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S-3	TYPICAL SECTIONS & DETAIL AT EXISTING PIER		T-3	SUGGESTED DETAIL FOR RESISTING 50 KIPS HORIZONTAL FORCE AT TOP OF COLUMN	
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	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	HAWAII	HAW.	I-HI-1(84):16	1978	108	466

H-1 VIADUCT (EB) ESTIMATED QUANTITIES. PART II			
ITEM NO.	ITEM	UNIT	QUANTITIES
206.6000	Structure Excavation for Bridges	Cu. Yd.	2000
503.1093	Concrete in H-1 Viaduct (EB) Footings (Includes Pedestals)	Lump Sum	874 cu. yd.
503.1092	Concrete in H-1 Viaduct (EB) (Except Footings)	Lump Sum	2600 cu. yd.
504.4500	Keehi Type IV Prestressed Concrete Girders	Lump Sum	2087 lin. ft.
504.4510	Keehi Type IV F Prestressed Concrete Girders	Lump Sum	458 lin. ft.
504.6300	Keehi Type III Prestressed Concrete Girders	Lump Sum	2087 lin. ft.
510.0100	Deck Expansion Joint for H-1 Viaduct (EB)	Lin. Ft.	682
512.0100	Column Hinge for H-1 Viaduct (EB)	Each	8
602.0091	Reinforcing Steel in H-1 Viaduct (EB)	Lump Sum	1,131,341 lbs
507.7100	Standard Parapet for H-1 Viaduct (EB)	Lin. Ft.	782
604.4900	Furnishing & Installing Ductile Iron Frame & Cover for Deck Drain Clean out.	Each	4
604.4950	Furnishing & Installing Type A-12 Frame & Grate for Deck Drainage	Each	8

RAMP IV ESTIMATED QUANTITIES			
ITEM NO.	ITEM	UNIT	QUANTITIES
206.6000	Structure Excavation for Bridges (Ramp & Retaining Walls)	Cu. Yd.	745
206.7000	Structure Backfill for Bridges (Ramp & Retaining Walls)	Cu. Yd.	824
501.0210	Structural Steel for Ramp IV	Lump Sum	329,800 lbs
503.1095	Concrete in Ramp IV Footings (Includes Pedestals)	Lump Sum	118 cu. yd.
503.1096	Concrete in Abutment & Retaining Walls	Lump Sum	299 cu. yd.
513.0100	Precast Concrete Deck Slab for Ramp IV	Lump Sum	260 cu. yd.
514.0100	Precast Concrete Parapet for Ramp IV	Lin. Ft.	810
602.0092	Reinforcing Steel in Ramp IV	Lump Sum	19778 lbs.
602.0093	Reinforcing Steel in Abutment & Retaining Walls	Lump Sum	50648 lbs.
206.8000	Filter Material	Cu. Yd.	56
401.0300	Asphalt Concrete Pavement, Mix No. III	Ton	104
407.0100	SS-1 Emulsified Asphalt for Bituminous Tack Coat	Gal.	170

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Michael Matsunaga

No scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

H-1 VIADUCT (EB) PART II

INDEX TO DRAWINGS
ESTIMATED QUANTITIES

AIRPORT VIADUCT
F.A.I. PROJ. NO. I-HI-1(84):16

Date: May 16, 1978

SHEET NO. 5-1 OF 20 SHEETS

PRINTED ON NO. 1000M CLEARBRIM

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (84) 16	1978	409	466

- DESIGN CRITERIA**
- See Sheet SD-1 for General Notes.
 - Cast-in-place concrete for the various parts of the viaduct structures are:
 Class A - Beams, footings, tie beams & parapets.
 Class BD - Concrete deck slab 5500 p.s.i. - Pier (E) - Column (B)
 5000 p.s.i. - All others (Columns & Pier caps)
 - Reinforcing steel for cast-in-place concrete are as follows.
 Grade 40 - Concrete deck slabs, beams and parapet
 Grade 60 - Pier cap, column, footing, pedestal, tie beam reinforcing & others not specified.

SCURPER TYPE	DECK DRAIN LOCATION SCHEDULE	Location (# H-1 EB Sta.)
A	D1	210 + 10.00
A	D2	210 + 55.00
A	D3	211 + 15.00
A	D4	211 + 45.00
B	D5	212 + 30.00
B	D6	212 + 81.00
A	D7	213 + 25.00
A	D8	213 + 43.00

- NOTES:**
- See Sh. SD-8 & SD-9 for deck drain details.
 - Stations are to E of deck drains.
 - Provide temporary plugs at deck drain & outlet for D7 & D8. Plug at outlet shall have a 1" hole for drainage purposes.

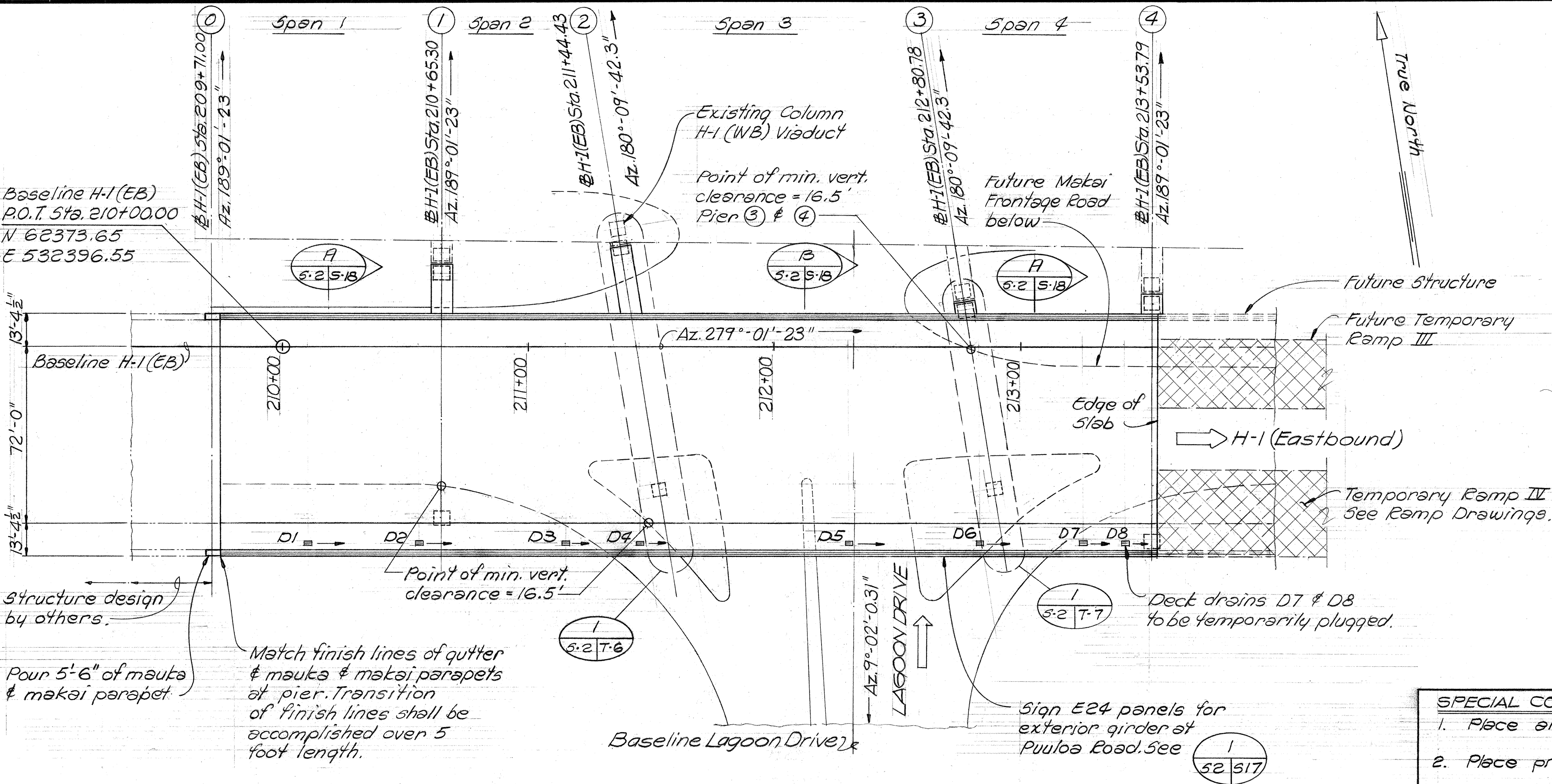
- SPECIAL CONSTRUCTION SEQUENCE FOR SPANS 2&4**
- Place all prestressed girders on spans 2&4
 - Place prestressed girders on span 3
 - Place concrete for slab & beams for span 2&4
 - Place concrete for slab & beams for span 3

- SPECIAL NOTES**
- Unless shown otherwise all transverse dimensions are perpendicular to Baseline H-1 (EB) & all longitudinal dimensions are on Baseline H-1 (EB).
 - See Civil Drawings for all horizontal & vertical controls.
 - For Hinge Restrainer details at hinge end of girder, see Sh. T-8
 - See Electrical Drawings for Viaduct Light Standard locations.

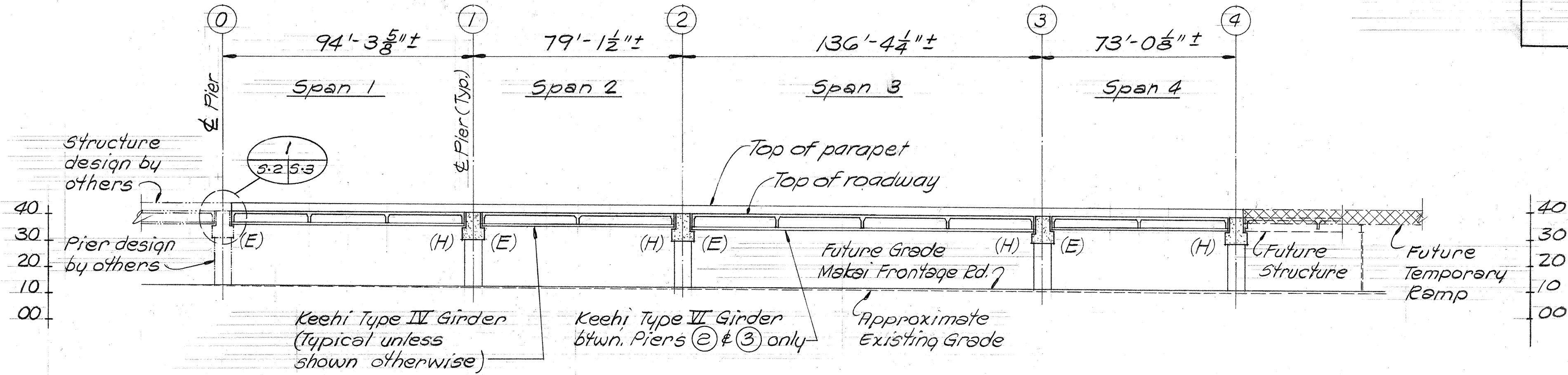
NOTE "A"
 Existing pavement which is damaged through excavation or other work shall be restored to its original condition. Pavement for this work shall be considered incidental to various contract items.

- LEGEND**
- (H) = Hinge end of girders
 (E) = Expansion end of girders
 D2 = Deck Drain #2

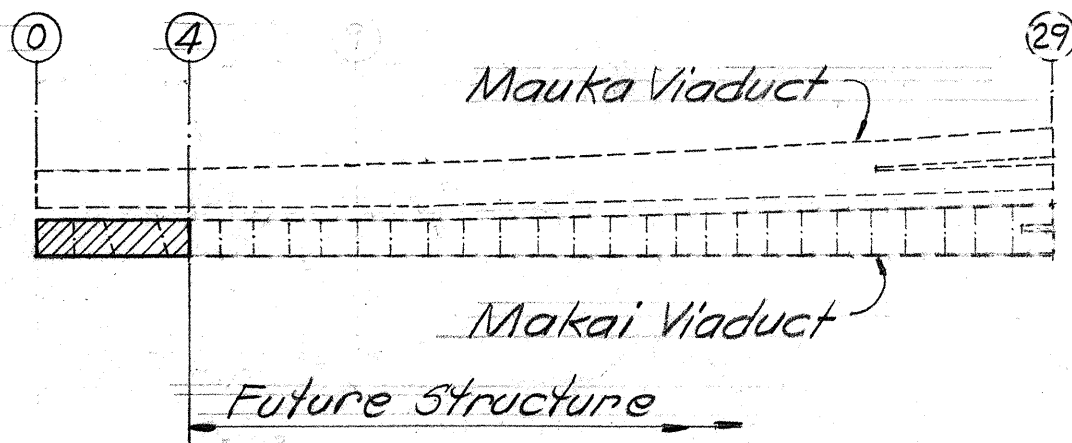
- REFERENCE DRAWINGS:**
- Typical Viaduct & Frontage Rd. Sections - S-3
 - Pier Elevations - S-7
 - Deck Framing Plan - S-16
 - Girder Schedule - S-17



PARTIAL VIADUCT LAYOUT PLAN
 Scale: 1" = 30'-0"



PARTIAL LONGITUDINAL SECTION ALONG BASELINE - H-1 (EB)
 Scale: 1" = 30'-0"



KEY PLAN

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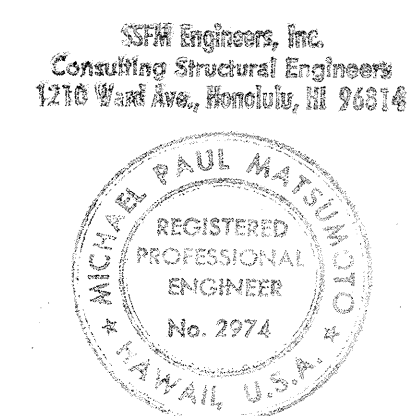
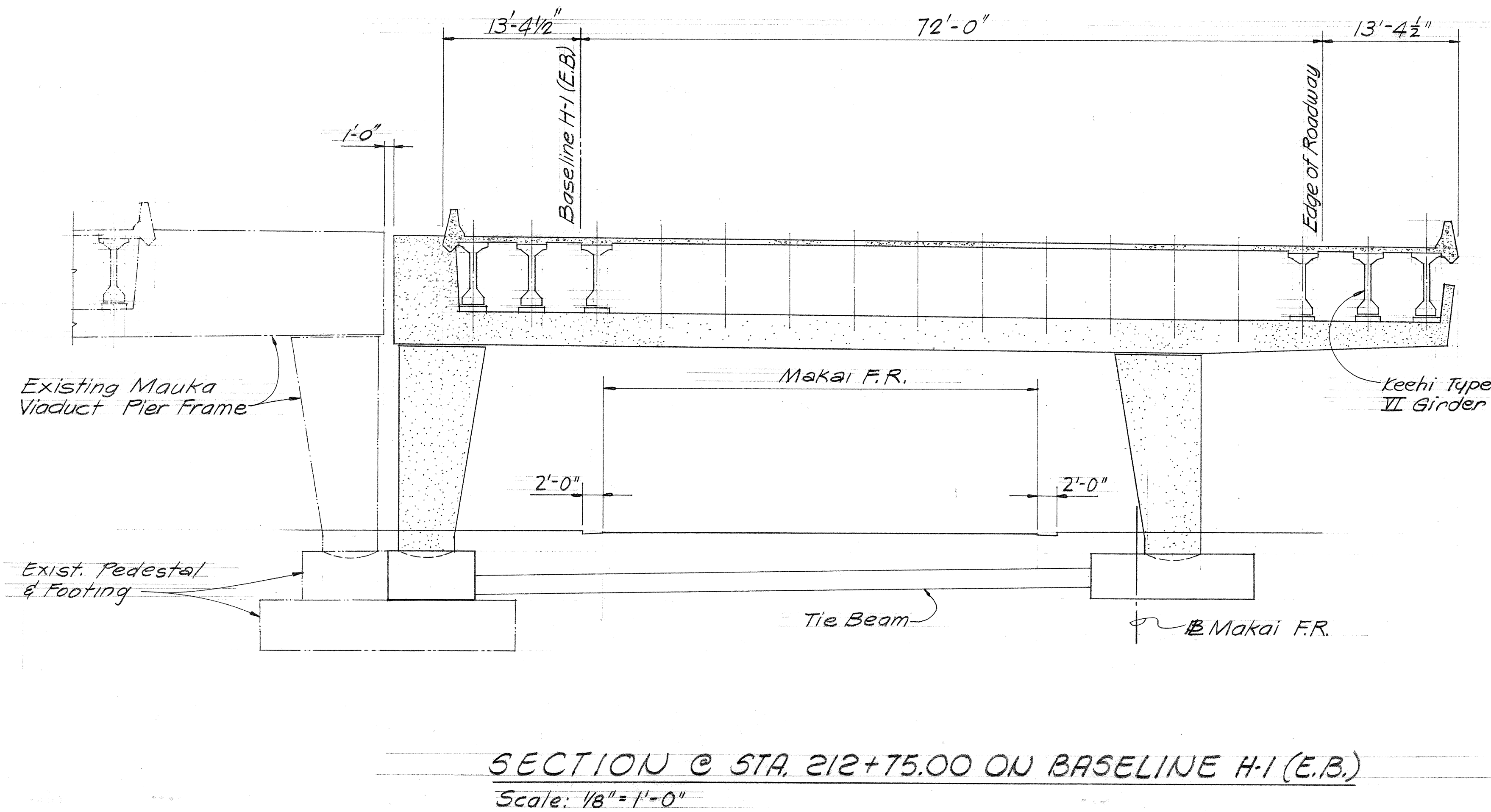
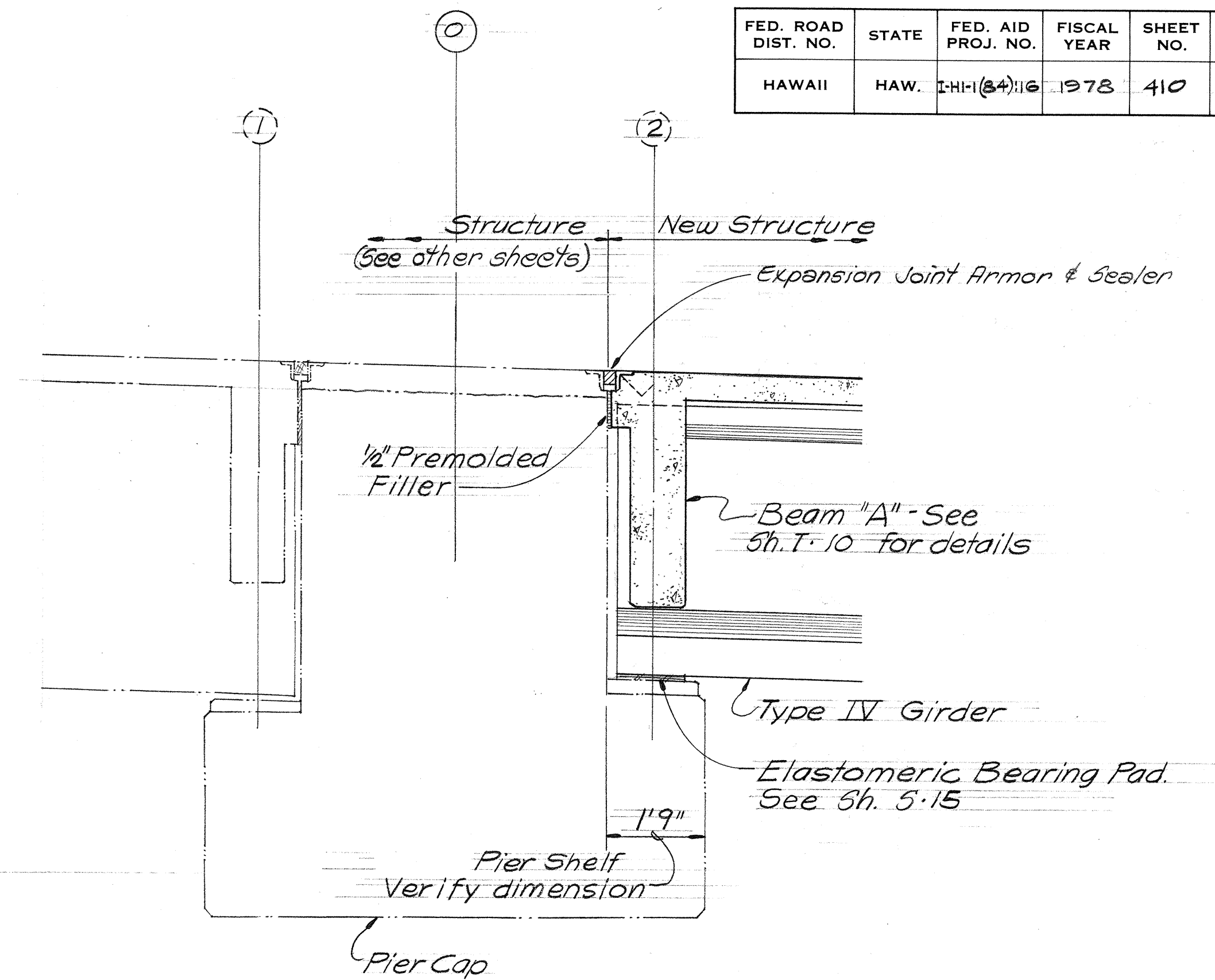
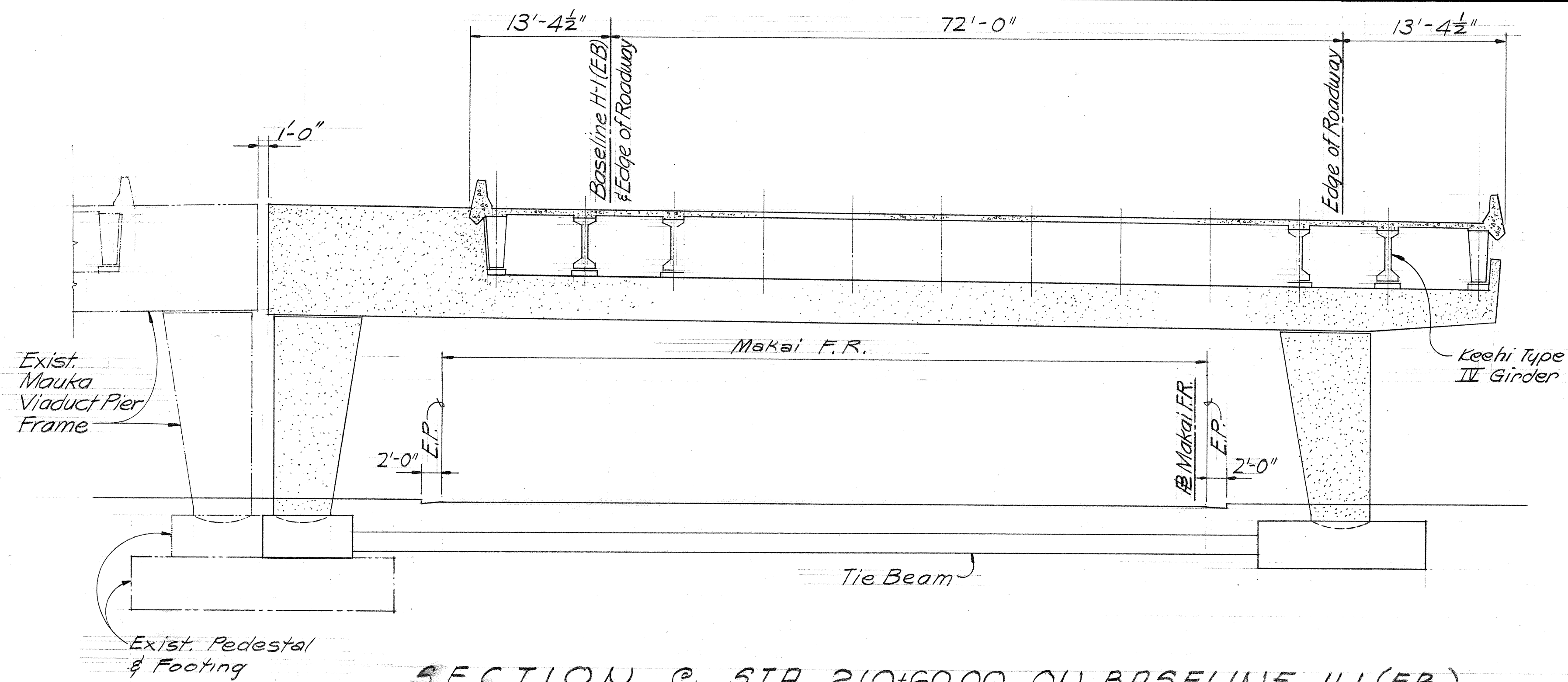
STATE OF HAWAII
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 HIGHWAYS DIVISION

H-1 VIADUCT (EB) PART II
 LAYOUT PLAN AND
 LONGITUDINAL SECTION AT
 STA. 209 + 71.00 TO 213 + 53.79

AIRPORT VIADUCT
 F.A.I. PROJ. NO. I-HI-1 (84) 16

Scale: As Shown Date: May 16, 1978
 SHEET NO. 5 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1H-1(84)16	1978	410	466

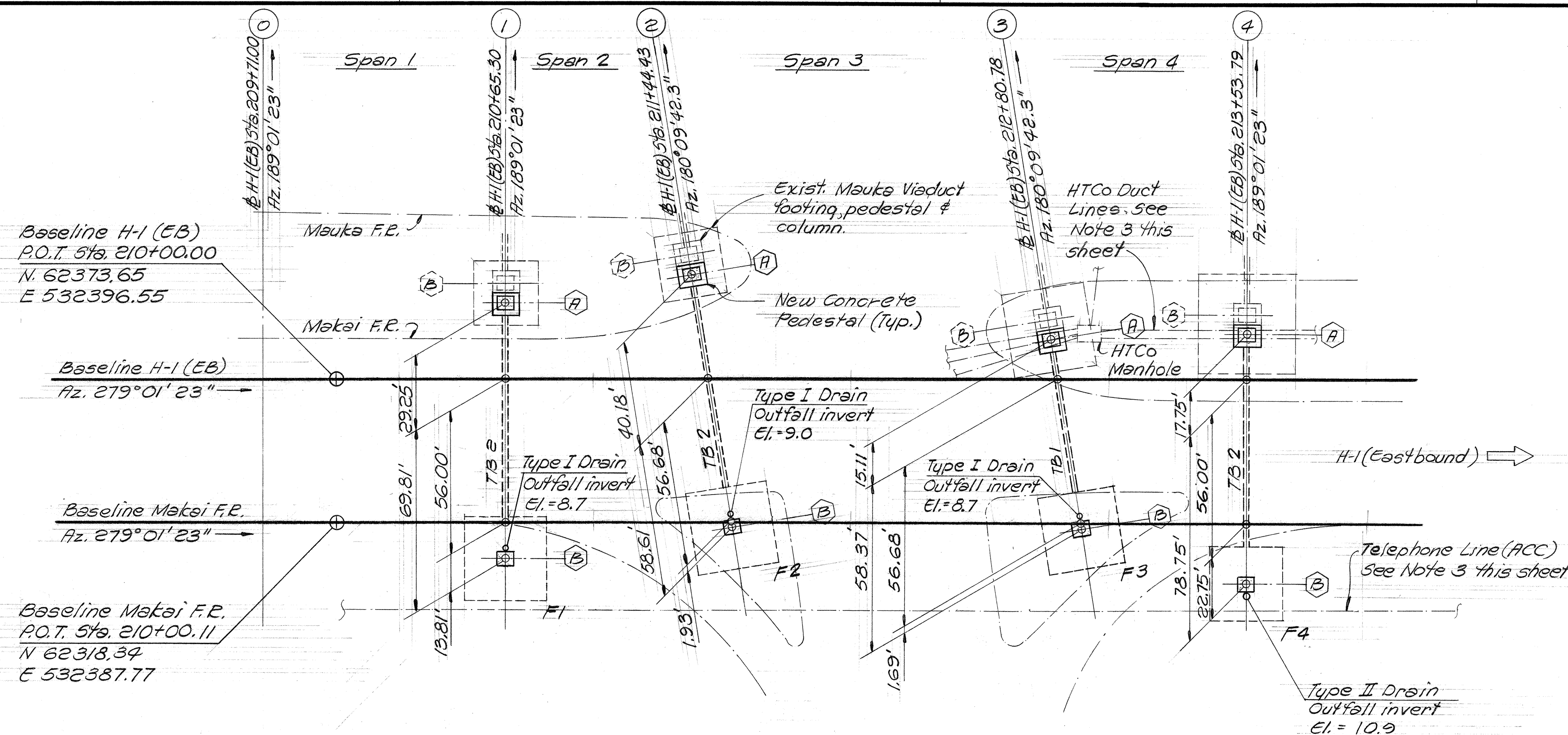


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
H-1 VIADUCT (EB) PART II
TYPICAL SECTIONS &
DETAIL AT EXISTING PIER
AIRPORT VIADUCT
F.A.I. PROJ. NO. 1-H-1 (84)16
Scale: As Shown Date: May 16, 1978
SHEET NO. 53 OF 20 SHEETS

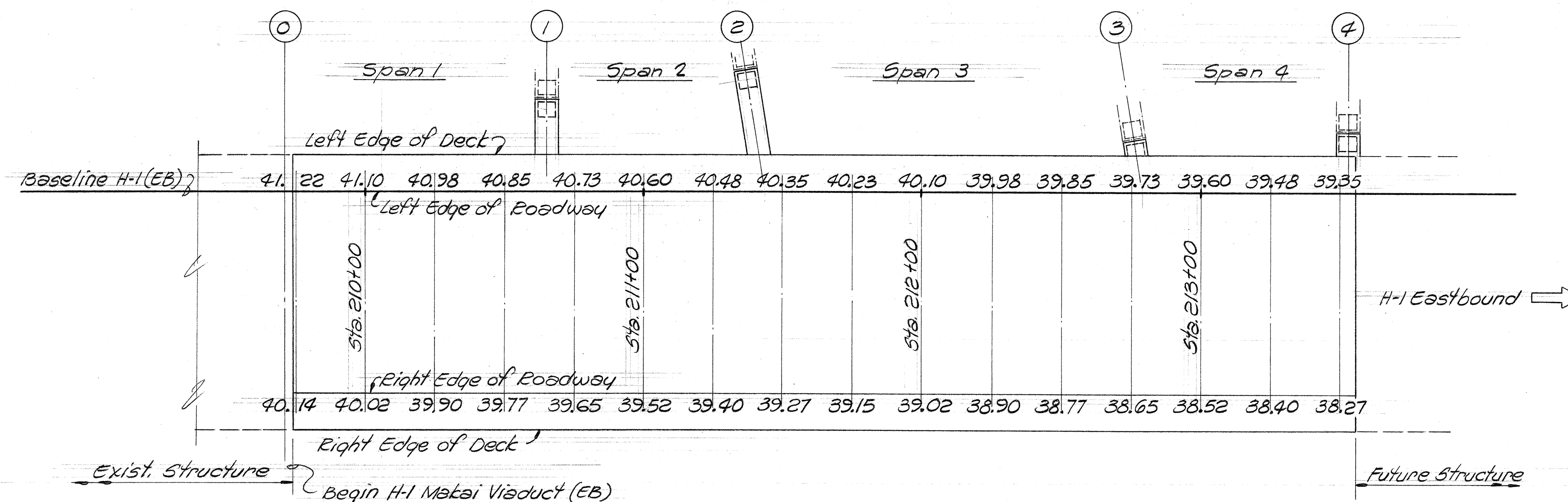
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ORIGINAL PLAN	DATE
DRAWN BY	DESIGNED BY
NOTED BY	CHECKED BY
NO.	

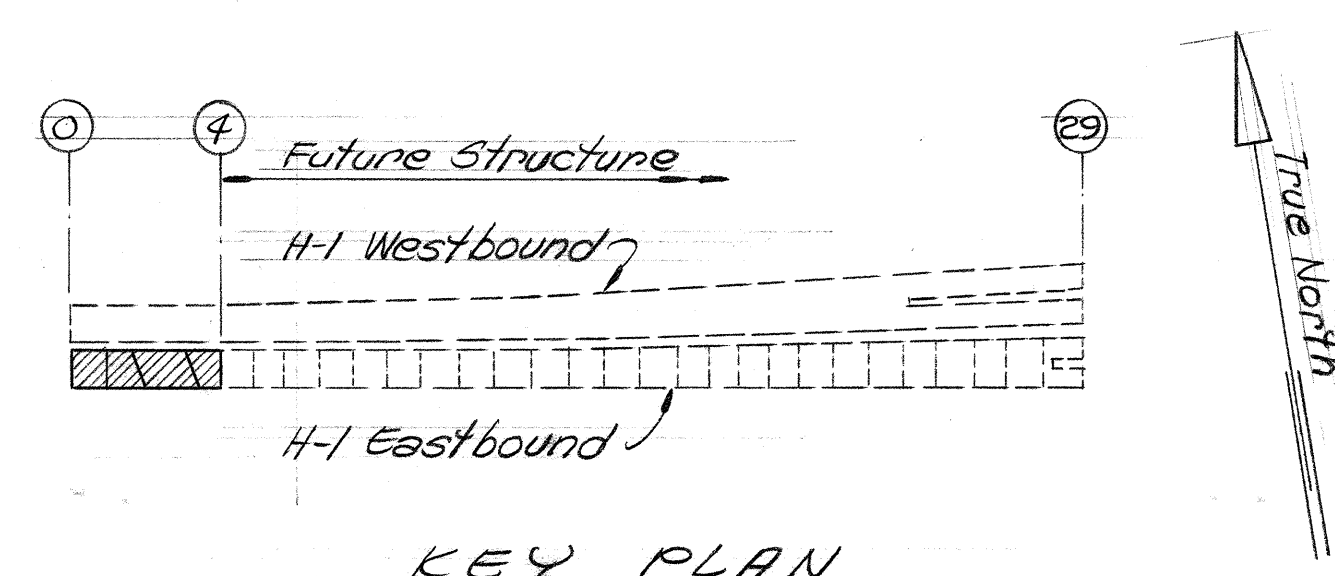
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-41-1(84):16	1978	411	466



FOUNDATION PLAN
Scale: 1" = 30'-0"



DECK PLAN WITH FINISH DECK ELEVATIONS
Scale: 1" = 30'-0"



KEY PLAN

BOTTOM OF FOOTING ELEVATIONS		
PIER	@ Col. A	@ Col. B
1		2.98
2		1.02
3		1.04
4		1.40

NOTES:

1. All dimensions shown are parallel to their respective Piers
2. See Sheet S-7 for Top of Footing Elevation
3. Construction of Piers 3A & 4A, Footing F4 & possibly Footing F1 cannot proceed until the existing underground telephone cables have been abandoned. These underground cables will be abandoned on or before Jan. 31, 1979. Removal of the aerial telephone cables is scheduled for May 31, 1979.

LEGEND

F4 = Footing #4
T82 = Tie Beam #2

REFERENCE DRAWINGS

1. Foundation details --- Sh. S-5
2. Tie Beam Details --- Sh. S-6
3. Conc. Pedestal details --- Sh. S-6
4. Drain Outfall details --- Sh. SD-9

SURVEY PLOTTED BY	DATE
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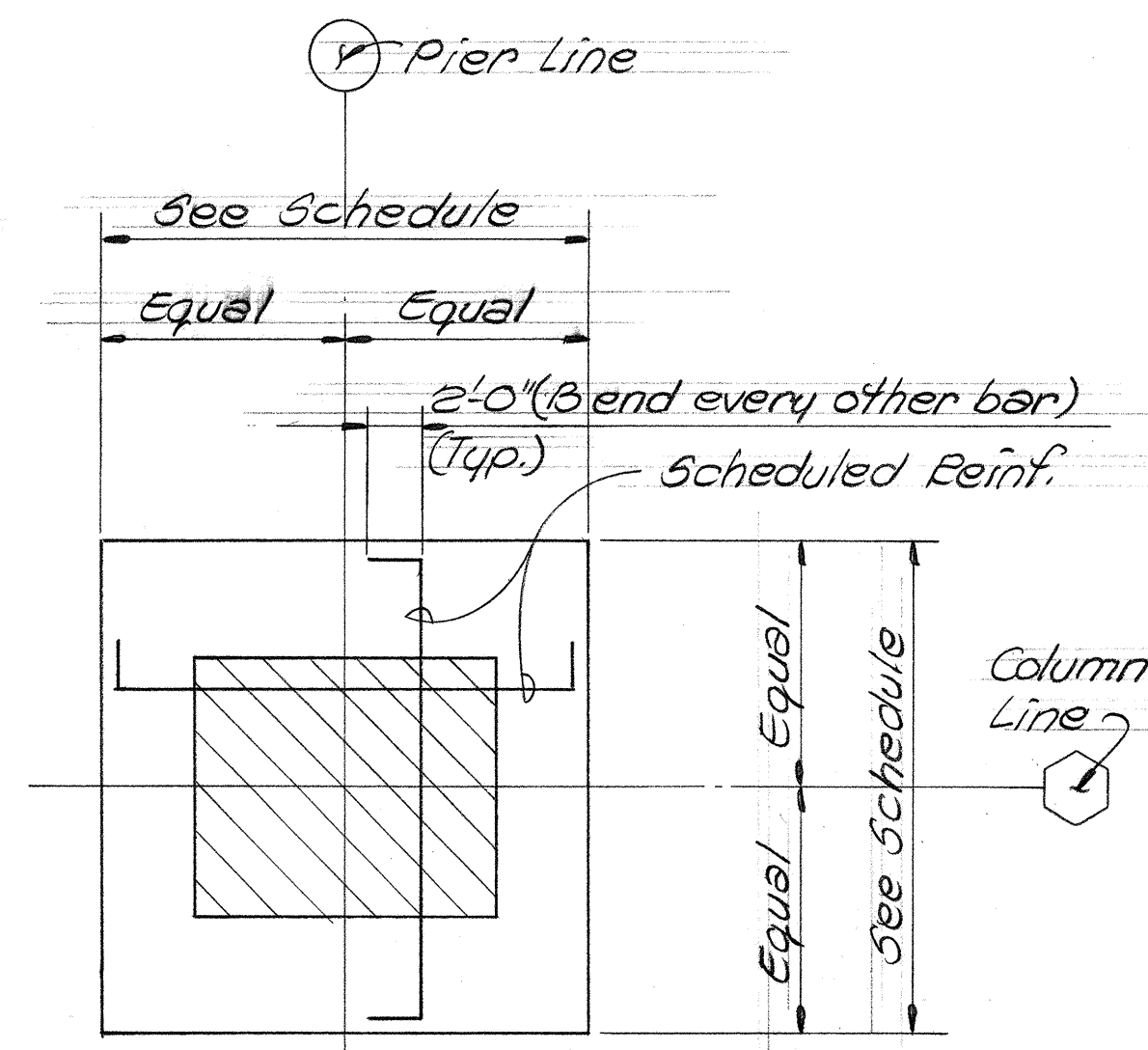
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

H-1 VIADUCT (EB) PART II
FOUNDATION PLAN
& DECK FINISH GRADE PLAN

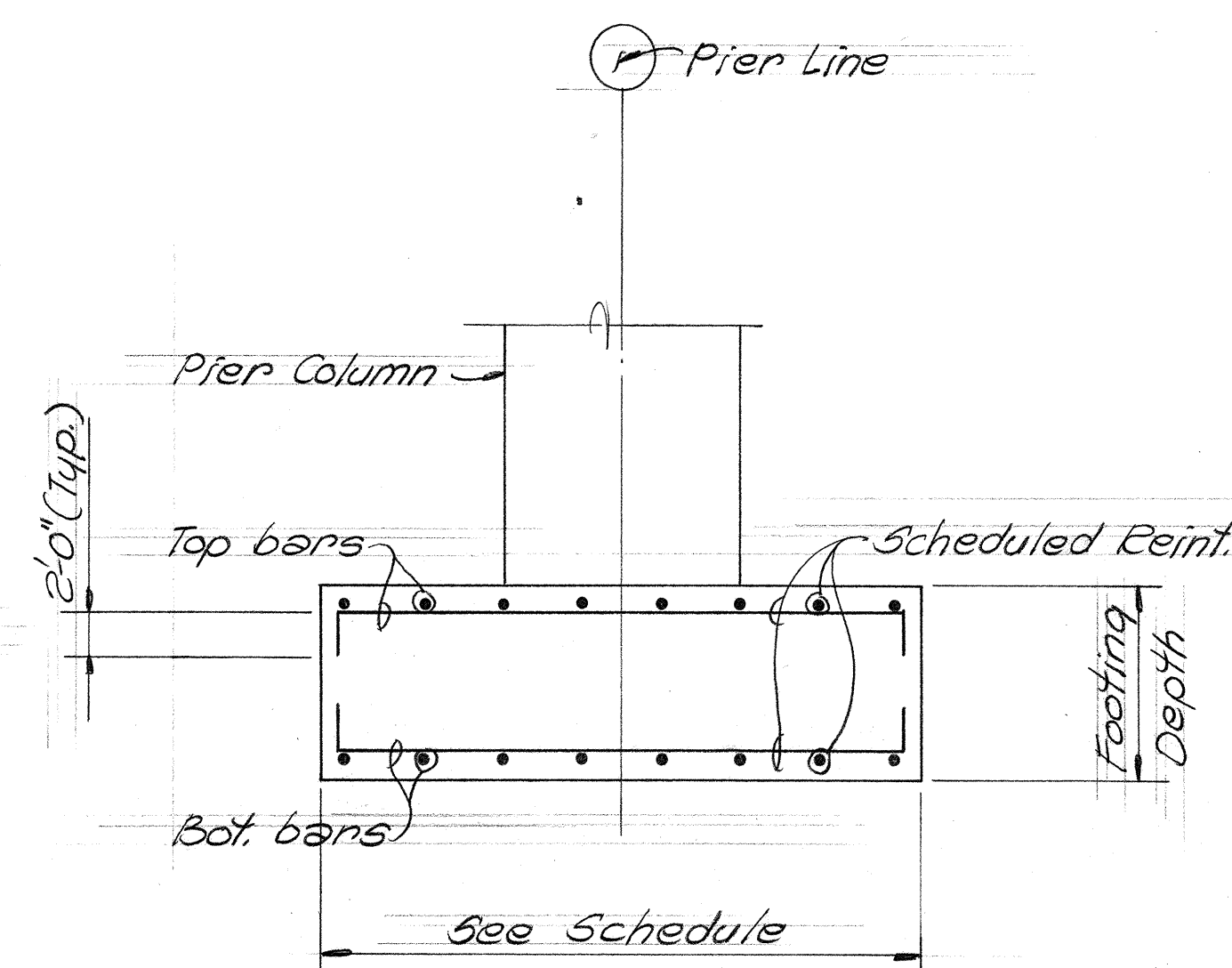
AIRPORT VIADUCT
F.A.I. PROJ. No. 1-HI-1(84):16

Scale: 1" = 30'-0" Date: May 16, 1978

SHEET No. 4 OF 20 SHEETS



PLAN DIAGRAM



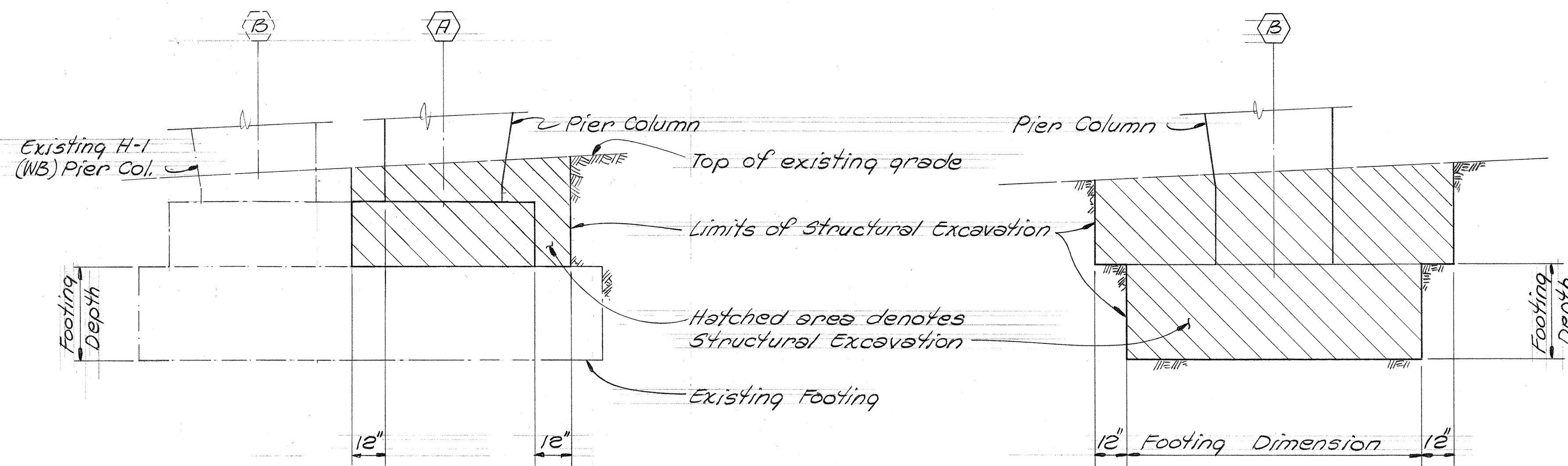
SECTION DIAGRAM

PIER FRAME COLUMN FOOTING SCHEDULE				
FOOTING TYPE	FOOTING PLAN DIMENSIONS	FOOTING DEPTH	TOP OF FOOTING REINF.	BOT. OF FOOTING REINF.
F1	32'-0" x 32'-0"	5'-0"	#6 @ 12" E.W.	#11 @ 7 1/2" E.W.
F2	32'-0" x 32'-0"	6'-6"	#6 @ 12" E.W.	#11 @ 6 1/2" E.W.
F3	30'-0" x 30'-0"	6'-0"	#6 @ 12" E.W.	#11 @ 7" E.W.
F4	28'-0" x 28'-0"	5'-0"	#6 @ 12" E.W.	#11 @ 9" E.W.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84)116	1978	412	466

FOOTING DIMENSIONS & REINF. LOCATIONS

Not to Scale

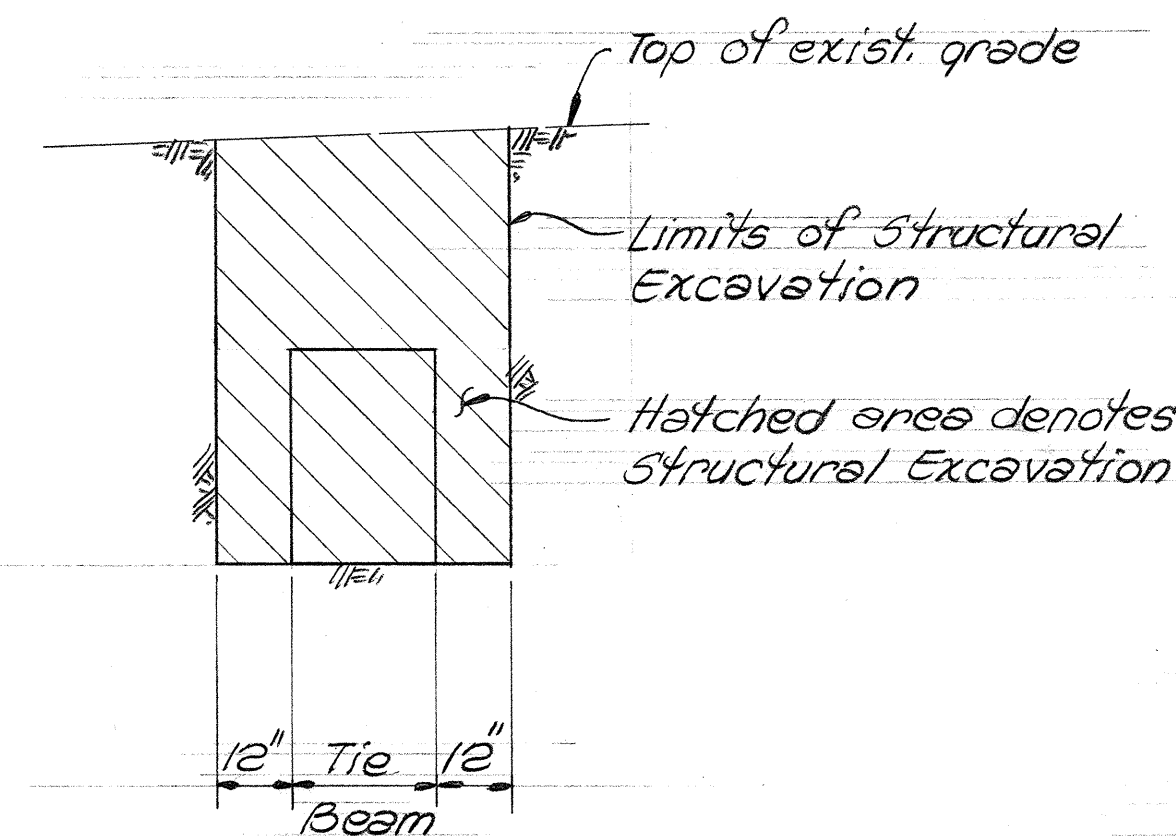


AT COLUMN LINE A FOOTING

AT COLUMN LINE B FOOTING

SECTIONS SHOWING LIMITS OF STRUCTURAL EXCAVATION

Not to Scale



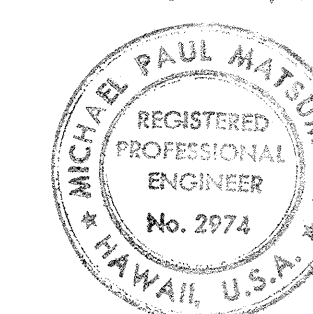
AT TIE BEAM

REFERENCE DRAWINGS

- | | |
|---------------------------------|-----------|
| 1. Top of Footing Elevations | S-7 |
| 2. Column Dowel Requirements | S-9 |
| 3. Column Hinge & Dowel Details | T-1 & T-2 |
| 4. Column Pedestal Details | S-6 |
| 5. General Notes | SD-1 |

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ORIGINAL PLAN	
NOTE BOOK	
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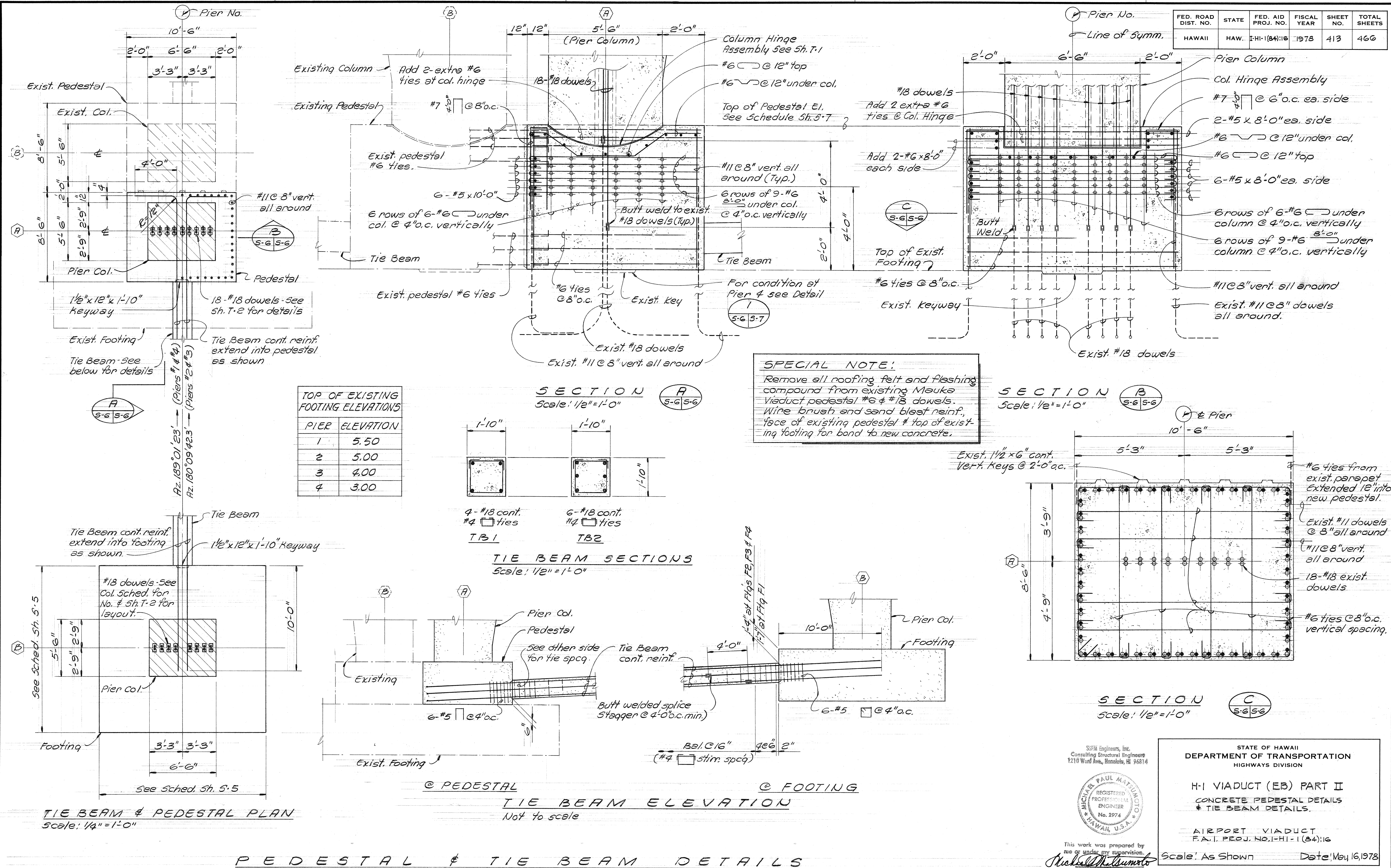
H-1 VIADUCT (EB) PART II
PIER FRAME COLUMN
FOOTING SCHEDULE & DETAILS

AIRPORT VIADUCT
F.A.I. PROJ. NO. I-HI-1(84)116

Scale: As Shown Date: May 16, 1978

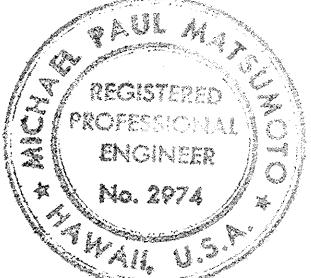
SHEET No. 5 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(84)16	1978	413	466



DATE _____
 SURVEY PLOTTED BY _____
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H-1 VIADUCT (EB) PART II
CONCRETE PEDESTAL DETAILS
& TIE BEAM DETAILS

AIRPORT VIADUCT
F.A.I. PROJ. NO. HI-1(84)16
Scale: As Shown Date: May 16, 1978
SHEET NO. 5-6 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84):16	1978	414	466

PIER FRAME SCHEDULE

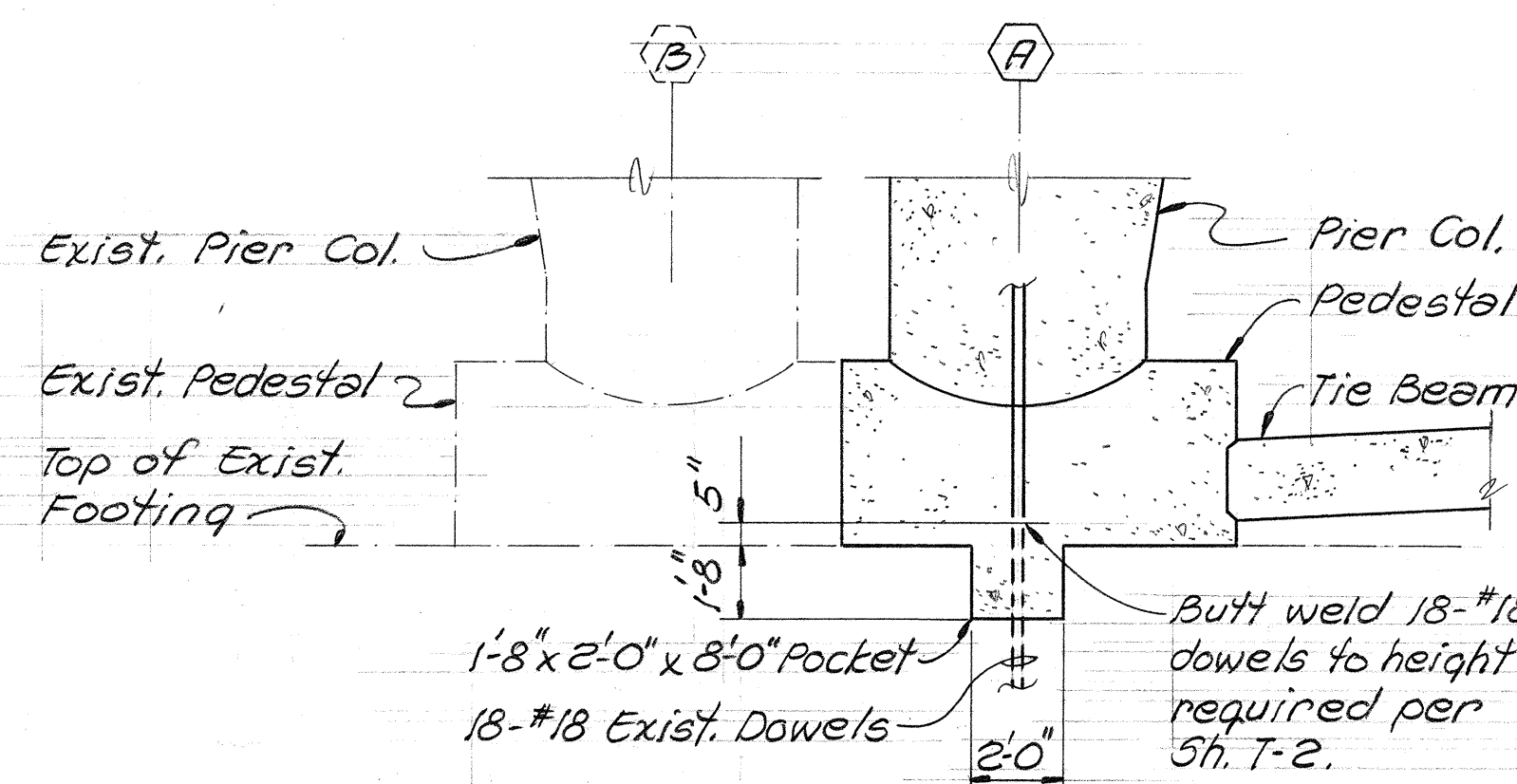
PIER LINE		(1)	(2)	(3)	(4)				
CAPS	TYPE	I	I	I	I				
	"L" (Length between Column Lines $\textcircled{A}$ & $\textcircled{B}$)	99.06	98.79	73.48	96.50				
	"C"	14.15	26.38	26.62	5.20				
	"D"	17.12	27.89	2.82	5.62				
	"E" (Depth of Pier Cap)	10'-0"	10'-0"	10'-0"	10'-0"				
	ELEVATIONS	TOP OF CAP (Along Pier Lines at intersections of Column Lines) $\textcircled{\text{H}}$ Column Line $\square$ Elevation	Upper Level	$\textcircled{A}$	$\textcircled{a}$	41.21	41.00	39.93	39.60
				$\textcircled{B}$	$\textcircled{b}$	39.73	39.46	38.79	38.15
			Lower Level	$\textcircled{A}$	$\textcircled{c}$				
				$\textcircled{B}$	$\textcircled{d}$	39.23	38.96	38.29	37.65
		TOP OF SHELF (Along Girder Seat Lines at intersections of Girder Lines) $\bigcirc$ Girder Line $\textcircled{\text{H}}$ Girder Seat Line $\square$ Elevation	$\textcircled{G1}$ $\textcircled{T1}$ *	$\textcircled{1}$	$\textcircled{e}$	34.83	34.49	32.53	33.51
				$\textcircled{2}$		34.84	33.17	33.85	33.41
			$\textcircled{G2}$ $\textcircled{T2}$ *	$\textcircled{1}$	$\textcircled{f}$	33.43	33.01	31.06	32.11
				$\textcircled{2}$		33.43	31.71	32.37	31.99
		SOFFIT OF CAP (Along Pier Lines at Col. Line intersections) $\textcircled{\text{H}}$ Col. Line $\square$ Elevation	$\textcircled{A}$	$\textcircled{g}$	30.71	30.50	29.43	29.10	
$\textcircled{B}$			$\textcircled{h}$	29.23	28.96	28.29	27.65		
COLUMN FOOTINGS	COLUMN LINE	$\textcircled{A}$	GROUP LOADING (AASHTO)		VII	VII	VII	VII	
			TOP OF PEDESTAL ELEVATION		9.46	9.06	8.18	7.85	
			** NET SOIL PRESSURE (KSF)		5.20	6.30	4.85	4.70	
		$\textcircled{B}$	GROUP LOADING (AASHTO)		I	I	I	I	
			TOP OF FOOTING ELEVATION		7.98	7.52	7.04	6.40	
			** NET SOIL PRESSURE (KSF)		2.73	4.73	4.77	2.89	

* For Keehi Type III Girders between Piers (2) & (3) only.

** Soil Pressures used are based on the special report entitled Keehi Interchange I-HI-1(85) Foundation Report, Puuloa Road to Ahua Street dated 5/20/76.

TYPE I PIER ELEVATION (H-1 EASTBOUND)

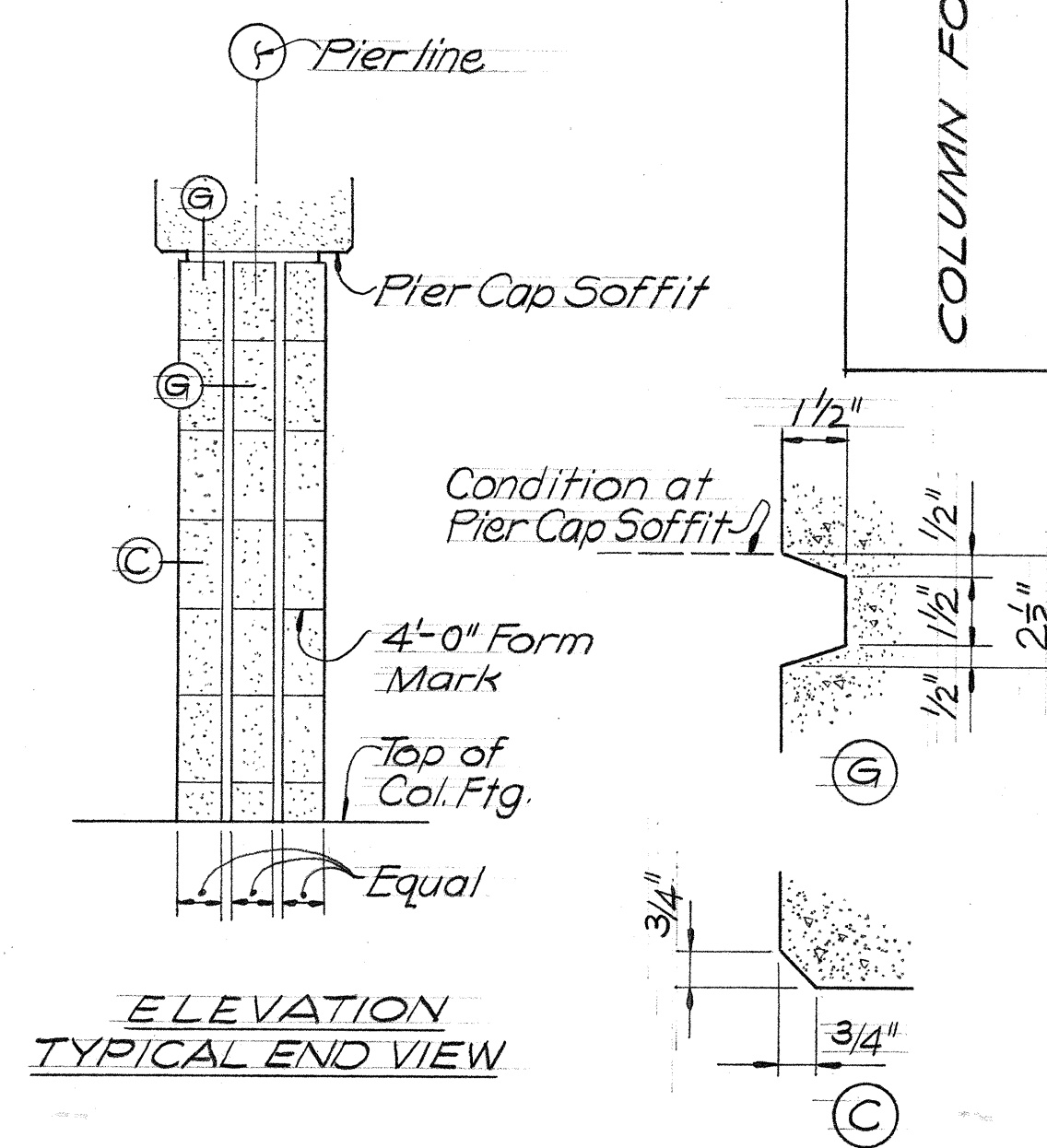
Scale: 1/8" = 1'-0"



PEDESTAL AT PIER 4 DETAIL

Not to scale

1
5-6 5-7

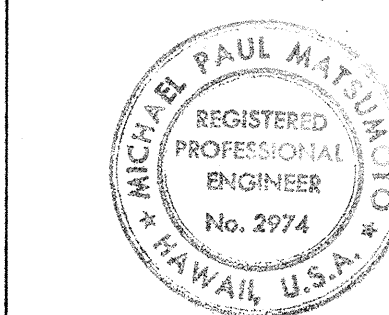


ELEVATION TYPICAL END VIEW

TYPICAL PIER COL. GROOVE & CHAMFER DETAILS

Not to scale

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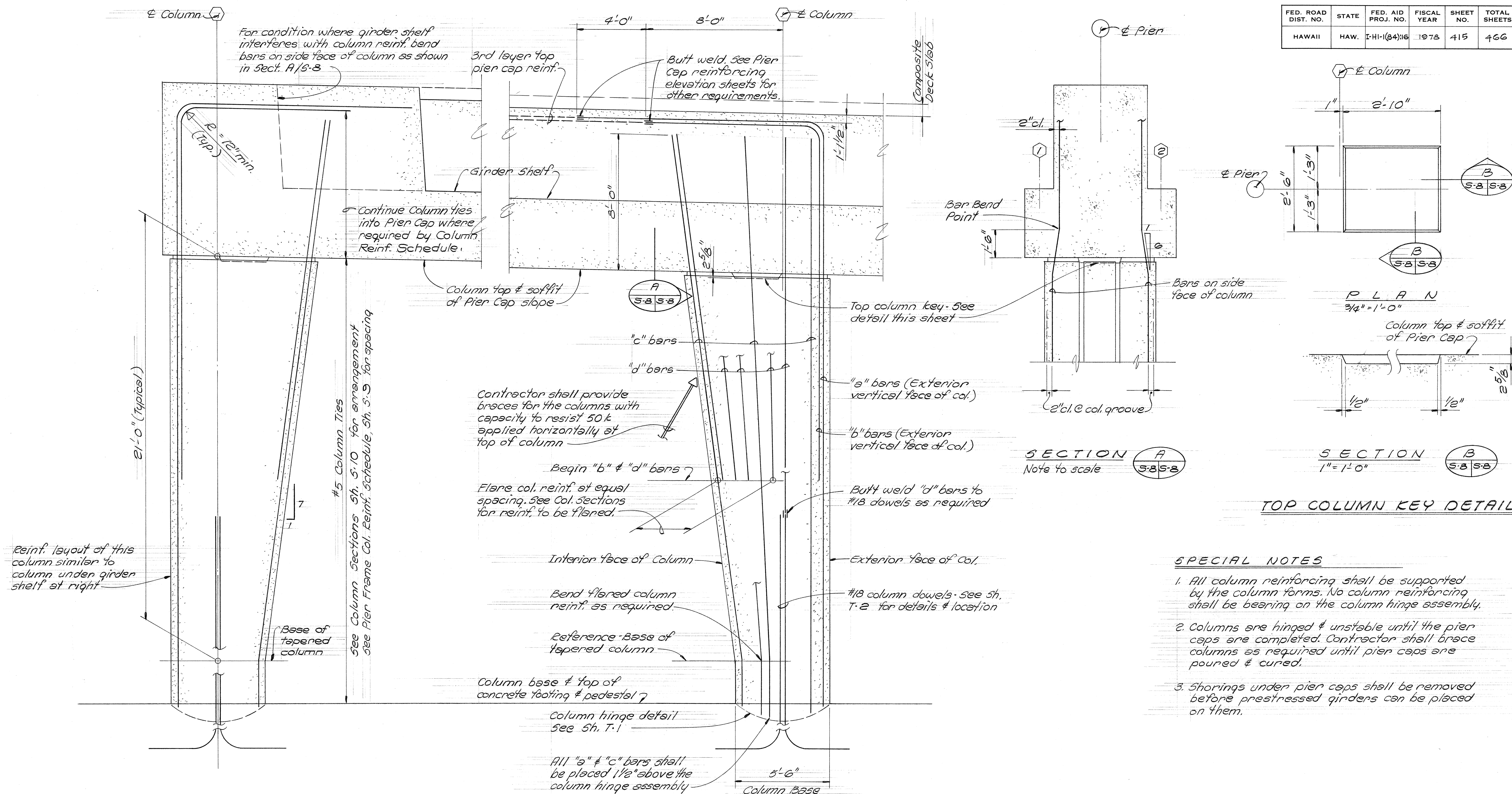
H-1 VIADUCT (EB) PART II PIER FRAME ELEVATION & SCHEDULE

AIRPORT VIADUCT
FAH. PROJ. NO. I-HI-1(84):16

Scale: As shown Date: May 16, 1978

SHEET NO. 5-7 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84):16	1978	415	466



TOP COLUMN KEY DETAIL

SPECIAL NOTES

1. All column reinforcing shall be supported by the column forms. No column reinforcing shall be bearing on the column hinge assembly.
2. Columns are hinged & unstable until the pier caps are completed. Contractor shall brace columns as required until pier caps are poured & cured.
3. Shorings under pier caps shall be removed before prestressed girders can be placed on them.

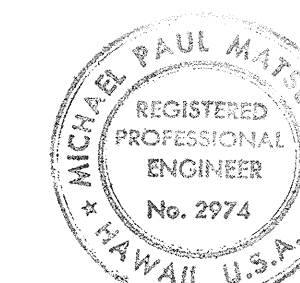
GIRDER SHELF AWAY FROM COLUMN

GIRDER SHELF OVER COLUMN

COLUMN REINFORCEMENT DETAILS

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H-1 VIADUCT (EB) PART II
COLUMN REINFORCING DETAILS

AIRPORT VIADUCT
F.A.I. PROJ. NO. 1-H-1 (84):16

Scale: As Shown Date: May 16, 1978

SHEET No.5.8 OF 20 SHEETS

PIER FRAME COLUMN REINFORCING SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84)16	1978	416	466

PIER	①		②		③		④	
COLUMN	A	B	A	B	A	B	A	B
Reference Top of Pier Cap	2'-0"		2'-0"		2'-0"			
Reference Top of Column	2'-0"		2'-0"		2'-0"			
COLUMN VERT. REINFORCING & TIE SPACING	30-#18 (11'-8" bars & 19'-0" bars) 18'-6" 30-#18 (5'-6" bars & 25'-0" bars) Bal. @ 6" (#5 tie spacing) 2" 44 @ 4"	Same as Column ② - A except ties stop @ Top of column.	36-#18 (13'-8" bars & 23'-0" bars) 18'-6" 34-#18 (5'-6" bars & 29'-0" bars) Bal. @ 6" (#5 tie spacing) 2" 44 @ 4"	58-#18 (20'-8" bars & 38'-0" bars) 18'-6" 34-#18 (5'-6" bars & 29'-0" bars) Bal. @ 6" (#5 tie spacing) 2" 44 @ 4"	20-#18 (8'-8" bars & 12'-0" bars) 18'-6" 10-#18 (2'-6" bars & 8'-0" bars) Bal. @ 8" (#5 tie spacing) 2" 60 @ 4", 6 @ 6"	30-#18 (10'-8" bars & 20'-0" bars) 18'-6" 14-#18 (4'-6" bars & 10'-0" bars) Bal. @ 8" (#5 tie spacing) 2" 60 @ 4", 6 @ 6"	Same as Column ① - A	Same as Column ① - A
Reference Top of Footing or Pedestal								
TOTAL NO OF #18 VERTICAL REINF.	60	70	70	92	30	44	60	60
NO. OF #18 DOWELS @ COLUMN BASE	18	12	18	16	18	18	18	12

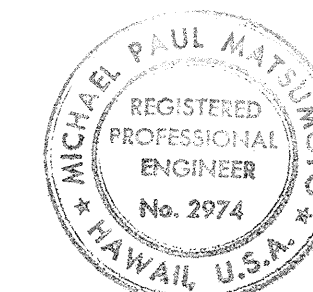
SPECIAL NOTE:
This column to be poured with 5500 p.s.i. concrete.

REFERENCE DRAWINGS

- Pier Schedule ----- Sh. 5-7 (Col. & Ftg. El.)
- Column Sections ----- Sh. 5-10
- #18 dowels @ Col. Base ---- Sh. 7-2

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

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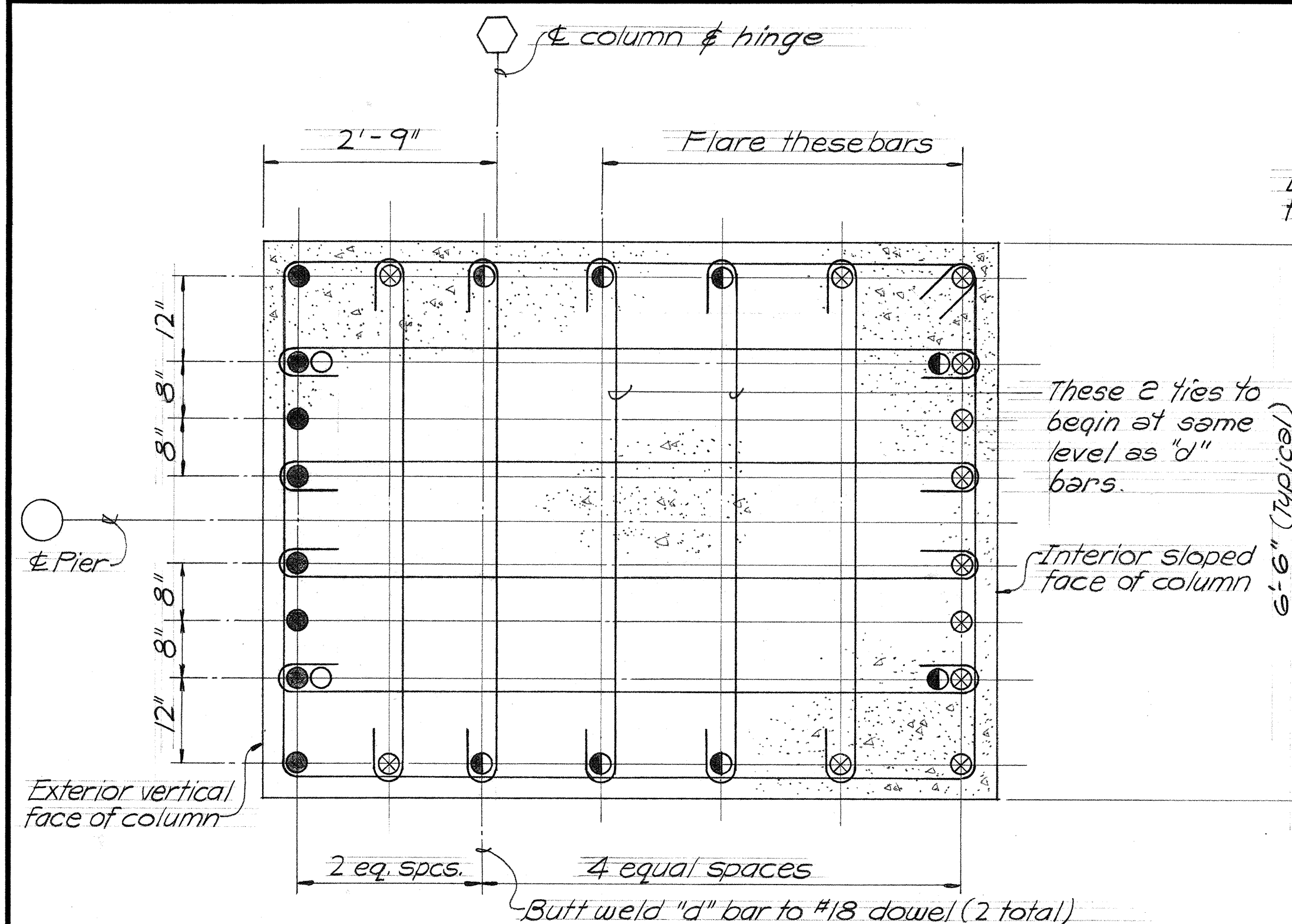
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
H-1 VIADUCT (EB) PART II
PIER FRAME
COLUMN REINFORCING SCHEDULE

AIRPORT VIADUCT
F.A.I. PROJ. NO. I-HI-1(84)16

No Scale Date: May 16, 1978

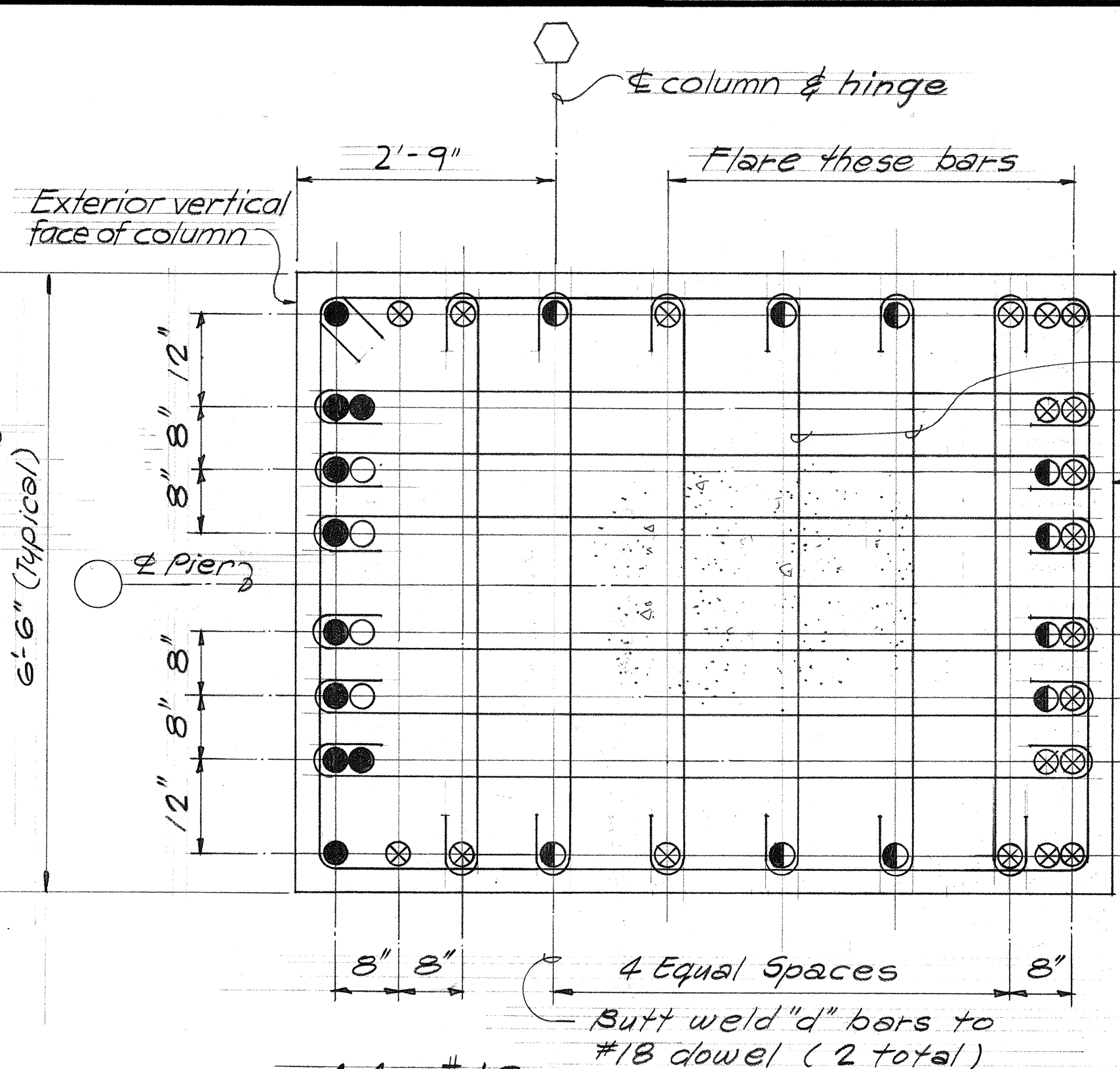
SHEET NO. 3-9 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(84)16	1978	117	466



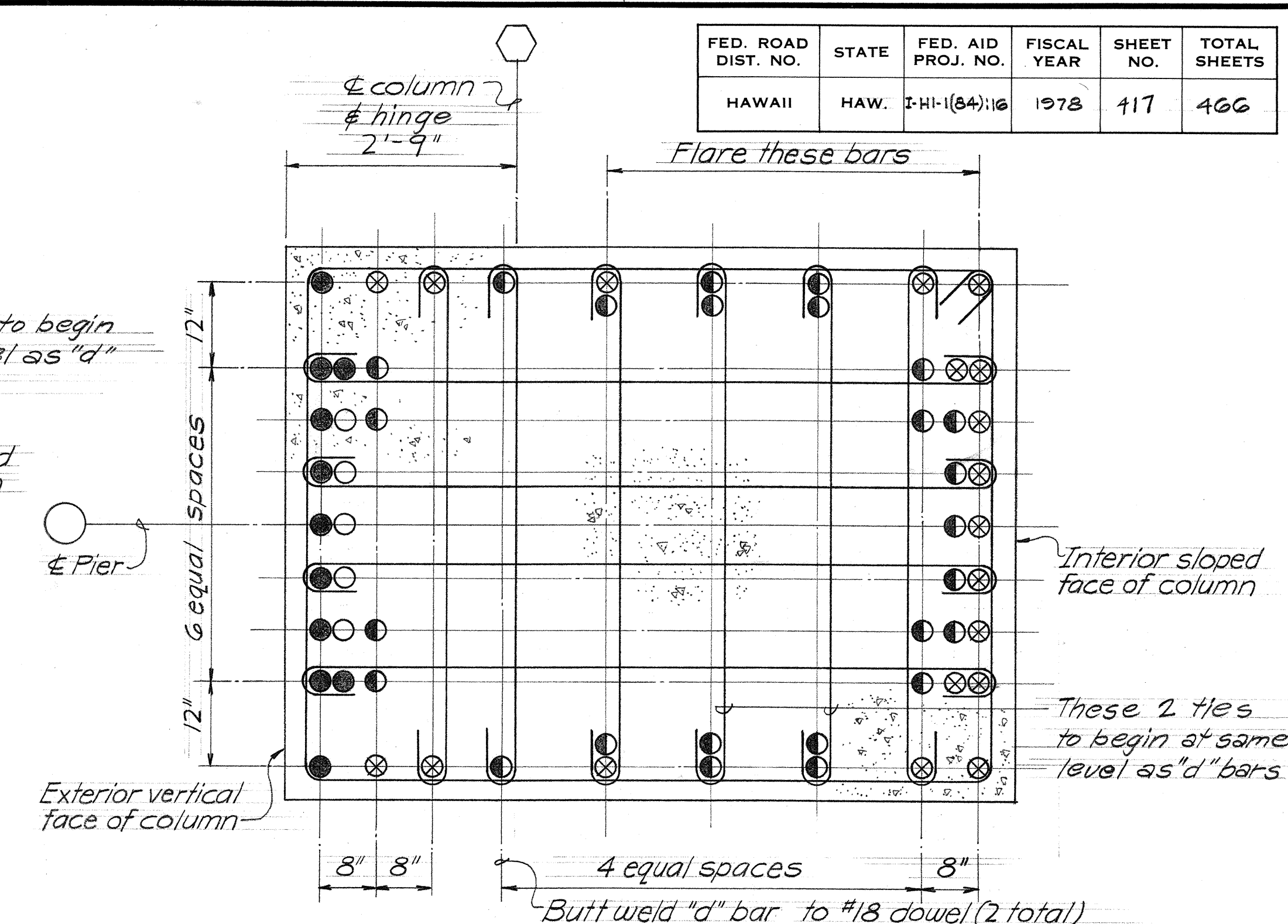
30-#18

8 - "a" bars
2 - "b" bars
12 - "c" bars
8 - "d" bars



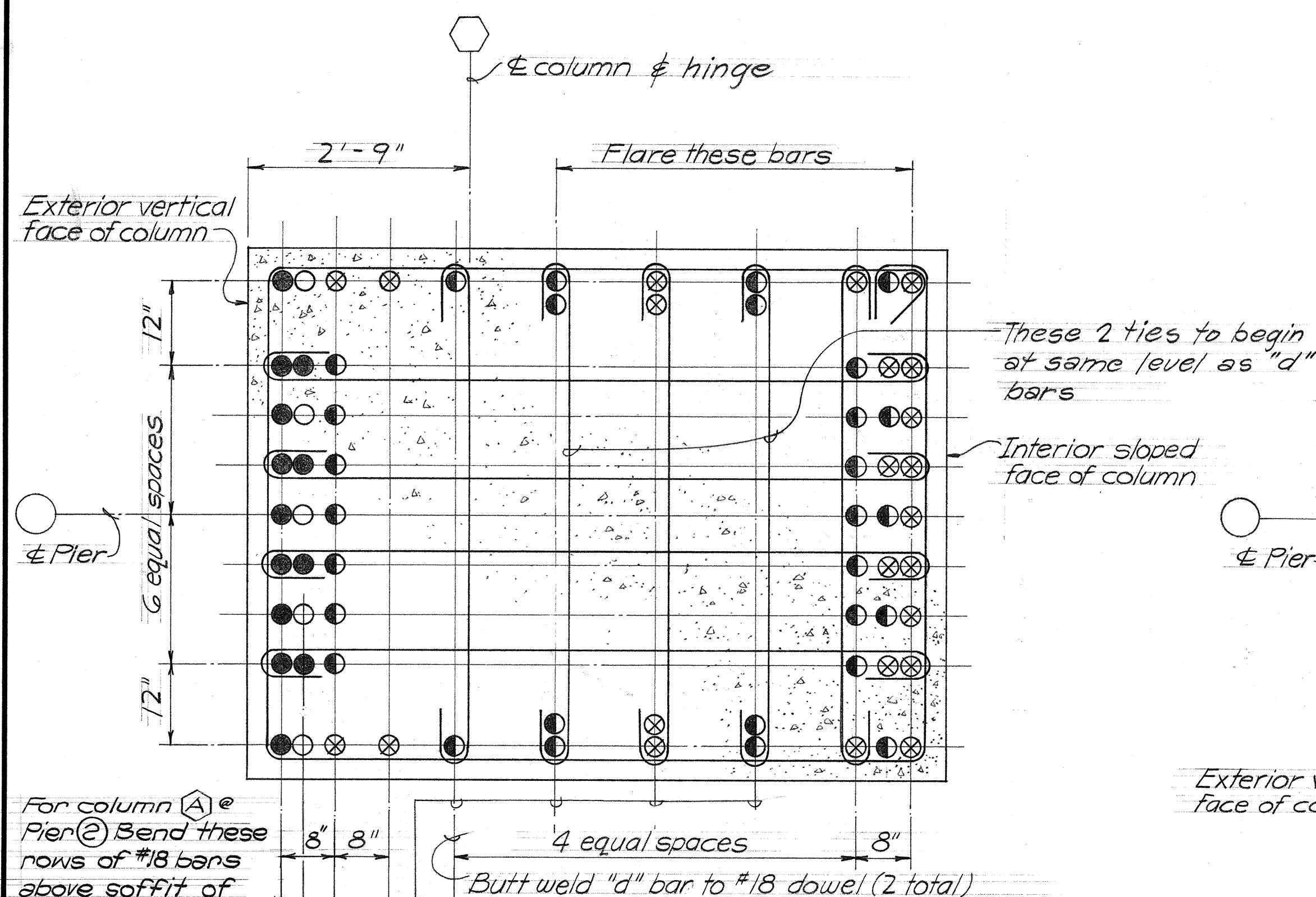
44-#18

10 - "a" bars
4 - "b" bars
20 - "c" bars
10 - "d" bars



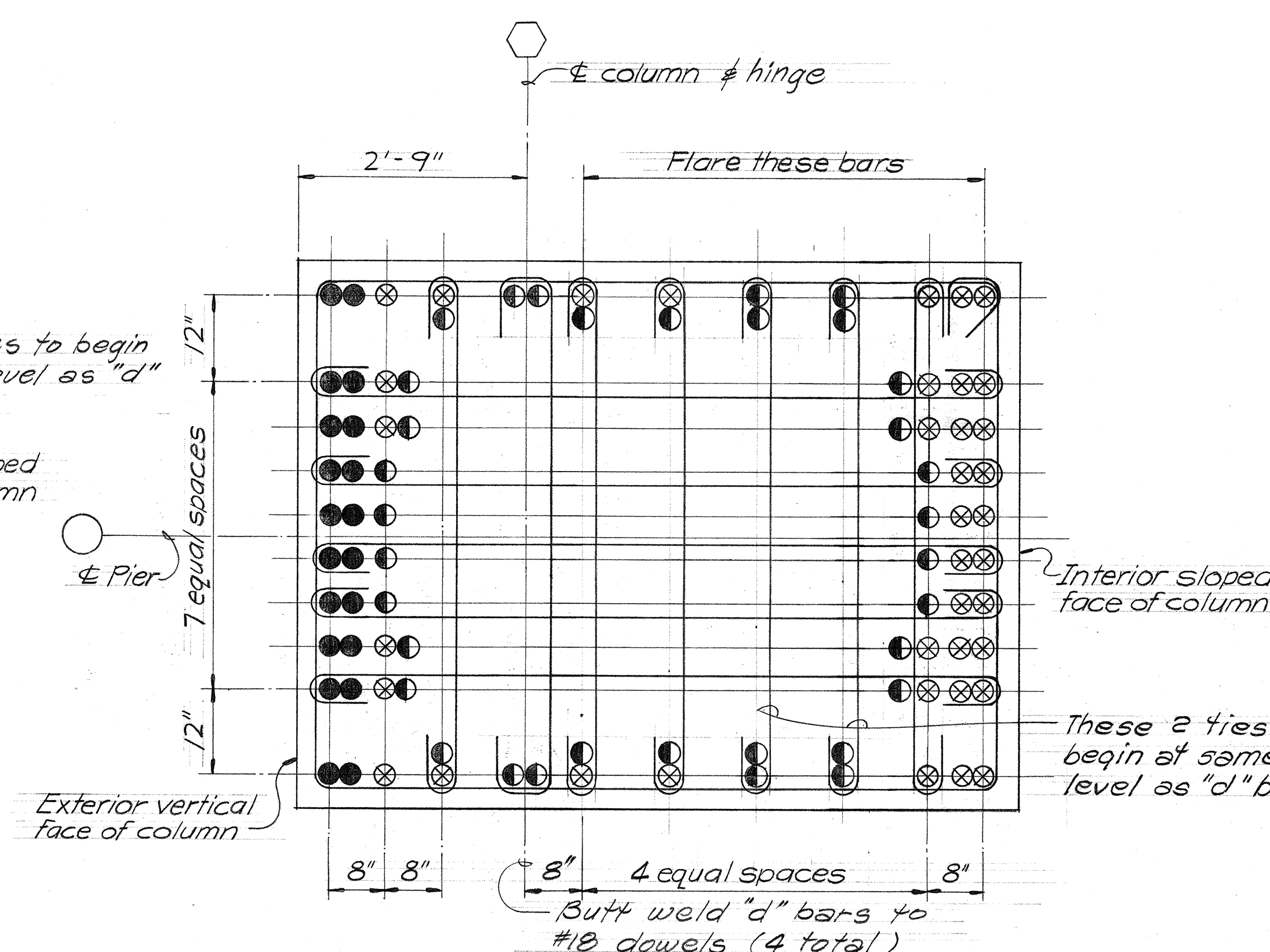
60-#18

11 - "a" bars
5 - "b" bars
19 - "c" bars
25 - "d" bars



70-#18

13 - "a" bars
5 - "b" bars
23 - "c" bars
29 - "d" bars



92-#18

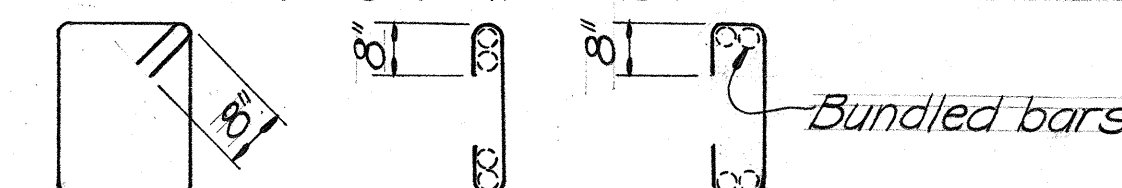
20 - "a" bars
38 - "c" bars
34 - "d" bars

LEGEND

- - "a" bars
- - "b" bars
- ⊗ - "c" bars
- ⦿ - "d" bars

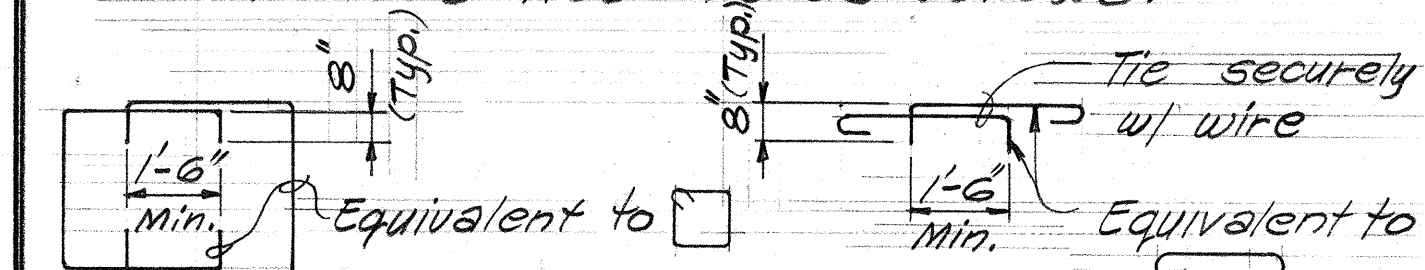
NOTES

- "d" bars designated as butt weld to #18 dowels are full tension splices.
- Exact location of bars shall be arranged so that no interference will occur between vert. col. reinf., pier cap horiz. reinf. & deck drain assembly.
- Materials:
 - 28-day concrete compressive strength - 5,500 p.s.i. for 30-#18 to 70-#18 Columns
 - Column #18 bars & #5 ties - A.S.T.M. A-615, Grade 60.
- In general, cut maximum 2 exterior vertical bars on exterior vertical face of column at deck drain downspout outlet at base of column where occurs.
- All column ties shall be #5 bars. See Column Schedule for spacing.
- Column tie details shall be as follows:



SPECIAL NOTE:

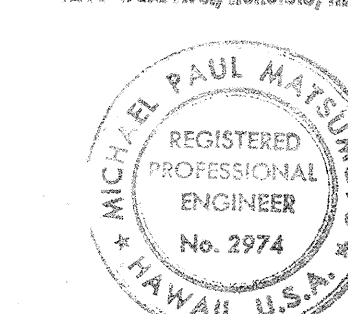
At his option the contractor may substitute non-continuous for continuous column ties. Continuous column ties are shown in the column sections. Non-continuous ties are as follows.



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CHECKED BY	

For column (A) @ Pier (B) Bend these rows of #18 bars above soffit of pier cap to match slope of end face of Pier Cap See 5h, 5-11 & T-5

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HIGHWAYS DIVISION

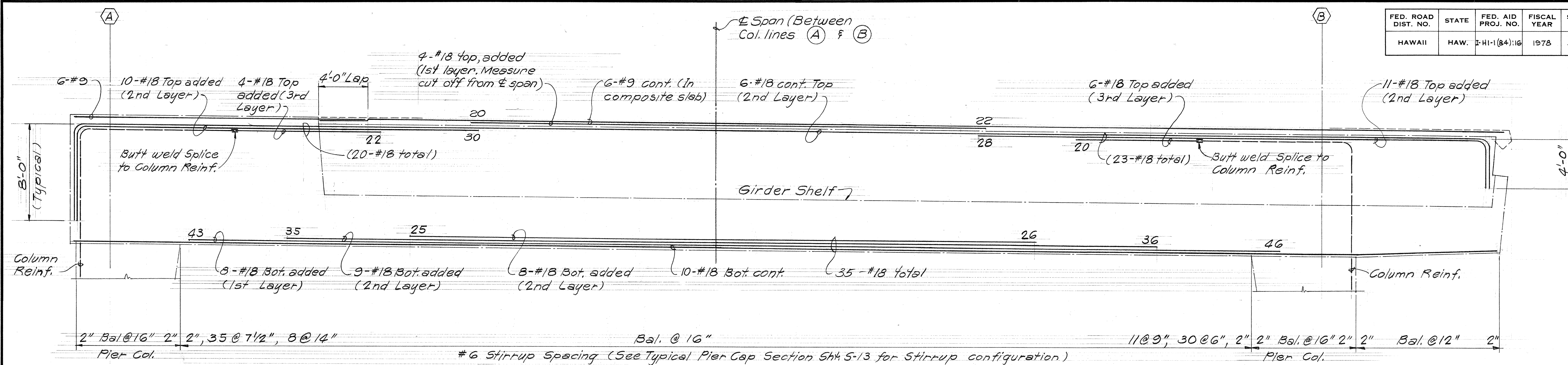
H-1 VIADUCT (EB) PART II
COLUMN SECTIONS

AIRPORT VIADUCT
F.A.I. PROJ. NO. I-H-1(84)16

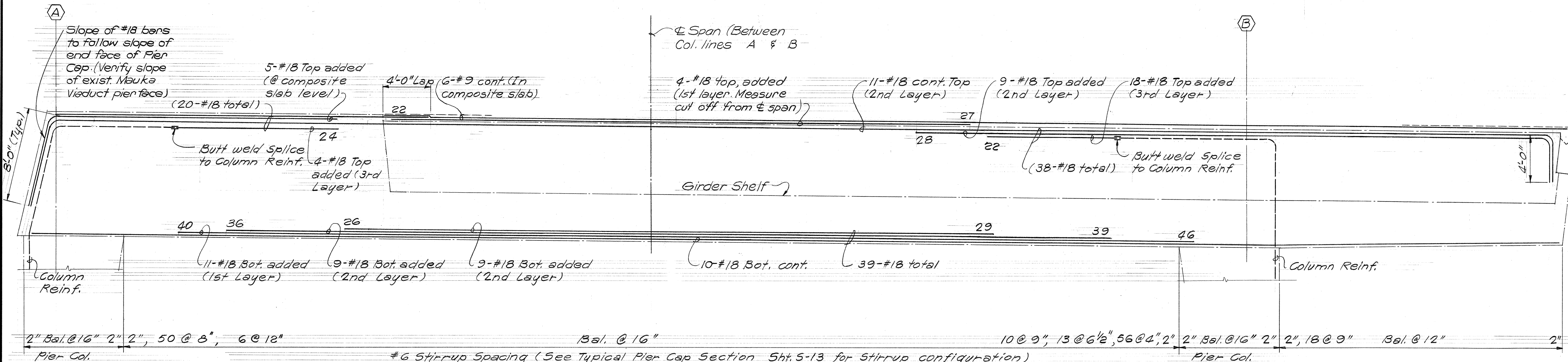
Scale: 3/4" = 1'-0" Date: May 16, 1978

SHEET NO. 5 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84):16	1978	418	466



PIER NO. 1 (TYPE I PIER)
Scale: 1/4" = 1'-0"

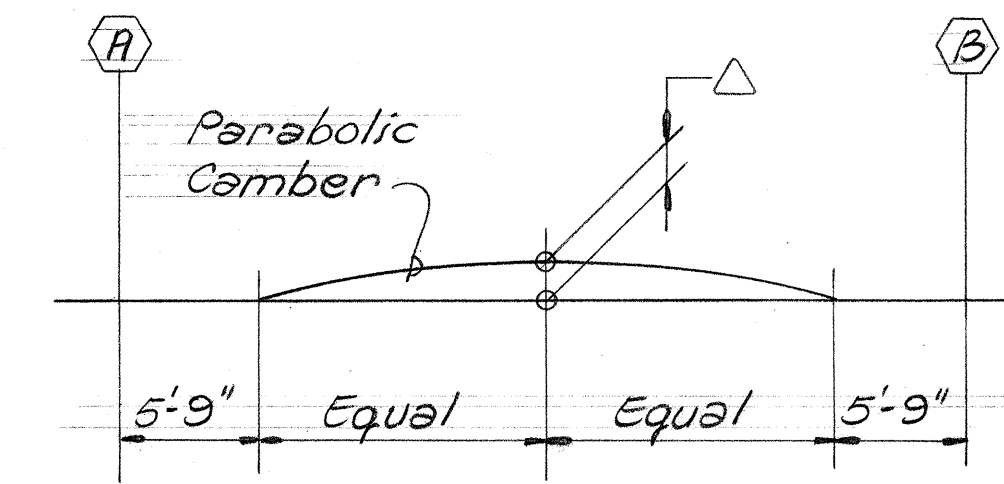


PIER NO. 2 (TYPE I PIER)
Scale: 1/4" = 1'-0"

NOTES:

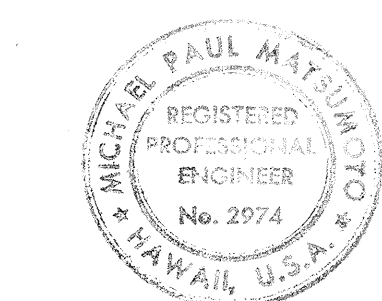
- Numbers at ends of bars indicate distance in feet. Top bars measured from column line alphabet & bottom bars from E span.
- For additional pier cap reinforcement location & details, see Sh. 5-13 & T-8.
- Bend #18 bars with 12" radius (minimum).
- Refer to sh. 5-7 & 5-13 for pier cap dimension & elevation schedule.
- Allowable Splices:
#9 bars = 4'-0" lap (stagger 4'-0" o.c.)
#18 bars = Full butt weld (Not more than 25% shall be spliced at any one point. Stagger splices 4'-0" o.c.)

SCHEDULE	
PIER	Δ
1	1 1/4"
2	1 3/8"
3	3/8"
4	1/8"



PIER CAP CAMBER (Dead Load Deflection x 2)

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HIGHWAYS DIVISION

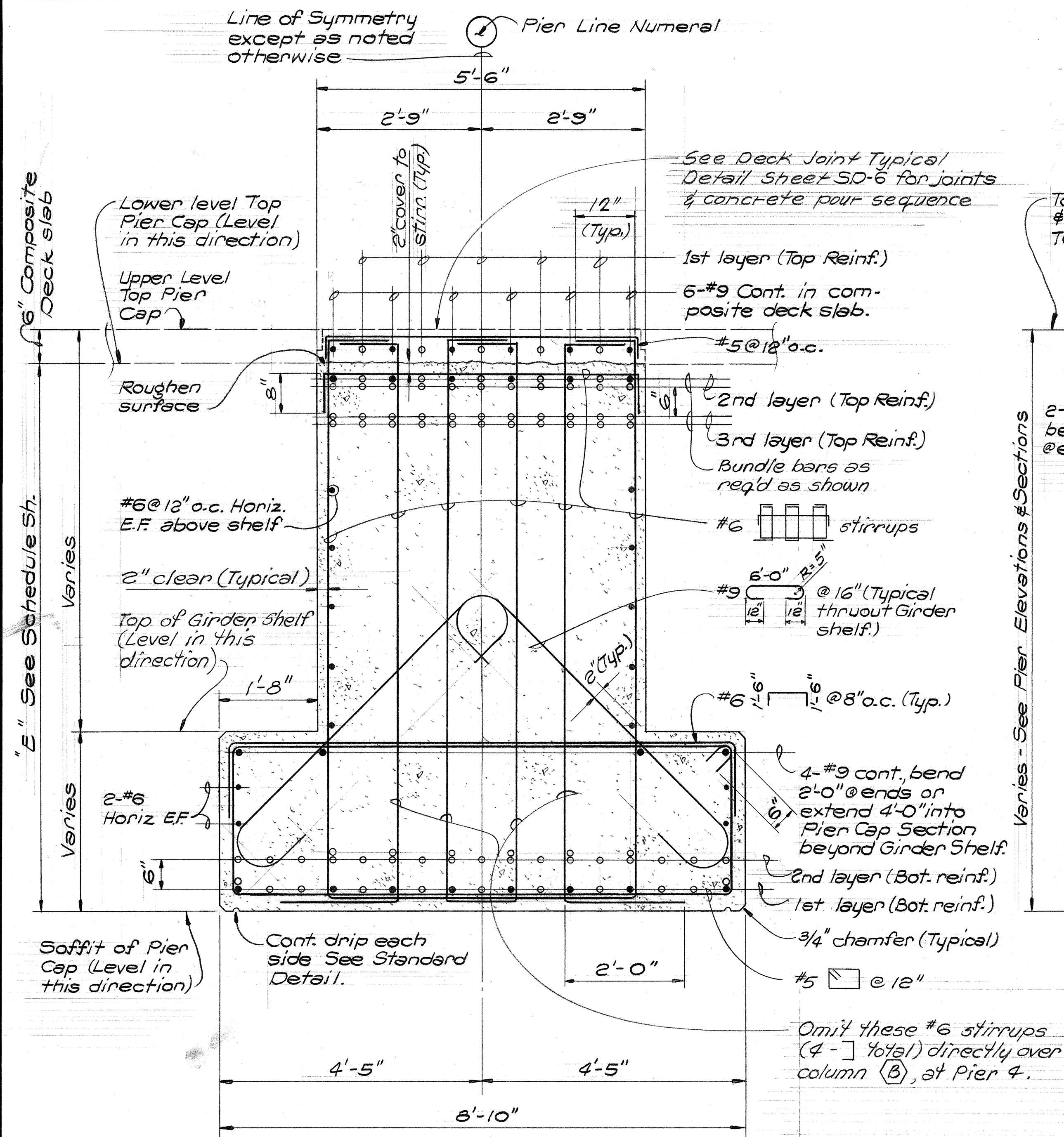
H-1 VIADUCT (EB) PART II
PIER CAP REINFORCING

AIRPORT VIADUCT
F.A.I. PROJ. NO. IHI-1 (84):16

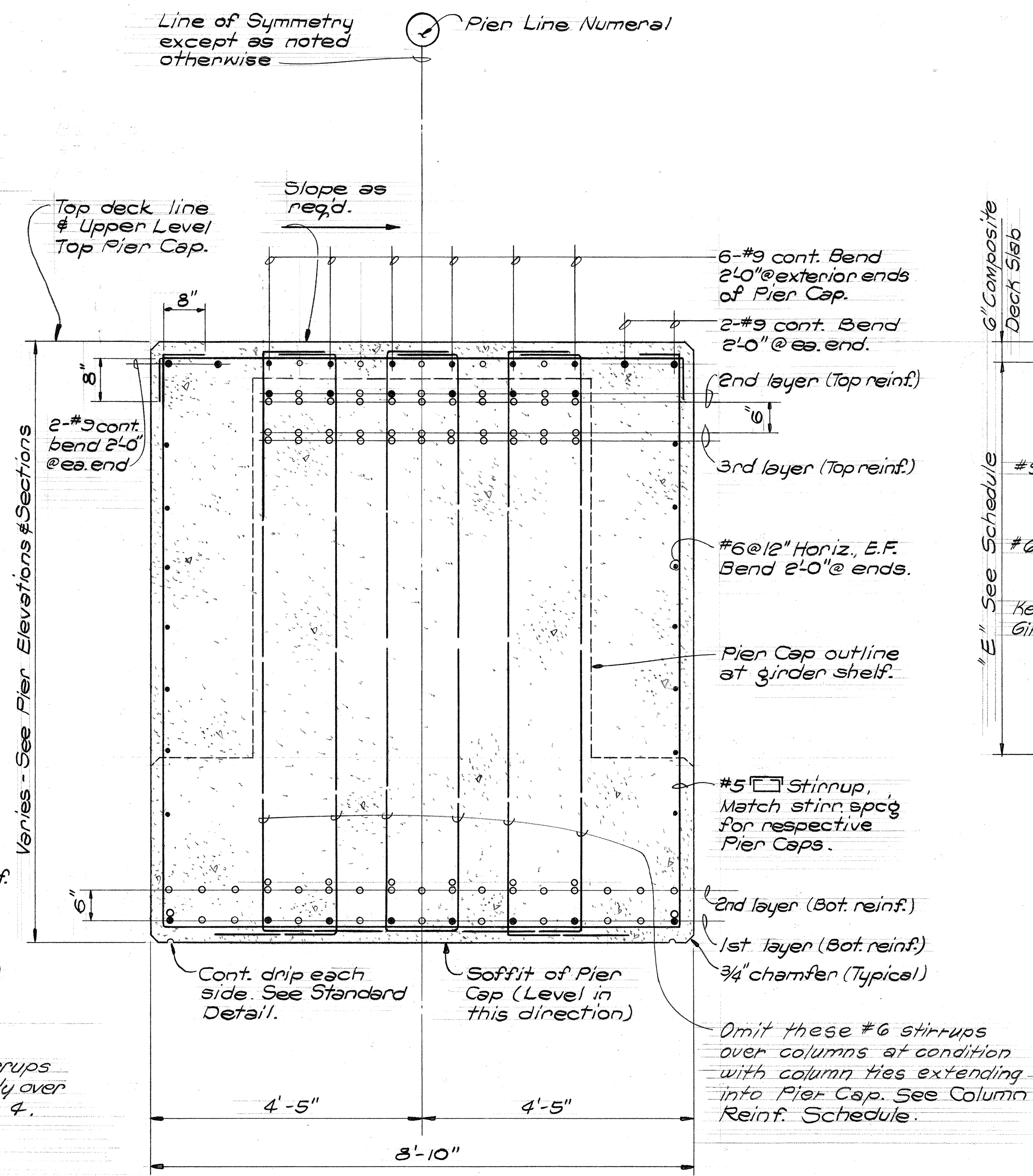
Scale: As shown Date: May 16, 1978

SHEET No. 5-II OF 20 SHEETS

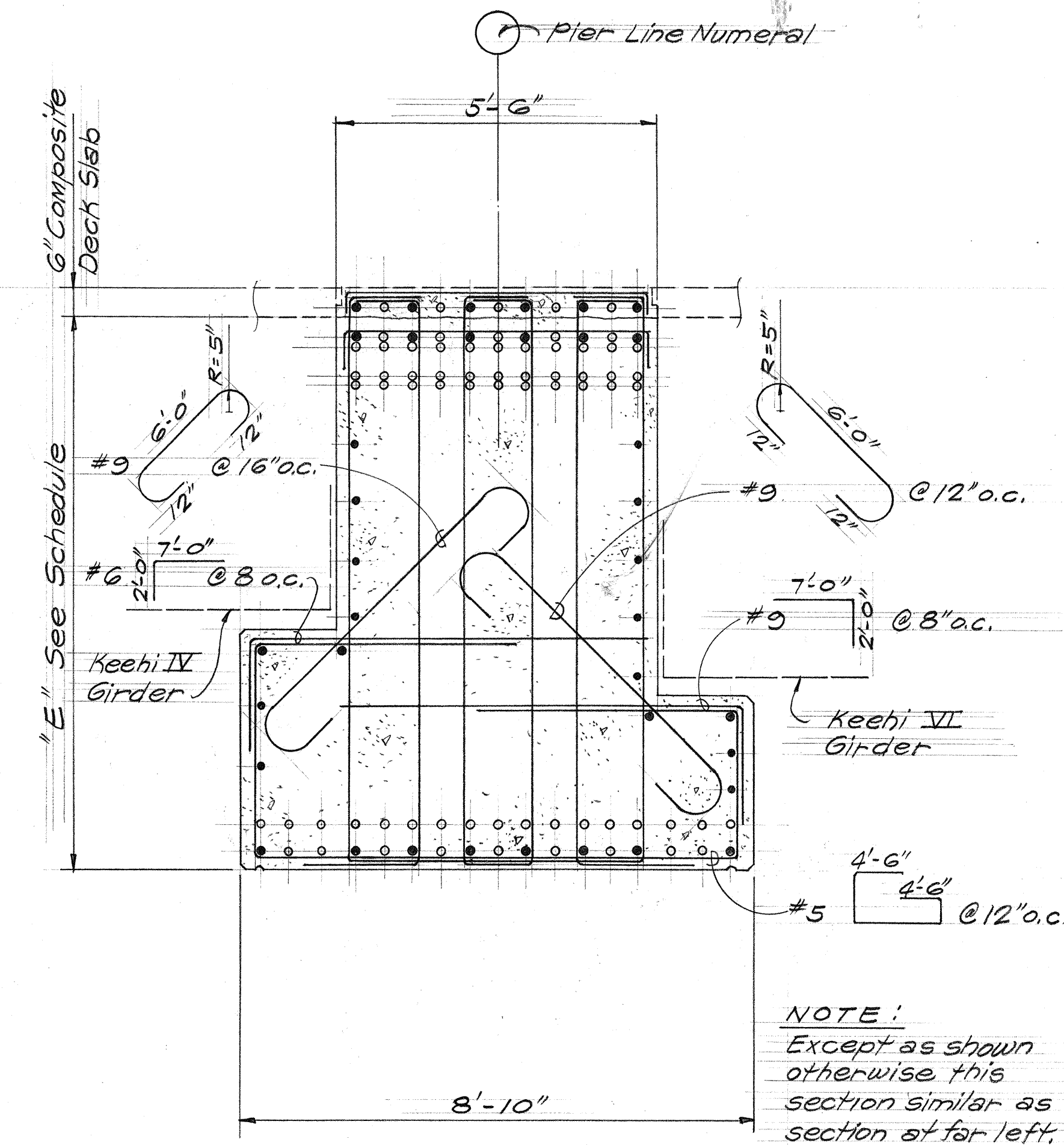
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84)16	1978	420	466



SECTION @ GIRDER SHELF



SECTION BEYOND GIRDER SHELF



SECTION @ GIRDER SHELF

PIER CAP SECTION @ PIER ②
N.T.S. (Section @ Pier ③ opposite hand)

TYPICAL PIER CAP SECTIONS

N.T.S.

SYMBOLS

- = Continuous bar location
- o = Added bar location

REINFORCING NOTES

- For Pier Cap reinforcing at ends, girders seats & creep block, see Sh. T-8
- See Pier Cap Reinforcing Elevation sheet for longitudinal top & bottom reinforcing & stirrup spacing.

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HIGHWAYS DIVISION

H-1 VIADUCT (EB) PART II
TYPICAL PIER CAP SECTIONS

AIRPORT VIADUCT
F.A.I. PROJ. No. I-HI-1 (84)16

Scale: As Shown Date: May 16, 1978

SHEET No. 513 OF 20 SHEETS

PIER CAP CONCRETE GIRDER SEAT LOCATIONS, ELEVATIONS, SKEWS, & BEVELS SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(84)16	1978	421	466

PIER LINE	①										②										③									
BEARING	①					②					①					②					①					②				
GIRDER	"D"	TR	TS	SKEW	BEVEL	"D"	TR	TS	SKEW	BEVEL	"D"	TR	TS	SKEW	BEVEL	"D"	TR	TS	SKEW	BEVEL	"D"	TR	TS	SKEW	BEVEL	"D"	TR	TS	SKEW	BEVEL
G1	-10.875	40.93	34.98	0	+1/16:12	-10.875	40.92	34.99	0	+1/16:12	-11.572	40.57	34.64	+1/8:12	+1/16:12															
T1	-2.352	40.83	34.86			-1.500	40.78	34.85			-2.083	40.42	34.49			-9.935	40.52	33.32	+1/8:12	+1/16:12	-11.065	39.88	32.68	+1/8:12	+1/16:12	.099	39.68	33.83		
T2	6.171	40.70	34.73			7.875	40.64	34.71			7.405	40.27	34.34			-4.116	40.43	33.23			-5.246	39.79	32.59			10.641	39.52	33.67		
T3	14.693	40.57	34.60			17.250	40.50	34.57			16.893	40.12	34.19			2.210	40.33	33.13			1.079	39.69	32.49			21.186	39.36	33.51		
T4	23.216	40.44	34.47			26.625	40.36	34.43			26.381	39.98	34.05			8.535	40.23	33.03			7.405	39.59	32.39			31.727	39.19	33.34		
T5	31.739	40.31	34.34			36.000	40.21	34.28			35.870	39.83	33.90			14.861	40.14	32.94			13.730	39.49	32.29			42.270	39.03	33.18		
T6	40.261	40.19	34.22			45.375	40.07	34.14			45.358	39.68	33.75			21.186	40.04	32.84			20.056	39.39	32.19			52.607	38.86	33.01		
T7	48.784	40.06	34.09			54.750	39.93	34.00			54.846	39.53	33.60			27.512	39.94	32.74			26.381	39.29	32.09			63.356	38.70	32.85		
T8	57.307	39.93	33.96			64.125	39.79	33.86			64.334	39.38	33.45			33.837	39.84	32.64			32.707	39.20	32.00			73.898	38.53	32.68	▽	▽
T9	65.830	39.80	33.83			73.500	39.65	33.72	▽	▽	73.823	39.24	33.31	▽	▽	40.163	39.74	32.54			39.032	39.10	31.90							
T10	74.352	39.67	33.70	▽	▽											46.488	39.64	32.44			45.358	39.00	31.80							
T11																52.814	39.54	32.34			51.683	38.90	31.70							
T12																59.139	39.44	32.24			58.009	38.80	31.60							
T13																65.465	39.35	32.15			64.334	38.70	31.50							
T14																71.790	39.25	32.05			70.660	38.60	31.40							
T15																78.116	39.15	31.95	▽	▽	76.985	38.50	31.30	▽	▽					
T16																83.935	39.06	31.86	+1/8:12	+1/16:12	82.805	38.41	31.21	+1/8:12	+1/16:12					
G2	82.875	39.55	33.58	0	+1/16:12	82.875	39.51	33.58	0	+1/16:12	83.311	39.09	33.16	+1/8:12	+1/16:12															

PIER LINE	④									
BEARING	①					②				
GIRDER	"D"	TR	TS	SKEW	BEVEL	"D"	TR	TS	SKEW	BEVEL
G1	-10.875	39.51	33.66	0	+1/16:12	-10.875	39.48	33.56	0	+1/16:12
T1	-1.461	39.36	33.51			-1.50	39.33	33.41		
T2	9.956	39.20	33.35			7.875	39.19	33.27		
T3	20.375	39.04	33.19			17.250	39.05	33.13		
T4	30.790	38.89	33.04			26.625	38.91	32.99		
T5	41.207	38.73	32.88			36.00	38.77	32.85		
T6	51.613	38.57	32.72			45.375	38.63	32.71		
T7	62.041	38.42	32.57			54.750	38.49	32.57		
T8	72.458	38.26	32.41	▽	▽	64.125	38.35	32.43		
T9						73.500	38.21	32.29	▽	▽
G2	82.875	38.11	32.26	0	+1/16:12	82.875	38.07	32.14	0	+1/16:12

PIER LINE ⑤					
BEARING	①				
GIRDER	"D"	TR	TS	SKEW	BEVEL
G1	-10.875	41.39	35.42	0	+1/16:12
T1	-2.352	41.26	35.29		
T2	6.171	41.13	35.16		
T3	14.693	41.01	35.04		
T4	23.216	40.88	34.91		
T5	31.739	40.75	34.78		
T6	40.261	40.62	34.65		
T7	48.784	40.50	34.53		
T8	57.307	40.37	34.40		
T9	65.830	40.24	34.27		
T10	74.352	40.11	34.14	▽	▽
G2	82.875	39.98	34.01	0	+1/16:12

LEGEND

"D" = Distance of girder intersection with bearing line. (Measured along & Pier)

TR = Top of Roadway Elevation at intersection & girder & Pier Bearing Line.

TS = Top of Seat Elevation at intersection & girder & Pier Bearing Line.

Skew = Seat Skew

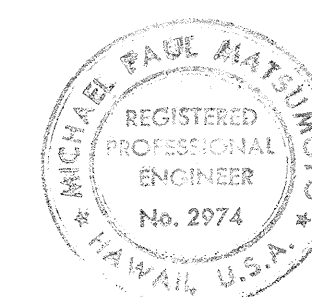
Bevel = Seat Bevel

NOTES:

- See Sh. S-15 for schematic representation of all information shown on this sheet.
- All distances & elevations in schedule are in feet.

SURVEY PLOTTED BY	DATE
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ORIGINAL PLAN	
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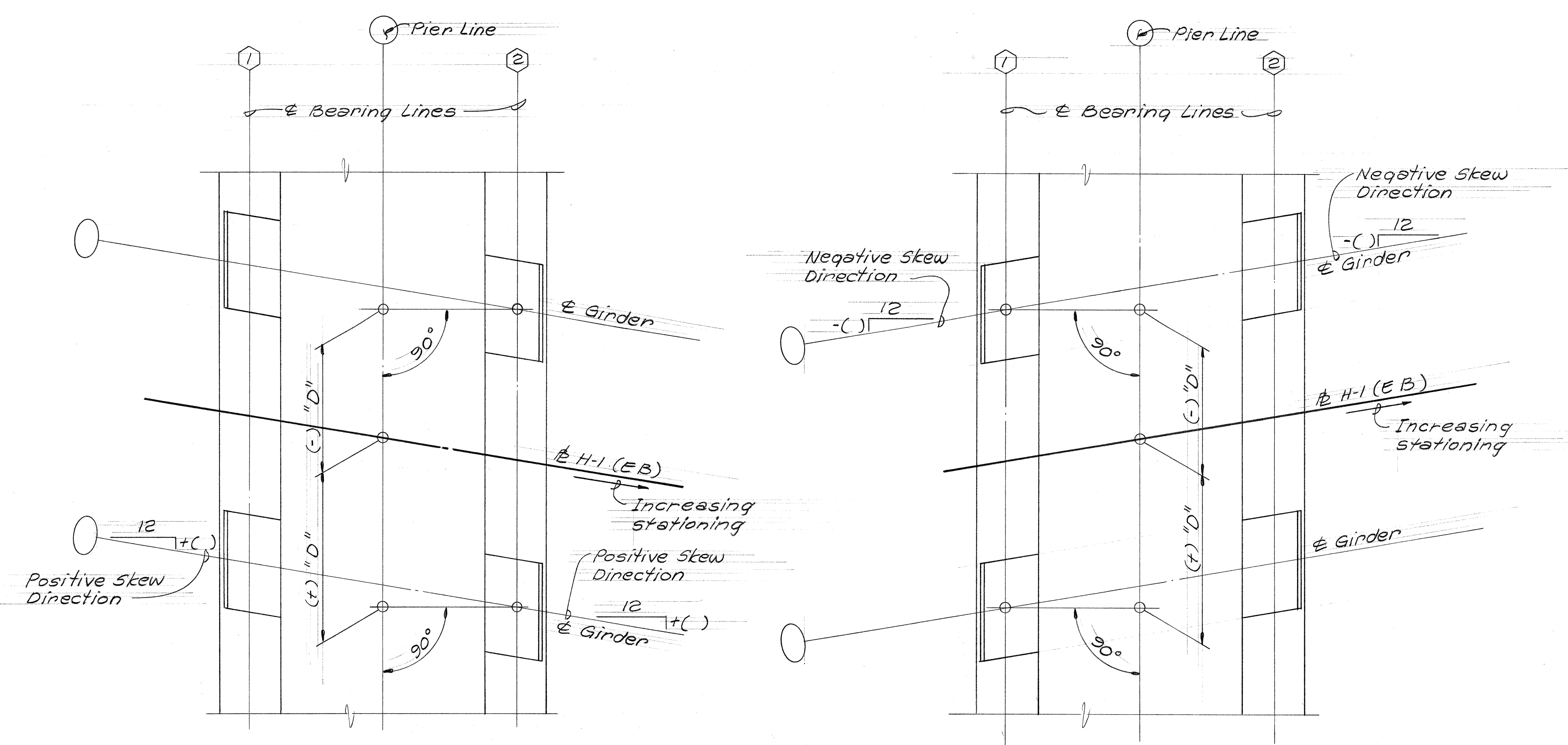
H-1 VIADUCT (EB) PART II
GIRDER SEAT GEOMETRICS

AIRPORT VIADUCT
F.A.I. PROJ. NO. 1-HI-1(84)16

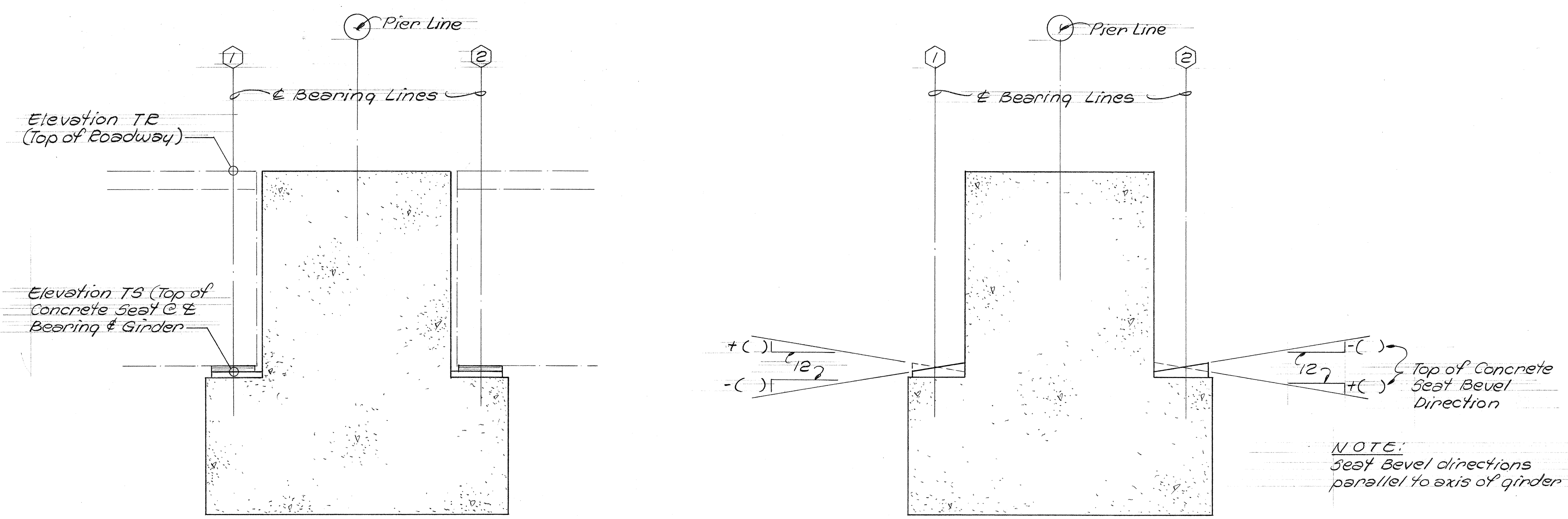
Scale: As Shown Date: May 16, 1978

SHEET NO. 514 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84):16	1978	422	466

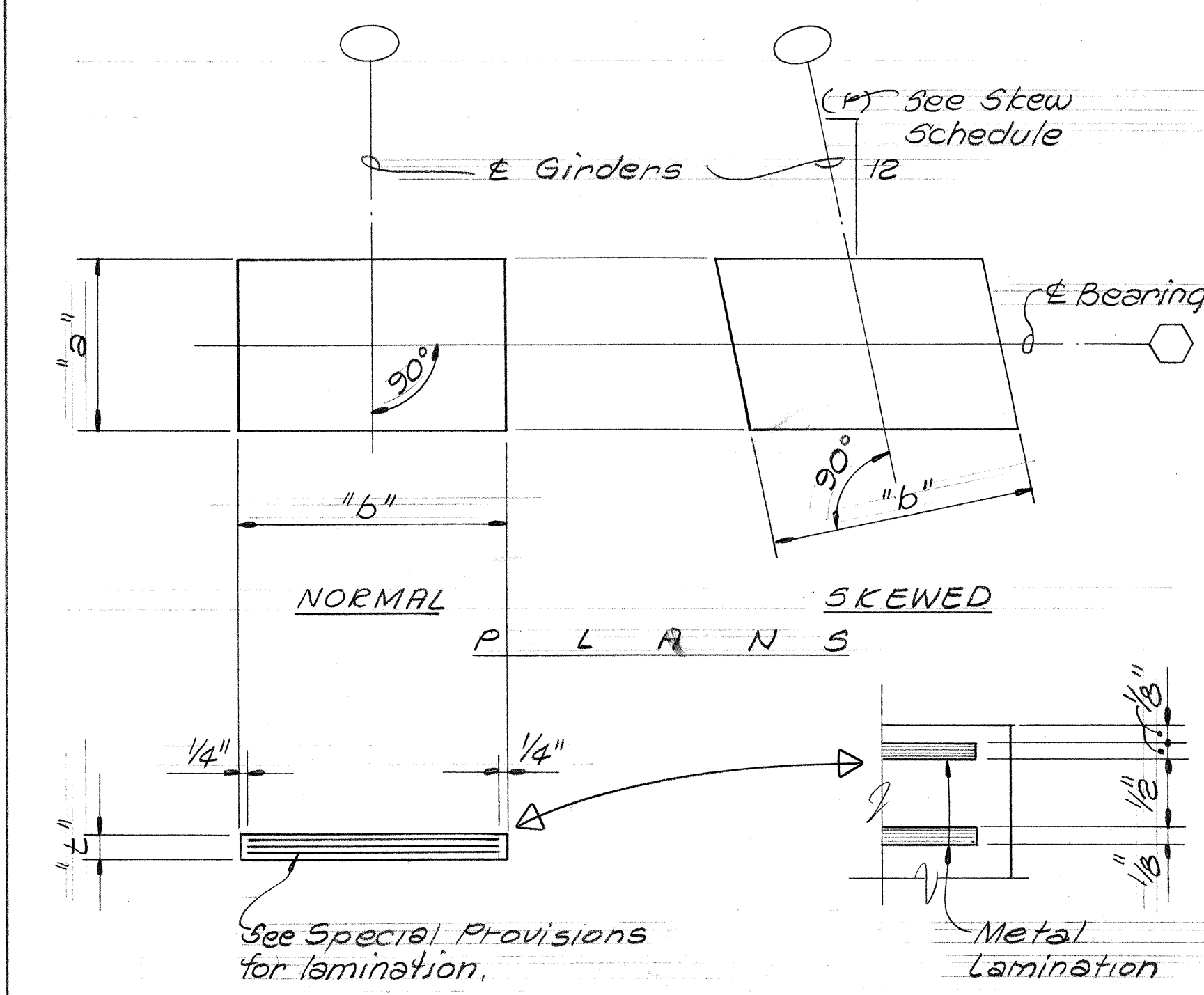


GIRDER SEAT LOCATION & SKEW
Scale: 1/2" = 1'-0"



GIRDER SEAT ELEVATIONS
Scale: 1/2" = 1'-0"

GIRDER CONCRETE SEAT BEVEL DIRECTION
Scale: 1/2" = 1'-0"



ELEVATION
ELASTOMERIC BEARING PAD DETAILS

ELASTOMERIC BEARING PAD SCHEDULE							
Spans btwn Piers		G1 & G2 Girder Brq. Pads			T1 to T16 Girder Brq. Pads		
		Dimensions			Dimensions		
		"a"	"b"	"t"	"a"	"b"	"t"
①	①	13"	15½"	2¼"	8"	24½"	2¼"
①	②	13"	15½"	2¼"	8"	24½"	2¼"
②	③	 					

- NOTES:**
- Fiberglass reinforced elastomeric pads may be used in lieu of pads with metal lamination as shown.
 - Minimum total thickness of fiberglass reinforced elastomeric pads shall be equal to the sum of the 1/2" pads between metal laminations + 1/4" (Revise dimension "t" in Schedule accordingly.)
 - Any revision to elastomeric bearing pad thicknesses shall be reflected in concrete seat and girder shelf elevations.
 - Cost of bearing pads incidental to concrete.

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HIGHWAYS DIVISION

H-1 VIADUCT (EB) PART II

GIRDER SEAT GEOMETRIC DETAILS
ELASTOMERIC BEARING PAD SCHEDULE & DETAILS

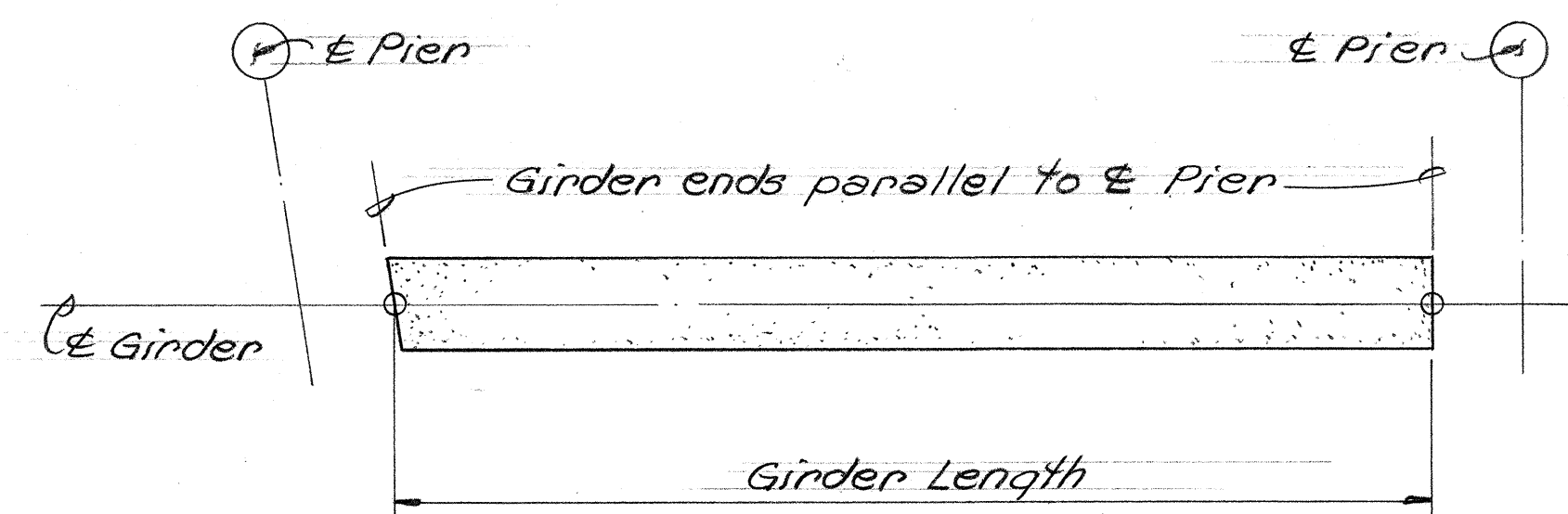
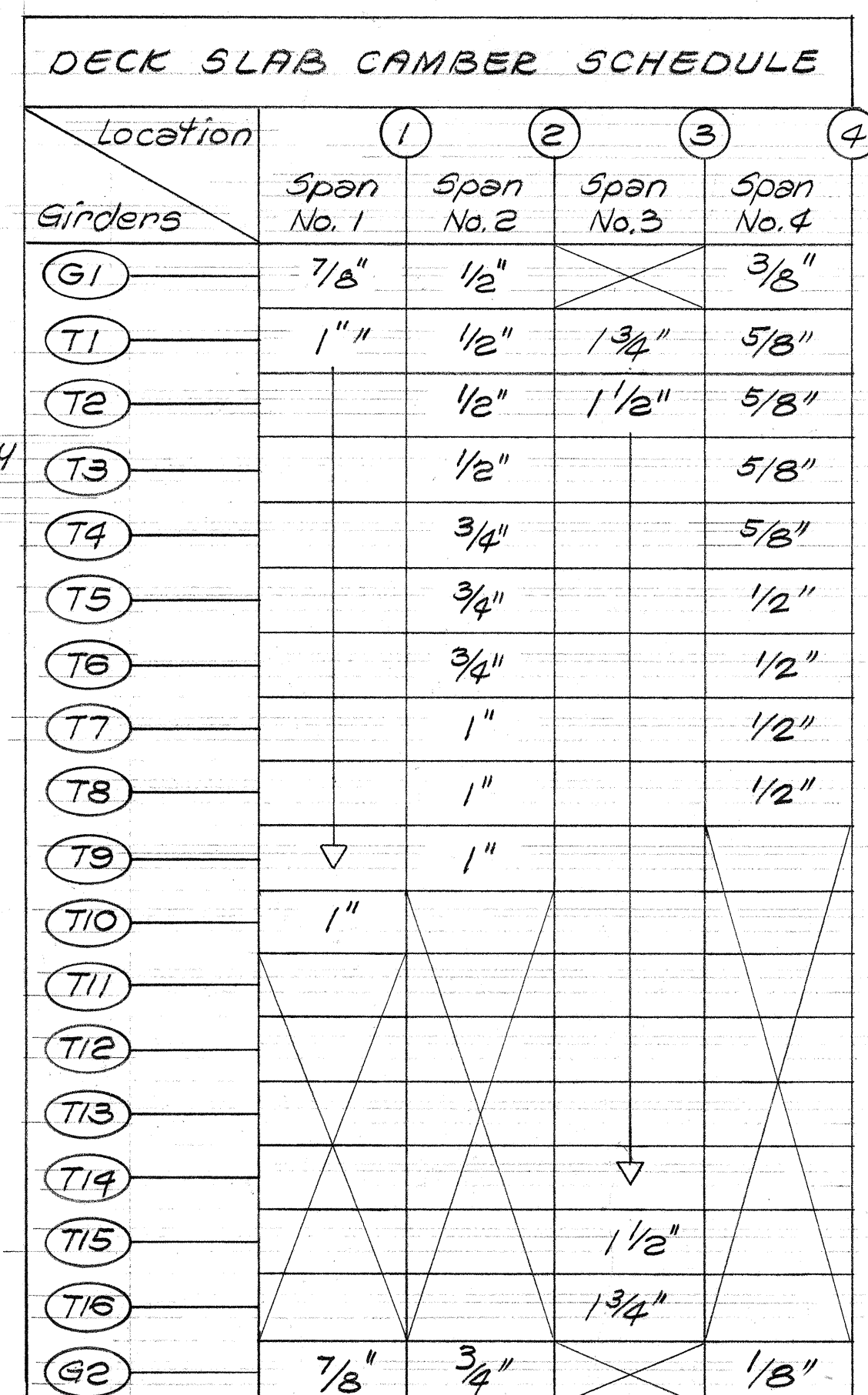
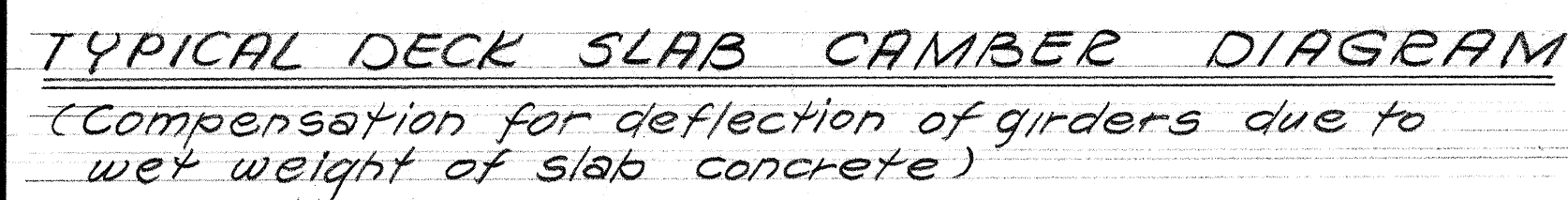
AIRPORT VIADUCT
F.A.I. PROJ. No. I-HI-1 (84):16

Scale: As Shown Date: May 16, 1978

SHEET No. 515 OF 20 SHEETS

[illegible]

Scale = $1/16" = 1'-0"$



P L A N

Not to Scale

- (E) = Expansion end of girders
(H) = Hinge end of girders

1. Girder lengths are measured along & of girders & out to out in Plan. Lengths shown in ()
- 2 All girders are parallel.
3. All girders are erected & slab poured without girder shores.

1. Prestressed Girders Schedule --Sh. S-17
2. Prestressed Girder Details--Sh. T-9 & T-10
3. Slab Reinforcing Schedule--Sh. S-19
4. Beams "A" & "B" -----Sh. T-10
5. Hinge Restrainers -----Sh. T-7
6. Deck Drain Locations ----Sh. S-2
7. Deck Drain Details -----Sh. SD-8 & SD-9

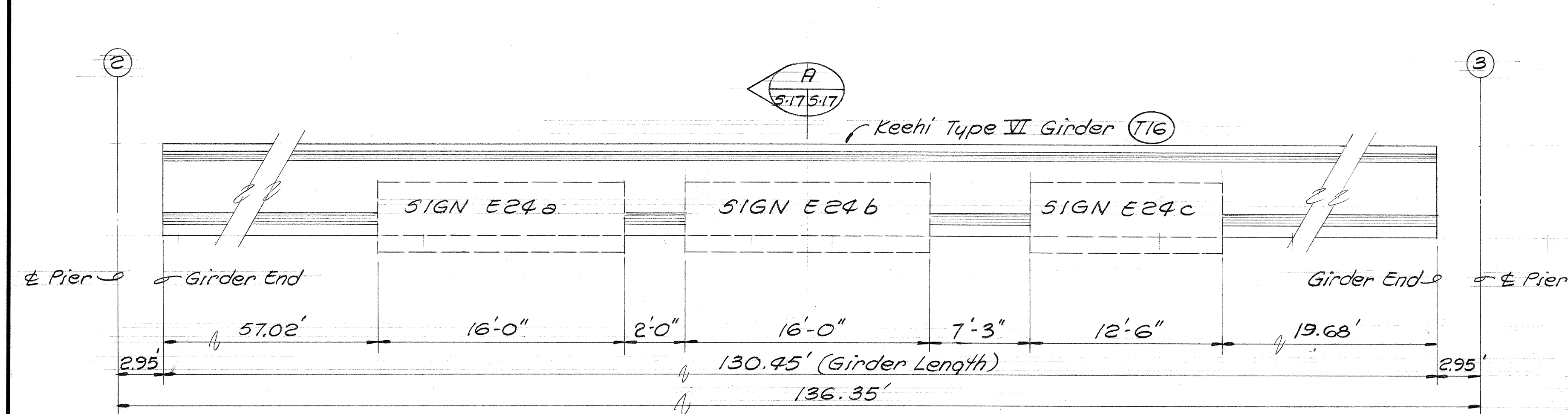


SHEET No. 516 OF 20 SHEETS

PRESTRESSED GIRDER SCHEDULE

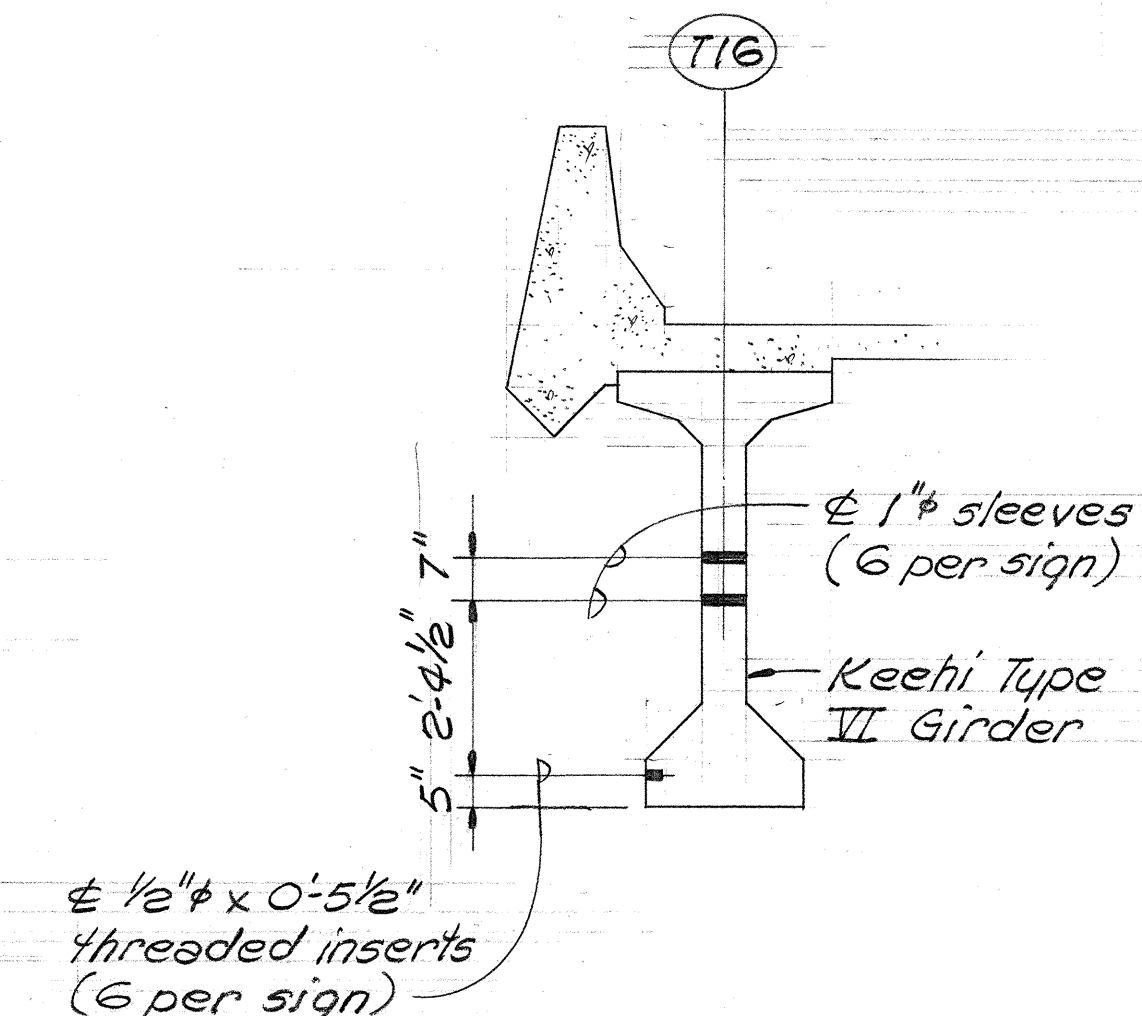
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(84)16	1978	124	400

SPAN NO.	GIRDER SECTION	GIRDER MARK NO.	GIRDER TYPE	INITIAL PRE-STRESS FORCE (KIPS)	FINAL PRESTRESS FORCE (KIPS)	CALCULATED CAMBER SEE NOTE 4 ON SHT. T8	LOCATION OF CG OF PRESTRESSED FORCE			STIRRUP SPACING			CONCRETE STRENGTH @ TRANSFER (PSI)	MASK STRANDS @ EA. END FOR NET INITIAL PRE-STRESS FORCE TRANSFERRED TO CONCRETE (KIPS)	DISTANCE OF MASKED STRANDS FROM EA. END (EXCLUSIVE OF MASKED STRANDS)	DISTANCE AM. TO CG OF STRANDS	REMARKS
							A	B	C	D1	D2	D3					
1	Keeki IV	T1-T10	P1	1215	940	-1.30"	14.38"	7.34"	4/10	14@9"	10@12"	Bal.@16"	4500	—	—	—	
2	Keeki IV	T1-T9	P2	1215	940	T1#T2 = -1.15"	14.38"	6.63"	4/10	14@9"	10@12"	Bal.@16"	4500	—	—	—	
						T3#T4 = -1.21"								—	—	—	
						T5#T6 = -1.27"								—	—	—	
						T7-T9 = -1.34"								—	—	—	
3	Keeki VII	T2-T15	P3A	1700	1316	-1.94"	18.27"	7.49"	4/10	15@11"	11@15"	Bal.@22"	4500	1457	4/10	19.44"	
	Keeki VII	T1#T16	P3B	1761	1363	-2.16"	17.70"	7.29"	4/10	15@11"	11@15"	Bal.@22"	4500	1457	4/6.67	19.58"	
4	Keeki IV	T1-T8	P4	911	705	T1#T2 = -0.67"	14.38"	7.35"		11@9"	8@12"	Bal.@16"	4000	—	—	—	
						T3#T4 = -0.61"								—	—	—	
						T5#T6 = -0.56"								—	—	—	
						T7#T8 = -0.49"								—	—	—	
1	Keeki IV F	G1 & G2	EP1	1461	1128	-1.36"	19.71"	10.84"	4/10	14@9"	10@12"	Bal.@16"	4500	—	—	—	
2	Keeki IV F	G1	EP2A	1461	1128	-0.75"	19.71"	16.21"	4/10	12@9"	8@12"	Bal.@16"	4500	—	—	—	
	Keeki IV F	G2	EP2B	1461	1128	-1.29"	19.71"	11.06"	4/10	14@8 1/2"	10@12"	Bal.@16"	4500	—	—	—	
4	Keeki IV F	G1	EP4A	974	752	-0.71"	18.71"	8.57"	4/10	11@9"	8@12"	Bal.@16"	4000	—	—	—	
	Keeki IV F	G2	EP4B	974	752	-0.30"	18.71"	16.58"	4/10	8@10"	6@13"	Bal.@16"	4000	—	—	—	



- NOTES**
- For locations of inserts for sign supports, see Sign E24 detail Sh. K-5
 - All lengths measured along girder.

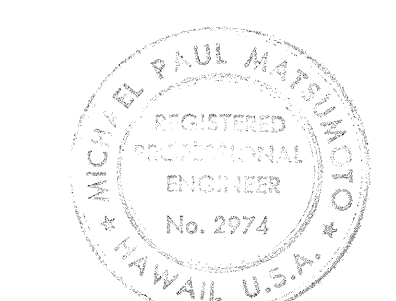
ELEVATION - MAKAI SIDE FASCIA SIGN PANEL
N.T.S.



SECTION A-A
N.T.S.

NOTE:
See Sh. T-9 & T-10 for prestressed beam details.

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Michael E. Paul Matsumoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

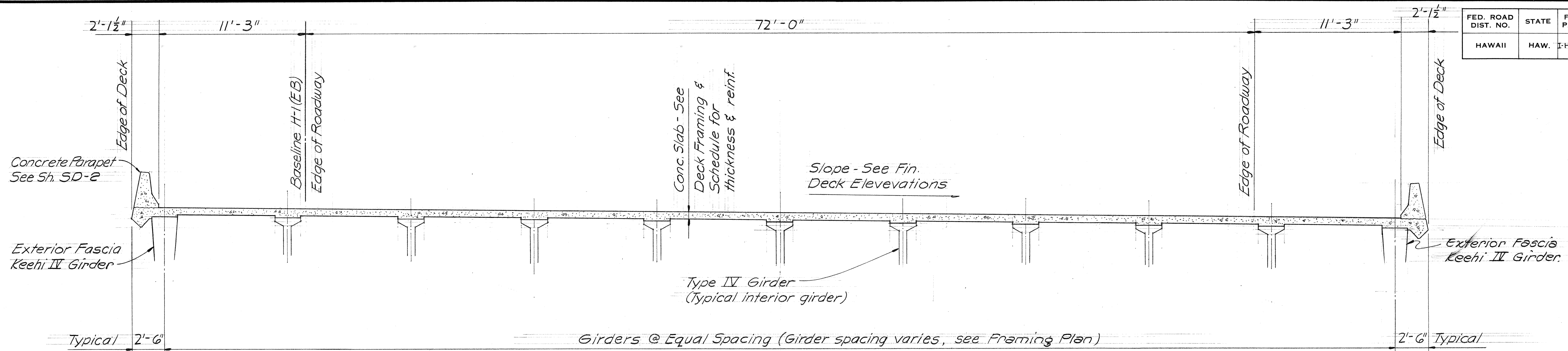
H-1 VIADUCT (EB) PART II
PRESTRESSED GIRDER SCHEDULE

AIRPORT VIADUCT
FA.I. PROJ. NO. 1-HI-1(84)16

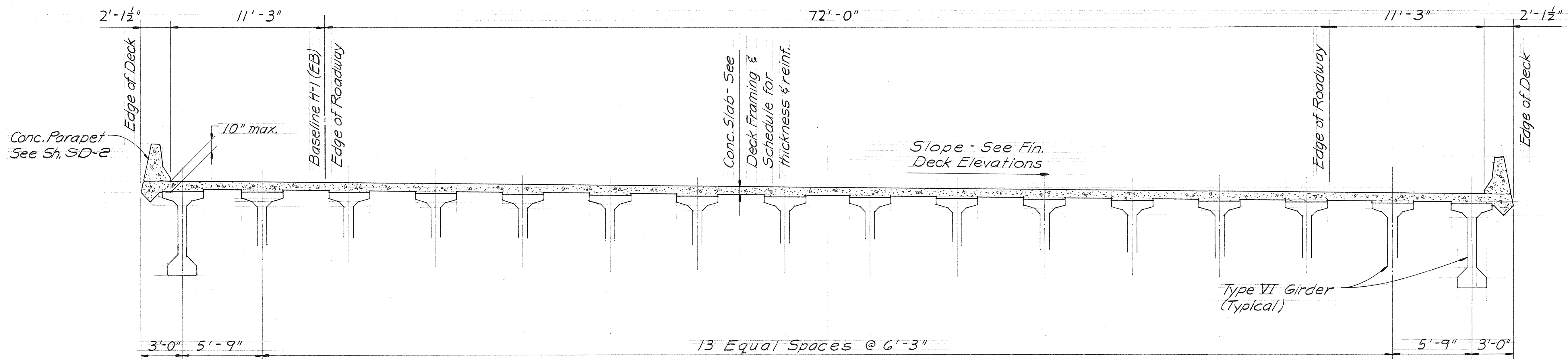
Scale: _____ Date: May 16, 1978

SHEET NO. 17 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24);16	1978	425	466



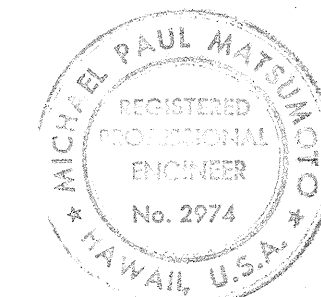
TYPICAL H-I VIADUCT DECK SECTION ^A₅₂₅₋₁₈ (UNLESS SHOWN OTHERWISE)
 Scale: 1/4" = 1'-0"



H-I VIADUCT DECK SECTION ^B₅₂₅₋₁₈ (BETWEEN PIERS 2 & 3)
 Scale: 1/4" = 1'-0"

SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

SSFM Engineers, Inc.
 Consulting Structural Engineers
 1212 Ward Ave., Honolulu, HI 96813



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 HIGHWAYS DIVISION

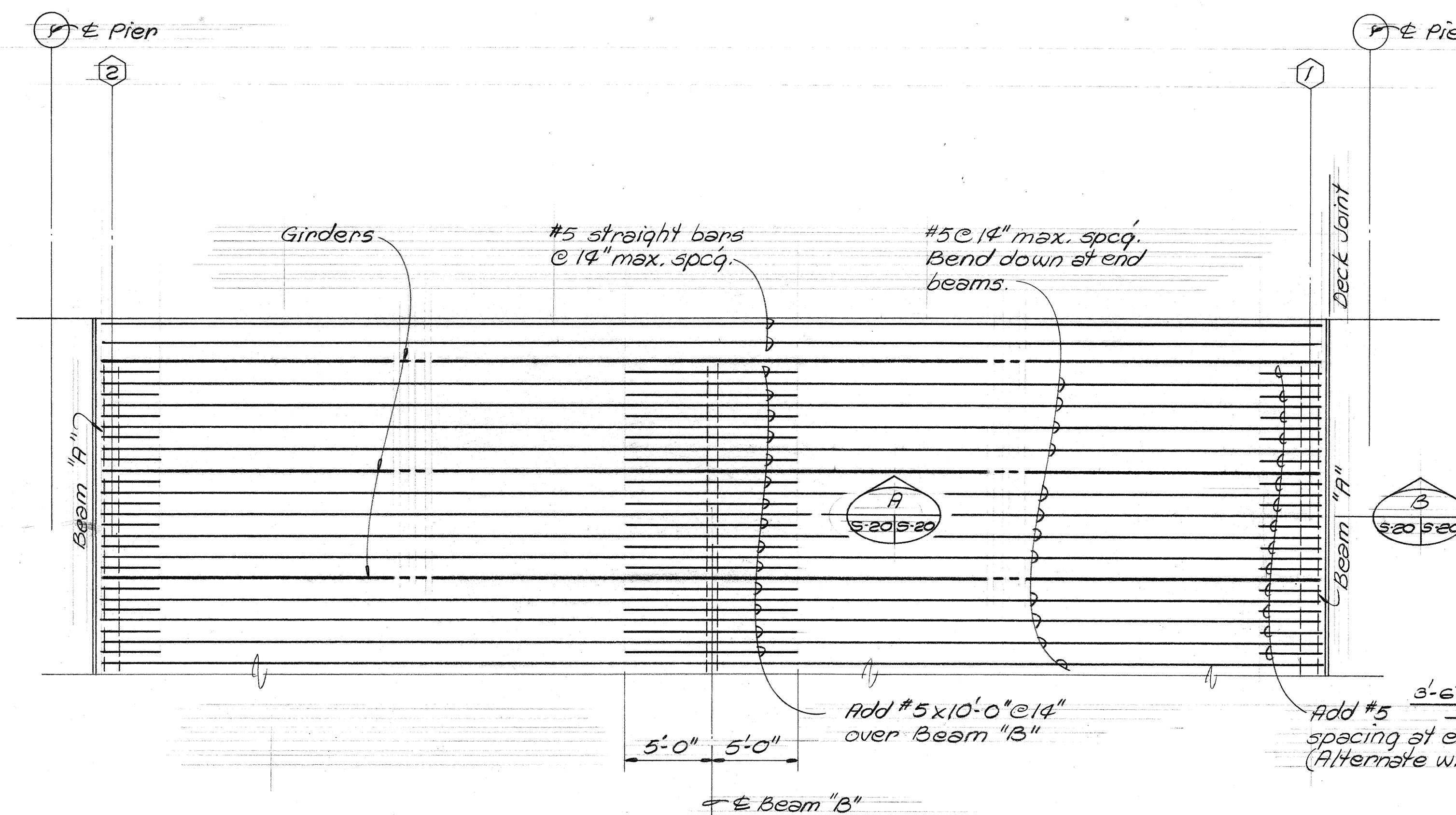
H-I VIADUCT (EB) PART II
 TYPICAL DECK CROSS SECTIONS

AIRPORT VIADUCT
 F.A.I. PROJ. NO. I-HI-1(24);16

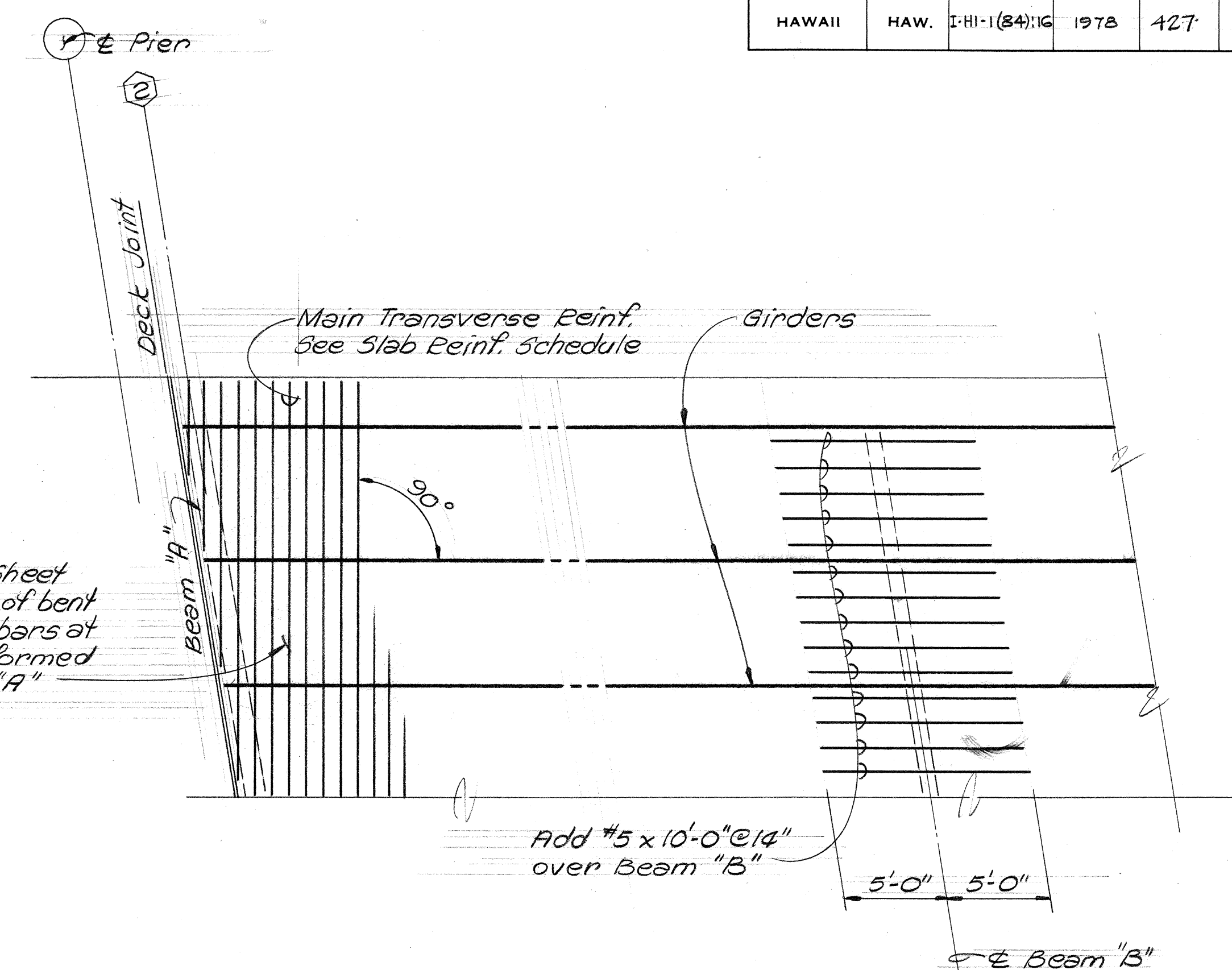
Scale: As shown Date: May 16, 1978

SHEET NO. 5-18 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(84)16	1978	427	466



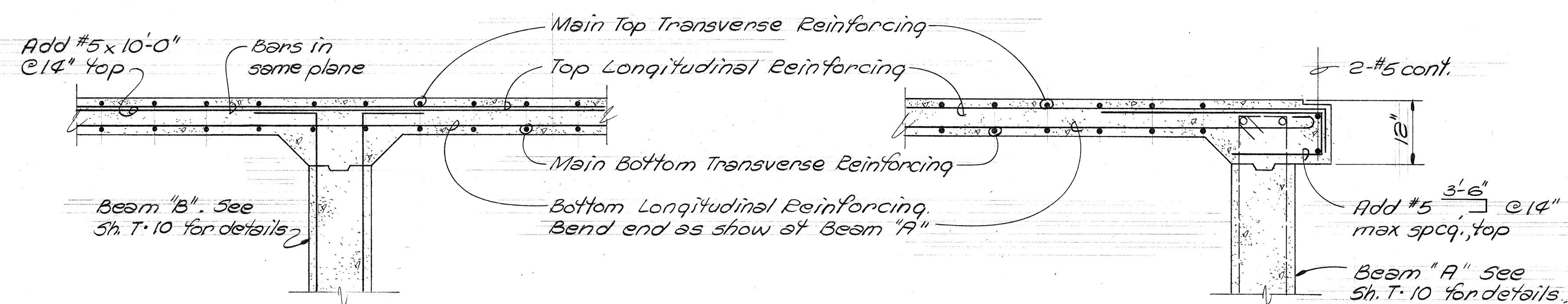
PLAN ~ GIRDERS PERPENDICULAR TO PIERS
(Showing Top Longitudinal reinf. only)



PLAN ~ GIRDERS SKEWED TO PIERS
(Showing Main Transverse reinf. only. See plan at left for Top Longitudinal reinf.)

TYPICAL ARRANGEMENT FOR DECK SLAB REINFORCEMENT

Not to Scale



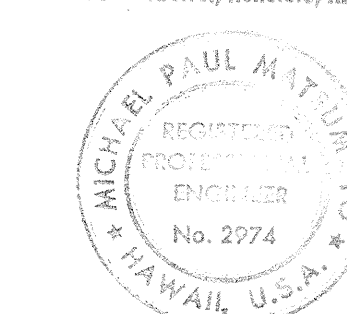
AT BEAM "B"
(Interior Diaphragms)

SECTION A
Not to Scale

AT BEAM "A"
(End Beam)

SECTION B
Not to Scale

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

H-1 VIADUCT (EB) PART II
TYPICAL DECK SLAB REINF. ARRANGEMENT

AIRPORT VIADUCT
F.A.I. PROJ. NO. I-HI-1 (84)16

Scale: As Shown Date: May 16, 1978
SHEET NO. 5 OF 20 SHEETS