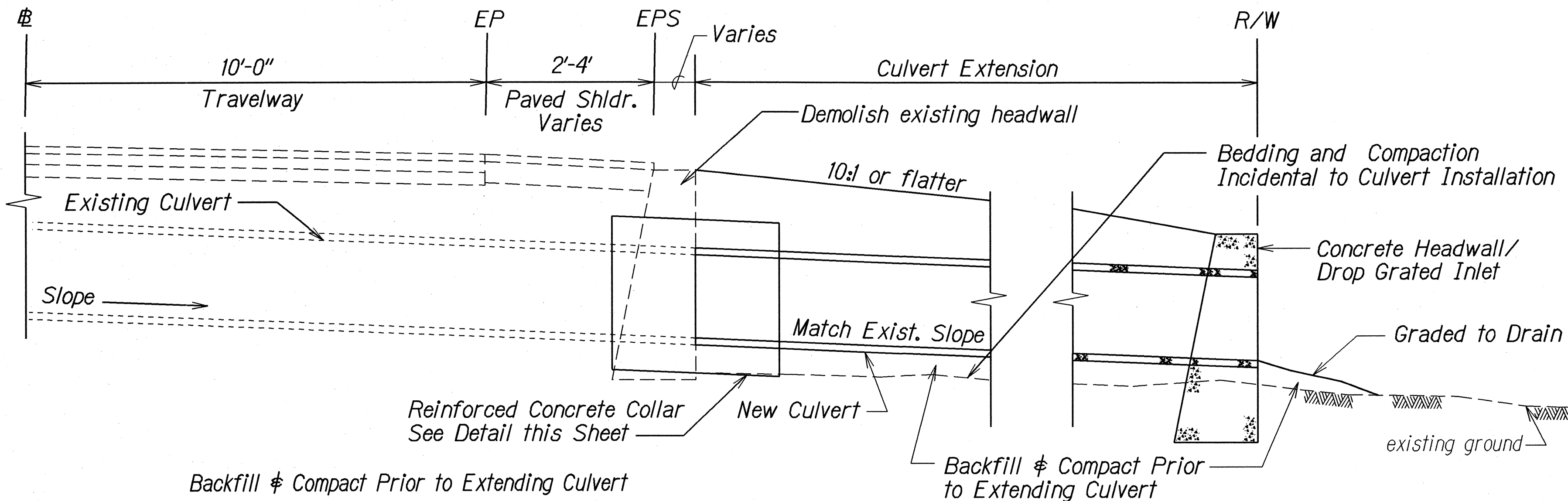


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	450B-01-02M	2002	10	40

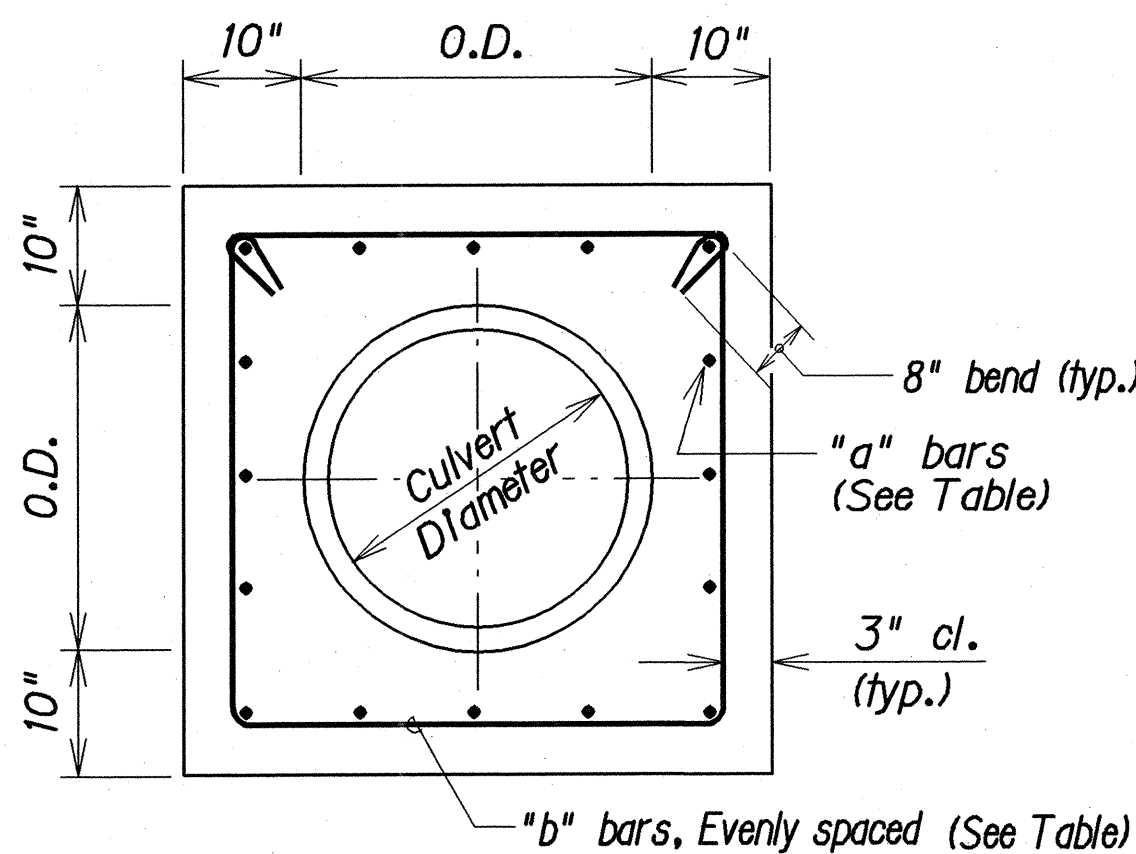
### MISCELLANEOUS DRAINAGE NOTES:

- Existing drainage system will be functional at all times during construction. Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow, the cost of which shall be incidental to the various contract items.
- Demolishing and/or removing a portion or the entire existing structure shall not be paid for separately, but shall considered incidental to the various contract items.
- Culverts within the graded drop inlets shall be cut flush with the inside face of the wall. Above work shall be considered incidental to the various contract items.
- Contractor shall verify the locations of all culverts in the field. Any culvert damaged during construction shall be repaired or replaced by the Contractor at his expense.
- Concrete for graded drop inlets and other structures shall be Class "A".
- Inlet and Outlet conditions shall be cleaned and graded to permit free flow of run-off or as directed by the Engineer. Cleaning and grading shall be to the satisfaction of the Engineer. Above work shall be considered incidental to the various contract items.
- The Contractor shall provide bedding materials for culvert, Class "C" bedding. Payment for this work will not be paid for separately but will be considered incidental to the various contract items.
- Reinforcing Steel for Concrete Structures will not be paid for separately but shall be considered incidental to various contract items.
- Location and elevations of new structures must be laid out in the field for the Engineer's approval.
- Chamfer all exposed edges 1".
- Quantities are approximate only. Contractor shall conduct an independent survey of worksites to verify and validate pay quantities.
- Reinforced concrete collar will not be paid for separately but shall be considered incidental to installation of culverts.

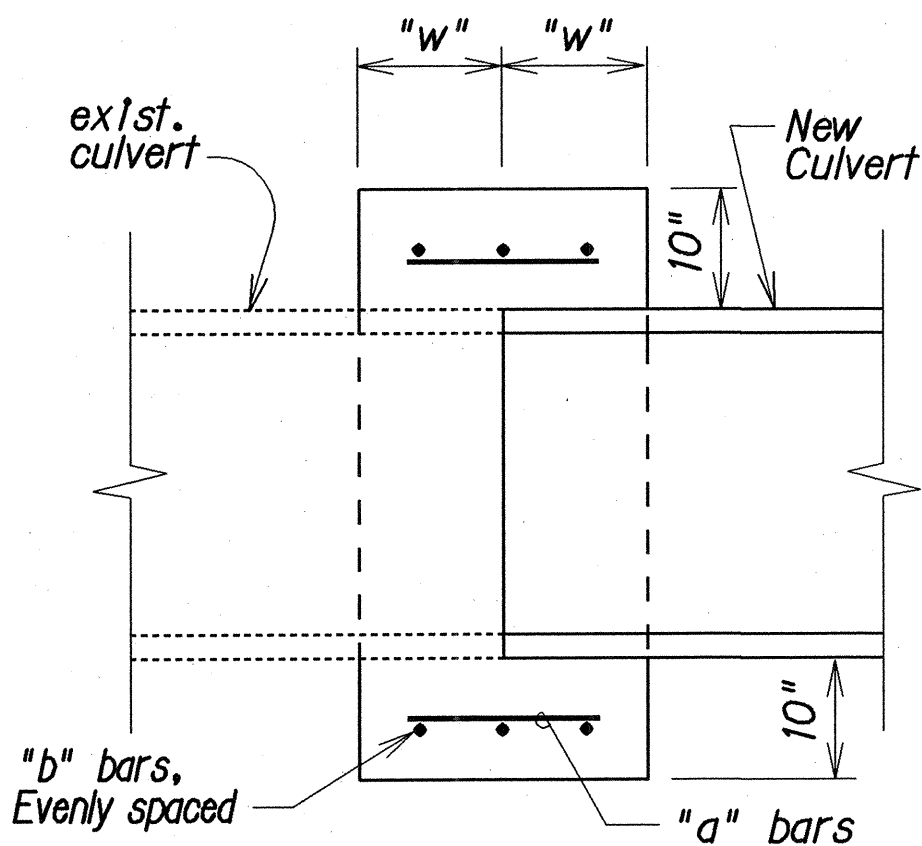


### DETAIL - TYPICAL CULVERT EXTENSION DETAIL

Scale: 1/2"=1'



### ELEVATION

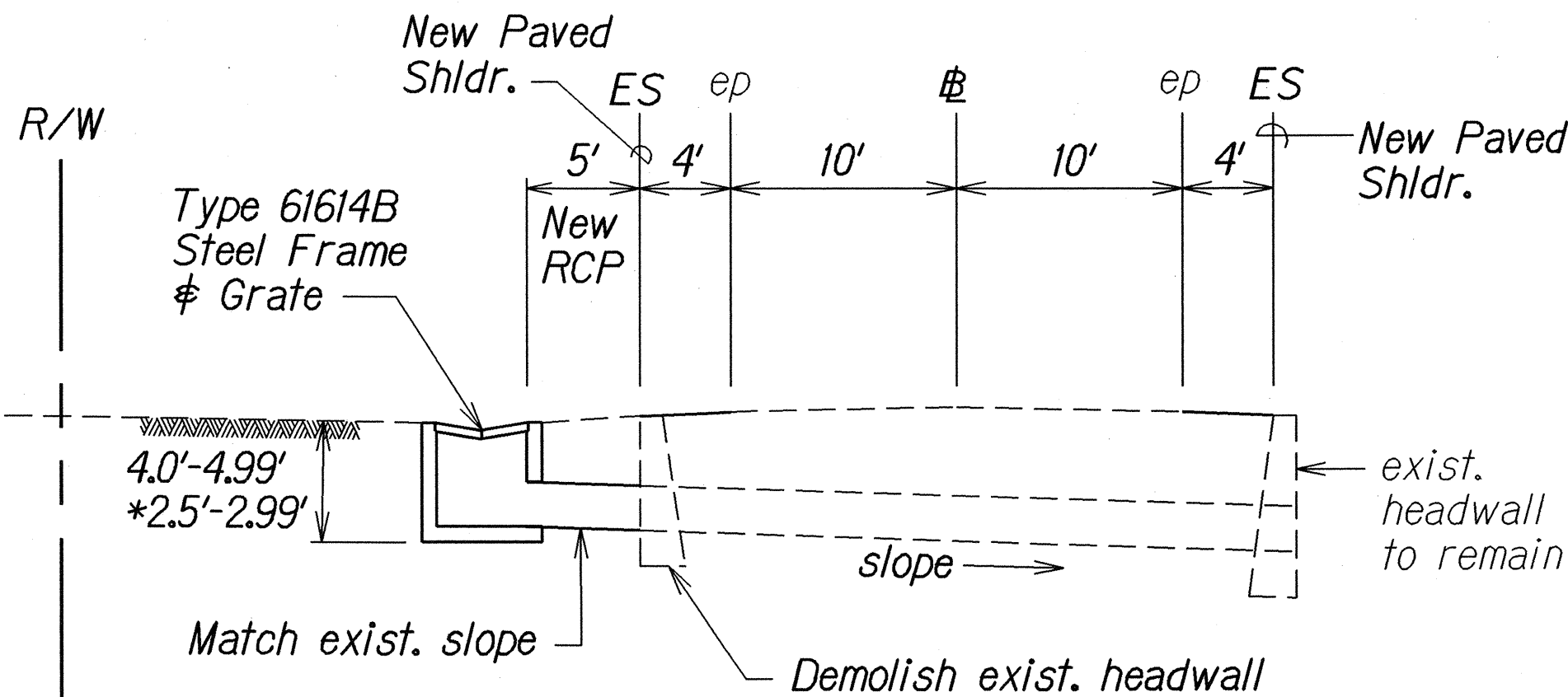


### SECTION

### TYPICAL DETAILS REINFORCED CONCRETE COLLAR

Culvert Diameter	"a" bars	"b" bars	"w"
18" to 30"	#4 @ 9"	3- #4	12"
36" to 48"	#5 @ 9"	4- #4	15"

Note:  
Reinforcing Steel for Concrete Collar shall conform to the requirements of ASTM 615-Grade 60.

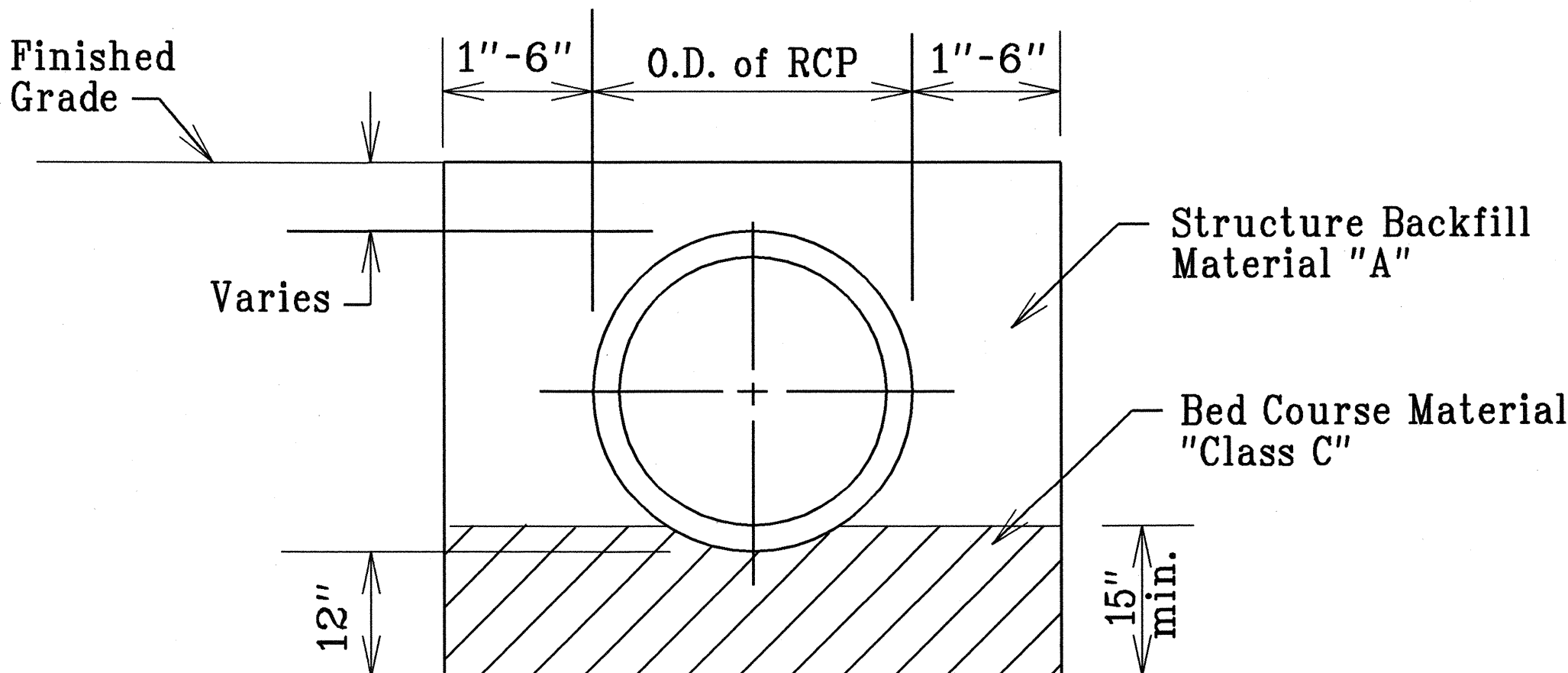


### PROFILE - 24" RCP @ INLET

(# STA. 200+15, 202+85, 208+10, 210+75)

(\* # STA. 197+75, 205+00)

Not To Scale



### REINFORCED CONCRETE PIPE CULVERT TRENCH DETAIL

# STA. 197+75, RT., # STA. 200+15, RT., # STA. 202+85, RT.,

# STA. 205+00, RT., # STA. 208+10, RT., # STA. 212+40, RT.

Not to Scale

### LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### DRAINAGE DETAILS

KAMEHAMEHA V HIGHWAY RESURFACING

Kamalo to Pukoo

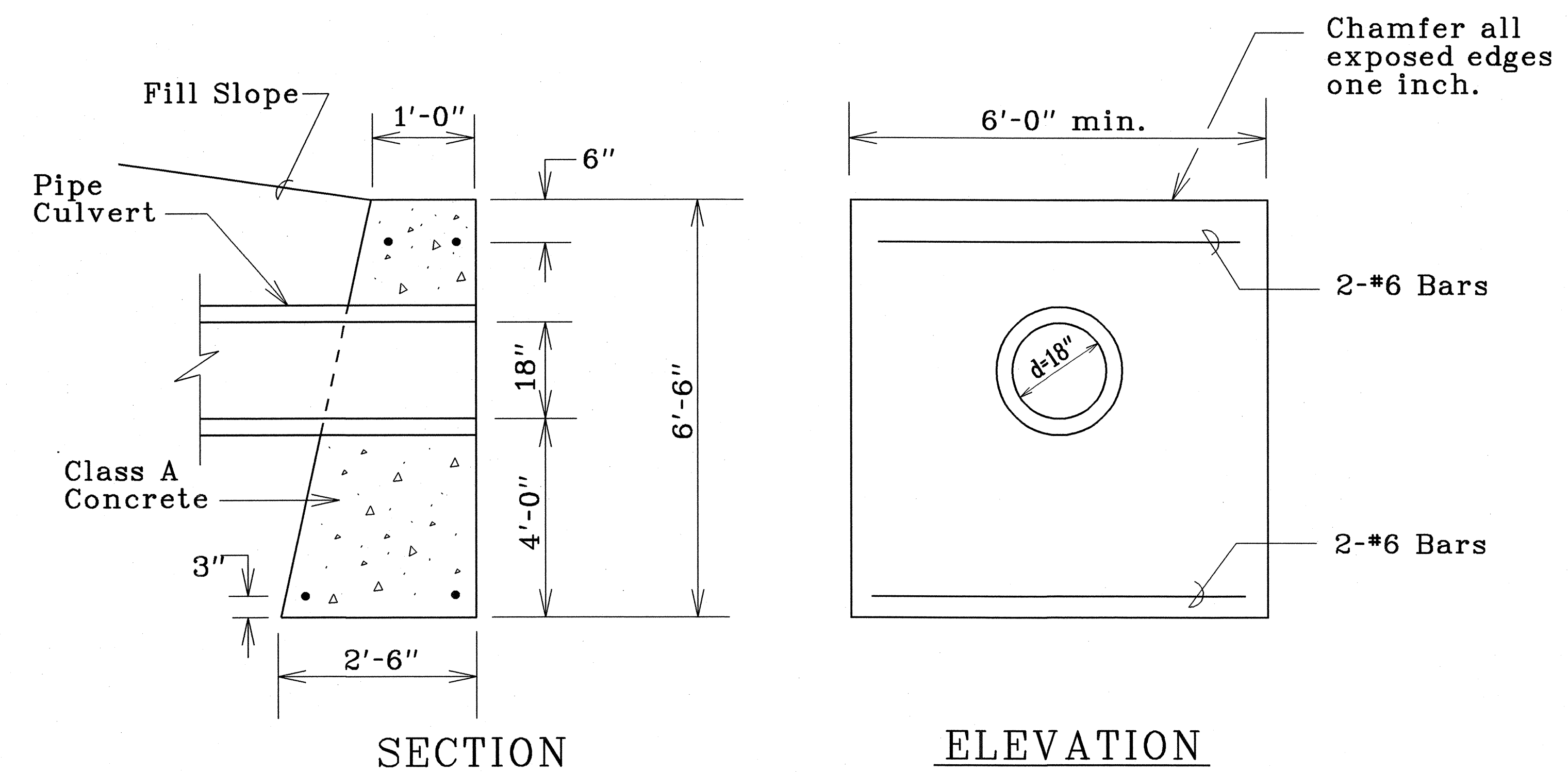
Project No. 450B-01-02M

Scale: As Shown Date: October, 2001

SHEET No. 1 OF 1 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	450B-01-02M	2002	10	40

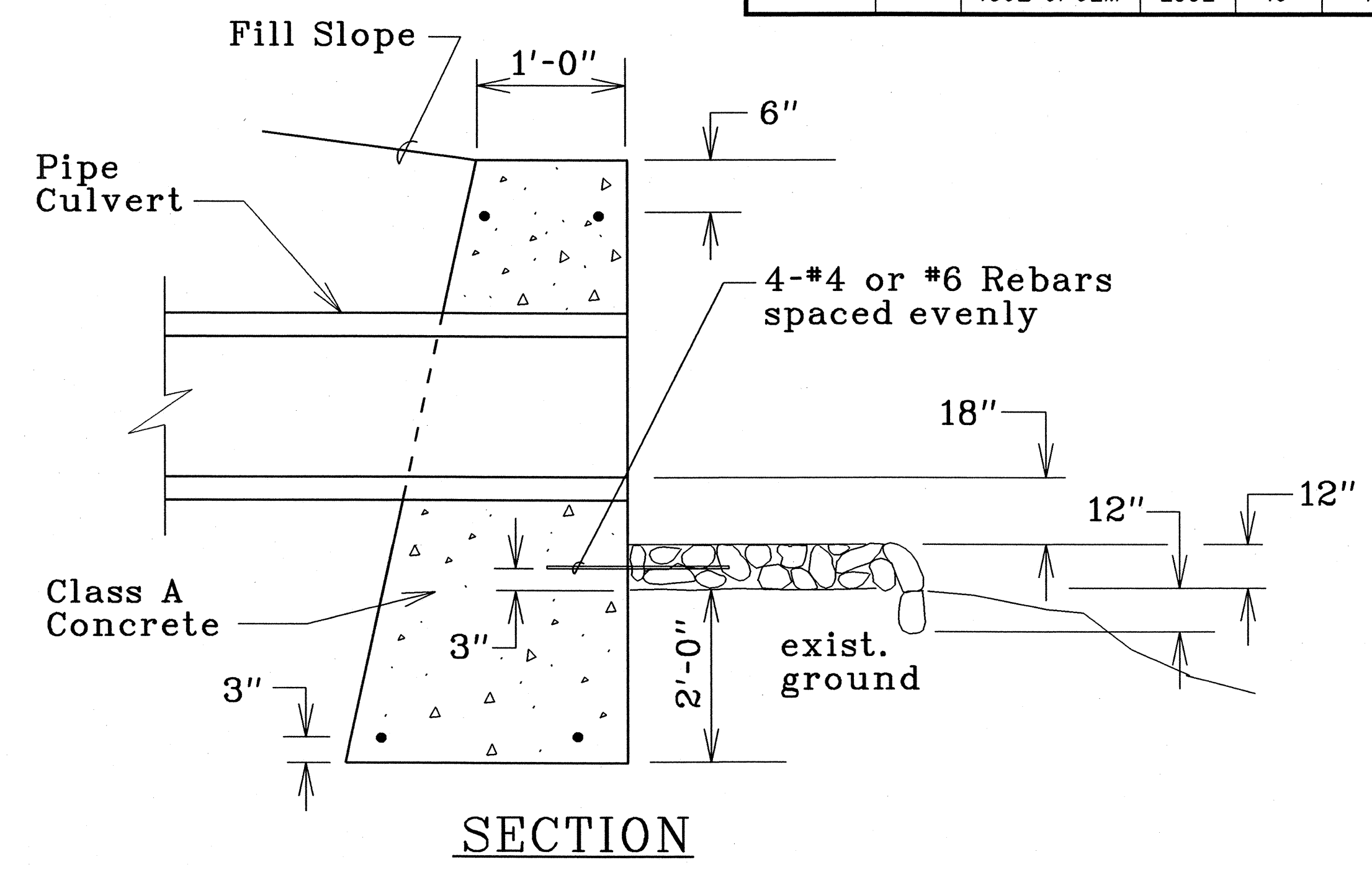


SECTION

ELEVATION

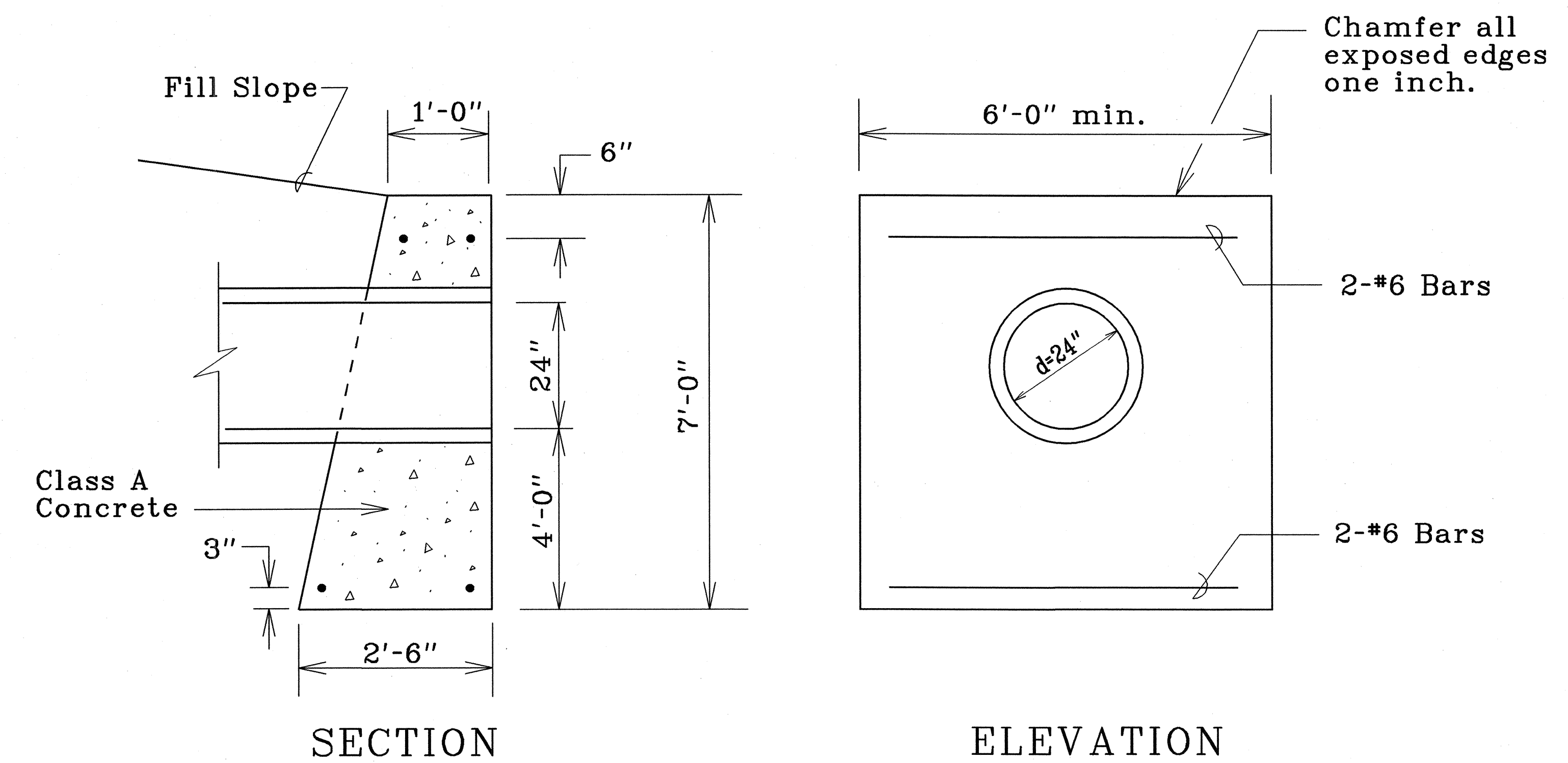
MODIFIED CONCRETE HEADWALL

STA. 202+85, RT.



SECTION

HEADWALL & GRP SPILLWAY (TYP.)

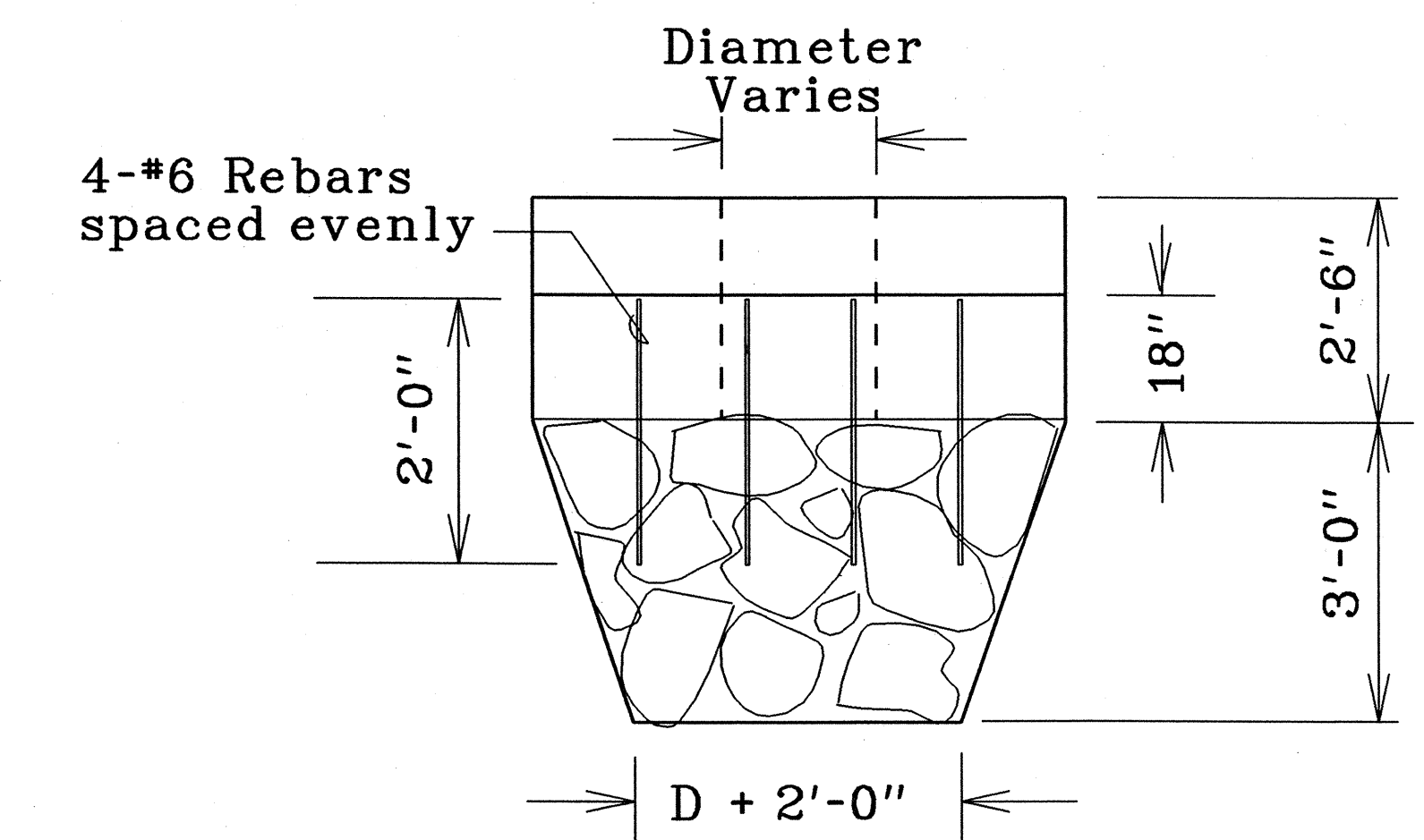


SECTION

ELEVATION

MODIFIED CONCRETE HEADWALL

STA. 205+00, RT.



PLAN VIEW

HEADWALL & GRP SPILLWAY (TYP.)

ORIGINAL PLAN	DATE	5/20/03
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
CHECKED BY		

THIS SHEET PREPARED DURING "AS-BUILT" POSTING.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**

KAMEHAMEHA V HIGHWAY RESURFACING

Kamalo to Pukoo

Project No. 450B-01-02M

Not to Scale

Date: October, 2001