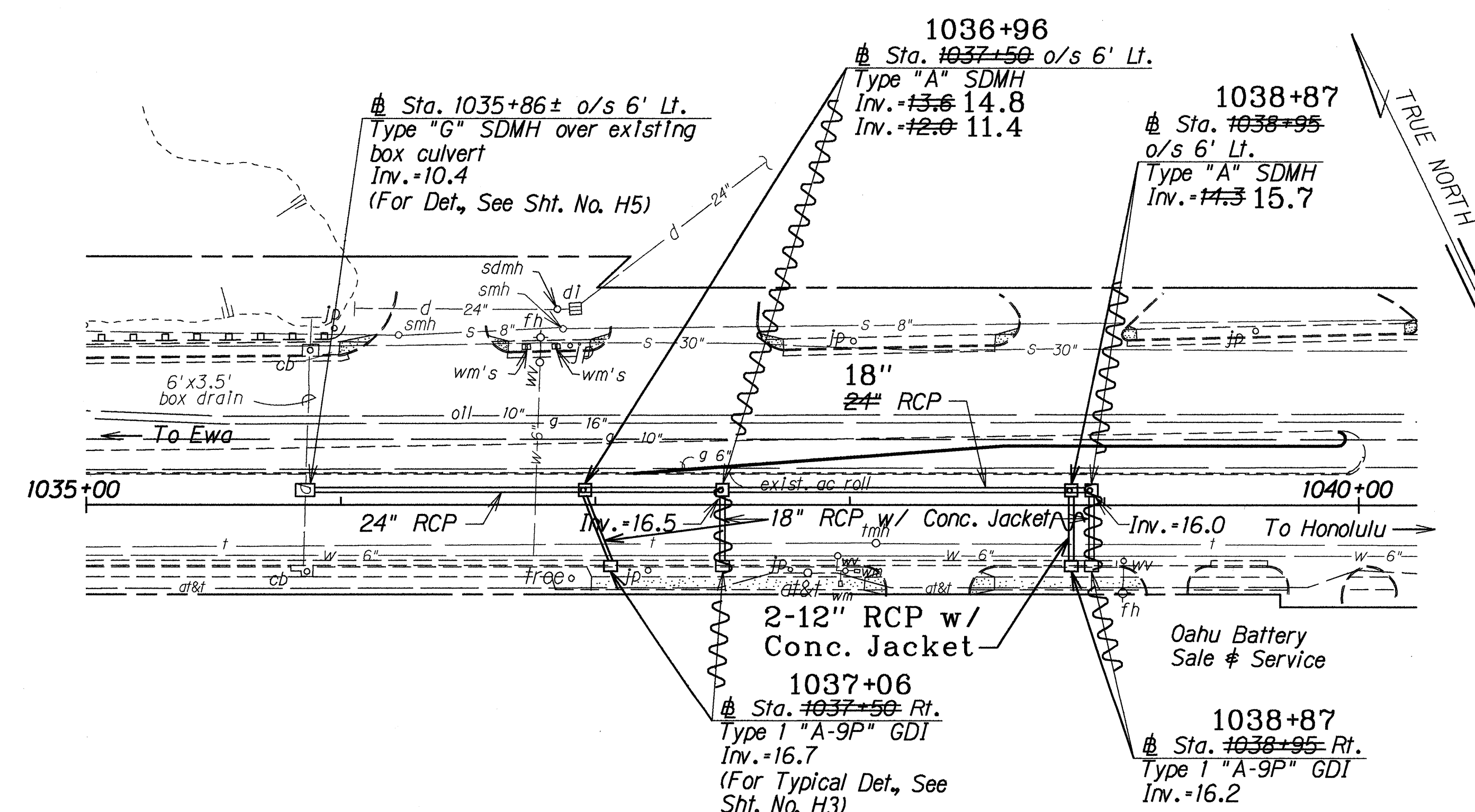
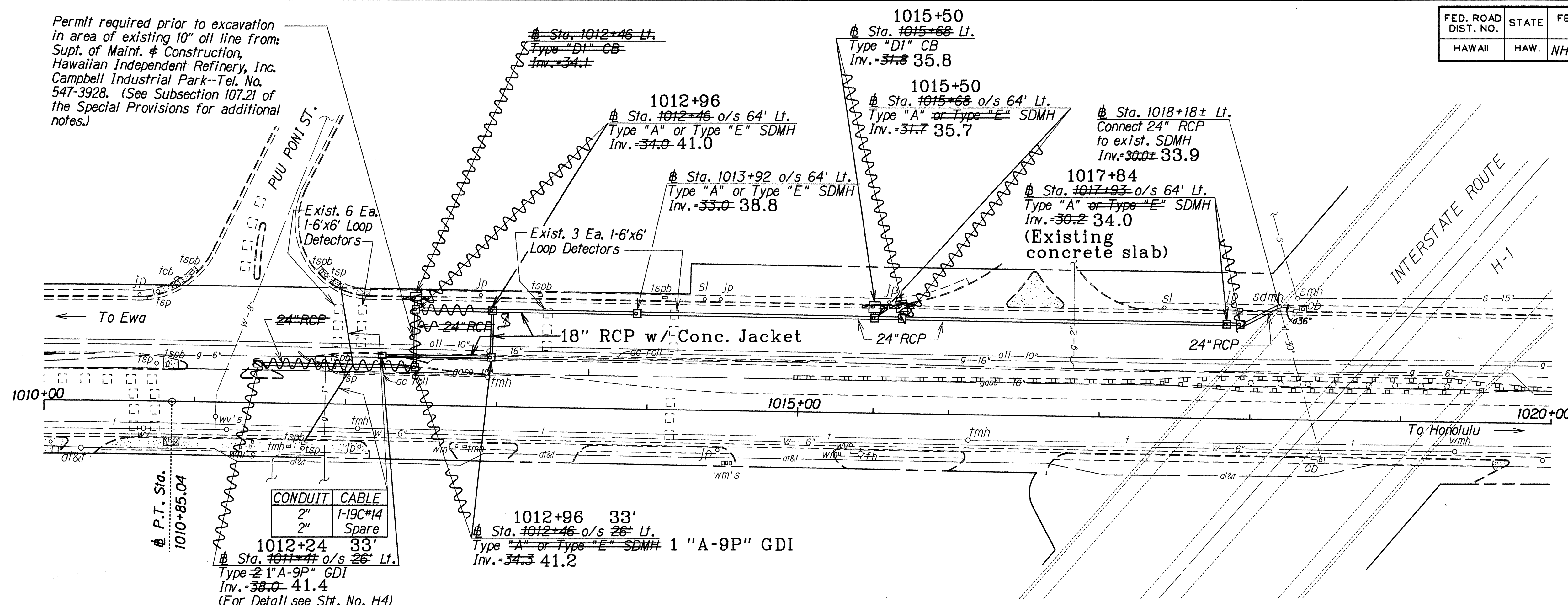


Permit required prior to excavation in area of existing 10" oil line from: Supt. of Maint. & Construction, Hawaiian Independent Refinery, Inc. Campbell Industrial Park--Tel. No. 547-3928. (See Subsection 107.21 of the Special Provisions for additional notes.)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(11)	1993	6	11



DRAINAGE NOTES:

- Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. The cost for this work shall be incidental to the various Contract Items.
- 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.
- Demolishing and removing a portion of an existing concrete box culvert shall be considered incidental to the Type "G" Storm Drain Manhole.
- The 24-inch pipe connections to the existing storm drain manhole and concrete box culvert shall be considered incidental to 24-Inch Reinforced Concrete Pipe.
- Only non-pneumatic type of drill as approved by the Engineer will be permitted for drilling holes in concrete. The approximate diameter of drilled holes for installation of dowels are indicated on plans, and voids after installing dowels shall be filled with epoxy grout as directed by the Engineer. The work mentioned above shall be considered incidental to Type "G" Storm Drain Manhole.
- Concrete shall be Class A unless otherwise noted.
- All reinforcing steel shall conform to the requirements of ASTM 615-Grade 60.
- For Reinforced Concrete Jacket Detail, see Sht. No. H6.
- For Trench and A. C. Pavement Restoration Detail, see Sht. No. H6.
- The Trench Backfill Material A will be used as backfilling material and shall be considered incidental to Structure Excavation.
- The restoration of existing concrete curbing shall be considered incidental to 24-Inch Reinforced Concrete Pipe.
- Item No. 627.0200, Restoration of Existing Pavements and Other Improvements on Kamehameha Hwy. shall conform to Section 627-"RESTORATION OF EXISTING CITY AND/OR COUNTY STREETS AND OTHER IMPROVEMENTS" of the Standard Specifications.
- For Summary of Estimated Quantities, see Sht. No. H3.

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

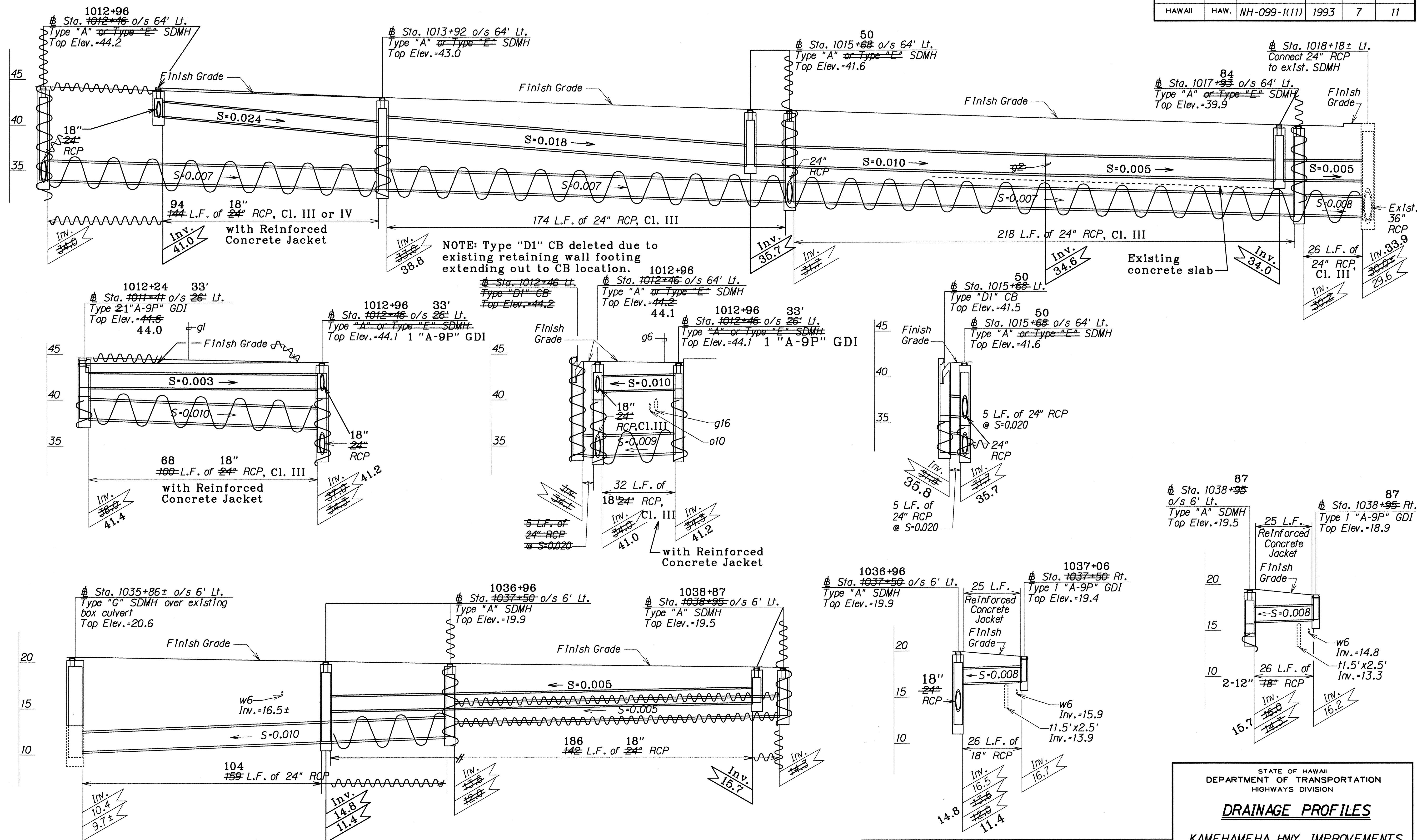
DRAINAGE PLAN

KAMEHAMEHA HWY. IMPROVEMENTS
Puu Moml St. to Kaluamoi Pl.
Fed. Aid Project No. NH-099-1(11)

Scale: 1" = 40' Date: Mar. 1993

SHEET No. H1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(11)	1993	7	11



PROFILE ALONG & CULVERTS

Scale: Vert 1"=5'
Horiz 1"=20'

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 PROFILES

KAMEHAMEHA HWY. IMPROVEMENTS
Puu Moml St. to Kaluamoi Pl.
Fed. Aid Project No. NH-099-1(11)

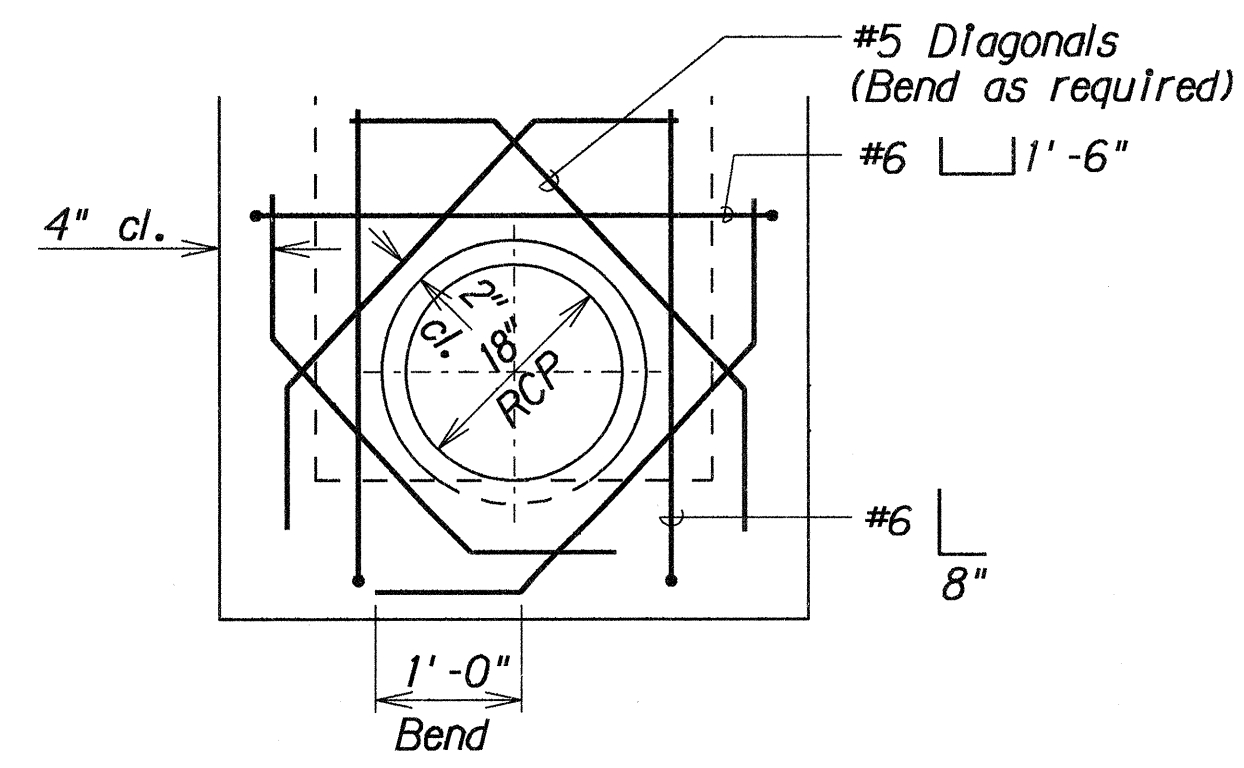
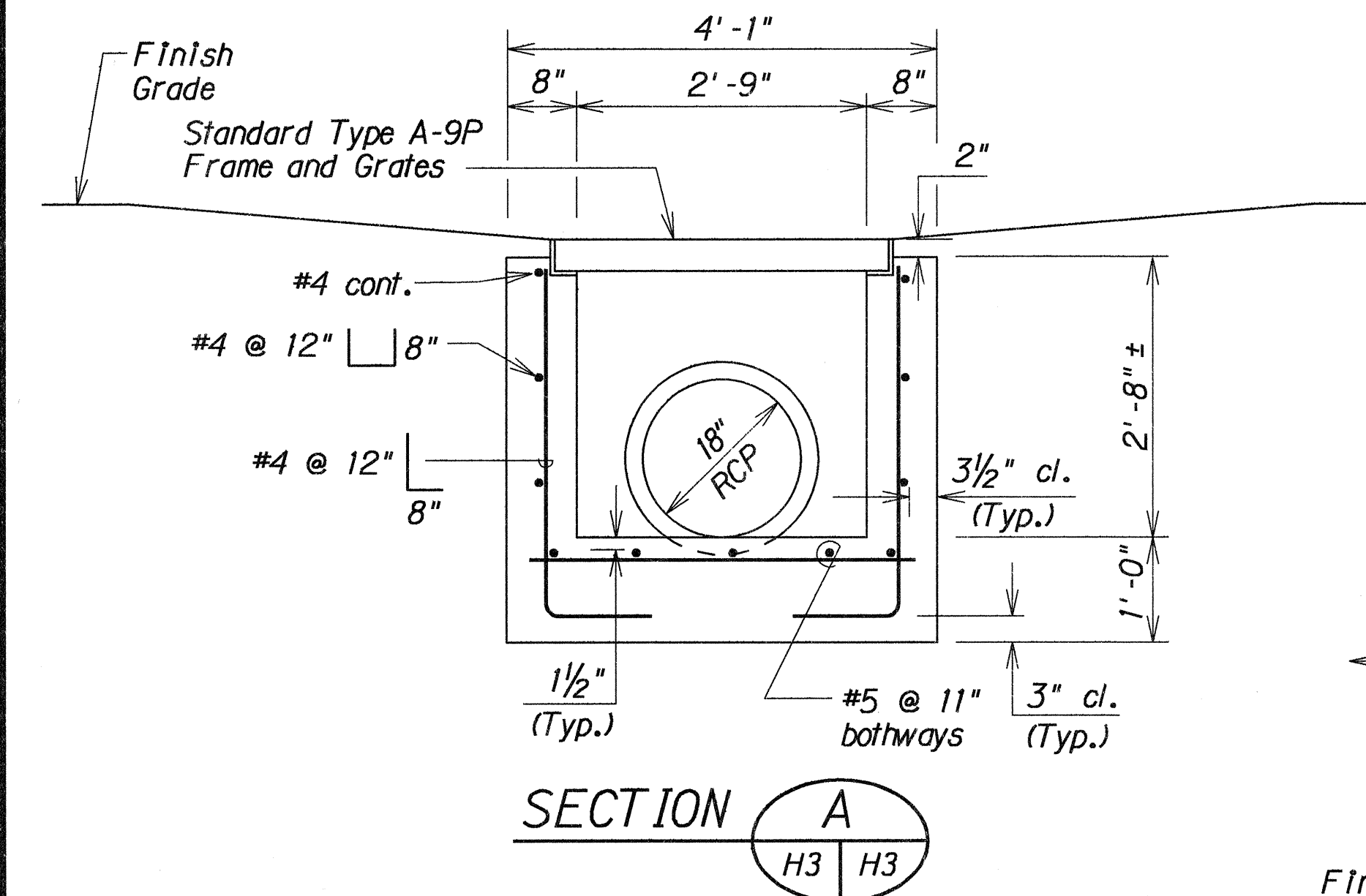
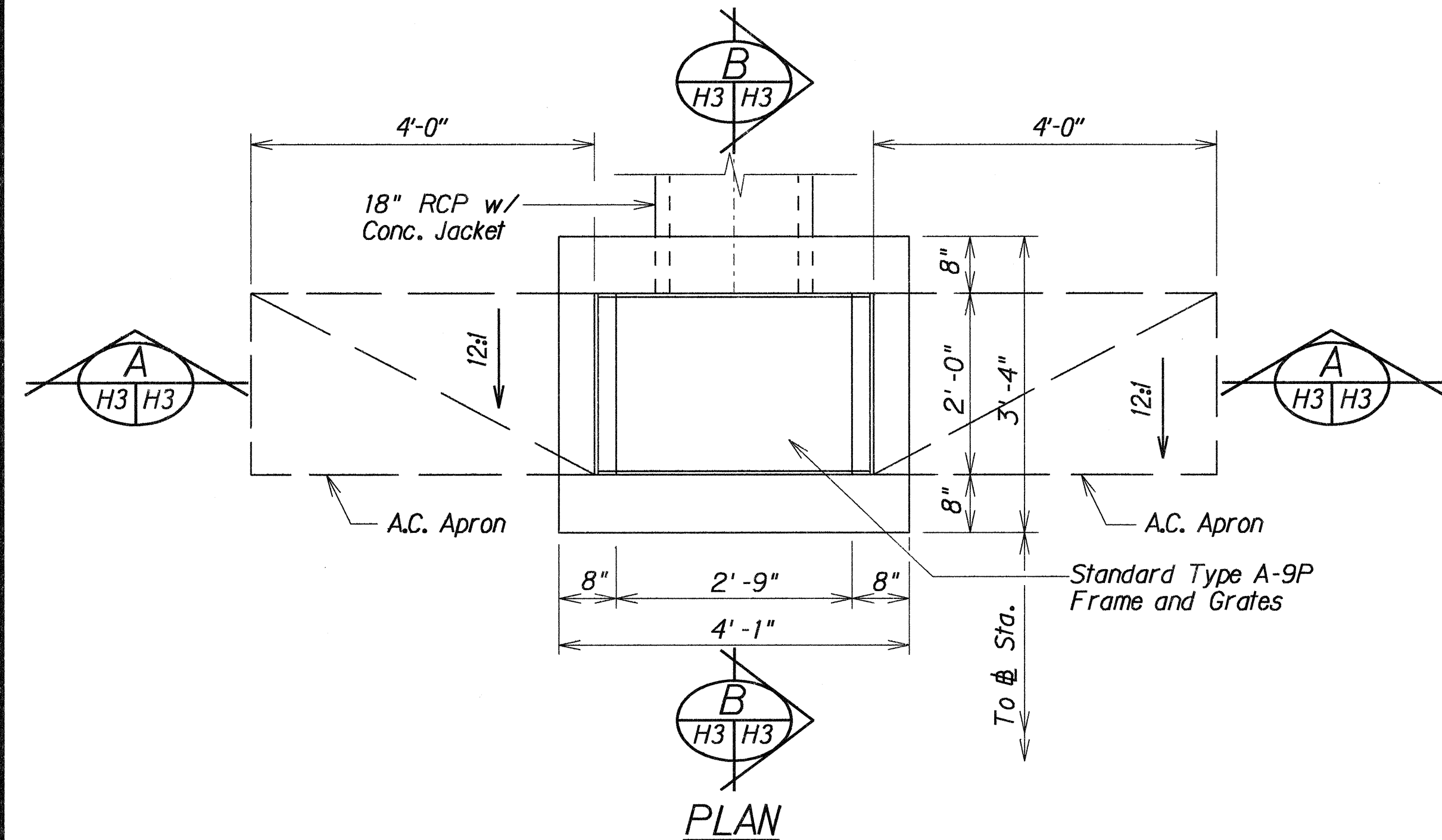
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SHEET No. H2 OF 6 SHEETS

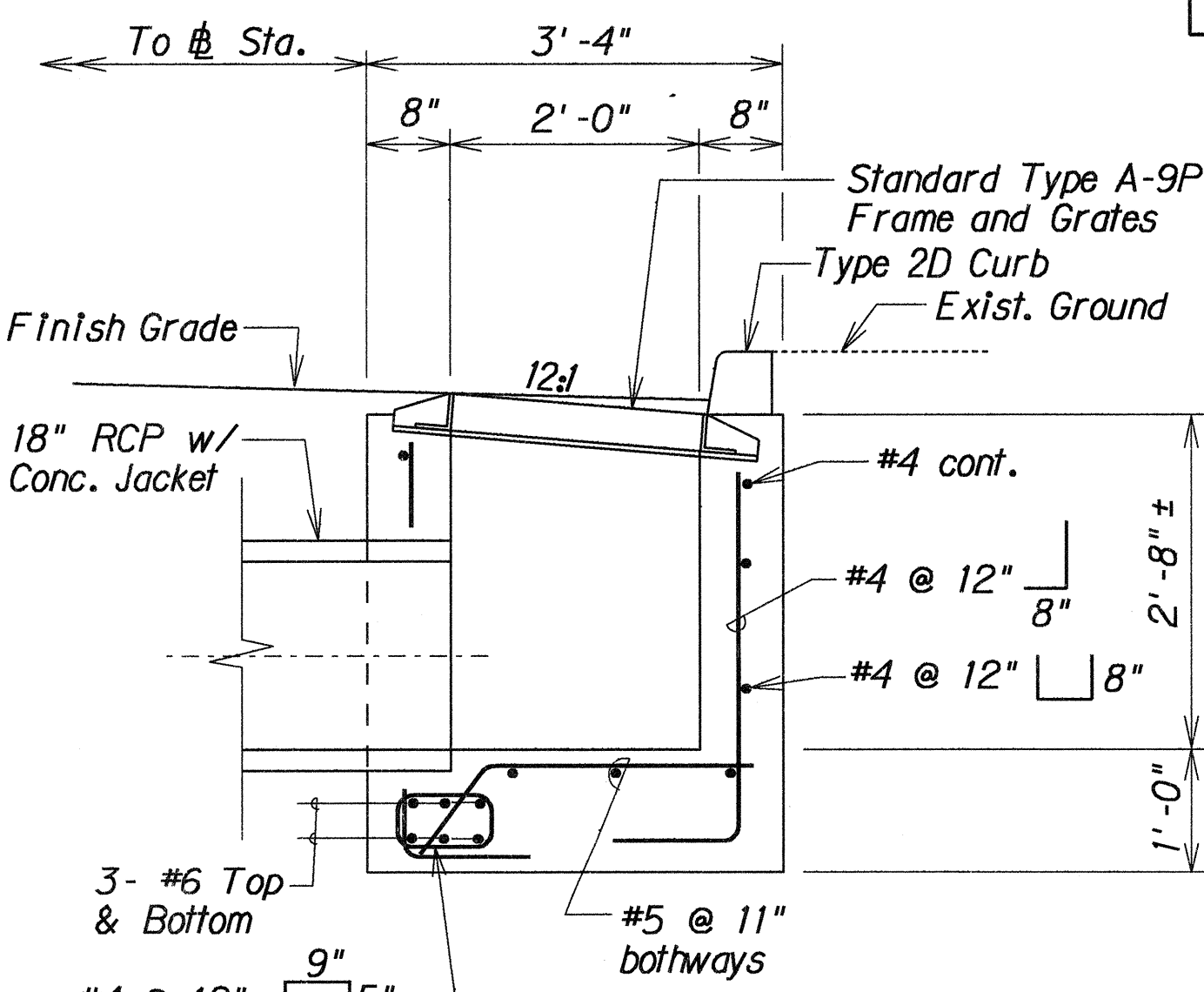
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
APPROVED BY	

6/24/93

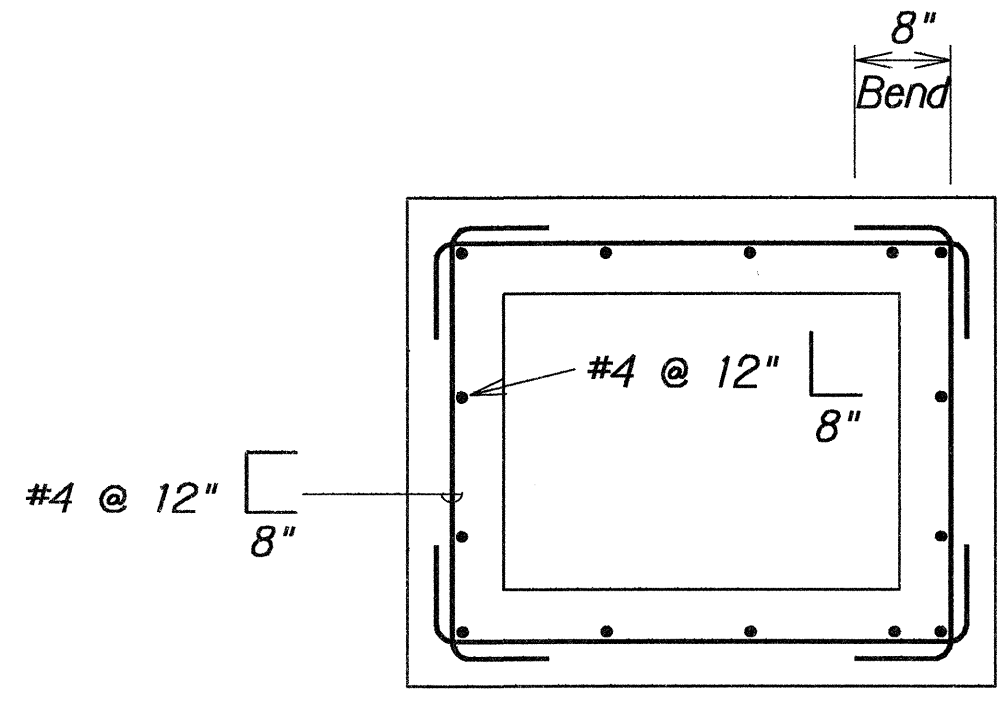
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(11)	1993	8	11



ADDED REINFORCING
AT CULVERT OPENING



SECTION B



PLAN VIEW OF
WALL REINFORCING

		DRAINAGE SUMMARY													
ITEM NO.	UNIT USED	206	503	603	603	603	604	604	604	604	604	604	604	604	627
		2020	0140	0010	1006	1010	5010	5011	5012	5013	5015	5020	5021	5031	0200
STATION (from)	STATION (to)	CY	LF	CY	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	SF
		Structure Excavation for Drainage System	Reinforced Concrete Jacket	Bed Course Material for Culvert	18-Inch Reinforced Concrete Pipe, Class III	24-Inch Reinforced Concrete Pipe, Class III	Type "A" Storm Drain Manhole, 5.00 Feet to 5.99 Feet	Type "A" Storm Drain Manhole, 7.00 Feet to 7.99 Feet	Type "A" or Type "E" Storm Drain Manhole, 9.00 Feet to 9.99 Feet	Type "A" or Type "E" Storm Drain Manhole, 10.00 Feet to 10.99 Feet	Type "G" Storm Drain Manhole, 6.00 Feet to 6.99 Feet	Type 1 "A-9P" Grated Drop Inlet, 2.00 Feet to 2.99 Feet	Type 2 "A-9P" Grated Drop Inlet, 6.00 Feet to 6.99 Feet	Type "D1" Catch Basin, 9.00 Feet to 9.99 Feet	Type "D1" Catch Basin, 10.00 Feet to 10.99 Feet
1011+41 o/s 26' Lt.	1012+46 o/s 26' Lt.	186		25		100									542
1012+46 o/s 64' Lt.	1012+46 Lt.	7		2		5								1	27
1012+46 o/s 64' Lt.	1012+46 o/s 26' Lt.	68		8		32			1						173
1012+46 o/s 64' Lt.	1013+92 o/s 64' Lt.	324		37		144			1						780
1013+92 o/s 64' Lt.	1015+68 o/s 64' Lt.	387		44		174			1						943
1015+68 o/s 64' Lt.	1015+68 Lt.	7		2		5									1
1015+68 o/s 64' Lt.	1017+93 o/s 64' Lt.	479		55		218				1					1181
1017+93 o/s 64' Lt.	1018+18± Lt.	54		7		26				1					141
1035+86 o/s 6' Lt.	1037+50 o/s 6' Lt.	296		32		159					1				861
1037+50 o/s 6' Lt.	1037+50 Rt.		25	5	26							1			91
1037+50 o/s 6' Lt.	1038+95 o/s 6' Lt.	184		28		142	1								770
1038+95 o/s 6' Lt.	1038+95 Rt.		25	5	26							1			91
	TOTAL	1992	50	250	52	1005	1	1	3	2	1	2	1	1	5627

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

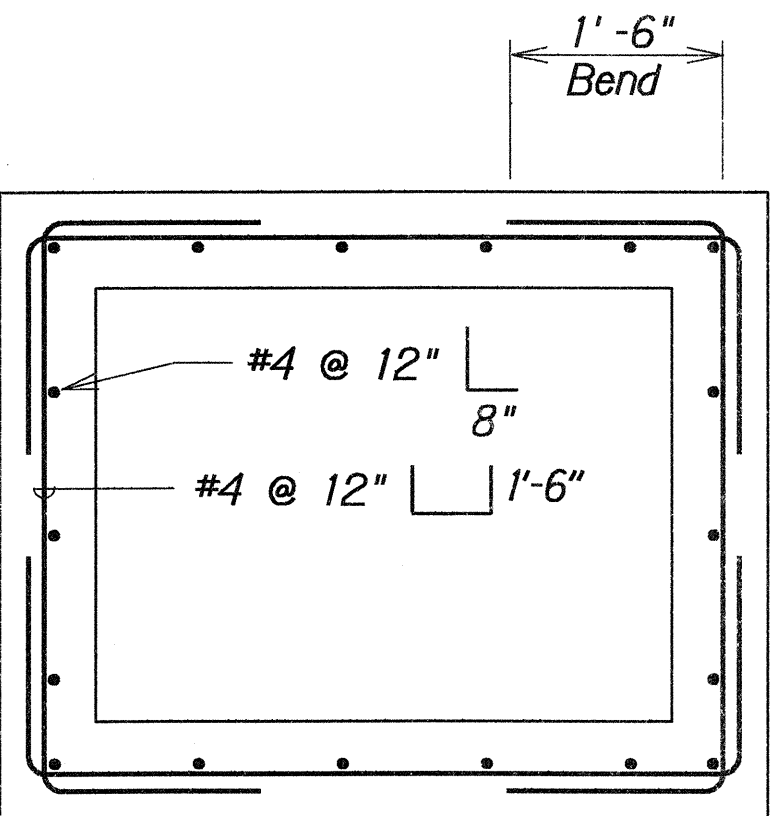
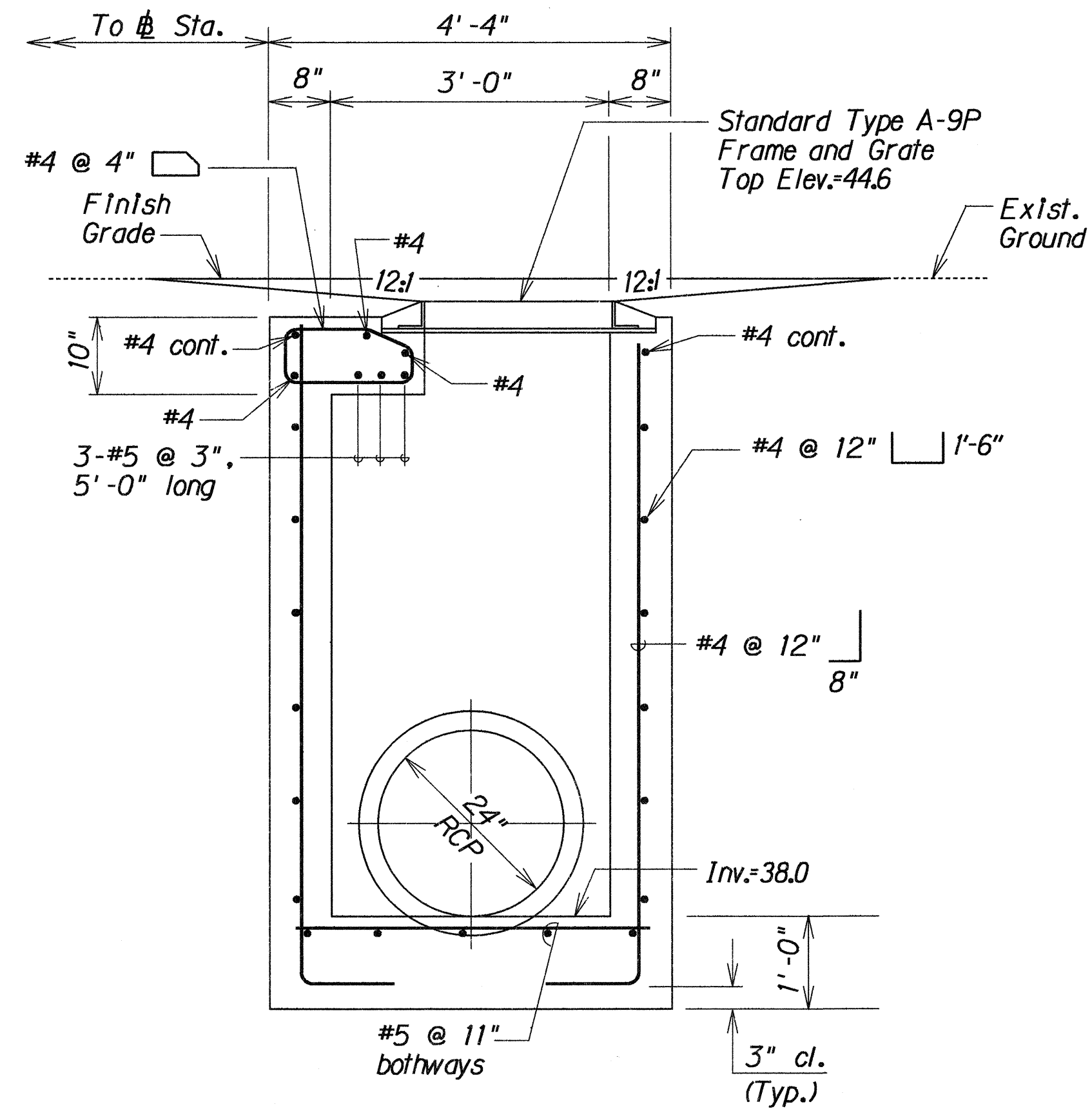
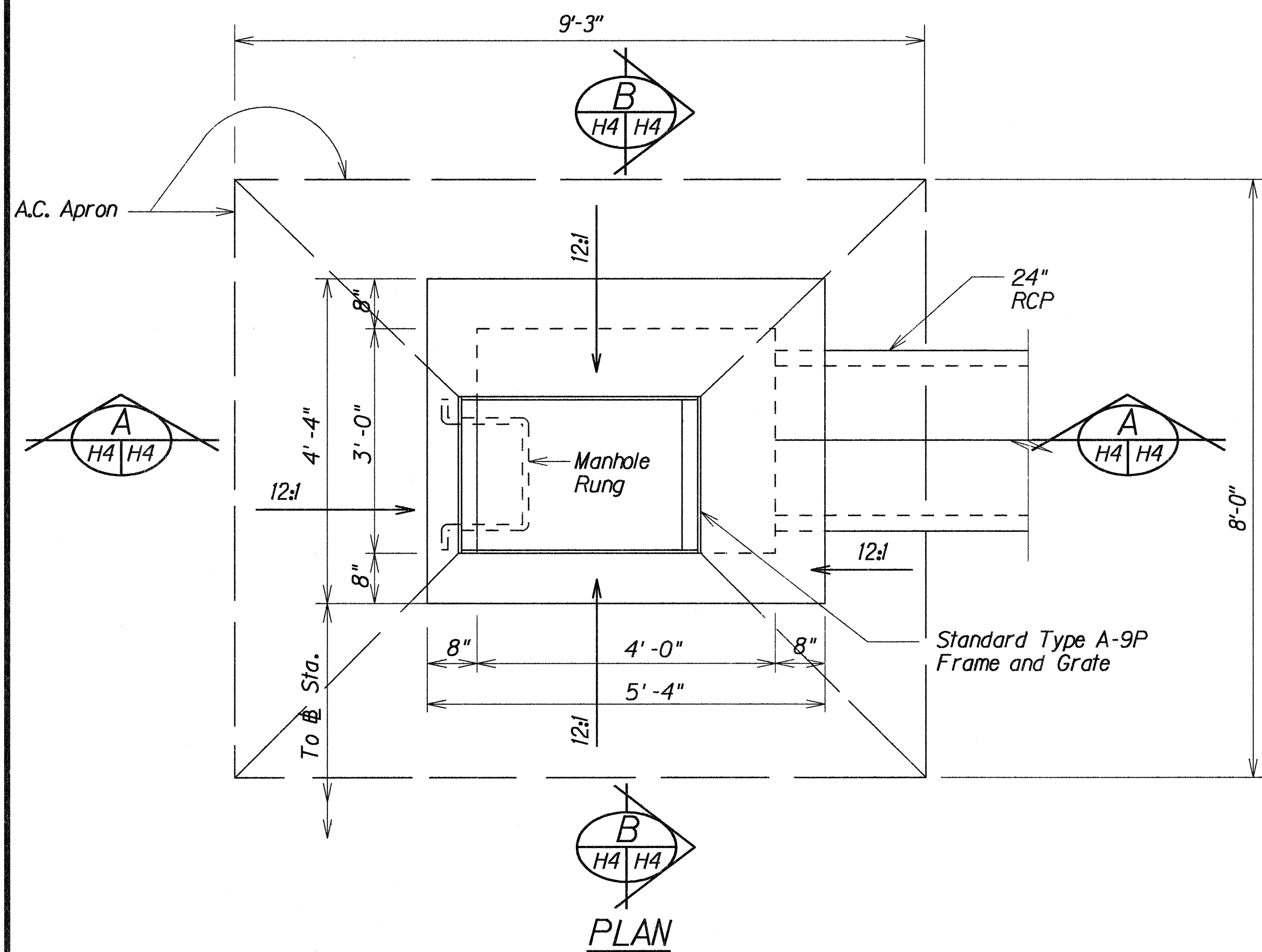
DRAINAGE DETAILS

KAMEHAMEHA HWY. IMPROVEMENTS
Puu Momī St. to Kaluamōi Pl.
Fed. Aid Project No. NH-099-1(11)

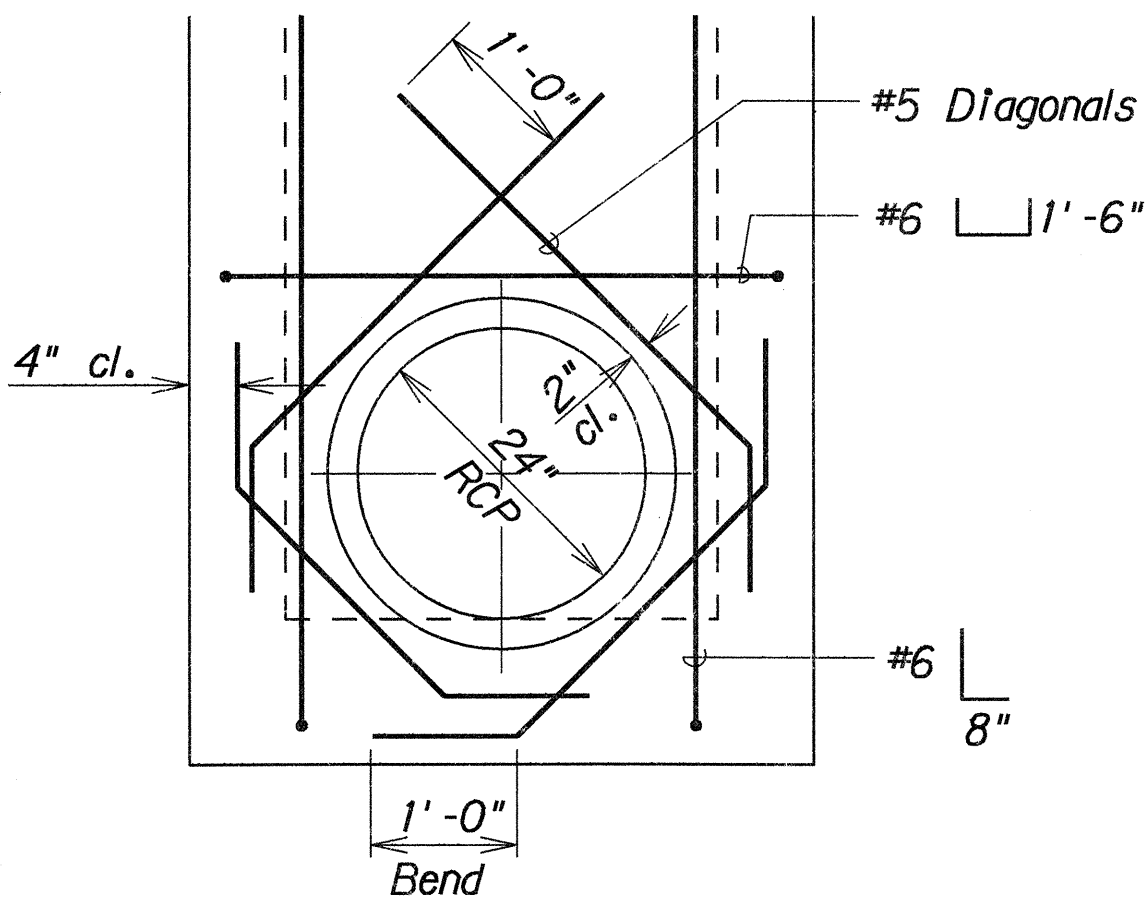
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SHEET No. H3 OF 6 SHEETS

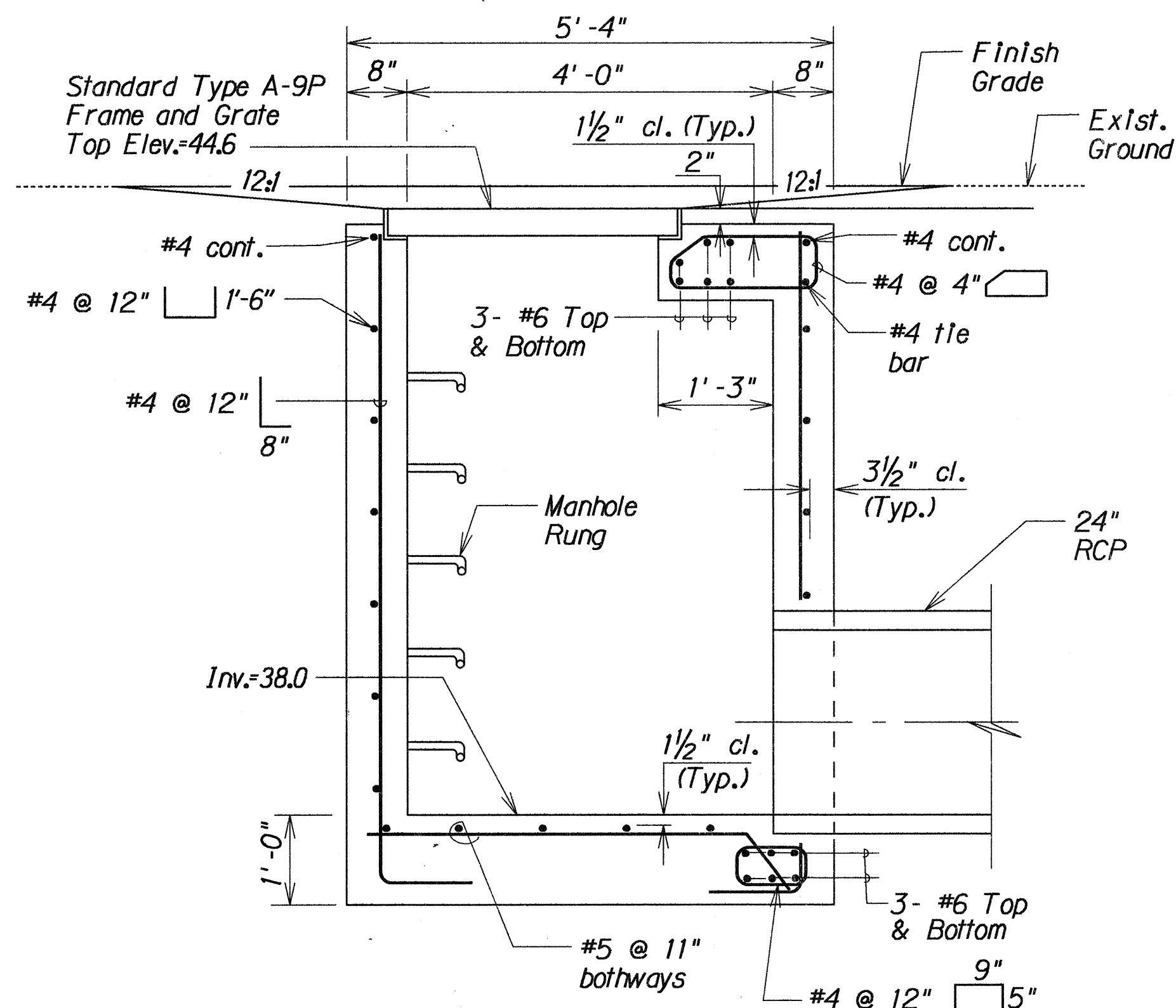
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(11)	1993	9	11



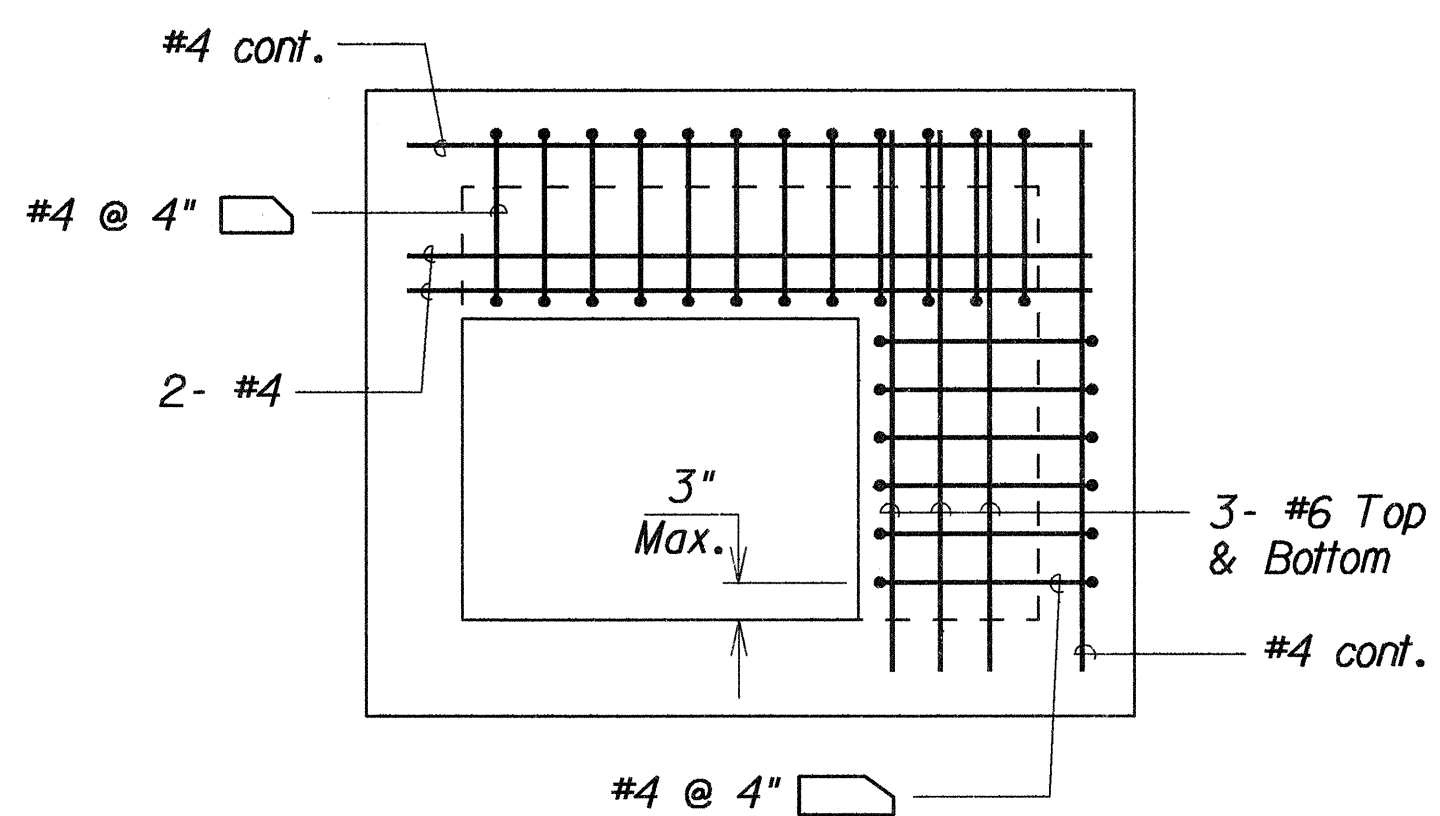
PLAN VIEW OF WALL REINFORCING



ADDED REINFORCING AT CULVERT OPENING



SECTION A



PLAN VIEW OF TOP SLAB REINFORCING

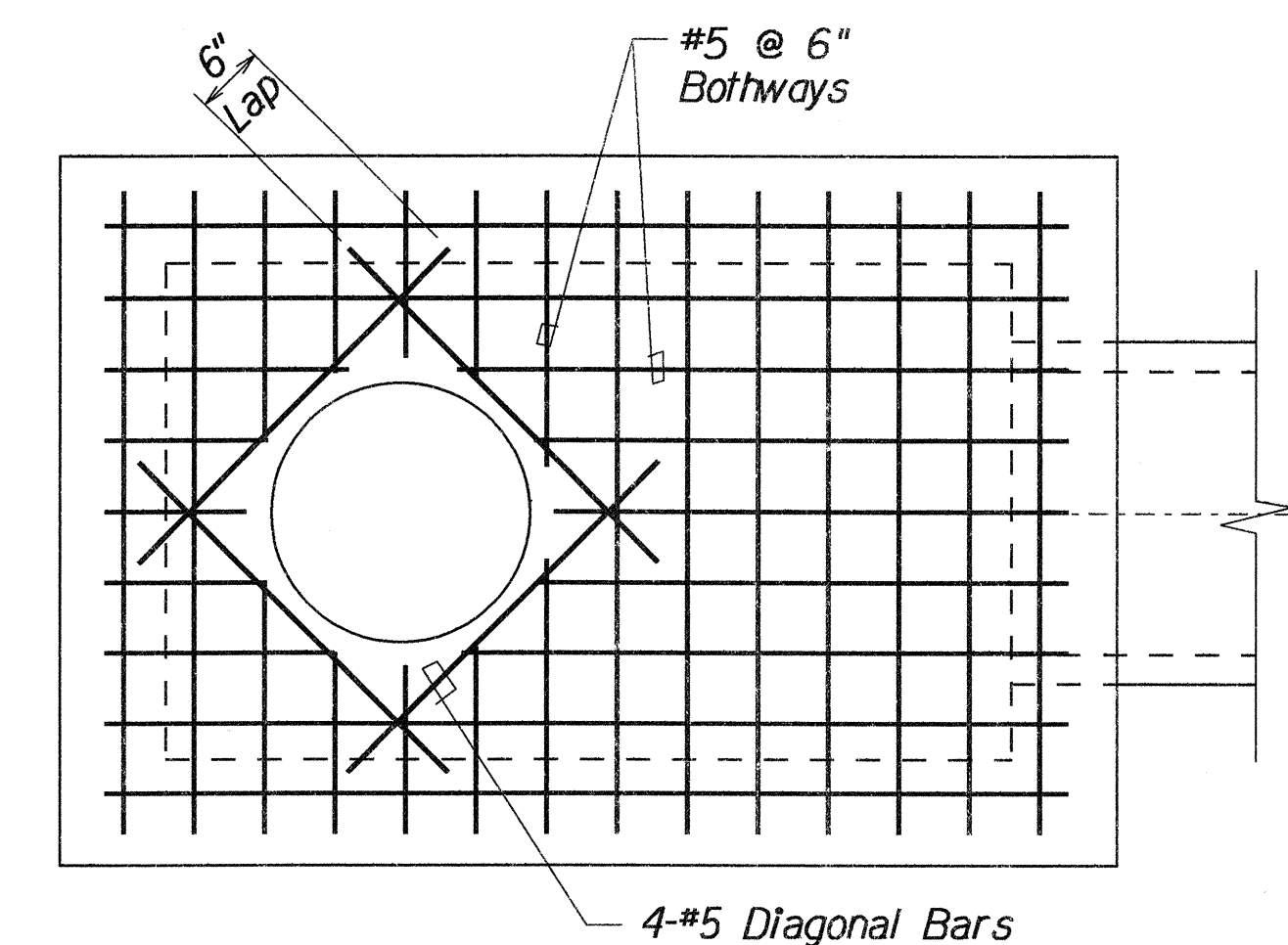
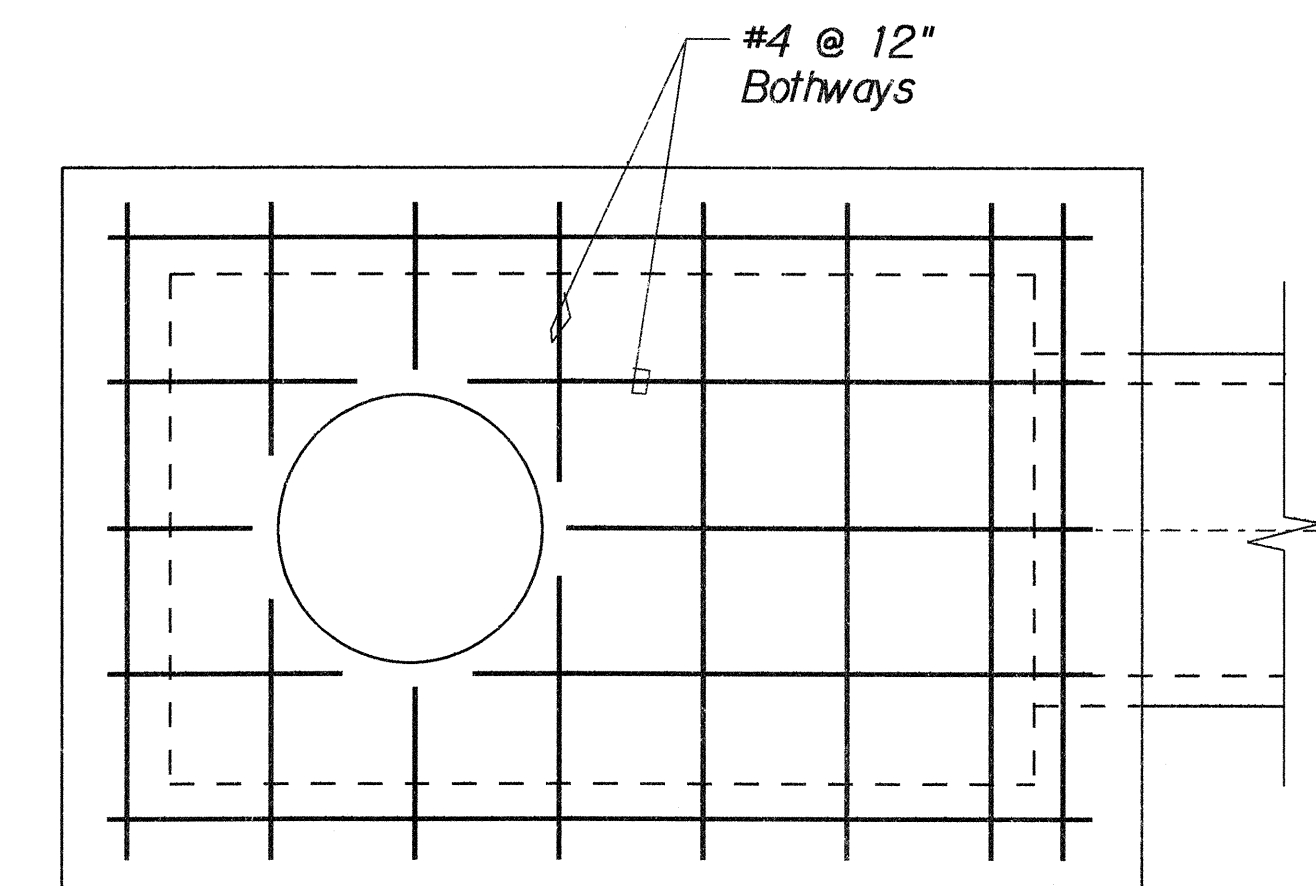
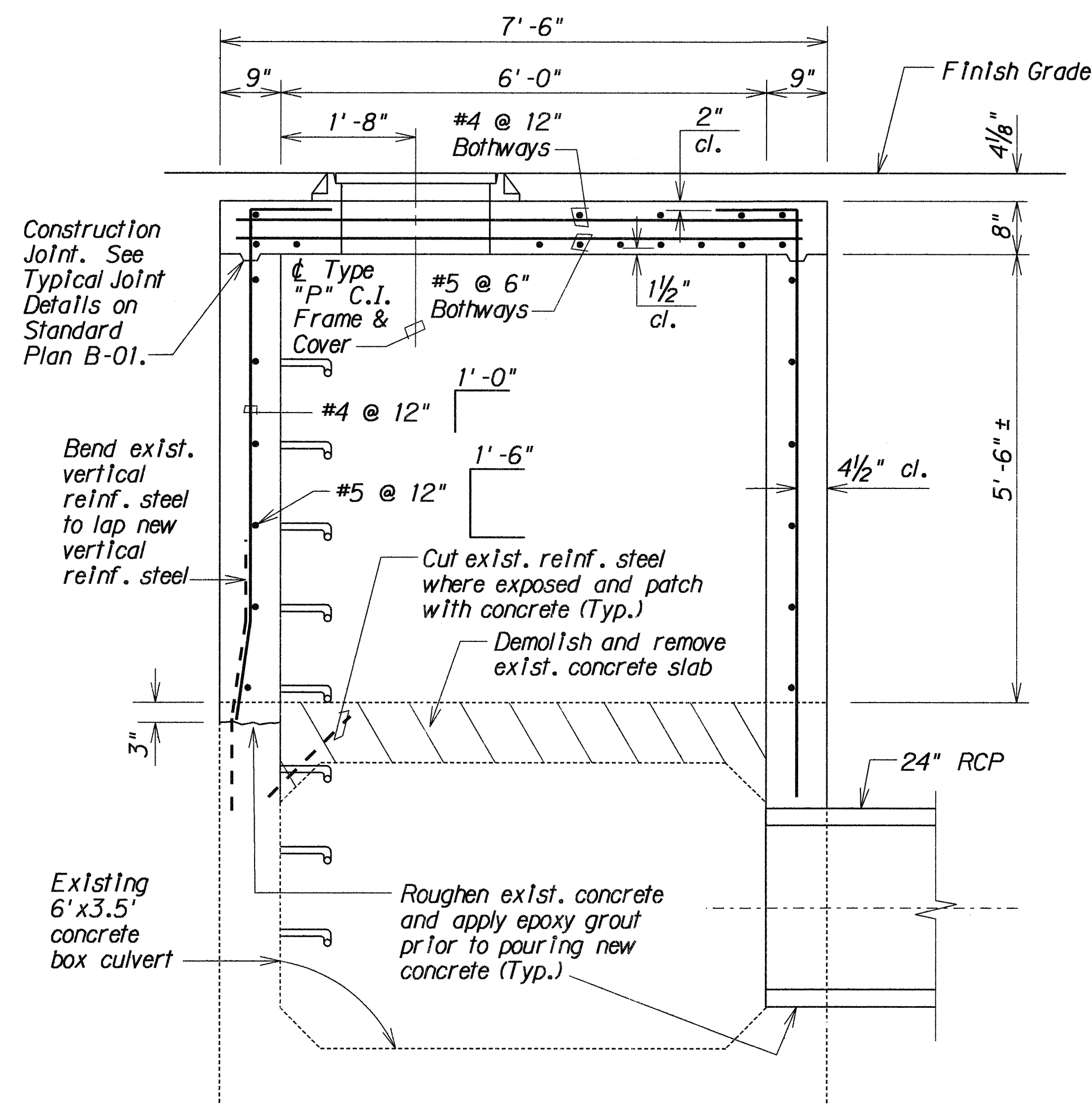
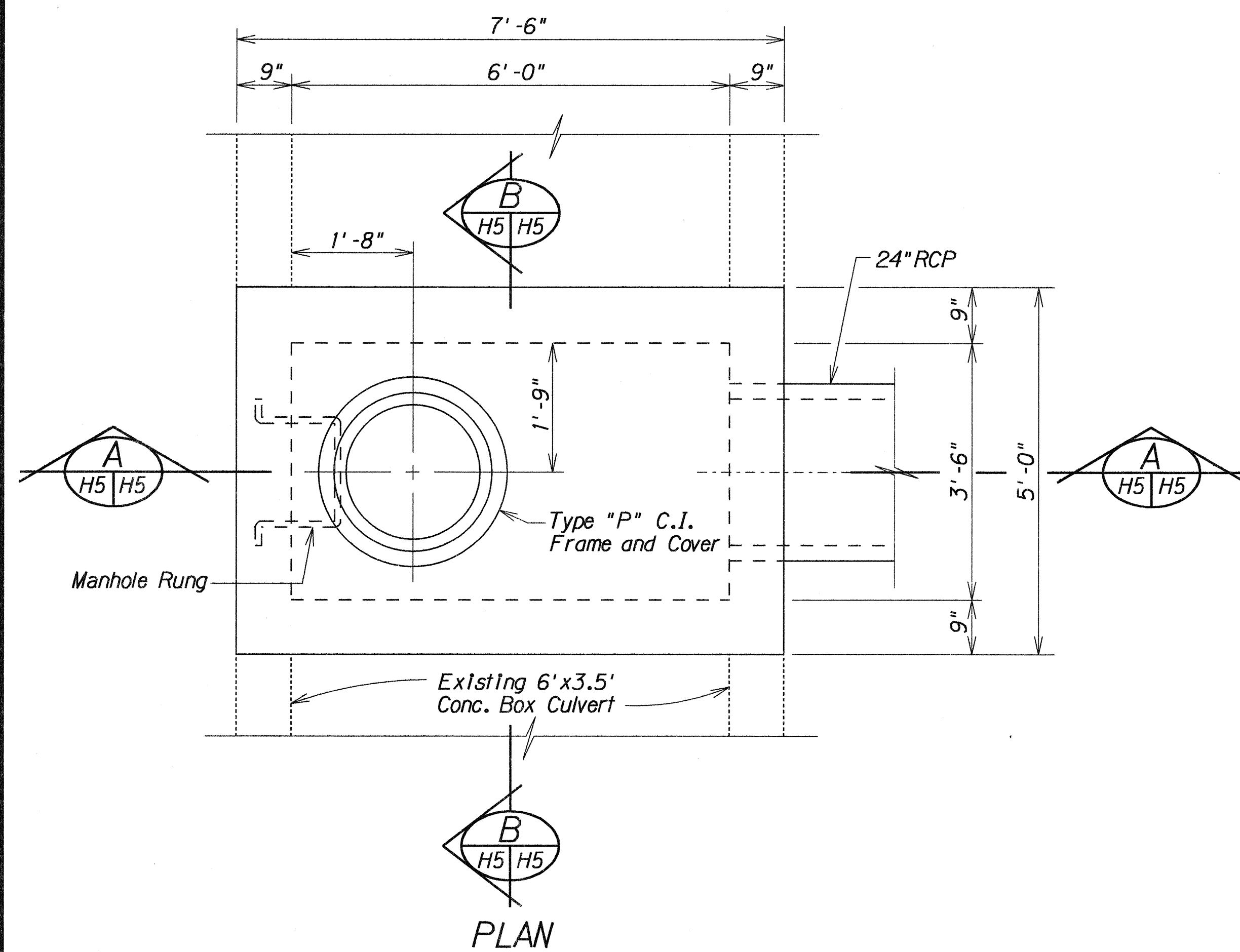
DETAILS OF TYPE 2 "A9-P" GRATED DROP INLET AT STA. 1011+41 o/s 26' LT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

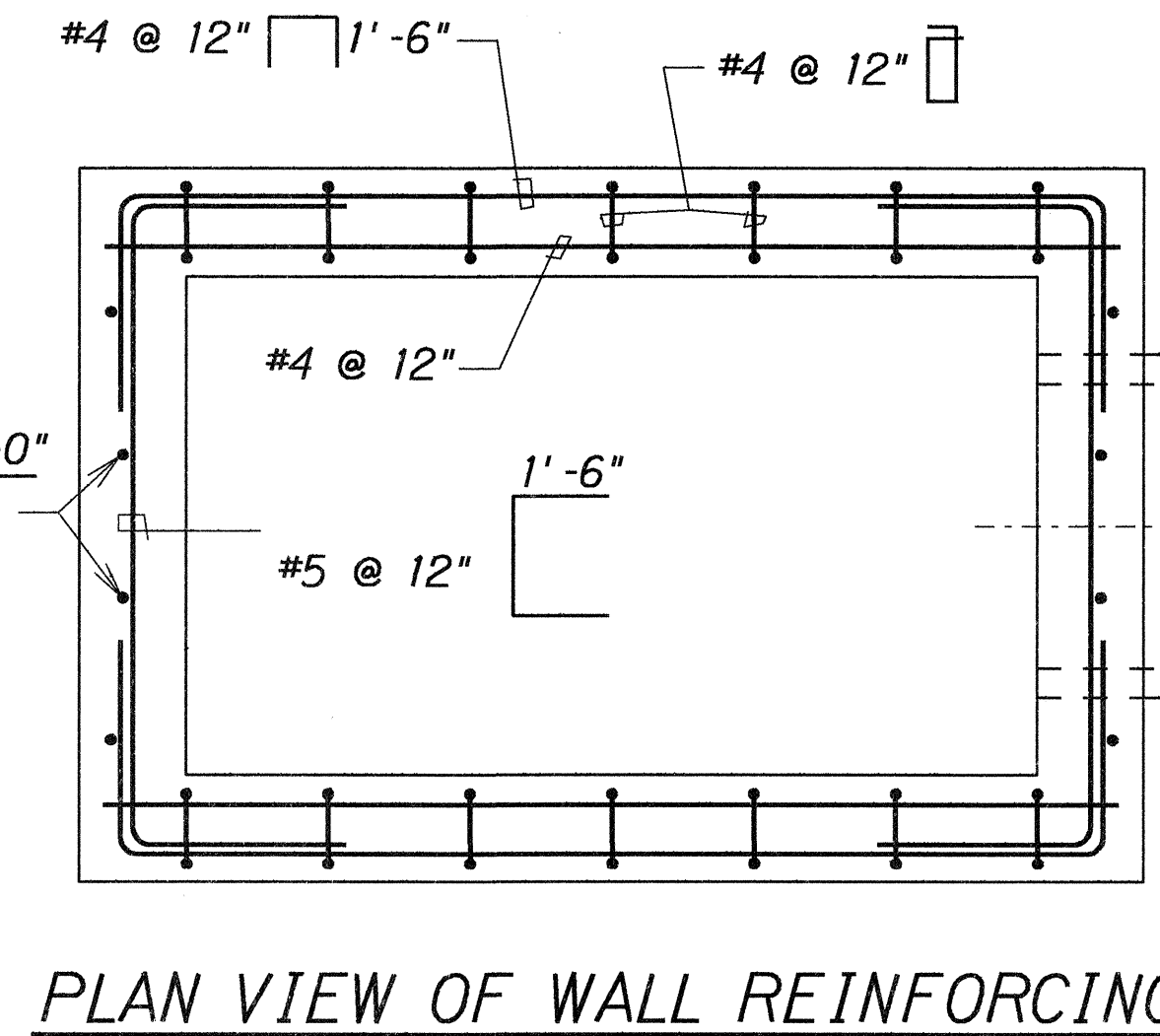
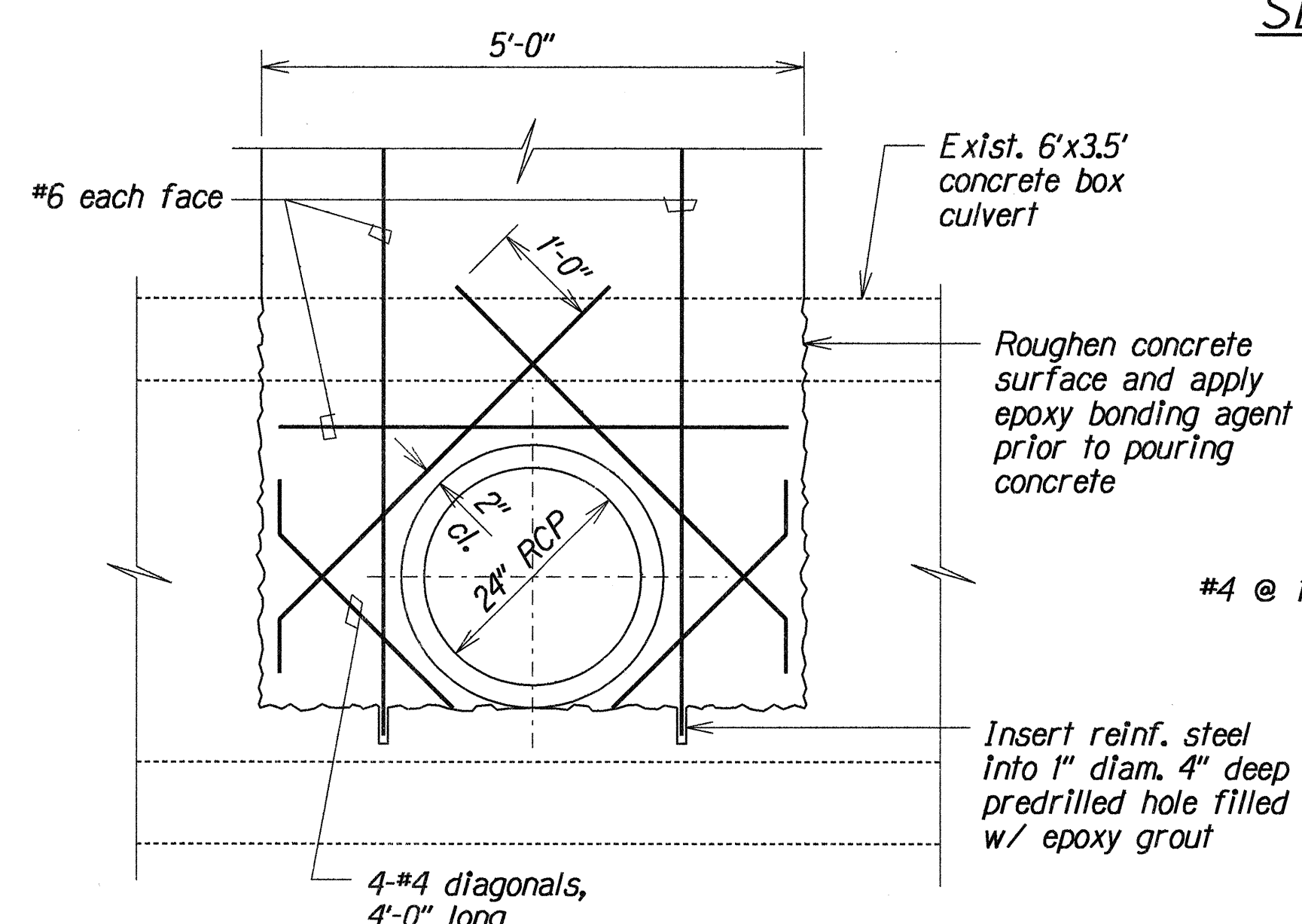
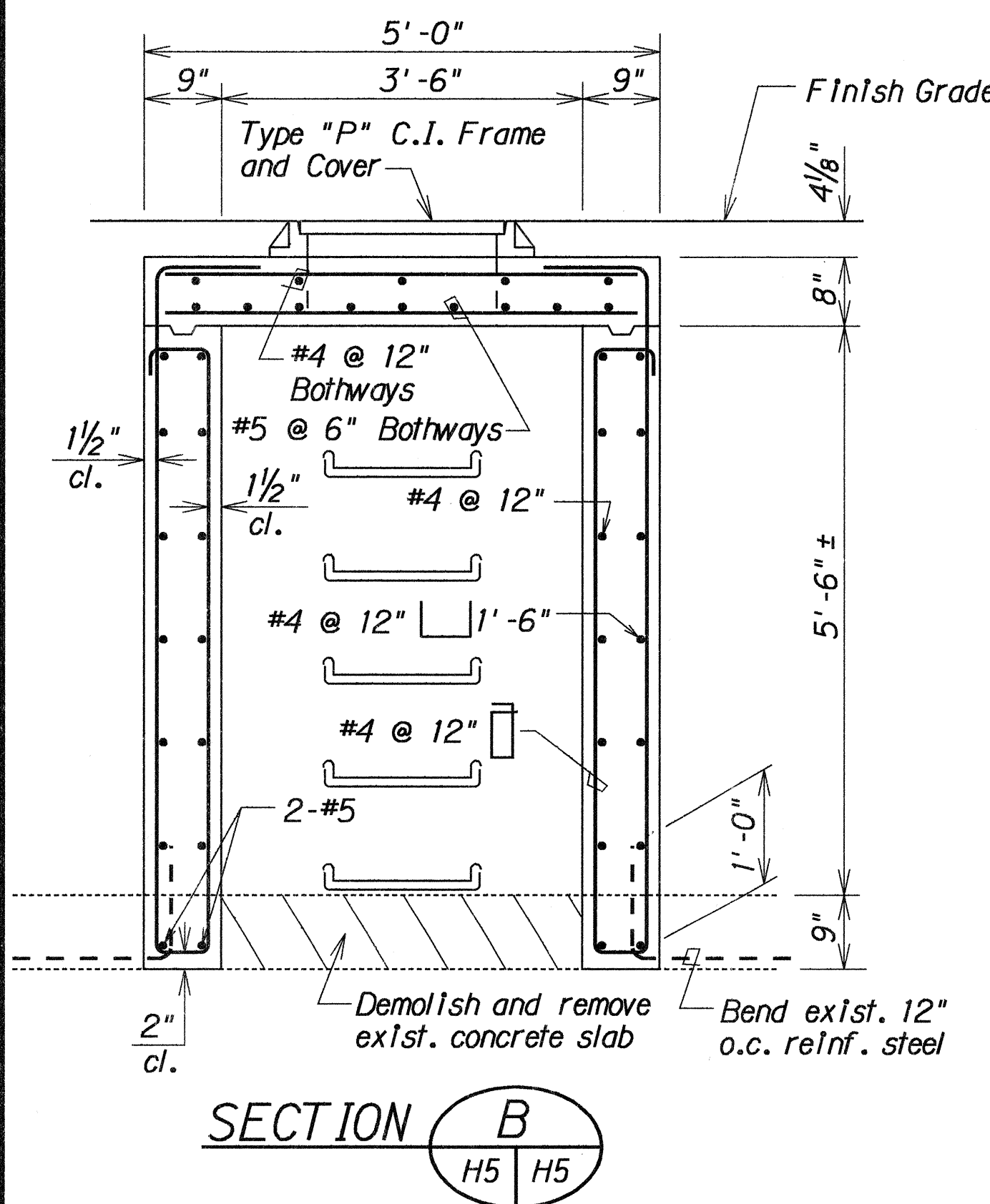
DRAINAGE DETAILS
KAMEHAMEHA HWY. IMPROVEMENTS
Puu Momi St. to Kaluamoi Pl.
Fed. Aid Project No. NH-099-1(11)
Scale: 3/4" = 1'-0" Date: Mar. 1993
SHEET No. H4 OF 6 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
DATE	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(11)	1993	10	11



PLAN VIEW OF TOP SLAB REINFORCING



DETAILS OF TYPE "G" STORM DRAIN MANHOLE

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
QUANTITIES BY	_____
BRN BY	_____
ORIGINAL PLAN	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

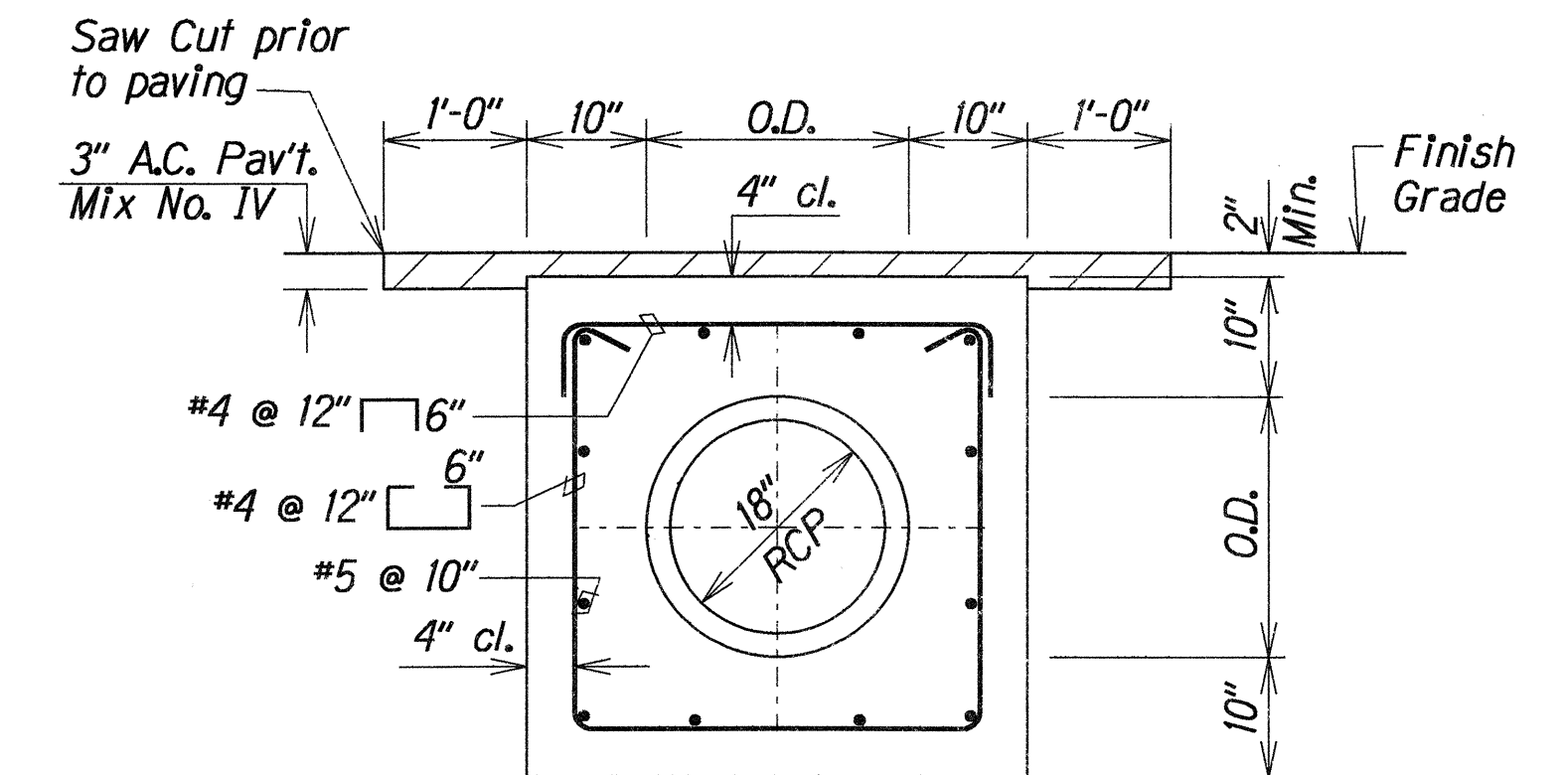
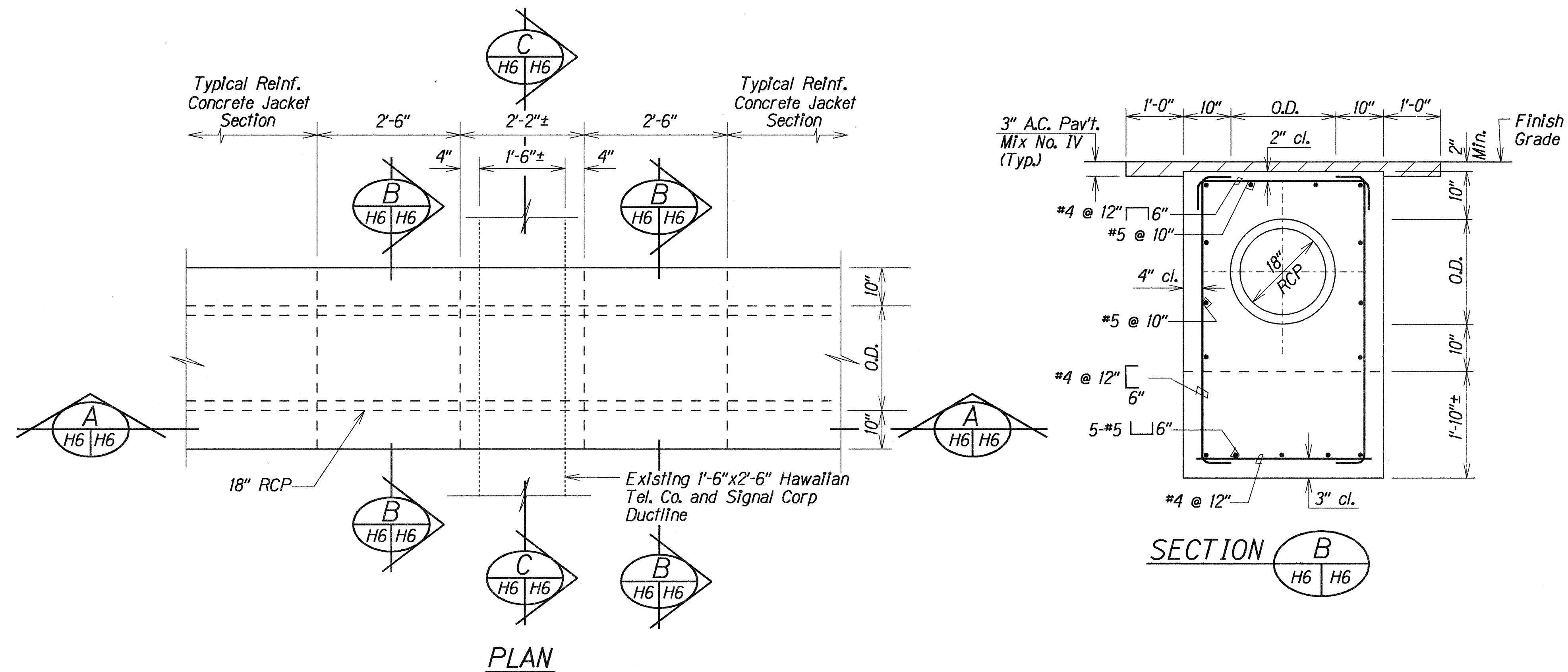
DRAINAGE DETAILS

KAMEHAMEHA HWY. IMPROVEMENTS
Puu Momii St. to Kaluamoi Pl.
Fed. Aid Project No. NH-099-1(11)

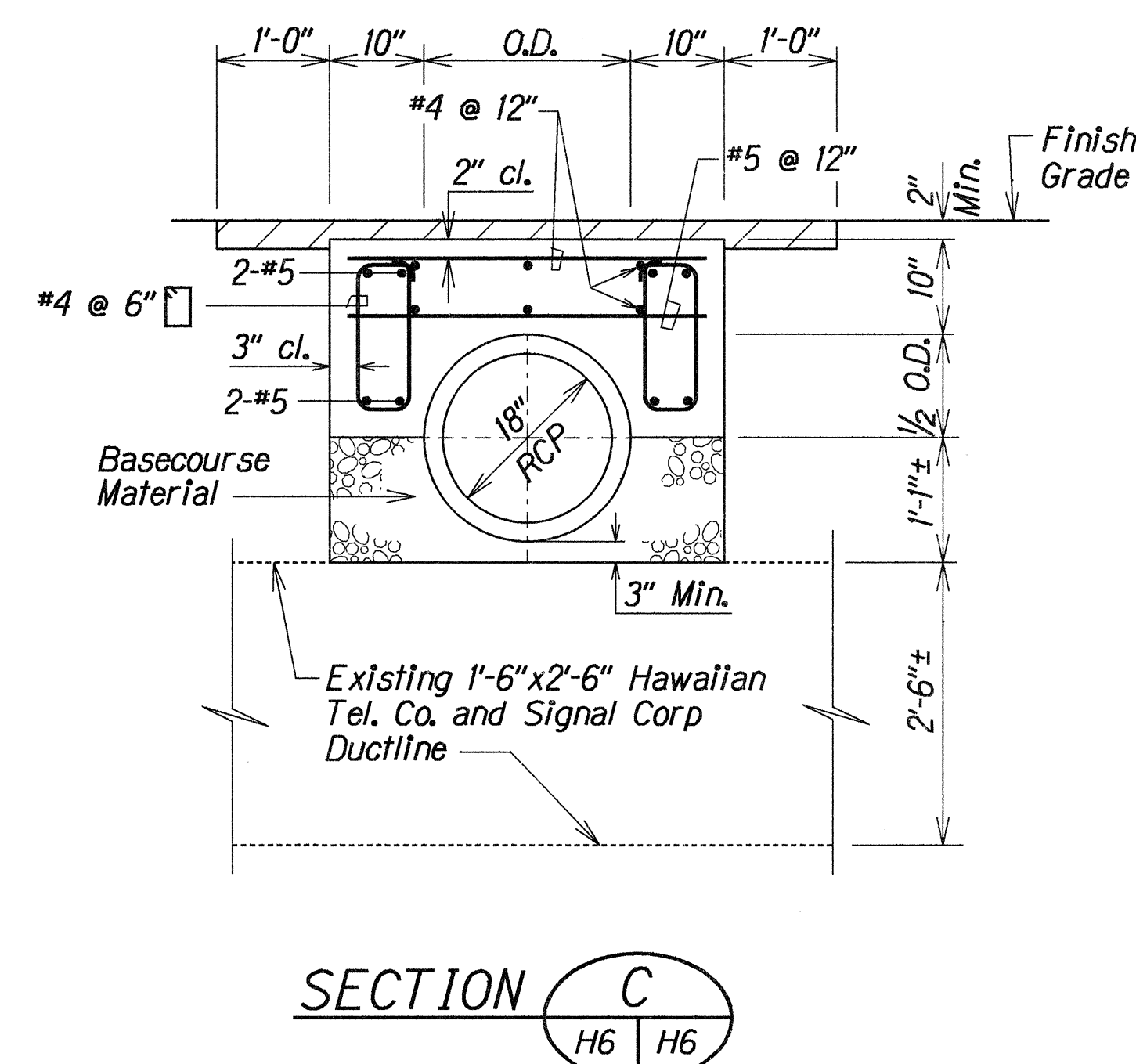
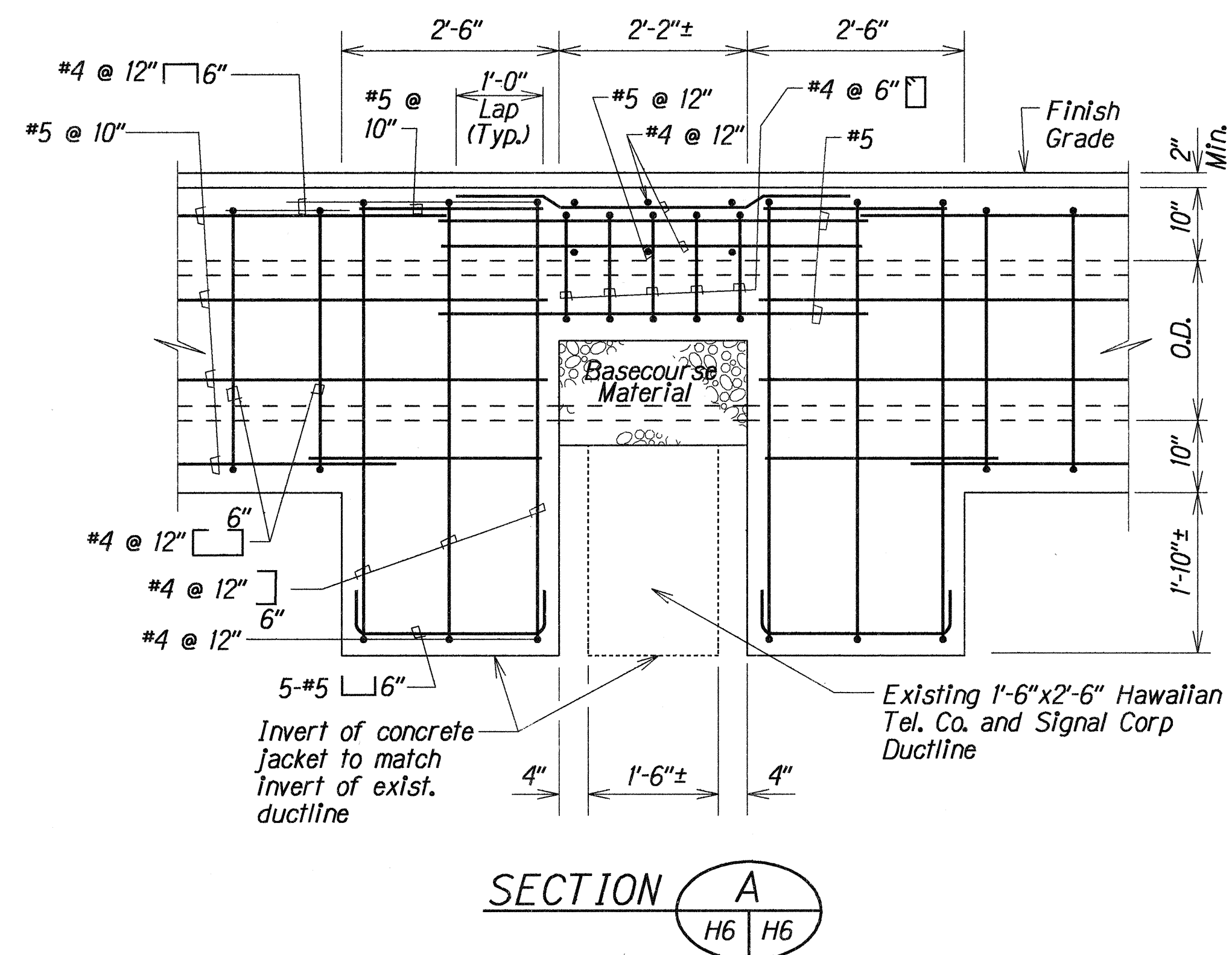
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SHEET No. H5 OF 6 SHEETS

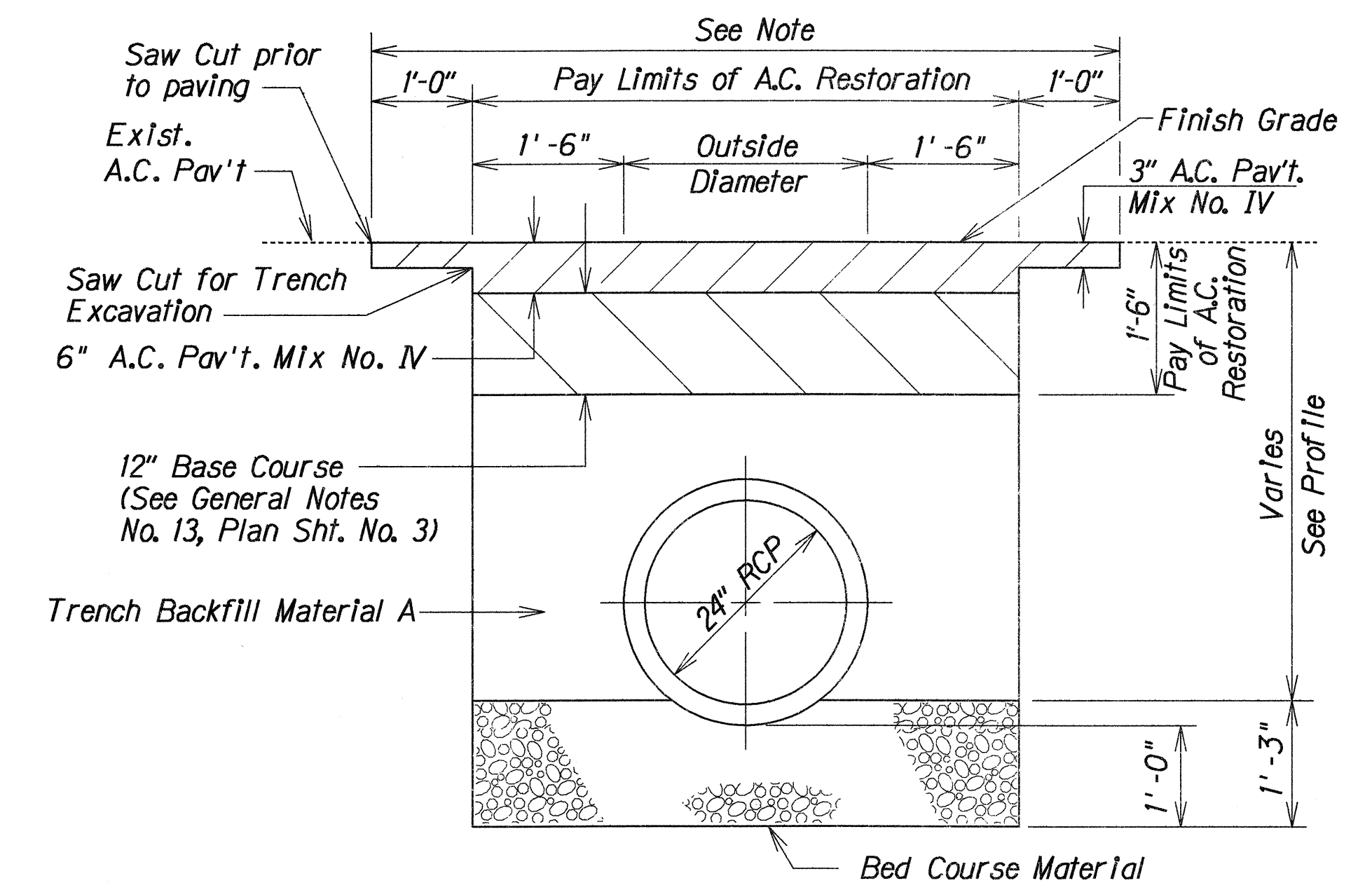
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(11)	1993	11	11



TYPICAL REINFORCED CONCRETE JACKET SECTION



DETAILS OF REINFORCED CONCRETE JACKET @ STA. 1037+50 AND STA. 1038+95



NOTE: The additional 1'-0" width of A.C. Pavement on each side of the trench shall be considered incidental to Restoration of Existing Pavements and Other Improvements.

TRENCH AND A.C. PAV'T. RESTORATION DETAIL

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
NO.	_____

6/10/93

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE DETAILS
KAMEHAMEHA HWY. IMPROVEMENTS Puuhonua St. to Kaluamoi Pl. Fed. Aid Project No. NH-099-1(11)
Scale: 3/4" = 1'-0" Date: Mar. 1993
SHEET No. H6 OF 6 SHEETS