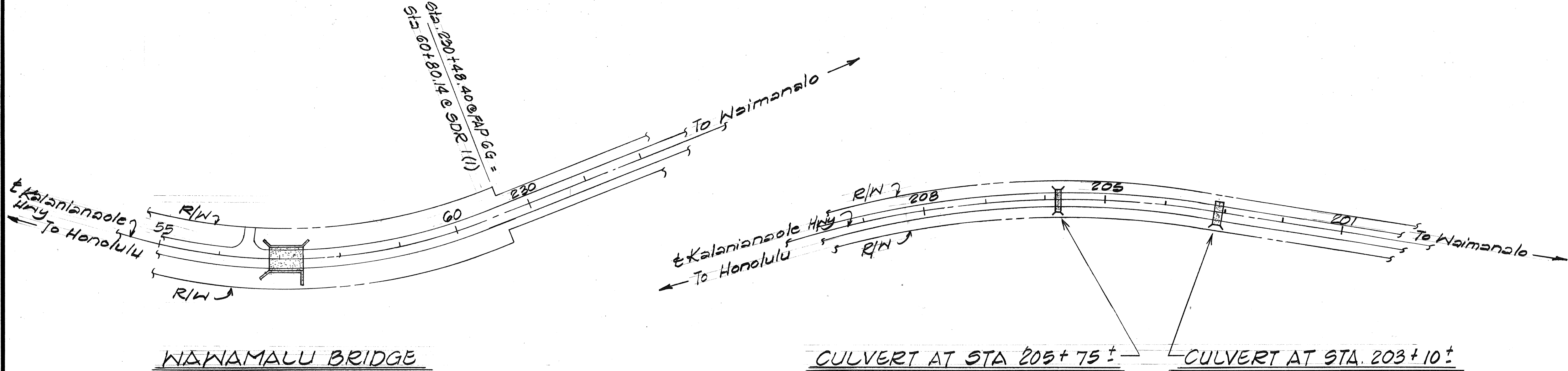


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(23)	1984	36	42



STRUCTURE JOB SITE PLAN

Scale: 1" = 100'

GENERAL STRUCTURE NOTES

DESIGN SPECIFICATIONS:

(AASHTO) Standard Specifications for Hwy Bridges (12th Edition) with subsequent interim Specifications, 1978 to 1983.

DESIGN LOAD: HS-20-44

DESIGN STRESSES:

- $f_c = 4,200 \text{ psi (0.4 } f'_c)$
- $f_s = 20,000 \text{ psi}$

MATERIALS:

- Reinforced Concrete - Class A
- Reinforcing Steel - ASTM A615 Grade 40
- Epoxy Grout - High early strength type (1,000 psi min. compressive strength @ 4 hrs) approved by the Engineer & applied in strict accordance with the manufacturer's recommendations.
- Structural Steel - ASTM A-36.
- U.S. Anchor Bolt - ASTM A193 Grade B8 Class 2 w/nuts conforming to ASTM A194 Grade 8A except as noted otherwise.

CONSTRUCTION REQUIREMENTS:

- See Standard Specifications for Road & Bridge Construction, (Hawaii 1976) & Special Provisions.
- A-325 anchor bolts, structural steel shapes & plates shall be hot-dipped galvanized after fabrication.
- Preformed fabric pads shall be securely fastened to the abutments before placement of the precast planks.
- The face of the existing slab to be epoxy bonded with the new slab shall be thoroughly wetted with clean water and scrubbed with a solution of not more than one part hydrochloric (muriatic) acid to nine parts water followed immediately by thorough rinsing with clean water.
- Large impacting or vibratory types of equipment shall not be used in drilling holes in the existing structure. Small vibratory tools shall be approved by the Engineer before being used.

- Items designated for removal shall be removed in such a manner as to preclude any damage to the existing structure. Large impacting or vibratory types of equipment will not be permitted in the removal operation. Small vibratory tools, approved by the Engineer, will be permitted.
- The Contractor shall be solely responsible for the protection of the adjacent property, utilities, and existing and new structures from damage due to construction and shall repair any damage at his own expense to the satisfaction of the Engineer.
- The lane adjacent to the new deck shall be closed during epoxying operation, and may be reopened 4 hours after the completion of epoxying operation.
- Where reinforcing bars are cut in the removal of existing concrete, all exposed ends shall be undercut a minimum of 1 1/2" below the surface of the concrete and patched with mortar. Cutting of reinforcing and patching with mortar shall be incidental to concrete removal.

GENERAL:

- Items noted incidental will not be paid for separately.
- The Contractor shall verify all dimensions in the field before commencing work.
- The Contractor shall verify the location of all existing utility lines near the structures, and notify their respective owners before commencing work.

ESTIMATED QUANTITIES

ITEM NO.	ITEM	NAWAMALU BRIDGE	CULVERT Sta. 203+10	CULVERT Sta. 205+75	UNIT	QUANTITY
202.0300	Removal of portion of exist. slab & curb	—	2	2	Lump Sum	4 cy
202.0440	Removal of portion of exist. CRM Abutment	—	7	10	Lump Sum	17 cy
206.6100	Structure excavation for culverts	—	70	101	Cu.Yd.	171 cy
206.7000	Structure backfill for culverts	—	57	121	Cu.Yd.	178 cy
501.0100	Structural steel for guard rail post	—	71	141	Lump Sum	212 lb
503.0200	Class A concrete (All)	—	32	75	Cu.Yd.	107 cy
503.1910	Precast planks (4'-0" wide)	—	40	40	Sq.Ft.	80 sf
503.1911	Precast planks (6'-6" wide)	—	65	65	Sq.Ft.	130 sf
503.1912	Precast planks (6'-7 1/4" wide)	—	66	66	Sq.Ft.	132 sf
510.0000	Repair of exist. cracks in CRM Abutment	—	—	50	Lump Sum	50 lf
602.0400	reinforcing steel (All)	—	2,400	5,020	Lump Sum	7,420 lb
606.5100	Type "C" guard rail	119	—	—	Lin.Ft	119 lf

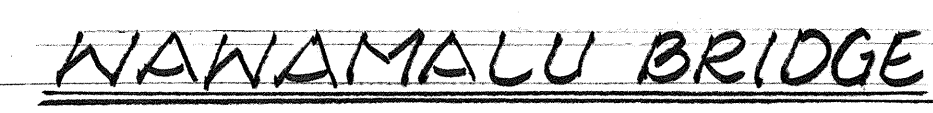
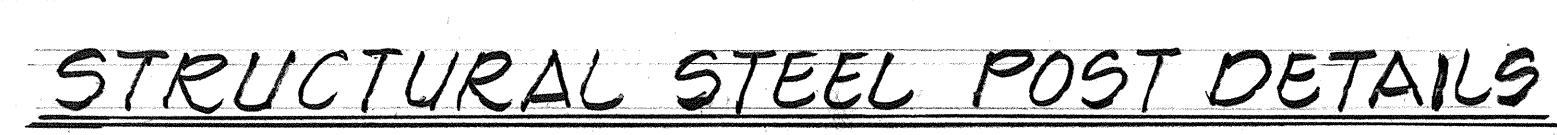
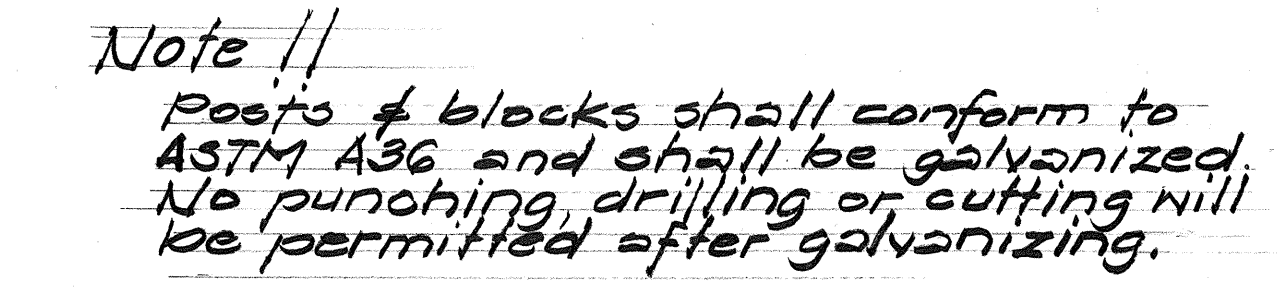
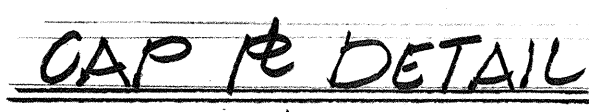
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

NAWAMALU BR & CULVERT EXTENSION
STRUCTURE JOB SITE PLAN
GENERAL STR. NOTES & EST. QUANTITIES
KALANIANA'OLE HWY SAFETY IMPROVEMENT
NEAR MAKAPUU
Proj. No. HES-0300(23)
Scale: As Shown Date: Mar. 1984

SHEET NO. 1 OF 6 SHEETS

ORIGINAL PLAN	DATE	3-22
DRAWN BY	SY	
DESIGNED BY	MY	
NOTED BY	CU	
QUANTITIES BY	CU	
CHECKED BY	CU	
NO.		

- * Height of exist. conc. railing to be verified in field to determine exact dimensions for bolt holes in post.

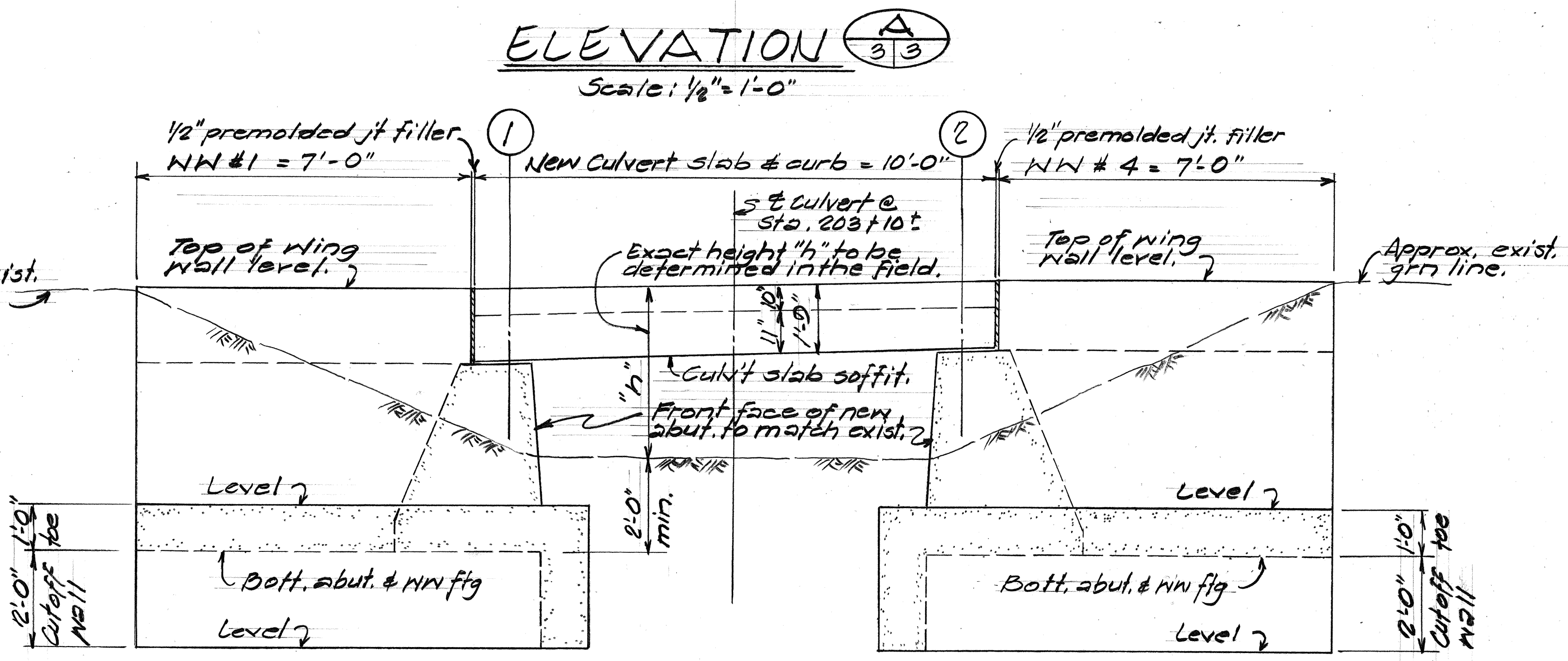
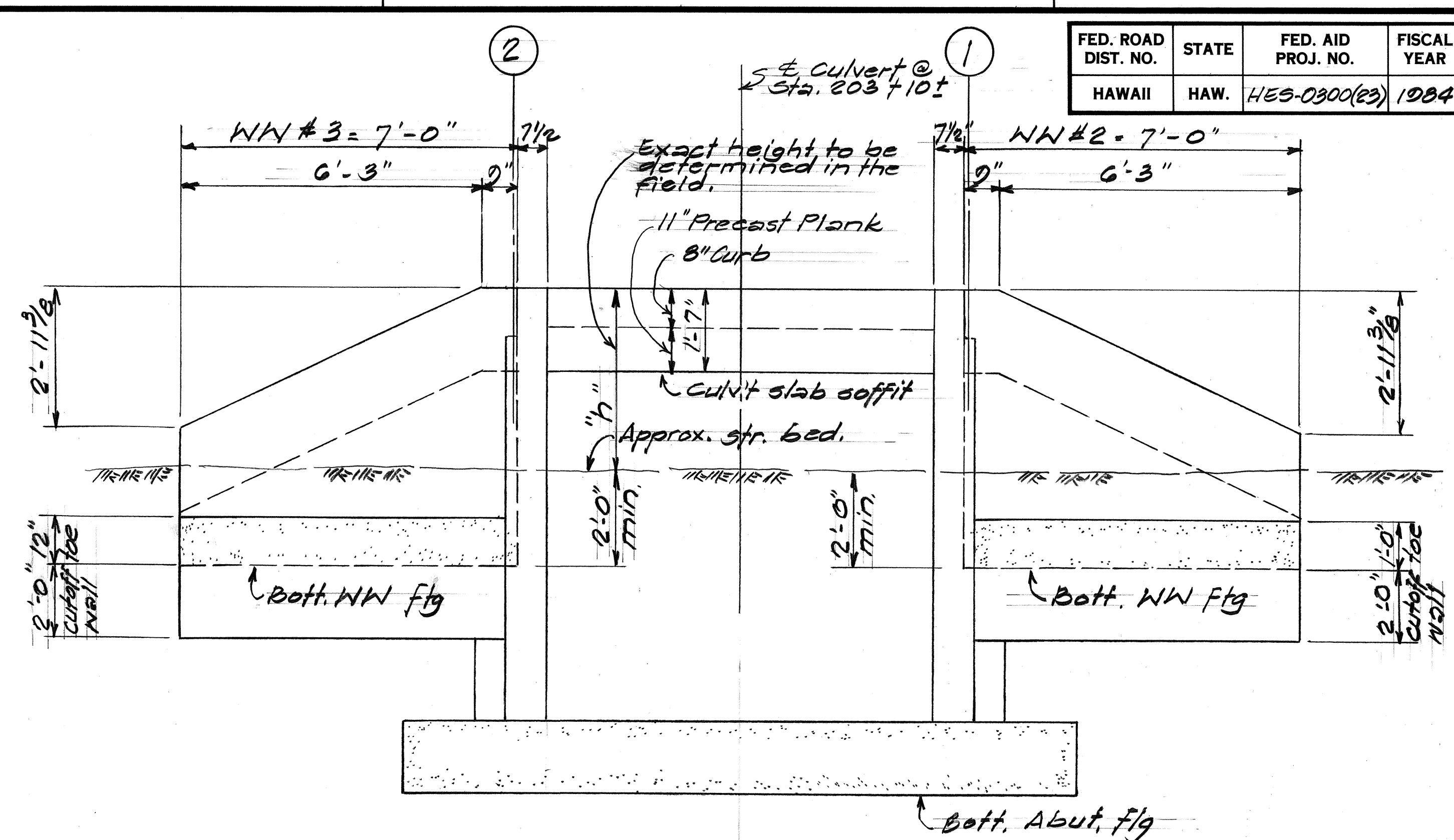
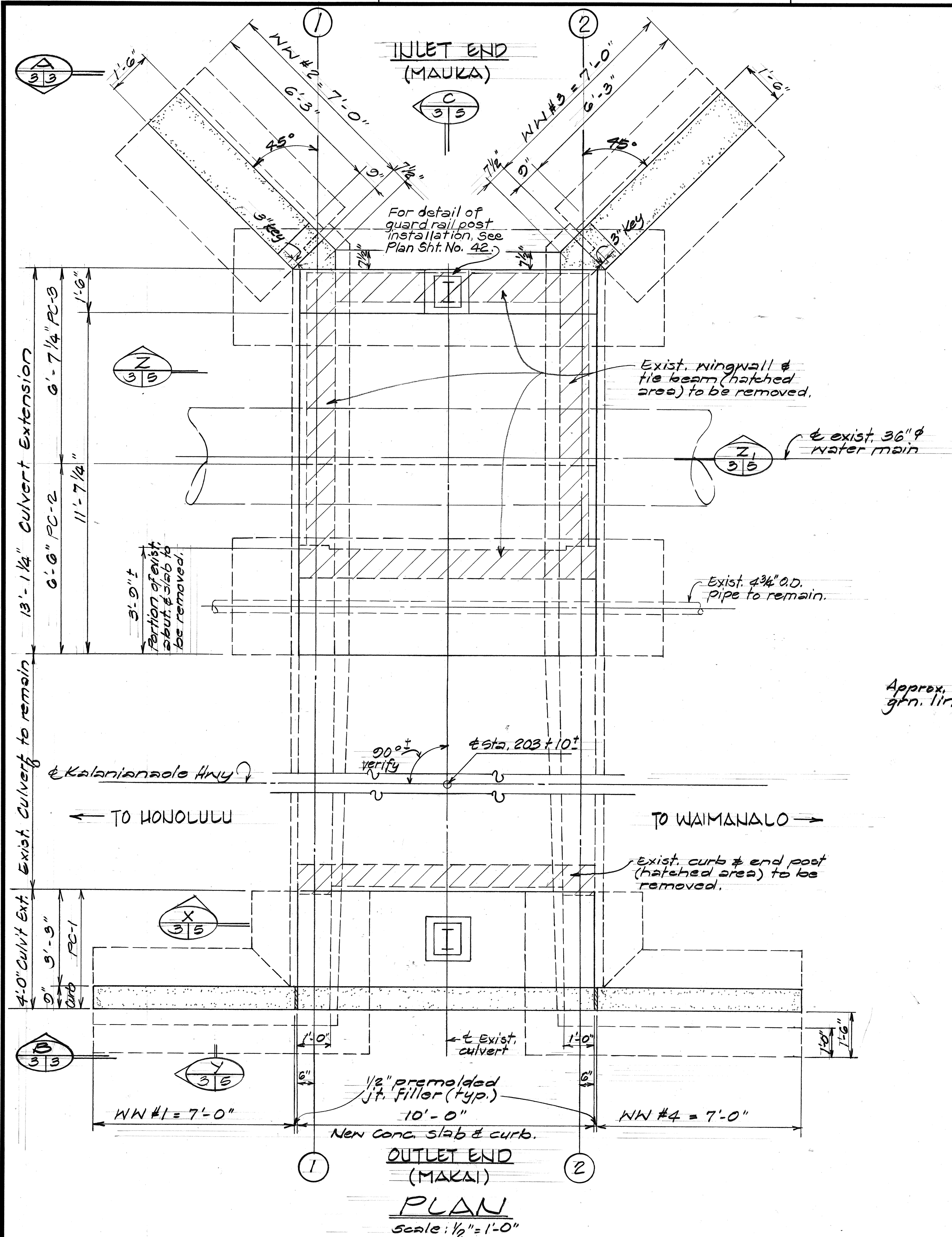


Note

The work necessary to construct the Type "C" guard rail shall include all labor, materials, tools, equipment and incidentals necessary to complete the work. This work will be measured and paid for by the linear feet.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
WAWAMALU BRIDGE
PLAN & TYPICAL SECTION
STRUCTURAL SHAPE POST DETAILS
KALANIANIA'OLE HWY SAFETY IMPROVEMENT
NEAR MAKAPUU
Proj. No. HES-0300(23)
Scale: As Shown Date: Mar 1984
SHEET NO. 2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(23)	1984	38	42



APPROVED:

R. Hagata

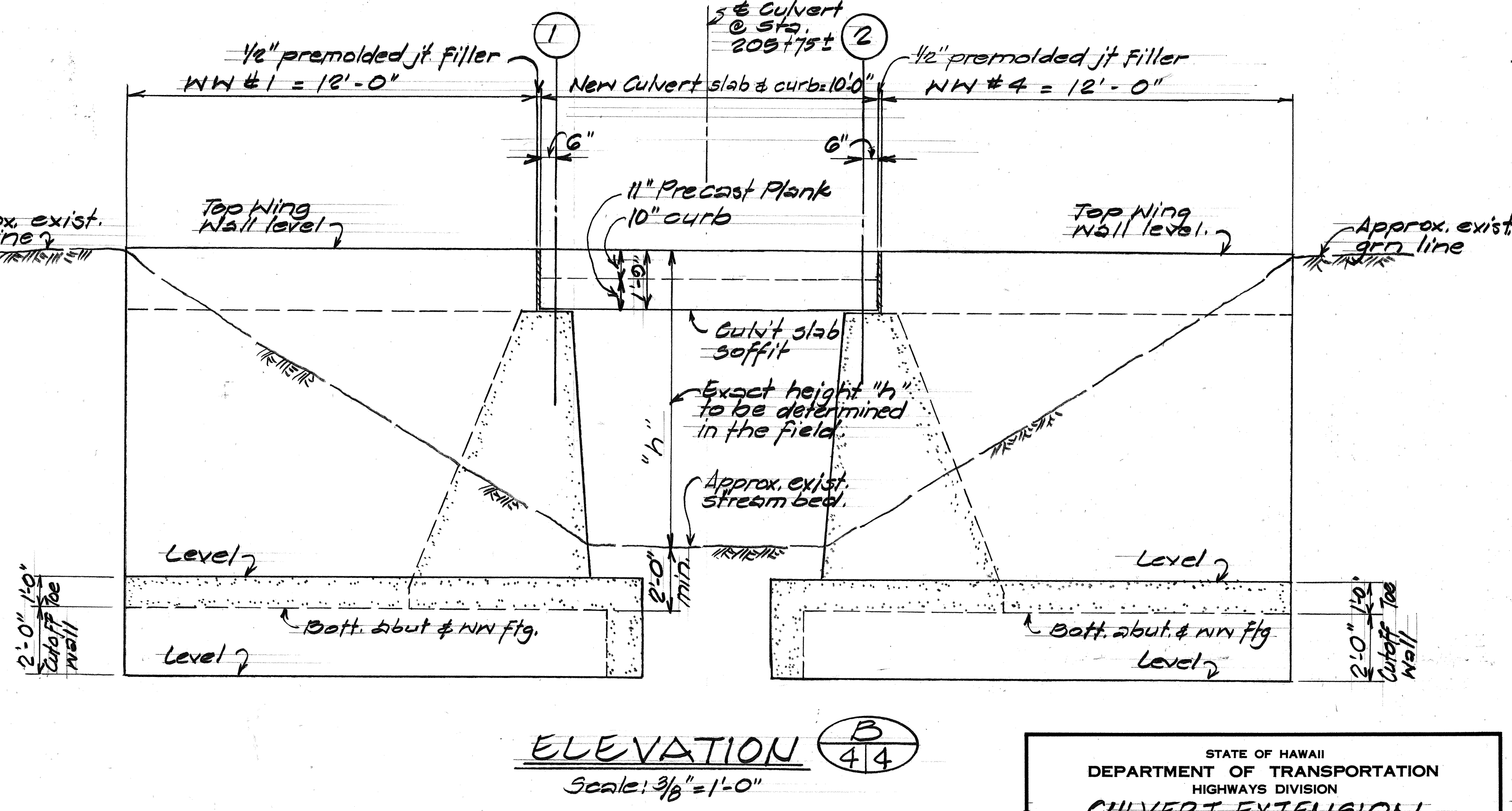
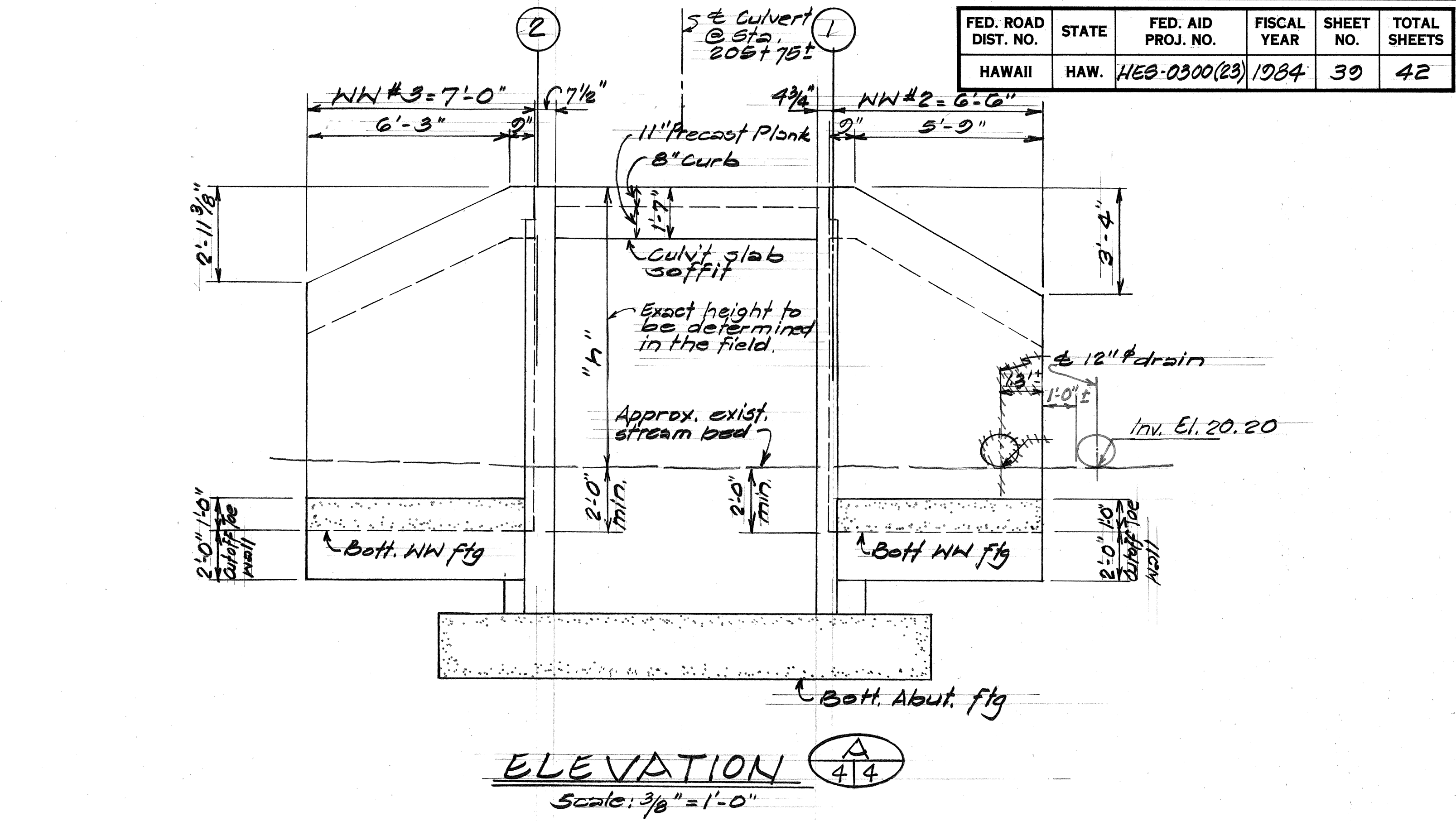
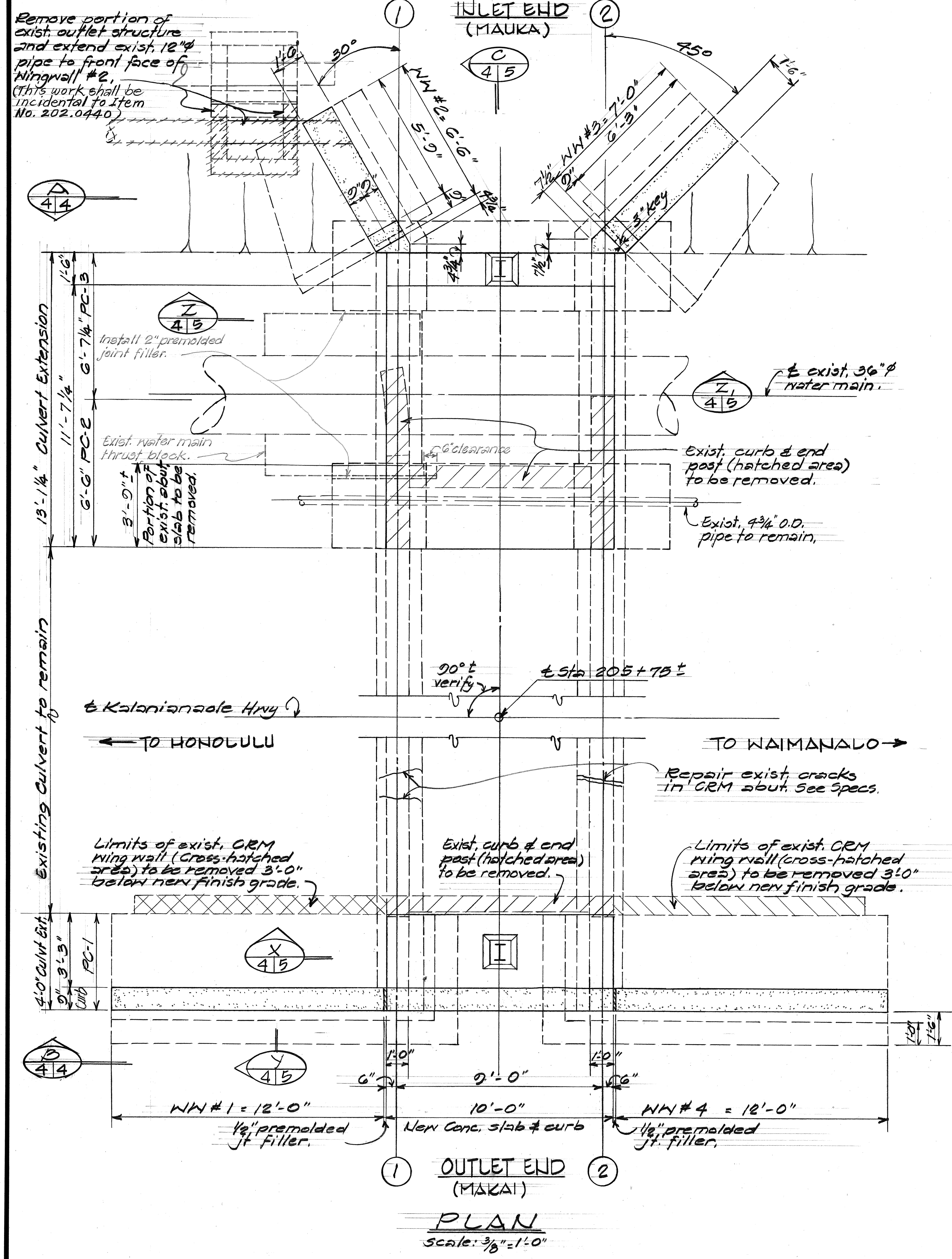
7-19-84

CHIEF, PLANNING & ENGINEERING, BWS

DATE

12/21/84	REVISED NOTE REGARDING FUTURE GUARD RAIL SHOWN ON PLAN, INLET END (MAUKA)
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CULVERT EXTENSION	
AT STA. 203+10 ±	
PLAN AND ELEVATION	
KALANIANAOLE HWY SAFETY IMPROVEMENT	
NEAR MAKAPUU	
Proj. No. HES-0300 (23)	
Scale: As Shown	
Date: Mar 1984	
SHEET NO. 3 OF 6 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HEB-0300(23)	1984	39	42



APPROVED: R. [Signature] 7-19-84
 CHIEF, PLANNING & ENGINEERING, BWS DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
CULVERT EXTENSION
AT STA. 205 + 75 ±
PLAN AND ELEVATION
 KALANIANAOLE HWY SAFETY IMPROVEMENT
 NEAR MAKAPUU
 Proj. No. HES-0300(23)
 Scale: As Shown Date: Mar 1984
 SHEET NO. 4 OF 6 SHEETS

ORIGINAL PLAN	DATE	3-22
DESIGNED BY	3-22	
TRACED BY	3-22	
NOTE BOOK	3-22	
QUANTITIES BY	3-22	
CHECKED BY	3-22	

Plan view of a proposed culvert extension and bridge structure. The diagram shows the layout of the culvert, bridge, and surrounding infrastructure.

- Culvert Extension:** A new culvert extension of 13'-1 1/4" is shown, extending from the existing culvert. The existing culvert to remain is 4'-0" long.
- Bridge Structure:** A new bridge structure is proposed, consisting of a 3'-0" wide section and a 4'-0" wide section. The total width of the bridge is 7'-0".
- Stream Bed:** The approximate existing stream bed is indicated by a dashed line.
- Water Main:** An existing 36" diameter water main is shown, running parallel to the culvert extension.
- Dimensions:**
 - Overall width: 7'-0"
 - Overall length: 13'-0"
 - Bridge width: 3'-0" + 4'-0" = 7'-0"
 - Culvert extension length: 13'-1 1/4"
 - Existing culvert length: 4'-0"
 - Water main diameter: 36"
- Notes:**
 - Existing culvert to remain
 - New culvert extension = 13'-1 1/4"
 - Existing 4 3/4" O.D. pipe to remain
 - Existing 36" water main
 - Approx. exist. stream bed
 - Both of exist. fly.
 - Portion of exist. structure to be removed
 - Existing 4 3/4" O.D. pipe to remain
 - Existing 36" water main

[illegible]

AT ABUTMENT  (OUTLET END)

AT NINGWALL

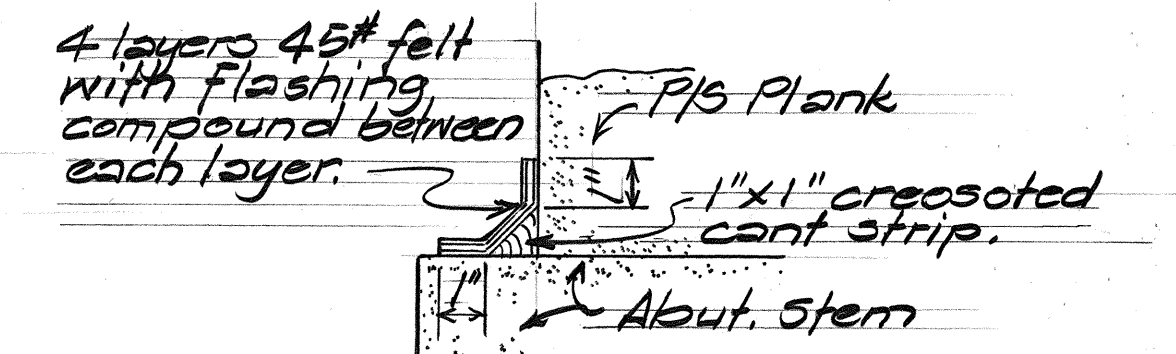
TYPICAL SECTIONS

scale: $\frac{3}{4}" = 1'-0"$

HALF SECTION $\frac{7}{3 \times 15}$ HALF SECTION $\frac{2}{3 \times 15}$

TYPICAL ABUTMENT SECTION ~ INLET END ONLY

Scale: $\frac{1}{2}'' = 1'-0''$



WATERPROOFING DETAIL

DATE	REVISION
12/21/84	REVISED NOTE AT "h" ON DETAIL 

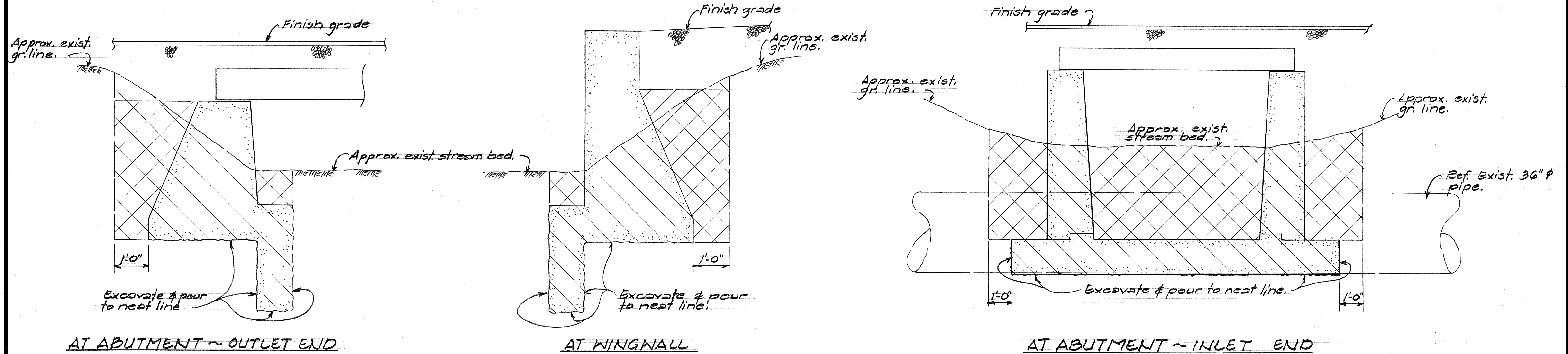
APPROVED:

R. Ziegler 7-19-84
for CHIEF, PLANNING & ENGINEERING, BWS DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CULVERT EXTENSION
AT STA. 203+10± & STA. 205+75±
TYPICAL ABUTMENT & WINGWALL DETAIL
KALANIANAOLE HWY SAFETY IMPROVEMENT
NEAR MAKAPUU
Proj. No. HES-0300(23)
Scale: As Shown Date: Mar. 1984

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(23)	1984	41	42



TYPICAL STRUCTURE EXCAVATION & BACKFILL PAY LIMITS

Not to scale

NOTE:

Hatched areas shown thus denote limits of structure excavation pay line. All other excavation shall be roadway excavation.
Hatched areas shown thus denote limits of structure back fill.

ORIGINAL PLAN	DATE
DESIGNED BY	3-82
DESIGNED BY	3-82
QUANTITIES BY	3-82
CHECKED BY	3-82

APPROVED:

7-19-84
CHIEF, PLANNING & ENGINEERING, BWS DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CULVERT EXTENSION	
AT STA. 203+10± & STA. 205+75±	
STRUCTURE EXC. & BACKFILL PAY LIMITS	
KALANIANA'OLE HWY SAFETY IMPROVEMENT	
NEAR MAKAPUU	
Proj. No. HES-0300(23)	
Scale: As Shown	Date: Mar 1984
SHEET No. 6 OF 6 SHEETS	

