

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	130B-01-91	1991	12	26

STRUCTURAL NOTES

DESIGN SPECIFICATIONS -- AASHTO:

AASHTO Standard Specifications for Highway Bridges (14th edition), with subsequent Interim Specification 1990.

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
- Except as noted otherwise, all structural steel tubing and members shall conform to ASTM A500 and hot-dip galvanized after fabrication.

MATERIALS:

- Reinforced concrete: Class A (all others)
- Reinforced steel: ASTM A615, Grade 40 or Grade 60
- Admixture in concrete: see Special Provisions
- Structural steel tubing: ASTM A500 Grade B
- Epoxy grout: High early strength type (1,000 psi minimum compressive strength at 4 hours), approved by the Engineer and applied in strict accordance with the manufacturer's recommendations.
- All expansion and premolded joint filler shall be incidental to concrete and will not be paid for separately.

CONSTRUCTION METHODS:

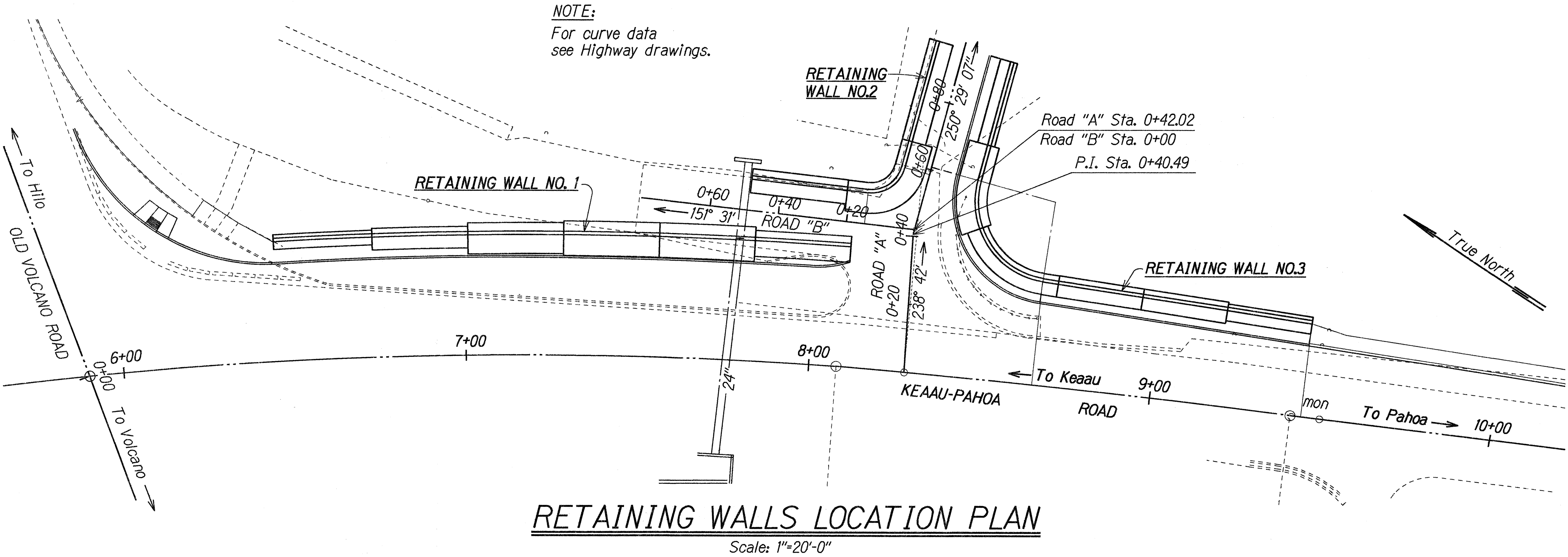
- Refer to Standard Specifications for Road and Bridge Construction, 1985 Edition and Special Provisions.
- Repair to galvanized coating due to welding shall conform to section 501.03(G)(2) and include a coating of repair material $\frac{1}{4}$ " minimum beyond welds.
- Except as noted otherwise, all vertical dimensions are measured plumb.

REFERENCE:

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

GENERAL NOTES:

- 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.
- 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.



ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITIES
206.5000	Structure Excavation For Retaining Walls	Cu. Yd.	708 cy.
206.7250	Structure Backfill For Retaining Walls	Cu. Yd.	670 cy.
206.8300	Filter Material For Retaining Walls	Cu. Yd.	47 cy.
501.0210	Structural Steel For 6-Pipe Rail	Lump Sum	(9,308 lbs.)
503.1051	Concrete In Retaining Walls	Lump Sum	(259 cy.)
602.0050	Reinforcing Steel In Retaining Walls	Lump Sum	(30,053 lbs.)

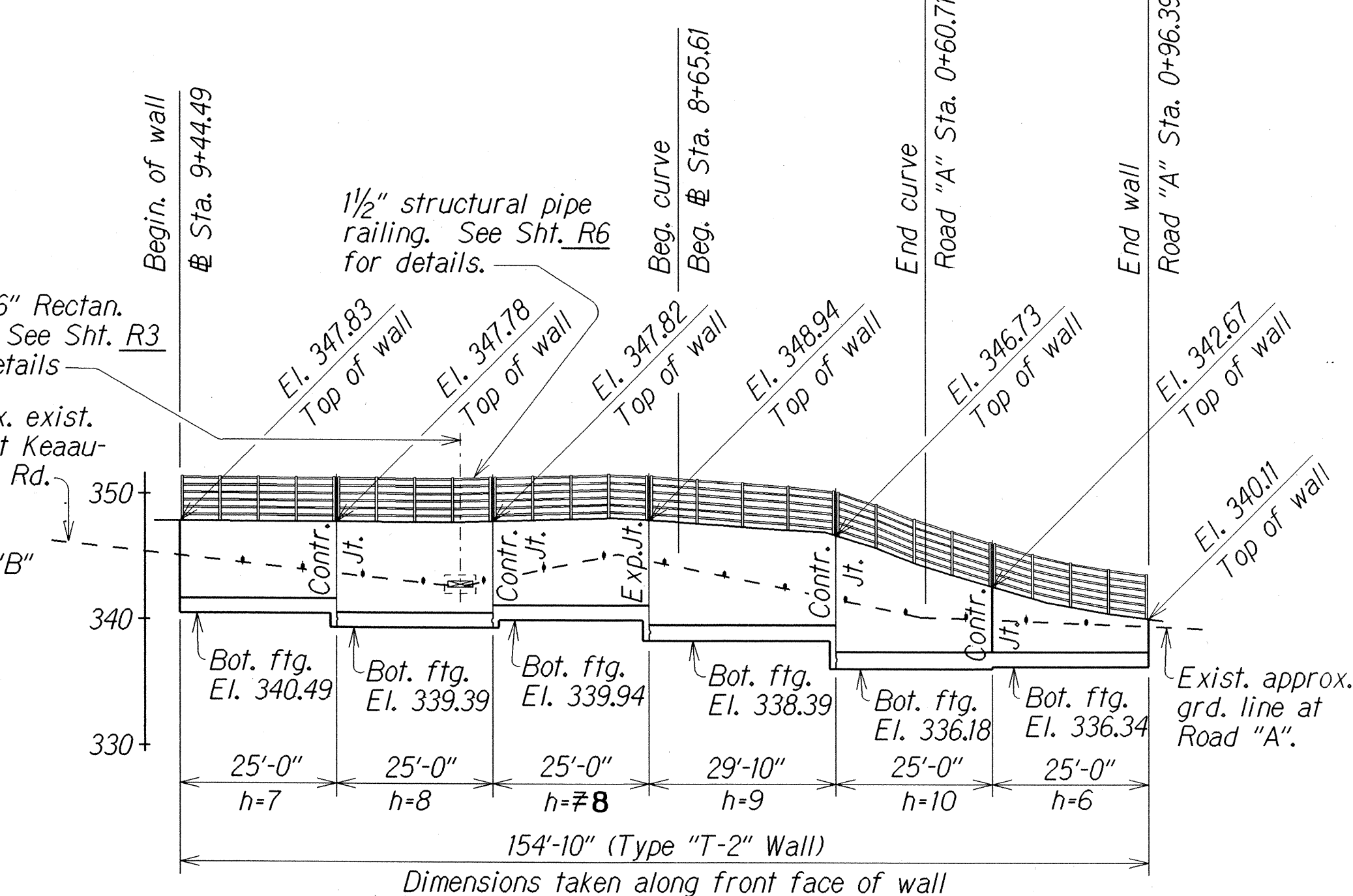
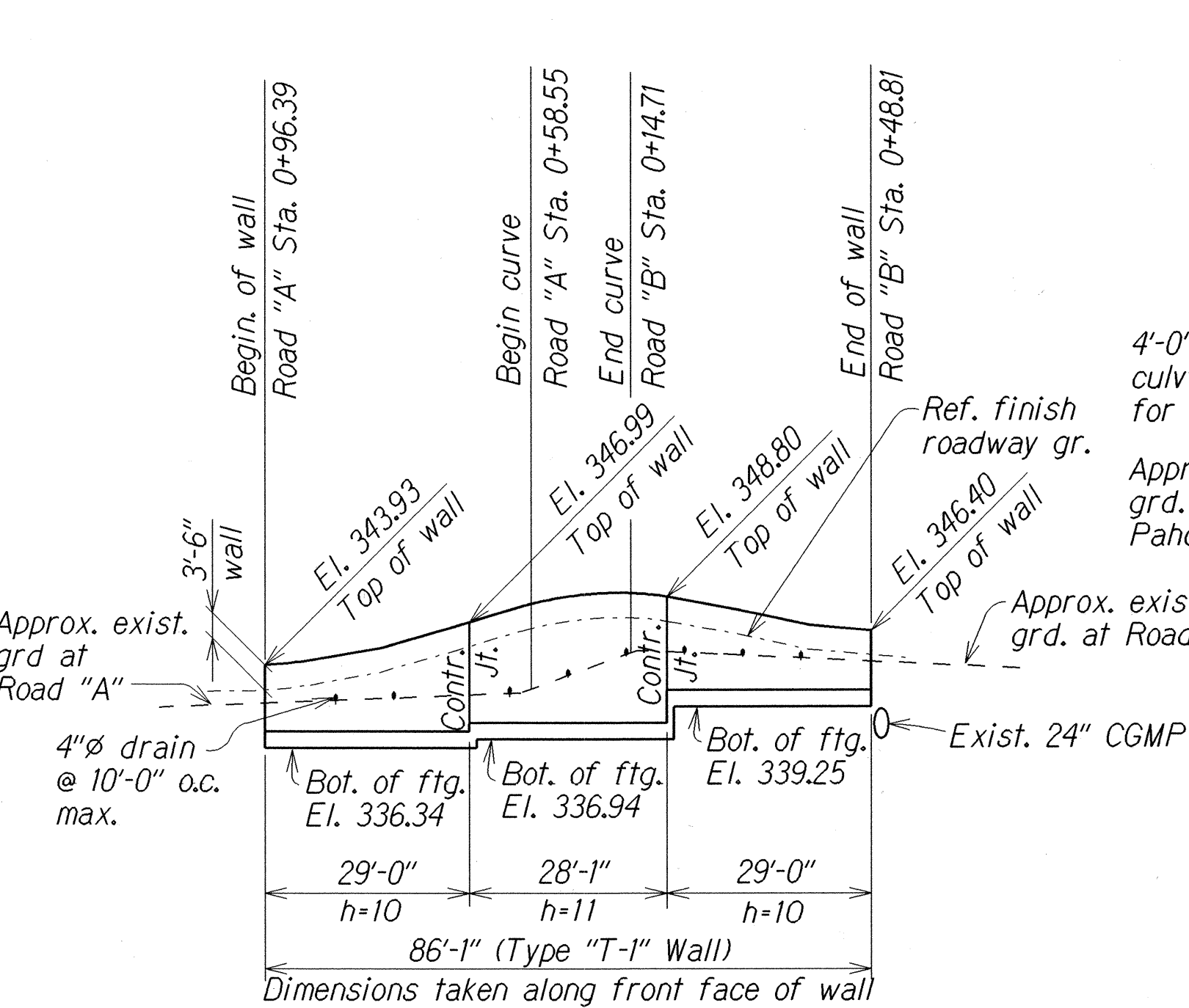
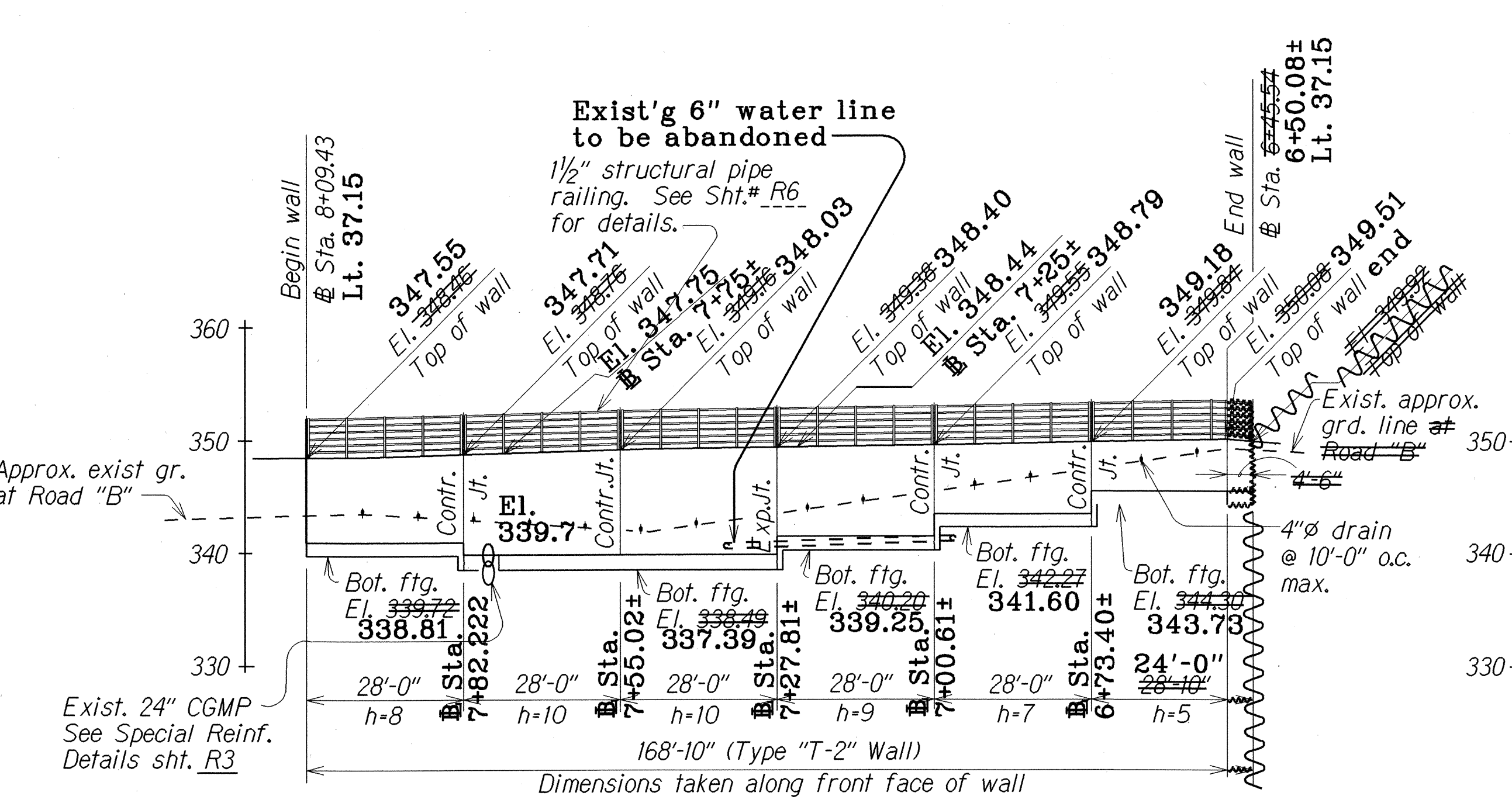
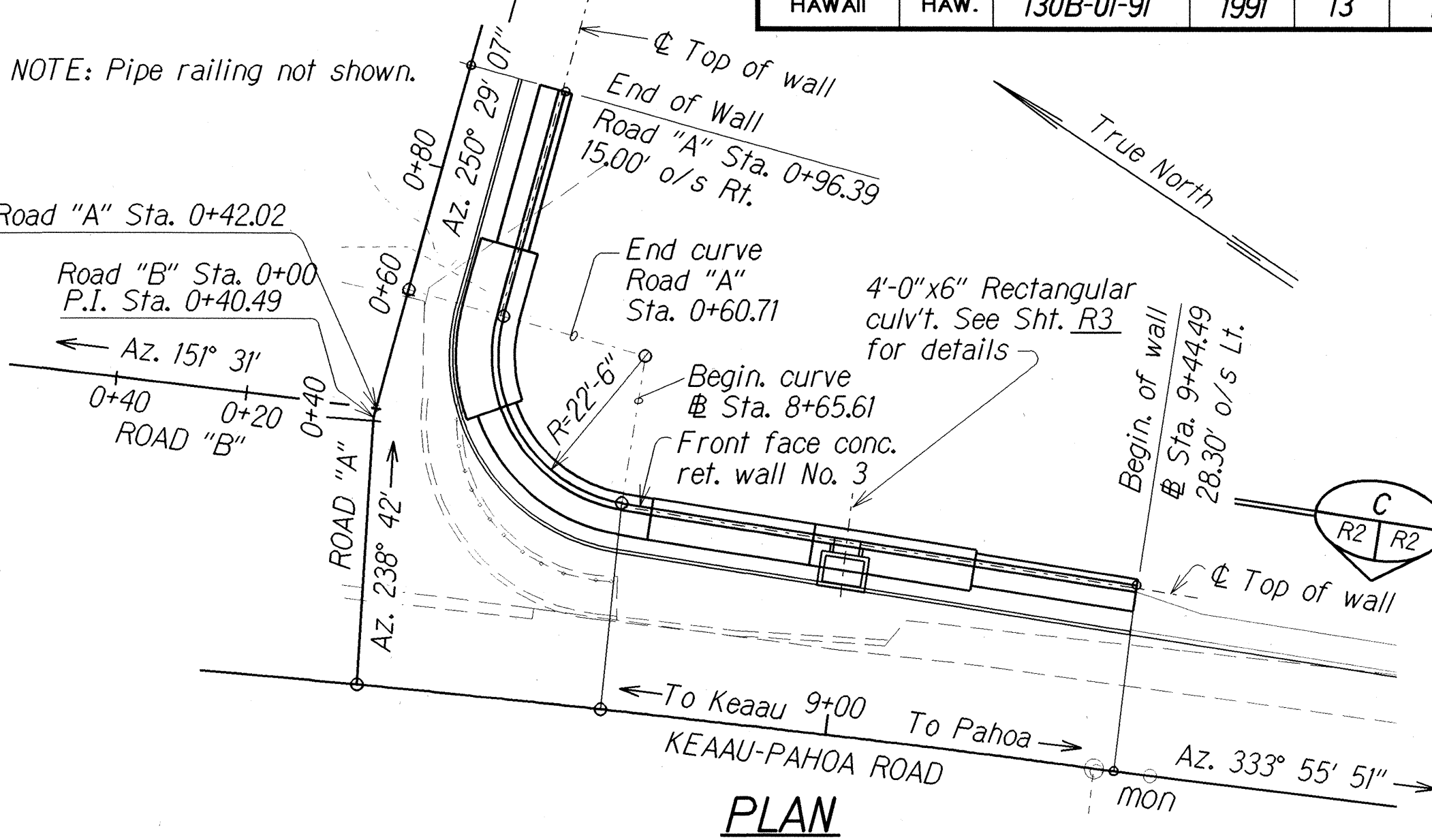
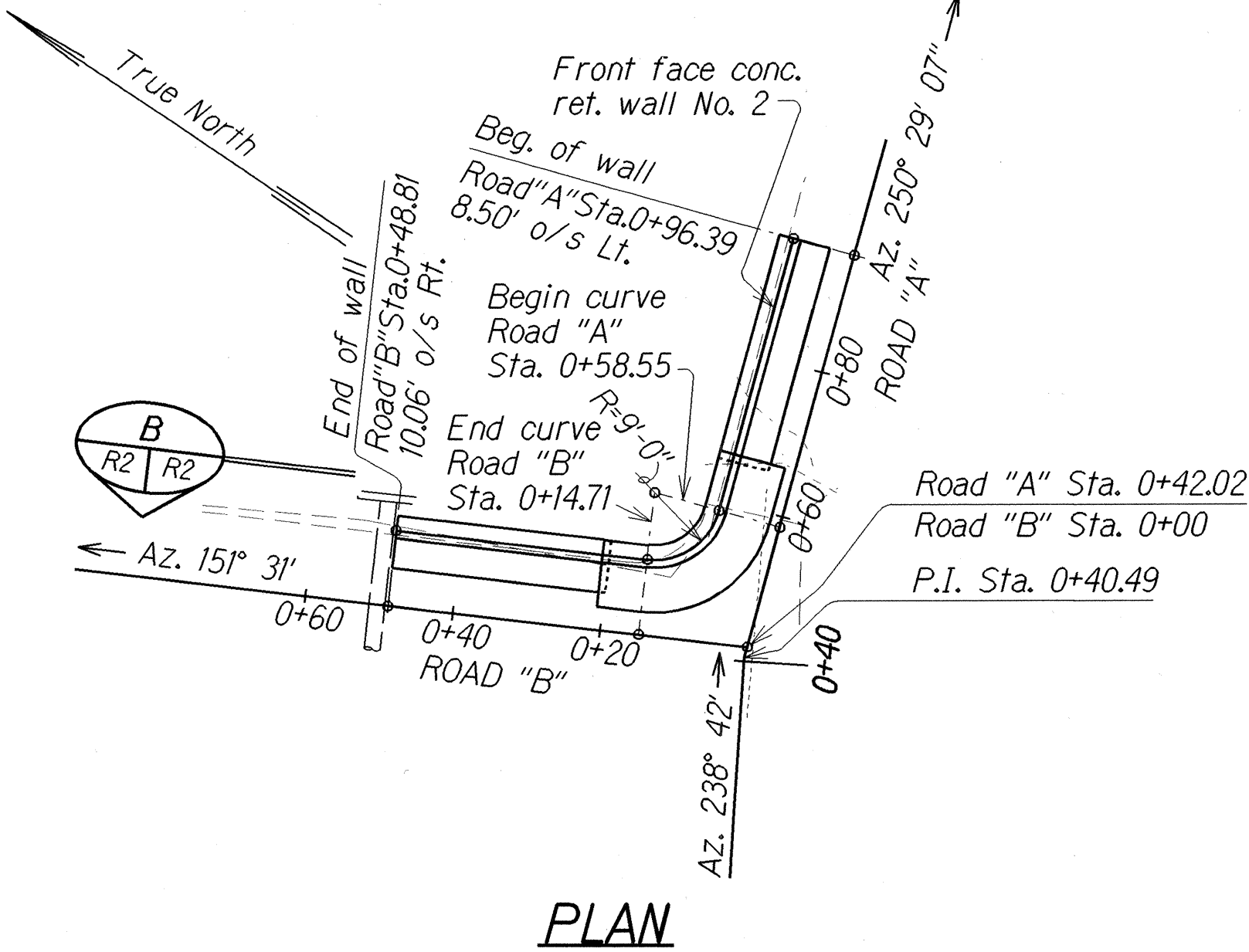
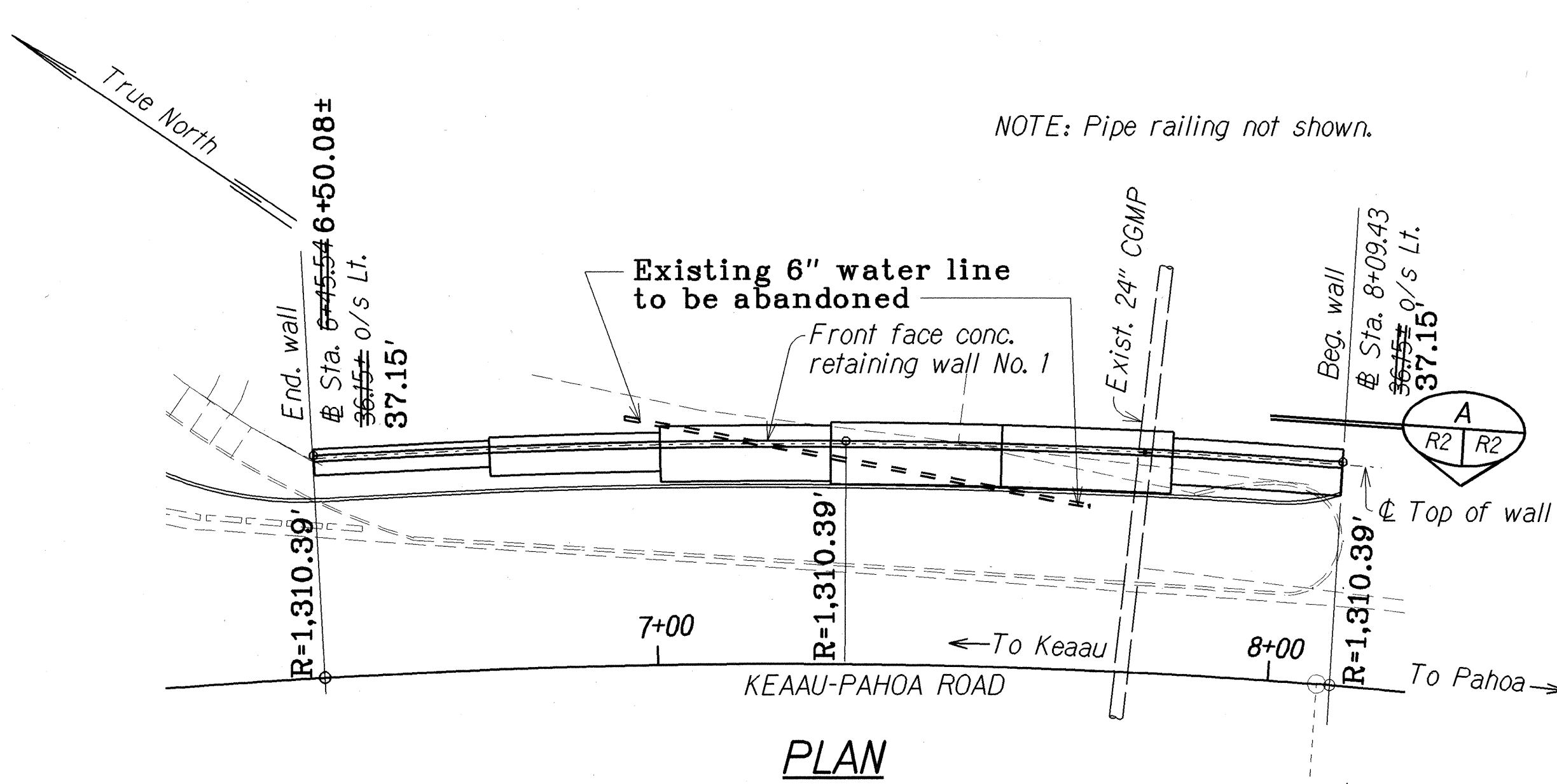
ORIGINAL PLAN	DESIGNED BY	DATE
FILE	TRACED BY	MAY 1991
N. 101	QUANTITIES BY	MAY 1991
	CHECKED BY	MAY 1991

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALLS NO. 1, NO. 2 AND NO. 3
RETAINING WALLS LOCATION PLAN
ESTIMATED QUANTITIES, STRUCTURAL NOTES
KEEAU-PAHOA ROAD IMPROVEMENTS
VICINITY OF KEEAU SCHOOL
Project No. 130B-01-91

Scale: As Noted
Date: May, 1991

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DEVELOPED ELEVATION

RETAINING WALL NO. 1

Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

DEVELOPED ELEVATION

RETAINING WALL NO. 2

Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

DEVELOPED ELEVATION

RETAINING WALL NO. 3

Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALLS NO. 1, NO. 2 AND NO. 3

PLAN AND ELEVATION
RETAINING WALLS NO. 1, NO. 2, AND NO. 3
KEAAU-PAHOA ROAD IMPROVEMENTS
VICINITY OF KEAAU SCHOOL
Project No. 130B-01-91

Scale: As Noted Date: May, 1991

SHEET No. R2 OF 6 SHEETS

"AS-BUILT"