

GENERAL STRUCTURAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-062-1(33)	1999	ADD.35	58

GENERAL SPECIFICATIONS:

1. State of Hawaii Department of Transportation Standard Specifications for Road and Bridge Construction, 1994 and Special Provisions.

DESIGN SPECIFICATIONS - AASHTO:

1. AASHTO LRFD Bridge Design Specifications, 1994, with 1996 and 1997 interim revisions..

DESIGN LOADS:

1. Dead loads Soil 120 pcf
 Concrete 160 pcf
 Structural Steel 490 pcf
2. Vehicular Impact TL-2 (27 kips) Only on concrete barrier
3. Soil Properties phi = 26°

MATERIALS:

1. Concrete Class A
2. Reinforcing Steel ASTM A 615, Grade 60 except stirrups; ASTM A 615 Grade 40

CONSTRUCTION METHODS:

1. Refer to Hawaii Standard Specifications for Road, Bridge and Public Works Construction, 1994 Edition and Special Provisions.
2. Except as noted otherwise, all dimensions are measured plumb.
3. For concrete finish, see Special Provisions.
4. For steel reinforcing, all splices shall be staggered where possible. No splice will be allowed within 12" of rail posts, except as shown in plans.
5. Steel reinforcing shall be supported, bent and placed as per the ACI Detailing Manual, 1994.
6. For cast-in-place concrete, minimum reinforcement cover unless shown otherwise: concrete cast against earth: 3" walls: 2" to stirrups in walls: 1½"
7. At the time concrete is placed, reinforcing shall be free from mud, oil, laitance or other coatings adversely affecting bond capacity.
8. Reinforcement, dowels and other embedded items shall be positively secured before pouring.
9. All footings shall bear on firm undisturbed natural soils or properly compacted structural fill.

REFERENCE:

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

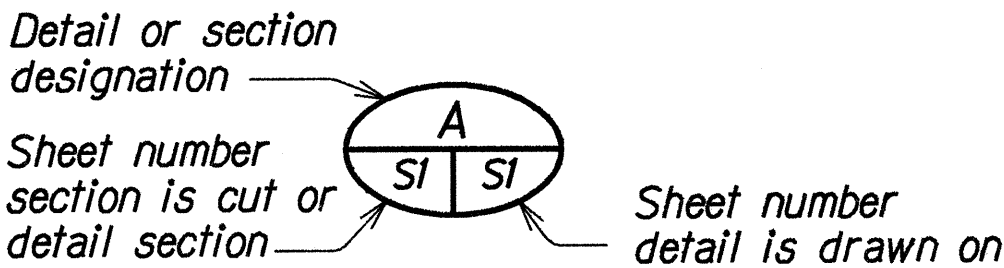
GENERAL:

1. All items noted incidental will not be paid for separately.
2. The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work. Locations of utility shown are approximate.
3. The Contractor shall verify all grades and dimensions in the field before commencing with any work.
4. The Contractor shall be solely responsible for the protection of adjacent property, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's 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.
5. Excavation for all footings and footing keys shall be accomplished by maintaining as near a vertical cut as possible.
6. In the event of over-excavation, the space between the footing or footing key and ground shall be filled with a minimum of Class D concrete at the Contractor's expense and as directed by the Engineer.
7. Unless noted otherwise, chamfer all exposed concrete edges three-quarters (¾) of an inch.
8. Contractor shall be responsible for protecting existing waterline and for bracing and supporting waterline as necessary to avoid movement during construction of traffic barrier.

ABBREVIATIONS

AB	Anchor Bolt	FF	Front Face	R	Radius
Abut.	Abutment	Fin.	Finish	Rdwy.	Roadway
at#t	Exist. underground telephone cable	Ga.	Gage, gauge	Ref.	Reference
Alum.	Aluminum	Galv.	Galvanized	Req'd	Required
Approx.	Approximate	gdi	Exist. grated drop inlet	Reinf.	Reinforcing
#	Baseline	Gr.	Grade	s#	Sewer line * inches diameter
Bal.	Balance			Sect.	Section
Beg.	Begin, Beginning	Horiz.	Horizontal	Shld.	Shoulder
Bm.	Beam	HS	High Strength	Sht.	Sheet
Brg., Brgs.	Bearing, Bearings	IB	Inbound	smh	Exist. Sewer Manhole
		Jt.	Joint	Spcs.	Spaces
¢	Center line			Spcg.	Spacing
cdi	Exist. conc. drop inlet	L	Length	Sta.	Station
Cl.	Clear	LC	Length of Curve	Std.	Standard
Col.	Column	Lg.	Long	Struct.	Structural
Conc.	Concrete	Longit.	Longitudinal	Str.	Structure
Cont.	Continuous			t	Exist. underground telephone cable
CR	Corrosion Resistant	Max.	Maximum	T#B	Top and Bottom
Det.	Detail	Min.	Minimum	Thk.	Thick
Dia.	Diameter	No.	Number	tp	Exist. Telephone Pole
Diag.	Diagonal			TS	Tubular Steel
Ea.	Each	oc	On Center	Typ.	Typical
EF	Each Face	OB	Outbound	tmh	Exist. Telephone Manhole
emh	Exist. Electric Manhole	OD	Outside Dimension		
EP	Edge of Pavement	PL	Plate	Vert.	Vertical
Eq.	Equal	plf	Pounds /lin. ft.	w/	with
Exist.	Existing	pp	Exist. Power Pole	w*	Water line * inches diameter
Exp.	Expansion				

SYMBOLS

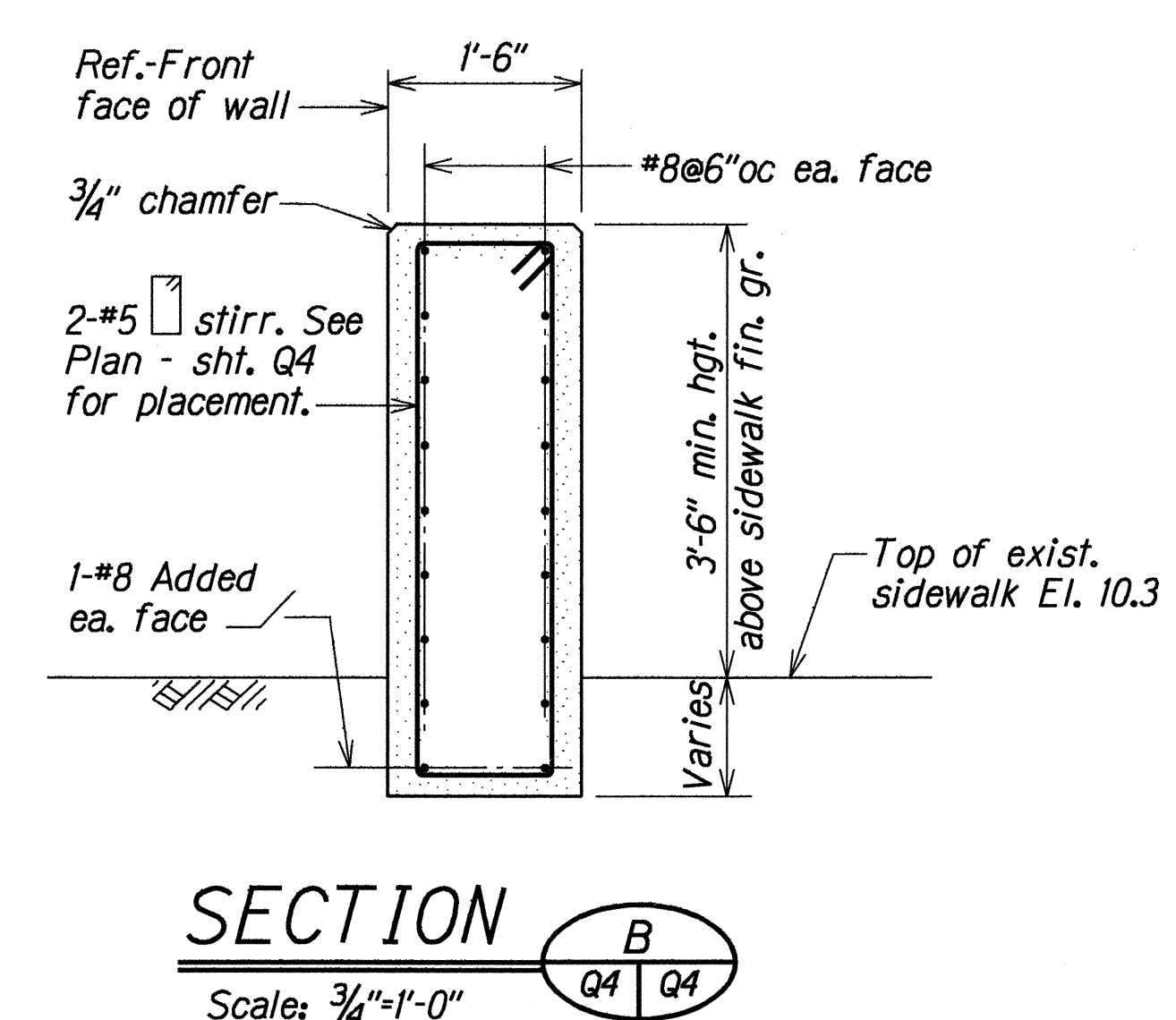
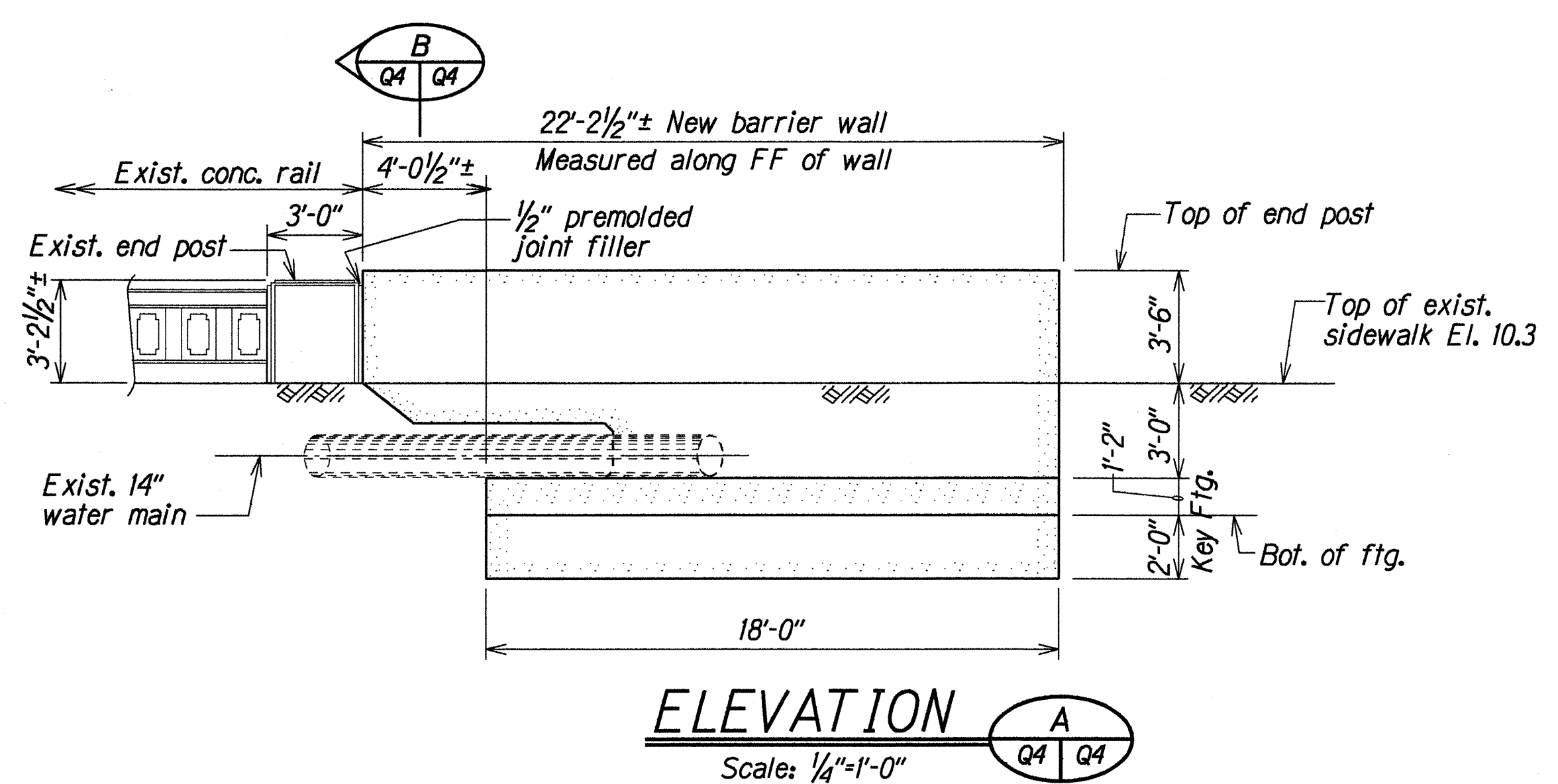
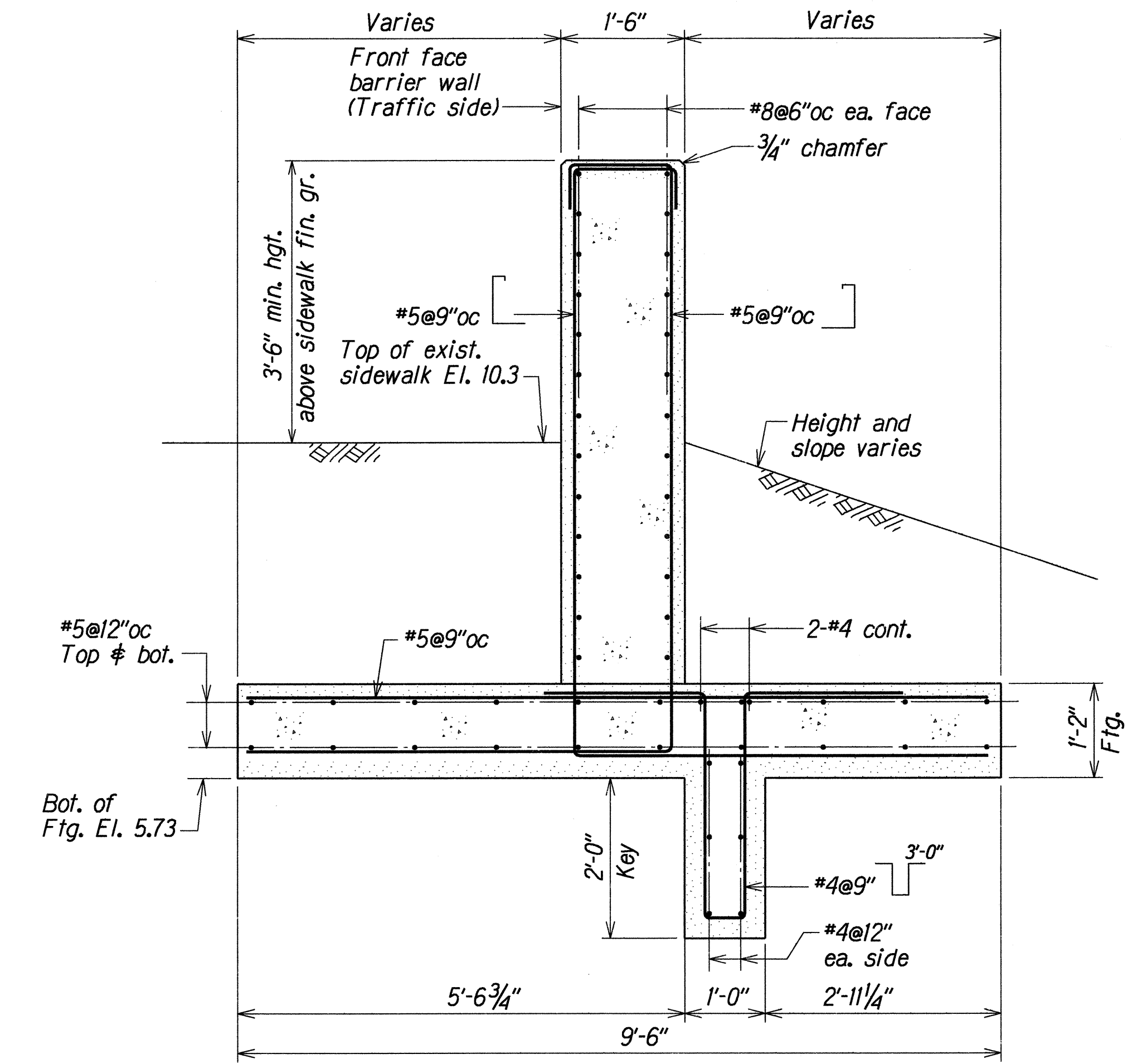
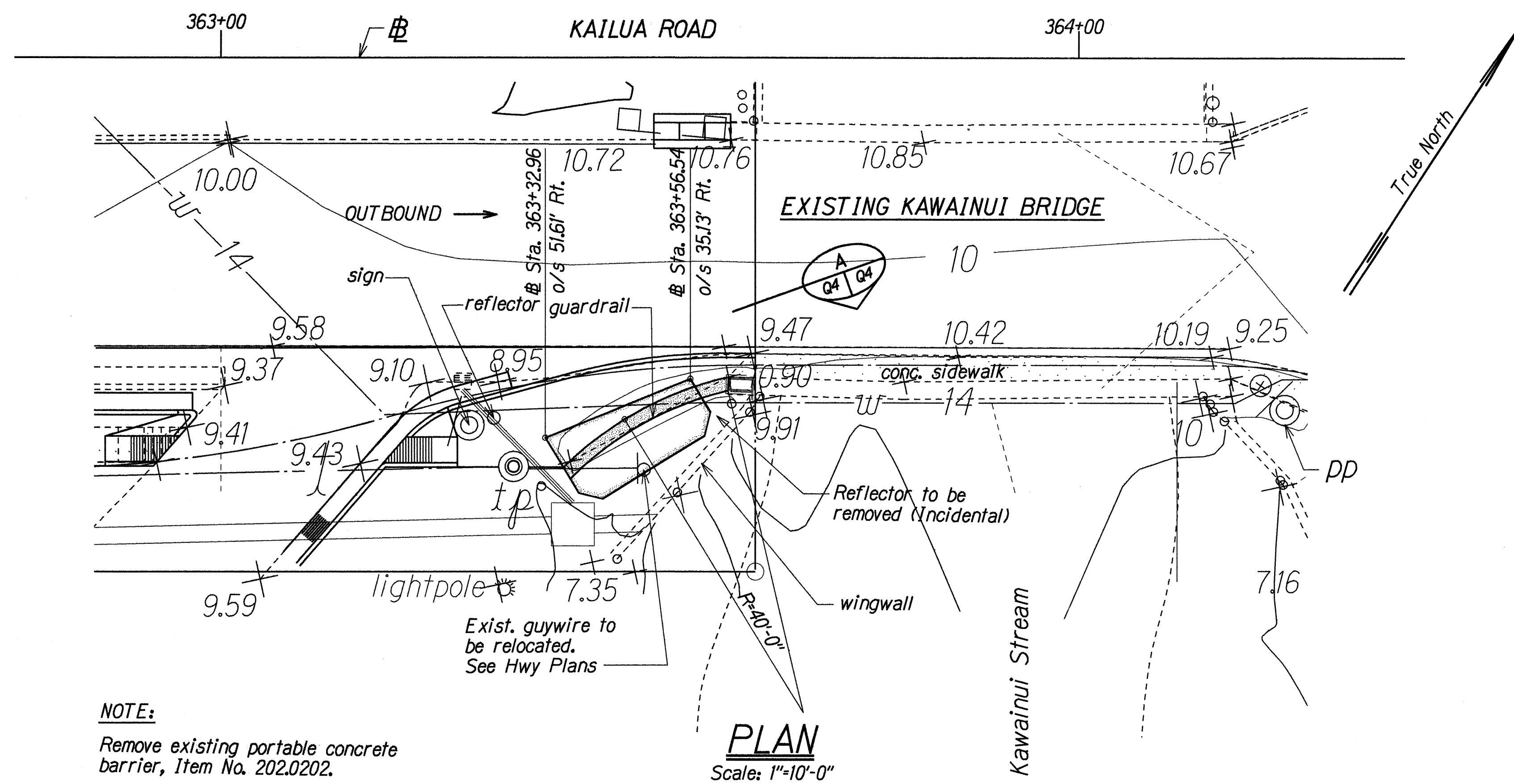


DATE	JUL 1999
SURVEY PLOTTED BY	TKM
DRAWN BY	DVT
DESIGNED BY	DVT
CHECKED BY	2/khql
ORIGINAL PLAN	
NOTE BOOK	
No.	

ESTIMATED QUANTITIES			
ITEM NO.	ITEM	UNIT	QUANTITY
202.0201	Removal Of Portion Of Existing Drainage Structure (2 CY)	(Lump Sum)	(Lump Sum)
206.6122	Structural Excavation For Retaining Walls	CY	28 CY
206.7122	Structure Backfill For Retaining Walls	CY	18 CY
503.0021	Class A Concrete For Drainage System	CY	11 CY
503.0022	Concrete In Retaining Wall (10 CY)	(Lump sum)	(Lump sum)
602.1021	Reinforcing Steel For Drainage System (2,800 Lbs.)	(Lump sum)	(Lump sum)
602.1022	Reinforcing Steel In Retaining Wall (2,600 Lbs.)	(Lump sum)	(Lump sum)

Estimated quantities deleted from this Contract	
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION KAILUA ROAD SHOULDER IMPROVEMENTS GENERAL STRUCTURAL NOTES, ABBREVIATIONS, SYMBOLS AND ESTIMATED QUANTITIES KAILUA ROAD Shoulder Improvements For Bicycle Route Kalanian'aoale Hwy. to Kawaihuli Bridge F.A. Project No. STP-062-1(33) Scale: As Noted Date: Oct. 1999	
SHEET No. 01 OF 5 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-062-1(33)	1999	38	58



DESIGNED BY	DATE
TRACED BY	XXX 1997
DESIGNED BY	XXX 1997
QUANTITIES BY	XXX 1997
CHECKED BY	XXX 1997

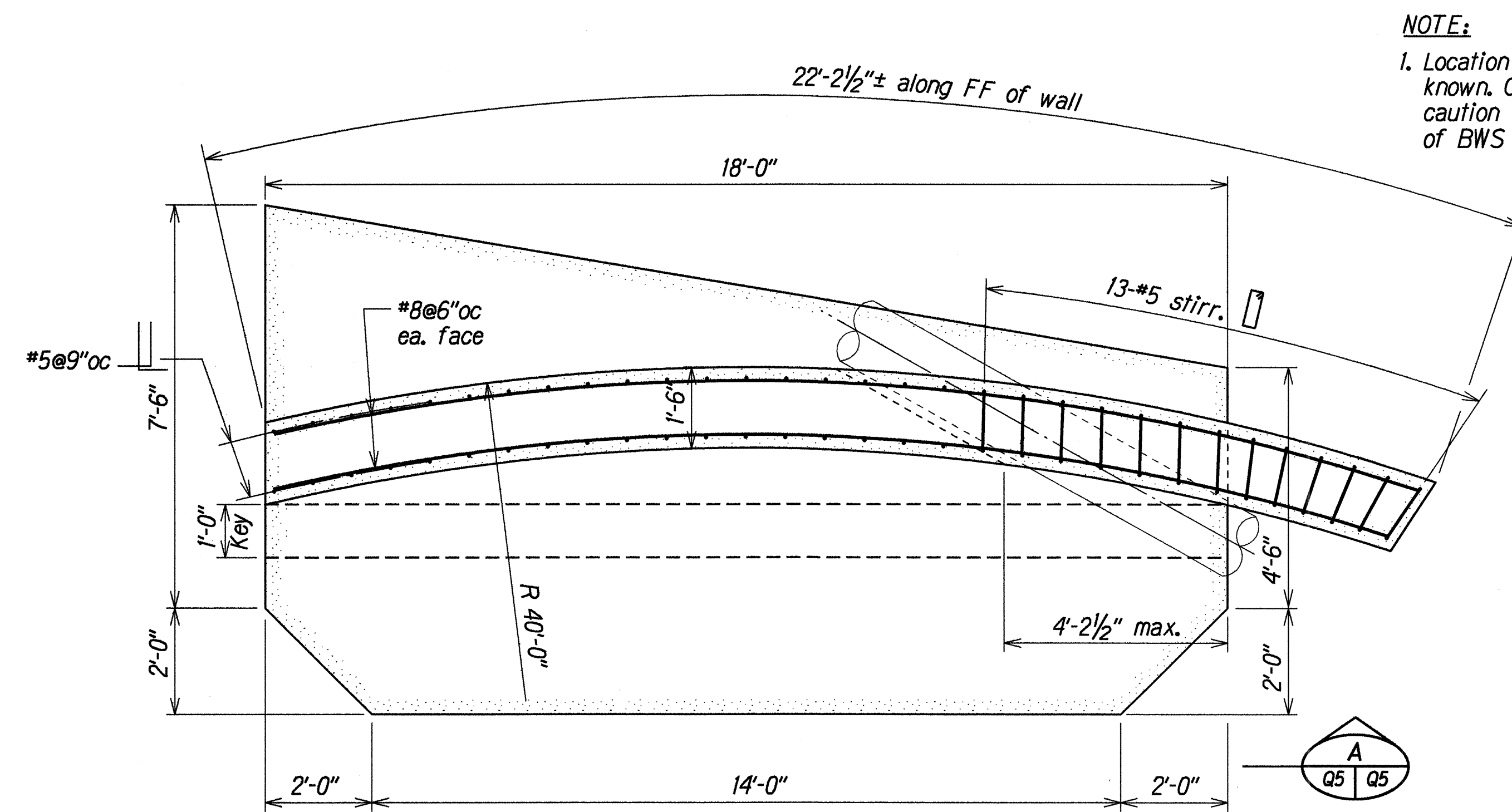
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAILUA ROAD SHOULDER IMPROVEMENTS
RETAINING WALL PLAN, ELEVATION
AND TYPICAL SECTIONS
KAILUA ROAD
Shoulder Improvements For Bicycle Route
Kalanianaʻole Hwy. to Kawainui Bridge
F.A. Project No. STP-062-1(33)

Scale: As Noted
Date: Oct. 1998

SHEET No. Q4 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-062-1(33)	1999	39	58

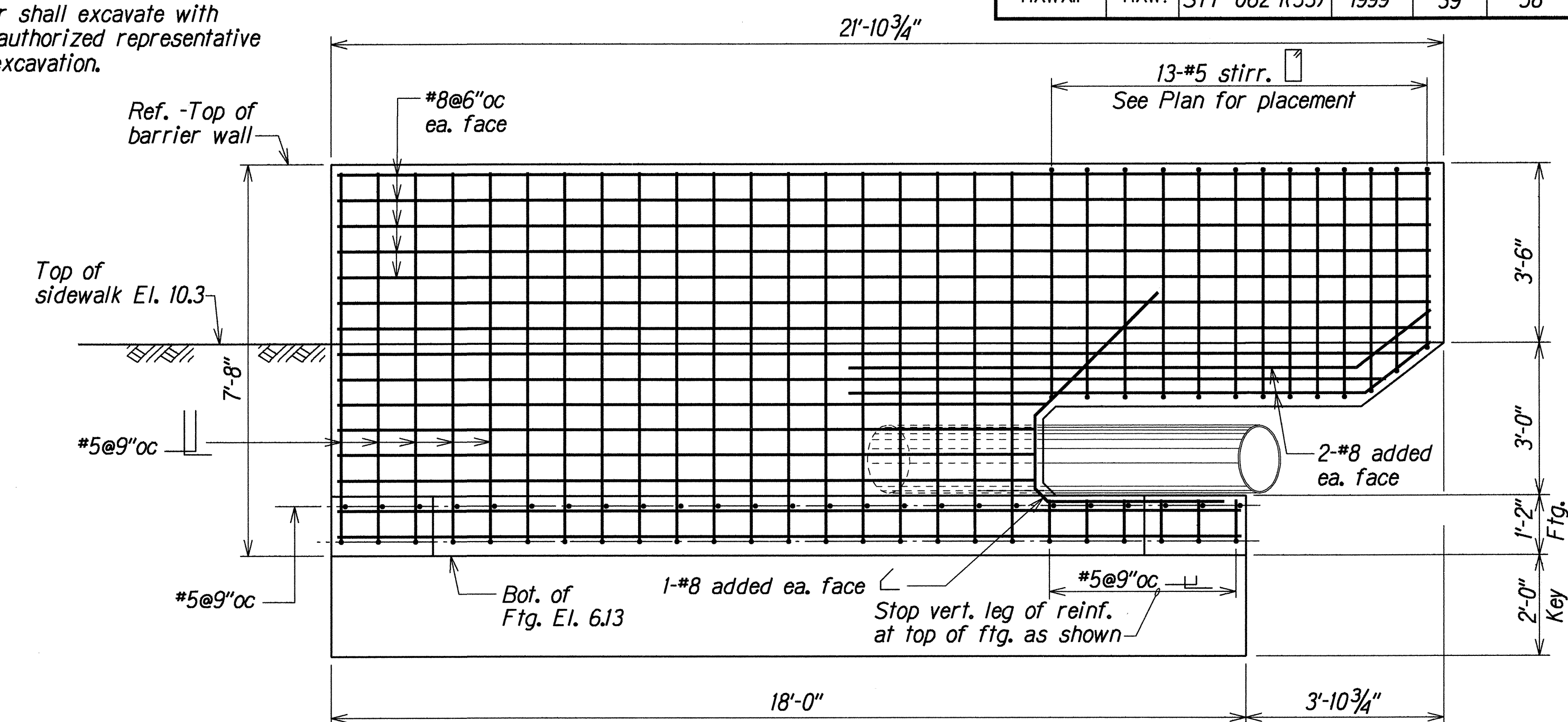


WALL REINFORCEMENT PLAN

Scale: 1/2"=1'-0"

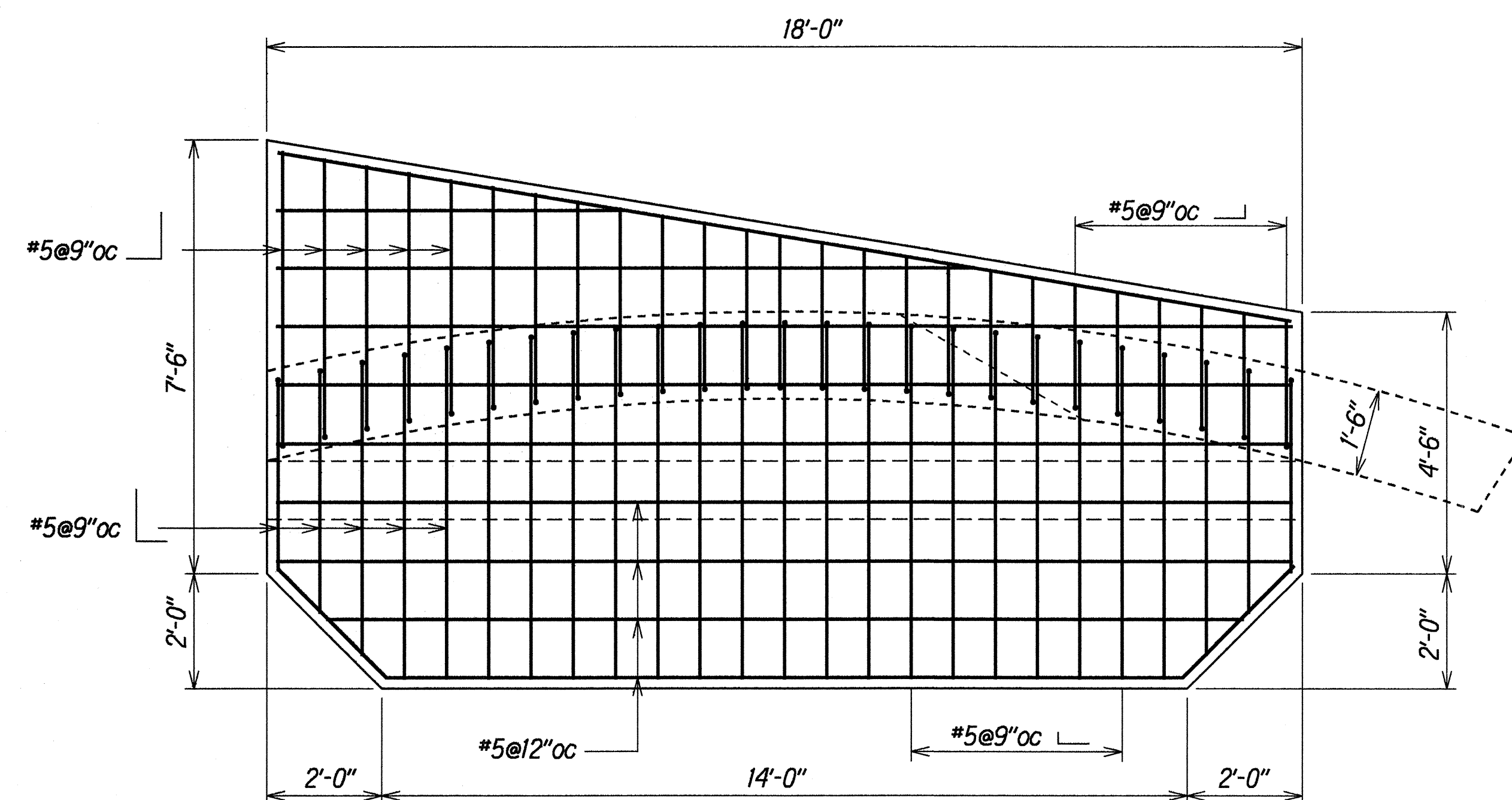
NOTE:

1. Location and size of water line is not known. Contractor shall excavate with caution with an authorized representative of BWS during excavation.



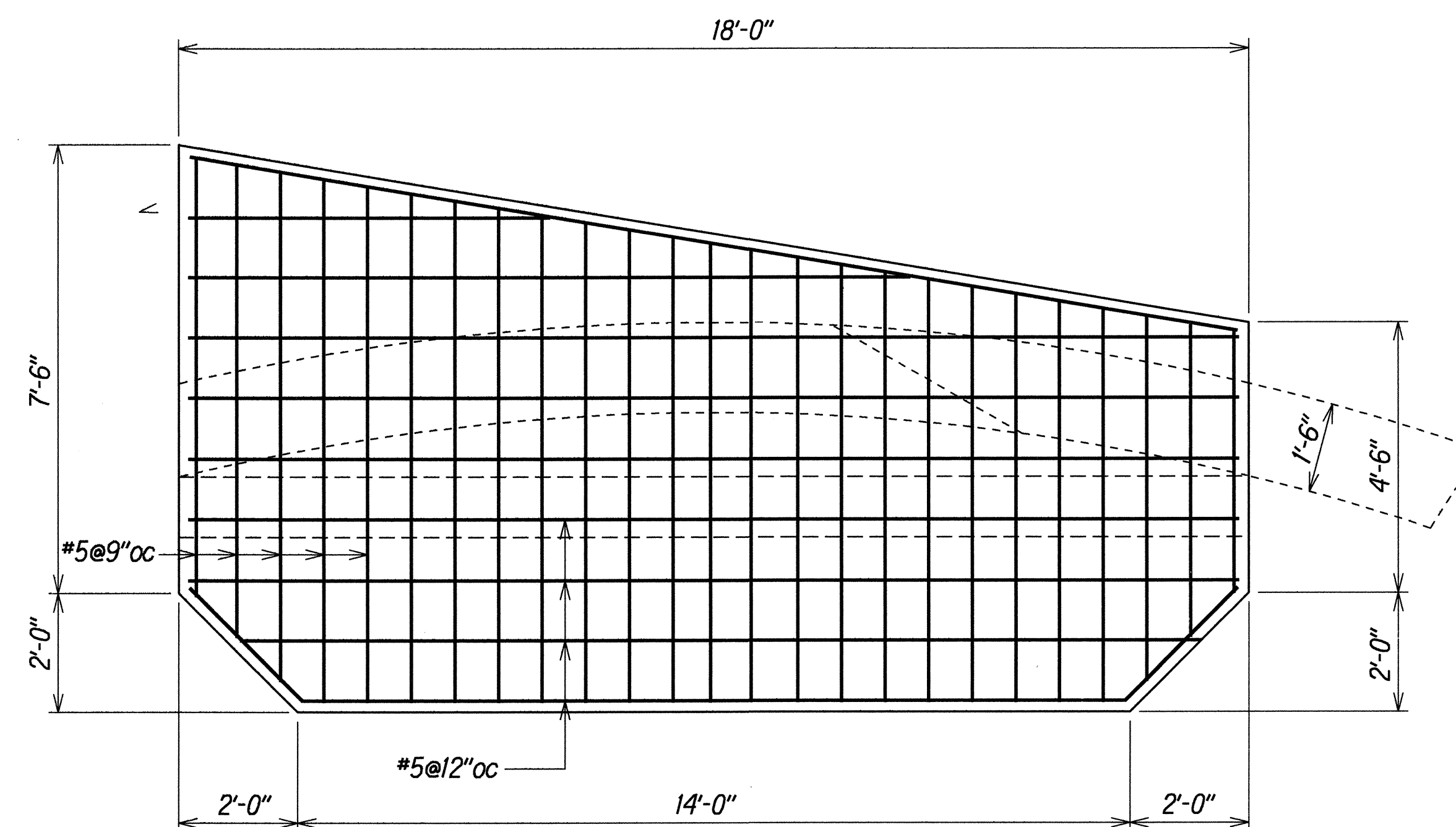
ELEVATION

Scale: 1/2"=1'-0"



BOTTOM FOOTING REINFORCEMENT PLAN

Scale: 1/2"=1'-0"



TOP FOOTING REINFORCEMENT PLAN

Scale: 1/2"=1'-0"

DESIGNED BY	DATE
CHKD BY	XXX 1997
DESIGNED BY	XXX 1997
CHKD BY	XXX 1997
DESIGNED BY	XXX 1997
CHKD BY	XXX 1997

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAILUA ROAD SHOULDER IMPROVEMENTS

**RETAINING WALL DETAILS
AND REINFORCEMENT**

KAILUA ROAD
Shoulder Improvements For Bicycle Route
Kalanianaʻole Hwy. to Kawaihuli Bridge
F.A. Project No. STP-062-1(33)

Scale: As Noted Date: Oct. 1998

SHEET No. Q5 OF 5 SHEETS