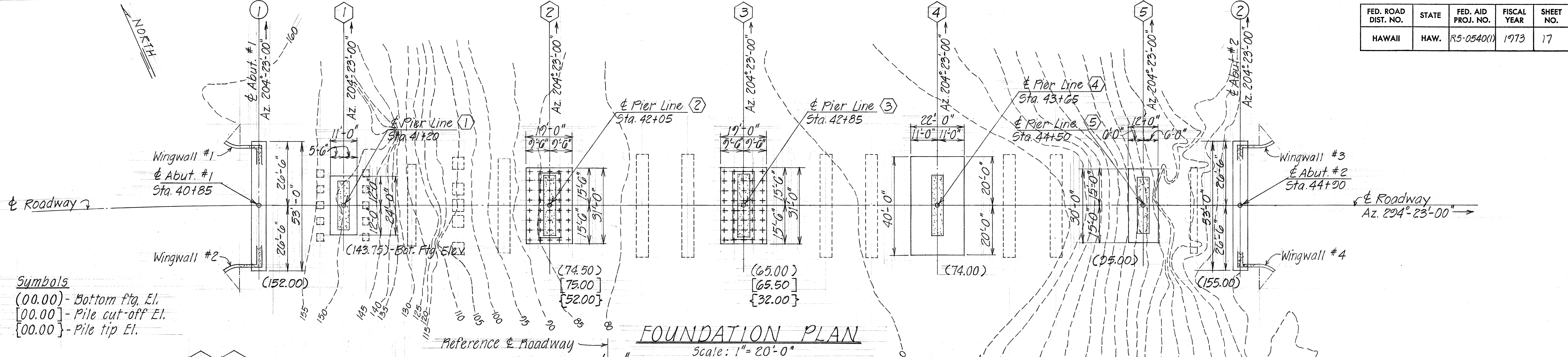


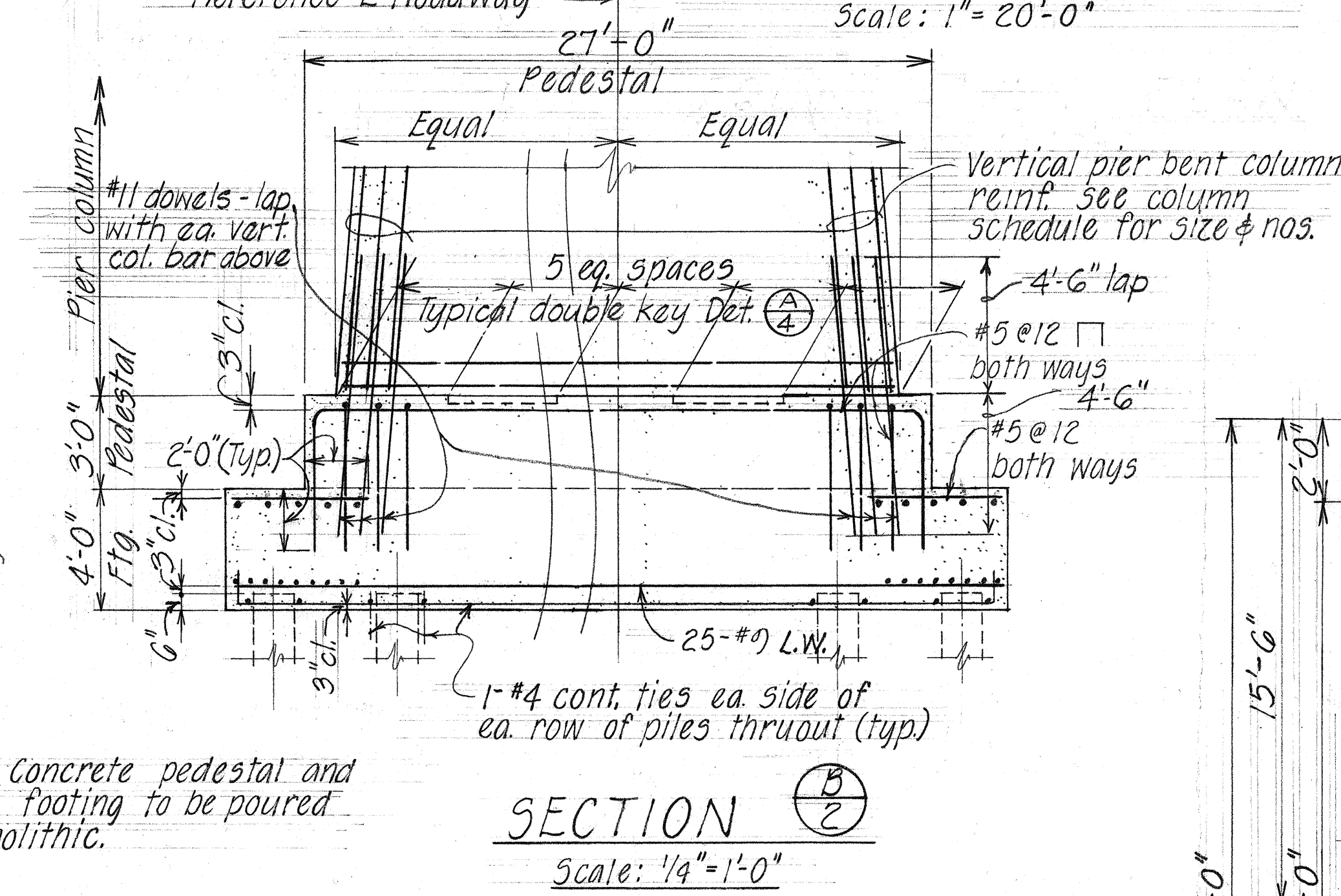
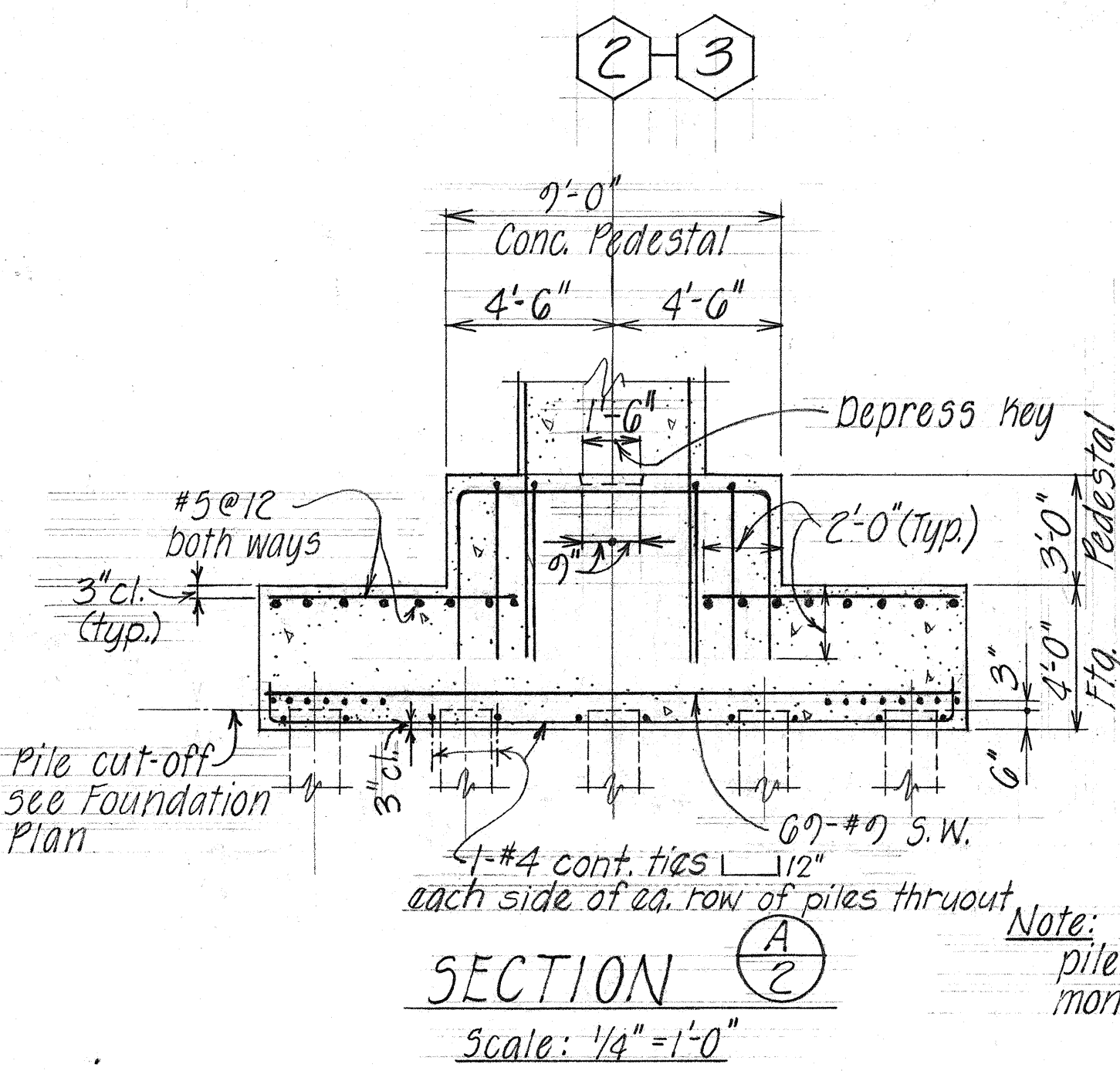




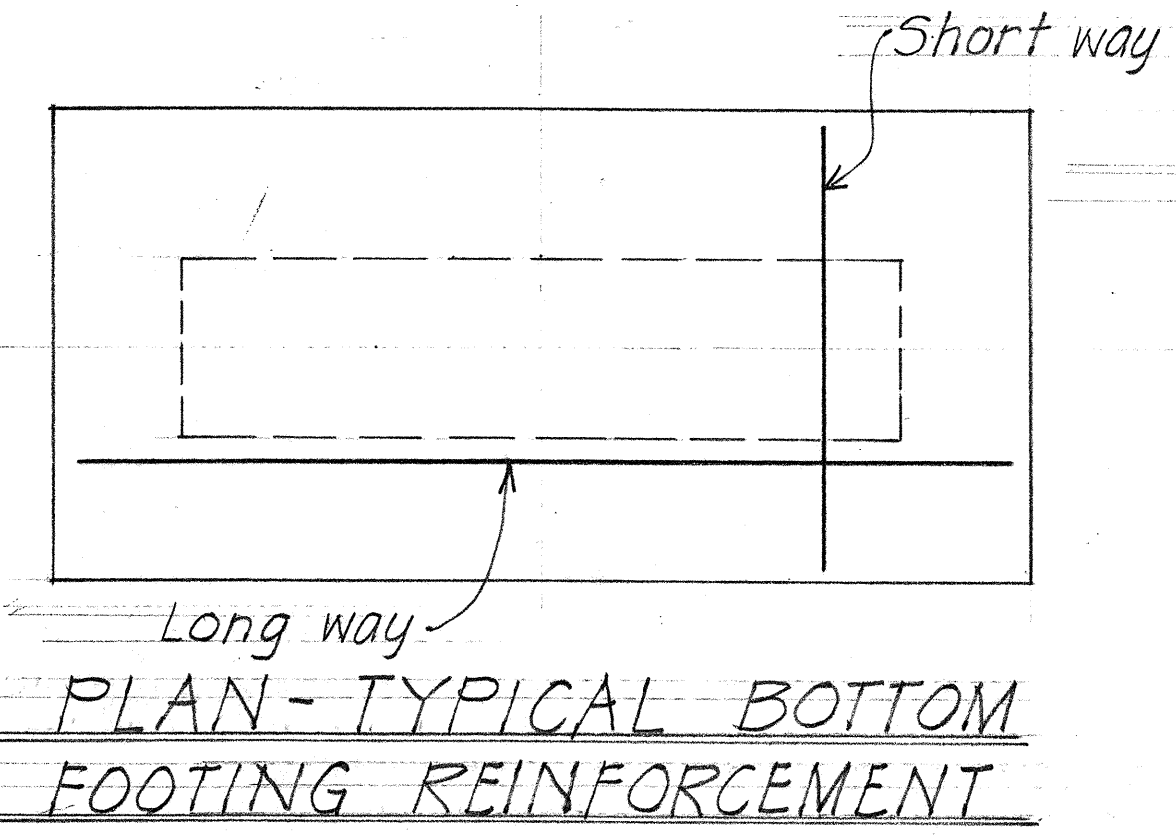
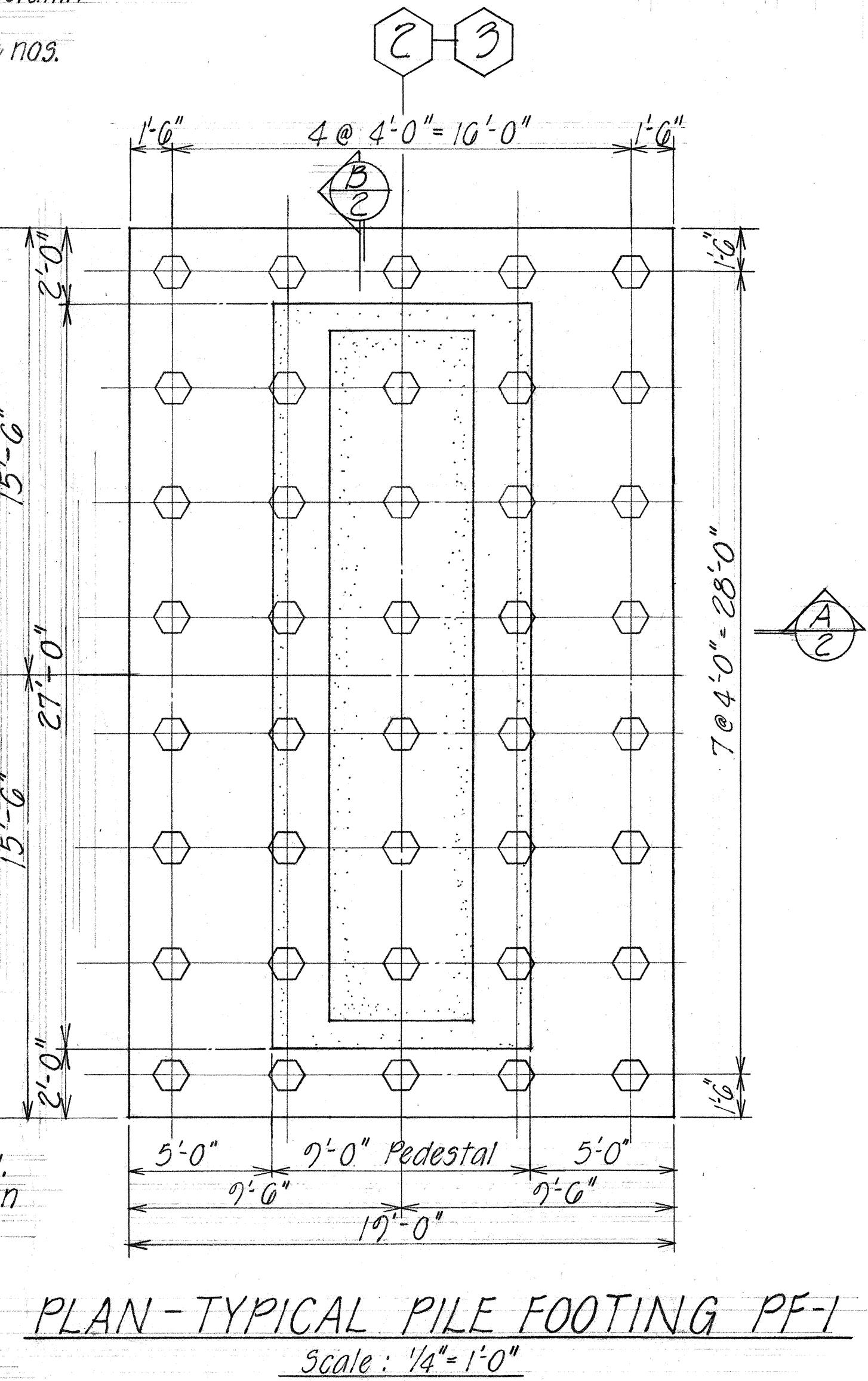
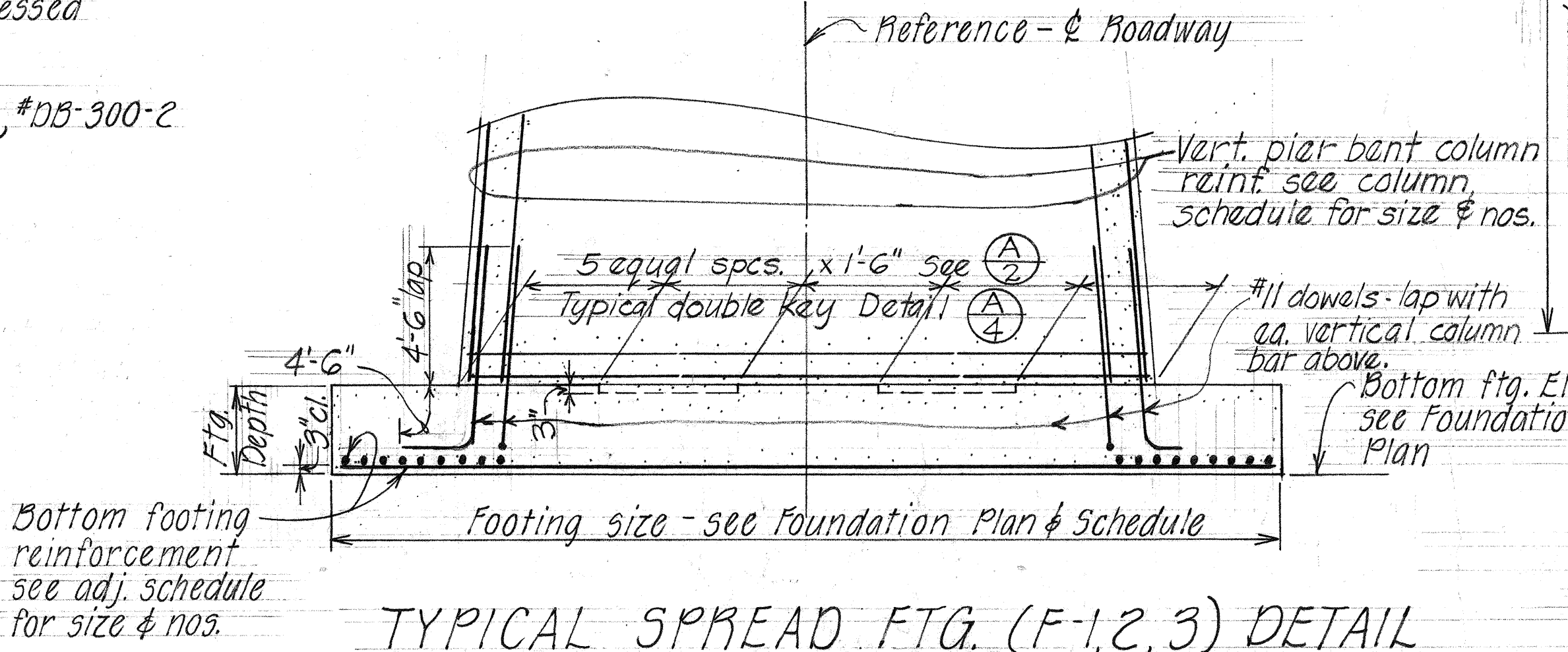
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | R5-0540(1)         | 1973        | 17        | 46           |



**Symbols**  
 (00.00) - Bottom Ptg. El.  
 [00.00] - Pile cut-off El.  
 {00.00} - Pile tip El.



- Reference Notes:**
- All piles to be Type I prestressed concrete vertical piles.
  - See Standard Sht. #DB-300-1, #DB-300-2



**SPREAD FOOTING SCHEDULE**

| TYPE | SIZE            | DEPTH | BOTTOM REINFORCEMENT |        |
|------|-----------------|-------|----------------------|--------|
|      |                 |       | S.W.                 | L.W.   |
| F-1  | 11'-0" x 24'-0" | 1'-0" | 34-#8                | 15-#8  |
| F-2  | 22'-0" x 40'-0" | 4'-3" | 81-#11               | 40-#11 |
| F-3  | 12'-0" x 30'-0" | 2'-0" | 49-#9                | 21-#9  |

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**REPLACEMENT OF EXISTING WAHIAWA TIMBER BRIDGE**

FOUNDATION PLAN AND DETAILS

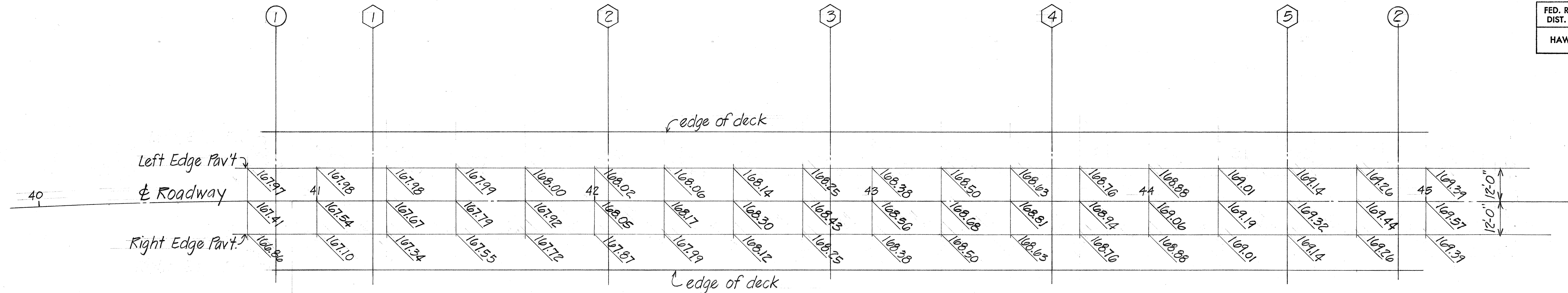
Koloa, Kauai  
 F.A.S. Proj. No. R5-0540(1) April 1973

**SHEET No. 2 OF 13 SHEETS**

|               |      |      |
|---------------|------|------|
| ORIGINAL PLAN | DATE | 3/73 |
| DESIGNED BY   | BY   | 3/73 |
| NOTED BY      | BY   | 3/73 |
| CHECKED BY    | BY   | 3/73 |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | R5-0540(1)         | 1973        | 18        | 46           |



### FINISH GRADE PLAN

Scale: 1" = 20'-0"

### GENERAL NOTES

#### DESIGN SPECIFICATIONS AASHO

Standard Specifications for Highway Bridges (10th Edition)  
with subsequent Interim Specifications.

#### DESIGN LOADS: HS-20-44 or Interstate loading

#### DESIGN STRESSES:

1. R.C. beams & slabs - See AASHO Specifications and Special Provisions except as otherwise noted.

#### Class A

$f'_c = 3,000$  psi  
 $f_c = 1,200$  psi  
 $n = 10$   
 $f_s = 20,000$  psi

#### 2. Prestressed Girders

$f'_c = 5,500$  psi |  $\frac{1}{2}$ " dia. 7 wire strands  
 $f'_{ci} = 4,000$  psi | Tensioning load = 28,900 lbs. per strand.  
Design load = 23,550 lbs. per strand.  
Forms must be removed and the beams inspected before the strands are cut.

#### 3. Pile Capacity - See Foundation Plan.

#### MATERIALS:

1. All concrete shall be class A except as otherwise noted on plans. Concrete for prestressed concrete girders see Standard Specifications and as noted under Design Stresses.

2. All preformed bridge bearing pads are incidental to concrete and will not be paid for separately.

3. See Special Provisions for admixture in concrete.

#### CONSTRUCTION METHODS:

1. See Standard Specifications and Special Provisions.
2. For Concrete finish see Special Provisions. Concrete seats and creep blocks to be poured monolithically with structure. Top surfaces of concrete seats to have hard trowel finish.
3. See details for additional surface finish.
4. In general, top & edge of concrete deck of superstructure shall be constructed to follow the finish roadway vertical & horizontal curves and grades.

#### CONSTRUCTION METHOD:

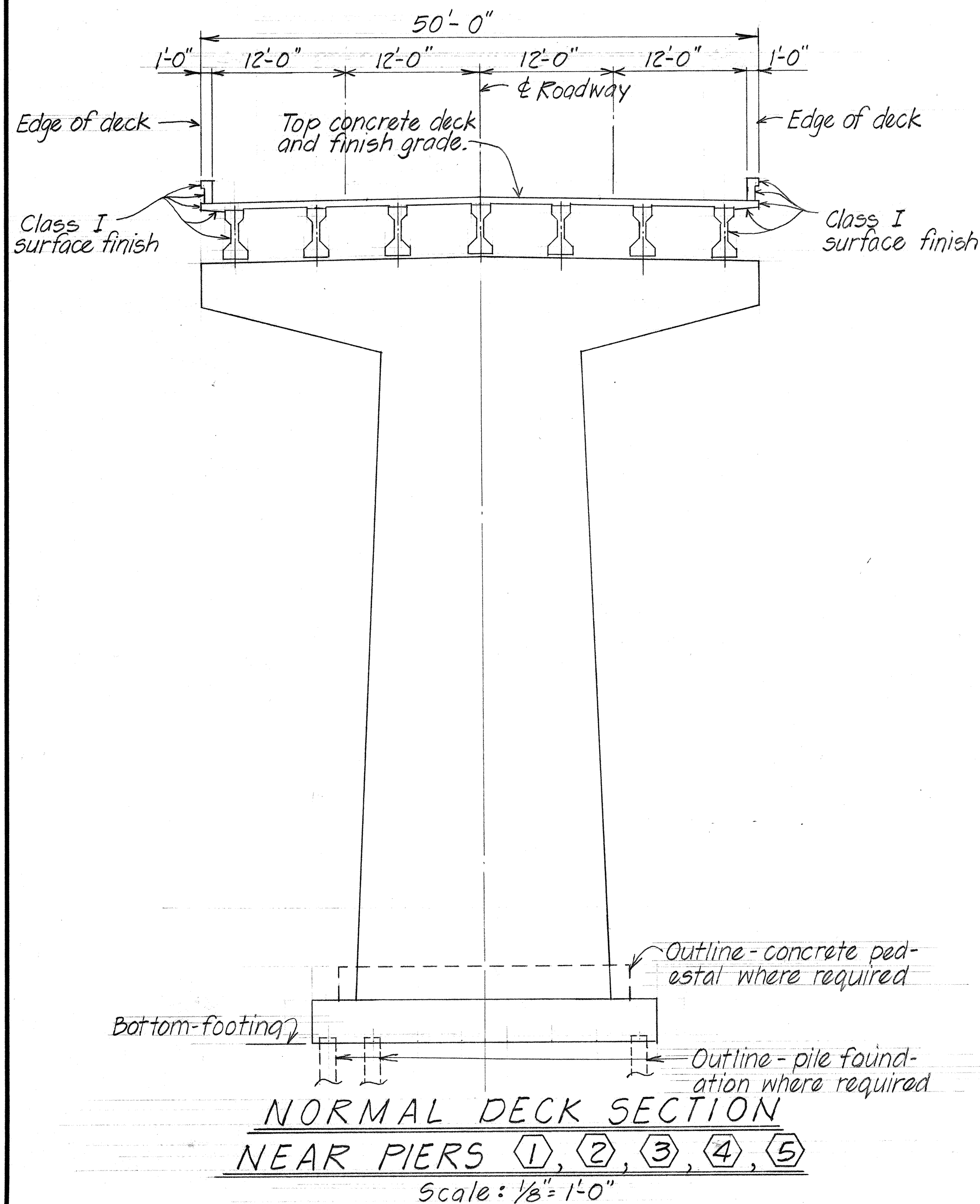
5. Backfill for both abutments to be placed simultaneously at each abutment after the superstructure is cured.
6. Except as otherwise noted, all vertical dimensions are measured plumb.
7. Concrete pedestals of existing timber bridge shall be removed at least to the ground level, unless otherwise shown on the plans or ordered by the Engineer.

#### REFERENCE:

1. Accompanying Sht. Nos. 5302.12, 5302.13, 5302.19 are portions of original contract plans of existing timber bridge for information & guidance to demolition of existing bridge. The complete contract plans of the existing timber bridge is on file with the Highway Department, Department of Transportation.
2. Refer to Standard Detailed Drawings for additional details not covered by detailed plans.
3. Typical Details drawing sheet Nos. TD-1 thru TD-5 inclusive refers to the bridge structure except for modification as may be required by special conditions. For such modifications see corresponding detailed plans.

#### GENERAL:

1. All items noted incidental will not be paid for separately.

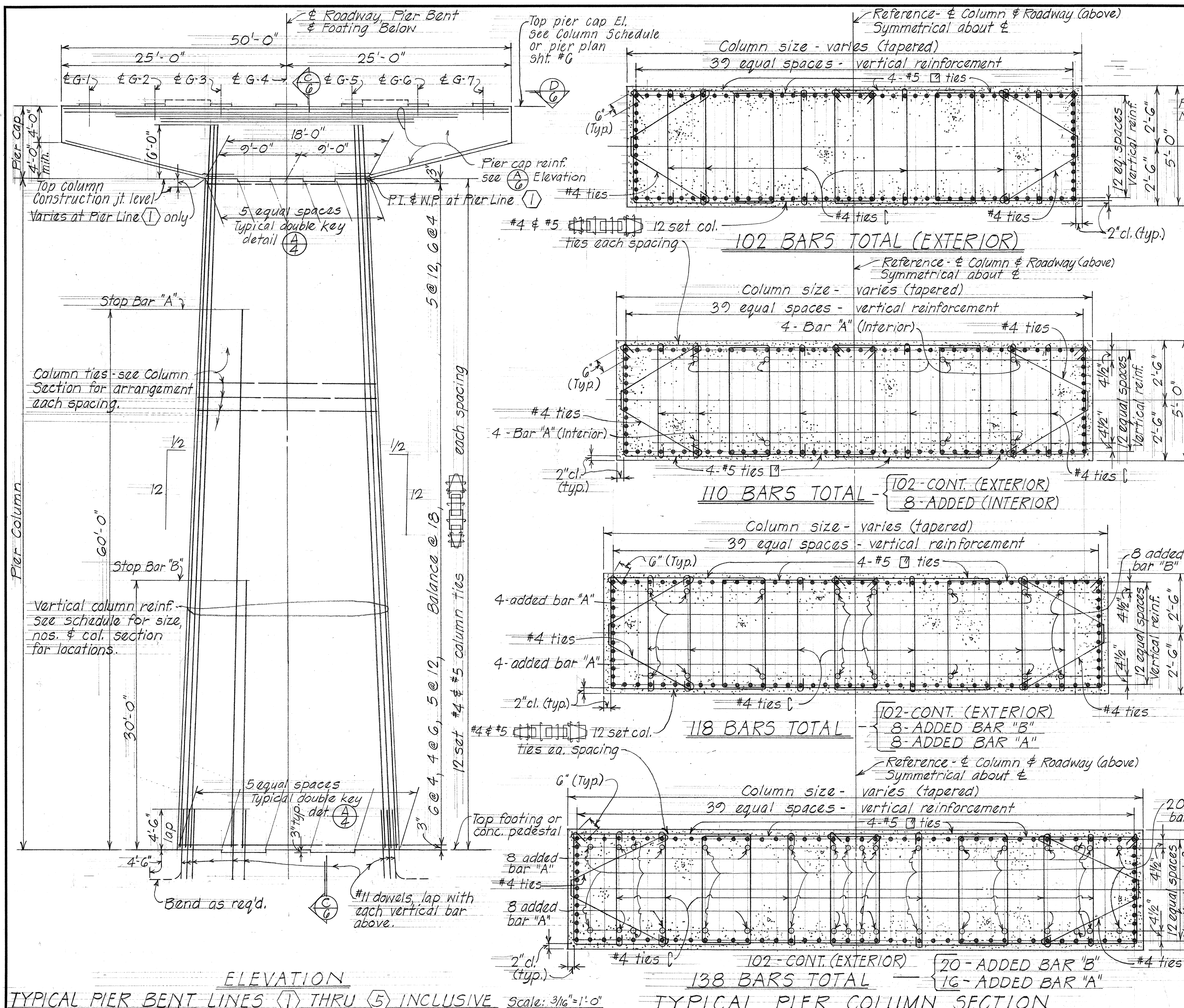


|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          | 3/73 |
| TRACED BY         | 3/73 |
| NOTED BY          | 3/73 |
| CHECKED BY        | 3/73 |
| INCHES            |      |

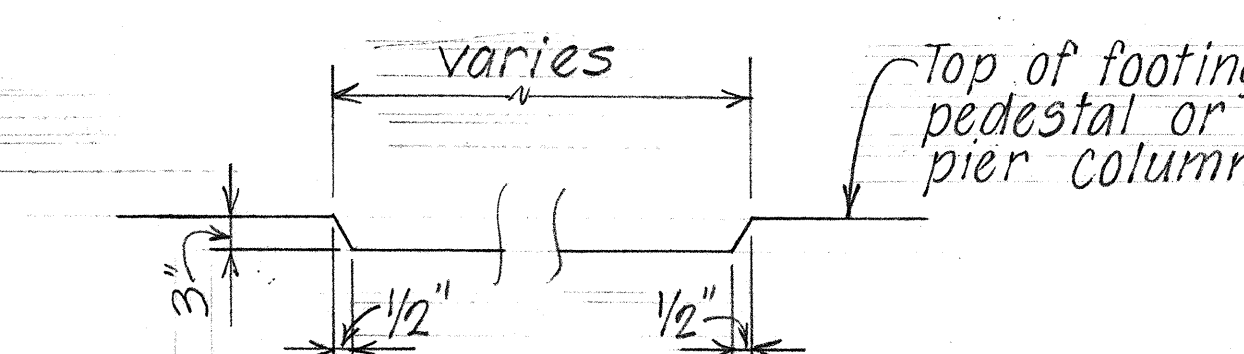
|                                                                                        |
|----------------------------------------------------------------------------------------|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION                   |
| REPLACEMENT OF EXISTING<br>WAHIAWA TIMBER BRIDGE<br>GRADING PLAN, NOTES<br>AND DETAILS |
| Koloa, Kauai<br>F.A.S. Proj. No R5-0540(1) April 1973                                  |
| SHEET No. 3 OF 13 SHEETS                                                               |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 19        | 46           |



| PIER BENT COLUMN SCHEDULE |                     |                  |                  |                  |                     |
|---------------------------|---------------------|------------------|------------------|------------------|---------------------|
| PIER LINE NO.             | (1)                 | (2)              | (3)              | (4)              | (5)                 |
| Top Pier Cap Elevation    | See Pier pl. sh. #6 | 162.26           | 162.57           | 163.06           | See Pier Pl. sh. #6 |
| Top pier cap              | 102-#11 (Total)     | 158-#11 (Total)  | 138-#11 (Total)  | 118-#11 (Total)  | 110-#11 (Total)     |
| Top footing or pedestal   | 102-Cont. (Ext.)    | 102-Cont. (Ext.) | 102-Cont. (Ext.) | 102-Cont. (Ext.) | 102-Cont. (Ext.)    |
| Column Dowels             | 102-#11             | 158-#11          | 138-#11          | 118-#11          | 110-#11             |
| Concrete Pedestal         | See Detail          | See Detail       | See Detail       | See Detail       | See Detail          |
| Footing Type              | F-1                 | PF-1             | PF-1             | F-2              | F-3                 |

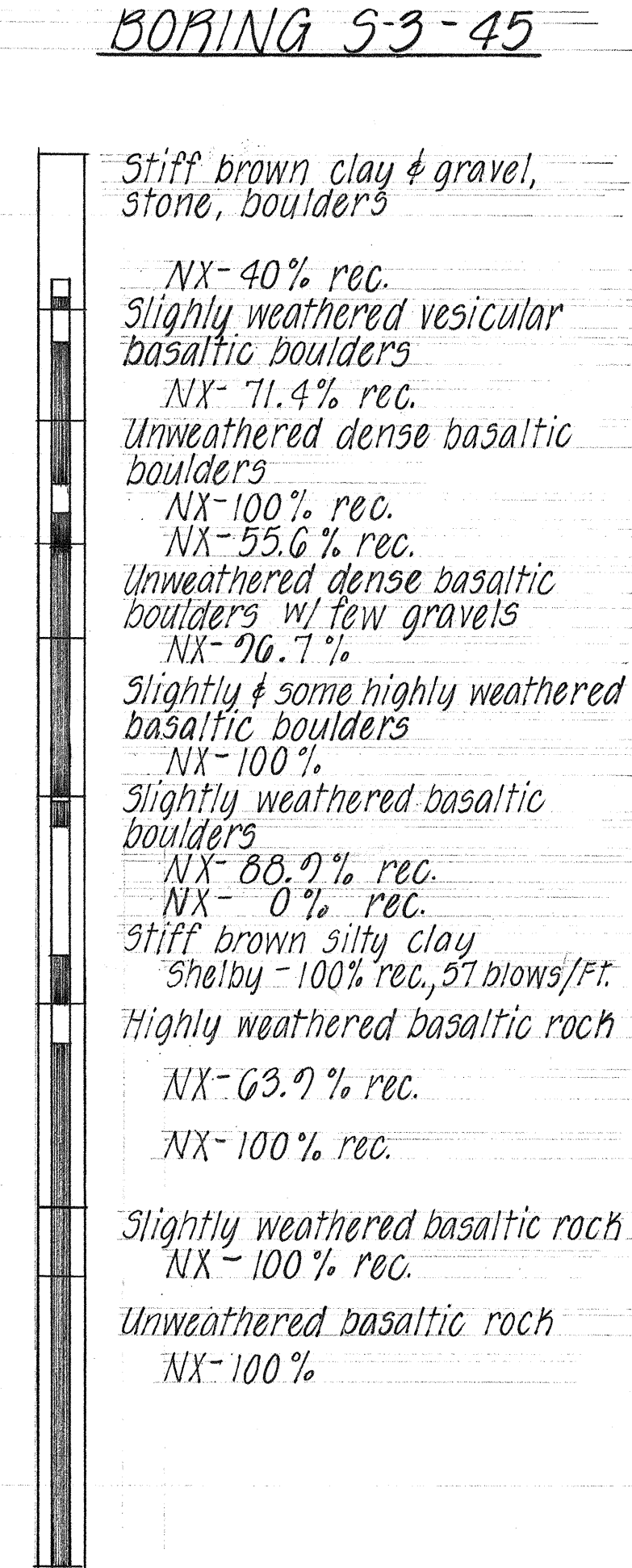
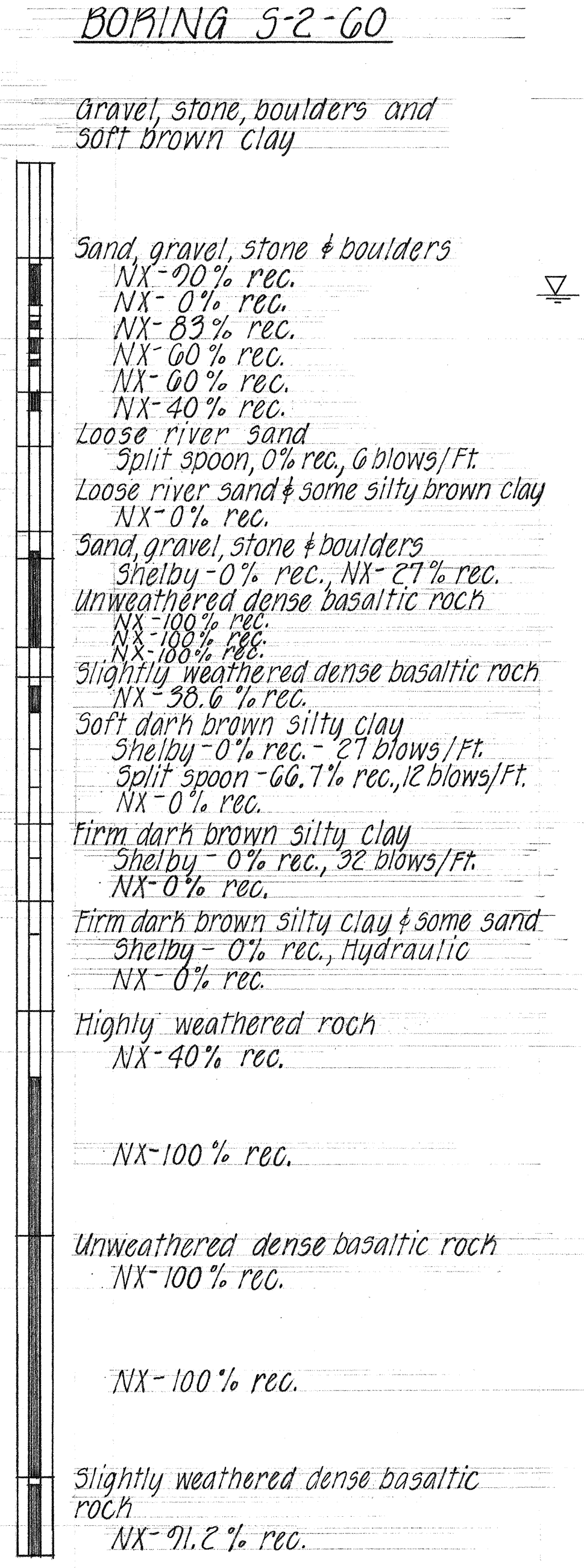
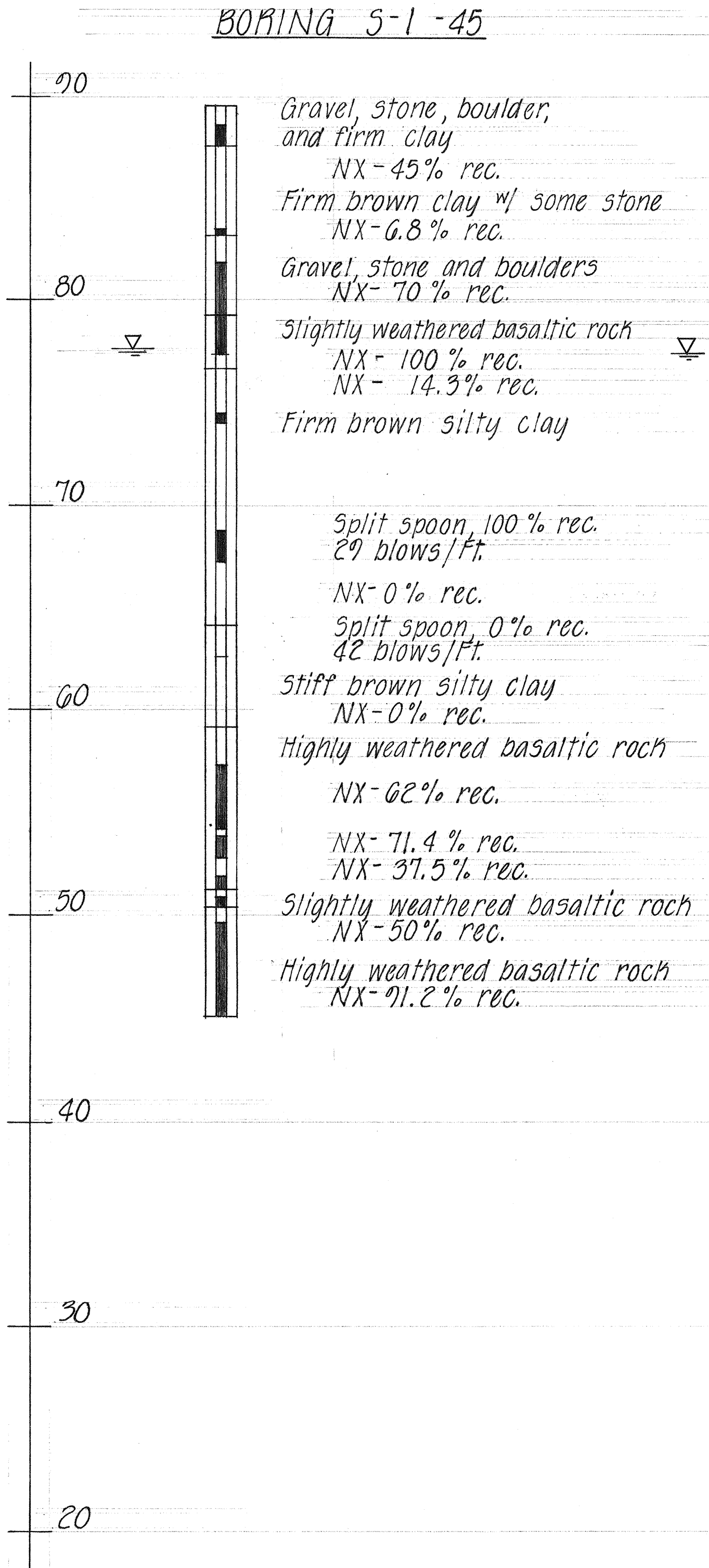
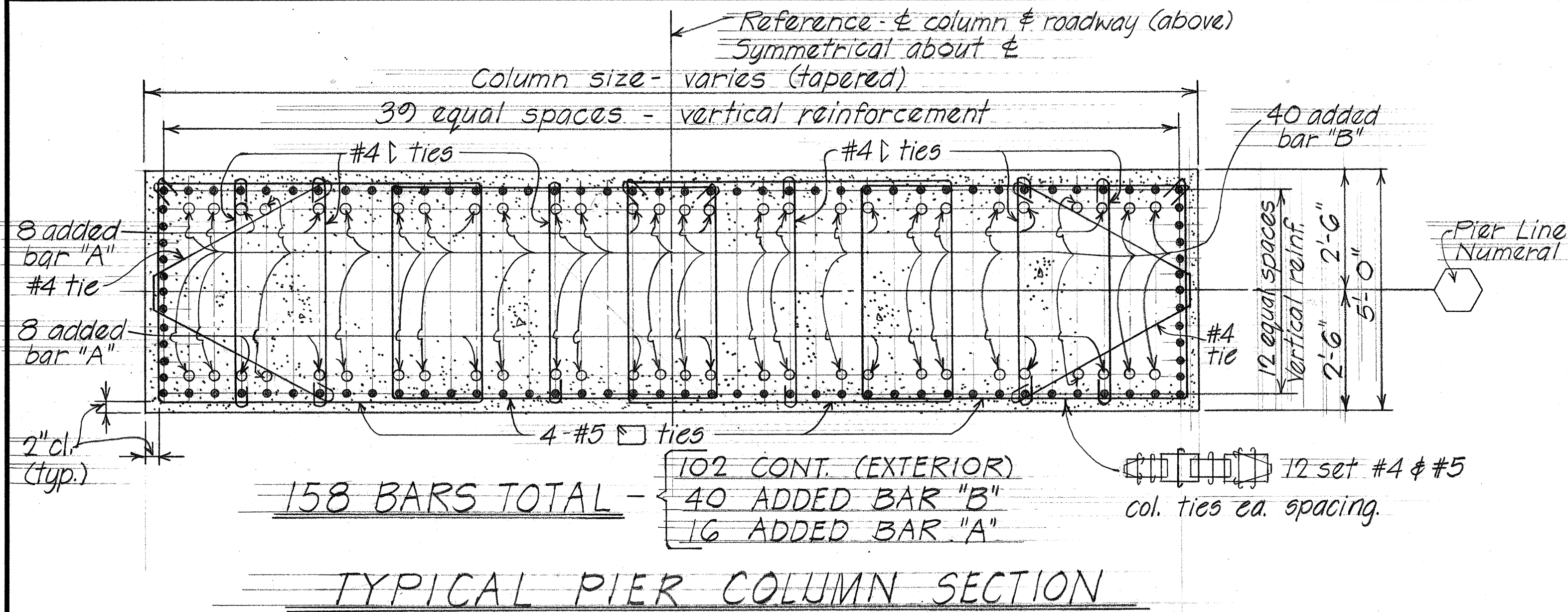


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**REPLACEMENT OF EXISTING WAHIAWA TIMBER BRIDGE**  
TYPICAL PIER BENT AND DETAILS  
Koloa, Kauai  
F.A.S. Proj. No. RS-0540(1) April 1973  
SHEET No. 4 OF 13 SHEETS

|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DESIGNED BY   | 3/73 |
| NOTED BY      | 3/73 |
| CHECKED BY    | 3/73 |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 20        | 46           |



|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          | 3/73 |
| TRACED BY         | 3/73 |
| NOTED BY          | 3/73 |
| CHECKED BY        | 3/73 |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| No.               |      |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
BORING LOGS AND  
PIER BENT DETAILS

Koloa, Kauai  
F.A.S. Proj. No. RS-0540(1) April 1973

SHEET No. 5 OF 13 SHEETS

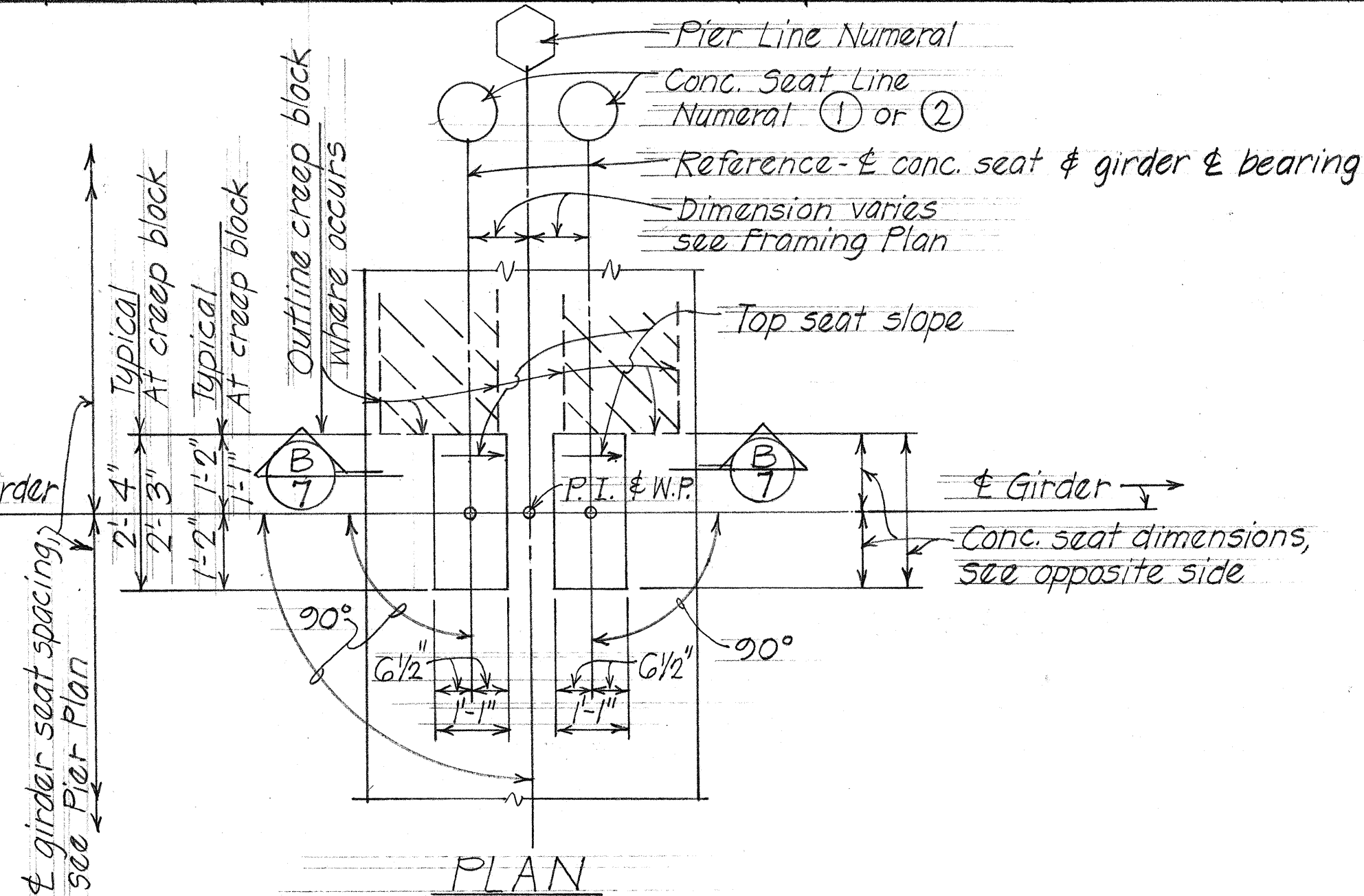






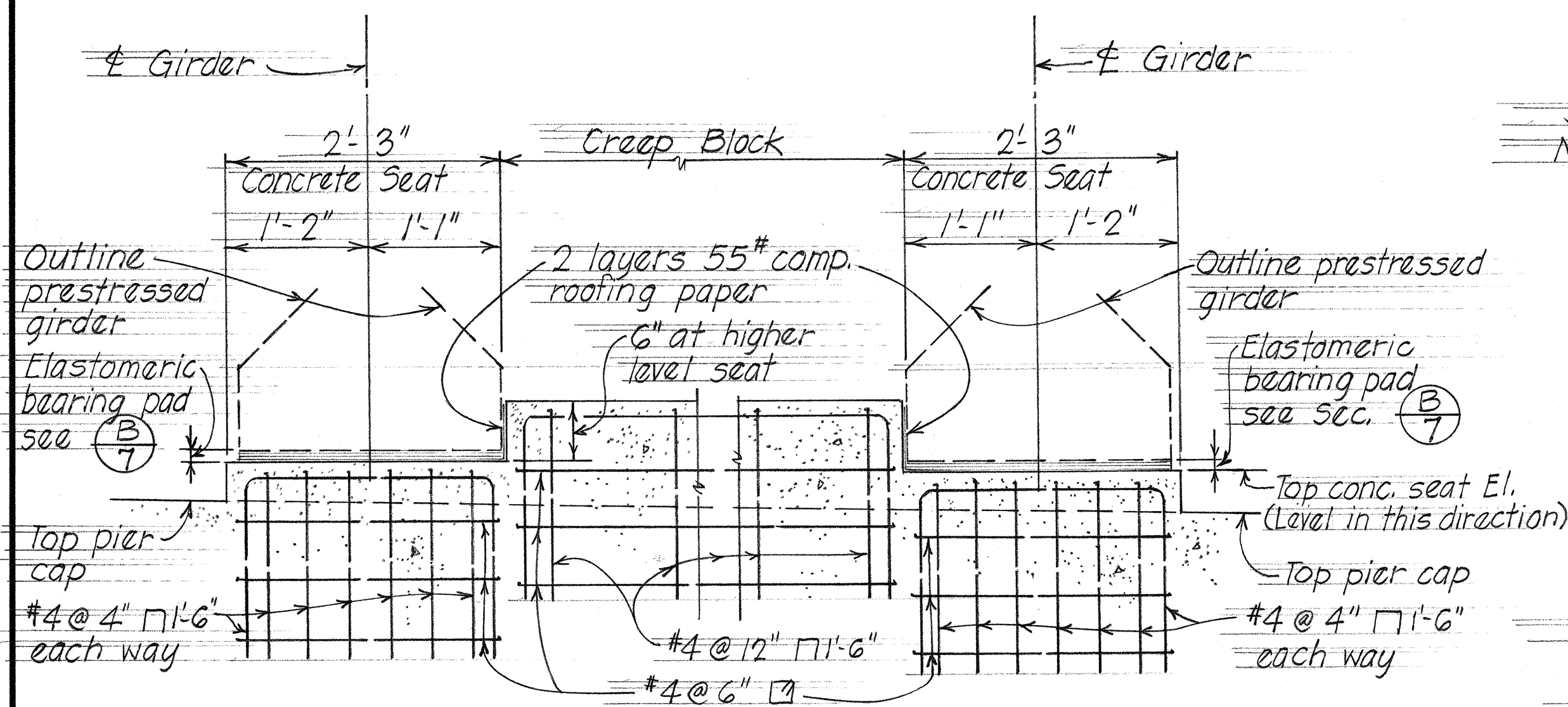
| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | RS-0540(i)            | 1973           | 22           | 46              |

|     | ①      |                | DIRECTION |   | ①              |        | ② |                | DIRECTION |        | ③              |   | DIRECTION |                | ④      |        | DIRECTION      |         | ⑤ |                | DIRECTION |        | ⑥       |   |        |        |        |         |   |        |   |        |
|-----|--------|----------------|-----------|---|----------------|--------|---|----------------|-----------|--------|----------------|---|-----------|----------------|--------|--------|----------------|---------|---|----------------|-----------|--------|---------|---|--------|--------|--------|---------|---|--------|---|--------|
|     | ①      | TOP SEAT SLOPE | ①         | ② | TOP SEAT SLOPE | ①      | ② | TOP SEAT SLOPE | ①         | ②      | TOP SEAT SLOPE | ① | ②         | TOP SEAT SLOPE | ①      | ②      | TOP SEAT SLOPE | ①       | ② | TOP SEAT SLOPE | ①         | ②      |         |   |        |        |        |         |   |        |   |        |
| G-1 | 163.25 | -              | 1/32:12   | - | 163.13         | 162.95 | - | 1/32:12        | -         | 162.75 | 162.76         | + | 0:12      | +              | 162.82 | 162.83 | +              | 1/16:12 | + | 163.31         | 163.34    | +      | 1/16:12 | + | 163.66 | 163.86 | +      | 1/16:12 | + | 164.06 |   |        |
| G-2 | 162.94 | +              | 0:12      | + | 162.92         | 162.74 | + | 0:12           | +         | 162.78 | 162.79         | ↑ | 1/32:12   | ↑              | 162.93 | 162.94 | ↑              | ↑       | ↑ | 163.42         | 163.45    | ↑      | ↑       | ↑ | 163.77 | 163.97 | ↑      | ↑       | ↑ | 164.17 |   |        |
| G-3 | 162.64 | ↑              | 1/32:12   | ↑ | 162.72         | 162.54 | ↑ | 1/32:12        | ↑         | 162.81 | 162.82         | ↑ |           |                | 163.04 | 163.05 | ↑              |         |   | 163.53         | 163.56    | ↑      |         |   | 163.88 | 164.08 | ↑      |         |   | 164.28 |   |        |
| G-4 | 162.33 |                | 1/16:12   |   | 162.51         | 162.33 |   | 1/16:12        |           | 162.84 | 162.85         |   |           |                | 163.15 | 163.16 |                |         |   | 163.64         | 163.67    |        |         |   | 163.99 | 164.19 |        |         |   | 164.39 |   |        |
| G-5 | 162.02 |                | 3/32:12   |   | 162.30         | 162.12 |   | 3/32:12        |           | 162.73 | 162.74         |   |           |                | 163.04 | 163.05 |                |         |   | 163.53         | 163.56    |        |         |   | 163.88 | 164.08 |        |         |   | 164.28 |   |        |
| G-6 | 161.72 | ↓              | 1/8:12    | ↓ | 162.09         | 161.91 | ↓ | 3/32:12        | ↓         | 162.62 | 162.63         | ↓ |           | ↓              | 162.93 | 162.94 | ↓              |         | ↓ | ↓              | 163.42    | 163.45 | ↓       |   | ↓      | ↓      | 163.77 | 163.97  | ↓ |        | ↓ | 164.17 |
| G-7 | 161.41 | +              | 5/32:12   | + | 161.87         | 161.69 | + | 1/8:12         | +         | 162.51 | 162.52         | + | 1/32:12   | +              | 162.82 | 162.83 | +              | 1/16:12 | + | 163.31         | 163.34    | +      | 1/16:12 | + | 163.66 | 163.86 | +      | 1/16:12 | + | 164.06 |   |        |



PLAN

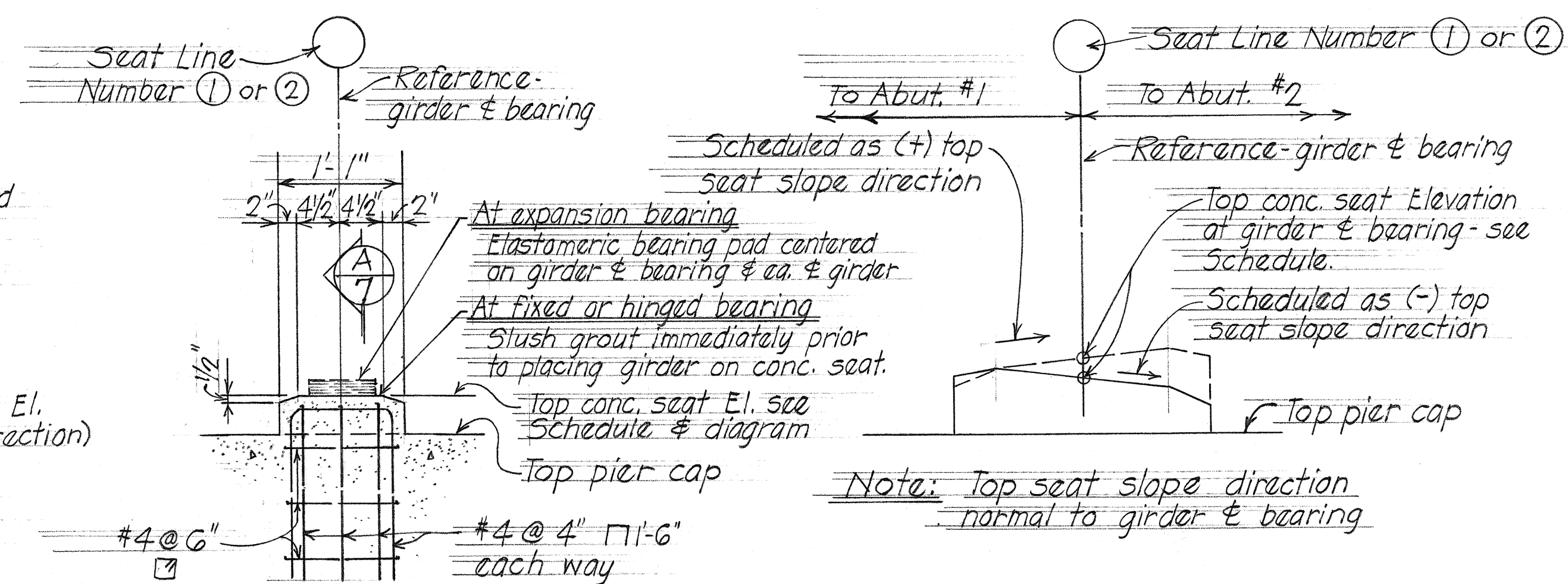
TYPICAL CONCRETE SEAT DETAIL



AT CREEP BLOCK

TYPICAL SEAT SECTION

Scale: 1" = 1'-0"



### SHOWING REINFORCEMENT & DIMENSIONS

## DIAGRAM- VARIOUS CONDITIONS OF TOP SEAT SLOPE

TYPICAL SEAT SECTION  $\left(\frac{B}{7}\right)$

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
GIRDER CONCRETE SEAT  
AND SCHEDULE

Koloa, Kauai  
F.A.S. Proj. No. RS-0540(1) April 1973

SHEET No. 7 OF 13 SHEETS

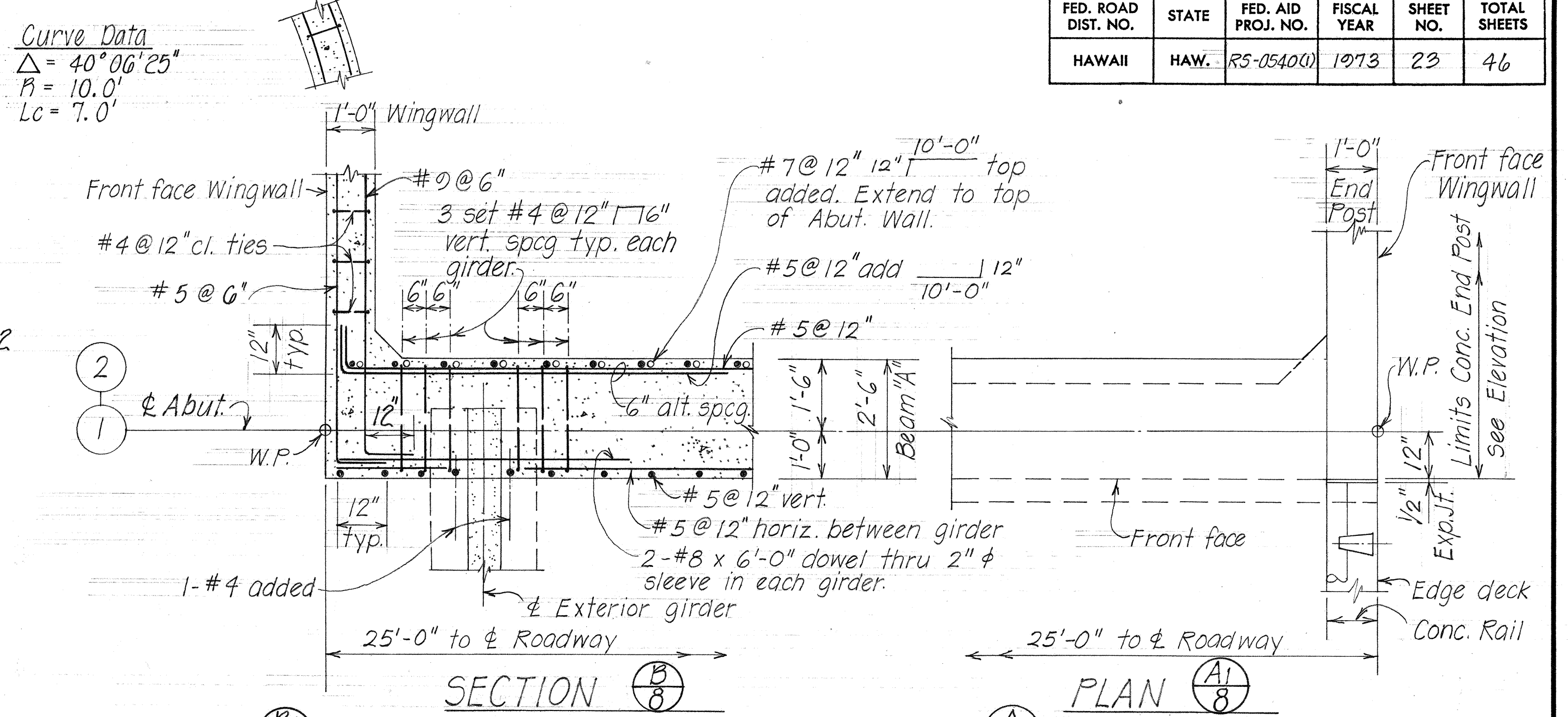


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

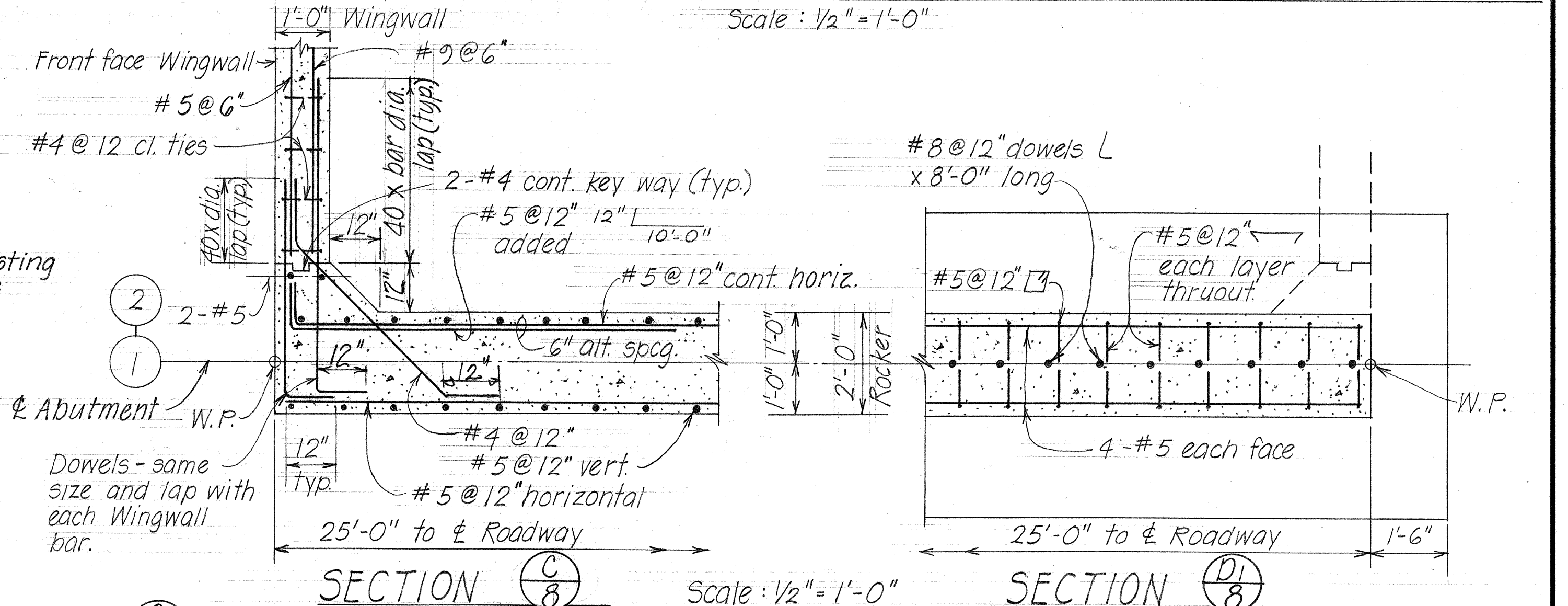
REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
ABUTMENT NO 2 AND DETAILS

Koloa, Kauai  
F.A.S. Proj. No. RS-0540 (1) April 1973

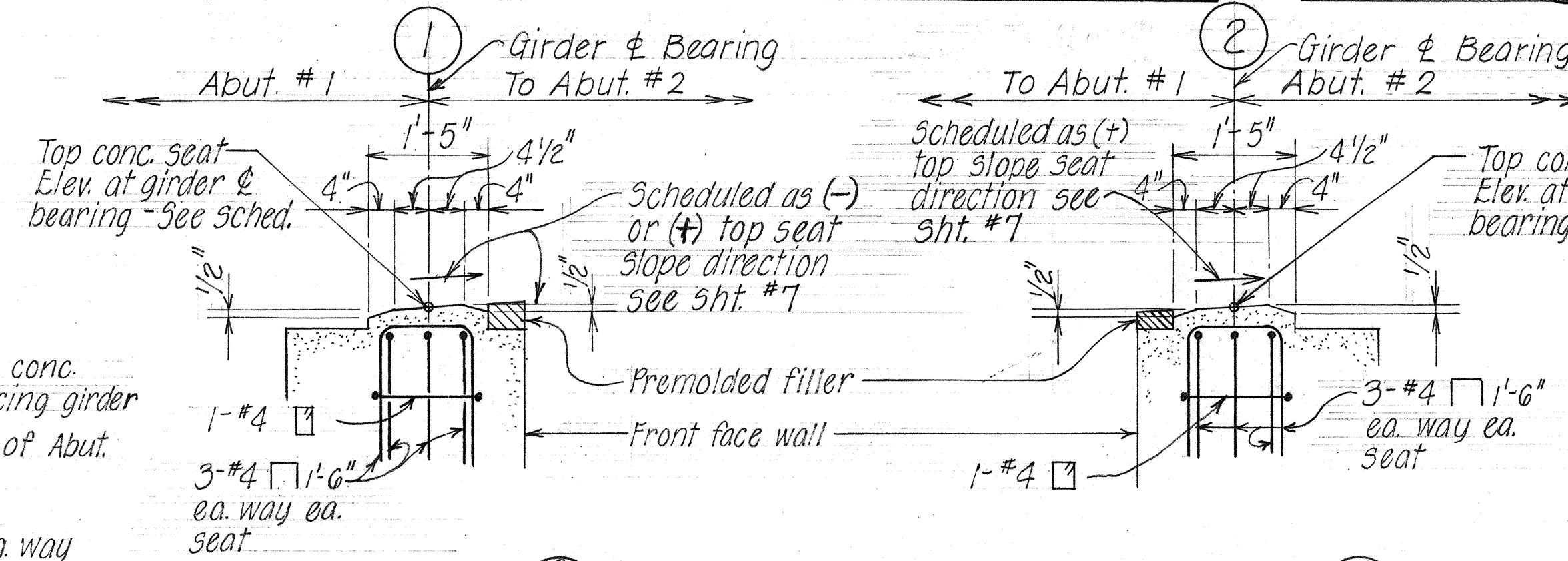
**SHEET No. 8 OF 13 SHEETS**



SECTION  $\frac{B1}{8}$  SIMILAR EXCEPT OPP. HAND PLAN  $\frac{A}{8}$  SIMILAR EXCEPT OPP. HAND



SECTION  $\frac{C}{8}$  SIMILAR EXCEPT OPP. HAND SECTION  $\frac{D}{8}$  SIMILAR EXCEPT OPP. HAND

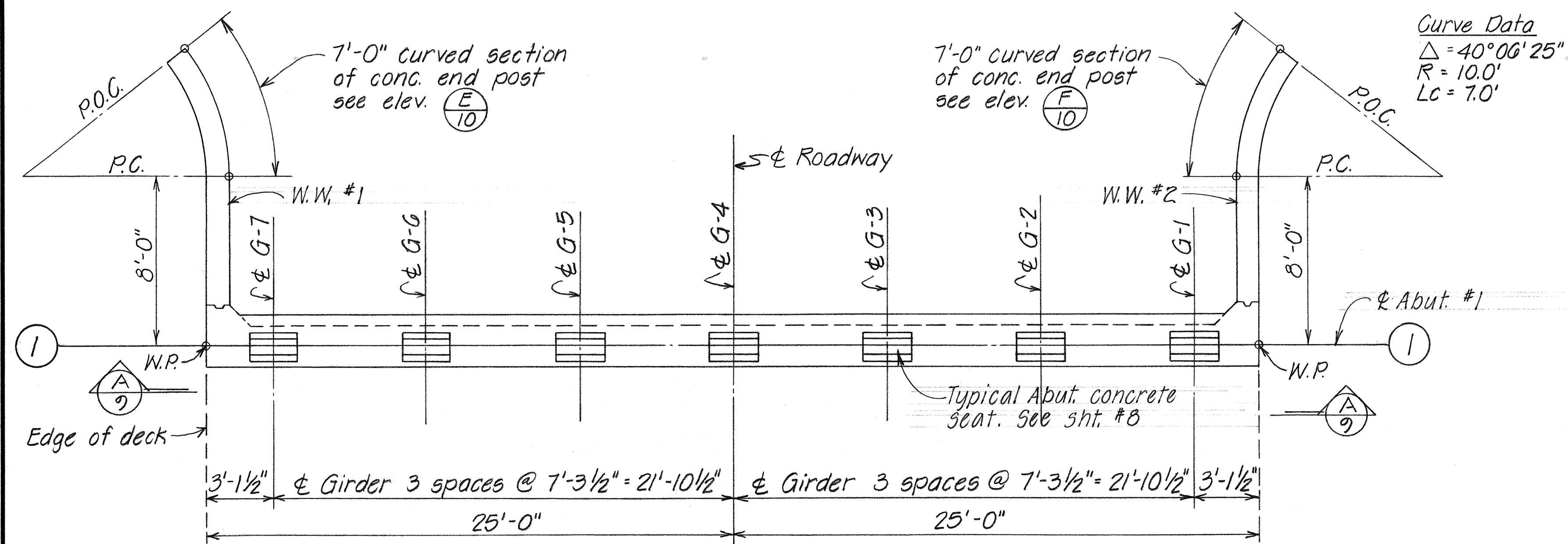


SECTION   
(AT ABUTMENT N<sup>o</sup> 1)

SECTION  $\left( \frac{F}{8} \right)$   
(AT ABUTMENT N<sup>o</sup> 2)

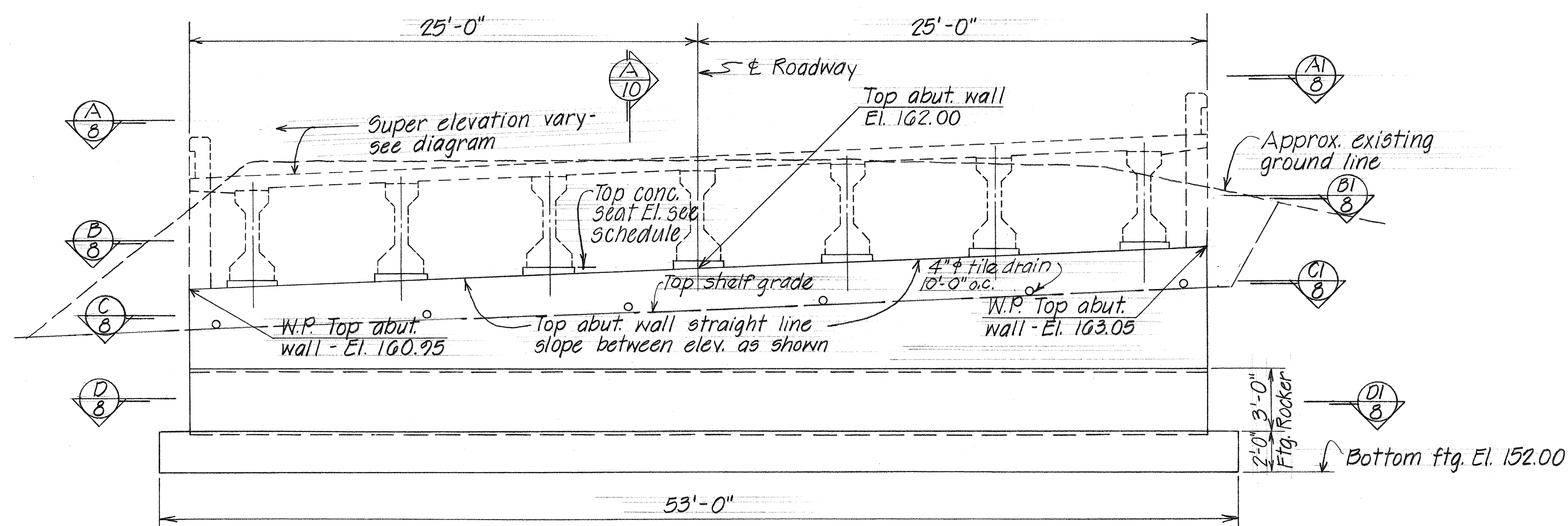


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 24        | 46           |



PLAN - TOP OF ABUTMENT WALL - ABUTMENT No 1

Scale:  $\frac{1}{4}'' = 1'-0''$



ELEVATION  ABUTMENT No 1

Scale:  $\frac{1}{4}" = 1'-0"$

|               |                           |               |
|---------------|---------------------------|---------------|
| ORIGINAL PLAN | SURVEY PLOTTED BY _____   | DATE _____    |
|               | DRAWN BY <u>L.N.</u>      | " <u>3/73</u> |
|               | TRACED BY _____           | " <u>3/73</u> |
| NOTE BOOK     | DESIGNED BY <u>M.Y.</u>   | " <u>3/73</u> |
|               | QUANTITIES BY <u>G.A.</u> | " <u>3/73</u> |
|               | CHECKED BY <u>L.M.</u>    | " <u>3/73</u> |
| No. _____     |                           |               |

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

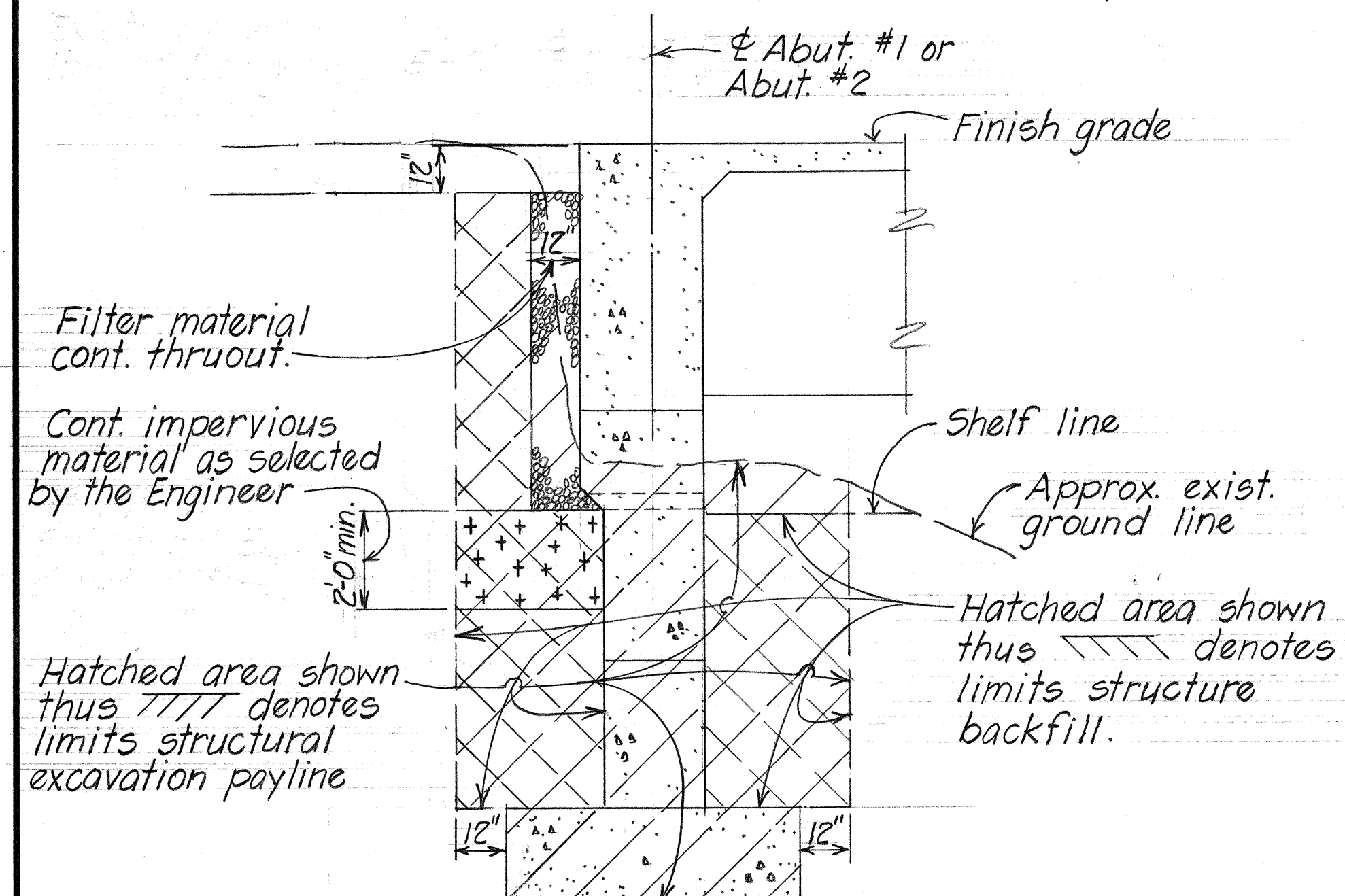
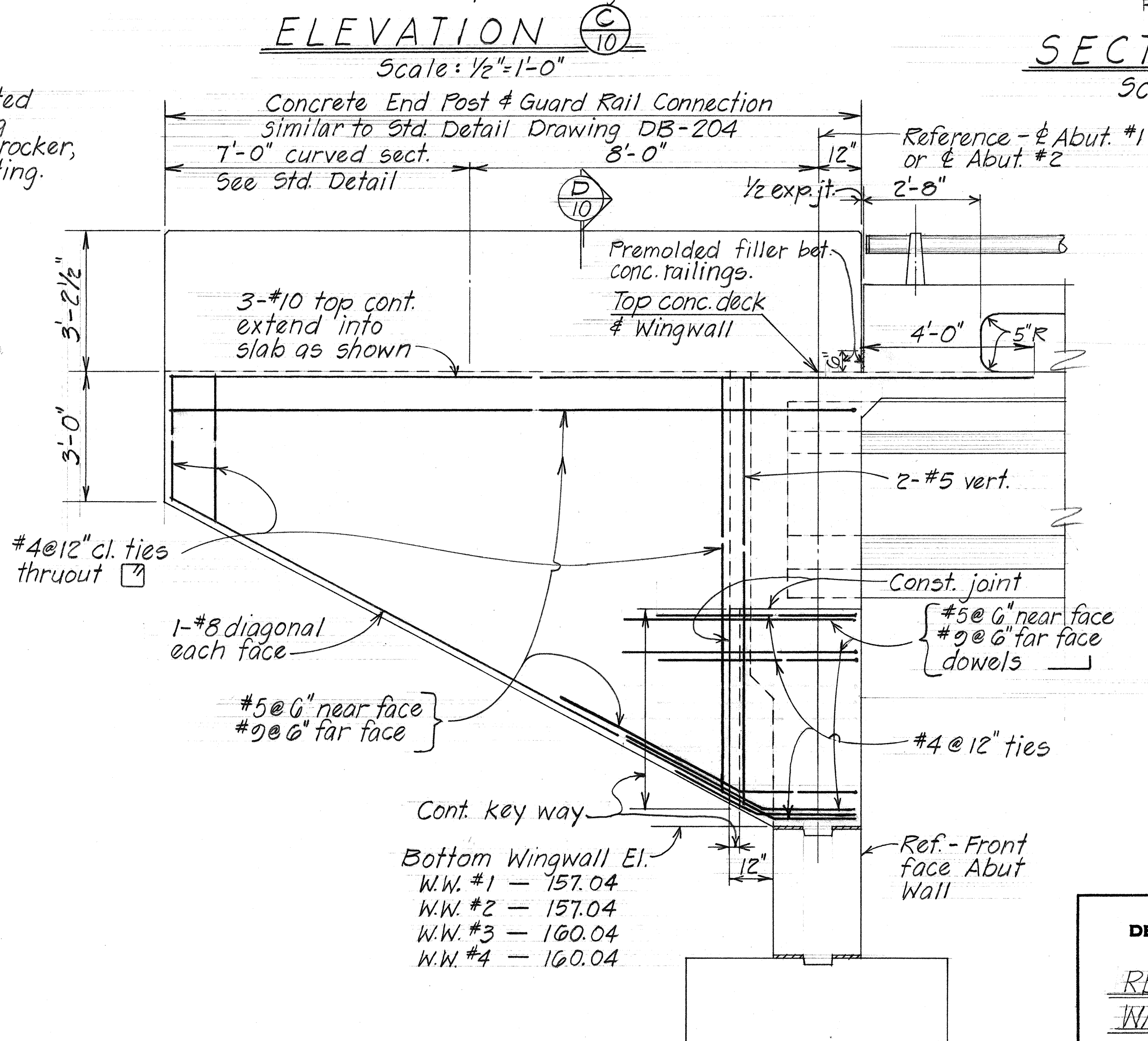
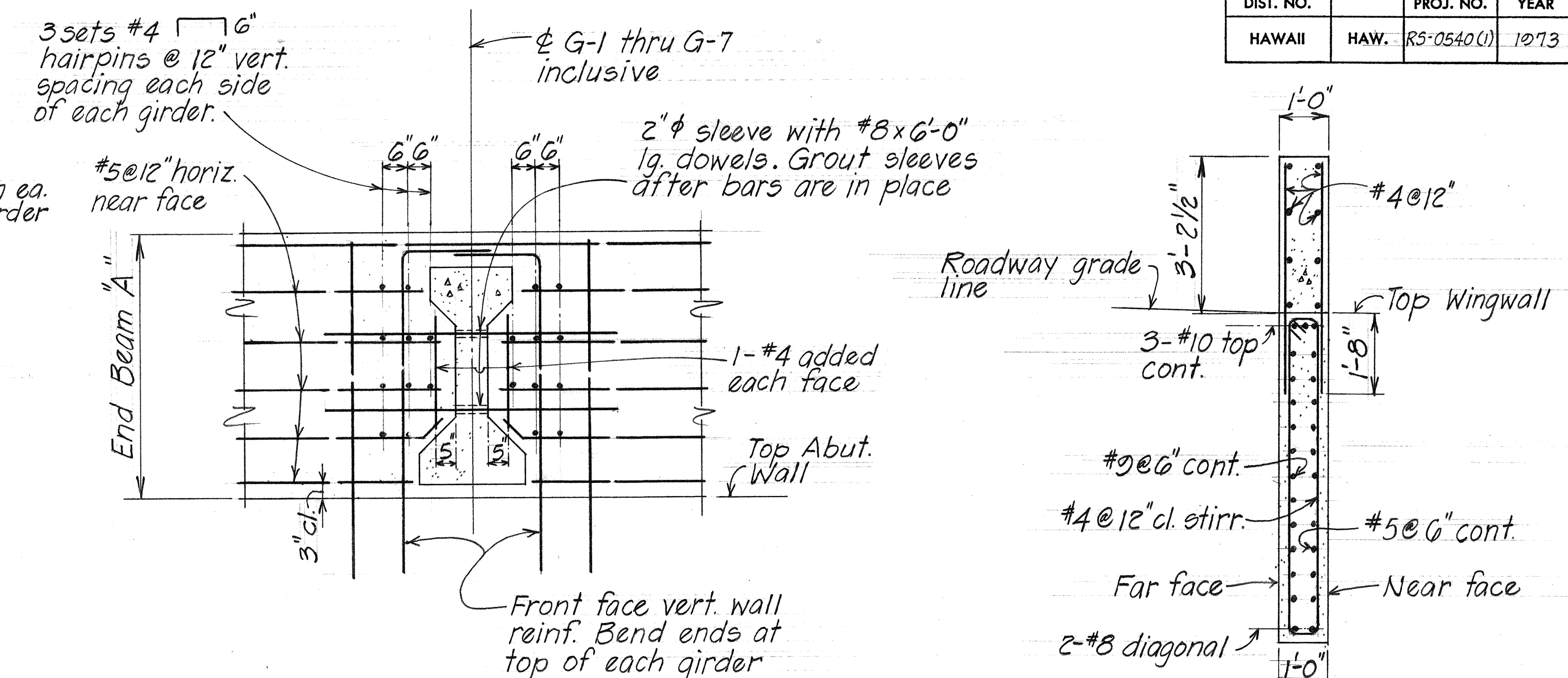
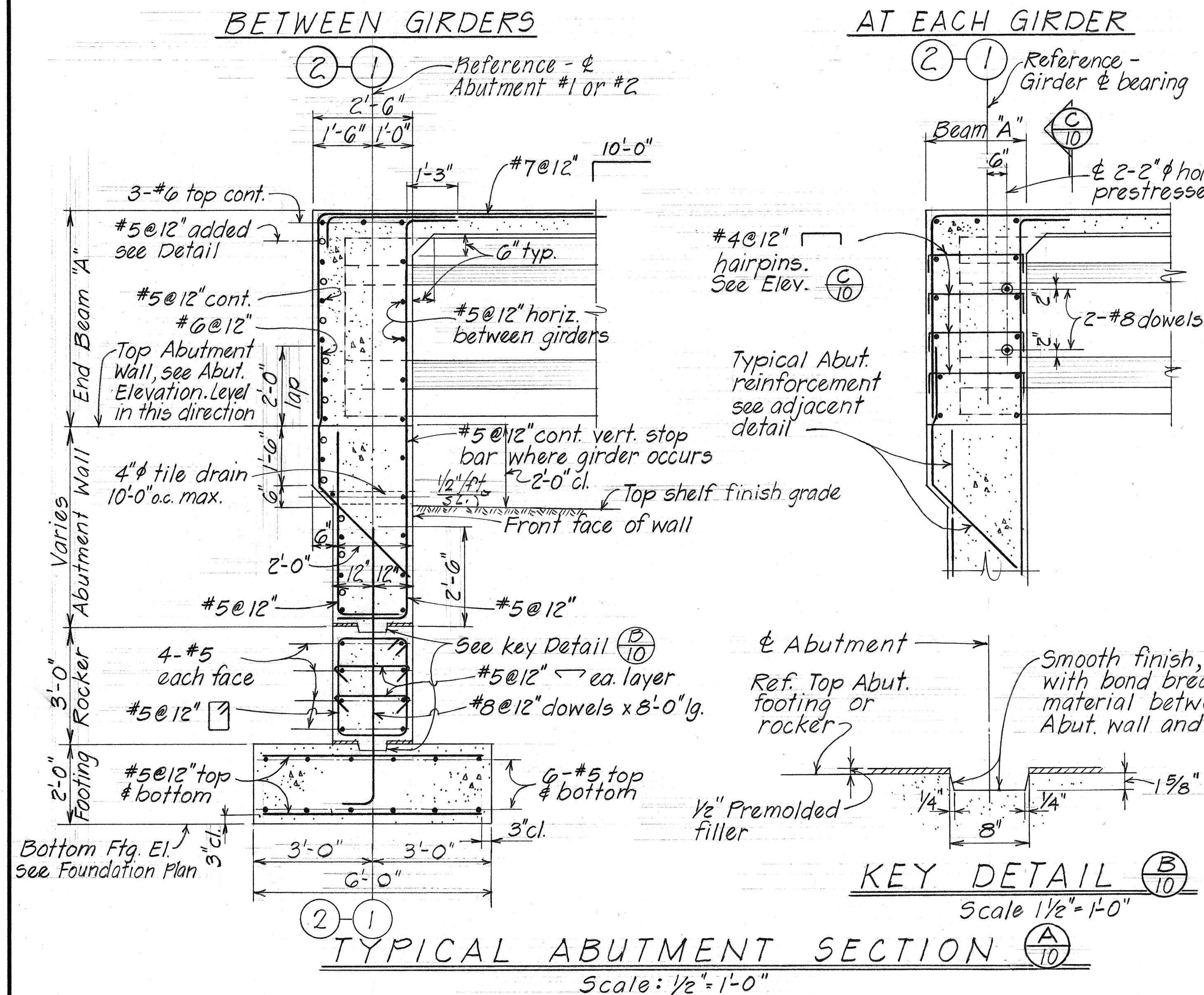
REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
ABUTMENT No 1

Koloa, Kauai  
F.A.S. Proj. No. RS-0540(1) April 1973

**SHEET No. 9 OF 13 SHEETS**



| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | RS-0540(1)            | 1973           | 25           | 46              |



TYPICAL ABUTMENT STRUCTURE EXCAVATION  
PAY LIMITS AND BACKFILL DETAILS No Scale

$\frac{E}{10}$  ELEVATION - TYPICAL ABUTMENT WINGWALL  
 $\frac{F}{10}$  SIMILAR EXCEPT OPPOSITE HAND  
 Scale:  $\frac{1}{2}" = 1'-0"$

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING  
WAHIANA TIMBER BRIDGE  
TYPICAL ABUTMENT NO 1 AND  
ABUTMENT NO 2 DETAILS

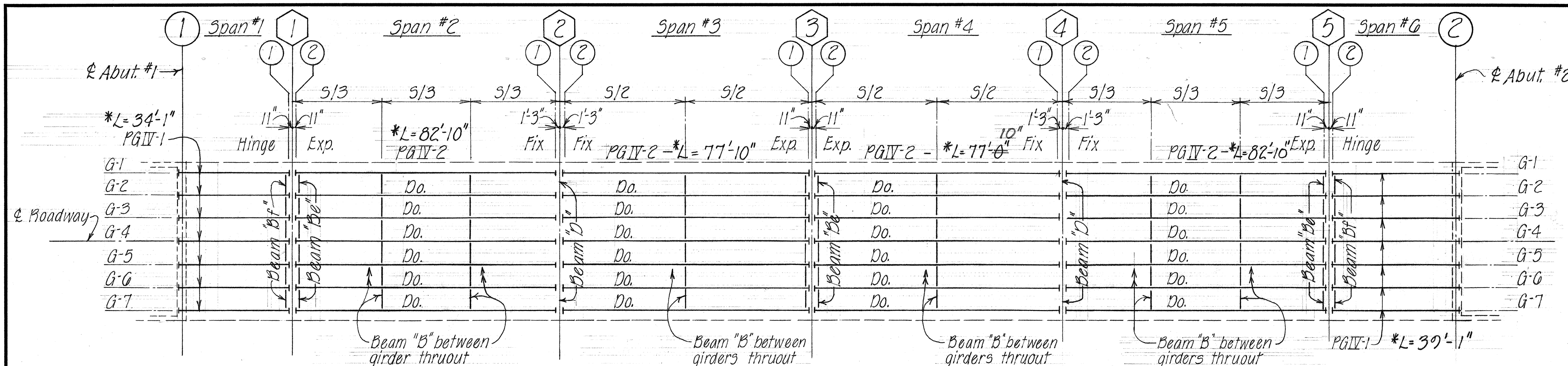
Koloa, Kauai

F.A.S. Proj. No. RS-0540(1) April 1973

**SHEET No. 10 OF 13 SHEETS**

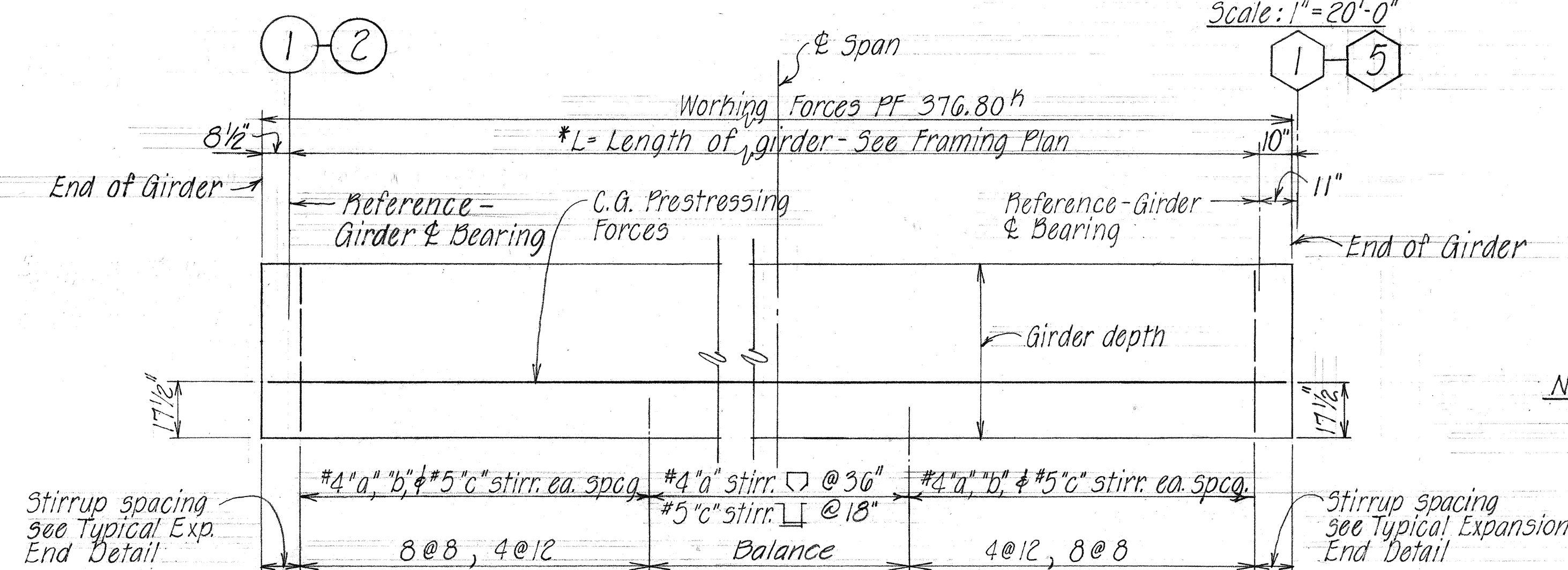


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 26        | 46           |



### DECK FRAMING PLAN

Scale: 1" = 20'-0"



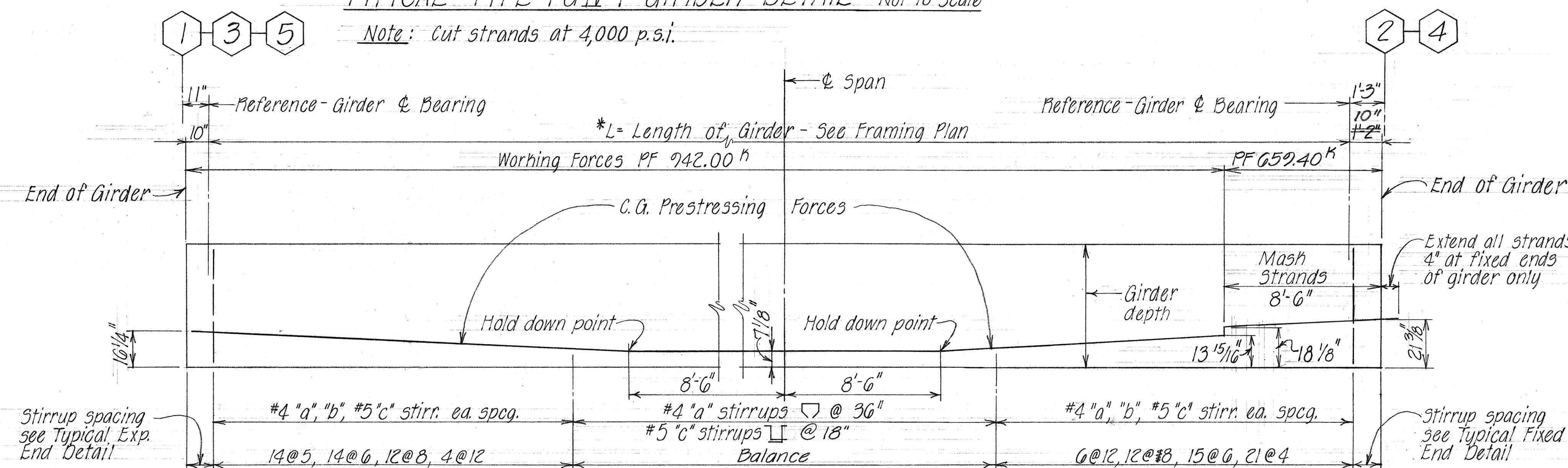
Note: Girder length \*L = Horizontal measurement between girder & bearing ea. end of girder

### ABUT. END SUPPORT

### HINGE END SUPPORT

### TYPICAL TYPE PGIV-1 GIRDER DETAIL

Not to scale



### EXPANSION END SUPPORT

### FIXED END SUPPORT

### TYPICAL TYPE PGIV-2 GIRDER DETAIL

Not to scale

|             |      |
|-------------|------|
| DESIGNED BY | DATE |
| CHECKED BY  | DATE |
| APPROVED BY | DATE |
| NOTED BY    | DATE |
| REVISION    | DATE |

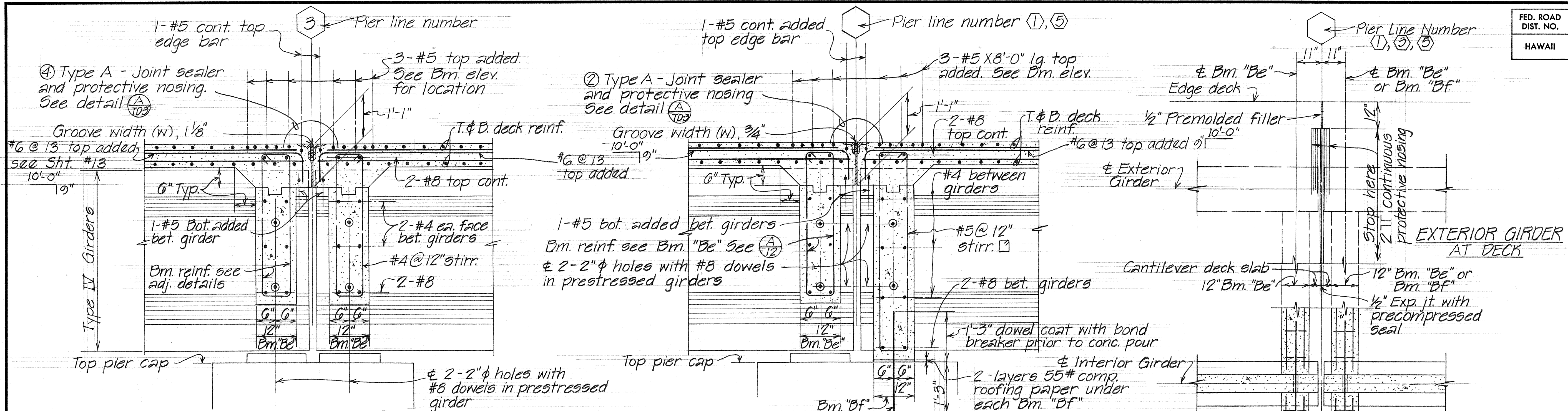
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
DECK FRAMING PLAN AND DETAILS

Koloa, Kauai  
F.A.S. Proj. No. RS-0540(1) April 1973  
SHEET No. 11 OF 13 SHEETS

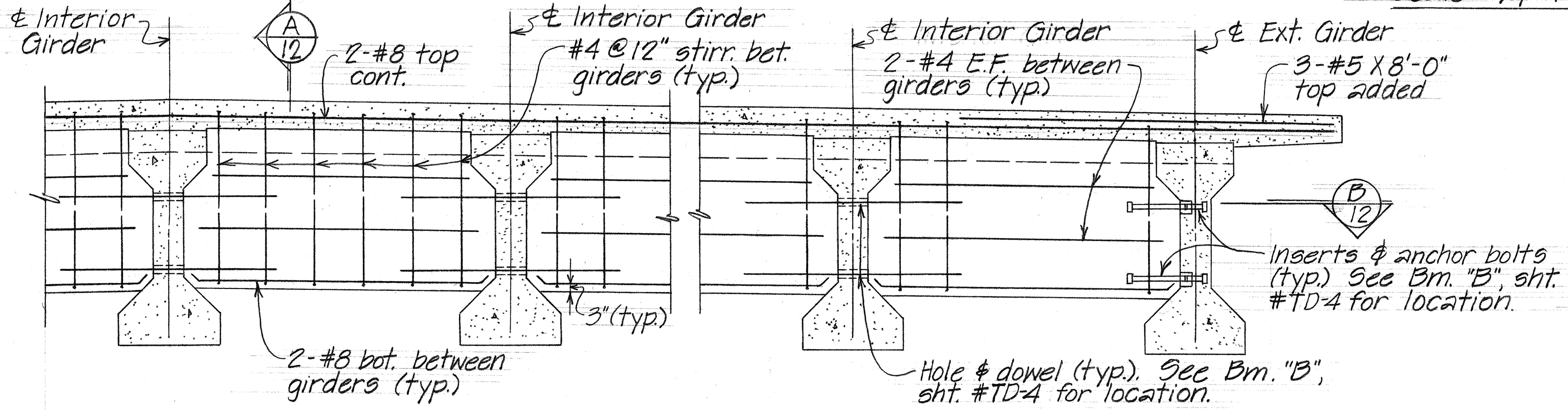


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 27        | 46           |

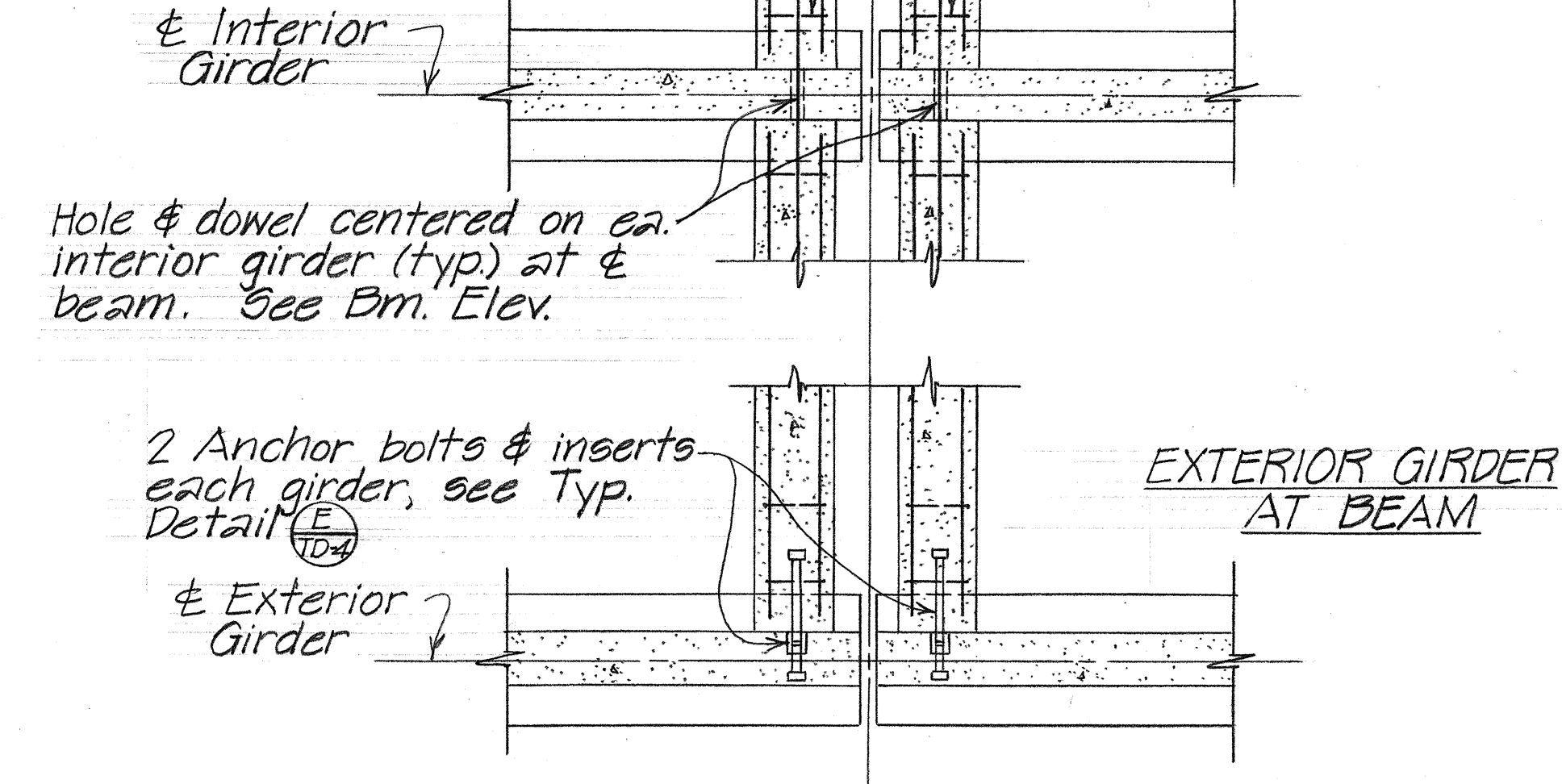


SECTION A-12  
Scale: 3/4" = 1'-0"

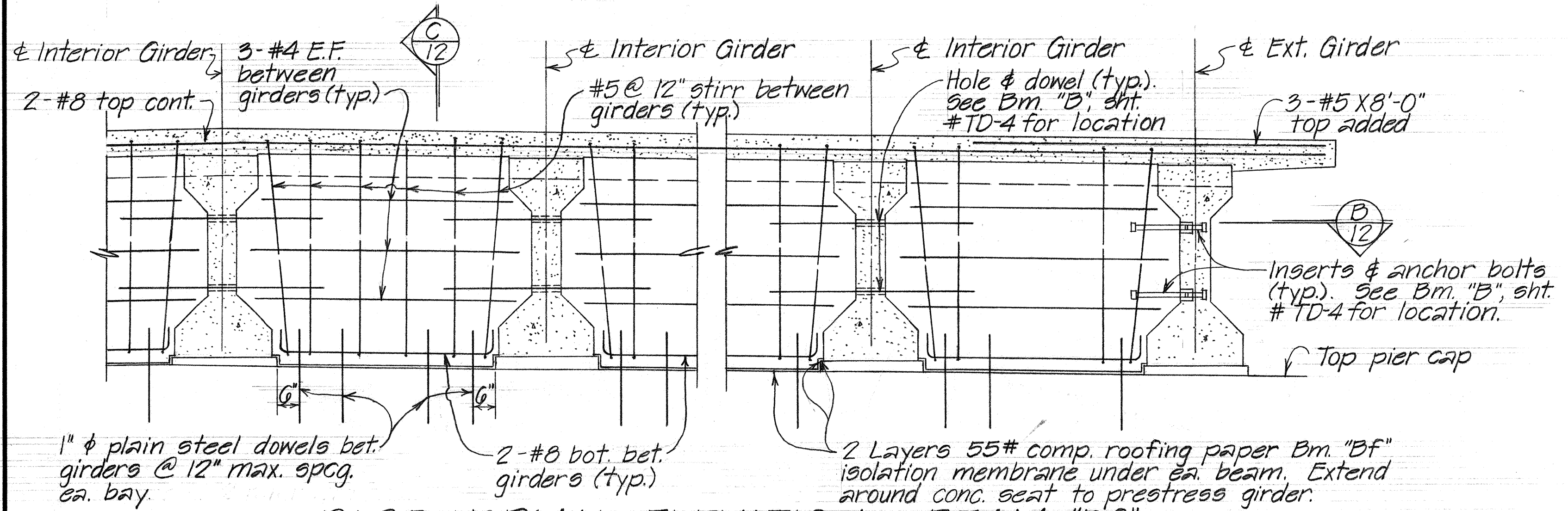
SECTION C-12  
Scale: 3/4" = 1'-0"



PART NORMAL ELEVATION - BEAM "Be"  
Scale: 1/2" = 1'-0"



SECTION B-12  
Scale: 1/2" = 1'-0"



PART NORMAL ELEVATION - BEAM "Bf"  
Scale: 1/2" = 1'-0"

|             |        |
|-------------|--------|
| DATE        | 3/73   |
| DESIGNED BY | L.M.A. |
| CHECKED BY  | L.M.A. |
| DATE        | 3/73   |
| DESIGNED BY | L.M.A. |
| CHECKED BY  | L.M.A. |
| DATE        | 3/73   |
| DESIGNED BY | L.M.A. |
| CHECKED BY  | L.M.A. |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

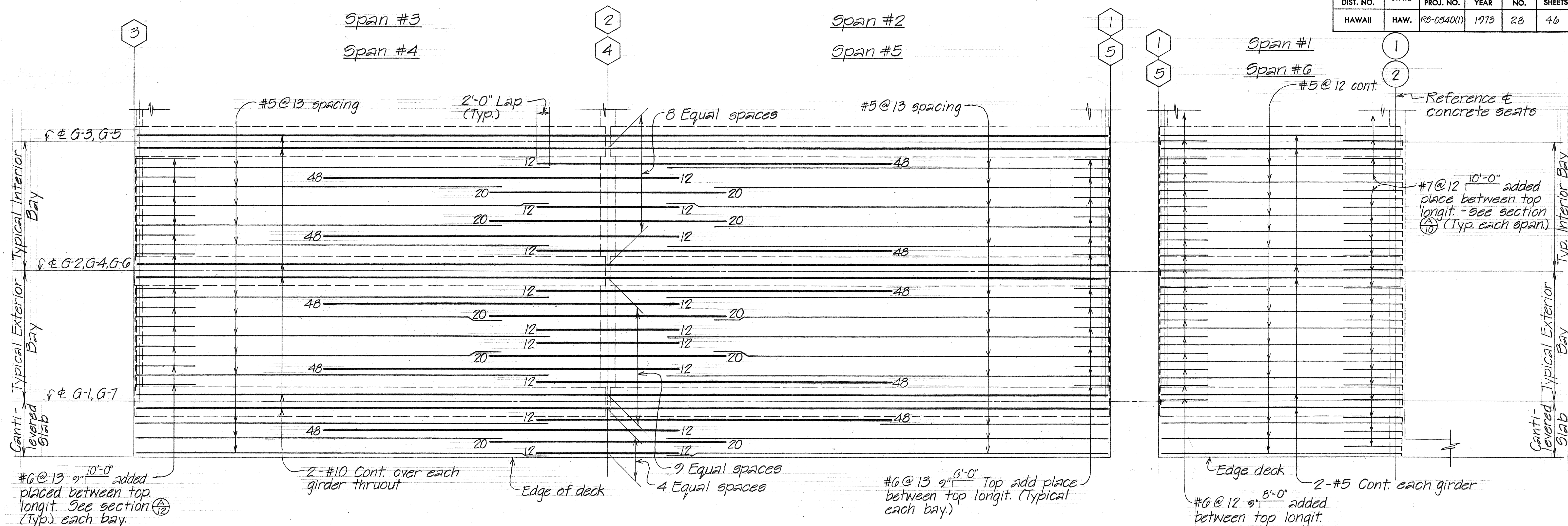
REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
DECK DETAILS AND SECTIONS

Koloa, Kauai  
F.A.S. Proj. No. RS-0540(1) April 1973

SHEET No. 12 OF 13 SHEETS



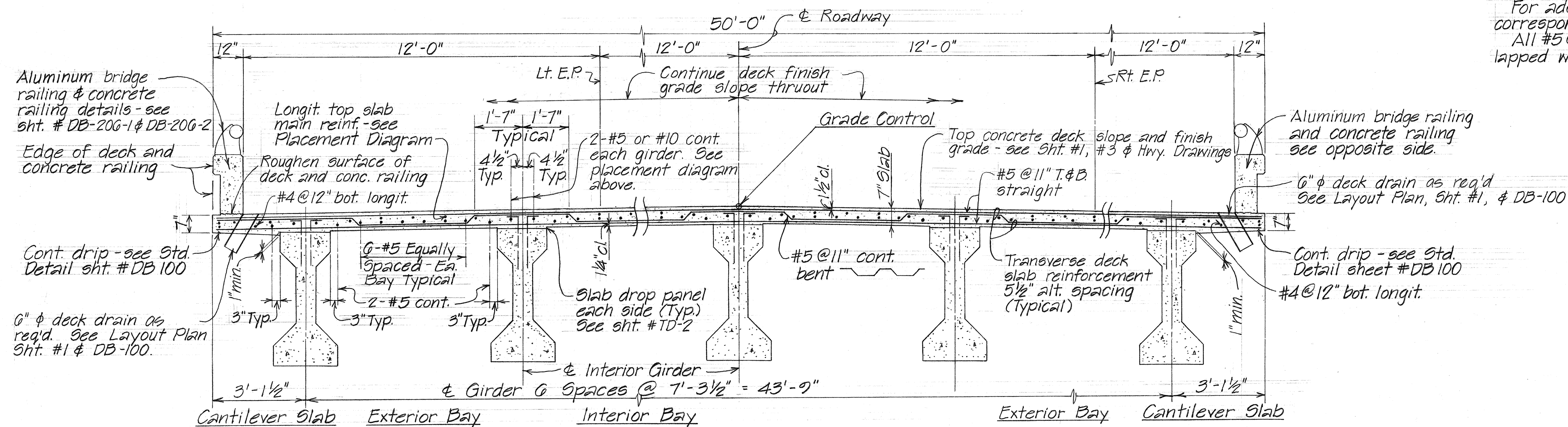
| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | RS-0540(1)            | 1973           | 28           | 46              |



### PLACEMENT DIAGRAM - DECK SLAB TOP LONGITUDINAL REINFORCEMENT

Scale: Vertical -  $\frac{3}{8}" = 1'-0"$   
Horizontal -  $\frac{1}{8}" = 1'-0"$

NOTES: All reinforcement in diagram are #10 except as otherwise noted.  
Numbers at ends of bars indicate distance in feet from corresponding pier line (2) & (4).  
For additional top reinforcement see section & corresponding details.  
All #5 @ 13" max. bars shall be extended and lapped with the adjacent #10 bars as shown.



### NORMAL DECK SECTION

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

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

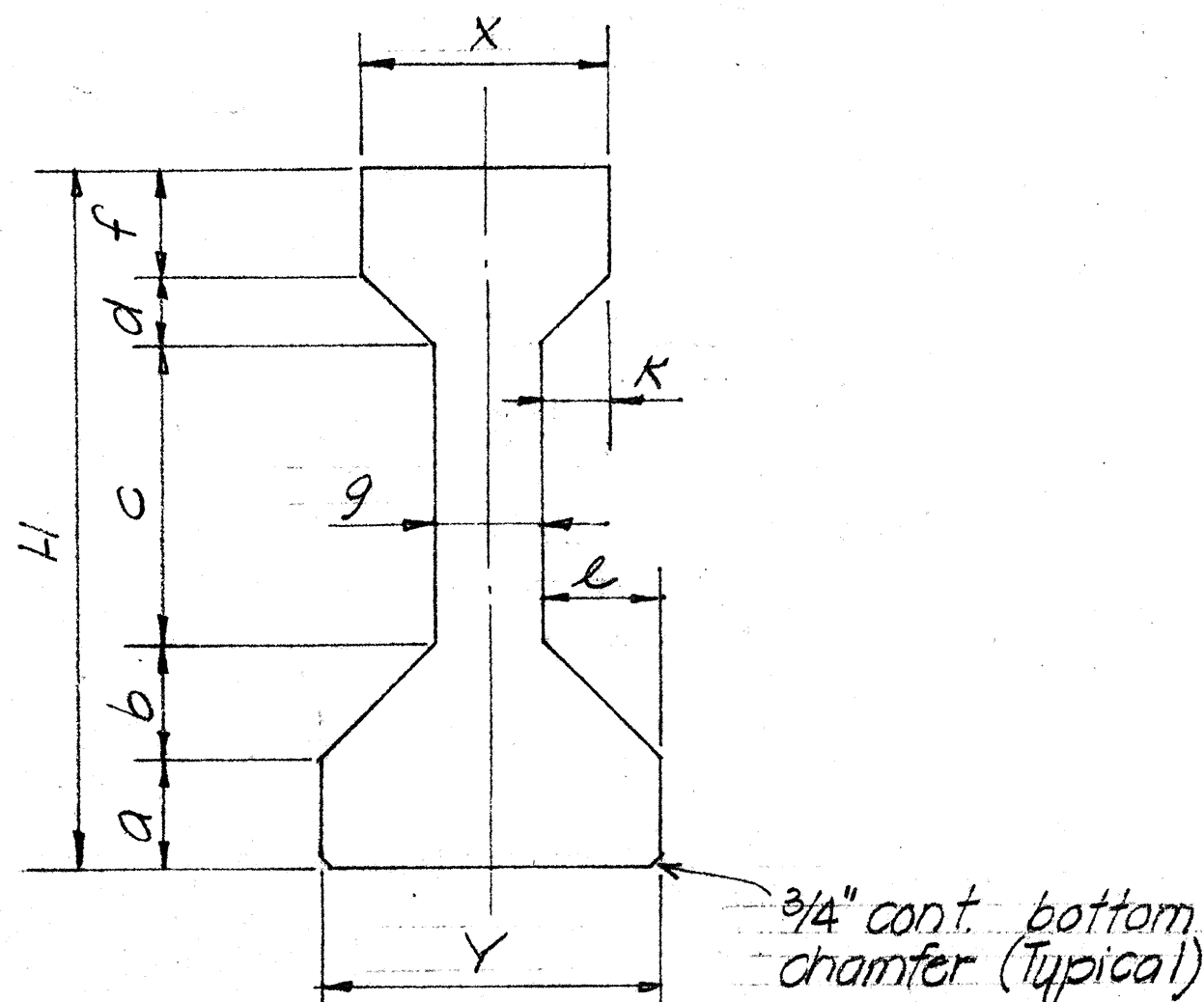
REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
DECK DETAIL AND SECTION

Koloa, Kauai  
F.A.S. Proj. No R5-0540(1) April 1973  
SHEET No. 13 OF 13 SHEETS

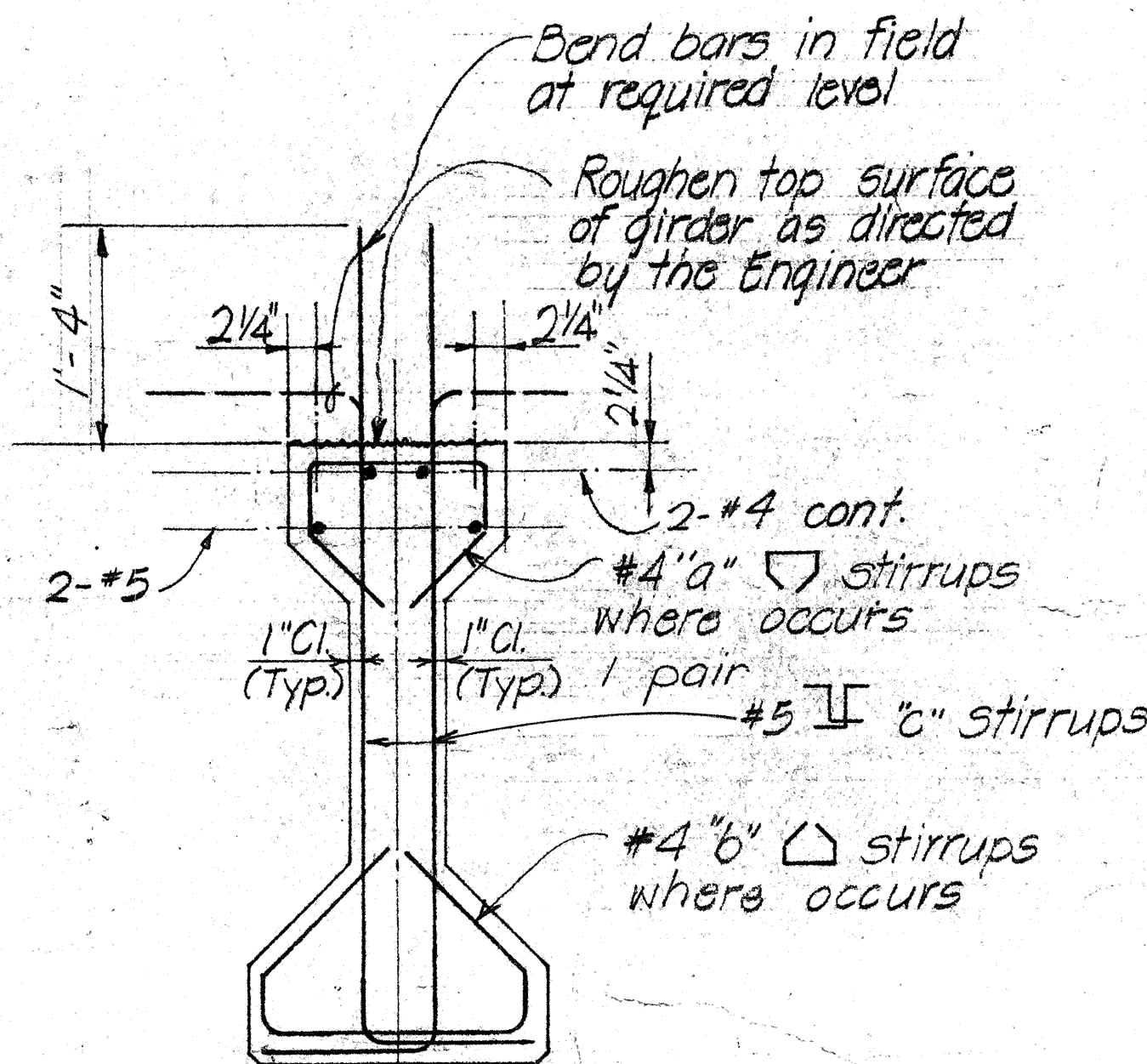


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 29        | 46           |

| AASHTO-PCI STANDARD BRIDGE GIRDER DIMENSION |       |       |        |        |            |             |        |   |    |    |   |        |        |   |   |
|---------------------------------------------|-------|-------|--------|--------|------------|-------------|--------|---|----|----|---|--------|--------|---|---|
| GIRDER TYPE                                 | H     | X     | Y      | a      | b          | c           | d      | e | f  | g  | J | K      | L      | m | n |
| I                                           | 2'-4" | 1'-0" | 1'-4"  | 5"     | 5"         | 11"         | 3"     | — | 4" | 6" | — | 3"     | 5"     |   |   |
| II                                          | 3'-0" | 1'-0" | 1'-6"  | NOT 6" | APPROX. 6" | APPROX. 11" | 6"     | — | 6" | —  | — | 3"     | 6"     |   |   |
| III                                         | 3'-9" | 1'-4" | 1'-10" | 7"     | 7 1/2"     | 1'-7"       | 4 1/2" | — | 7" | 7" | — | 4 1/2" | 7 1/2" |   |   |
| IV                                          | 4'-6" | 1'-8" | 2'-2"  | 8"     | 9"         | 1'-11"      | 6"     | — | 8" | 8" | — | 6"     | 9"     |   |   |



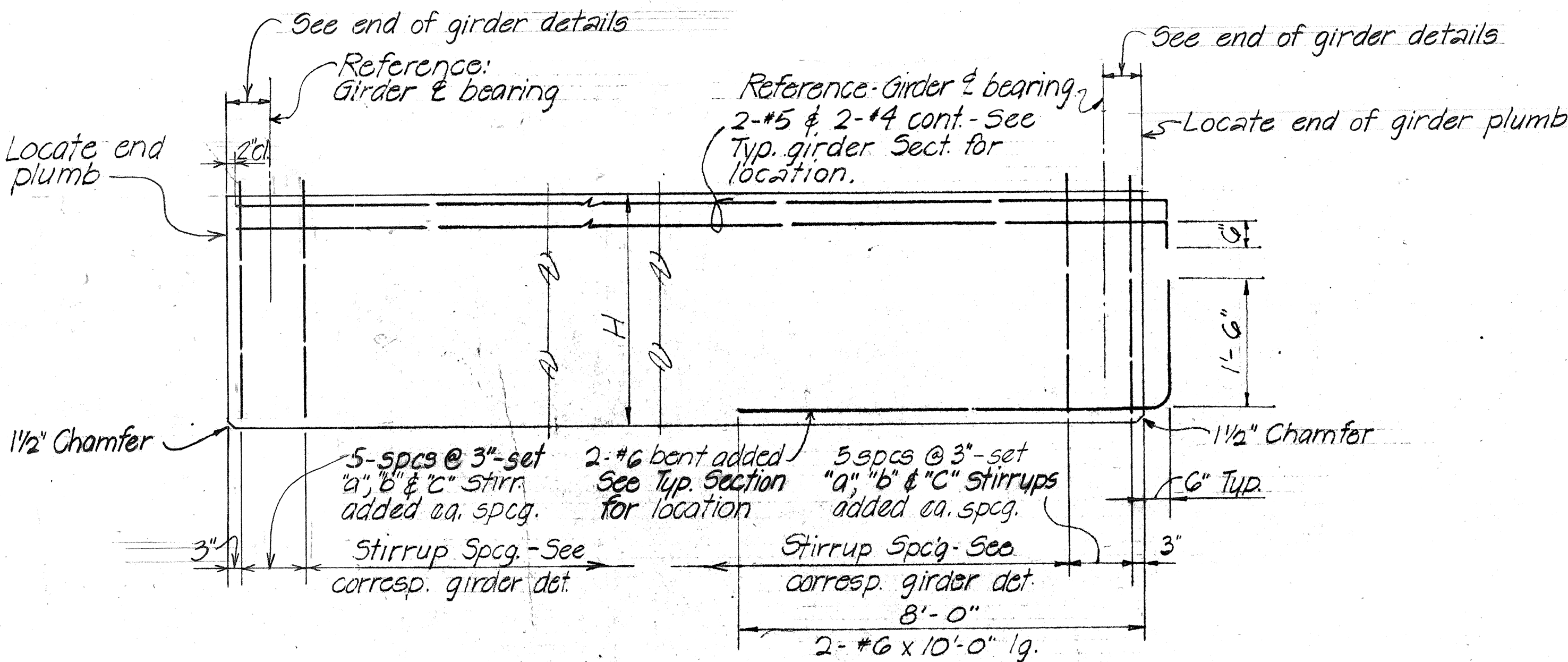
TYPE I THRU TYPE IV



TYPE I THRU TYPE IV  
TYPICAL SECTION PRESTRESSED CONC. GIRDERS

BUNDLING OF PRESTRESSING REINFORCEMENT

| ARRANGEMENT AND CLEARANCE FOR POST TENSIONED UNITS                                                                                                                                                                                                                                                    | ARRANGEMENT AND CLEARANCE FOR PRETENSIONED STRANDS                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>Horizontal clearance between units equals 2" min.</li> <li>Units may be bundled vertically in groups of 3 maximum.</li> <li>Vertical clearance between bundled units equal 3" minimum.</li> <li>Approval of the Engineer is required for deviation.</li> </ol> | <ol style="list-style-type: none"> <li>Strands may be bundled in groups as shown.</li> <li>The minimum distance "S" between groups or individual strands is 2" for 1/2" strands.</li> <li>"S" is measured between centers of adjacent strands.</li> </ol> |
| <p>CASE I</p>                                                                                                                                                                                                                                                                                         | <p>CASE II</p>                                                                                                                                                                                                                                            |



EXPANSION OR HINGED END      FIXED END  
TYPICAL DETAILS - AT ENDS OF GIRDER

GENERAL NOTES

For design stresses refer to sht. #3 and corresponding girder detail drawings.

Forms must be removed and the beams inspected before the strands are cut.

For additional holes and inserts in prestressed girders for beam connections refer to corresponding beam details.

For additional prestressed girder details not covered by these drawings refer to corresponding detail plans.

All strand patterns shall be approved by the engineer.

STATE OF HAWAII  
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HIGHWAYS DIVISION

REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
TYPICAL DETAILS

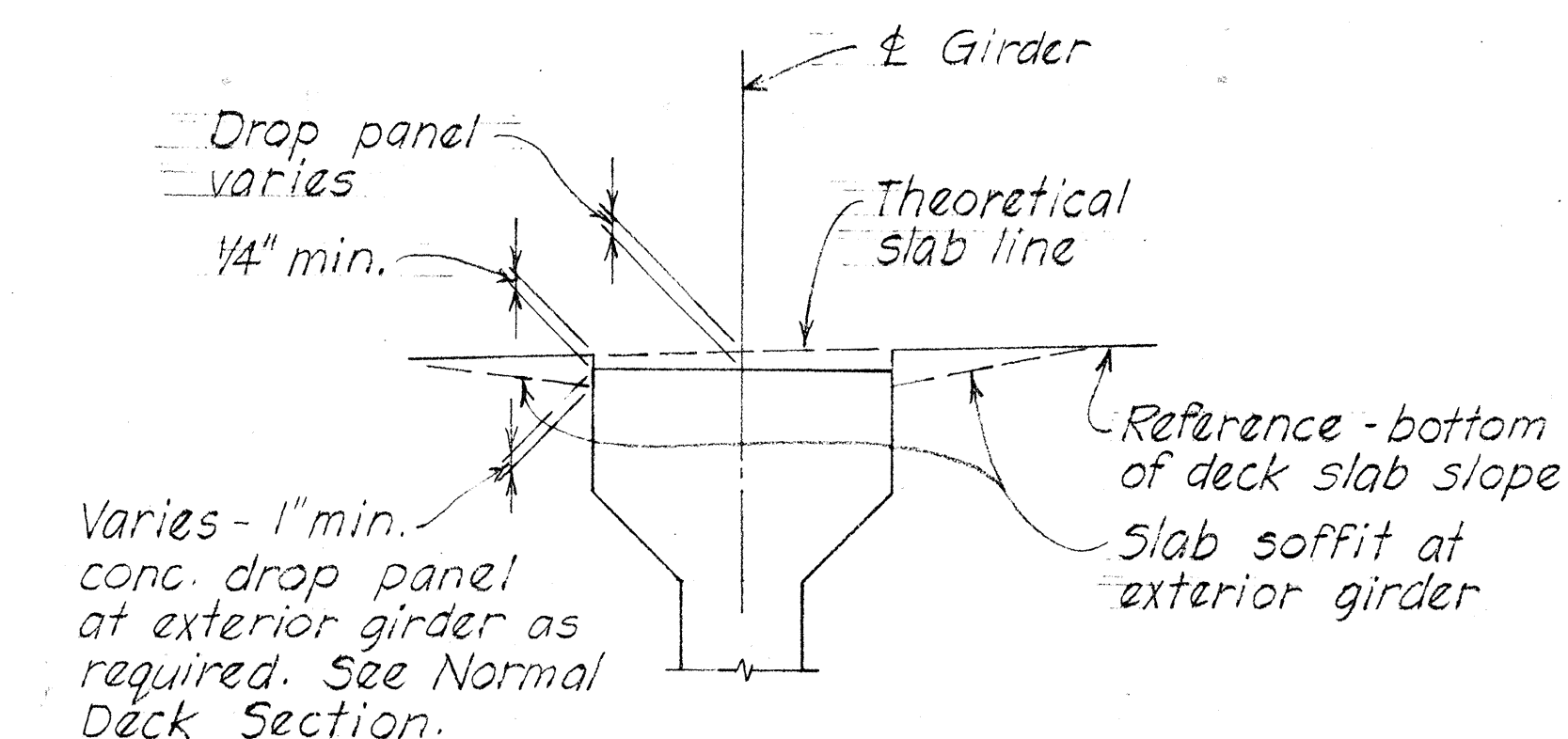
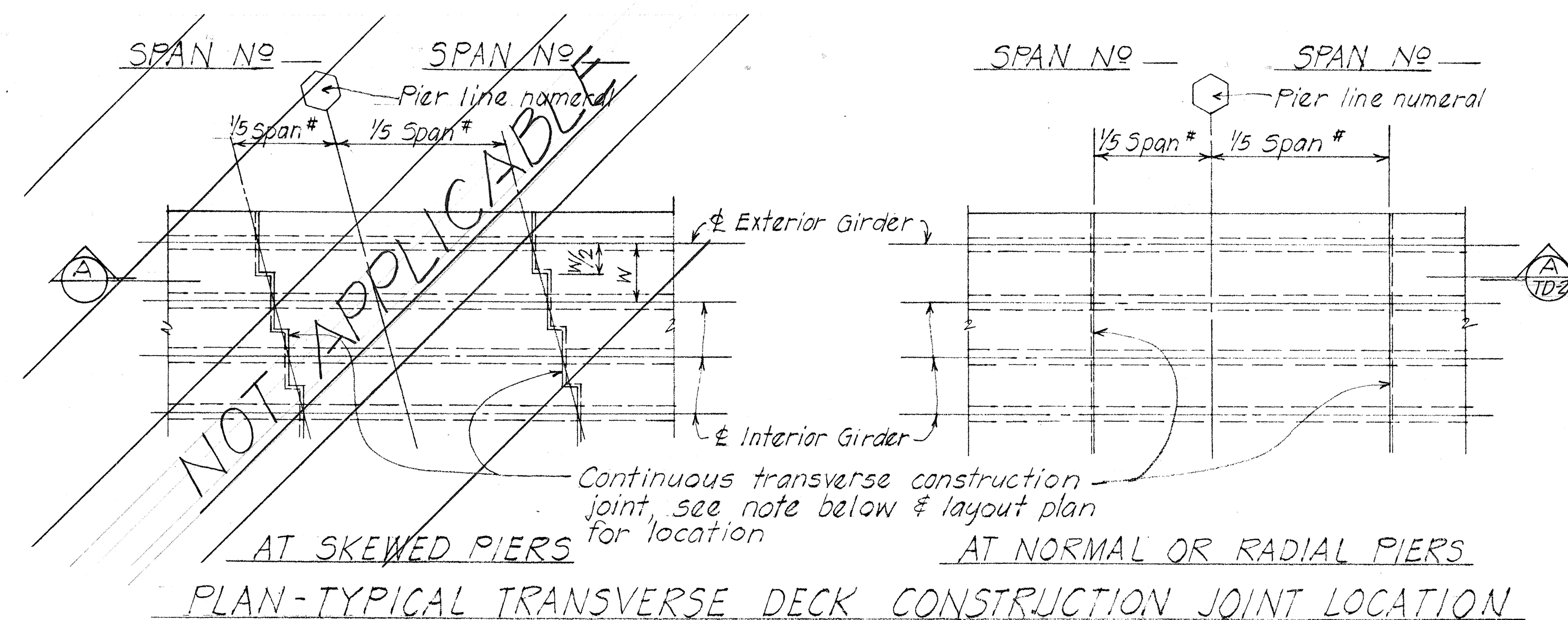
Koloa, Kauai  
FAS Proj. No. RS-0540 (1)  
SHEET No. TD-1 OF 5 SHEETS

April 1973

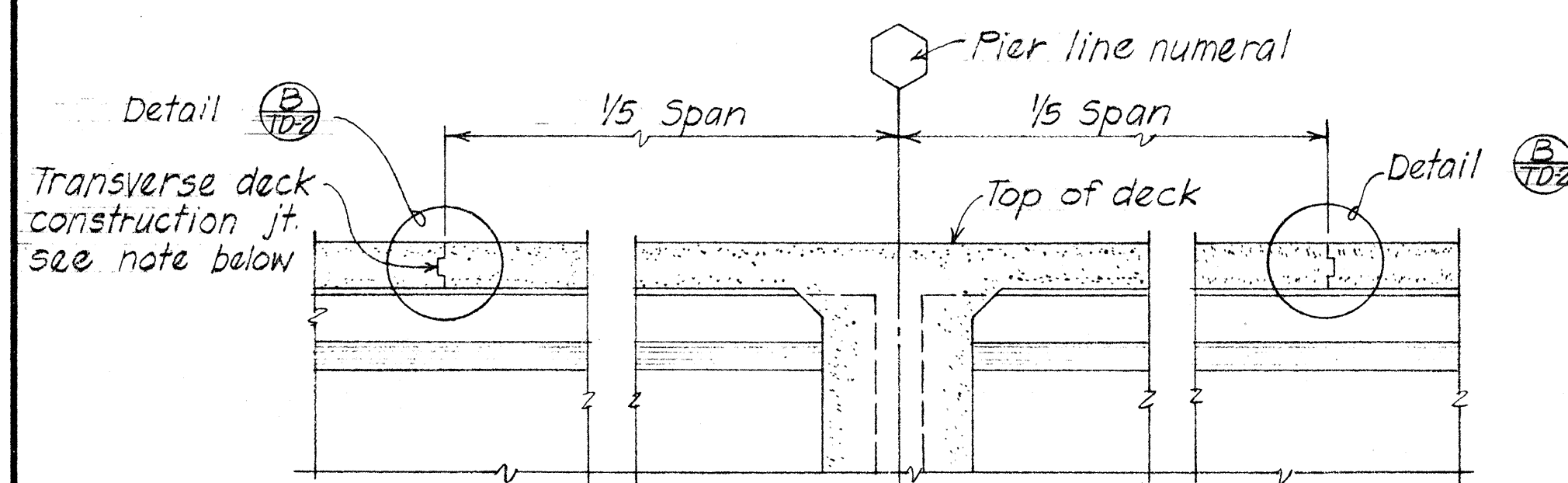
|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| NOTE BOOK         |      |
| CHECKED BY        |      |
| No.               |      |



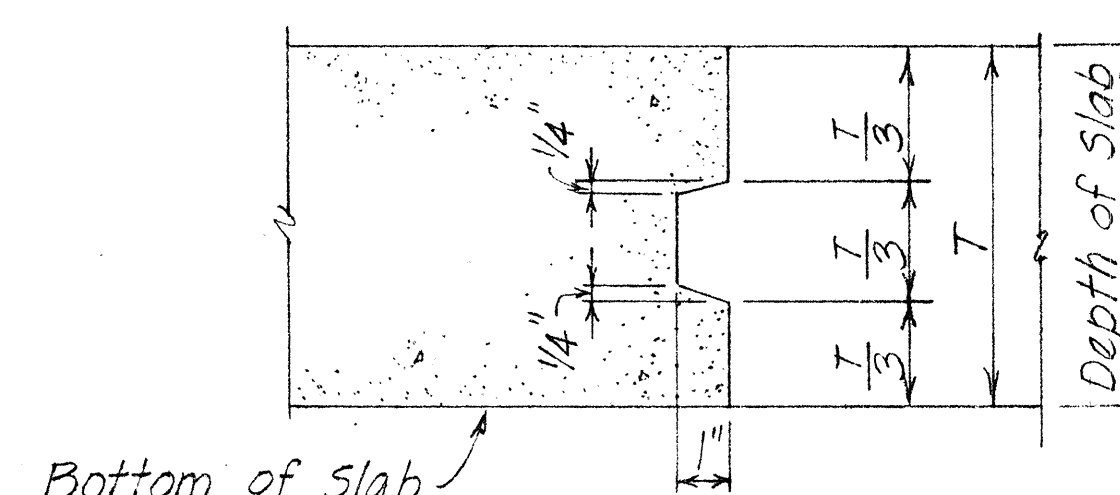
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 30        | 46           |



TYPICAL SLAB DROP PANEL DETAIL  
AT PRESTRESSED GIRDER  
No Scale



DETAIL OF CONTINUOUS SLAB OVER PIER



TYPICAL SLAB CONSTRUCTION JOINT DETAIL

NOTE:

Transverse deck construction joint shall be used at these locations. The portion of the pour indicated between construction joints over the pier shall not be poured until the pours for the adjacent positive moment areas have been completed.

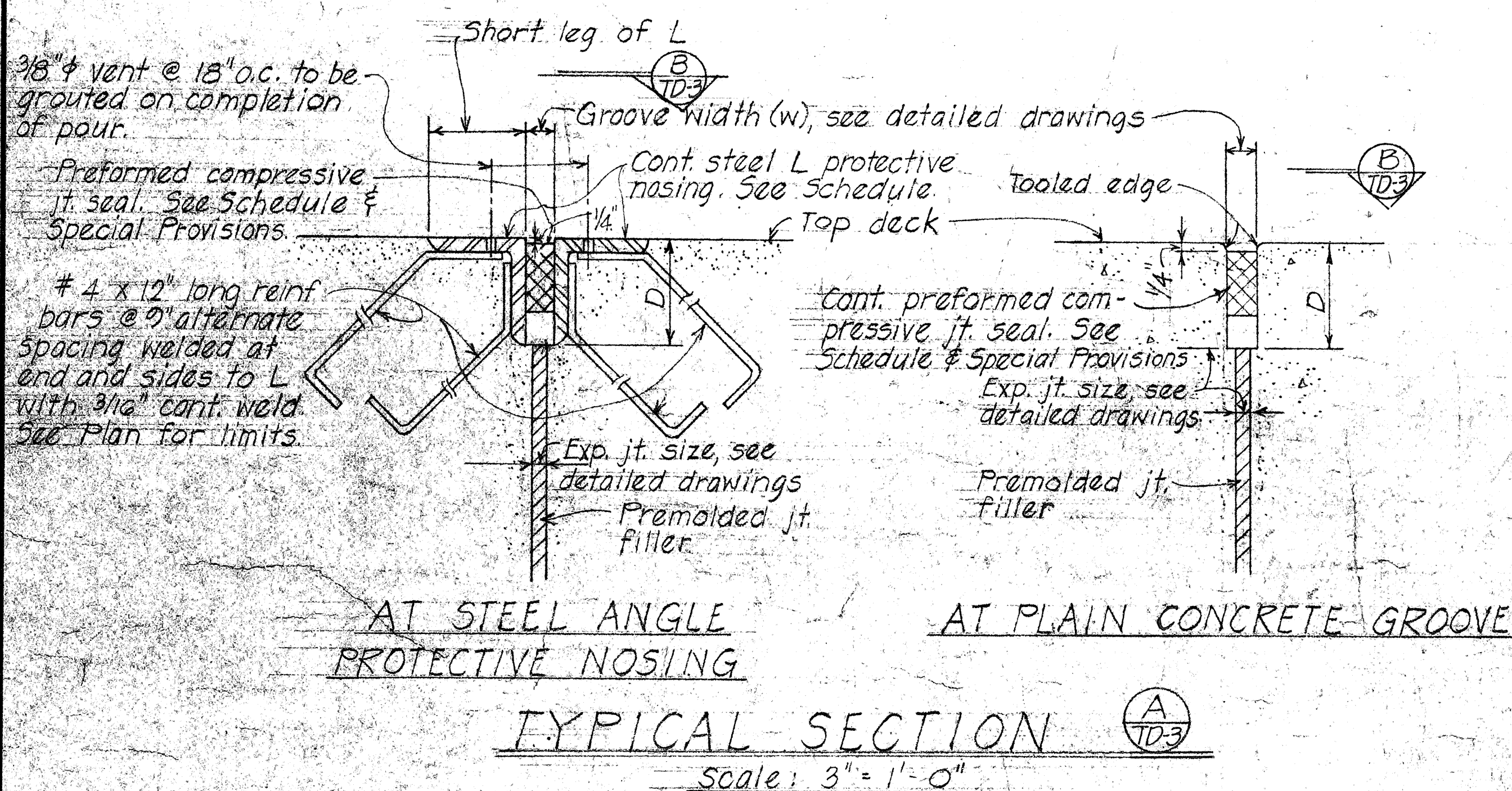
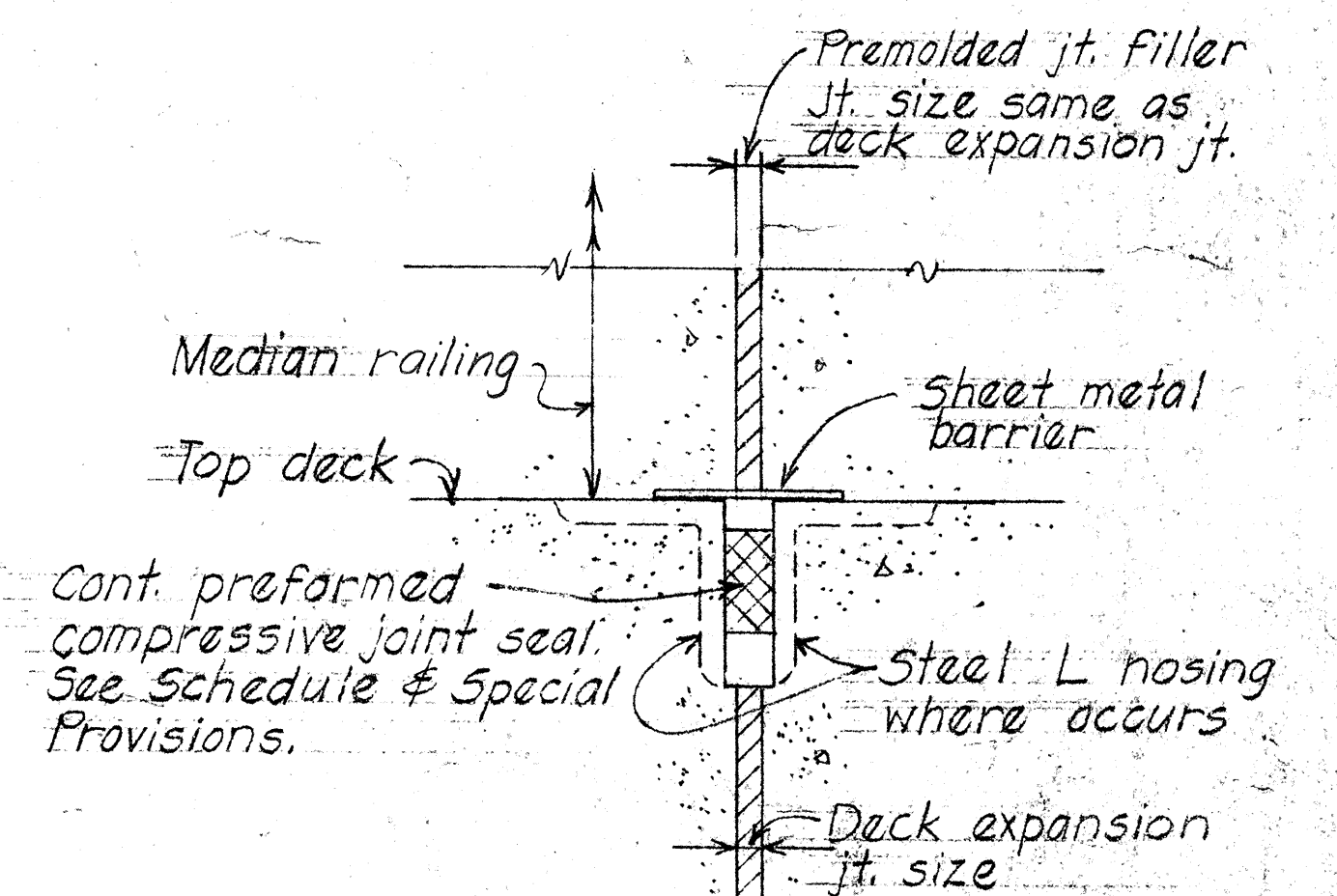
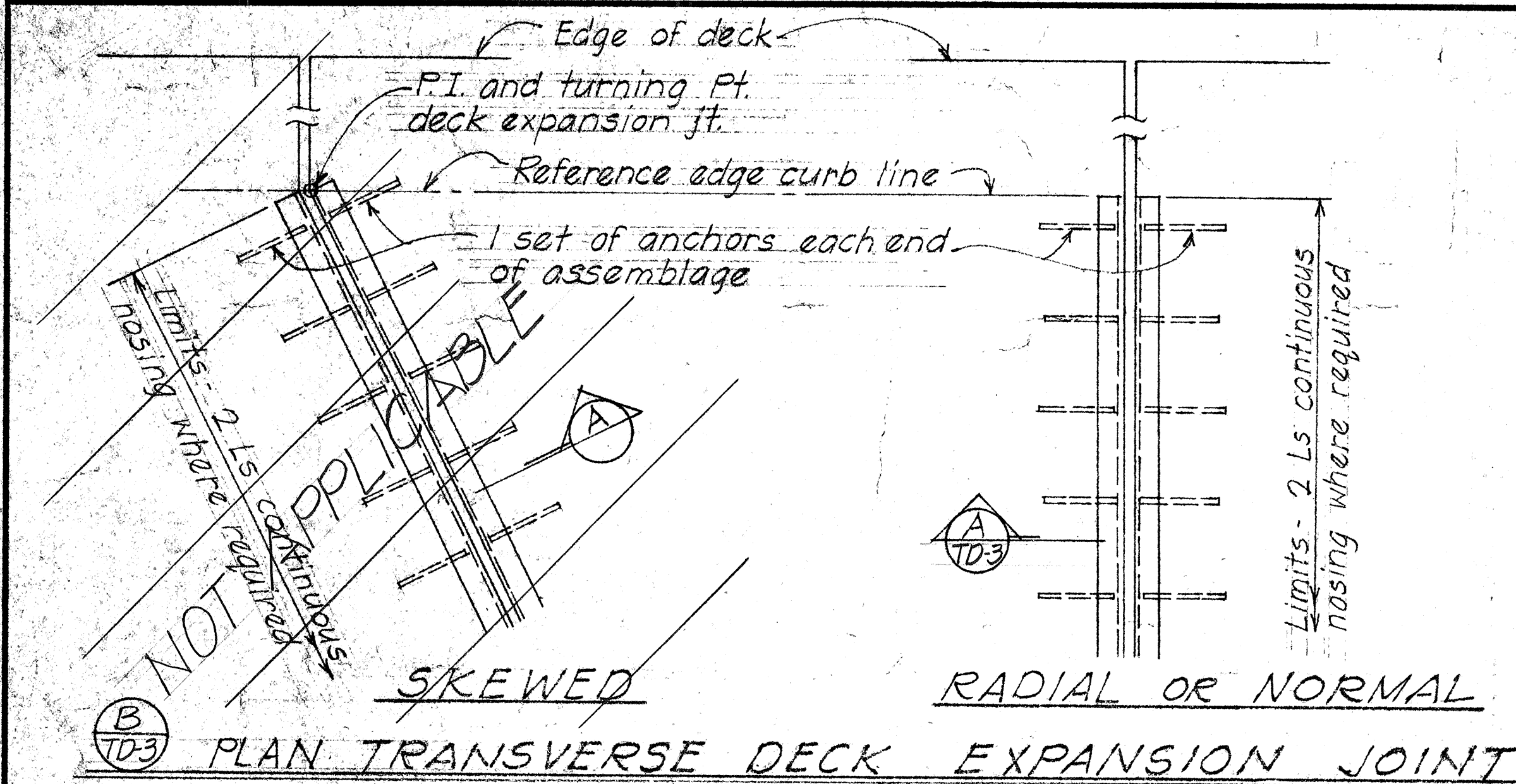
Transverse deck construction joints may be eliminated if permitted by the Engineer in writing. If the construction joints are eliminated, water reducing and retarding admixture conforming to AASHTO Designation: M194, Type D, shall be added to the deck concrete over the pier within the indicated lines. The type of the admixture shall be such that the amount of dosage used will produce the retardation required. The type and dosage of the admixture, and the method of pour shall be approved by the Engineer.

|               |      |
|---------------|------|
| DESIGNED BY   | DATE |
| DRAWN BY      |      |
| CHECKED BY    |      |
| NOTED BY      |      |
| ORIGINAL PLAN |      |

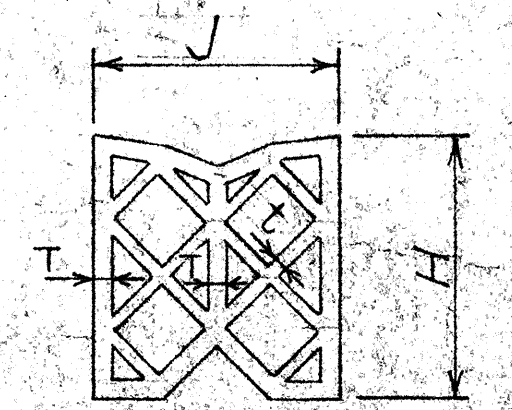
|                                                                      |            |
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| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION |            |
| REPLACEMENT OF EXISTING<br>WAHIAWA TIMBER BRIDGE                     |            |
| TYPICAL DETAILS<br>PRESTRESSED GIRDER SUPERSTRUCTURE                 |            |
| Koloa, Kauai<br>FAS Proj. No. RS-0540(1)                             | April 1973 |
| SHEET No. TD-2 OF 5 SHEETS                                           |            |



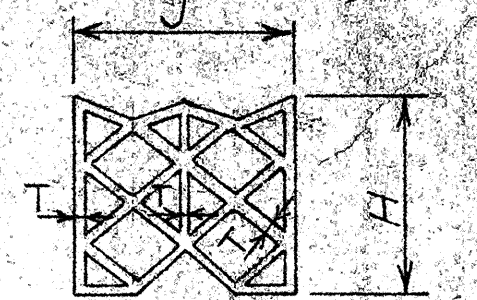
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | RS-0540(1)         | 1973        | 31        | 46           |



| EXPANSION JOINT SEALER SCHEDULE |                                                      |                |                  |                  |                        |                               |                |                                                      |                  |   |  |
|---------------------------------|------------------------------------------------------|----------------|------------------|------------------|------------------------|-------------------------------|----------------|------------------------------------------------------|------------------|---|--|
| Joint Seal Size                 | Type A - Joint Sealer<br>(Dimensions and Tolerances) |                |                  |                  |                        | Steel Angle Protective Nosing | Groove Dim. D  | Type B - Joint Sealer<br>(Dimensions and Tolerances) |                  |   |  |
|                                 | J                                                    | H              | Thickness        |                  | J                      |                               |                | H                                                    | Thickness        |   |  |
|                                 |                                                      |                | T                | t                |                        |                               |                |                                                      | T                | t |  |
| ②                               | 1 3/4 +3/16 -0                                       | 2 ± 1/8        | 1/8 +1/32 -1/64  | 3/32 +1/64 -1/32 | 3 1/2" x 3 1/2" x 1/2" | 3 1/2"                        | 1 3/4 +3/16 -0 | 1 3/4 ± 3/16                                         | 5/64 +1/32 -1/64 | — |  |
| ③                               | 2 +3/16 -0                                           | 2 1/16 ± 1/8   | 1/8 +1/32 -1/64  | 3/32 +1/32 -1/64 | 4" x 3 1/2" x 1/2"     | 4"                            | 2 +5/32 -0     | 2 ± 1/8 -0                                           | 7/64 +1/32 -0    | — |  |
| ④                               | 2 1/2 +1/4 -0                                        | 2 3/4 ± 1/8    | 3/16 +3/64 -1/64 | 3/32 +1/32 -1/64 | 5" x 3 1/2" x 1/2"     | 5"                            |                |                                                      |                  |   |  |
| ⑤                               | 3 +1/4 -0                                            | 3 13/32 ± 3/16 | 3/16 +3/64 -1/64 | 1/8 +3/64 -1/64  | 6" x 3 1/2" x 1/2"     | 6"                            |                |                                                      |                  |   |  |
| ⑥                               | 4 +5/16 -0                                           | 4 23/32 ± 1/4  | 1/4 +3/64 -1/32  | 3/16 +3/64 -1/64 | 7" x 4" x 1/2"         | 7"                            |                |                                                      |                  |   |  |



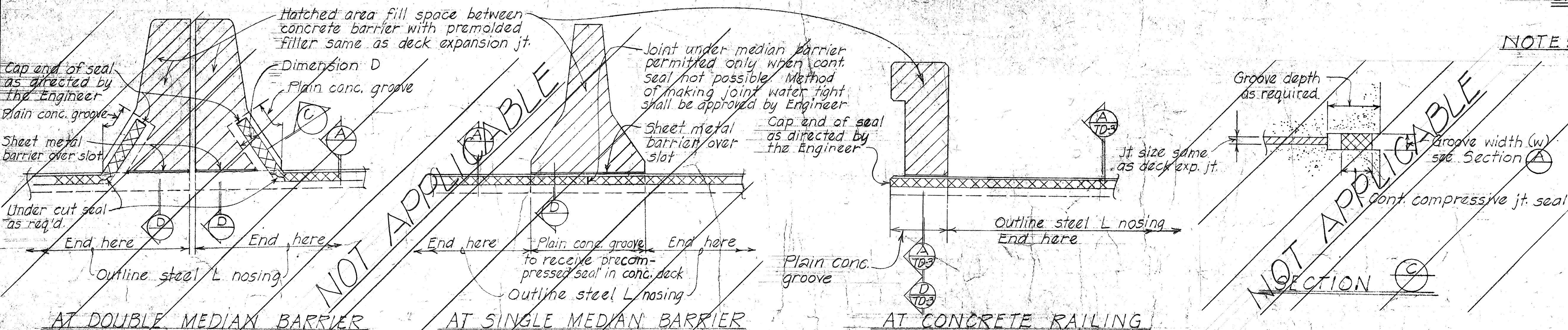
TYPE A



TYPE B

## EXPANSION JOINT SEALER

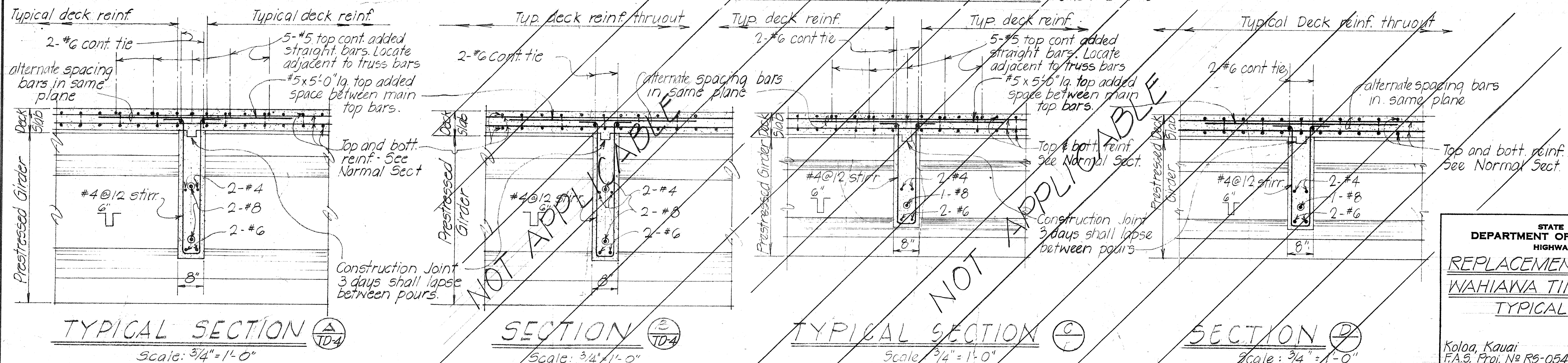
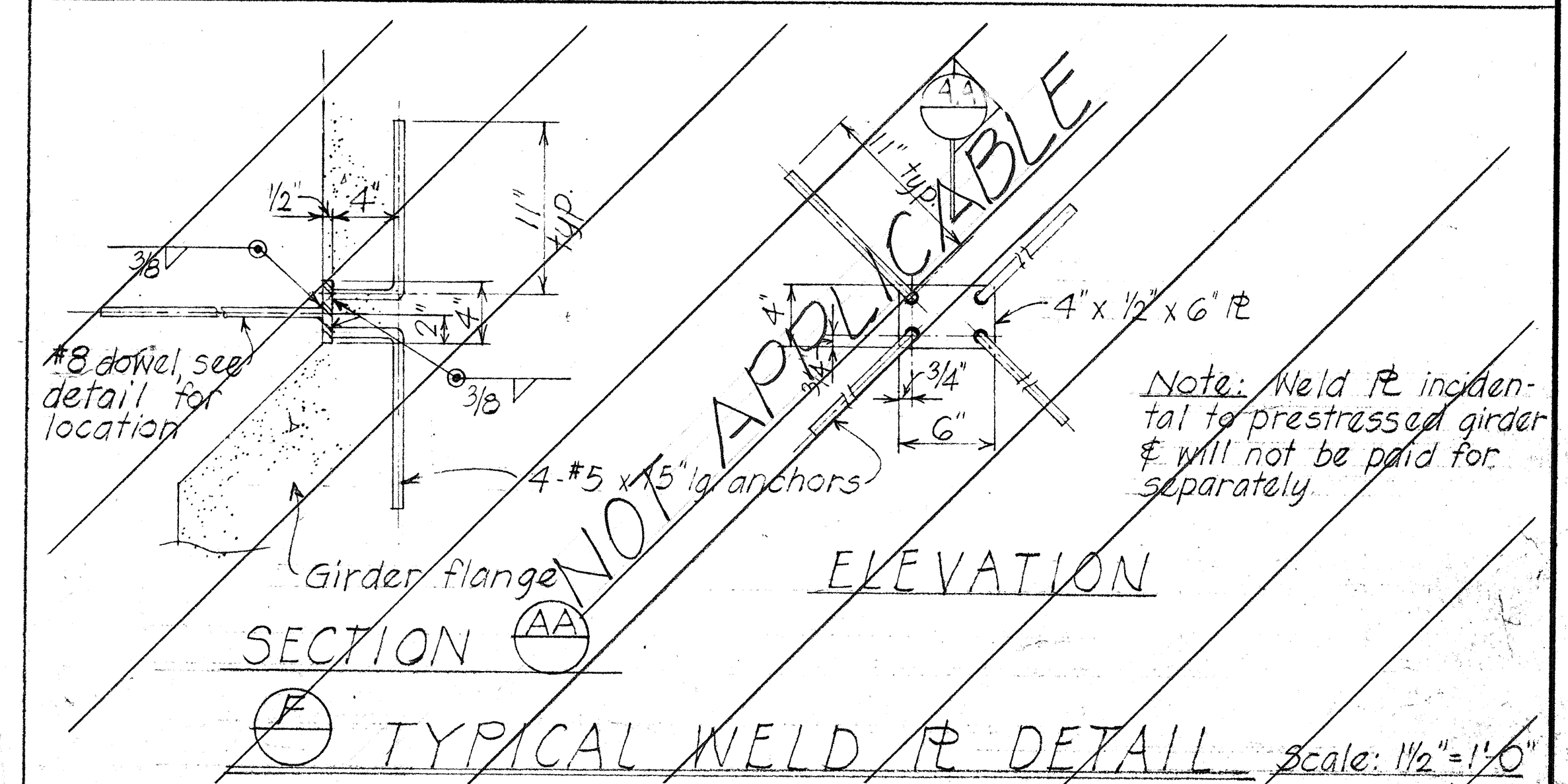
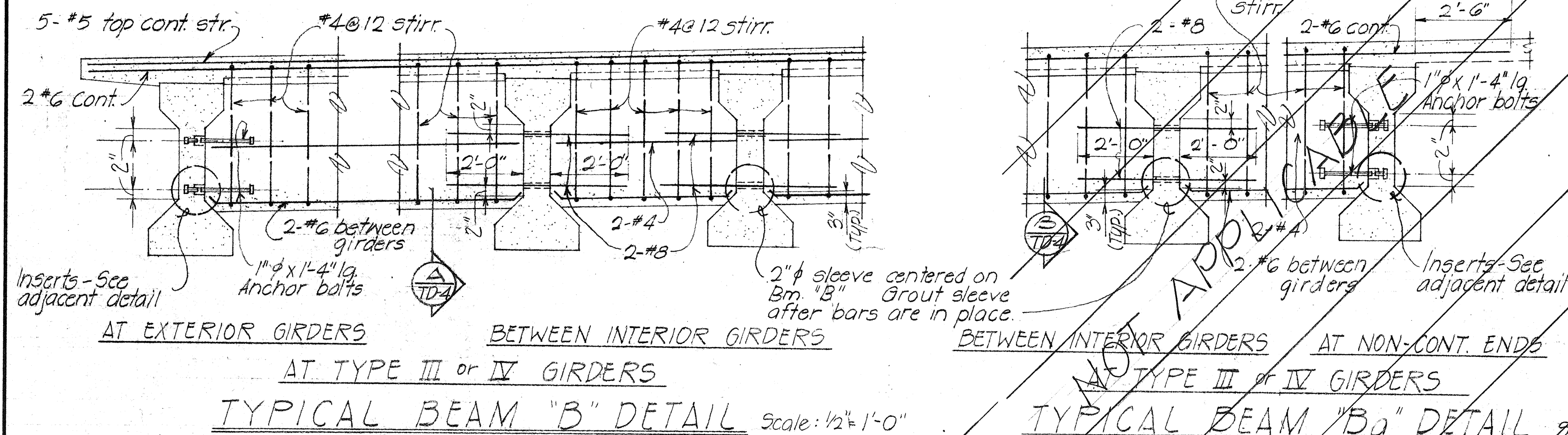
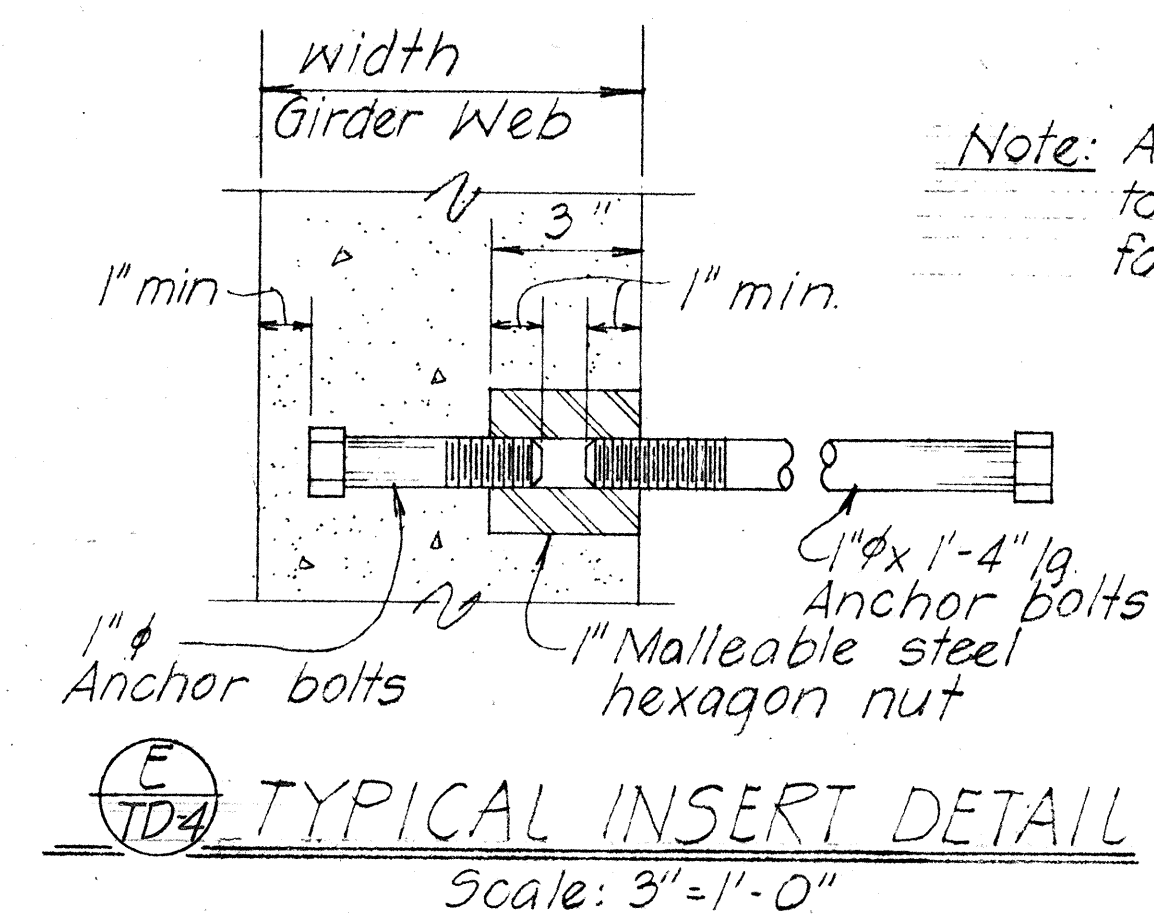
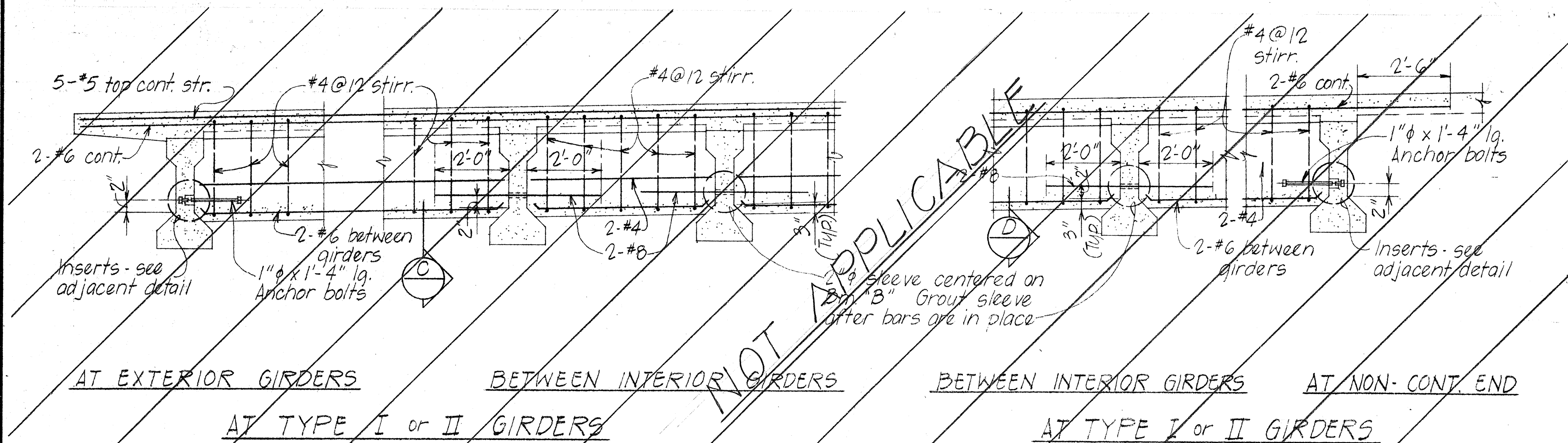
**NOTE:** Steel angle protective nosing assembly to be hot dipped galvanized after fabrication. Steel angle protective nosing assembly and joint sealer incidental to concrete and will not be paid for separately.



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
TYPICAL DETAILS  
EXPANSION JOINT SEALER  
WATERPROOFING DETAILS  
Koloa, Kauai  
FAS Proj. No. RS-0540(1)  
April 1973  
SHEET No. TD-30F 5. SHEETS



| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | RS-0540(1)            | 1973           | 32           | 46              |



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING  
WAHIAWA TIMBER BRIDGE  
TYPICAL DETAILS



