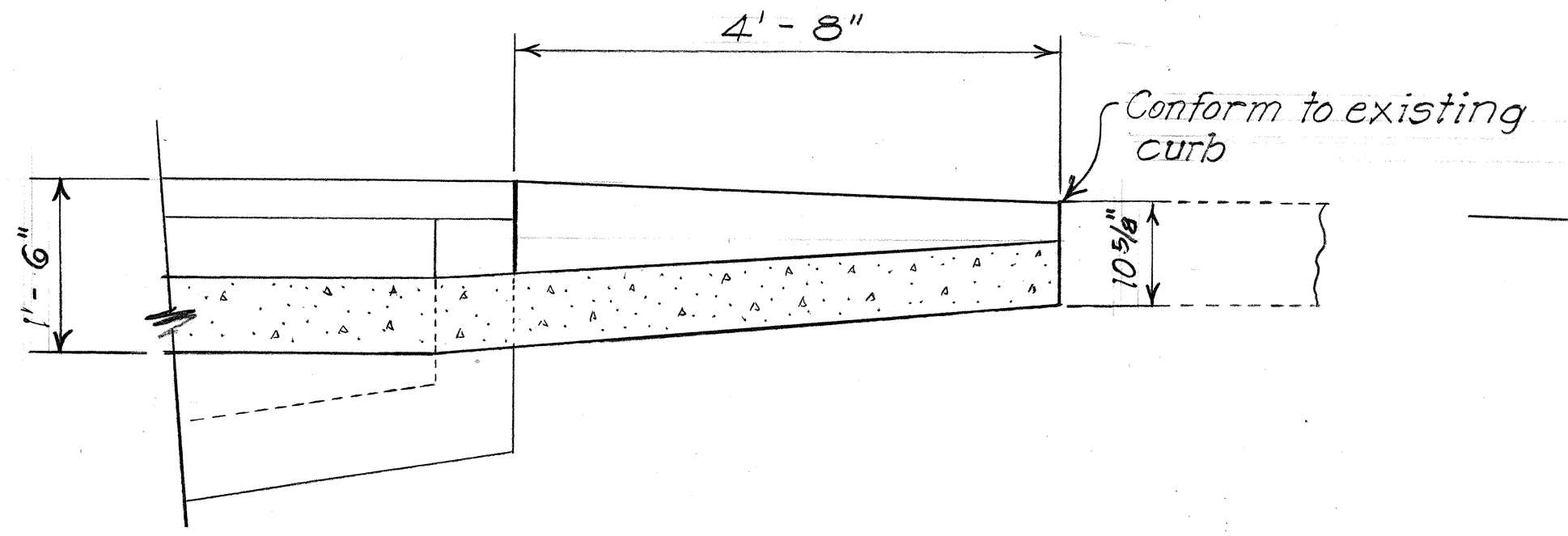
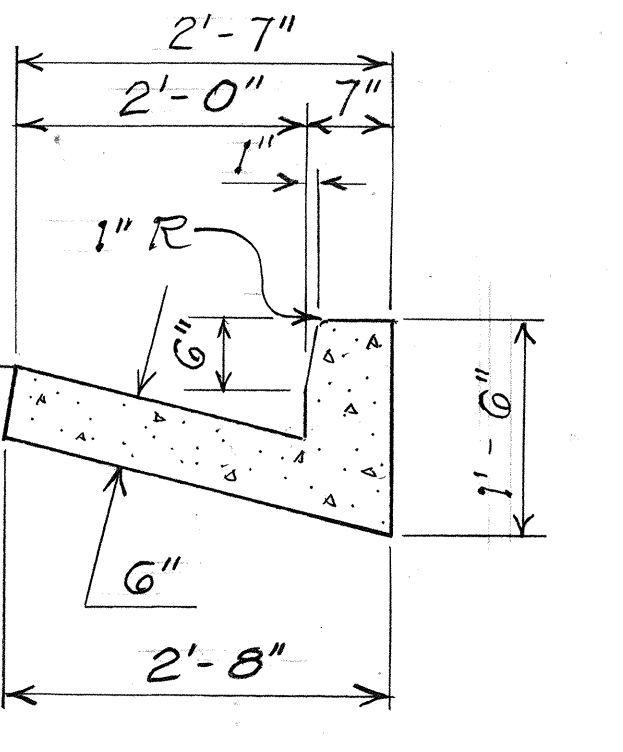
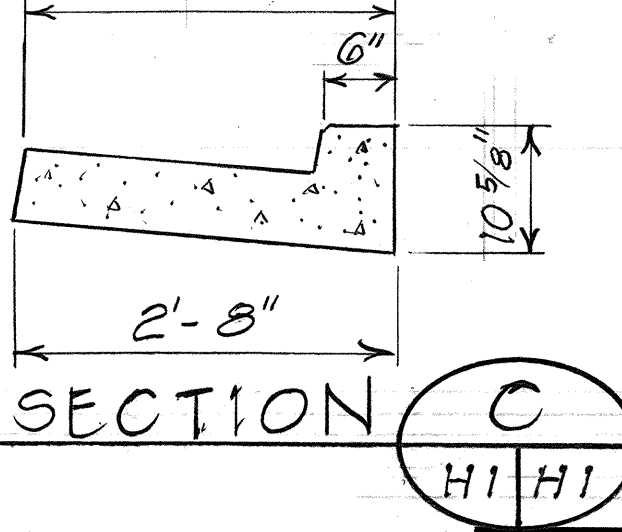


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7241B-02-90	1990	003	6

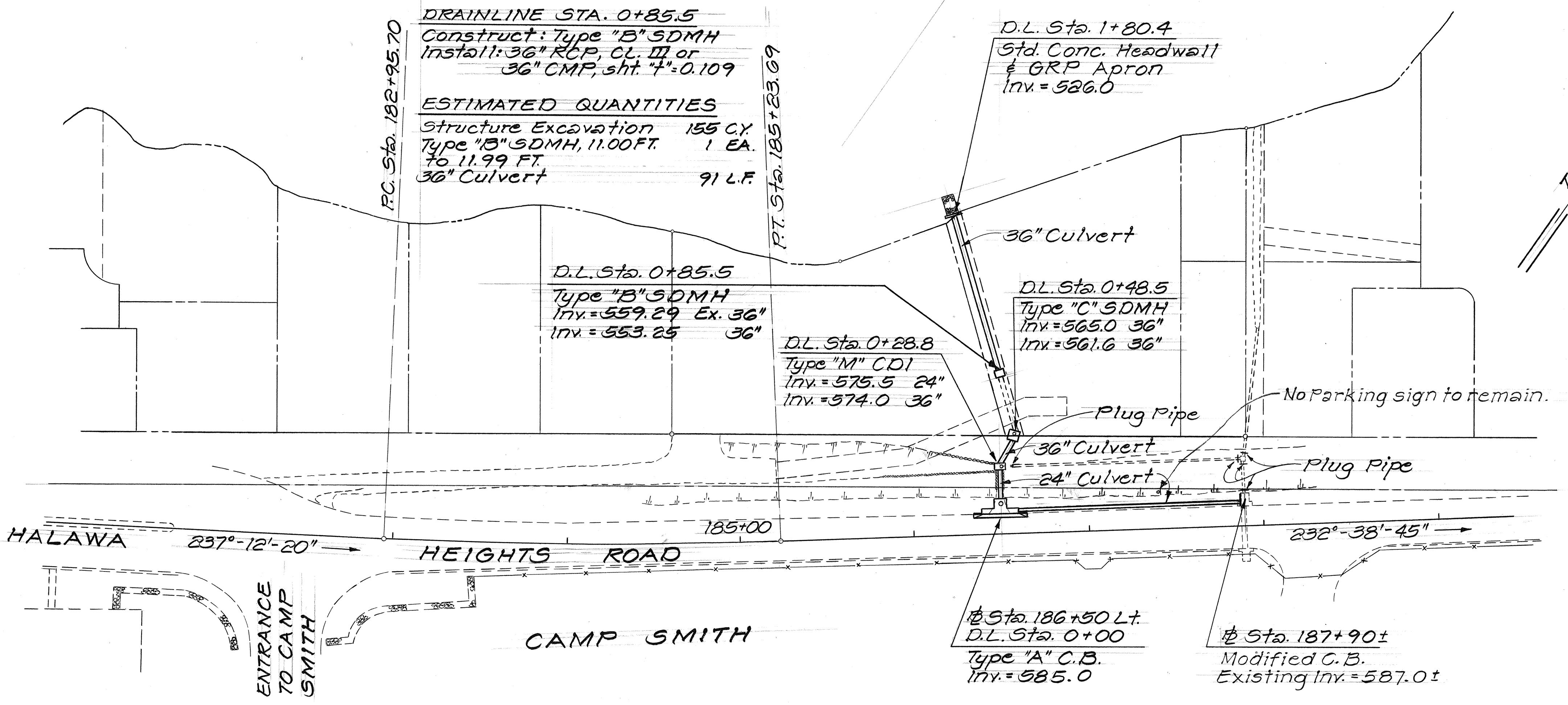
DRAINAGE NOTES

- The Contractor shall verify and check all dimensions and details on the drawings before proceeding with the work. Any discrepancy shall be brought to the attention of the Engineer for clarification.
- All existing utilities and improvements whether or not shown on plans shall be protected at all times by the Contractor unless specified otherwise. Any damages resulting from the contractor's operations shall be immediately repaired or restored as directed by the Engineer at the Contractor's expense.
- The Contractor at his own expense shall keep the project area and surrounding area free from rubbish, noise, dust, erosion etc.. The work shall be done in conformance with the air and water pollution control standards and regulations of the State Dept. of Health.
- The Contractor is responsible for maintaining existing drainage flow conditions until final construction is completed.
- Demolishing of existing structure shall not be paid for separately, but shall be considered incidental to the various contract items.
- Concrete shall be Class A unless otherwise noted.
- Chamfer all exposed concrete edges 1".
- The Contractor shall regrade area surrounding the Type A Catch Basin flush with the top slab and shall be done to the satisfaction of the Engineer.
- The Concrete drop curb shall not be paid for separately but shall be considered incidental to the various contract items.

DRAINLINE STA. 1+80.4	
Construct: Std. Conc. Headwall and GRP Apron (For detail of GRP Apron see sht. no. H2)	
ESTIMATED QUANTITIES	
Class "A" Conc.	4 C.Y.
Reinforcing Steel	63 L.b.
GRP	6 C.Y.
Structure Excavation	38 C.Y.
# STA. 187+90±	
Construct: Modified C.B. (For detail see sht. no. H4)	
Install: 24" RCP, CL. III or 24" CMP, sht. "4"=0.109"	
ESTIMATED QUANTITIES	
Modified C.B. 6.00 FT. to 6.99 FT.	1 Ea.
24" Culvert	140 L.F.
2'-7" Structure Excavation	172 C.Y.



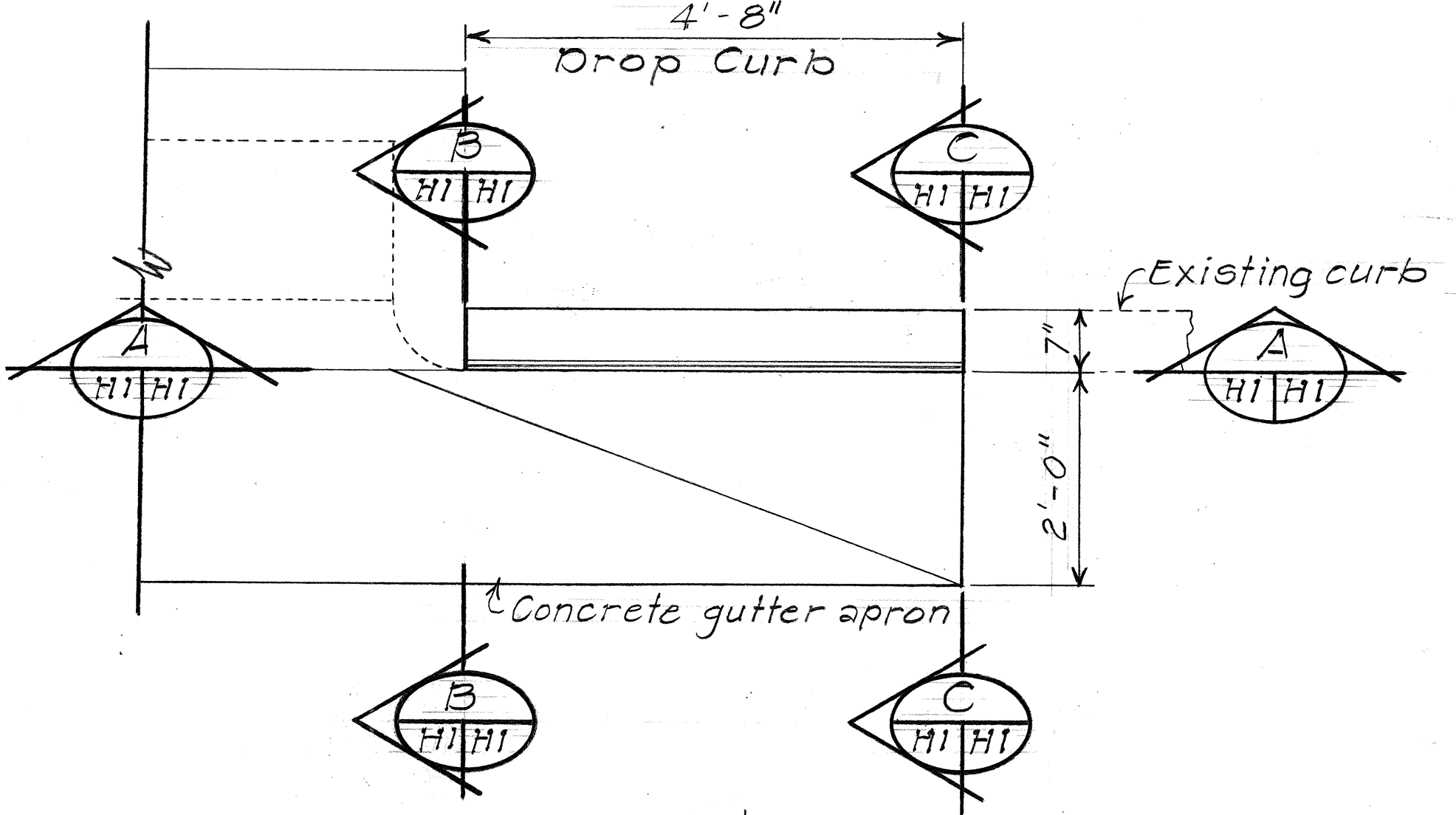
SECTION A
DETAIL OF CONCRETE DROP CURB
Scale: 3/4" = 1'-0"



DRAINLINE STA. 0+00	
Construct: Type "A" C.B.	
Install: 24" RCP, CL. III or 24" CMP sht. "4"=0.109"	
ESTIMATED QUANTITIES	
Structure Excavation	20 C.Y.
Type "A" CB 7.00 FT. to 7.99 FT.	1 EA.
24" Culvert	20 L.F.

DRAINLINE STA. 0+28.8	
Construct: Type "M" CD1 (For detail see sht. no. H3)	
Install: 36" RCP, CL. III or 36" CMP sht. "4"=0.109"	
ESTIMATED QUANTITIES	
Structure Excavation	40 C.Y.
Type "M" CD1 9.00 FT. to 9.99 FT.	1 EA.
36" Culvert	19 L.F.

DRAINLINE STA. 0+48.5	
Construct: Type "C" SDMH	
ESTIMATED QUANTITIES	
Type "C" SDMH 10.00 FT. to 10.99 FT.	1 EA.



PLAN

DATE	REVISION
4-1-91	Revised Profile and added Type "B" SDMH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

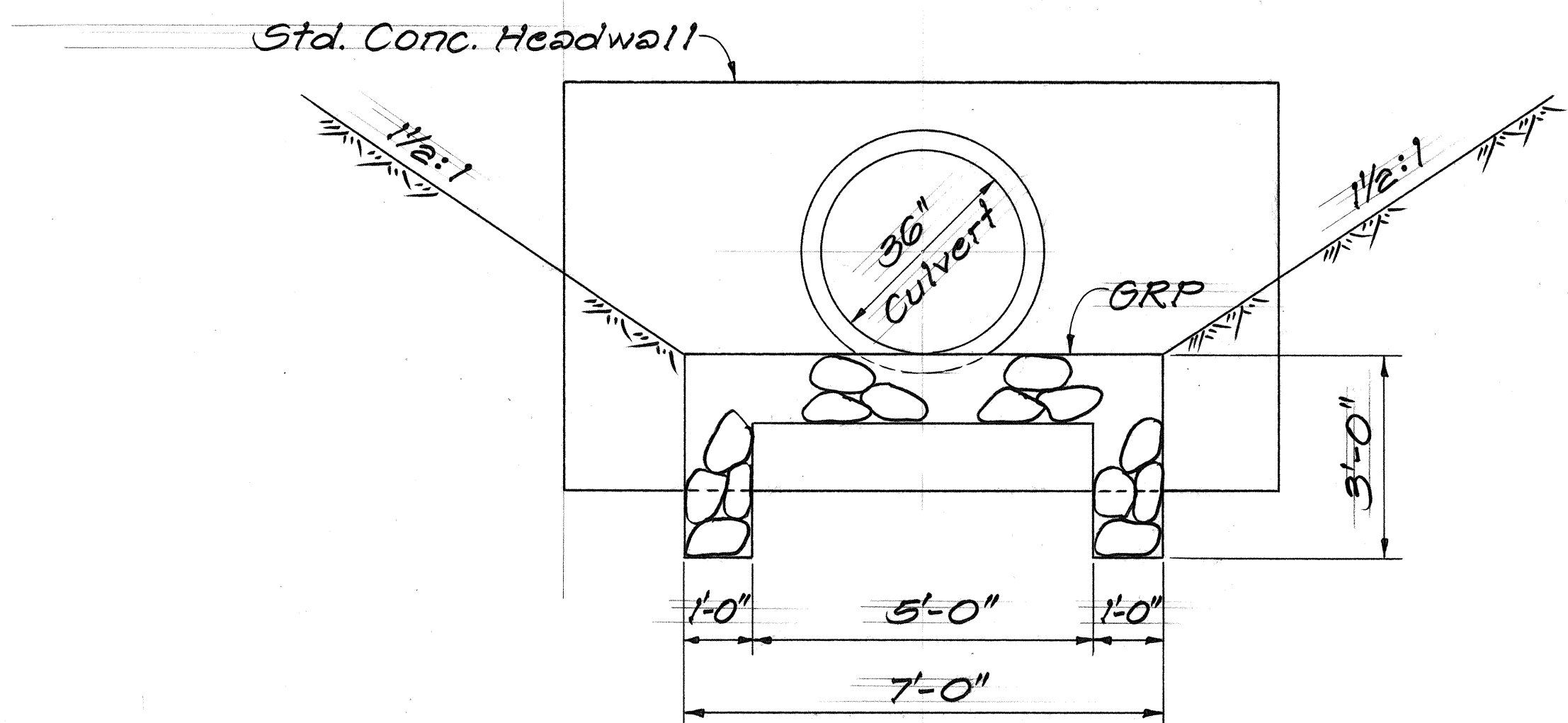
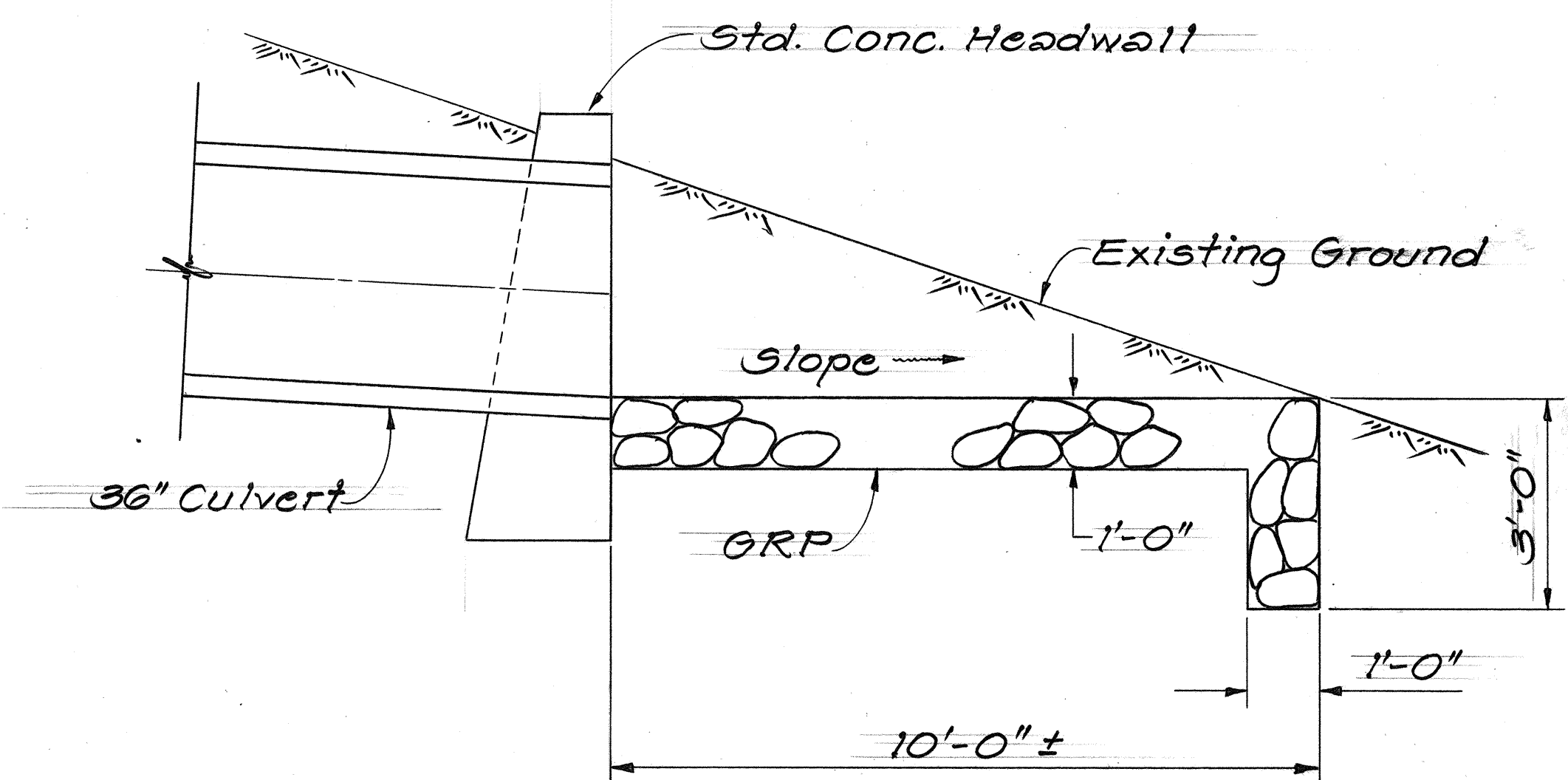
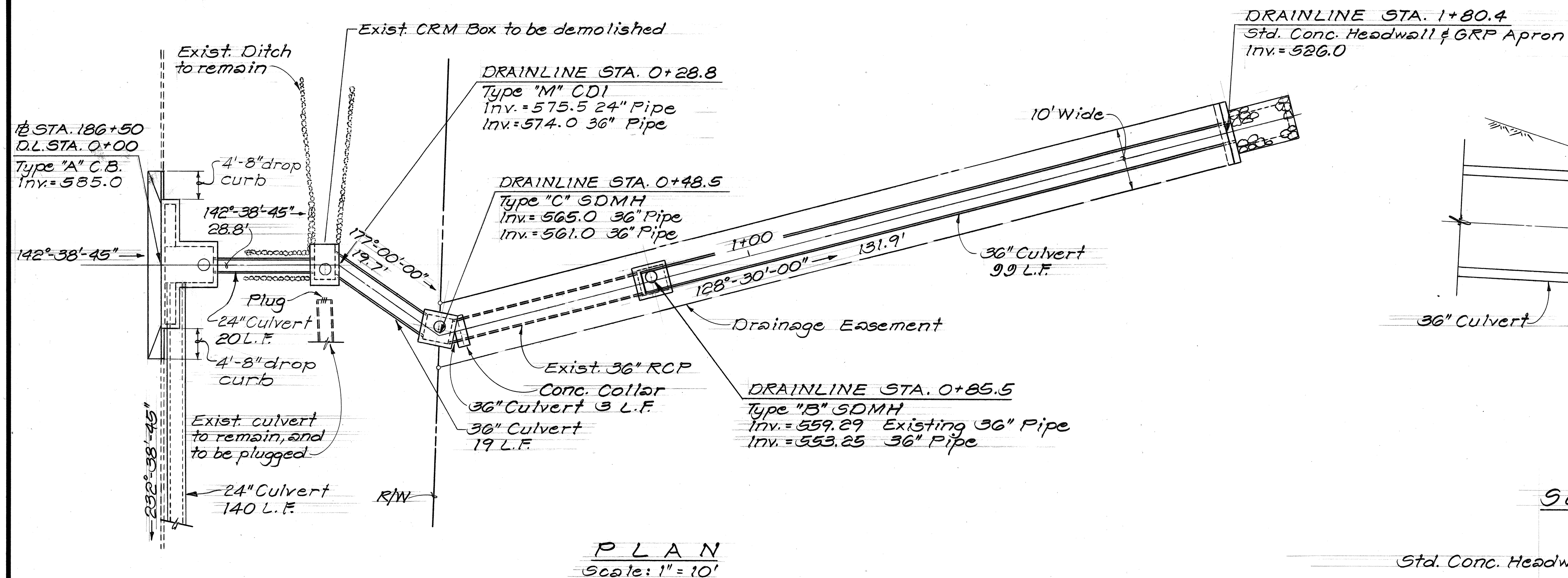
DRAINAGE PLAN

HALAWA HEIGHTS ROAD,
DRAINAGE IMPROVEMENTS,
VICINITY OF CAMP SMITH

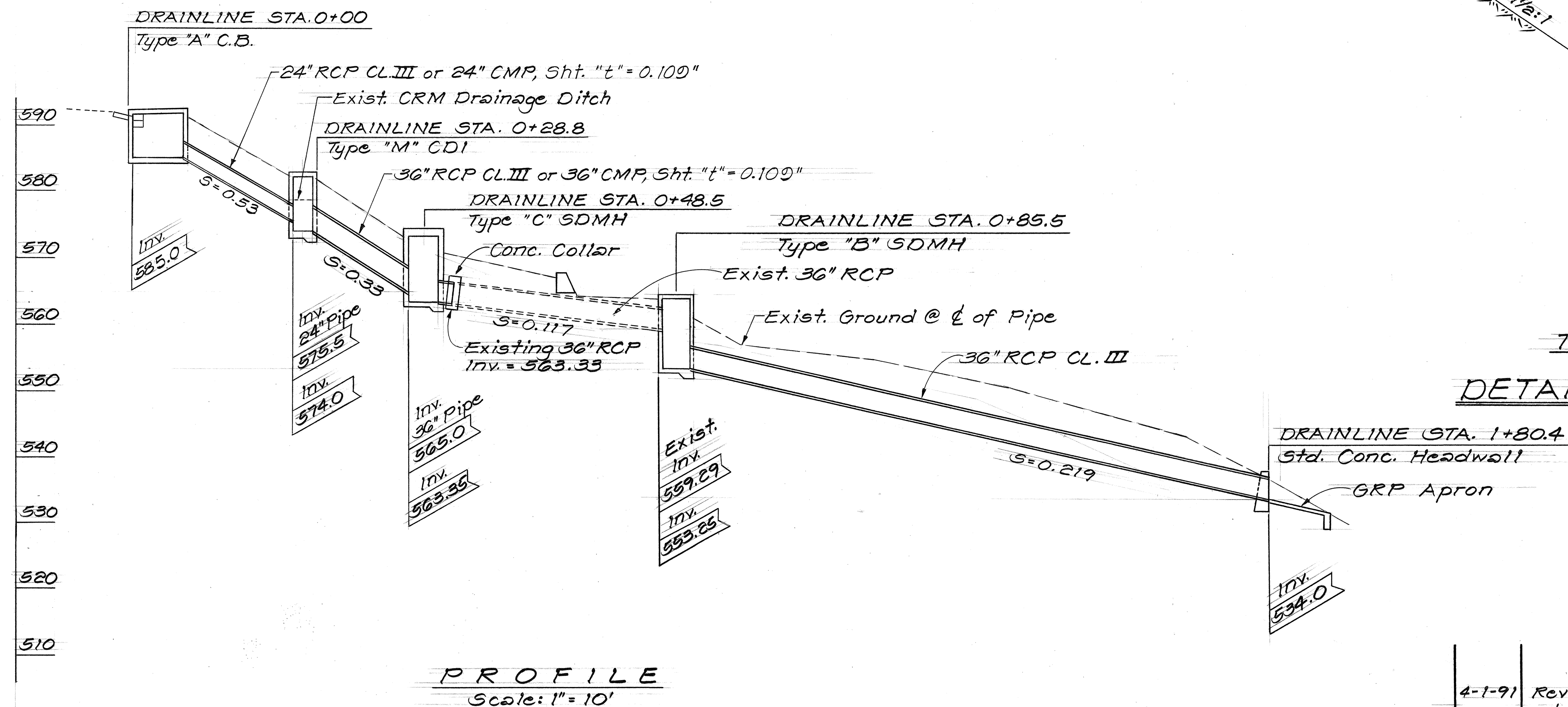
PROJ. NO. 7241B-02-90
SCALE: AS NOTED DATE: OCT, 1990

SHEET NO. H1 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7241B-02-90	1990	004	6



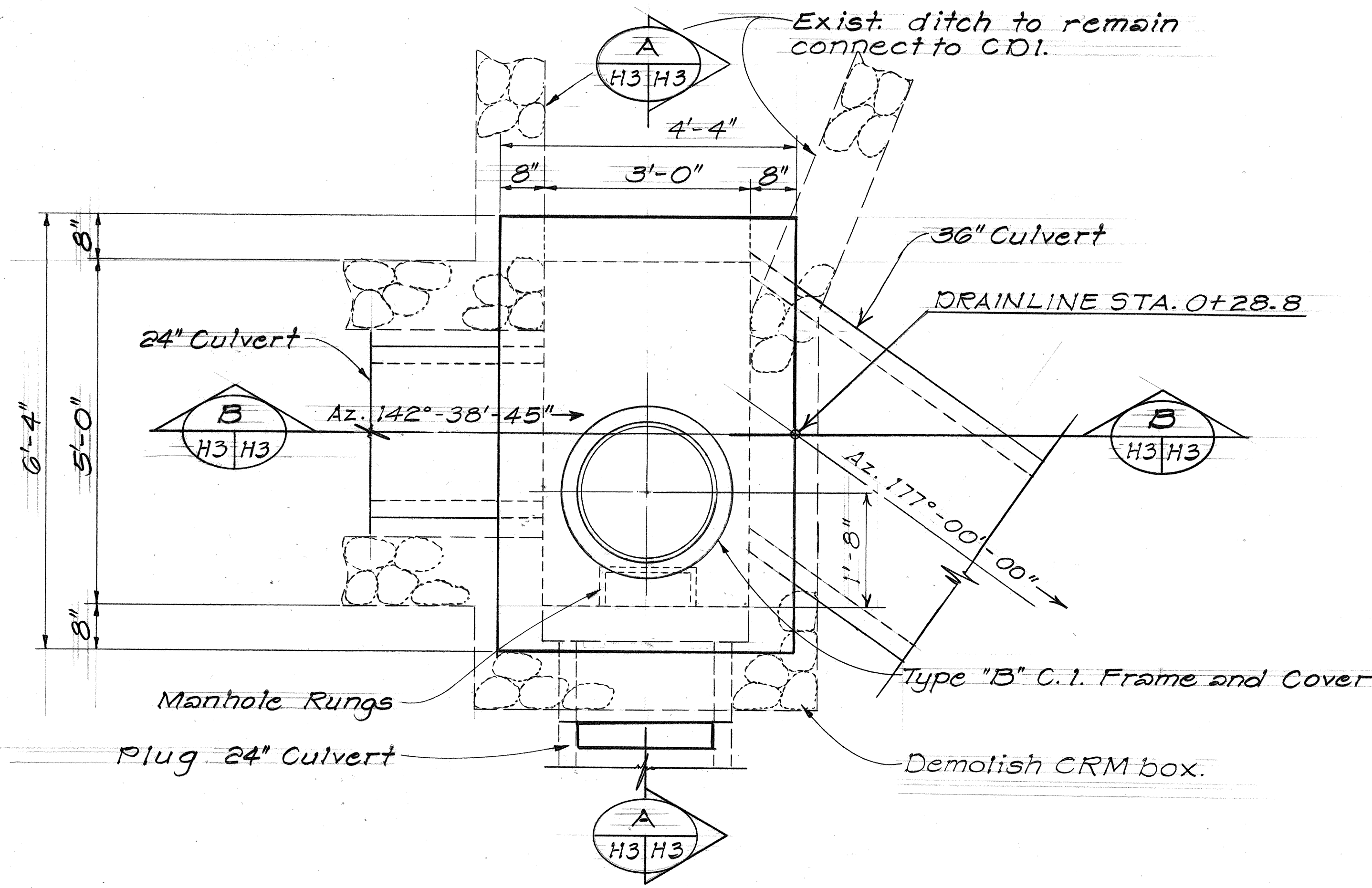
DETAIL OF GRP OUTLET APRON
Scale: 1/2" = 1'-0"



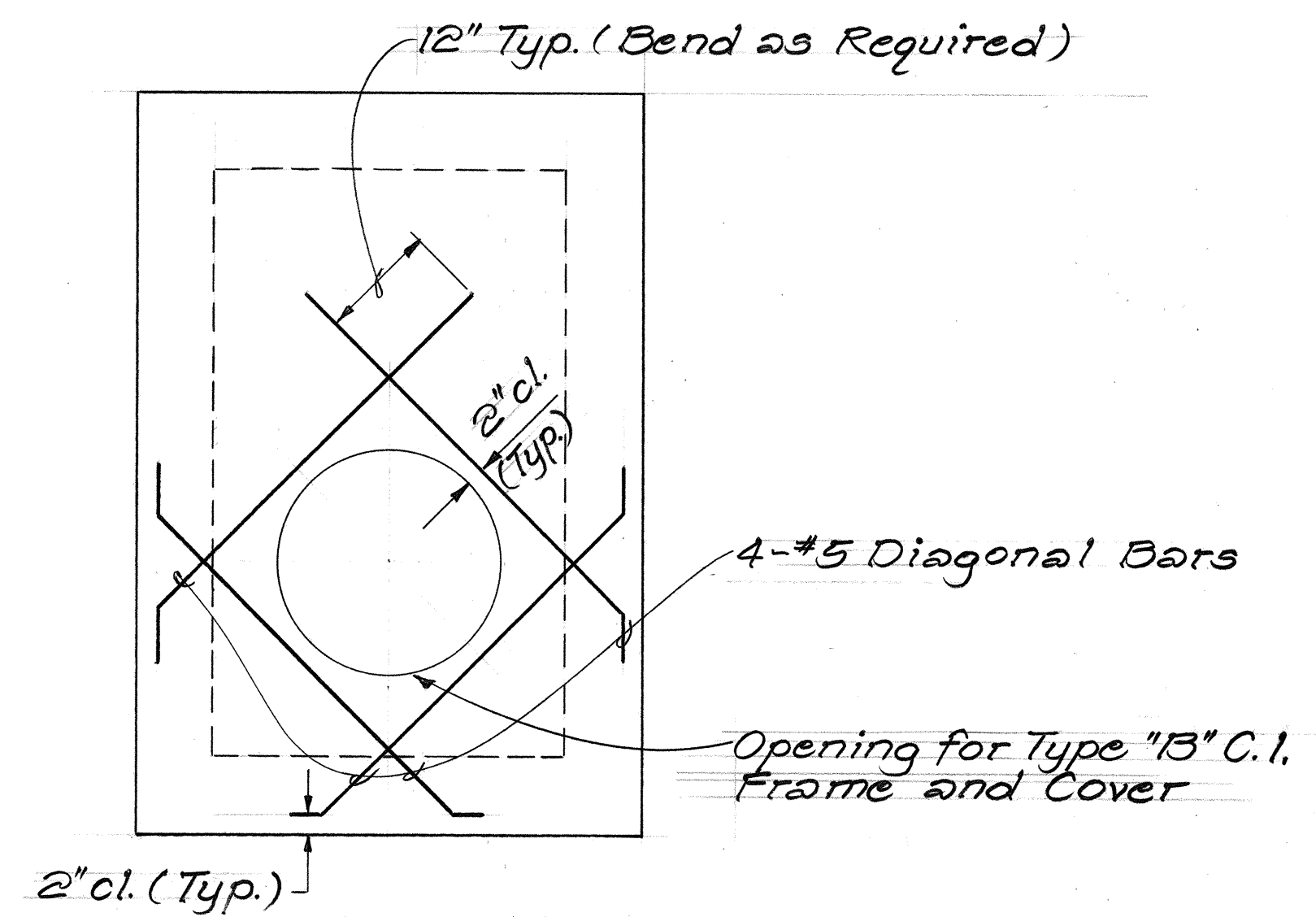
4-1-91	Revised Profile and added Type "B" GDMH
DATE	REVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE DETAILS
HALAWA HEIGHTS ROAD DRAINAGE IMPROVEMENTS VICINITY OF CAMP SMITH
PROJ. NO. 7241B-02-90
SCALE: AS NOTED DATE: OCT. 1990
SHEET NO. H2 OF 4 SHEETS

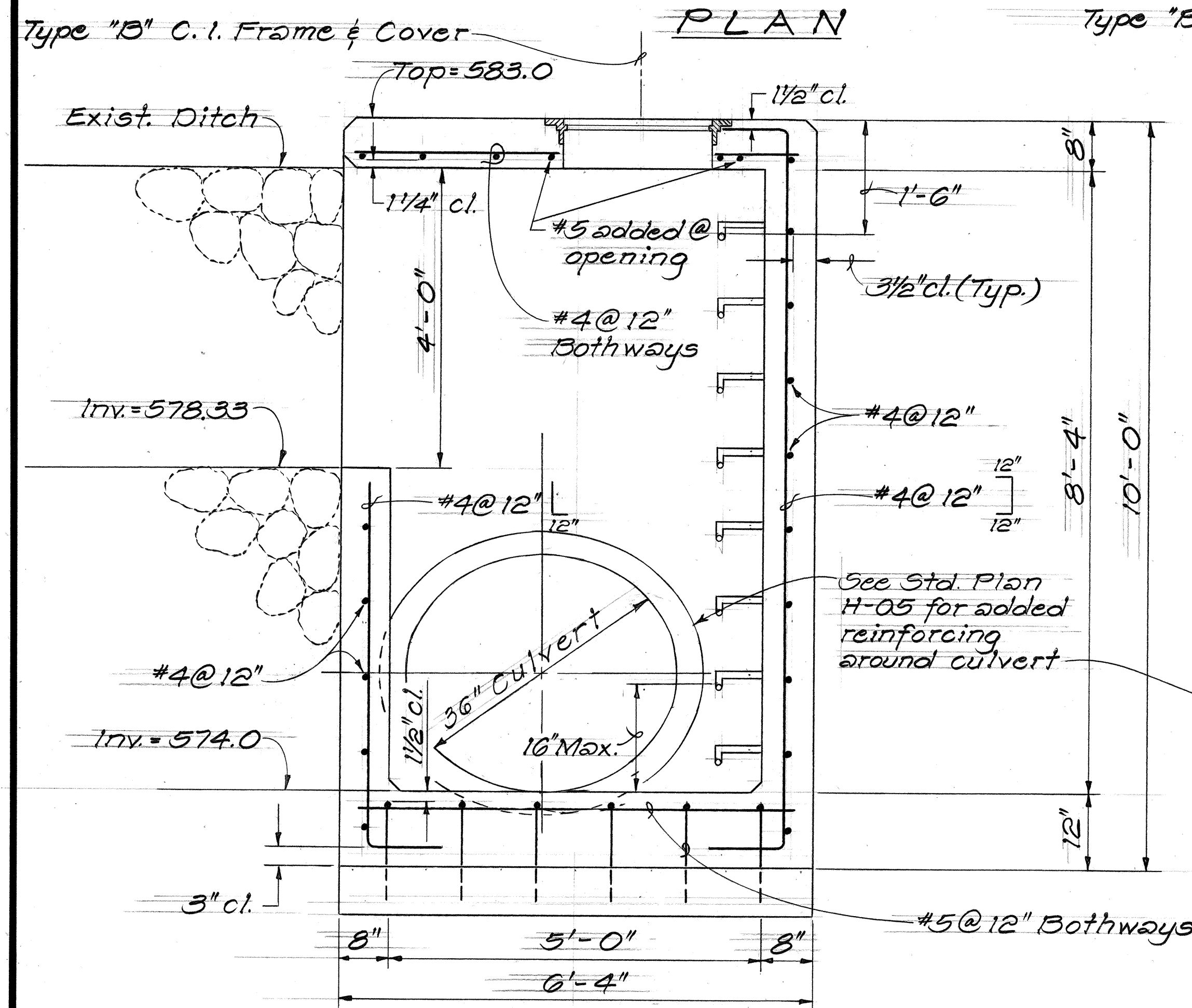
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7241B-02-90	1990	5	6



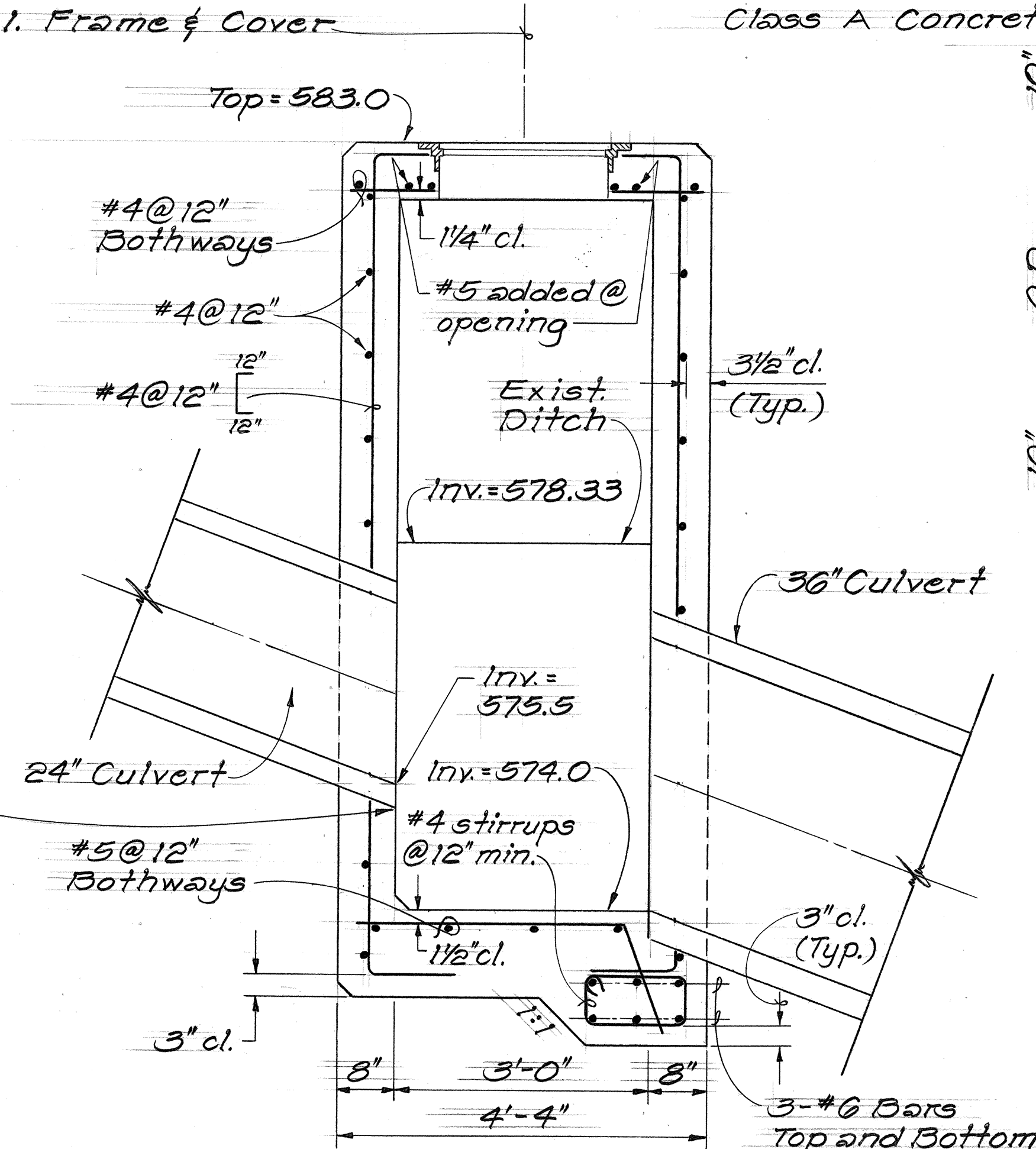
PLAN VIEW OF WALL REINFORCING



PLAN VIEW OF ADDED REINFORCING AROUND MANHOLE OPENING

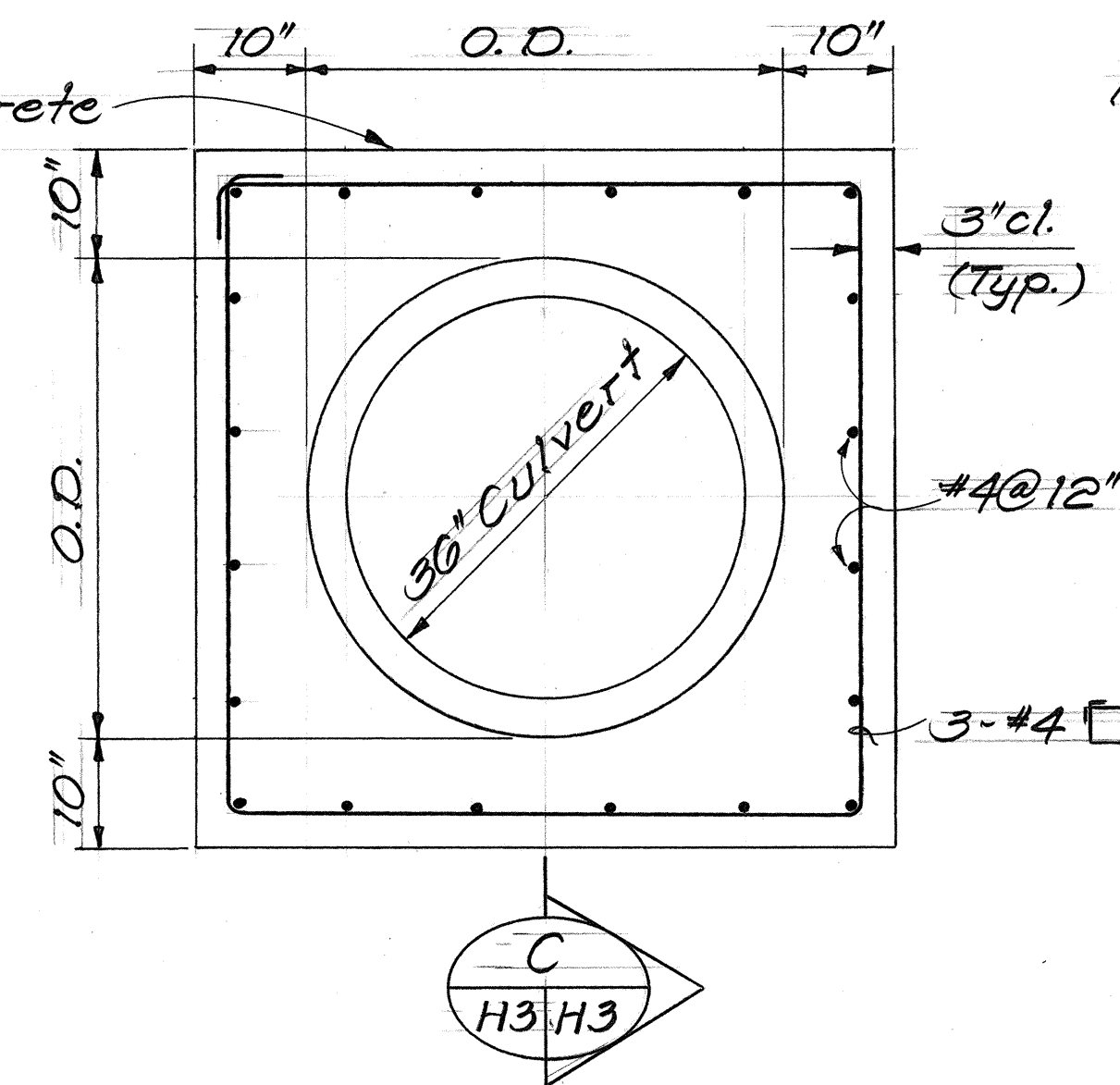


SECTION A
H3/H3

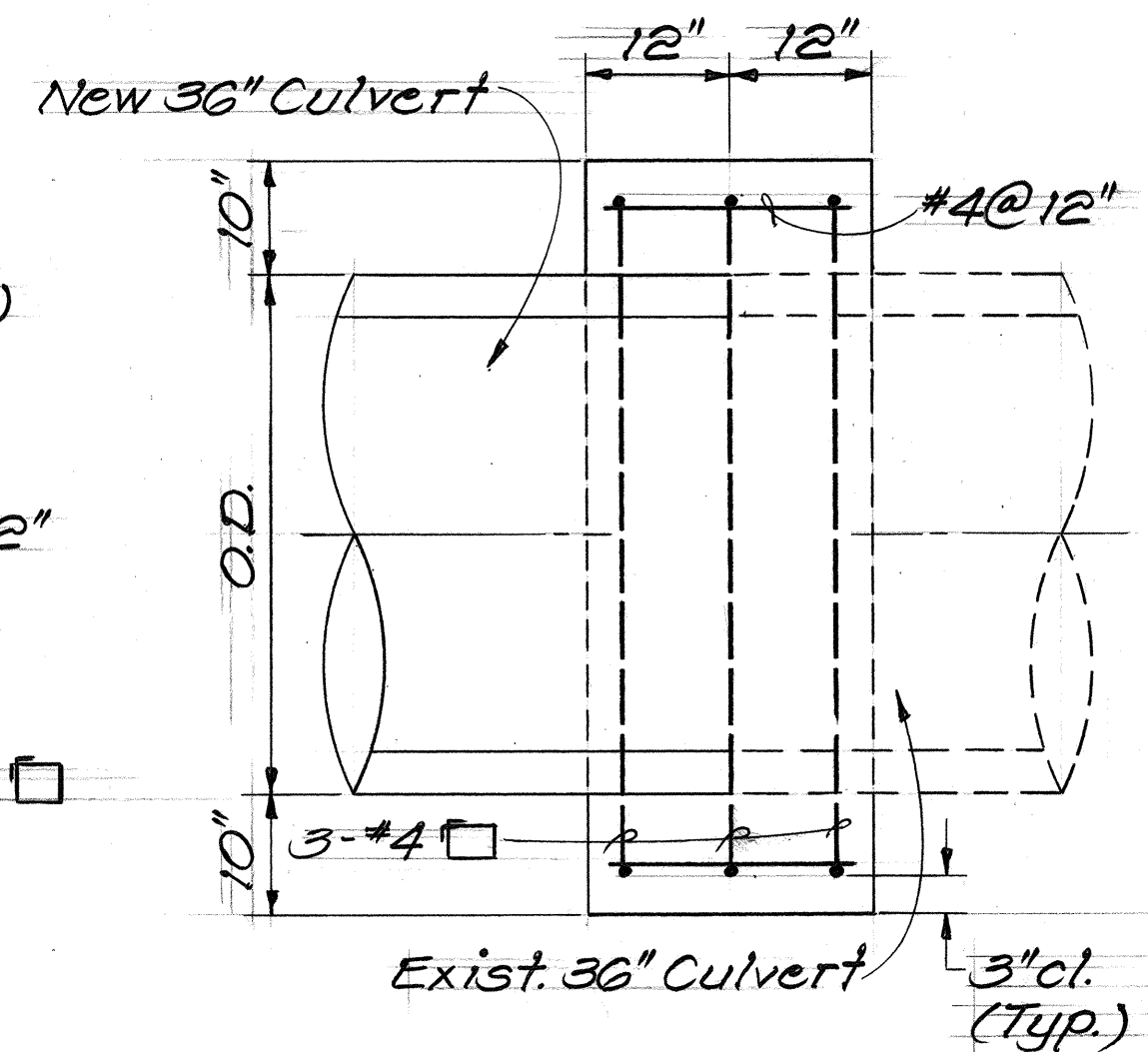


SECTION B
H3/H3

DETAILS OF TYPE "M" CDI



FRONT ELEVATION

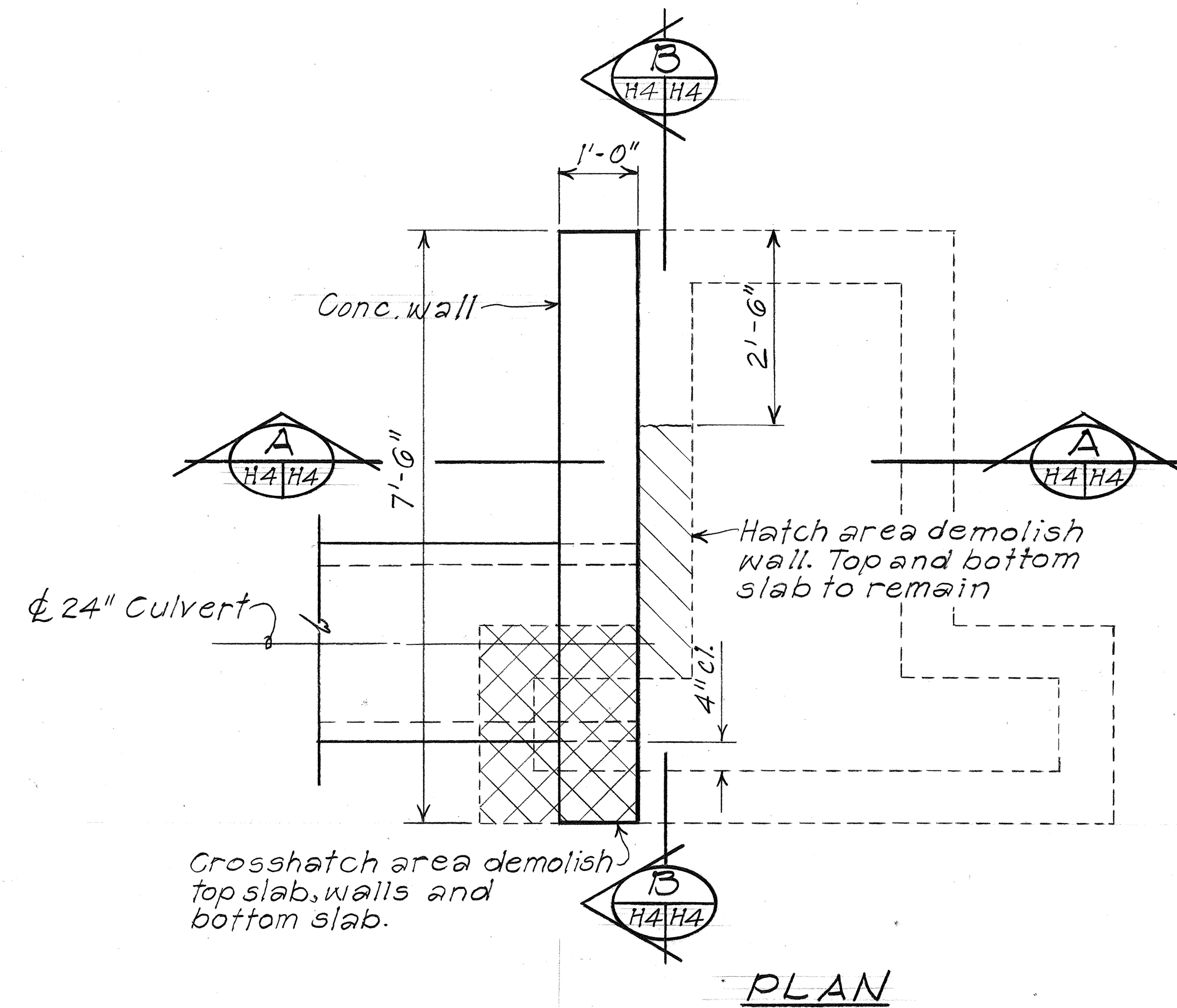


SECTION C
H3/H3

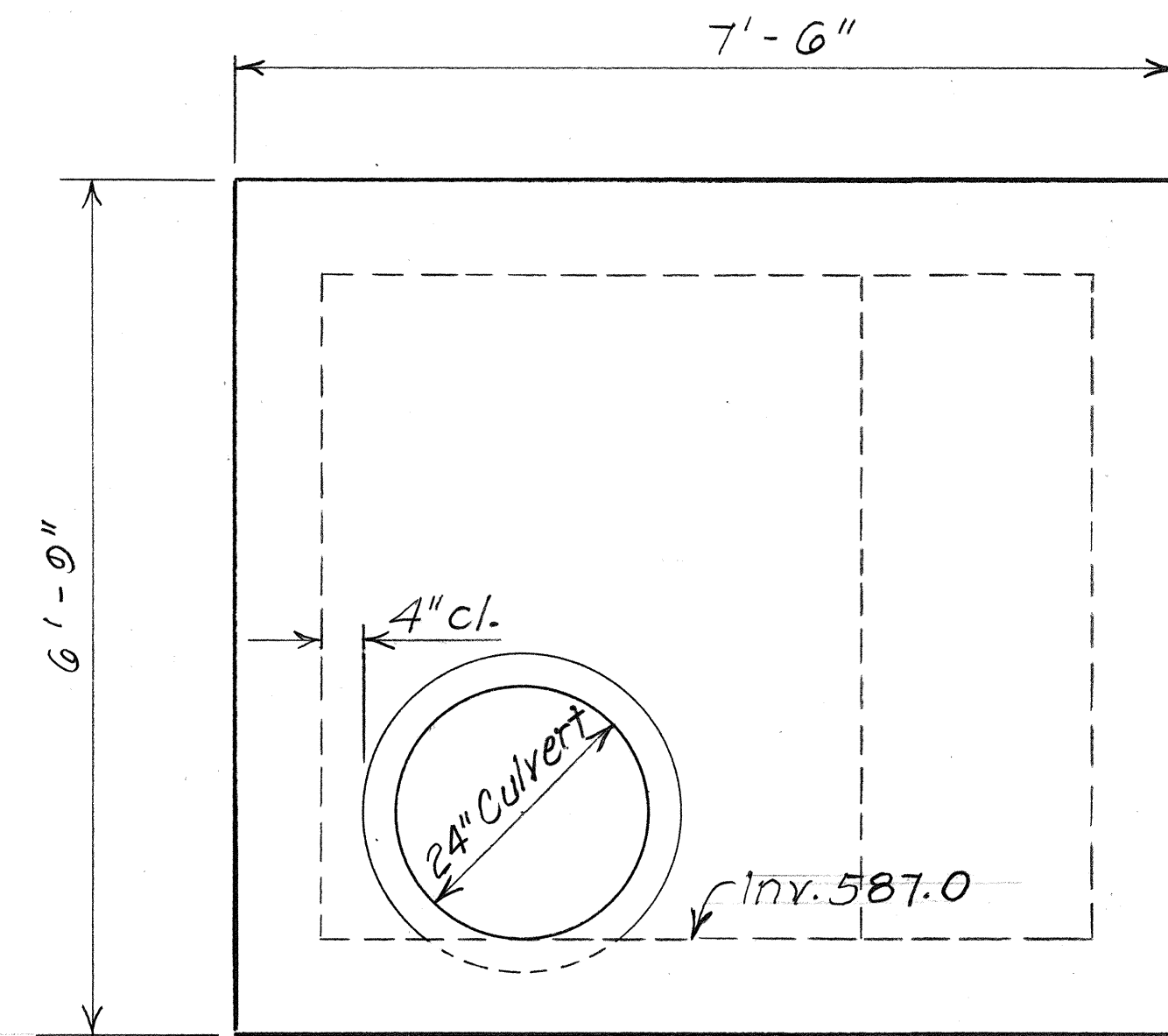
TYPICAL REINFORCED CONCRETE COLLAR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
HALAWA HEIGHTS ROAD,
DRAINAGE IMPROVEMENTS,
VICINITY OF CAMP SMITH
PROJ. NO. 7241B-02-90
SCALE: 3/4"=1'-0" DATE: OCT, 1990
SHEET NO. H3 OF 4 SHEETS

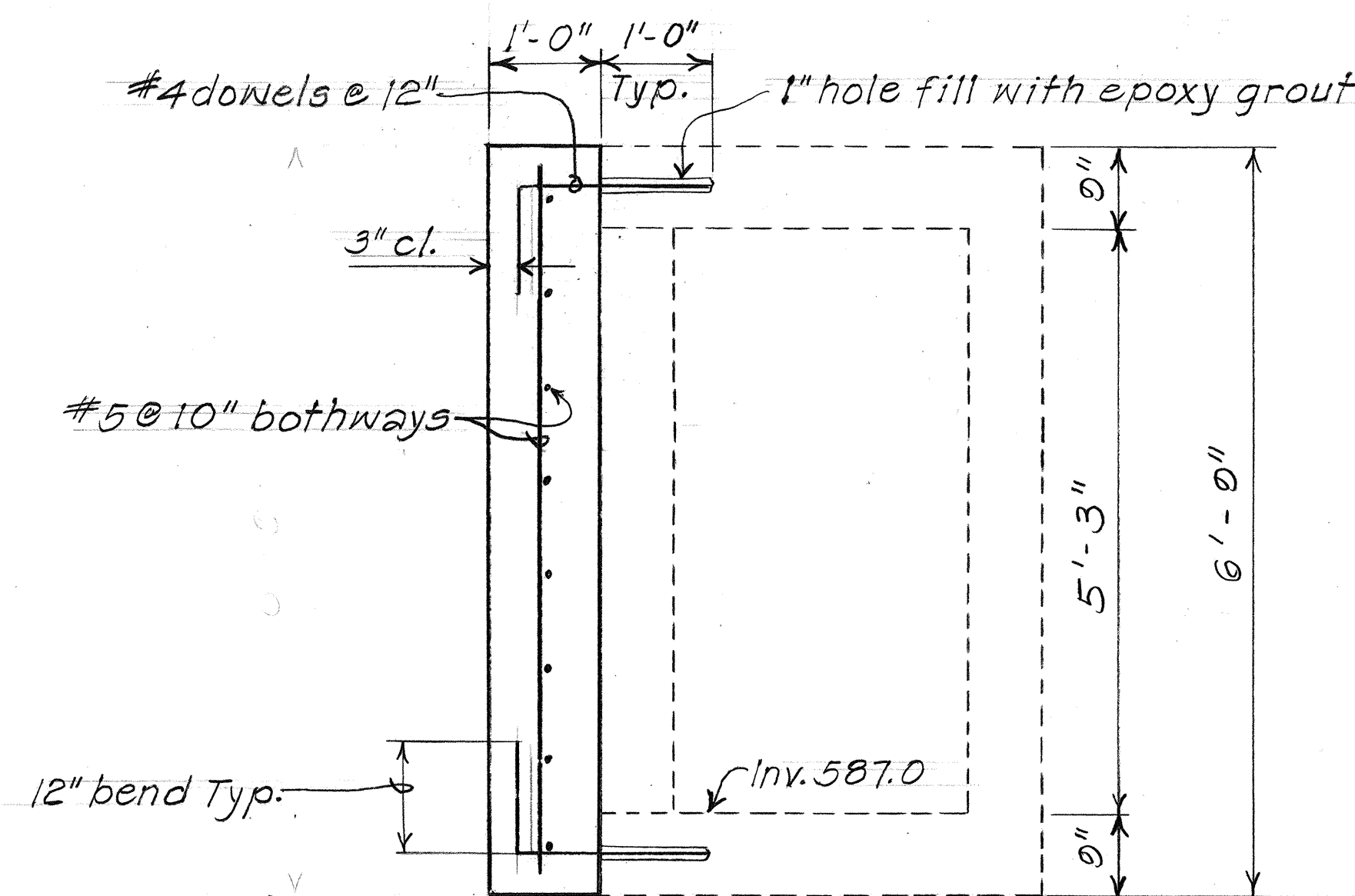
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72413-02-90	1991	6	6



PLAN



SECTION B
H4 H4



SECTION A
H4 H4

NOTE:

1. Only non-pneumatic type of drill as approved by the Engineer will be permitted for drilling holes in concrete. Where indicated on the plans, the approximate diameter of drilled holes for installation of dowels shall be 1", and voids after installing dowels shall be filled with epoxy grout as directed by the Engineer. The cost for this work shall be considered incidental to the various Contract items.
2. Existing C.B. walls constructed of bricks.

DETAIL OF MODIFIED CATCH BASIN AT STA. 187+90±

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

HALAWA HEIGHTS ROAD,
DRAINAGE IMPROVEMENTS,
VICINITY OF CAMP SMITH

PROJ. NO. 72413-02-90
SCALE: 3/4" = 1'-0" DATE: OCT. 1990

SHEET NO. H4 OF 4 SHEETS