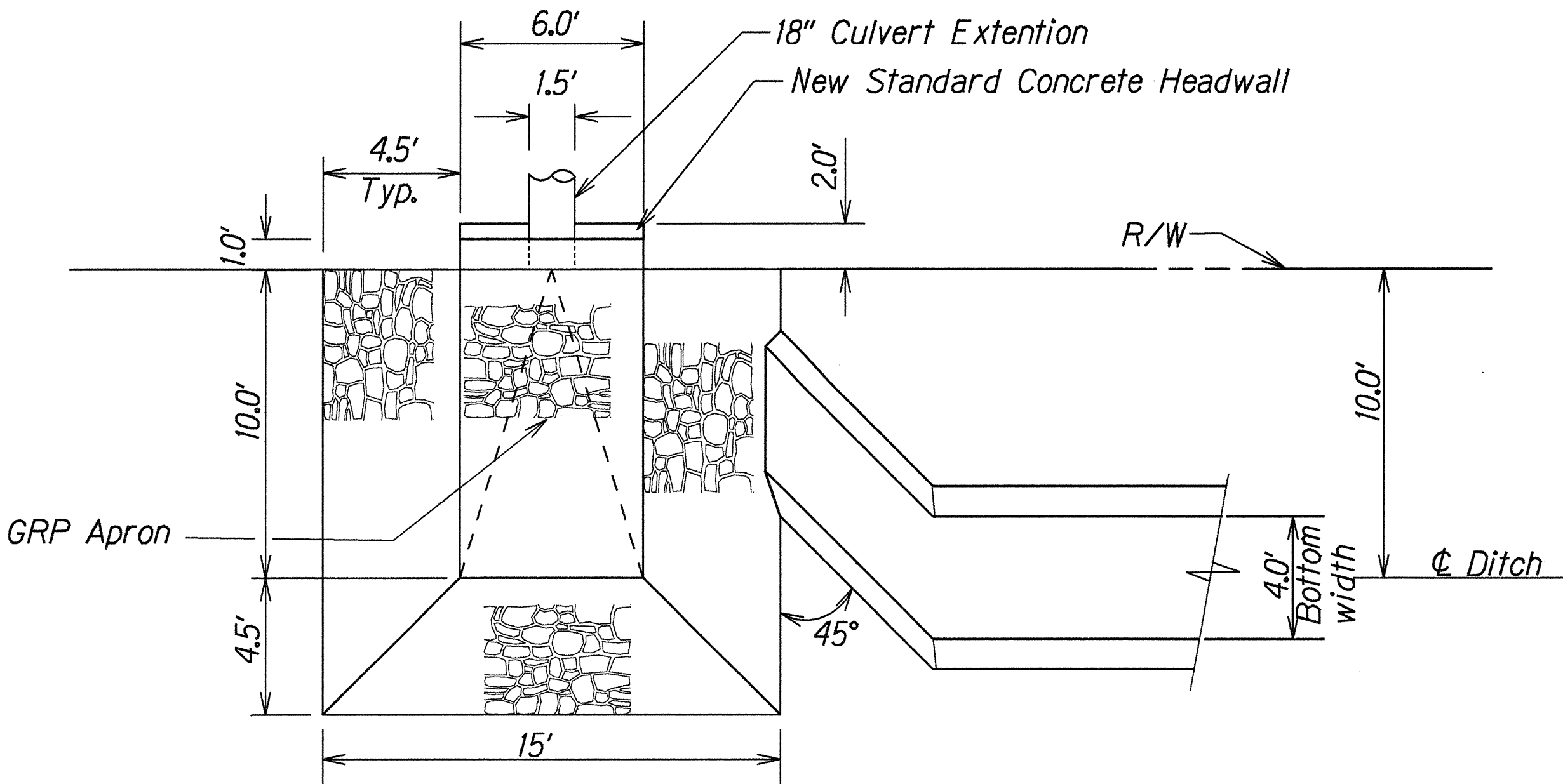
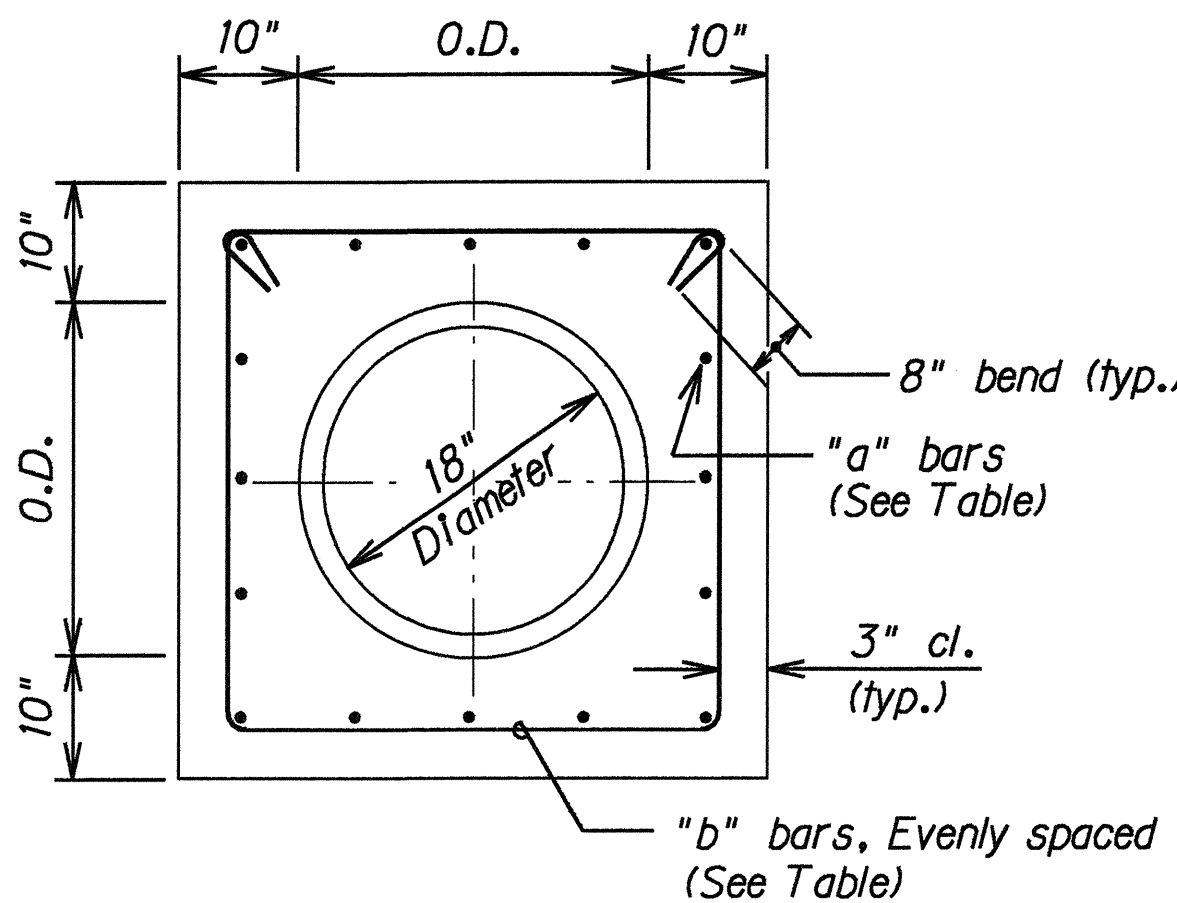


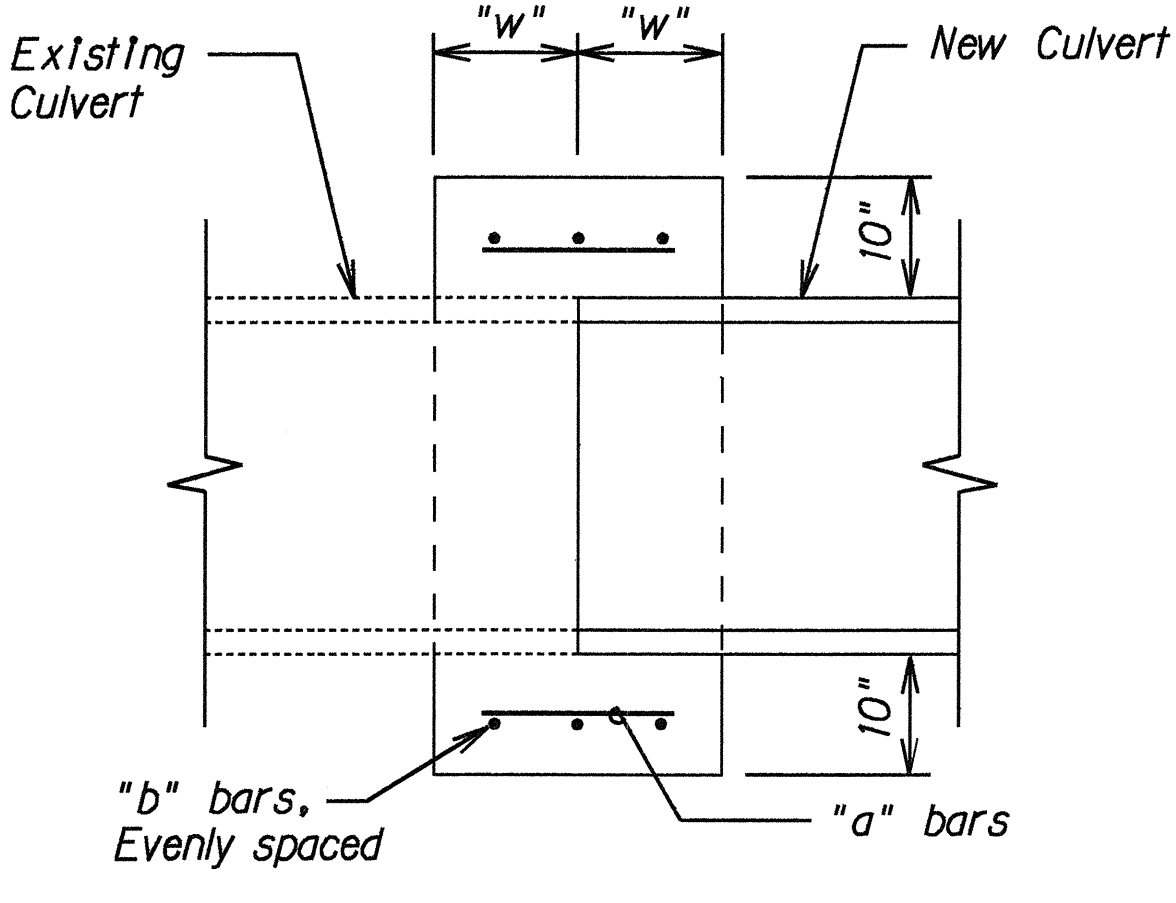
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(9)	1995	14	29



PLAN
CULVERT DRAINAGE
Scale: 1/4" = 1'-0"



ELEVATION



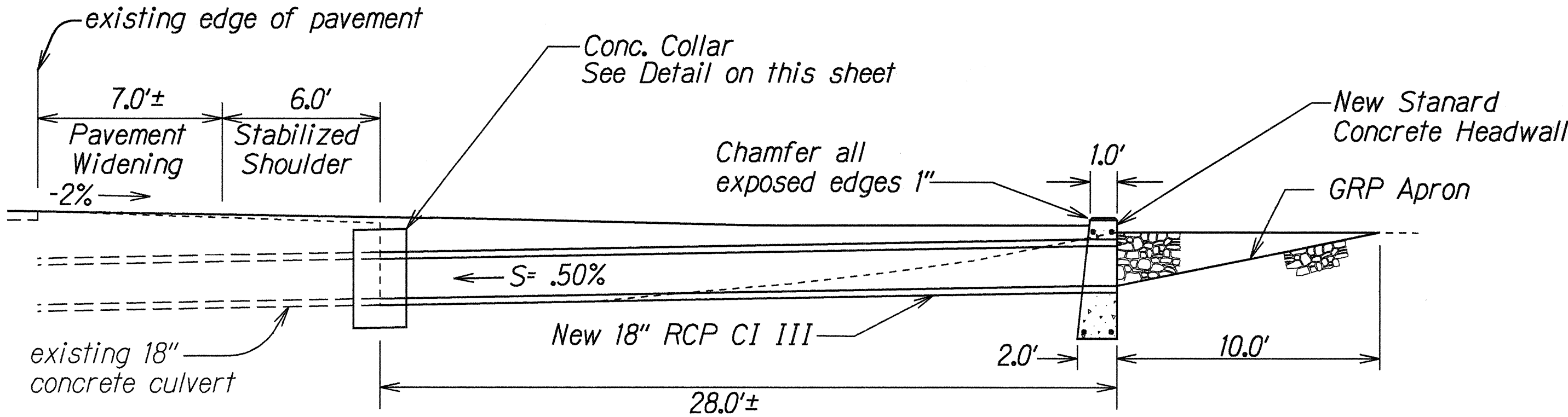
SECTION

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.

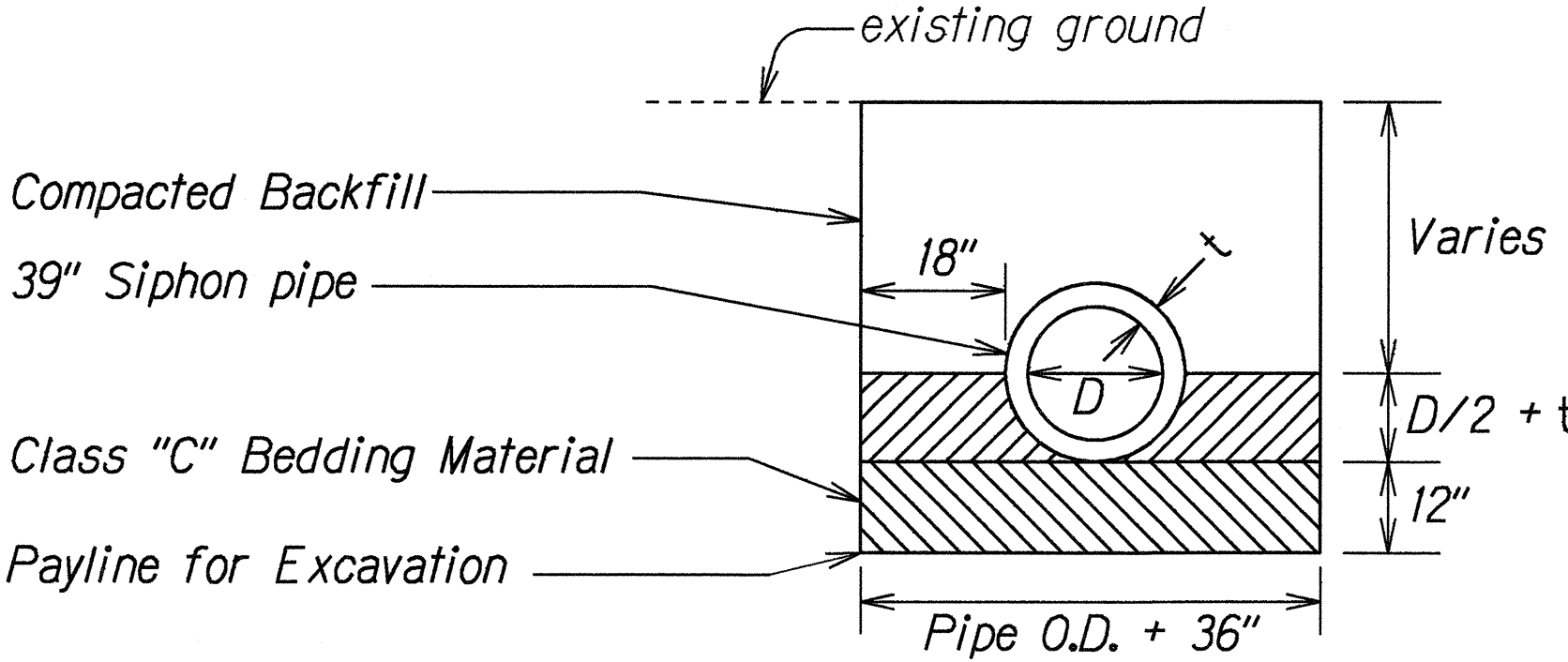
TYPICAL DETAILS OF REINFORCED CONCRETE COLLAR

Not To Scale

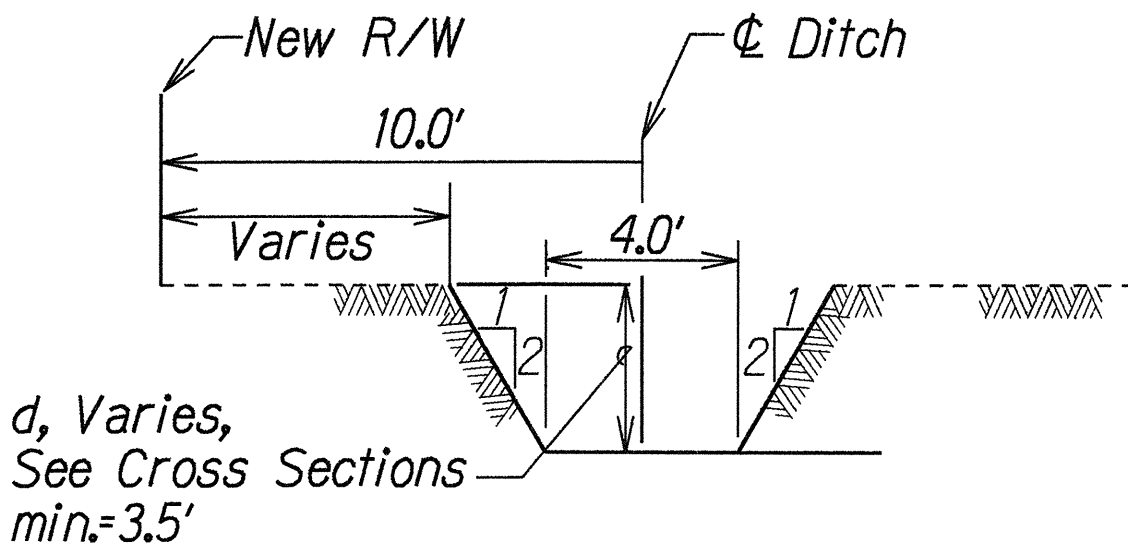


CULVERT EXTENSION @ STA. 26+90 RT.
Scale: 1/4" = 1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY Gary Mankasala	3-22-94
DESIGNED BY S. Markawa	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
KEY	
REVISIONS	



PIPE INSTALLATION SECTION
Scale: 1/2" = 1'-0"



TYPICAL EARTH DITCH SECTION
Sta. 26+90 to Sta. 32+00 (Rt. Side)
Sta. 33+00 to Sta. 39+20 (Rt Side)
Scale: 1/4" = 1'-0"

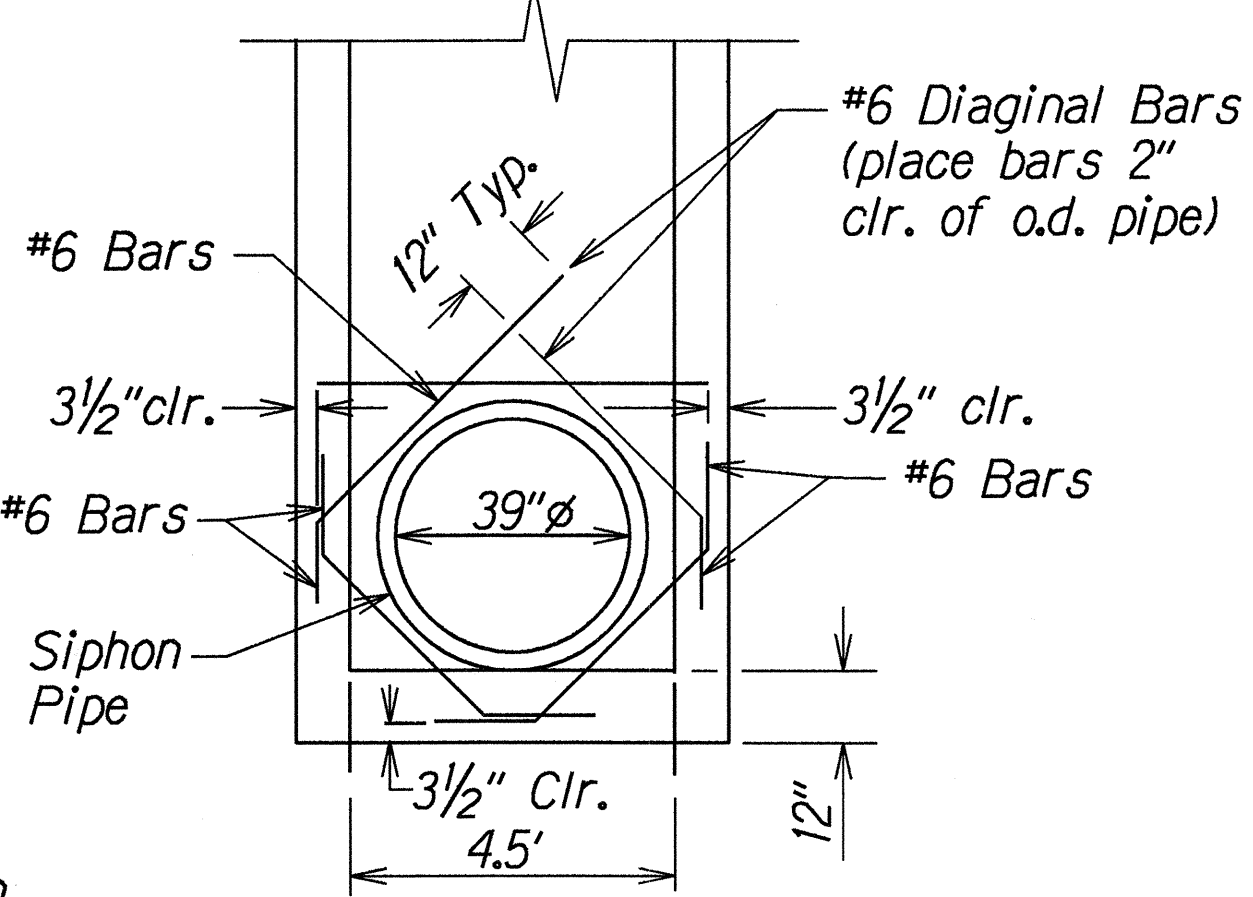
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**CULVERT & MISCELLANEOUS
DRAINAGE DETAILS**
KAUMUALII HIGHWAY IMPROVEMENTS
AT HALEWILI ROAD
Fed. Aid Proj. No. STP-050-1(9)
Scale: As Shown Date: Feb., 1995

SHEET No. 1 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(9)	1995	15	29

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



DETAIL "A"
Scale: 1/2" = 1'

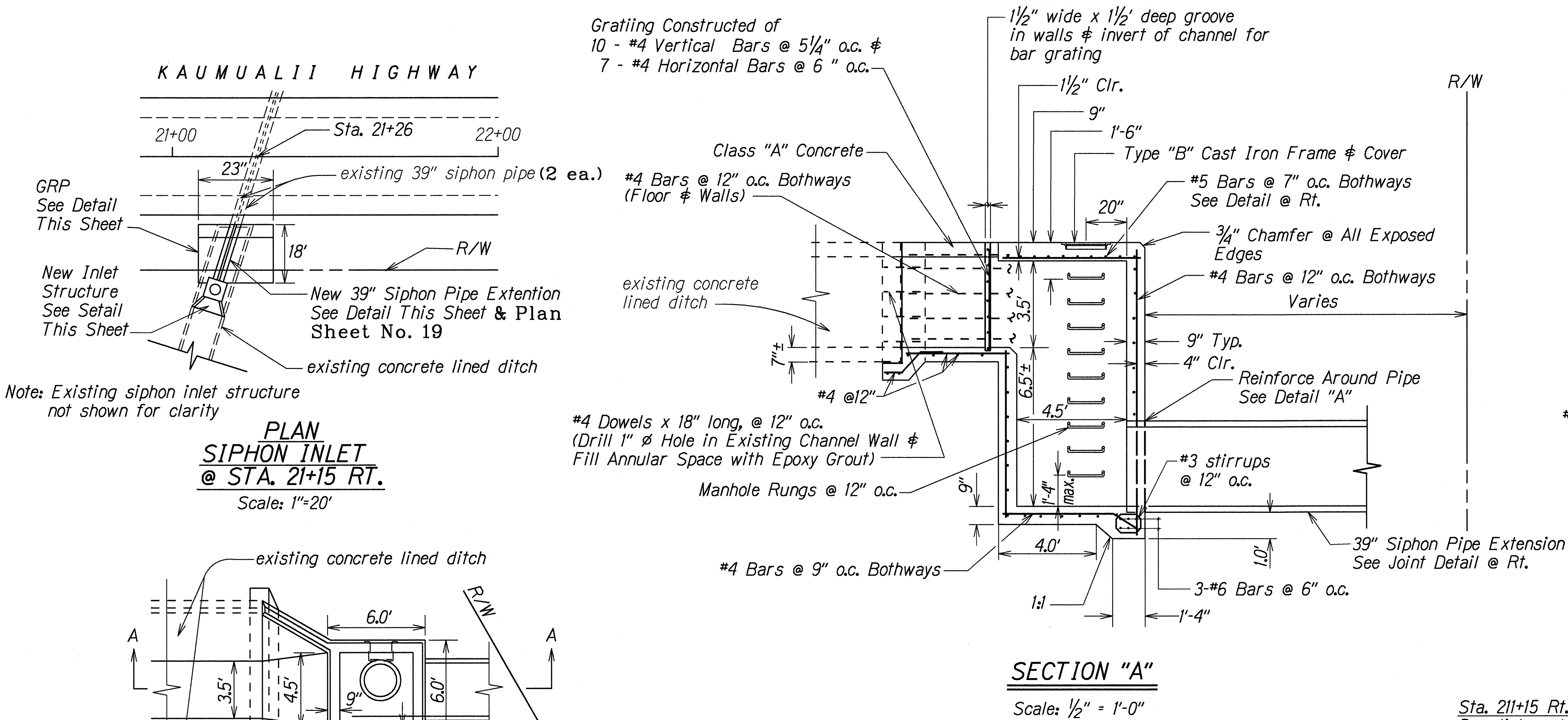
Sta. 21+15 Rt.
Demolish and remove existing inlet structure, extend siphon pipe and construct new inlet structure and GRP. For plan and details, see this sheet.

Estimated Quantities	
Structural Excavation	= 58 c.y.
Class "A" Concrete	= 10 c.y.
Bed Course Material	= 5 c.y.
G R P	= 21 c.y.
Type "B" C.I. Frame & Cover	= 1 each
39" Siphon Pipe	= 24 L.f.

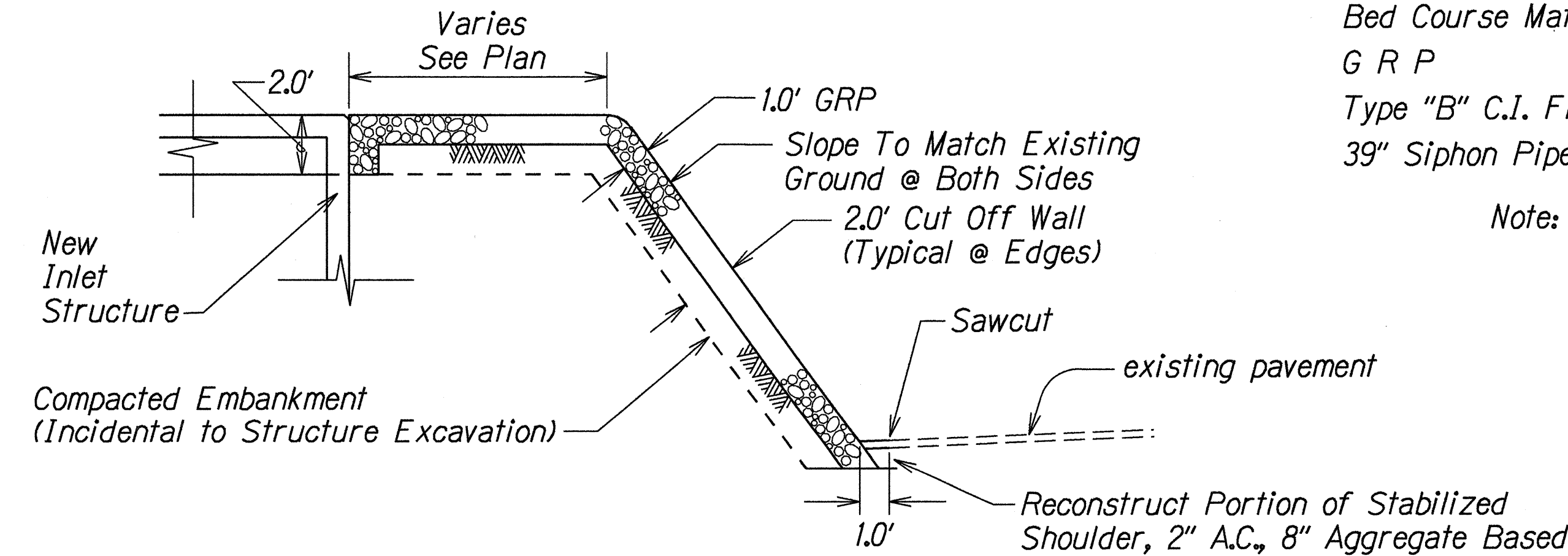
Note: Reinforcing Bars, Manhole Rung and Grating shall be incidental to Class "A" Concrete.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

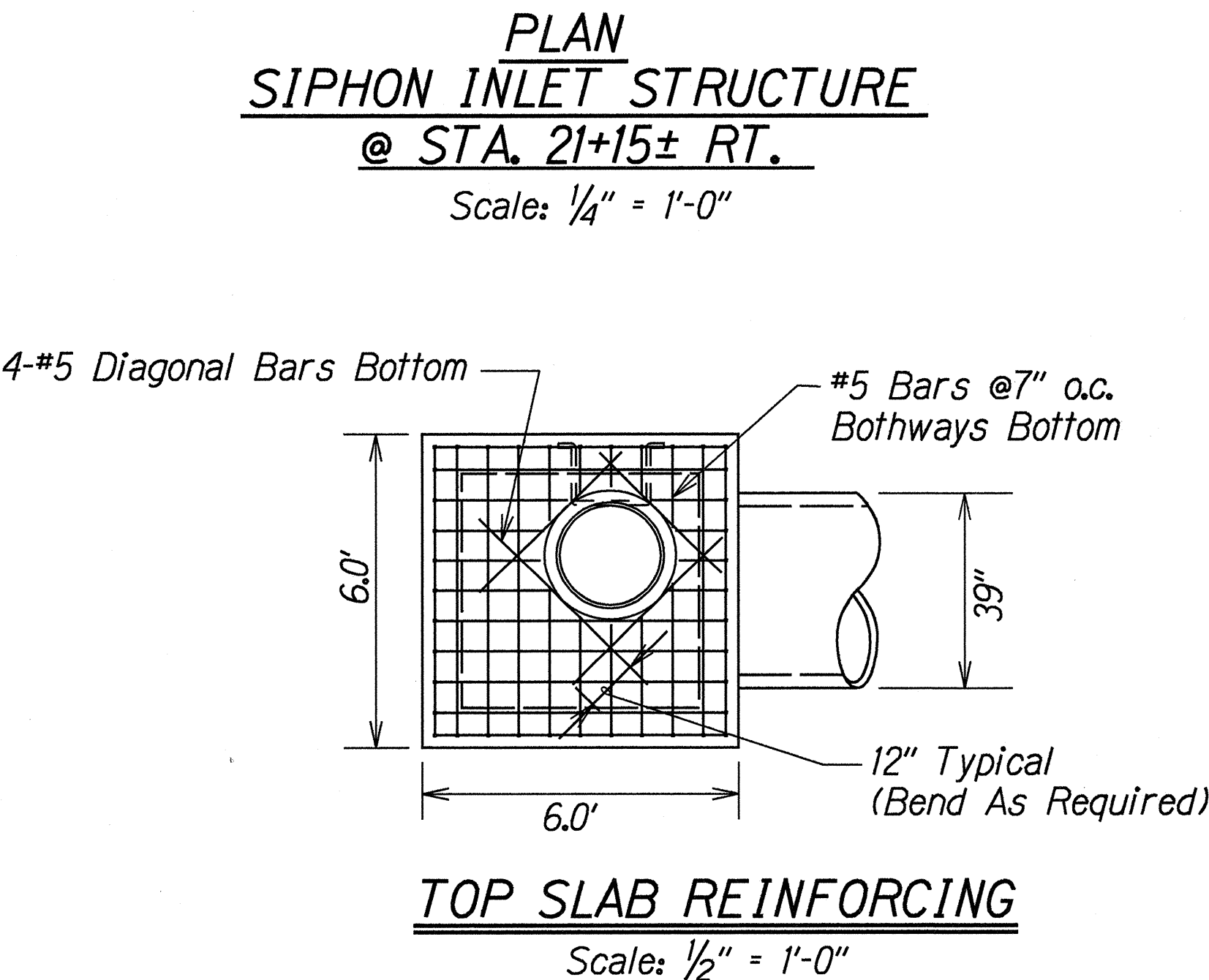
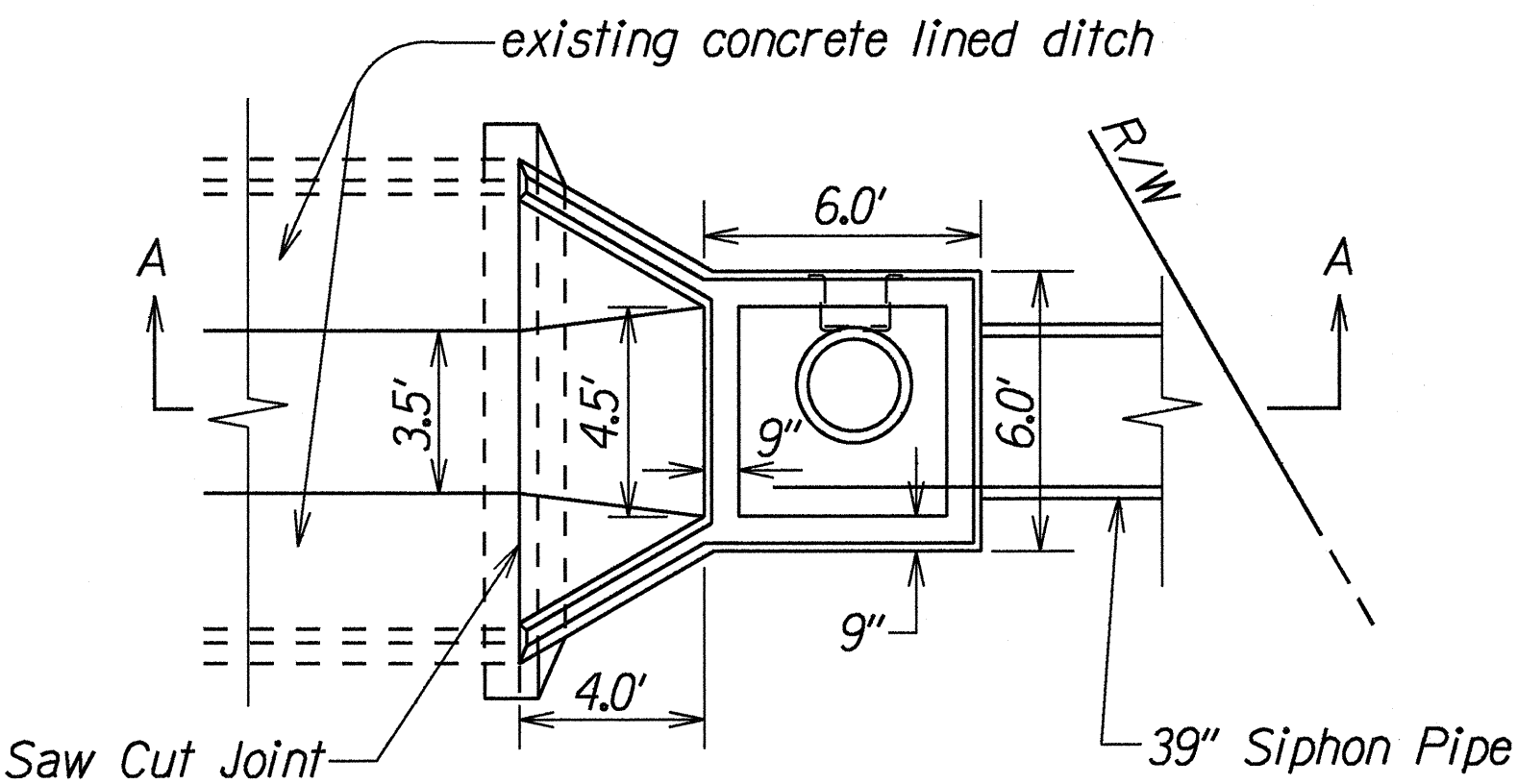
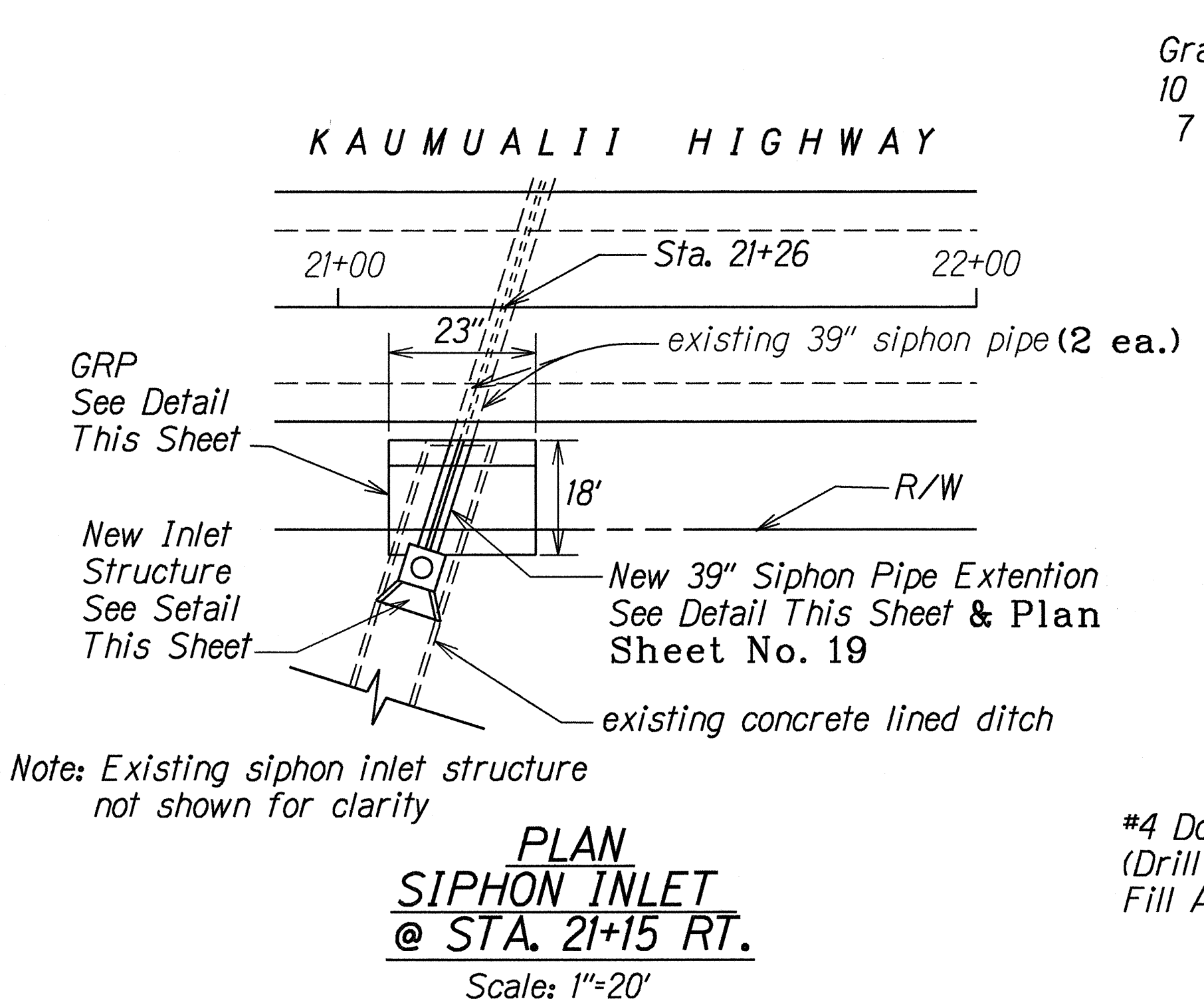
SIPHON DETAILS
KAUMUALII HIGHWAY IMPROVEMENTS
AT HALEWILI ROAD
Fed. Aid Proj. No. STP-050-1(9)
Scale: As Shown Date: Feb., 1995
SHEET No. 2 OF 3 SHEETS



Note: Contractor shall maintain flow into the existing irrigation system crossing Kaumualii Hwy. at all times during removal and construction operations. Contractor shall coordinate his operations with A & B (McBryde Sugar Co.) Payment for maintaining the irrigation flow will not be paid for separately but shall be considered incidental to the various contract items of payment.

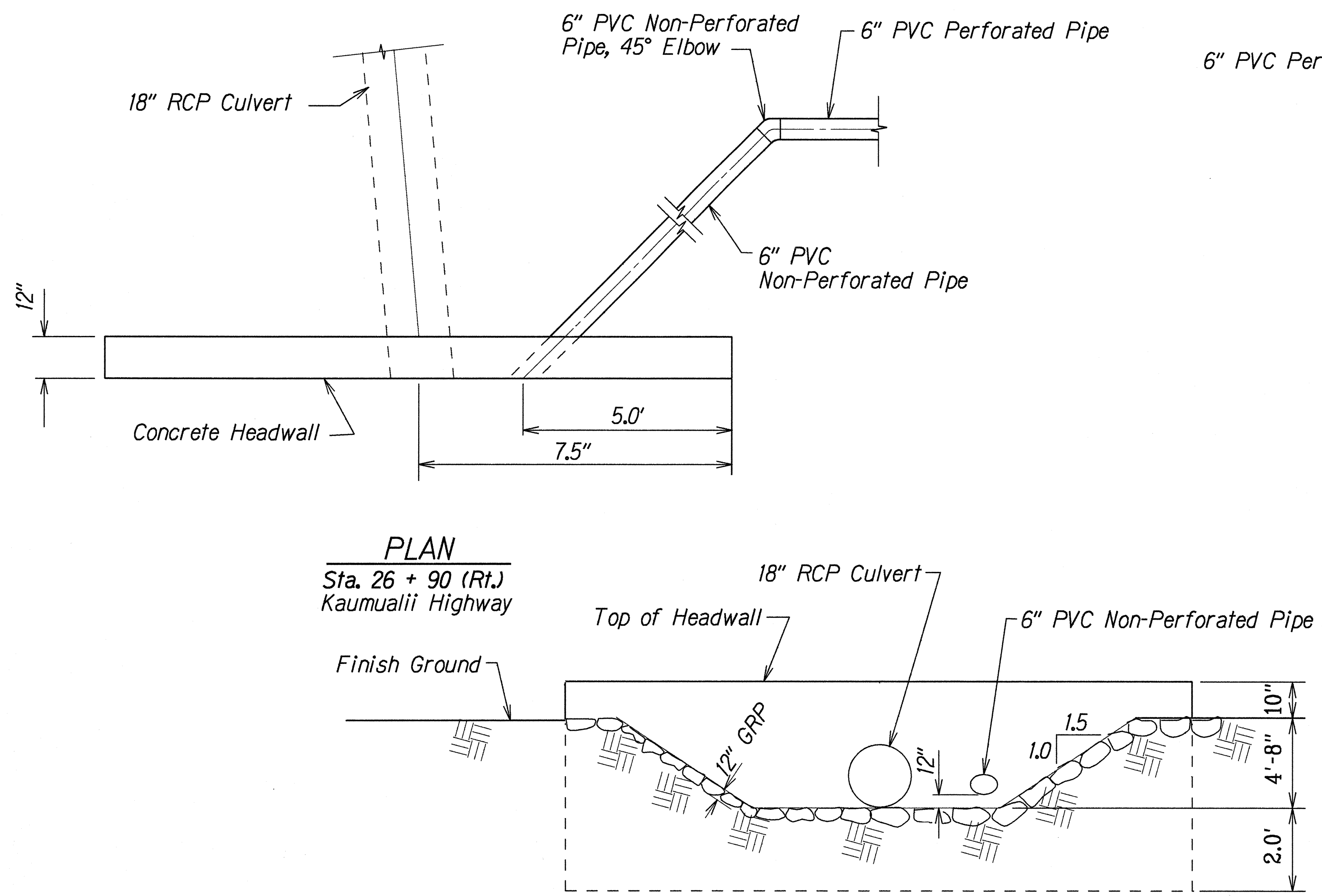


SLOPE PROTECTION DETAIL @ STA. 21+15 RT.
Scale: 1/4" = 1'-0"



ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

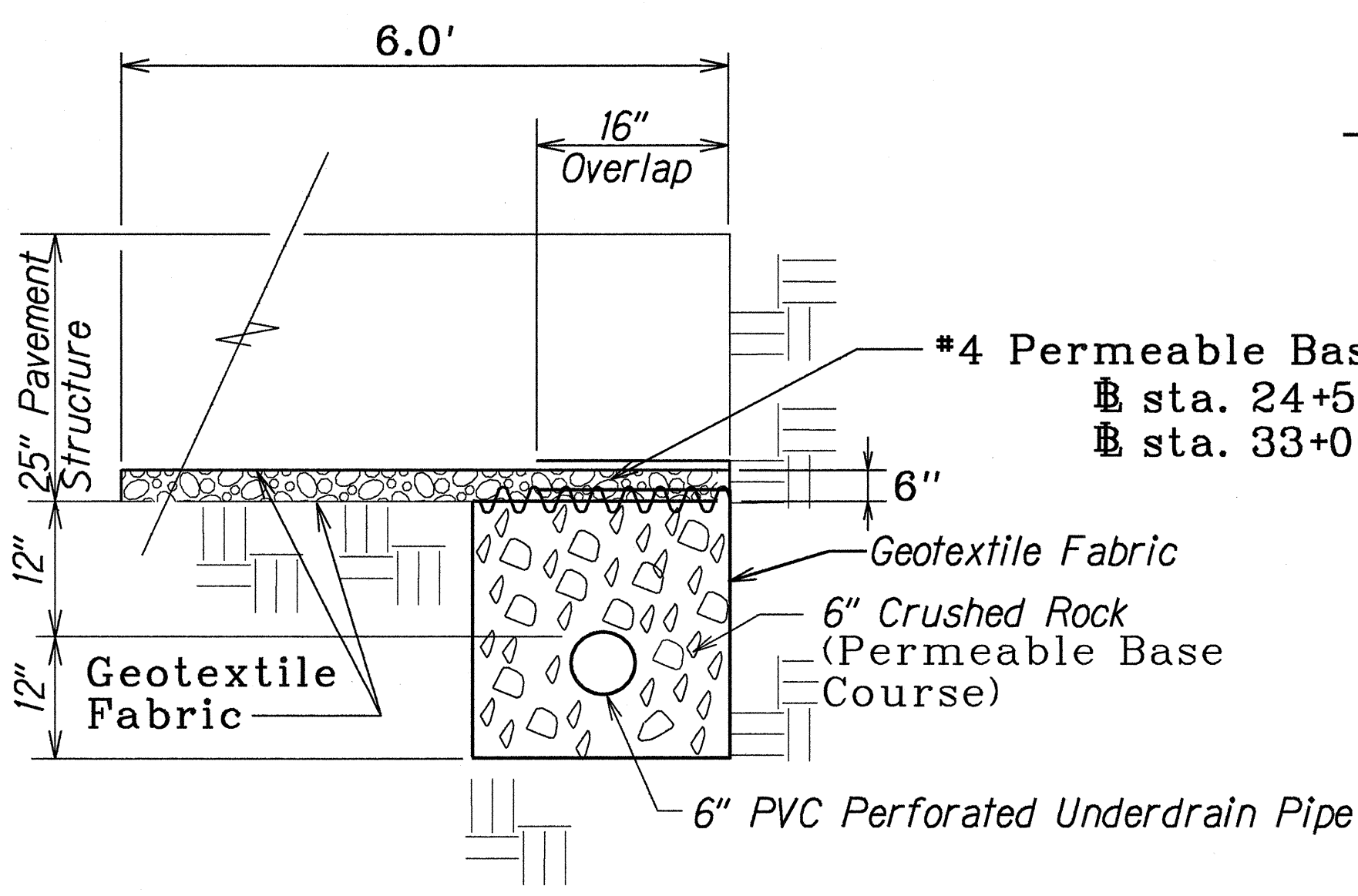
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(9)	1995	16	29



ELEVATION

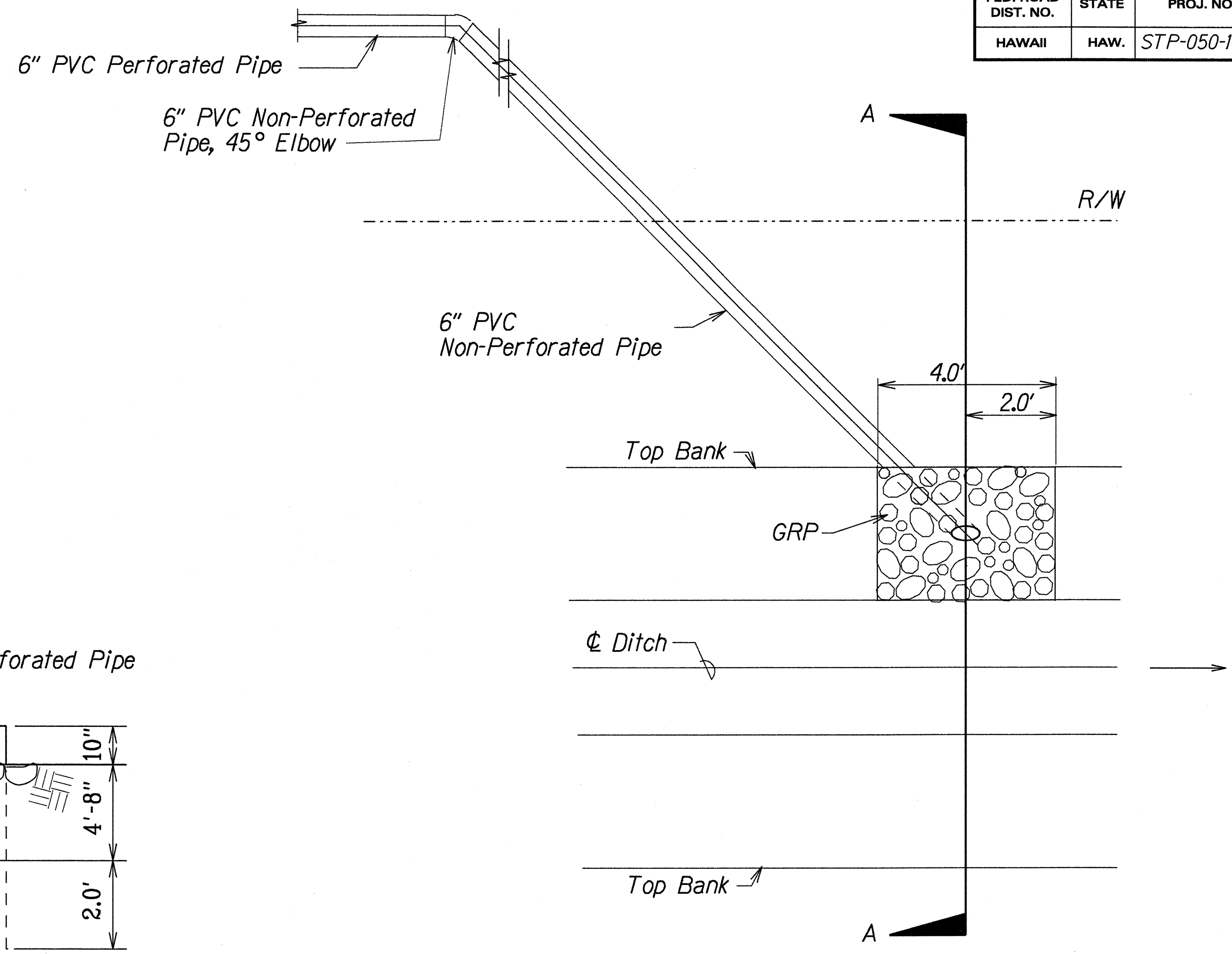
6" UNDERDRAIN OUTLET DETAILS

Scale: 1/2" = 1'-0"



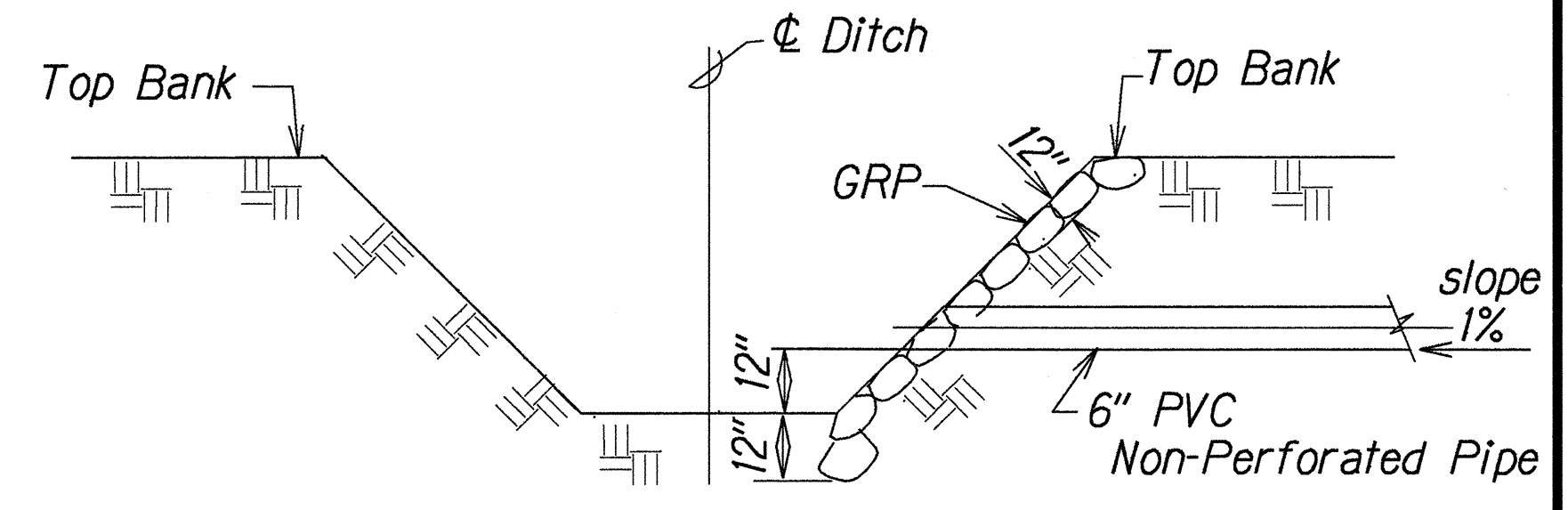
LONGITUDINAL UNDERDRAIN

Not to Scale



PLAN

Sta. 40 + 00 (Rt.)
Kaumualii Highway



SECTION A-A

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
KAUMUALII HIGHWAY IMPROVEMENTS
AT HALEWILI ROAD
Fed. Aid Project No. STP-050-1(9)
Scale: As shown Date: Feb., 1995
SHEET No. 3 OF 4 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
DESIGNED BY	CHECKED BY	
DESIGNED BY	CHECKED BY	

"AS-BUILT"

