

DRAINAGE NOTES

1. Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract Items.

2. The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
3. Demolishing, removing, and disposing existing concrete headwall and portions of existing 30-inch RCP shall not be paid for separately, but shall be considered incidental to the Structure Excavation.

4. For Culvert Trench and Backfill Detail, see Sheet No. H7.

5. For Details of Type 61614P Frame and Grates, see Sheet No. H6.

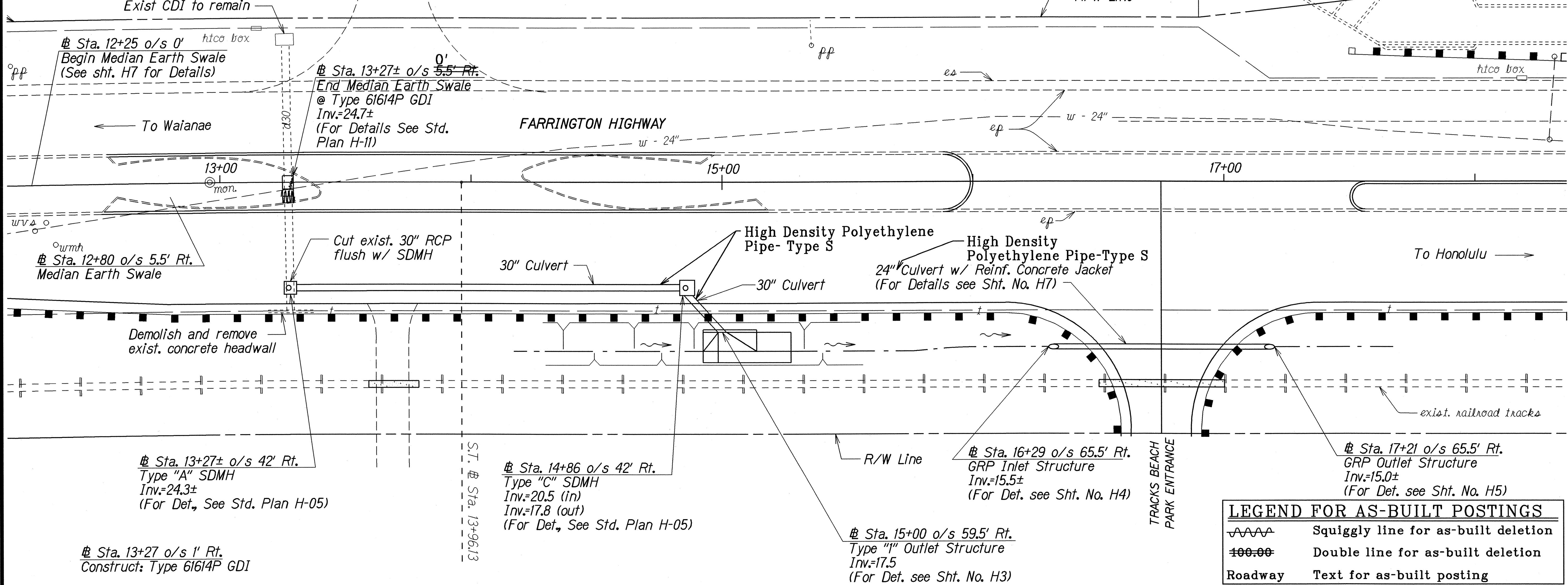
6. For added reinforcing around existing and new culverts at new storm drain manholes and grated drop inlet, see Standard Plan H-04.
7. For C.I. Frame and Cover and Manhole Rung details, see Standard Plan H-08.

8. Concrete shall be Class A unless otherwise noted.

9. Chamfer all exposed concrete edges 1".

10. Median Earth Swale shall not be paid for separately, but shall be considered incidental to 203.0100 Roadway Excavation.

|                     |       |                    |             |           |              |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII              | HAW.  | NH-093-1(19)       | 1999        | 20        | 49           |



# Sta. 13+27 o/s 1' Rt.  
Construct: Type 61614P GDI

Estimated Quantities  
Type 61614P GDI = 1 EA.

# Sta. 13+27 o/s 42' Rt.  
Construct: Type "A" SDM  
Install: 30" Culvert

Estimated Quantities  
Structure Excavation = 208 C.Y.  
Bedcourse Material = 34 C.Y.  
30" Culvert = 156 L.F.  
Type "A" SDM = 1 EA.

# Sta. 14+86 o/s 42' Rt.  
Construct: Type "C" SDM  
Install: 30" Culvert

Estimated Quantities  
Structure Excavation = 24 C.Y.  
Bedcourse Material = 5 C.Y.  
30" Culvert = 23 L.F.  
Type "C" SDM = 1 EA.

# Sta. 15+00 o/s 59.5' Rt.  
Construct: Type "I" Outlet Structure

Estimated Quantities  
Structure Excavation = 30 C.Y.  
Concrete (Class A) = 20 C.Y.  
Grouted Rubble Paving = 6 C.Y.  
Riprap = 35 C.Y.

# Sta. 16+29 o/s 65.5' Rt.  
Construct: GRP Inlet and Outlet Structure  
Install: 24" Culvert

Estimated Quantities  
Structure Excavation = 42 C.Y.  
Bedcourse Material = 31 C.Y.  
Reinforced Concrete Jacket = 75 L.F.  
24" Culvert = 92 L.F.  
Grouted Rubble Paving = 71 C.Y.

# Sta. 17+21 o/s 65.5' Rt.  
GRP Outlet Structure  
Inv.=15.0±  
(For Det. see Sht. No. H5)

| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
| Roadway                      | Text for as-built posting           |

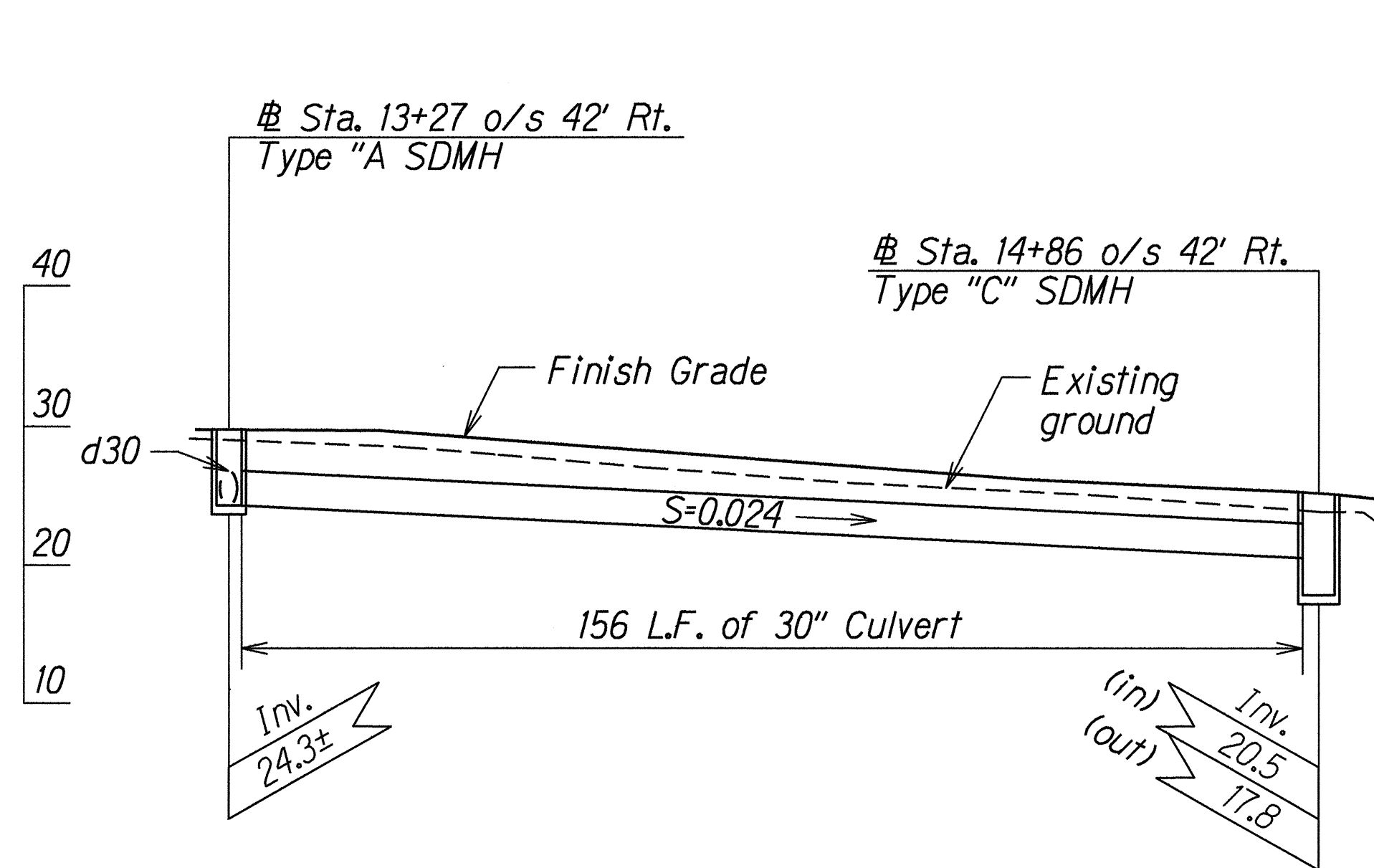
| 1/11/00                                                                                            | Relocated GDI at 13+27 & median swale |
|----------------------------------------------------------------------------------------------------|---------------------------------------|
| DATE                                                                                               | REVISION                              |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION                               |                                       |
| <b>DRAINAGE PLAN</b>                                                                               |                                       |
| FARRINGTON HWY. IMPROVEMENTS<br>Vicinity of Tracks Beach Park<br>Fed. Aid Project No. NH-093-1(19) |                                       |
| Scale: 1"=20'                                                                                      | Date: Sept., 1998                     |
| SHEET No. <b>HI</b> OF <b>7</b> SHEETS                                                             |                                       |

|               |             |
|---------------|-------------|
| DATE          | 7/31/98     |
| DESIGNED BY   | C. M. M. M. |
| CHECKED BY    | C. M. M. M. |
| NOTED BY      | C. M. M. M. |
| QUANTITIES BY | C. M. M. M. |
| ORIGINAL      | 1           |

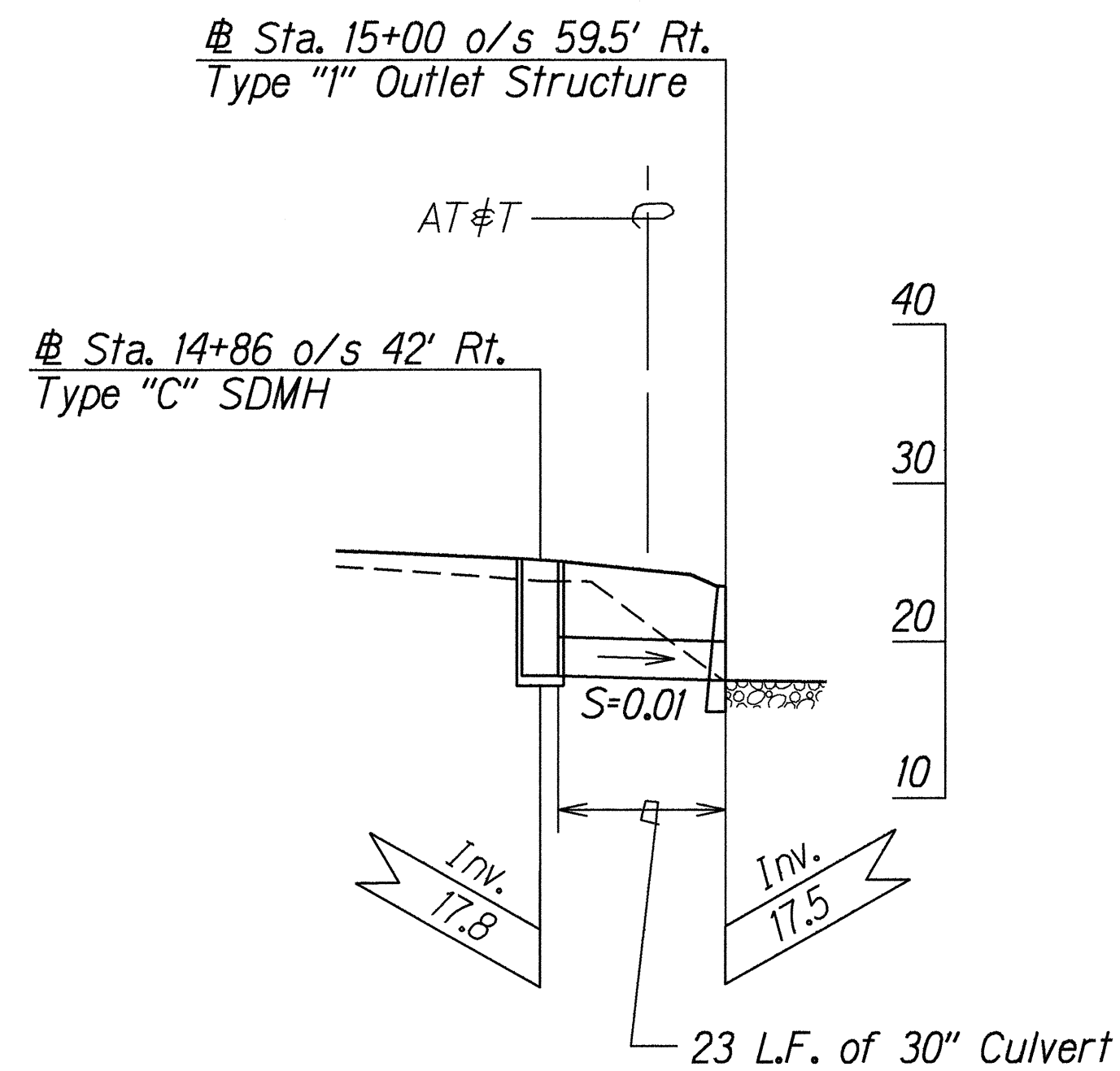
"AS-BUILT"

C.O. 20

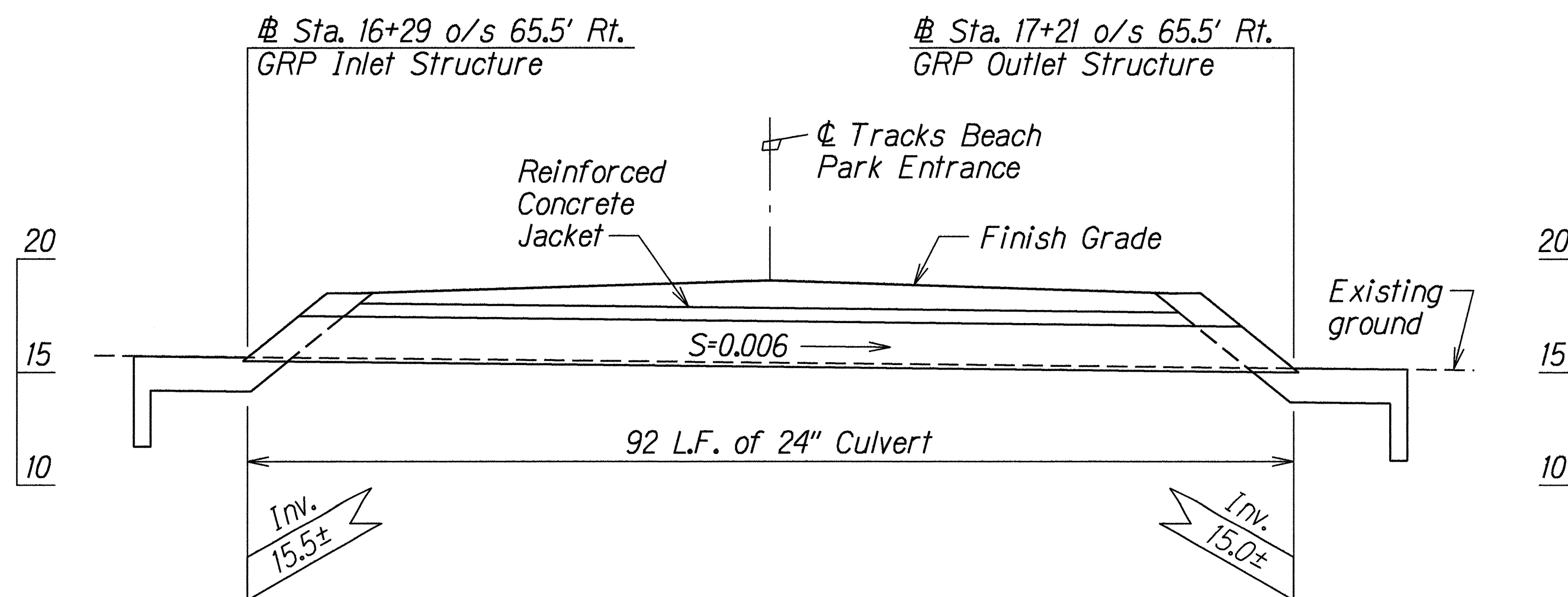
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-093-1(19)       | 1999        | 21        | 49           |



**Φ PROFILE - 30" CULVERT**  
**Sta. 13+27 RT. TO Sta. 14+86 RT.**  
 Scale: Horiz. 1"=20'  
 Vert. 1"=10'



**Φ PROFILE - 30" CULVERT**  
**Sta. 14+86 RT. TO Sta. 15+00 RT.**  
 Scale: Horiz. 1"=20'  
 Vert. 1"=10'



**Φ PROFILE - 24" CULVERT**  
**Sta. 16+29 RT. TO Sta. 17+21 RT.**  
 Scale: Horiz. 1"=10'  
 Vert. 1"=5'

|               |                        |        |
|---------------|------------------------|--------|
| ORIGINAL PLAN | SURVEY PLOTTED BY      | DATE   |
| NOTE BOOK     | DRAWN BY A. Noma       | 8/5/98 |
| REVISIONS     | DESIGNED BY C. Matsuda |        |
| CHECKED BY    | APPROVED BY            |        |

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

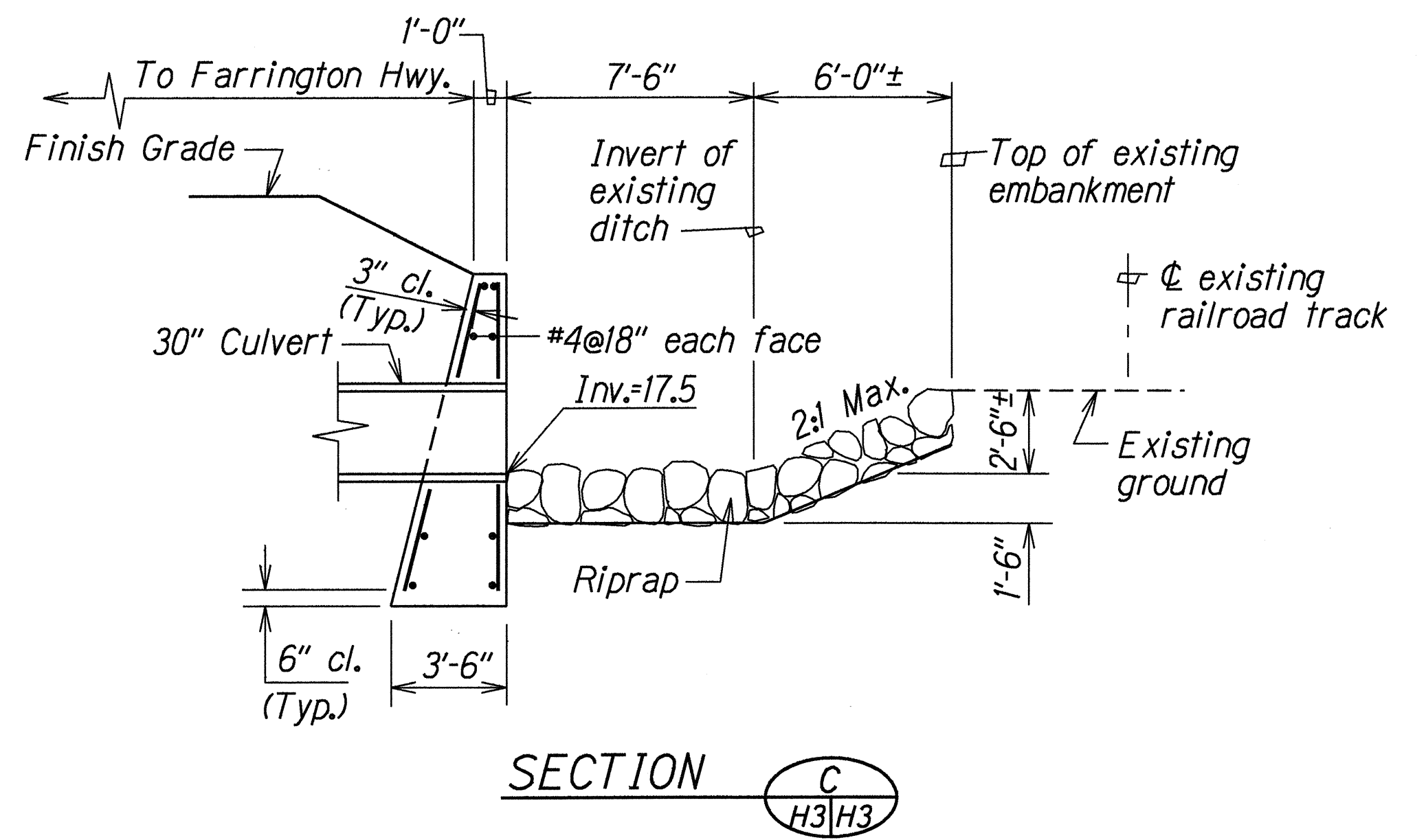
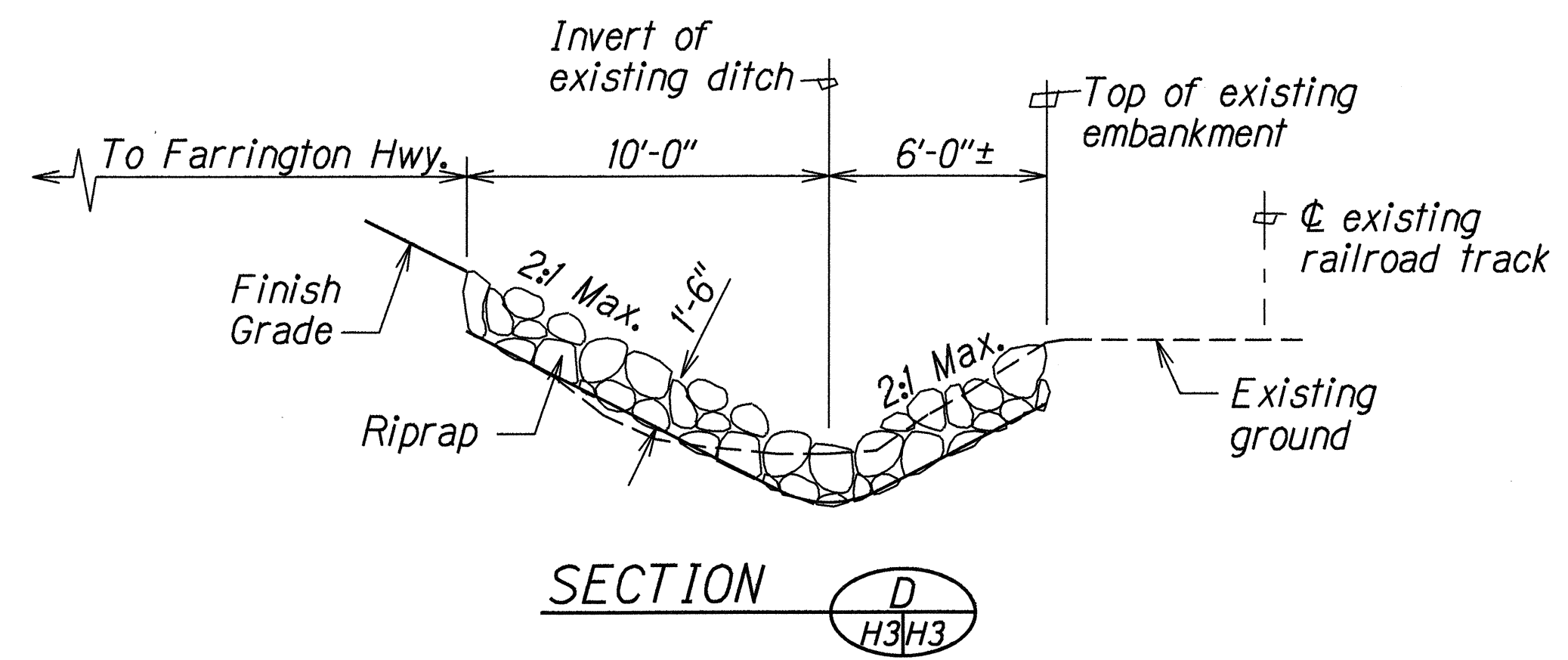
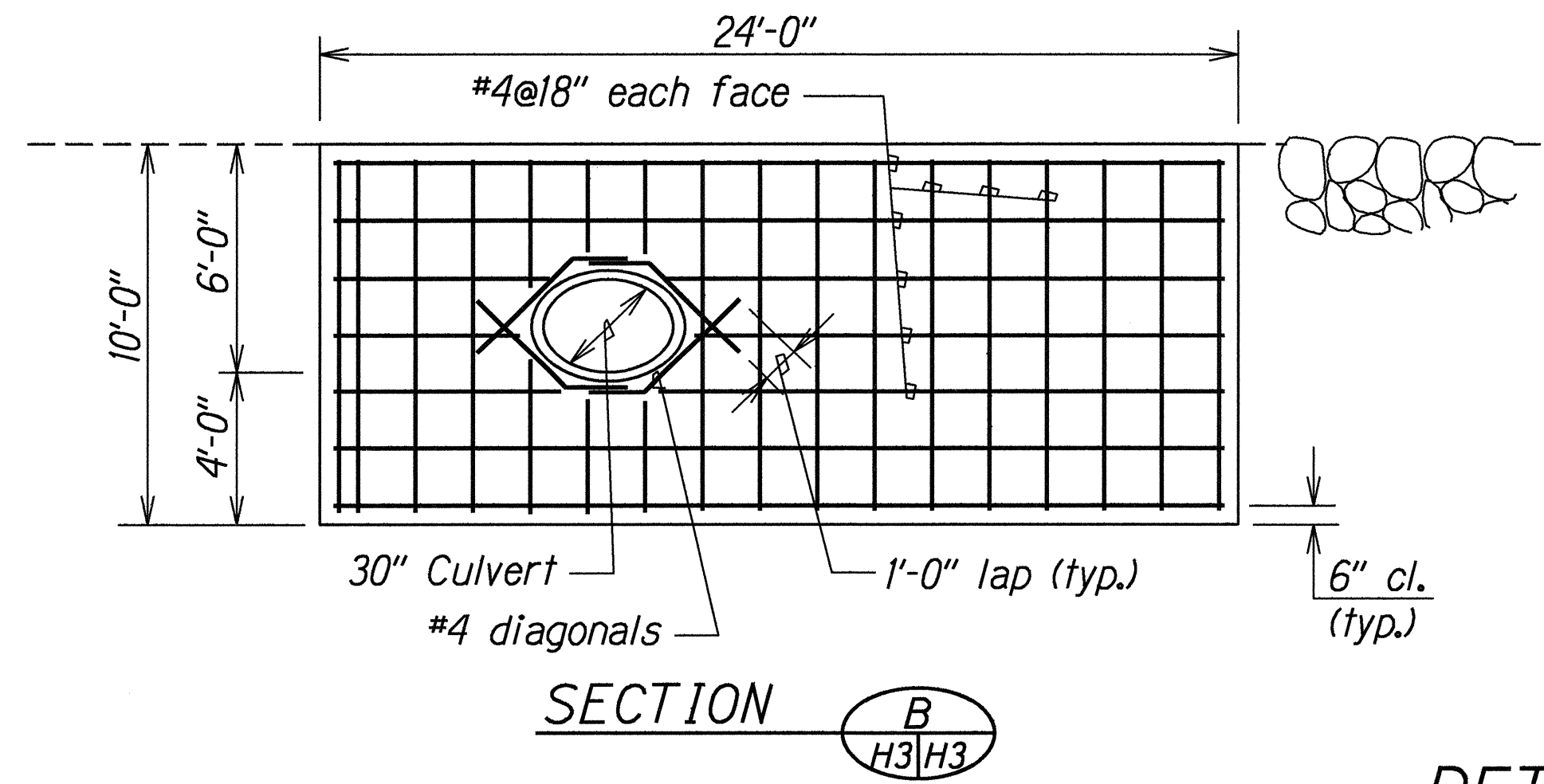
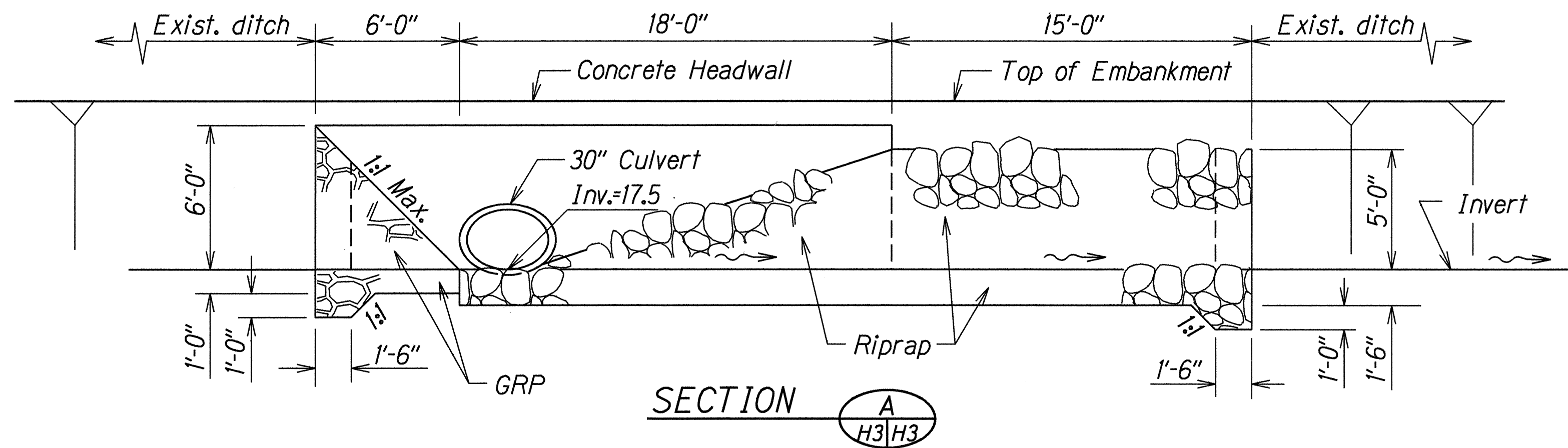
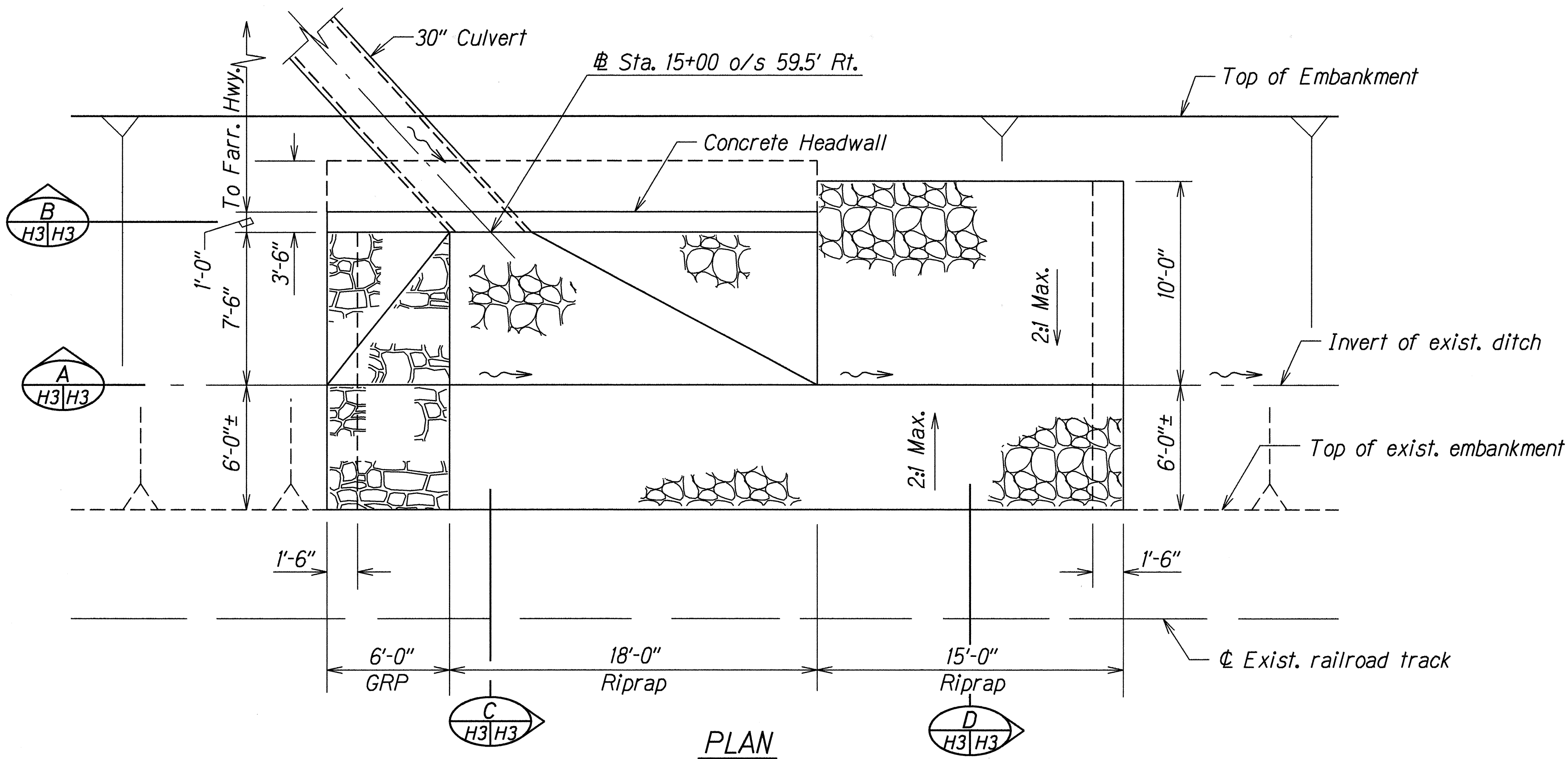
**DRAINAGE PROFILES**

**FARRINGTON HWY. IMPROVEMENTS**  
Vicinity of Tracks Beach Park  
Fed. Aid Project No. NH-093-1(19)

Scale: As Shown Date: Sept. 1998

SHEET No. H2 OF 7 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-093-1(19)       | 1999        | 22        | 49           |



# DETAILS OF TYPE "1" OUTLET STRUCTURE

|               |      |         |
|---------------|------|---------|
| ORIGINAL PLAN | DATE | 8/15/98 |
| DESIGNED BY   | DATE |         |
| CHECKED BY    | DATE |         |
| APPROVED BY   | DATE |         |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## DRAINAGE DETAILS

FARRINGTON HWY. IMPROVEMENTS  
Vicinity of Tracks Beach Park  
Fed. Aid Project No. NH-093-1(19)

Scale: 1/4"=1'-0"      Date: Sept. 1998

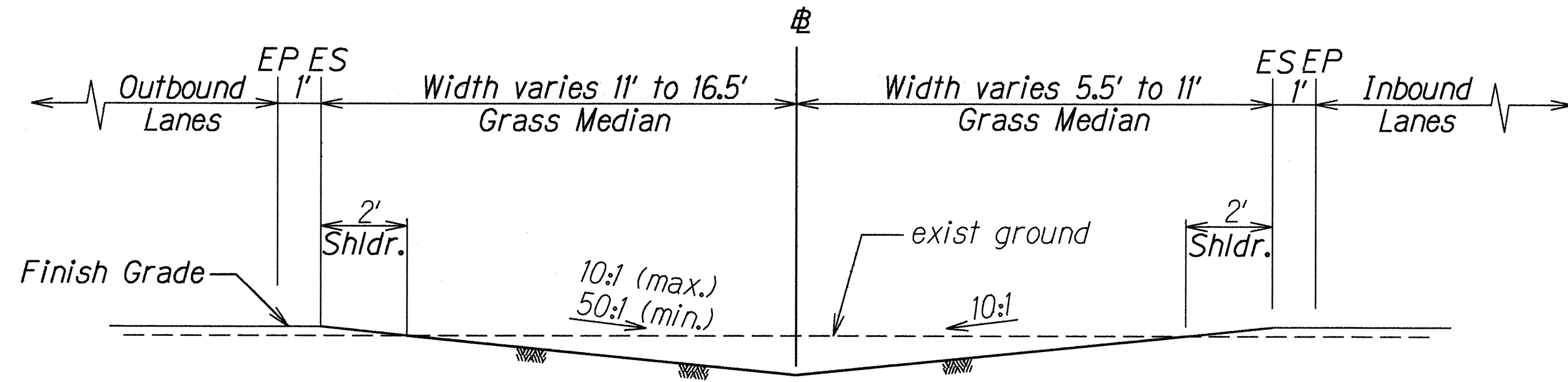
SHEET No. H3 OF 7 SHEETS







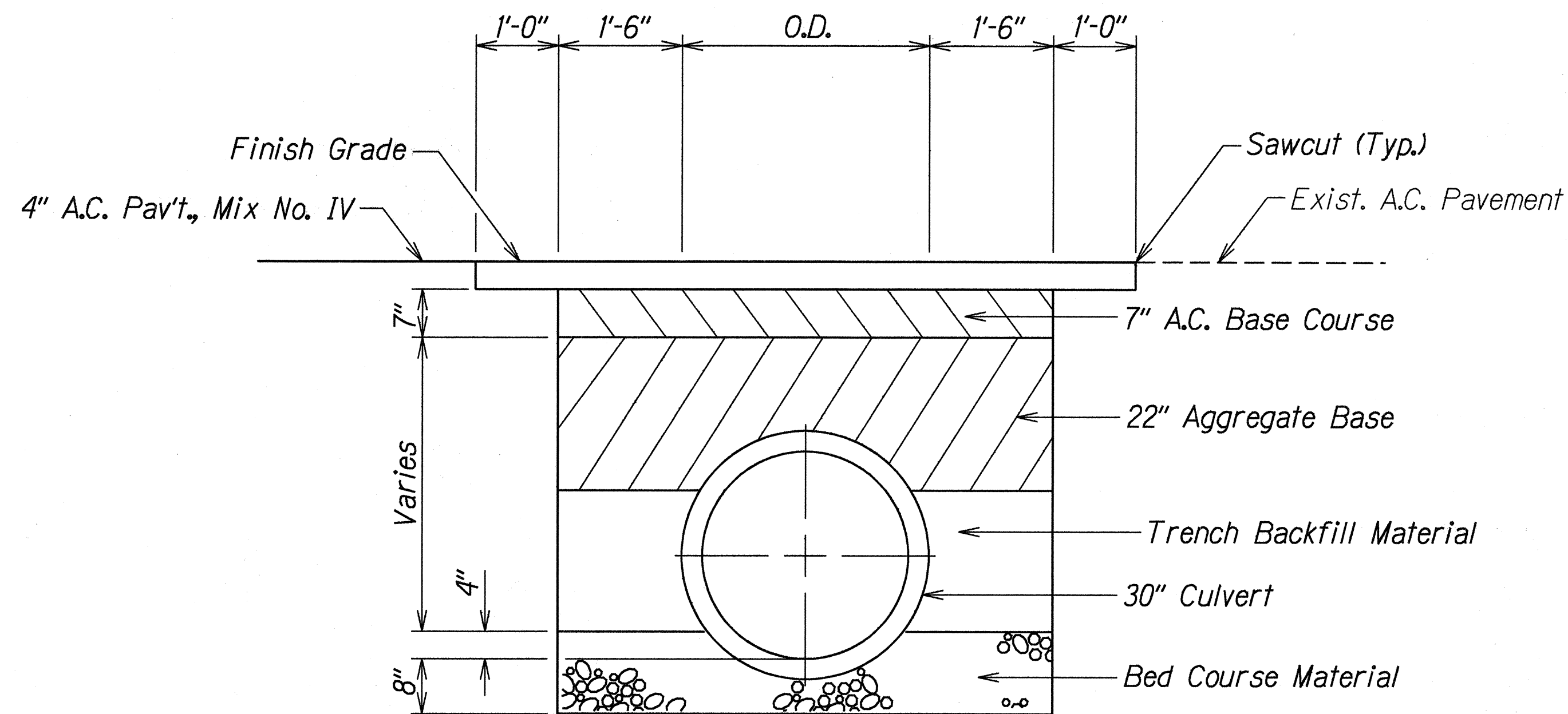
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-093-1(19)       | 1999        | 26        | 49           |



### MEDIAN EARTH SWALE DETAIL

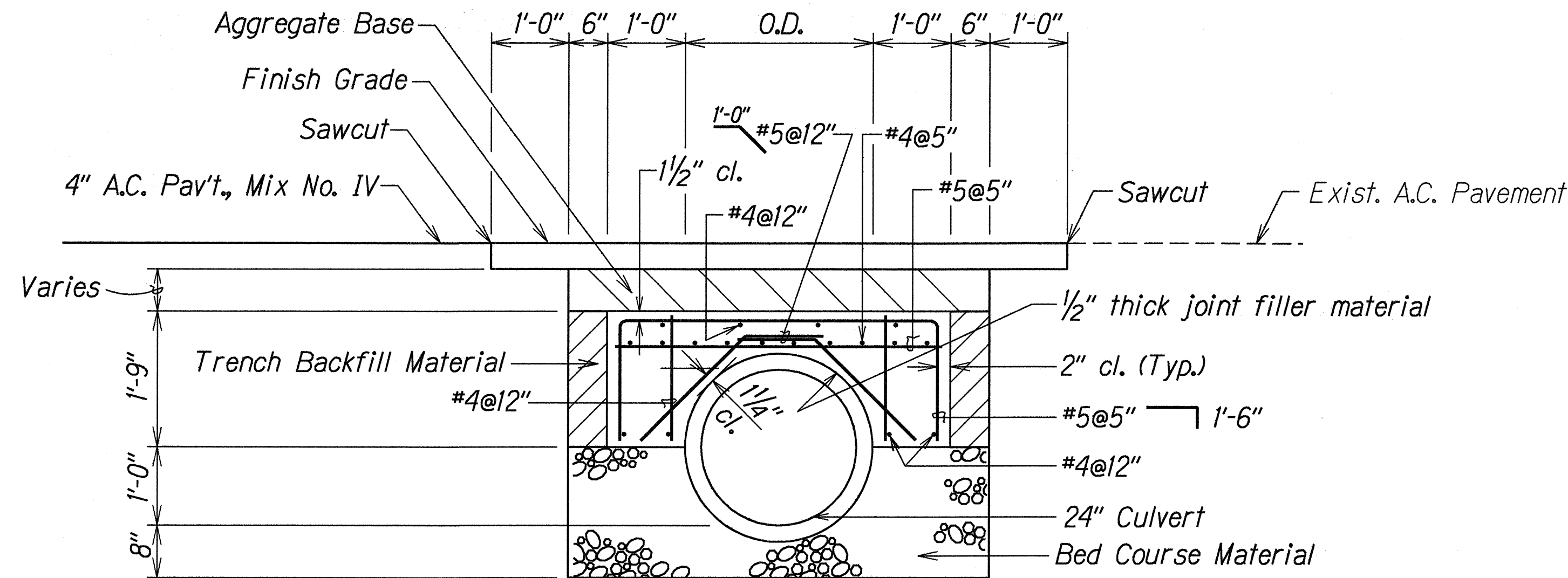
± STA. 12+25 to ± STA. 13+27±

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



### TYPICAL DETAILS OF 30" CULVERT TRENCH RESTORATION

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



### TYPICAL DETAILS OF 24" CULVERT TRENCH RESTORATION

WITH REINFORCED CONCRETE JACKET

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

|               |                   |      |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK     | DRAWN BY          |      |
| dh3curtis     | CHECKED BY        |      |
| 8/29/10/06    |                   |      |

1/11/00 Revised median swale detail  
11/29/99 Revised Concrete Jacket Def.

DATE REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**DRAINAGE DETAILS**  
FARRINGTON HWY. IMPROVEMENTS  
Vicinity of Tracks Beach Park  
Fed. Aid Project No. NH-093-1(19)

Scale: As Shown Date: Sept., 1998

SHEET No. H7 OF 7 SHEETS

C.O. 26