

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360A-02-94M	1994	3	4

GENERAL NOTES:

DESIGN SPECIFICATIONS -- AASHTO:

AASHTO Standard Specifications for Highway Bridges (15th edition), with subsequent Interim Specification 1992.

ALLOWABLE DESIGN STRESSES:

- Reinforced concrete: $f_c = 0.40 f'_c$
- Reinforced steel: $f_s = 20,000$ psi for Grade 40; 24,000 psi for Grade 60

MATERIALS:

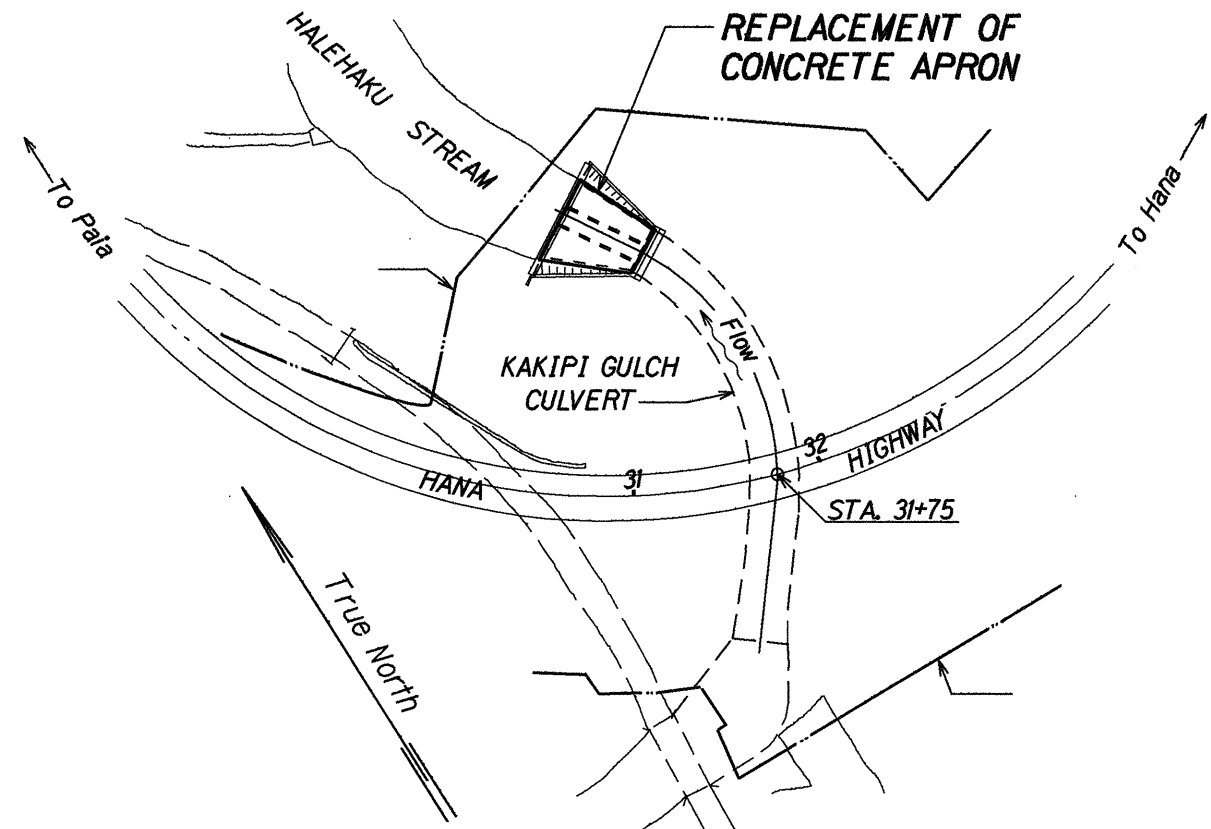
- Reinforced concrete: Class A
- Reinforced steel: ASTM A 615, Grade 40 or Grade 60
- Admixture in concrete: see Special Provisions
- All expansion and premolded joint filler shall be incidental to concrete and will not be paid for separately.

CONSTRUCTION METHODS:

- Refer to Standard Specifications for Road and Bridge Construction, 1985 Edition and Special Provisions.
- Except as noted otherwise, all vertical dimensions are measured plumb.
- For concrete finish, see Special Provisions.
- Stagger all splices where possible.
- Rebars shall be supported, bent and placed as per "Manual of Standard Practice for Detailing Concrete Structures" ACI 315 (latest)
- For cast-in-place concrete, minimum reinforcement cover:
Concrete cast against earth: 3"
Retaining wall: 2"
- At time concrete is placed, rebars shall be free from mud, oil, laitance or other coatings adversely affecting bond capacity.
- Reinforcement, dowels and other embedded items shall be positively secured before pouring.
- All footings shall bear on firm undisturbed natural soils or properly compacted structural fill.

STRUCTURAL NOTES:

- Damaged areas of existing CRM wingwalls to be repaired as directed by the Engineer. Required repair shall be incidental to concrete in concrete apron.
- Crushed rock shall conform to the grading requirements for coarse aggregate as indicated in table 703-III of the Standard Specifications For Road And Bridge Construction, except that the filler material shall be deleted.
- Stone Fill:
Stones shall be hard, sound and durable. The stones shall consist predominantly of large sizes ranging from six inches (6") to three feet (3') maximum in dimension. Round river boulders may be used in the core of the fill, provided they are well mixed with angular pieces.
- Remove existing damaged concrete apron before starting new concrete apron work.
- Splice lengths of #9 bars shall be 4'-0" min.
Splice lengths of #5 bars shall be 1'-6" min.
- The Contractor shall drain area dry before proceeding with the work.



JOB SITE AT M.P. 0.45
Not to Scale

ESTIMATED QUANTITIES			
ITEM NO.	ITEM	QUANTITY	UNIT
202.0441	Removal Of Damaged Concrete Apron	(50 C.Y.)	L.S.
206.2500	Structure Excavation For Concrete Apron	25 C.Y.	C.Y.
503.1000	Class A Concrete In Concrete Apron	125 C.Y.	C.Y.
602.0900	Reinforcing Steel For Concrete Apron	(22,000 LBS.)	L.S.
670.0014	Stone Fill	(300 C.Y.)	L.S.
670.0015	Crushed Rock	30 C.Y.	C.Y.

REFERENCE:

- Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

GENERAL:

- All items noted incidental will not be paid for separately.
- The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
- The Contractor shall verify all grades and dimensions in the field before commencing with any work.
- The Contractor shall be solely responsible for the protection of adjacent property, utility and existing and new structures from damage due to construction and repair any damage at his own expense, to the satisfaction of the Engineer. He shall conduct his work in such a manner and provide such temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
- Excavation for all footings and stems shall be accomplished by maintaining as near a vertical cut as possible.
- In the event of over-excavation, the space between the footing and ground shall be filled with a minimum of class D concrete at the Contractor's expense and as directed by the Engineer.
- Unless noted otherwise, chamfer all exposed concrete edges three quarters ($\frac{3}{4}$ ") of an inch.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REPLACEMENT OF WASHED OUT EXISTING
CONCRETE APRON (OUTLET) AT KAKIHI BRIDGE

GENERAL NOTES AND ESTIMATED QUANTITIES

HANA HIGHWAY - KAKIHI TWIN CULVERT REPAIR
Project No. 360A-02-94M

Scale: As Noted Date: Nov. 1993

SHEET No. 31 OF 2 SHEETS