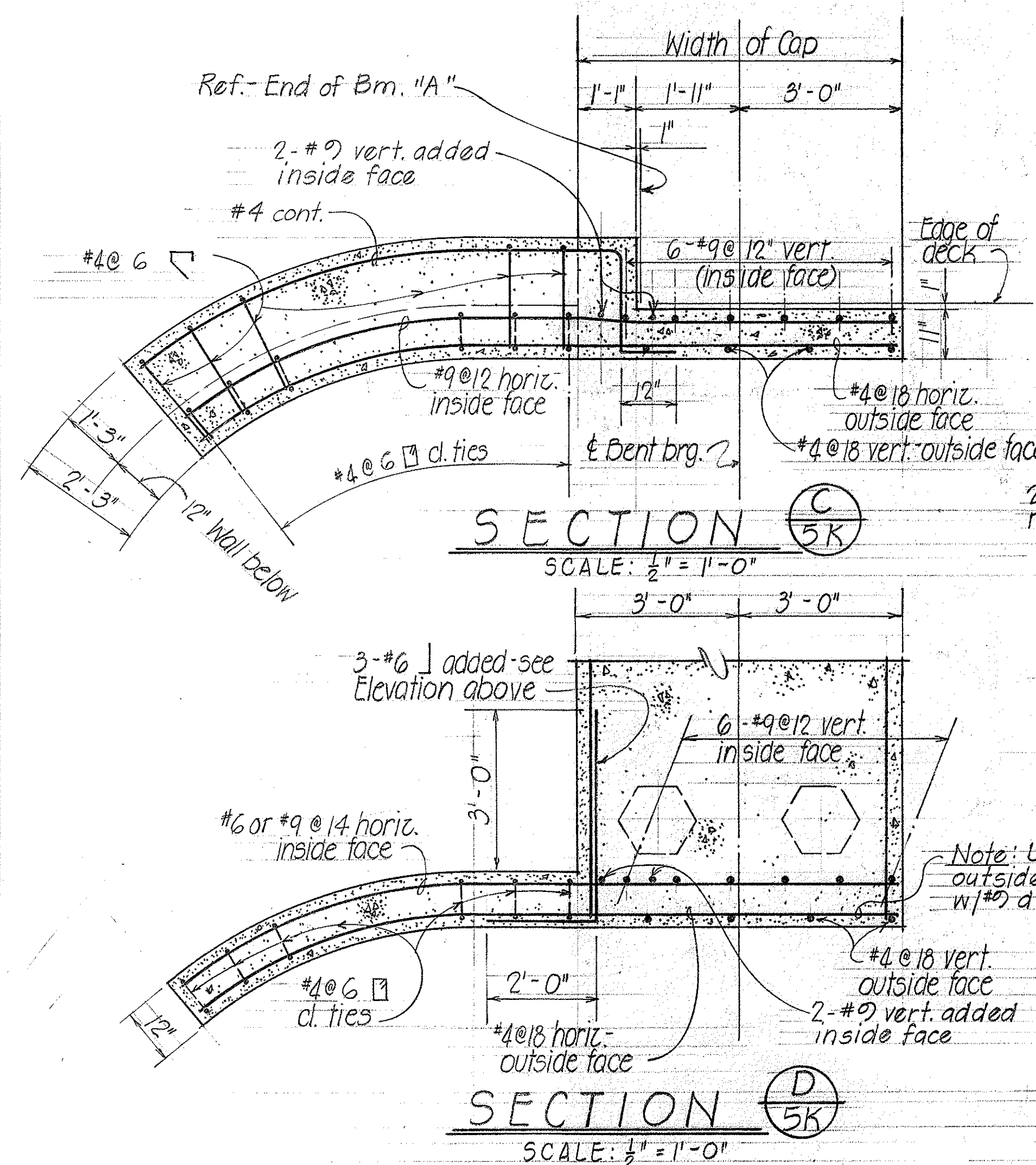
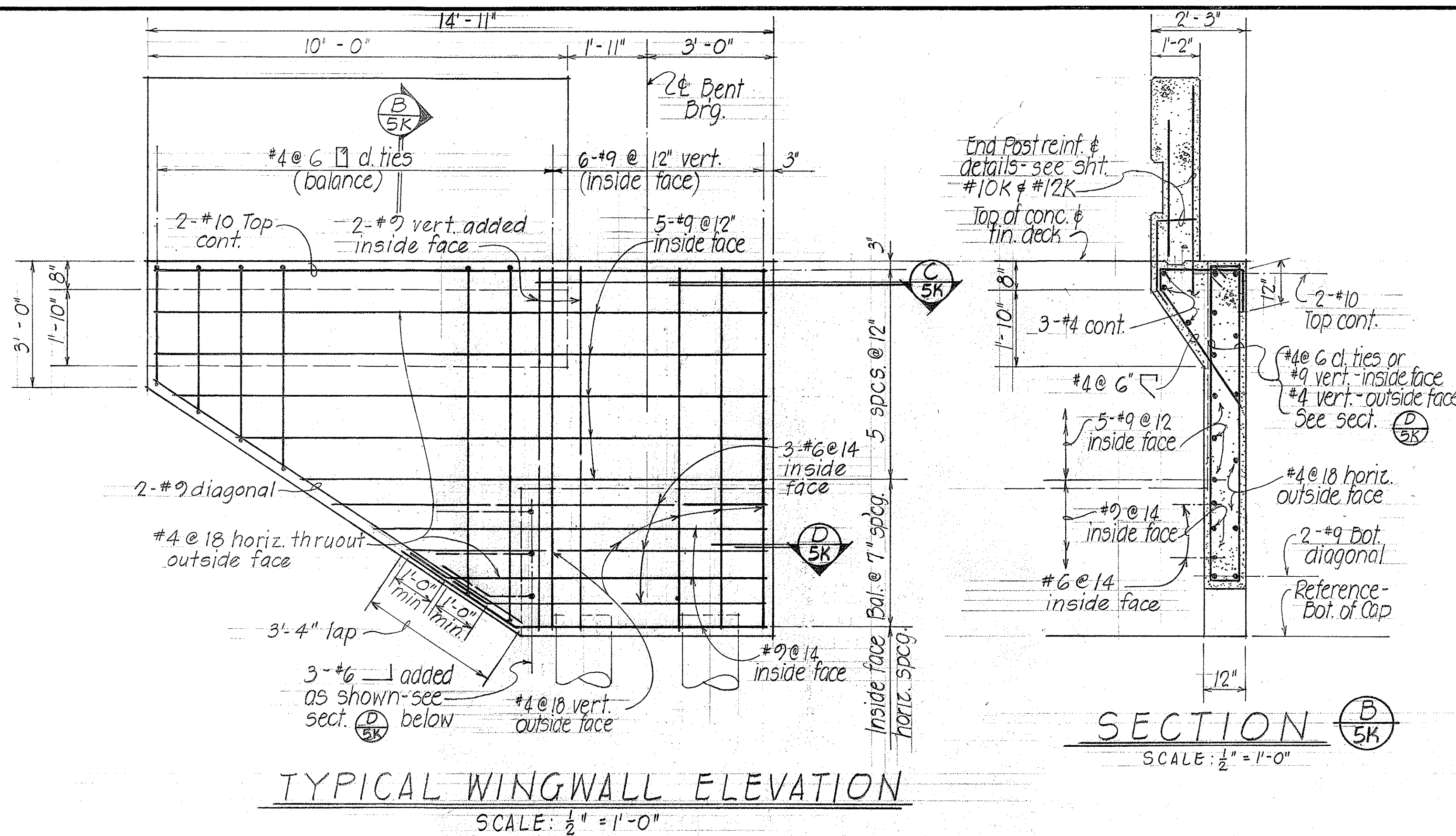
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SHEET No. 2K OF 12 SHEETS

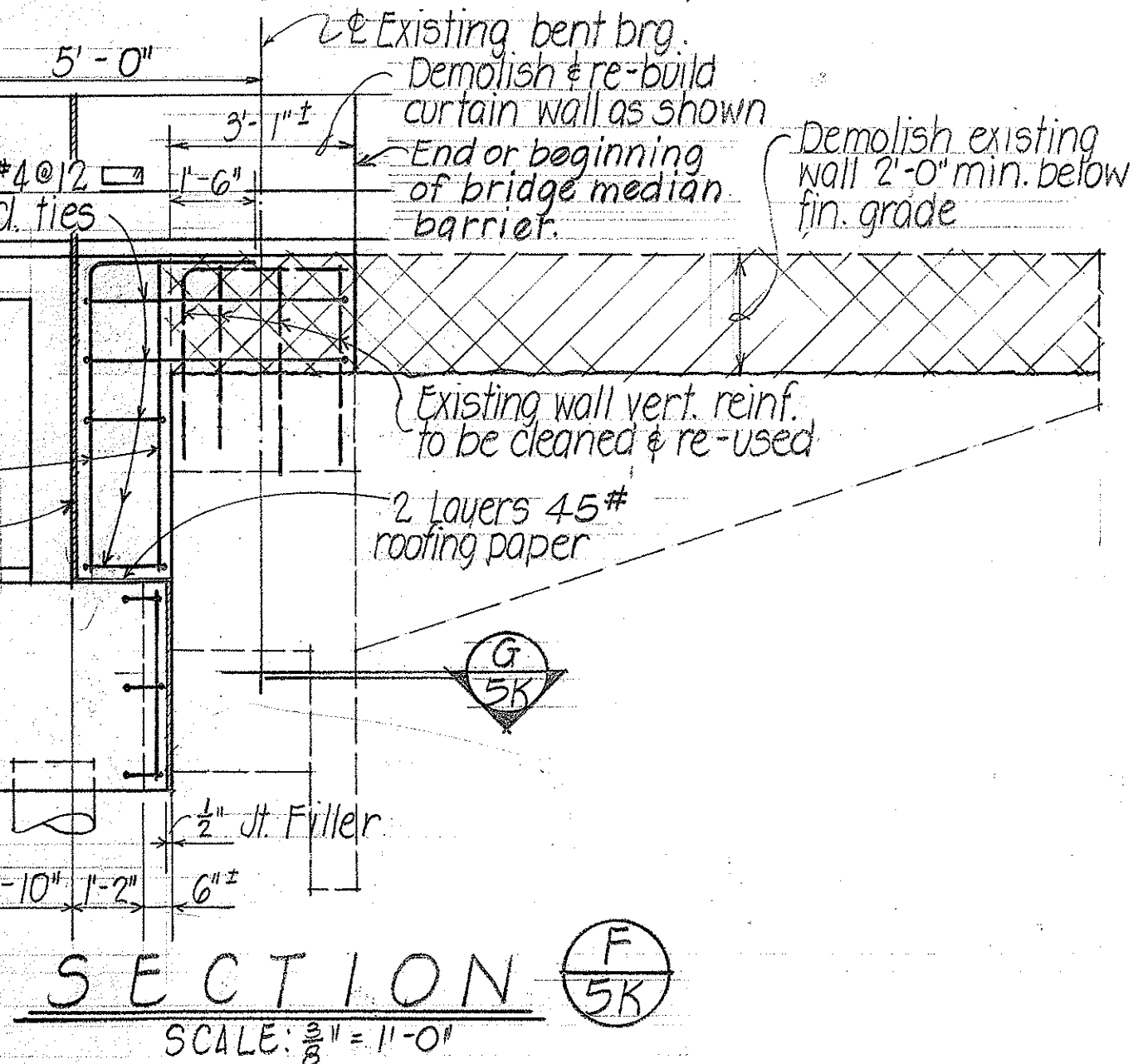
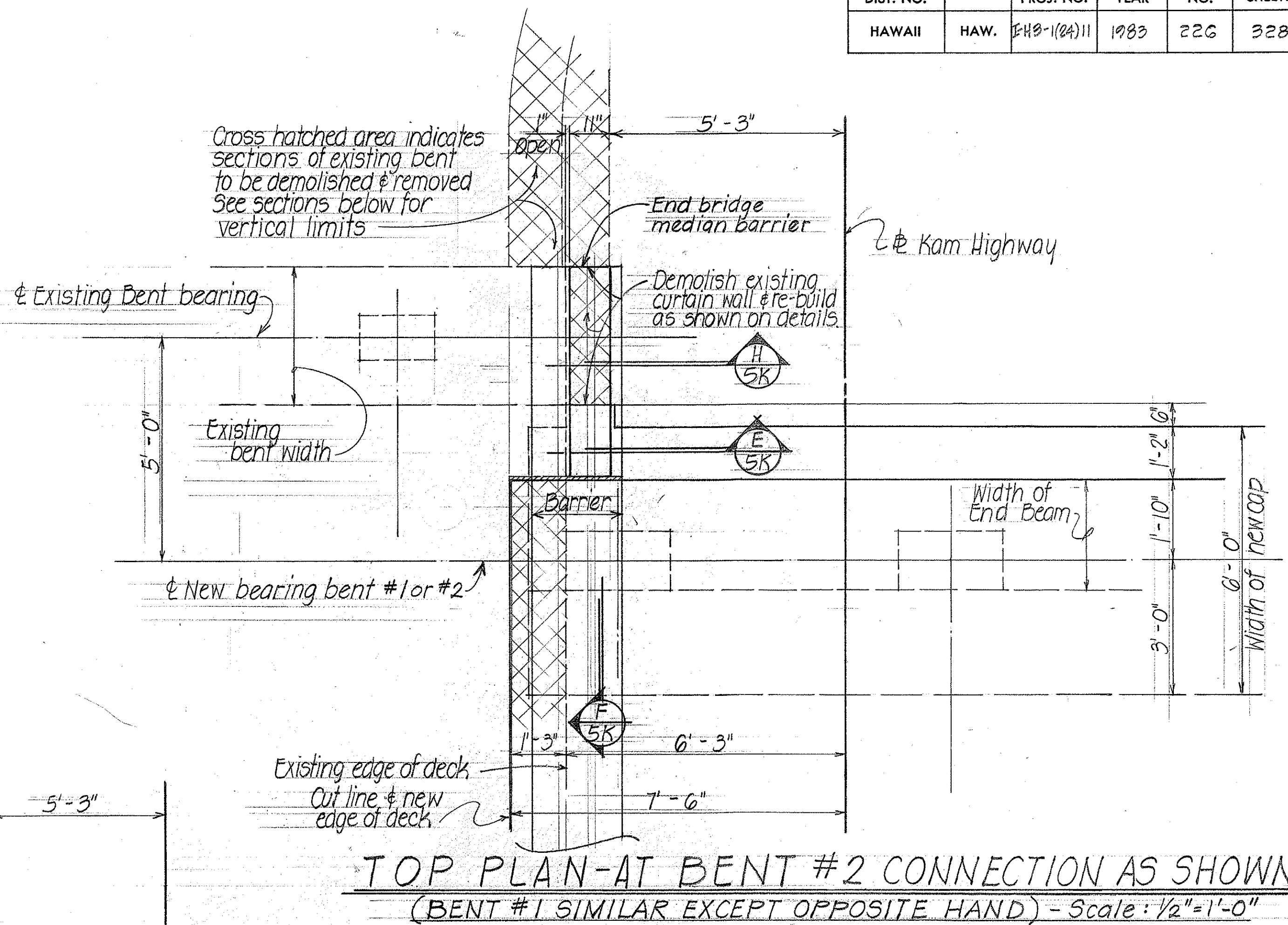
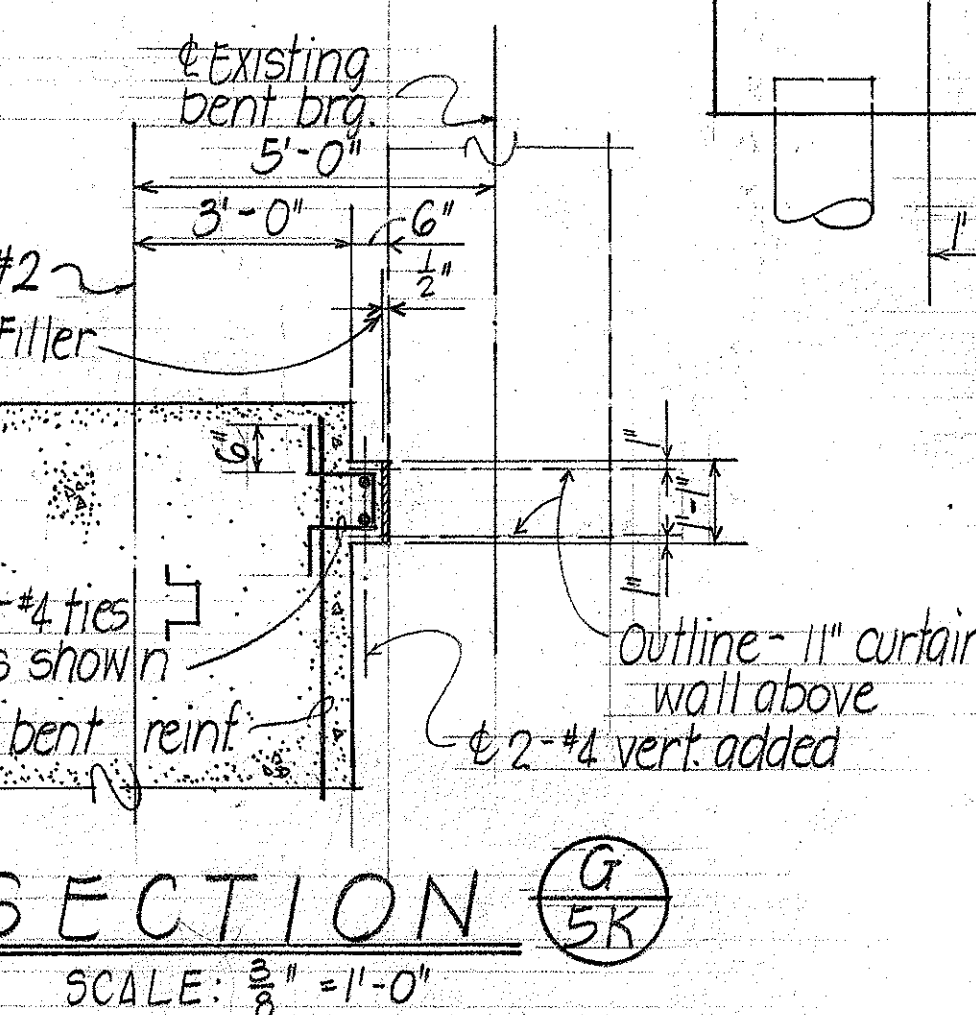
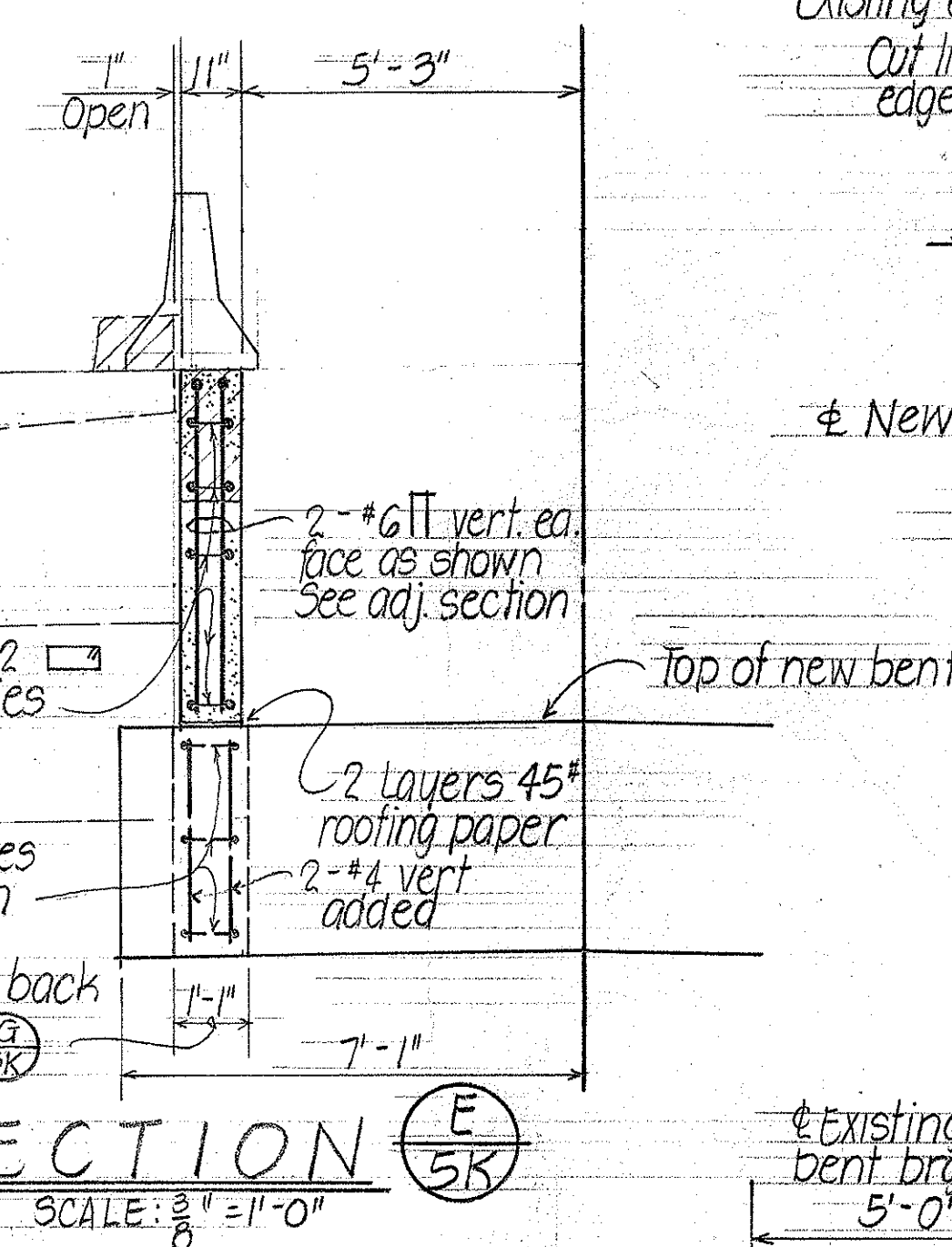
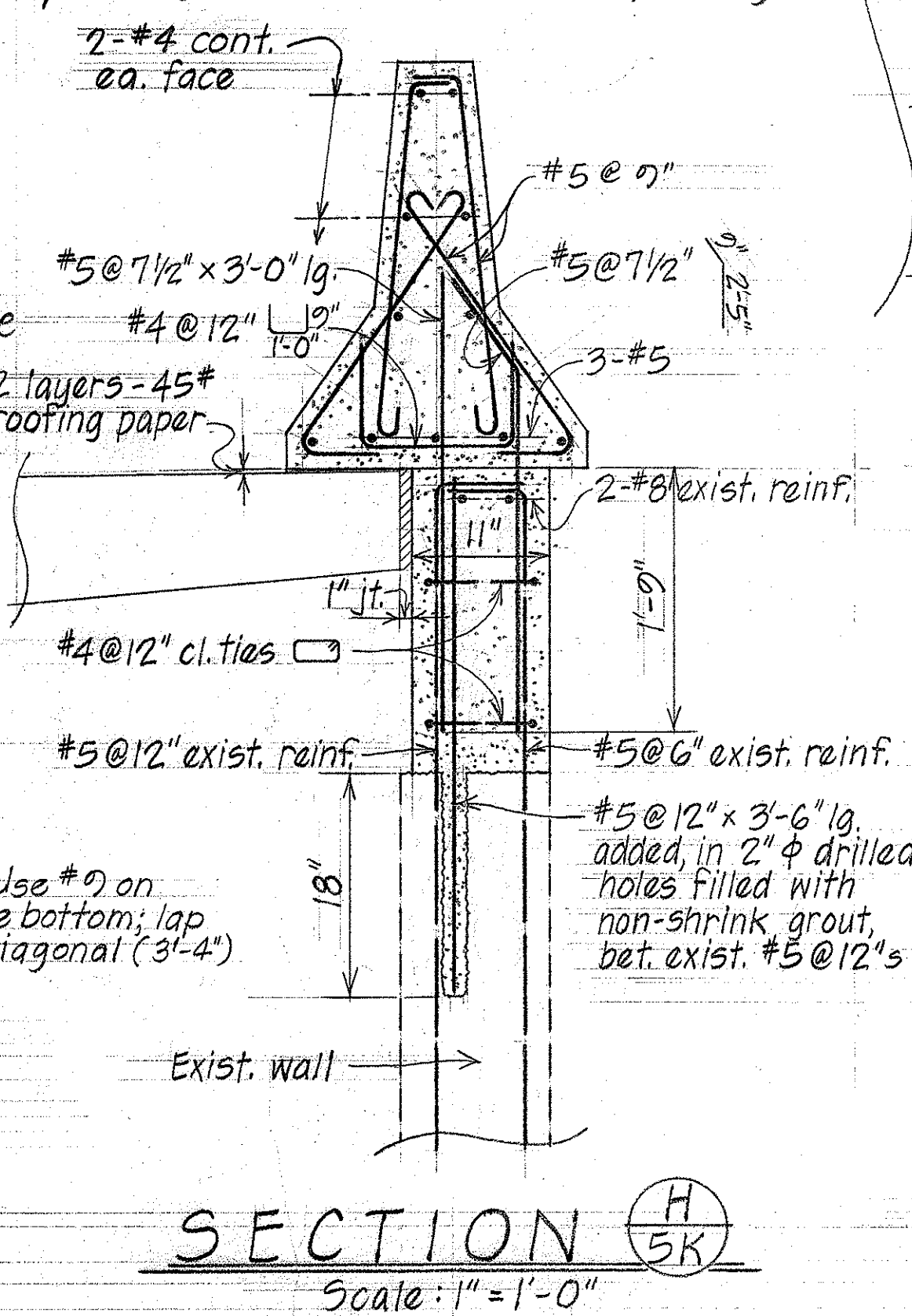
"AS BUILT"

223R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(24)11	1983	226	328



NOTE:
Reinf. in median barrier shall be incidental to "Bridge Median Barrier" quantity & will not be paid for separately.



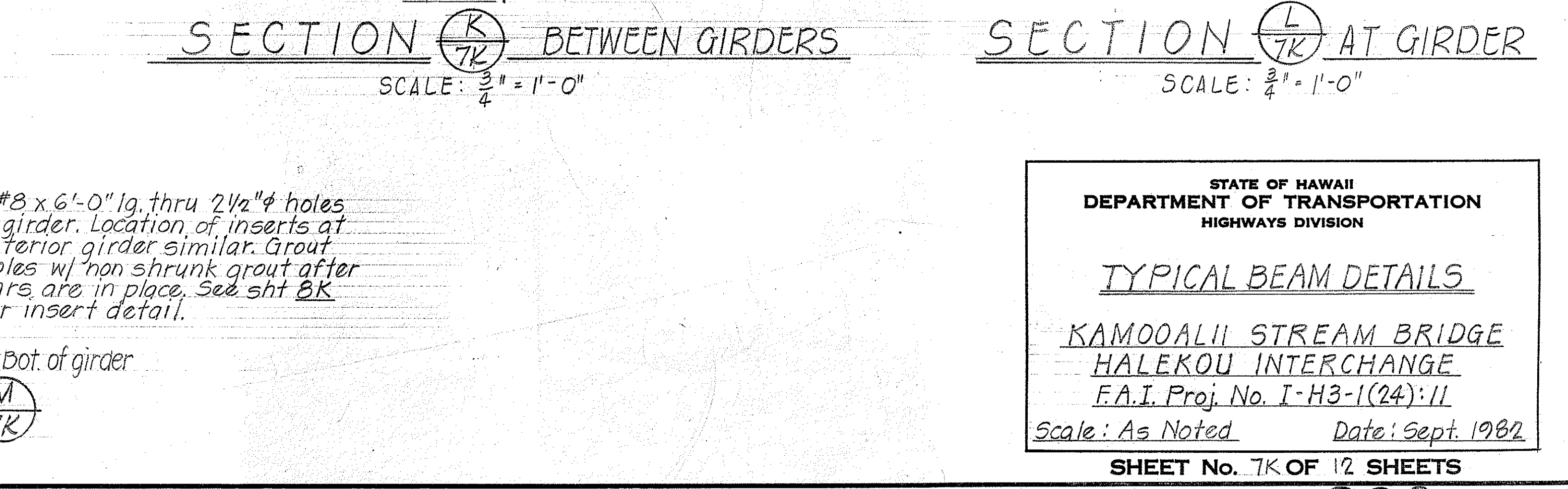
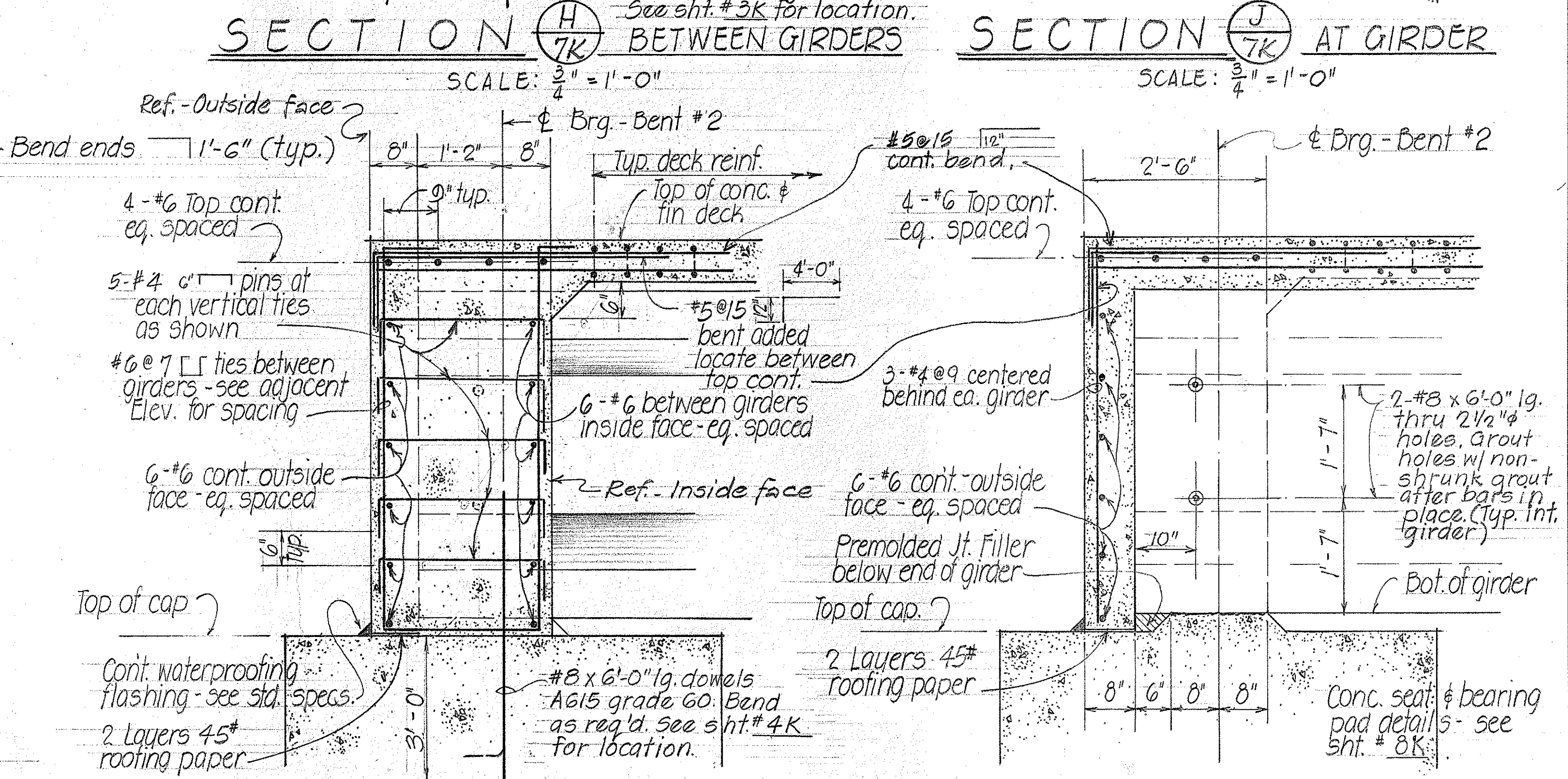
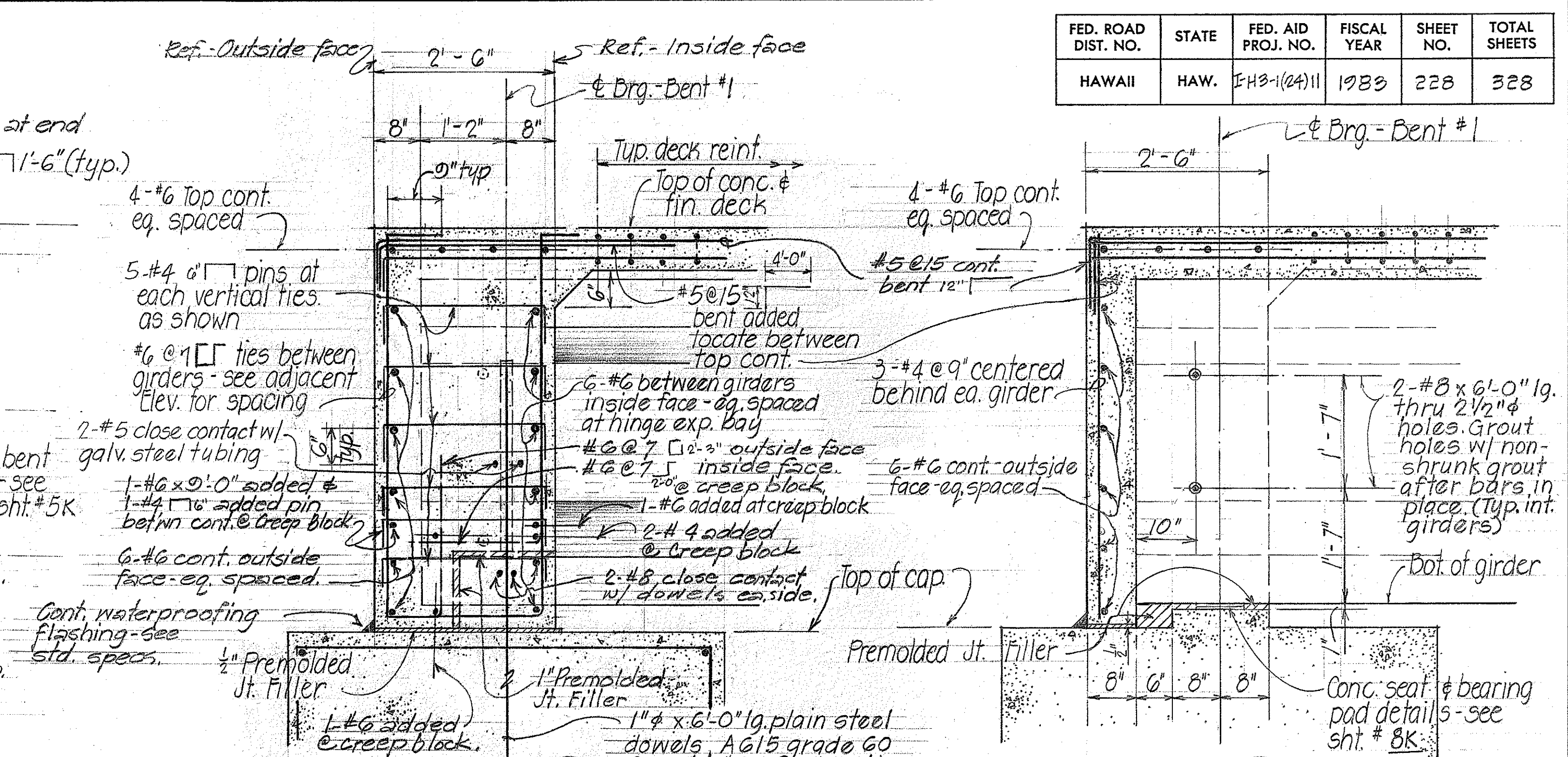
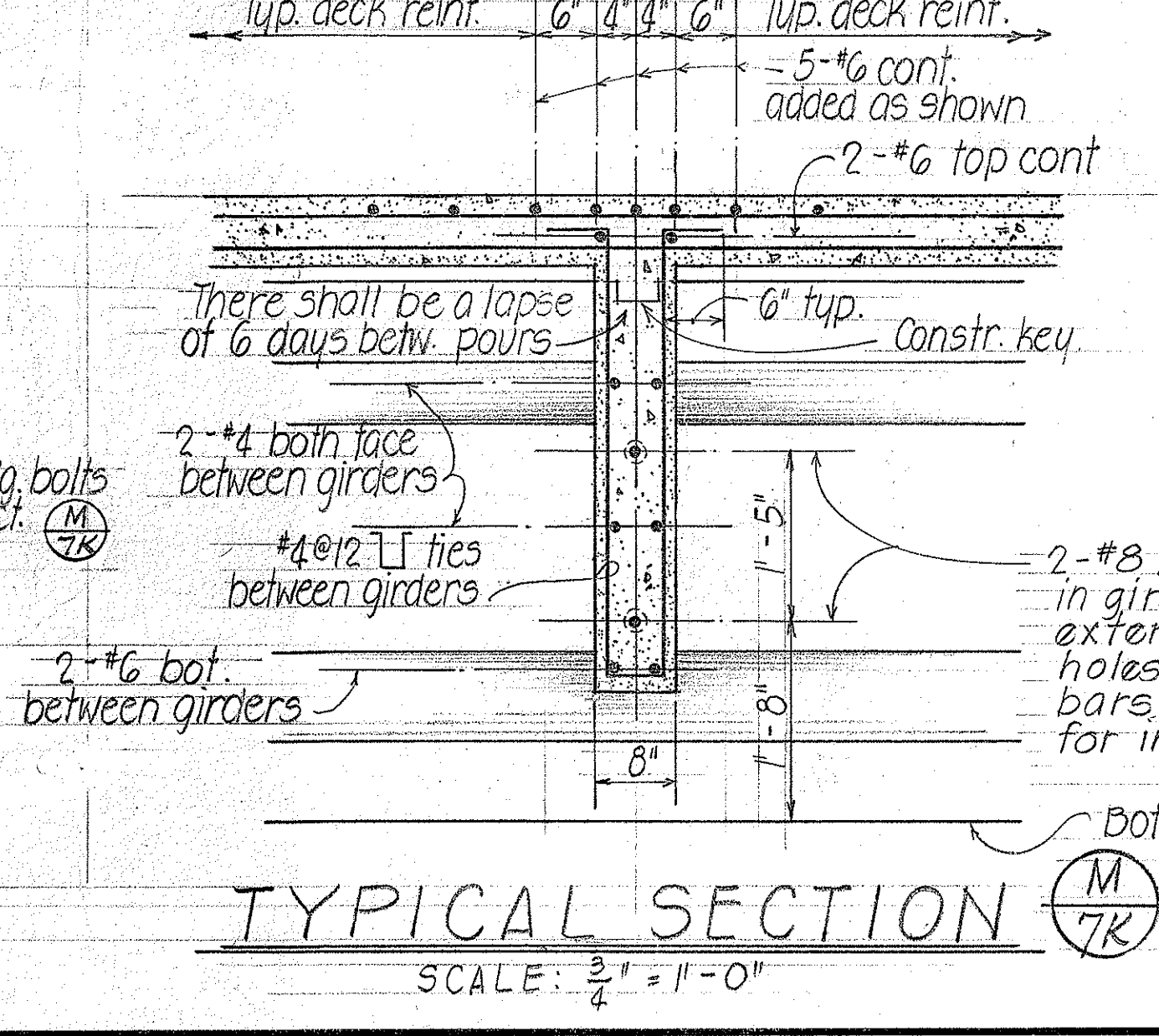
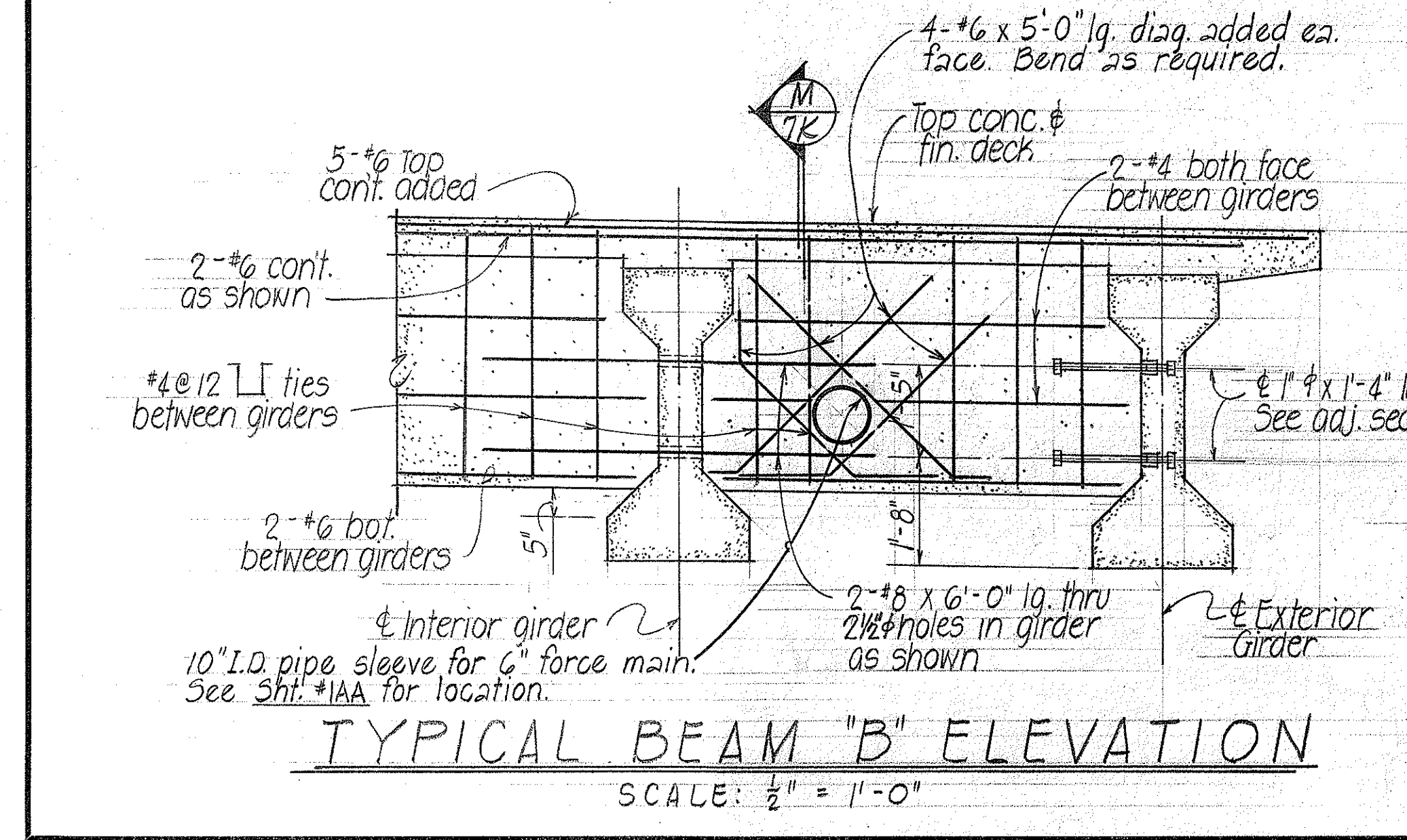
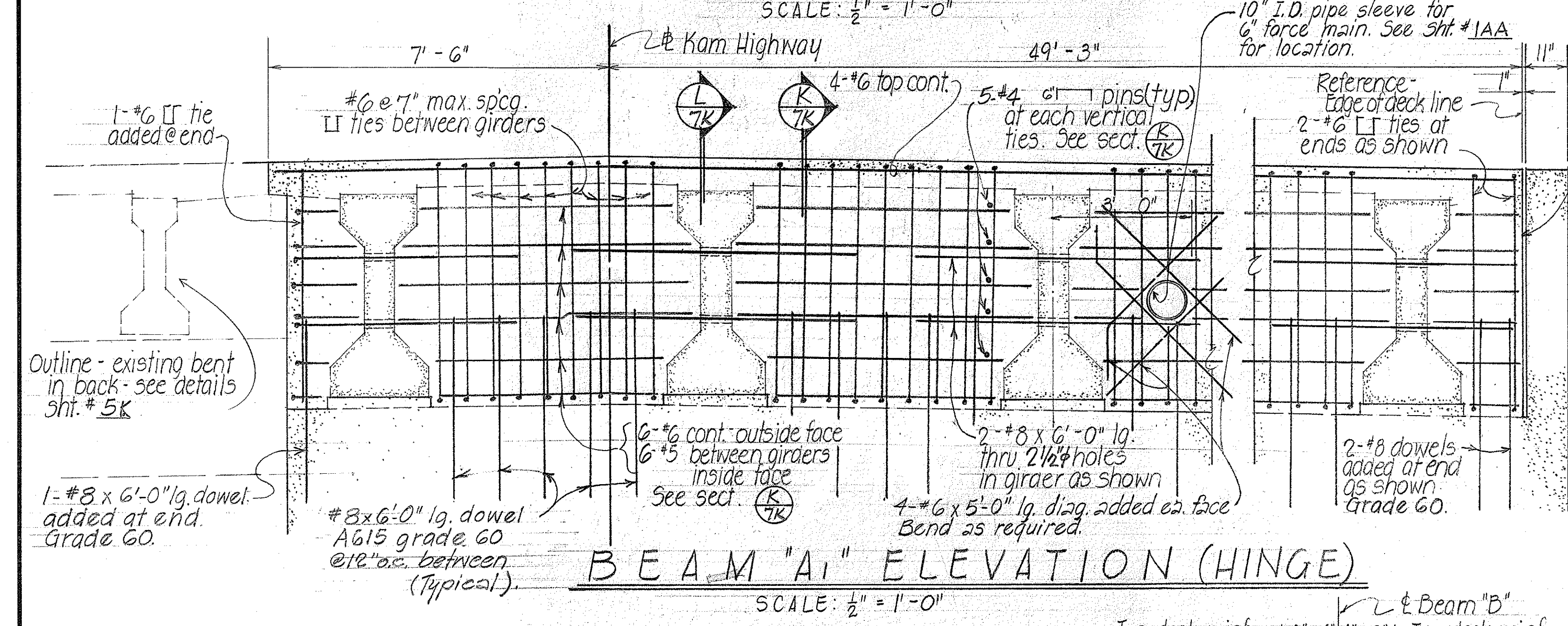
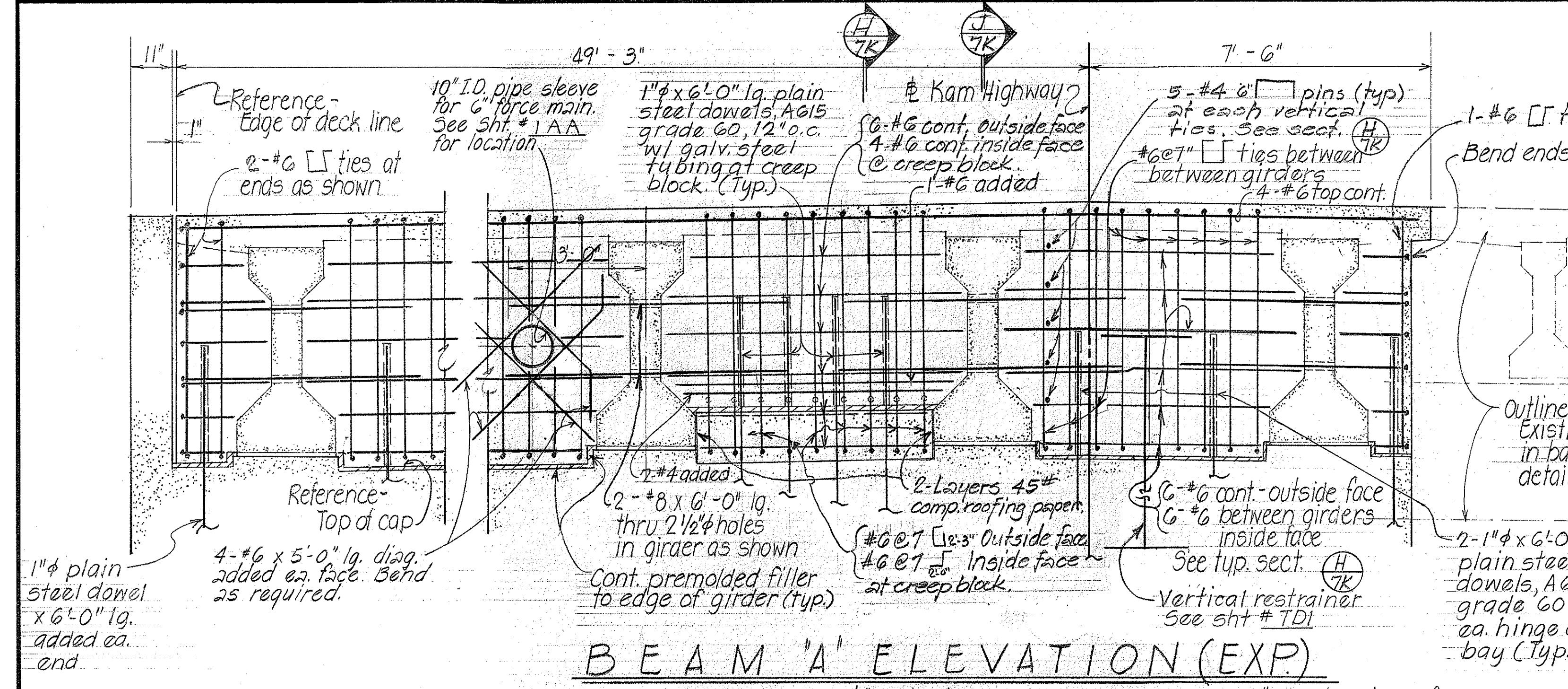
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WINGWALLS & MISC. DETAILS

KAMOOLII STREAM BRIDGE
HALEKOU INTERCHANGE
F.A.I. Proj. No. I-H3-1(24)11
Scale: As Noted Date: Sept. 1982

SHEET No. 5K OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	143-1(24)11	1983	228	328



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

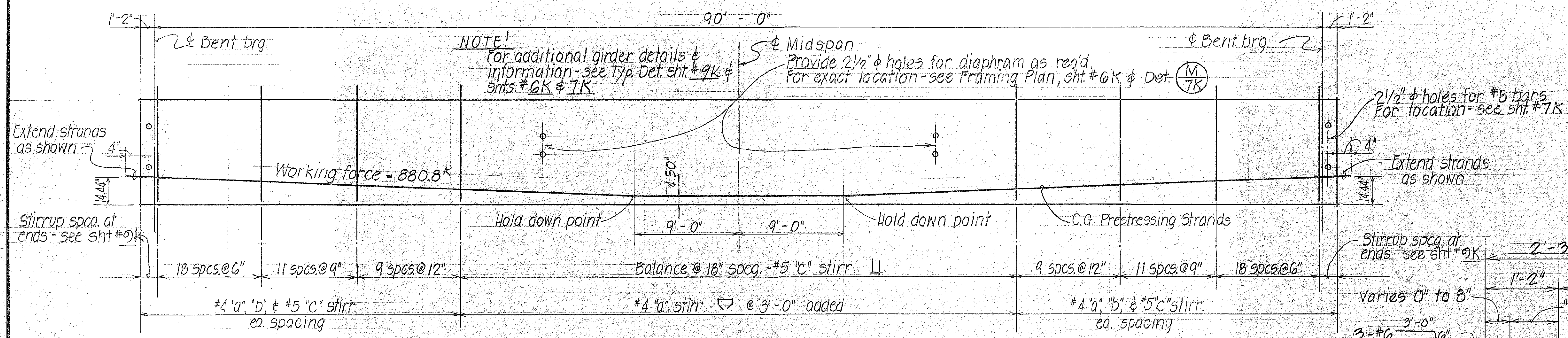
TYPICAL BEAM DETAILS

KAMOOALII STREAM BRIDGE
HALEKOU INTERCHANGE
F.A.I. Proj. No. I-H3-1(24):11
Scale: As Noted Date: Sept. 1982

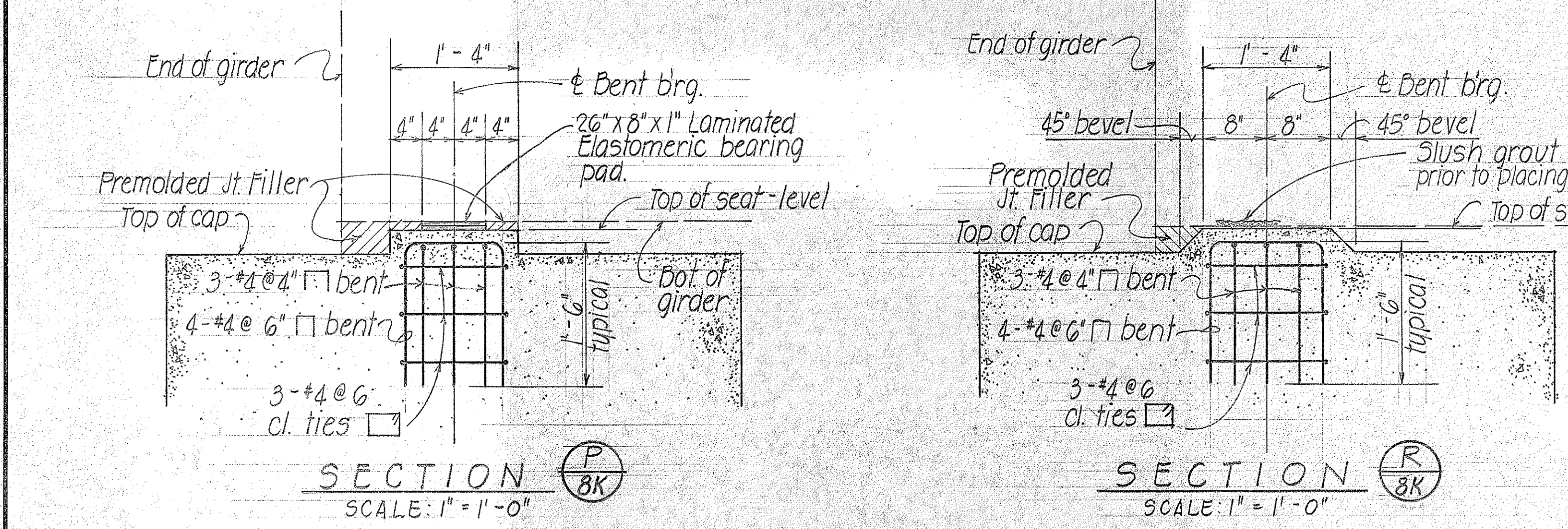
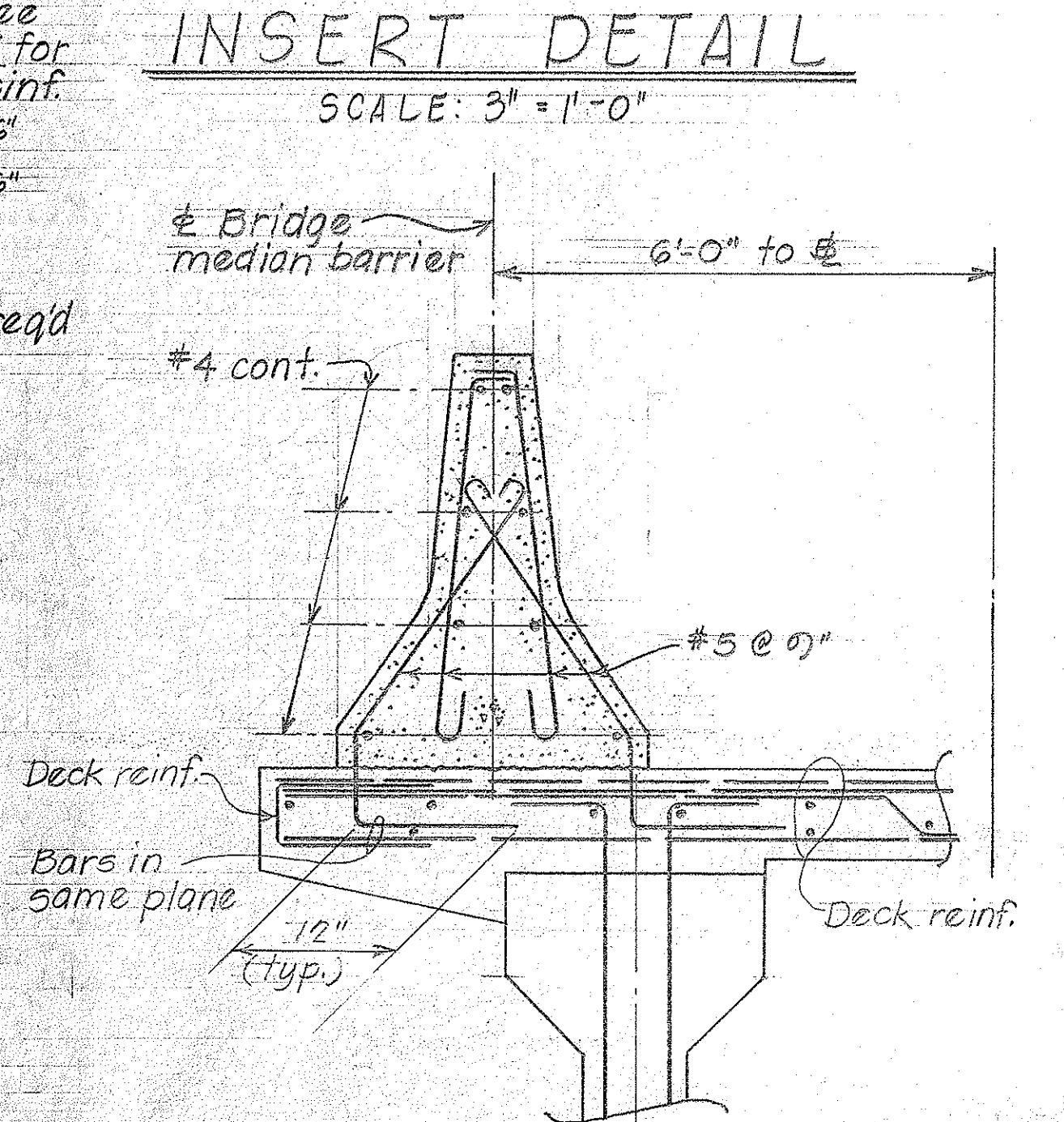
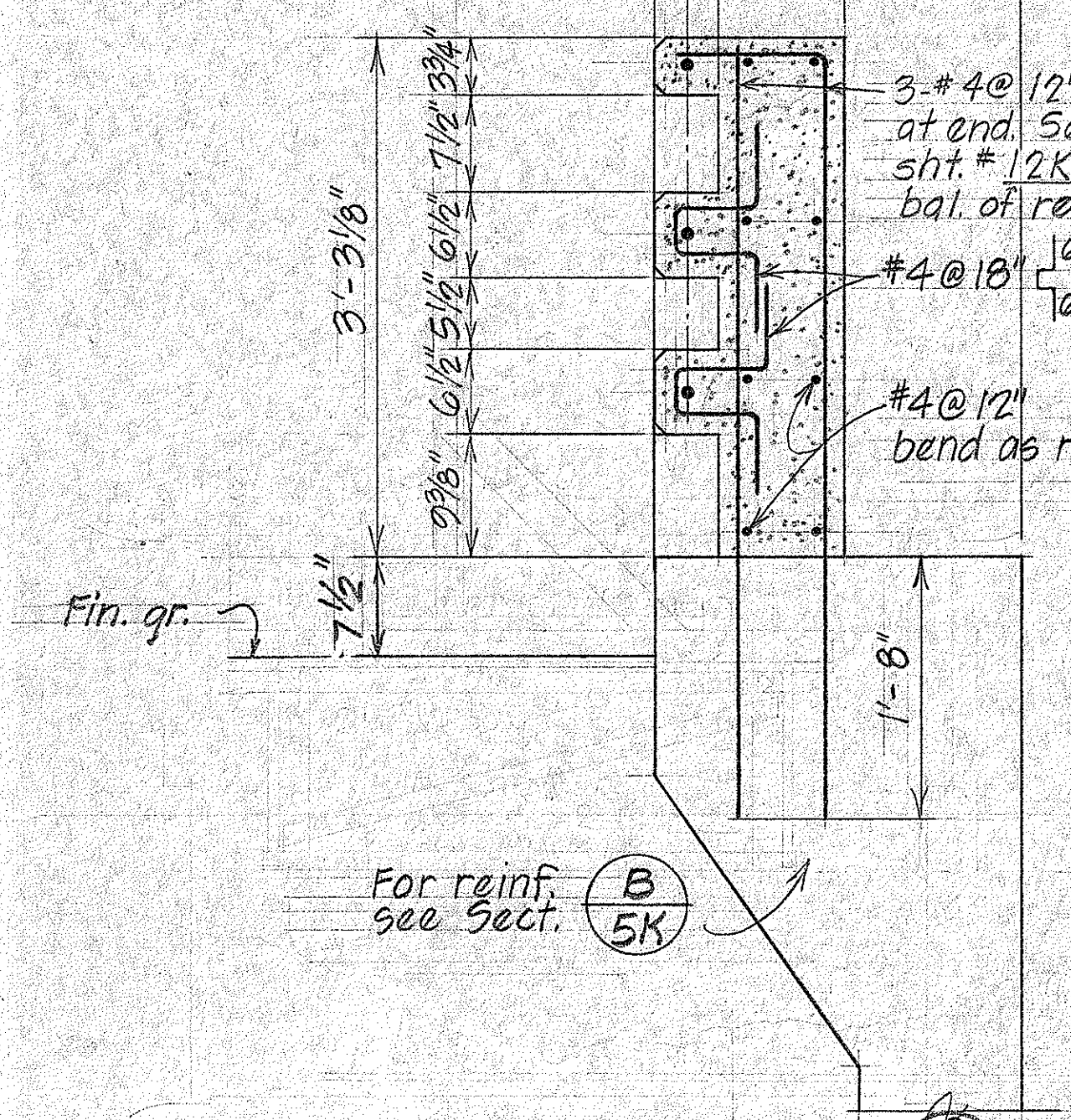
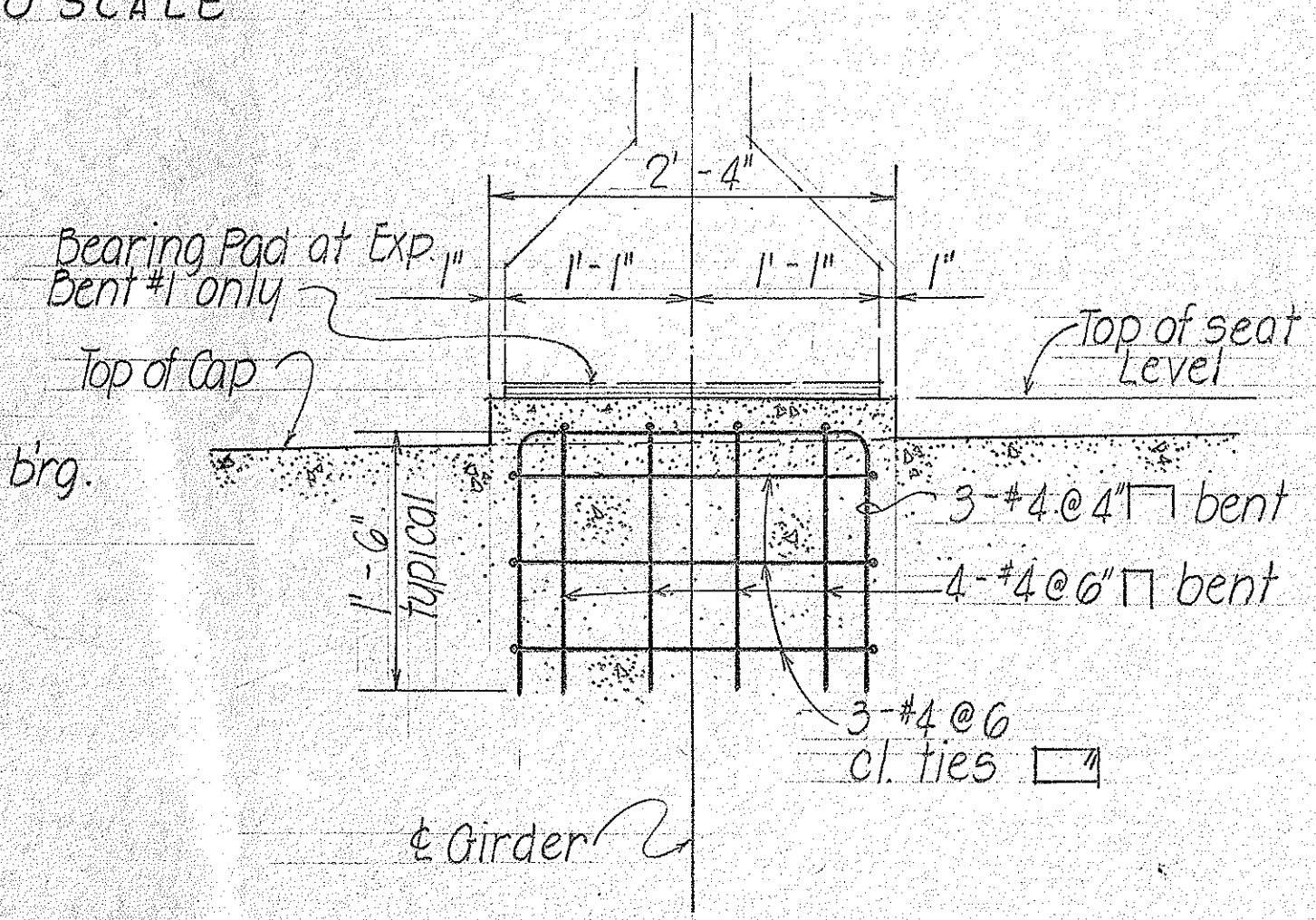
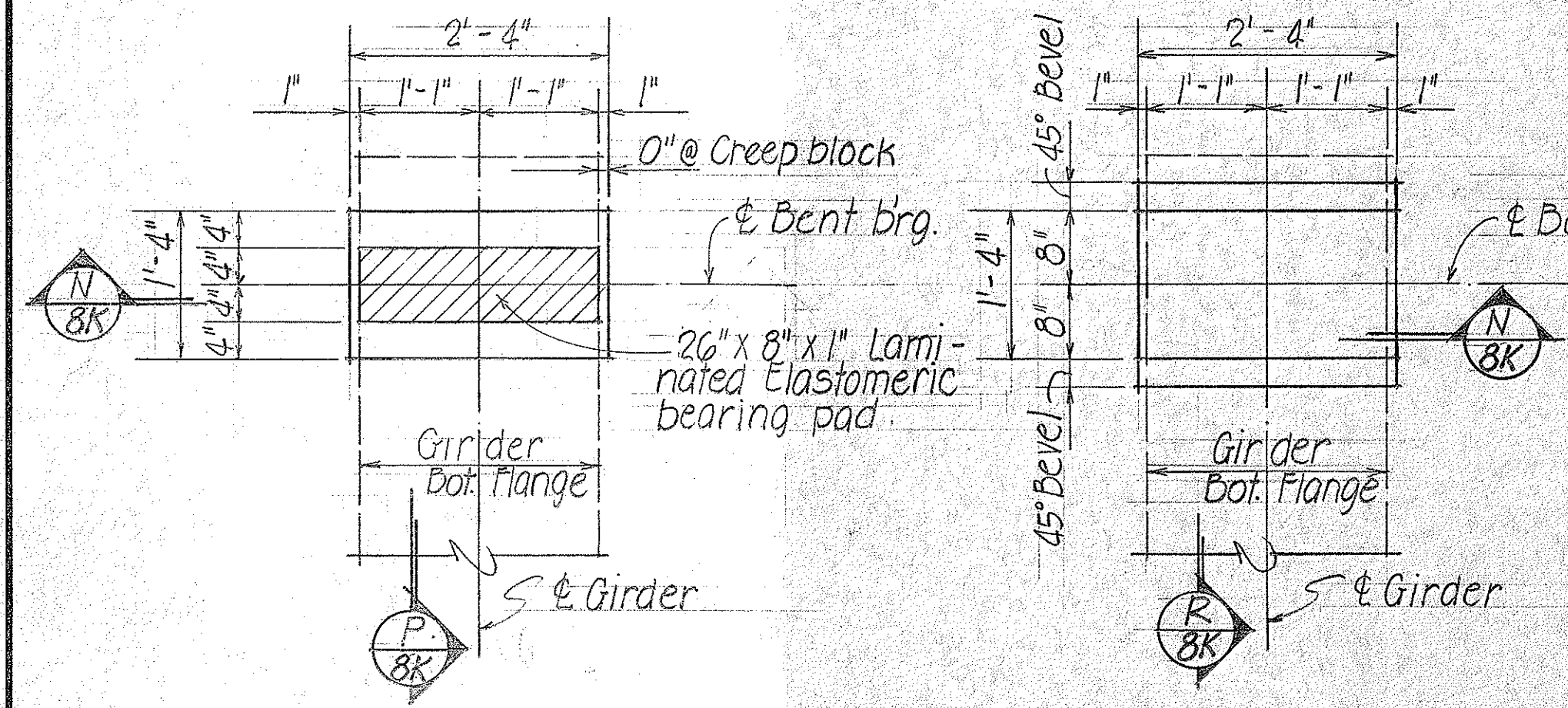
SHEET No. 7K OF 12 SHEETS

DATE	
SURVEY PLANNED BY	
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

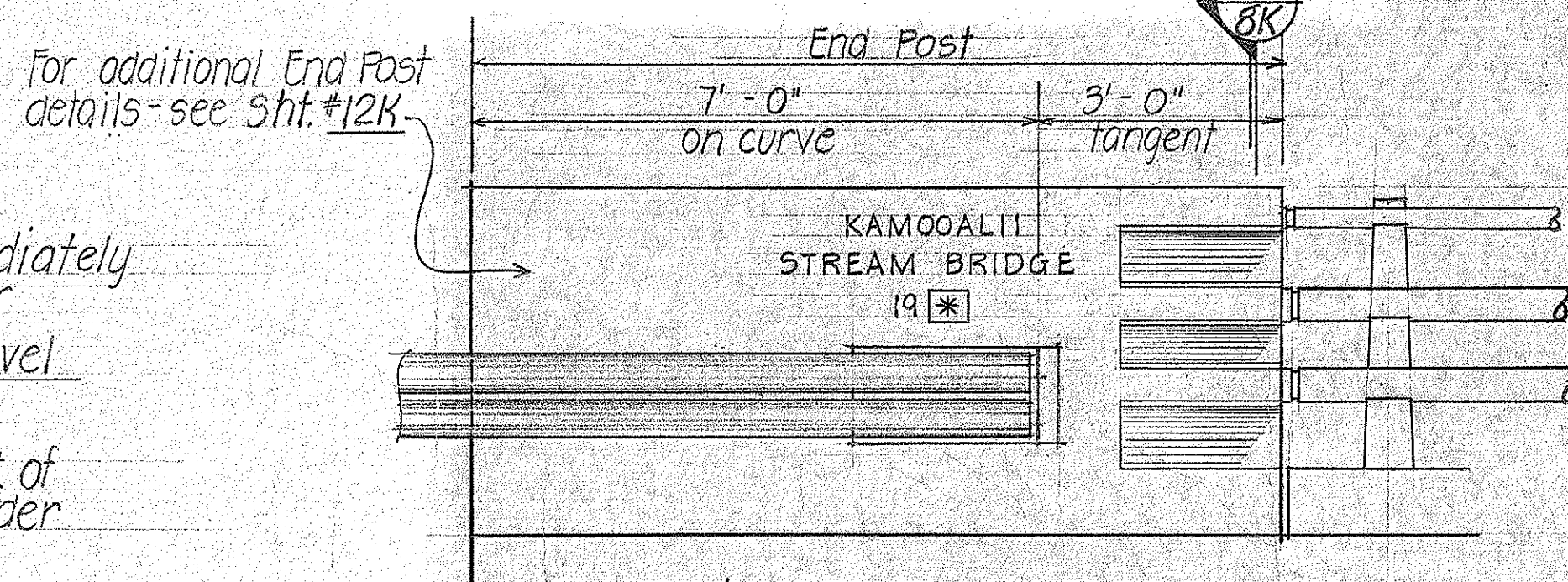
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HA3-1(24)11	1983	229	328



TYPICAL TYPE IV PRESTRESSED GIRDER DETAIL
NOT TO SCALE



TYPICAL CONCRETE SEAT DETAILS
SCALE: AS NOTED



NOTE: Reinf. in median barrier shall be incidental to "Bridge Median Barrier" quantity & will not be paid for separately.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRESTRESSED GIRDER & MISC. DETAILS

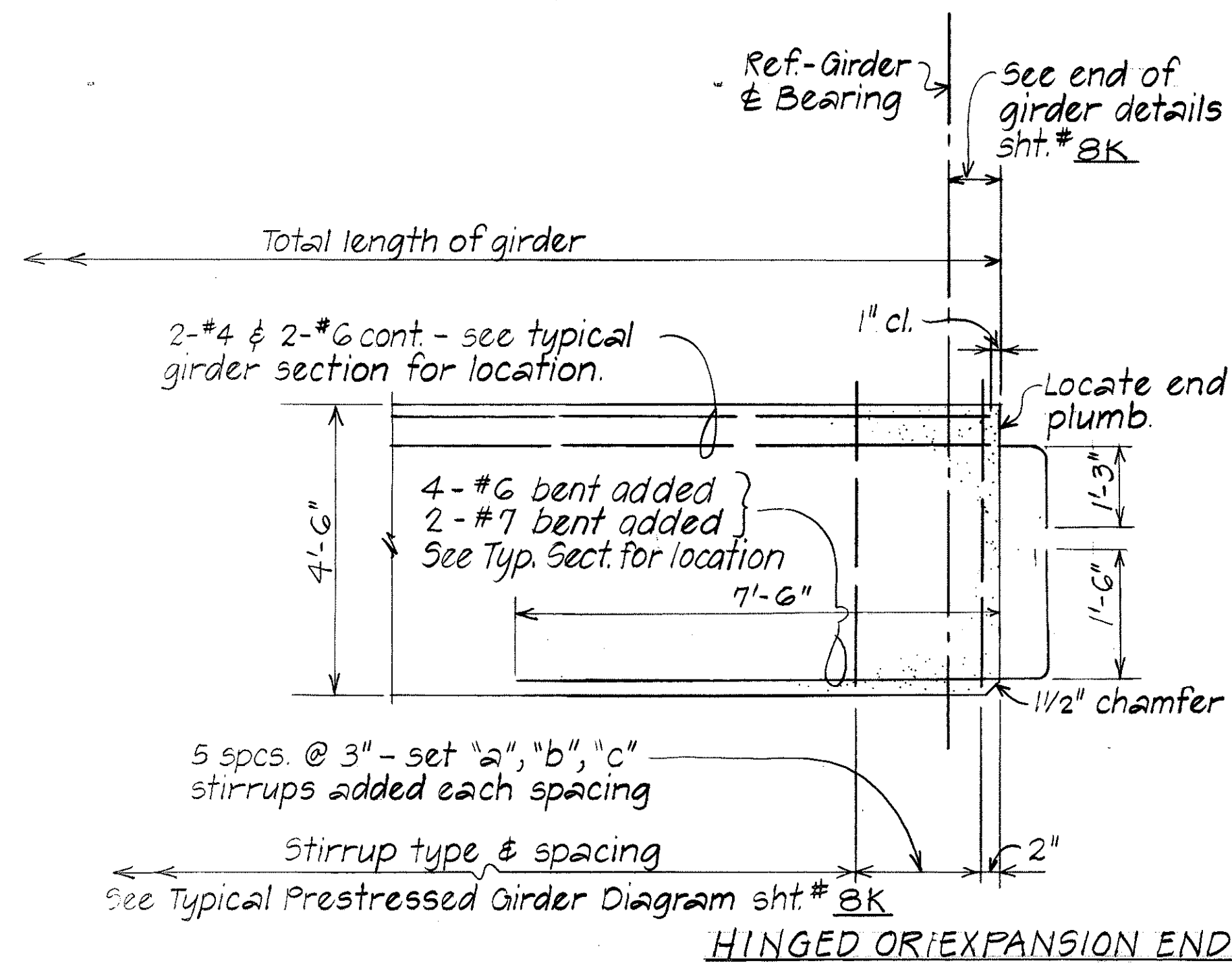
KAMOOLII STREAM BRIDGE
HALEKOU INTERCHANGE
F.A.I. Proj. No. I-H3-1(24)-11

Scale: As Noted Date: Sept. 1982

SHEET No. 8K OF 12 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NO.	

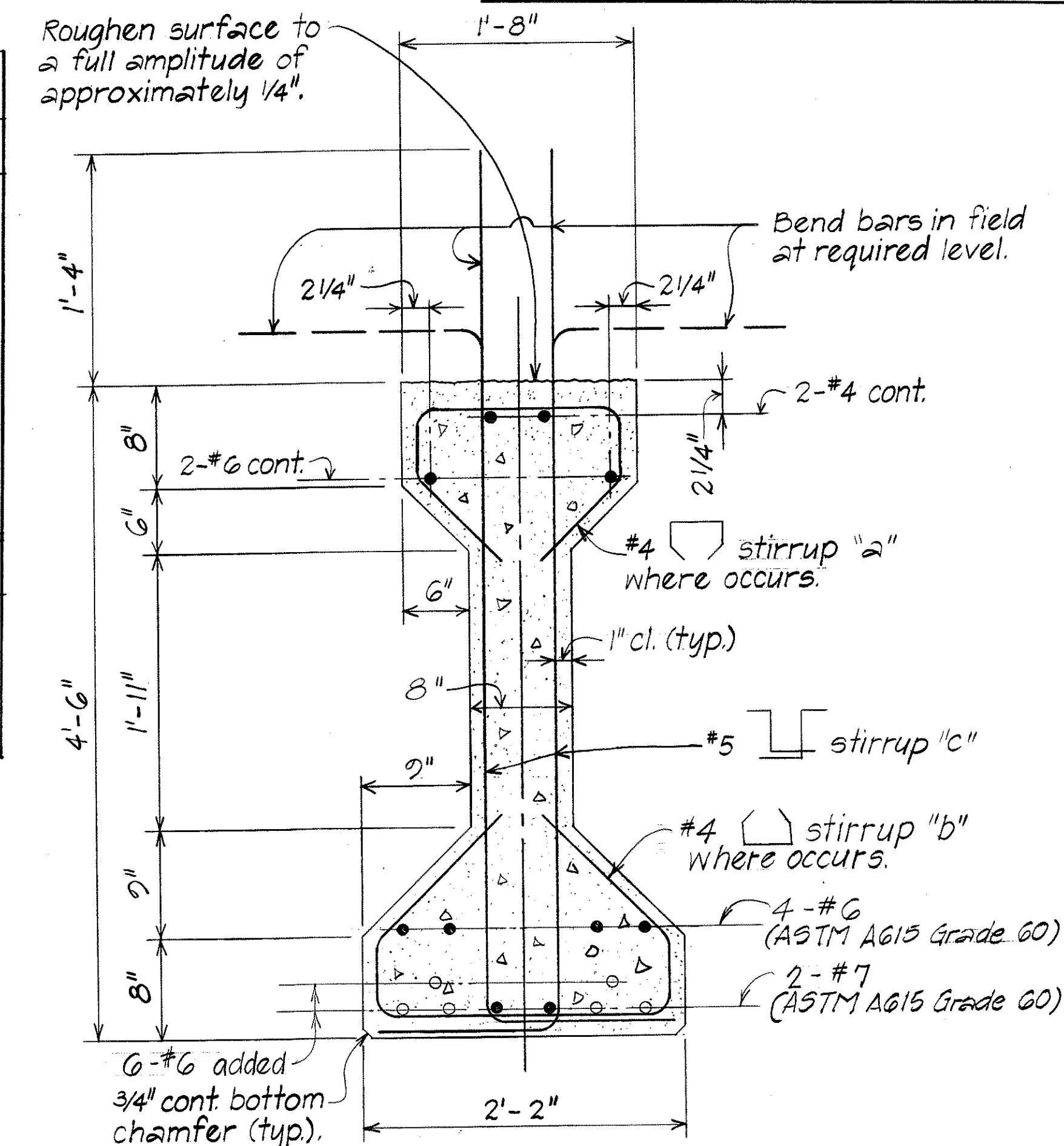
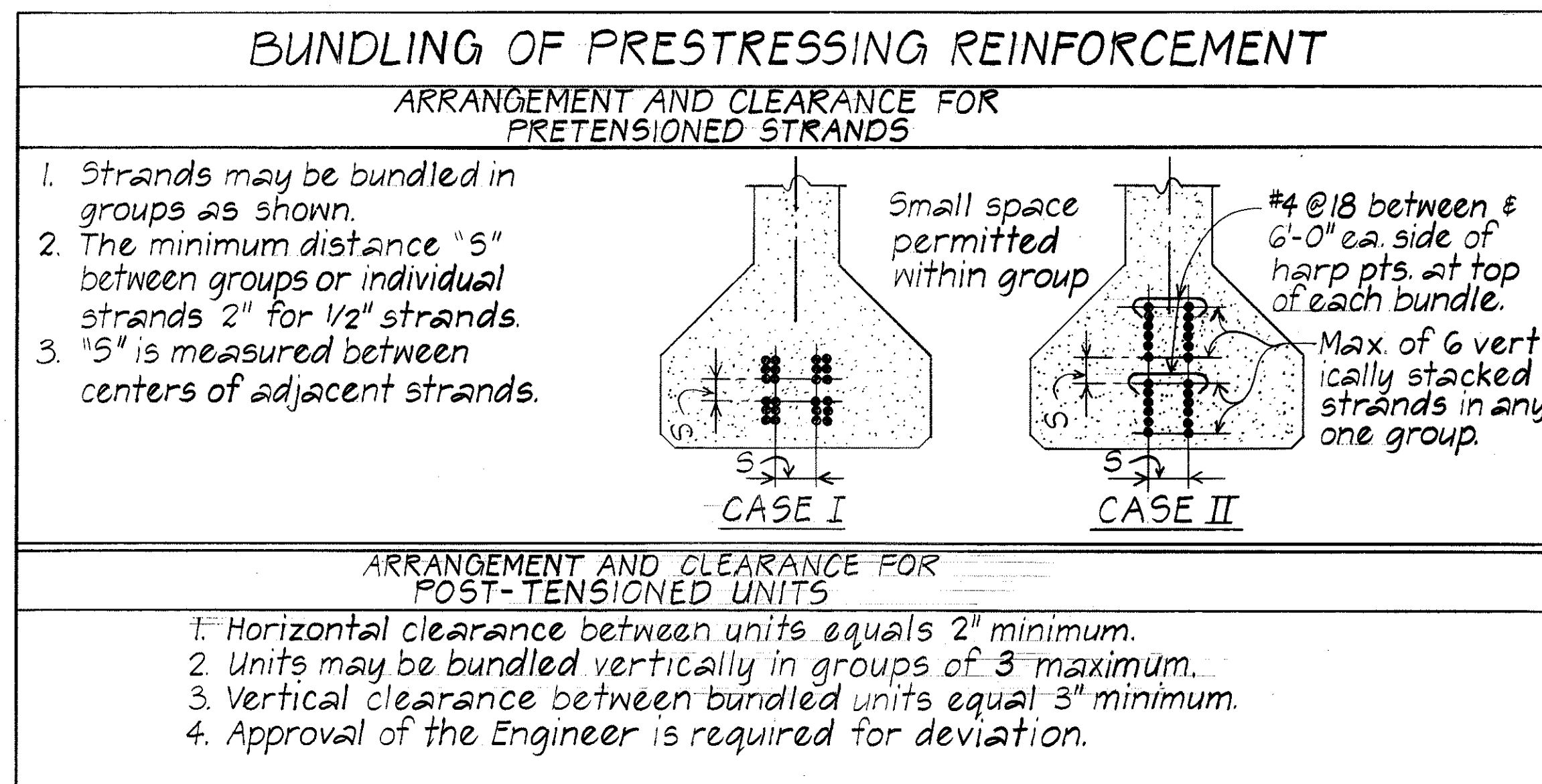
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HAWAII	HAW.	I-H3-1(24)11	1983	230	328



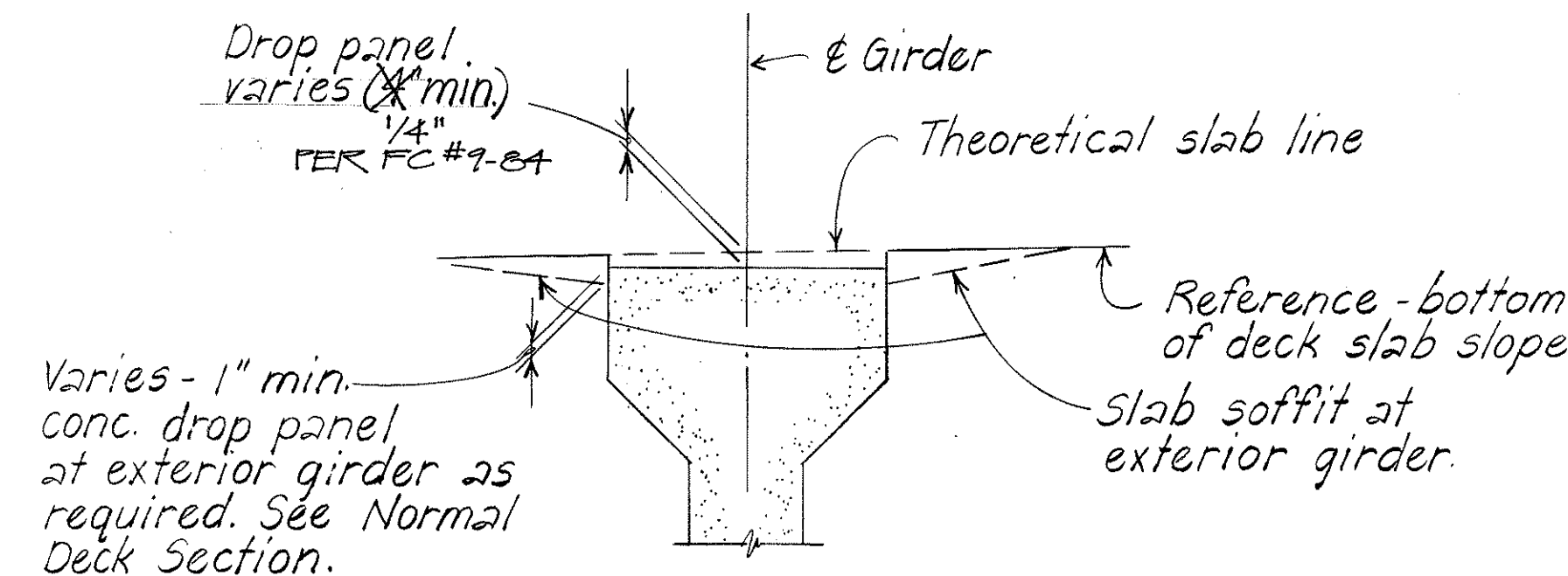
ELEVATION ~ TYPE PG-IV GIRDER END DETAILS
No Scale

GENERAL NOTES

- For design stresses refer to sht. 1K and corresponding girder detail drwg.
- Forms must be removed and the beams inspected before strands are cut.
- For additional holes and inserts in prestressed girders for beam connections refer to corresponding beam details.
- For additional prestressed girder details not covered by these drawings refer to corresponding detail plans.
- All strand patterns shall be approved by the Engineer.
- The calculated camber includes the effect of the initial prestress force and the weight of the girder upon removal from the stressing bed. Calculated camber values shown do not account for any camber growth of the girder. The actual camber at time of deck pour shall not exceed the calculated camber by more than 100%. Calculated midspan camber equals 1 7/16 inches.
- Contractor shall submit record of cambers to the Engineer. This record shall include cambers at time of detensioning, delivery and deck pour.



TYPICAL PRESTRESSED CONCRETE GIRDER TYPE PG-IV
No Scale



TYPICAL SLAB DROP PANEL DETAIL AT PRESTRESSED GIRDER

Not to Scale

"AS BUILT"

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

PRESTRESSED GIRDER

(TYPE PG-IV)

KAMOOALII STREAM BRIDGE

HALEKOU INTERCHANGE

F.A.I. Proj. No. I-H3-1(24)11

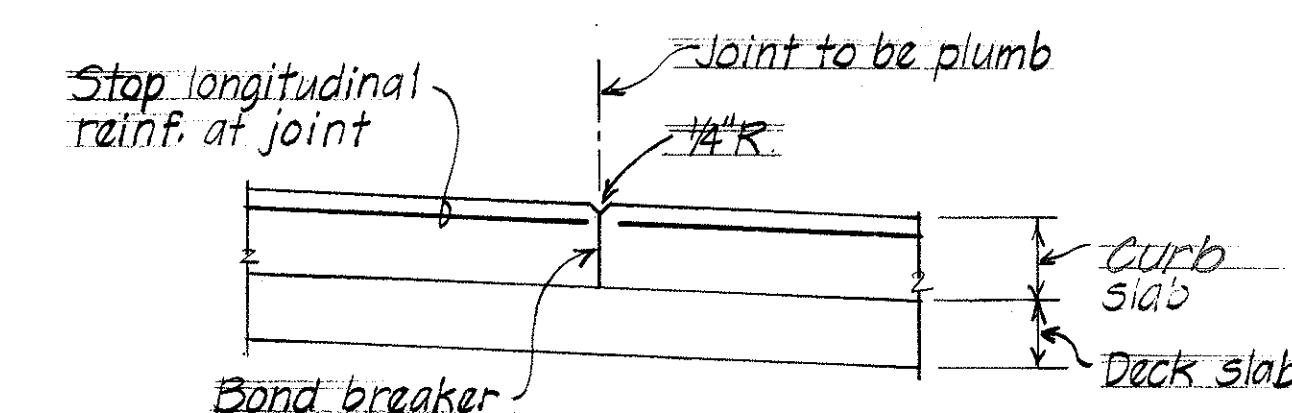
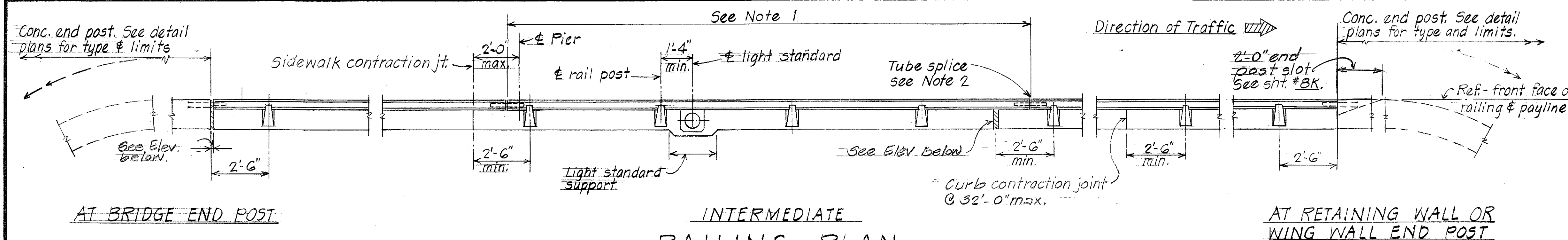
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Date: Sept 1982

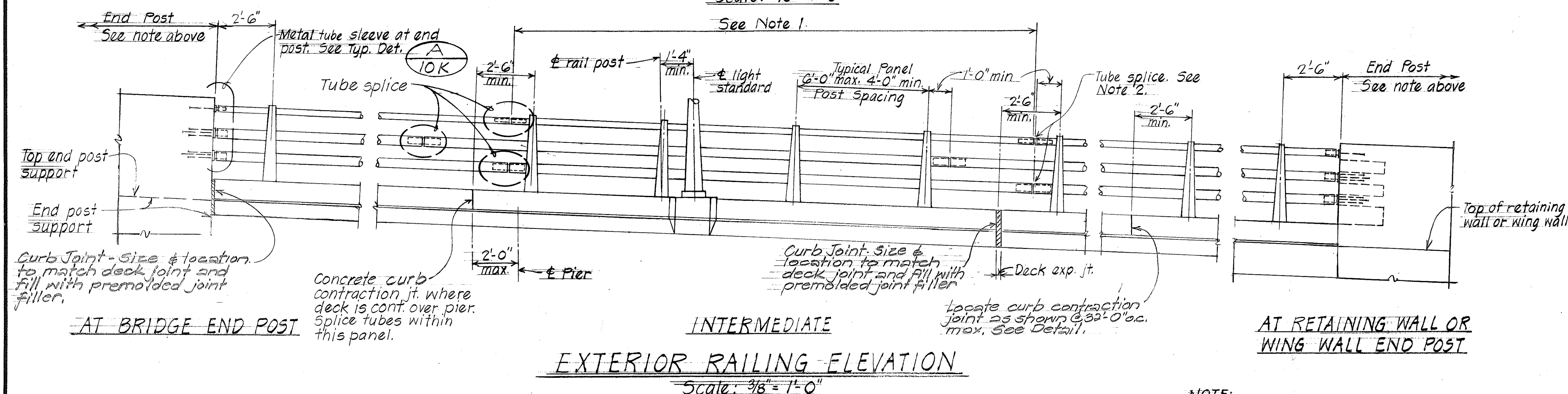
SHEET No. 2K OF 12 SHEETS

230

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	I-48-1(24)11	1083	231	328

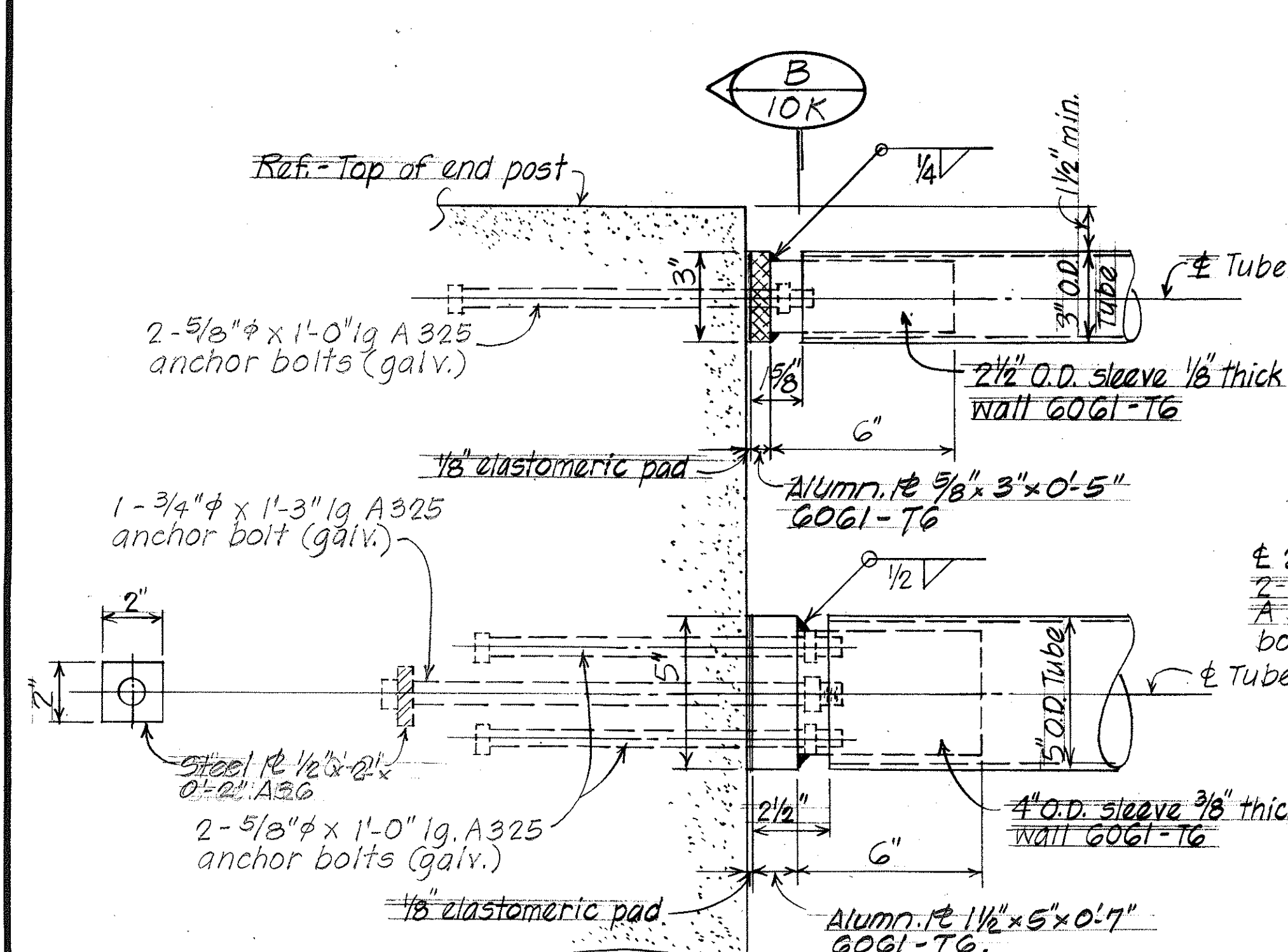


TYPICAL CURB 41'K
CONTRACTION JOINT DETAIL
Scale: 1/2" = 1'-0"

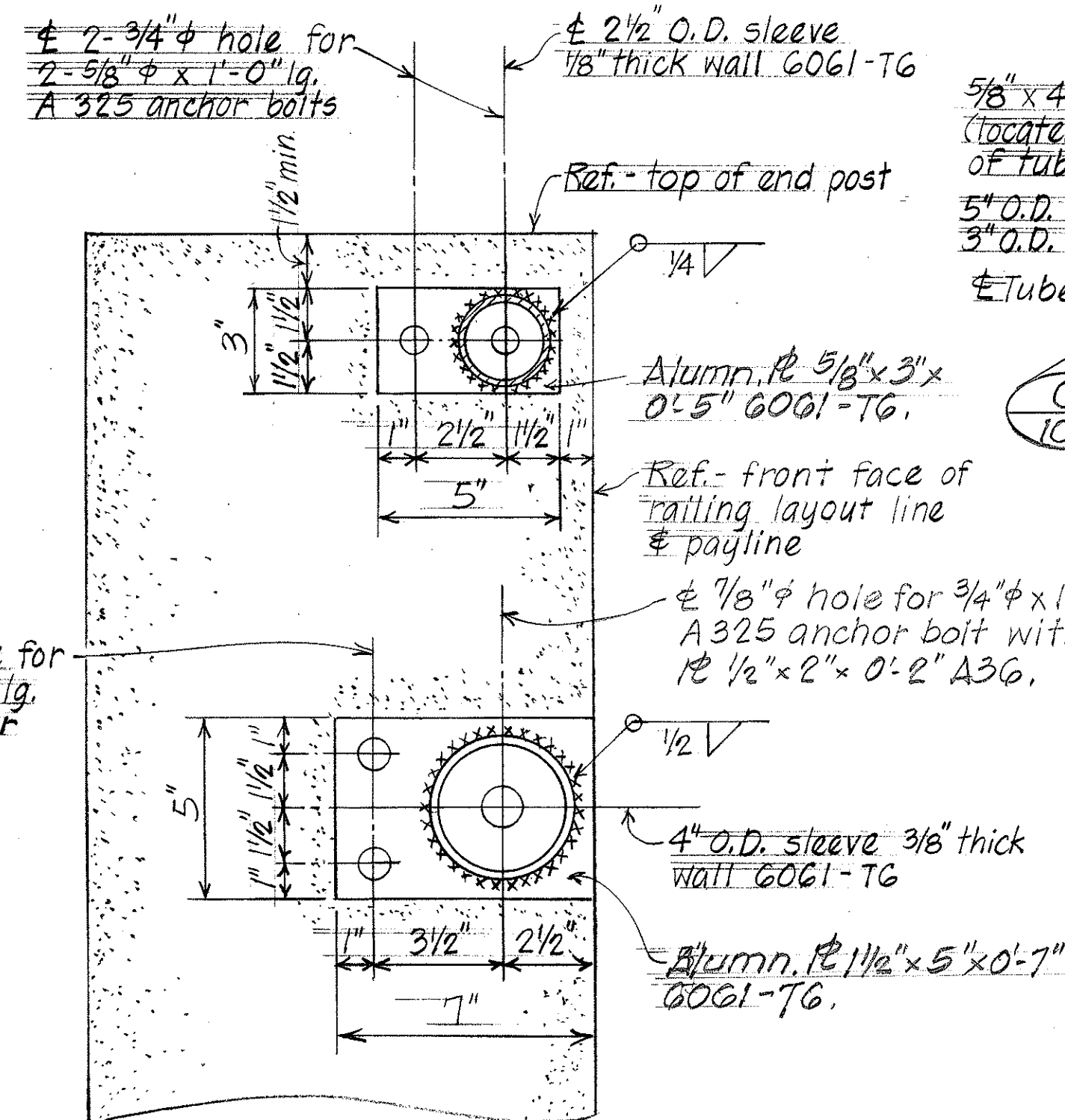


1. Tubing shall be continuous over not less than 4 posts unless noted otherwise.
2. All tubes shall be spliced in the panel spanning deck expansion joints. Increase joint width between tube to $1\frac{1}{2}$ " and increase sleeve length by 1" (See Tube Splice Det.)
3. Rail post shall be normal to grade.
4. No more than one tube splice per panel shall be permitted except as noted.
5. $\frac{1}{8}$ " thick, full size elastomeric pads shall be placed between every post base and concrete surface.
6. Welding of aluminum shall conform to subsection 113.14(b)(1) of Standard Specifications.
7. Unused holes in salvaged rail tubes shall be filled with weld filler material and ground smooth.

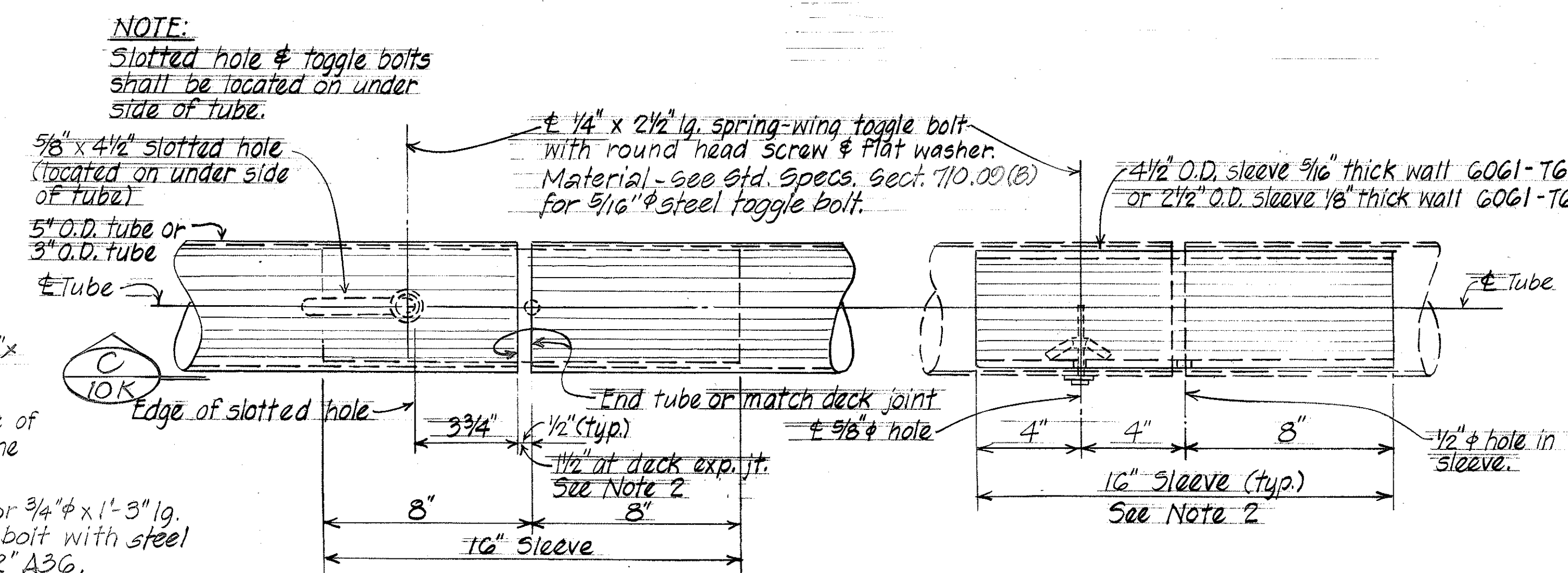
NOTES



DETAIL - TYPICAL METAL TUBE SLEEVE AT END POST
Scale: 3" = 1'-0"



SECTION 
Scale: 3" = 1'-0"



PLAN

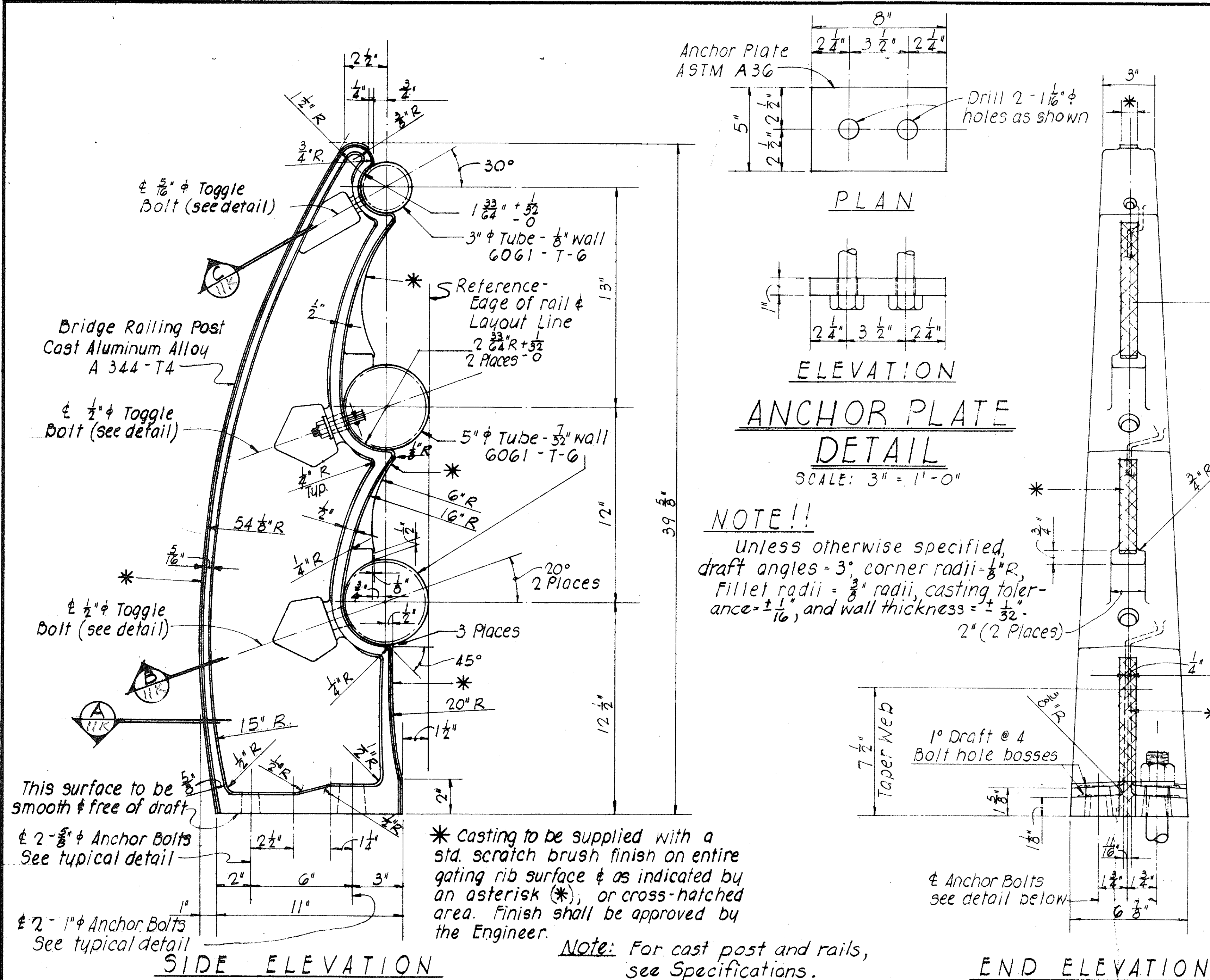
SECTION $\frac{C}{10K}$
TUBE SPLICE DETAIL Scale: 3" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

ALUMINUM BRIDGE RAILING
THREE RAIL COMBINATION TYPE
KAMOOALII STREAM BRIDGE
HALEKOU INTERCHANGE
FAI Proj. No. I-H3-1(24):11

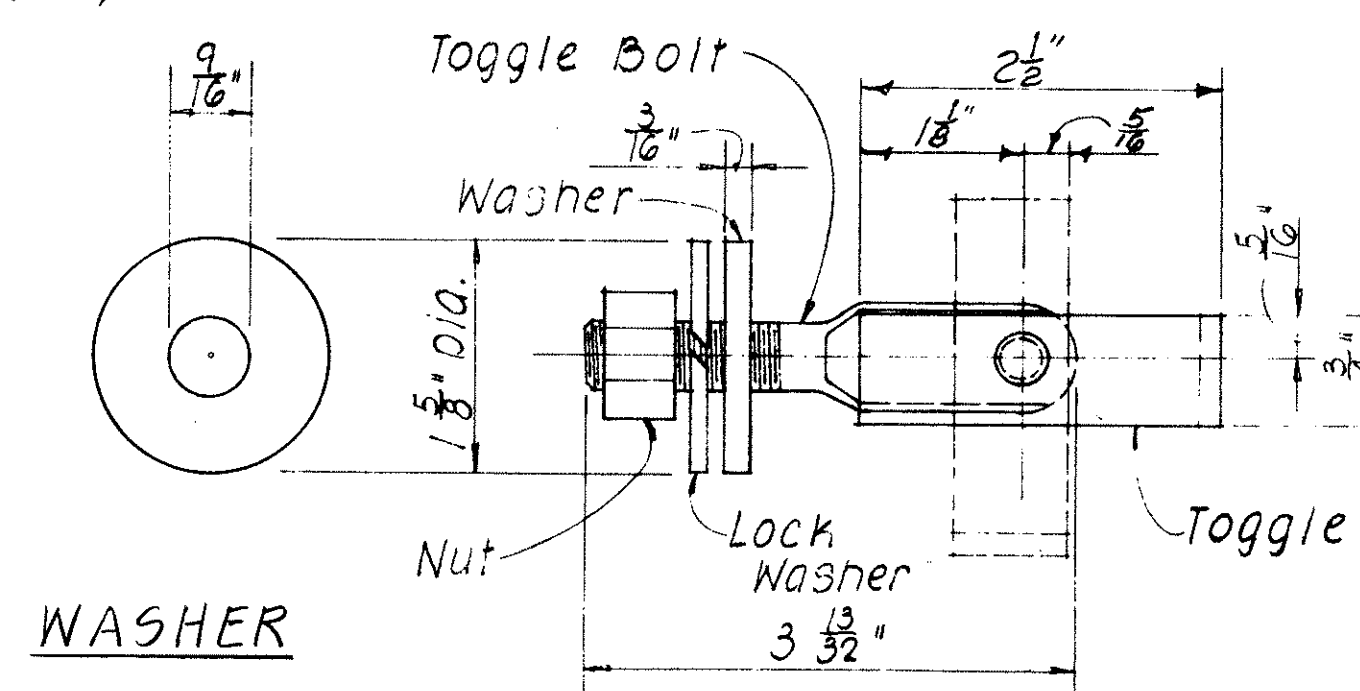
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SHEET No. 10K OF 12 SHEETS

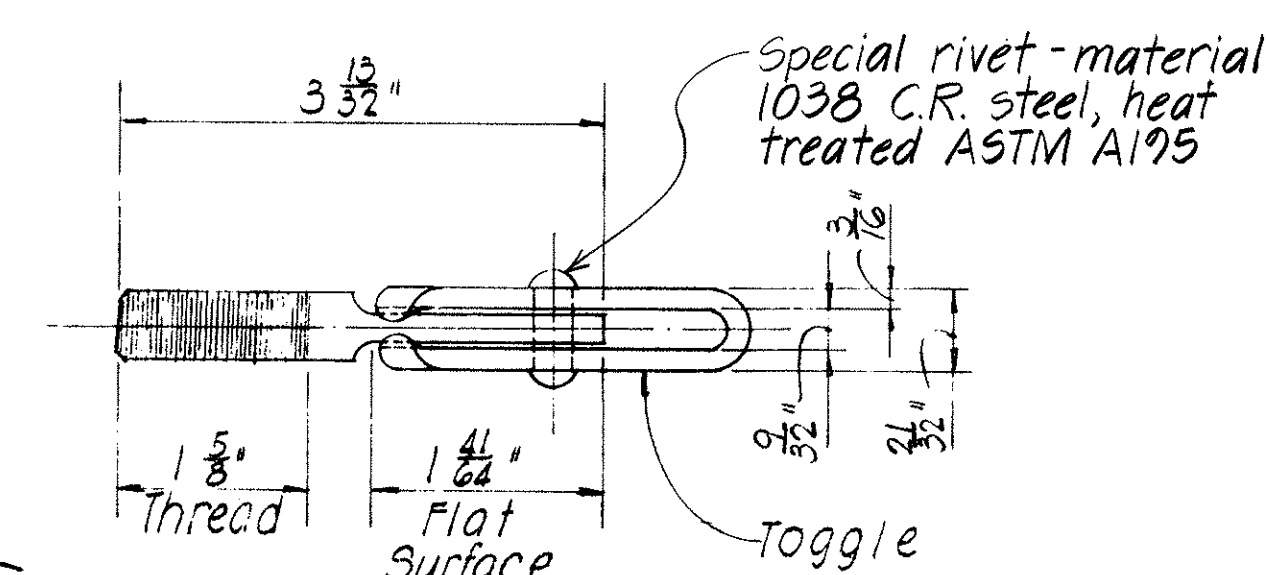


NOTE:

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

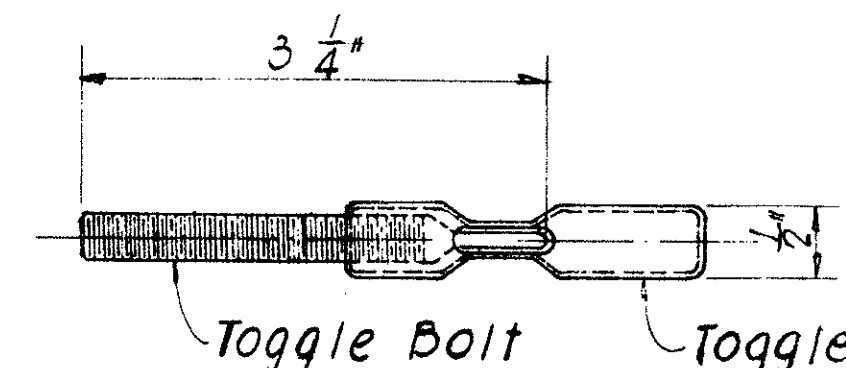


SIDE ELEVATION ASSEMBLAGE

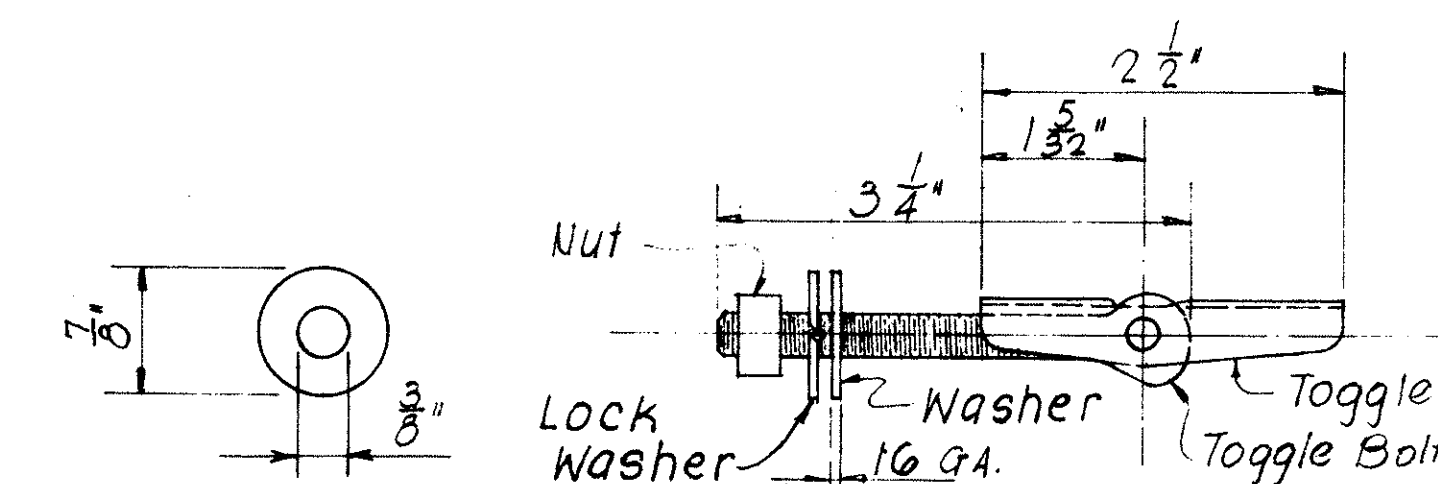


TOP PLAN

1/2" ϕ STEEL TOGGLE BOLT DETAIL

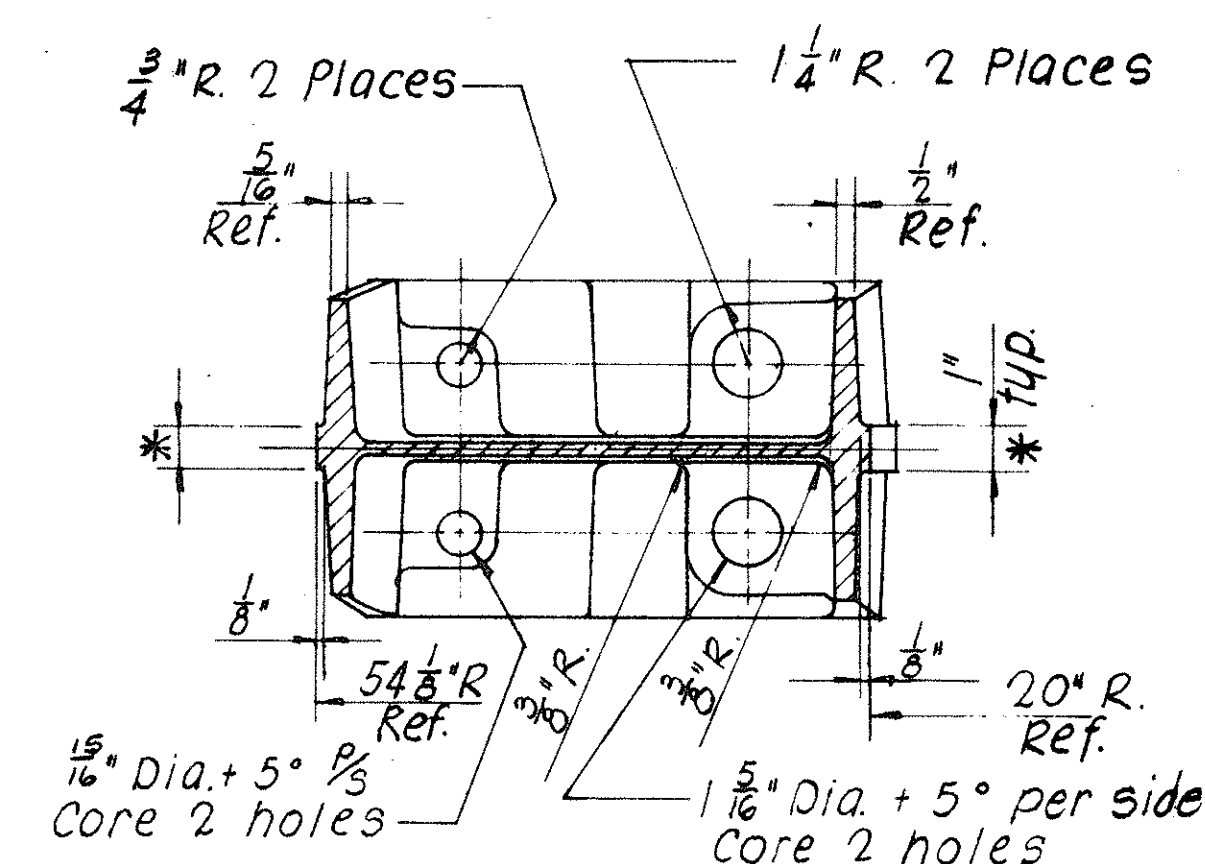


TOP PLAN

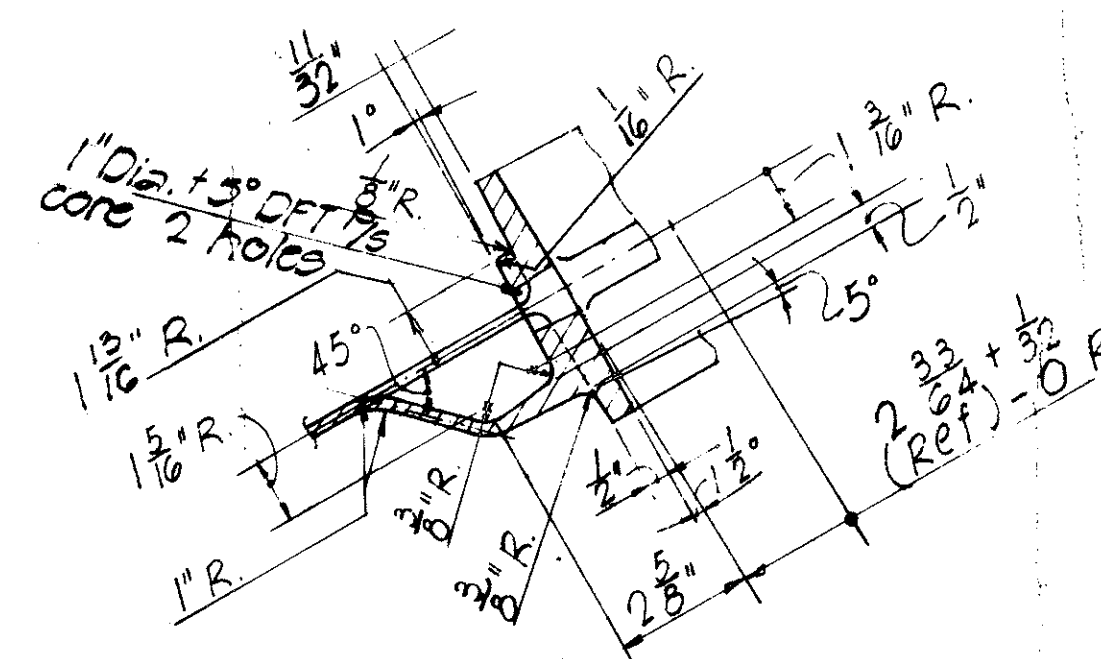


WASHER ELEVATION ASSEMBLAGE

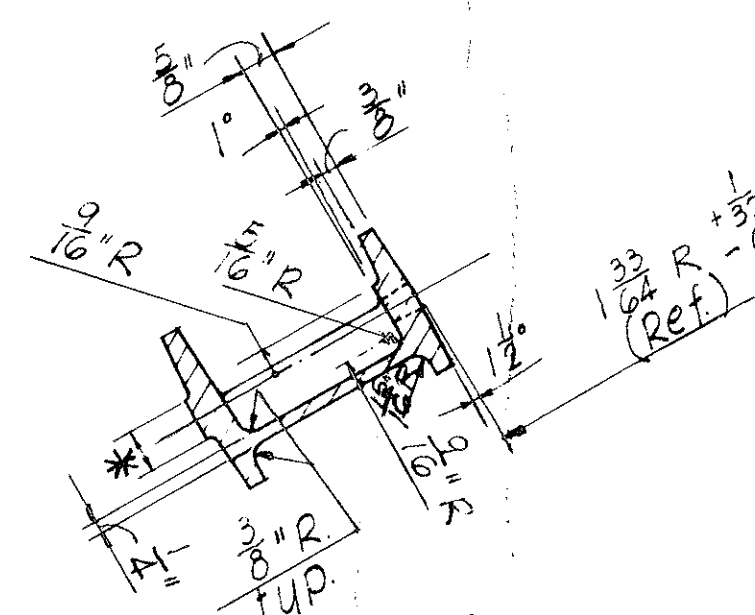
5"
16 ϕ STEEL TOGGLE BOLT DETAIL



SECTION
SCALE: 3" = 1'-0"

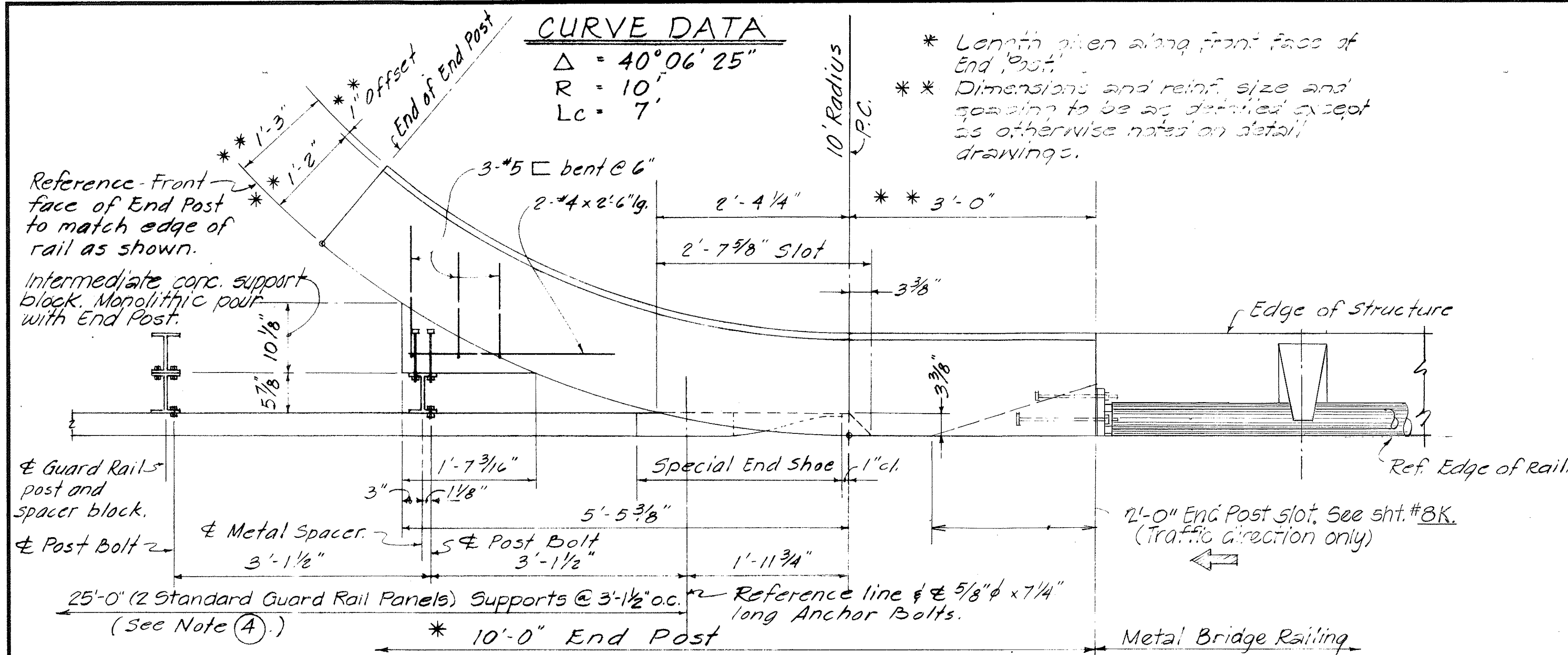


SECTION
SCALE: 3" = 1'-0"

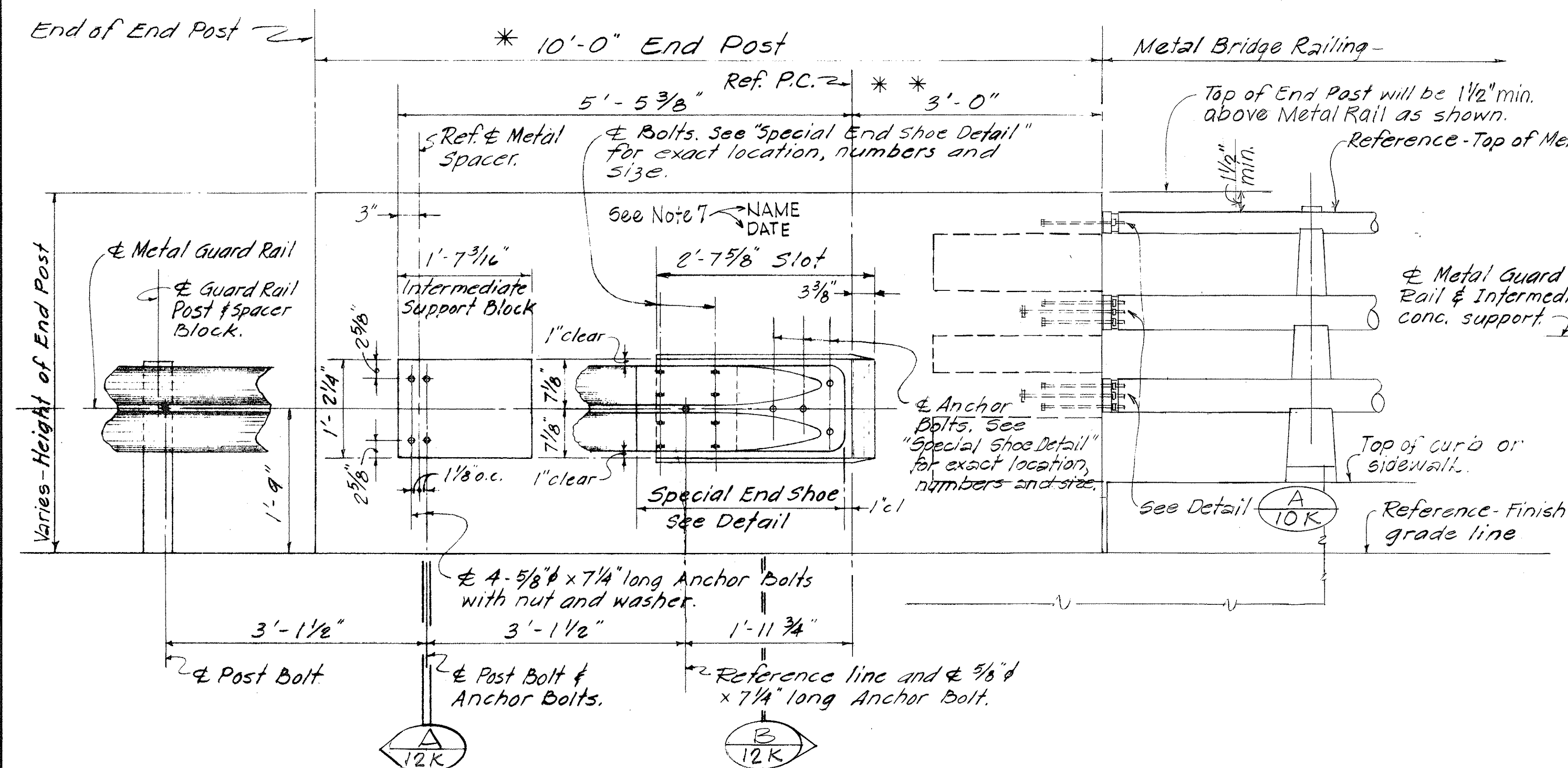


SECTION
SCALE: 3" = 1'-0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-49-1(24):11	1983	233	328



PLAN Scale: 1" = 1'-0"

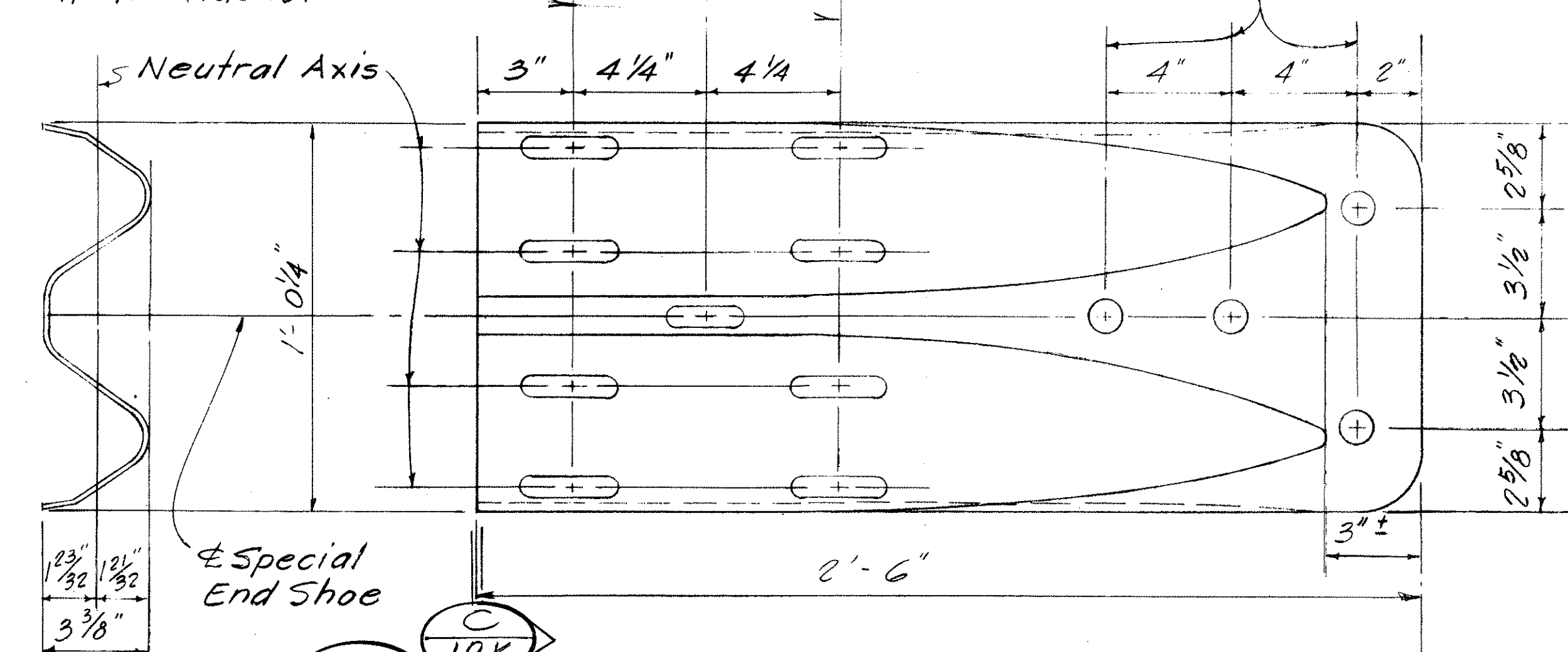
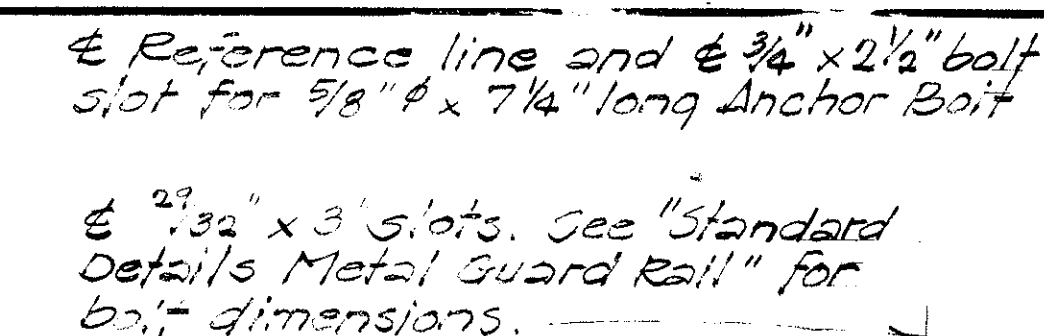
ELEVATION

Scale: 1" = 1'-0"

- NOTES.

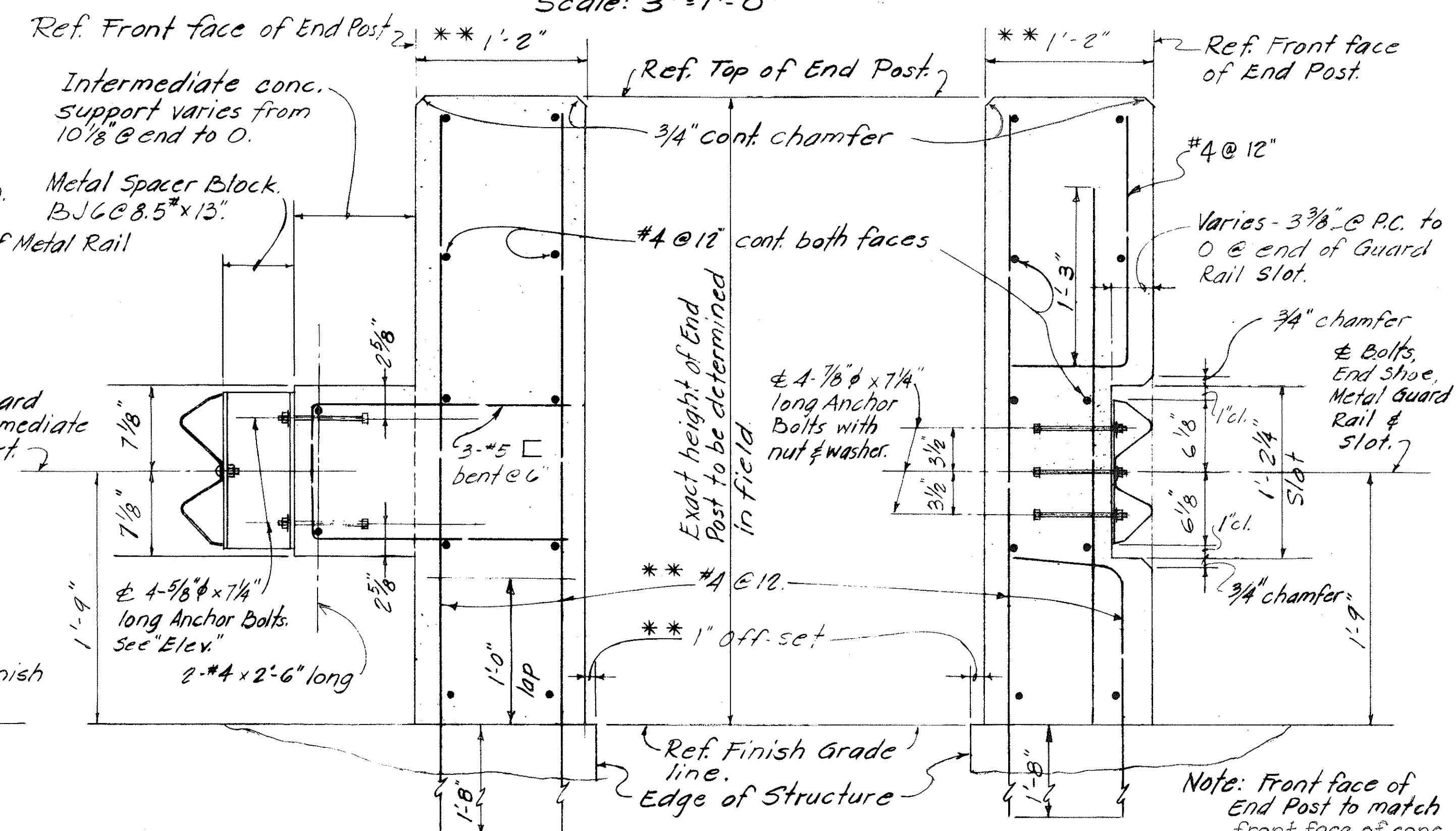
1. All Anchor bolts shall be High Strength bolts conforming to the requirements of ASTM A-325.
2. All shoe assembly, including anchor bolts, nuts and washers, shall be galvanized.
3. Special End Shoe shall be Fabricated from 10 gage steel conforming to the requirements of AASHTO 180.

4. First 25'-0" of guard rail adjoining "Special End Shoe" shall be galvanized steel.
5. Anchor Bolt length given under bolt head.
6. These details are applicable for Connections to Retaining walls also.
7. Place name of structure as shown. For location, see "Plan" on Contract Drawing. Date shown will be year structure is completed. Letter size and detail see standard Drawing Sht. 51.



SECTION $\frac{C}{12K}$ $\frac{12K}{12K}$ ELEVATION
SPECIAL END SHOE DETAILS

Scale: 3" = 1'-0"



SECTION $\frac{\Delta}{12K}$ Scale: $1\frac{1}{2}" = 1'-0"$

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

SECTION B curb & edge of rail
12K Scale: 1 1/2" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

METAL GUARD RAIL CONNECTION
AT VERTICAL FACE TYPE END POST

KAMOOALII STREAM BRIDGE
HALEKOU INTERCHANGE
E.A.I. Proj. No. I-H3-1(24):11

Scale: As shown Date: Sept. 1982

SHEET No. 12K OF 12 SHEETS