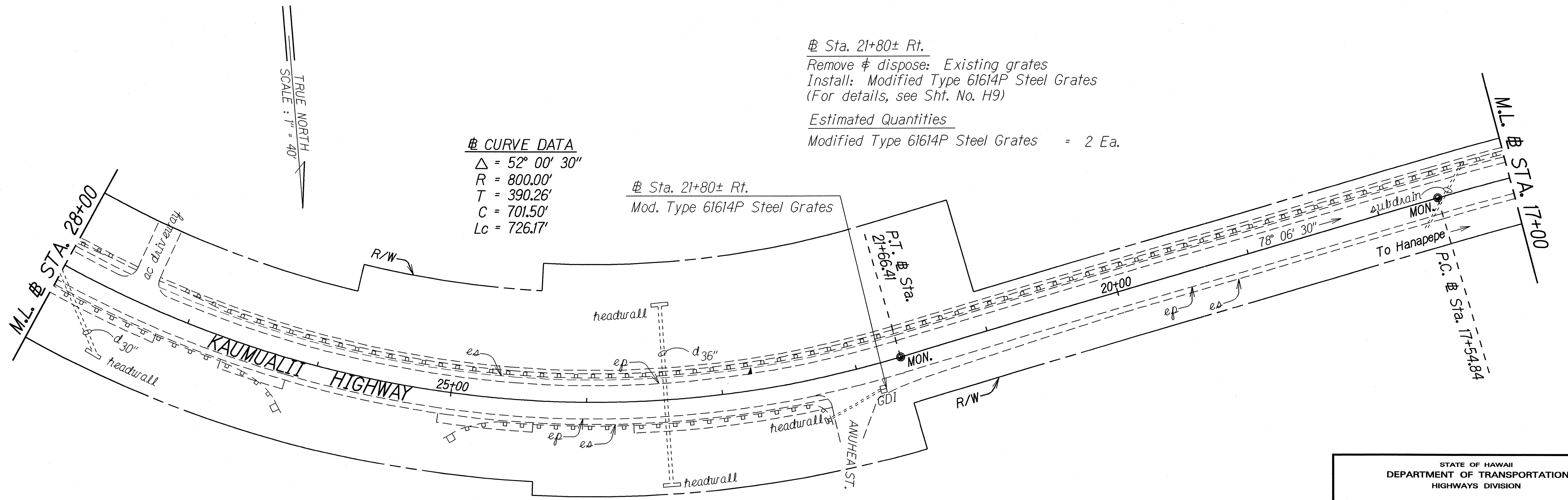
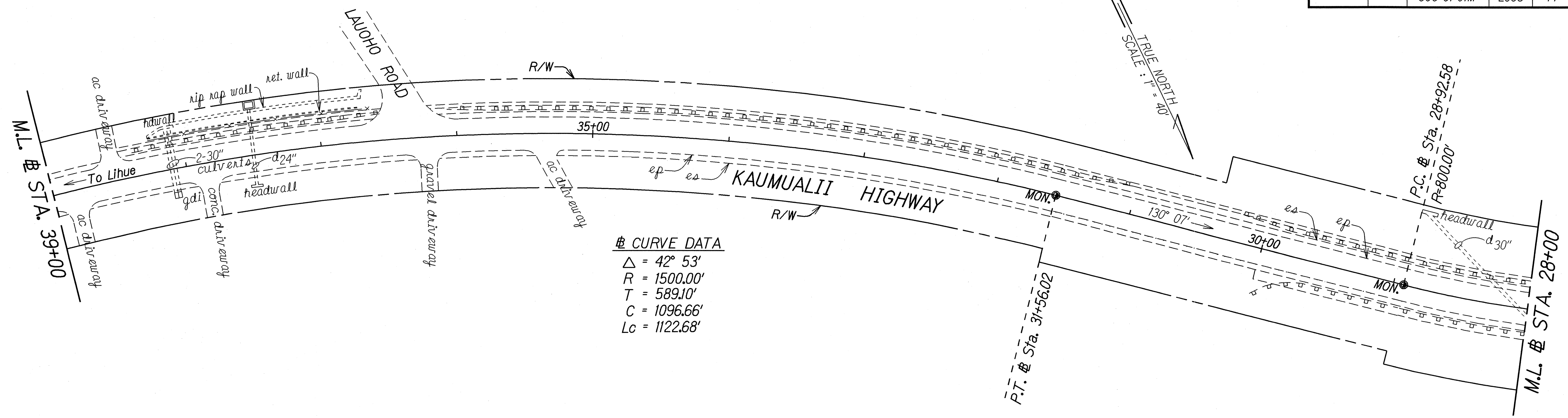


| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 14        | 32           |



# Sta. 21+80± Rt.  
 Remove & dispose: Existing grates  
 Install: Modified Type 61614P Steel Grates  
 (For details, see Sht. No. H9)

Estimated Quantities  
 Modified Type 61614P Steel Grates = 2 Ea.

|               |                   |          |
|---------------|-------------------|----------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE     |
| NOTE BOOK     | DRAWN BY          | 10/14/02 |
| DESIGNED BY   | CHECKED BY        |          |
| QUANTITIES BY |                   |          |
| CHECKED BY    |                   |          |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### DRAINAGE PLAN

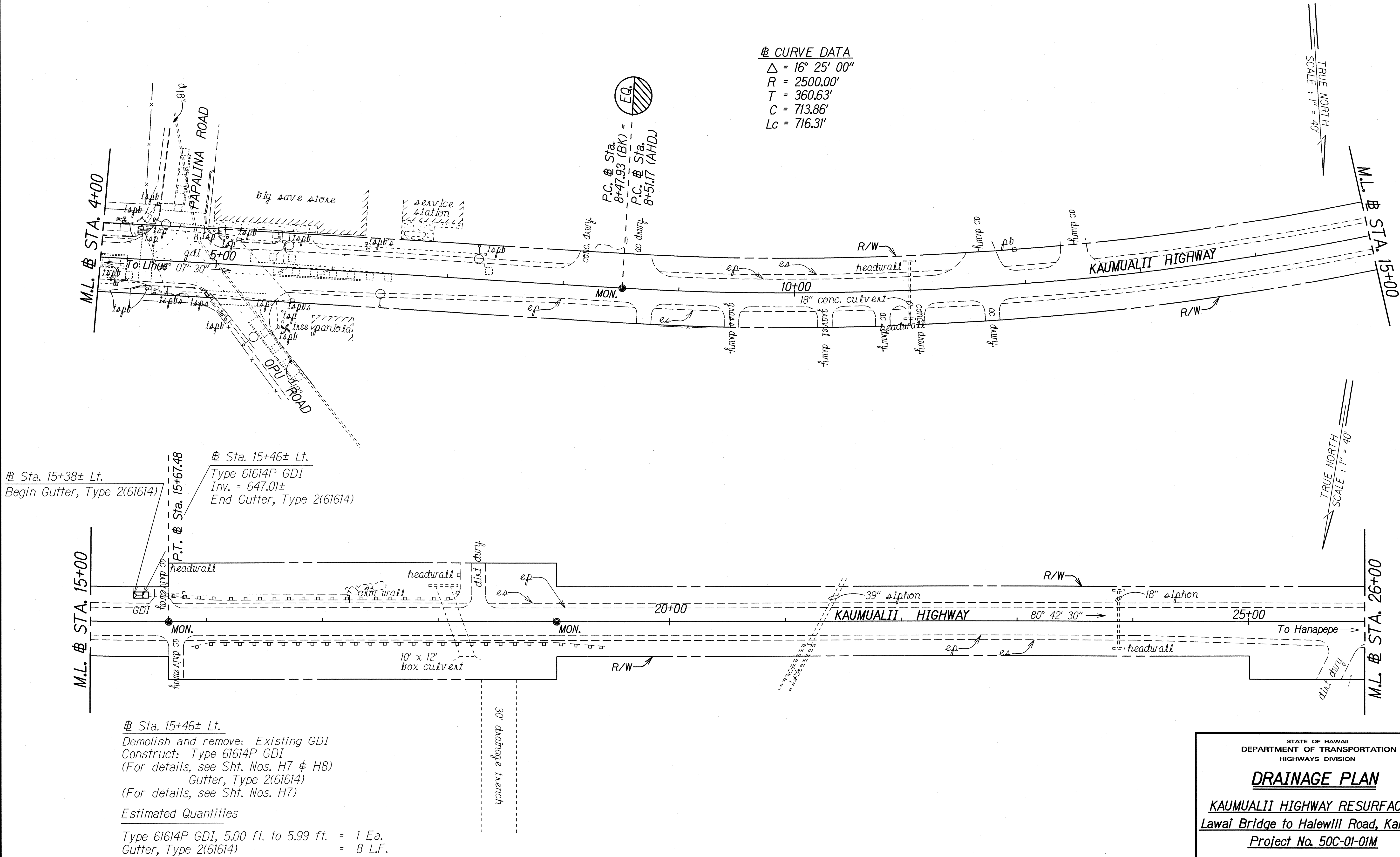
KAUMUALII HIGHWAY RESURFACING  
 Lawai Bridge to Halewili Road, Kalaheo  
 Project No. 50C-01-01M

Scale: 1" = 40'      Date: Feb. 2003

SHEET No. **H1** OF **9** SHEETS



| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 16        | 32           |

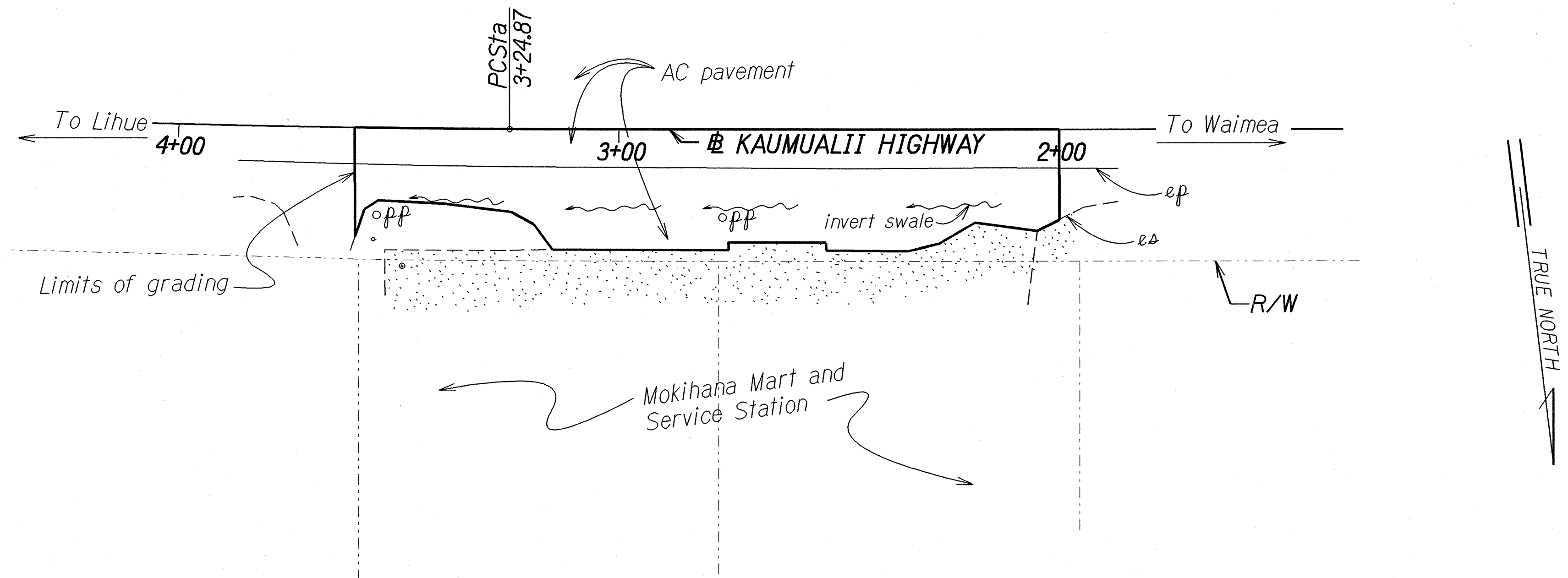


|                   |          |
|-------------------|----------|
| SURVEY PLOTTED BY | DATE     |
| DRAWN BY          | 10/12/02 |
| DESIGNED BY       |          |
| CHECKED BY        |          |
| ORIGINAL PLAN     |          |
| NOTE BOOK         |          |
| 3/20/04/01/03     |          |
| 3/20/04/01/03     |          |

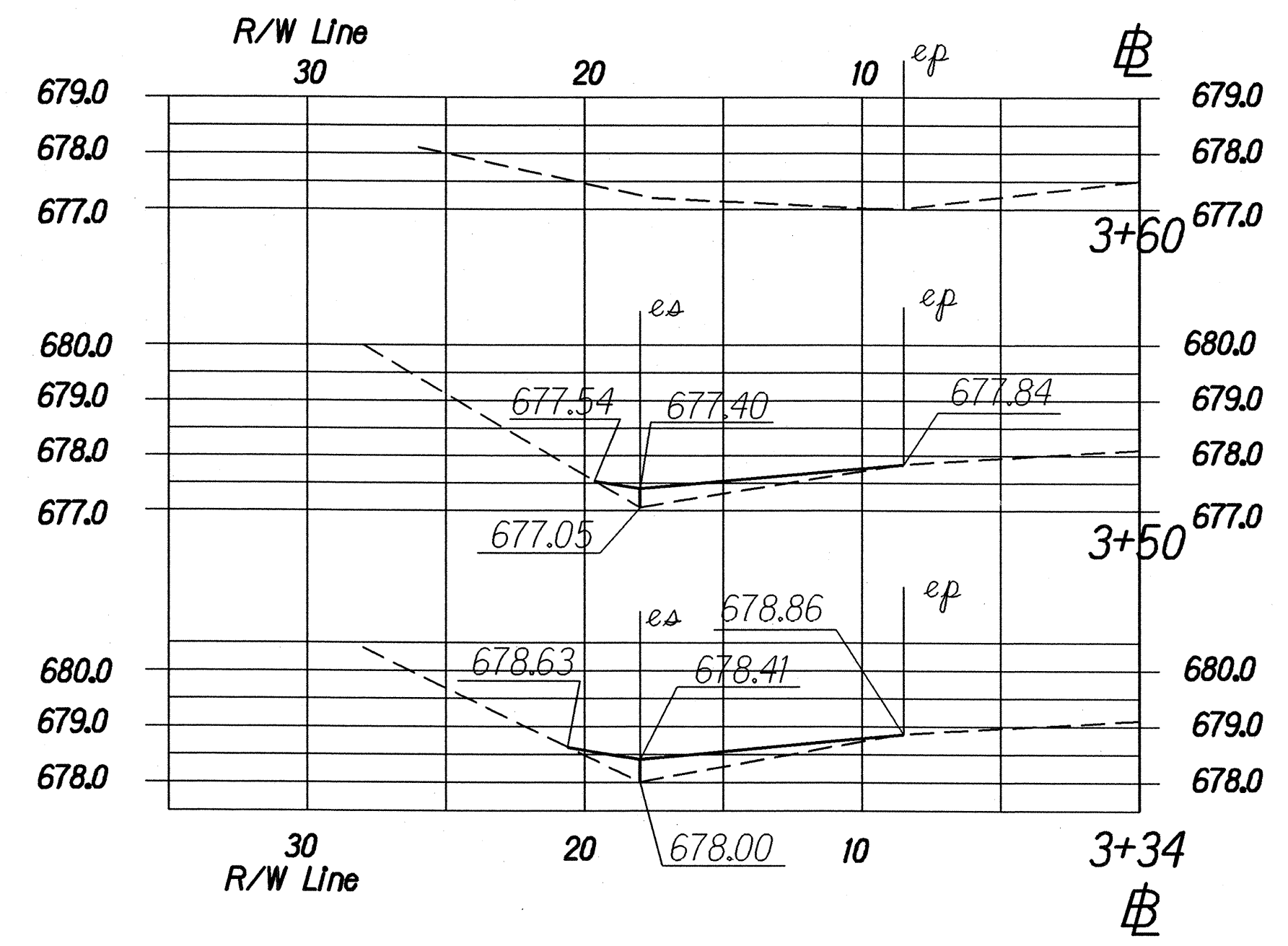
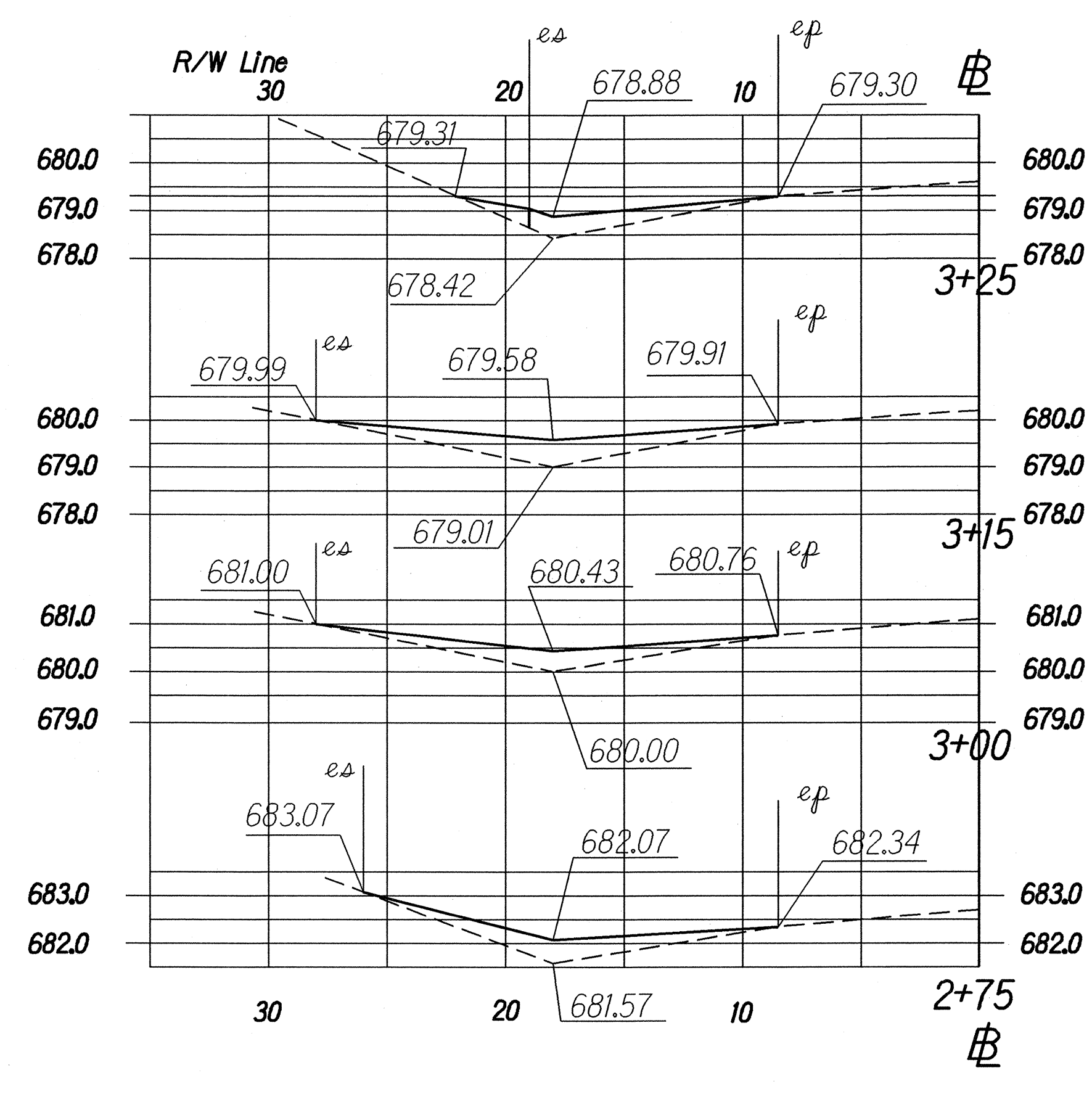
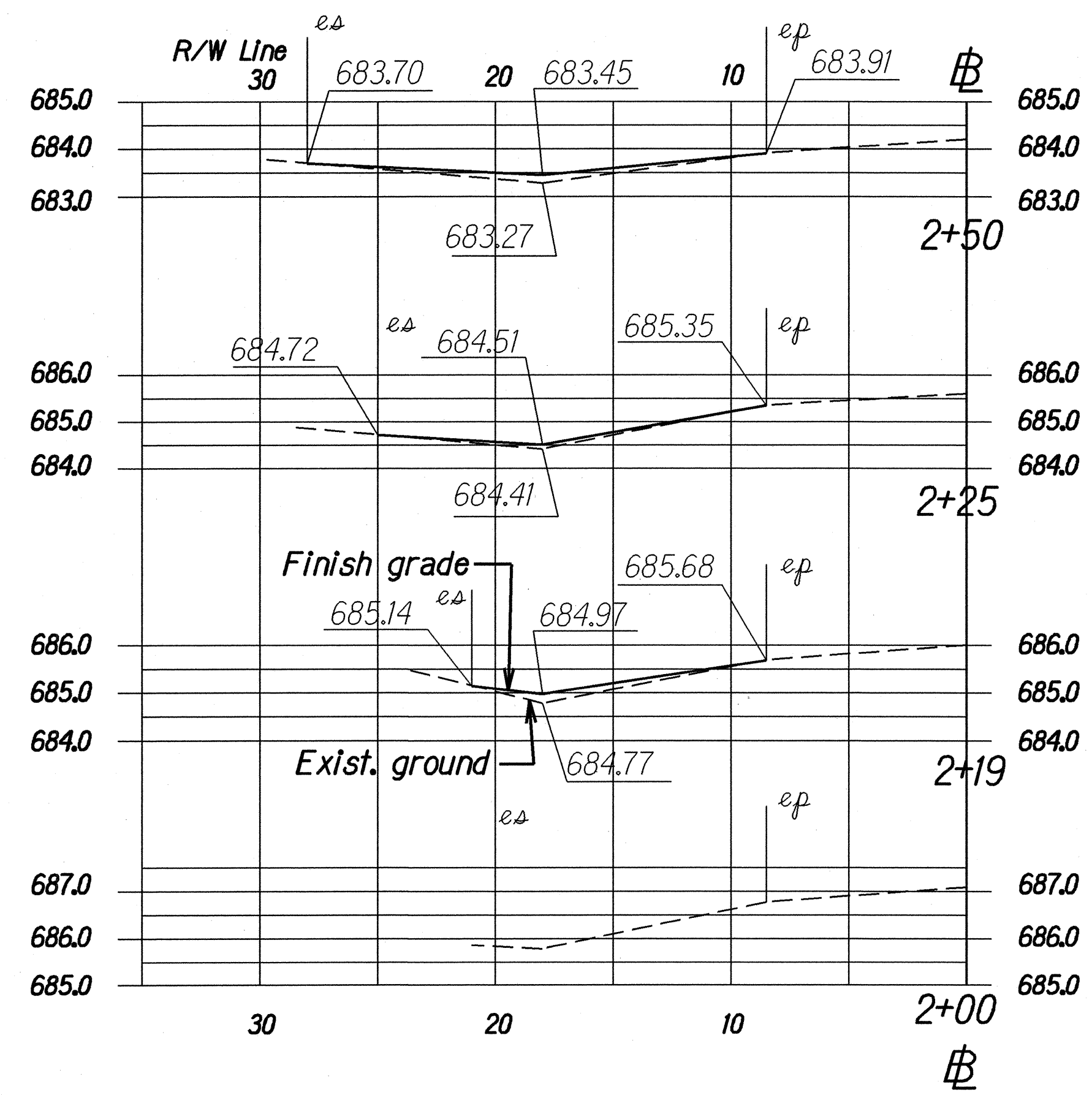
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE PLAN**  
**KAUMUALII HIGHWAY RESURFACING**  
**Lawai Bridge to Halewili Road, Kalaheo**  
**Project No. 50C-01-01M**  
Scale: 1" = 40'      Date: Feb. 2003  
SHEET No. **H3** OF **9** SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 17        | 32           |



PLAN - STA. 2+00 TO STA. 3+60  
Scale: 1"=20'

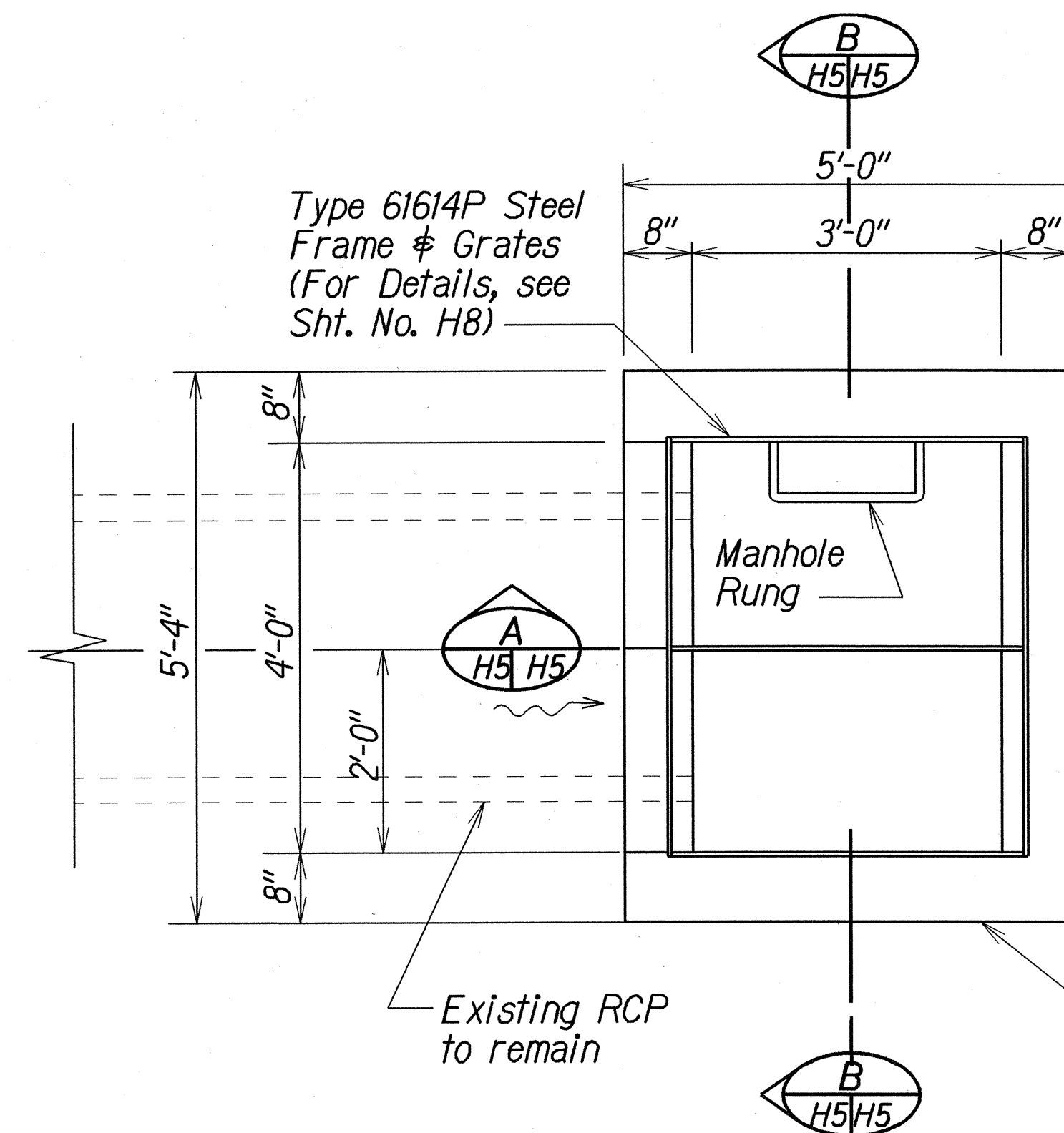


CROSS SECTIONS - STA. 2+00 TO STA. 3+60  
Scale: Horiz. 1"=5'  
Vert. 1"=2.5'

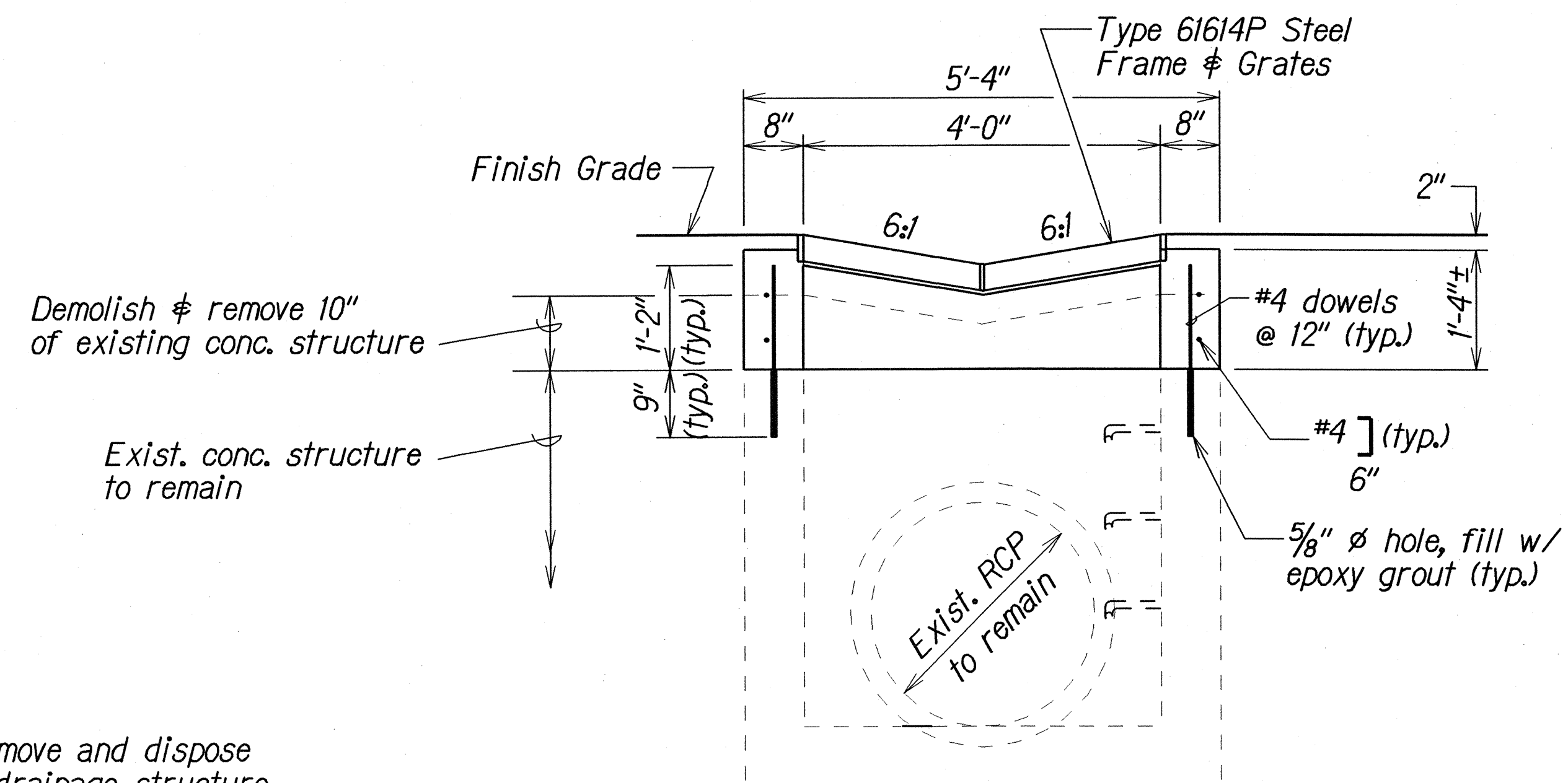
|                   |      |          |
|-------------------|------|----------|
| ORIGINAL PLAN     | DATE | 10/28/03 |
| SURVEY PLOTTED BY |      |          |
| DRAWN BY          |      |          |
| TRACED BY         |      |          |
| NOTED BY          |      |          |
| QUANTITIES BY     |      |          |
| CHECKED BY        |      |          |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**DRAINAGE PLAN & CROSS SECTION**  
**KAUMUALII HIGHWAY RESURFACING**  
**Lawai Bridge to Halewili Road, Kalaheo**  
**Proj. No. 50C-01-01M**  
Scale: As Shown      Date: Feb. 2003  
SHEET No. **H4** OF 9 SHEETS

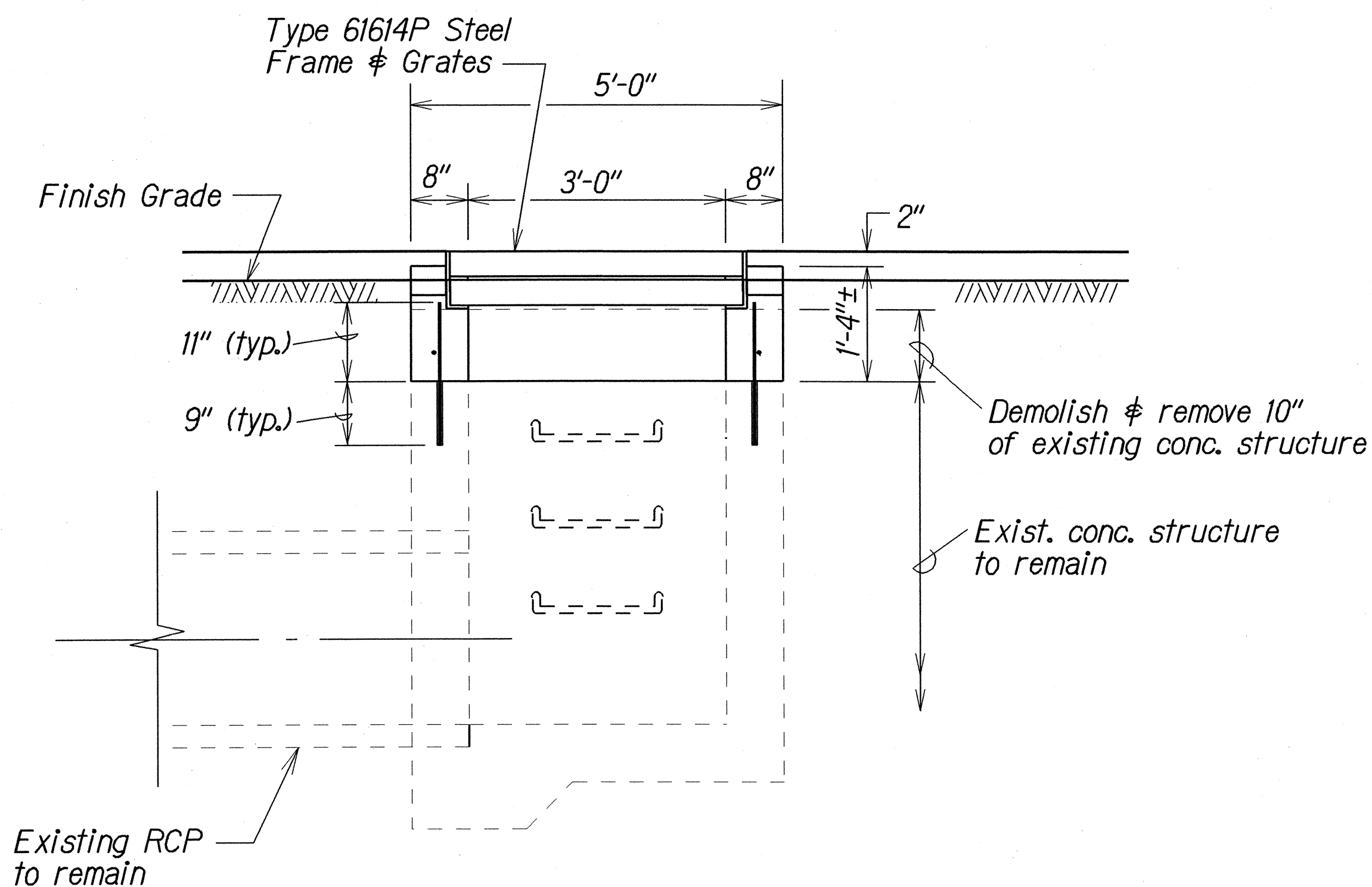
| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 18R       | 32           |



PLAN



SECTION B-B



SECTION A-A

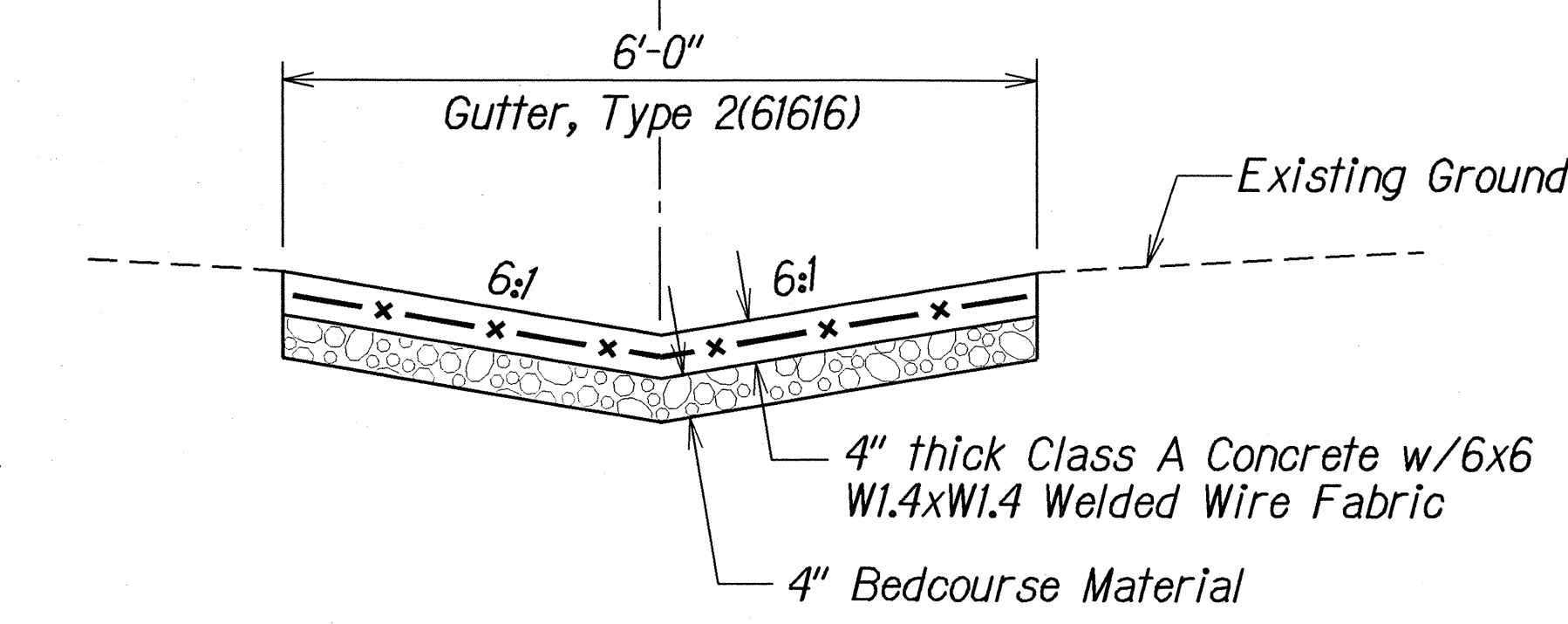
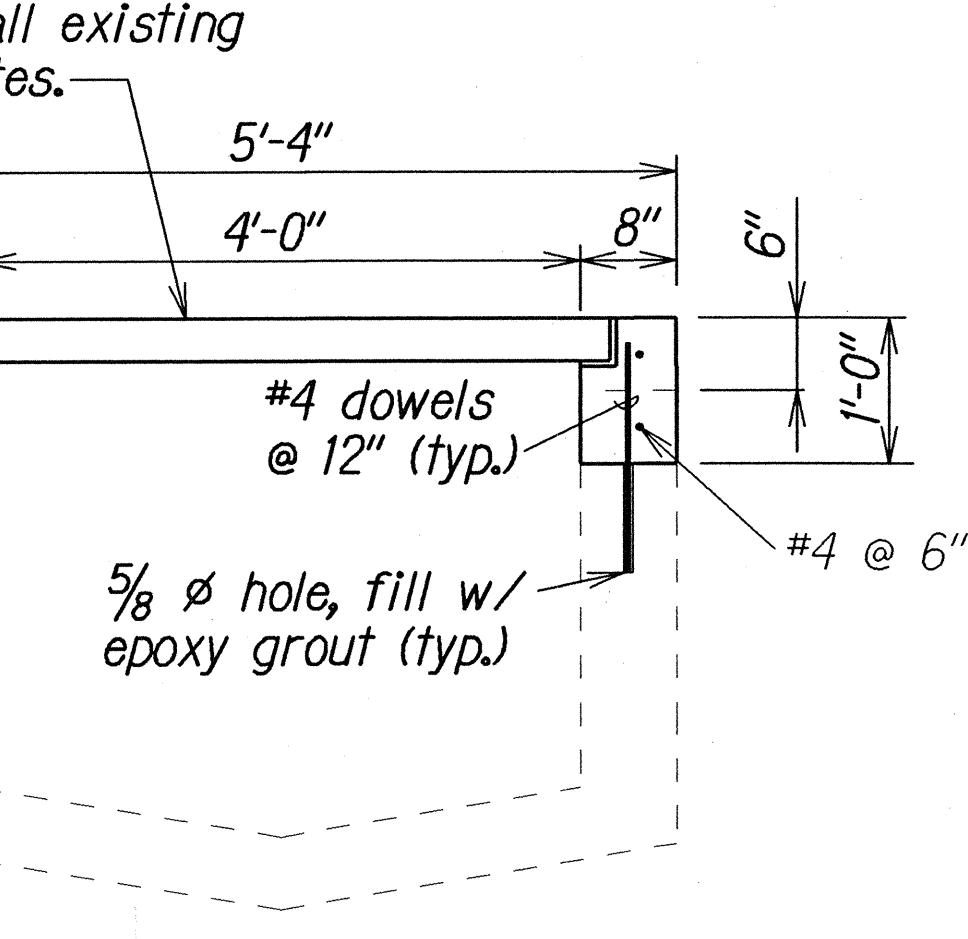
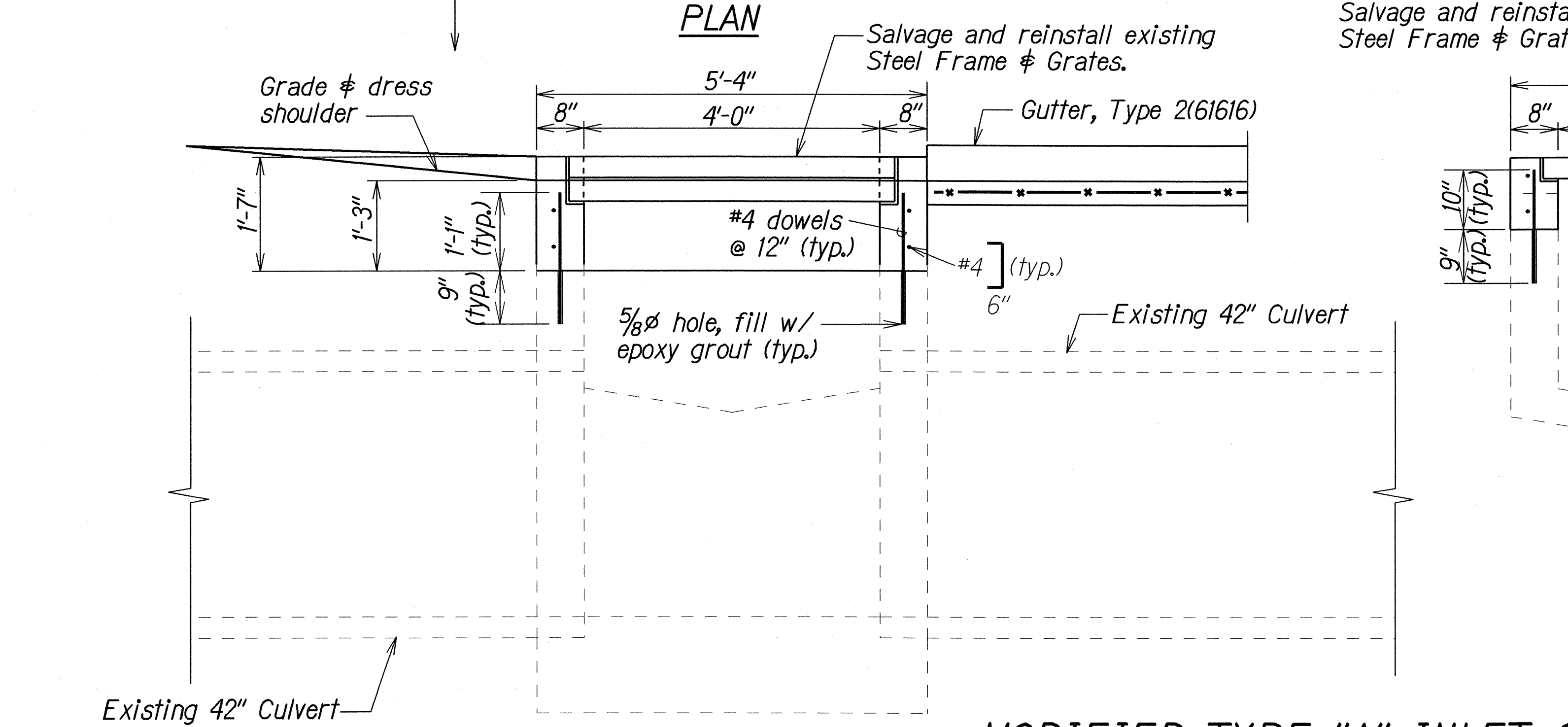
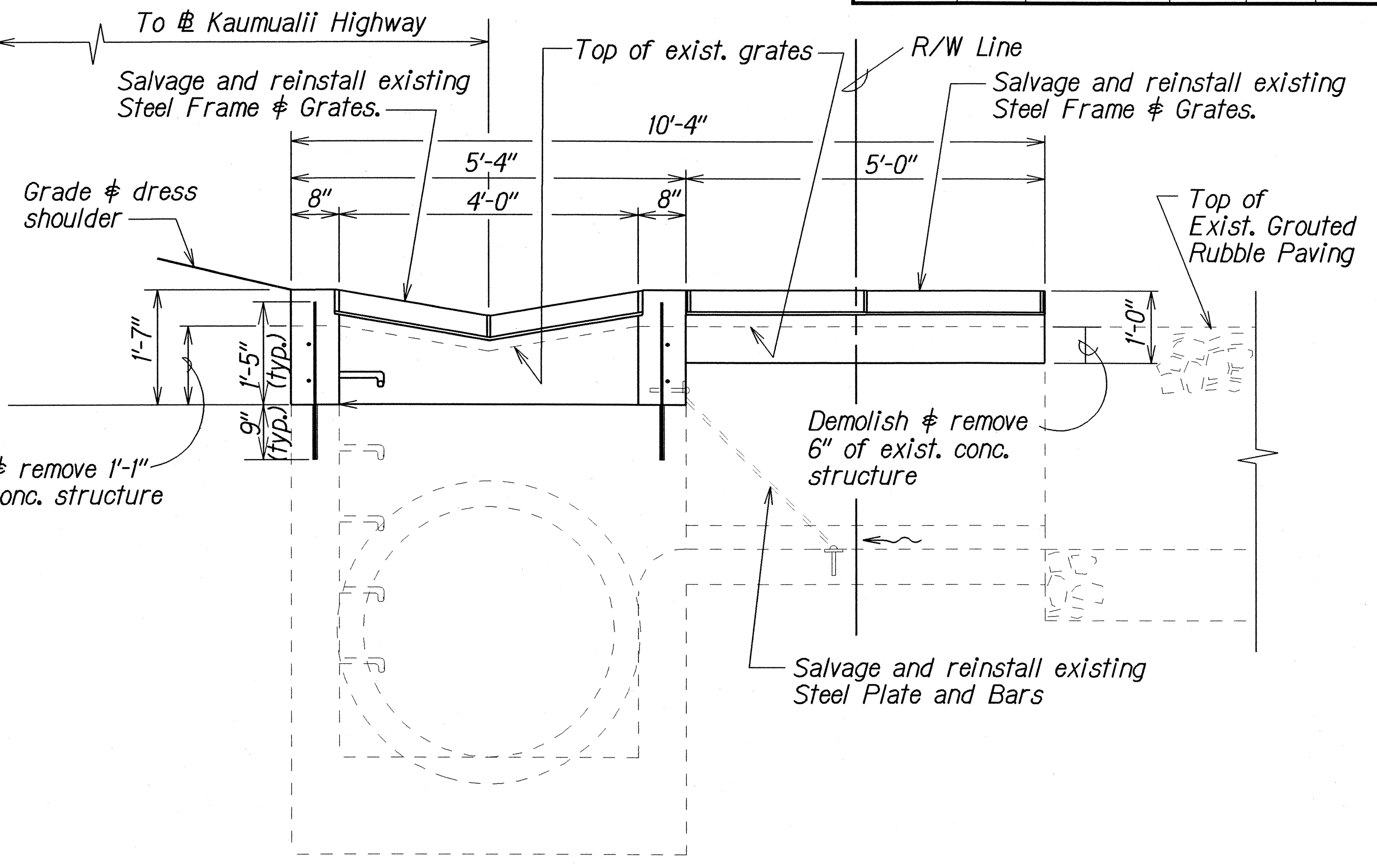
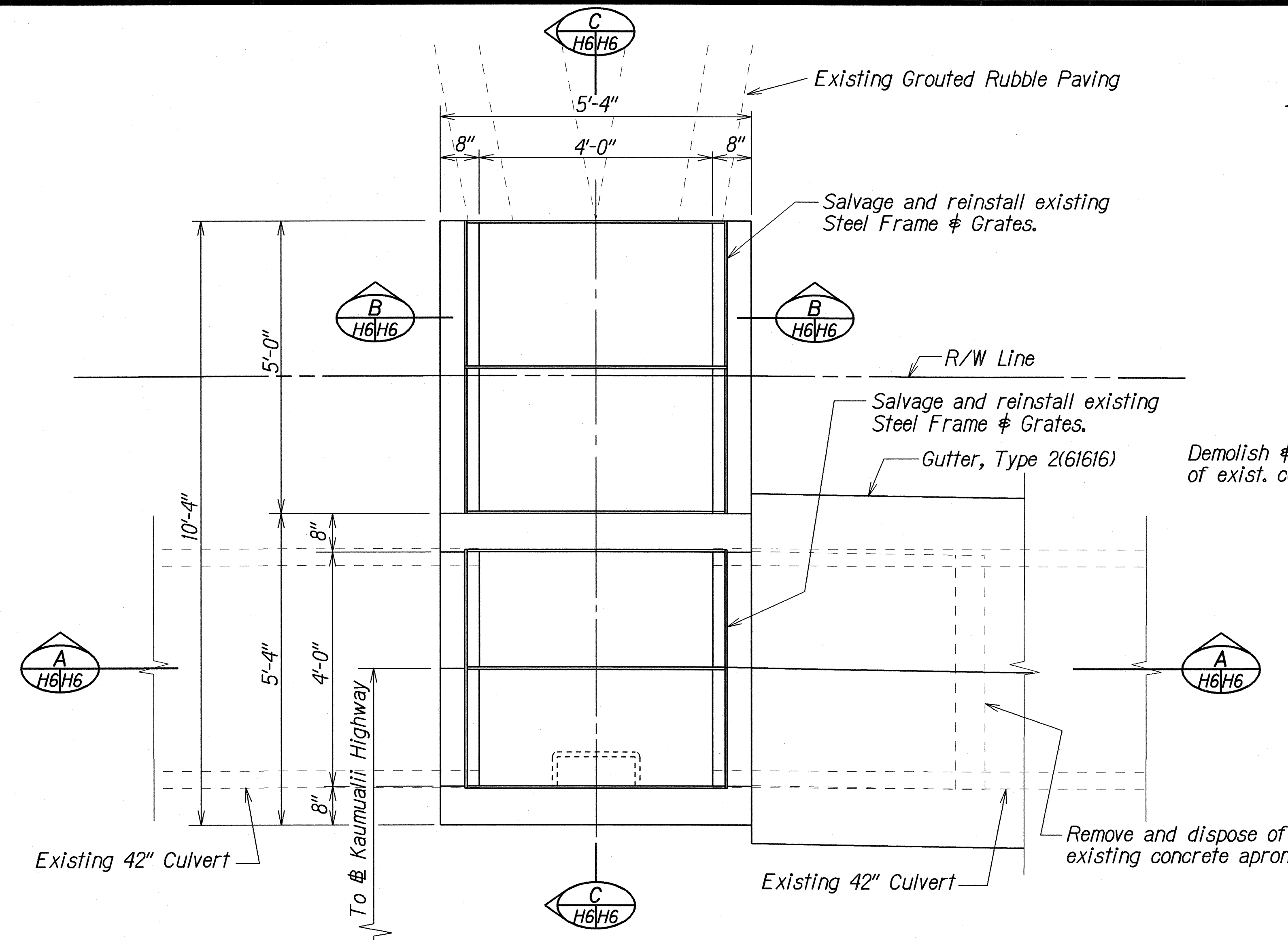
Note: The Contractor shall verify in the field the actual height to be adjusted to meet finish grade.

DETAILS OF MODIFIED TYPE 61614P GRATED DROP INLET @ STA. 15+12± RT.

|                          |          |
|--------------------------|----------|
| ORIGINAL PLAN            | DATE     |
| DRAWN BY A. KAWAURA      | 11/15/02 |
| CHECKED BY R. KAWAURA    |          |
| NOTED BY R. KAWAURA      |          |
| QUANTITIES BY R. KAWAURA |          |
| CHECKED BY R. KAWAURA    |          |

| 5/30/03                                                                                                                                                                                                                                                               | Amended sheet reference in plan view from H9 to H8. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| DATE                                                                                                                                                                                                                                                                  | REVISION                                            |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>DRAINAGE DETAILS</b><br>KAUMUALII HIGHWAY RESURFACING<br>Lawai Bridge to Halewili Road, Kalaheo<br>Project No. 50C-01-01M<br>Scale: 3/4"=1'-0" Date: Feb. 2003<br>SHEET No. H5 OF 9 SHEETS |                                                     |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 19        | 32           |



**DETAILS OF GUTTER, TYPE 2(61616)**

**MODIFIED TYPE "A" INLET STRUCTURE AT STA. 10+86± LT.**

|                   |      |          |
|-------------------|------|----------|
| ORIGINAL PLAN     | DATE | 10/22/02 |
| SURVEY PLOTTED BY |      |          |
| DRAWN BY          |      |          |
| DESIGNED BY       |      |          |
| CHECKED BY        |      |          |
| NOTED BY          |      |          |
| QUANTITIES BY     |      |          |
| REVISIONS         |      |          |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

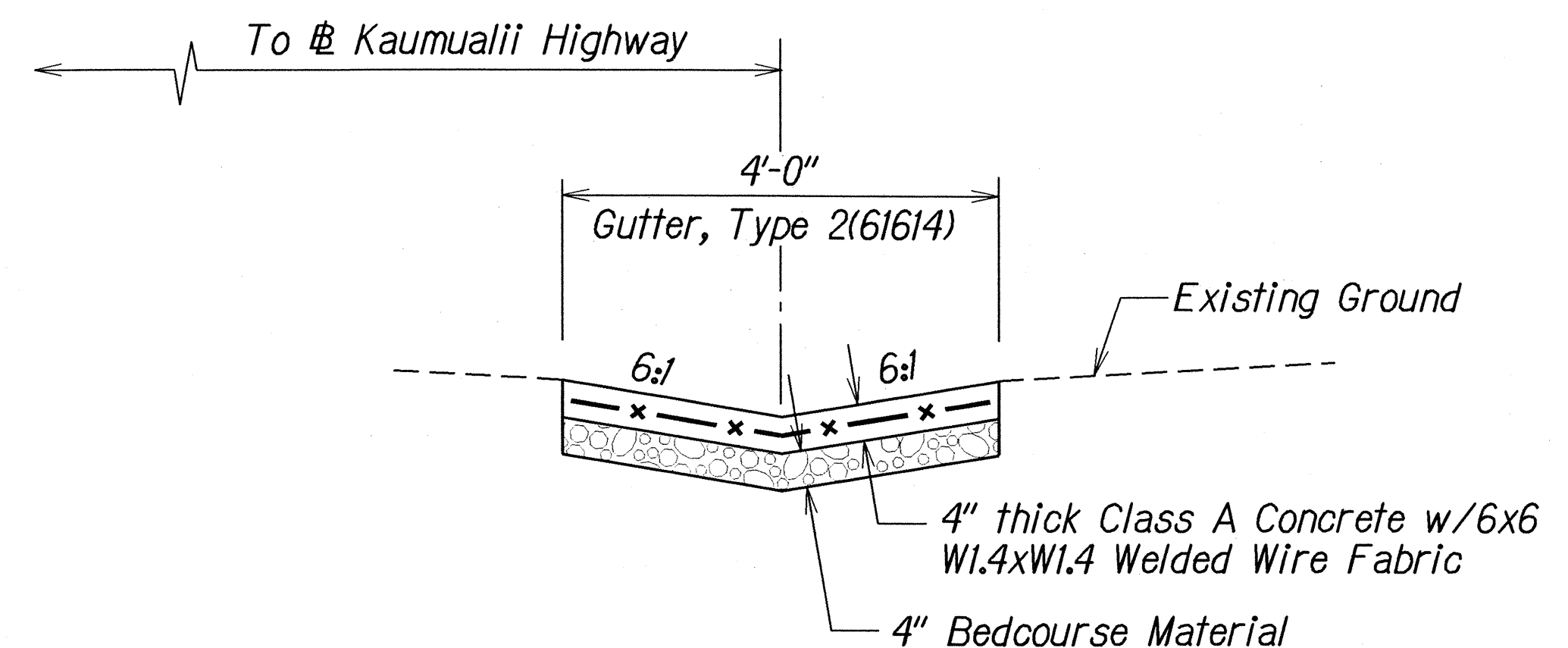
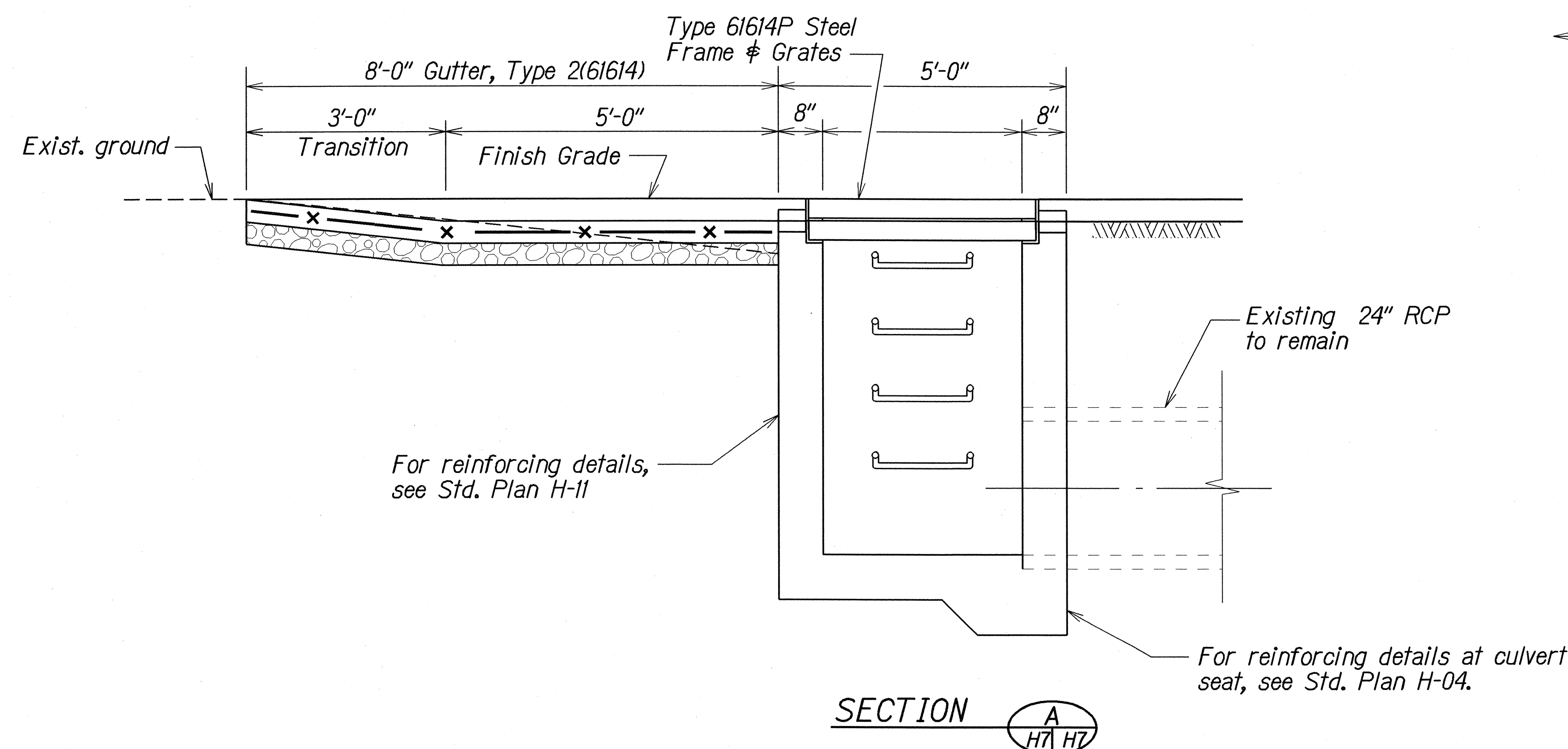
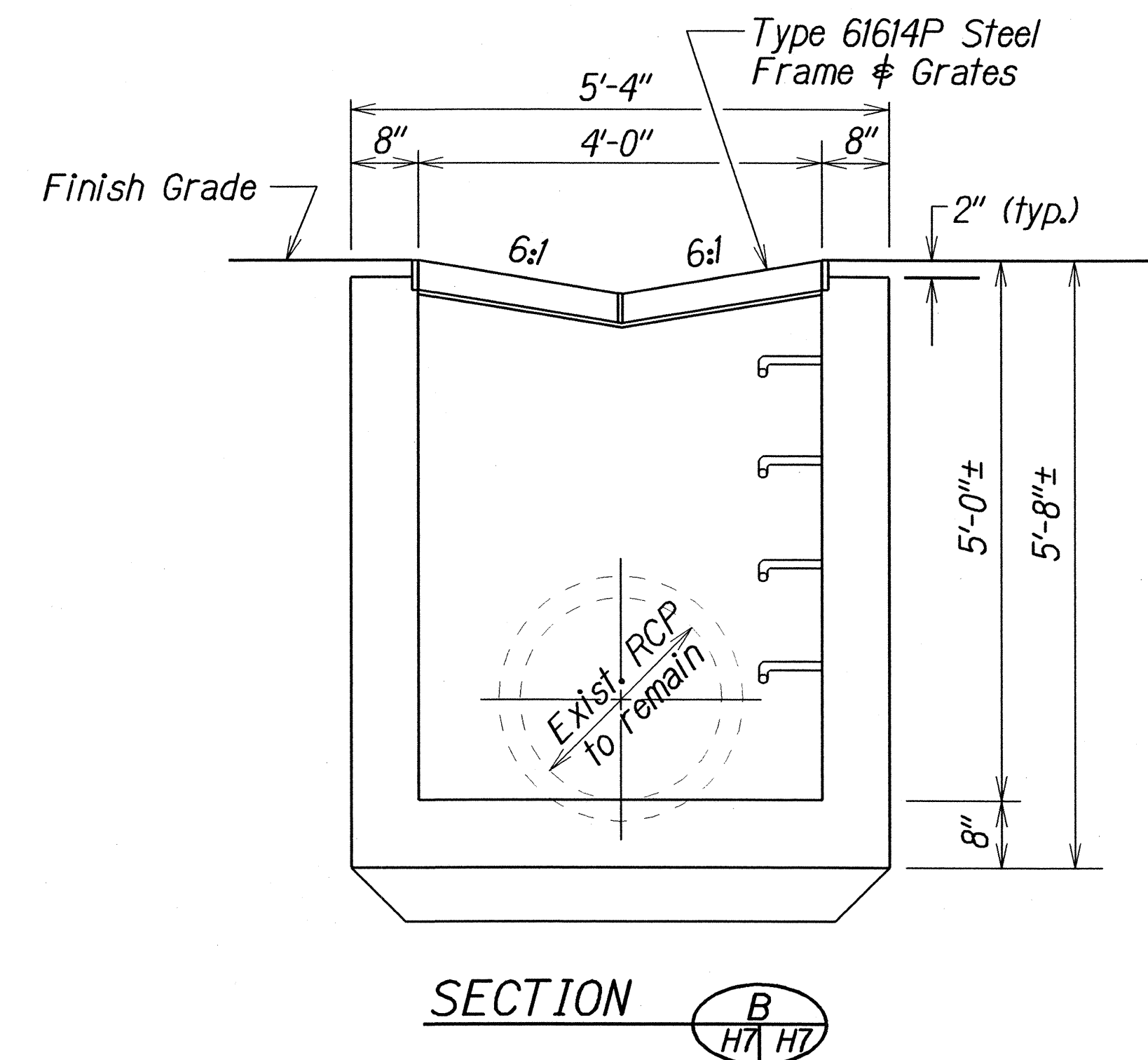
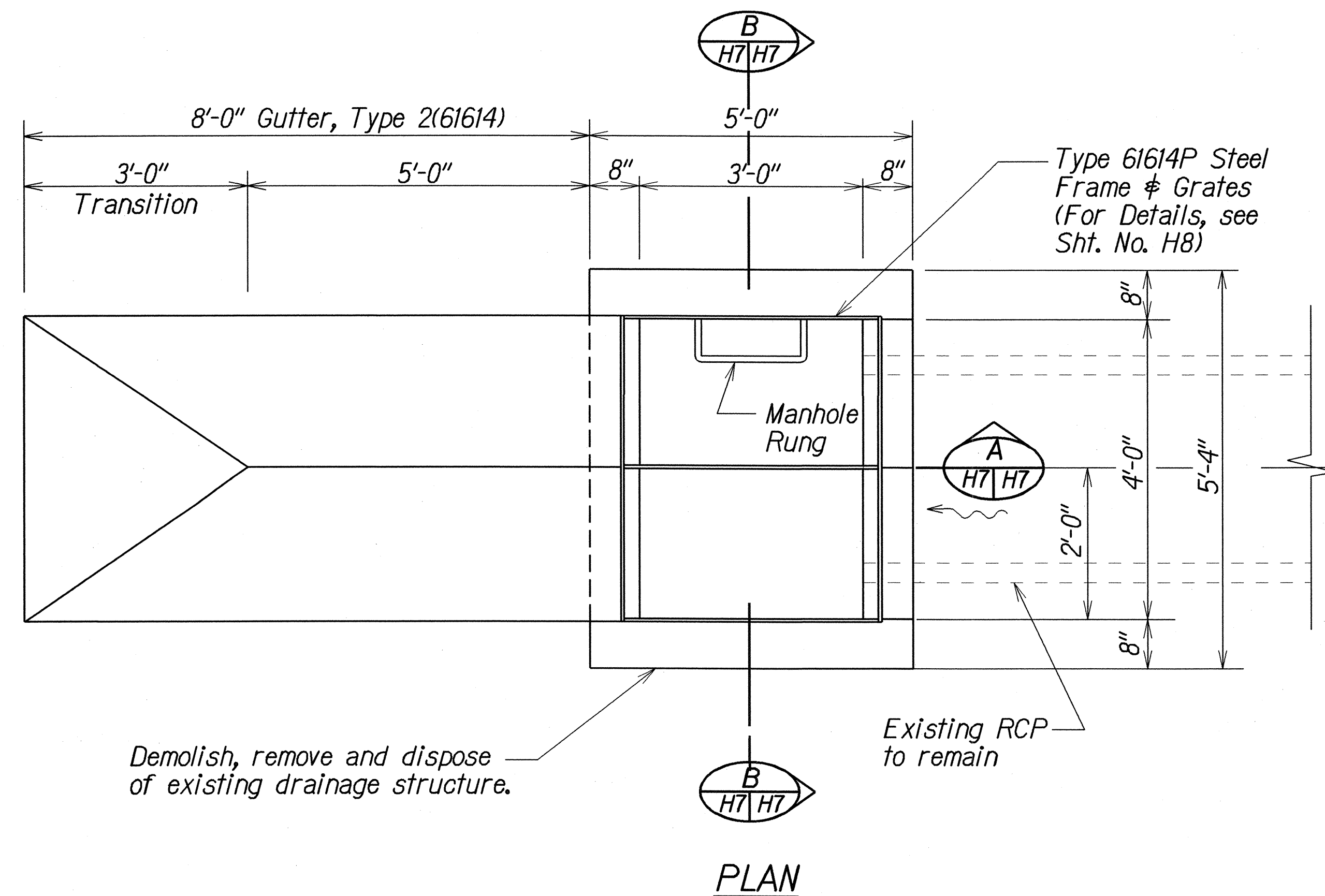
**DRAINAGE DETAILS**

**KAUMUALII HIGHWAY RESURFACING**  
**Lawai Bridge to Halewili Road, Kalaheo**  
**Project No. 50C-01-01M**

Scale: 3/4"=1'-0" Date: Feb. 2003

SHEET No. H6 OF 9 SHEETS

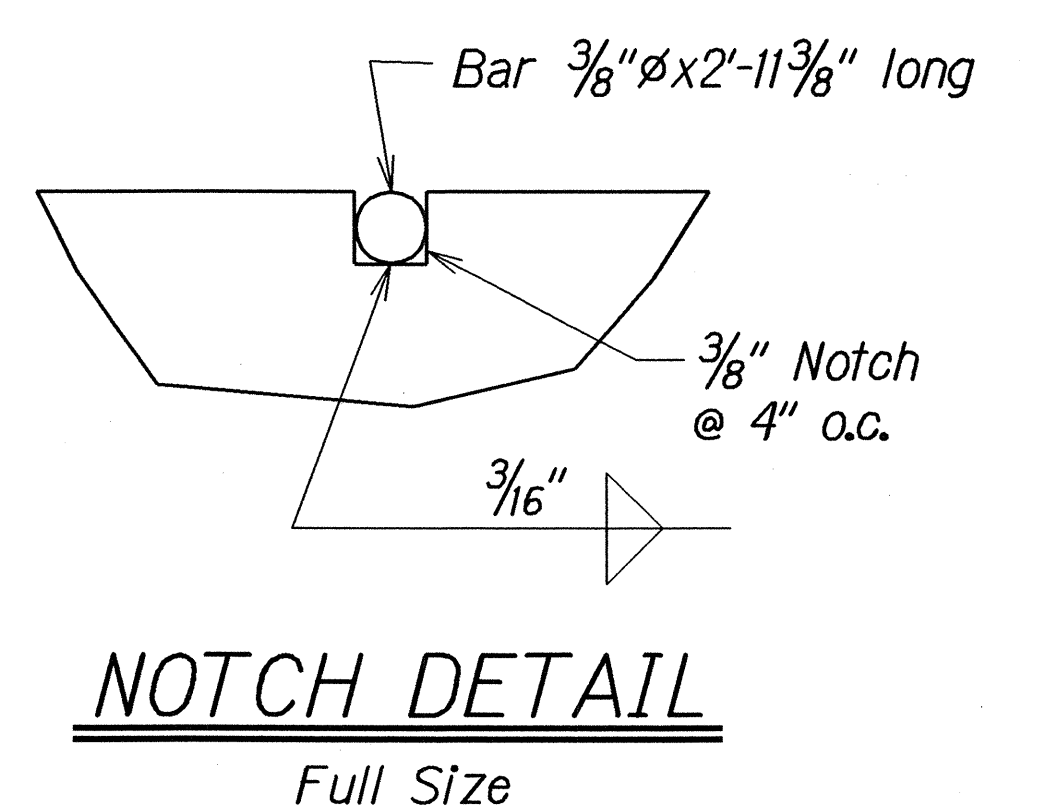
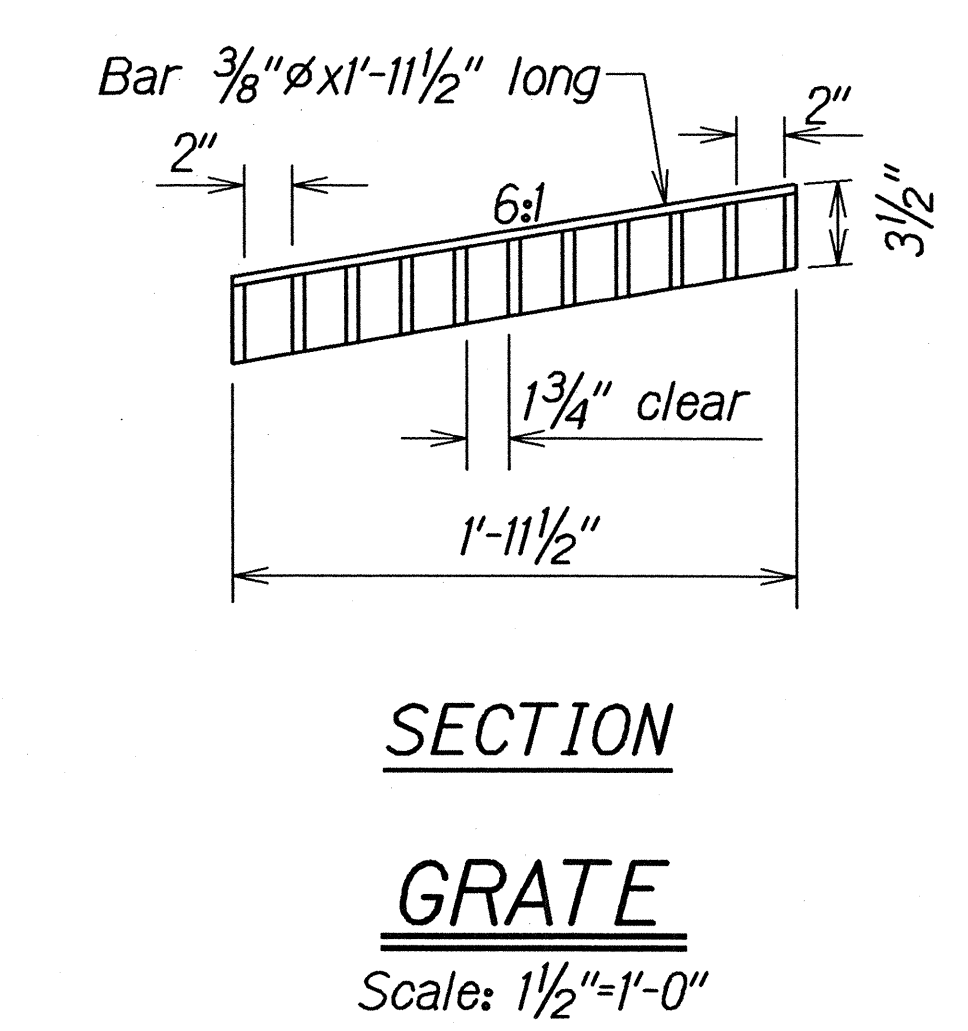
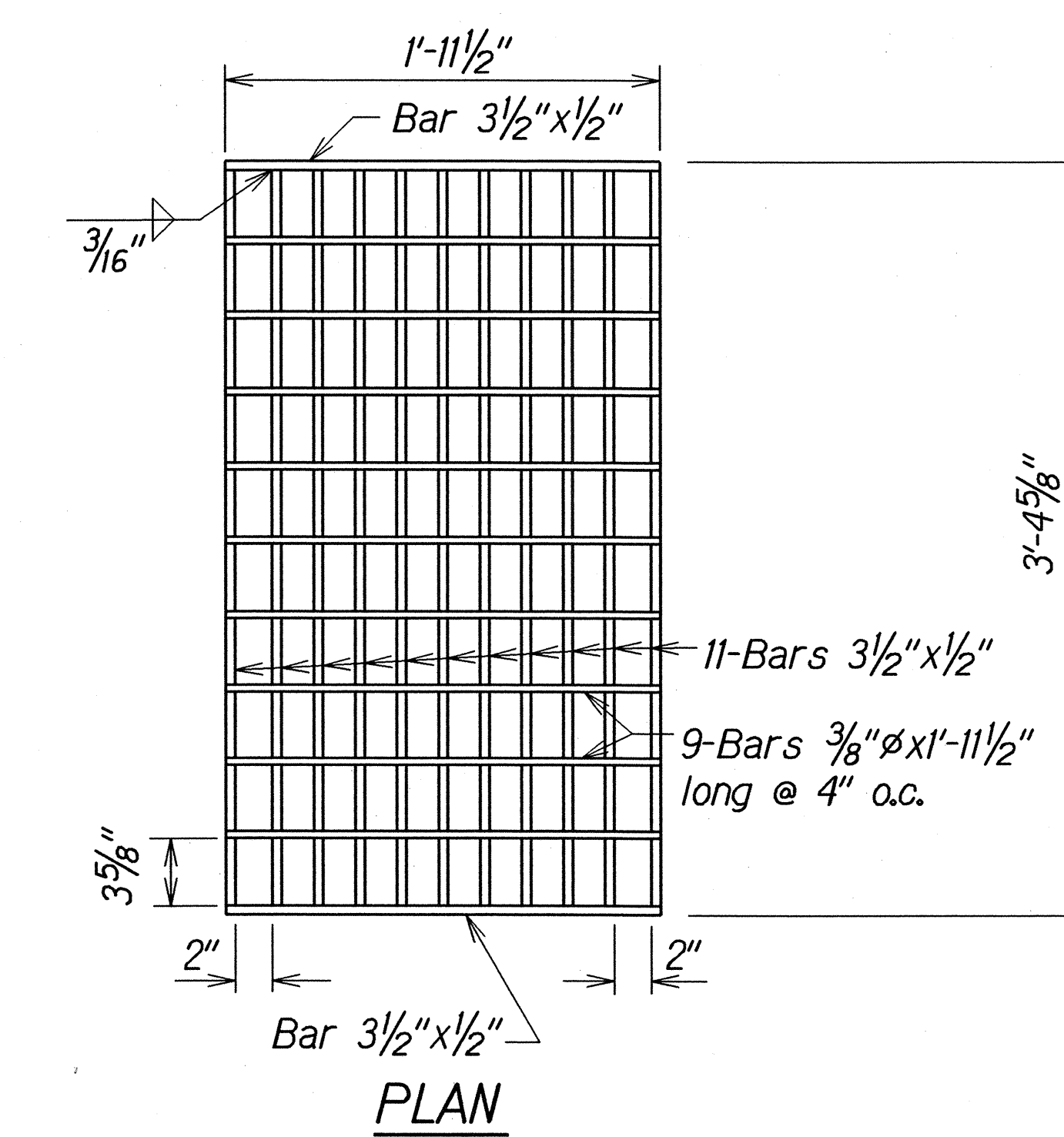
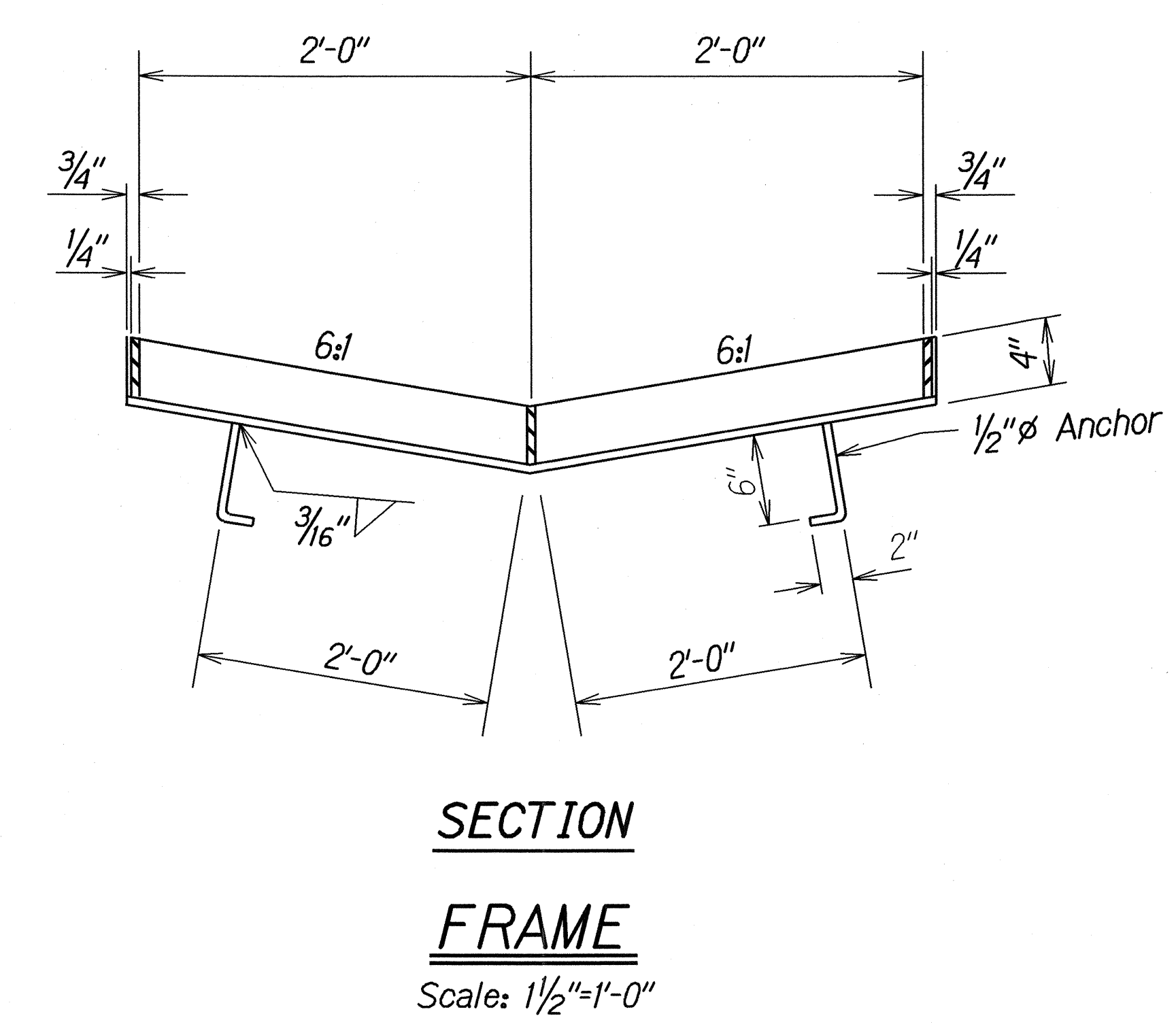
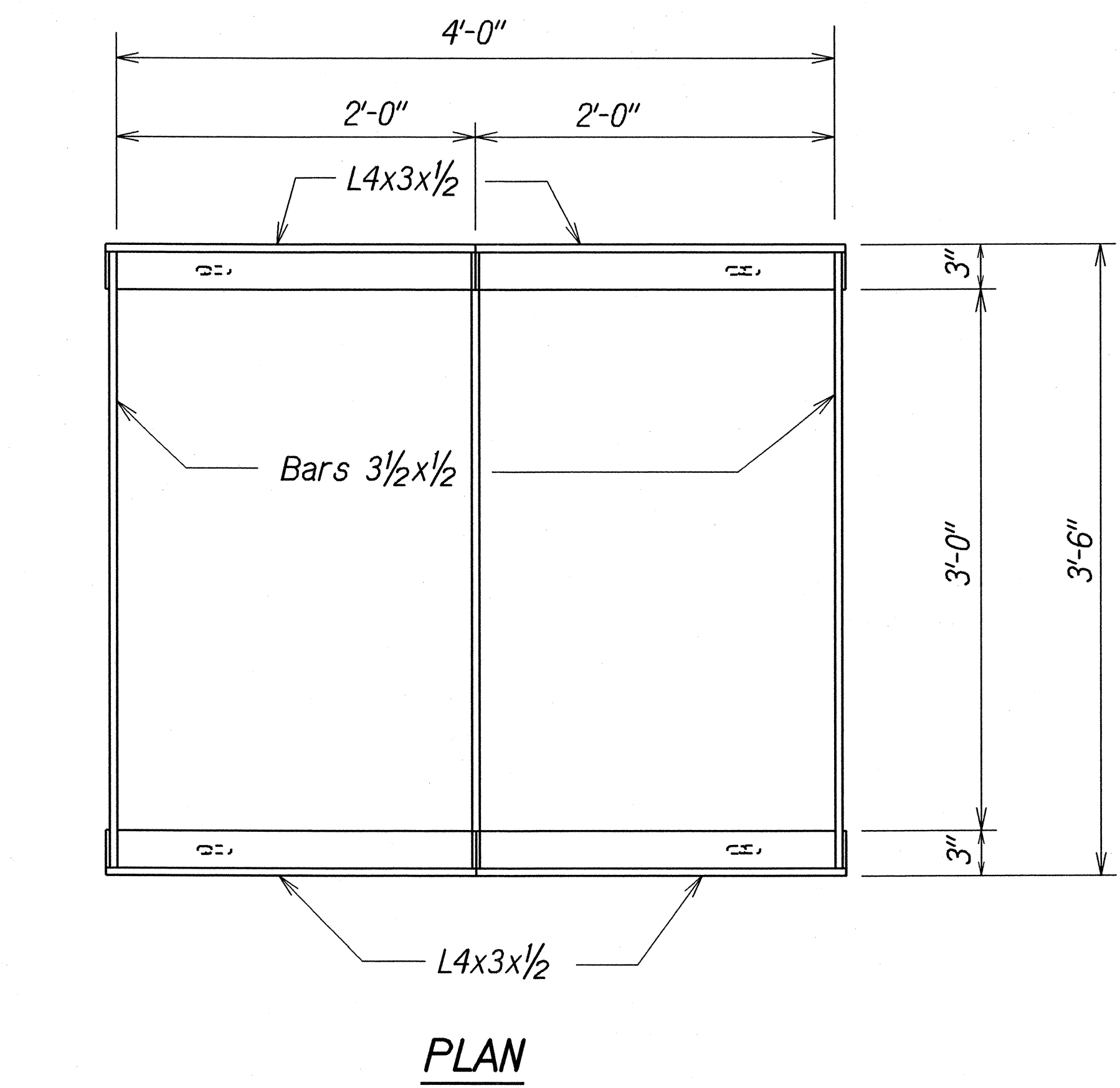
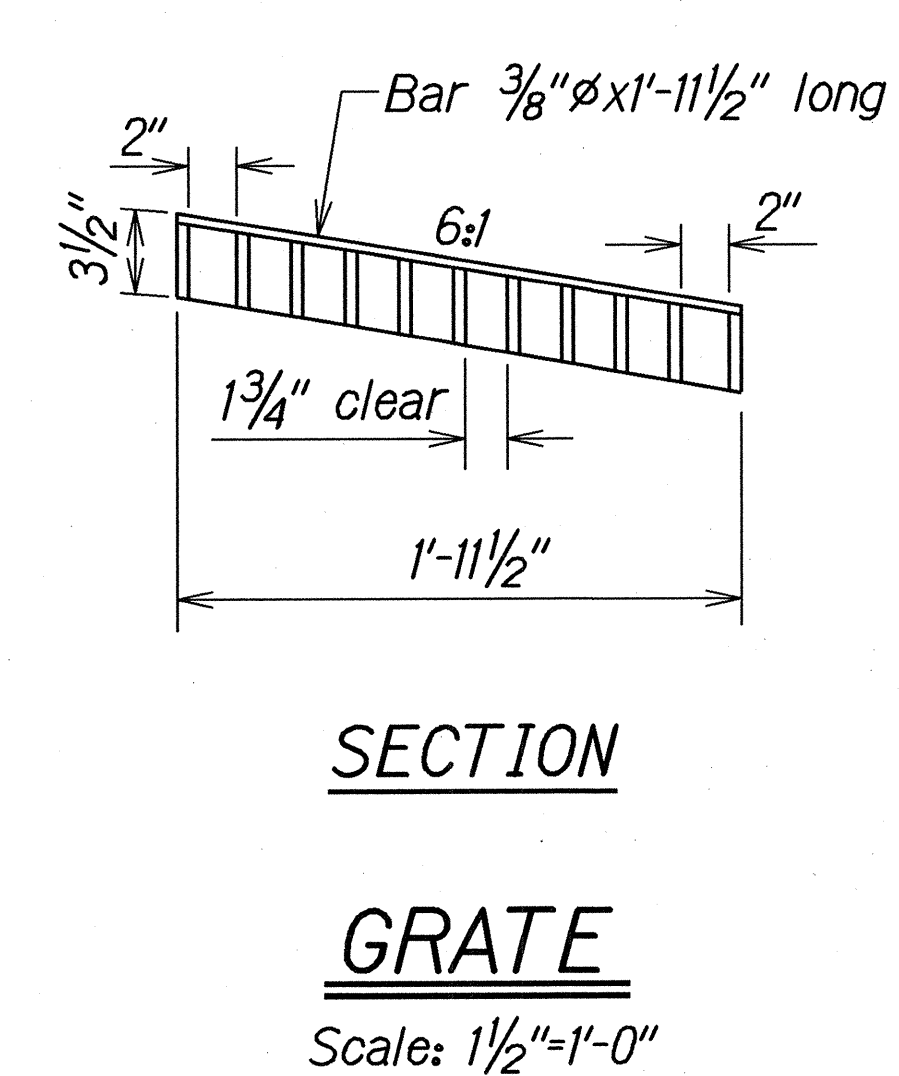
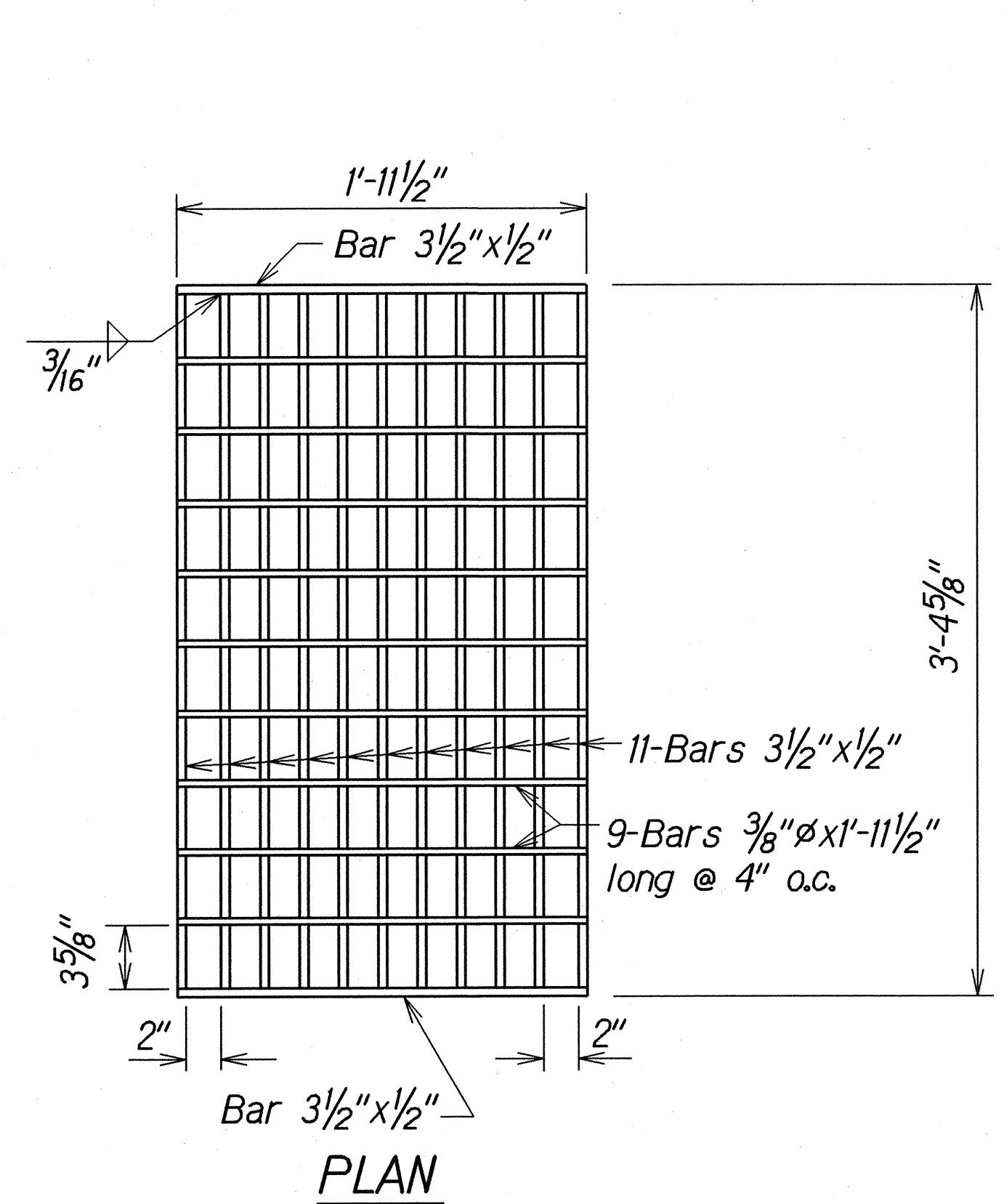
| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 20R       | 32           |



# **DETAILS OF TYPE 61614P GRATED DROP INLET @ STA. 15+46± LT.**

| 5/30/03                                                                                                                                                                                                                                                               | Amended sheet reference in plan view from H9 to H8. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| DATE                                                                                                                                                                                                                                                                  | REVISION                                            |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>DRAINAGE DETAILS</b><br>KAUMUALII HIGHWAY RESURFACING<br>Lawai Bridge to Halewili Road, Kalaheo<br>Project No. 50C-01-01M<br>Scale: 3/4"=1'-0" Date: Feb. 2003<br>SHEET No. H7 OF 9 SHEETS |                                                     |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 21        | 32           |



NOTE:  
All welds 3/8" unless otherwise noted.

# DETAILS OF TYPE 61614P STEEL FRAME AND GRATES

|               |                   |          |
|---------------|-------------------|----------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE     |
| NOTE BOOK     | DRAWN BY          | 10/11/02 |
| 61614P        | DESIGNED BY       |          |
| 61614P        | CHECKED BY        |          |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## DRAINAGE DETAILS

KAUMUALII HIGHWAY RESURFACING

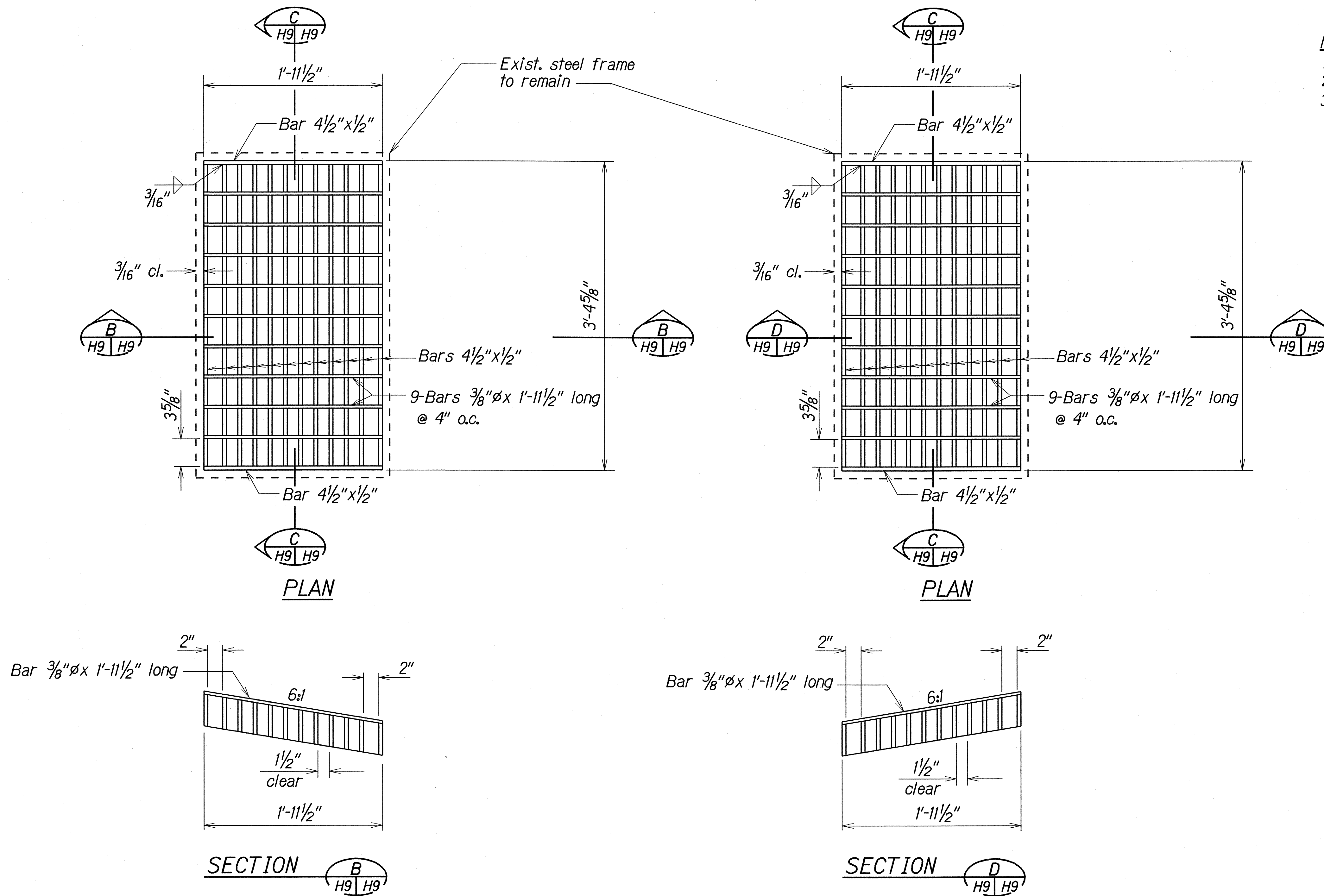
Lawai Bridge to Halewili Road, Kalaheo

Project No. 50C-01-01M

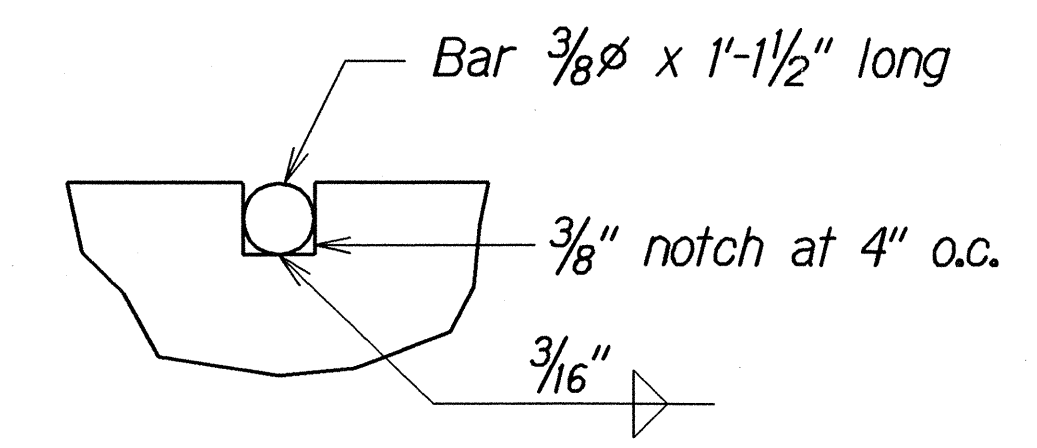
Scale: As Shown Date: Feb. 2003

SHEET No. H8 OF 9 SHEETS

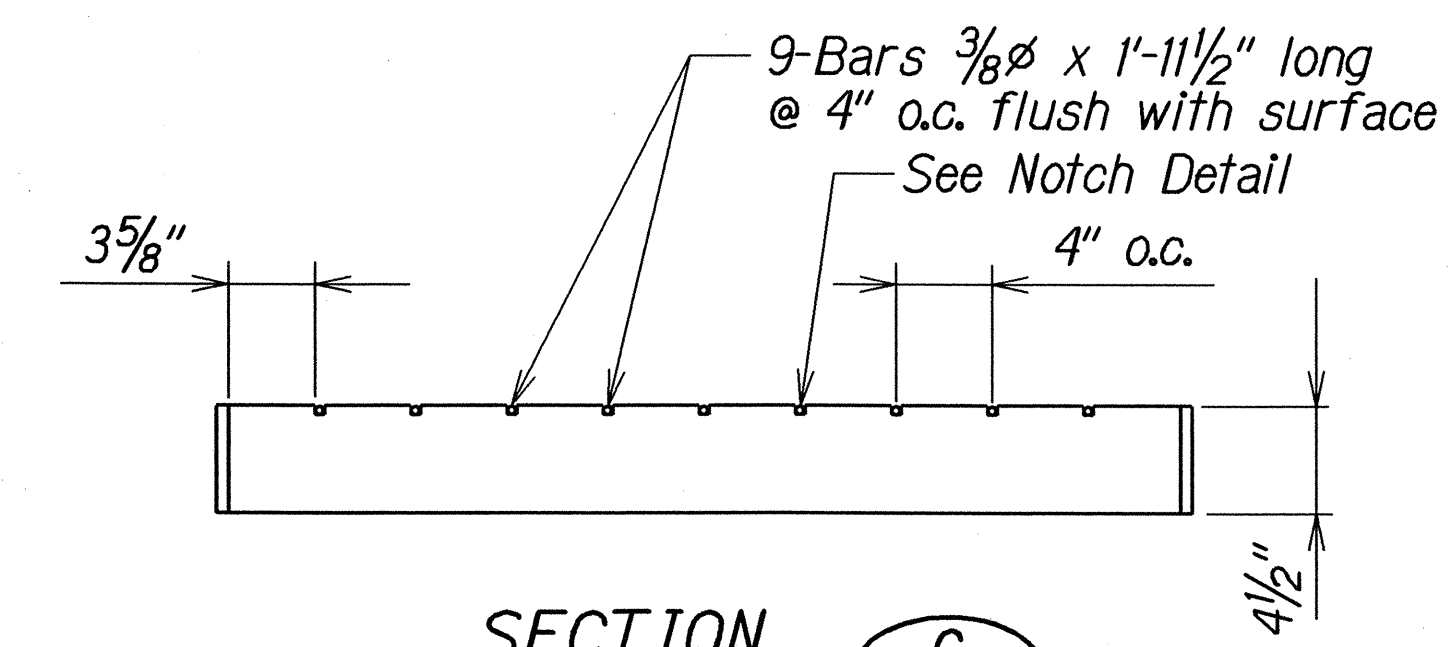
| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 50C-01-01M | 2003        | 22        | 32           |



- NOTES:**
1. Contractor shall verify size of frame before fabricating grates.
  2. Grates shall be hot dip galvanized after fabrication.
  3. All welds  $\frac{3}{8}$ " unless otherwise noted.



**NOTCH DETAIL**  
Full Size



**SECTION C**  
**GRATES**

**DETAIL OF MODIFIED TYPE 61614P STEEL GRATES**  
Scale: 1/2"=1'-0"

|               |                   |         |
|---------------|-------------------|---------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE    |
| NOTE BOOK     | DRAWN BY          | 10/1/02 |
| DESIGNED BY   | CHECKED BY        |         |
| QUANTITIES BY |                   |         |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**  
KAUMUALII HIGHWAY RESURFACING  
Lawai Bridge to Halewili Road, Kalaheo  
Project No. 50C-01-01M  
Scale: 1/2" = 1'-0" Date: Feb. 2003  
SHEET No. H9 OF 9 SHEETS