

# DESIGN CRITERIA

- See sh. SD-1 for General Notes.
- Cast-in-place concrete for the various parts of the viaduct structures are:
  - Class A = Beams, footings, pile caps, tie beams & parapets. (Except pile caps at Pier (22) use 5,000 p.s.i.)
  - Class BD = Concrete Deck Slab
  - 5,000 psi = All others (Columns & Pier Caps)
  - = Pile Caps @ Pier (22) only
- Reinforcing steel for cast-in-place concrete are as follows:
  - Grade 40 = Concrete deck slab, beams & parapets.
  - Grade 60 = Pier cap, column, footing, pile cap, pedestal, tie beam reinforcing & others not specified.

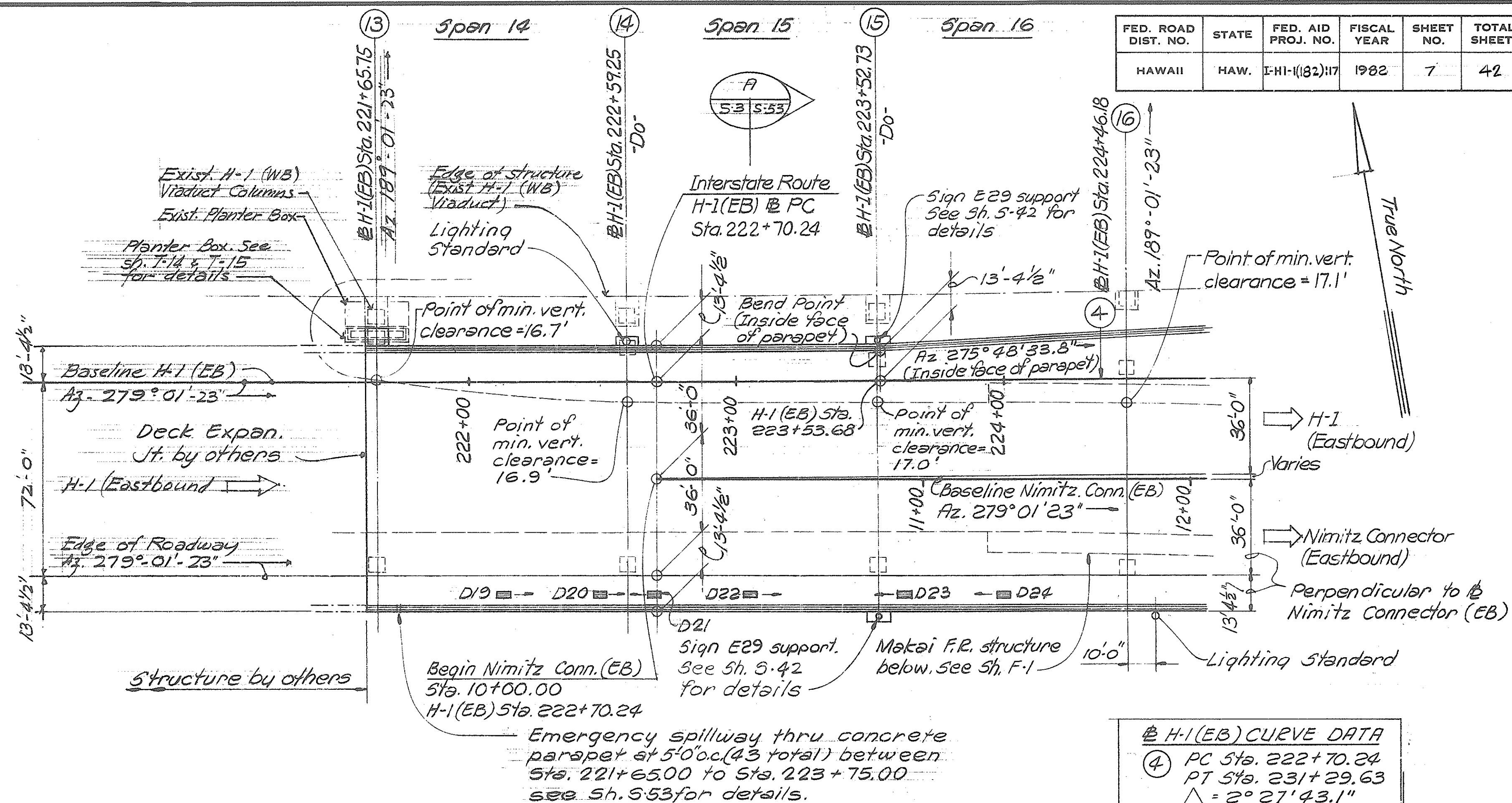
## DECK DRAIN NOTES

- Stations are to E of Deck Drains.
- For Deck Drain details see sh. SD-8 & SD-9.
- All scuppers on this sheet are Type "A" Drain.

| DECK DRAIN LOCATION SCHEDULE |                          |
|------------------------------|--------------------------|
| Deck Drain                   | Location (H-1 (EB) Sta.) |
| D19                          | 222 + 13.00              |
| D20                          | 222 + 49.00              |
| D21                          | 222 + 69.00              |
| D22                          | 223 + 05.00              |
| D23                          | 223 + 63.00              |
| D24                          | 224 + 00.00              |

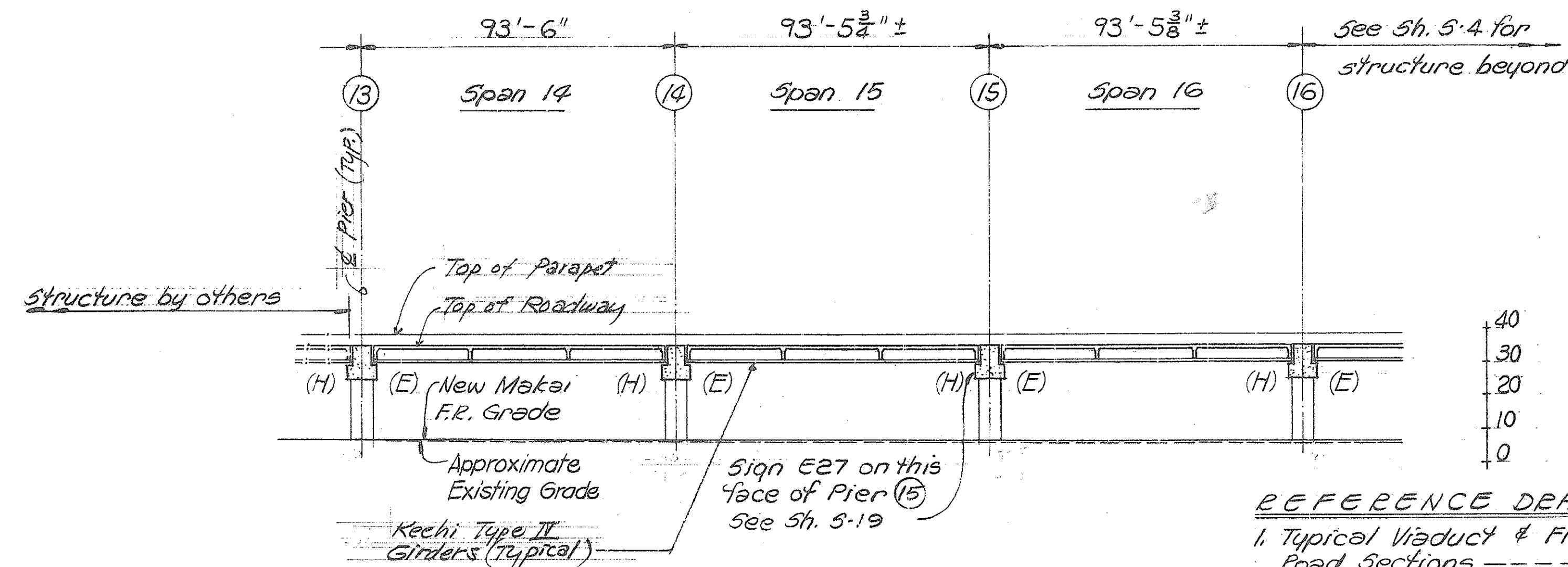
## SPECIAL NOTES

- Unless shown otherwise, all transverse dimensions are perpendicular to Baseline H-1 (EB) & all longitudinal dimensions are on Baseline H-1 (EB).
- See Civil Drawings for all horizontal & vertical controls.
- For Hinge Restrainer details at hinge end of girder, see sh. T-8.
- See sh. S-40 for typical pier cap Construction Notes.



## PARTIAL VIADUCT LAYOUT PLAN

Scale: 1" = 30'-0"



## PARTIAL LONGITUDINAL SECTION ALONG BASELINE H-1 (EB)

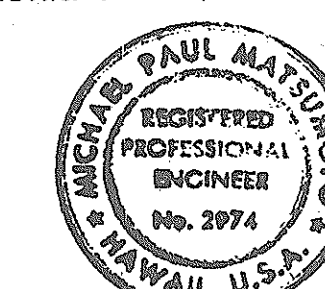
Scale: 1" = 30'-0"

## LEGEND

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

FOR INFORMATION ONLY

KEEHI INTERCHANGE AREA I & II CONSULTANTS  
c/o Shimazu, Shimabukuro & Fukuda, Inc.  
1210 Ward Ave., Honolulu, Hawaii 96814



This work was prepared by me or under my supervision  
*Paul Matsushita*

## REFERENCE DRAWINGS

- Typical Viaduct & Frontage Road Sections --- Sh. S-6 to S-8
- Pier Elevations --- Sh. S-17 to S-19
- Girder Length --- Sh. S-49 to S-51
- Finish Deck Elevations --- Sh. S-9 & S-10

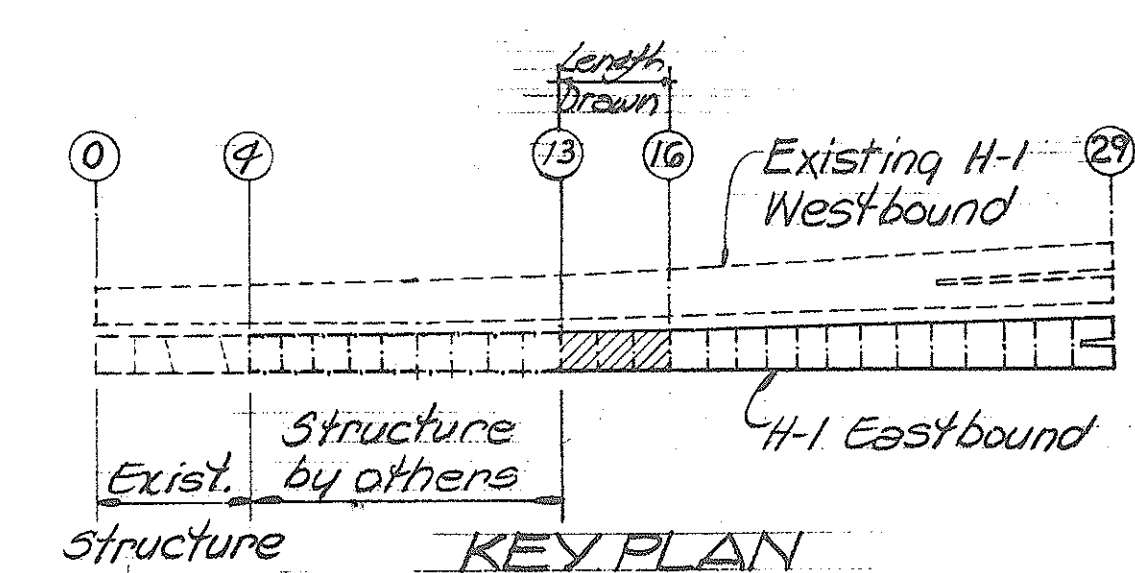
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

H-1 VIADUCT (EB)  
PARTIAL LAYOUT PLAN & LONGITUDINAL SECTION AT STA. 221 + 65.75 TO 224 + 46.18

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. T-HI-1 (82)-117

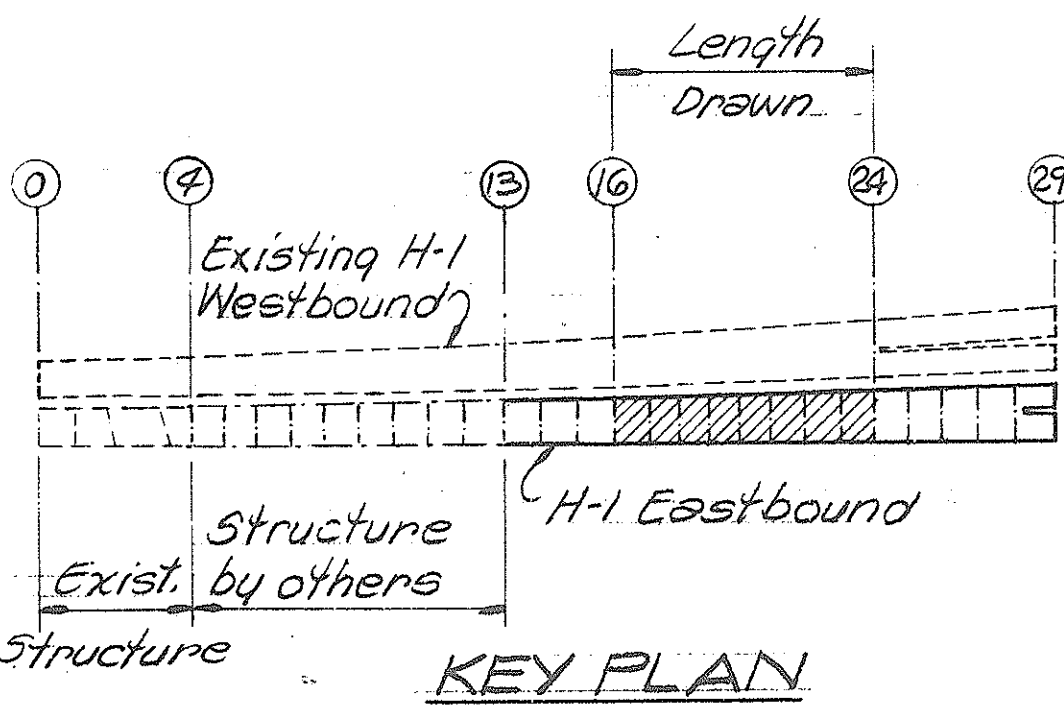
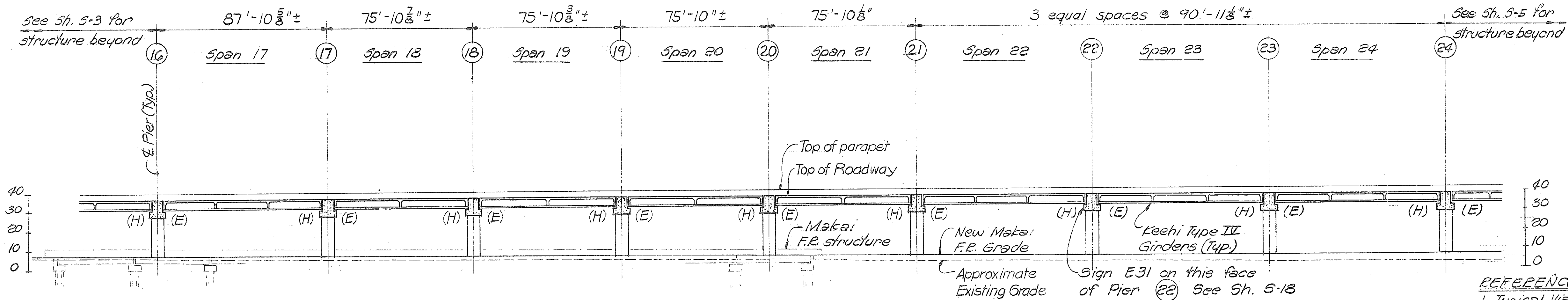
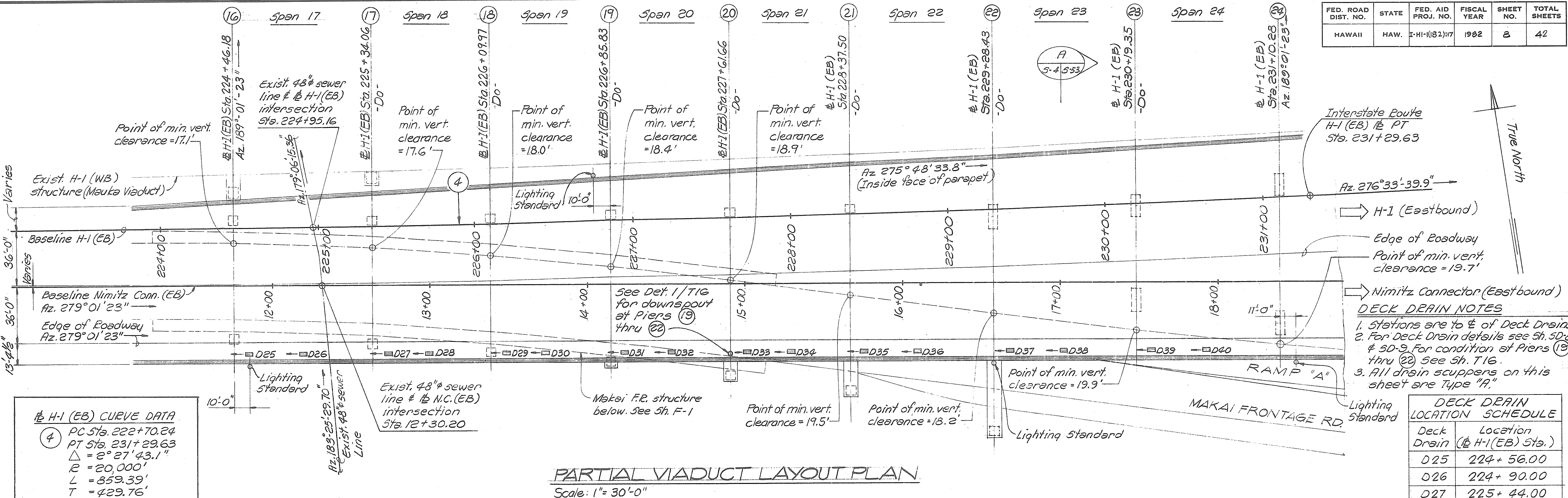
Scale: As Shown Date: 4/21/83

SHEET NO. S-3 OF 58 SHEETS



## KEY PLAN

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-H-1(82)17        | 1982        | 8         | 42           |



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This work was prepared by  
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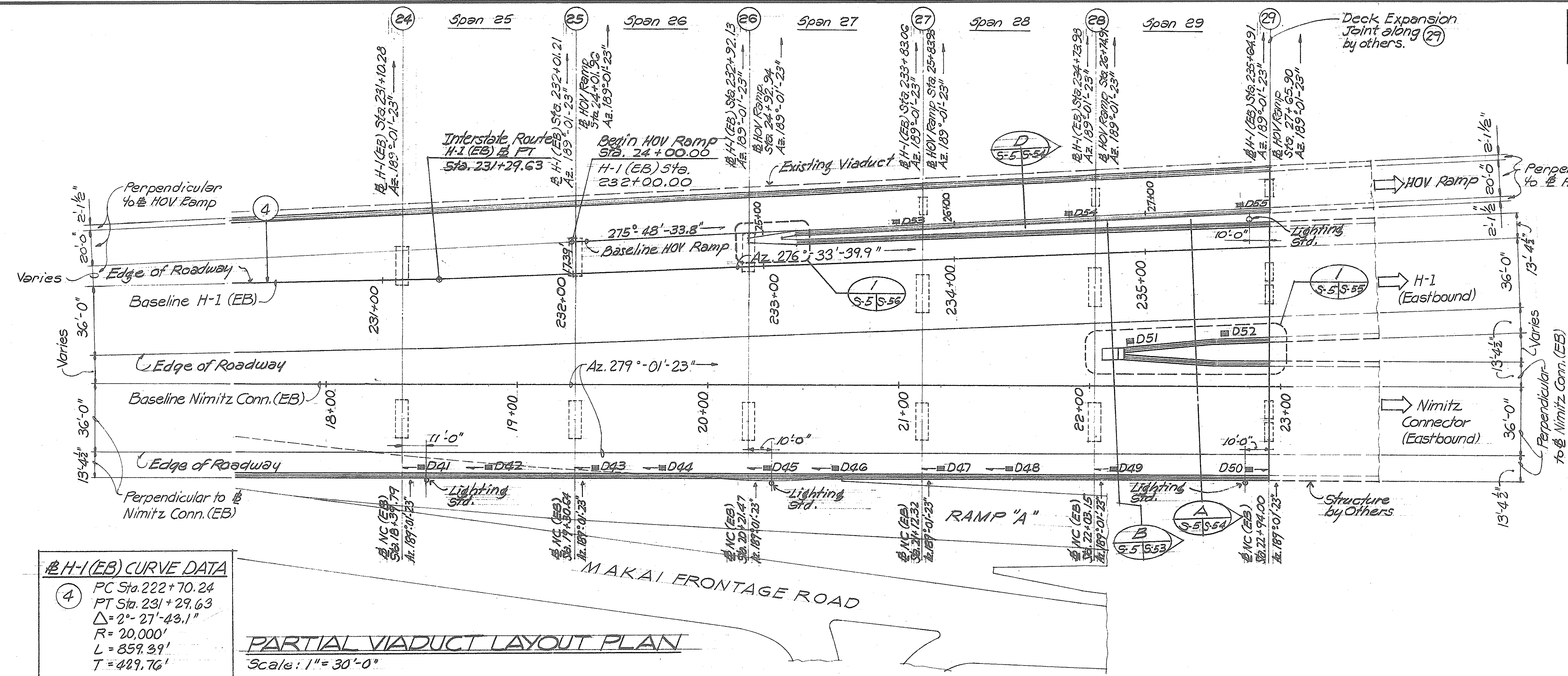
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION,  
HIGHWAYS DIVISION

**H-1 VIADUCT (EB)**  
PARTIAL LAYOUT PLAN &  
LONGITUDINAL SECTION AT  
STA. 224+46.18 TO 231+10.28

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. I-H-1(82)17

Scale: As Shown Date: 4/21/83  
SHEET NO. 8 OF 58 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1-HI-1(182):17     | 1982        | 9         | 42           |



**H-1 (EB) CURVE DATA**

④ PC Sta. 222+70.24  
PT Sta. 231+29.63  
 $\Delta = 2^\circ - 27' - 43.1''$   
 $R = 20,000'$   
 $L = 859.39'$   
 $T = 429.76'$

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

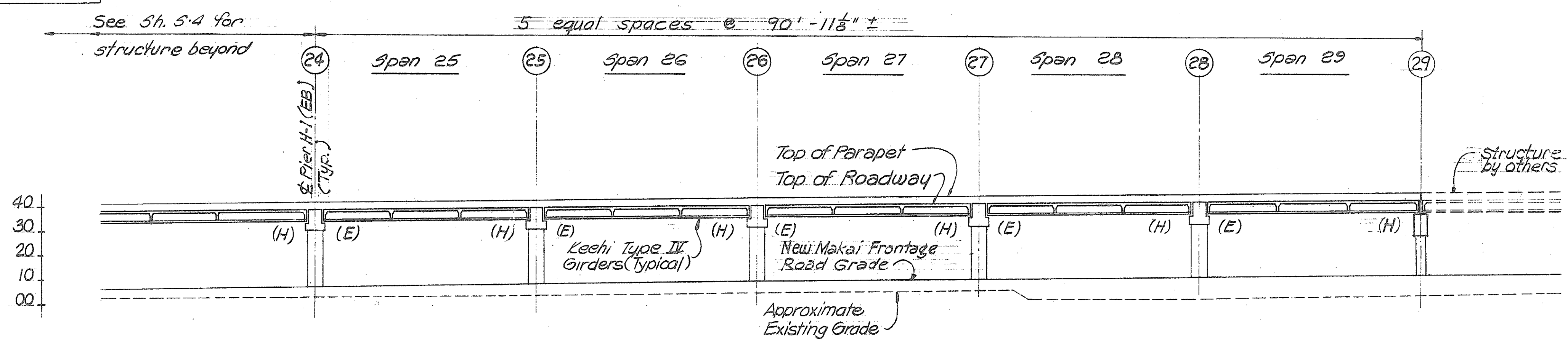
| DECK DRAIN LOCATION SCHEDULE |              |              |          |
|------------------------------|--------------|--------------|----------|
| DECK DRAIN                   | SCUPPER TYPE | OUTFALL TYPE | LOCATION |
| D41                          | A            | 2            | 18 + 50  |
| D42                          |              |              | 18 + 85  |
| D43                          |              |              | 19 + 41  |
| D44                          |              |              | 19 + 76  |
| D45                          |              |              | 20 + 31  |
| D46                          |              |              | 20 + 67  |
| D47                          |              |              | 21 + 22  |
| D48                          |              |              | 21 + 58  |
| D49                          | V            | V            | 22 + 13  |
| D50                          | A            | 2            | 22 + 84  |
| D51                          | C            |              | 234 + 90 |
| D52                          | C            |              | 235 + 40 |
| D53                          | C            |              | 25 + 70  |
| D54                          | C            |              | 26 + 60  |
| D55                          | C            |              | 27 + 50  |

**DECK DRAIN NOTES**

1. Stations are to  $\pm$  of Deck Drains.  
2. For details see Sh. 5D-8 & 5D-9

**REFERENCE DRAWINGS**

1. Typical Viaduct & Frontage Road Sections — Sh. S-7 & 8  
2. Pier Elevations — Sh. S-17 to 19  
3. Girder Length — Sh. S-49 to 51  
4. Deck Finish Grades — Sh. S-9 & 10



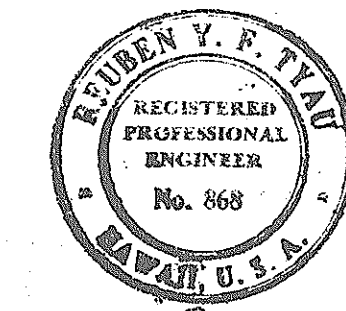
**PARTIAL LONGITUDINAL SECTION ALONG BASELINE H-1 (EB)**  
Scale: 1" = 30'-0"

**LEGEND**

(H) = Hinge end of girders  
(E) = Expansion end of girders  
DE = Drain #2

**SPECIAL NOTES**  
(See Sh. S-3)

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HIGHWAYS DIVISION

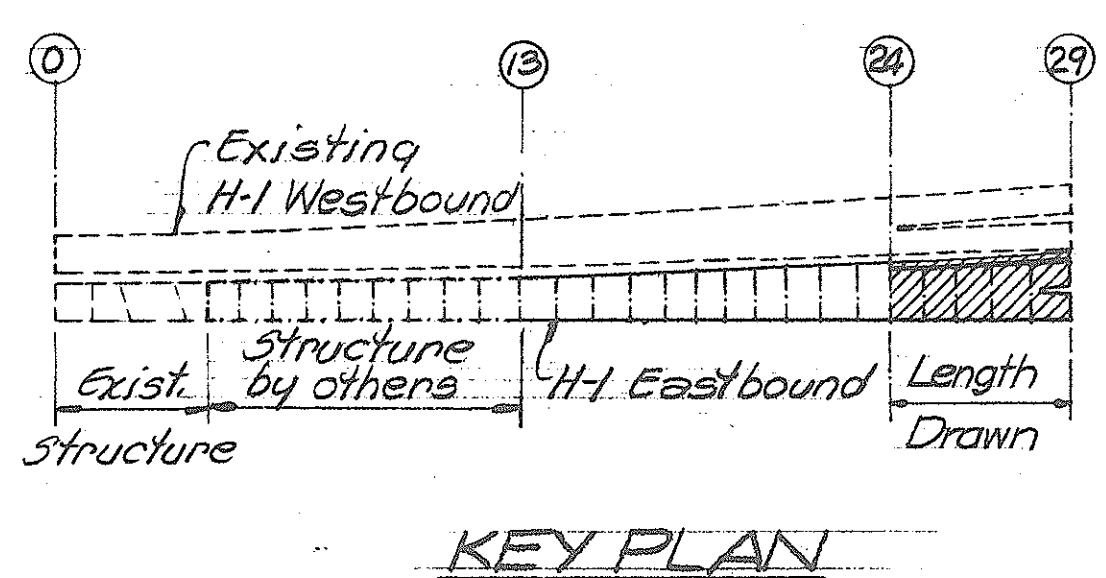
**H-1 VIADUCT (EB)**  
PARTIAL LAYOUT PLAN & LONGITUDINAL SECTION AT STA. 231+0.25 TO 235+64.91

KEEHI INTERCHANGE  
P.A.T. PROJ. NO. 1-HI-1 (182):17

Scale: As Shown Date: 4/21/83

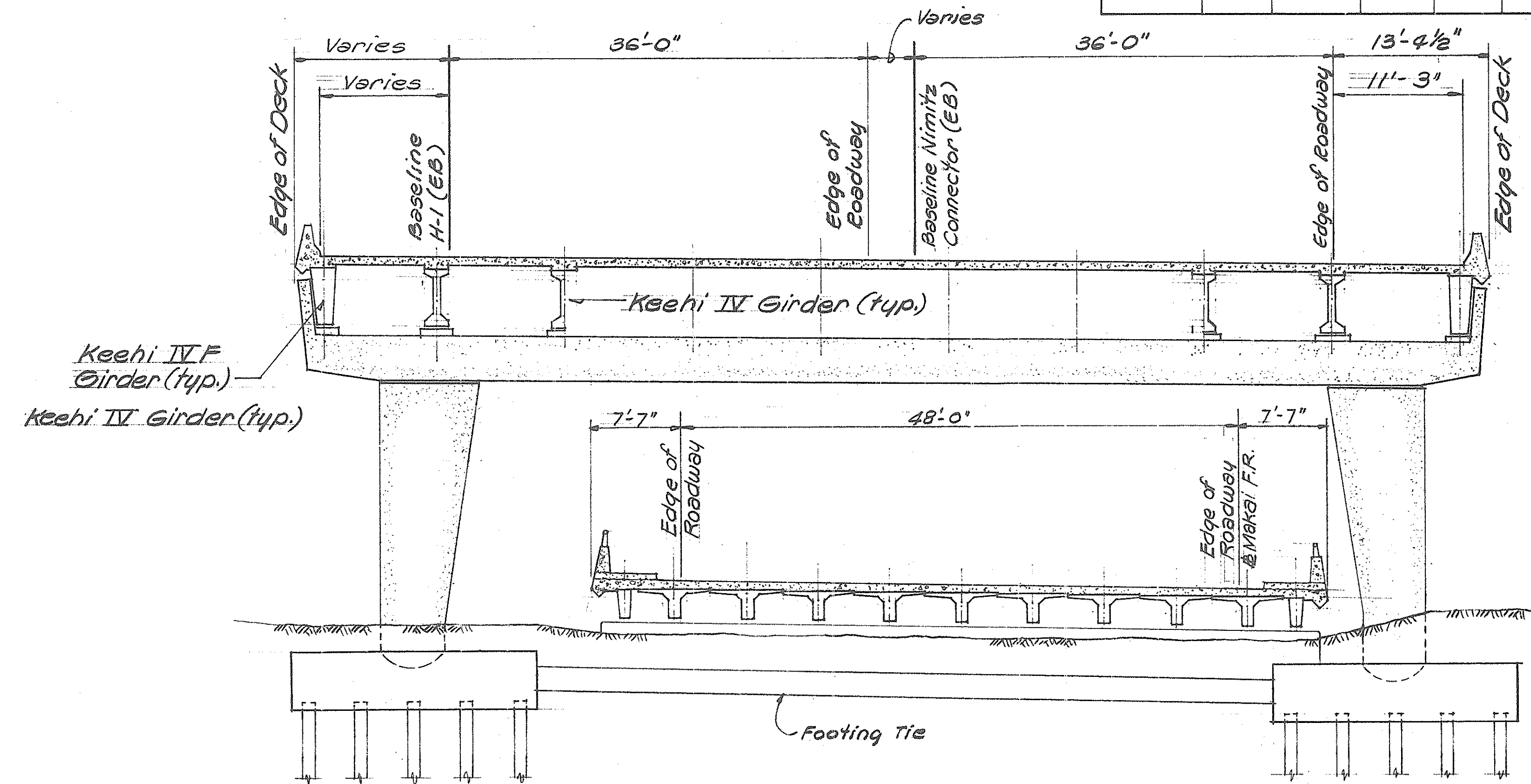
SHEET NO. 5 OF 58 SHEETS

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| NOTED BY          |      |
| CHECKED BY        |      |
| NO.               |      |



**KEY PLAN**

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-HI-1(82):17      | 1982        | 10        | 42           |



**SECTION @ H-1 (EB) BASELINE STA. 225+50.00**  
 Scale: 1/8" = 1'-0"

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| DESIGNED BY       |      |
| CHECKED BY        |      |
| NO.               |      |

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 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

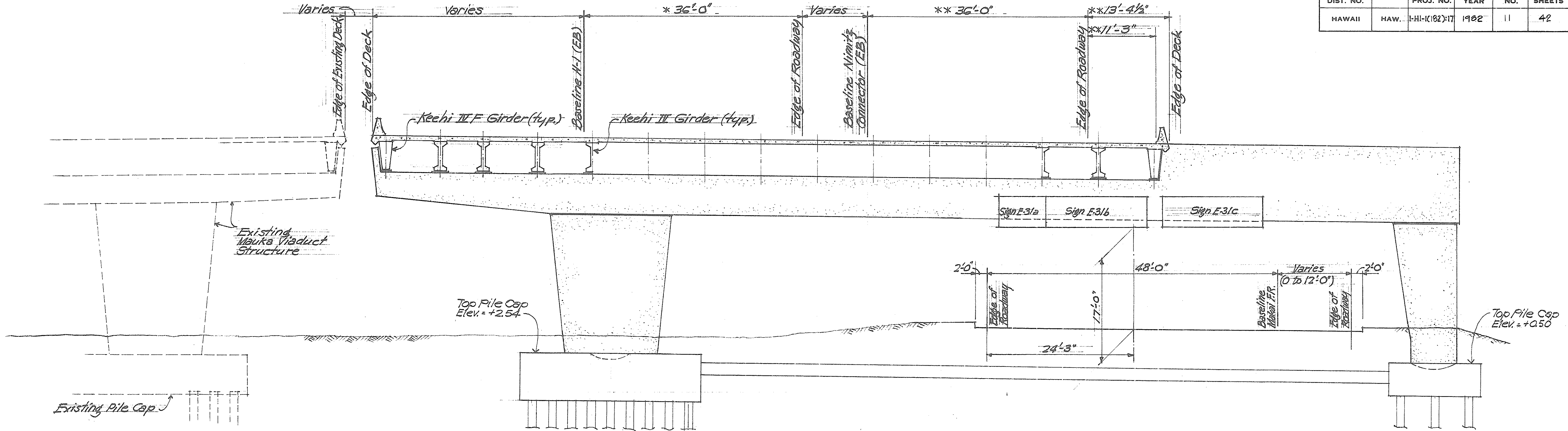
**H-1 VIADUCT (EB)**  
 TYPICAL SECTIONS

KEEHI INTERCHANGE  
 P.A.I. PROJ. NO-I-HI-1(82):17

Scale: As Shown Date: 4/21/83

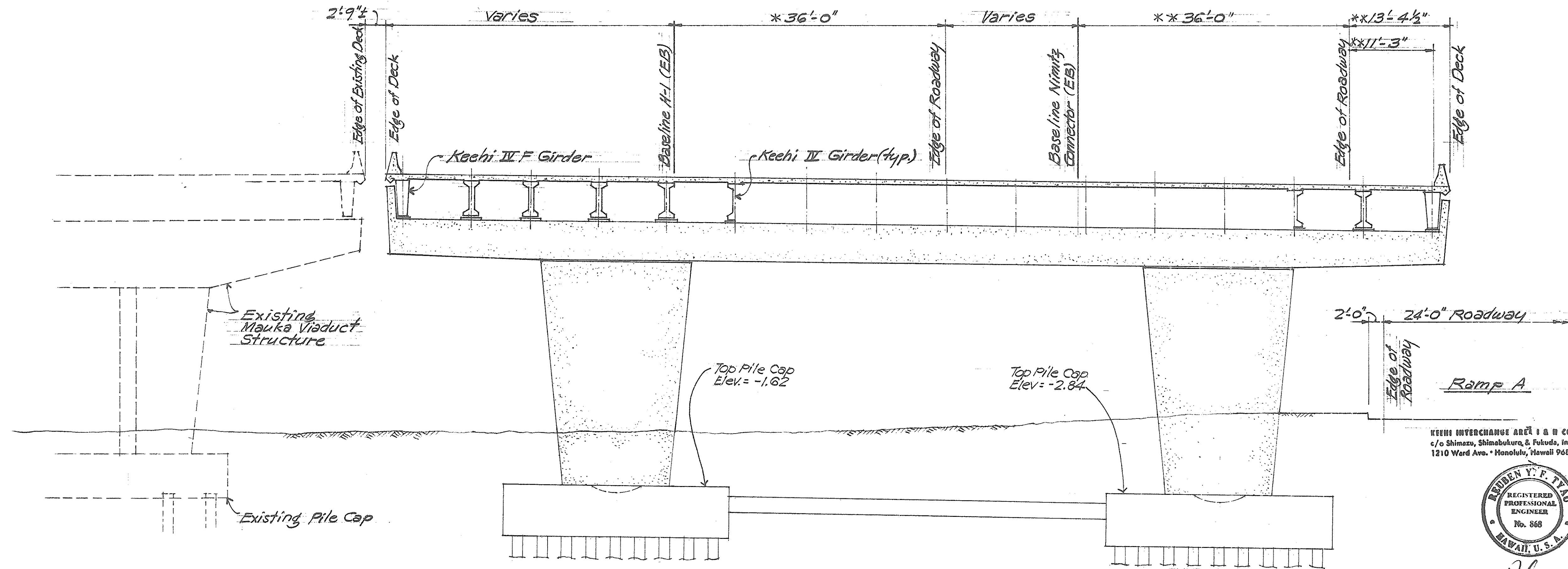
SHEET NO. 5-6 OF 50 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-HI-1(182)-17     | 1982        | 11        | 42           |



SECTION @ H-1 (EB) BASELINE STA. 229+28.43  
Scale: 1/8" = 1'-0"

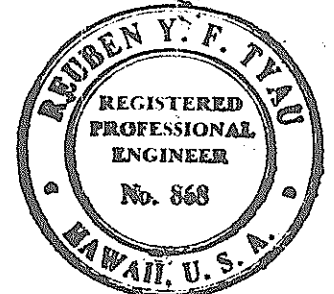
- NOTES:
- \* Denotes dimensions are perpendicular to H-1 (EB).
  - \*\* Denotes dimensions are perpendicular to NC (EB).



SECTION @ H-1 (EB) BASELINE STA. 231+10.28  
Scale: 1/8" = 1'-0"

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*[Signature]*

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HIGHWAYS DIVISION

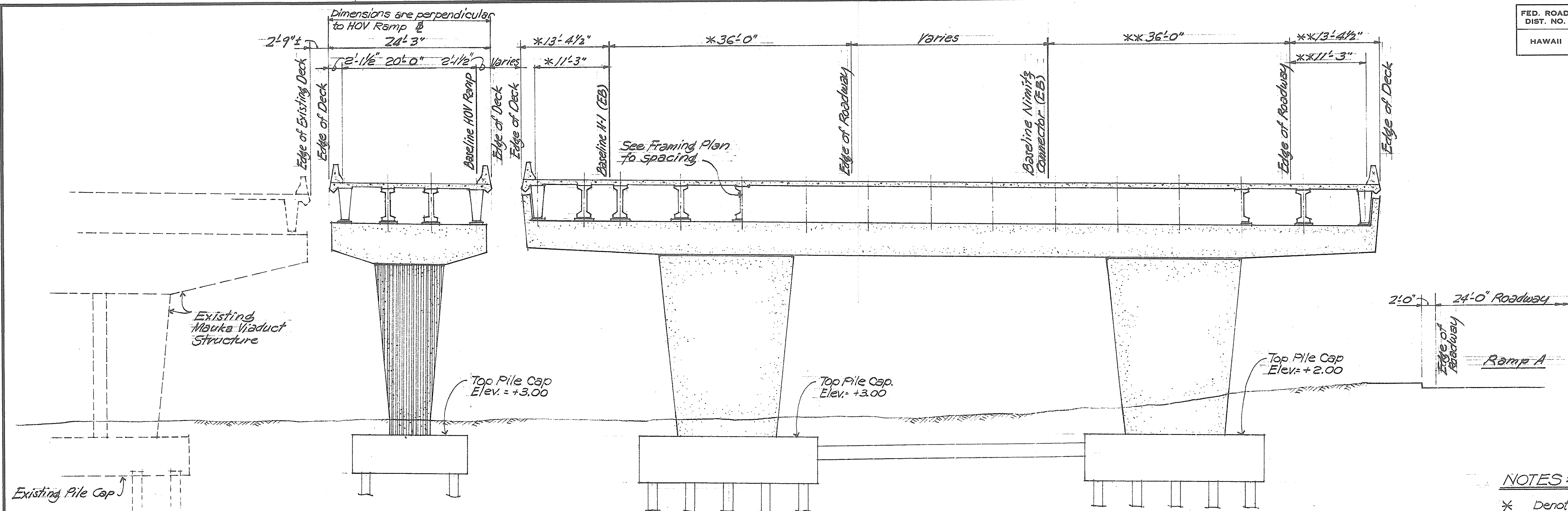
H-1 VIADUCT (EB)  
TYPICAL SECTIONS

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. I-HI-1(182)-17  
Scale: As Shown Date: 4/21/83

SHEET NO. 9-7 OF 58 SHEETS

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| NO.               |      |

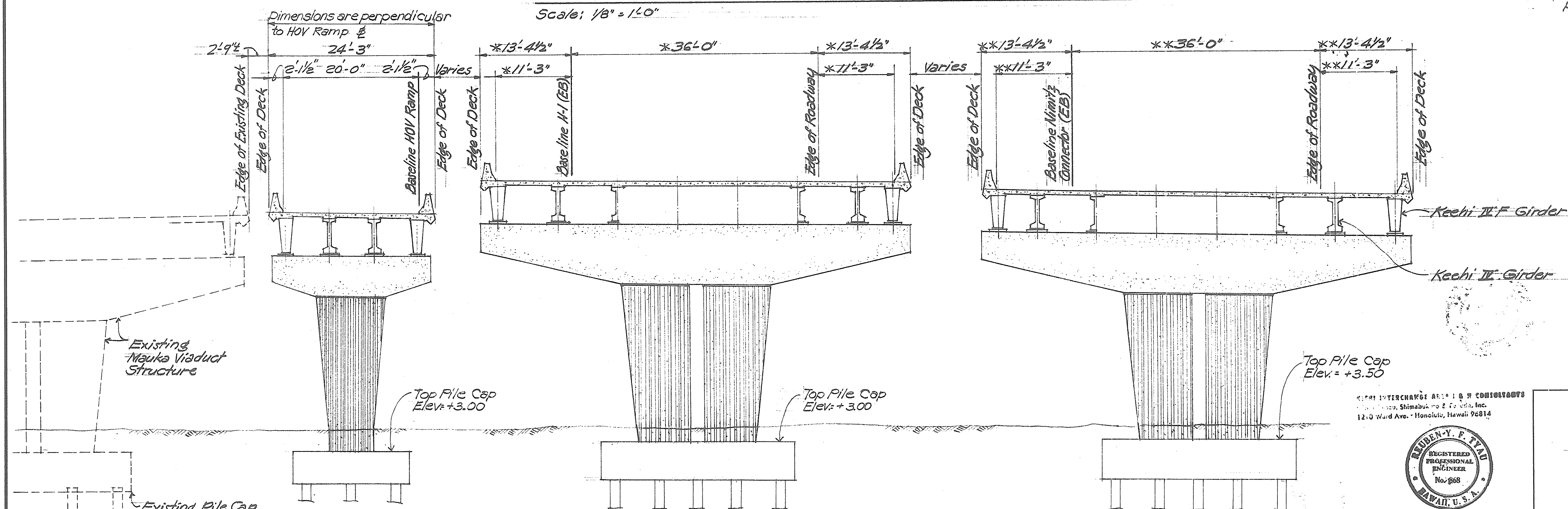
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1-HI-1(182)-17     | 1982        | 12        | 42           |



**SECTION @ H-1 (EB) BASELINE STA. 233 + 83.06**  
Scale: 1/8" = 1'-0"

**NOTES:**

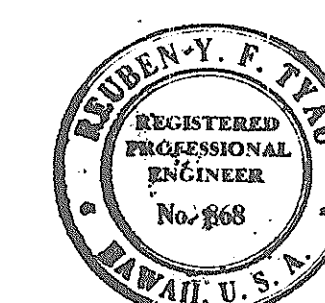
- \* Denotes dimensions are perpendicular to H-1 (EB)
- \*\* Denotes dimensions are perpendicular to NC (EB)



**SECTION @ H-1 (EB) BASELINE STA. 235 + 64.91**  
Scale: 1/8" = 1'-0"

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STATE OF HAWAII  
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HIGHWAYS DIVISION

**H-1 VIADUCT (EB)**

TYPICAL SECTIONS

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. 1-HI-1 (182) :17

Scale: As Shown Date: 4/21/83

SHEET NO. 5-8 OF 58 SHEETS

**Reference & Sign support shaft Base Pl.**

**Shaft base Pl anchor bolts**

**Anchor Pl**  
1" x 6" x 2'-11" lg. (Typ.)

**Side anchor Pl**  
1" x 6" x 0'-6" (typ.)

**& Sign support shaft Base Pl.**

**Outline Base Pl - See Frame Drawings.**

**PLAN**

**& Sign support shaft**

**12" Threaded ea. bolt (typ.)**

**Hexagon nuts (galv.)**

**Lock washers ea. bolt.**

**Leveling nuts (galv.)**

**Total 12- 3"  $\phi$  x 3'-6" lg. anchor bolt ea. post**

**Anchor Pl**  
1" x 6" x 2'-11" lg.

**Side anchor Pl**  
1" x 6" x 0'-6" (Typical)

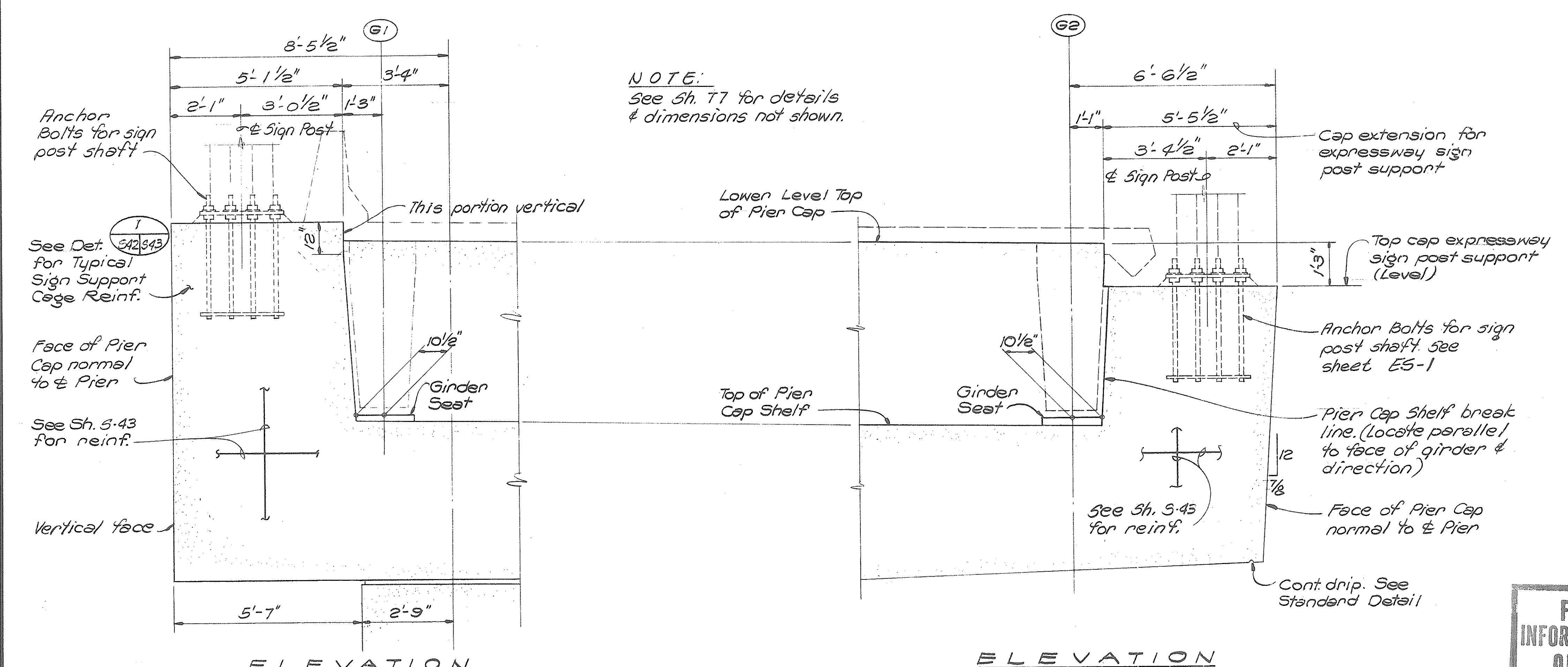
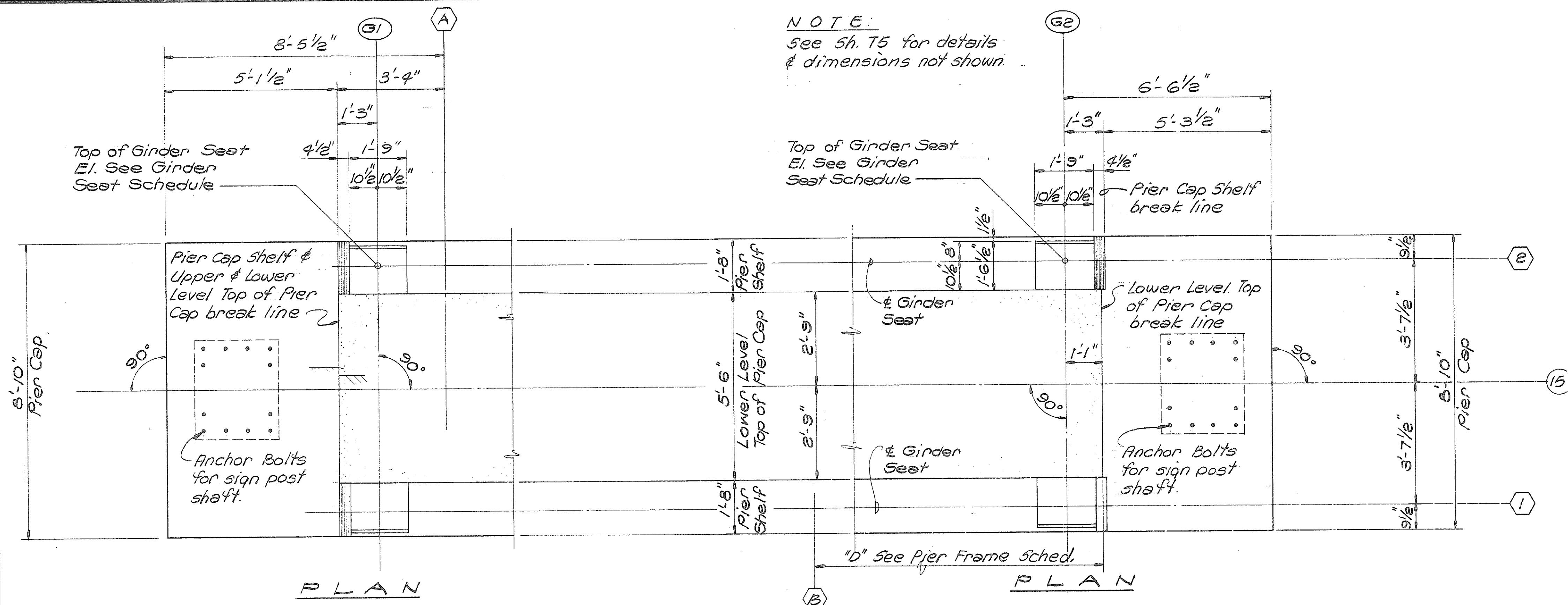
**SECTION**

**SIGN POST SHAFT-ANCHOR BOLT DETAIL**

**Scale: 1" = 1'-0"**

**342 543**

**2**



SIGN SUPPORT DETAILS  
Scale: 1/2" = 1'-0"

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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

TYPICAL DETAIL  
PIER 15 SIGN E-29  
SUPPORT DETAILS

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. I-HI-1 (182): 17

Scale: As shown                      Date: 4/21/83

SHEET No.S-42 OF 50 SHEETS

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

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-HI-1(182)-17     | 1982        | 14        | 42           |

| PIER LINE | 13      |       |       |      |       |         |       |       |      |       | 14      |       |       |      |       |         |       |       |      |       |
|-----------|---------|-------|-------|------|-------|---------|-------|-------|------|-------|---------|-------|-------|------|-------|---------|-------|-------|------|-------|
|           | 1       |       |       |      |       | 2       |       |       |      |       | 1       |       |       |      |       | 2       |       |       |      |       |
|           | "D"     | TR    | TS    | SKEW | BEVEL | "D"     | TR    | TS    | SKEW | BEVEL | "D"     | TR    | TS    | SKEW | BEVEL | "D"     | TR    | TS    | SKEW | BEVEL |
| GIRDER    |         |       |       |      |       |         |       |       |      |       |         |       |       |      |       |         |       |       |      |       |
| G1        | -10.875 | 36.13 | 30.16 | 0:12 | 0:12  | -10.875 | 36.13 | 30.15 | 0:12 | 0:12  | -10.875 | 36.06 | 30.08 | 0:12 | 0:12  | -10.875 | 36.06 | 30.08 | 0:12 | 0:12  |
| T1        | -3.063  | 36.02 | 30.08 |      |       | -4.625  | 36.03 | 30.06 |      |       | -4.625  | 35.97 | 30.00 |      |       | -4.625  | 35.97 | 30.00 |      |       |
| T2        | 4.750   | 35.90 | 29.96 |      |       | 4.125   | 35.90 | 29.93 |      |       | 4.125   | 35.84 | 29.87 |      |       | 4.125   | 35.84 | 29.87 |      |       |
| T3        | 12.562  | 35.78 | 29.84 |      |       | 12.875  | 35.77 | 29.80 |      |       | 12.875  | 35.71 | 29.74 |      |       | 12.875  | 35.71 | 29.74 |      |       |
| T4        | 20.375  | 35.66 | 29.72 |      |       | 21.625  | 35.64 | 29.67 |      |       | 21.625  | 35.58 | 29.61 |      |       | 21.625  | 35.57 | 29.60 |      |       |
| T5        | 28.187  | 35.55 | 29.61 |      |       | 30.375  | 35.51 | 29.54 |      |       | 30.375  | 35.45 | 29.48 |      |       | 30.375  | 35.44 | 29.47 |      |       |
| T6        | 36.000  | 35.43 | 29.49 |      |       | 39.125  | 35.38 | 29.41 |      |       | 39.125  | 35.31 | 29.34 |      |       | 39.125  | 35.31 | 29.34 |      |       |
| T7        | 43.812  | 35.31 | 29.37 |      |       | 47.875  | 35.24 | 29.27 |      |       | 47.875  | 35.18 | 29.21 |      |       | 47.875  | 35.18 | 29.21 |      |       |
| T8        | 51.625  | 35.20 | 29.26 |      |       | 56.625  | 35.11 | 29.14 |      |       | 56.625  | 35.05 | 29.08 |      |       | 56.625  | 35.05 | 29.08 |      |       |
| T9        | 59.437  | 35.08 | 29.14 |      |       | 65.375  | 34.98 | 29.01 |      |       | 65.375  | 34.92 | 28.95 |      |       | 65.375  | 34.92 | 28.95 |      |       |
| T10       | 67.250  | 34.96 | 29.02 |      |       | 74.125  | 34.85 | 28.88 | ▽    | ▽     | 74.125  | 34.79 | 28.82 | ▽    | ▽     | 74.125  | 34.79 | 28.82 | ▽    | ▽     |
| T11       | 75.062  | 34.84 | 28.90 | ▽    | ▽     |         |       |       |      |       |         |       |       |      |       |         |       |       |      |       |
| G2        | 82.875  | 34.73 | 28.76 | 0:12 | 0:12  | 82.875  | 34.72 | 28.75 | 0:12 | 0:12  | 82.875  | 34.66 | 28.69 | 0:12 | 0:12  | 82.875  | 34.66 | 28.68 | 0:12 | 0:12  |

| PIER LINE | 15      |       |       |      |       |         |       |       |          |       | 16      |       |       |          |       |         |       |       |          |       | 17      |       |       |          |       |         |       |       |          |          |
|-----------|---------|-------|-------|------|-------|---------|-------|-------|----------|-------|---------|-------|-------|----------|-------|---------|-------|-------|----------|-------|---------|-------|-------|----------|-------|---------|-------|-------|----------|----------|
|           | 1       |       |       |      |       | 2       |       |       |          |       | 1       |       |       |          |       | 2       |       |       |          |       | 1       |       |       |          |       | 2       |       |       |          |          |
|           | "D"     | TR    | TS    | SKEW | BEVEL | "D"     | TR    | TS    | SKEW     | BEVEL | "D"     | TR    | TS    | SKEW     | BEVEL | "D"     | TR    | TS    | SKEW     | BEVEL | "D"     | TR    | TS    | SKEW     | BEVEL | "D"     | TR    | TS    | SKEW     | BEVEL    |
| GIRDER    |         |       |       |      |       |         |       |       |          |       |         |       |       |          |       |         |       |       |          |       |         |       |       |          |       |         |       |       |          |          |
| G1A       |         |       |       |      |       | -11.026 | 36.09 | 30.11 | -1/16:12 | 0:12  | -15.264 | 36.26 | 30.28 | -1/16:12 | 0:12  | -15.671 | 36.28 | 30.30 | -1/16:12 | 0:12  | -19.232 | 36.51 | 30.53 | -1/16:12 | 0:12  | -19.639 | 36.54 | 30.64 | -1/16:12 | -1/16:12 |
| G1        | -10.769 | 36.08 | 30.10 | 0:12 | 0:12  |         |       |       |          |       |         |       |       |          |       |         |       |       |          |       |         |       |       |          |       |         |       |       |          |          |
| T1A       |         |       |       |      |       | -7.704  | 36.04 | 30.07 | 0:12     | 0:12  | -7.104  | 36.14 | 30.17 | 0:12     | 0:12  | -11.354 | 36.22 | 30.26 | 0:12     | 0:12  | -10.387 | 36.38 | 30.42 | 0:12     | 0:12  | -14.387 | 36.46 | 30.56 | 0:12     | -1/16:12 |
| T1        | -4.455  | 35.99 | 30.08 | 0:12 | 0:12  | -1.704  | 35.95 | 29.98 |          |       | -1.104  | 36.05 | 30.08 |          |       | -2.604  | 36.09 | 30.13 |          | ▽     | -1.637  | 36.25 | 30.29 |          | ▽     | -3.387  | 36.29 | 30.39 |          |          |
| T2        | 4.295   | 35.86 | 29.89 |      |       | 4.296   | 35.86 | 29.89 |          |       | 4.896   | 35.96 | 29.99 |          |       | 6.979   | 35.94 | 29.98 |          | 0:12  | 7.946   | 36.10 | 30.14 |          | 0:12  | 7.615   | 36.13 | 30.23 |          |          |
| T3        | 13.045  | 35.73 | 29.76 |      |       | 13.045  | 35.73 | 29.76 |          |       | 13.649  | 35.83 | 29.83 |          |       | 16.568  | 35.80 | 29.84 |          | 0:12  | 17.534  | 35.96 | 30.00 |          | 0:12  | 18.615  | 35.96 | 30.06 |          |          |
| T4        | 21.795  | 35.60 | 29.63 |      |       | 21.795  | 35.60 | 29.63 |          |       | 22.399  | 35.70 | 29.73 |          |       | 26.149  | 35.65 | 29.69 |          |       | 27.115  | 35.81 | 29.85 |          |       | 29.615  | 35.80 | 29.90 |          |          |
| T5        | 30.545  | 35.46 | 29.49 |      |       | 30.545  | 35.47 | 29.50 |          |       | 31.149  | 35.57 | 29.60 |          |       | 35.734  | 35.51 | 29.55 |          |       | 36.70   | 35.67 | 29.71 |          |       | 40.615  | 35.63 | 29.73 |          |          |
| T6        | 39.295  | 35.33 | 29.36 |      |       | 39.295  | 35.34 | 29.37 |          |       | 39.899  | 35.43 | 29.46 |          |       | 45.317  | 35.37 | 29.41 |          |       | 46.283  | 35.53 | 29.57 |          |       | 51.615  | 35.46 | 29.56 |          |          |
| T7        | 48.045  | 35.20 | 29.23 |      |       | 48.045  | 35.21 | 29.24 |          |       | 48.649  | 35.30 | 29.33 |          |       | 54.900  | 35.22 | 29.26 |          |       | 55.866  | 35.38 | 29.42 |          |       | 62.615  | 35.30 | 29.40 |          |          |
| T8        | 56.795  | 35.07 | 29.10 |      |       | 56.795  | 35.07 | 29.10 |          |       | 57.399  | 35.17 | 29.20 |          |       | 64.482  | 35.08 | 29.12 |          |       | 65.448  | 35.24 | 29.28 |          |       | 73.615  | 35.13 | 29.23 | ▽        | ▽        |
| T9        | 65.545  | 34.94 | 28.97 |      |       | 65.545  | 34.94 | 28.97 |          |       | 66.149  | 35.04 | 29.07 |          |       | 74.066  | 34.93 | 28.97 | ▽        | ▽     | 75.032  | 35.09 | 29.13 | ▽        | ▽     |         |       |       |          |          |
| T10       | 74.295  | 34.81 | 28.84 | ▽    | ▽     | 74.295  | 34.81 | 28.84 | ▽        | ▽     | 74.899  | 34.91 | 28.94 | ▽        | ▽     |         |       |       |          |       |         |       |       |          |       |         |       |       |          |          |
| G2        | 83.045  | 34.68 | 28.70 | 0:12 | 0:12  | 83.045  | 34.68 | 28.71 | 0:12     | 0:12  | 83.649  | 34.78 | 28.80 | 0:12     | 0:12  | 83.649  | 34.79 | 28.81 | 0:12     | 0:12  | 84.615  | 34.95 | 28.99 | 0:12     | 0:12  | 84.615  | 34.97 | 29.07 | 0:12     | -1/16:12 |

## LEGEND

"D" = Distance of girder intersection with bearing line (Measured along bearing line) from baseline.

TR = Top of roadway elevation at intersection of girder & bearing line.

TS = Top of seat elevation at intersection of girder & bearing line.

Skew = seat skew

Bevel = seat bevel

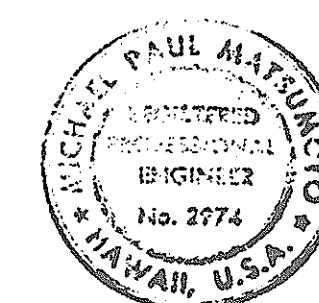
## NOTES

1- See sh. S-47 for schematic representation of all information shown on this sheet.

2- Dimension "D" & Elevations TR & TS are given in feet. (See sh. S-47 for "D" dimension)

FOR  
INFORMATION  
ONLY

KEEHI INTERCHANGE AREA I & H CONSULTANTS  
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This work was prepared by  
Nicholas J. Matsumoto

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

H-1 VIADUCT (EB)

GIRDER SEAT GEOMETRICS

KEEHI INTERCHANGE  
F.A.I. PROJ. I-HI-1(182)-17

No Scale Date: 4/21/83

SHEET NO. S-44 OF 58 SHEETS

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

|                     |       |                    |             |           |              |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII              | HAW.  | I-HI-1082-17       | 1982        | 15        | 42           |

| PIER LINE | 18      |       |       |           |          |         |       |       |           |          | 19      |       |       |           |          |         |       |       |           |          | 20      |       |       |           |          |         |       |       |           |          |
|-----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|
|           | 1       |       |       |           |          | 2       |       |       |           |          | 1       |       |       |           |          | 2       |       |       |           |          | 1       |       |       |           |          | 2       |       |       |           |          |
| BEARING   | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    |
| GIRDER    |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |
| G1A       | -22.348 | 36.79 | 30.89 | -11/16:12 | -1/16:12 | -22.755 | 36.82 | 30.92 | -11/16:12 | -1/16:12 | -25.175 | 37.12 | 31.22 | -11/16:12 | -1/16:12 | -25.582 | 37.15 | 31.25 | -11/16:12 | -1/16:12 | -27.712 | 37.50 | 31.60 | -11/16:12 | -1/16:12 | -28.120 | 37.54 | 31.64 | -11/16:12 | -1/16:12 |
| T1A       | -13.242 | 36.65 | 30.75 | 0:12      | -1/16:12 | -19.242 | 36.76 | 30.86 | 0:12      | -1/16:12 | -17.809 | 37.01 | 31.11 | 0:12      | -1/16:12 | -20.559 | 37.08 | 31.18 | 0:12      | -1/16:12 | -18.841 | 37.37 | 31.47 | 0:12      | -1/16:12 | -21.091 | 37.44 | 31.54 | 0:12      | -1/16:12 |
| T2A       |         |       |       |           |          | -13.242 | 36.67 | 30.77 |           |          | -11.809 | 36.92 | 31.02 |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |
| T1        | -2.242  | 36.48 | 30.58 | 0:12      | -1/16:12 | -2.242  | 36.51 | 30.61 |           |          | -0.809  | 36.75 | 30.85 |           |          | -11.809 | 36.94 | 31.04 | 0:12      | -1/16:12 | -10.091 | 37.24 | 31.34 | 0:12      | -1/16:12 | -10.091 | 37.27 | 31.37 | 0:12      | -1/16:12 |
| T2        | 8.760   | 36.32 | 30.42 |           |          | 8.760   | 36.34 | 30.44 |           |          | 10.193  | 36.58 | 30.68 |           |          | -0.809  | 36.78 | 30.88 |           |          | 0.909   | 37.07 | 31.17 |           |          | 0.909   | 37.10 | 31.20 |           |          |
| T3        | 19.760  | 36.15 | 30.25 |           |          | 19.760  | 36.18 | 30.28 |           |          | 21.193  | 36.42 | 30.52 |           |          | 10.193  | 36.61 | 30.71 |           |          | 11.912  | 36.90 | 31.00 |           |          | 11.912  | 36.94 | 31.04 |           |          |
| T4        | 30.760  | 35.99 | 30.09 |           |          | 30.760  | 36.01 | 30.11 |           |          | 32.193  | 36.25 | 30.35 |           |          | 21.193  | 36.45 | 30.55 |           |          | 22.912  | 36.74 | 30.84 |           |          | 22.912  | 36.77 | 30.87 |           |          |
| T5        | 41.760  | 35.82 | 29.92 |           |          | 41.760  | 35.85 | 29.95 |           |          | 43.193  | 36.09 | 30.19 |           |          | 32.193  | 36.28 | 30.38 |           |          | 33.912  | 36.57 | 30.67 |           |          | 33.912  | 36.61 | 30.71 |           |          |
| T6        | 52.760  | 35.66 | 29.76 |           |          | 52.760  | 35.68 | 29.78 |           |          | 54.193  | 35.92 | 30.02 |           |          | 43.193  | 36.11 | 30.21 |           |          | 44.912  | 36.40 | 30.50 |           |          | 44.912  | 36.44 | 30.54 |           |          |
| T7        | 63.760  | 35.49 | 29.59 |           |          | 63.760  | 35.51 | 29.61 |           |          | 65.193  | 35.75 | 29.85 |           |          | 54.193  | 35.95 | 30.05 |           |          | 55.912  | 36.24 | 30.34 |           |          | 55.912  | 36.27 | 30.37 |           |          |
| T8        | 74.760  | 35.32 | 29.42 | ▽         | ▽        | 74.760  | 35.35 | 29.45 | ▽         | ▽        | 76.193  | 35.59 | 29.69 | ▽         | ▽        | 65.193  | 35.78 | 29.88 |           |          | 66.912  | 36.07 | 30.17 |           |          | 66.912  | 36.11 | 30.21 |           |          |
| T9        |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          | 76.193  | 35.62 | 29.72 | ▽         | ▽        | 77.912  | 35.91 | 30.01 | ▽         | ▽        | 77.912  | 35.94 | 30.04 | ▽         | ▽        |
| G2        | 85.760  | 35.16 | 29.26 | 0:12      | -1/16:12 | 85.760  | 35.18 | 29.28 | 0:12      | -1/16:12 | 87.193  | 35.42 | 29.52 | 0:12      | -1/16:12 | 87.193  | 35.45 | 29.55 | 0:12      | -1/16:12 | 88.912  | 35.74 | 29.84 | 0:12      | -1/16:12 | 88.912  | 35.77 | 29.87 | 0:12      | -1/16:12 |

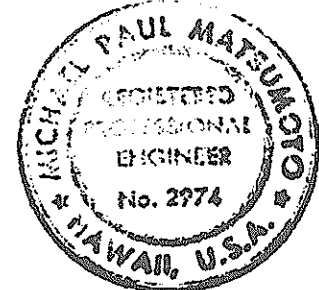
| PIER LINE | 21      |       |       |           |          |         |       |       |           |          | 22      |       |       |           |          |         |       |       |           |          | 23      |       |       |           |          |         |       |       |           |          |
|-----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|---------|-------|-------|-----------|----------|
|           | 1       |       |       |           |          | 2       |       |       |           |          | 1       |       |       |           |          | 2       |       |       |           |          | 1       |       |       |           |          | 2       |       |       |           |          |
| BEARING   | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    | "D"     | TR    | TS    | SKEW      | BEVEL    |
| GIRDER    |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          |
| G1A       | -29.962 | 37.94 | 32.04 | -11/16:12 | -1/16:12 | -30.369 | 37.98 | 31.98 | -11/16:12 | -1/16:12 | -32.865 | 38.46 | 32.46 | -11/16:12 | -1/16:12 | -32.700 | 38.51 | 32.40 | -11/16:12 | -1/16:12 | -34.183 | 38.99 | 32.88 | -11/16:12 | -1/16:12 | -34.590 | 39.03 | 32.92 | -11/16:12 | -1/16:12 |
| T1A       | -19.084 | 37.77 | 31.87 | 0:12      | -1/16:12 | -26.084 | 37.92 | 31.94 | 0:12      |          | -23.298 | 38.33 | 32.35 | 0:12      |          | -26.298 | 38.44 | 32.36 | 0:12      |          | -25.100 | 38.85 | 32.77 | 0:12      |          | -30.350 | 38.96 | 32.86 | 0:12      |          |
| T2A       |         |       |       |           |          | -20.084 | 37.82 | 31.84 | 0:12      | ▽        | -17.298 | 38.24 | 32.26 | 0:12      | ▽        | -23.298 | 38.37 | 32.29 |           |          | -20.099 | 38.77 | 32.69 |           |          | -23.350 | 38.86 | 32.78 |           |          |
| T3A       |         |       |       |           |          |         |       |       |           |          |         |       |       |           |          | -17.298 | 38.27 | 32.19 |           |          | -14.100 | 38.68 | 32.60 |           |          | -14.100 | 38.72 | 32.64 |           |          |
| T1        | -8.084  | 37.61 | 31.71 | 0:12      | -1/16:12 | -10.834 | 37.68 | 31.70 | 0:12      | -1/16:12 | -8.048  | 38.10 | 32.12 | 0:12      | -1/16:12 | -8.048  | 38.13 | 32.05 |           |          | -4.849  | 38.54 | 32.46 |           |          | -4.849  | 38.58 | 32.50 |           |          |
| T2        | 2.916   | 37.44 | 31.54 |           |          | -1.584  | 37.54 | 31.56 |           |          | 1.202   | 37.96 | 31.98 |           |          | 1.202   | 37.99 | 31.91 |           |          | 4.401   | 38.40 | 32.32 |           |          | 4.401   | 38.44 | 32.36 |           |          |
| T3        | 13.919  | 37.27 | 31.37 |           |          | 7.667   | 37.40 | 31.42 |           |          | 10.452  | 37.81 | 31.83 |           |          | 10.452  | 37.85 | 31.77 |           |          | 13.651  | 38.26 | 32.18 |           |          | 13.651  | 38.30 | 32.22 |           |          |
| T4        | 24.919  | 37.11 | 31.21 |           |          | 16.917  | 37.27 | 31.29 |           |          | 19.702  | 37.67 | 31.69 |           |          | 19.702  | 37.71 | 31.63 |           |          | 22.901  | 38.12 | 32.04 |           |          | 22.901  | 38.16 | 32.08 |           |          |
| T5        | 35.919  | 36.94 | 31.04 |           |          | 26.167  | 37.13 | 31.15 |           |          | 28.952  | 37.54 | 31.56 |           |          | 28.952  | 37.58 | 31.50 |           |          | 32.151  | 37.98 | 31.90 |           |          | 32.151  | 38.02 | 31.94 |           |          |
| T6        | 46.919  | 36.77 | 30.87 |           |          | 35.417  | 36.99 | 31.01 |           |          | 38.202  | 37.40 | 31.42 |           |          | 38.202  | 37.44 | 31.36 |           |          | 41.401  | 37.84 | 31.76 |           |          | 41.401  | 37.88 | 31.80 |           |          |
| T7        | 57.919  | 36.61 | 30.71 |           |          | 44.667  | 36.84 | 30.86 |           |          | 47.452  | 37.25 | 31.27 |           |          | 47.452  | 37.29 | 31.21 |           |          | 50.651  | 37.70 | 31.62 |           |          | 50.651  | 37.73 | 31.65 |           |          |
| T8        | 68.919  | 36.44 | 30.54 |           |          | 53.917  | 36.70 | 30.72 |           |          | 56.702  | 37.11 | 31.13 |           |          | 56.702  | 37.15 | 31.07 |           |          | 59.901  | 37.56 | 31.48 |           |          | 59.901  | 37.59 | 31.51 |           |          |
| T9        | 79.919  | 36.28 | 30.38 | ▽         | ▽        | 63.167  | 36.56 | 30.58 |           |          | 65.952  | 36.97 | 30.99 |           |          | 65.952  | 37.01 | 30.93 |           |          | 69.151  | 37.42 | 31.34 |           |          | 69.151  | 37.45 | 31.37 |           |          |
| T10       |         |       |       |           |          | 72.417  | 36.42 | 30.44 |           |          | 75.202  | 36.83 | 30.85 |           |          | 75.202  | 36.87 | 30.79 |           |          | 78.401  | 37.28 | 31.20 |           |          | 78.401  | 37.31 | 31.23 |           |          |
| T11       |         |       |       |           |          | 81.667  | 36.29 | 30.31 | ▽         | ▽        | 84.452  | 36.70 | 30.72 | ▽         | ▽        | 84.452  | 36.74 | 30.66 | ▽         | ▽        | 87.651  | 37.15 | 31.07 | ▽         | ▽        | 87.651  | 37.18 | 31.10 | ▽         | ▽        |
| G2        | 90.919  | 36.11 | 30.21 | 0:12      | -1/16:12 | 90.917  | 36.15 | 30.15 | 0:12      | -1/16:12 | 93.702  | 36.56 | 30.56 | 0:12      | -1/16:12 | 93.702  | 36.60 | 30.49 | 0:12      | -1/16:12 | 96.901  | 37.01 | 30.90 | 0:12      | -1/16:12 | 96.901  | 37.04 | 30.93 | 0:12      | -1/16:12 |

NOTE:  
See Sh. S-44 for Legend  
and Notes.

DATE \_\_\_\_\_  
SURVEY PLOTTED BY \_\_\_\_\_  
DRAWN BY \_\_\_\_\_  
CHECKED BY \_\_\_\_\_  
DESIGNED BY \_\_\_\_\_  
NOTED BY \_\_\_\_\_  
NO. \_\_\_\_\_

FOR  
INFORMATION  
ONLY

KEEHI INTERCHANGE AREA I & II CONSULTANTS  
c/o Shimazu, Shimabukuro & Fukuda, Inc.  
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This work was prepared by  
me or under my supervision.  
*Michael Paul Matsuoka*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
  
H-1 VIADUCT (EB)  
GIRDER SEAT GEOMETRICS  
  
KEEHI INTERCHANGE  
F.A.I. PROJ. NO. I-HI-1082-17  
No. Scale      Date: 4/21/83  
SHEET NO. 45 OF 50 SHEETS

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

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1-HI-1(182):17     | 1982        | 16        | 42           |

| PIER LINE | 24     |       |       |          |          |        |       |       |          |          | 25     |       |       |          |          |        |       |       |          |          | 26     |       |       |          |          |        |       |       |          |          |
|-----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|
| BEARING   | ①      |       |       |          |          | ②      |       |       |          |          | ①      |       |       |          |          | ②      |       |       |          |          | ①      |       |       |          |          | ②      |       |       |          |          |
| GIRDER    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    |
| G1A       | -35.67 | 39.50 | 33.39 | -1/16:12 | -1/16:12 | -36.08 | 39.54 | 33.43 | -1/16:12 | -1/16:12 | -36.88 | 40.01 | 33.90 | -1/16:12 | -1/16:12 | -37.28 | 40.05 | 33.99 | -1/16:12 | -1/16:12 | -38.07 | 40.52 | 34.46 | -1/16:12 | -1/16:12 | -38.48 | 40.54 | 34.50 | -1/16:12 | +1/16:12 |
| T1A       | -26.74 | 39.37 | 33.29 | 0:12     |          | -31.74 | 39.48 | 33.40 | 0:12     |          | -27.84 | 39.87 | 33.79 | 0:12     |          | -33.09 | 39.99 | 33.96 | 0:12     |          | -29.19 | 40.38 | 34.35 | 0:12     |          | -32.05 | 40.44 | 34.54 |          |          |
| T2A       | -19.74 | 39.26 | 33.18 |          |          | -26.74 | 39.40 | 33.32 |          |          | -22.84 | 39.80 | 33.72 |          |          | -25.09 | 39.87 | 33.84 |          |          | -21.19 | 40.26 | 34.23 |          |          | -25.63 | 40.34 | 34.44 |          |          |
| T3A       | -10.49 | 39.12 | 33.04 |          |          | -19.74 | 39.29 | 33.21 |          |          | -15.84 | 39.69 | 33.61 |          |          | -15.84 | 39.72 | 33.69 |          |          | -11.94 | 40.12 | 34.09 |          |          |        |       |       |          |          |
| G2A       |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |
| G1        |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |
| T1        | -1.24  | 38.98 | 32.90 | 0:12     | -1/16:12 | -10.49 | 39.15 | 33.03 | 0:12     | -1/16:12 | -6.59  | 39.55 | 33.42 | 0:12     | -1/16:12 | -6.59  | 39.59 | 33.56 | 0:12     | -1/16:12 | -2.69  | 39.98 | 33.95 | 0:12     | -1/16:12 | -7.69  | 40.10 | 34.07 | 0:12     |          |
| T2        | 8.01   | 38.84 | 32.76 |          |          | -1.24  | 39.02 | 32.94 |          |          | 2.66   | 39.41 | 33.33 |          |          | 2.66   | 39.45 | 33.42 |          |          | 6.56   | 39.84 | 33.81 |          |          | -2.69  | 40.02 | 33.99 |          |          |
| T3        | 17.26  | 38.70 | 32.62 |          |          | 8.01   | 38.88 | 32.80 |          |          | 11.91  | 39.27 | 33.19 |          |          | 11.91  | 39.31 | 33.28 |          |          | 15.81  | 39.70 | 33.67 |          |          | 6.56   | 39.88 | 33.85 |          |          |
| T4        | 26.57  | 38.56 | 32.48 |          |          | 17.26  | 38.74 | 32.66 |          |          | 21.16  | 39.13 | 33.05 |          |          | 21.16  | 39.17 | 33.14 |          |          | 25.06  | 39.56 | 33.53 |          |          | 15.81  | 39.74 | 33.71 |          |          |
| T5        | 35.76  | 38.41 | 32.33 |          |          | 26.57  | 38.60 | 32.52 |          |          | 30.41  | 38.99 | 32.91 |          |          | 30.41  | 39.03 | 33.00 |          |          | 34.31  | 39.42 | 33.39 |          |          | 25.06  | 39.60 | 33.57 |          |          |
| T6        | 45.01  | 38.26 | 32.18 |          |          | 35.76  | 38.46 | 32.37 |          |          | 39.66  | 38.84 | 32.76 |          |          | 39.66  | 38.88 | 32.85 |          |          | 43.56  | 39.28 | 33.25 |          |          | 34.31  | 39.46 | 33.43 |          |          |
| T7        | 54.26  | 38.13 | 32.05 |          |          | 45.01  | 38.30 | 32.22 |          |          | 48.91  | 38.70 | 32.62 |          |          | 48.91  | 38.74 | 32.71 |          |          | 52.81  | 39.14 | 33.11 |          |          | 43.56  | 39.31 | 33.28 |          |          |
| T8        | 63.51  | 37.99 | 31.91 |          |          | 54.26  | 38.17 | 32.09 |          |          | 58.16  | 38.56 | 32.48 |          |          | 58.16  | 38.59 | 32.56 |          |          | 62.06  | 39.00 | 32.97 |          |          | 52.81  | 39.17 | 33.14 |          |          |
| T9        | 72.76  | 37.85 | 31.77 |          |          | 63.51  | 38.03 | 31.95 |          |          | 67.41  | 38.42 | 32.34 |          |          | 67.41  | 38.45 | 32.42 |          |          | 71.31  | 38.86 | 32.63 |          |          | 62.06  | 39.03 | 33.00 |          |          |
| T10       | 82.01  | 37.71 | 31.63 |          |          | 72.76  | 37.89 | 31.81 |          |          | 76.66  | 38.28 | 32.20 |          |          | 76.66  | 38.31 | 32.28 |          |          | 80.56  | 38.72 | 32.69 |          |          | 71.31  | 38.89 | 32.86 |          |          |
| T11       | 91.26  | 37.58 | 31.50 |          |          | 82.01  | 37.75 | 31.67 |          |          | 85.91  | 38.14 | 32.06 |          |          | 85.91  | 38.17 | 32.14 |          |          | 89.81  | 38.58 | 32.55 |          |          | 80.56  | 38.75 | 32.72 |          |          |
| T12       |        |       |       |          |          | 91.26  | 37.62 | 31.54 |          |          | 95.16  | 38.01 | 31.93 |          |          | 95.16  | 38.04 | 32.01 |          |          | 99.06  | 38.45 | 32.42 |          |          | 89.81  | 38.61 | 32.58 |          |          |
| T13       |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          | 99.06  | 38.48 | 32.45 |          |          |
| G2        | 100.51 | 37.44 | 31.33 | 0:12     | -1/16:12 | 100.51 | 37.48 | 31.37 | 0:12     | -1/16:12 | 104.41 | 37.87 | 31.76 | 0:12     | -1/16:12 | 104.41 | 37.90 | 31.84 | 0:12     | -1/16:12 | 108.31 | 38.31 | 32.25 | 0:12     | -1/16:12 | 108.31 | 38.34 | 32.28 |          |          |

| PIER LINE | 27     |       |       |          |          |        |       |       |          |          | 28     |       |       |          |          |        |        |       |       |          | 29       |        |        |       |       |          |          |        |        |                  |       |          |         |
|-----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|--------|-------|-------|----------|----------|--------|--------|-------|-------|----------|----------|--------|--------|-------|-------|----------|----------|--------|--------|------------------|-------|----------|---------|
| BEARING   | ①      |       |       |          |          | ②      |       |       |          |          | ①      |       |       |          |          | ②      |        |       |       |          | ①        |        |        |       |       | ②        |          |        |        |                  |       |          |         |
| GIRDER    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    | "D"    | TR    | TS    | SKEW     | BEVEL    | GIRDER | "D"    | TR    | TS    | SKEW     | BEVEL    | GIRDER | "D"    | TR    | TS    | SKEW     | BEVEL    | GIRDER | "D"    | TR               | TS    | SKEW     | BEVEL   |
| G1A       | -19.60 | 40.39 | 34.49 | -1/16:12 | +1/16:12 | -19.70 | 40.37 | 34.43 | -1/16:12 | +3/16:12 | -19.60 | 39.30 | 33.40 | -1/16:12 | +3/16:12 | G1A    | -19.70 | 39.27 | 33.33 | -1/16:12 | +5/16:12 | G-1A   | -19.60 | 37.27 | 31.37 | -1/16:12 | +5/16:12 | 1HV1   | -19.66 |                  | 31.35 | -1/16:12 | +3/8:12 |
| T1A       | -13.18 | 40.29 | 34.44 |          |          | -13.28 | 40.28 | 34.38 |          |          | -13.18 | 39.21 | 33.36 |          |          | T1A    | -13.28 | 39.18 | 33.28 |          |          | T-1A   | -13.18 | 37.18 | 31.33 |          |          | 1HV2   | -13.23 | Future by Others | 31.26 |          |         |
| T2A       | -6.75  | 40.20 | 34.35 |          |          | -6.85  | 40.19 | 34.29 |          |          | -6.75  | 39.12 | 33.27 |          |          | T2A    | -6.85  | 39.09 | 33.19 |          |          | T-2A   | -6.75  | 37.10 | 31.25 |          |          | 1HV3   | -6.80  |                  | 31.17 |          |         |
| G2A       | -0.32  | 40.10 | 34.20 |          |          | -0.42  | 40.09 | 34.15 |          |          | -0.32  | 39.03 | 33.13 |          |          | G2A    | -0.42  | 39.00 | 33.06 |          |          | G-2A   | -0.32  | 37.01 | 31.11 |          |          | 1HV4   | -0.38  |                  | 31.09 |          |         |
| G1        | -10.73 | 40.60 | 34.54 | -1/2:12  | -1/16:12 | -11.04 | 40.64 | 34.58 | -1/2:12  | -1/16:12 | -10.73 | 41.08 | 35.02 | -1/2:12  | -1/16:12 | G1     | -11.04 | 41.12 | 35.14 | -1/2:12  | -1/16:12 |        |        |       |       |          |          |        |        |                  |       |          |         |
| T1        | -3.78  | 40.49 | 34.46 | 0:12     |          | -8.03  | 40.59 | 34.56 | 0:12     |          | -4.12  | 40.98 | 34.95 | 0:12     |          | T1     | -1.98  | 40.99 | 35.03 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T2        | 1.22   | 40.41 | 34.38 |          |          | 1.22   | 40.45 | 34.42 |          |          | 5.13   | 40.84 | 34.81 |          |          | T2     | 6.46   | 40.86 | 34.90 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T3        | 10.47  | 40.27 | 34.24 |          |          | 10.47  | 40.31 | 34.28 |          |          | 14.38  | 40.70 | 34.67 |          |          | T3     | 15.21  | 40.73 | 34.77 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T4        | 19.72  | 40.13 | 34.10 |          |          | 19.72  | 40.17 | 34.14 |          |          | 23.63  | 40.57 | 34.54 |          |          | T4     | 23.96  | 40.60 | 34.64 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T5        | 28.97  | 39.99 | 33.96 |          |          | 28.97  | 40.03 | 34.00 |          |          | 32.88  | 40.43 | 34.40 |          |          | T5     | 32.71  | 40.47 | 34.51 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T6        | 38.22  | 39.85 | 33.82 |          |          | 38.22  | 39.89 | 33.86 |          |          | 42.13  | 40.28 | 34.25 |          |          | T6     | 41.46  | 40.32 | 34.36 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T7        | 47.47  | 39.71 | 33.68 |          |          | 47.47  | 39.74 | 33.71 |          |          | 51.38  | 40.12 | 34.09 |          |          | G2     | 49.12  | 40.18 | 34.20 | -1:12    |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T8        | 56.72  | 39.57 | 33.54 |          |          | 56.72  | 39.60 | 33.57 |          |          | 60.63  | 39.96 | 33.93 |          |          | G1     | 56.02  | 40.07 | 34.09 | +1/2:12  | 0:12     |        |        |       |       |          |          |        |        |                  |       |          |         |
| T9        | 65.97  | 39.43 | 33.40 |          |          | 65.97  | 39.46 | 33.43 |          |          | 69.88  | 39.80 | 33.77 |          |          | T1     | 63.63  | 39.93 | 33.97 | 0:12     |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T10       | 75.22  | 39.29 | 33.26 |          |          | 75.22  | 39.32 | 33.29 |          |          | 79.13  | 39.66 | 33.63 |          |          | T2     | 72.38  | 39.78 | 33.82 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T11       | 84.47  | 39.15 | 33.12 |          |          | 84.47  | 39.18 | 33.15 |          |          | 88.38  | 39.52 | 33.49 |          |          | T3     | 81.13  | 39.65 | 33.69 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T12       | 93.72  | 39.01 | 32.98 |          |          | 93.72  | 39.04 | 33.01 |          |          | 97.63  | 39.38 | 33.35 |          |          | T4     | 89.88  | 39.52 | 33.56 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| T13       | 102.97 | 38.88 | 32.85 |          |          | 102.97 | 38.91 | 32.88 |          |          | 106.88 | 39.25 | 33.22 |          |          | T5     | 98.63  | 39.39 | 33.43 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
| G2        | 112.22 | 38.74 | 32.68 |          |          | 112.22 | 38.77 | 32.71 |          |          | 116.13 | 39.11 | 33.05 |          |          | T6     | 107.38 | 39.26 | 33.30 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |
|           |        |       |       |          |          |        |       |       |          |          |        |       |       |          |          | G2     | 116.13 | 39.13 | 33.15 |          |          |        |        |       |       |          |          |        |        |                  |       |          |         |

See Sht. S-48  
for Girder Seat  
Locations,  
Elevations,  
Skews & Bevels  
for H-1 (EB)  
+ MC (EB)

See Sht. S-48  
for Girder Seat  
Locations,  
Elevations,  
Skews & Bevels  
for H-1 (EB)  
+ MC (EB)

FOR  
INFORMATION  
ONLY

KEEHI INTERCHANGE AREA 1 & 2 CONSULTANTS  
c/o S. S. Shinaburo & Futada, Inc.  
1219 Ward Ave., Honolulu, Hawaii 96814

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

H-1 VIADUCT (EB)

GIRDER SEAT GEOMETRICS

KEEHI INTERCHANGE

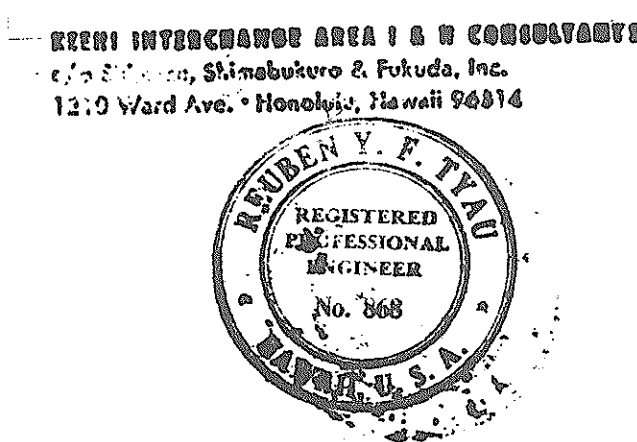
KEITHEN Y. F. TIAU  
REGISTERED PROFESSIONAL  
ENGINEER  
No. 268  
HAWAII, U.S.A.

NOTE  
See Sht. S-44 For Legend  
and Notes

See Sht. S-48  
for Girder Seat  
Locations,  
Elevations,  
Skews & Bevels  
for H-1 (EB)  
& NC (EB)

See Sht. S-48  
for Girder Seat  
Locations,  
Elevations,  
Skews & Bevels  
for H-1 (EB)  
& NC (EB)

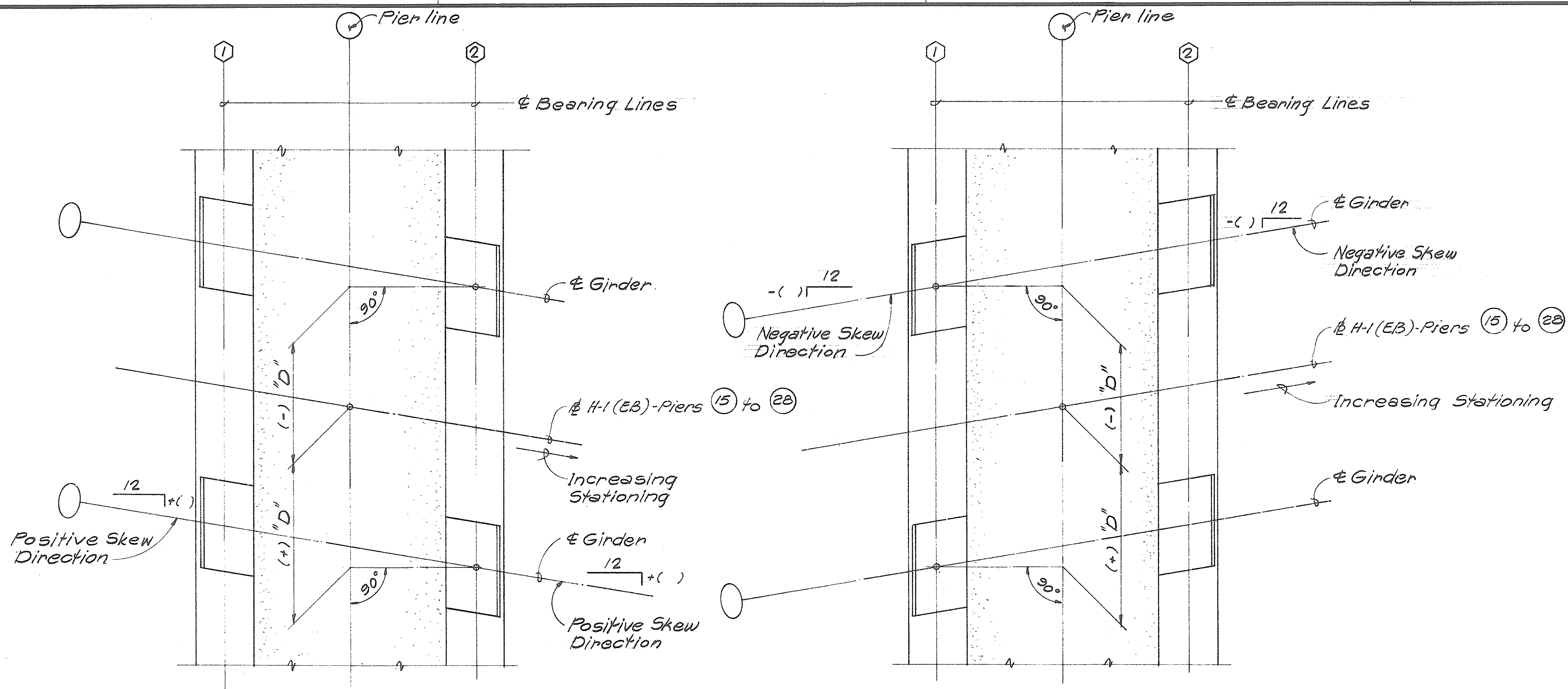
FOR  
INFORMATION  
ONLY



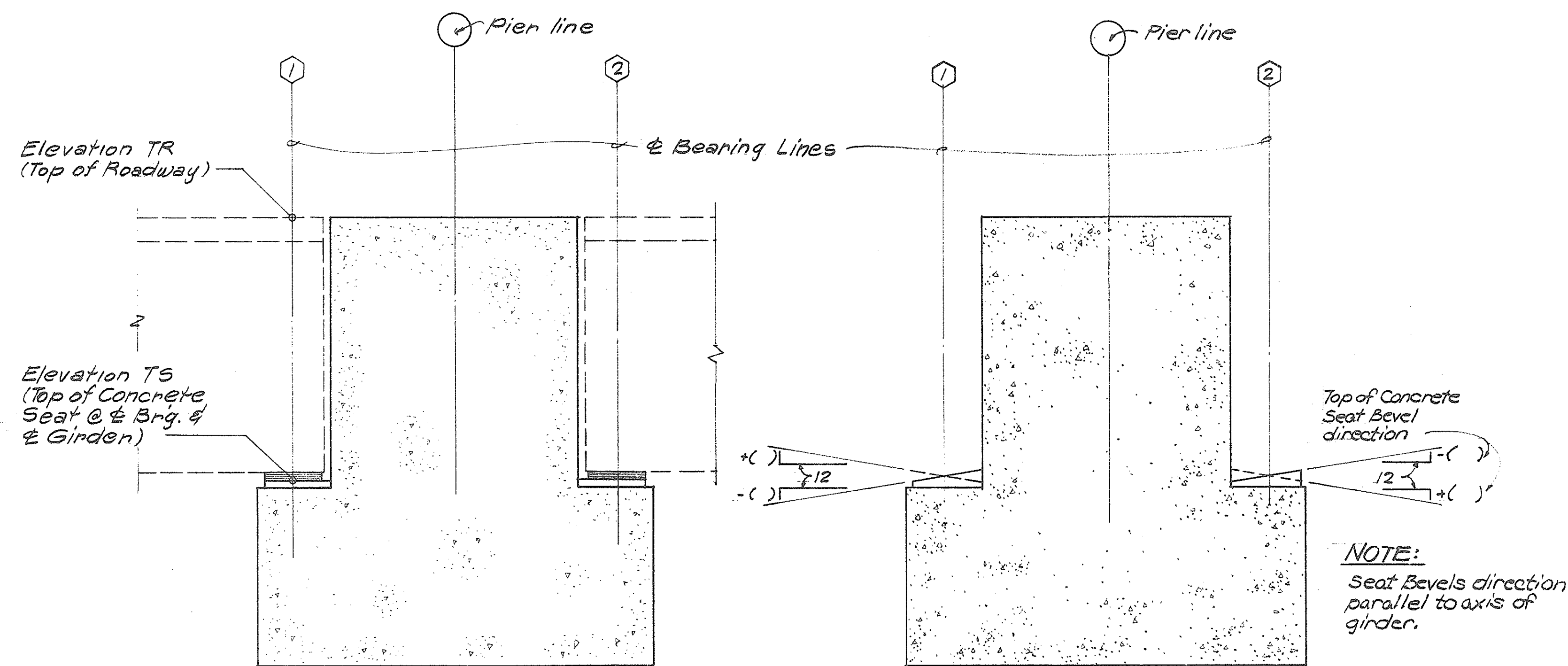
This work was prepared by  
me or under my supervision.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
H-1 VIADUCT (EB)  
GIRDER SEAT GEOMETRICS  
KEEHI INTERCHANGE  
F.A.I. PROJ. No. 1-HI-1 (182):17  
Scale: None Date: 4/21/83  
SHEET No. S-46 OF 58 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-HI-1(182):17     | 1982        | 17        | 42           |

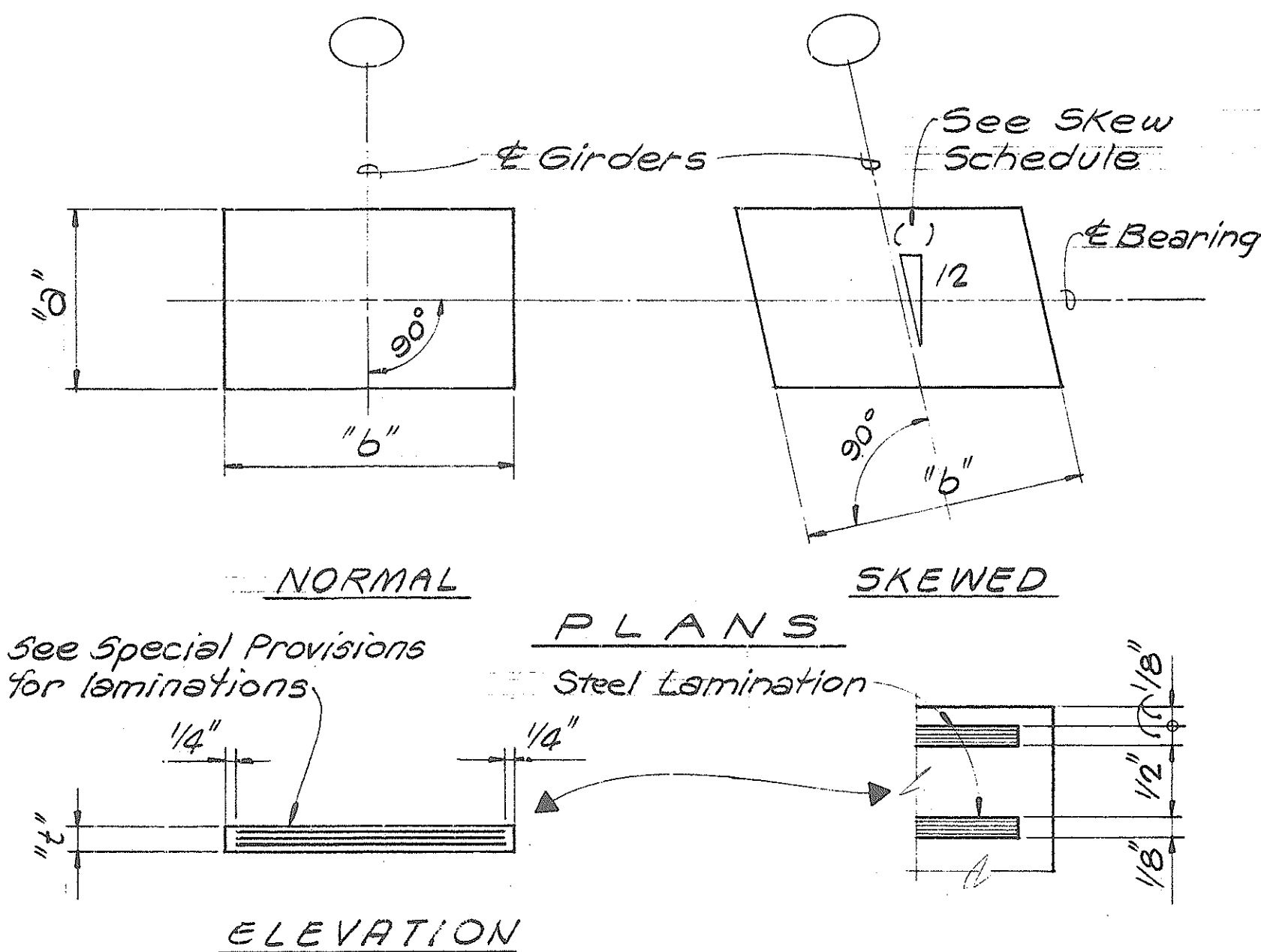


**GIRDER SEAT LOCATION & SKEW**  
Scale: 1/2" = 1'-0"



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

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



**ELASTOMERIC BEARING PAD DETAILS**

**H-I, N.C. & HO.V. ELASTOMERIC BEARING PAD SCHEDULE**

| Pier Line    | Bearing Line | Dimensions   |           |           |            |           |           |              |            |           |           |           |            |
|--------------|--------------|--------------|-----------|-----------|------------|-----------|-----------|--------------|------------|-----------|-----------|-----------|------------|
|              |              | H-I # N.C.   |           |           | HO.V.      |           |           | H-I # N.C.   |            |           | HO.V.     |           |            |
|              |              | G1, G2 & G1A | G1A # G2A | T1 to T13 | T1A to T14 | T1H & T2A | T1H & T2A | T1 to T13    | T1A to T14 | T1H & T2A | T1H & T2A | T1 to T13 | T1A to T14 |
| (18) to (20) | (1)-(2)      | 13"          | 15 1/2"   | 2 1/4"    |            |           |           | 8 1/2"       | 24 1/2"    | 2 1/4"    |           |           |            |
| (2)          | (1)          |              |           | 2 1/4"    |            |           |           |              |            | 2 1/4"    |           |           |            |
| (2) & (13)   | (2)          |              |           | 2 1/8"    |            |           |           |              |            | 2 1/8"    |           |           |            |
| (4) to (16)  | (1)-(2)      |              |           | 2 1/8"    |            |           |           |              |            | 2 1/8"    |           |           |            |
| (17)         | (1)          |              |           | 2 1/8"    |            |           |           |              |            | 2 1/8"    |           |           |            |
| (22)         | (2)          |              |           | 2 1/4"    |            |           |           |              |            | 2 1/4"    |           |           |            |
| (22)         | (1)          |              |           | 2 1/8"    |            |           |           |              |            | 2 1/8"    |           |           |            |
| (23) & (24)  | (1)-(2)      |              |           | 4 1/8"    |            |           |           |              |            | 4 1/8"    |           |           |            |
| (25)         | (1)          |              |           | 4 1/8"    |            |           |           |              |            | 4 1/8"    |           |           |            |
| (25)         | (2)          |              |           | 3 1/2"    |            |           |           |              |            | 3 1/2"    |           |           |            |
| (26) & (27)  | (1)-(2)      |              |           | 3 1/2"    |            |           |           |              |            | 3 1/2"    |           |           |            |
| (28)         | (1)          |              |           | 3 1/2"    |            |           |           |              |            | 3 1/2"    |           |           |            |
| (28)         | (2)          | 13"          | 15 1/2"   | 2 7/8"    |            |           |           | 3 1/2"       | 24 1/2"    | 2 7/8"    |           |           |            |
| (29)         | (1) (2)      | See Sh. T-11 |           |           |            |           |           | See Sh. T-11 |            |           |           |           |            |

**ELASTOMERIC BEARING PAD NOTES**

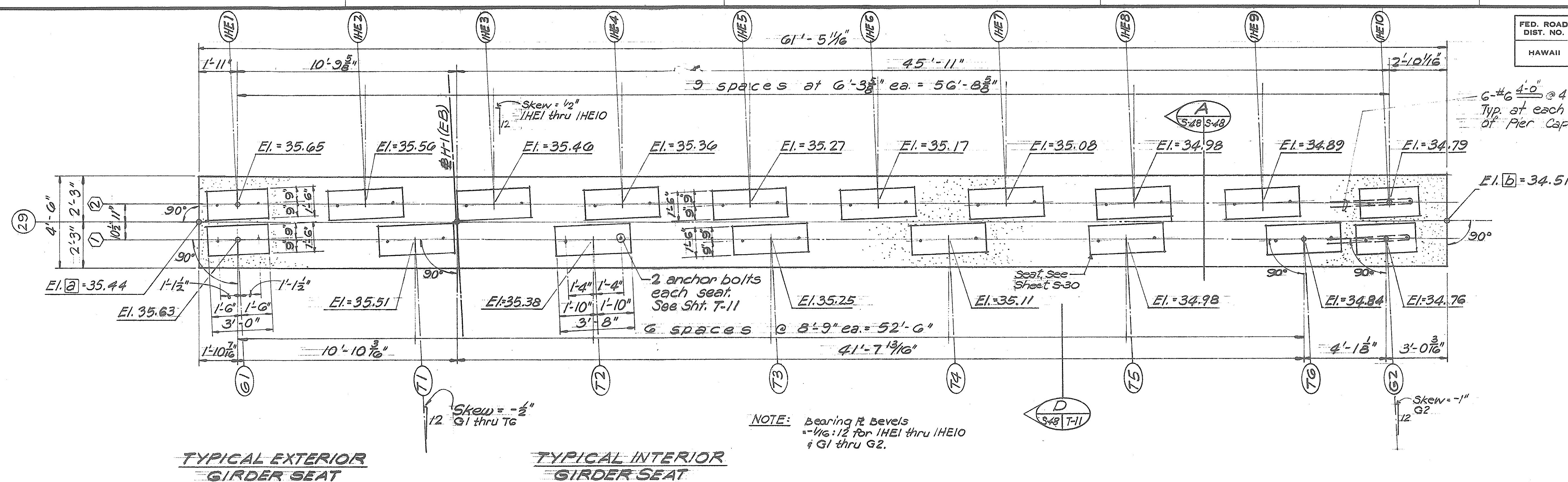
- For steel laminated elastomeric bearing pads, see Standard Specifications and Special Provisions.
- Fiberglass reinforced elastomeric bearing pads may be used in lieu of steel laminated pads as shown. If the Contractor elects to use fiber glass laminated pads, he shall comply with the following requirements:
  - The fiber glass laminated elastomeric pads shall comply with the details shown on the plans and the requirements of the Special Provisions.
  - Minimum total thickness of fiberglass laminated pads shall be equal to the sum of 1/2 inch pads between steel laminations + 1/4 inch. (Revise dimension "t" in the Schedule accordingly.)
  - All bearing seat elevations are based on steel laminated elastomeric bearing pads. Appropriate revisions shall be made to the bearing seat elevations and shear R thickness to reflect the reduction in the thickness for the fiber glass laminated bearing pads. Any such revision shall be approved by the Engineer. The shear R thickness shall be calculated accordingly.
- Cost of bearing pads, bearing plates, etc. are incidental to concrete.

FOR  
INFORMATION  
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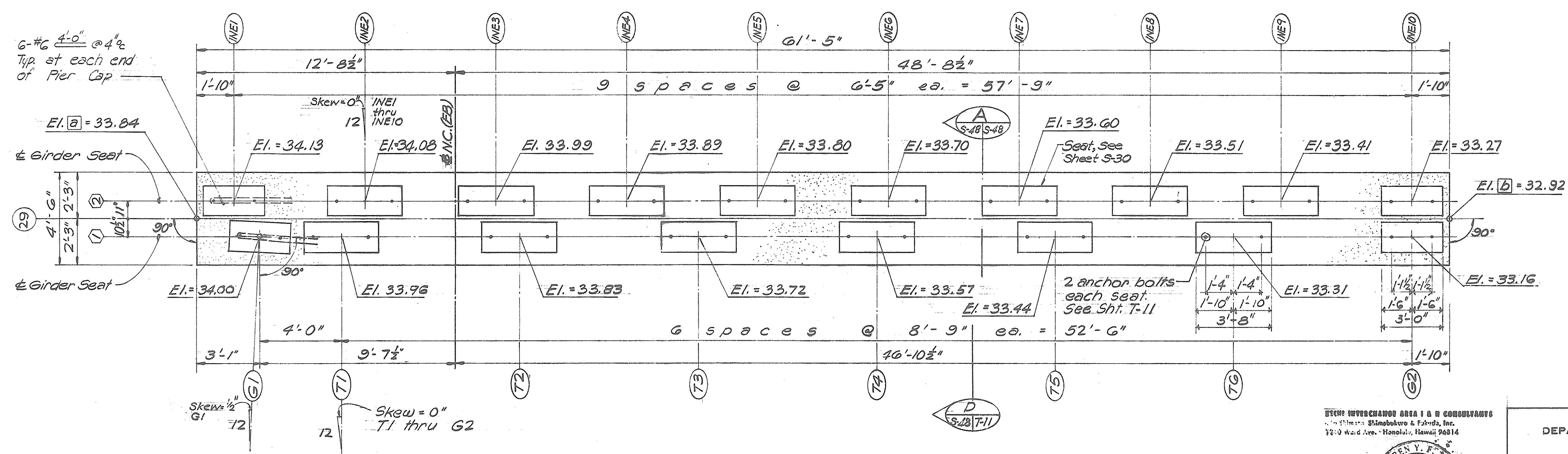


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**H-I VIADUCT (E.B.)**  
GIRDER SEAT GEOMETRIC DETAILS  
ELASTOMERIC BEARING PAD SCHED. & DETAILS  
KEEHI INTERCHANGE  
F.A.I. PROJ. NO. I-HI-1(182):17  
Scale: As Shown Date: 4/21/83  
SHEET NO. 547 OF 58 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 111 (102) 117      | 1982        | 18        | 42           |



**H-1 (EB) #29 PIER CAP PLAN**  
Scale: 3/8" = 1'-0"

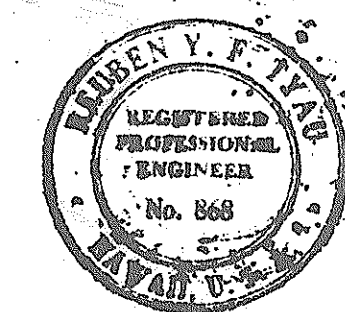


**NC (EB) #29 PIER CAP PLAN**  
Scale: 3/8" = 1'-0"

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

**FOR INFORMATION ONLY**

KEEHI INTERCHANGE AREA I & D CONSULTANTS  
Shimizu Shimboku & Fukuda, Inc.  
1810 Ward Ave., Honolulu, Hawaii 96814



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**H-1 VIADUCT (EB)**

**PIER CAP PLANS**

**TYPE VI PIER**

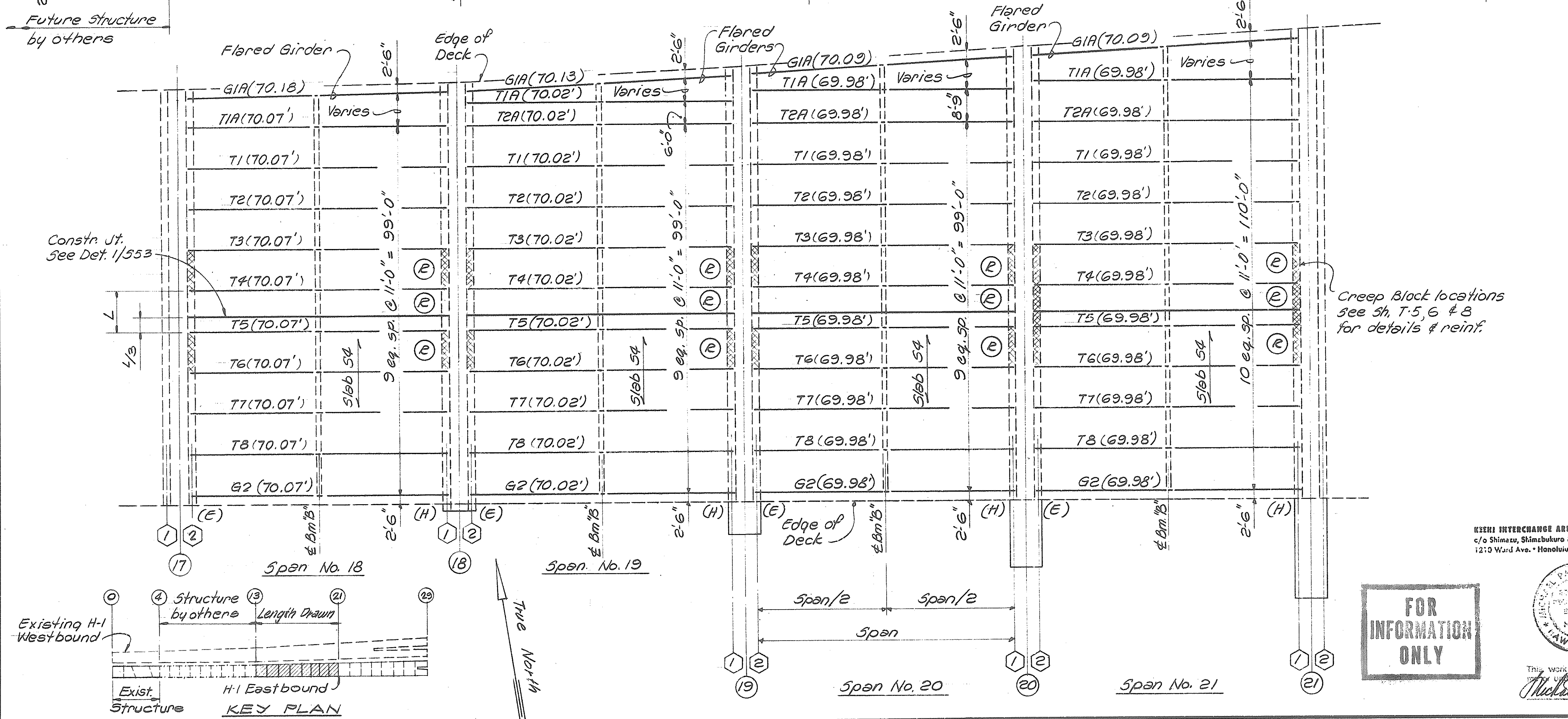
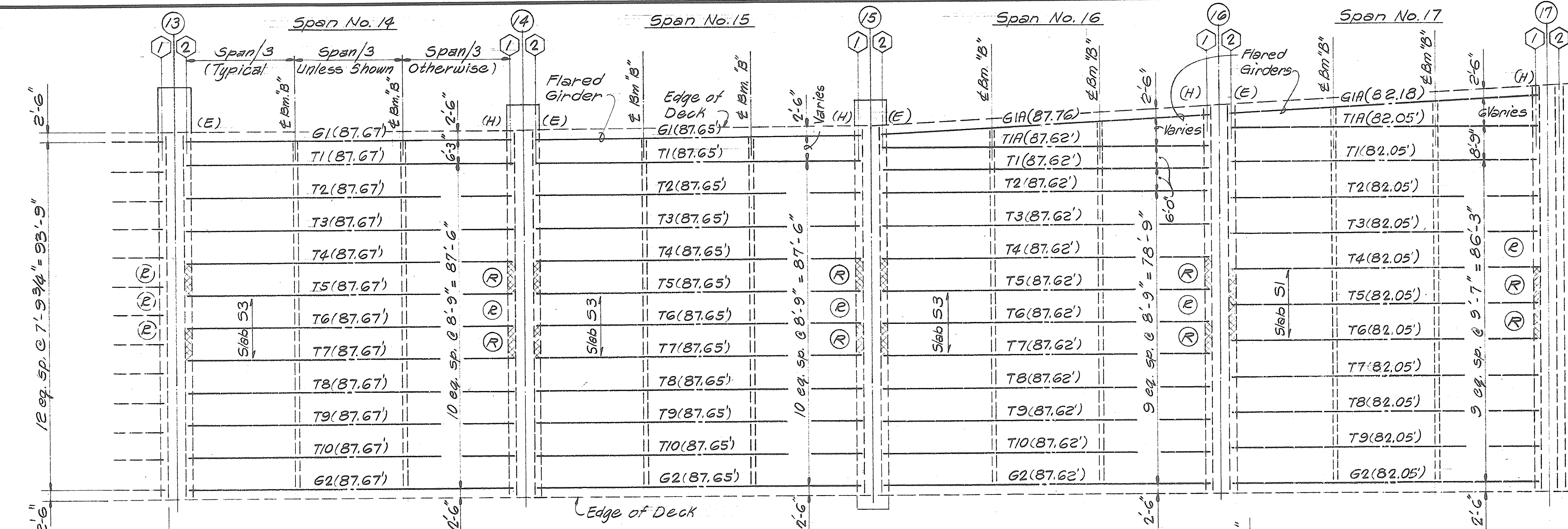
**PIER (29) H-1 (EB) & NC (EB)**

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. 111-1(102)117

Scale: As shown Date: 4/21/83  
SHEET NO. 548 OF 60 SHEETS

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-HI-1(182)-17     | 1982        | 19        | 42           |

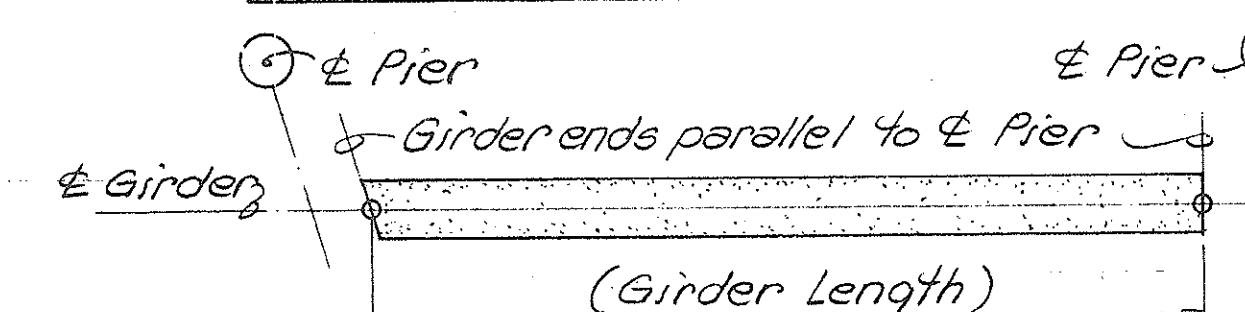


# PRESTRESSED GIRDER SCHEDULE

|           | SPAN NO. | GIRDER MARK NO. | GIRDER TYPE |
|-----------|----------|-----------------|-------------|
| H-1 (EB)  | 14 & 15  | G1 & G2         | EP-5        |
|           |          | T1 to T10       | P-2b        |
|           |          |                 |             |
|           | 16       | G1A & G2        | EP-5        |
|           |          | T1A to T10      | P-2b        |
|           | 17       | G1A & G2        | EP-2b       |
|           |          | T1A to T9       | P-2b        |
|           |          |                 |             |
|           | 18 to 21 | G1A & G2        | EP-1        |
|           |          | T1A to T8       | P-1         |
| N.C. (EB) | 22 to 28 | G1A, G1 & G2    | EP-3        |
|           |          | T1A to T3A      | P-2c        |
|           | 29       | G1 & G2         | EP-4        |
|           |          | T1 to T6        | P-2a        |
| H.O.V.    | 29       | G1 & G2         | EP-4        |
|           |          | T1 to T6        | P-2a        |
|           | 27 to 29 | G1A & G2A       | EP-3        |
|           |          | T1A & T2A       | P-4         |

## NOTES

- See Deck Framing Plans for Girder Mark No's.
- See Sh. T-9 & 10 for Girder details.
- Girder lengths are measured along & of girders out to out in plan. Length shown in ( ) on Framing Plans. See diagram below.
- All girders are parallel unless designated as flared.



## SKewed End      Normal End PLAN - GIRDER LENGTH & END CONDITION

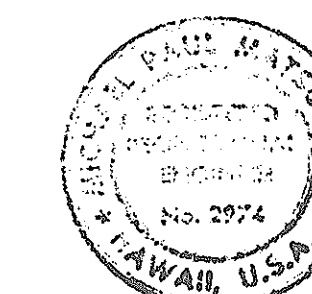
## LEGEND

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

## REFERENCE DRAWINGS

- Hinge Restraint --- Sh. T-8
- Prestressed Girder Details --- Sh. T-9 & 10
- Beam "A" & "B" --- Sh. T-10
- Slab Reinforcing Schedule --- Sh. S-57 & 58
- Deck Slab Camber Schedule --- Sh. S-52
- Deck Drain Locations --- Sh. S-3 to 5
- Deck Drain Details --- Sh. S-8 & 9

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1213 Ward Ave., Honolulu, Hawaii 96814



This work was prepared by  
*Michael J. McDonald*

FOR  
INFORMATION  
ONLY

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

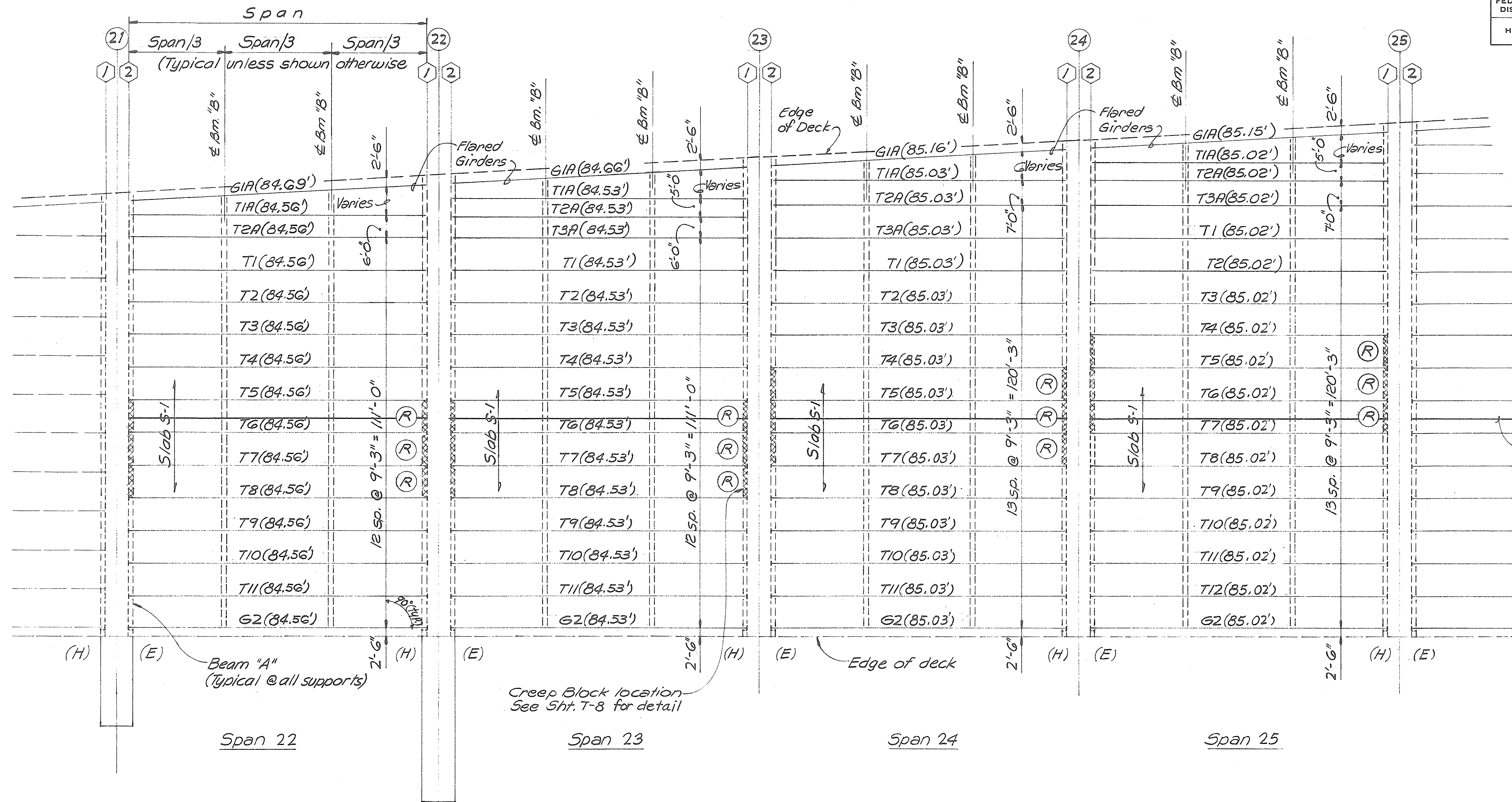
H-1 VIADUCT (EB)  
PARTIAL DECK FRAMING PLAN  
PIER 13 TO PIER 21

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. I-HI-1(182)-17

Scale: 1/16"=1'-0"      Date: 4/21/83

SHEET NO. 549 OF 58 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | H-1-1(82):17       | 1982        | 20        | 42           |

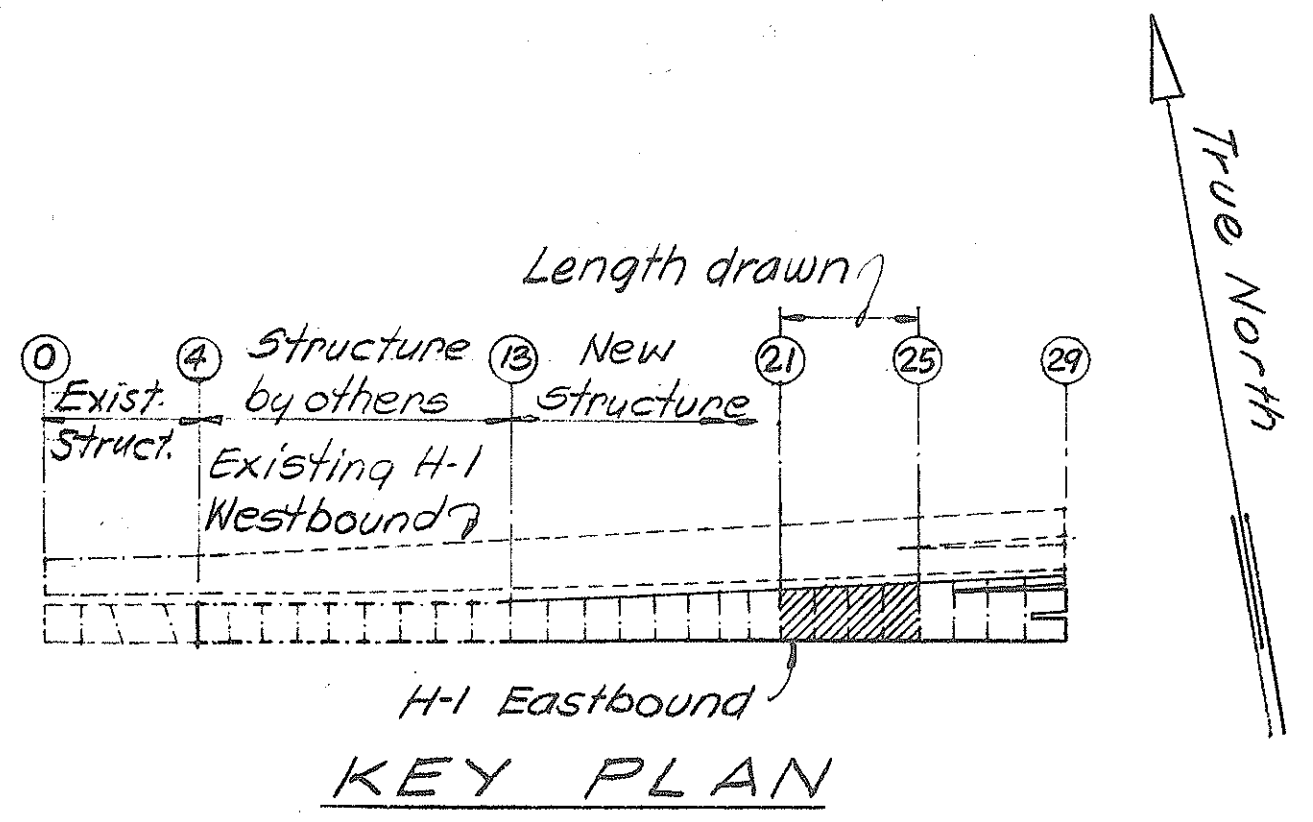


**LEGEND:**  
 (E) = Expansion End of Girder.  
 (H) = Hinge End of Girder.  
 (R) = One set of Hinge Restrainer Location.

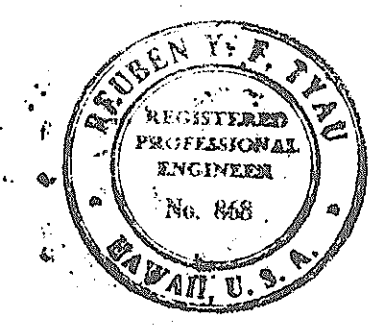
**NOTE:**  
 See Sheet S-49 for Notes.

Construction Joint  
 See Det. 1/8-53

**PARTIAL DECK FRAMING PLAN**  
 Scale: 1/16" = 1'-0"

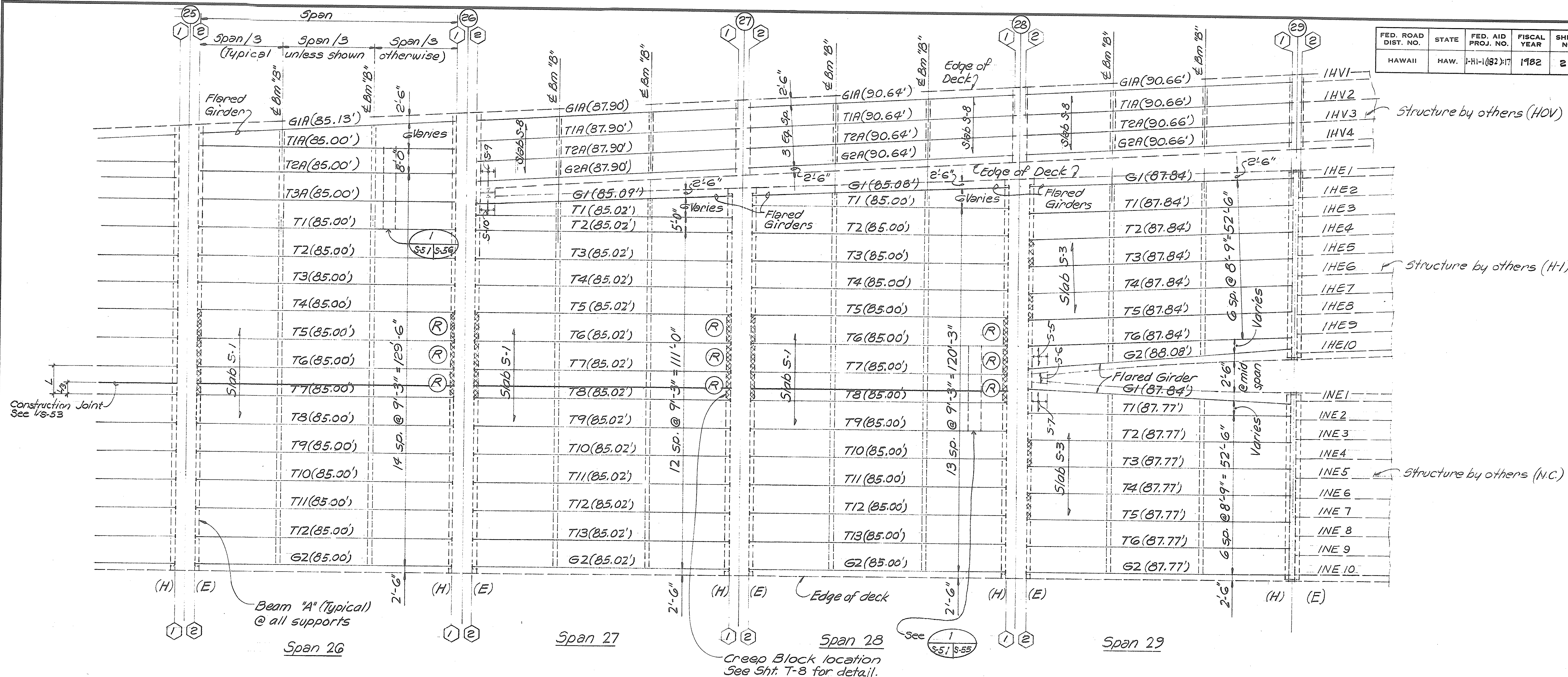


**FOR INFORMATION ONLY**



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**H-1 VIADUCT (EB)**  
 PARTIAL DECK FRAMING PLAN  
 PIER 21 TO 25  
 KEEHI INTERCHANGE  
 F.A.I. PROJ. NO. H-1-1(82):17  
 Scale: As Shown Date: 4/21/83  
 SHEET NO. S-50 OF 58 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | H-1-1(182)-17      | 1982        | 21        | 42           |



## PARTIAL DECK FRAMING PLAN

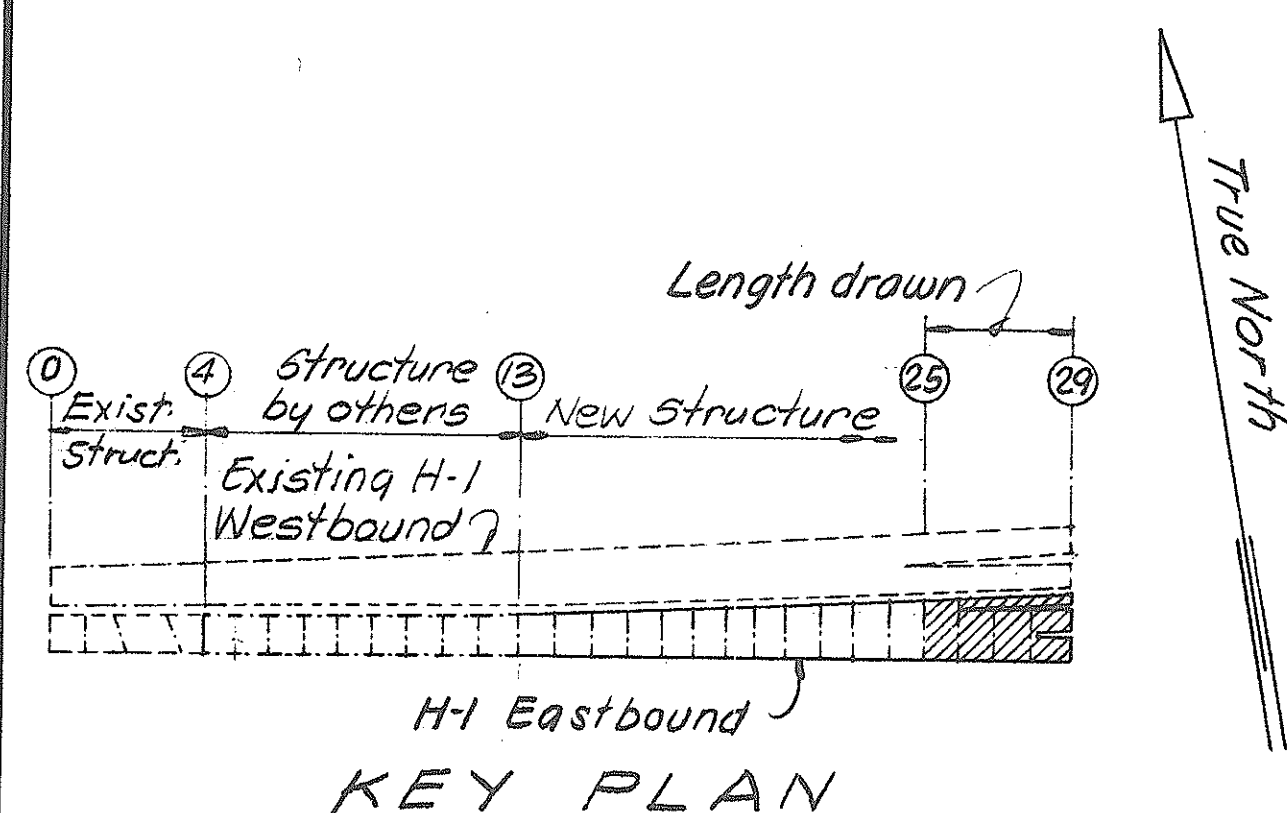
Scale: 1/16" = 1'-0"

### LEGEND:

- (E) = Expansion end of Girder
- (H) = Hinge end of Girder
- (R) = One set of Hinge Restrainer Location

### NOTE:

See Sheet 5-49 for Notes.



FOR  
INFORMATION  
ONLY

KEEHI INTERCHANGE AREA I & D CONSULTANTS  
c/o Shimizu, Shimabukuro & Fukuda, Inc.  
1213 Ward Ave., Honolulu, Hawaii 96814



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

H-1 VIADUCT (EB)  
PARTIAL DECK FRAMING PLAN  
PIER 25 TO 29

KEEHI INTERCHANGE  
F.A.I. PROJ. NO. H-1(182)-17

Scale: As Shown Date: 4/21/83  
SHEET NO. 5-51 OF 50 SHEETS