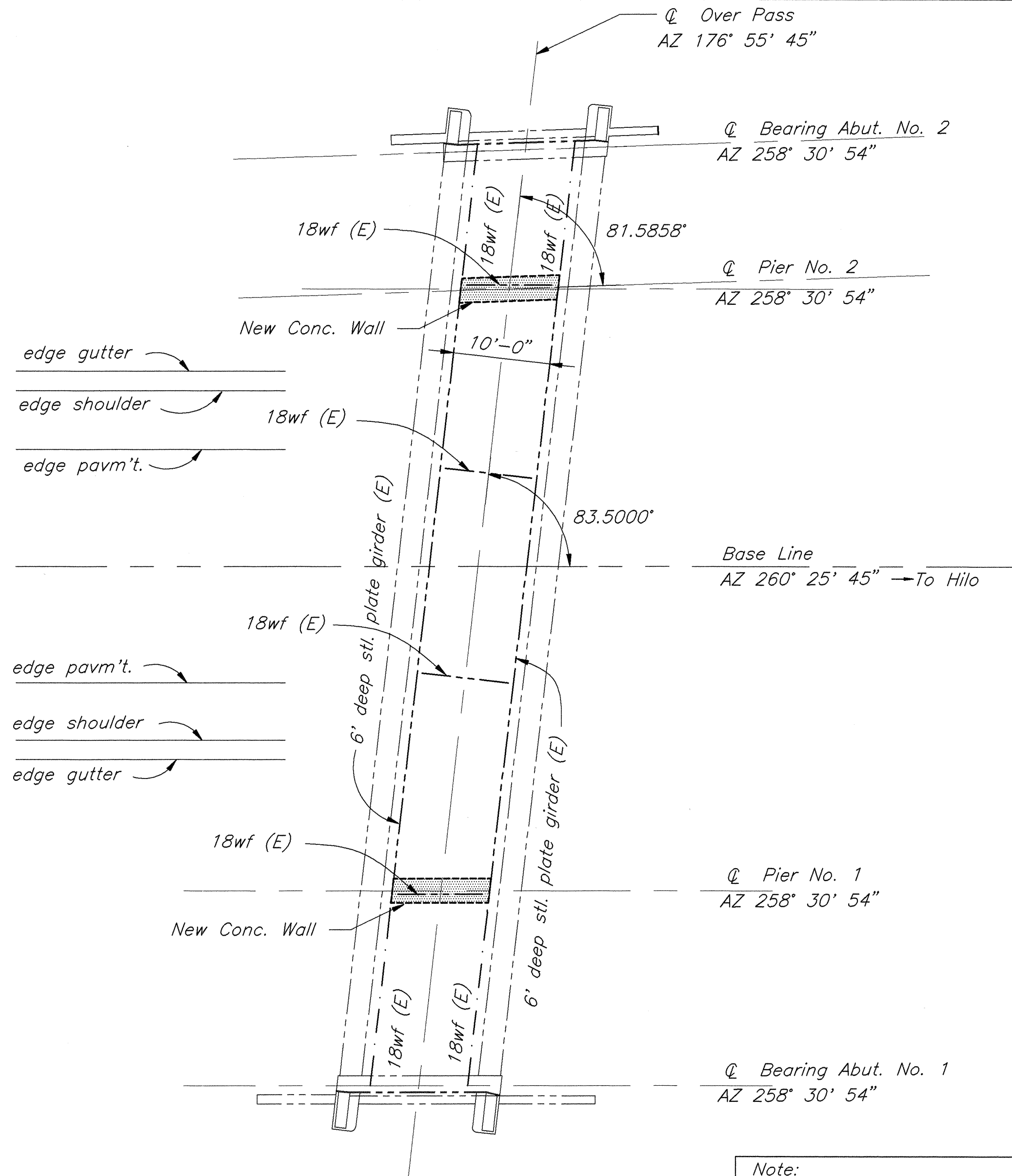


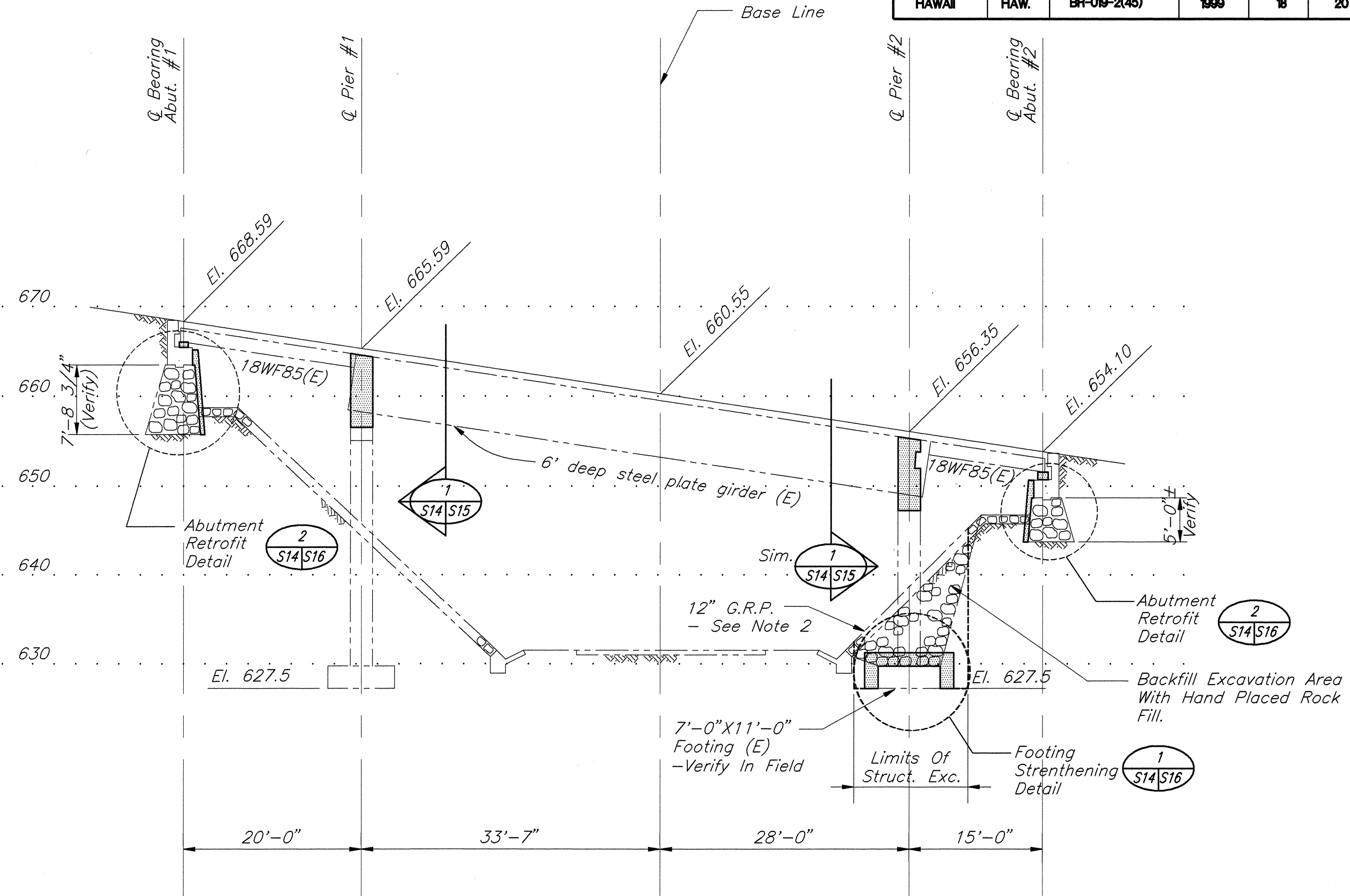
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(45)	1999	18	20



FRAMING PLAN

SCALE : 1"=10'

Note:
All finish elevations, stations and azimuths are approximate only. They are based on the original contract drawings dated march 1957. Contractor shall verify elevations, stations and azimuths as required.



- Note:
- The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Material.
 - Remove Existing G.R.P. As Required And Replace With New G.R.P.

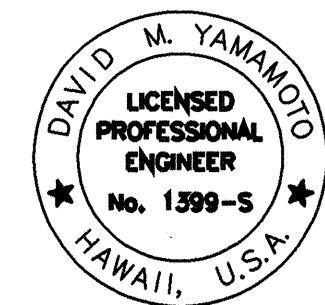
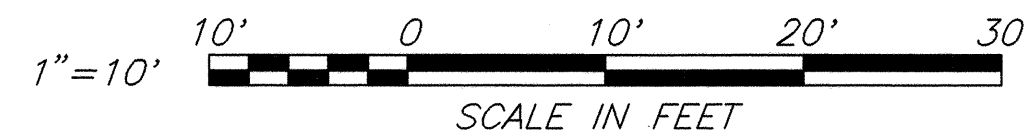
LONGITUDINAL SECTION

SCALE : 1"=10'

ESTIMATED QUANTITIES

Item No.	Item	Approx Quantity
206.0100D	Structure Excavation	120 CY
206.0200D	Structure Backfill	110 CY
501.0200D	Structural Steel	3900 lbs
503.1090D	Concrete In Bridge Superstructure Retrofit	8 CY
503.1091D	Concrete In Bridge Substructure Retrofit	20 CY
602.0090D	Reinforcing Steel In Bridge Superstructure Retrofit	1600 lbs
602.0091D	Reinforcing Steel In Bridge Substructure Retrofit	3850 lbs
612.0100D	Grouted Rubble Paving	45 SY
655.0100D	Drilling Holes and Installing Dowels	380 Ea

(N) = New
(E) = existing



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**OOKALA PLANTATION OVERPASS
LONGITUDINAL SECTION**

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF OOKALA
FEDERAL AID PROJECT NO. BR-019-2(45)
SCALE: AS NOTED DATE: AUGUST 1998

SHEET No. 814 OF 16 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
NOTE BOOK	QUANTITIES BY	
	CHECKED BY	
	NO.	

GENERAL:

- The Existing Bridge Information Shown In These Drawings Was Obtained From The Original Bridge Drawings And Is Presented For Reference Purposes Only. No Responsibility Is Assumed For The Accuracy Of The Existing Information Presented. It Is The Contractor's Responsibility To Verify Independently All of The As-Built Information.
- The Contractor Shall Visit The Construction Site And Shall Verify All Dimensions And Conditions Prior To Starting Any Work And Shall Be Responsible For Coordination Of All Work And Materials Including Those Furnished By Sub-Contractors. The Hawaii Department Of Transportation (D.O.T.) Representative Shall Be Notified Immediately Of Any Discrepancies Found
- The Contract Structural Drawings And Specifications Represent The Finished Structure. They Do Not Indicate The Method Of Construction. The Contractor Shall Provide All Measures Necessary To Protect The Structure During Construction.
- The Contractor Shall Provide Adequate Shoring For All Existing Adjacent Structures. Shoring For Construction Loads Shall Be Designed By Licensed Civil Engineer Experienced In This Kind Of Work.

BASIS FOR SEISMIC RETROFIT:

- The Proposed Retrofit Work Addresses Three Apparent Weaknesses:
 - The Possibility Of The Superstructure Sliding Transversely and Longitudinally Off The Substructure During An Earthquake
 - The Possibility Of Foundation Failure At Pier #2 Due To Rocking.
 - The Possibility Of Movement Of Individual Stones In The Rubble Masonry Abutments During An Earthquake.
- The Goal Of The Proposed Retrofit Work Is To Reduce The Risk Of Collapse During An Earthquake And Not The Prevention Of All Structural And Non-Structural Damage.
- The Earthquake Loading Considered Is The ARS Curve For 5% Damping At 0 Feet To 10 Feet By Caltrans With An Expected Maximum Acceleration At Bedrock Of A = .38g.
- The Design Methodology Is Per The Bridge Memo To Designers By The California Department Of Transportation, December 31, 1995.

GENERAL NOTES:

- General Specifications: Hawaii Department Of Transportation Standard Specification For Road, Bridge And Public Works Construction, 1994 Together With Special Provisions Prepared For This Contract.
- Design Specifications: AASHTO, Standard Specifications
- Caltrans Memo To Designers 20-4.
- Seismic Loading:
 - Seismic Performance Category D
 - Acceleration Coefficient 0.40
- Concrete:
 - Existing:
 - All Concrete. (Assumed) $f_c' = 3,300$ psi
 - New:
 - Footing $f_c' = 3,000$ psi
 - Walls, Creep Block & Beam Seats $f_c' = 4,000$ psi
- Reinforcing Steel:
 - Existing:
 - All Reinforcing Steel (Assumed) $f_y = 44,000$ psi
 - New:
 - All Bars, Dowels & Stirrups $f_y = 60,000$ psi
- Structural Steel:
 - Existing (ASTM A7) $F_y = 33,000$ psi
 - New (ASTM A36) $F_y = 36,000$ psi