The second secon					
	INDEX TO DRAWINGS				
SHEET NO.	DESCRIPTION				
Q1	INDEX, ESTIMATED QUANTITIES, STRUCTURAL NOTES ♦ ABBREVIATIONS				
Q2	TYPE 10'x10' INLET STRUCTURE - PLAN				
Q3	TYPE 10'x10' INLET STRUCTURE - SECTION				
Q4	TYPE 10'x10' INLET STRUCTURE - SECTIONS				
Q5	TYPE 10'x10' INLET STRUCTURE - SECTION \$ TYPICAL STRUCTURE EXCAVATION AND BACKFILL PAY LIMITS				

SYMBOLS AND ABBREVIATIONS

Inbound

Detail or

Section	VVV	I.D. Irr.	Iribuila Irrigation
designation — Sheet No.	Sheet No. Detail	Jt.	Joint
Section is cut or Detail Local	is drawn	LC L.F., Lin. Ft.	Length of Curve Linear Feet
Abut. AB Alum.	Abutment Anchor Bolt Aluminum	Lg. Longit. L.S. Light Std.	Long Longitudinal Lump Sum Lighting Standard
Approx.	Approximate		
胜 Bal。 Beg。	Baseline Balance Begin, Beginning	Max. Min. MP	Maximum Minimum Mile Post
Blk. Bm. Bot. Brg., Brgs.	Block Beam Bottom Bearing, Bearings	No., # N.T.S.	Number Not To Scale
© CI., CIr. Col. Conc.	Center Line Clear Column Concrete	0.B. o.c. 0.D. o/s, 0/S	Outbound On Center Outside Dimension Offset
Cont. CR	Continuous Corrosion Resistant	P.C. PL	Point of Curvature Plate
Det. Dia., ø D.I. Dim. Dwg., Dwgs.	Detail Diameter Drain Inlet Dimension Drawing, Drawings	R Rdwy Ref. Reinf.	Radius Roadway Reference Reinforcement
EA, Ea., ea. E.F. E.W. Elec. Elev. Exist. Exp., (E)	Each Each Face Each Way Electrical Elevation Existing Expansion	Req'd Sect. Sht. Spcs. Spcd. Spcg. Sta. Std.	Required Section Sheet Spaces Spaced Spacing Station Standard
F.F. Fin. Ftg.	Front Face Finish Footing	Str. Struct. Symm.	Straight Structural Symmetrical
Ga. Galv. G.D.I. Gr.	Gage, Gauge Galvanized Grated Drain Inlet Grade	T∲B Thk. T.O.F. TS Typ.	Top and Bottom Thick, Thickness Top of Footing Tubular Steel Typical
Horiz. HS H.W. Hwy.	Horizontal High Strength Headwall Highway	Var. Vert. w/	Varies Vertical With

STRUCTURAL NOTES

DESIGN SPECIFICATIONS:

A. AASHTO 1998 LRFD Bridge Design Specifications, (Second Edition) and its subsequent Interim Specifications.

MATERIALS:

Concrete:

Class A, unless otherwise noted

B. Reinforcing Steel:

ASTM A 615, Grade 60

C. Admixture in concrete:

See Special Provisions

- D. All expansion and premolded joint filler shall be incidental to concrete and will not be paid for separately.
- E. All structural steel shall be ASTM A 36 hot-dip galvanized after fabrication.
- F. All anchor bolts, washers and nuts shall be ASTM A 325 hot-dip galvanized after fabrication, unless noted otherwise.
- G. All welding shall be in accordance with the current edition of Bridge Welding Code ANSI/ AASHTO/AWS D 1.5

CONSTRUCTION METHODS:

- A. Refer to Hawaii Standard Specifications for Road, Bridge and Public Works Construction, 1994 Edition and Special Provisions.
- B. Except as noted otherwise, all vertical dimensions are measured plumb.
- C. For steel reinforcing, stagger all splices where possible.
- D. Steel reinforcing shall be supported, bent and placed as per LRFD Bridge Design Specifications.
- E. For cast-in-place concrete, unless otherwise shown, minimum cover for reinforcing steel: Concrete cast against earth: 3"
 Walls/Slabs: 2"
- F. At time concrete is placed, reinforcing shall be free from mud, oil, laitance or other coatings adversely affecting bond capacity.
- G. Reinforcement, dowels and other embedded items shall be positively secured before pouring.
- H. Minimum clear spacing between parallel bars shall be one and one-half (1½) times the diameter of the bars (for non-bundled bars), one and one-half (1½) times the maximum size of the course aggregate or one and one-half (1½) inches.
- I. All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.
- J. All footings shall bear on firm undisturbed natural ground or properly compacted structural fill.
- K. In the event of over-excavation, the space between the footing/slabs/wall and the ground shall be filled with a minimum of Class D concrete at the Contractor's expense at no cost to the State.
- L. Where the Plans call for reinforcement bars to be embedded or anchored into existing concrete, see Special Provisions, Section 674 Concrete Retrofit.
- M. Where the Plans call for placing fresh plastic concrete against existing concrete, see Special Provisions, Section 674 Concrete Retrofit.

REFERENCE:

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

GENERAL:

- A. All items noted incidental will not be paid for separately.
- B. The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
- C. The Contractor shall verify all grades and dimensions in the field before commencing with any work.
- D. 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 no cost to the State.
- E. The Contractor 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.
- F. Unless noted otherwise, chamfer all exposed concrete edges three-quarters ($\frac{3}{4}$) of an inch.

FED. ROAD DIST. NO. STATE FED. AID PROJ. NO. FISCAL SHEET NO. SHEETS

HAWAII HAW. DE-072-1(48)R 2006 15 20

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPE 10'x10' INLET STRUCTURE

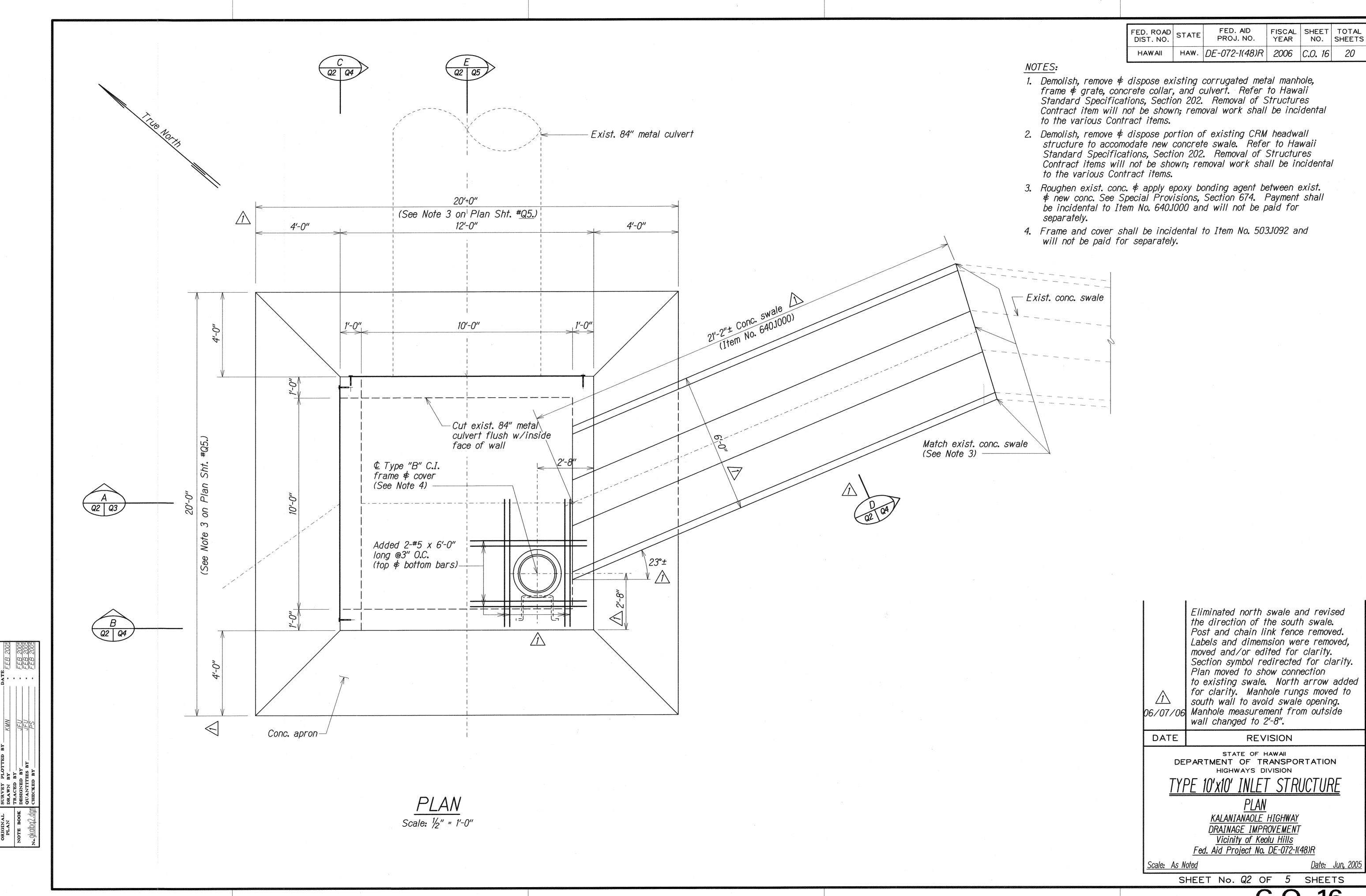
INDEX, ESTIMATED QUANTITIES

STRUCTURAL NOTES AND ABBREVIATIONS

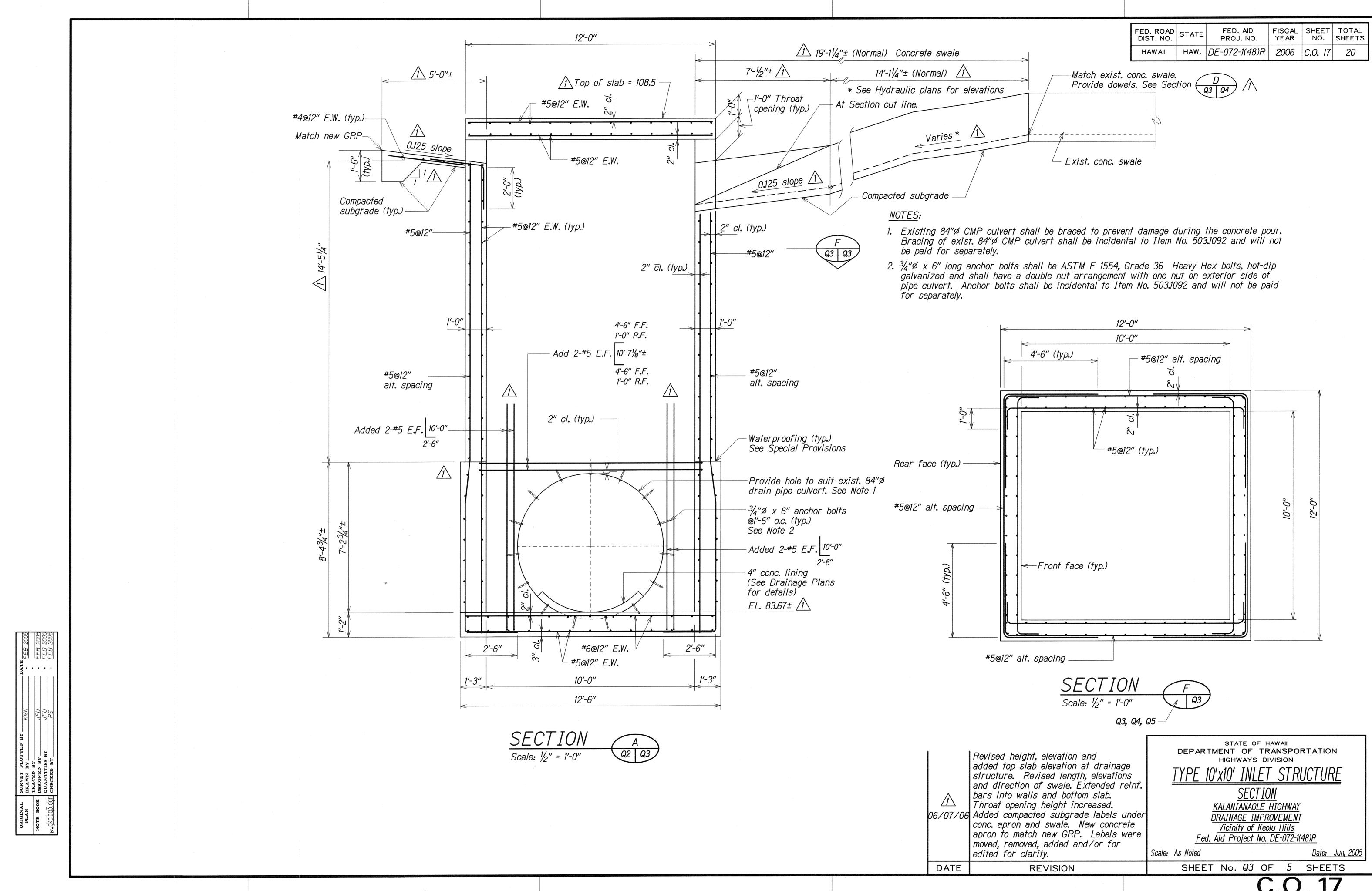
KALANIANAOLE HIGHWAY
DRAINAGE IMPROVEMENT
Vicinity of Keolu Hills
Fed. Aid Project No. DE-072-1(48)R

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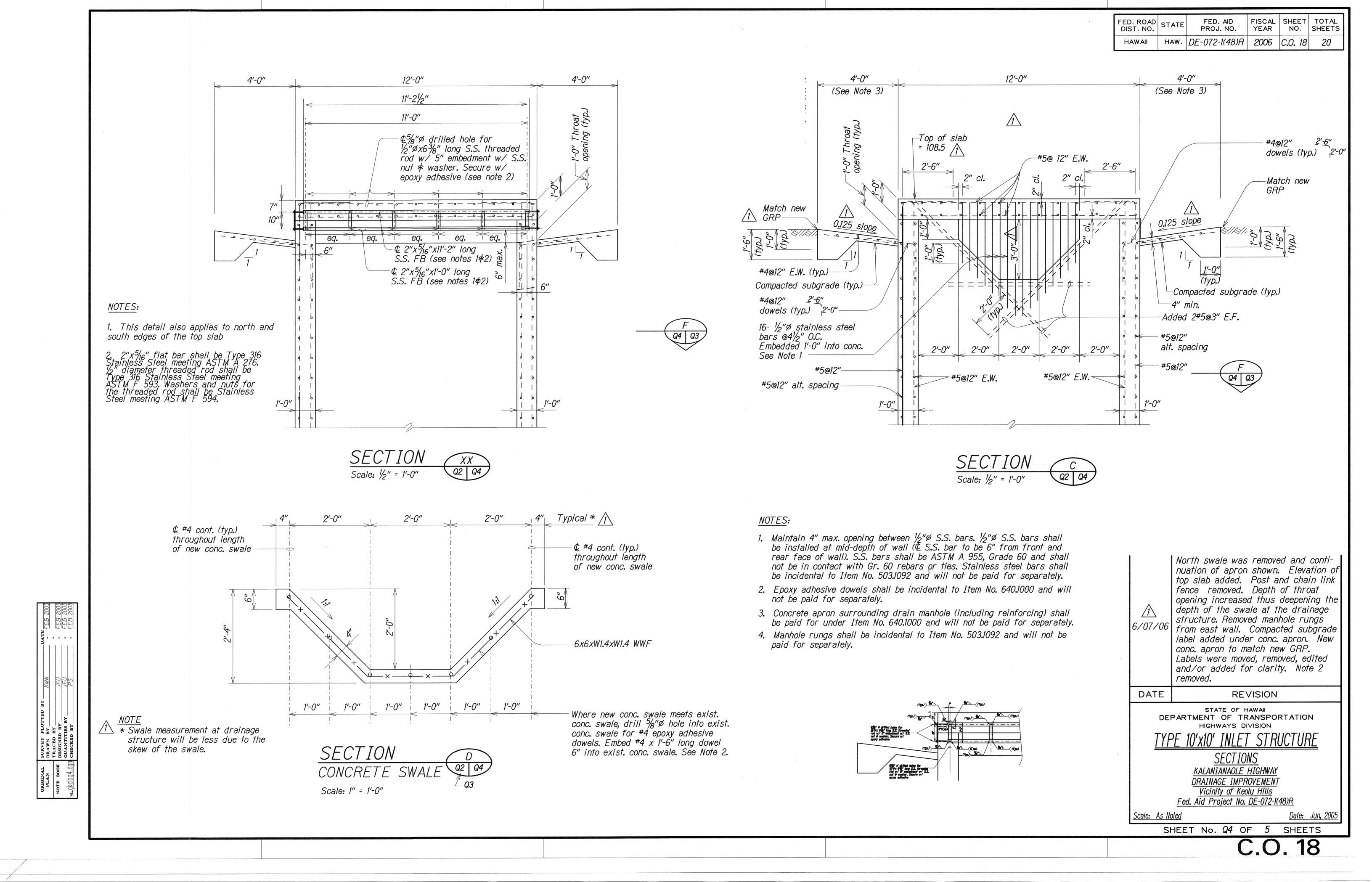
SHEET No. Q1 OF 5 SHEETS



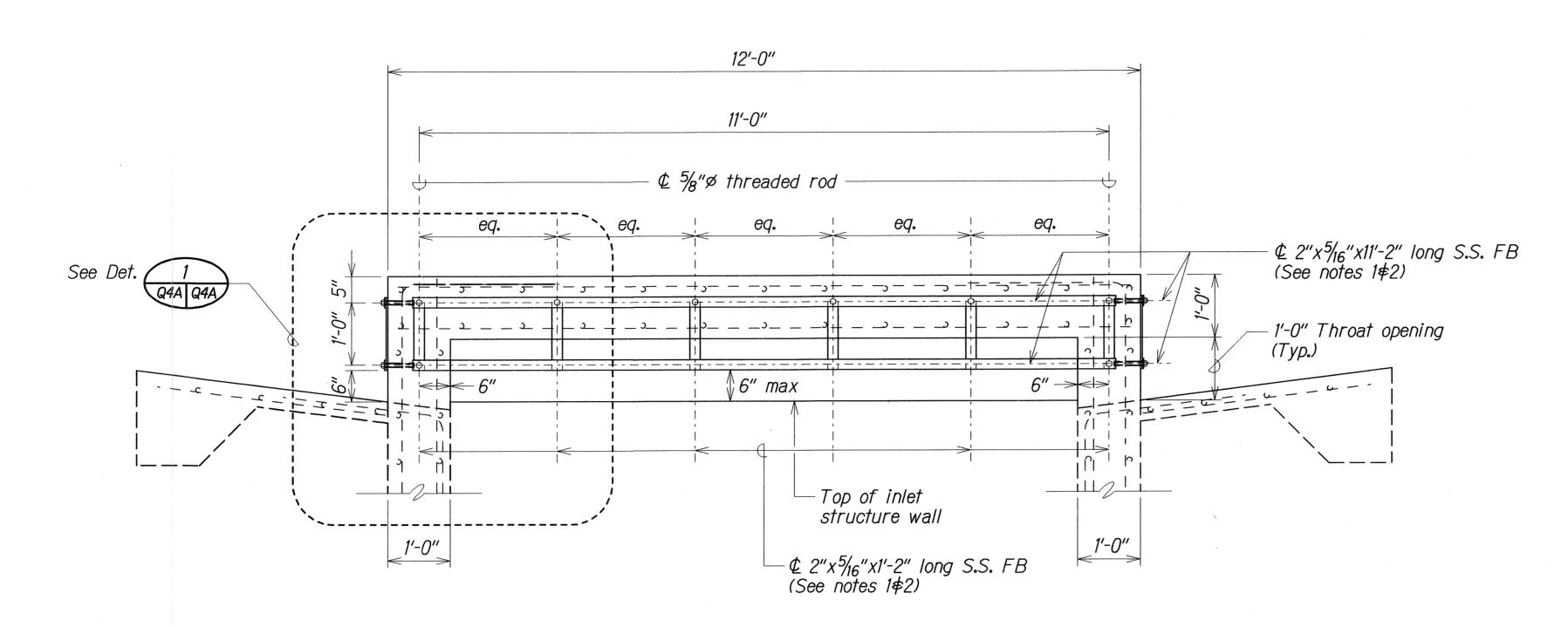
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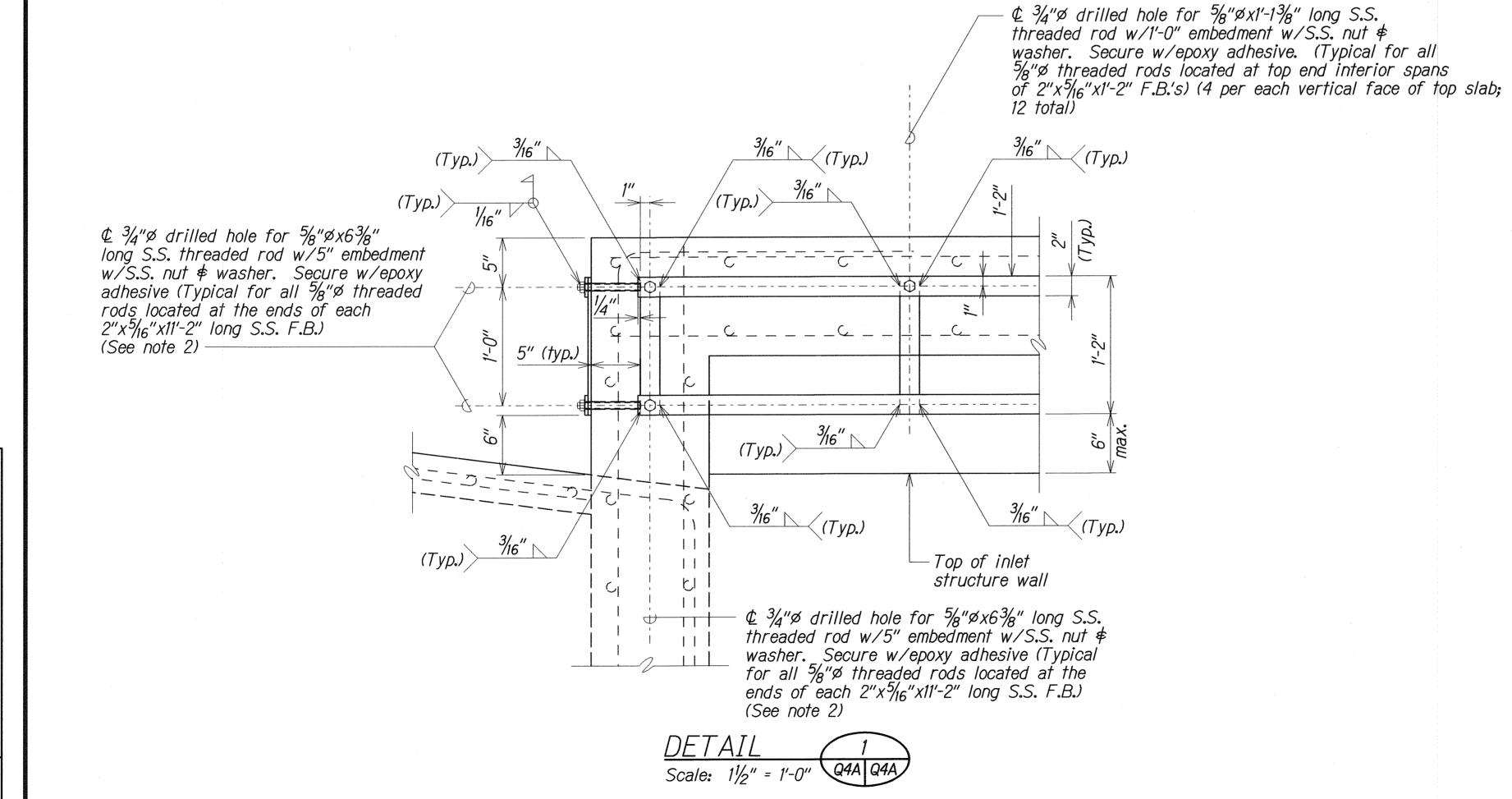
C.O. 17







ELEVATION G Scale: 3/4" = 1'-0"



STAINLESS STEEL VERTICAL GRATE DETAILS 1

FEB 2005 FEB 2005 FEB 2005 FEB 2005

NWN JFU JFU PS

SURVEY PLOTTED
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY

NOTES:

- 1. This detail also applies to north and south vertical faces of top slab.
- 2. 2"x5/16" flat bar shall be Type 316 Stainless Steel meeting ASTM A 276. 5%"\$\sigma\$ threaded rod shall be Type 316 Stainless Steel meeting ASTM F 593. Washers and nuts for the threaded rod shall be Stainless Steel meeting ASTM F 594.
- 3. Drainage box reinforcement shown for clarity only.
- 4. All edges of steel bars shall be ground smooth.

This supplemental sheet was added 3/24/08 as a change order. DATE REVISION STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

<u>TYPE 10'x10' INLET STRUCTURE</u>

HIGHWAYS DIVISION

S.S. VERTICAL GRATE DETAILS KALANIANAOLE HIGHWAY DRAINAGE IMPROVEMENT Vicinity of Keolu Hills

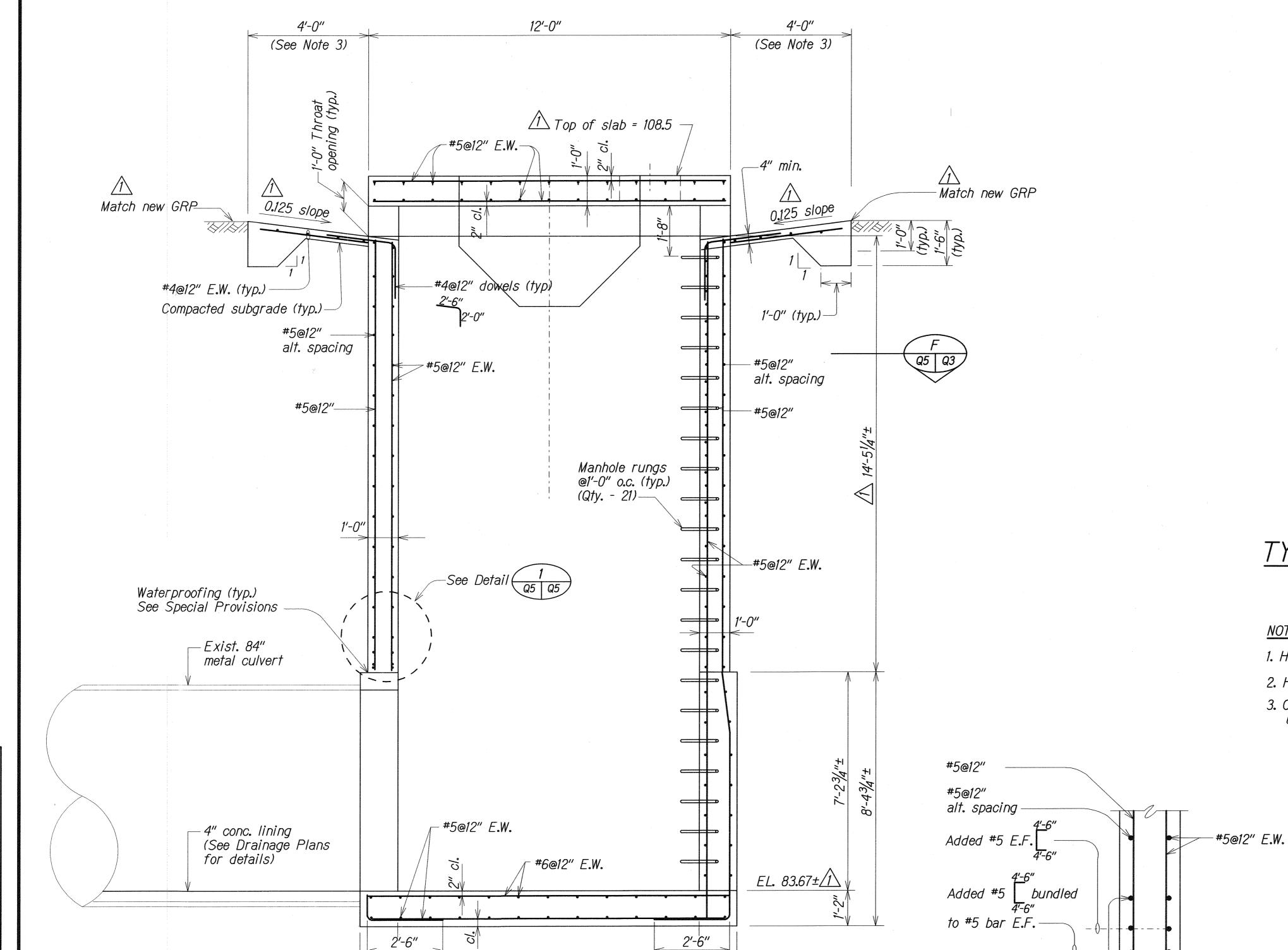
Fed. Aid Project No. DE-072-1(48)R Scale: As Noted

Date: Jun, 2005

SHEET No. Q4A OF 5 SHEETS

C.O. 18 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR		TOTAL SHEETS
HAWAII	HAW.	DE-072-1(48)R	2006	C.O. 19	20



10'-0"

12'-6"

SECTION

1'-3"

#5@12"

alt. spacing

DETAIL

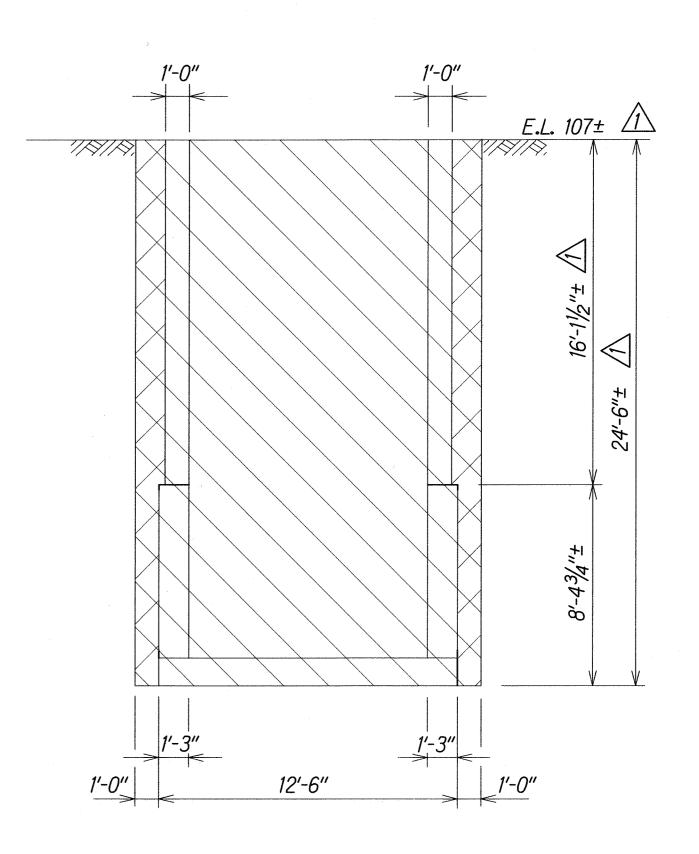
Scale: 1" = 1'-0"

Q5 Q5

1'-3"

FEB FEB FFB

JFU JFU PS

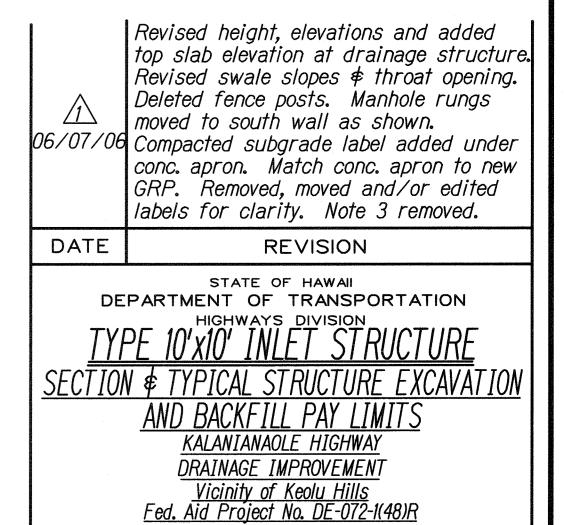


TYPICAL STRUCTURAL EXCAVATION AND BACKFILL PAY LIMITS

Scale: 1/4" = 1'-0"

NOTES:

- 1. Hatched area shown thus \tag{\tag{N}} denotes limits of structure excavation payline.
- 2. Hatched area shown thus ///// denotes limits of structure backfill.
- 3. Concrete apron surrounding drain manhole (including reinforcing) shall be paid for under Item No. 640.1000 and will not be paid for separately.



SHEET No. Q5 OF 5 SHEETS C. O. 19

<u>Date: Jun, 2005</u>