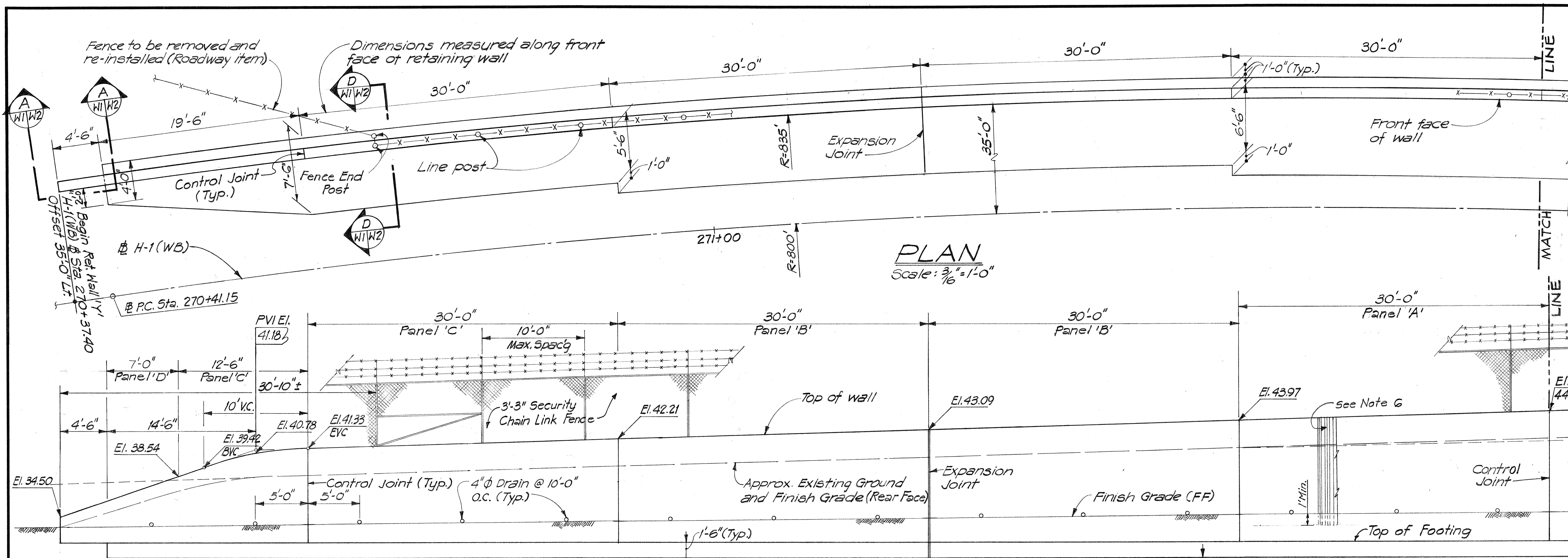


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-H1-1(131):17     | 1977        | 229       | 394          |

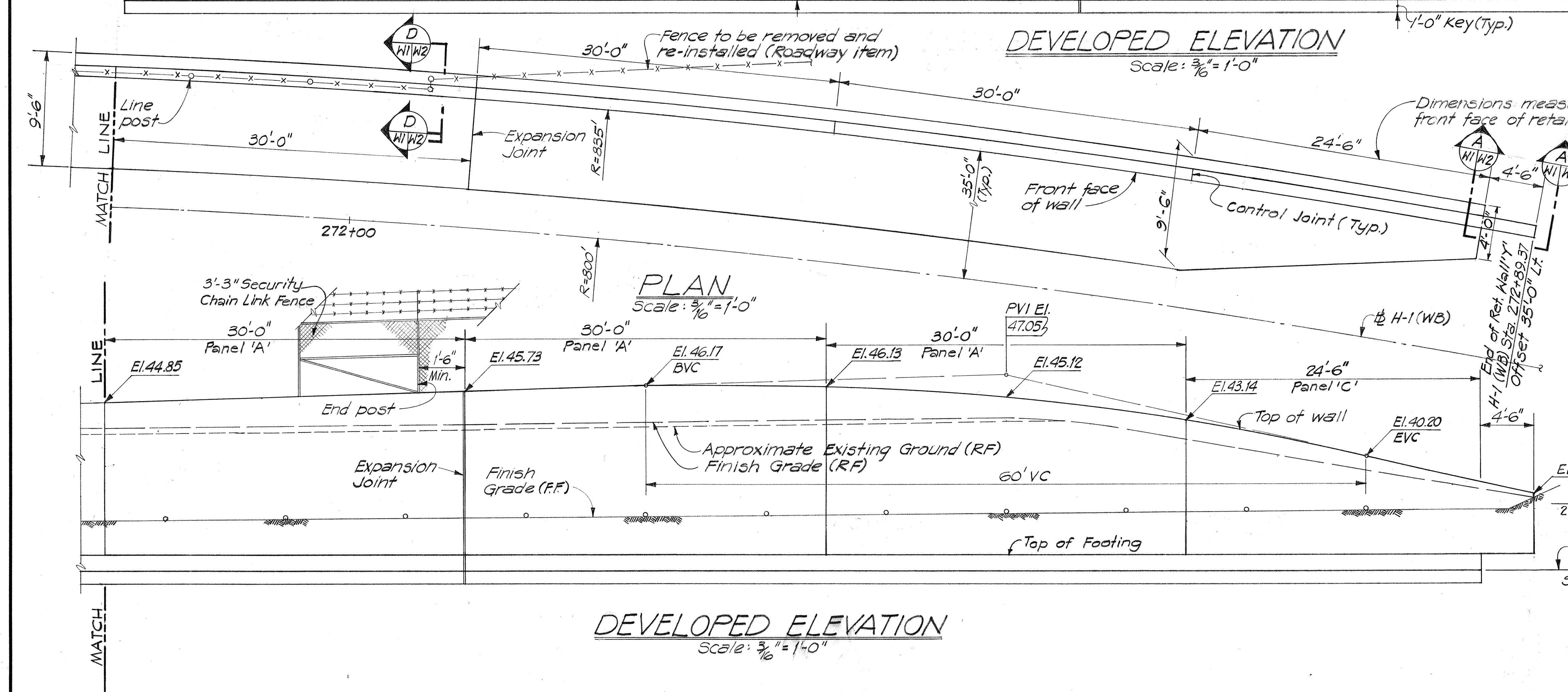


**PLAN**  
Scale:  $\frac{3}{16}'' = 1'-0''$

**DEVELOPED ELEVATION**  
Scale:  $\frac{3}{16}'' = 1'-0''$

- NOTES:**
- Design stresses:  
(a) Concrete = Ultimate compressive Stress (28 days)  
 $f'_c = 3000$  psi  
Allowable stress  
 $f_c = 0.4 f'_c$   
(b) Steel = ASTM A615, Grade 40  
 $f_s = 20,000$  psi
  - All exposed edges of Wall to be chamfered by  $\frac{3}{4}''$ .
  - The rock elevation must be verified in the field so as to set bottom of footing 6-inches into the rock. If the rock elevation is 1-foot lower or more than shown, redesign of the wall will be necessary.
  - Fence Details to be similar to details shown on Sheet No. 43.
  - The Stem of Wall shall be constructed to follow the curved alignment, the footing of wall may be constructed on a series of chords to fit curved alignment at maximum chord length = 30 ft.
  - Retaining Wall Finish shall be same as for H-1 Viaduct Abutment & Wingwall. See Section X on sheet No. S-30.

| ITEM No. | ITEM                                                   | UNIT     | QUANTITY     |
|----------|--------------------------------------------------------|----------|--------------|
| 206.5110 | Structure Excavation for Retaining Wall 'Y'            | Cu. Yd.  | 750          |
| 206.7000 | Structure Backfill                                     | Cu. Yd.  | 190          |
| 206.8000 | Filter Material                                        | Cu. Yd.  | 54           |
| 206.8500 | Crusher Screenings                                     | Cu. Yd.  | 650          |
| 503.1053 | Concrete in Retaining Wall (Except Footings); Wall 'Y' | Lump Sum | (110 C.Y.)   |
| 503.1054 | Concrete in Retaining Wall footings; Wall 'Y'          | Lump Sum | (130 C.Y.)   |
| 602.0053 | Reinforcing Steel for Retaining Wall; Wall 'Y'         | Lump Sum | (26,000 Lbs) |



**PLAN**  
Scale:  $\frac{3}{16}'' = 1'-0''$

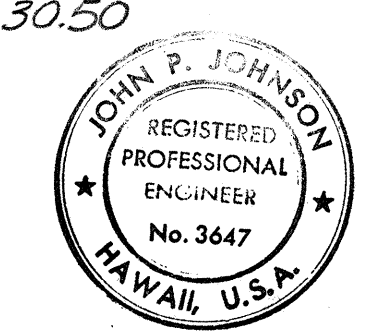
**DEVELOPED ELEVATION**  
Scale:  $\frac{3}{16}'' = 1'-0''$

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**RETAINING WALL 'Y'**

INTERSTATE ROUTE H-1  
PROJECT NO. I-H1-1(131):17

SCALE:  $\frac{3}{16}'' = 1'-0''$  DATE: AUG. 31, 1977  
SHEET NO. W1 OF W3 SHEETS



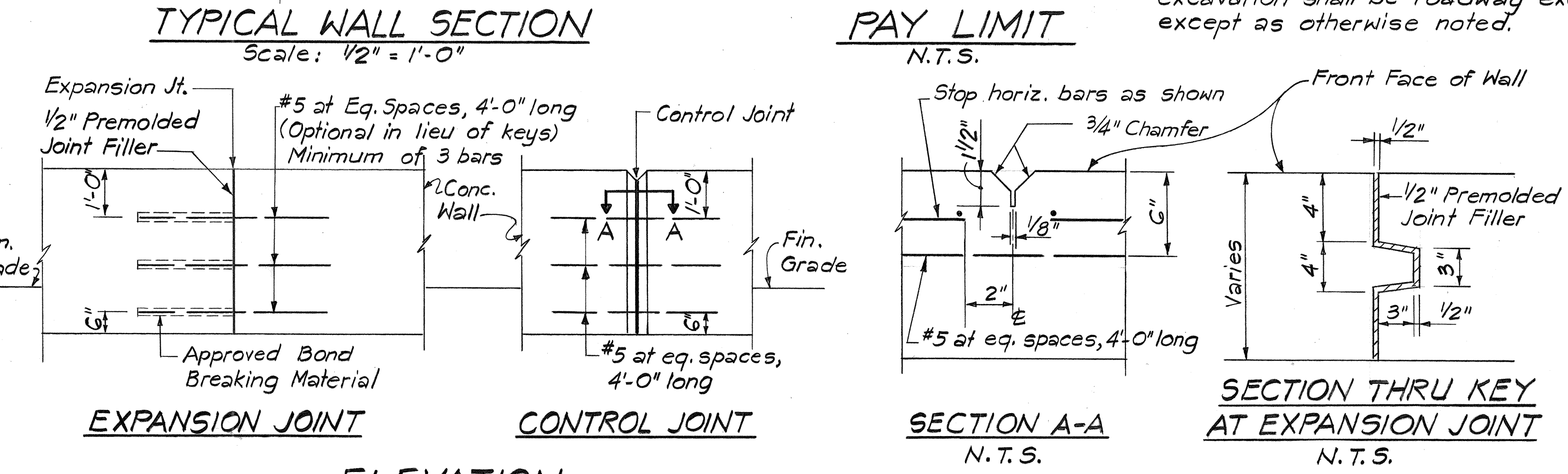
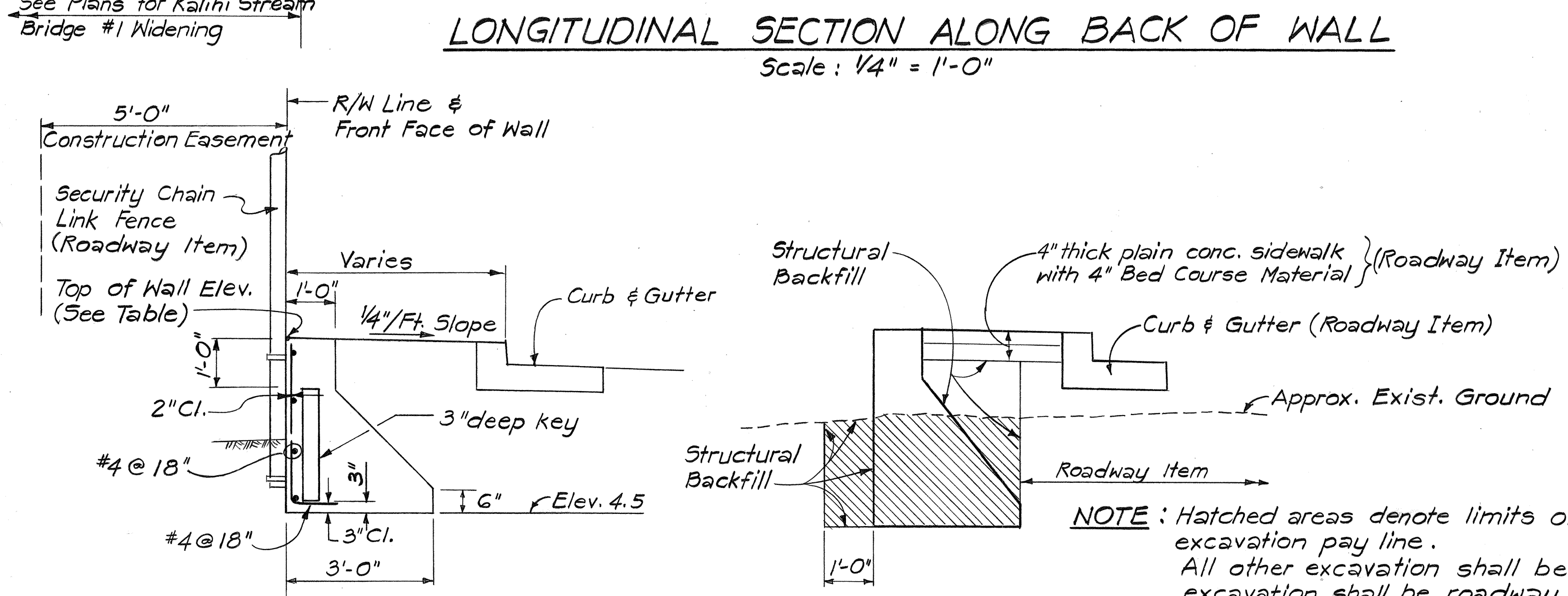
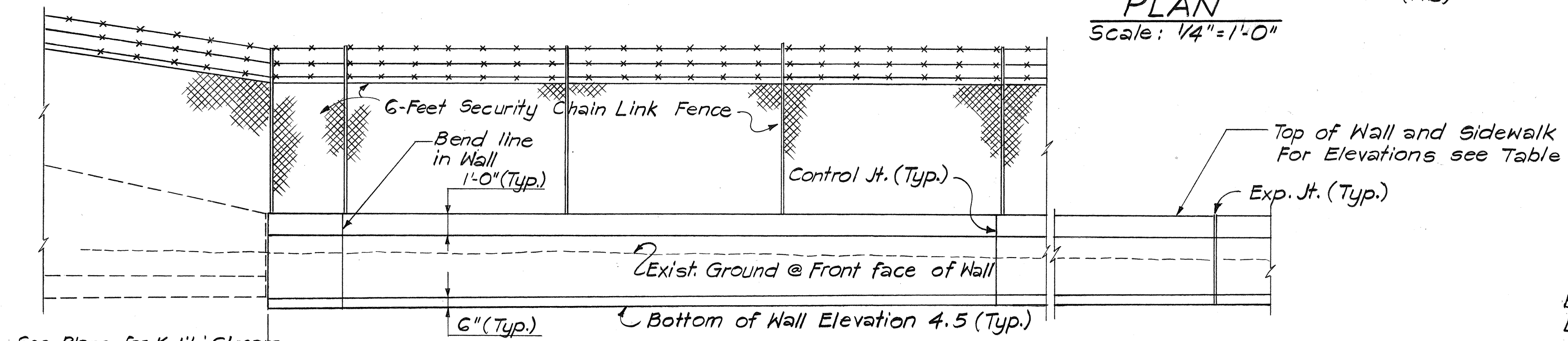
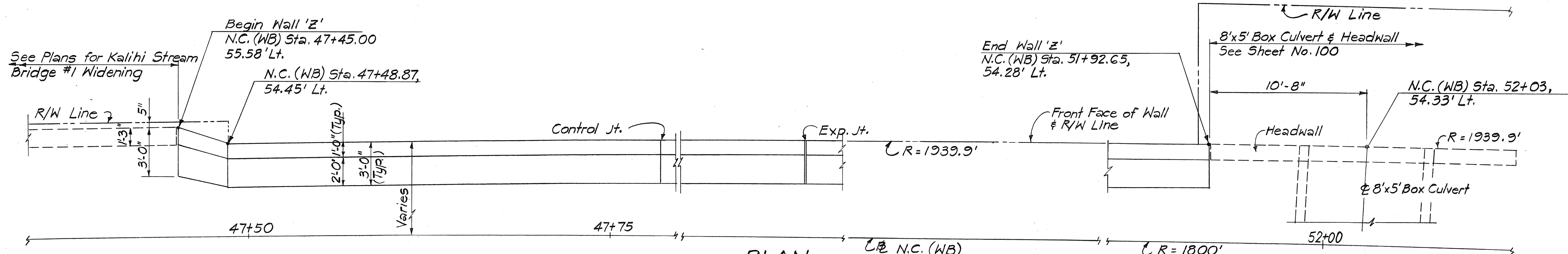
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

*John P. Johnson*

SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
QUANTITIES BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_



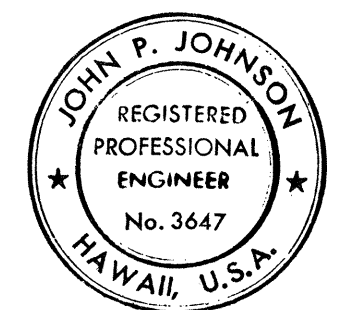
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | I-H-1(131):17      | 1977        | 231       | 394          |



| WALL 'Z'               |            |
|------------------------|------------|
| TOP OF WALL ELEVATIONS |            |
| N.C.(WB) STATION       | ELEVATIONS |
| 47 + 45.00             | 8.73       |
| 47 + 48.87             | 8.68       |
| 47 + 50.00             | 8.67       |
| 47 + 75.00             | 8.53       |
| 48 + 00.00             | 8.42       |
| 48 + 25.00             | 8.35       |
| 48 + 50.00             | 8.27       |
| 48 + 75.00             | 8.20       |
| 49 + 00.00             | 8.12       |
| 49 + 25.00             | 8.04       |
| 49 + 50.00             | 7.97       |
| 49 + 75.00             | 7.89       |
| 50 + 00.00             | 7.82       |
| 50 + 25.00             | 7.74       |
| 50 + 50.00             | 7.67       |
| 50 + 75.00             | 7.60       |
| 51 + 00.00             | 7.52       |
| 51 + 25.00             | 7.45       |
| 51 + 50.00             | 7.38       |
| 51 + 75.00             | 7.30       |
| 51 + 92.65             | 7.25       |

- NOTES:
- All Concrete shall be class 'A' Concrete.
  - Spacing of Joint  
Expansion = 96'-0" Max.  
Control = 32'-0" Max.
  - For details of security chain link fence see sheet No. 43.

| ITEM No. | ITEM                                     | UNIT     | QUANTITY    |
|----------|------------------------------------------|----------|-------------|
| 206.5120 | Structure Excavation Retaining Wall 'Z'  | Cu. Yd.  | 130         |
| 206.7000 | Structure Backfill                       | Cu. Yd.  | 80          |
| 503.1055 | Concrete in Ret. Wall 'Z'                | Lump Sum | (120 C.Y.)  |
| 602.0054 | Reinforcing Steel for Retaining Wall 'Z' | Lump Sum | (2500 Lbs.) |



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.  
John P. Johnson

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**RETAINING WALL 'Z'**

INTERSTATE ROUTE H-1  
PROJECT NO. I-H-1(131):17

SCALE: AS SHOWN DATE: AUG. 31, 1977  
SHEET NO. W3 OF W3 SHEETS