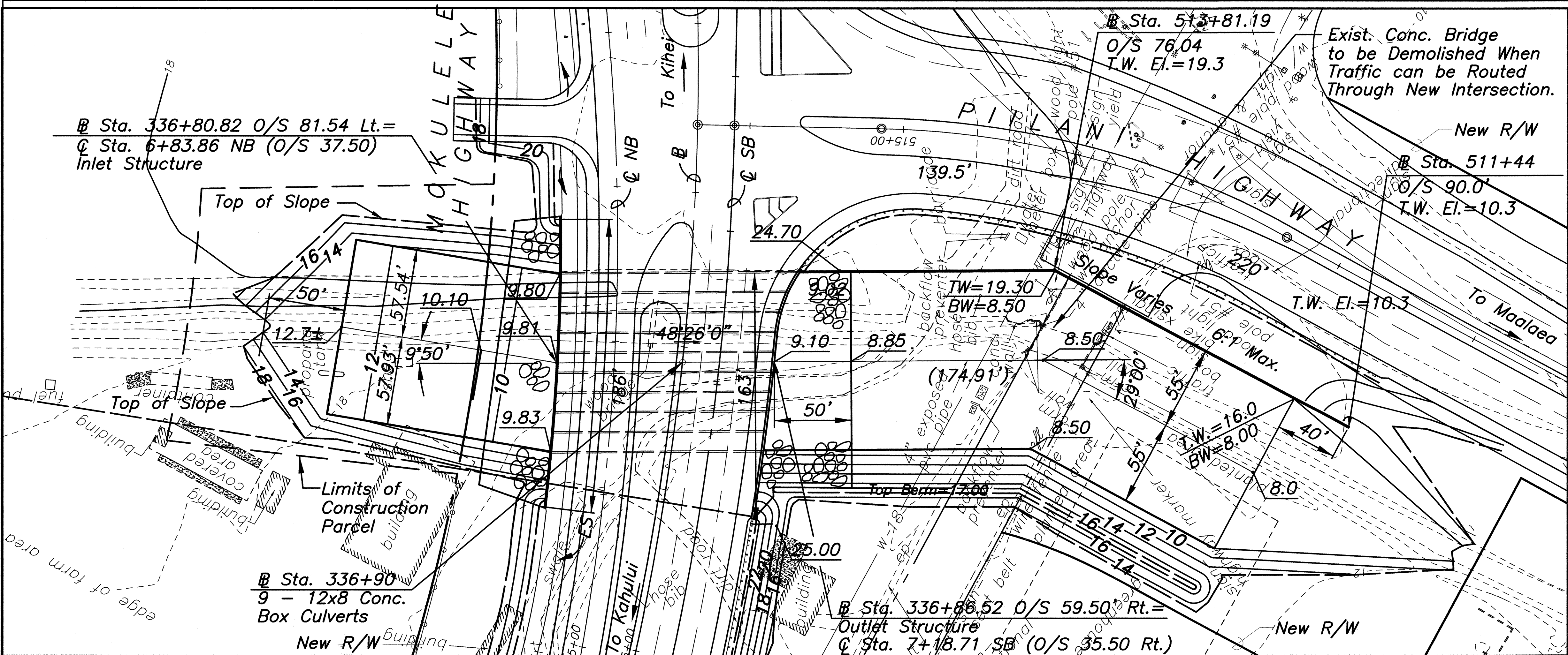
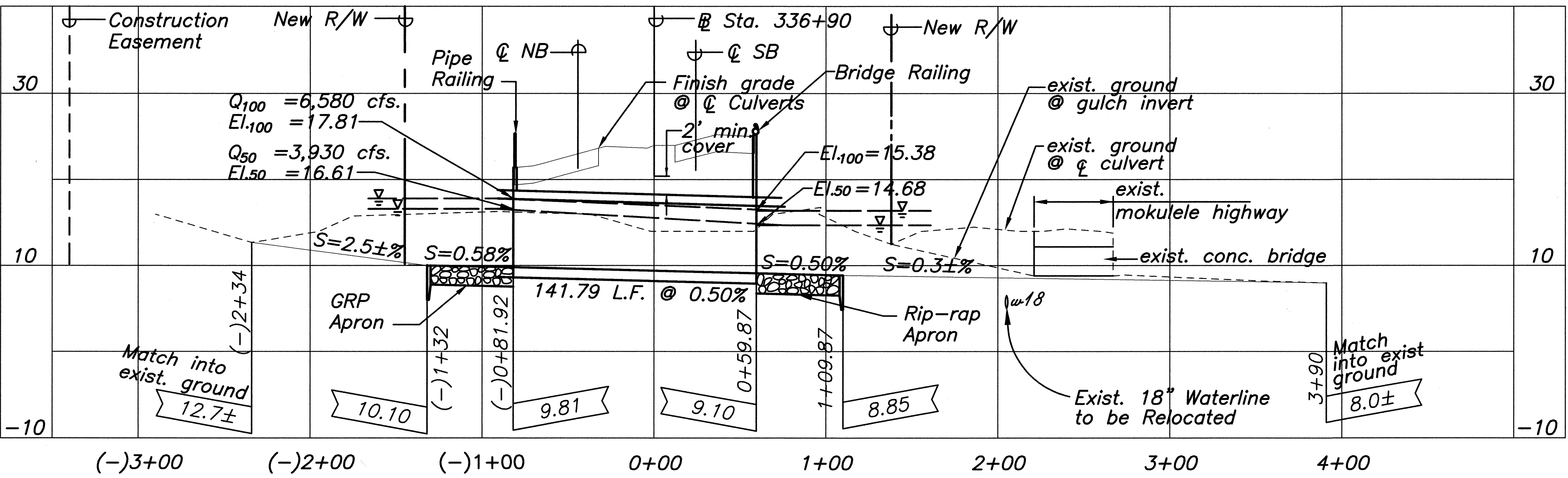




PLAN - KEAHUAIWI GULCH CULVERTS AT STA. 336+90

Scale: 1" = 40'

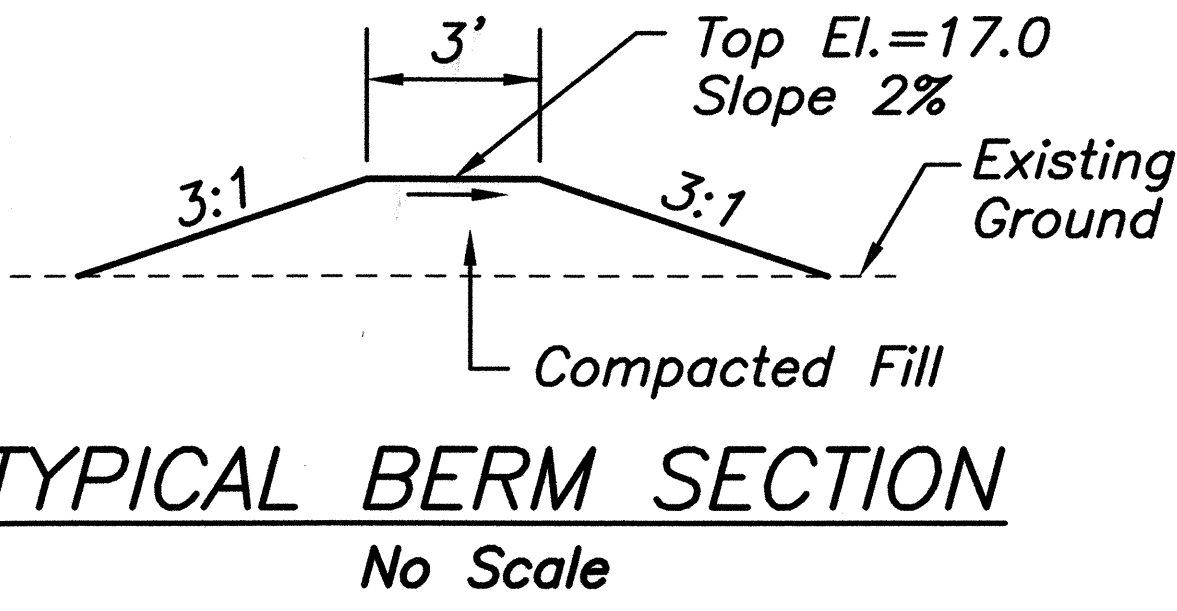


PROFILE - KEAHUAIWI GULCH CULVERTS AT STA. 336+90

Scale: Horiz. 1" = 40'
Vert. 1" = 8'

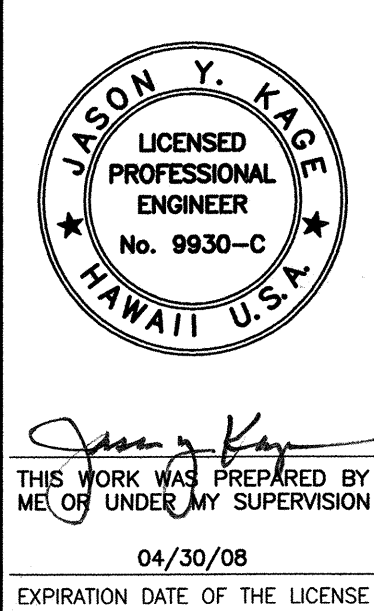
FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(4)	2006	ADD.65	180

- Notes:
1. For Culverts, Inlets and Outlet Structures, GRP and Hand Laid Rip-rap Details, see Structural Plans.
 2. For Relocation of Waterlines and Valves Boxes, see Utility Plans.
 3. All Channel Cross Slopes 3:1, Except as Noted.



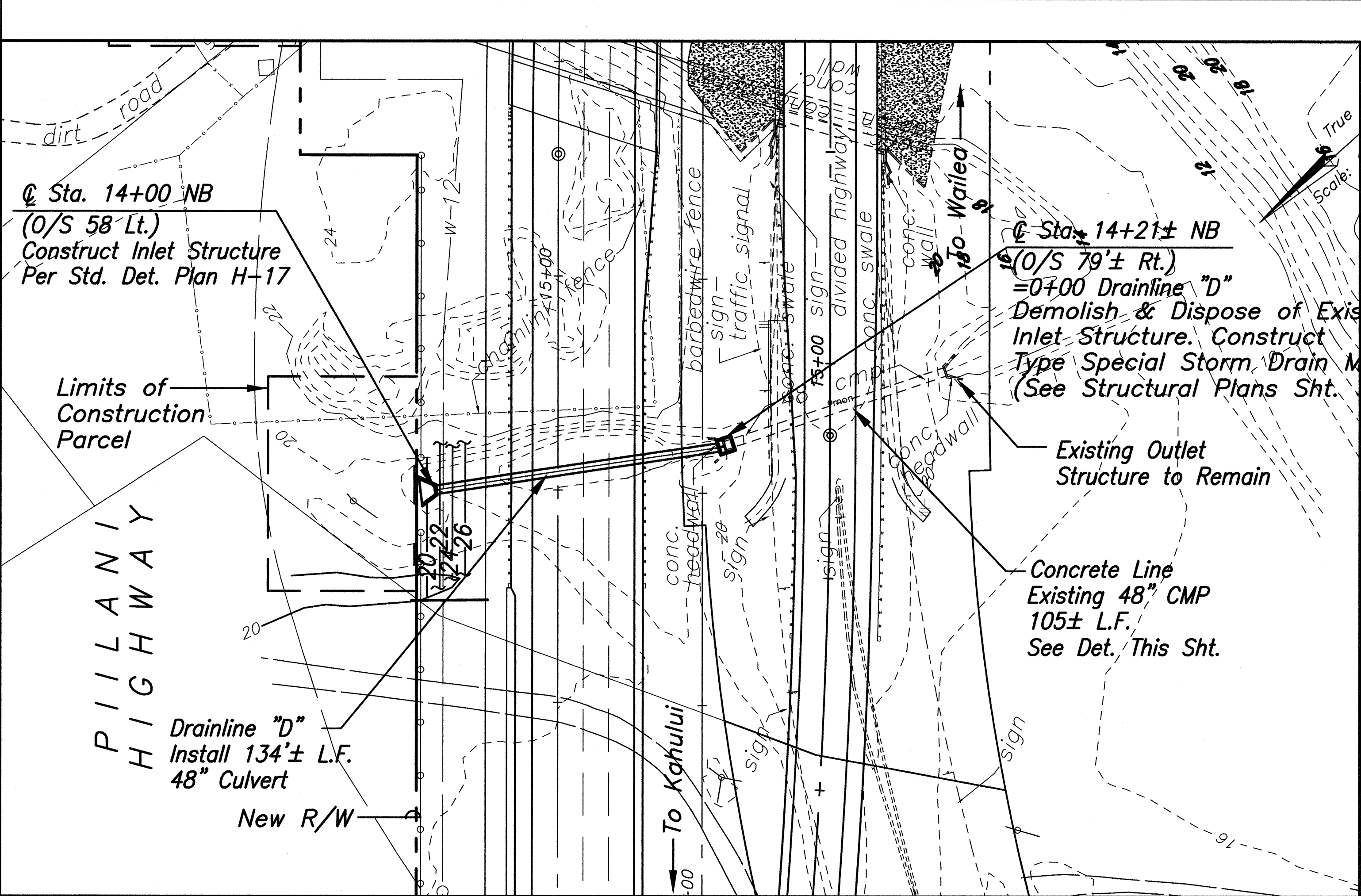
TYPICAL BERM SECTION
No Scale

5/9/06	Replace Entire Sheet Due To Plotting Error
DATE	REVISION



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CULVERT DETAILS
MOKULELE HIGHWAY WIDENING
Vicinity of Kealia Pond Driveway
To
Piilani Highway
Federal - Aid Project No. NH-A311(4)
Scale: AS NOTED Date: July 2005
SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(4)	2006	ADD.66	180

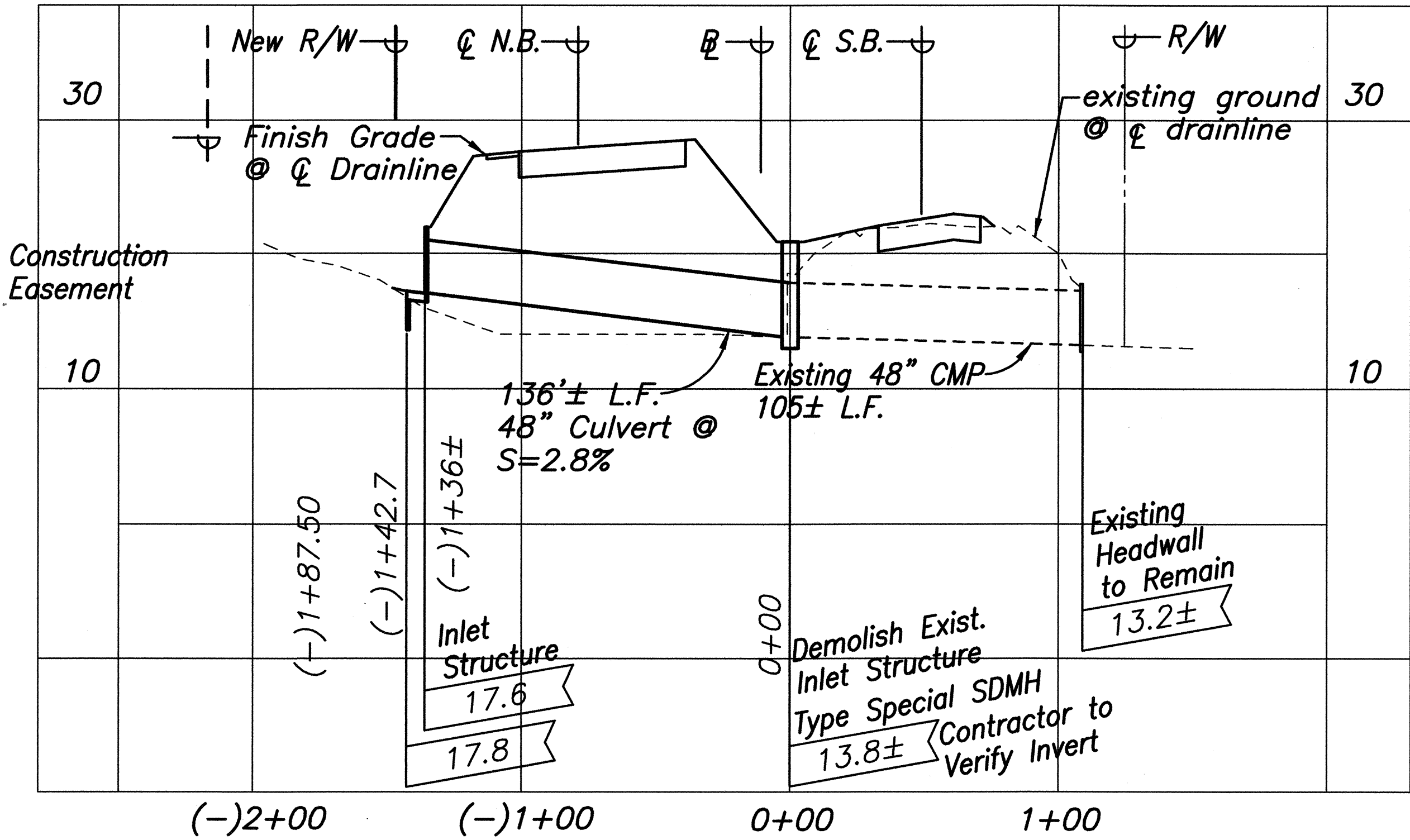


PLAN – DRAINLINE "D"

Scale: 1" = 40'

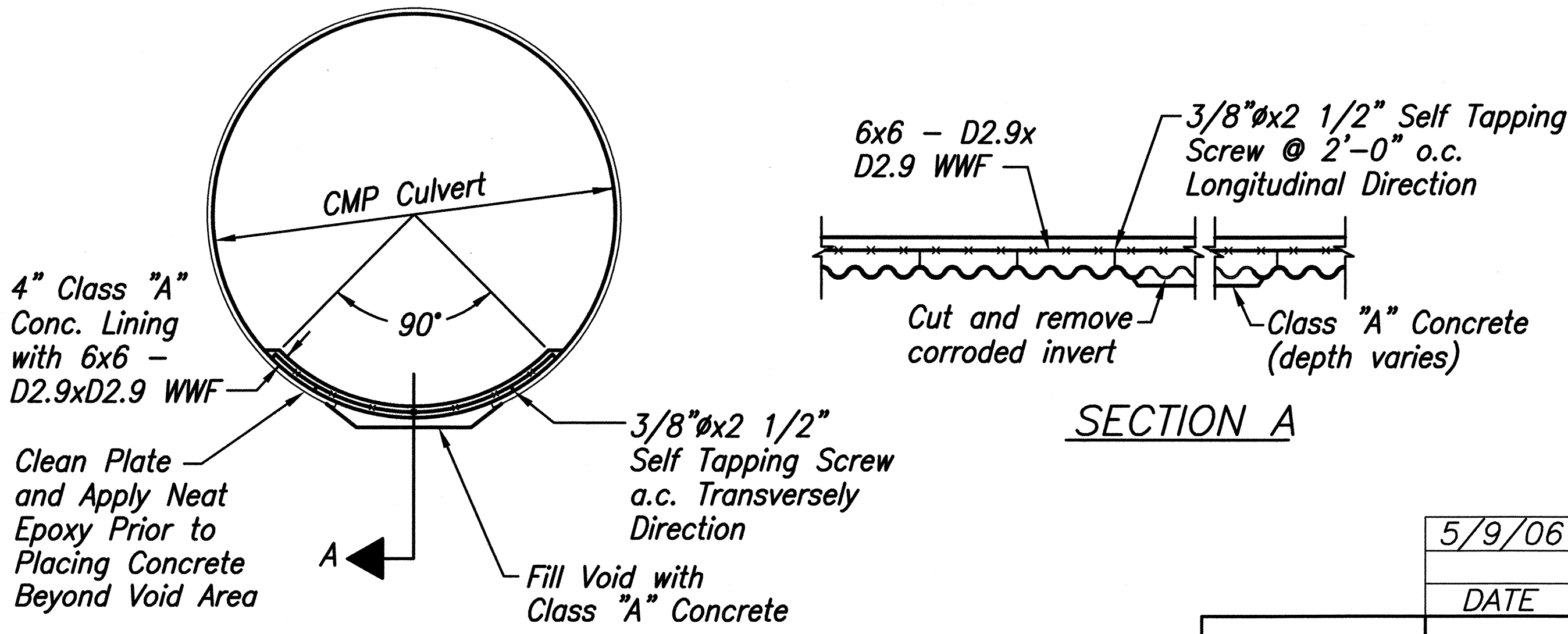
NOTES:

- The concrete placed in the culvert shall be allowed to cure for a minimum of 48 hours before water is allowed to flow on the invert.
- The culvert surface to be in contact with the concrete shall be clean and dry to the satisfaction of the engineer. Badly corroded sections shall be cut and removed, provided the structural integrity of the culvert is not compromised. Epoxy shall be neatly applied to the clean metal surface prior to placing concrete.
- The welded wire fabric steel reinforcement shall be placed two inches above the crest of corrugations by welding to self tapping screws. The screws shall be drilled and tapped to the sectional plate culvert at two feet on centers longitudinally and 1'-0" transversely. If lapping of the welded wire fabric is necessary, it shall be lapped a minimum of six inches.
- The welded wire fabric, screws and epoxy shall not be paid for separately but shall be considered incidental to concrete.
- The concrete culvert lining shall be scored 3/4-inch deep laterally along the crest of corrugations, 20 feet on-center.
- Concrete: $F_c' = 3,000$ psi
Rebars: ASTM A615 Grade 60



PROFILE – DRAINLINE "D"

Scale: Horiz. 1" = 40'
Vert. 1" = 8'

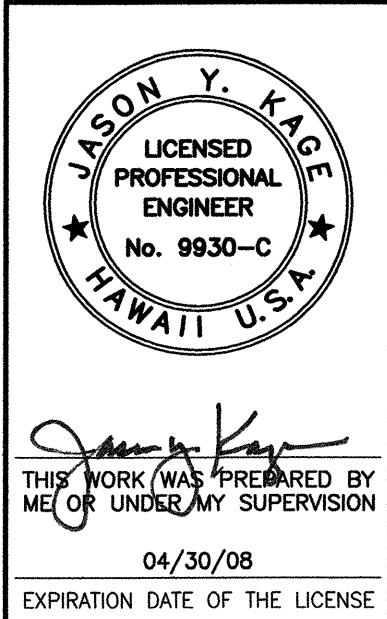


SECTION IN VOID AREA

DETAILS OF CONCRETE CULVERT LINING

Scale: None

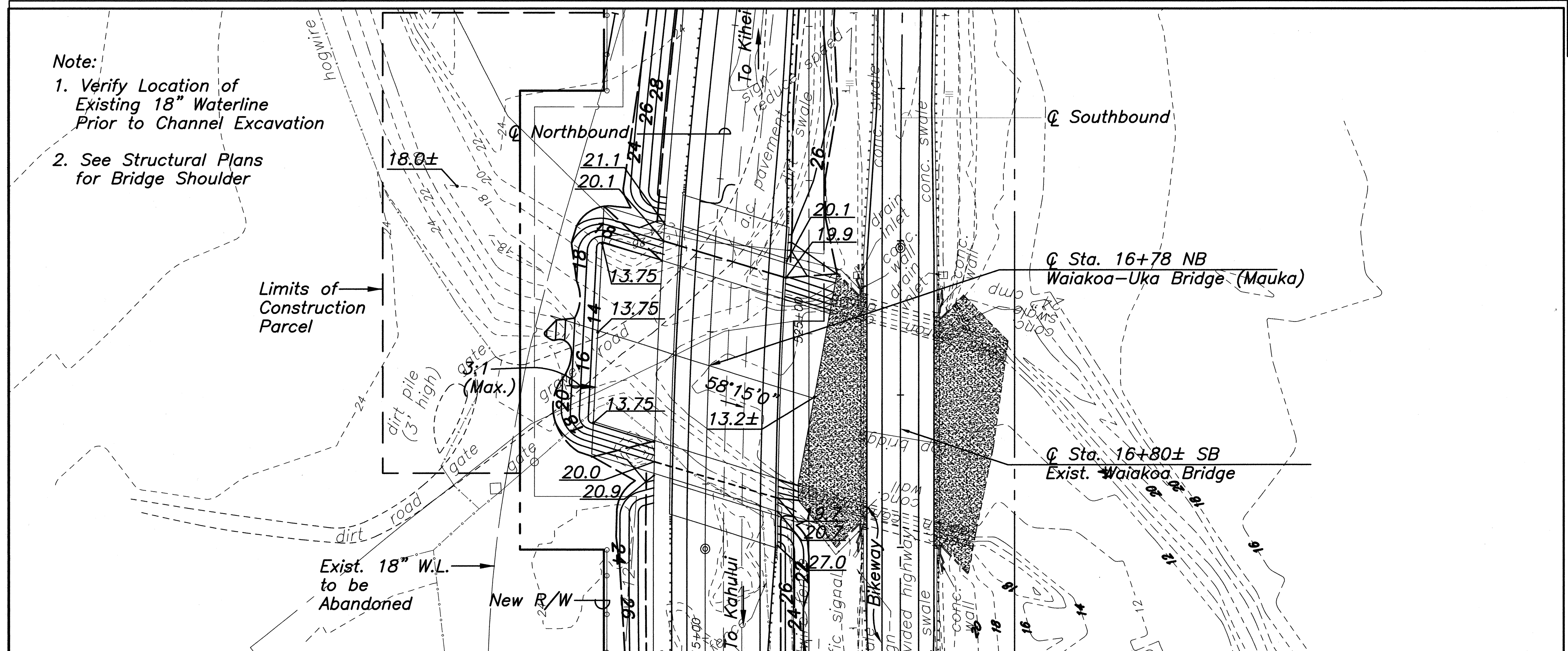
5/9/06	Replace Entire Sheet Due To Plotting Error
DATE	REVISION



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CULVERT DETAILS	
MOKULELE HIGHWAY WIDENING Vicinity of Kealia Pond Driveway To Piilani Highway Federal - Aid Project No. NH-A311(4) Scale: AS NOTED Date: July 2005	
SHEET No. 2 OF 3 SHEETS	

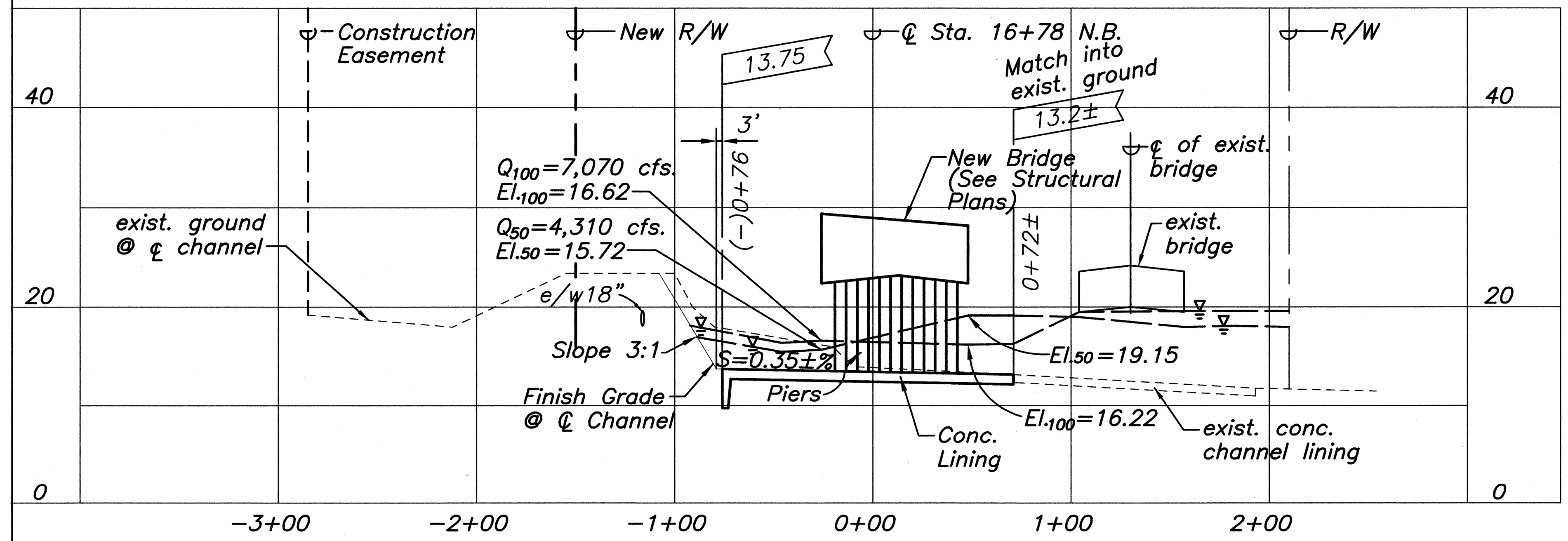
FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(4)	2006	ADD.67	180

- Note:
1. Verify Location of Existing 18" Waterline Prior to Channel Excavation
 2. See Structural Plans for Bridge Shoulder



PLAN – WAIAKOA–UKA BRIDGE (MAUKA) AT @ STA. 16+76 N.B.

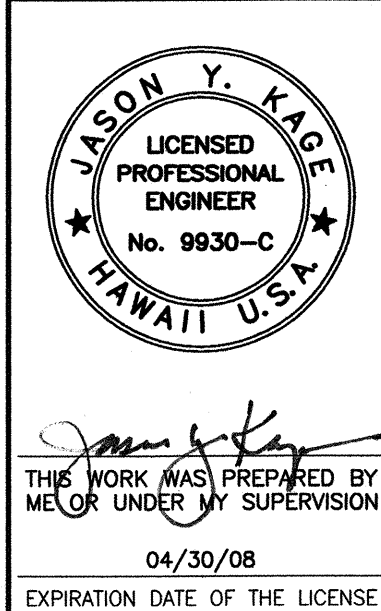
Scale: 1" = 40'



PROFILE – WAIAKOA–UKA BRIDGE (MAUKA) @ @ STA. 16+76 N.B.

Scale: Horiz. 1" = 40'
Vert. 1" = 8'

5/9/06 Replace Entire Sheet Due To Plotting Error
DATE REVISION



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CULVERT DETAILS
MOKULELE HIGHWAY WIDENING
Vicinity of Kealia Pond Driveway
To
Piilani Highway
Federal - Aid Project No. NH-A311(4)
Scale: AS NOTED Date: July 2005
SHEET No. 3 OF 3 SHEETS

ADD. 67

ORIGINAL PLAN	DATE
NO. 1	
NO. 2	
NO. 3	
NO. 4	
NO. 5	
NO. 6	
NO. 7	
NO. 8	
NO. 9	
NO. 10	