INDEX TO STRUCTURAL DRAWINGS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	40	106

SHEET No.	DESCRIPTION
S-1	Index to Drawings
S-2	Estimated Quantities
S-3	Partial Layout Plan & Longitudinal Elevation (Sta. 356+70 To Sta. 367+04)
S-4	Partial Layout Plan & Longitudinal Elevation (Sta. 367+04 To Sta. 374+25)
S-5	Pier Elevations (Typical Pier, Piers #11 Thru #18 & Piers #22 Thru #25)
S-6	Pier Elevations (Piers #19 & #20)
S-7	Pier Elevations (Piers #21, #26 & #27)
S-8	Partial Deck Finish Grade (Sta. 356+70 To Sta. 367+00)
S-9	Partial Deck Finish Grade (Sta. 367+00 To Sta. 374+25)
S-10	Foundation Plan
S-11	Pile Cap Details
S-12	Pile Cap Details
S-12A	Pile Cap Details
S-12B	Pile Driving Schedule & Spread Footing Details
S-13	Pier Frame Schedule
S-14	Column Reinforcing Details
S-15	Column Reinforcing Schedule
S-16	Typical Pier Cap Reinforcing
S-17	Typical Pier Cap Plans & Details
S-18	
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S-20	Pier #21 Details
S-21	Pier Cap Bearing Geometrics
S-22	Pier Cap Bearing Geometrics
S-23	Pier Cap Bearing Geometrics
S-24	Typical Pier Box Girder Framing Plan & Reinforcing
S-25	Pier #19 Details
S-26	Pier #20 Details
S-27	Typical Box Girder Details
S-28	Pier Elevations & Details (Piers #26 & #27)
S-29	Piers #26 & #27 Details
S-30	Pier Box Girder Shelf Details
S-31	Pier Box Girder Bearing Geometrics
S-32	Box Girder Deck Drain Details
S-33	Abutment Plans
S-34	Abutment Sections & Details
S-35	Abutment Elevations
S-36	End Post Details
S-37	Partial Framing Plans (Piers #11 To #15)
S-38	Partial Framing Plans (Piers #15 To #22)
S-39	Partial Framing Plans (Pier #22 To Abutment #2)
S-40	Deck Sections (Sta. 356+70 To Sta. 360+46)
S-41	Typical Deck Sections
S-42	Deck Slab Reinforcing Schedule
S-43	Deck Slab Reinforcing Plan
S-44	Deck Slab Camber Schedule

TYPICAL DRAWINGS

T-1	General Notes
T-2	Special Concrete & Reinf. and Construction Sequence
T-3	Pile Details
T-4	Pile Details
T-5	Pile Build-up Details
T-6	Pile Load Test Details
T-7	Prestressed Girder Details (Keehi IV & Keehi VI Girders)
T-8	Prestressed Girder Details (Keehi IVF Girder)
T-9	Prestressed Girder Schedule
T-10	Keehi IV Girder (Dapped & Fixed End Details)
T-11	Keehi IVF Girder (Dapped & Fixed End Details)
T-12	Beam Details (Beams "A", "B", "C," & "D")
T-13	Beam Details (Beams "E," "F," & "G")
T-14	Beam Details (Beams "H" & "J")
T-15	Hinge Restrainer Details
T-16	Exterior Parapet Details
T-17	Interior Parapet Details
T-18	Deck Expansion Joint Details
T-19	Sign Structure Foundation Details
T-20	Sign Structure Truss Details
T-21	Sign Structure Connection Details

DATE	REVISION
10/13/89	VOID SHEETS S18 & S19

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

ORIGINAL PLAN
NOTE BOOK
No. _____

SSFM ENGINEERS INC.
501 Sumner St., #502
Honolulu, Hawaii 96817

HOWARD Y. FUKUDA
REGISTERED PROFESSIONAL ENGINEER
No. 1343-S
HAWAII U.S.A.

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Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX TO DRAWINGS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
DATE:

SHEET No. 51 OF 46 SHEETS

C.O. 40

ESTIMATED STRUCTURAL QUANTITIES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	41	106

ITEM No.	ITEM	UNIT	QUANTITIES
206.6001	Structure Excavation for Bridges	L.S.	(9,295 C.Y.)
206.7201	Structure Backfill for Bridge Abutments, Wingwalls and Retaining Walls	L.S.	(61 C.Y.)
206.8211	Filter Material at Abutment	L.S.	(33 C.Y.)
503.1900	Concrete in Bridges (Except Footings)	L.S	(9,587 C.Y.)
503.1940	Concrete in Bridge Footings	L.S.	(3,558 C.Y.)
504.4501	Keehi Type IV Prestressed Concrete Girders	L.S.	(16,843 L.F.)
504.4511	Keehi Type IV F Prestressed Concrete Girders	L.S.	(3,108 L.F.)
505.0010	Pile Load Tests	Ea.	6
504.0030	Strand Slippage Measurement on Piles	Ea.	100
505.0430	Precast, Prestressed Concrete Piles, Furnished (16 1/2" Octagonal)	L.F.	62,231
505.4300	Precast, Prestressed Concrete Piles, Driven (16 1/2" Octagonal)	L.F.	54,845
505.4810	Furnishing and Installing Splice Cans	Ea.	198
505.6001	Predrilled Holes for Piling	L.S.	(6,922 L.F.)
505.8100	Pile Driving Shoe	Ea.	210
505.9000	Extension or "Build-ups" of Piles	F.A.	
505.9301	Retapping of Piles	F.A.	
504.9500	Strand Slippage Measurements on Girders	Ea.	50
505.9401	Pile Driving Equipment Expense		
	(Not to exceed $ 8,000)	L.S.	
507.7100	Concrete Bridge Exterior Parapet, Including End Post	L.F.	3,538
507.7200	Concrete Bridge Parapet at Median	L.F.	1,755
508.0100	Cement Rubble Masonry	C.Y.	150
511.0100	Deck Expansion Joint	L.F.	980
602.1300	Reinforcing Steel in Bridges	L.S.	(4,102,943 LBS)
604.2360	Bridge Deck Drain Steel Frame and Grate	Ea.	58
634.0100	Exploratory Work at Structure Footings	F.A.	
505.9200	Repair or Replacement of Engineer Pile Testing Equipment	F.A.	
622.4510	Anchor Bolts for Future Light Poles	L.S.	
	Anchor Bolts		(84 Ea.)
	Base Plates		(1,436 LBS)

ITEM No.	ITEM	UNIT	QUANTITIES

SURVEY PLOTTED BY _____ DATE
DRAWN BY _____ .
TRACED BY _____ .
DESIGNED BY _____ .
QUANTITIES BY _____ .
CHECKED BY _____ .

ORIGINAL PLAN
NOTE BOOK
No. _____

SSFH Engineers, Inc.
Consulting Structural Engineers
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DATE	REVISION
11-7-90	Revised Quantities
10/19/89	REVISED QUANTITIES TO REFLECT CHANGES DUE TO REDESIGN OF SPANS 12 & 13.
11/15/88	REVISED QUANTITIES

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

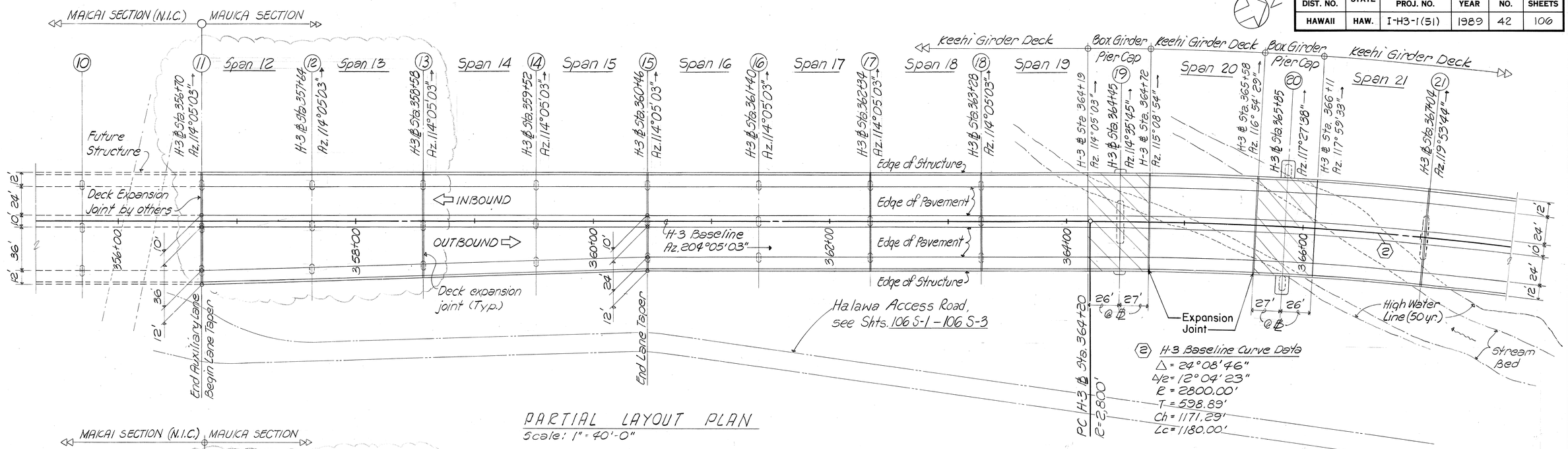
ESTIMATED QUANTITIES

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
DATE:

SHEET No. 52 OF 46 SHEETS

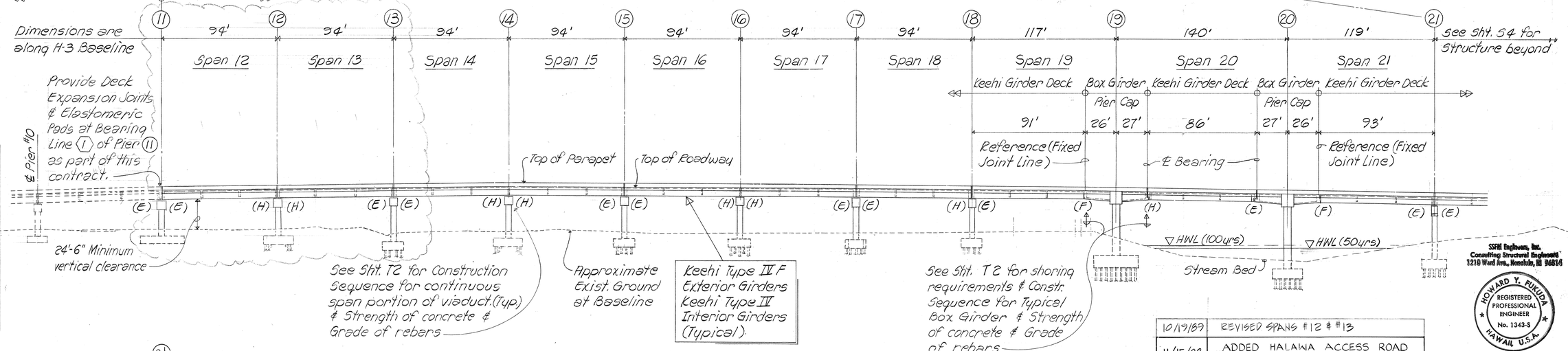
C.O. ADD. 41

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	42	106



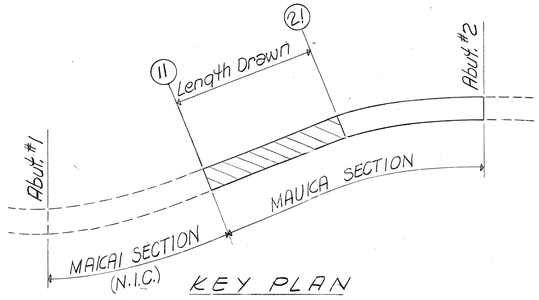
PARTIAL LAYOUT PLAN

Scale: 1" = 40'-0"



PARTIAL LONGITUDINAL ELEVATION

Scale: 1" = 40'-0"



KEY PLAN

SPECIAL NOTES:

1. Unless shown otherwise, all transverse dimensions are perpendicular to H-3 Baseline.
2. See Geometric & Profile Drawings for horizontal & vertical controls.
3. See sheet 532 for deck drainage details.
4. See Electrical Dwgs E1 thru E8 for Highway Lighting Details.

REFERENCE DRAWINGS:

1. Typical Pier Elevations	Sht. 55 thru 57
2. Finish Deck Elevations	Sht. 58 & 59
3. Prestressed Girder Details	Sht. T7 thru T11
4. Deck drain locations & Details	Civil Drawings Sheets 100 thru 700.

LEGEND
(E) = Expansion Bearing
(F) = Fixed Joint
(H) = Hinge Bearing

HYDRAULIC DATA - 50 & 100 yr

Piers (11) thru (18): Q50 = 8200 cfs, Q100 = 10500 cfs
Pier (19): WS Elevation (50 yr) = 110.63 ft., WS Elevation (100 yr) = 111.37 ft.
Pier (20): WS Elevation (50 yr) = 113.05 ft., WS Elevation (100 yr) = 114.29 ft.

DATE	REVISION
10/19/89	REVISED SPANS #12 & #13
11/15/88	ADDED HALAWA ACCESS ROAD & BEARING GEOMETRICS

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL LAYOUT PLAN & LONGITUDINAL ELEVATION

STA. 356+70 TO STA. 367+04

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

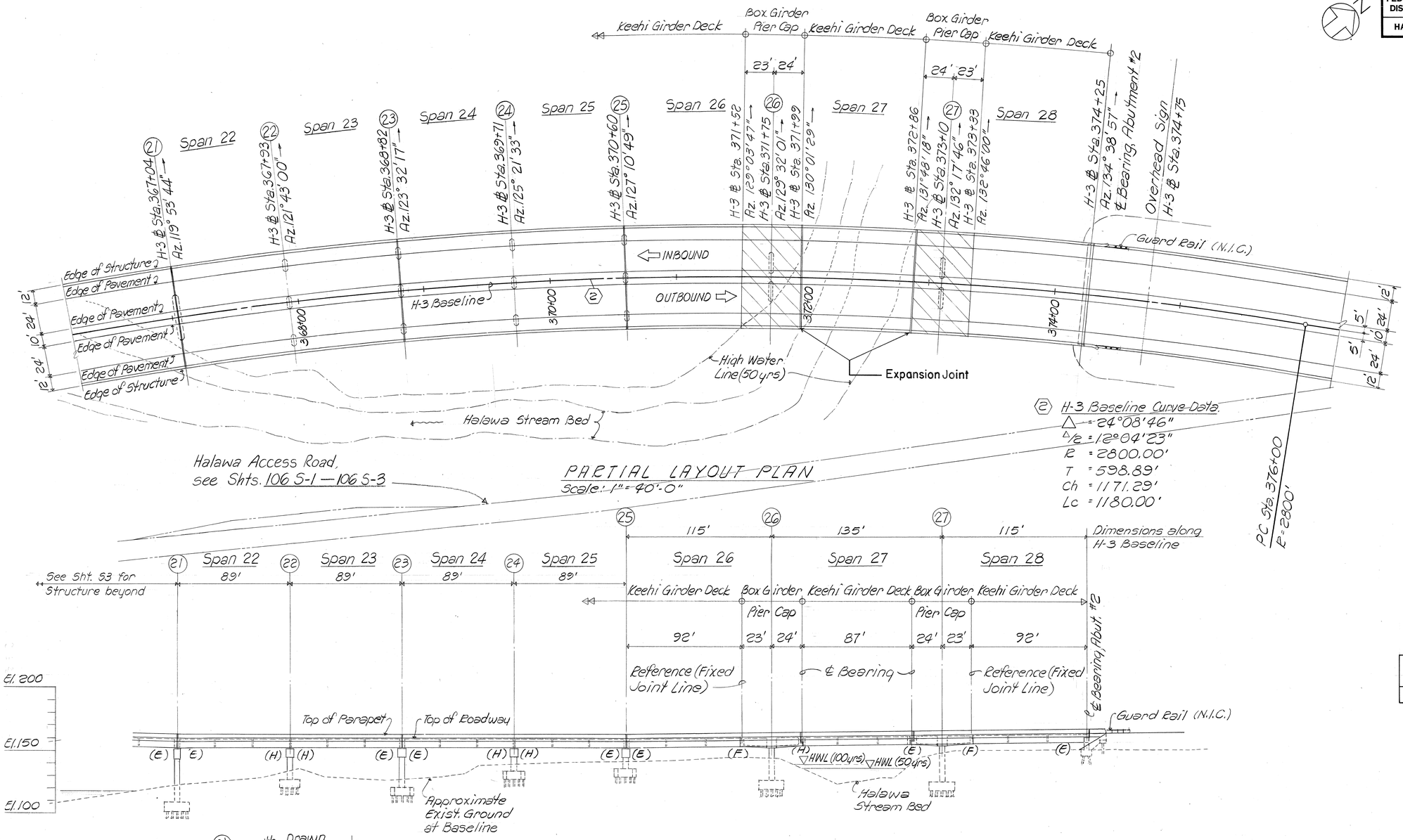
SCALE: AS NOTED DATE:

SHEET No. 53 OF 46 SHEETS

C.O. ADD. 42

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

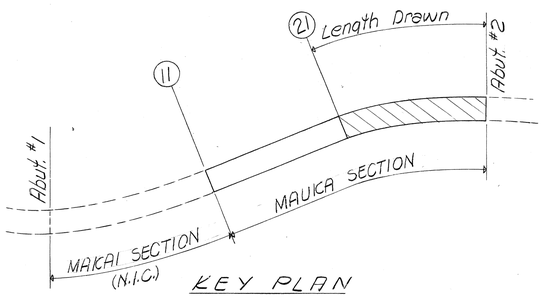
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	43	106



PARTIAL LAYOUT PLAN
Scale: 1" = 40'-0"

(2) H-3 Baseline Curve Data
△ = 24°08'46"
△/2 = 12°04'23"
R = 2800.00'
T = 598.89'
Ch = 1171.29'
Lc = 1180.00'

PARTIAL LONGITUDINAL ELEVATION
Scale: 1" = 40'-0"



KEY PLAN

LEGEND:
(E) = Expansion Bearing
(F) = Fixed Joint
(H) = Hinge Bearing

NOTE:
See sheet 53 for special notes & Reference Dwg's.

HYDRAULIC DATA - 50 & 100 yr.
Piers (22) thru (25) & (27): Q50 = 8200 cfs
Q100 = 10500 cfs
Pier (21): WS Elevation (50 yr) = 114.53 ft.
WS Elevation (100 yr) = 115.67 ft.
Pier (27): WS Elevation (50 yr) = 131.43 ft.
WS Elevation (100 yr) = 132.64 ft.

11/15/88	ADDED HALAWA ACCESS ROAD & BEARING GEOMETRICS
DATE	REVISION

SSFH Engineers, Inc.
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL LAYOUT PLAN & LONGITUDINAL ELEVATION

STA. 367+04 TO STA. 374+25

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

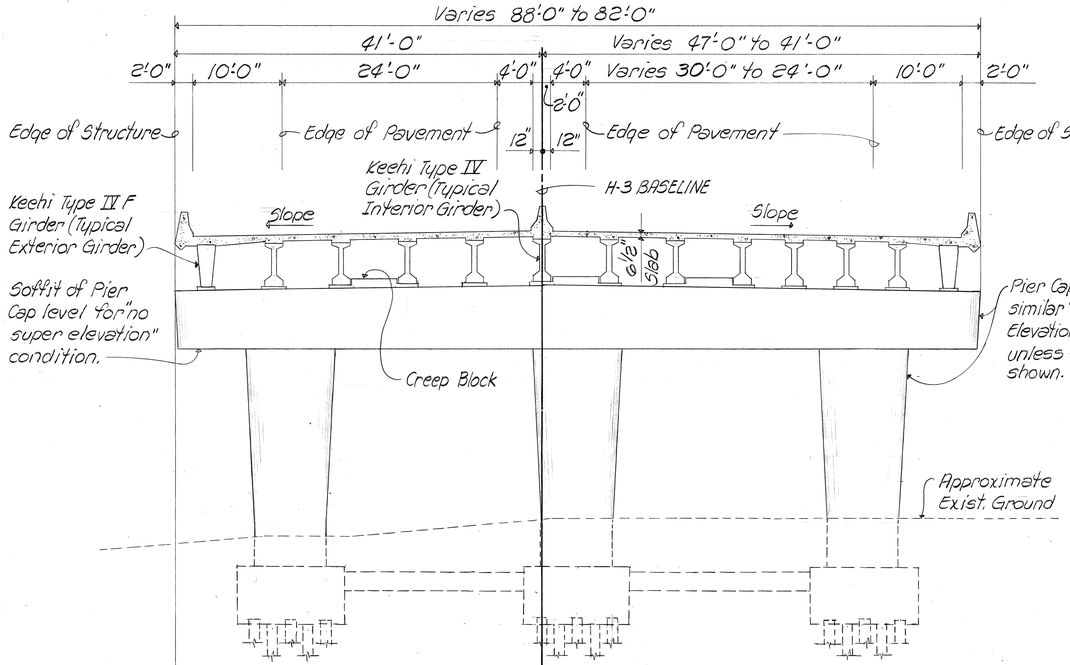
SCALE: AS NOTED DATE:

SHEET No. 54 OF 46 SHEETS

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

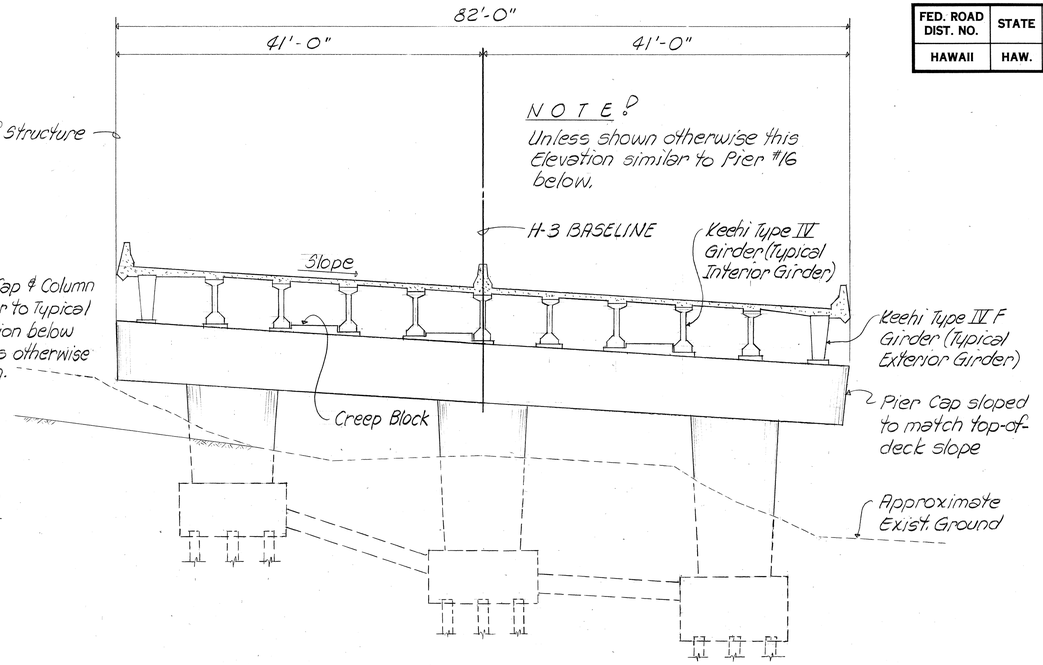
ADD. 43

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	44	106



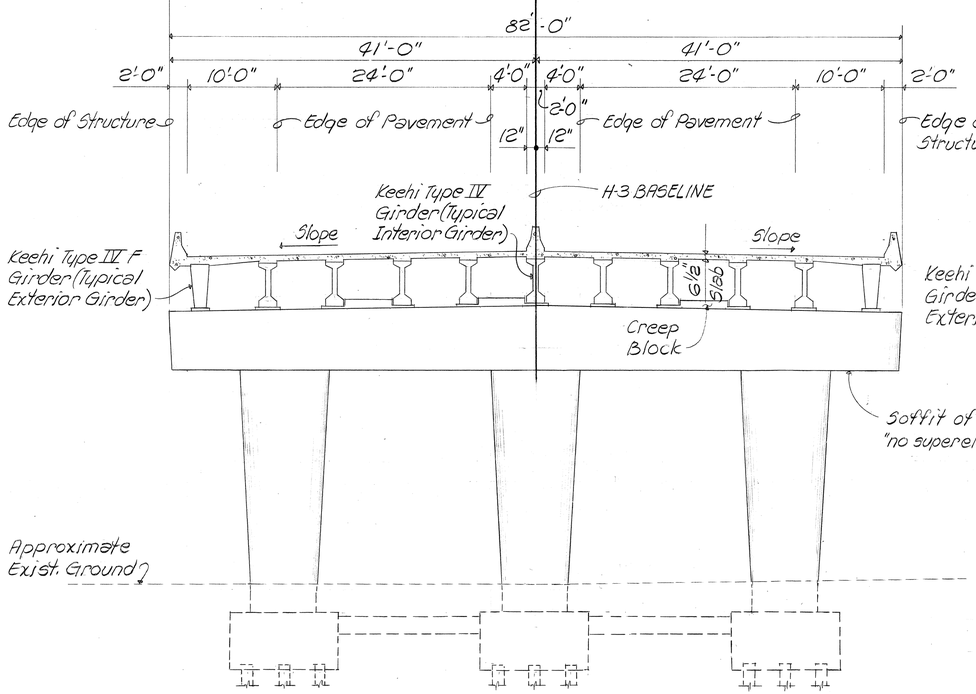
PIERS #13 THRU #15 ELEVATION (STA. 358+58 TO 360+46)

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



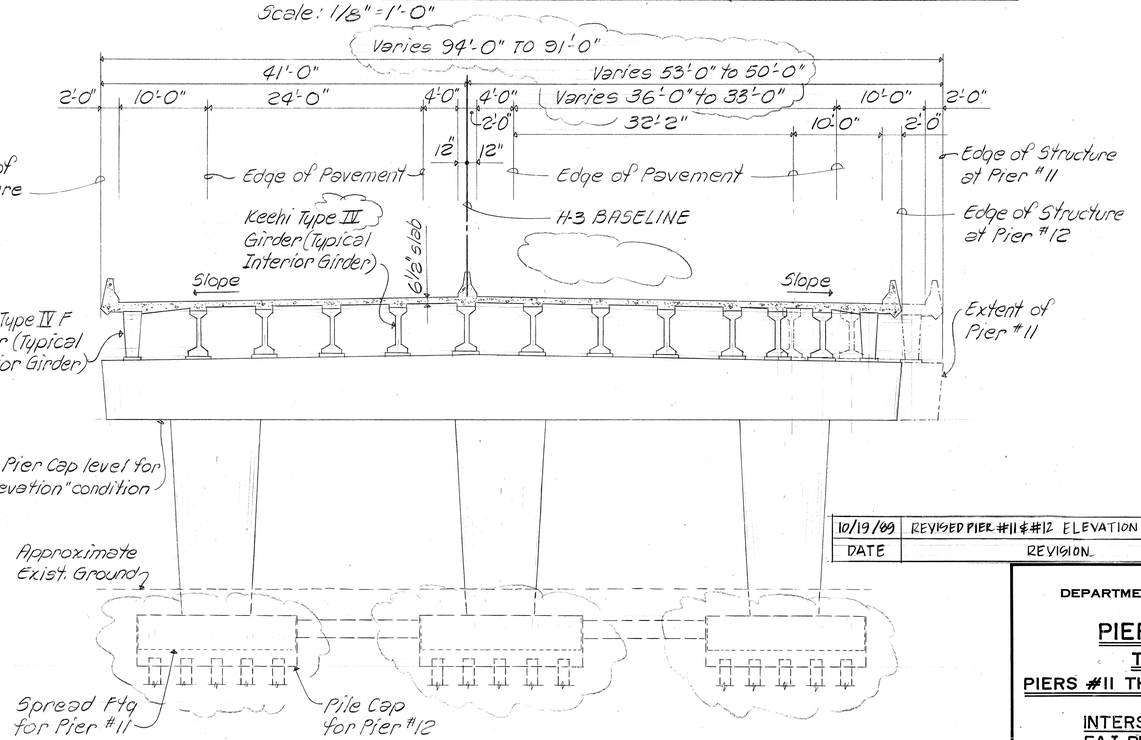
PIERS #22 THRU #25 ELEVATION (STA. 367+93 TO 370+60)

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



PIERS #16 THRU #18 ELEVATION (STA. 361+40 TO 363+28)

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



PIER #11 (STA. 356+70) & PIER #12 (STA. 357+64) ELEVATION

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

SSFH Engineers, Inc.
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DATE	REVISION
10/19/09	REVISED PIER #11 & #12 ELEVATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER ELEVATIONS

TYPICAL PIER

PIERS #11 THRU #18 & #22 THRU #25

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 55 OF 46 SHEETS

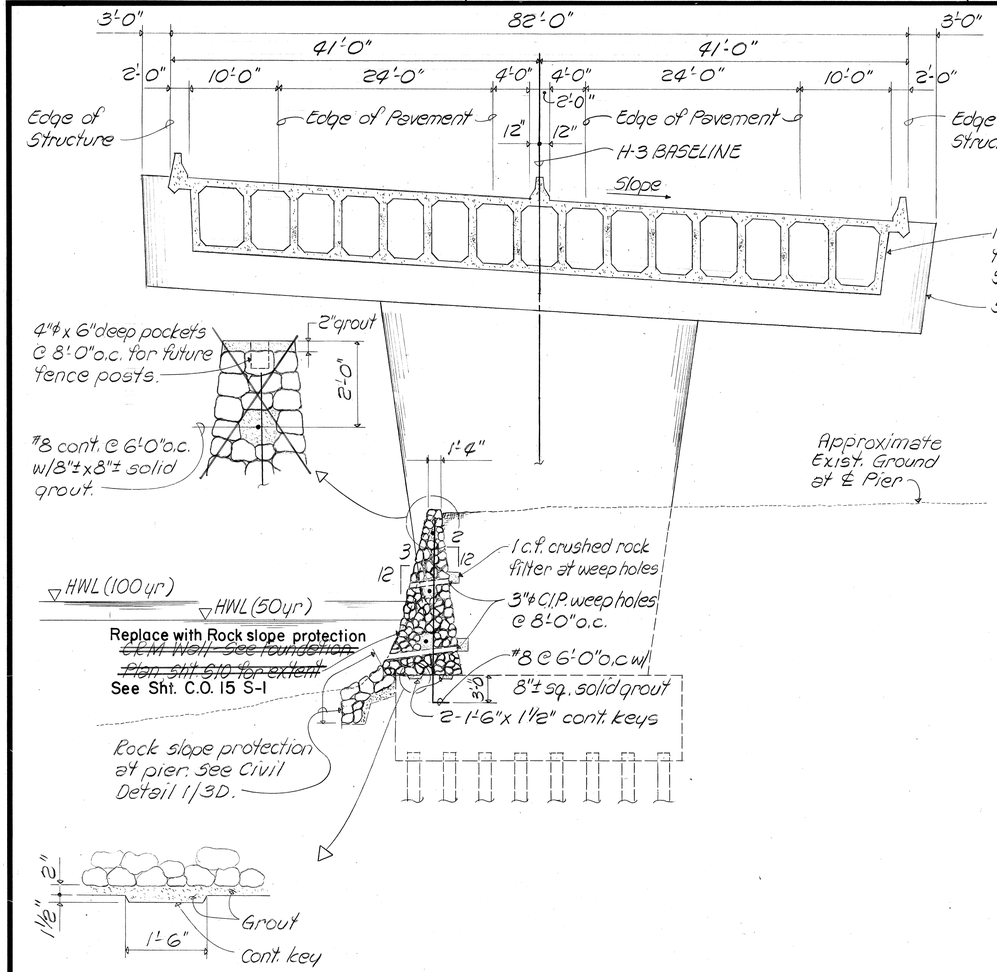
C.0.44

ORIGINAL PLAN

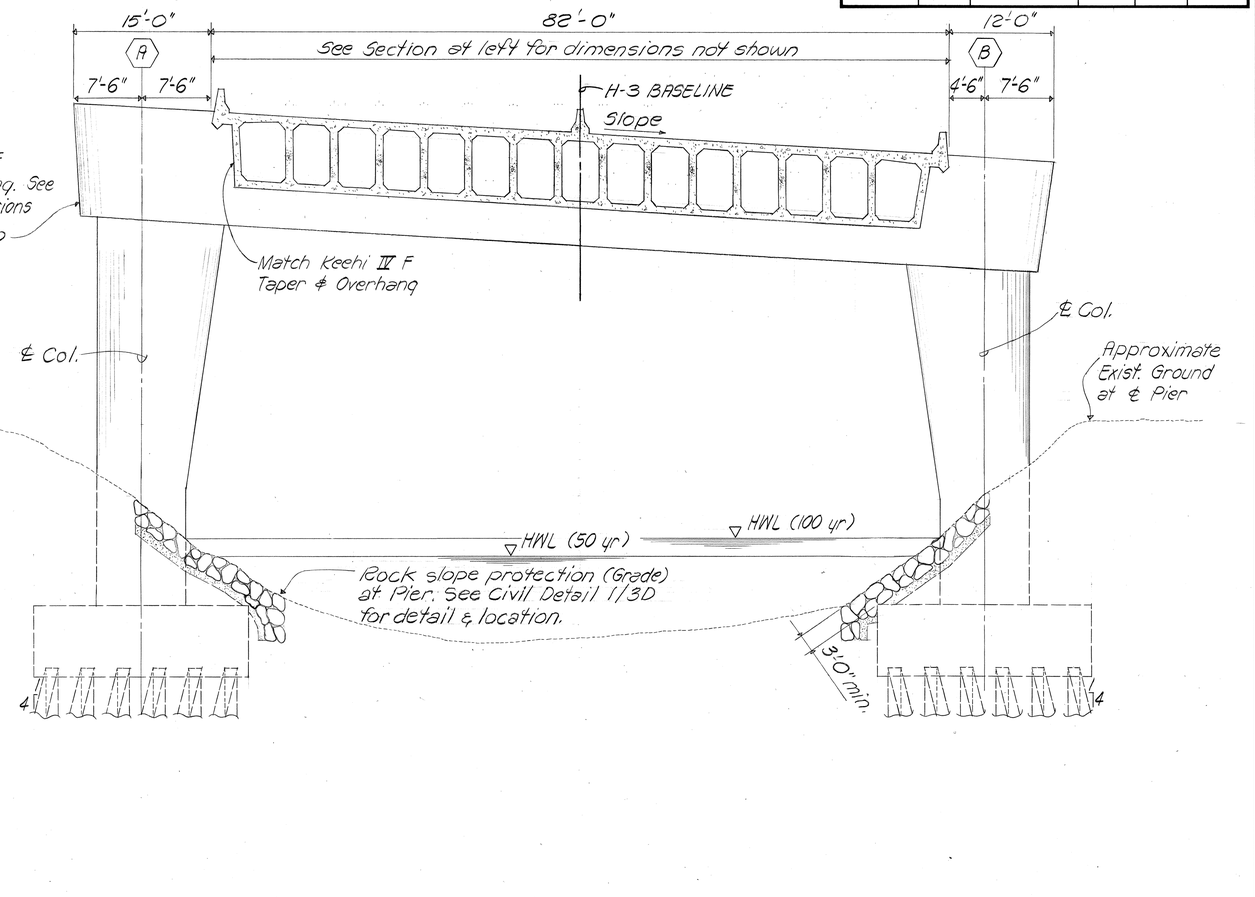
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

NOTE BOOK
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	45	106



PIER #19 ELEVATION (STA. 364+45)
Scale: 1/8"=1'-0"



PIER #20 ELEVATION (STA. 365+85)
Scale: 1/8"=1'-0"

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QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTE BOOK
No.

SSFM Engineers, Inc.
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HOWARD Y. FUKUDA
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

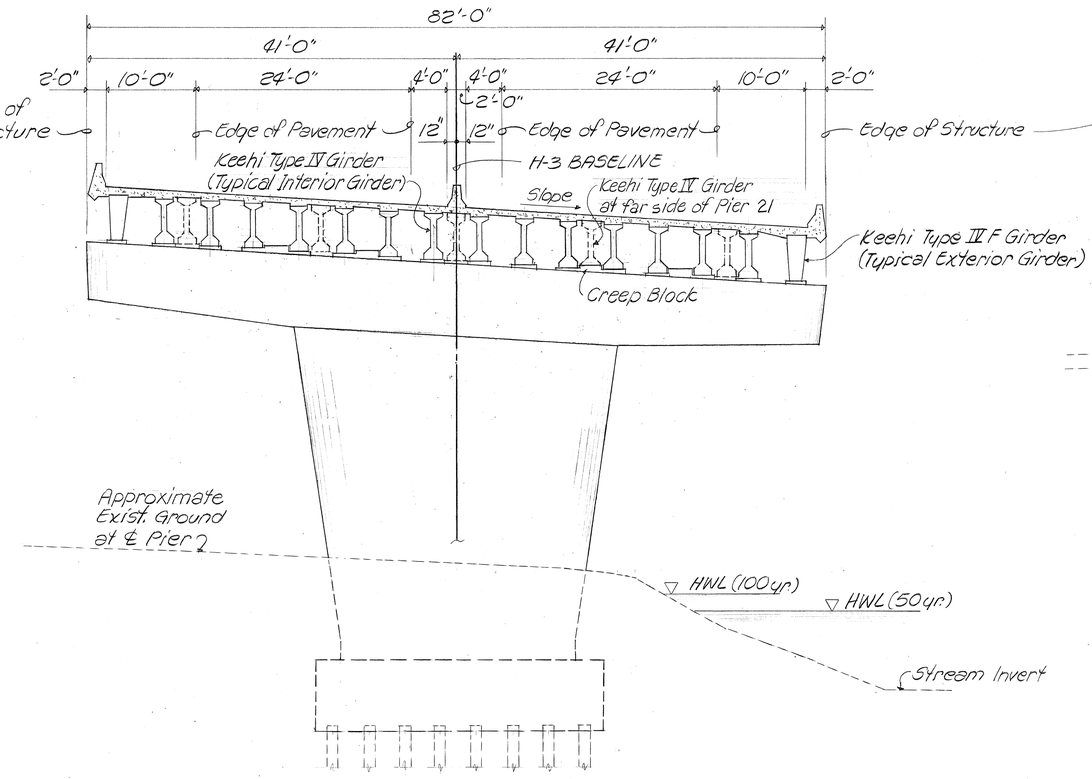
PIER ELEVATIONS
PIERS #19 & #20

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

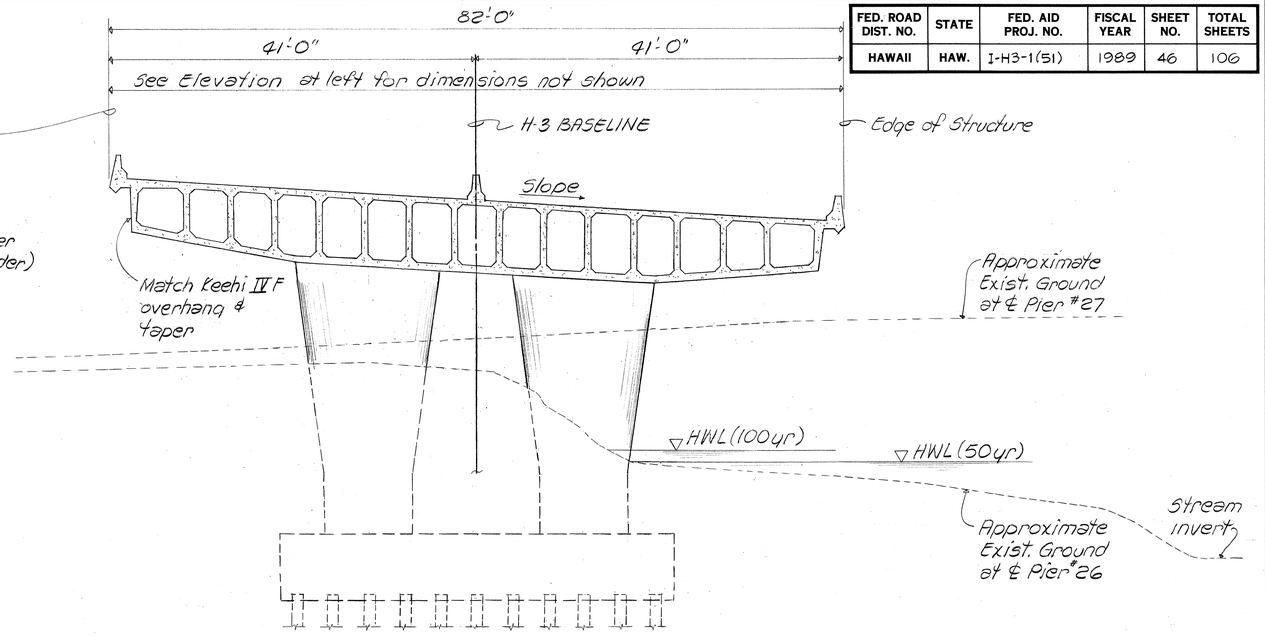
SCALE: AS NOTED DATE:

SHEET No. 56 OF 46 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	46	106



PIER #21 ELEVATION (STA. 367+04)
Scale: 1/8"=1'-0"



PIER #27 (Sta. 373+10) similar unless otherwise noted.

PIER #26 ELEVATION (STA. 371+75)
Scale: 1/8"=1'-0"

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER ELEVATIONS

PIERS #21, #26 & #27

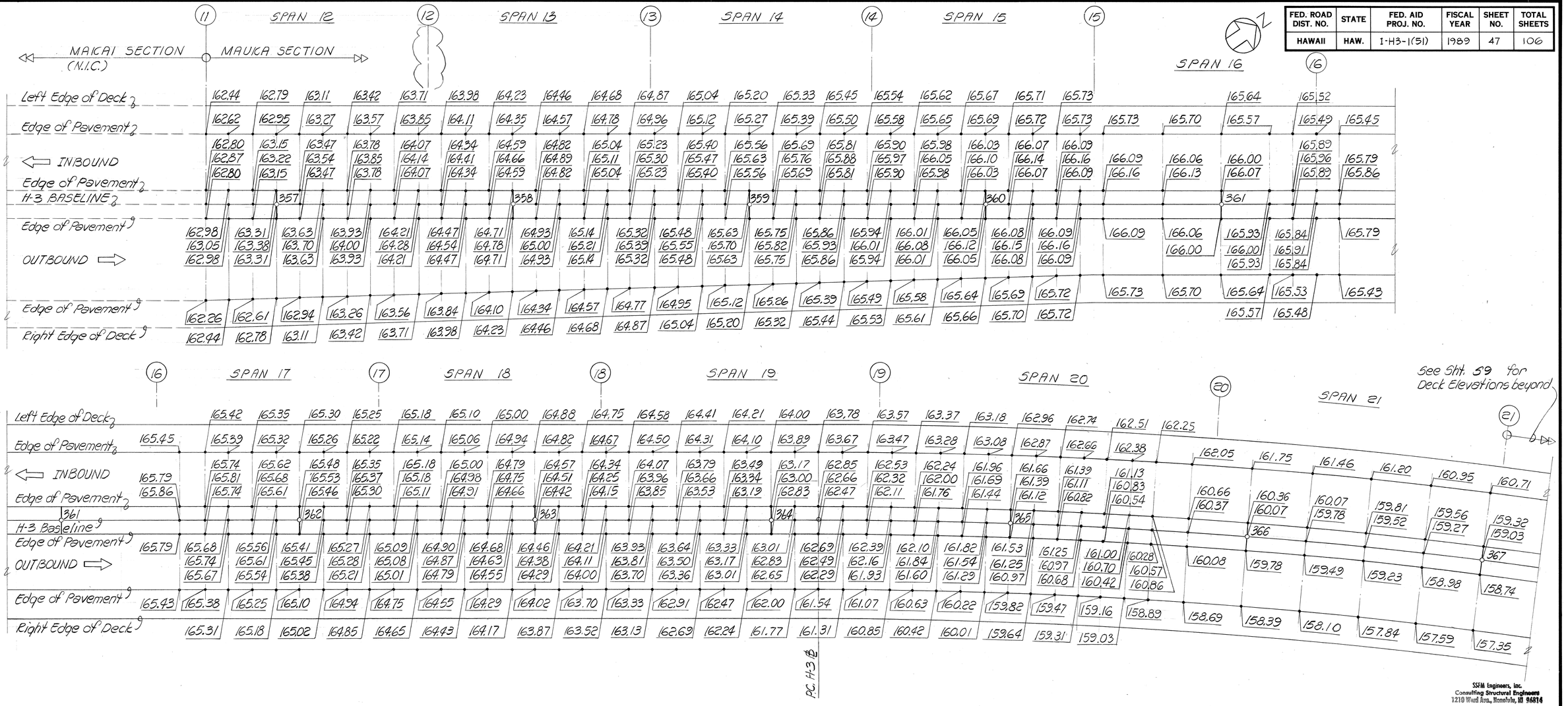
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 57 OF 46 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	47	106



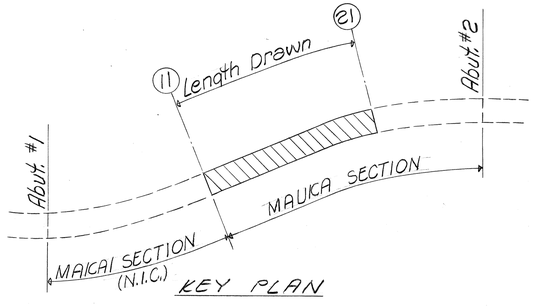
SSFM Engineers, Inc.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

HOWARD Y. FUKUDA
REGISTERED PROFESSIONAL ENGINEER
No. 1343-S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

PARTIAL DECK PLANS WITH FINISH DECK ELEVATIONS

Scale: 1" = 20'-0"



KEY PLAN

NOTE

Deck elevations are shown at 10 foot intervals from Sta. 356+70 to Sta. 360+50 & Sta. 361+20 to Sta. 365+60. Deck elevations are shown at 25 foot intervals from Sta. 360+50 to Sta. 361+00 & Sta. 365+75 to Sta. 374+25.

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

DATE	REVISION
10/19/89	REVISED LOCATION OF PIER #12

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL DECK FINISH GRADE

STA. 356+70 TO STA. 367+00

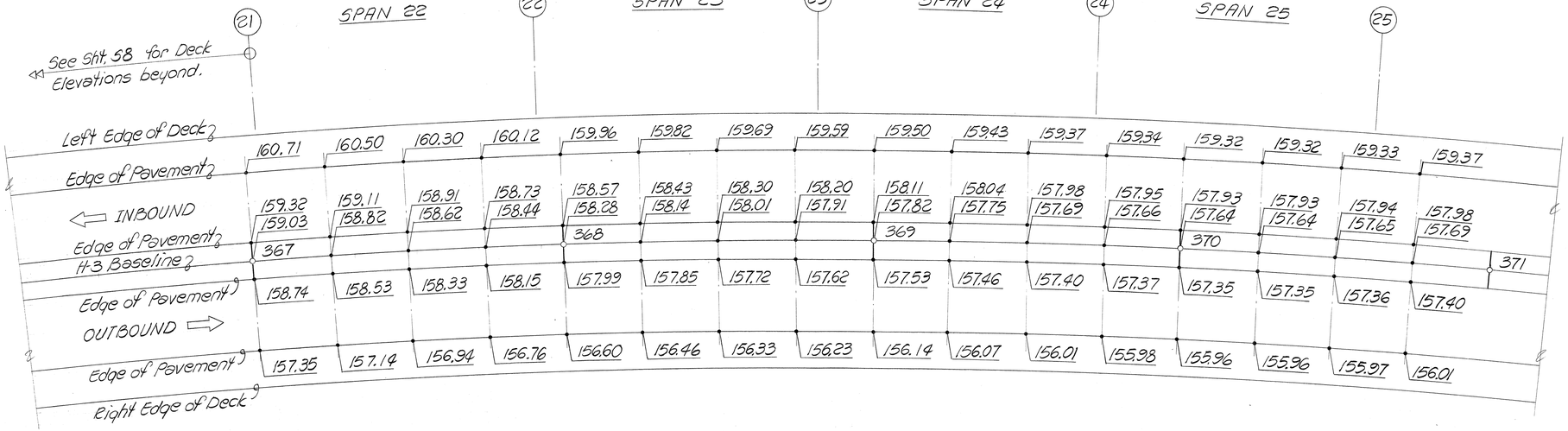
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

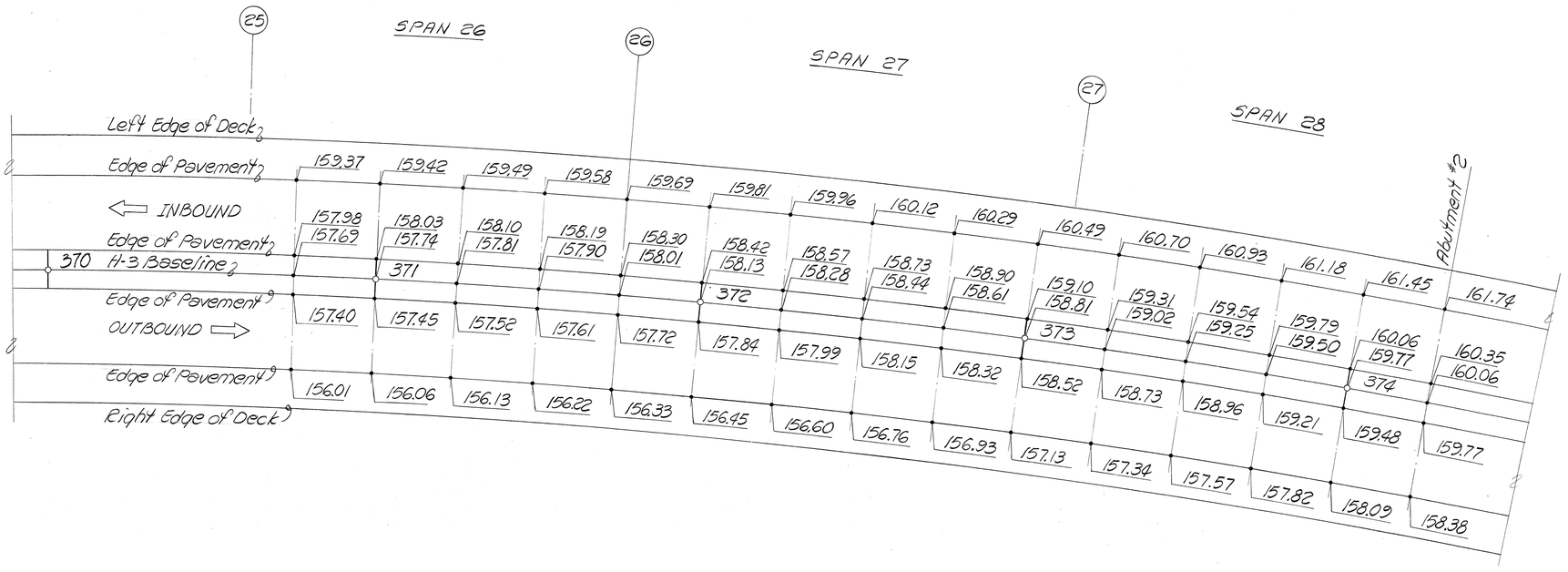
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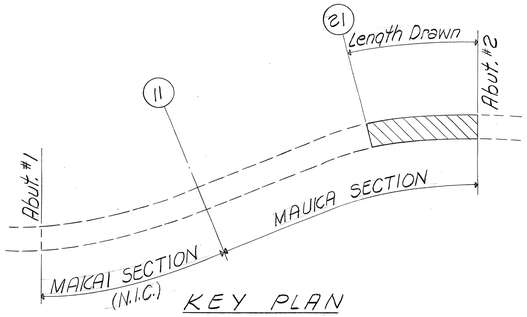
SHEET No. 58 OF 46 SHEETS

C.O. 47

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I- H3-1(51)	1989	48	106







PARTIAL DECK PLANS WITH FINISH DECK ELEVATIONS

Scale: 1" = 20'-0"

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

SSFM Engineers, Inc.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

HOWARD Y. FUKUDA REGISTERED PROFESSIONAL ENGINEER No. 1343-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL DECK FINISH GRADE

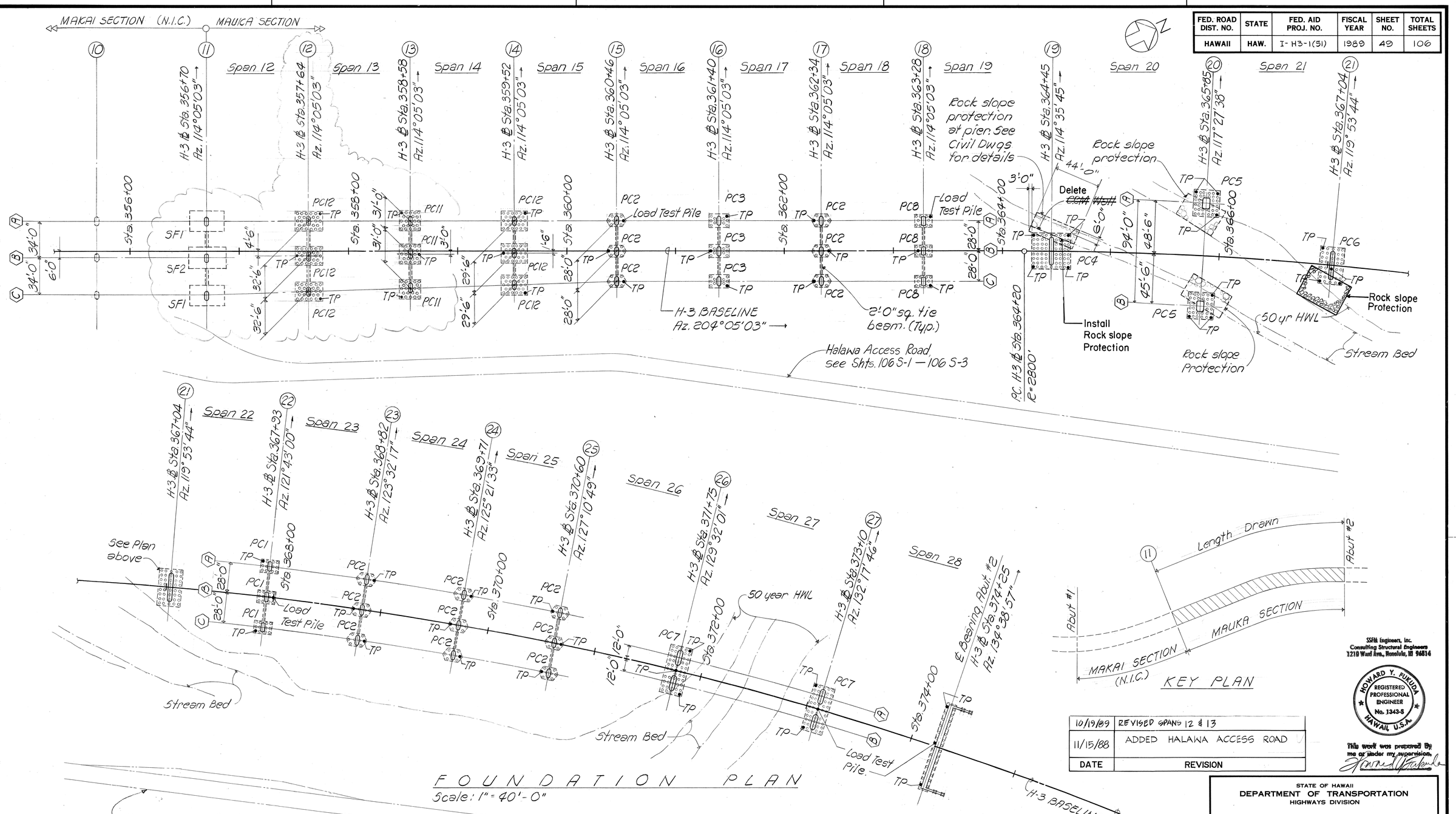
STA. 367+00 TO STA. 374+25

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 59 OF 46 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	49	106



FOUNDATION PLAN

Scale: 1" = 40'-0"

LEGEND

PC1, PC2, etc. = Pile cap type
● = Test pile for pile length determination (TP) & where designated load test pile.
SF1, SF2 = Spread Footing

NOTES:

1. All dimensions shown are parallel to their respective ℄ Pier.
2. For pile tip & Pile cut-off elevations, see Sht. S12B

REFERENCE DRAWINGS:

1. Pile Cap Details ---------- Sht. S11, S12 & S12A
2. Tie Beam Detail ---------- Sht. S11
3. Spread Footing Details ---------- Sht. S12B

DATE	REVISION
10/19/89	REVISED SPANS 12 & 13
11/15/88	ADDED HALAWA ACCESS ROAD

SSFH Engineers, Inc.
Consulting Structural Engineers
1218 Ward Ave., Honolulu, HI 96814

HOWARD Y. FUKUDA REGISTERED PROFESSIONAL ENGINEER No. 1343-S HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION PLAN

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

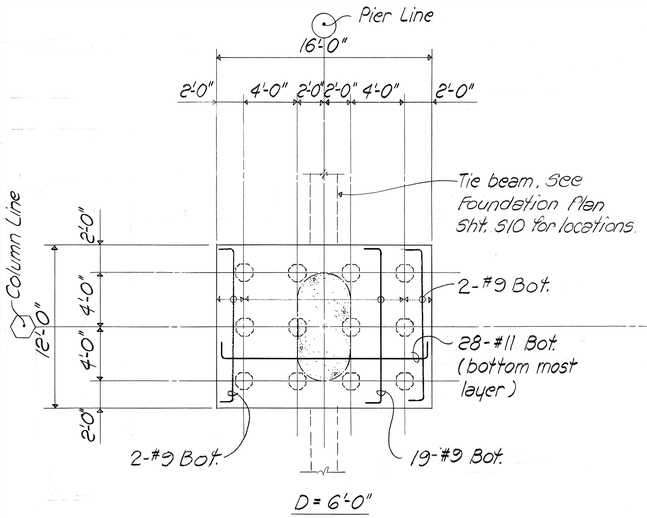
SCALE: AS NOTED DATE:

SHEET No. 510 OF 46 SHEETS

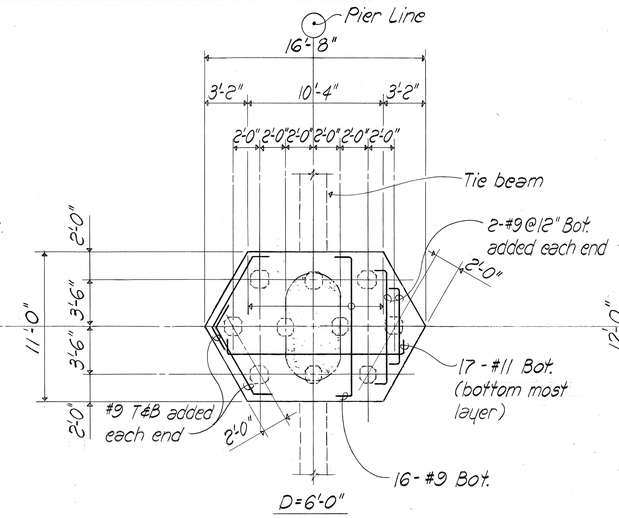
ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
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DATE
No.

C.O. ADD. 49

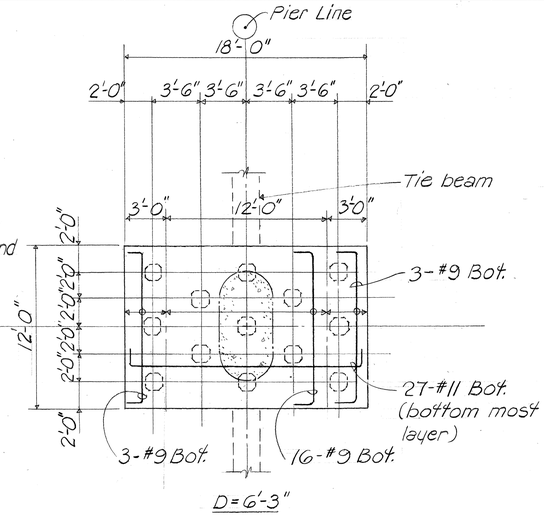
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	50	106



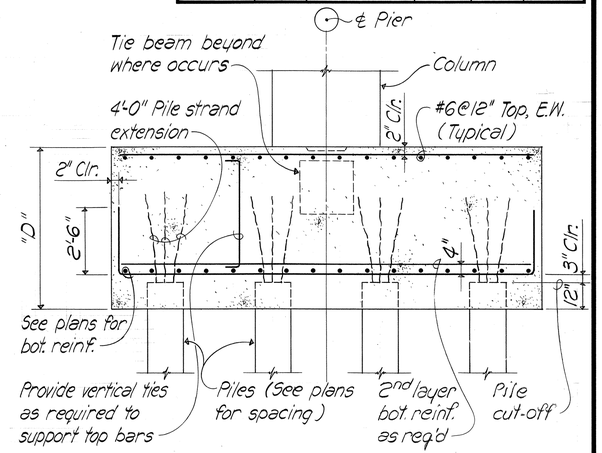
PC1 (12 Piles)



PC2 (10 Piles)

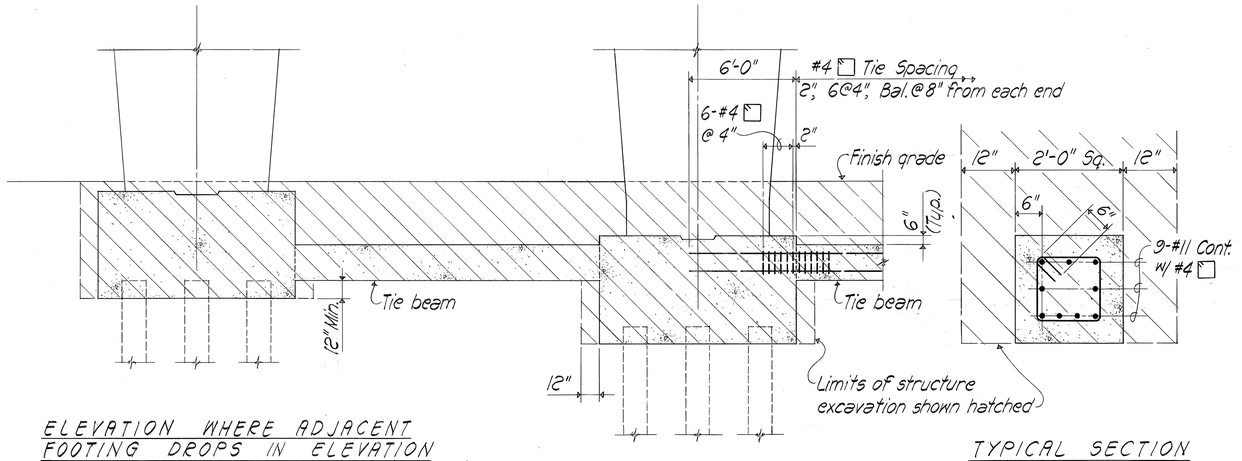


PC3 (13 Piles)



TYPICAL PILE CAP SECTION

Not to Scale



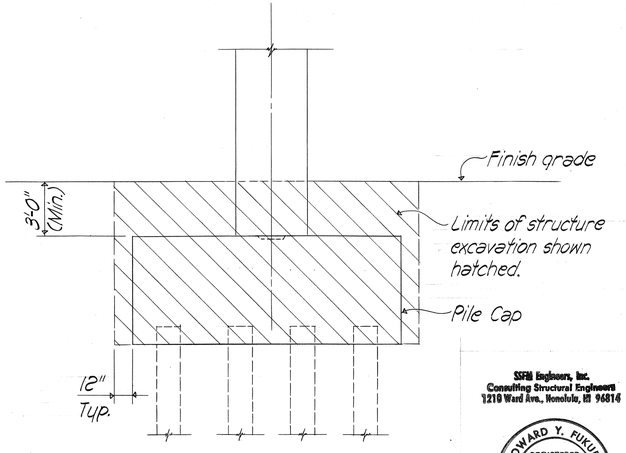
ELEVATION WHERE ADJACENT FOOTING DROPS IN ELEVATION

TYPICAL ELEVATION @ FOOTING

TYPICAL SECTION

TIE BEAM DETAIL

Not to Scale



STRUCTURE EXCAVATION

Not to Scale

SSFH Engineers, Inc.
Consulting Structural Engineers
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HOWARD Y. FUKUDA
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Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PILE CAP DETAILS

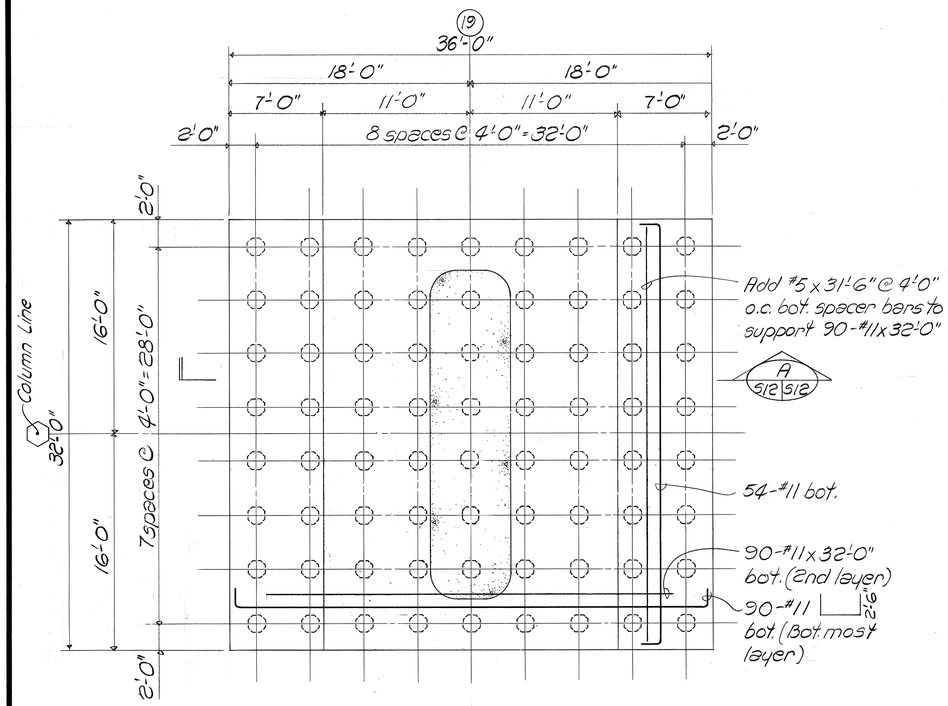
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 511 OF 46 SHEETS

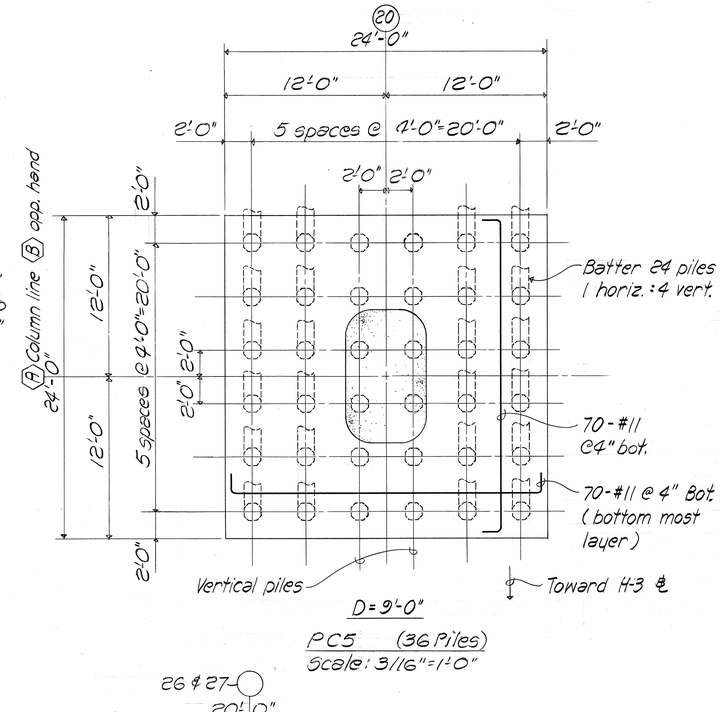
ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I- H3-1(51)	1989	51	106



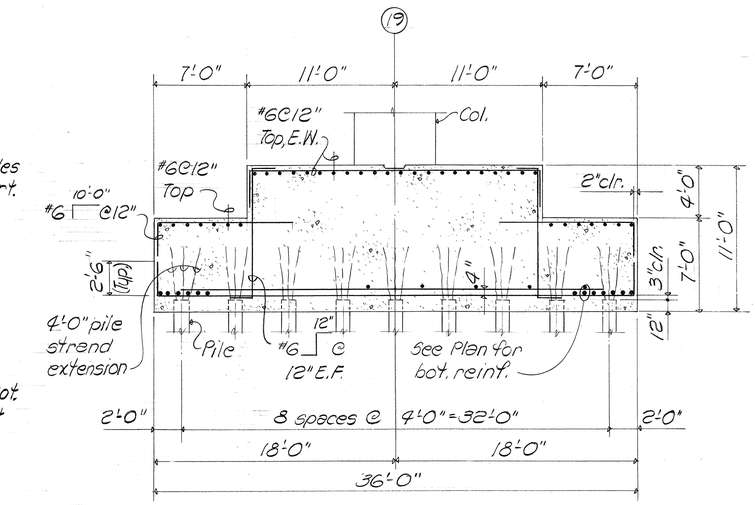
D = 11'-0"

PC4 (72 Piles)
Scale: 3/16" = 1'-0"



D = 9'-0"

PC5 (36 Piles)
Scale: 3/16" = 1'-0"

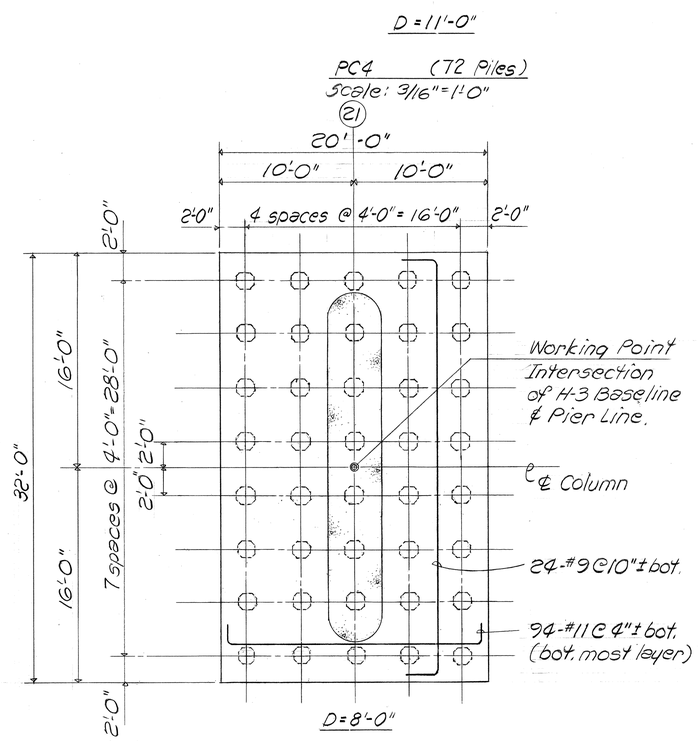


SECTION
Scale: 3/16" = 1'-0"

A
S12 S12

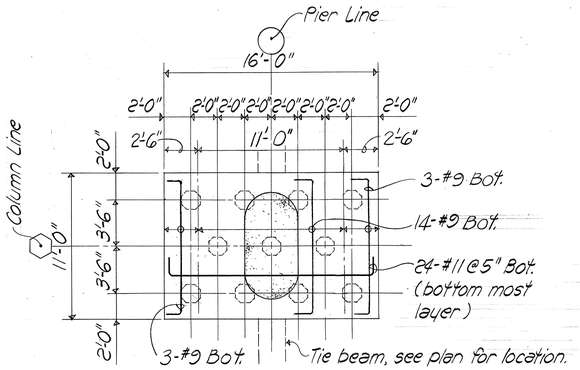
D = 7'-4"

PC7 (55 Piles)
Scale: 3/16" = 1'-0"



D = 8'-0"

PC6 (40 Piles)
Scale: 3/16" = 1'-0"



D = 6'-0"

PC8 (11 Piles)
Scale: 3/16" = 1'-0"

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HAWAII, U.S.A.

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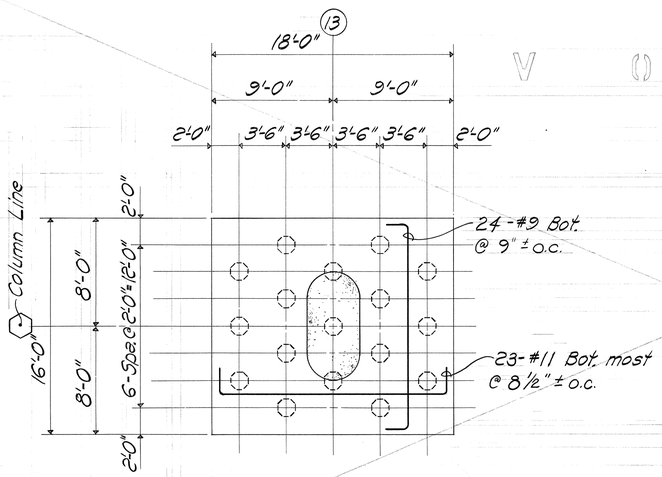
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PILE CAP DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:
SHEET NO. 512 OF 46 SHEETS

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

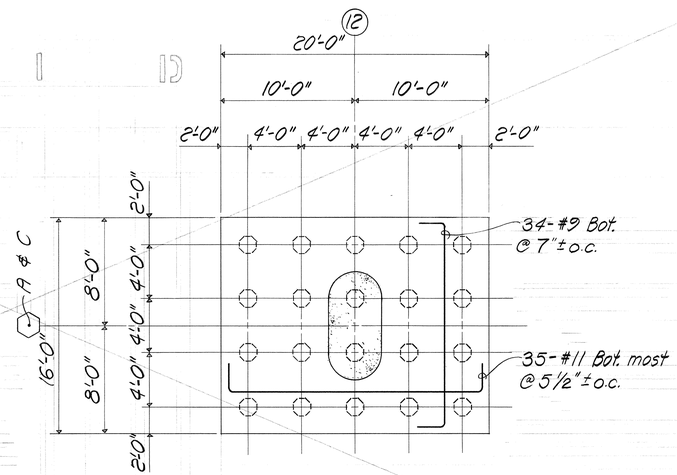
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	52	106



D = 6'-0"

PC9 (17 Piles)

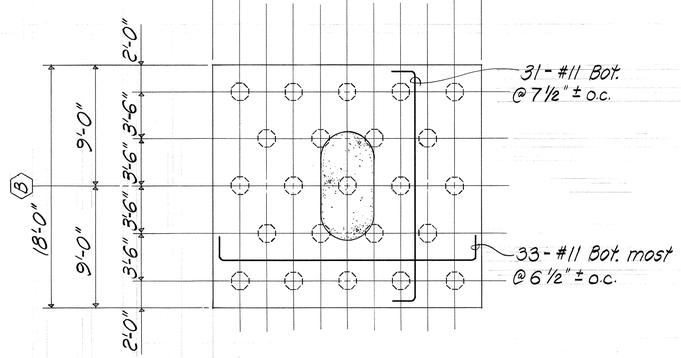
Scale: 3/16" = 1'-0"



D = 6'-0"

PC10 (20 Piles)

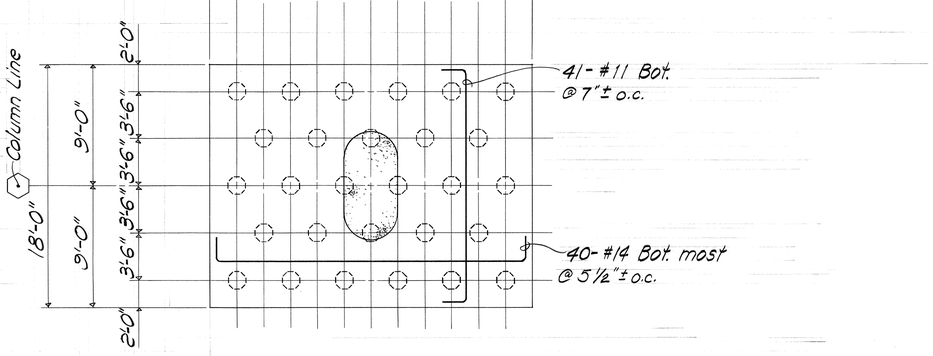
Scale: 3/16" = 1'-0"



D = 6'-0"

PC11 (23 Piles)

Scale: 3/16" = 1'-0"



D = 6'-0"

PC12 (28 Piles)

Scale: 3/16" = 1'-0"

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

ORIGINAL PLAN
NOTE BOOK
No.

SSFM ENGINEERS INC.
501 Sumner St., #502
Honolulu, Hawaii 96817

HOWARD Y. FUKUDA
REGISTERED PROFESSIONAL ENGINEER
No. 1343-S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PILE CAP DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET NO. 512A OF 40 SHEETS

DATE	REVISION
10/19/89	VOID PC9 & PC10

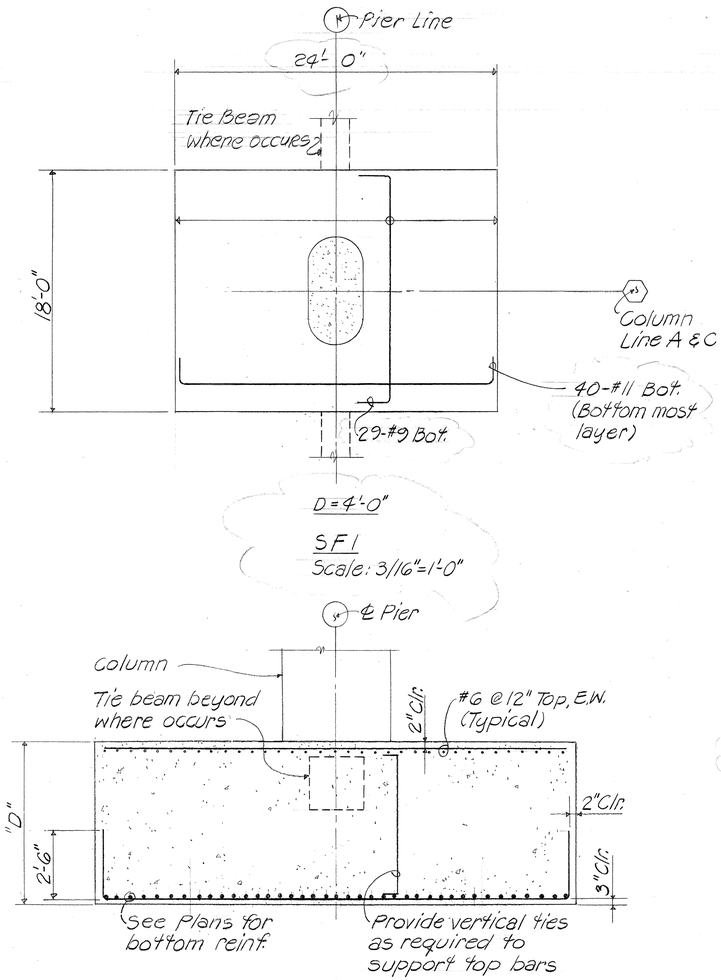
C.O. 52

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	53	106

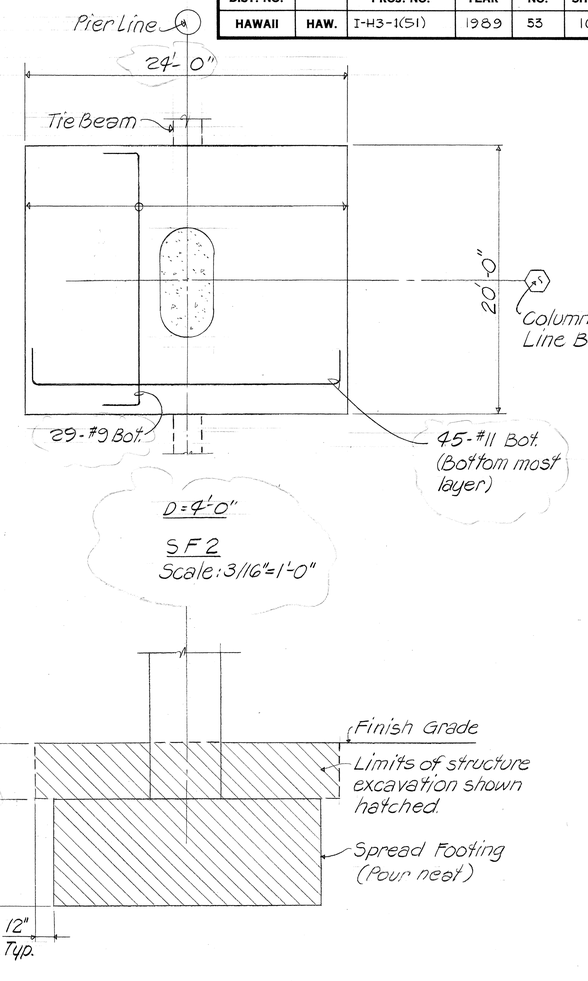
PILE DRIVING SCHEDULE

PIER	COLUMN	PTE	PCE	PDE	DRIVING SHOE REQ'D	PILE CAPACITY (TONS)
12	A	58.00	121.50	*	Yes	50
	B	58.00	122.50	*		
	C	58.00	123.50	*		
13	A	58.00	120.00	*		
	B	58.00	118.00	*		
	C	58.00	119.00	*		
14	A	56.00	119.75	*		
	B	56.00	120.25	*		
	C	56.00	120.25	*	Yes	50
15	A	28.00	120.00	88.00	No	100
	B	28.00	120.00	88.00		
	C	28.00	120.00	88.00		
16	A	28.00	119.75	88.00		
	B	28.00	119.75	88.00		
	C	28.00	119.75	88.00		
17	A	28.00	120.00	88.00		
	B	28.00	120.00	88.00		
	C	28.00	120.00	88.00		
18	A	28.00	120.00	98.00		
	B	28.00	120.00	98.00		
	C	28.00	120.00	98.00		
19	A	28.00	96.00	98.00		
20	A	20.00	98.00	95.00		
	B	20.00	98.00	95.00		
21	A	20.00	102.00	95.00		
22	A	20.00	128.00	95.00		
	B	20.00	120.00	95.00		
	C	20.00	117.00	95.00		
23	A	22.00	116.00	102.00		
	B	22.00	116.00	102.00		
	C	22.00	116.00	102.00		
24	A	26.00	130.00	102.00		
	B	26.00	129.00	102.00		
	C	26.00	122.00	102.00		
25	A	30.00	132.00	110.00		
	B	30.00	132.00	110.00		
	C	30.00	124.00	110.00		
26	A, B	40.00	114.67	110.00		
27	A, B	65.00	114.67	120.00		
ABUT NO. 2	—	84.00	144.75	124.00	No	100

LEGEND:
PTE = Pile Tip Elevation
PCE = Pile Cut-off Elevation
PDE = Bottom of Pre-Drilled Hole Elevation
* = No Pre-Drilling required



TYPICAL SPREAD FOOTING SECTION
Not to Scale



STRUCTURE EXCAVATION
Not to Scale

SSFM ENGINEERS INC.
501 Sumner St., #502
Honolulu, Hawaii 96817

HOWARD Y. FUKUDA REGISTERED PROFESSIONAL ENGINEER No. 1343-S HAWAII, U.S.A.

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

DATE	REVISION
10/19/89	REVISED PILE ELEVATIONS FOR PIER 12 & FTG'S SF1 & SF2
11/15/88	REVISED PILE DRIVING SCHEDULE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PILE DRIVING SCHEDULE & SPREAD FOOTING DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET NO. 5128 OF 46 SHEETS

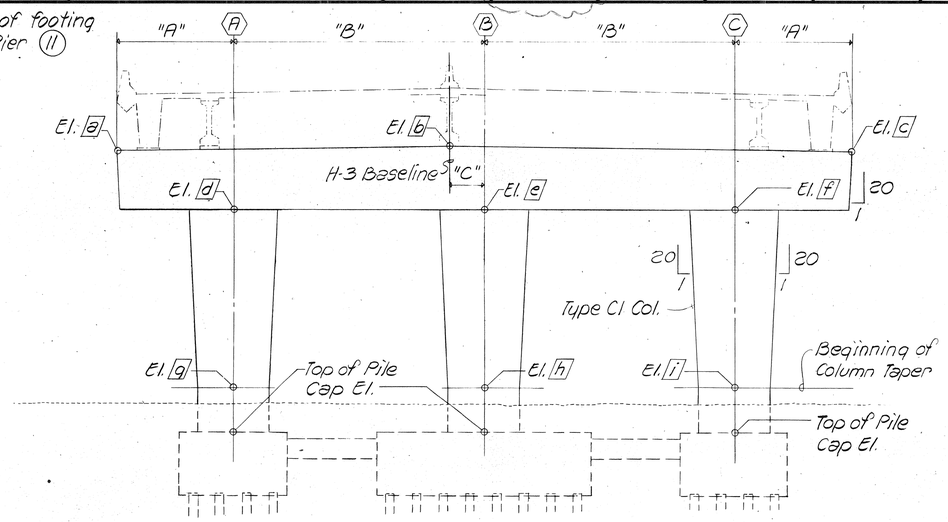
C.O. ADD. 53

PIER FRAME SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51).	1989	54	106

	PIER NUMBER		11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
PIER CAP	PIER TYPE		I	I	I	I	I	I	I	I	BOX GIRDER PIER	BOX GIRDER PIER	II	I	I	I	I	BOX GIRDER PIER	BOX GIRDER PIER
	BEARING TYPE		(E) (E)	(H) (H)	(E) (E)	(H) (H)	(E) (E)	(H) (H)	(E) (E)	(H) (E)	(F) (H)	(E) (F)	(E) (E)	(H) (H)	(E) (E)	(H) (H)	(E) (E)	(F) (H)	(E) (F)
	DIMENSION "A"		13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	SEE SHEET S25 FOR DETAILS	SEE SHEET S26 FOR DETAILS	SEE SHEET S20 FOR DETAILS	13.00	13.00	13.00	13.00	SEE SHEET S28 FOR DETAILS	SEE SHEET S28 FOR DETAILS
	DIMENSION "B"		34.00	32.50	31.00	29.50	28.00	28.00	28.00	28.00				28.00	28.00	28.00	28.00		
	DIMENSION "C"		6.00	4.50	3.00	1.50	0	0	0	0				0	0	0	0		
	TOP OF PIER CAP ELEVATION	a	155.99	157.69	158.49	159.24	159.28	159.19	158.93	158.55				154.58	154.00	153.91	153.73		
		b	156.61	158.30	159.11	159.85	159.90	159.79	158.98	157.77				152.20	151.62	151.54	151.35		
		c	155.81	157.55	158.40	159.13	159.28	159.17	158.36	156.95				149.82	149.24	149.16	148.98		
	SOFFIT OF PIER CAP ELEVATION (@ COLUMN LINE INTERSECTIONS)	A d	148.30	151.17	151.98	152.73	152.78	152.69	152.34	151.79				147.33	146.74	146.66	146.48		
		B e	148.24	151.12	151.95	152.72	152.78	152.68	152.14	151.25				145.70	145.12	145.04	144.85		
		C f	148.17	151.07	151.92	152.70	152.78	152.68	151.95	150.70				144.08	143.50	143.41	143.23		
	BEGIN COLUMN TAPER	A g	128.29	131.17	131.98	132.73	132.78	132.69	132.30	131.70				133.00	126.45	135.00	137.00		
		B h	128.23	131.12	131.94	132.71	132.78	132.68	132.11	131.15				125.41	124.83	134.00	137.00		
		C i	128.16	131.07	131.91	132.70	132.78	132.67	131.92	130.61				123.79	123.21	127.00	129.00		
COLUMN FOOTINGS	A	FOOTING TYPE	SF1	PC12	PC9	PC12	PC2	PC3	PC2	PC8				PC1	PC2	PC2	PC2		
		GROUP LOADING	VII	VII	VII	VII	VII	VII	VII	VII				VII	VII	VII	VII		
		TOP OF PILE CAP ELEVATION *	126.00	128.50	125.00	124.75	125.00	125.00	125.00	125.00				133.00	121.00	135.00	137.00		
	B	FOOTING TYPE	SF2	PC12	PC9	PC12	PC2	PC3	PC2	PC8				PC1	PC2	PC2	PC2		
		GROUP LOADING	VII	VII	VII	VII	VII	VII	VII	VII				VII	VII	VII	VII		
		TOP OF PILE CAP ELEVATION *	127.25	128.50	123.00	125.25	125.00	125.00	125.00	125.00				125.00	121.00	134.00	137.00		
	C	FOOTING TYPE	SF1	PC12	PC9	PC12	PC2	PC3	PC2	PC8				PC1	PC2	PC2	PC2		
		GROUP LOADING	VII	VII	VII	VII	VII	VII	VII	VII				VII	VII	VII	VII		
		TOP OF PILE CAP ELEVATION *	127.00	128.50	124.00	125.25	125.00	125.00	125.00	125.00				122.00	121.00	127.00	129.00		

* Top of footing @ Pier (11)



TYPE I PIER ELEVATION (LOOKING UPSTATION)
Scale: 1/8" = 1'-0"

LEGEND:
(E) - Expansion Jt.
(F) - Fixed Joint
(H) - Hinged Joint

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Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER FRAME SCHEDULE

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
DATE:

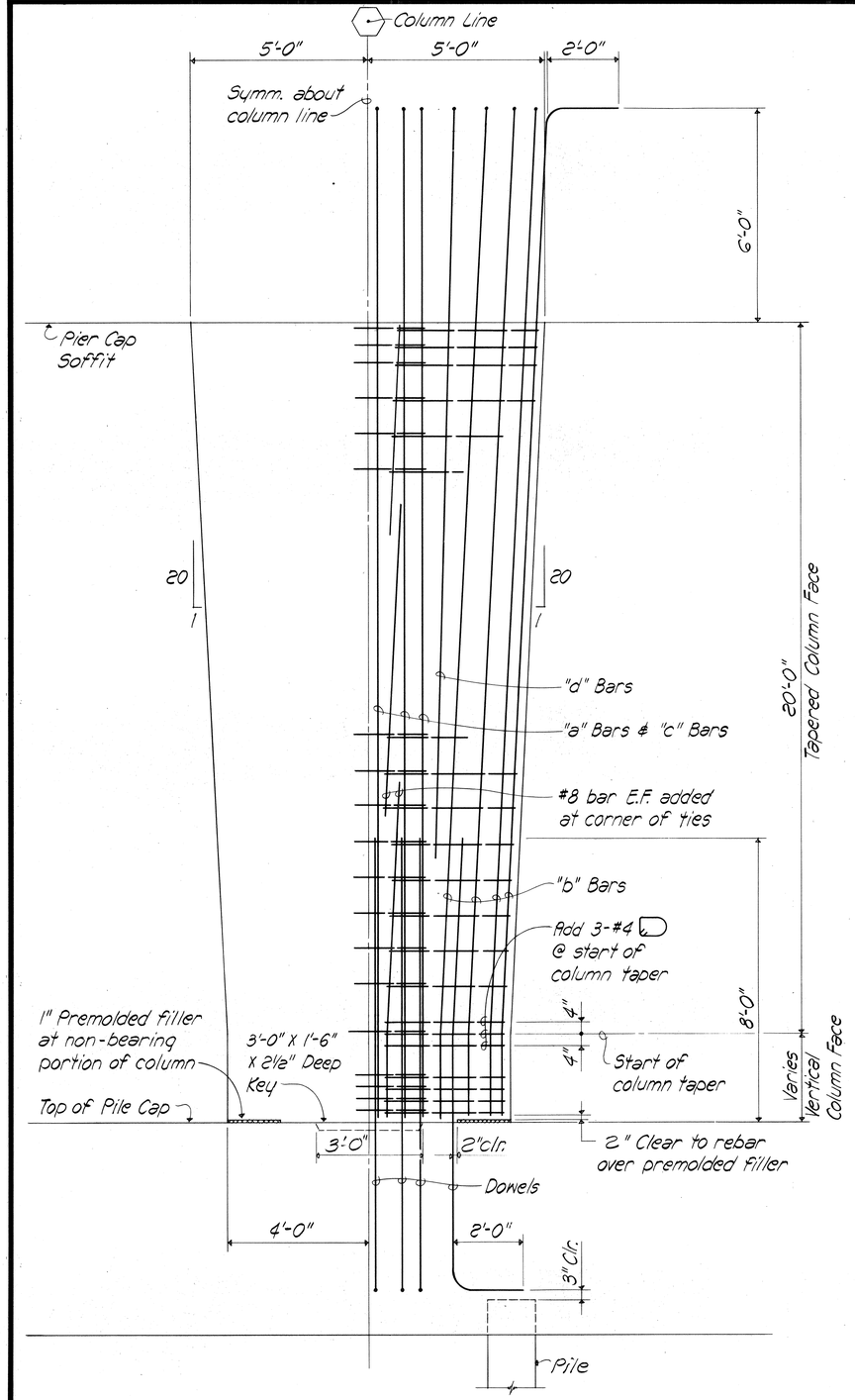
SHEET No. 513 OF 546 SHEETS

DATE	REVISION
10/19/89	REVISED PIER 12 SCHEDULE
11/15/88	REVISED SCHEDULE

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

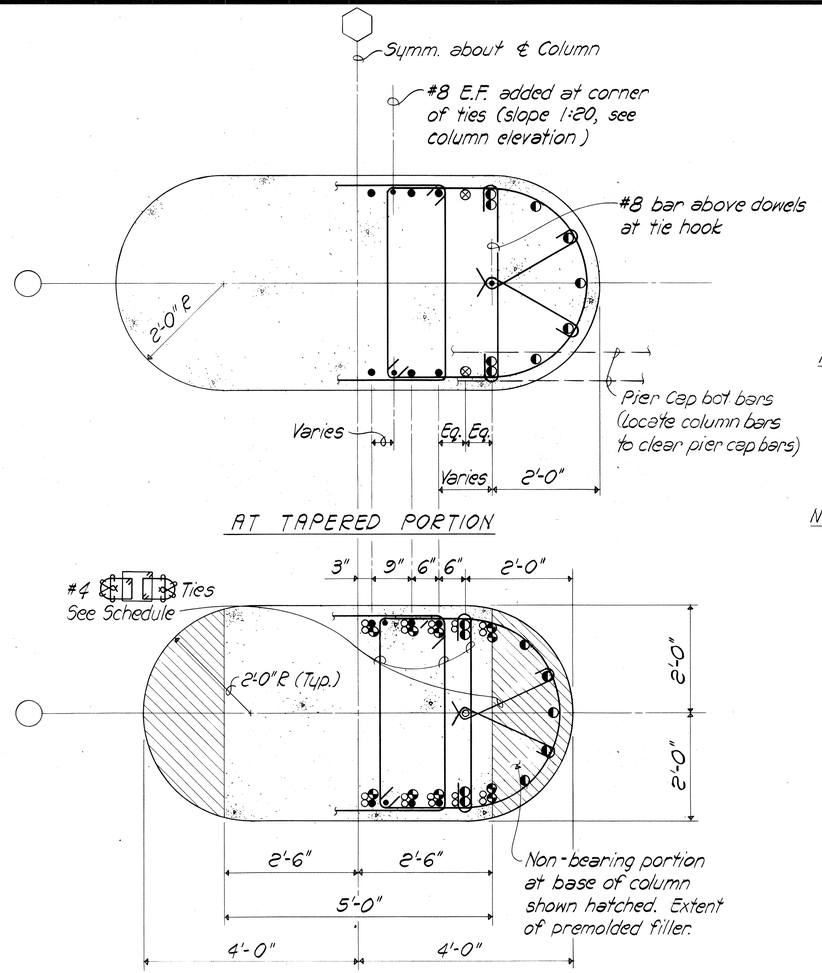
C.O. ADD. 54

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	55	106



TYPE "C1" COLUMN ELEVATION

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



AT TAPERED PORTION

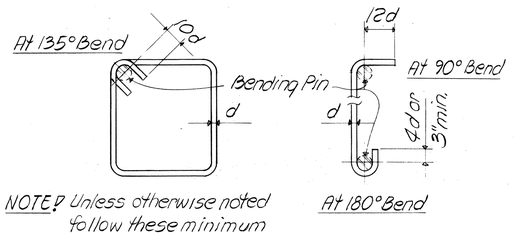
BELOW START OF COLUMN TAPER

TYPE "C1" COLUMN PLAN-SECTION

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

LEGEND :

- ○ Dowels
- ● "a" bars (cont.)
- ◐ "b" bars (cont. flared)
- ◔ "c" bars
- ⊗ "d" bars



NOTE: Unless otherwise noted follow these minimum bend requirements.

TYPICAL COLUMN TIE OR PIER CAP/BEAM STIRRUP BEND DETAILS

Not to scale

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COLUMN REINFORCING DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 514 OF 46 SHEETS

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

PIER FRAME COLUMN REINFORCING SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	56	106

PIER	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	㉒	㉓	㉔	㉕		
COLUMN	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ	Ⓐ Ⓑ Ⓒ		
COLUMN VERT. REINF. & TIE SPACING	30-#11 Cont. (20-"a" bars & 10-"b" bars) 4-#11 "d" bars 16'-0" Bal. @ 12", (#4 tie spacing) 8@4", 2"@12" Reference Top of Pier Cap Reference Top of Column 2", 8@4", Reference Top of Footing	30-#11 Cont. (18-"a" bars & 12-"b" bars) 4-#11 "d" bars 10'-0" Bal@12", (#4 tie spacing) 8@4", 2"@12" 26-#11 "c" bars 14'-0" 2", 8@4"	Similar to Columns 11 Ⓐ Ⓑ Ⓒ	30-#11 Cont. (18-"a" bars & 12-"b" bars) 4-#11 "d" bars 10'-0" Bal. @ 12", (#4 tie spacing) 8@4", 2"@12" 20-#11 "c" bars 14'-0" 2", 8@4"	Similar to Columns 11 Ⓐ Ⓑ Ⓒ	Similar to Columns 14 Ⓐ Ⓑ Ⓒ	Similar to Columns 11 Ⓐ Ⓑ Ⓒ	Similar to Columns 14 Ⓐ Ⓑ Ⓒ	28-#11 Cont. (18-"a" bars & 10-"b" bars) 6-#11 "d" bars (4'-0" for Ⓐ Ⓑ, 18'-0" for Ⓒ) Bal. @ 12", (#4 tie spacing) 8@4", 2"@12" 2", 8@4",	28-#11 Cont. (18-"a" bars & 10-"b" bars) 6-#11 "d" bars 17'-0" Bal. @ 12", (#4 tie spacing) 8@4", 2"@12" 2", 8@4",	28-#11 Cont. (18-"a" bars & 10-"b" bars) 6-#11 "d" bars (7'-0" for Ⓐ Ⓑ, 12'-0" for Ⓒ) Bal. @ 12", (#4 tie spacing) 8@4", 2"@12" 2", 8@4"	Similar to Columns 24 Ⓐ Ⓑ Ⓒ		
NO. OF #11 DOWELS @ COLUMN BASE	30	46		42					28	28	28			
TOTAL NO. & SIZE OF VERT. REINF.	34-#11	60-#11		54-#11					34-#11	34-#11	34-#11			

SPECIAL NOTES:

REFERENCE DRAWINGS:

1. Pier Schedule (Col. & Fty. Elev.) - Sht. 513
2. Column Sections - Sht. 514
3. #11 Dowels at Column Base - Sht. 514

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COLUMN REINFORCING SCHEDULE

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET NO. 515 OF 46 SHEETS

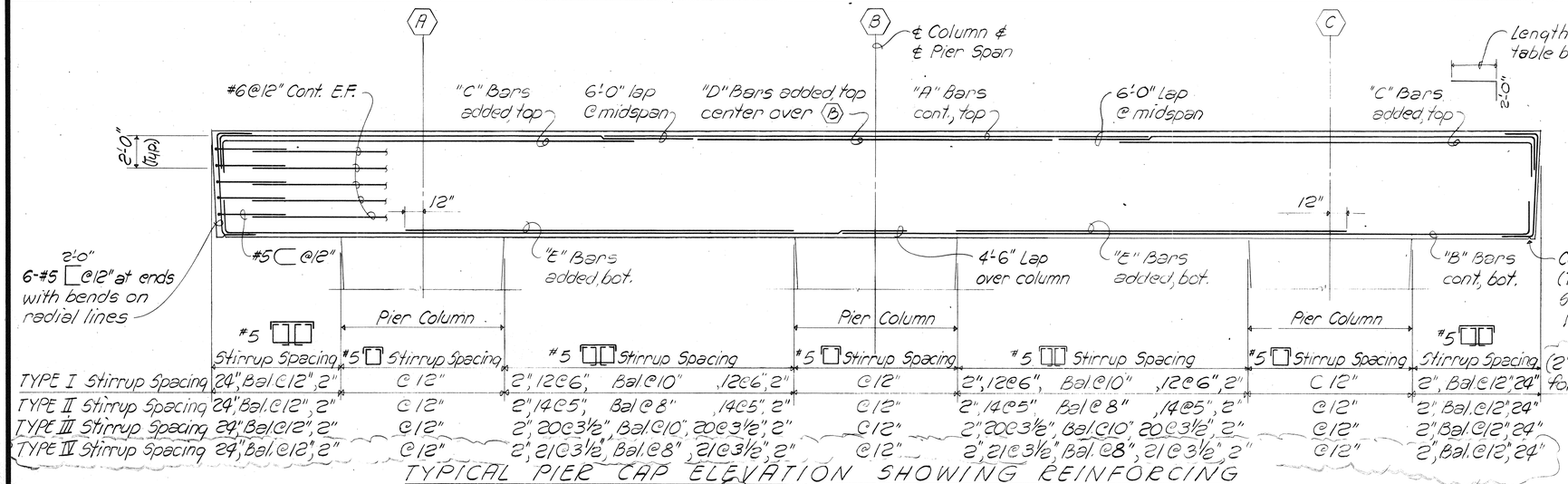
DATE	REVISION
10/19/89	PIER FRAME SCHEDULE REVISED

SURVEY PLOTTED BY
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CHECKED BY
DATE

ORIGINAL PLAN
NOTE BOOK
No.

C.O.56

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	57	106



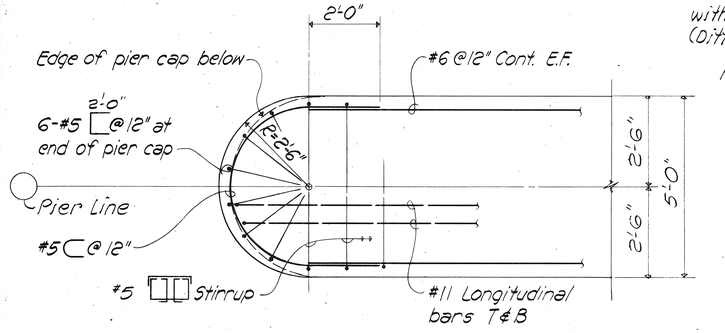
TYPICAL PIER CAP ELEVATION SHOWING REINFORCING

Scale: 1/4"=1'-0" (Piers (11) thru (18), (22) thru (25))

NOTES:

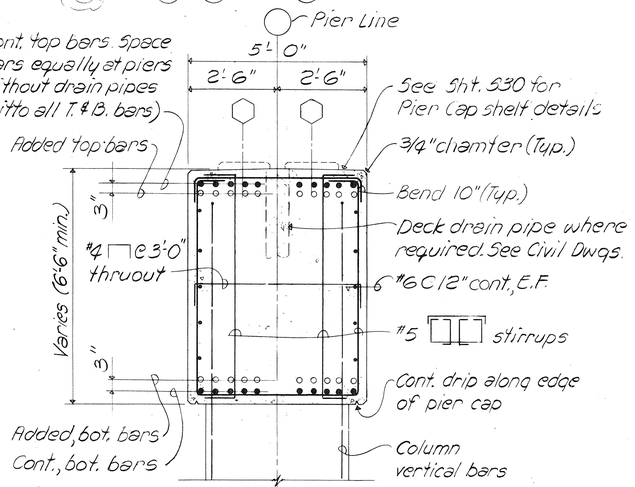
1. See Pier Frame Schedule, Sht. S13 for additional pier cap dimensions & data.
2. Allowable splices where indicated:
   a. Top bars* - #9 bars = 4'-0" lap (stagger 4'-0")
      #11 bars = 6'-0" lap (stagger 6'-0")
   b. Others - #9 bars = 3'-0" lap (stagger 3'-0")
      #11 bars = 4'-6" lap (stagger 4'-6")

   * Top bars: Horizontal reinforcement so placed that more than 12" of fresh concrete is cast below reinforcement.
3. See Sht. S14 for pier cap stirrup bend details.



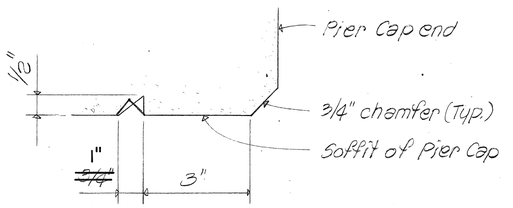
END OF PIER CAP PARTIAL PLAN

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



TYPICAL PIER CAP SECTION

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



DRIP DETAIL (1, S16 | S16)

Scale: 6"=1'-0"

PIER CAP REINFORCING SCHEDULE

Pier	℄ Sta.	"A" Bars	"B" Bars	"C" Bars	"D" Bars	"E" Bars	Stirr. Spcg Type
#11	356+70	10-#11	10-#11	3-#11x 30'-0"	6-#11x 30'-0"	4-#11x 30'-0"	IV
#12	357+64	10-#11	10-#11	2-#11x 30'-0"	4-#11x 30'-0"	2-#11x 28'-6"	I
#13	358+58	10-#11	10-#11	3 #11x 27'-0"	3 #11x 29'-0"	——	I
#14	359+52	Do	Do	2-#11x 27'-0"	3-#11x 27'-6"	——	I
#15	360+46	Do	Do	Do	3-#11x 26'-0"	——	I
#16	361+40	Do	Do	Do	2-#11x 26'-0"	——	I
#17	362+34	10-#11	10-#11	2-#11x 27'-0"	2-#11x 26'-0"	——	I
#18	363+28	10-#11	10-#11	3-#11x 27'-0"	3-#11x 26'-0"	——	I
#22	367+93	10-#11	10-#11	2-#11x 27'-0"	5-#11x 26'-0"	2-#11x 24'-0"	I
#23	368+82	Do	Do	Do	5-#11x 26'-0"	2-#11x 24'-0"	I
#24	369+71	Do	Do	2-#11x 27'-0"	10-#11x 26'-0"	7-#11x 24'-0"	II
#25	370+60	10-#11	10-#11	——	12-#11x 26'-0"	12-#11x 24'-0"	III

DATE	REVISION
10/19/89	REVISED PIER CAP REINFORCING SCHEDULE & DELETED NOTE 4.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL
PIER CAP REINFORCING

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

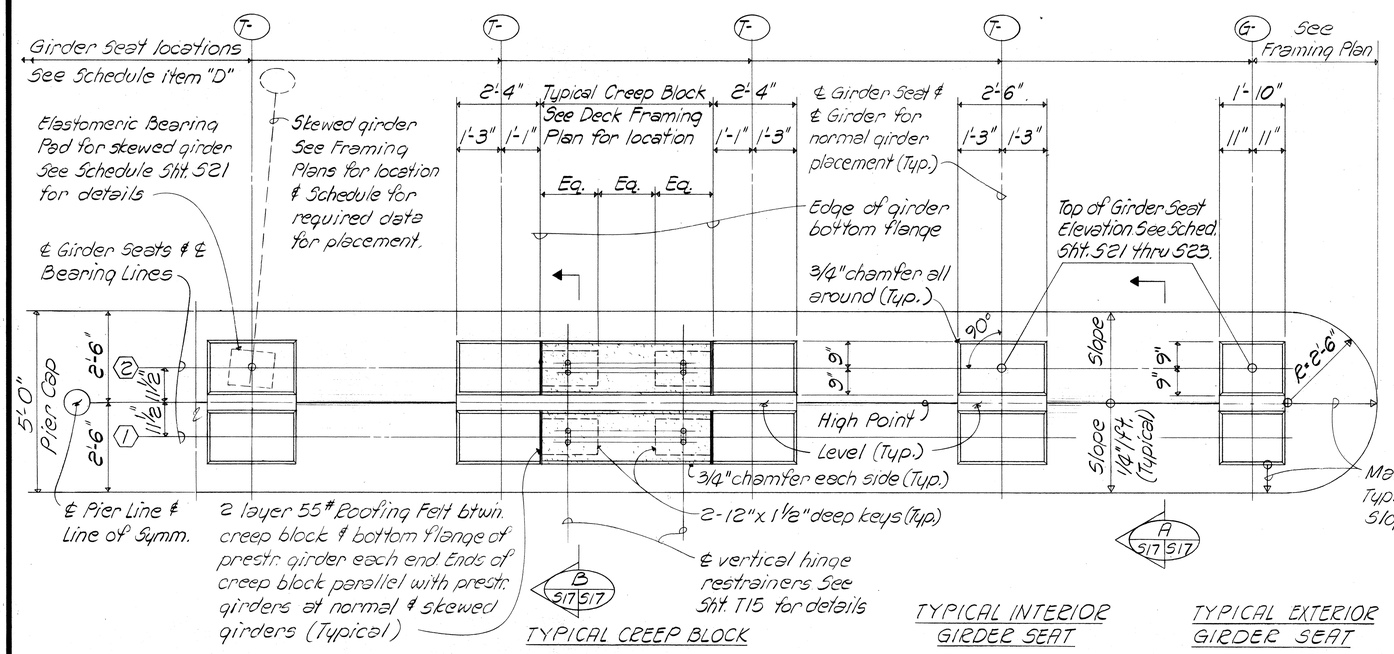
SCALE: AS NOTED DATE:

SHEET No. S16 OF 46 SHEETS

C.O.57

SURVEY PLOTTED BY
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	58	106

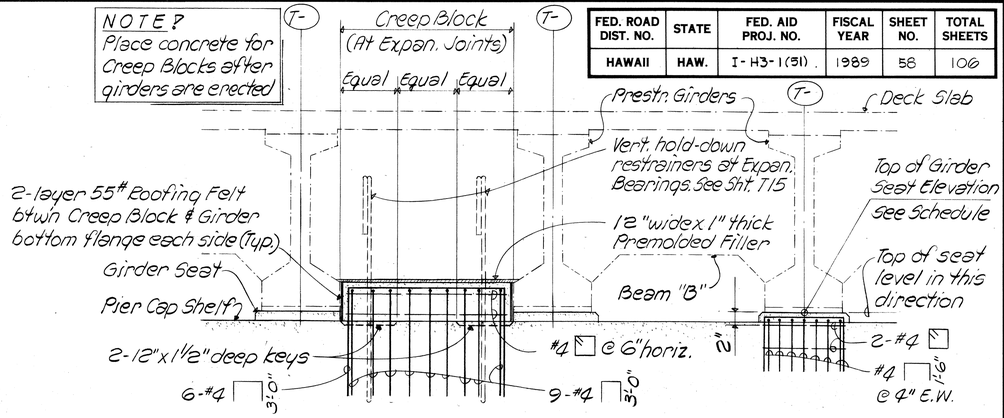


TYPICAL CREEP BLOCK

TYPICAL INTERIOR GIRDER SEAT

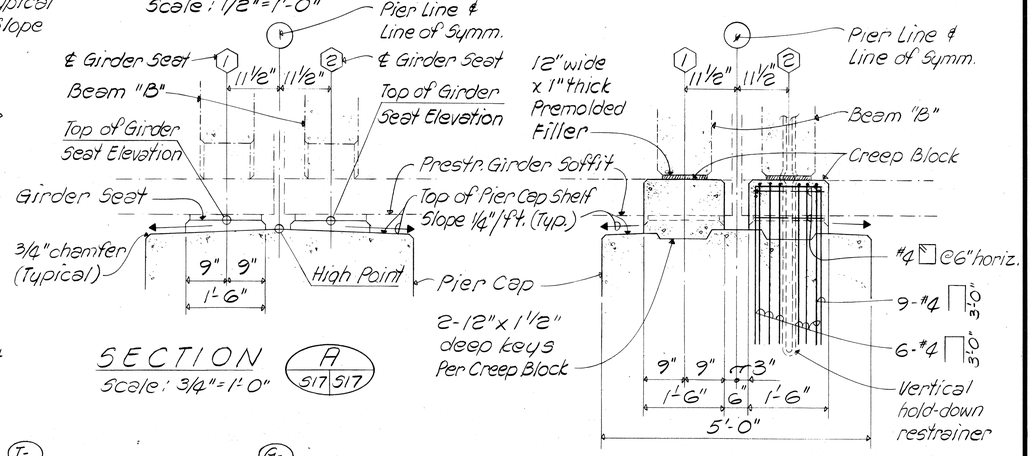
TYPICAL EXTERIOR GIRDER SEAT

NOTE?
Place concrete for Creep Blocks after girders are erected



ELEVATION - TYPICAL CREEP BLOCK & GIRDER SEAT W/ REINFORCING

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

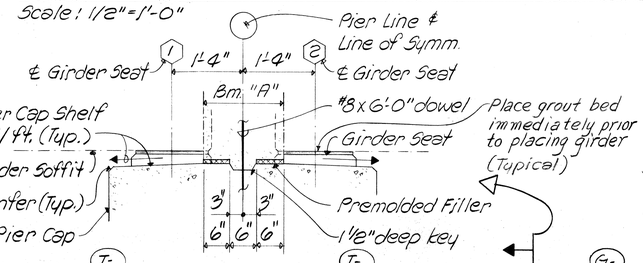


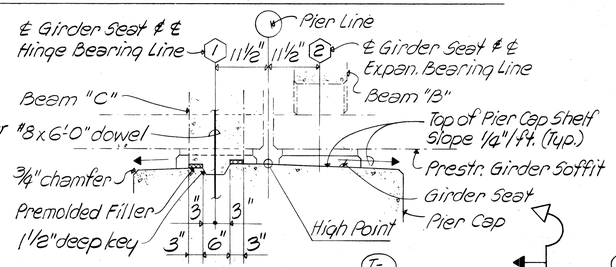
SECTION A S17 S17
Scale: 3/4"=1'-0"

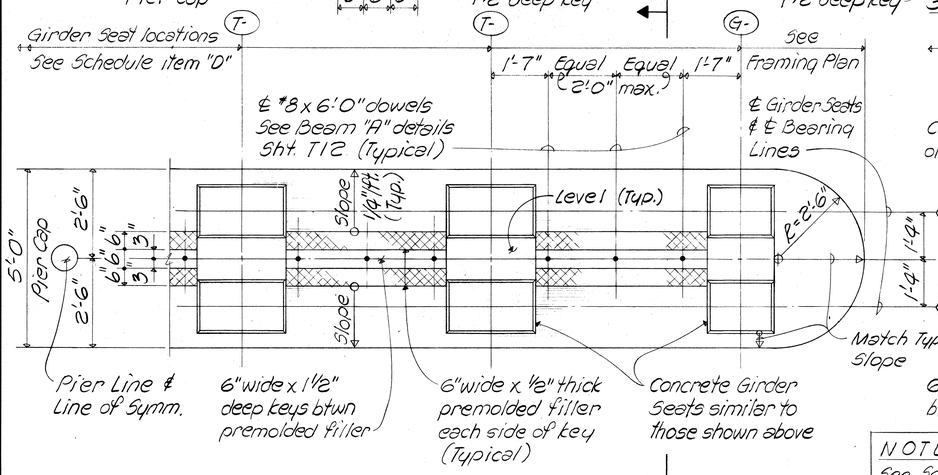
SECTION B S17 S17
Scale: 3/4"=1'-0"

PARTIAL PIER CAP SHELF PLAN AT EXPANSION BEARING PIERS

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



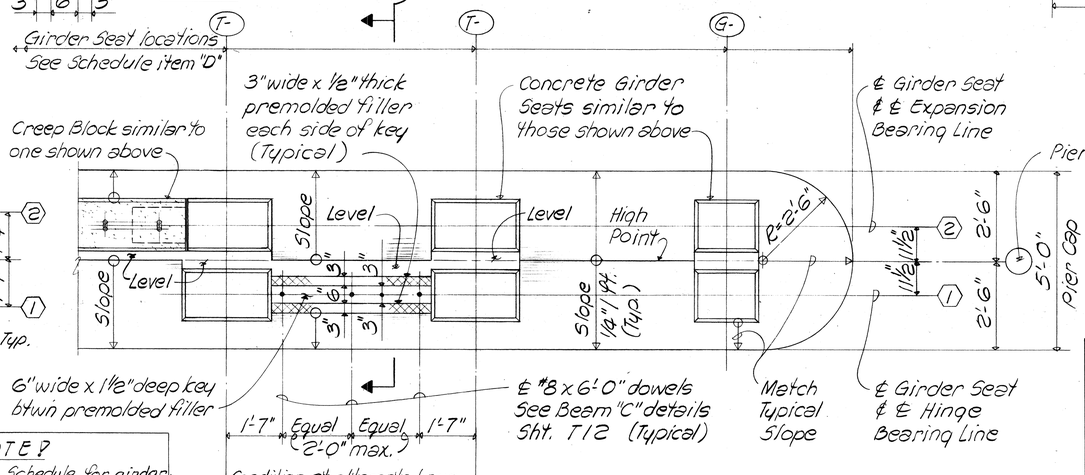




PARTIAL PIER CAP SHELF PLAN AT HINGE BEARING PIERS WITH CONTINUOUS SUPPORT

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

NOTE?
See Schedule for girder seat elevations, bevels & locations. (Sht. S21 thru S23)



PARTIAL PIER CAP SHELF PLAN AT EXPANSION & HINGE BEARING PIERS WITH DISCONTINUOUS SUPPORT

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

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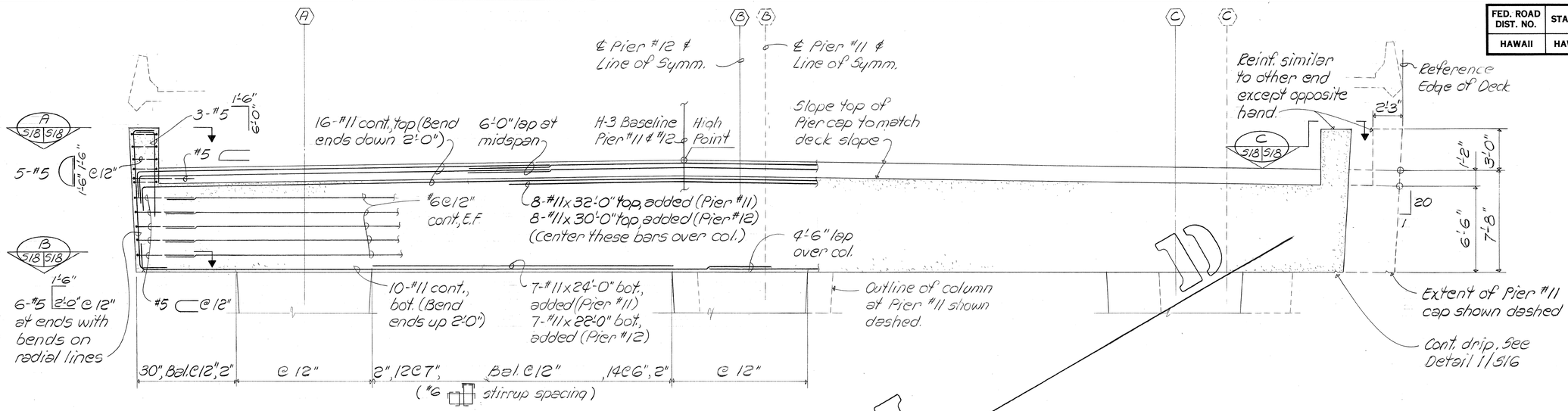
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL PIER CAP PLANS & DETAILS

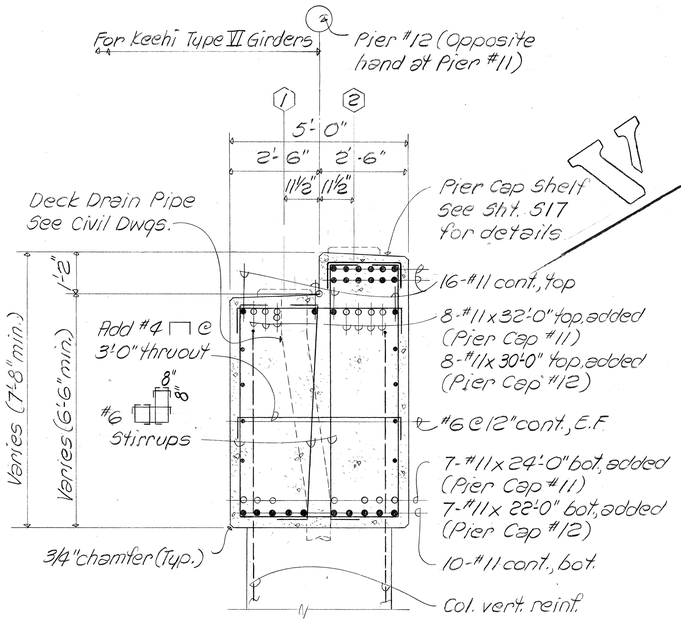
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:
SHEET No. S17 OF 46 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	59	106



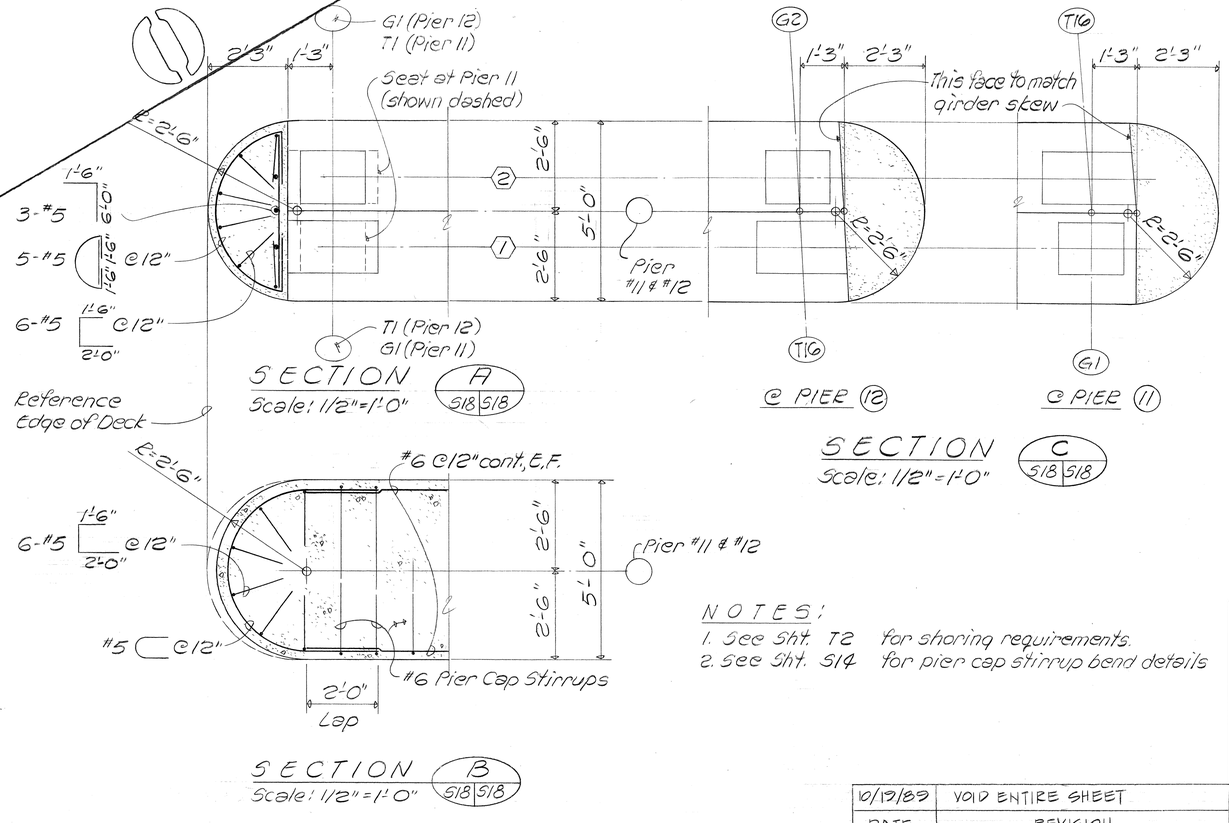
ELEVATION - PIER CAP #11 & #12 WITH REINFORCING

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



TYPICAL PIER CAP #12 SECTION

Scale: 1/2" (PIER CAP #11 OPPOSITE HAND)



SECTION A

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

SECTION C

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

SECTION B

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

NOTES:

1. See Sht. T2 for shoring requirements.
2. See Sht. S14 for pier cap stirrup bend details

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER CAP DETAILS

PIERS #11 & #12

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. S18 OF 46 SHEETS

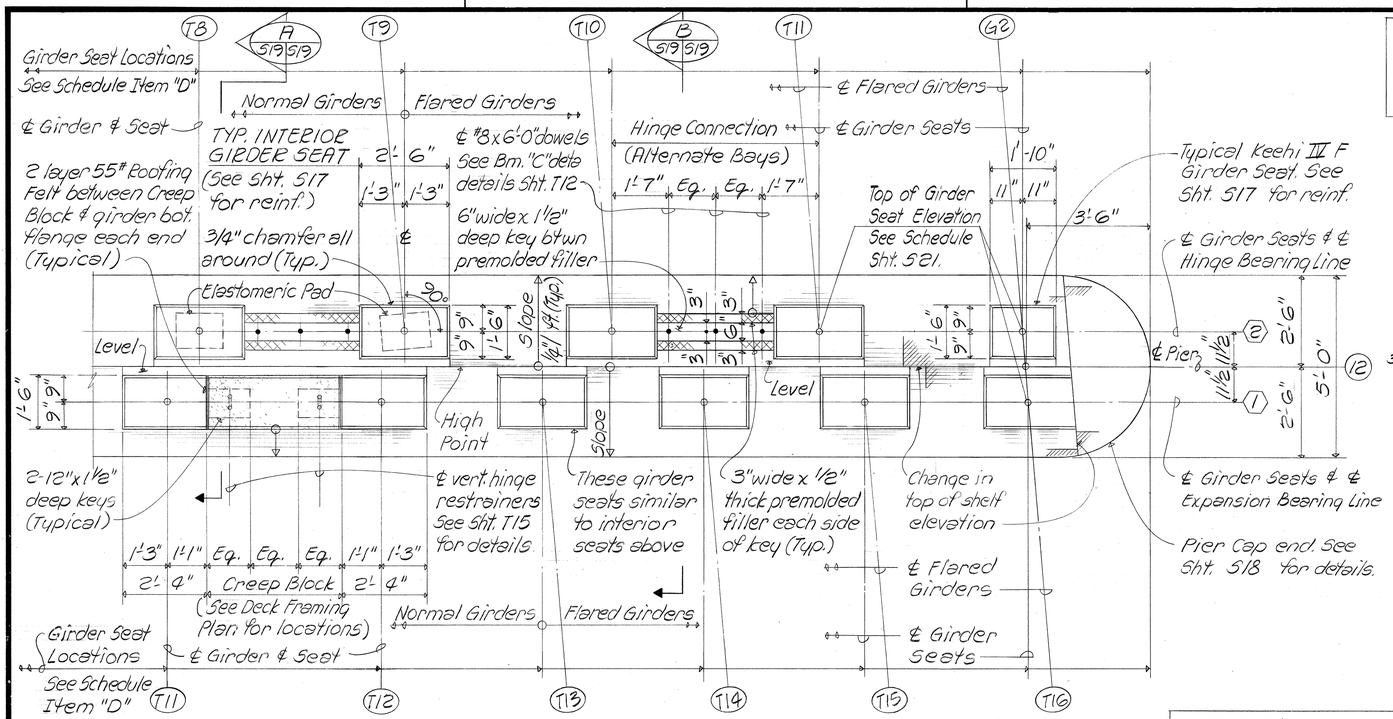
DATE	REVISION
10/17/89	VOID ENTIRE SHEET

SURVEY PLOTTED BY
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DATE

ORIGINAL PLAN
NOTE BOOK
No.

C.O. 59

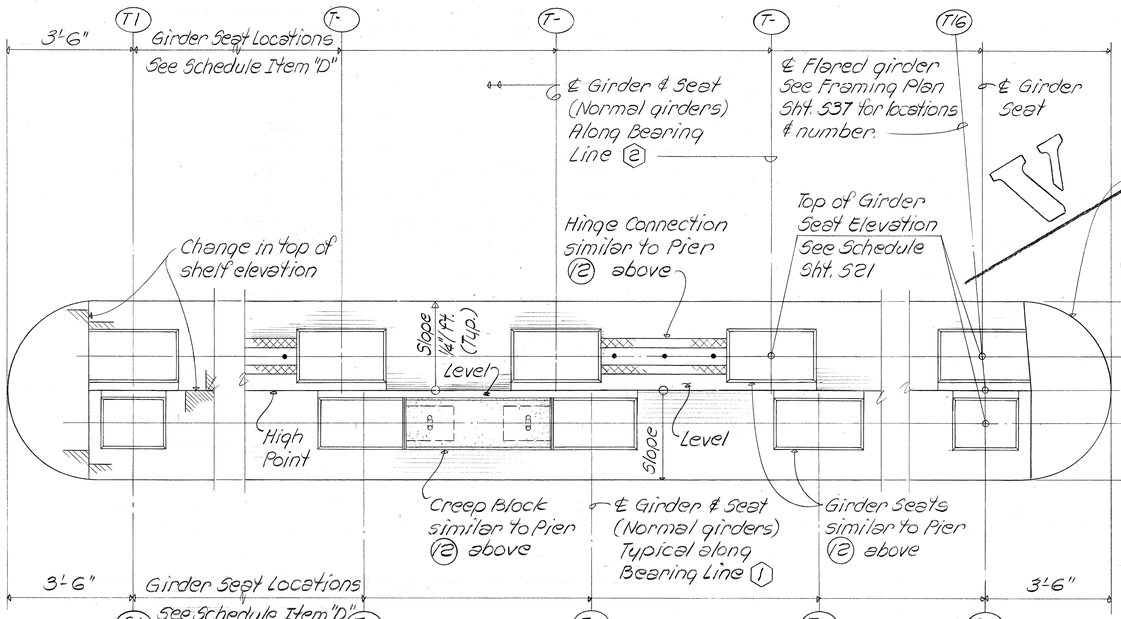
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	60	106



PARTIAL PIER CAP SHELF PLAN @ PIER (12)

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

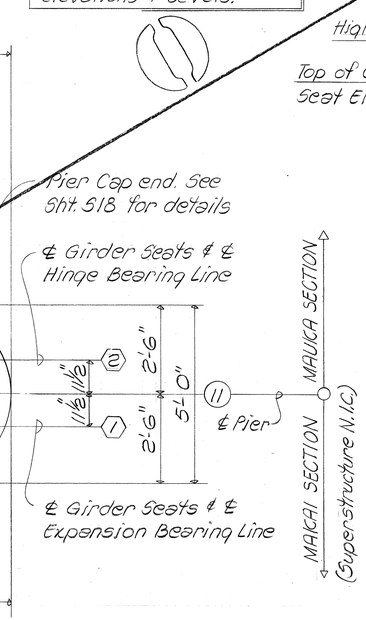
(Condition at normal end of Pier Cap - ℄ Girder G1, T1 - similar to Pier (11) except opposite hand)



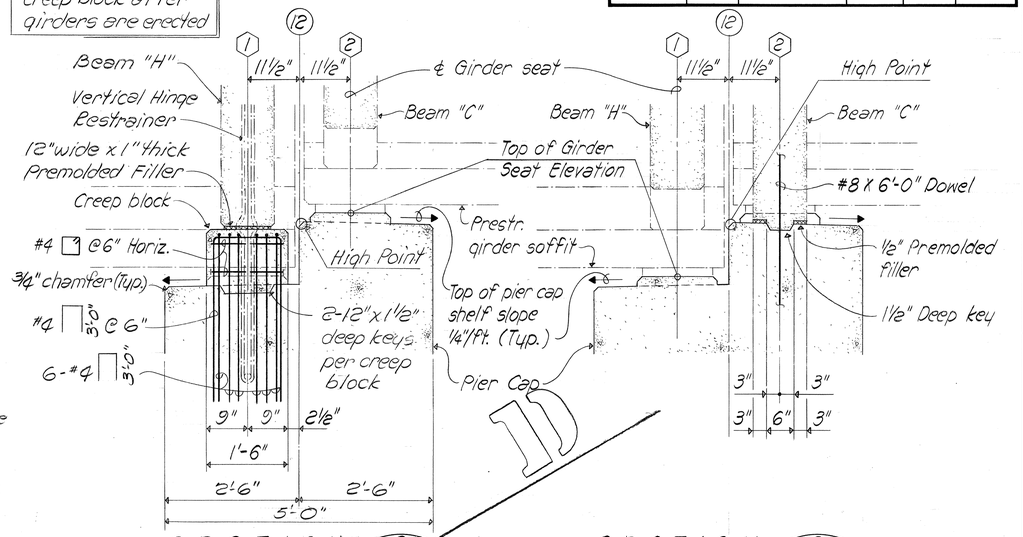
PARTIAL PIER CAP SHELF PLAN @ PIER (11)

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

NOTE!
See Schedule Sht. S21 for girder seat locations, elevations & bevels.



NOTE!
Place concrete for creep block after girders are erected

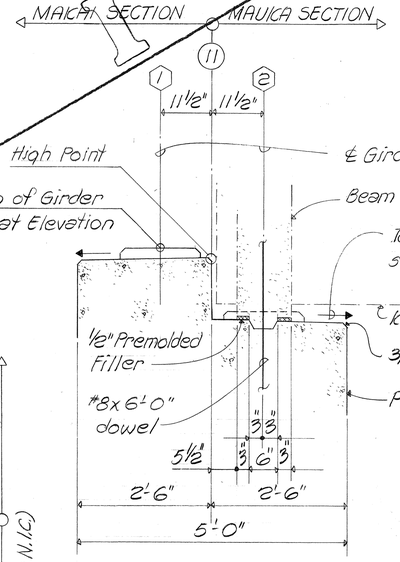


SECTION (A) 519 | 519

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

SECTION (B) 519 | 519

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



SECTION (C) 519 | 519

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

NOTES:

1. Concrete girder seats shall be built perpendicular to ℄ Pier.
2. Elastomeric bearing pads shall be installed perpendicular to ℄ of prestressed girders.
3. End of creep blocks shall be parallel to the bottom flange of prestressed girders.
4. Protect creep block reinforcing & restrainers at Bearing Line (1) of Pier (11) until Makai Section constructed.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER CAP PLANS & DETAILS

PIERS #11 & #12

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

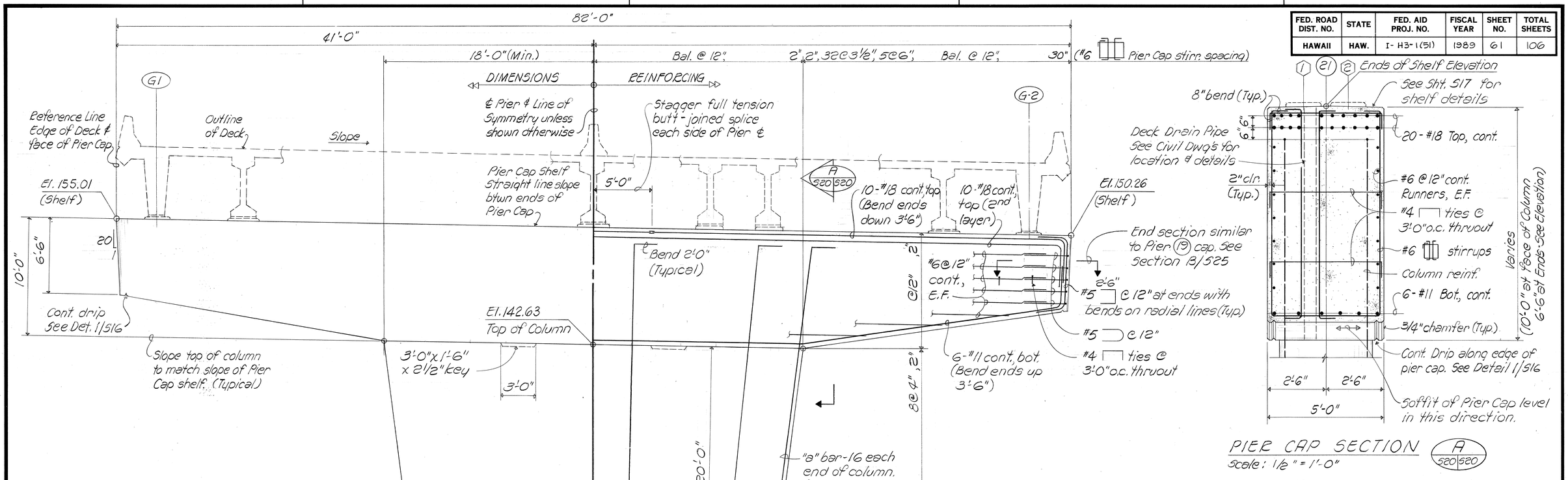
SHEET No. 519 OF 46 SHEETS

DATE	REVISION
10/19/89	VOID ENTIRE SHEET

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

C.O. 60

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	61	106



PIER CAP SECTION

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

A S20|S20

TYPICAL

NEAR COLUMN BASE

PIER #21 ELEVATION (TYPE II PIER CAP)

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

COLUMN SECTIONS

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

B S20|S20

NOTES:

1. See Sht. T2 for shoring requirements.
2. See Sht. S14 for pier cap stirrups & column tie bend details.
3. Elevations shown are given along ℄ of Pier.

LEGEND

- ○ #11 dowels (112 total)
- ● "a" bars (32-#11 total)
- ⊗ "b" bars (24-#11 total)
- ◒ "c" bars (80-#11 total)

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER #21 DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET NO. S20 OF 46 SHEETS

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

PIER CAP SHELF GIRDER SEAT LOCATIONS, ELEVATIONS & BEVELS & ELASTOMERIC BEARING PAD SKEW SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	62	106

PIER LINE	(11)					PIER LINE	(11)					(12)					PIER LINE	(12)					(13)					(13)				
BEARING	①					BEARING	②					①					BEARING	②					①					②				
GIRDER	"D"	"T2"	"TS"	BEVEL	SKEW	GIRDER	"D"	"T2"	"TS"	BEVEL	SKEW	"D"	"T2"	"TS"	BEVEL	SKEW	GIRDER	"D"	"T2"	"TS"	BEVEL	SKEW	"D"	"T2"	"TS"	BEVEL	SKEW	"D"	"T2"	"TS"	BEVEL	SKEW
G1	-37.50	162.29	156.35	3/16	0	G1	-37.50	162.32	156.40	5/16	0	-37.50	163.75	157.96	1/8	0	G1	-37.50	163.79	158.00	3/16	0	-37.50	164.80	158.87	0	0	-37.50	164.82	158.89	1/16	0
T1	-33.00	162.35	156.42	3/16	0	T1	-30.00	162.44	156.51	5/16	0	-30.00	163.87	158.07	1/8	0	T1	-30.00	163.90	158.11	3/16	0	-30.00	164.91	158.98	1/16	0	-30.00	164.93	159.01	1/16	0
T2	-26.50	162.45	156.51	3/16	0	T2	-22.50	162.55	156.62	5/16	0	-22.50	163.98	158.19	1/8	0	T2	-22.50	164.01	158.22	3/16	0	-22.50	165.02	159.10	1/16	0	-22.50	165.04	159.12	1/16	0
T3	-20.00	162.55	156.61	3/16	0	T3	-15.00	162.66	156.73	5/16	0	-15.00	164.09	158.30	1/8	0	T3	-15.00	164.13	158.33	3/16	0	-15.00	165.14	159.21	1/16	0	-15.00	165.15	159.23	1/16	0
T4	-13.50	162.65	156.71	3/16	0	T4	-7.50	162.77	156.85	5/16	0	-7.50	164.20	158.41	1/8	0	T4	-7.50	164.24	158.45	3/16	0	-7.50	165.25	159.32	1/16	0	-7.50	165.27	159.34	1/16	0
T5	-7.00	162.74	156.81	3/16	0	T5	0.00	162.89	156.96	5/16	0	0.00	164.32	158.52	1/8	0	T5	0	164.35	158.56	3/16	0	0	165.36	159.43	1/16	0	0	165.38	159.46	1/16	0
T6	-0.50	162.84	156.91	3/16	0	T6	7.50	162.77	156.85	5/16	0	7.50	164.20	158.41	1/8	0	T6	7.50	164.24	158.45	3/16	0	7.50	165.25	159.32	1/16	0	7.50	165.27	159.34	1/16	0
T7	6.00	162.76	156.82	3/16	0	T7	15.00	162.66	156.73	5/16	0	15.00	164.09	158.30	1/8	0	T7	15.00	164.13	158.33	3/16	0	15.00	165.14	159.21	1/16	0	15.00	165.15	159.23	1/16	0
T8	12.50	162.66	156.73	3/16	0	T8	22.50	162.55	156.62	5/16	0	22.50	163.98	158.19	1/8	0	T8	22.50	164.01	158.22	3/16	0	22.50	165.02	159.10	1/16	0	22.50	165.04	159.12	1/16	0
T9	19.00	162.56	156.63	3/16	0	T9	30.00	162.44	156.51	5/16	0	30.00	163.87	158.07	1/8	0	T9	30.00	163.90	158.11	3/16	0	30.00	164.91	158.98	1/16	0	29.49	164.94	159.01	1/16	-1/8
T10	25.50	162.47	156.53	3/16	0	T10	36.50	162.34	156.41	5/16	-1/8	35.50	163.78	157.99	1/8	-1/8	T10	35.50	163.82	158.03	3/16	-1/8	34.50	164.84	158.92	1/16	-1/8	36.48	164.83	158.91	1/16	-1/4
T11	32.00	162.37	156.43	3/16	0	T11	43.00	162.24	156.31	5/16	-1/4	41.00	163.70	157.91	1/8	-1/4	T11	41.00	163.74	157.94	3/16	-1/4	39.00	164.78	158.85	1/16	-1/4	—	—	—	—	—
T12	38.50	162.27	156.33	3/16	0	G2	49.50	162.14	156.22	5/16	-3/8	46.50	163.62	157.83	1/8	-3/8	G2	46.50	163.65	157.86	3/16	-3/8	43.50	164.71	158.78	0	-3/8	43.47	164.73	158.80	1/16	-3/8
T13	45.00	162.17	156.24	3/16	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
G2	49.50	162.11	156.17	3/16	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND:

"D" - Distance of ℄ girder intersection with bearing line from H-3 Baseline.

"T2" - Top of roadway elevation at intersection of ℄ girder & ℄ bearing line.

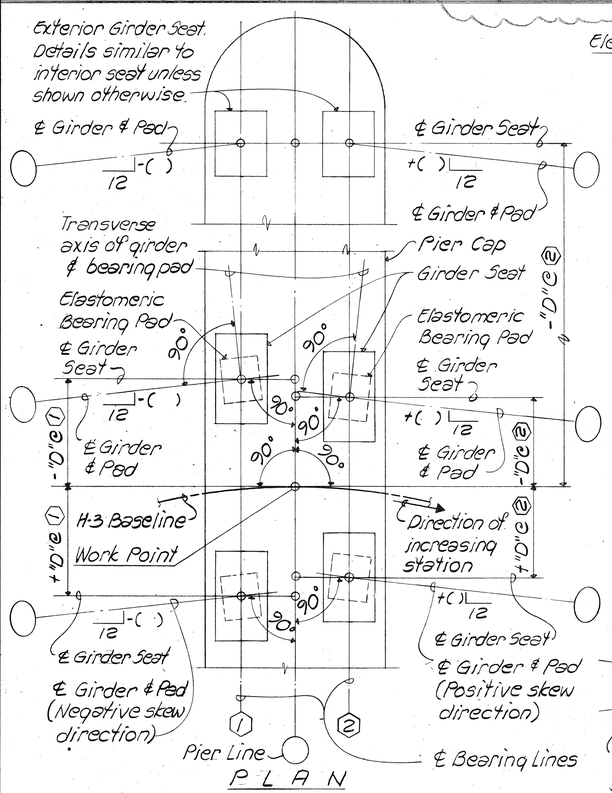
"TS" - Top of girder seat elevation at intersection of ℄ girder & ℄ bearing line.

Bevel - Girder seat bevel

Skew - Elastomeric bearing pad ℄ girder skew.

NOTE:

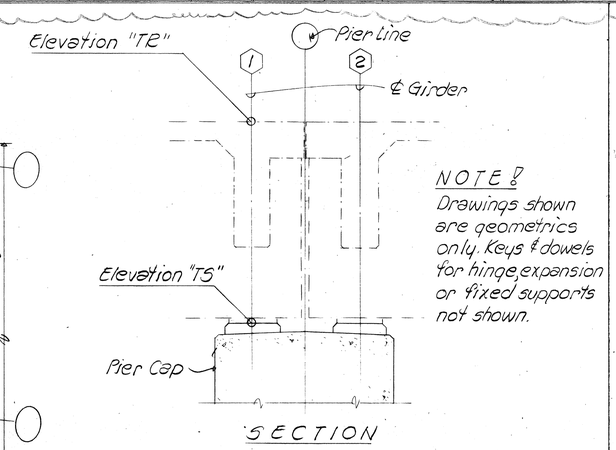
Items "D", "T2" & "TS" are given in feet.



PLAN

GIRDER SEAT LOCATION & ELASTOMERIC BEARING PAD SKEW

Not to scale



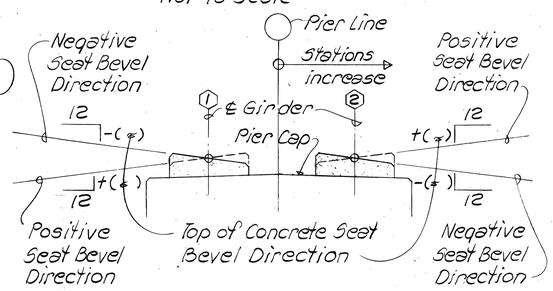
SECTION

NOTE:

Drawings shown are geometrics only. Keys & dowels for hinge, expansion or fixed supports not shown.

TOP OF ROADWAY & CONCRETE SEAT ELEVATION

Not to scale

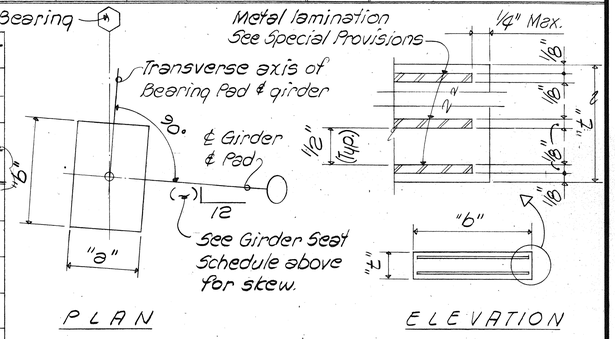


GIRDER SEAT BEVEL DIRECTION

Not to scale

ELASTOMERIC BEARING PAD SCHEDULE FOR GIRDER SEAT

Pier Line	Bearing Line	G1 & G2 Girders Dimensions "a"	"b"	"t"	T- Girders Dimensions "a"	"b"	"t"
~~(12)~~	①	~~13½"~~	~~2'-0½"~~	~~2¼"~~	~~13½"~~	~~2'-0½"~~	~~2¼"~~
(13) (21)	②	15½"	1'-3½"	1⅝"	15½"	2'-0½"	1⅝"
(15) (17) (23)	① ②	15½"	1'-3½"	1⅝"	15½"	2'-0½"	1⅝"
(18)	②	14"	1'-3½"	2⅞"	15½"	2'-0½"	2⅞"
(21)	①	14"	1'-3½"	2⅞"	15½"	2'-0½"	2⅞"
(25)	①	15½"	1'-3½"	1⅝"	15½"	2'-0½"	1⅝"
(25)	②	14"	1'-3½"	2¼"	15½"	2'-0½"	2¼"
(11)	①	20"	1'-3½"	2¼"	13½"	2'-0½"	2¼"
(11)	②	15½"	1'-3½"	1⅝"	15½"	2'-0½"	1⅝"
(13)	①	15½"	1'-3½"	1⅝"	15½"	2'-0½"	1⅝"



PLAN ELEVATION

ELASTOMERIC BEARING PAD DETAIL

Not to scale

NOTES:

1. Fiberglass reinforced elastomeric pads may be used in lieu of pads with metal lamination as shown.
2. 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).
3. Any revisions to elastomeric bearing pad thicknesses shall be reflected in concrete seat & girder shelf elevations.
4. Cost of bearing pads incidental to concrete.

DATE	REVISION
10/19/89	REVISED GEOMETRICS & BEARING PAD SCHEDULE

SSFH Engineers, Inc.
Consulting Structural Engineers
Honolulu, HI 96814

HOWARD Y. FUKUDA REGISTERED PROFESSIONAL ENGINEER No. 1343-S HAWAII U.S.A.

This work was prepared by me or under my supervision.

Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER CAP BEARING GEOMETRICS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET NO. 52 OF 46 SHEETS

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

C.O. 62

PIER CAP SHELF GIRDER SEAT LOCATIONS, ELEVATIONS & BEVELS & ELASTOMERIC BEARING PAD SKEW SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	63	106

PIER LINE	(14)										(15)										(16)									
BEARING			(1)					(2)					(1)					(2)					(1)					(2)		
GIRDER	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW
G1	-37.50	165.41	159.62	1/16	0	-37.50	165.42	159.63	0	0	-37.50	165.60	159.67	0	0	-37.50	165.60	159.67	0	0	-37.50	165.37	159.58	0	0	-37.50	165.36	159.57	0	0
T1	-30.00	165.52	159.74	1/16	0	-30.00	165.53	159.75	0	0	-30.00	165.71	159.79	0	0	-30.00	165.71	159.79	0	0	-30.00	165.48	159.69	0	0	-30.00	165.47	159.68	-1/16	0
T2	-22.50	165.64	159.85	1/16	0	-22.50	165.65	159.86	0	0	-22.50	165.82	159.90	0	0	-22.50	165.82	159.90	0	0	-22.50	165.59	159.80	0	0	-22.50	165.58	159.79	-1/16	0
T3	-15.00	165.75	159.96	1/16	0	-15.00	165.76	159.97	0	0	-15.00	165.94	160.01	0	0	-15.00	165.93	160.01	0	0	-15.00	165.70	159.91	0	0	-15.00	165.69	159.90	-1/16	0
T4	-7.50	165.86	160.07	1/16	0	-7.50	165.87	160.08	0	0	-7.50	166.05	160.12	0	0	-7.50	166.05	160.12	0	0	-7.50	165.81	160.02	0	0	-7.50	165.80	160.01	-1/16	0
T5	0	165.97	160.19	1/16	0	0	165.98	160.20	0	0	0	166.16	160.24	0	0	0	166.16	160.24	1/16	0	0	165.92	160.13	1/16	0	0	165.91	160.12	-1/16	0
T6	7.50	165.86	160.07	1/16	0	7.50	165.87	160.08	0	0	7.50	166.05	160.12	0	0	7.50	166.05	160.12	1/16	0	7.50	165.81	160.02	1/16	0	7.50	165.79	160.01	-1/16	0
T7	15.00	165.75	159.96	1/16	0	15.00	165.76	159.97	0	0	15.00	165.94	160.01	0	0	15.00	165.93	160.01	1/16	0	15.00	165.69	159.91	1/16	0	15.00	165.68	159.89	-1/16	0
T8	22.50	165.64	159.85	1/16	0	22.50	165.65	159.86	0	0	22.50	165.82	159.90	0	0	22.50	165.82	159.90	1/16	0	22.50	165.58	159.79	1/16	0	22.50	165.57	159.78	-1/16	0
T9	28.51	165.55	159.76	1/16	-1/8	28.49	165.56	159.77	0	-1/8	27.51	165.75	159.82	0	-1/8	30.00	165.71	159.79	1/16	0	30.00	165.47	159.68	1/16	0	30.00	165.46	159.67	-1/16	0
T10	34.53	165.46	159.67	1/16	-1/4	34.47	165.47	159.68	0	-1/4	32.52	165.67	159.75	0	-1/4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
G2	40.54	165.36	159.58	1/16	-3/8	40.46	165.38	159.59	0	-3/8	37.53	165.60	159.67	0	-3/8	37.50	165.60	159.67	1/16	0	37.50	165.36	159.57	1/16	0	37.50	165.34	159.56	-1/16	0

PIER LINE	(17)										(18)									
BEARING			(1)					(2)					(1)					(2)		
GIRDER	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW
G1	-37.50	165.19	159.27	0	0	-37.50	165.19	159.27	-1/16	0	-37.50	164.85	159.06	-1/16	0	-37.50	164.84	158.81	-1/8	0
T1	-30.00	165.20	159.28	-1/16	0	-31.73	165.20	159.27	-1/16	0	-31.73	164.74	158.95	-1/16	0	-32.50	164.74	158.71	-1/8	0
T2	-22.50	165.21	159.29	-1/16	0	-25.96	165.20	159.28	-1/16	0	-25.96	164.63	158.85	-1/16	0	-27.50	164.65	158.62	-1/8	0
T3	-15.00	165.22	159.30	-1/16	0	-20.19	165.21	159.28	-1/16	0	-20.19	164.53	158.74	-1/16	0	-22.50	164.55	158.52	-1/8	0
T4	-7.50	165.24	159.31	-1/16	0	-14.42	165.21	159.29	-1/8	0	-14.42	164.42	158.63	-1/8	0	-17.50	164.46	158.43	-1/8	0
T5	0	165.25	159.32	-1/16	0	-8.65	165.22	159.30	-1/8	0	-8.65	164.31	158.52	-1/8	0	-12.50	164.36	158.33	-3/16	0
T6	7.50	165.13	159.21	-1/16	0	-2.88	165.23	159.30	-1/8	0	-2.88	164.20	158.41	-1/8	0	-7.50	164.26	158.24	-3/16	0
T7	15.00	165.02	159.10	-1/16	0	2.88	165.18	159.26	-1/8	0	2.88	164.09	158.30	-1/8	0	-2.50	164.17	158.14	-3/16	0
T8	22.50	164.91	158.99	-1/16	0	8.65	165.10	159.17	-1/8	0	8.65	163.98	158.19	-1/8	0	2.50	164.07	158.04	-3/16	0
T9	30.00	164.80	158.87	-1/16	0	14.42	165.01	159.09	-1/8	0	14.42	163.86	158.07	-1/8	0	7.50	163.97	157.94	-3/16	0
T10	—	—	—	—	—	20.19	164.92	159.00	-1/8	0	20.19	163.75	157.96	-1/8	0	12.50	163.87	157.84	-1/4	0
T11	—	—	—	—	—	25.96	164.84	158.92	-3/16	0	25.96	163.63	157.84	-3/16	0	17.50	163.77	157.74	-1/4	0
T12	—	—	—	—	—	31.73	164.75	158.83	-3/16	0	31.73	163.52	157.73	-3/16	0	22.50	163.67	157.64	-1/4	0
T13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.50	163.57	157.54	-1/4	0
T14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.50	163.47	157.44	-1/4	0
G2	37.50	164.68	158.76	-1/16	0	37.50	164.67	158.74	-3/16	0	37.50	163.40	157.62	-3/16	0	37.50	163.37	157.34	-5/16	0

NOTES:
See Sht. S21 for Legend, Girder Seat Schematics and Elastomeric Bearing Pad Details.

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

SSFM Engineers, Inc.
Consulting Structural Engineers
1136 12th Ave., Honolulu, HI 96816

HOWARD Y. FUKUDA
REGISTERED PROFESSIONAL ENGINEER
No. 1343-S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER CAP BEARING GEOMETRICS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
DATE:

SHEET No. S22 OF 40 SHEETS

DATE	REVISION
10/19/89	REVISED TOP OF GIRDER SEAT ELEVATIONS

C.O. 63

PIER CAP SHELF GIRDER SEAT LOCATIONS, ELEVATIONS & BEVELS & ELASTOMERIC BEARING PAD SKEW SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	64	106

PIER LINE	(21)										(22)										(23)									
BEARING	(1)					(2)					(1)					(2)					(1)					(2)				
GIRDER	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	TS	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW
G1	-37.88	161.20	155.18	-1/8	-3/16	-37.88	161.19	155.26	-1/16	3/16	-37.88	160.53	154.74	-1/16	-3/16	-37.88	160.52	154.73	-1/16	3/16	-37.88	160.08	154.16	-1/16	-3/16	-37.88	160.07	154.15	0	3/16
T1	-32.86	160.91	154.89	-1/8	-3/16	-30.35	160.75	154.83	-1/16	3/16	-30.35	160.10	154.31	-1/16	-3/16	-30.35	160.08	154.29	-1/16	3/16	-30.35	159.64	153.72	-1/16	-3/16	-30.35	159.64	153.71	0	3/16
T2	-27.83	160.62	154.59	-1/8	-3/16	-22.81	160.31	154.39	-1/16	3/16	-22.81	159.66	153.87	-1/16	-3/16	-22.81	159.64	153.85	-1/16	3/16	-22.81	159.21	153.28	-1/16	-3/16	-22.81	159.20	153.28	0	3/16
T3	-22.81	160.33	154.30	-1/8	-3/16	-15.27	159.88	153.95	-1/16	3/16	-15.27	159.22	153.43	-1/16	-3/16	-15.27	159.20	153.42	-1/16	3/16	-15.27	158.77	152.85	-1/16	-3/16	-15.27	158.76	152.84	0	3/16
T4	-17.78	160.04	154.01	-1/8	-3/16	-7.73	159.44	153.52	-1/16	3/16	-7.73	158.78	153.00	-1/16	-3/16	-7.73	158.77	152.98	-1/16	3/16	-7.73	158.33	152.41	-1/16	-3/16	-7.73	158.33	152.40	0	3/16
T5	-12.76	159.75	153.72	-1/8	-3/16	-0.19	159.00	153.08	-1/16	3/16	-0.19	158.35	152.56	-1/16	-3/16	-0.19	158.33	152.54	-1/16	3/16	-0.19	157.90	151.97	-1/16	-3/16	-0.19	157.89	151.96	0	3/16
T6	-7.73	159.46	153.43	-1/8	-3/16	7.35	158.56	152.64	-1/16	3/16	7.35	157.91	152.12	-1/16	-3/16	7.35	157.89	152.10	-1/16	3/16	7.35	157.46	151.53	-1/16	-3/16	7.35	157.45	151.53	0	3/16
T7	-2.70	159.16	153.14	-1/8	-3/16	14.88	158.13	152.20	-1/16	3/16	14.88	157.47	151.68	-1/16	-3/16	14.88	157.45	151.67	-1/16	3/16	14.88	157.02	151.10	-1/16	-3/16	14.88	157.01	151.09	0	3/16
T8	2.32	158.87	152.84	-1/8	-3/16	22.42	157.69	151.77	-1/16	3/16	22.42	157.03	151.25	-1/16	-3/16	22.42	157.02	151.23	-1/16	3/16	22.42	156.58	150.66	-1/16	-3/16	22.42	156.58	150.65	0	3/16
T9	7.35	158.58	152.55	-1/8	-3/16	29.96	157.25	151.33	-1/16	3/16	29.96	156.60	150.81	-1/16	-3/16	29.96	156.58	150.79	-1/16	3/16	29.96	156.15	150.22	-1/16	-3/16	29.96	156.14	150.22	0	3/16
T10	12.37	158.29	152.26	-1/8	-3/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T11	17.40	158.00	151.97	-1/8	-3/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T12	22.42	157.71	151.68	-1/8	-3/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T13	27.45	157.42	151.39	-1/8	-3/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
T14	32.47	157.12	151.10	-1/8	-3/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
G2	37.50	156.83	150.80	-1/8	-3/16	37.50	156.82	150.89	-1/16	3/16	37.50	156.16	150.37	-1/16	-3/16	37.50	156.14	150.35	-1/16	3/16	37.50	155.71	149.79	-1/16	-3/16	37.50	155.70	149.78	0	3/16

PIER LINE	(24)										(25)									
BEARING	(1)					(2)					(1)					(2)				
GIRDER	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW	"D"	"TR"	"TS"	BEVEL	SKEW
G1	-37.88	159.86	154.07	0	-3/16	-37.88	159.86	154.07	0	3/16	-37.88	159.86	153.94	0	-3/16	-37.88	159.86	153.89	1/16	3/16
T1	-30.35	159.42	153.63	0	-3/16	-30.35	159.42	153.63	0	3/16	-30.35	159.43	153.50	0	-3/16	-32.86	159.57	153.60	1/16	3/16
T2	-22.81	158.98	153.20	0	-3/16	-22.81	158.98	153.19	0	3/16	-22.81	158.99	153.06	0	-3/16	-27.83	159.28	153.31	1/16	3/16
T3	-15.27	158.55	152.76	0	-3/16	-15.27	158.54	152.76	0	3/16	-15.27	158.55	152.63	0	-3/16	-22.81	158.99	153.01	1/16	3/16
T4	-7.73	158.11	152.32	0	-3/16	-7.73	158.11	152.32	0	3/16	-7.73	158.11	152.19	0	-3/16	-17.78	158.70	152.72	1/16	3/16
T5	-0.19	157.67	151.88	0	-3/16	-0.19	157.67	151.88	0	3/16	-0.19	157.68	151.75	0	-3/16	-12.76	158.41	152.43	1/16	3/16
T6	7.35	157.24	151.45	0	-3/16	7.35	157.23	151.44	0	3/16	7.35	157.24	151.32	0	-3/16	-7.73	158.12	152.14	1/16	3/16
T7	14.88	156.80	151.01	0	-3/16	14.88	156.80	151.01	0	3/16	14.88	156.80	150.88	0	-3/16	-2.70	157.82	151.85	1/16	3/16
T8	22.42	156.36	150.57	0	-3/16	22.42	156.36	150.57	0	3/16	22.42	156.36	150.44	0	-3/16	2.32	157.53	151.56	1/16	3/16
T9	29.96	155.92	150.14	0	-3/16	29.96	155.92	150.13	0	3/16	29.96	155.93	150.00	0	-3/16	7.35	157.24	151.27	1/16	3/16
T10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.37	156.95	150.97	1/16	3/16
T11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.40	156.66	150.68	1/16	3/16
T12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.42	156.37	150.39	1/16	3/16
T13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.45	156.08	150.10	1/16	3/16
T14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.47	155.78	149.81	1/16	3/16
G2	37.50	155.49	149.70	0	-3/16	37.50	155.48	149.70	0	3/16	37.50	155.49	149.57	0	-3/16	37.50	155.49	149.52	1/16	3/16

NOTES:

See Sht. 521 for Legend, Girder Seat Schematics and Elastomeric Bearing Pad Details.

ORIGINAL PLAN | NOTE BOOK | No. ____

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____ . . . . . .
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____

SSFM Engineers, Inc.
Consulting Structural Engineers
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Howard Y. Fukuda

DATE	REVISION
10/19/89	REVISED TOP OF GIRDER SEAT ELEVATIONS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

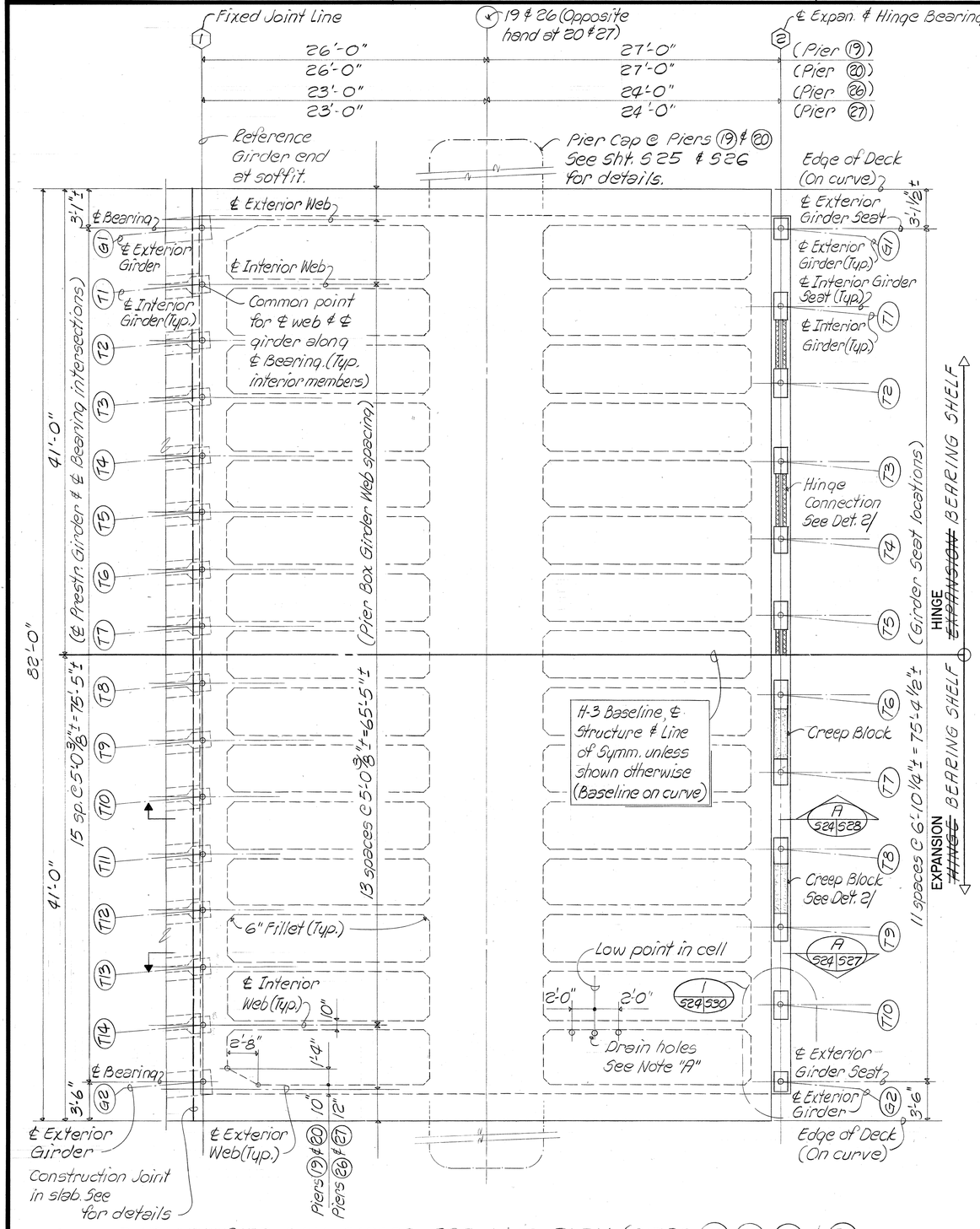
PIER CAP BEARING GEOMETRICS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
DATE:

SHEET NO. 523 OF 46 SHEETS

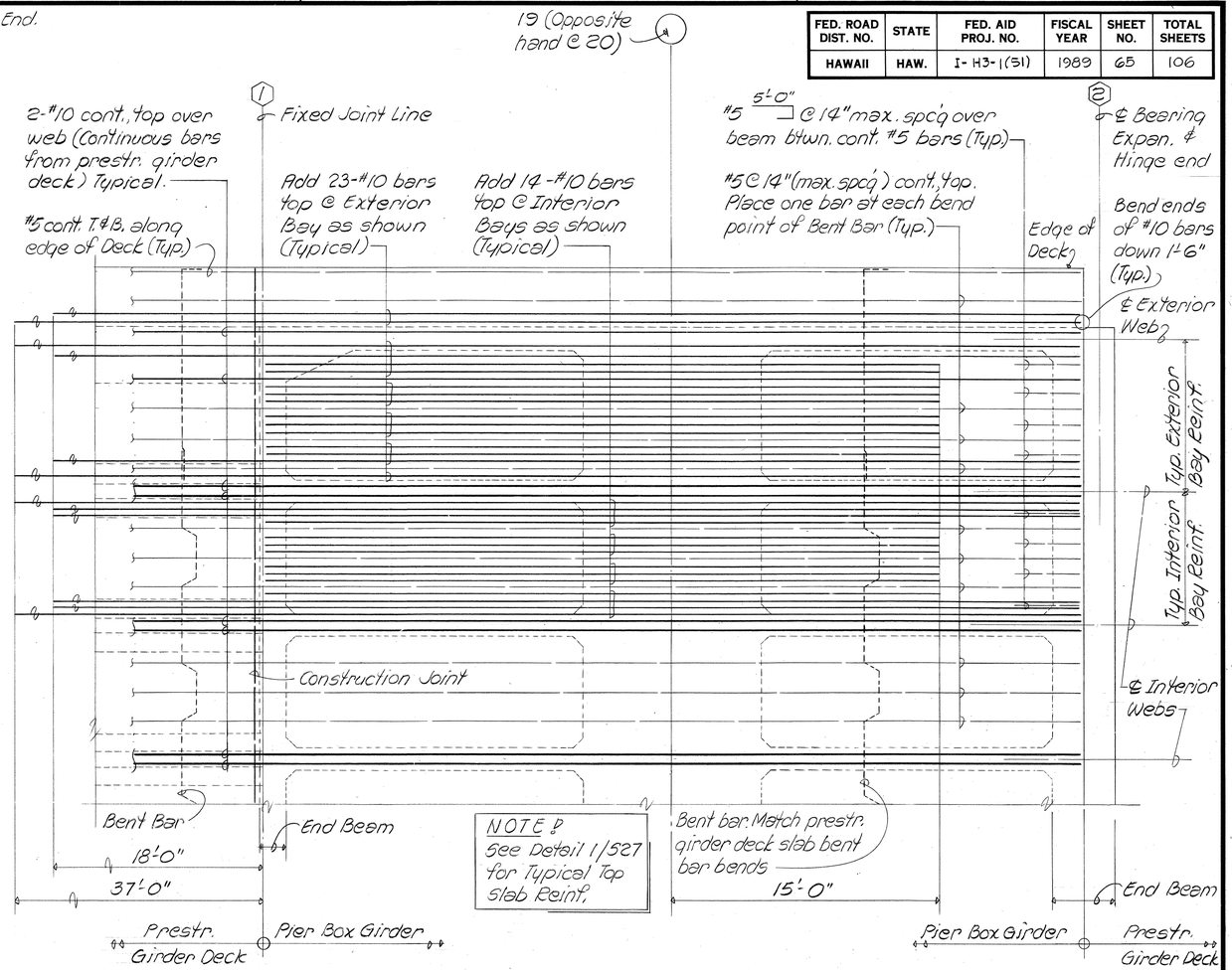
C.O. 64

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I- H3-1(51)	1989	65	106



TYPICAL PIER BOX GIRDER FRAMING PLAN (PIERS 19), 20), 26) & 27)

Scale: 3/16" = 1'-0"



PARTIAL PLAN - PIER BOX GIRDER TOP SLAB, TOP LONGITUDINAL REINF. LAYOUT (PIERS 19) & 20)

Not to scale. (See Sht. S-29 for PIERS 26) & 27) Reinf. Layout)

NOTE "A"

Provide 3-3" ϕ drain holes @ 24" o.c. in bottom slab at each box girder cell, (Typical) Locate one hole at low point.
Provide 3-8" ϕ drain holes @ 24" o.c. in bottom slab at each box girder cell which contains drain pipes. Locate one hole at low point.
Provide drip edge around all holes.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

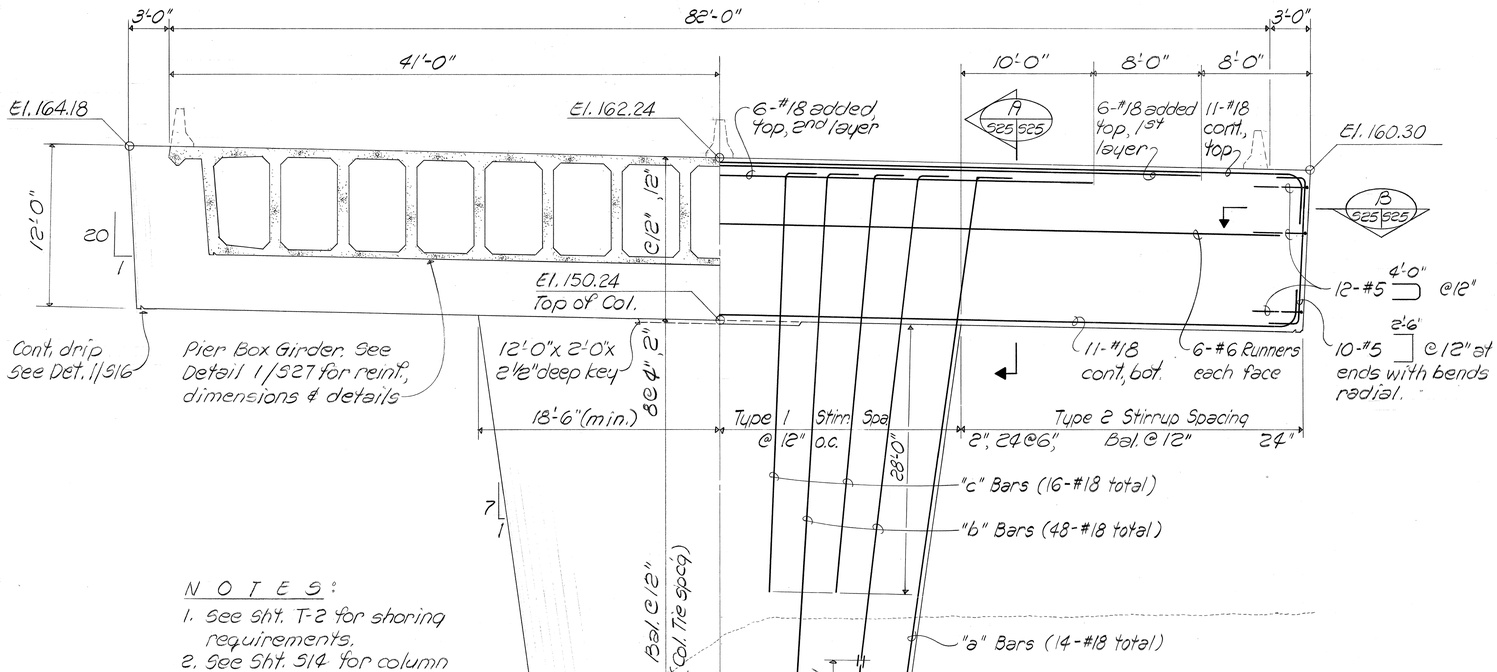
TYPICAL PIER BOX GIRDER PLAN & REINFORCEMENT

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET NO. 529 OF 46 SHEETS

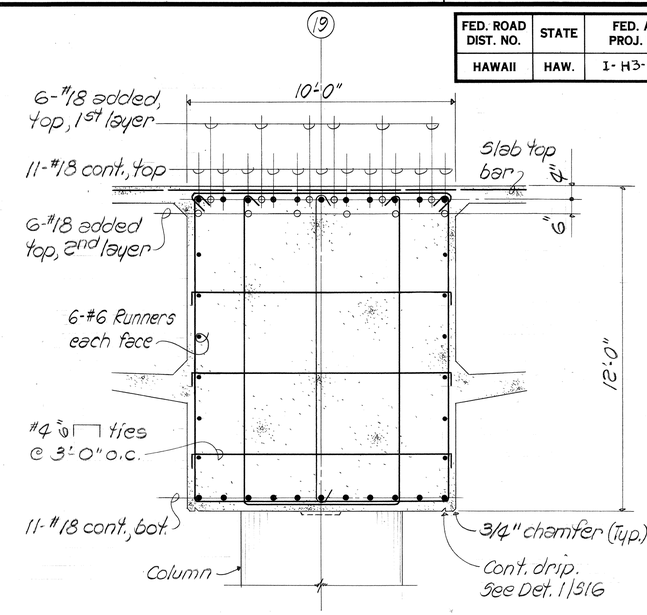
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	66	106

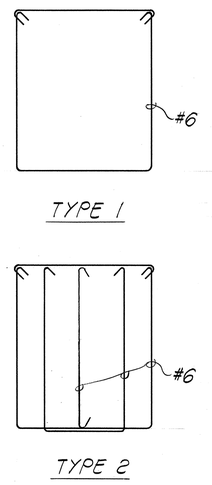


PIER #19 ELEVATION
Scale: 3/16" = 1'-0"

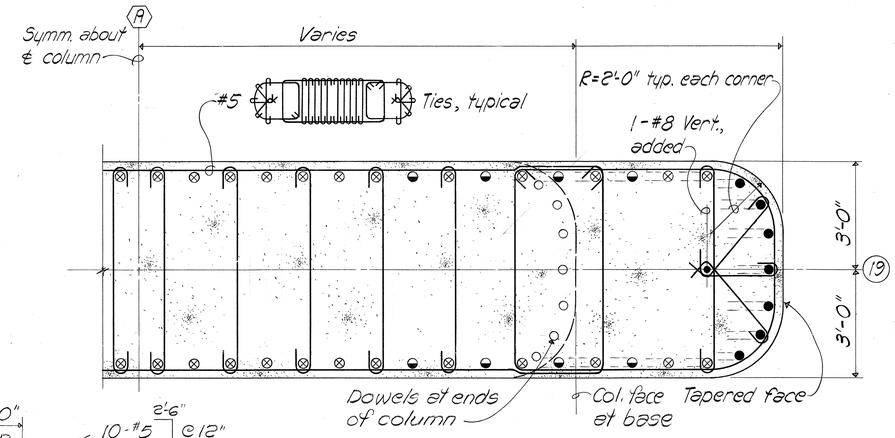
NOTES:
1. See sht. T-2 for shoring requirements.
2. See Sht. S14 for column ties & pier cap stirrups bend details.
3. Elevations shown are given along ℄ of Pier.



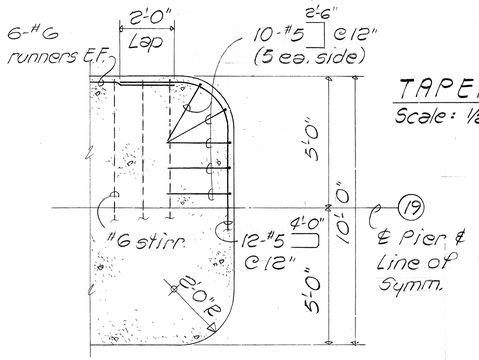
SECTION A 525|525
Scale: 3/8" = 1'-0"



PIER CAP STIRRUP TYPES
Not to scale



TAPERED COLUMN PLAN-SECTION
Scale: 1/2" = 1'-0"



SECTION B 525|525
Scale: 3/8" = 1'-0"

LEGEND
- ○ Dowels (62-#18 bars)
- ● "a" Bars (14-#18 bars)
- ⊗ "b" Bars (48-#18 bars)
- ◒ "c" Bars (16-#18 bars)

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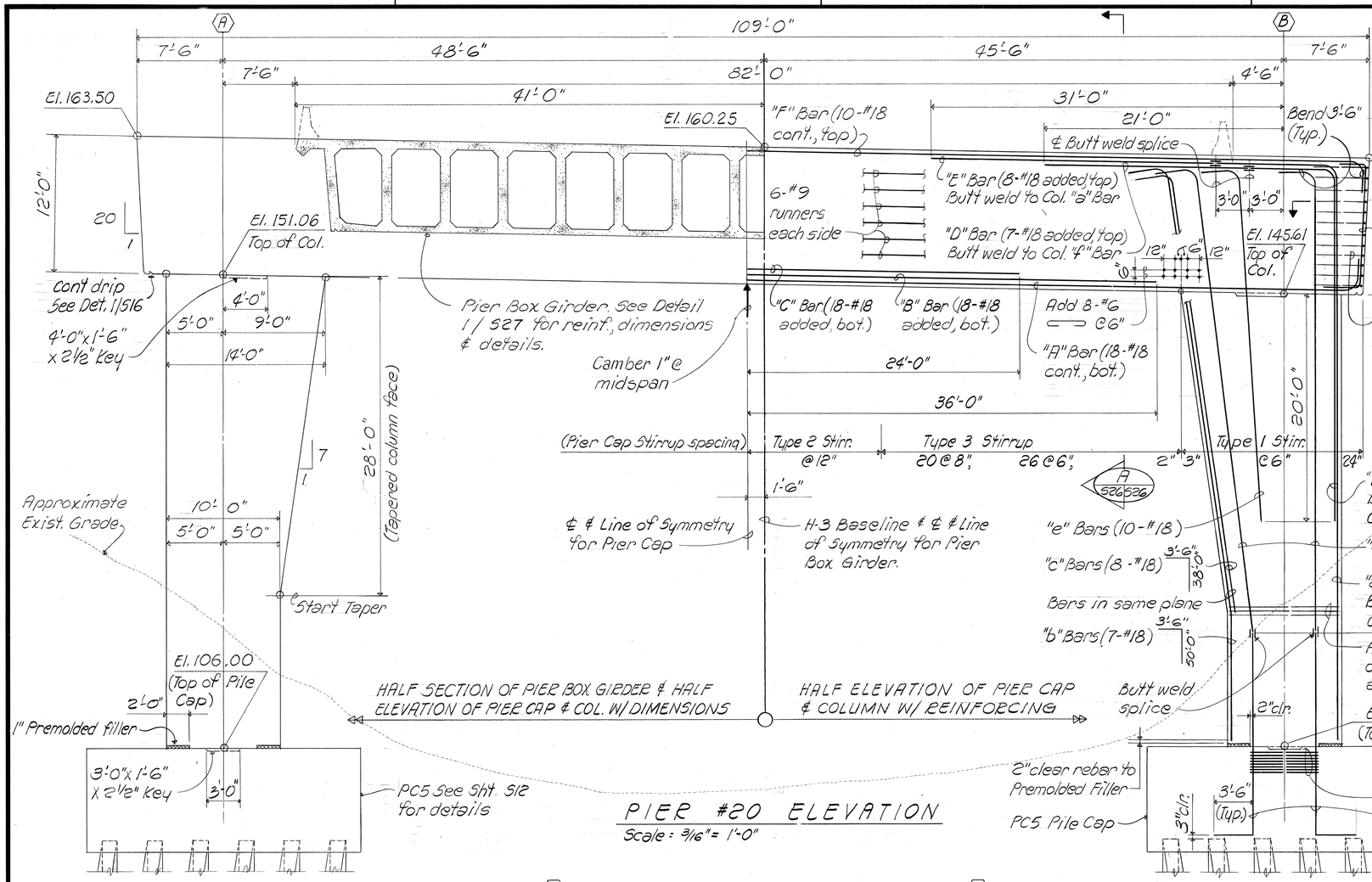
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER #19 DETAILS

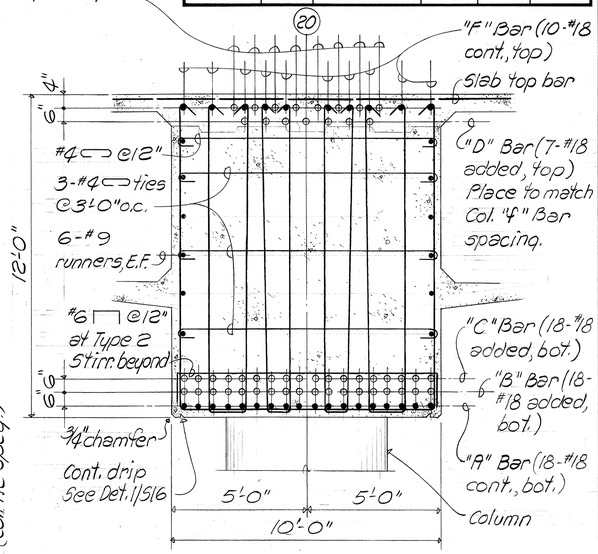
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:
SHEET No. 525 OF 46 SHEETS

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

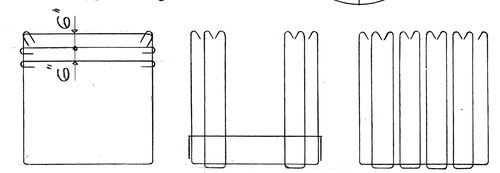
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	67	106



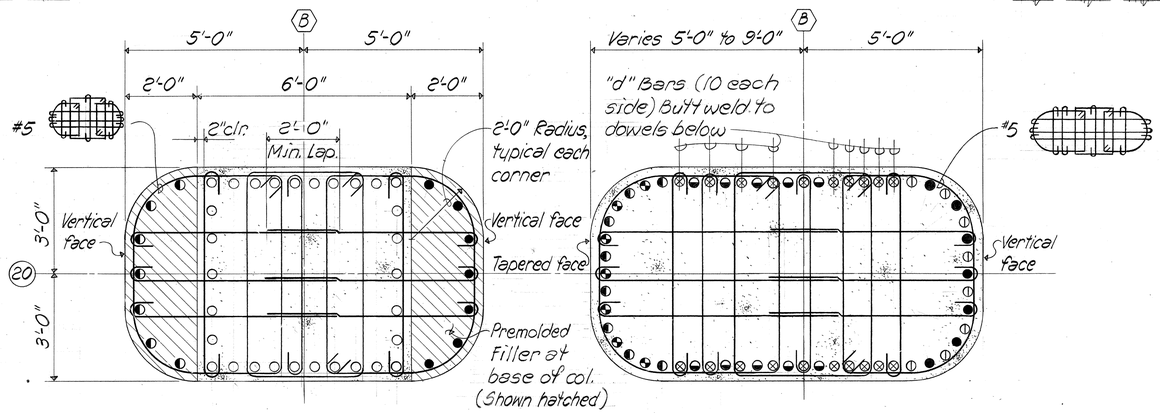
PIER #20 ELEVATION
Scale: 3/16" = 1'-0"



SECTION A 526 526
Scale: 3/8" = 1'-0"



PIER CAP STIRRUP TYPES (#6 BAR)
Not to scale



LEGEND
- ○ Dowels (30-#18 bars)
- ● "a" Bars (7-#18 bars)
- ◐ "b" Bars (7-#18 bars)
- ◕ "c" Bars (8-#18 bars)
- ⊗ "d" Bars (20-#18 bars)
- ◒ "e" Bars (10-#18 bars)
- ⊕ "f" Bars (8-#18 bars)

COLUMN BELOW START OF TAPER PLAN-SECTION
Scale: 1/2" = 1'-0"

TAPERED COLUMN PLAN-SECTION
Scale: 1/2" = 1'-0"

NOTES:
1. See Sht. T2 for shoring requirements.
2. See Sht. S14 for column ties & pier cap stirrups bend details.
3. Elevations shown are given along ℄ of Pier.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER #20 DETAILS

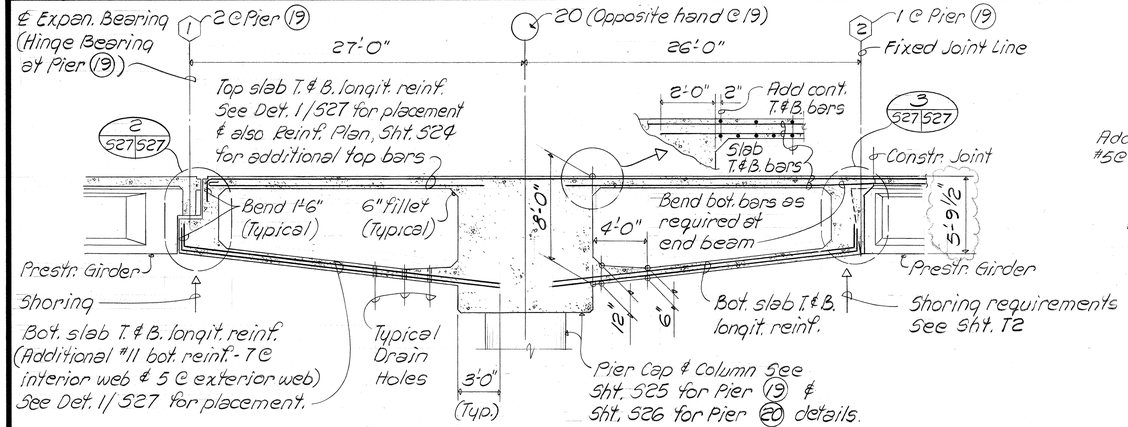
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 526 OF 46 SHEETS

67

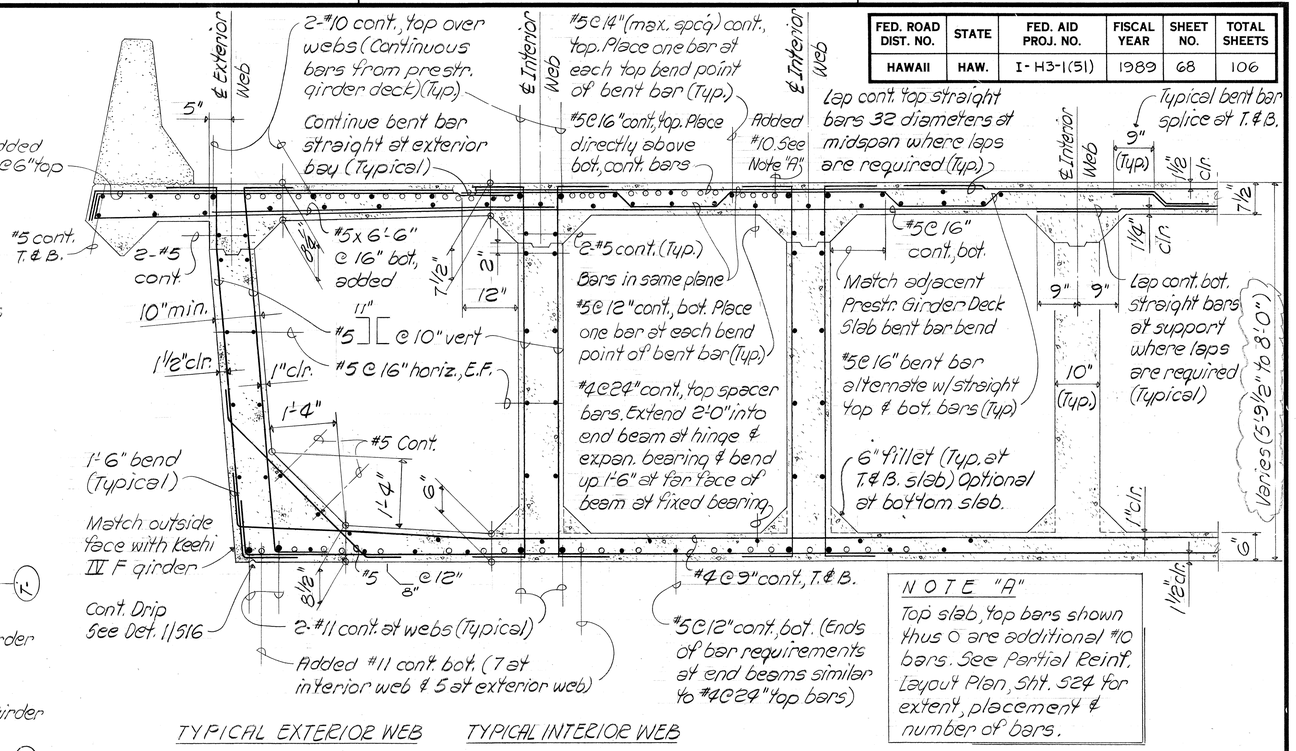
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	68	106



PIER BOX GIRDER LONGITUDINAL SECTION (PIERS (19) & (20)) A 524|527

Scale: 3/16" = 1'-0"



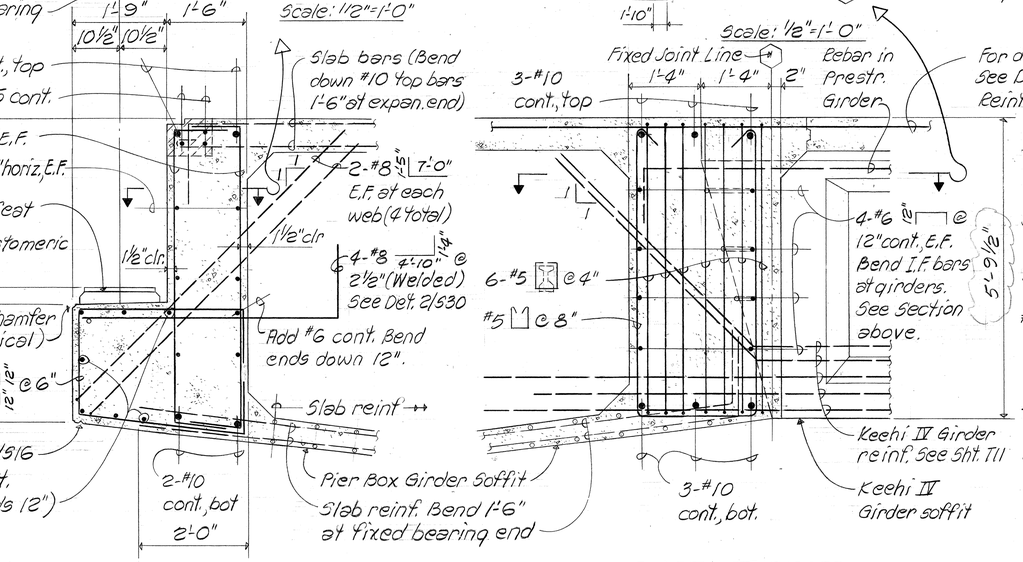
TYPICAL EXTERIOR WEB TYPICAL INTERIOR WEB

NOTE "A"
Top slab, top bars shown thus ○ are additional #10 bars. See Partial Reinf. Layout Plan, Sht. 524 for extent, placement & number of bars.

TYPICAL PIER BOX GIRDER REINFORCING DETAIL 1 524|527

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

NOTE
See Sht. 514 for end beam stirrup bend details.



PIER BOX GIRDER HINGE & EXPAN. BEARING END SECTION

DETAIL 2 527|527
Scale: 3/4" = 1'-0"

℄ KEEHI IV GIRDER ℄ KEEHI IV F GIRDER

PIER BOX GIRDER FIXED BEARING END SECTIONS

DETAIL 3 527|527
Scale: 3/4" = 1'-0"

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____
ORIGINAL PLANS
NOTE BOOK
No. ____

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL BOX GIRDER DETAILS

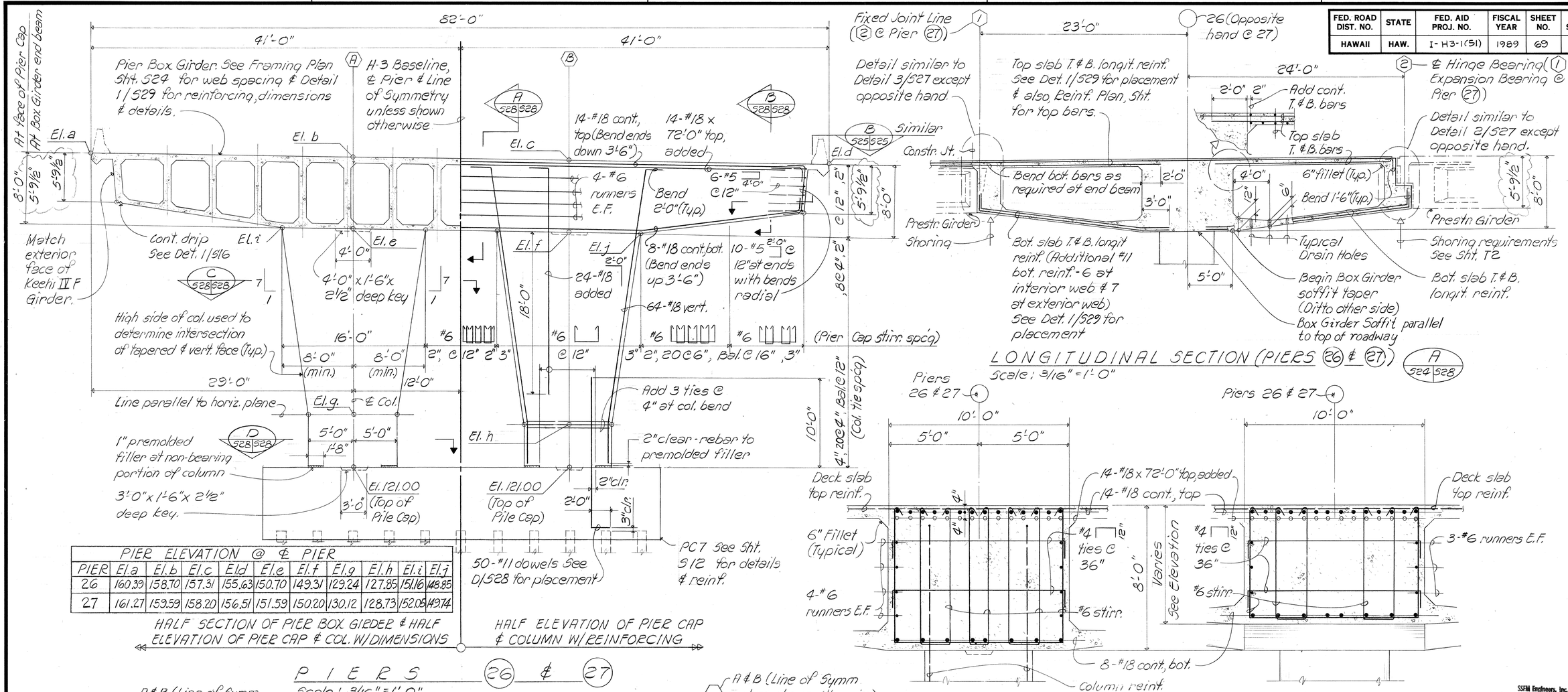
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 527 OF 46 SHEETS

DATE	REVISION
10/19/89	REVISED BOX GIRDER DEPTH

C.O. 68

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	69	106



PIER ELEVATION @ ℄ PIER										
PIER	El. a	El. b	El. c	El. d	El. e	El. f	El. g	El. h	El. i	El. j
26	160.39	158.70	157.31	155.63	150.70	149.31	129.24	127.85	151.16	148.85
27	161.27	159.59	158.20	156.51	151.59	150.20	130.12	128.73	152.05	149.74

HALF SECTION OF PIER BOX GIRDER & HALF ELEVATION OF PIER CAP & COL. W/DIMENSIONS

HALF ELEVATION OF PIER CAP & COLUMN W/REINFORCING

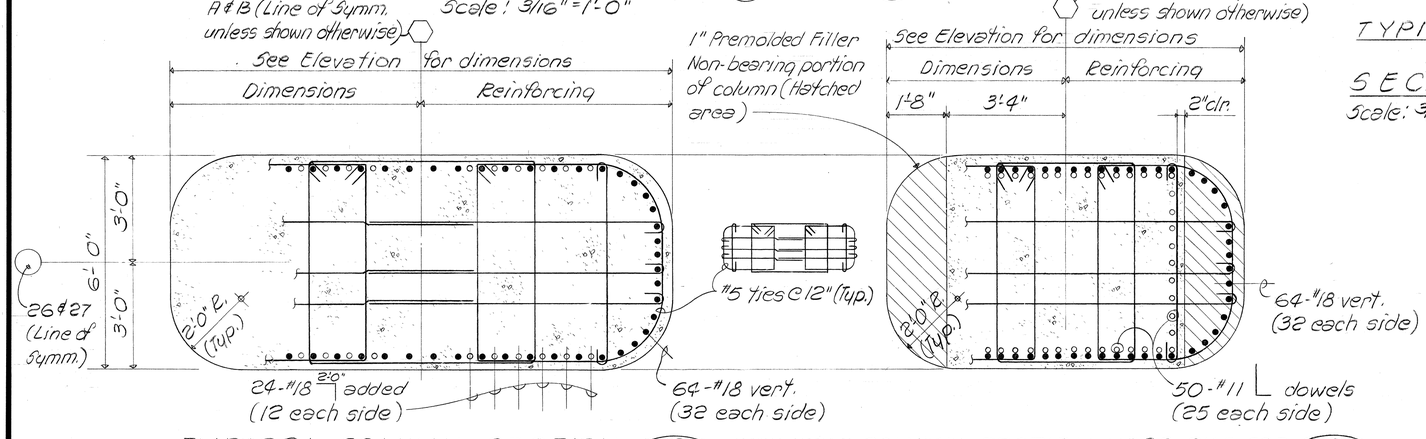
LONGITUDINAL SECTION (PIERS 26 & 27)

Scale: 3/16" = 1'-0"

A S24 S28

PIERS 26 & 27

Scale: 3/16" = 1'-0"



TYPICAL COLUMN SECTION C

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

S28 S28

COLUMN SECTION NEAR PILE CAP D

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

S28 S28

TYPICAL PIER CAP SECTION A

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

S28 S28

PIER CAP CANTILEVER SECTION B

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

S28 S28

NOTES:
1. See Sht. S02 for shoring requirements.
2. See Sht. S14 for column ties & pier cap stirrups bend details.
3. Elevations shown are given along ℄ of Pier Cap.

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DATE	REVISION
10/19/89	REVISED BOX GIRDER DEPTH
11/15/88	REVISED PIER GEOMETRICS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER ELEVATIONS & DETAILS

PIERS #26 & #27

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

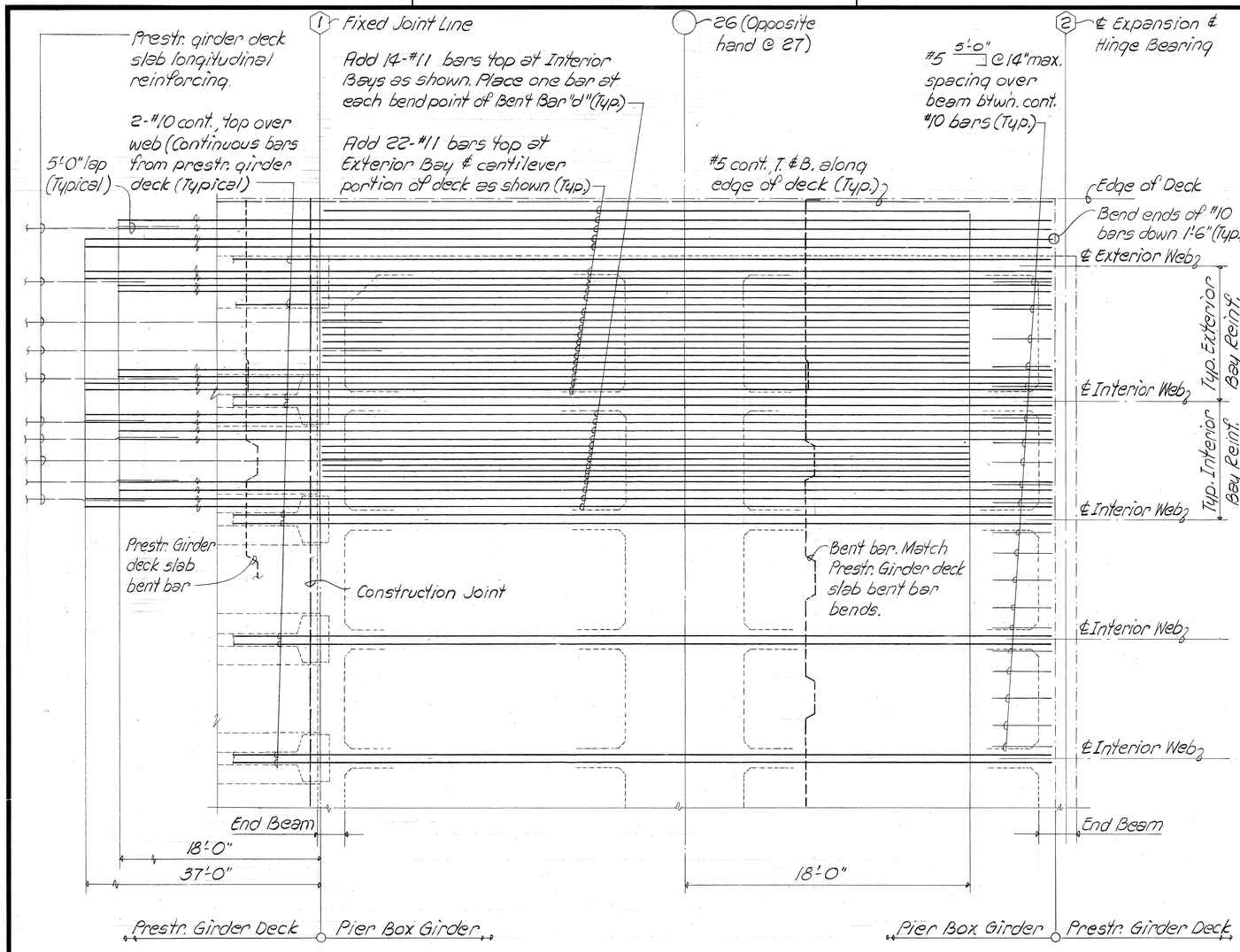
SCALE: AS NOTED DATE:

SHEET No. S28 OF 46 SHEETS

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

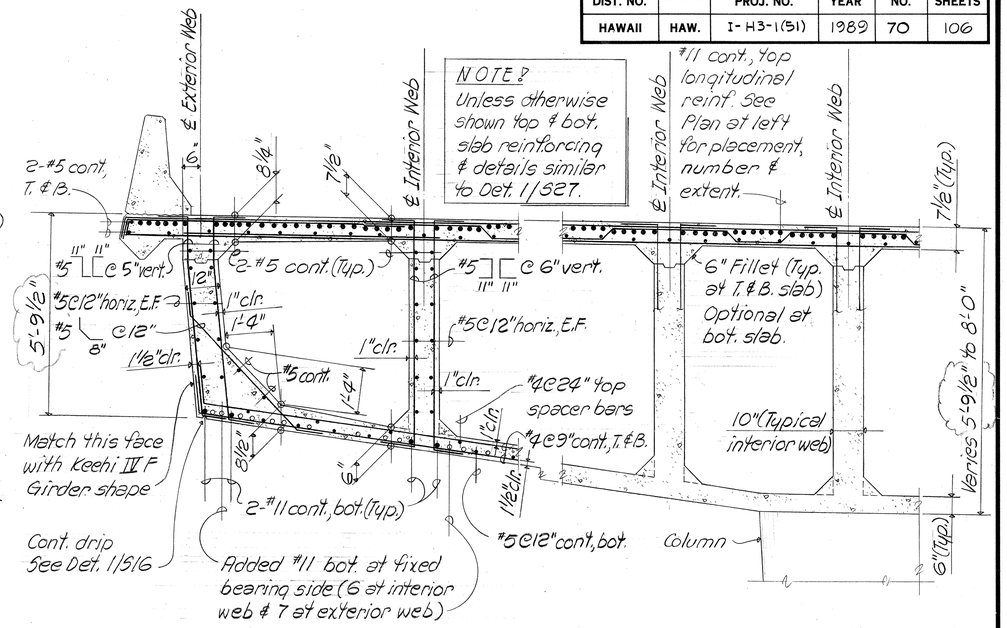
C.O. ADD. 69

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	70	106



PARTIAL PLAN - PIER BOX GIRDER TOP SLAB, TOP LONGIT. REINF. LAYOUT

Not to scale



TYPICAL EXTERIOR WEB TYPICAL INTERIOR WEB

PARTIAL PIER BOX GIRDER SECTION W/ REINF.

DETAIL 1 (529|529)

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

SSFM Engineers, Inc.
Consulting Structural Engineers
1001 Ward Ave., Honolulu, HI 96814

HOWARD Y. FUKUDA REGISTERED PROFESSIONAL ENGINEER No. 1343-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIERS #26 & #27 DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

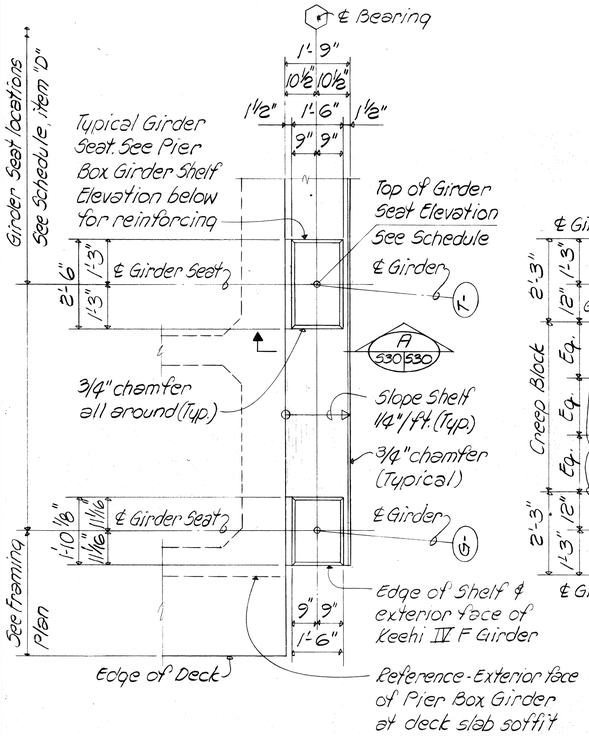
SHEET No. 529 OF 46 SHEETS

C.O. ADD. 70

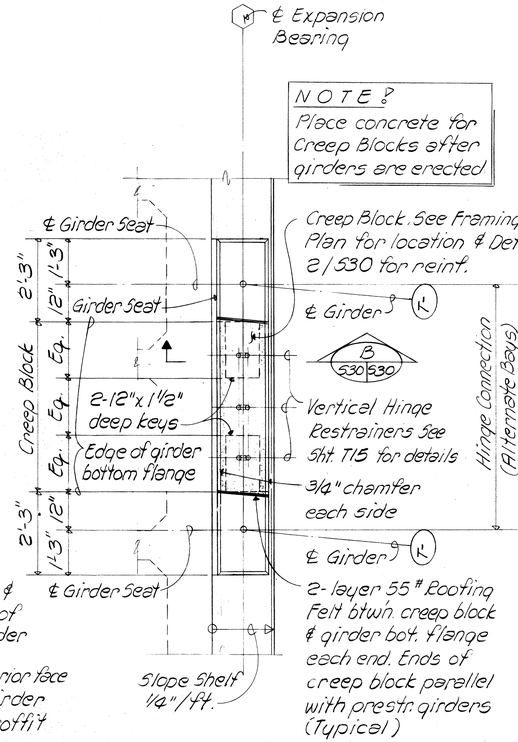
DATE	REVISION
10/19/89	REVISED BOX GIRDER DEPTH
11/15/88	REVISED BOX GIRDER DEPTH

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
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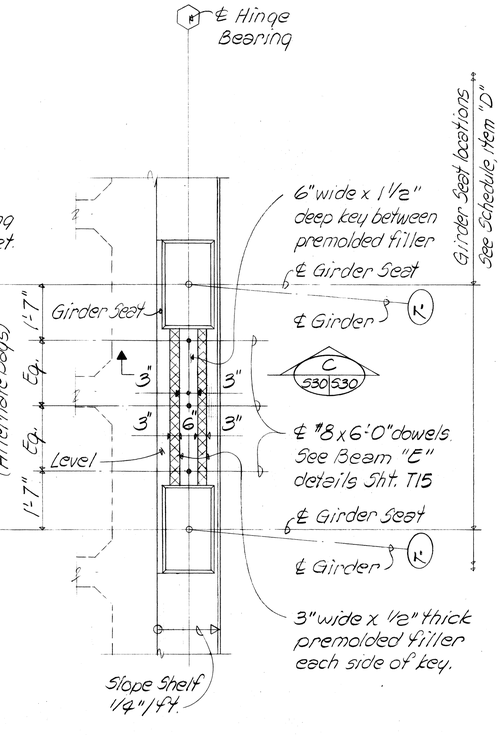
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	71	106



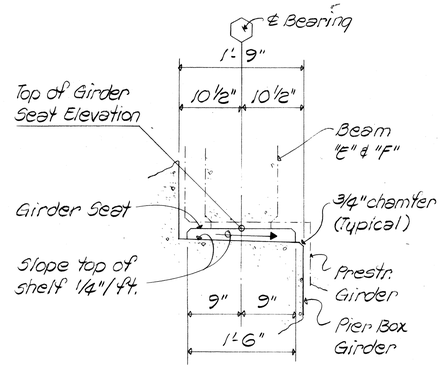
TYPICAL GIRDER SEATS



TYPICAL CREEP BLOCK

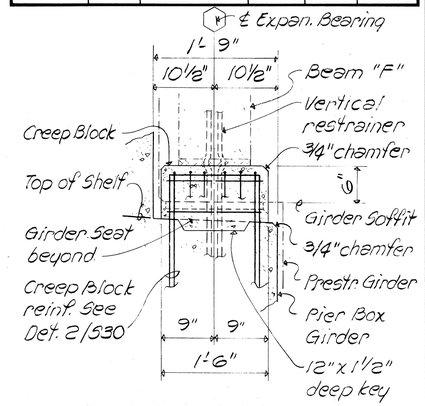


TYPICAL HINGE CONNECTION



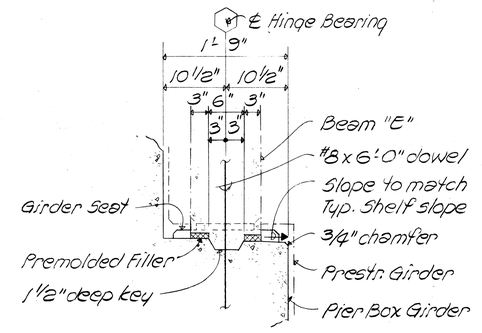
TYPICAL SECTION @ SHELF

SECTION A 530 530
Scale: 1"=1'-0"



@ CREEP BLOCK

SECTION B 530 530
Scale: 1"=1'-0"



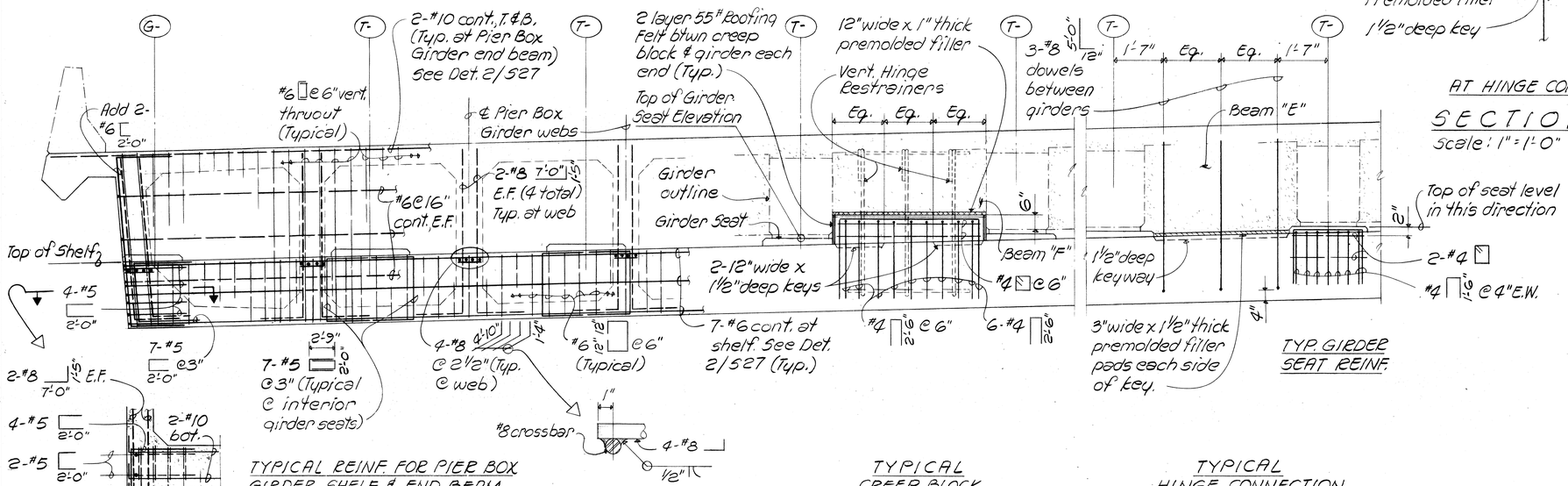
AT HINGE CONNECTION

SECTION C 530 530
Scale: 1"=1'-0"

PIER BOX GIRDER SHELF PLAN FOR PRESTRESSED GIRDER BEARING SEATS

1 524 530

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



TYPICAL REINF. FOR PIER BOX GIRDER SHELF & END BEAM

TYPICAL CREEP BLOCK

TYPICAL HINGE CONNECTION

PARTIAL ELEVATION OF PIER BOX GIRDER SHELF & END BEAM

2 530 530

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

SSFM Engineers, Inc.
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1210 Ward Ave., Honolulu, HI 96814

HOWARD Y. FUKUDA
REGISTERED PROFESSIONAL ENGINEER
No. 1343-S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

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DATE
ORIGINAL PLAN
NOTE BOOK
No.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER BOX GIRDER SHELF DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 530 OF 46 SHEETS

71

PIER BOX GIRDER SHELF SEAT LOCATIONS, ELEVATIONS & BEVELS & ELASTOMERIC BEARING PAD SKEW SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	72	106

PIER LINE	(19)								(20)								(26)								(27)							
BEARING	(1)			(2)					(1)					(2)			(1)			(2)					(1)				(2)			
GIRDER	"D"	"TE"	"GS"	"D"	"TE"	"TS"	BEVEL	SKEW	"D"	"TE"	"TS"	BEVEL	SKEW	"D"	"TE"	"GS"	"D"	"TE"	"GS"	"D"	"TE"	"TS"	BEVEL	SKEW	"D"	"TE"	"TS"	BEVEL	SKEW	"D"	"TE"	"GS"
G1	-37.50	164.11	158.33	-37.88	163.70	160.41	-1/8	3/16	-37.88	162.79	159.16	-1/8	-3/16	-37.88	162.14	156.35	-37.88	160.11	154.32	-37.88	160.33	157.04	1/16	3/16	-37.88	160.89	157.26	1/16	-3/16	-37.88	161.29	155.50
T1	-32.50	163.92	158.13	-31.03	163.36	160.07	-1/8	3/16	-31.03	162.39	158.76	-1/8	-3/16	-32.86	161.85	156.06	-32.86	159.82	154.03	-31.03	159.93	156.64	1/16	3/16	-31.03	160.50	156.87	1/16	-3/16	-32.86	161.00	155.21
T2	-27.50	163.73	157.94	-24.18	163.02	159.73	-1/8	3/16	-24.18	161.99	158.36	-1/8	-3/16	-27.83	161.56	155.77	-27.83	159.52	153.74	-24.18	159.53	156.24	1/16	3/16	-24.18	160.10	156.47	1/16	-3/16	-27.83	160.71	154.92
T3	-22.50	163.54	157.75	-17.32	162.67	159.39	-1/8	3/16	-17.32	161.60	157.96	-1/8	-3/16	-22.81	161.27	155.48	-22.81	159.23	153.44	-17.32	159.13	155.84	1/16	3/16	-17.32	159.70	156.07	1/16	-3/16	-22.81	160.42	154.63
T4	-17.50	163.35	157.56	-10.47	162.33	159.05	-3/16	3/16	-10.47	161.20	157.57	-3/16	-3/16	-17.78	160.97	155.19	-17.78	158.94	153.15	-10.47	158.74	155.45	1/16	3/16	-10.47	159.30	155.67	1/16	-3/16	-17.78	160.13	154.34
T5	-12.50	163.15	157.37	-3.62	161.99	158.71	-3/16	3/16	-3.62	160.80	157.17	-3/16	-3/16	-12.76	160.68	154.89	-12.76	158.65	152.86	-3.62	158.34	155.05	1/16	3/16	-3.62	158.91	155.28	1/16	-3/16	-12.76	159.83	154.05
T6	-7.50	162.96	157.17	3.23	161.65	158.36	-3/16	3/16	3.23	160.40	156.77	-3/16	-3/16	-7.73	160.39	154.60	-7.73	158.36	152.57	3.23	157.94	154.65	1/16	3/16	3.23	158.51	154.88	1/16	-3/16	-7.73	159.54	153.76
T7	-2.50	162.77	156.98	10.09	161.31	158.02	-3/16	3/16	10.09	160.01	156.37	-3/16	-3/16	-2.70	160.10	154.31	-2.70	158.07	152.28	10.09	157.54	154.25	1/16	3/16	10.09	158.11	154.48	1/16	-3/16	-2.70	159.25	153.46
T8	2.50	162.58	156.79	16.94	160.97	157.68	-3/16	3/16	16.94	159.61	155.98	-3/16	-3/16	2.32	159.81	154.02	2.32	157.78	151.99	16.94	157.15	153.86	1/16	3/16	16.94	157.71	154.08	1/16	-3/16	2.32	158.96	153.17
T9	7.50	162.38	156.60	23.79	160.63	157.34	-3/16	3/16	23.79	159.21	155.58	-3/16	-3/16	7.35	159.52	153.73	7.35	157.48	151.70	23.79	156.75	153.46	1/16	3/16	23.79	157.32	153.69	1/16	-3/16	7.35	158.67	152.88
T10	12.50	162.19	156.40	30.65	160.29	157.00	-3/16	3/16	30.65	158.81	155.18	-3/16	-3/16	12.37	159.23	153.44	12.37	157.19	151.40	30.65	156.35	153.06	1/16	3/16	30.65	156.92	153.29	1/16	-3/16	12.37	158.38	152.59
T11	17.50	162.00	156.21	—	—	—	—	—	—	—	—	—	—	17.40	158.93	153.15	17.40	156.90	151.11	—	—	—	—	—	—	—	—	—	—	17.40	158.09	152.30
T12	22.50	161.81	156.02	—	—	—	—	—	—	—	—	—	—	22.42	158.64	152.85	22.42	156.61	150.82	—	—	—	—	—	—	—	—	—	—	22.42	157.79	152.01
T13	27.50	161.62	155.83	—	—	—	—	—	—	—	—	—	—	27.45	158.35	152.56	27.45	156.32	150.53	—	—	—	—	—	—	—	—	—	—	27.45	157.50	151.71
T14	32.50	161.42	155.64	—	—	—	—	—	—	—	—	—	—	32.47	158.06	152.27	32.47	156.03	150.24	—	—	—	—	—	—	—	—	—	—	32.47	157.21	151.42
G2	37.50	161.23	155.44	37.50	159.95	156.66	-3/16	3/16	37.50	158.42	154.78	-3/16	-3/16	37.50	157.77	151.98	37.50	155.74	149.95	37.50	155.95	152.66	1/16	3/16	37.50	156.52	152.89	1/16	-3/16	37.50	156.92	151.13

LEGEND:

"GS" - Elevation at end of prestressed girder soffit ℄.

"D" - Distance of ℄ girder intersection with bearing line from H-3 Baseline

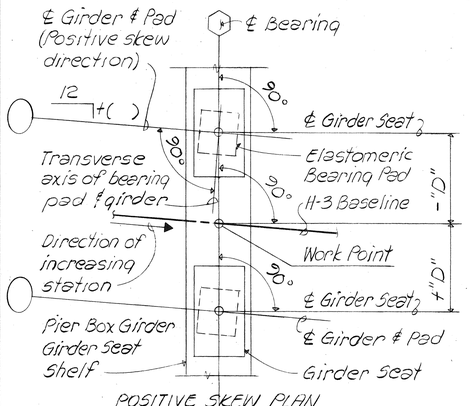
"TE" - Top of roadway elevation at intersection of ℄ girder & ℄ bearing line.

"TS" - Top of girder seat elevation at intersection of ℄ girder & ℄ bearing line

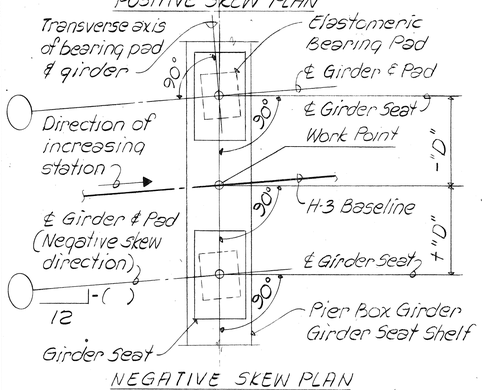
Bevel - Girder seat bevel

Skew - Elastomeric bearing pad & girder skew

NOTE: Items "GS", "D", "TE" & "TS" are given in feet.



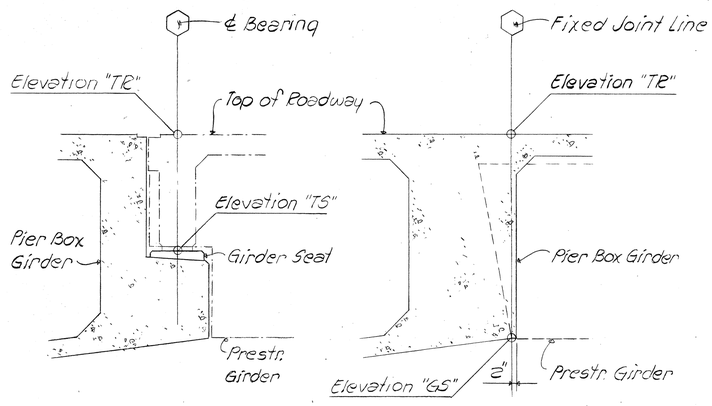
POSITIVE SKEW PLAN



NEGATIVE SKEW PLAN

GIRDER SEAT LOCATION & ELASTOMERIC BEARING PAD SKEW PLANS

Not to scale

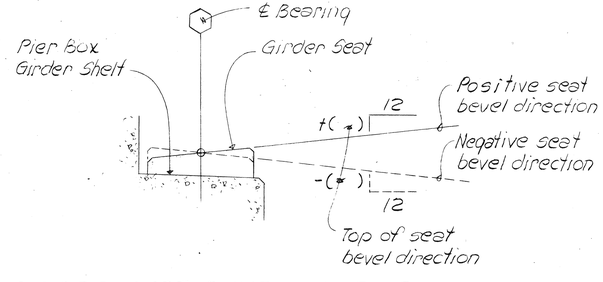


AT EXPAN. & HINGE BEARING

AT FIXED BEARING

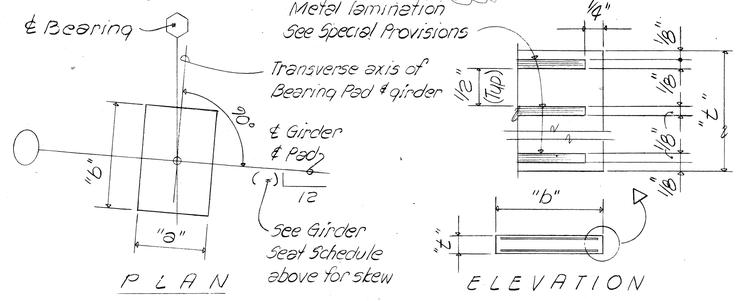
PIER BOX GIRDER END SECTIONS W/ ℄ BEARING ELEVATION LOCATIONS

Not to scale



GIRDER SEAT BEVEL DIRECTION

Not to scale



PLAN

ELEVATION

ELASTOMERIC BEARING PAD SCHEDULE FOR GIRDER SEATS							
Pier Line	Bearing Line	G1 & G2 Girders Dimensions			T- Girders Dimensions		
		"a"	"b"	"t"	"a"	"b"	"t"
(20)	(1)	15½"	1'-3½"	4⅛"	15½"	2'-0½"	4⅛"
(27)	(1)	15½"	1'-3½"	4⅛"	15½"	2'-0½"	4⅛"

NOTES:

1. Fiberglass reinforced elastomeric pads may be used in lieu of pads with metal lamination as shown.
2. 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.).
3. Any revisions to elastomeric bearing pad thicknesses shall be reflected in concrete seat & girder shelf elevations.
4. Cost of bearing pads incidental to concrete.

ELASTOMERIC BEARING PAD DETAILS

DATE	REVISION
10/19/89	REVISED TOP OF GIRDER SEAT ELEVATIONS

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIER BOX GIRDER BEARING GEOMETRICS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

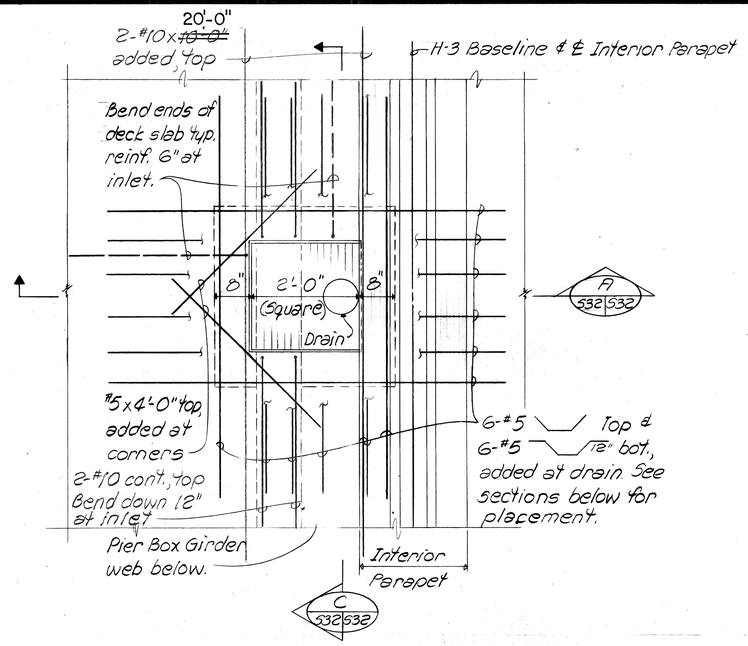
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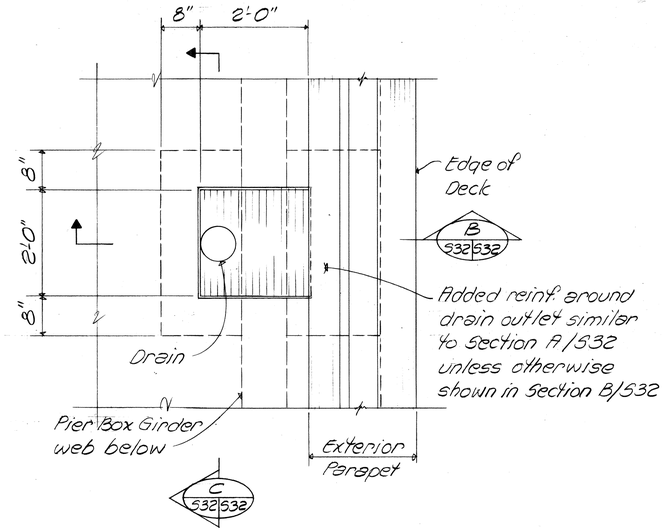
SHEET No. 53 OF 46 SHEETS

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

C.O.72

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	73	106





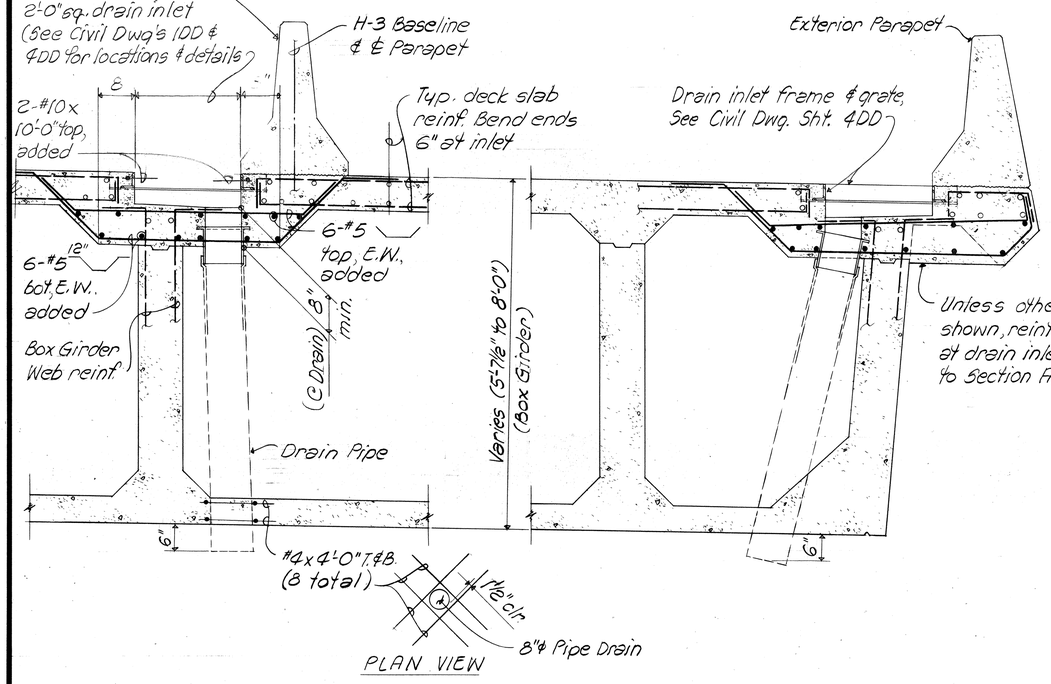
℄ INTERIOR PARAPET

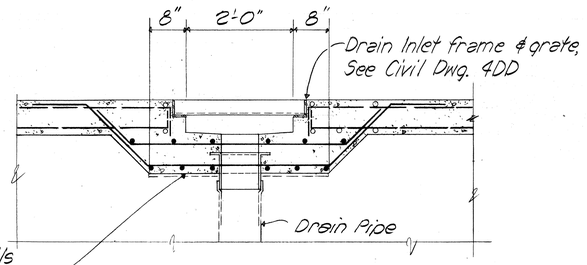
℄ EXTERIOR PARAPET

PIER BOX GIRDER DECK DRAIN PLANS

1 / S3 S32

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





SECTION A S32 S32
Scale: 3/4"=1'-0"

SECTION B S32 S32
Scale: 3/4"=1'-0"

SECTION C S32 S32
Scale : 3/4"=1'-0"

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

SSFH Engineers, Inc.
Consulting Structural Engineers
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HAWAII, U.S.A.

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Howard Y. Fukuda

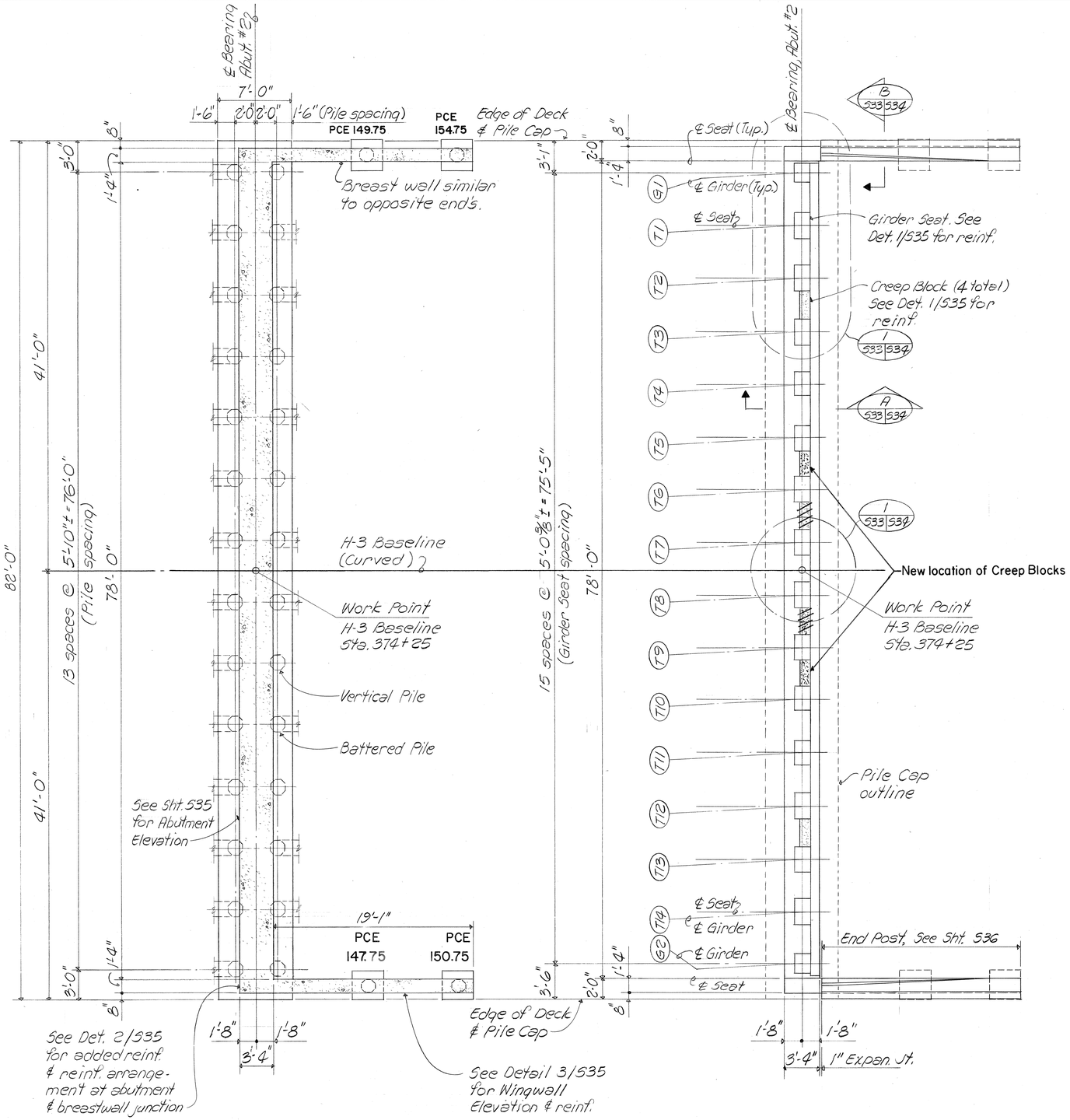
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BOX GIRDER DECK DRAIN DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 532 OF 46 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	74	106



FOUNDATION PLAN
Scale: 3/16" = 1'-0"

PLAN AT ABUTMENT SHELF
Scale: 3/16" = 1'-0"

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

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Howard Y. Fukuda

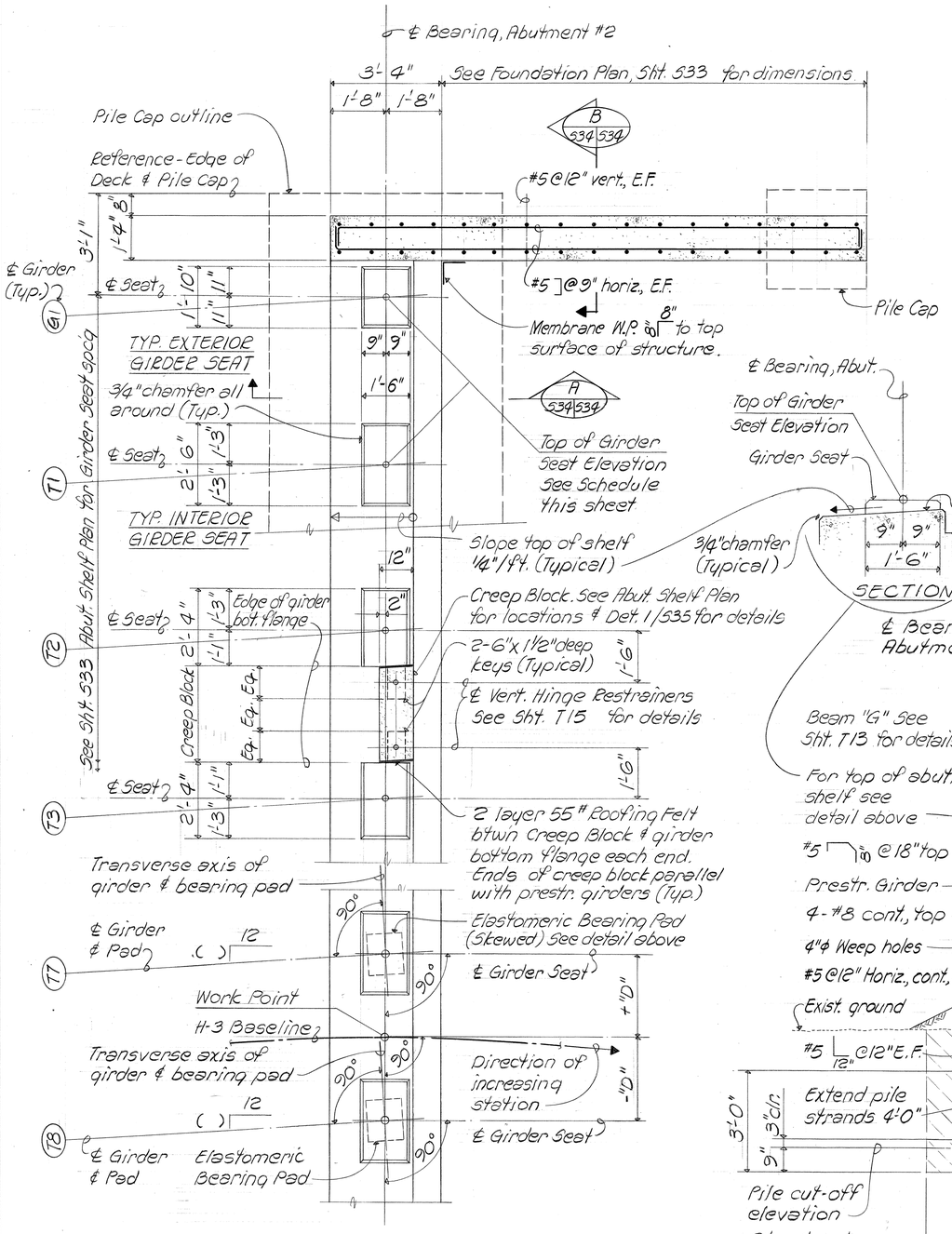
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ABUTMENT PLANS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 533 OF 46 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	75	106

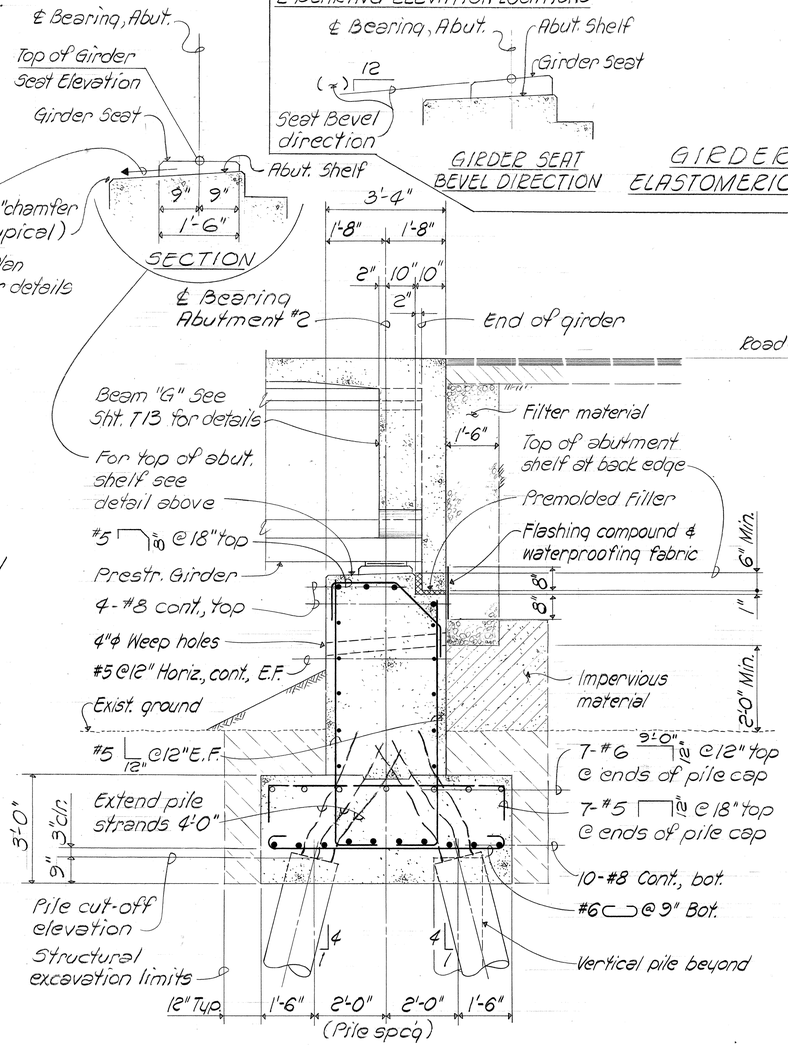


PARTIAL ABUTMENT SHELF PLAN

(1 / 533 534)

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

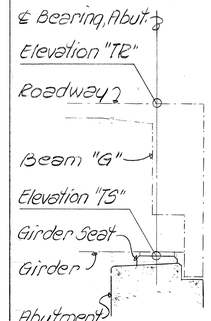
NOTE 8
Place concrete for Creep Blocks after girders are erected



TYPICAL ABUTMENT SECTION

(A / 533, 534)

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



SECTION

℄ BEARING ELEVATION LOCATIONS

GIRDER SEAT BEVEL DIRECTION

LEGEND:

"D" - Distance of ℄ girder intersection with bearing line from H-3 Baseline

"TE" - Top of roadway elevation at intersection of ℄ girder & ℄ bearing line.

"TS" - Top of girder seat elevation at intersection of ℄ girder & ℄ bearing line.

Bevel - Girder seat bevel

NOTE: Items "D", "TE" & "TS" are given in feet.

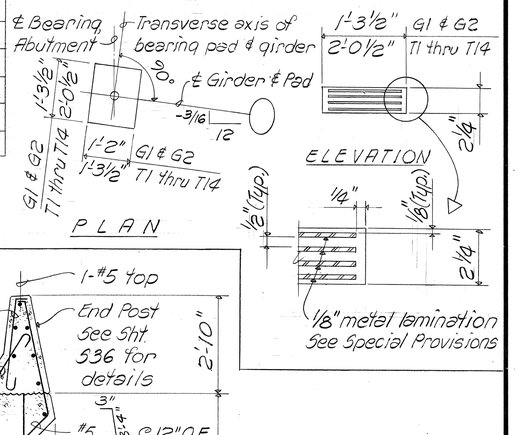
GIRDER SEAT LOCATIONS, ELEVATIONS & BEVELS

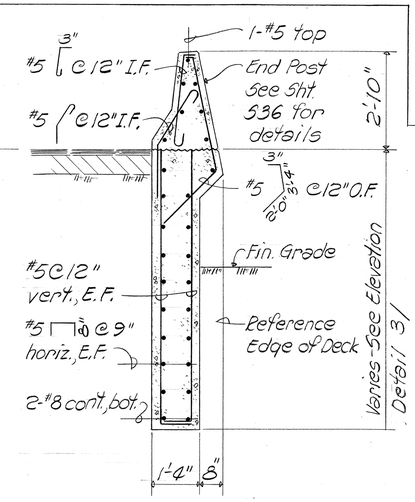
GIRDER	"D"	"TE"	"TS"	BEVEL
G1	-37.88	162.25	156.28	1/8
T1	-32.86	161.96	155.99	1/8
T2	-27.83	161.67	155.69	1/8
T3	-22.81	161.38	155.40	1/8
T4	-17.78	161.09	155.11	1/8
T5	-12.76	160.80	154.82	1/8
T6	-7.73	160.50	154.53	1/8
T7	-2.70	160.21	154.24	1/8
T8	2.32	159.92	153.95	1/8
T9	7.35	159.63	153.65	1/8
T10	12.37	159.34	153.36	1/8
T11	17.40	159.05	153.07	1/8
T12	22.42	158.76	152.78	1/8
T13	27.45	158.46	152.49	1/8
T14	32.47	158.17	152.20	1/8
G2	37.50	157.88	151.90	1/8

GIRDER SEAT SCHEDULE & ELASTOMERIC BEARING PAD DETAILS

ELASTOMERIC BEARING PAD NOTES

1. Fiberglass reinforced elastomeric pads may be used in lieu of pads with metal laminations as shown.
2. Minimum total thickness of fiberglass reinforced elastomeric bearing pads shall be equal to the sum of the 1/2" pads between metal laminations + 1/4" (Revise dimension "E" in schedule accordingly)
3. Any revisions to elastomeric bearing pad thicknesses shall be reflected in concrete seat & girder shelf elevations.
4. Cost of bearing pads incidental to concrete.





TYPICAL WINGWALL SECTION

(B / 533, 534 — 534)

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ABUTMENT SECTION & DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

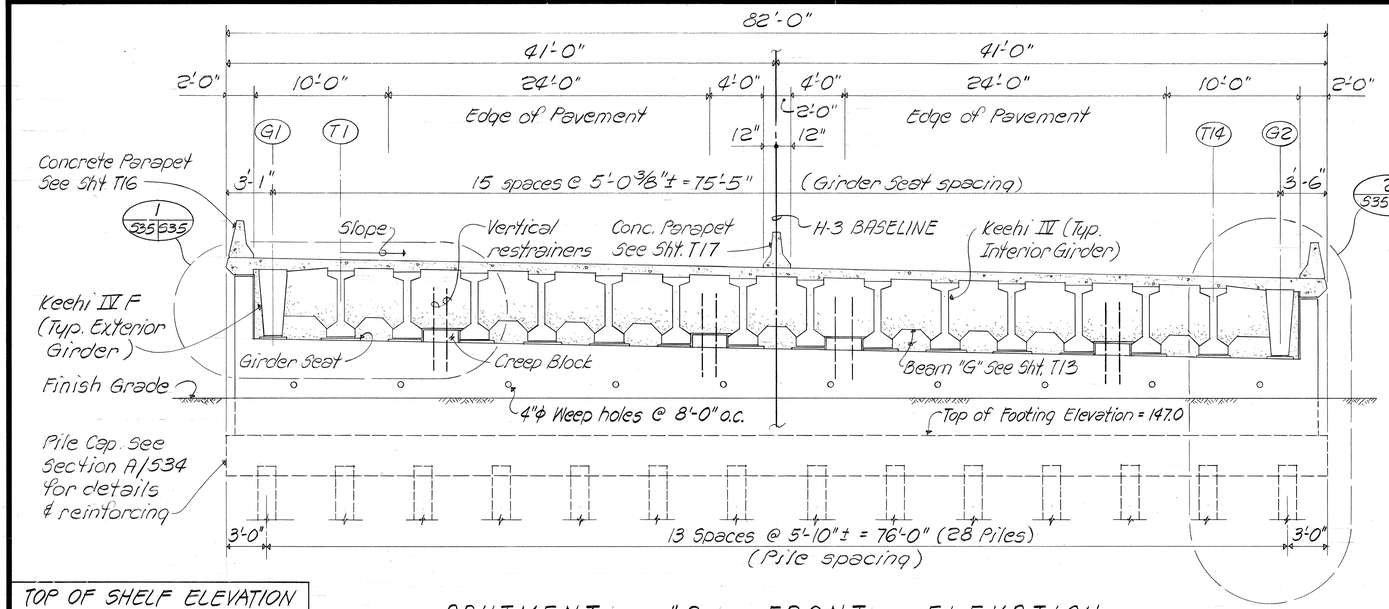
SHEET No. 534 OF 46 SHEETS

DATE	REVISION
10/19/89	REVISED TOP OF GIRDER SEAT ELEVATIONS

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

C.O. 75

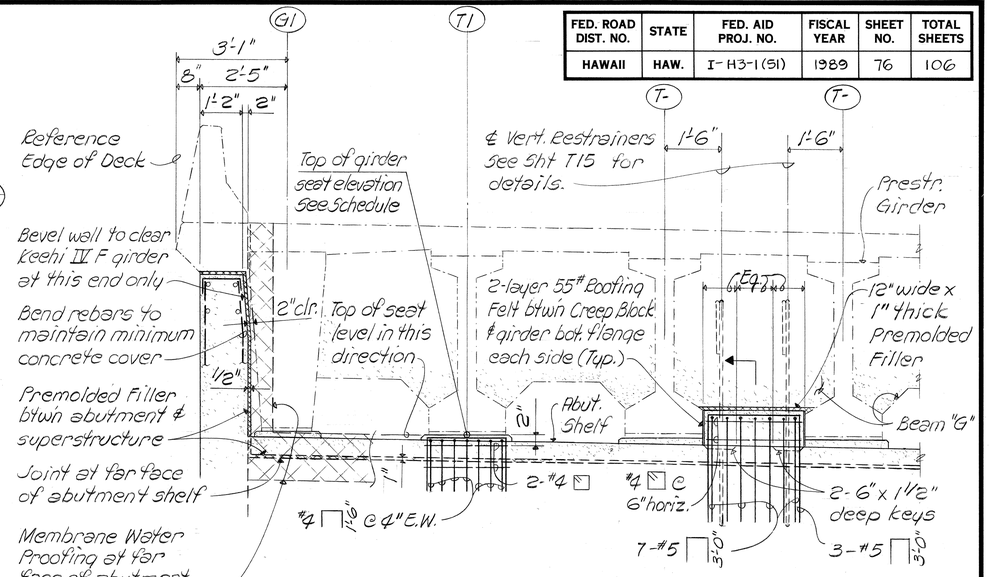
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	76	106



TOP OF SHELF ELEVATION
@ G1 ℄ = 155.86
@ G2 ℄ = 151.48

ABUTMENT #2 FRONT ELEVATION

Scale : 3/16" = 1'-0"

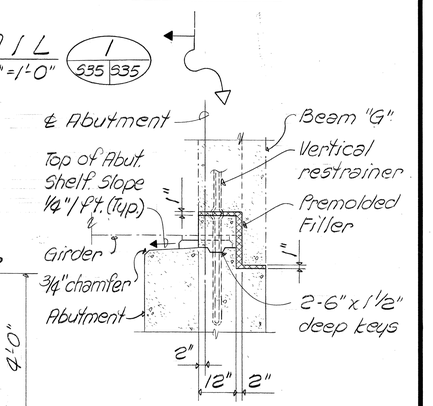


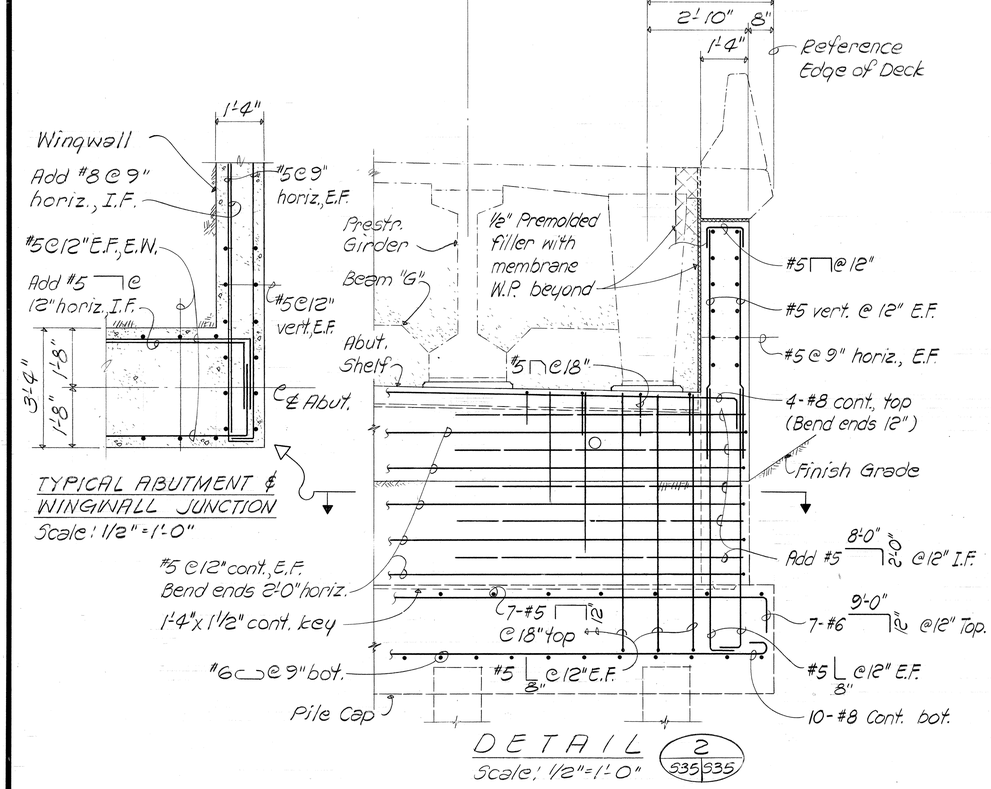
NOTE!
Place concrete for Creep Blocks after girders are erected

GIRDER SEAT

CREEP BLOCK

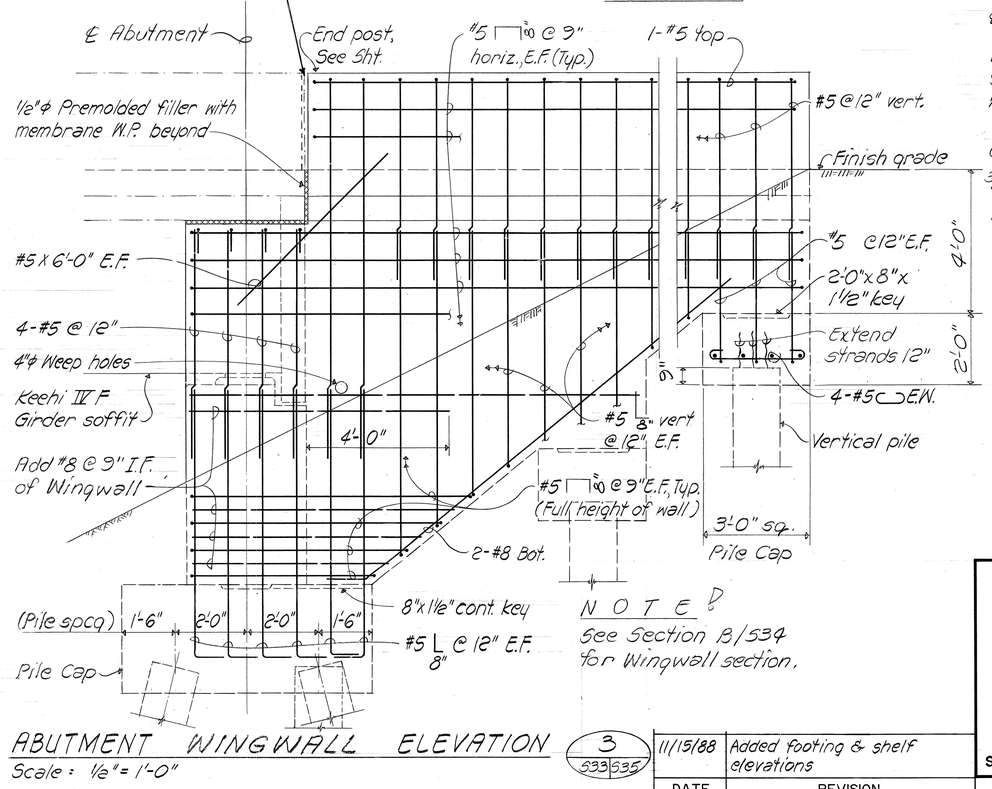
DETAIL 1 535 535
Scale: 1/2" = 1'-0"





TYPICAL ABUTMENT ℄ WINGWALL JUNCTION
Scale: 1/2" = 1'-0"

DETAIL 2 535 535
Scale: 1/2" = 1'-0"



NOTE!
See Section B/S34 for Wingwall section.

ABUTMENT WINGWALL ELEVATION 3 533 535
Scale: 1/2" = 1'-0"

DATE	REVISION
11/15/88	Added footing & shelf elevations

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

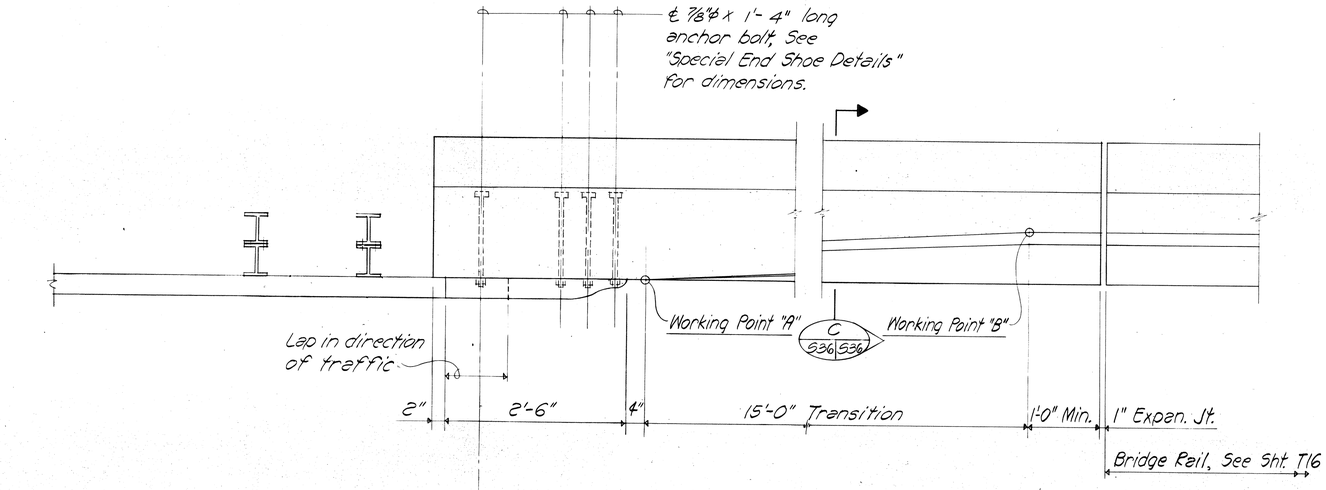
ABUTMENT ELEVATIONS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:
SHEET NO. 535 OF 46 SHEETS

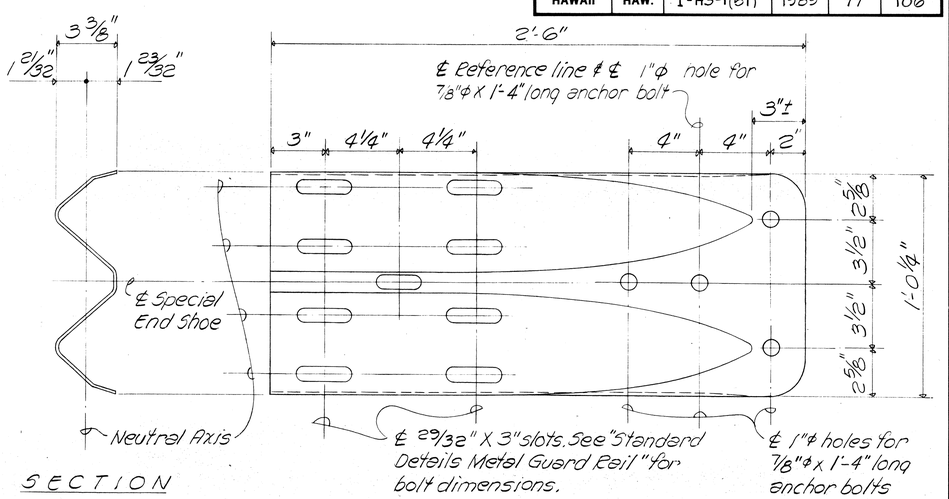
ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
NOTE BOOK
DESIGNED BY
QUANTITIES BY
CHECKED BY
No.
DATE

ADD. 76

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(61)	1983	77	106



PLAN
Scale: 1" = 1'-0"

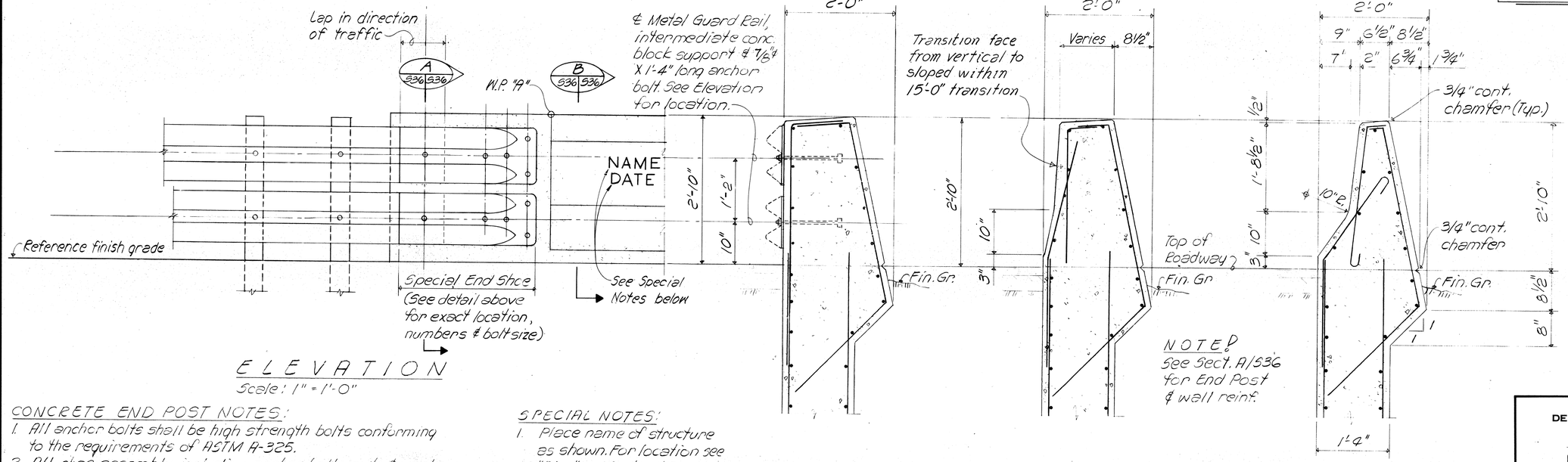


SECTION

ELEVATION

SPECIAL END SHOE DETAILS
Scale: 3" = 1'-0"

NOTE:
All metal guard rails are not in this Contract.



ELEVATION
Scale: 1" = 1'-0"

CONCRETE END POST 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 & washers shall be galvanized
3. Special End Shoe shall be fabricated from 10 gage steel conforming to the requirements of AASHTO 180.
4. First guard rail panel adjoining "Special End Shoe" shall be of galvanized steel. See Special Provisions for requirements.
5. Anchor bolt length given from under bolt head.

SPECIAL NOTES:
1. Place name of structure as shown. For location see "Plan" on Contract Drawings.
2. Date shown will be year structure is completed.
3. Letter size & detail, see "Standard Bridge Details."

SECTION A 536 536
Scale: 1" = 1'-0"

SECTION B 536 536
Scale: 1" = 1'-0"

SECTION C 536 536
Scale: 1" = 1'-0"

ORIGINAL PLAN
SURVEY PLOTTED BY
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NOTE BOOK
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CHECKED BY
DATE
NO.

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301 Sumner St., #502
Honolulu, Hawaii 96817

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

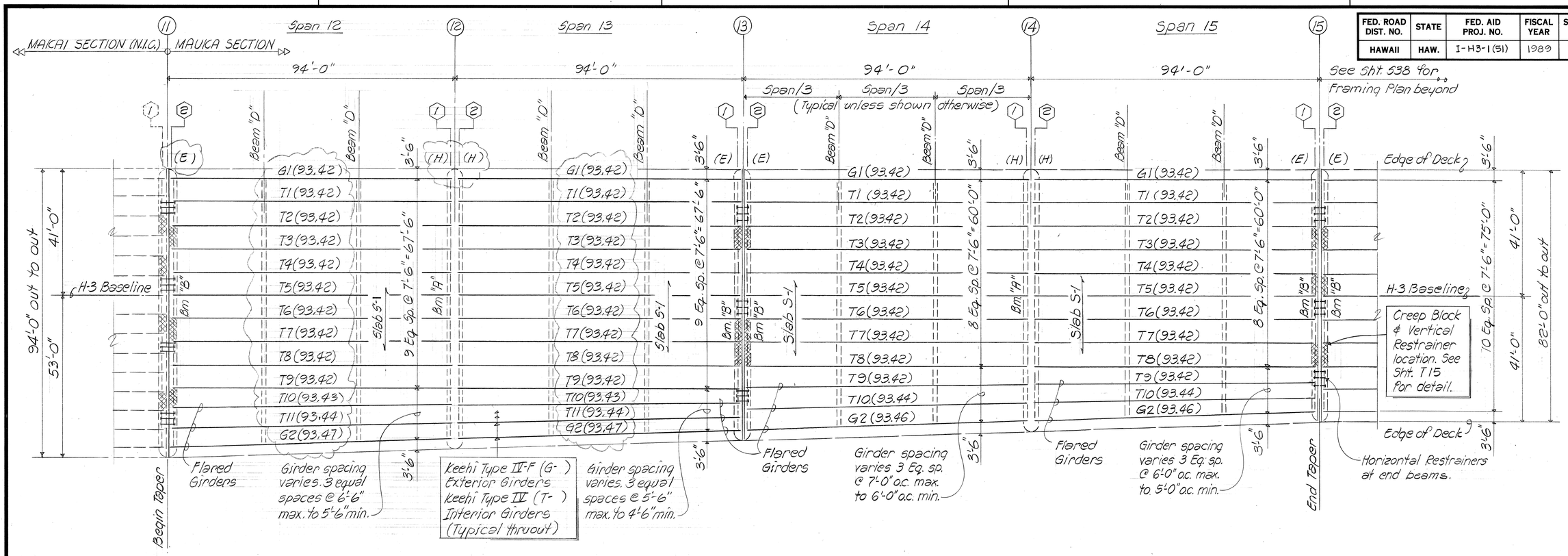
END POST DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 536 OF 46 SHEETS

77

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	78	106



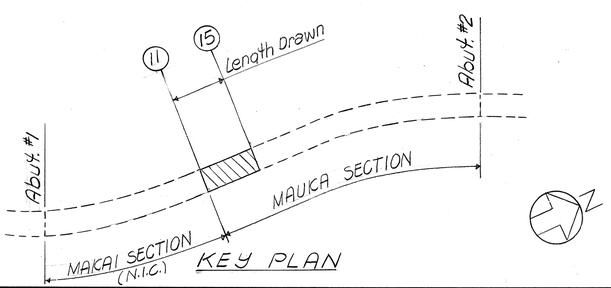
PARTIAL DECK FRAMING PLAN

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

PRESTRESSED GIRDER NOTES

1. See Deck Framing Plans for Girder Mark Numbers.
2. See Sht.'s T7 thru T11 for girder details.
3. Girder lengths are measured along ℄ of girders out to out in plan. Length shown in ( ) on Framing Plans. See Sht. T9 for diagram.
4. All girders are parallel unless designated as flared.

PRESTRESSED GIRDER SCHEDULE		
SPAN NUMBER	GIRDER MARK NUMBER	GIRDER TYPE
12	G1, G2	IIIF-2
	T1-T11	III-2
13	G1, G2	IIIF-2
	T1-T11	III-2
14 15	G1, G2	IIIF-2
	T1-T10	III-2



REFERENCE DRAWINGS

1. Hinge Restrainers ---------- Sht. T15
2. Prestressed Girder Details -- Sht. T7 thru T11
3. Beams "A", "B", "C" & "D" ---- Sht. T12
4. Beams "H" & "J" ---------- Sht. T14
5. Slab Reinforcing Schedule --- Sht. S42 & S43
6. Deck Slab Camber Schedule -- Sht. S44

Note: Additional Restrainers added later in another contract.

LEGEND

G1, T1, etc. = Girder Mark Number
(E) = Expansion end of girders
(H) = Hinge end of girders
⊢⊣ = Horizontal Hinge Restrainers
▨ = Creep Block with vertical restrainers

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STATE OF HAWAII
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HIGHWAYS DIVISION

PARTIAL FRAMING PLANS
PIERS #11 TO #15

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

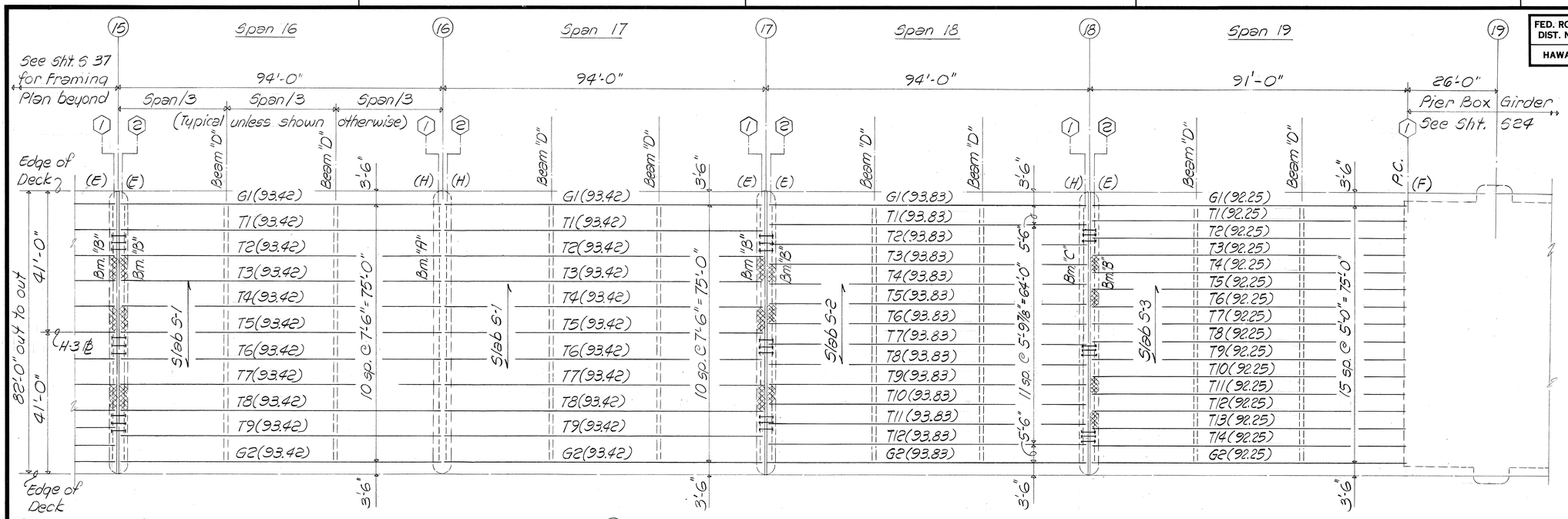
SHEET No. 537 OF 46 SHEETS

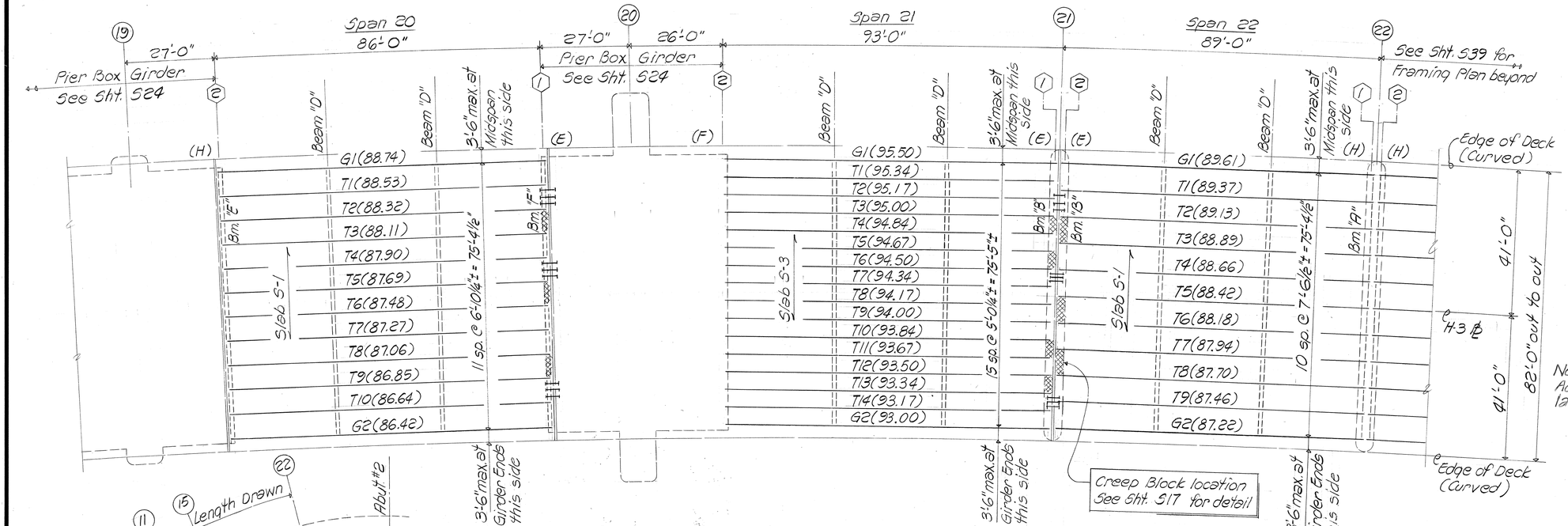
DATE	REVISION
10/19/89	REVISED SPANS 12 & 13

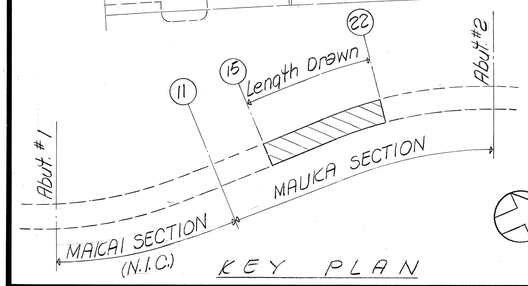
ORIGINAL PLAN
SURVEY PLOTTED BY ____ DATE
DRAWN BY .....
TRACED BY .....
DESIGNED BY .....
QUANTITIES BY .....
CHECKED BY .....
NOTE BOOK
No. ____

C.O. 78

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	79	106







PARTIAL DECK FRAMING PLANS

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

PRESTRESSED GIRDER SCHEDULE

SPAN NUMBER	GIRDER MARK NUMBER	GIRDER TYPE
16, 17	G1, G2	IV F-2
	T1-T9	IV-2
18	G1, G2	IV F-3
	T1-T12	IV-3
19, 21	G1, G2	IV F-6
	T1-T14	IV-5
20	G1, G2	IV F-3
	T1-T10	IV-4
22	G1, G2	IV F-5
	T1-T9	IV-4

See Sht. S-37 for PRESTRESSED GIRDER NOTES.

LEGEND

G1, T1, etc. = Girder Mark Number
(E) = Expansion end of girders
(H) = Hinge end of girders
(F) = Fixed end of girders
⊢ = Horizontal Hinge Restrainers
▨ = Creep Block w/ Vertical Restrainers

REFERENCE DRAWINGS

1. Similar to Sht. S37
2. Beam "F" ----- Sht. T13

Note:
Additional Restrainers added later in another contract.

NOTE:
Prestressed Girders shown are Keehi Type IV Interior Girders (T-) & Keehi Type IV F Exterior Girders (G-)

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DATE	REVISION
11/15/88	REVISED GIRDER LENGTHS SPAN 19 & 21

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL FRAMING PLANS

PIERS #15 TO #22

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

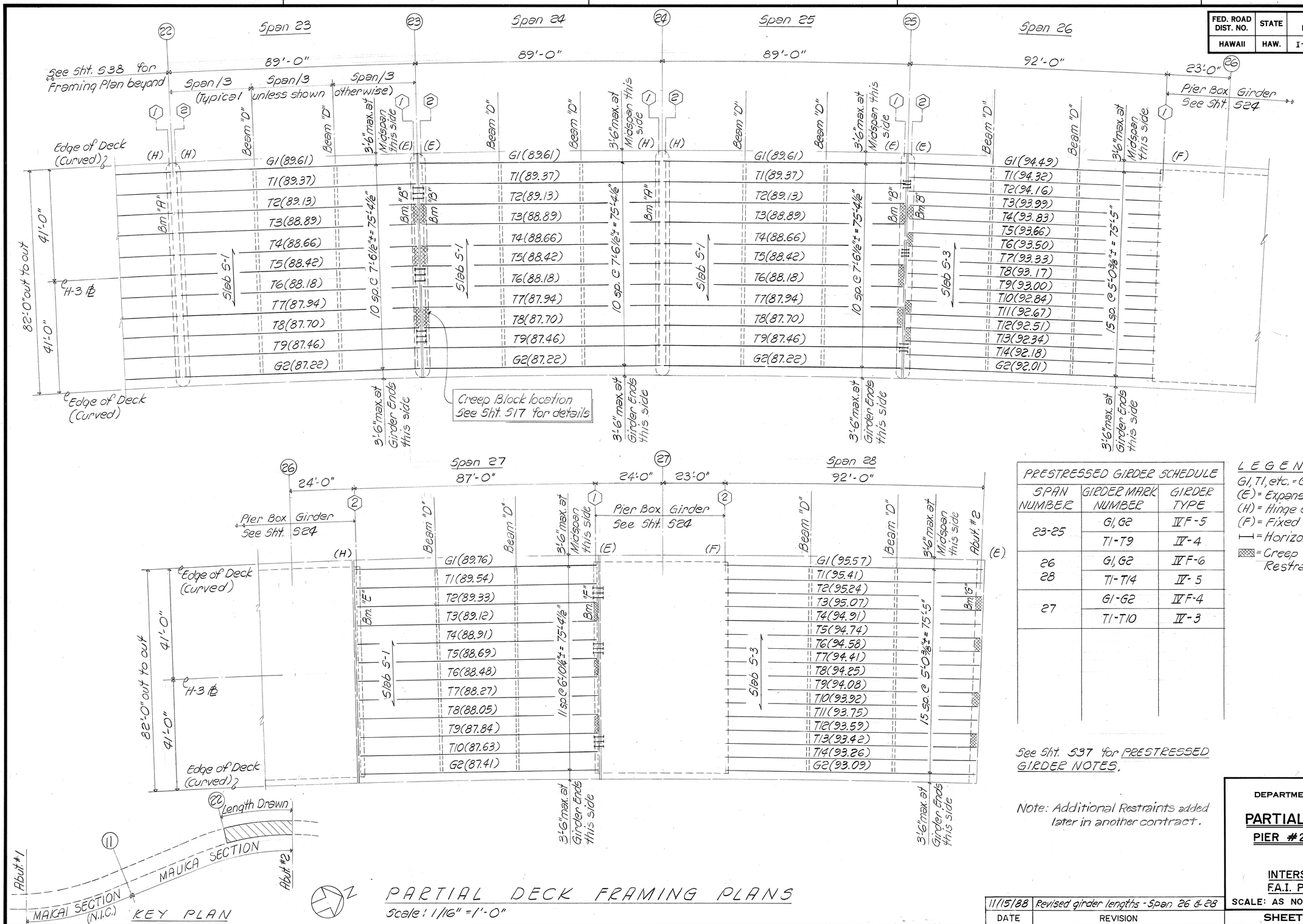
SCALE: AS NOTED DATE:

SHEET No. 538 OF 46 SHEETS

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

ADD. 79

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	80	106



PARTIAL DECK FRAMING PLANS

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

PRESTRESSED GIRDER SCHEDULE		
SPAN NUMBER	GIRDER MARK NUMBER	GIRDER TYPE
23-25	G1, G2	IV F-5
	T1-T9	IV-4
26 28	G1, G2	IV F-6
	T1-T14	IV-5
27	G1-G2	IV F-4
	T1-T10	IV-3

LEGEND

G1, T1, etc. = Girder Mark Number
(E) = Expansion end of girders
(H) = Hinge end of girders
(F) = Fixed end of girders
⊢ = Horizontal Hinge Restrainers
▨ = Creep Block w/ vertical Restrainers

See Sht. 537 for PRESTRESSED GIRDER NOTES.

Note: Additional Restraints added later in another contract.

DATE	REVISION
11/15/88	Revised girder lengths - Span 26 & 28

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL FRAMING PLANS
PIER #22 TO ABUTMENT #2

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

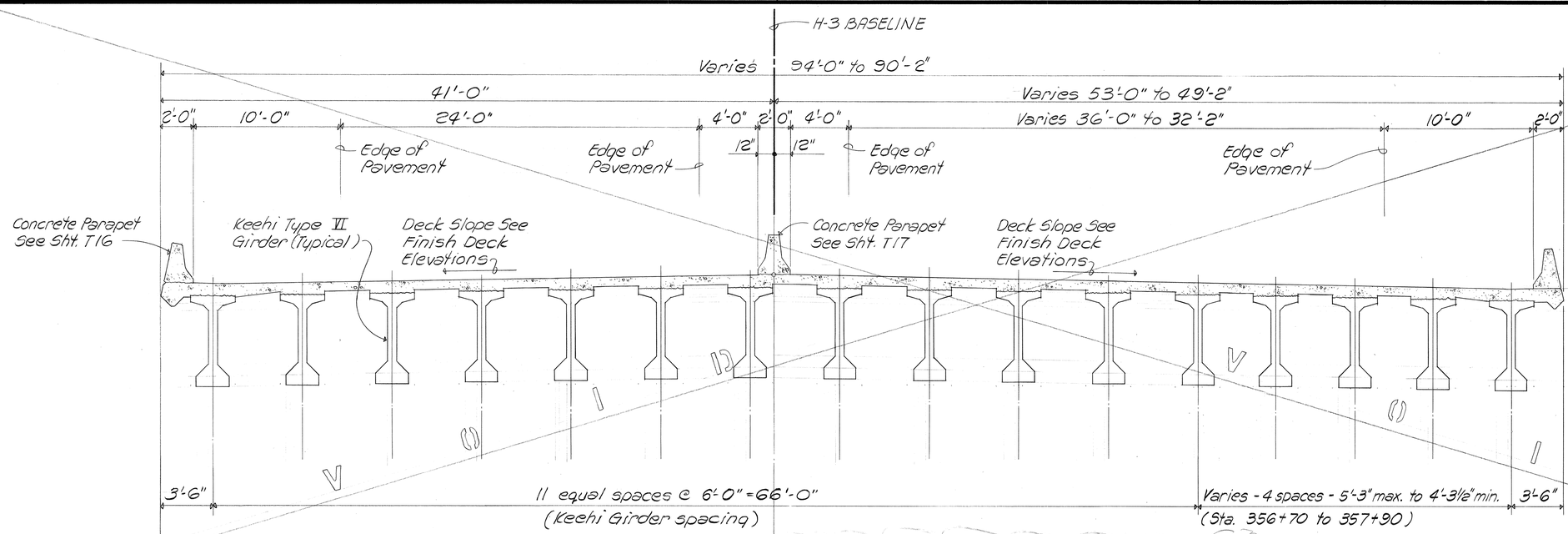
SHEET No. 539 OF 46 SHEETS

ADD. 80

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

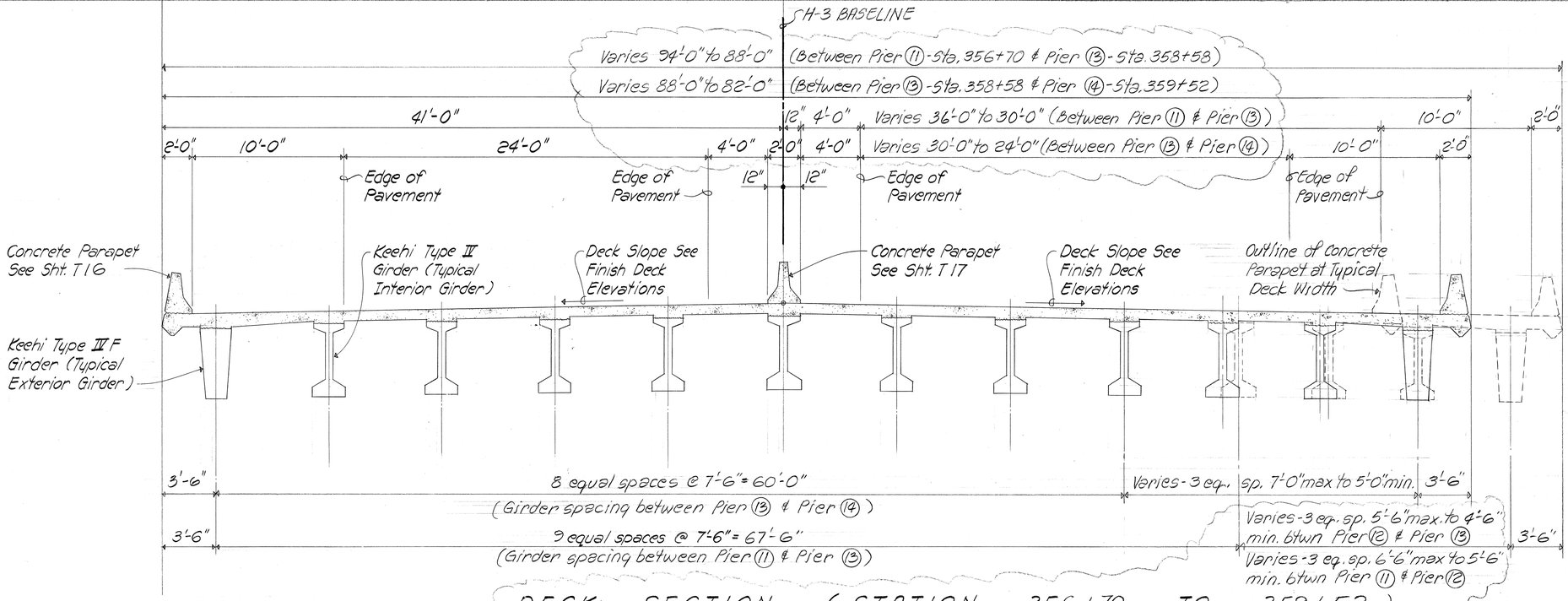
ORIGINAL PLAN
NOTE BOOK
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	81	106



DECK SECTION (STATION 356+70 TO 357+90)

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



DECK SECTION (STATION 356+70 TO 359+52)

Scale: 1/4" = 1'-0" (Tapered portion of deck)

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

ORIGINAL PLAN
NOTE BOOK
No.

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DATE	REVISION
10/13/89	VOIDED DECK SECTION BTWN STA. 356+70 & 357+90 & REVISED DECK SECTION BTWN STA. 356+70 & 359+52

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DECK SECTIONS

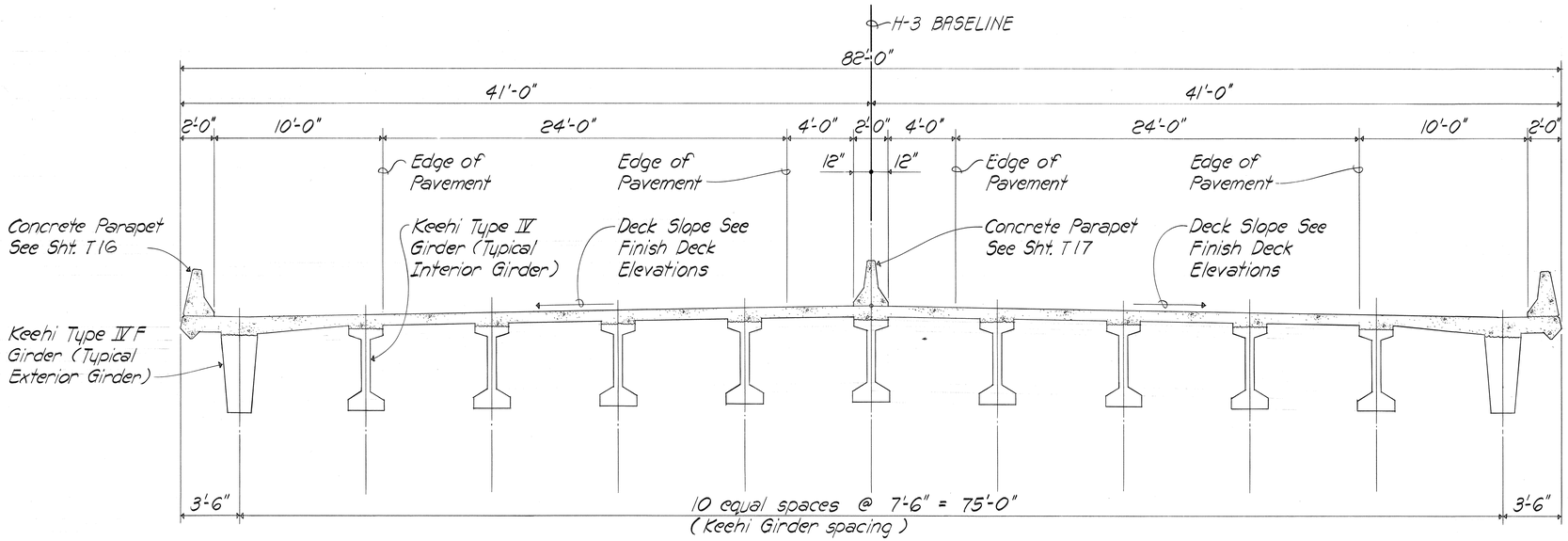
STA. 356+70 TO STA. 359+52

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE:

SHEET No. 590 OF 46 SHEETS

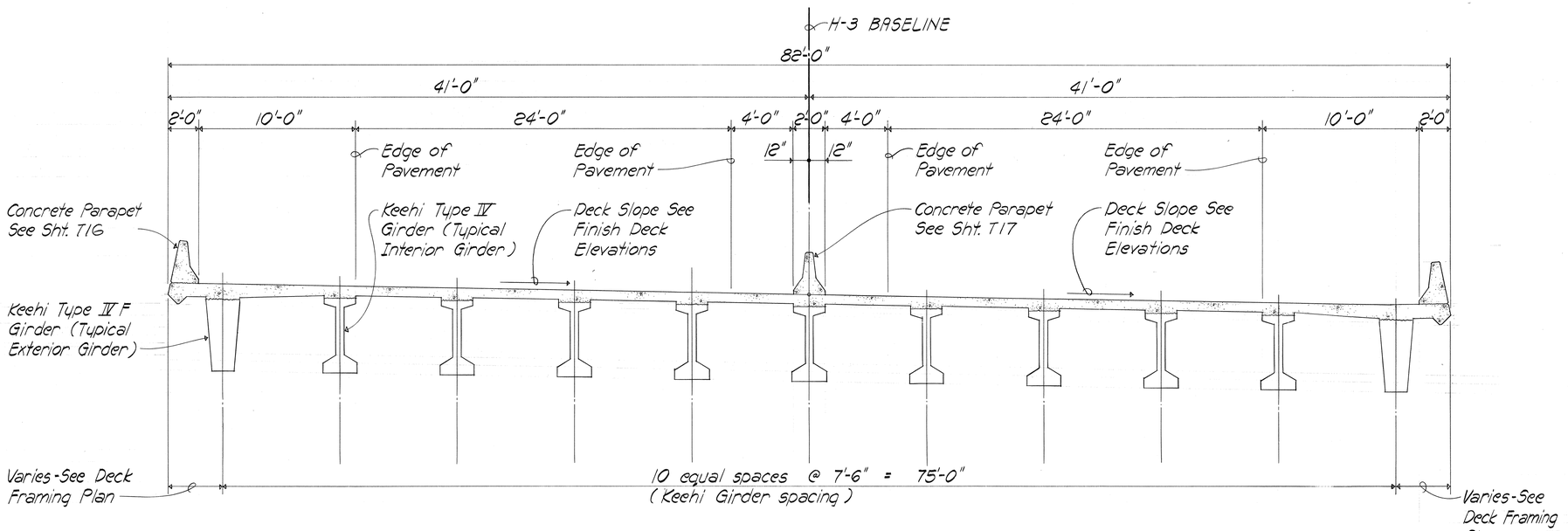
C.O. 81

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	82	106



TYPICAL DECK SECTION

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



DECK SECTION AT SUPERELEVATED ROADWAY

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

SURVEY PLOTTED BY ____ DATE
DRAWN BY .....
TRACED BY .....
DESIGNED BY .....
QUANTITIES BY .....
CHECKED BY .....

ORIGINAL PLAN | NOTE BOOK | No.

SSFM Engineers, Inc.
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

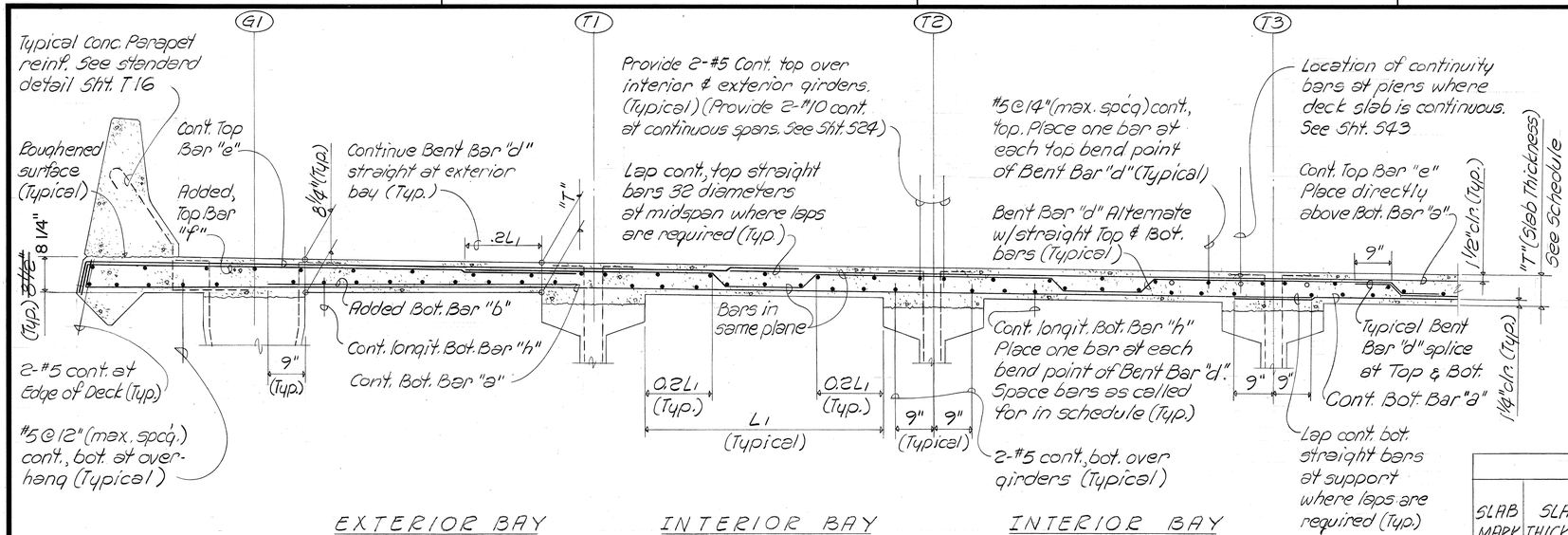
TYPICAL DECK SECTIONS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 541 OF 46 SHEETS

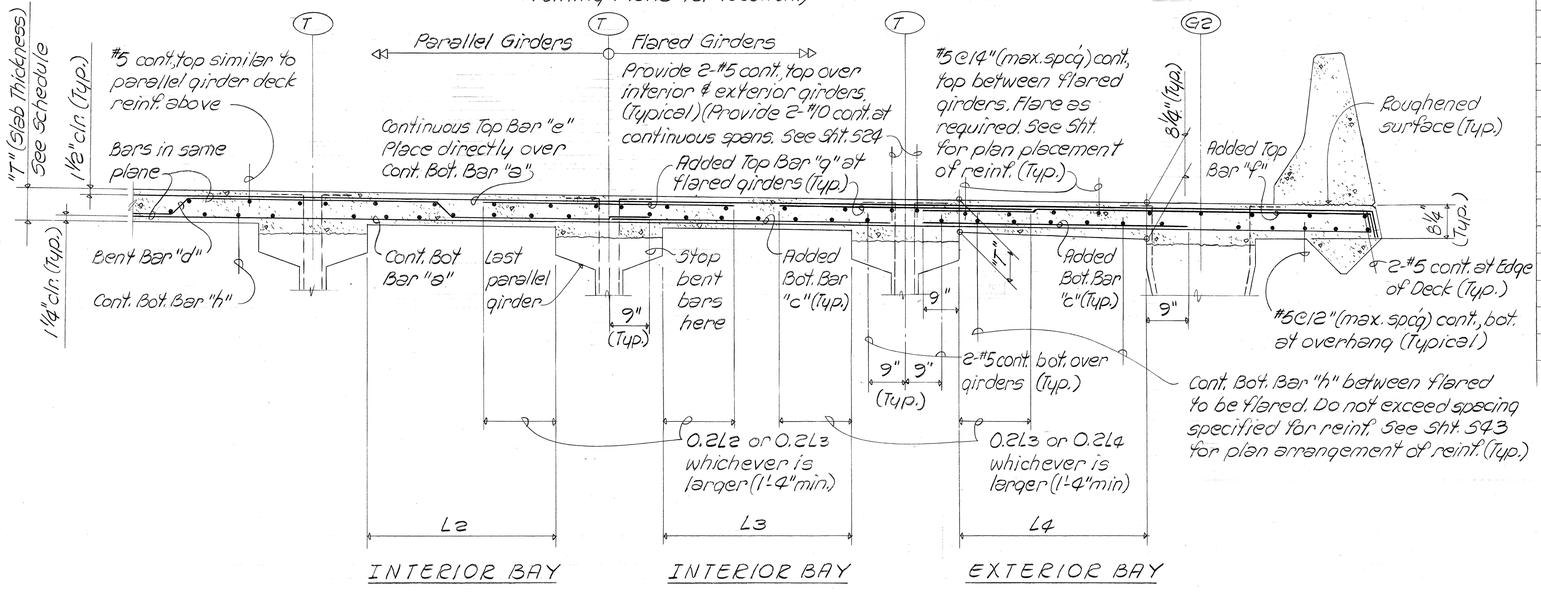
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	83	106



EXTERIOR BAY INTERIOR BAY INTERIOR BAY

AT PARALLEL GIRDERS

(L_1 = Slab span for typical equal girder spacing. See Deck Framing Plans for location.)



INTERIOR BAY INTERIOR BAY EXTERIOR BAY

AT FLARED GIRDERS

(Right side only where occurs)

DECK SLAB REINFORCING SCHEDULE

SLAB MARK NO.	SLAB THICKNESS "T"	TRANSVERSE REINF. CONT. BOT. BAR "b"	ADDED BOT. BAR "b"	ADDED BOT. BAR "c"	BENT BAR "d"	CONT. TOP BAR "e"	ADDED TOP BAR "f"	ADDED TOP BAR "g"	LONGIT. REINF. CONT. BOT. BAR "h"	REMARKS
S-1	6 1/2"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@8"	#5@12"	#5@9"	
S-2	6 1/2"	#5@14"	#5@14"	#5@14"	#5@14"	#5@14"	#5@7"	#5@14"	#5@10"	
S-3	6 1/2"	#5@16"	#5@16"	#5@16"	#5@16"	#5@16"	#5@6"	#5@16"	#5@12"	

NOTES:

1. Splices
   a) Splice top & bottom bars as required at interior bays only.
   b. Alternate bars shall be spliced at the same location.
2. Top & bottom transverse deck slab reinforcing shall be placed normal to girders. See plan arrangement for deck slab reinf. Sht. S43
3. See Deck Framing Plans for deck slab mark number locations.
4. For deck reinf. details not shown on this sheet, see plan arrangement for deck slab reinf. Sht. S-
5. All deck slab concrete, except diaphragm & parapet, shall be Class BD.

PARTIAL DECK SECTIONS SHOWING TYPICAL DECK SLAB REINFORCING

Not to scale

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Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

HOWARD Y. FUKUDA REGISTERED PROFESSIONAL ENGINEER No. 1343-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DECK SLAB REINFORCING SCHEDULE

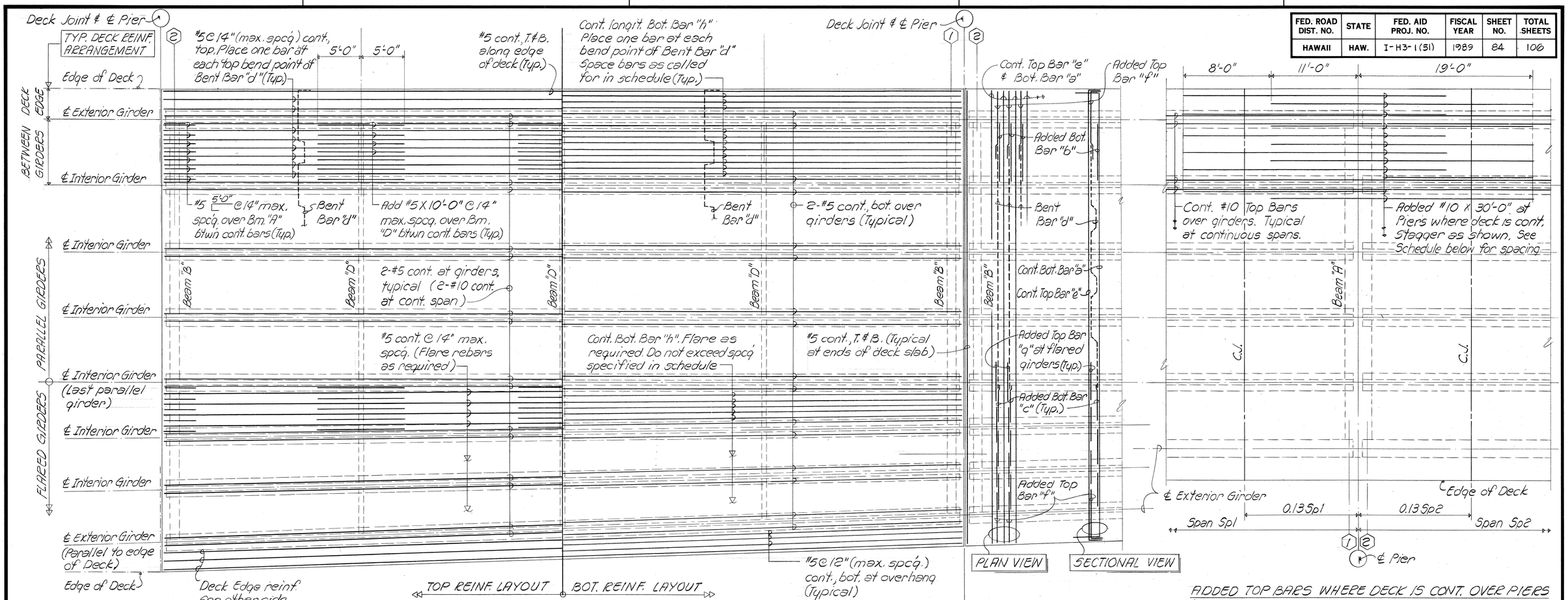
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

SCALE: AS NOTED DATE:

SHEET No. 542 OF 46 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	84	106

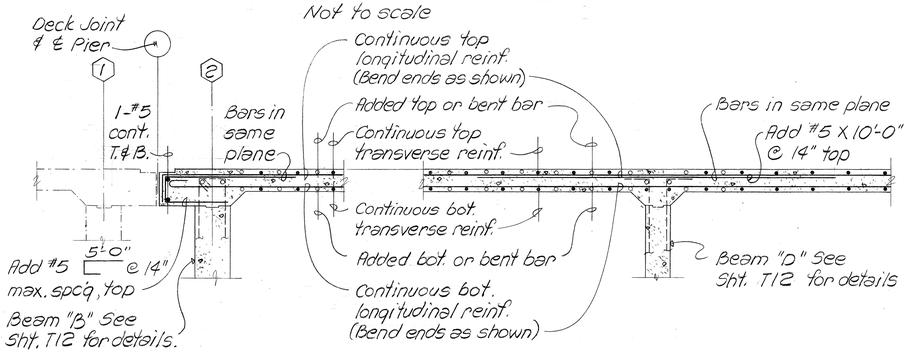


ADDED TOP BARS WHERE DECK IS CONT. OVER PIERS
(In same plane as typical deck top longitudinal bars)

Pier	Spacing of Added #10 X 30'-0"
14	7" o.c.
16	7" o.c.
22	9" o.c.
24	9" o.c.
12	7" O.C.

PLANS SHOWING TYPICAL ARRANGEMENT FOR DECK SLAB REINFORCEMENT

Not to scale



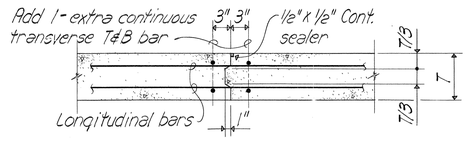
AT BEAM "B" AT BEAM "D"

TYPICAL DECK SECTIONS

Not to scale

N O T E S :

1. Unless otherwise shown, see Deck Slab Reinf. Schedule, Sht. S42 for slab reinf. not shown.
2. See Deck Section, Sht. S42 for transverse & longitudinal bar placement & extent & bends of transverse bars.
3. See Sht. T12 for Beam details.



AT TYPICAL TRANSVERSE CONSTRUCTION JOINT (C.J.)

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DECK SLAB REINFORCING PLAN

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)
SCALE: AS NOTED DATE: AUG., 1984

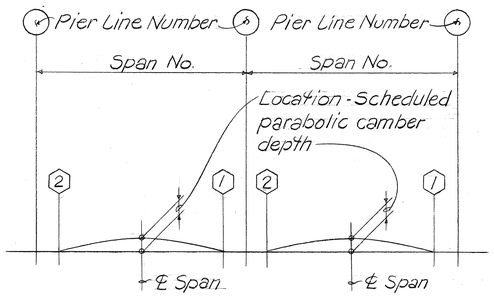
SHEET No. S43 OF 46 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(51)	1989	85	106

DECK SLAB CAMBER SCHEDULE

GIRDERS \ LOCATION	(11) SPAN No.12	(12) SPAN No.13	(13) SPAN No.14	(14) SPAN No.15	(15) SPAN No.16	(16) SPAN No.17	(17) SPAN No.18	(18) SPAN No.19	(19) SPAN No.20	(20) SPAN No.21	(21) SPAN No.22	(22) SPAN No.23	(23) SPAN No.24	(24) SPAN No.25	(25) SPAN No.26	(26) SPAN No.27	(27) SPAN No.28 Abut. #2
G-1	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	7/16"	1/2"	7/16"	1/2"	7/16"	7/16"	7/16"	7/16"	1/2"	7/16"	1/2"
T-1	1/8"	1/8"	1/8"	1/8	1/8"	1/8"	1/4"	5/16"	5/16"	5/16"	3/16"	3/16"	3/16"	3/16"	5/16"	5/16"	5/16"
T-2																	
T-3																	
T-4																	
T-5																	
T-6																	
T-7																	
T-8																	
T-9					1/8"	1/8"					3/16"	3/16"	3/16"	3/16"			
T-10			1/8"	1/8"					5/16"							5/16"	
T-11	1/8"	1/8"															
T-12							1/4"										
T-13																	
T-14								5/16"		5/16"					5/16"		5/16"
T-15																	
T-16																	
G-2	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	7/16"	1/2"	7/16"	1/2"	7/16"	7/16"	7/16"	7/16"	1/2"	7/16"	1/2"



TYPICAL DECK SLAB CAMBER DIAGRAM

NOTES:

1. The slab camber values includes the combined effects of the initial prestress force, the weight of the girder and the weight of the slab and diaphragm.
2. Camber values shown do not account for any camber growth of the girder.

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Howard Y. Fukuda

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DECK SLAB CAMBER SCHEDULE

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(51)

DATE:

SHEET No. 54 OF 46 SHEETS

DATE	REVISION
10/19/89	REVISED SPANS 12 & 13 SCHEDULE

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

C.O. 85