

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11N-01-03	2004	10	14

GENERAL NOTES

DESIGN SPECIFICATIONS:

A. AASHTO LRFD Bridge Design Specifications, Second Edition, including all interim revisions

MATERIALS:

- A. Concrete: Class A
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 studs and threaded rods shall be ASTM A 449, hot-dip galvanized, unless noted otherwise.
H. All welding shall be in accordance with the current edition of Reinforcing Steel Welding Code AWS D 1.4. Welding electrodes for structural steel shall be E 70.
I. Steel tubes shall be ASTM A 500 Grade B, hot-dip galvanized after fabrication.

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 per LRFD Bridge Design Specifications.
E. For cast-in-place concrete, minimum reinforcement cover:
Concrete cast against earth: 3"
Concrete cast against a smooth surface or finished to a smooth surface: 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 bundled bars). But in no case shall the clear distance between the bars be less than one and one-half (1½) times the maximum size of the course aggregate.
I. All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.

- J. All existing reinforcing and anchor bolts that can be incorporated in the new work shall be bent or cut as required and cleaned before being utilized in the new work.
K. All reinforcement bars shown with bends shall conform to standard ACI hooks unless noted otherwise.
L. All existing reinforcing and anchor bolts that cannot be incorporated in the new work shall be completely removed or removed to a minimum depth of one and one-half (1½) inches below finish grade and the area patched with mortar.
M. Where the plans call for reinforcement bars to be embedded or anchored into existing concrete, see Special Provisions Section 674-Concrete Retrofit.
N. Where the plans call for placing fresh plastic concrete against existing concrete, see Special Provisions Section 674-Concrete Retrofit.
O. All footings shall bear on firm undisturbed natural ground or properly compacted structural fill.
P. Areas with weathered basalt are observed at the existing ground surface. Hard excavation in basalt work is anticipated. Prospective bidders are encouraged to examine the site conditions to make their own interpretations.
Q. In the event of over-excavation, the space between the footing/slab/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.

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 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, all exposed concrete edges shall be chamfered ¾".

SYMBOLS AND ABBREVIATIONS

Detail or Section designation
Sheet No. Section
Is cut or
Detail Location

Adj. Adjacent
Alt. Alternate
Approx. Approximate

Baseline
Bal. Balance
Bet., Btwn. Between
B.F. Back Face
B.F.E. Bottom Footing Elevation
Bk. Back
Blt. Bolt
B, Bot., Bott. Bottom
B.O.S. Bottom of Slab

¢ Center Line
CIP Cast in Place
Cl., Clr. Clear
Conc. Concrete
Cont. Continuous
C.Y., Cu. Yd. Cubic Yards

Def. Detail
Dia, ø Diameter
Dim. Dimension
Dwg., Dwgs. Drawing, Drawings

EA, Ea, ea. Each
E.F. Each Face
El., Elev. Elevation
Eq. Equal
Est. Estimated
E.W. Each Way
Exc. Excavation
Exist. Existing
Exp., (E) Expansion
Ext. Exterior

F.F. Front Face
Fin. Finish
Fin. Gr. Finish Grade
Ftg. Footing

Gr. Grade
Grd. Ground

Horiz. Horizontal
Hwy. Highway

I.B. Inbound
I.F. Inside Face
In. Inch
Int. Interior
Inv. Invert

Jt. Joint

L Length
L.F., Lin. Ft. Linear Feet
Lg. Long
Longit. Longitudinal
L.S. Lump Sum
Lt. Left

Max. Maximum
Min. Minimum
Misc. Miscellaneous

N North
N.F. Near Face
No., # Number
N.T.S. Not To Scale

O.B. Outbound
o.c. On Center
Op'n'g Opening

R Radius
Rdwy Roadway
Ref. Reference
Reinf. Reinforcement
Ret. Retaining
Req'd Required
R.F. Rear Face
Rt. Right
R/W Right Of Way

Sect. Shoulder
Shldr. Sheet
Sht. Space
Spd. Spaced
Spog. Spacing
Spec. Specification
Sta. Station
Std. Standard
Stirr. Stirrup
Str. Straight
Struct. Structural
Symm. Symmetrical

T Top
Temp. Temporary
Thk. Thick, Thickness
T.O.S. Top of Slab
T.O.W. Top of Wall
Tot. Total
Transv. Transverse
Typ. Typical

Var. Varies
Vert. Vertical

w/ With
W.P. Working Point
W.W. Wingwall

ESTIMATED QUANTITIES

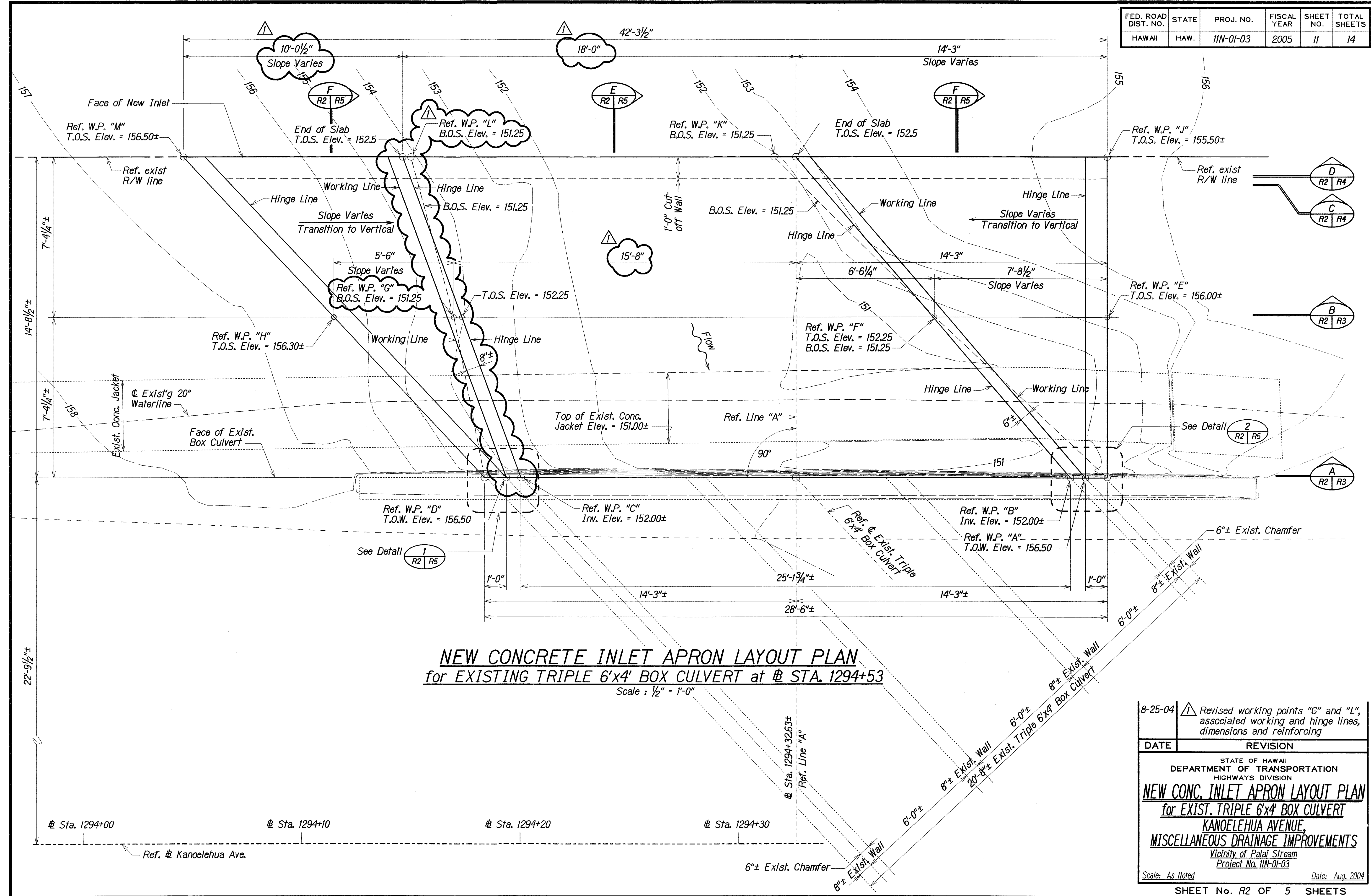
ITEM NO.	ITEM DESCRIPTION	UNIT
206.5100	Structural Excavation for Concrete Wingwall and Apron	C.Y.
206.7270	Structural Backfill for Concrete Wingwall and Apron	C.Y.
503.1055	Concrete Wingwall and Apron	L.S.
602.1001	Reinforcing Steel Other Than In Bridges	L.S.

INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
R1	General Notes, Symbols & Abbreviations, Estimated Quantities and Index to Drawings
R2	Layout Plan
R3	Sections
R4	Sections
R5	Sections, Details and Developed Elevation

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GENERAL NOTES, SYMBOLS & ABBREV.
ESTIM. QUAN. and INDEX to DRAWINGS
KANOIEFHUA AVENUE
Vicinity of Palai Stream
Project No. 11N-01-03
Scale: As Noted Date: Mar. 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11N-01-03	2005	11	14



NEW CONCRETE INLET APRON LAYOUT PLAN
for EXISTING TRIPLE 6'x4' BOX CULVERT at STA. 1294+53
Scale : 1/2" = 1'-0"

SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

8-25-04	Revised working points "G" and "L", associated working and hinge lines, dimensions and reinforcing
DATE	REVISION

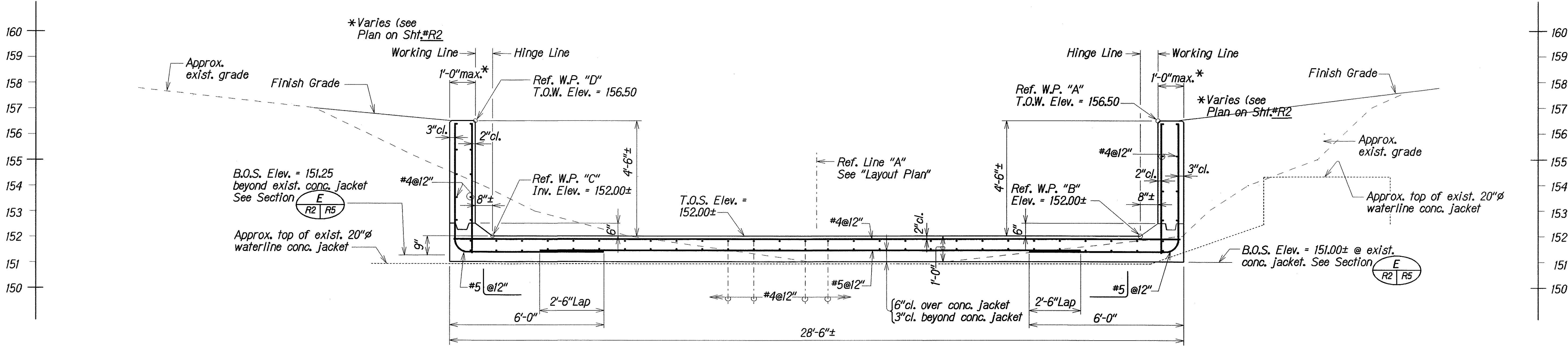
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NEW CONC. INLET APRON LAYOUT PLAN
for EXIST. TRIPLE 6'x4' BOX CULVERT
KANOELEHUA AVENUE,
MISCELLANEOUS DRAINAGE IMPROVEMENTS
Vicinity of Palai Stream
Project No. 11N-01-03

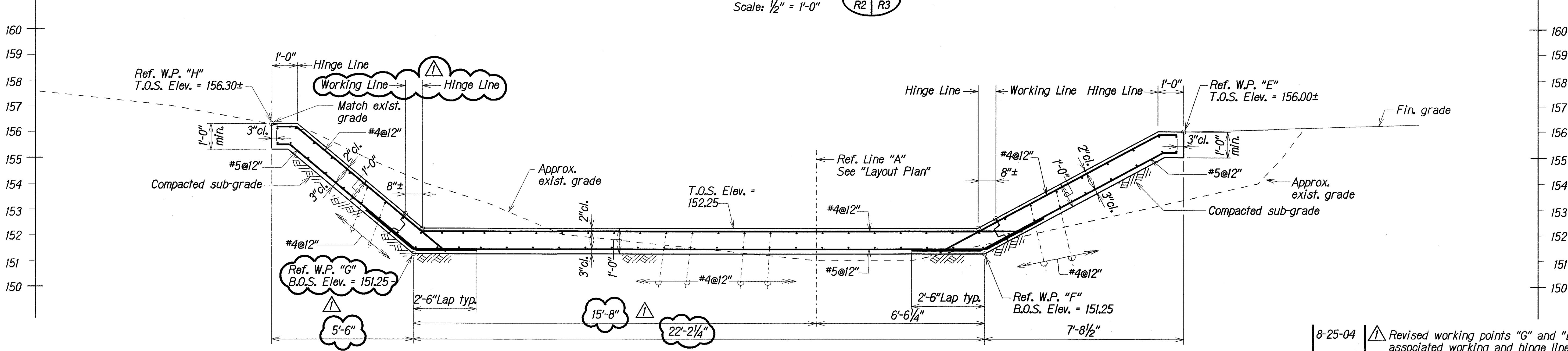
Scale: As Noted Date: Aug. 2004

SHEET No. R2 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11N-01-03	2005	12	14



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

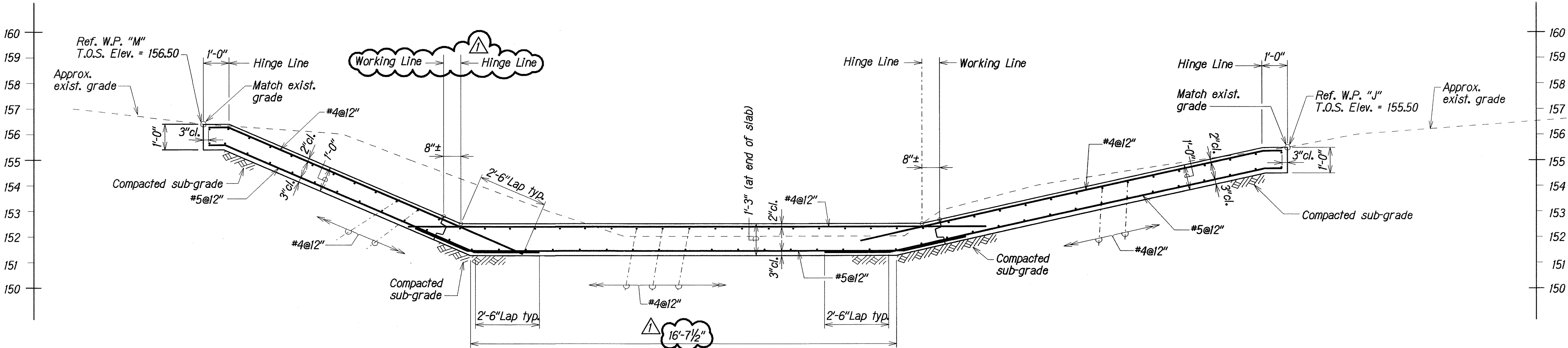


SECTION B
Scale: 1/2" = 1'-0"

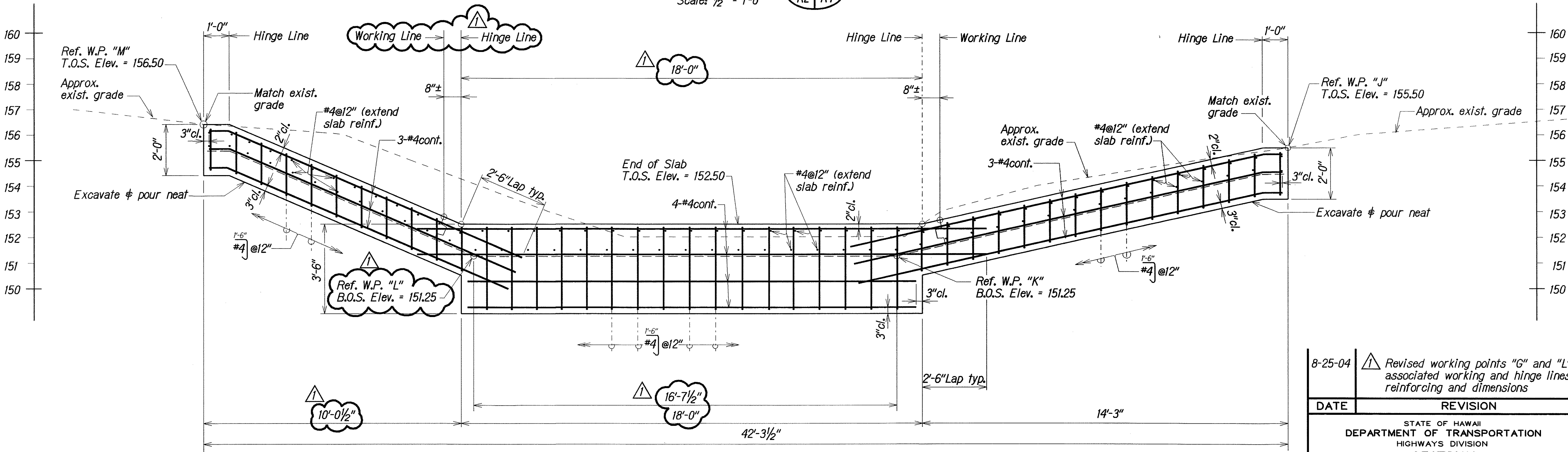
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
N _o .	_____

8-25-04	Revised working points "G" and "L", associated working and hinge lines, dimensions and reinforcing
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION SECTIONS TRIPLE 6x4' BOX CULVERT KANOIELEHUA AVENUE, MISCELLANEOUS DRAINAGE IMPROVEMENTS <i>Vicinity of Palai Stream</i> <i>Project No. 11N-01-03</i> Scale: As Noted Date: Aug. 2004	
SHEET No. R3 OF 5 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11N-01-03	2005	13	14



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

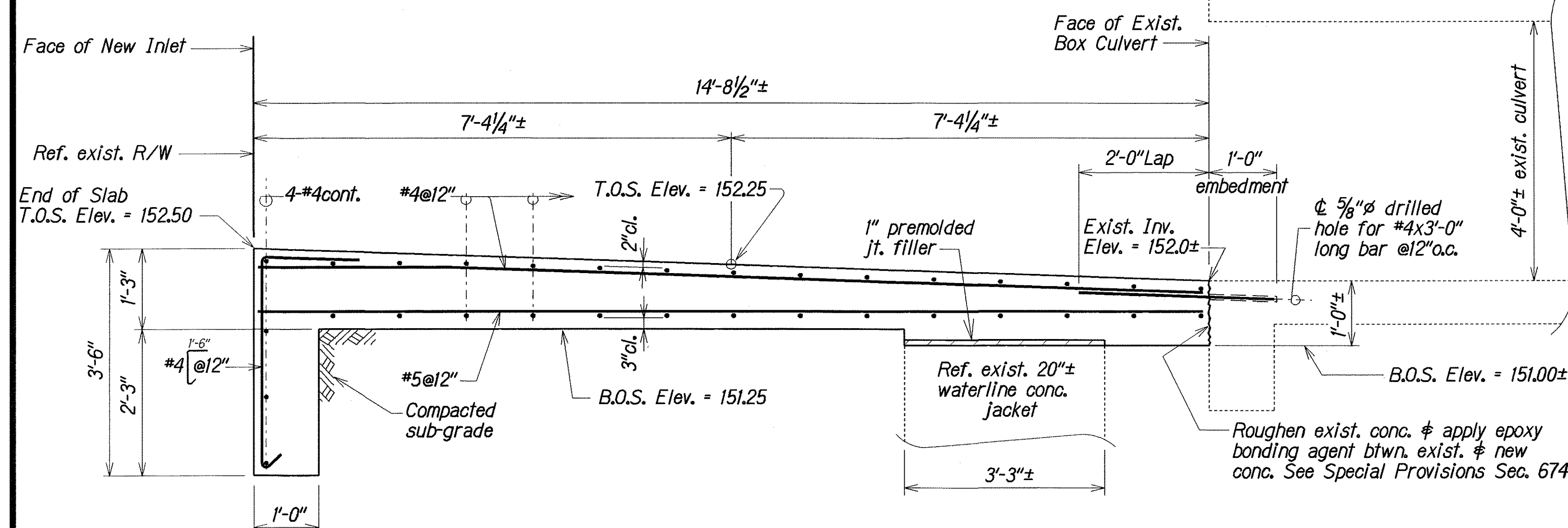


SECTION D
Scale: 1/2" = 1'-0"

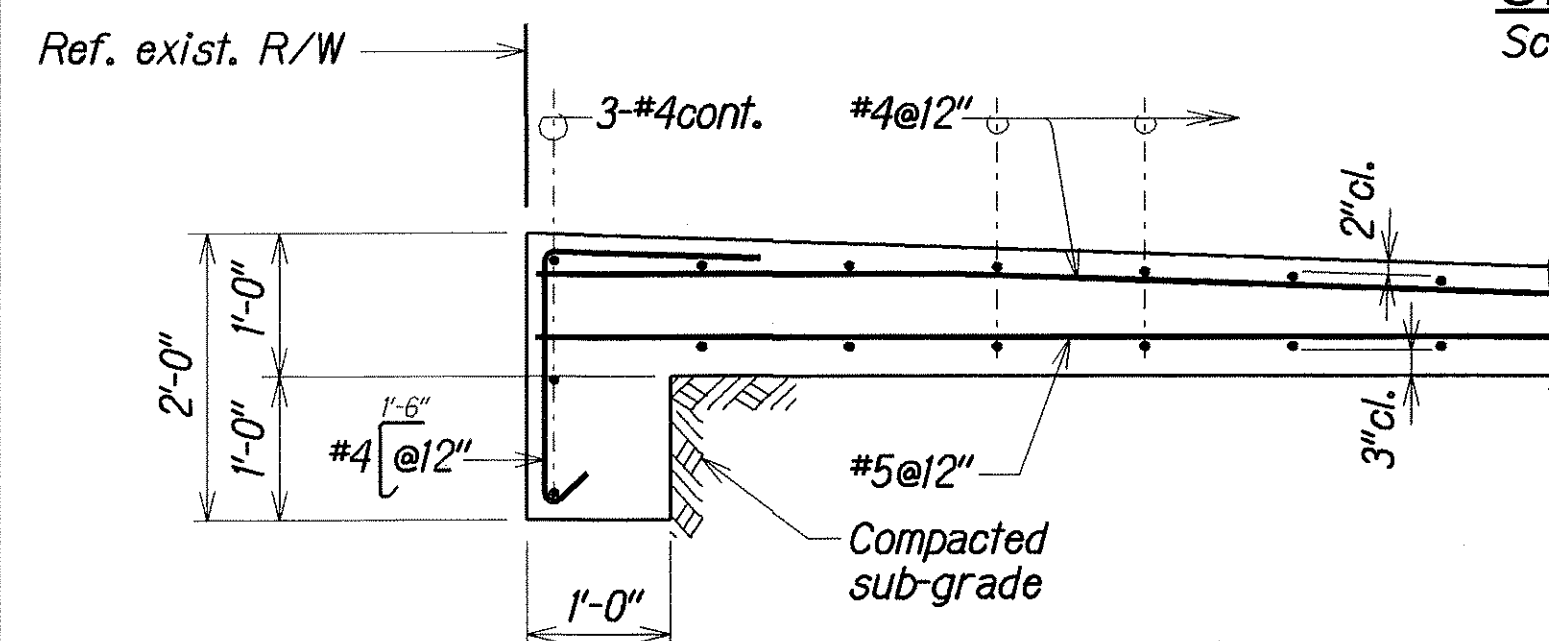
ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	

8-25-04	Revised working points "G" and "L", associated working and hinge lines, reinforcing and dimensions
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION SECTIONS TRIPLE 6'x4' BOX CULVERT KANOELEHUA AVENUE, MISCELLANEOUS DRAINAGE IMPROVEMENTS Vicinity of Palai Stream Project No. 11N-01-03 Scale: As Noted Date: Aug. 2004	
SHEET No. R4 OF 5 SHEETS	

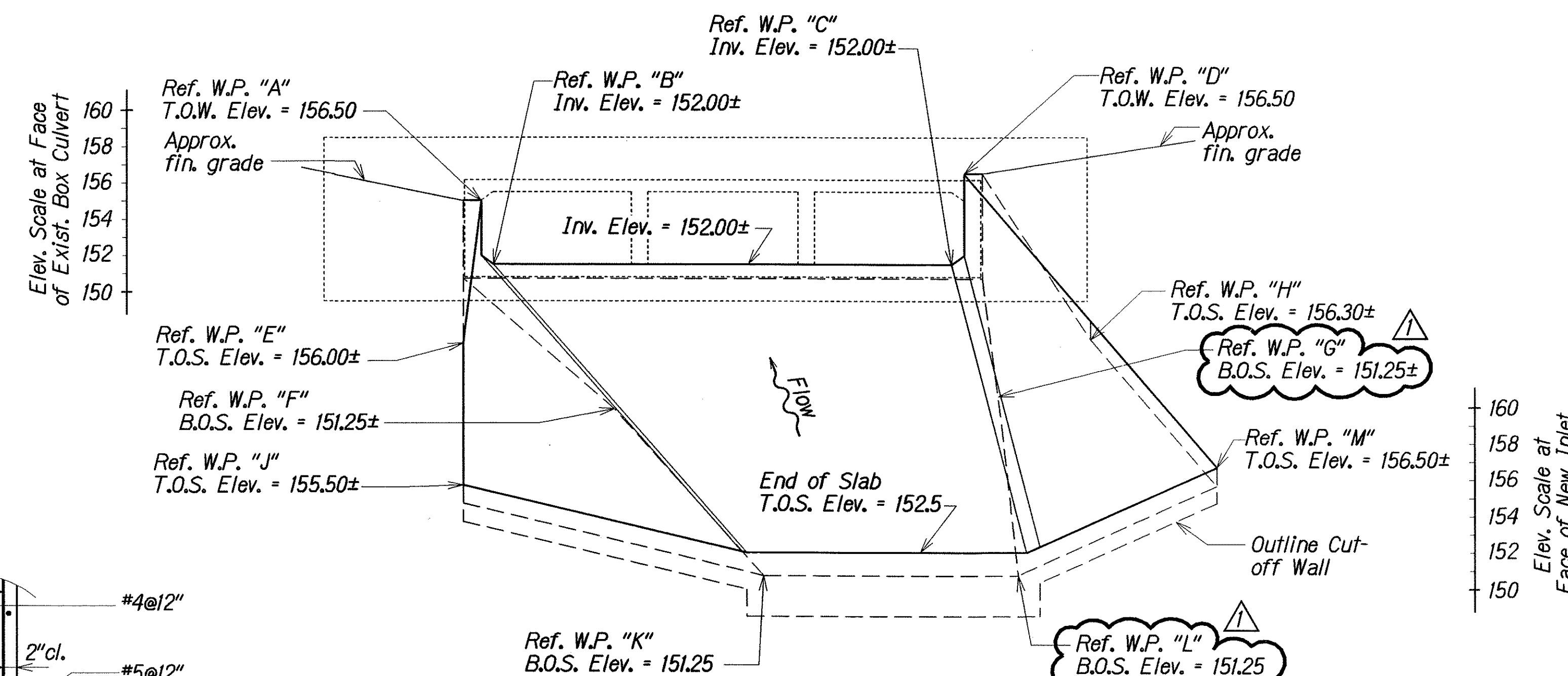
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11N-01-03	2005	14	14



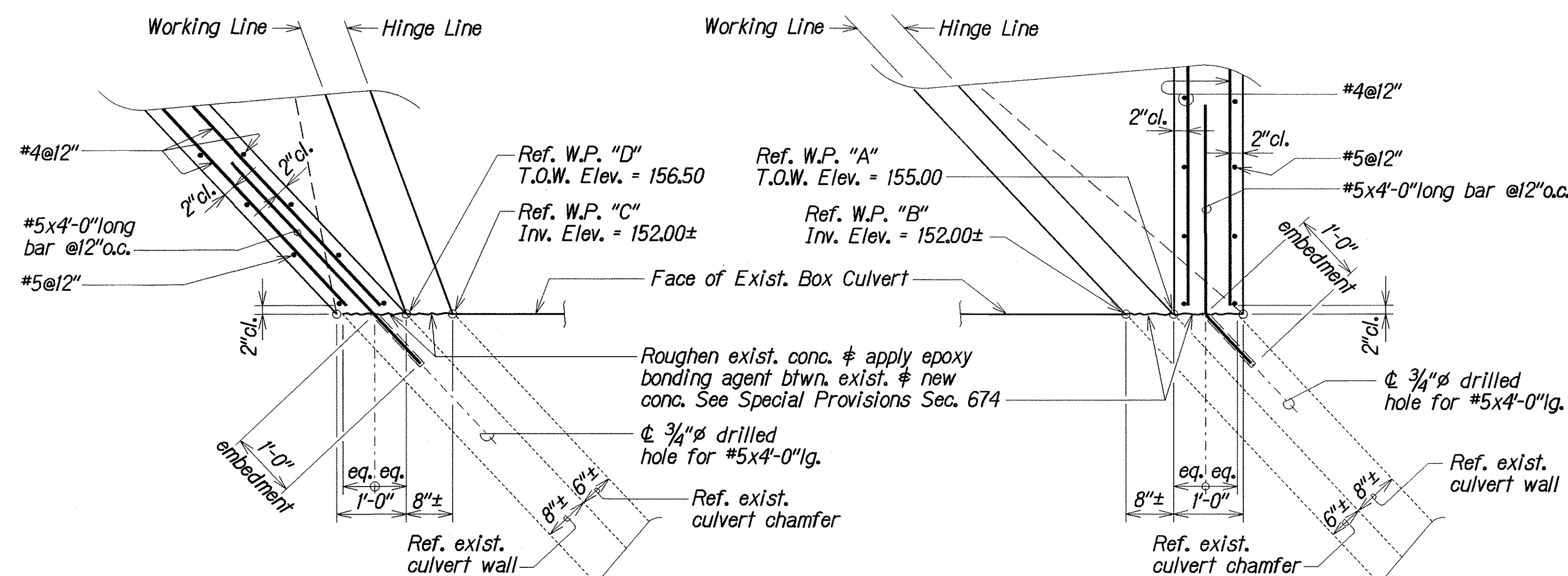
SECTION E
Scale: 3/4" = 1'-0"



SECTION F
Scale: 3/4" = 1'-0"



DEVELOPED ELEVATION
FACING DOWNSTREAM
Not to Scale



DETAIL 1
Scale: 3/4" = 1'-0"

DETAIL 2
Scale: 3/4" = 1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

8-25-04	Revised working points "G" and "L", associated working and hinge lines, dimensions and reinforcing
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION SECTIONS, DETAILS and DEVELOPED ELEVATION KAOOLEHUA AVENUE, MISCELLANEOUS DRAINAGE IMPROVEMENTS Vicinity of Palai Stream Project No. 11N-01-03 Scale: As Noted Date: Aug. 2004	

SHEET No. R5 OF 5 SHEETS

C.O.14