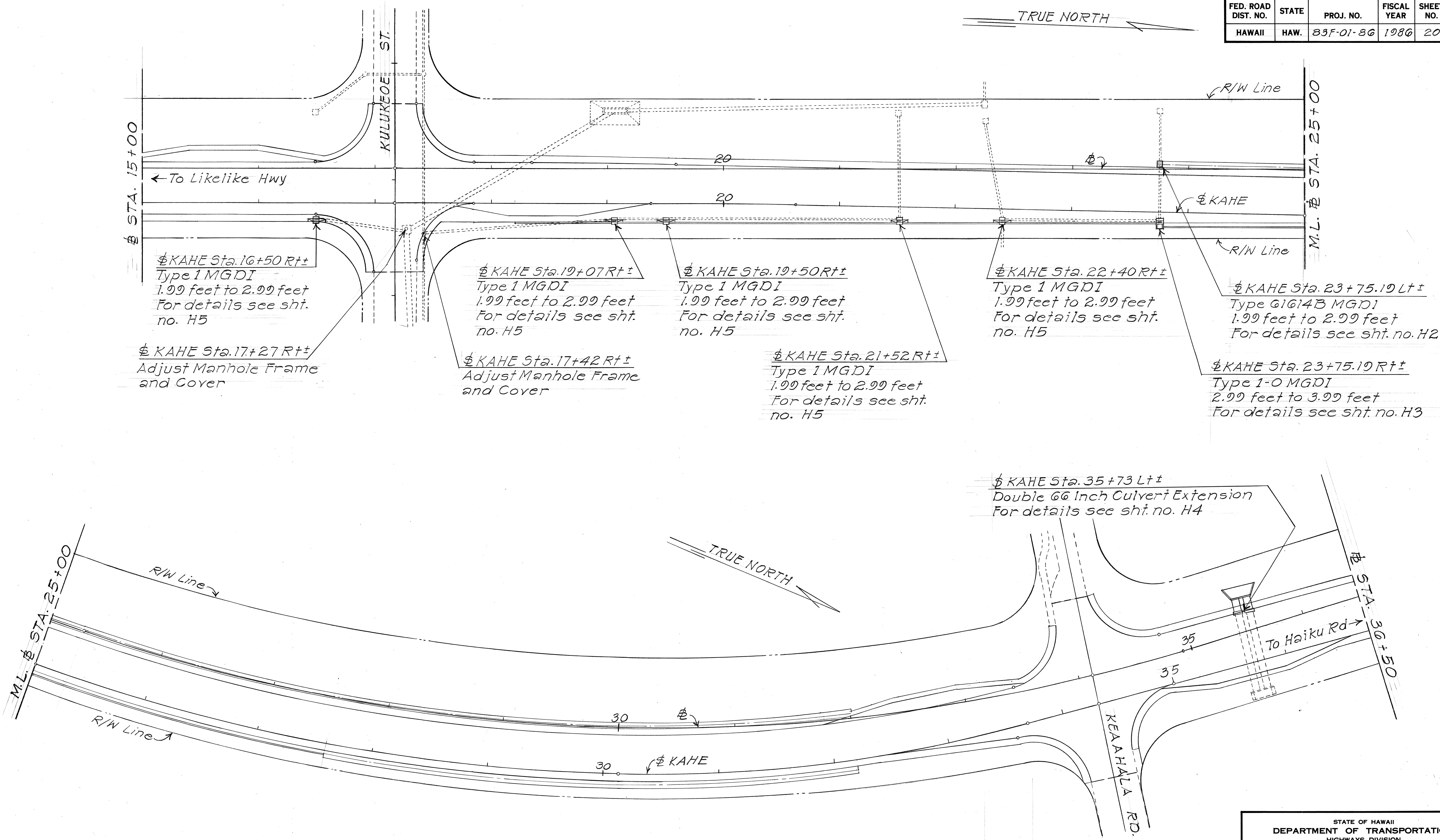


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-86	1986	20	54

TRUE NORTH



DATE	_____
SURVEY PLOTTED BY	_____
ORIGINAL PLAN	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
NO.	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

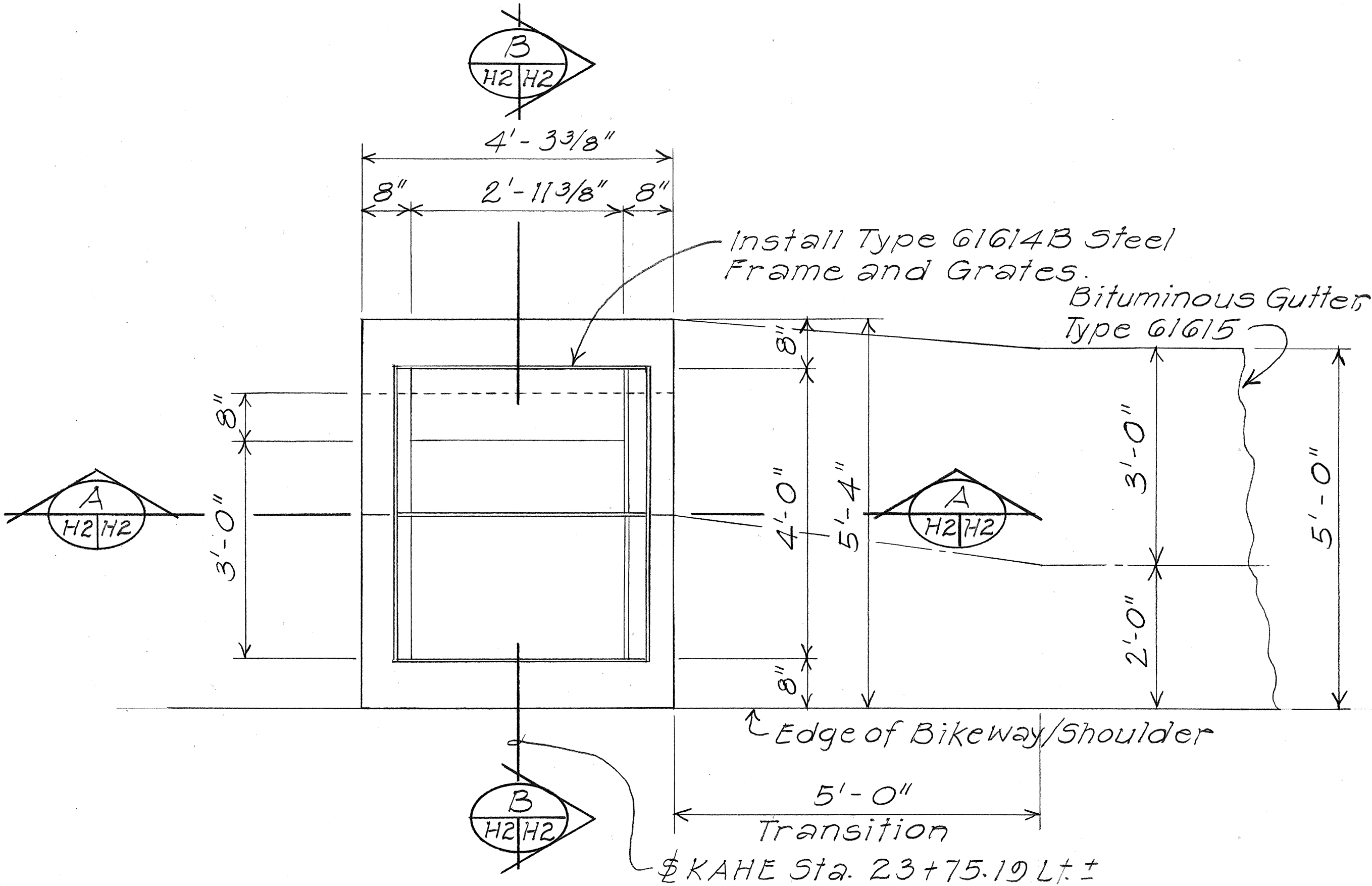
DRAINAGE PLAN

KAHEKILI HWY. IMPROVEMENTS
Likelike Hwy. to Haiku Road
PROJECT NO. 83F-01-86

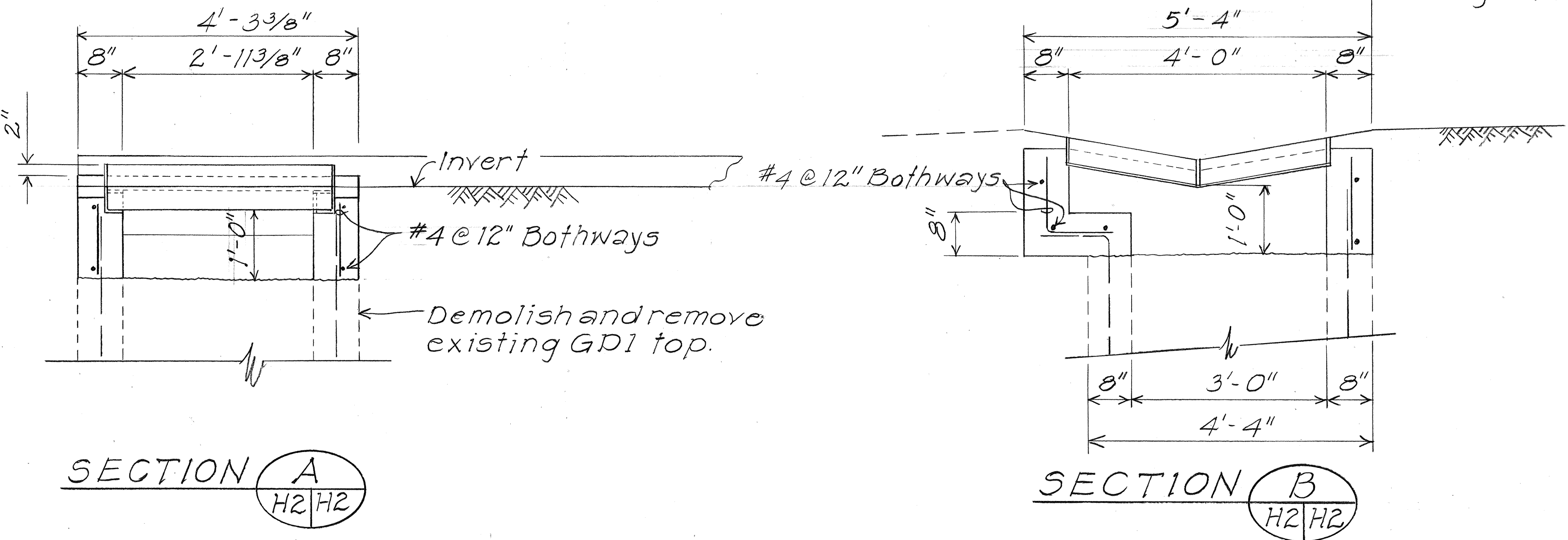
Scale: 1" = 40' Date: May, 1986

SHEET No. H1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-80	1986	21	54



PLAN



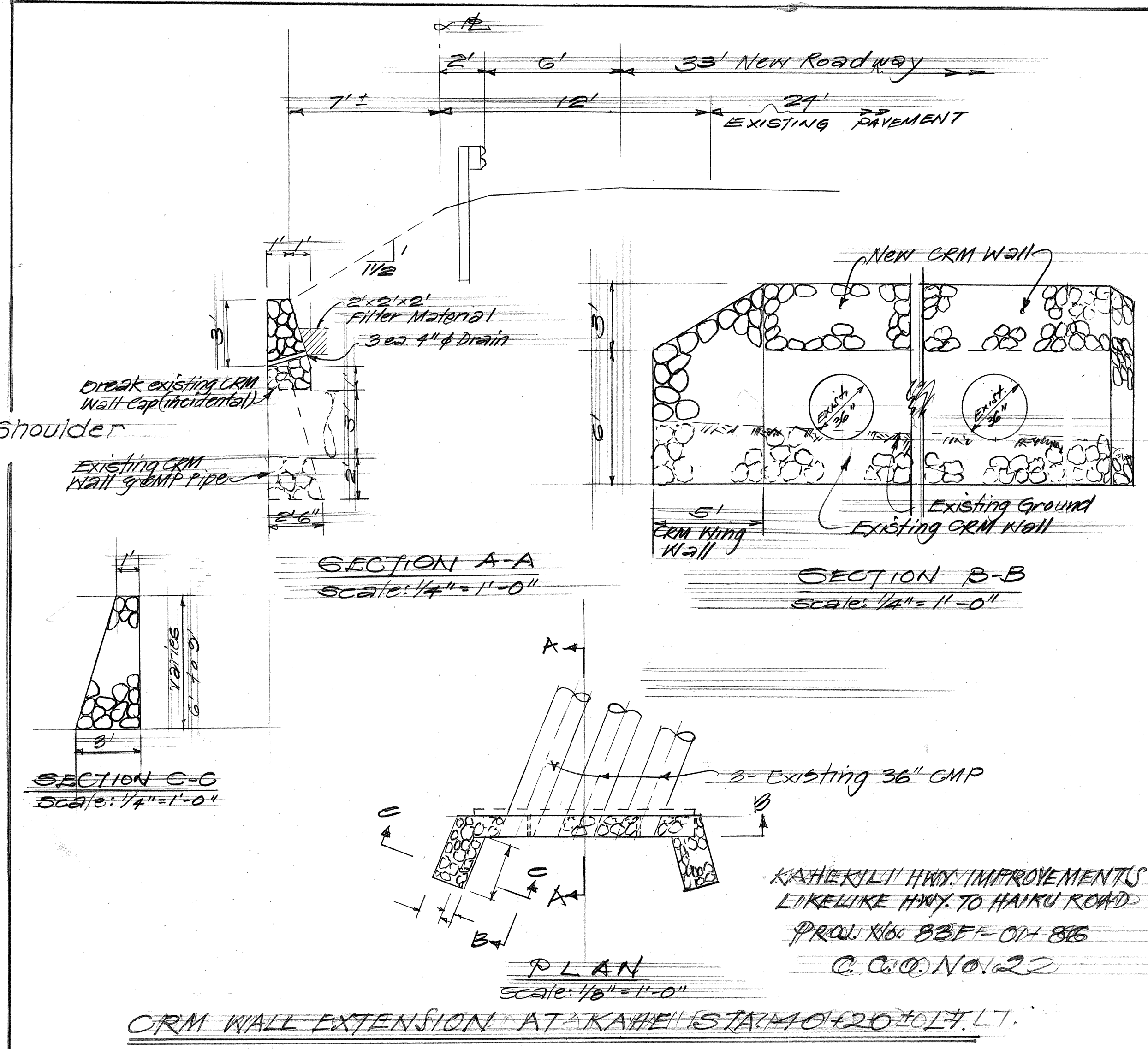
SECTION A
H2/H2

SECTION B
H2/H2

DETAIL OF TYPE 61614B MODIFIED GRATED DROP INLET
AT KAHE STA. 23+75.19 L.T.±
Scale: 3/4" = 1'-0"

GENERAL 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 removing a portion of the entire existing structure shall not be paid for seperately, but shall be considered incidental to the various contract items.
- The double 66 inch culvert extension shall be paid for as a unit item. Pay item shall include inlet structure, 66" RCP, C.I. III, concrete collar, excavation and backfill and other incidentals required to complete the work.



SECTION A-A
Scale: 1/4" = 1'-0"

SECTION B-B
Scale: 1/4" = 1'-0"

SECTION C-C
Scale: 1/4" = 1'-0"

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

CRM WALL EXTENSION AT KAHE STA. 23+75.19 L.T.±

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

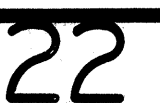
DRAINAGE DETAIL

KAHEKILI HWY. IMPROVEMENTS
Likelike Hwy. to Haiku Road
PROJECT NO. 83F-01-80

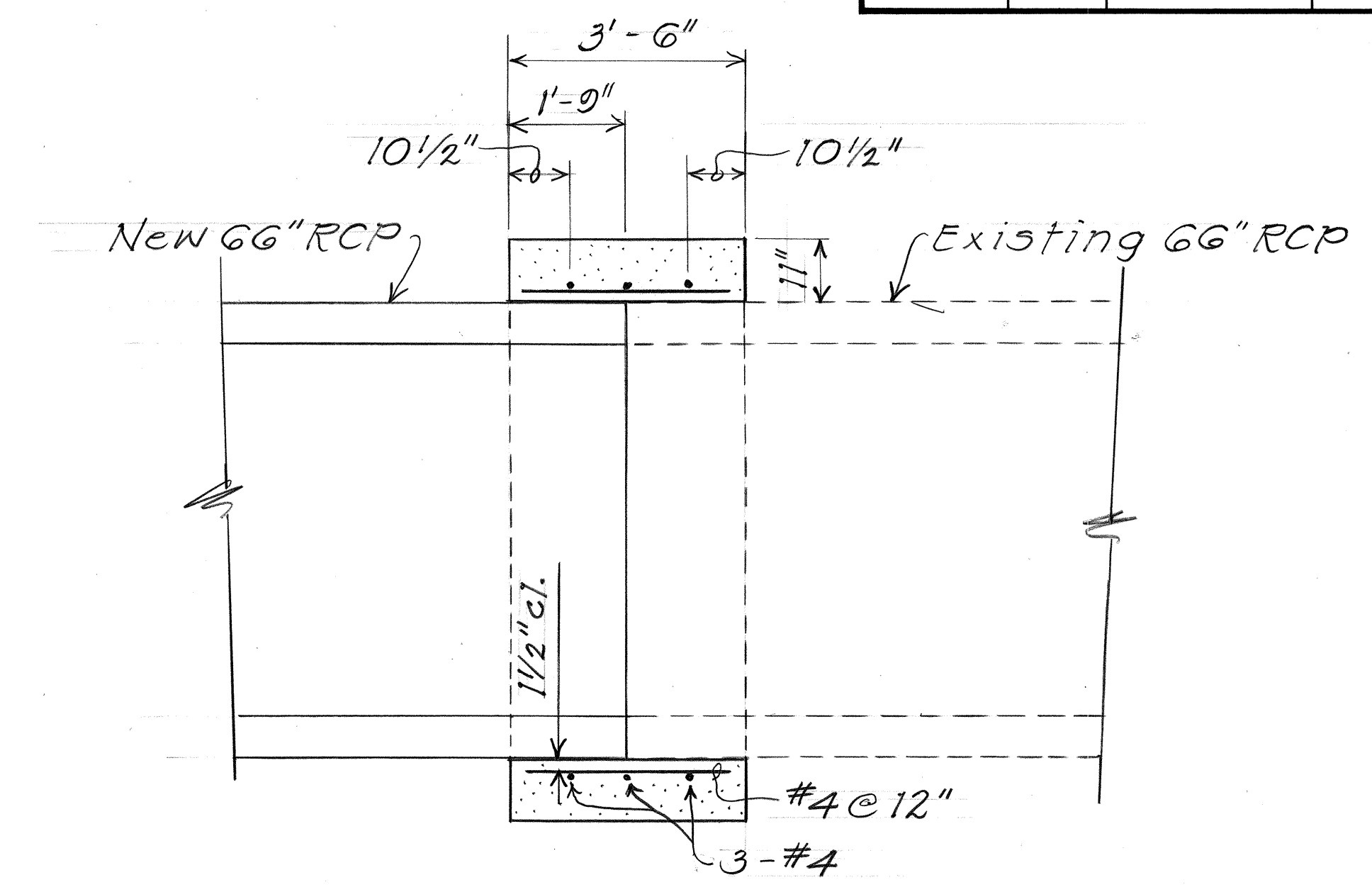
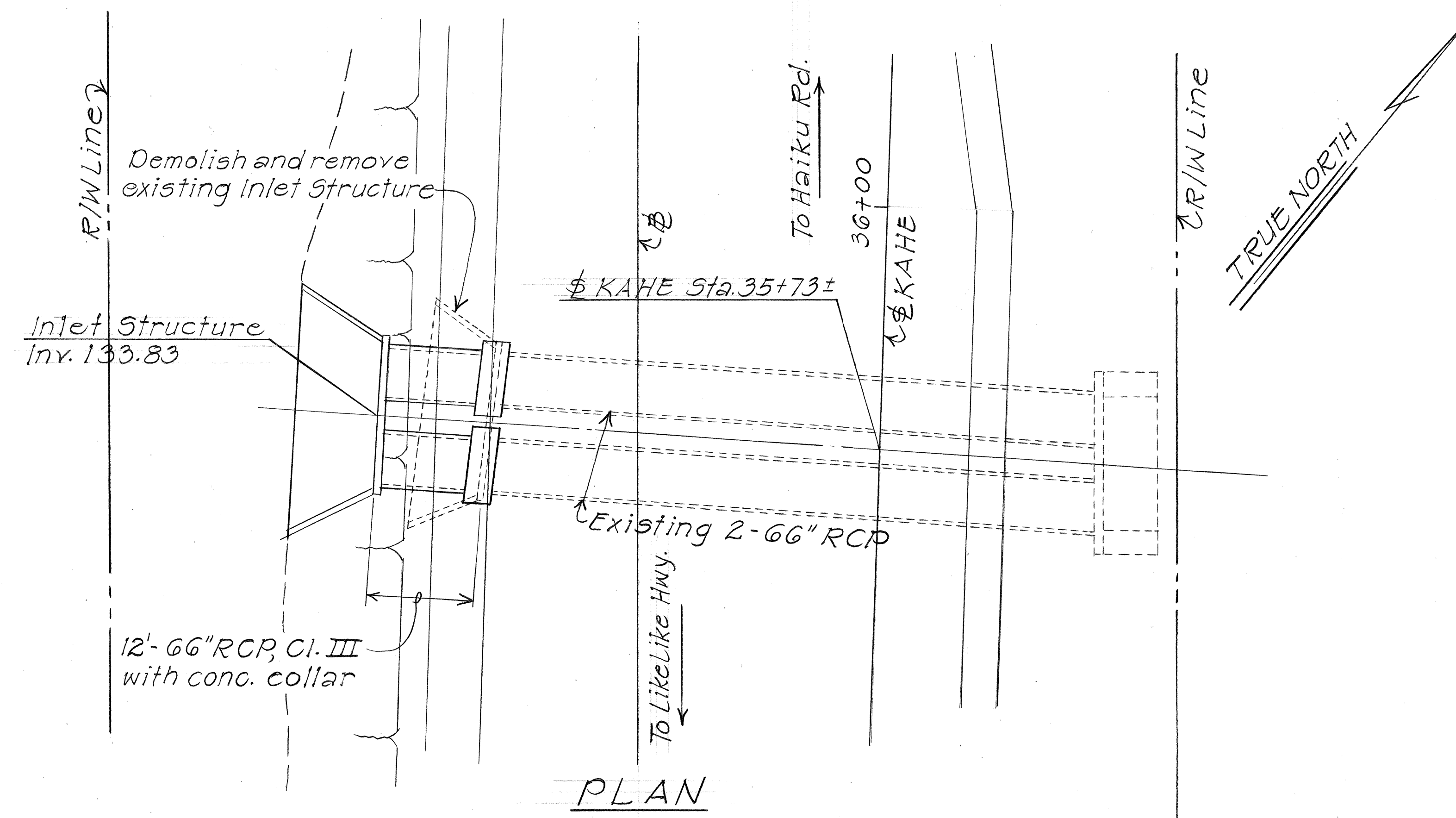
Scale: As Noted Date: May, 1986

SHEET No. H2 OF 7 SHEETS

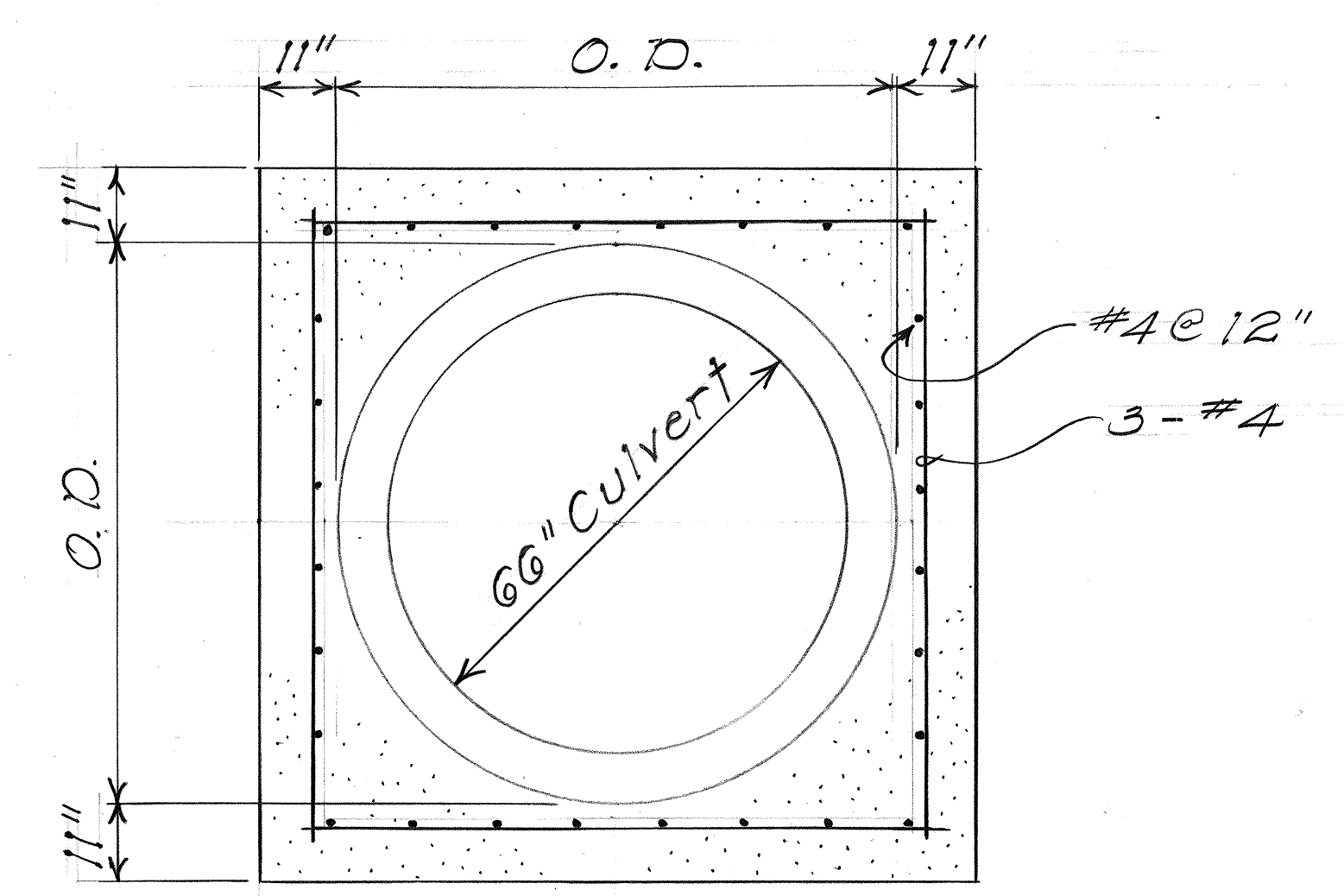
ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	" _____
	TRACED BY _____	" _____
	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
NO. _____	CHECKED BY _____	" _____



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-86	1986	23	54



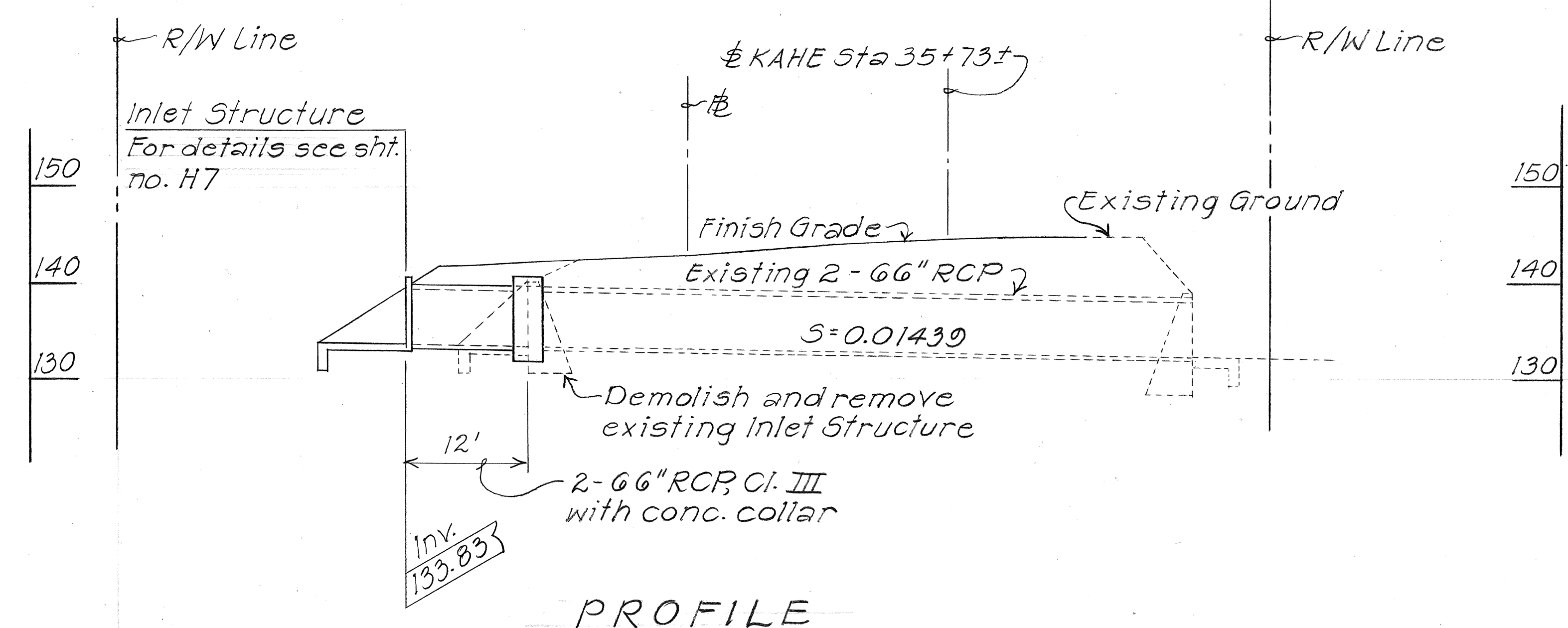
ELEVATION



SECTION

DETAIL OF CONCRETE COLLAR

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



DETAIL OF DOUBLE 66" CULVERT EXTENSION AT KAHE STA. 35+73 LT±

Scale: 1" = 10'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

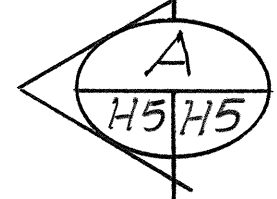
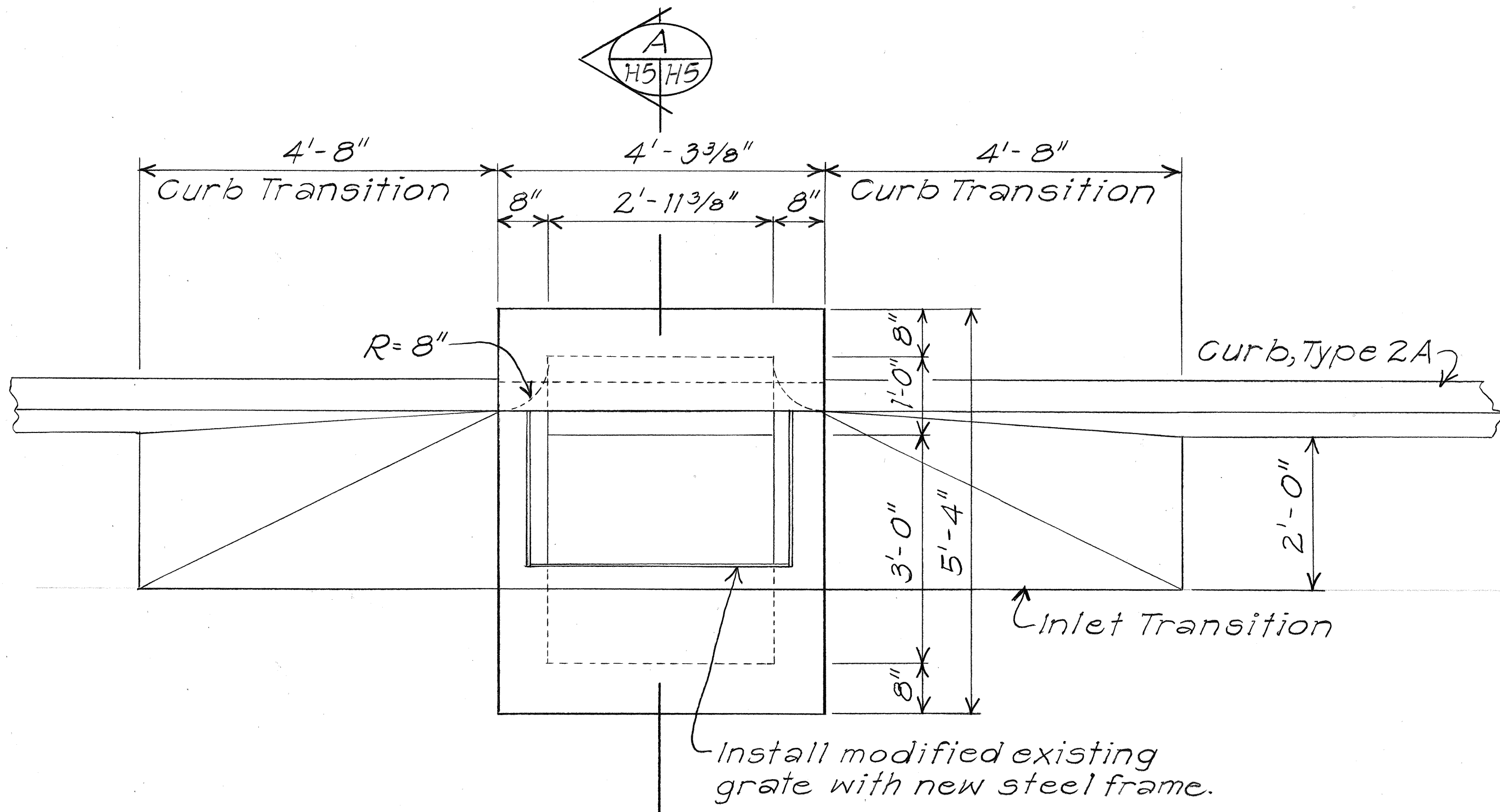
DRAINAGE DETAIL

KAHEKILI HWY. IMPROVEMENTS
Likelike Hwy. to Haiku Road
PROJECT NO. 83F-01-86

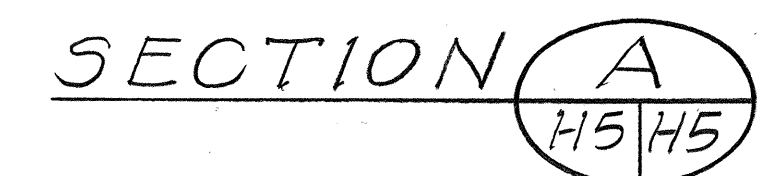
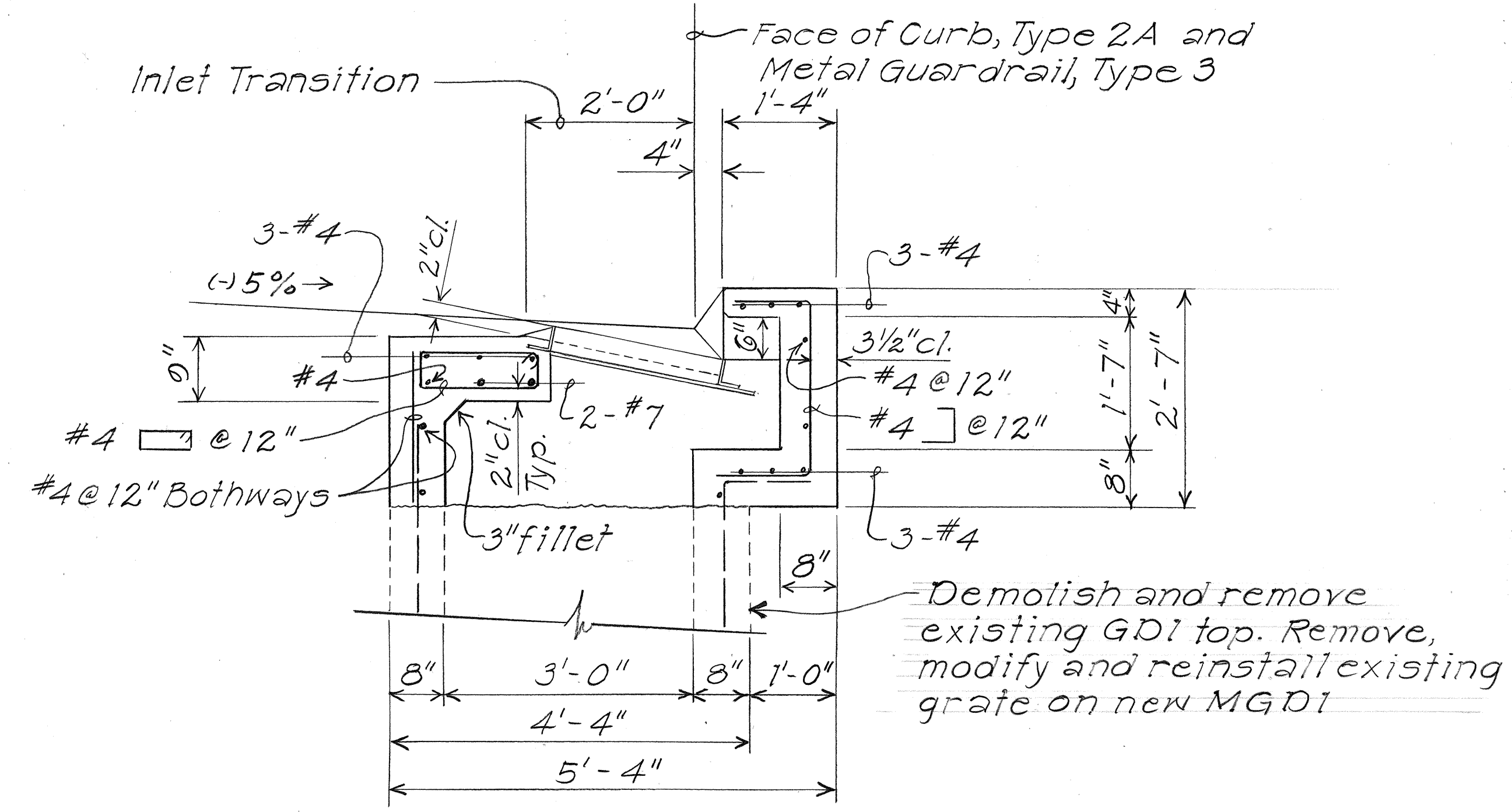
Scale: As Noted Date: May, 1986

SHEET No. 44 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-86	1986	ADD24	54



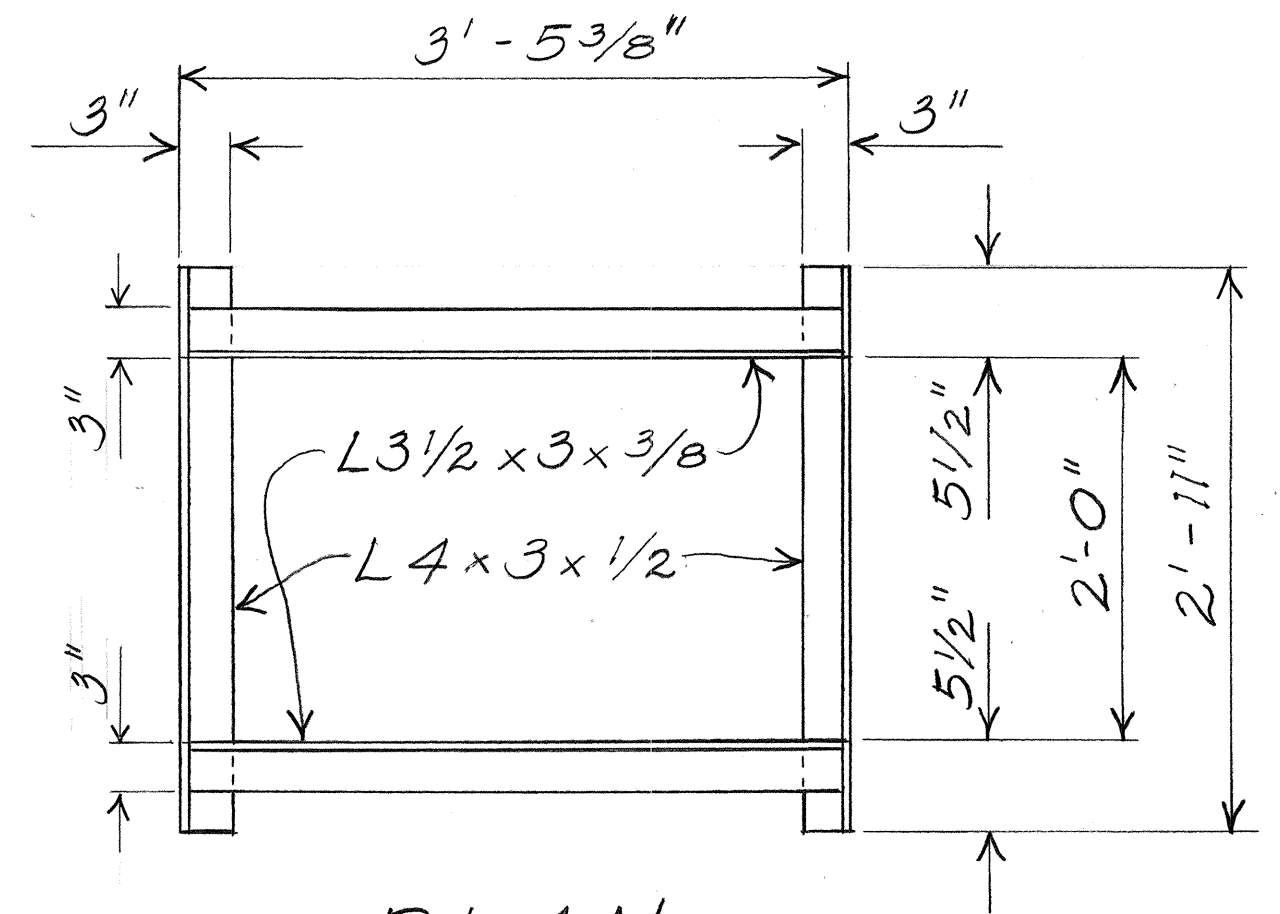
PLAN



SECTION A

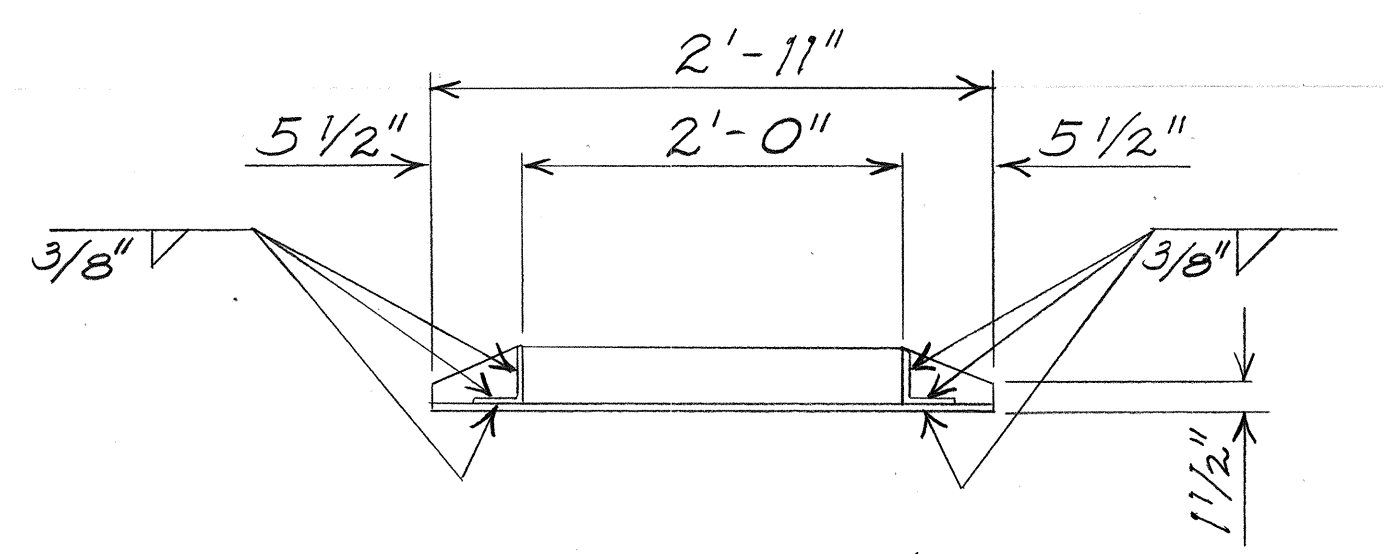
DETAIL OF TYPE 1 MODIFIED GRATED DROP INLET

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

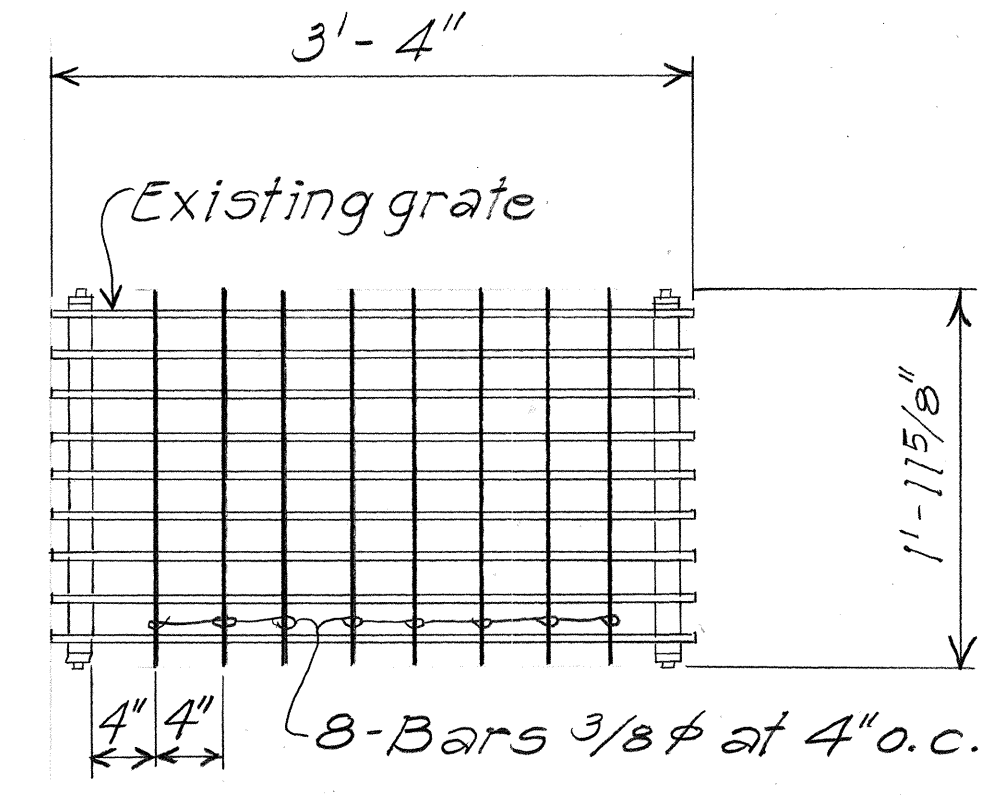


PLAN

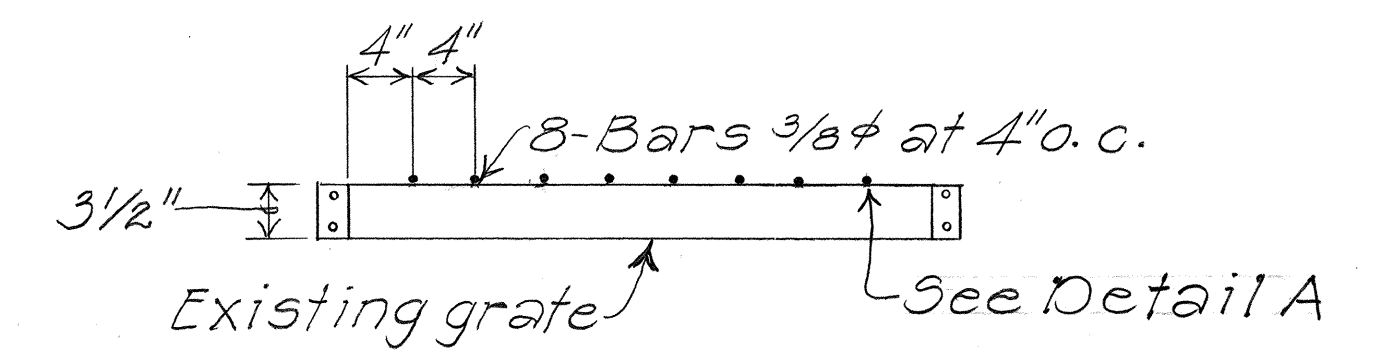
DETAIL OF FRAME



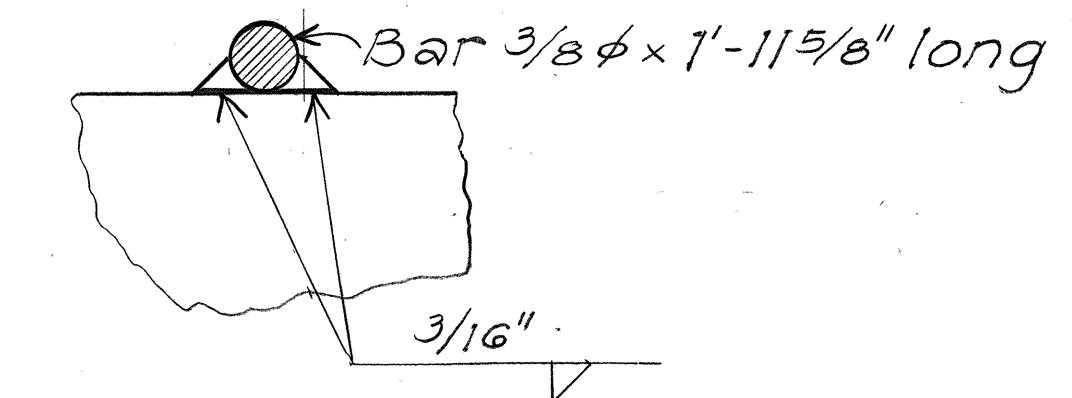
SECTION



PLAN



SECTION



DETAIL A

MODIFICATION TO EXISTING GRATE
DETAILS OF STEEL FRAME & MODIFIED EXISTING GRATE
Scale: 1" = 1' - 0"

DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
NO.	

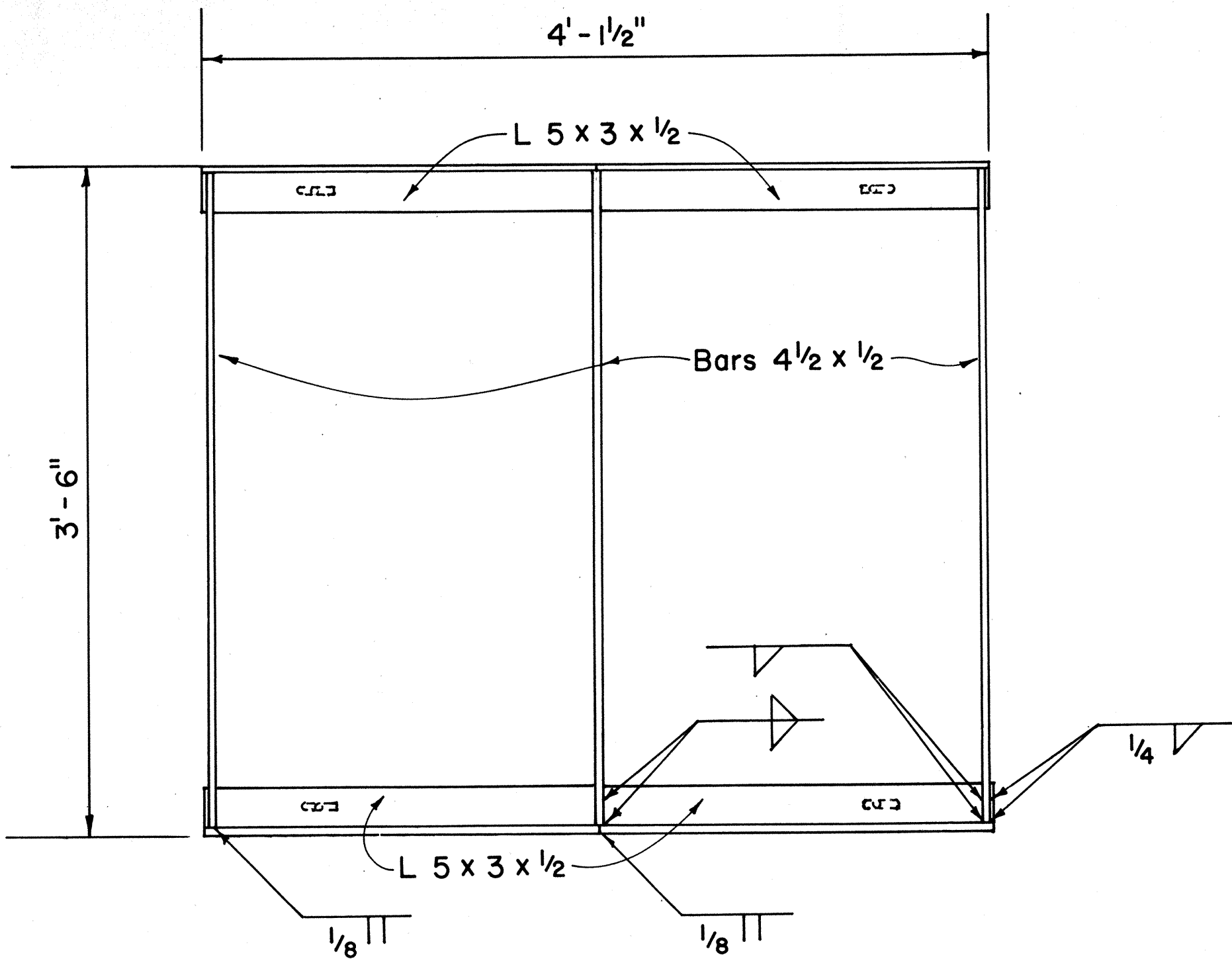
6/5/86	Revise detail for 3/8" cross bar for existing grate.
DATE	REVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE DETAIL
KAHEKILI HWY. IMPROVEMENTS Likelike Hwy. to Haiku Road PROJECT NO. 83F-01-86
Scale: As Noted Date: May, 1986
SHEET No. H5 OF 7 SHEETS

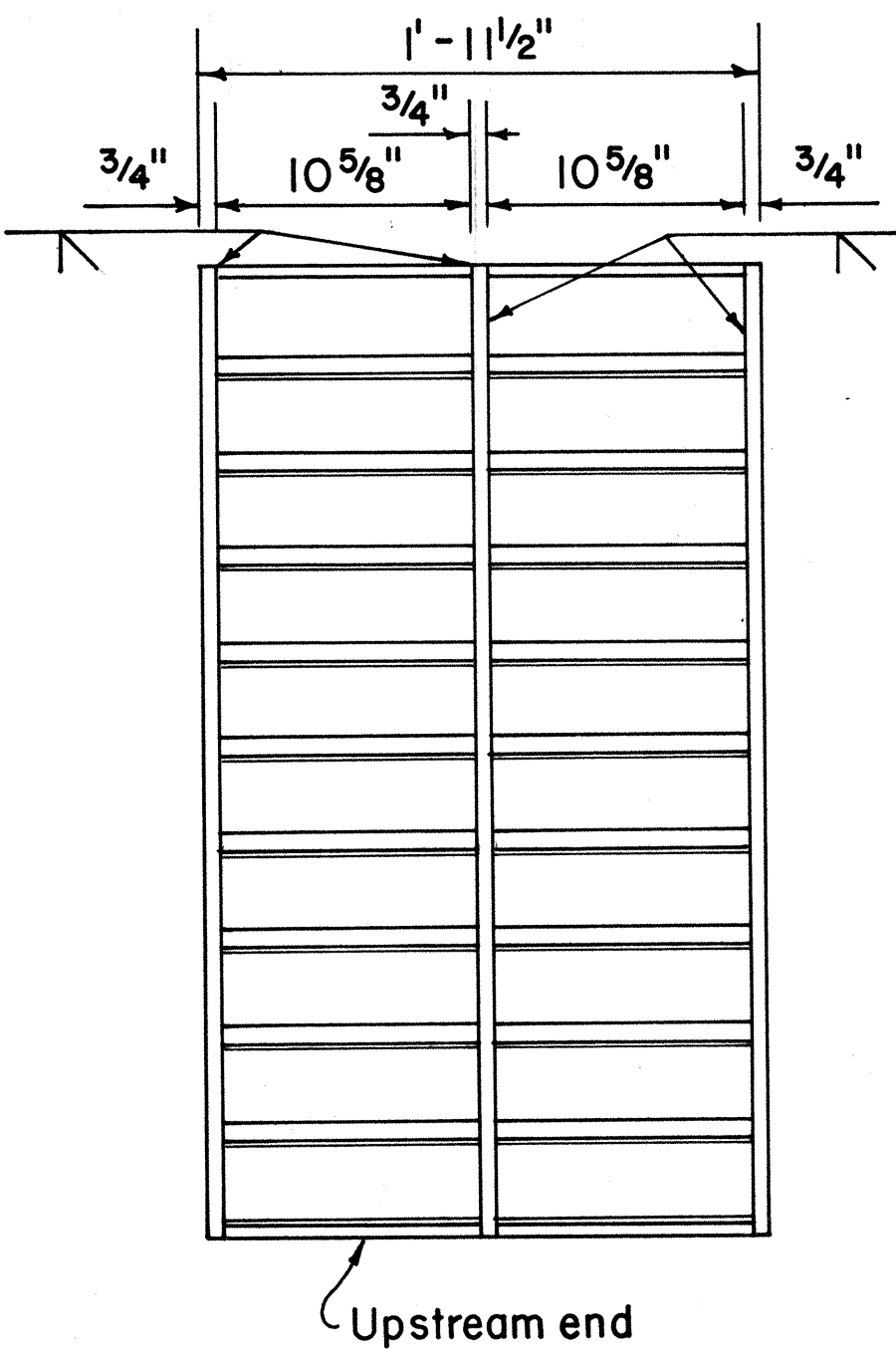
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-86	1986	25	54

GENERAL NOTES

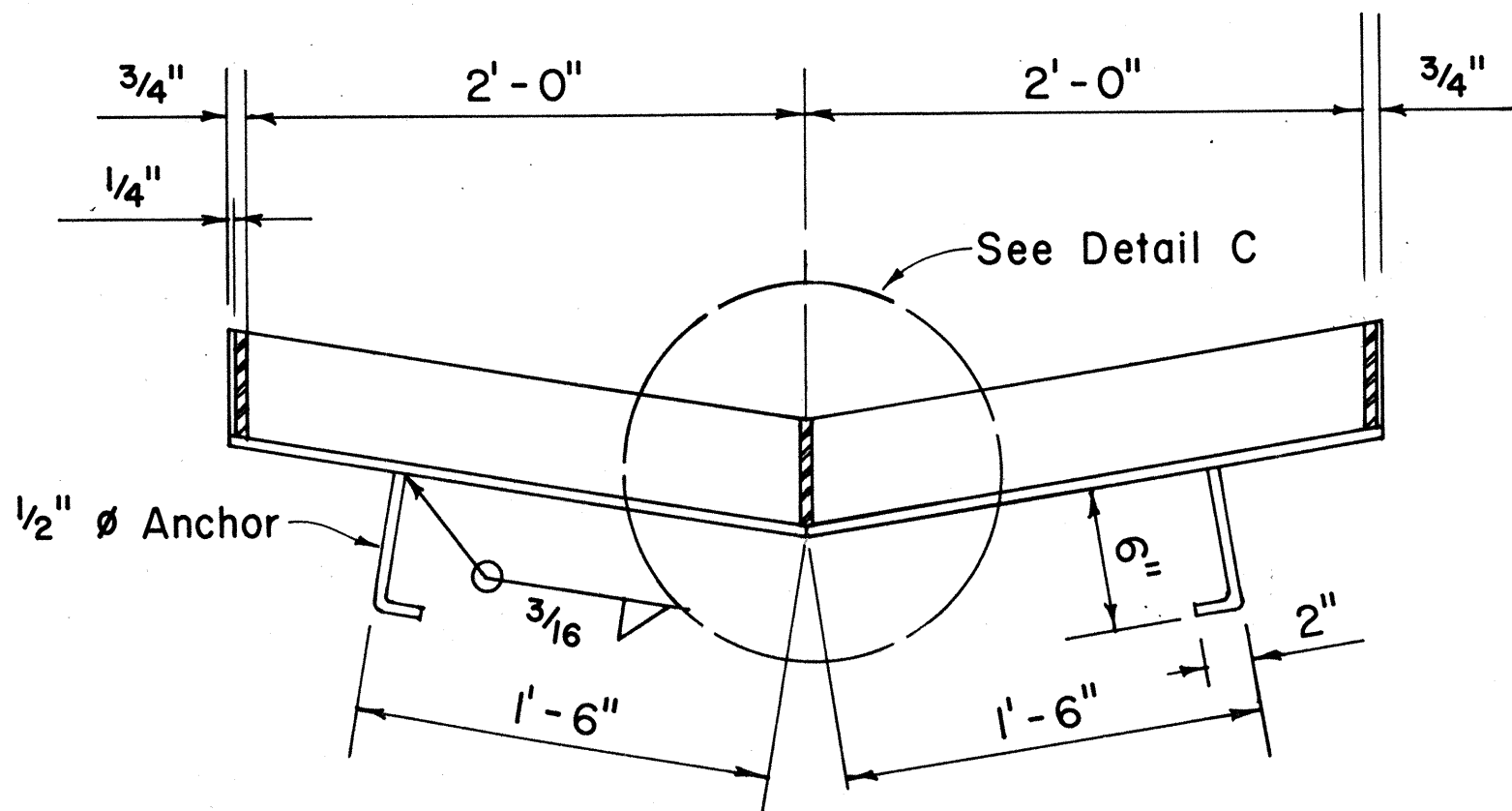
- All welds $\frac{5}{16}$ " unless otherwise noted.
- Grates and Frames shall be hot dip galvanized after fabrication.
- Use in locations off the road bed on all types of highway. (Bicycle Grates)



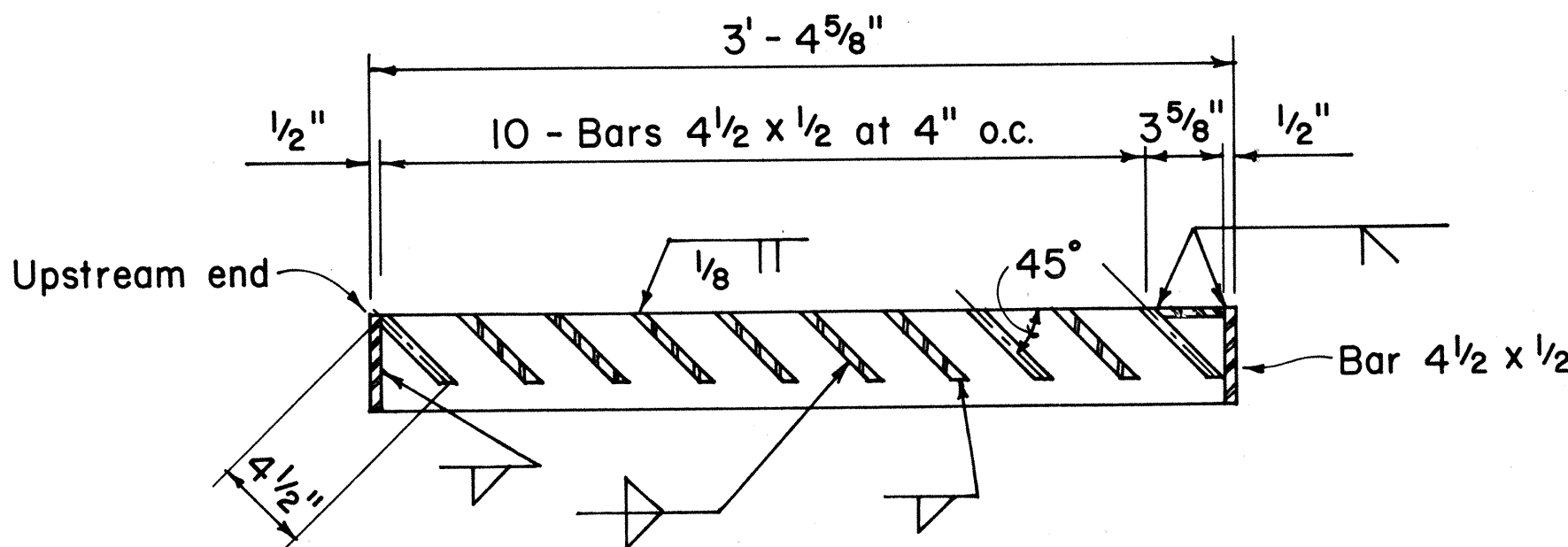
PLAN - FRAME



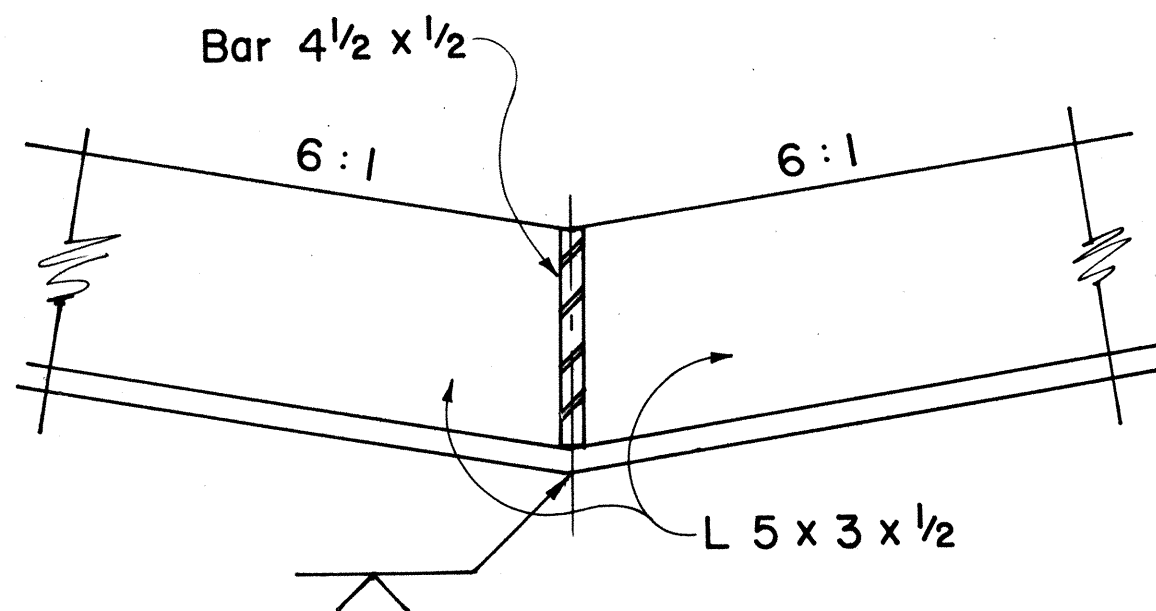
PLAN - GRATE



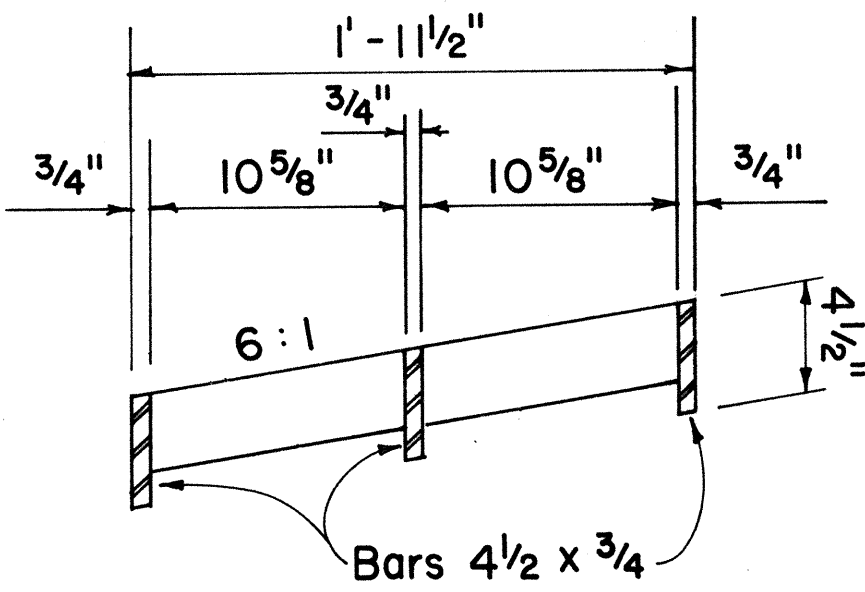
CROSS SECTION



LONGITUDINAL SECTION



DETAIL C



CROSS SECTION

61614B FRAME AND GRATES

APPROVAL RECOMMENDED:
 HYDRAULIC DESIGN ENGINEER 2/4/83 DATE
 APPROVED:
 ASSISTANT CHIEF, ENGINEERING 2-4-83 DATE

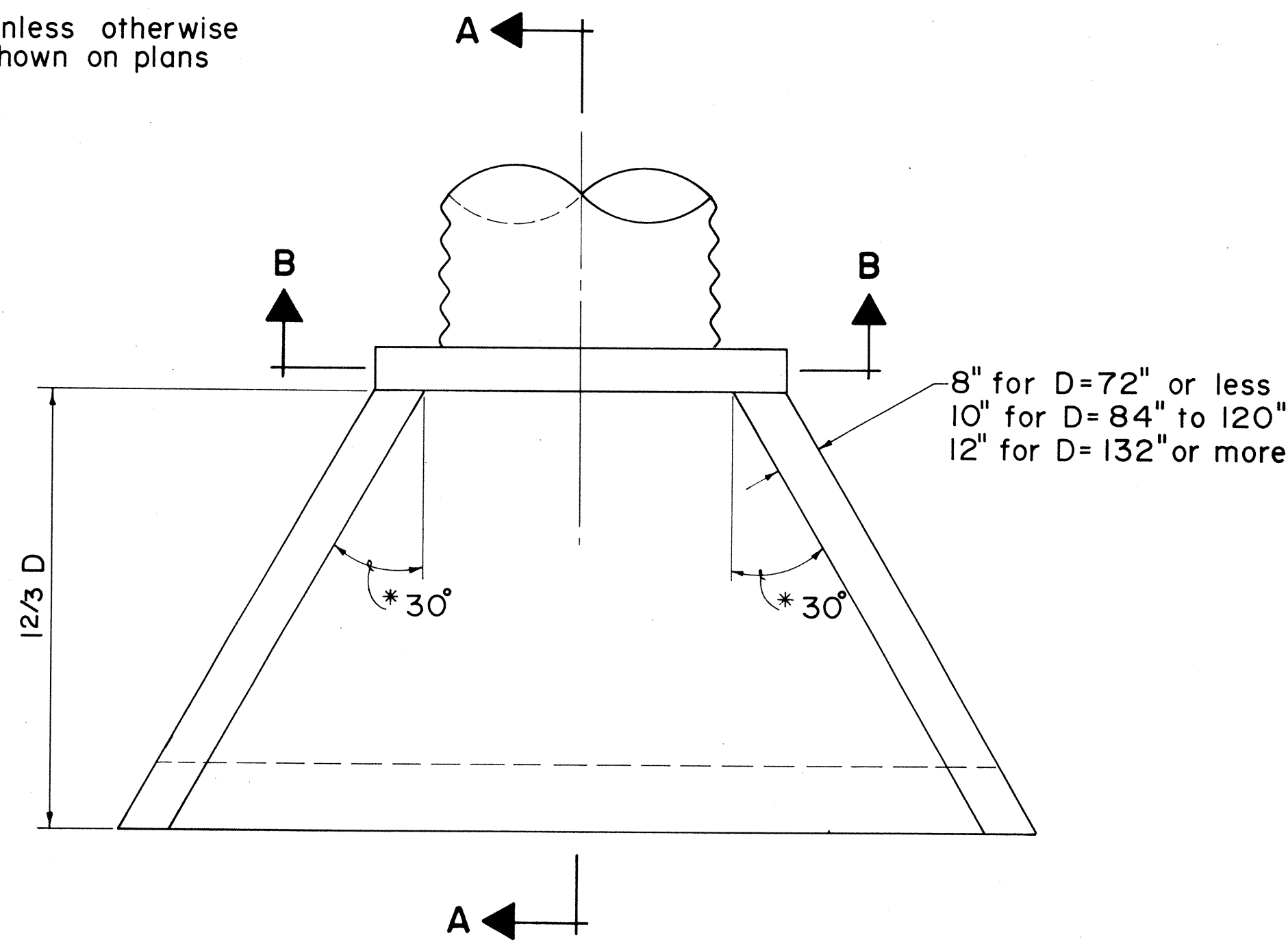
NO.	REVISION	APPROVED BY	DATE
1.	Note added to denote alignment of grate.	W	7-25-84

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS
61614B
STEEL FRAME AND GRATES
Not To Scale Date: Feb. 1983

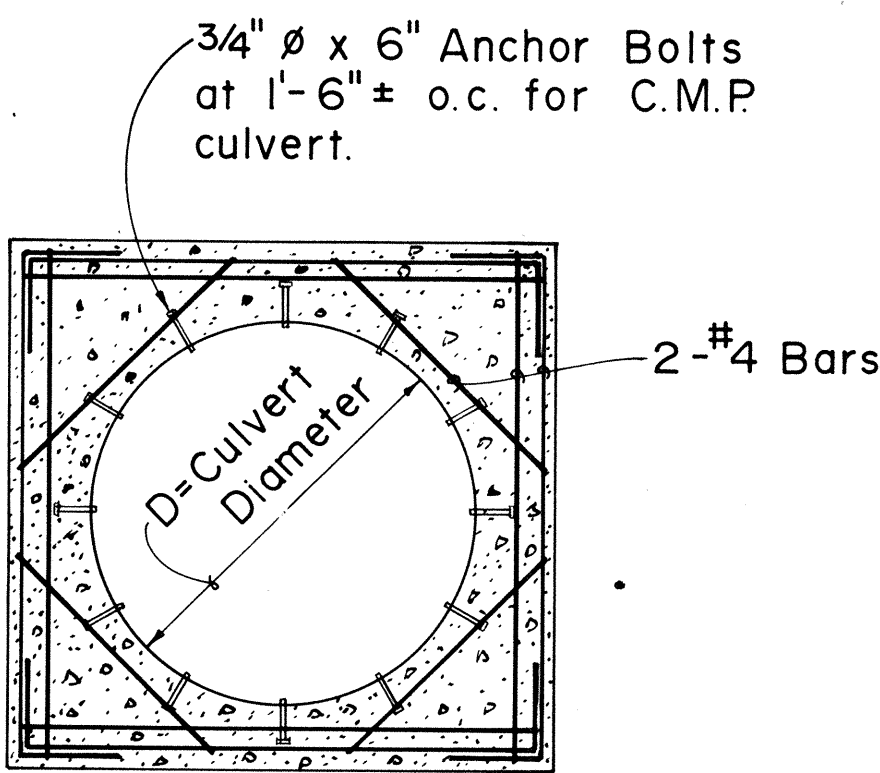
SHEET NO. 25 OF 7 SHEETS DH 15

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-36	1986	26	54

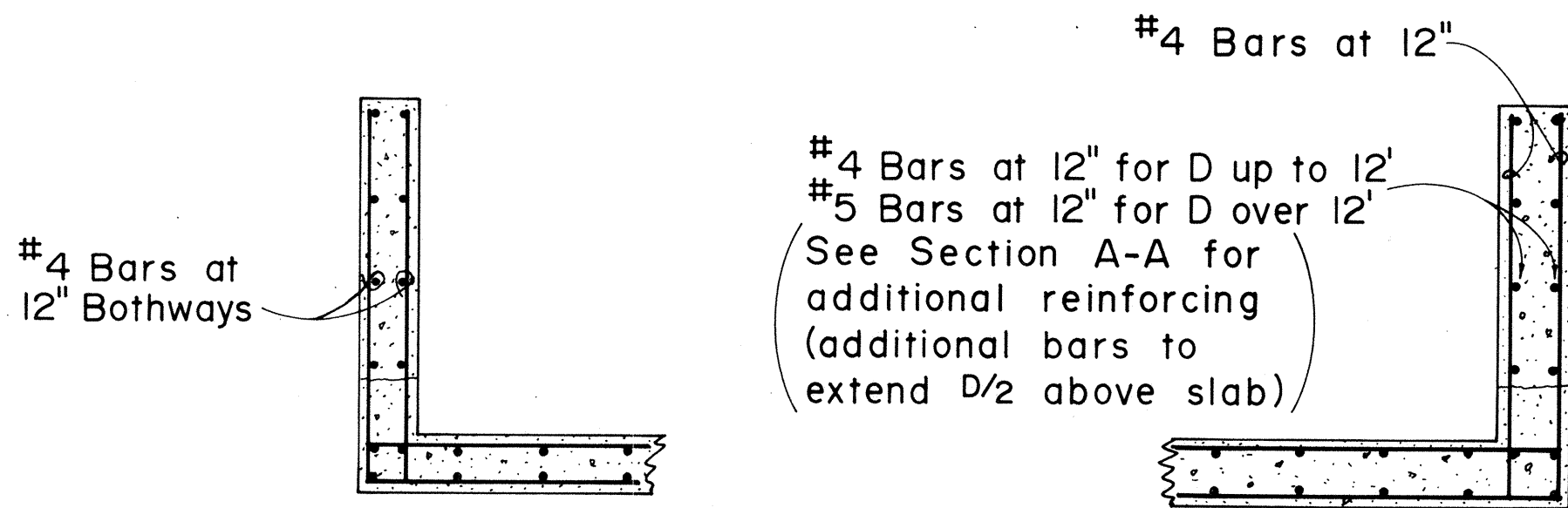
* Unless otherwise shown on plans



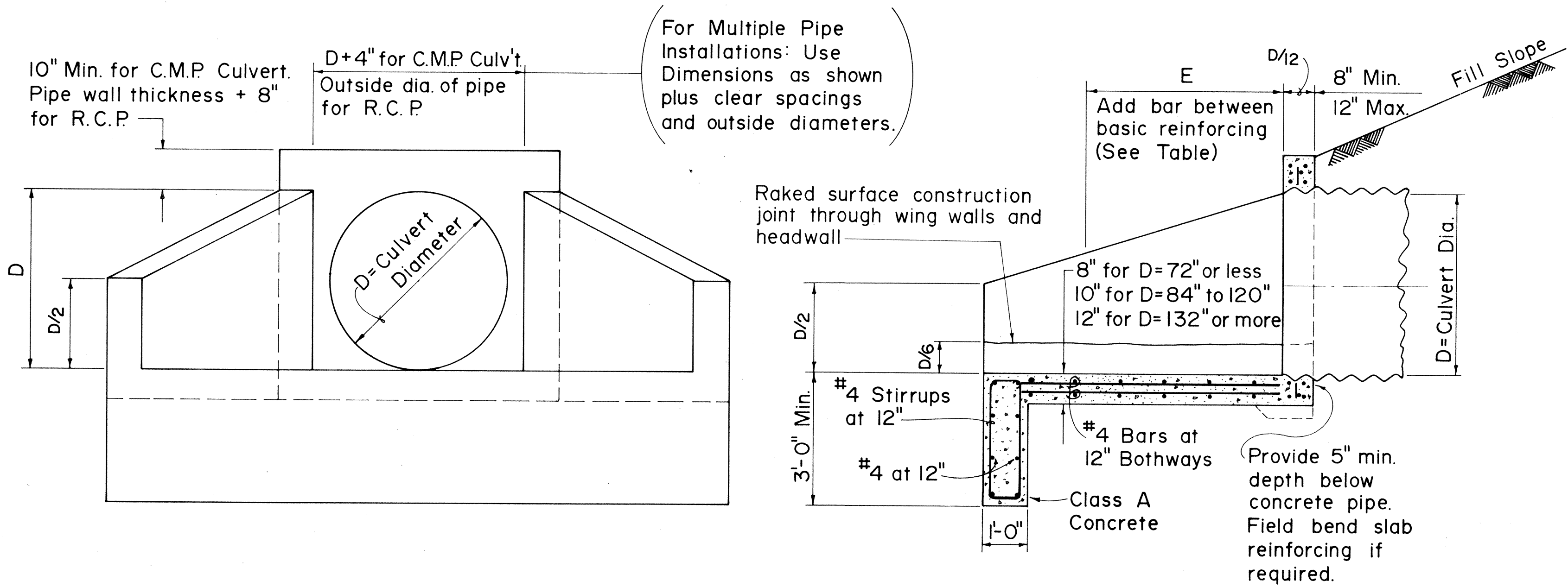
PLAN



SECTION B-B



8" WING WALL 10" TO 12" WING WALLS
TYPICAL WING WALL REINFORCING



FRONT ELEVATION

SECTION A-A

CULVERT DIA. (INCHES)	ADD BAR SIZE	E (FEET)
108	#4	3
120	#4	5
144	#5	8
180	#7	11

ADDITIONAL REINFORCING

APPROVAL RECOMMENDED:
T. Nakano 6-19-79
 HYDRAULIC DESIGN ENGINEER DATE
 APPROVED:
Harbert Zaleishi 6-22-79
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1.	Supersedes Sht. DH 13 approved 12-17-69	H.P.	6/22/79

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
INLET STRUCTURES
 Not To Scale Date: Dec. 1977

INLET STRUCTURE FOR CULVERT SIZES 48 IN. TO 180 IN. DIAMETER