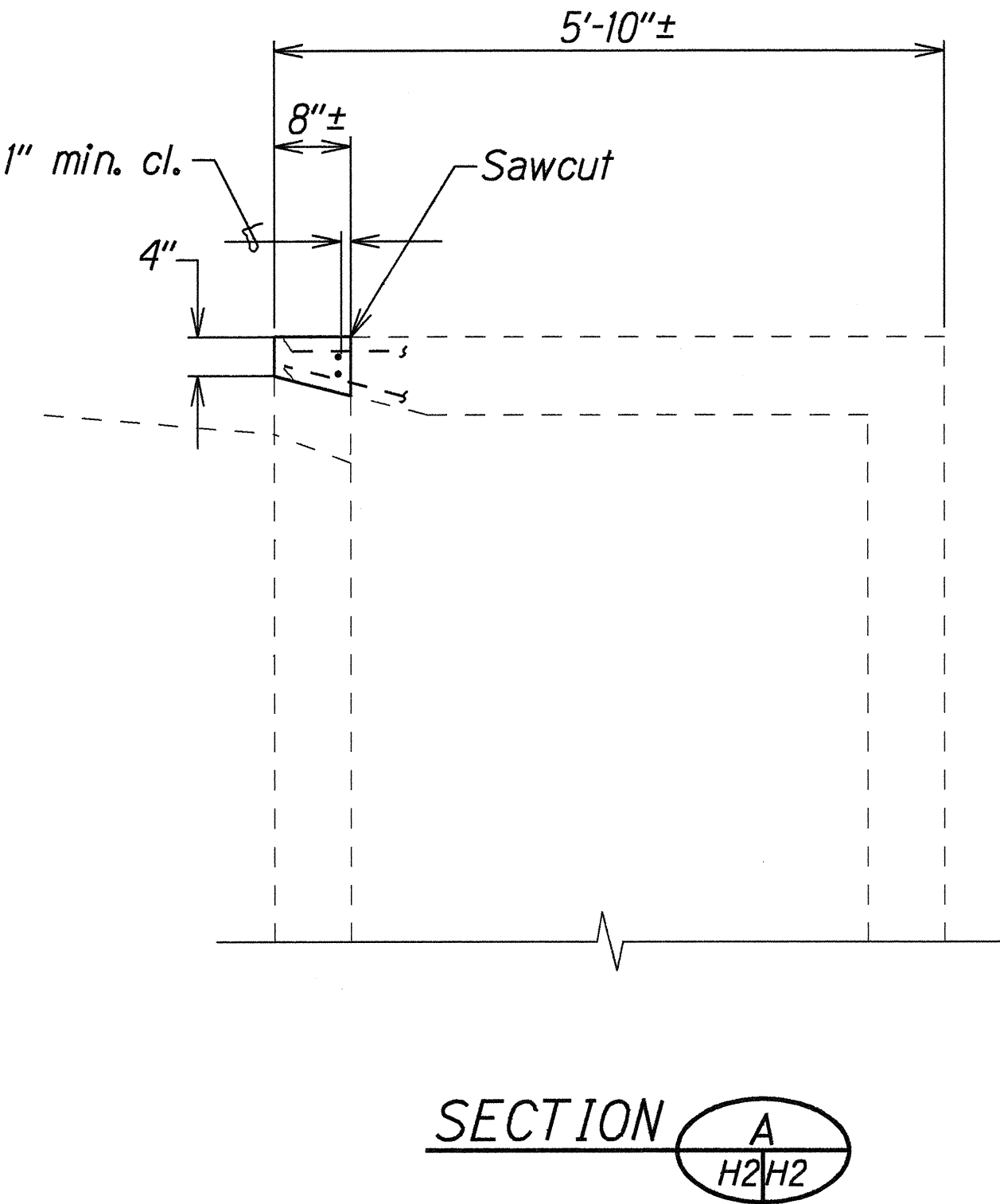
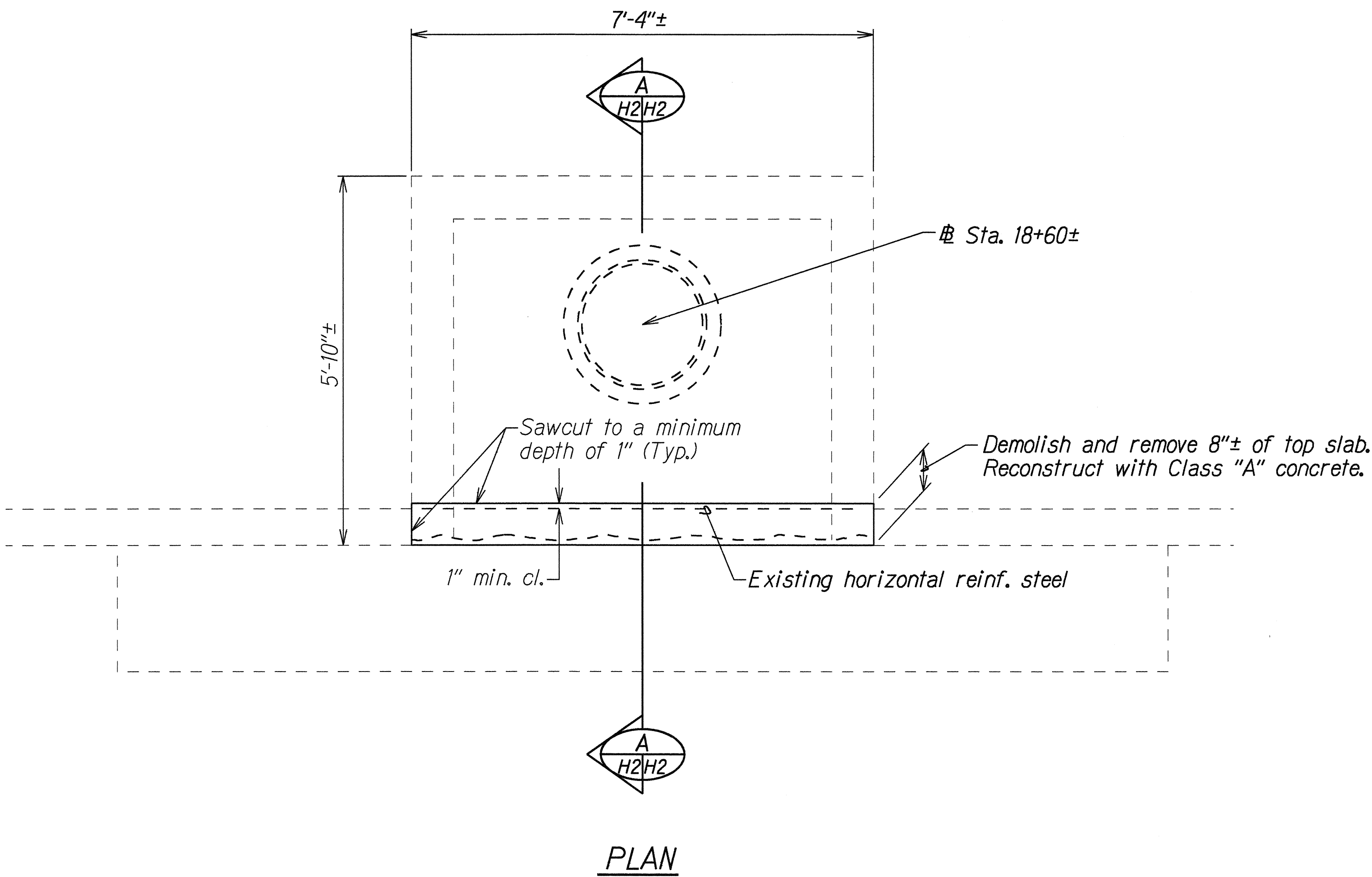


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-063-1(19)	1995	60	78

NOTE:
The 8" dimension shown is approximate. Actual dimension shall be 1" min. clearance beyond first layer of existing horizontal reinforcing steel.



CATCH BASIN REPAIR AT STA. 18+60±

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	May 1995
QUANTITIES BY	DESIGNED BY	
CHECKED BY	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

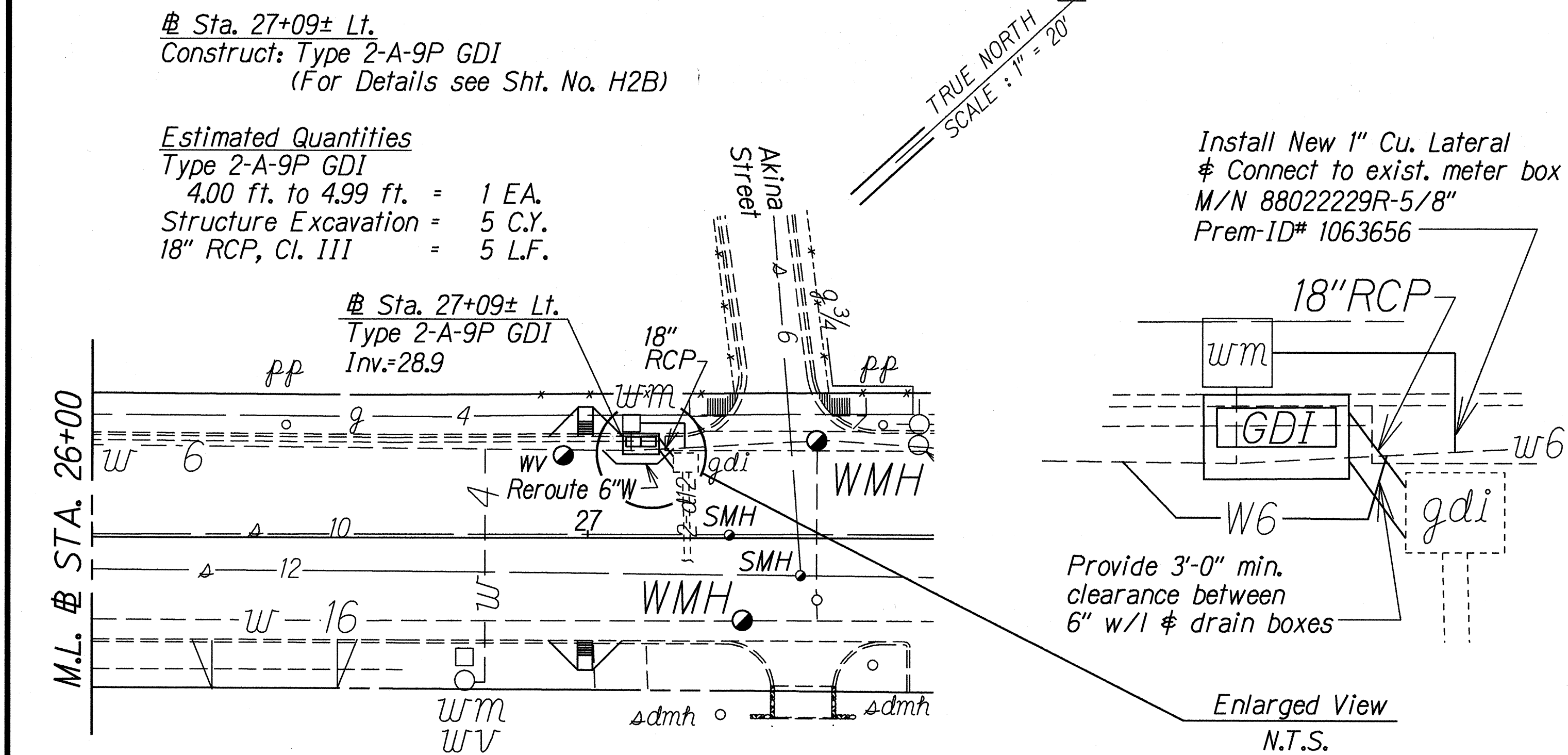
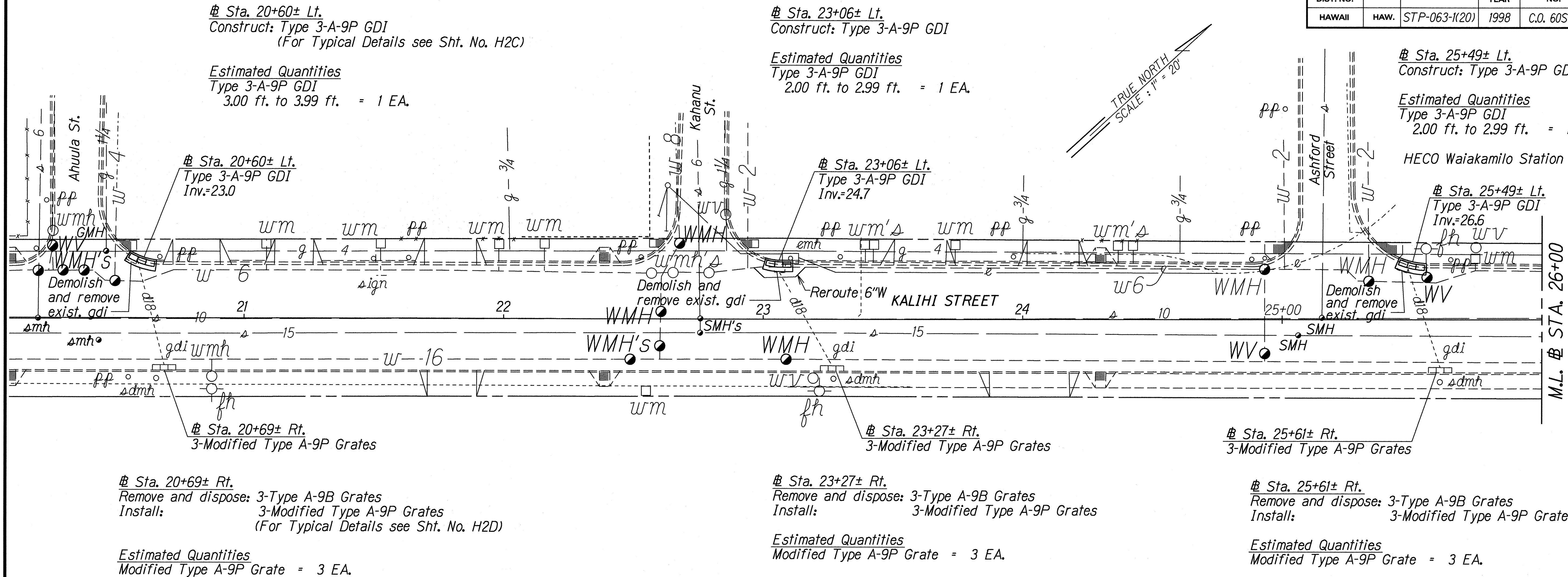
DRAINAGE DETAILS

LIKELIKE HIGHWAY RESURFACING
School St. to Emmeline Pl.
F.A. Project No. NH-063-1(19)

Scale: 3/4"=1'-0"
Date: May, 1995

SHEET No. H2 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-063-K(20)	1998	C.O. 60S-1	80



DRAINAGE NOTES

- Demolishing, removing, and disposing existing grated drop inlets structures; reconstructing portions of concrete curbs and sidewalks, shall not be paid for separately, but shall be considered incidental to Type 3-A-9P and Type 2-A-9P Grated Drop Inlets.
- Connecting 18-inch reinforced concrete pipe to existing grated drop inlet shall not be paid for separately but shall be considered incidental to Type 2-A-9P Grated Drop Inlet.
- Removing existing Type A-9B steel grates at existing grated drop inlets shall not be paid for separately, but shall be considered incidental to Modified Type A-9P Steel Grates.
- For Detail of Culvert Trench Restoration, see Sheet No. H2D.

APPROVED:

[Signature] 3/23/98
Chief, Planning & Engineering, BWS DATE

12/23/97 Added 6" Waterline Relocation
7/18/97 Added Drainage Plan.

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE PLAN
KALIHI STREET RESURFACING
Dillingham Blvd. to School St.
Including Interchange On/Off Ramps
F.A. Project No. STP-063-K(20)

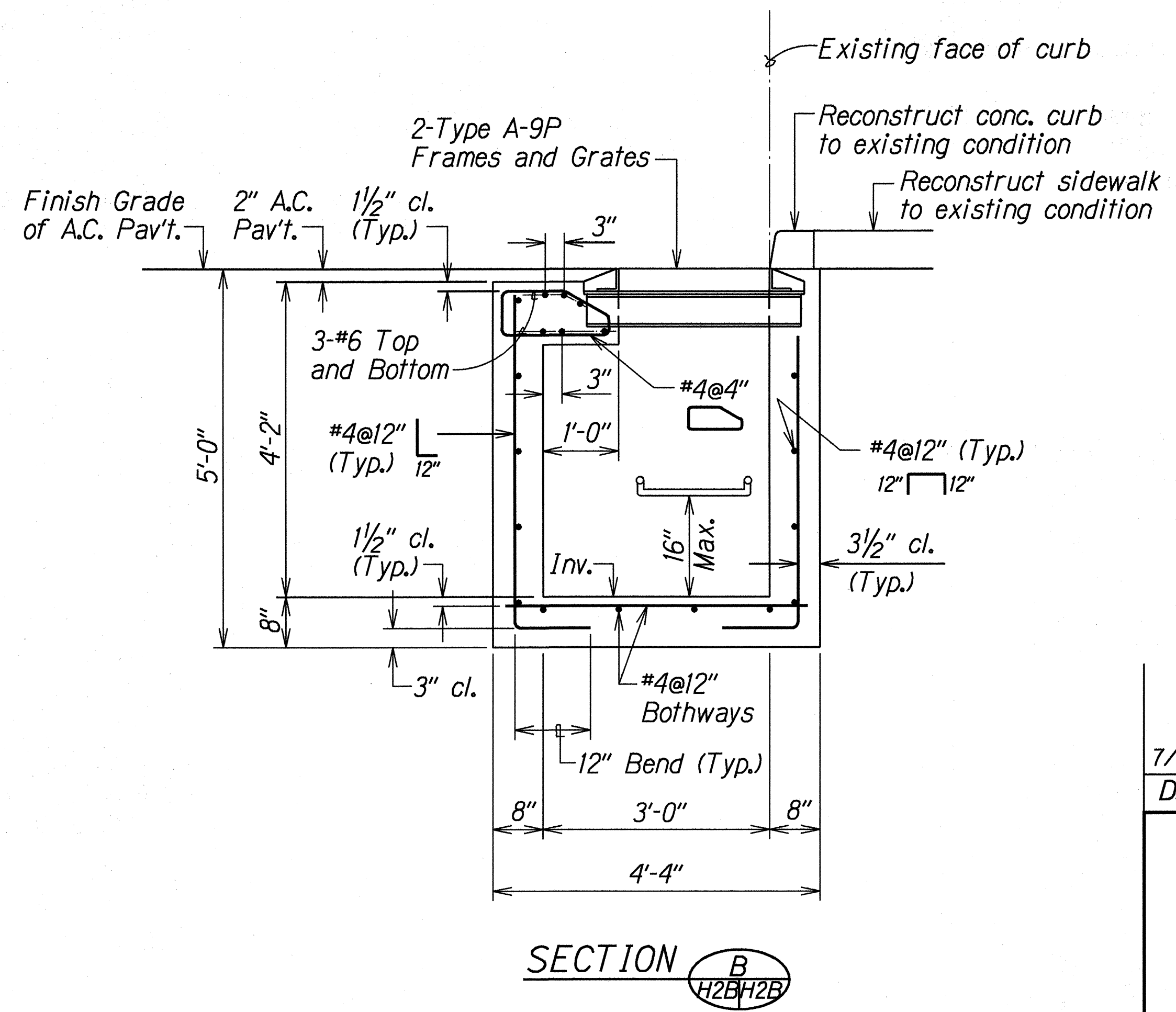
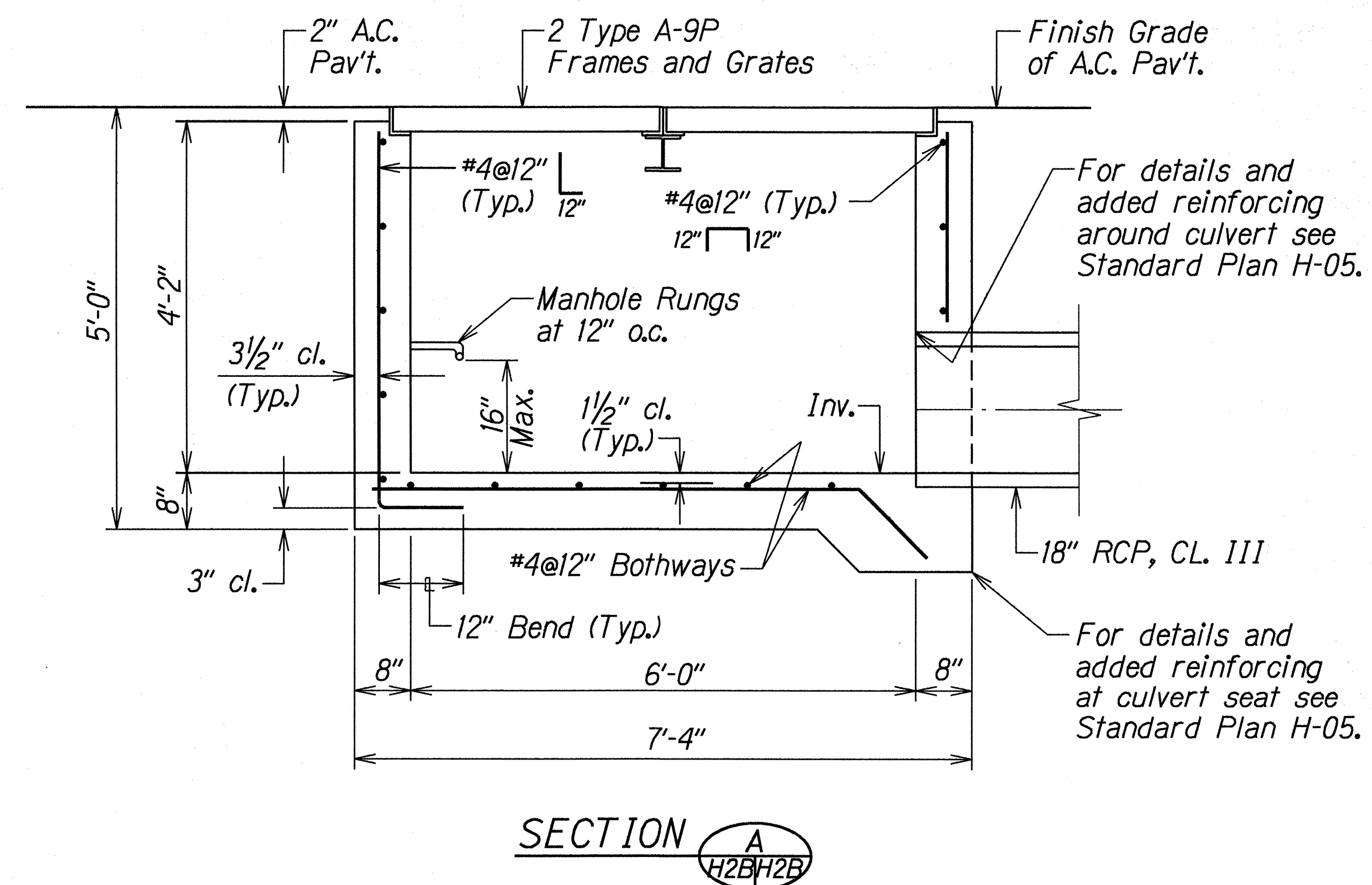
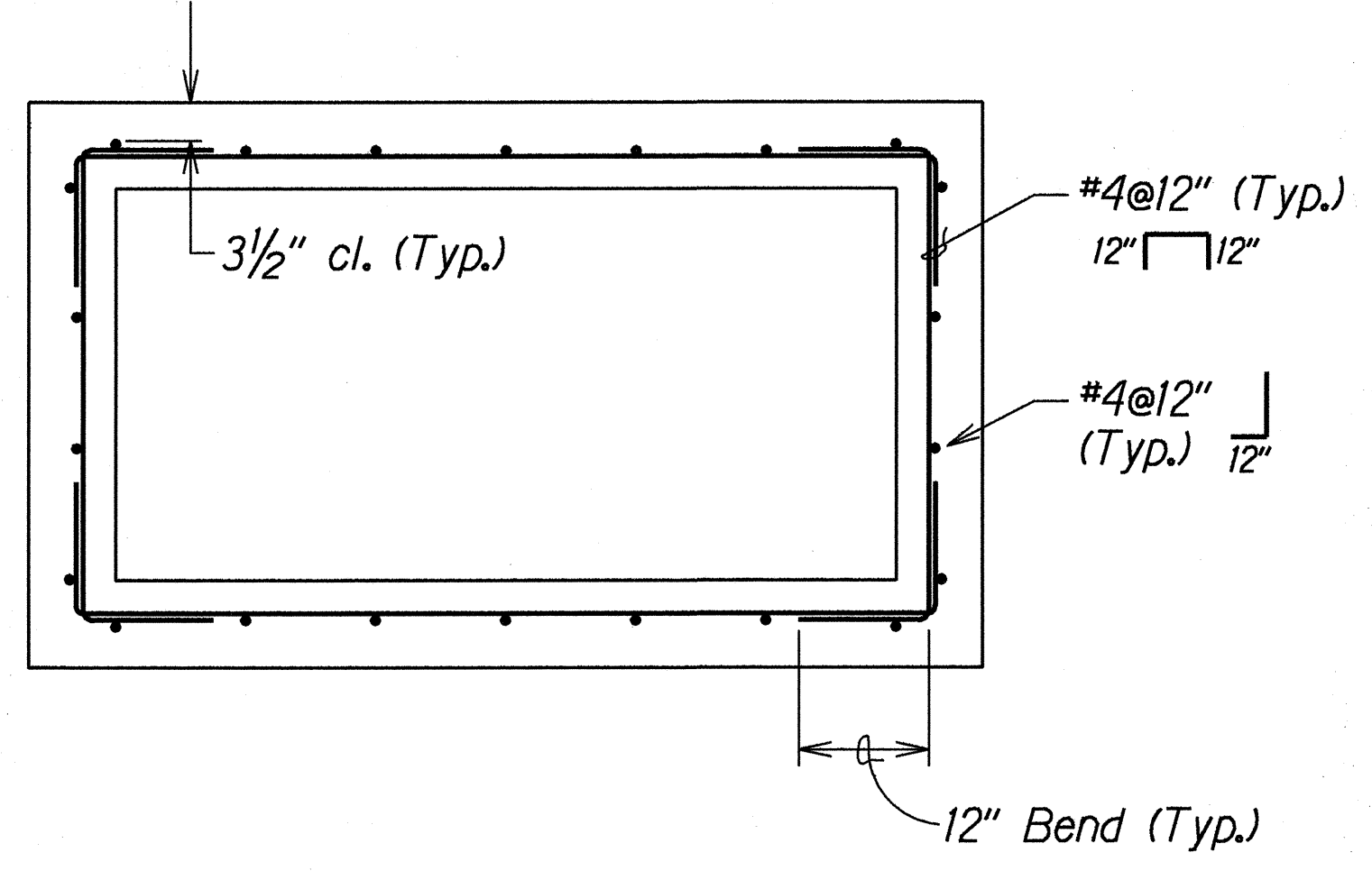
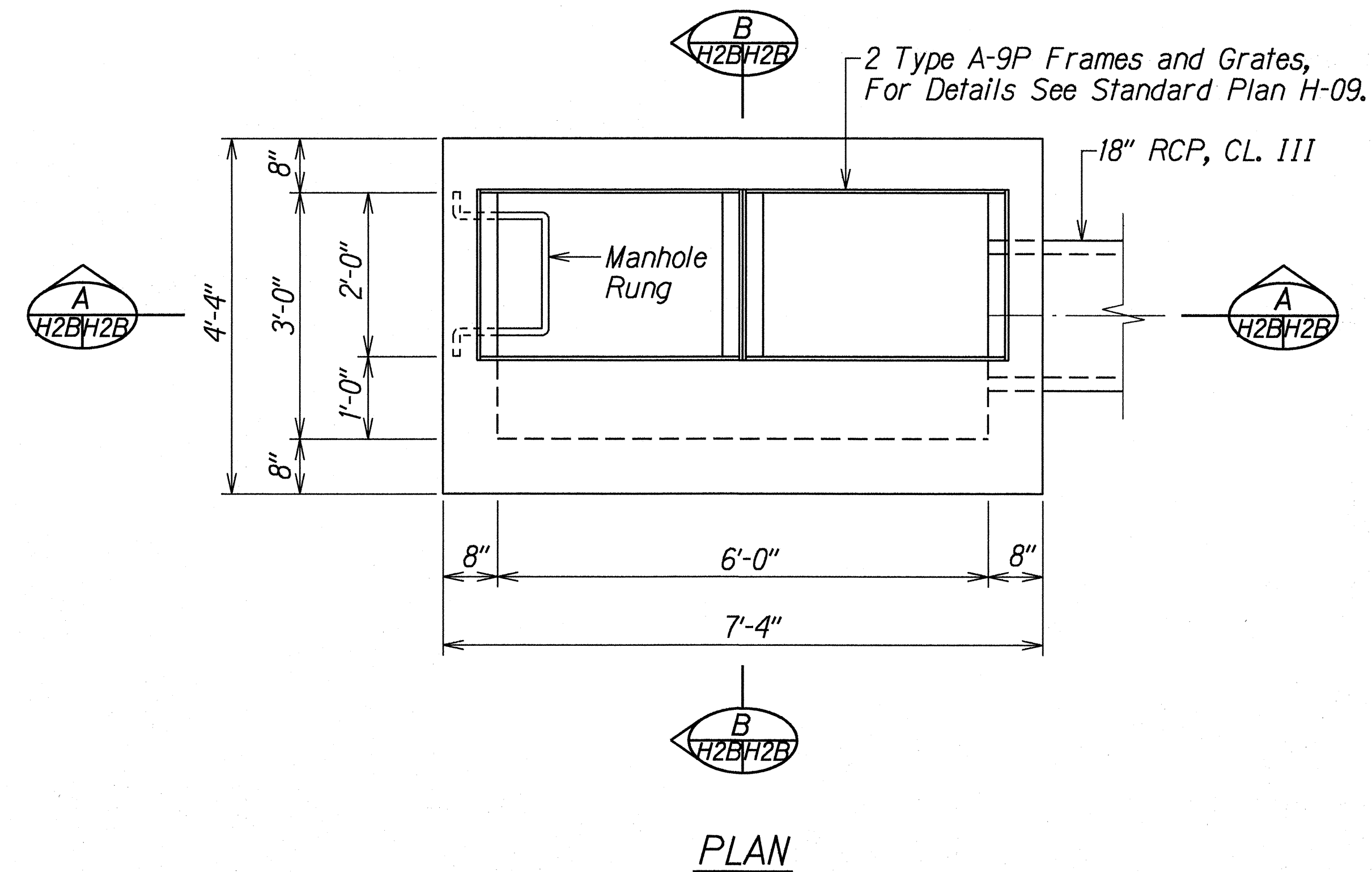
Date: Dec. 1997

SHEET No. 1 OF 3 SHEETS

C.O. 60S-1

ORIGINAL PLAN	DATE
NOTE BOOK	3/23/98
DESIGNED BY	AMM
CHECKED BY	AMM
QUANTITIES BY	AMM
CHECKED BY	AMM

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-063-1(19)	1997	C.O. 60S-2	78

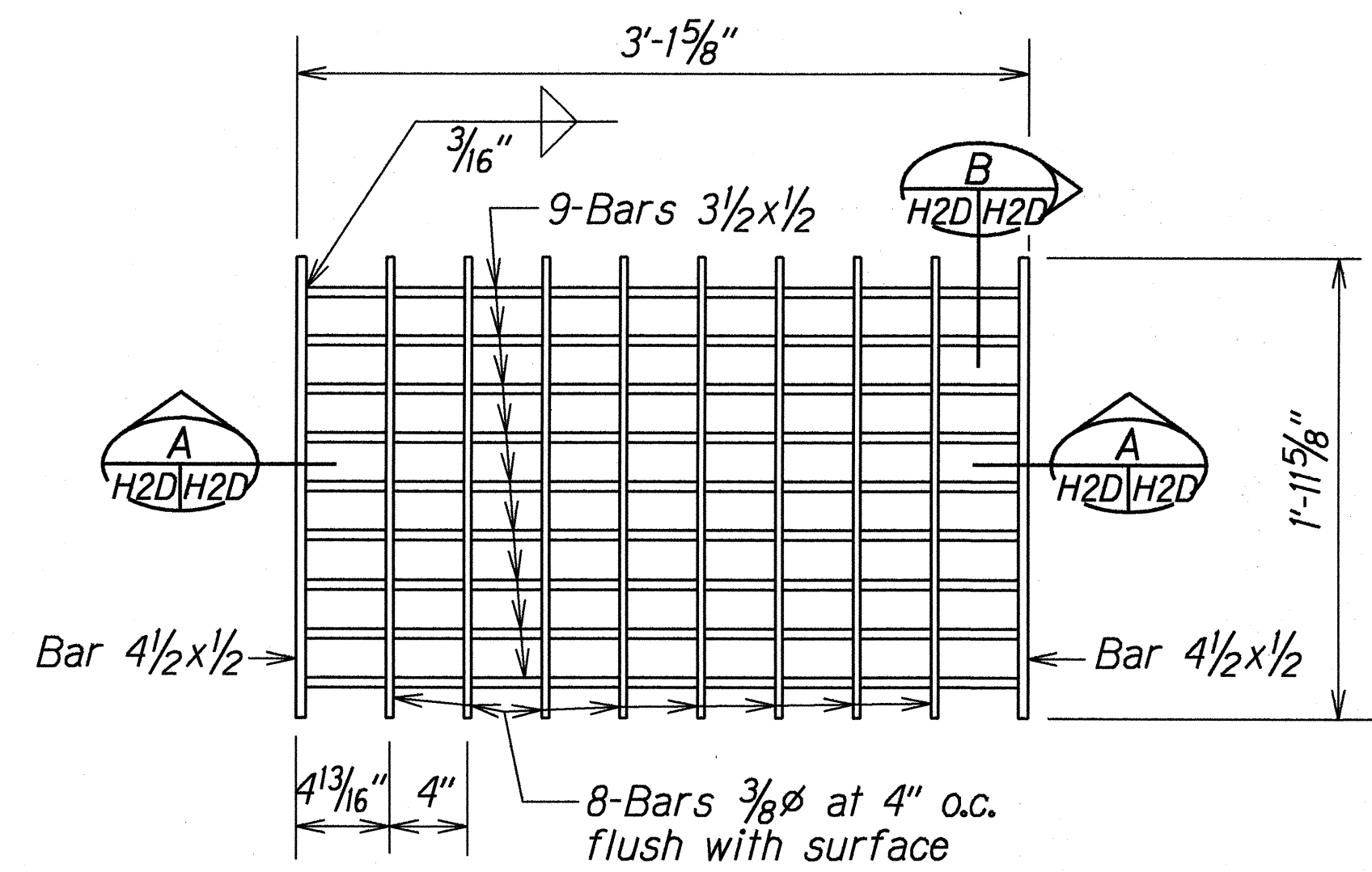


DETAILS OF TYPE 2-A-9P GDI

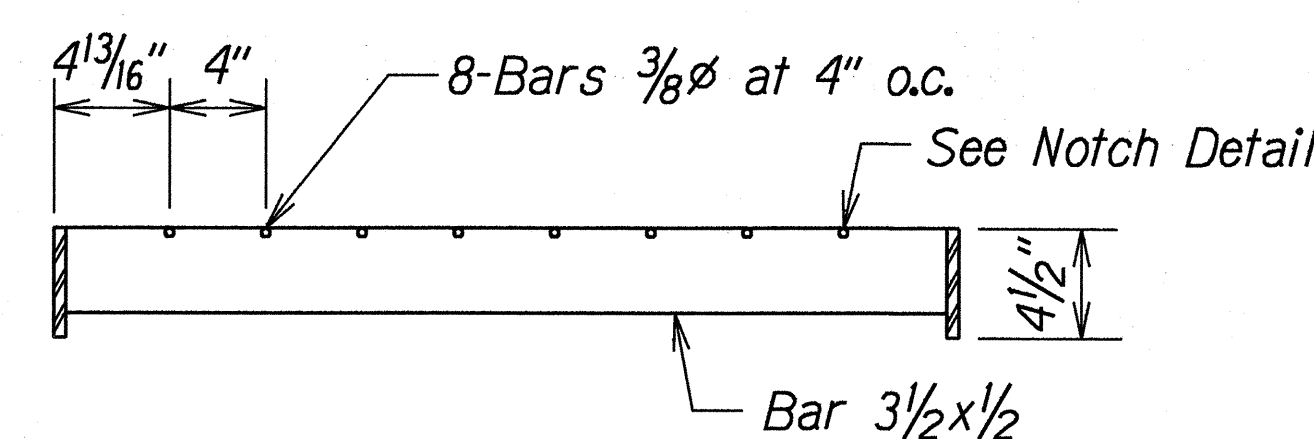
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	CHECKED BY	
	NOTED BY	
	QUANTITIES BY	
	CHECKED BY	

7/18/97	Added Drainage Details.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
LIKELIKE HIGHWAY RESURFACING	
School St. to Emmeline Pl.	
F.A. Project No. NH-063-1(19)	
Scale: 3/4"=1'-0"	Date: July, 1997
SHEET No. H2B OF 2 SHEETS	

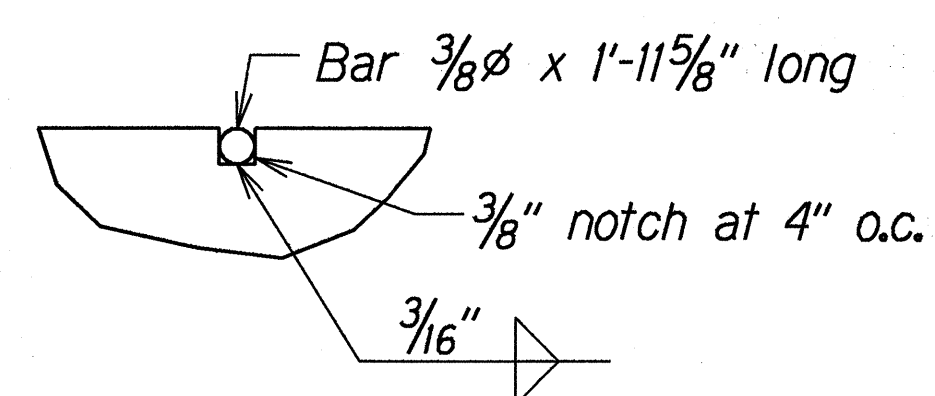
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-063-1(19)	1998	C.O. 60 S-4	78



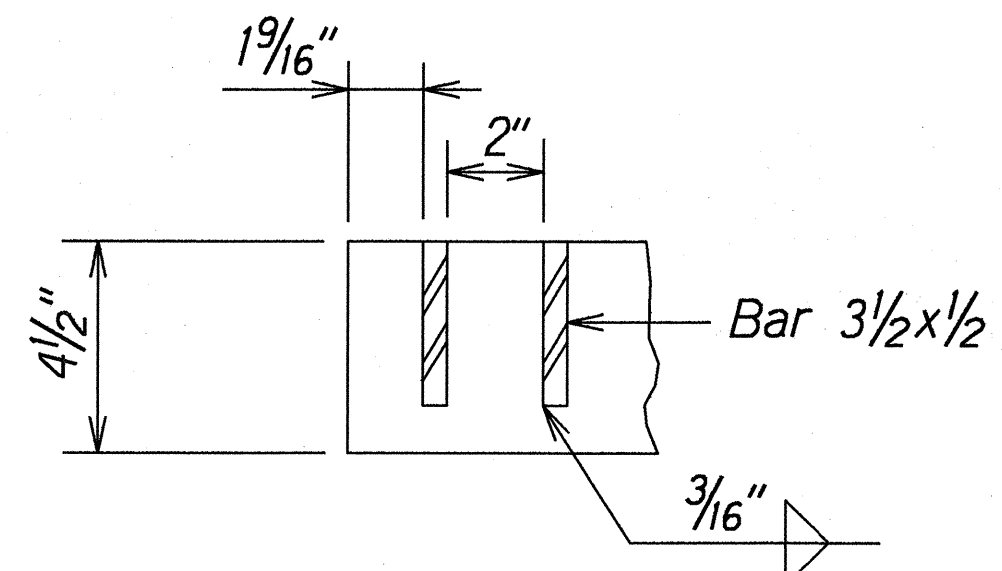
PLAN
Scale: 1 1/2"=1'-0"



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

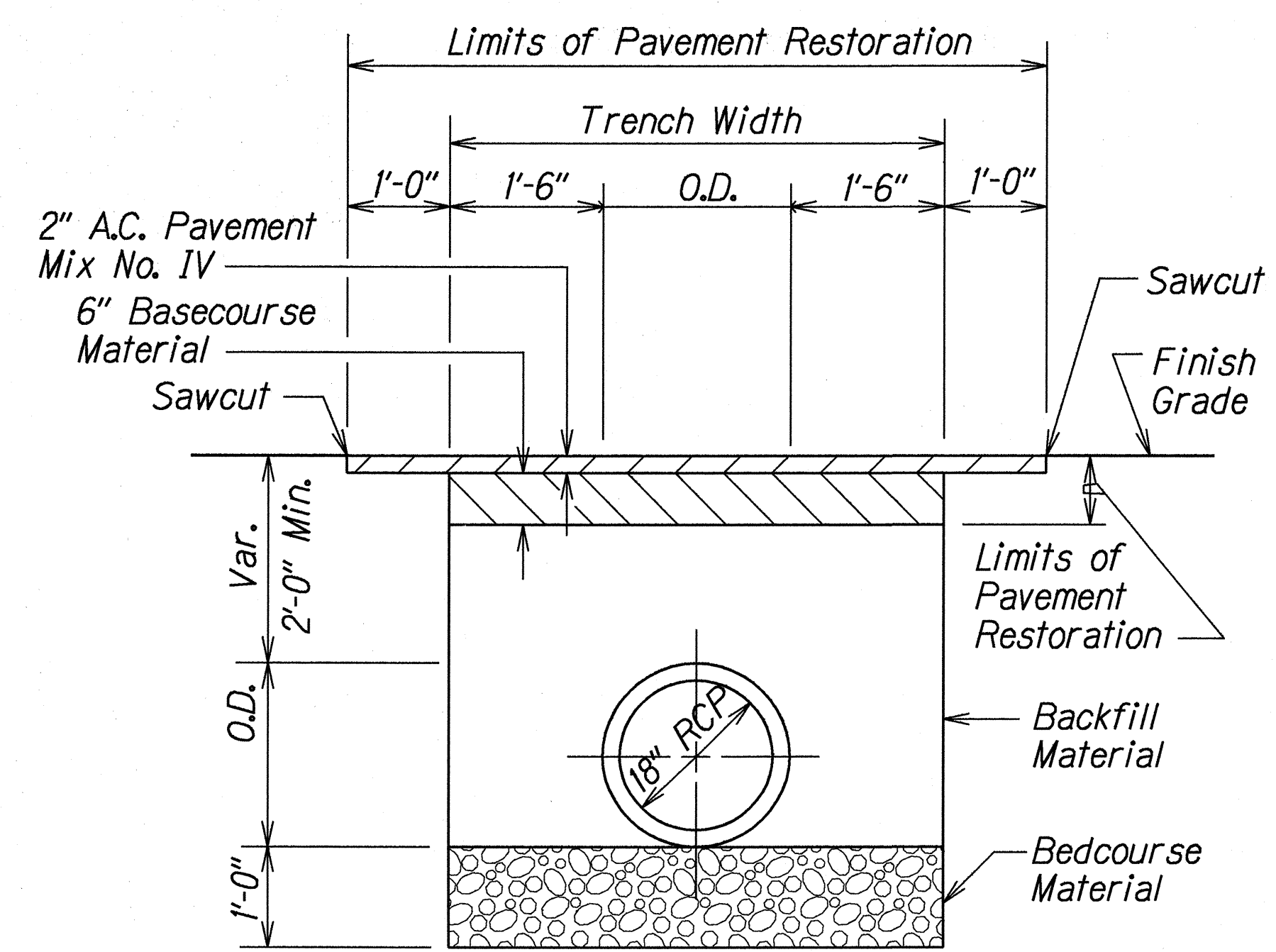


NOTCH DETAIL
Half Size



SECTION B
Scale: 3"=1'-0"

DETAILS OF MODIFIED TYPE A-9P STEEL GRATE



DETAIL OF CULVERT TRENCH RESTORATION

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

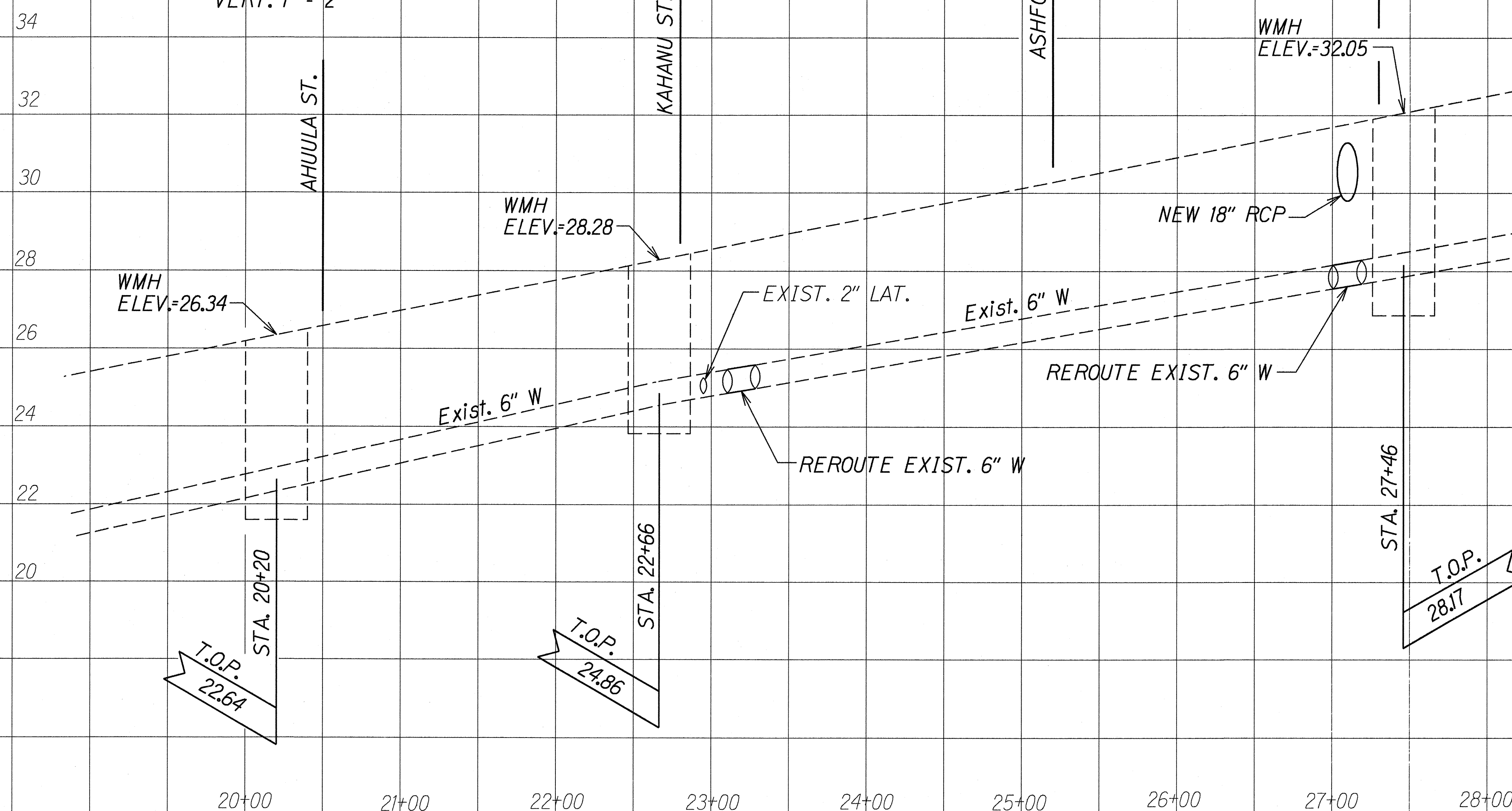
ORIGINAL PLAN	DATE
DRAWN BY A. Manuwa	7/18/97
NOTED BY B. Kawamura	
CHECKED BY	

7/18/97	Added Drainage Details.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS LIKELIKE HIGHWAY RESURFACING School St. to Emmeline Pl. F.A. Project No. NH-063-1(19) Scale: As Shown Date: July 1997 SHEET No. H2D OF 2 SHEETS	

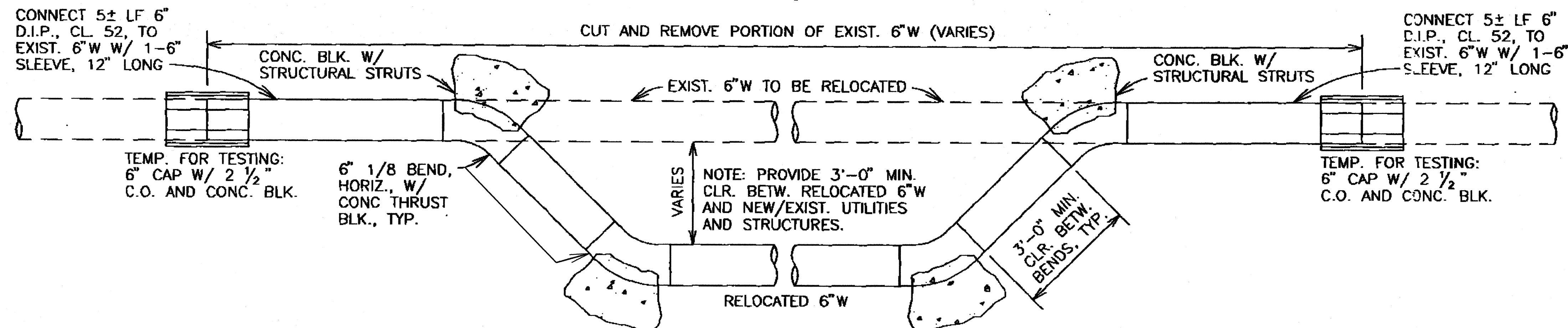
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-063-1(20)	1998	C.O. 60S-5	80

PROFILE - 6" W

SCALE: HORIZ. 1" = 50'
VERT. 1" = 2'



REROUTE EXIST 6" W - PLAN NTS



APPROVED:

[Signature] 2/23/98
Chief, Planning & Engineering, BWSca DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATERLINE RELOCATION

KALIHI STREET RESURFACING

*Dillingham Blvd. to School St.
Including Interchange On/Off Ramps*

F.A. Project No. STP-063-1(20)

Date: Dec. 1997

SHEET No. 2 OF 3 SHEETS

C.O. 60S-5

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	3/13/98
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
IN CHARGE	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-063-1(20)	1998	C.O.60S-6	80


BOARD OF WATER SUPPLY NOTES:

- Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS" VOLUME 1, DATED 1985, THE "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION", VOLUME 2, DATED 1985, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.
- All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply. All other features of the water system, such as lines, grades, fittings, drainage, etc., and other features of improvements shall not be the responsibility of the Board of Water Supply.
- Test pressure shall be 150 psi.
- The Contractor shall notify BWS Planning and Engineering Division, Construction Section in writing and submit four sets of approved construction plans one week prior to commencing work on the water system.
- The Contractor shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (For connection only)
- The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measure necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.
- The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and shall pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
- Prior to installation, the Contractor shall submit for approval by Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 1985.
- Polygon shape for mechanical joint glands as described in AWWA Standard C111 shall be "straight-sided" or an approved equal on a job to job basis.
- Re-approval shall be required if this project is not under construction within a period of two years.
- Contractor shall cut and plug all existing unused laterals at the main whether or not shown on the plans. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the Contractor.
- The Contractor/Owner shall obtain a NPDES permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the Board of Water Supply, Planning and Engineering Division, Construction Section.
- Pipe cushion shall be of high resistivity material. The Contractor shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 OHM-CM. Remainder of the backfill material shall be as specified in Volume 1 of the Water System Standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (PCB).
- Cleaning shall be by use of "pigs" introduced into the pipeline and run completely through all installed pipelines and all branch lines for fire hydrants. "Pigging" of service laterals is not required. Bare foam "pigs" shall be used to swab piping clean as each length of the pipeline is installed. Each "pig" shall consist of a cylindrical piece of polyurethane foam with a density of 3-7 pounds per cubic foot and a vinyl-coated nose. Outside diameter of the "pig" shall be equal to 1-1/4 to 1-1/2 times the inside diameter of the pipe being installed. The length of the "pig" shall be 1-1/2 to 2 times its diameter. Prior to use, the "pig" shall be submerged in a chlorine solution of 1 oz. of 5% chlorine bleach in 5 gallons of water. "Pigging" of the pipeline shall be considered incidental to the installation of the new pipeline.

SPECIAL WATER NOTES:

- For cut-in connection to existing:
"All waterline construction requiring shutdown connection shall be scheduled for AFTER working hours at six (6) hours maximum downtime."

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
NOTE BOOK	3/13/98	
	ddm	
	Mhogn	
	N.	

APPROVED:	
	3/23/98
Chief, Planning & Engineering, BWS	DATE
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GENERAL NOTES	
KALIHI STREET RESURFACING Dillingham Blvd. to School St. Including Interchange On/Off Ramps Fed. Aid Proj. No. STP-063-1(20)	
Date: March 1998	
SHEET No. 3 OF 3 SHEETS	