



INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
Q1	INDEX, ESTIMATED QUANTITIES, STRUCTURAL NOTES & ABBREVIATIONS
Q2	MANHOLE DETAILS

ESTIMATED QUANTITIES		
ITEM NO.	ITEM DESCRIPTION	UNIT
604.4020	Concrete Top Slab for Sewer Manhole	L.S.

SYMBOLS AND ABBREVIATIONS

Detail or Section designation →  Sheet No. Section is cut or Detail Location →  Sheet No. Detail is drawn

Bot.	Bottom
Cl.	Clear
Conc.	Concrete
E.W.	Each Way
Exist.	Existing
Fin.	Finish
L.S.	Lump Sum
O.B.	Outbound
o.c.	On Center
O.D.	Outside Dimension
o/s, O/S	Offset
Reinf.	Reinforcement
RT	Right
Sht.	Sheet
STA.	Station
Std.	Standard
Typ.	Typical
w/	With

STRUCTURAL NOTES

DESIGN SPECIFICATIONS:

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

MATERIALS:

- A. Reinforced 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. 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.
K. Where the Plans call for reinforcement bars to be embedded or anchored into 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:

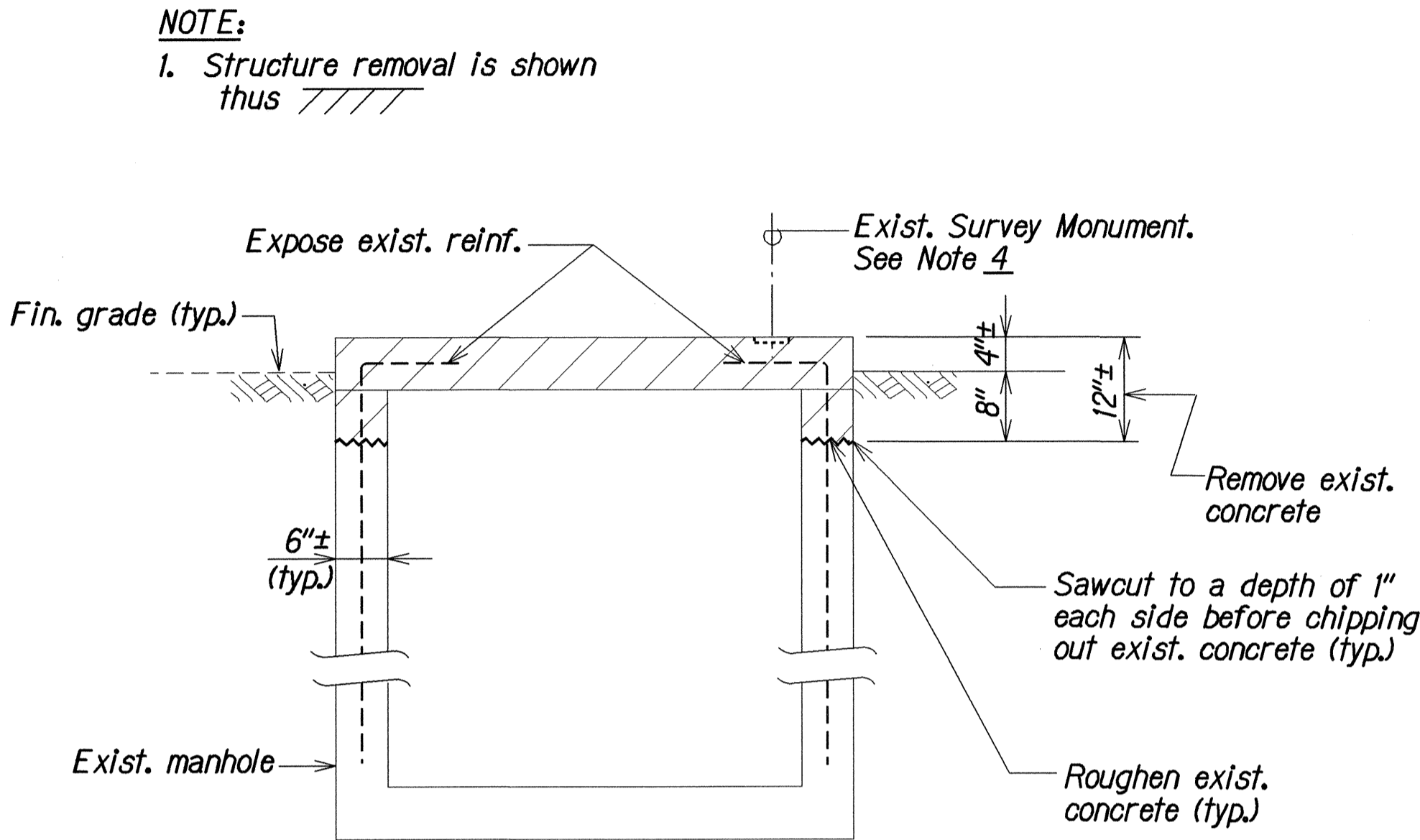
- A. All items noted incidental will not be paid for separately.
B. The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
C. The Contractor shall verify all grades and dimensions in the field before commencing with 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 (¾) of an inch.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	28	60

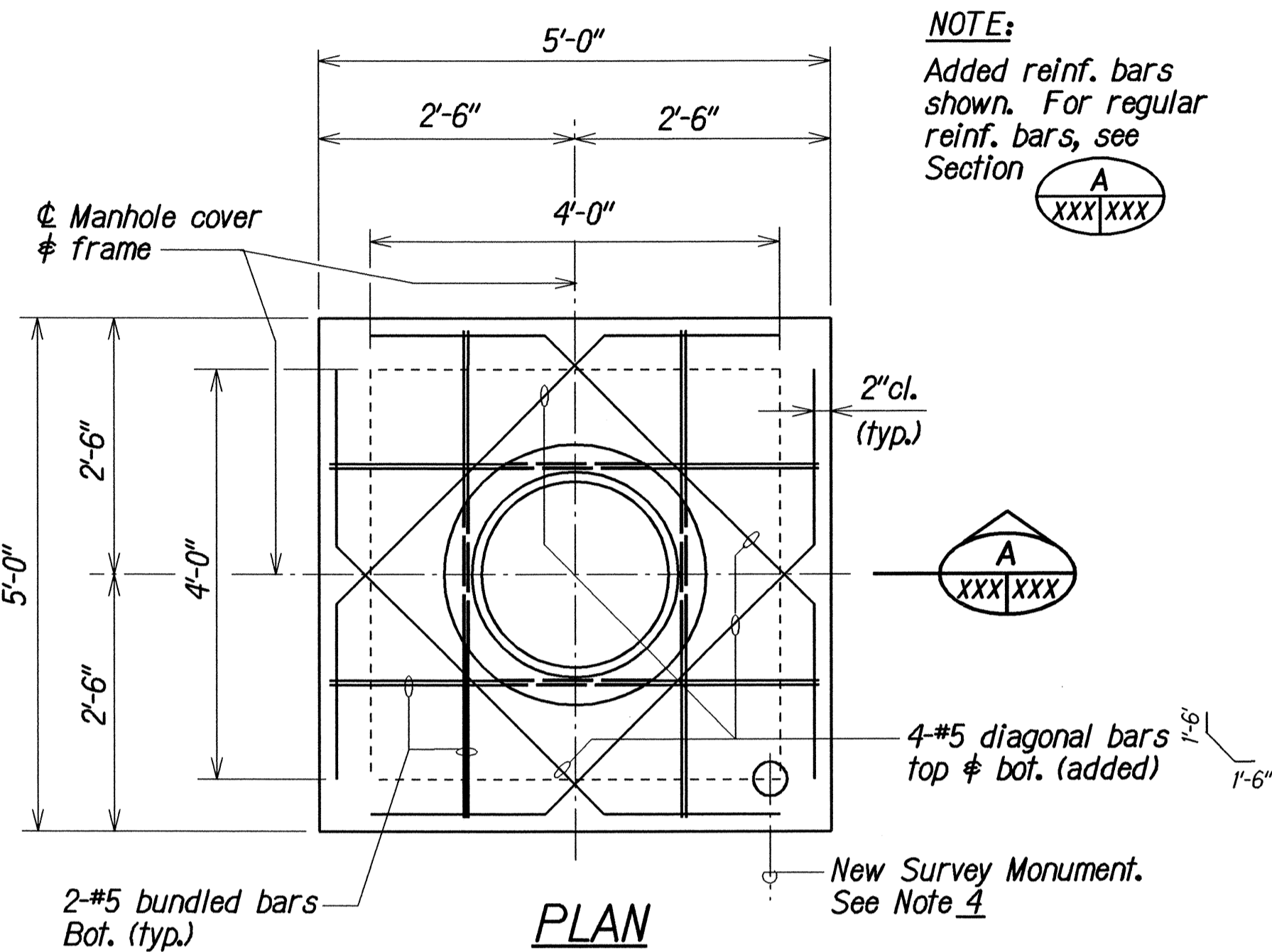
ORIGINAL PLAN	DATE
DRAWN BY LMA	AUG 2004
DESIGNED BY KM	AUG 2004
QUANTITIES BY KM	AUG 2004
CHECKED BY PS-JFU	AUG 2004

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SEWER MANHOLE FRAME & COVER ADJUSTMENT
INDEX, ESTIMATED QUANTITIES
STRUCTURAL NOTES AND ABBREVIATIONS
KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Fed. Aid Project No. CMAQ-099-1(22)
Scale: As Noted
Date: Aug. 2004

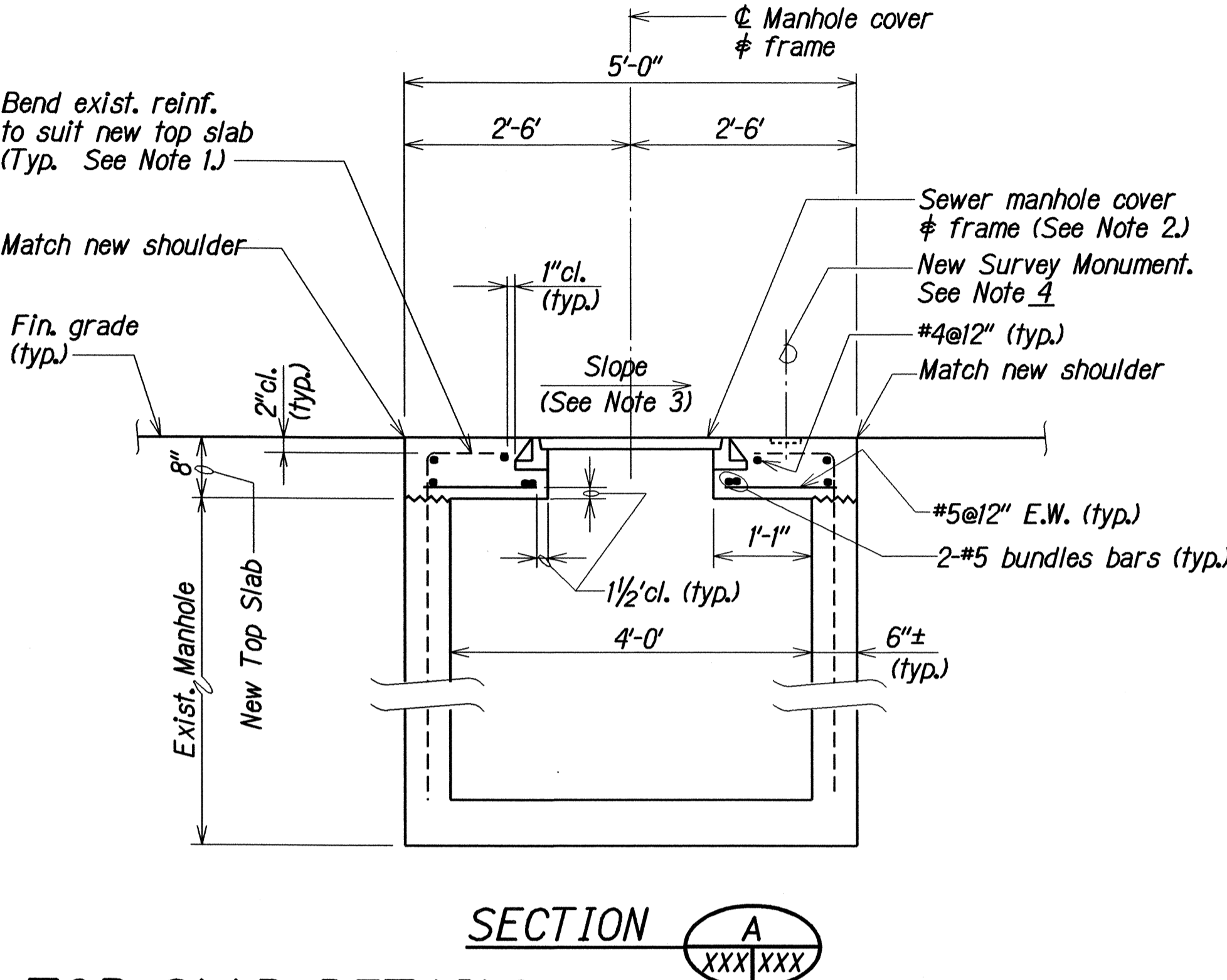
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HAWAII	HAW.	CMAQ-099-1(22)	2005	29	60



EXISTING MANHOLE DEMOLITION DETAIL
Scale: $\frac{3}{4}" = 1'-0"$



NEW SEWER MANHOLE TOP SLAB DETAILS
STA. 224+30.85± 0/S 20.58± RT.
Scale: $\frac{3}{4}" = 1'-0"$



- NOTES:
1. If no exist. reinf. from exist. walls to exist. top slab, place #4@9" x 1'-6" long epoxy rebar dowels w/6" min. embedment.
 2. For Sewer Manhole Frame & Cover, Type SA, see Std. Details for Public Works Construction, Sept. 1984, Shts. S-31 & S-32.
 3. For slope of top slab, match new slope per Roadway Plans.
 4. Before removing existing survey monument and installing new survey monument, coordinate with Engineer to preserve survey information.

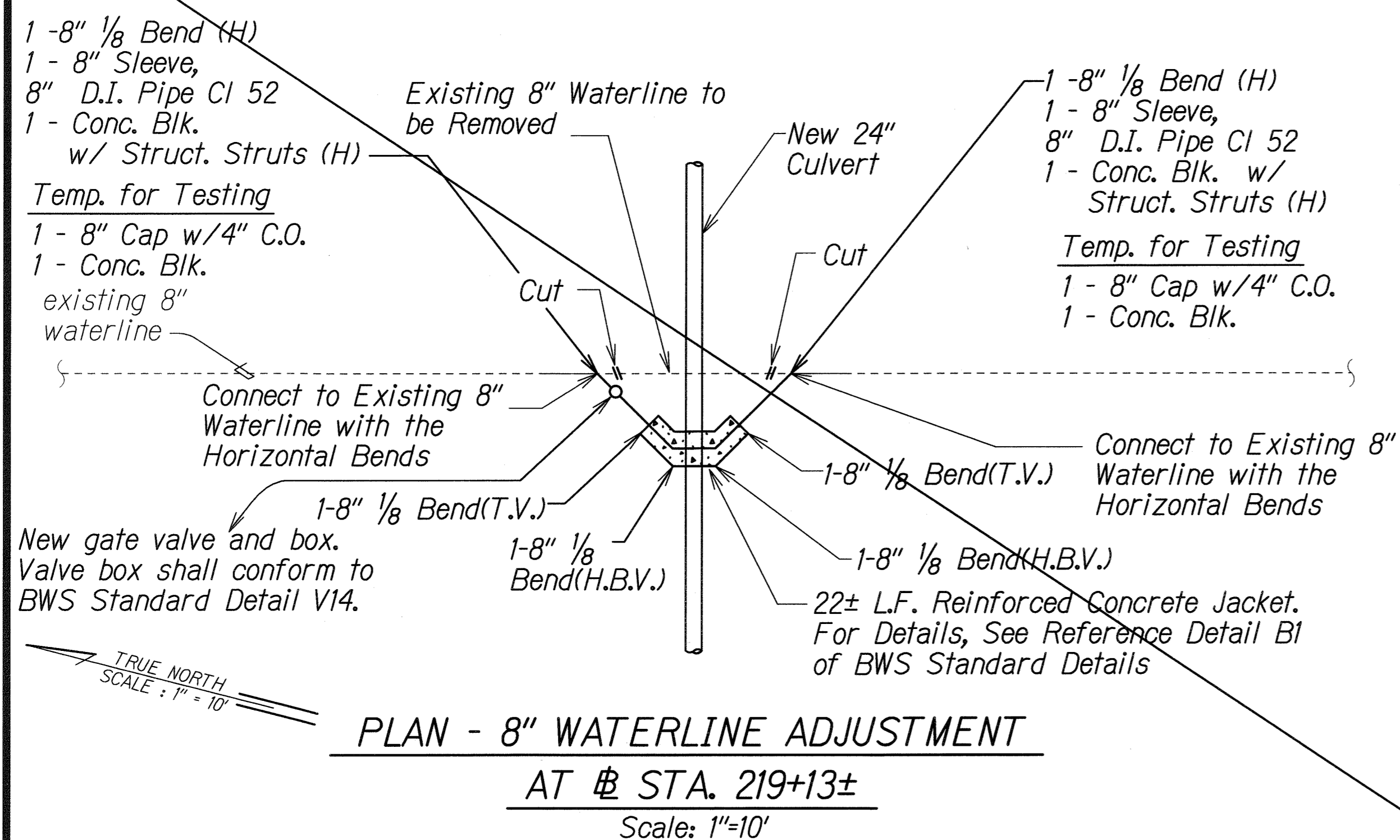
SURVEY PLOTTED BY	DATE
DRAWN BY	AUG 2004
DESIGNED BY	AUG 2004
QUANTITIES BY	AUG 2004
CHECKED BY	AUG 2004

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

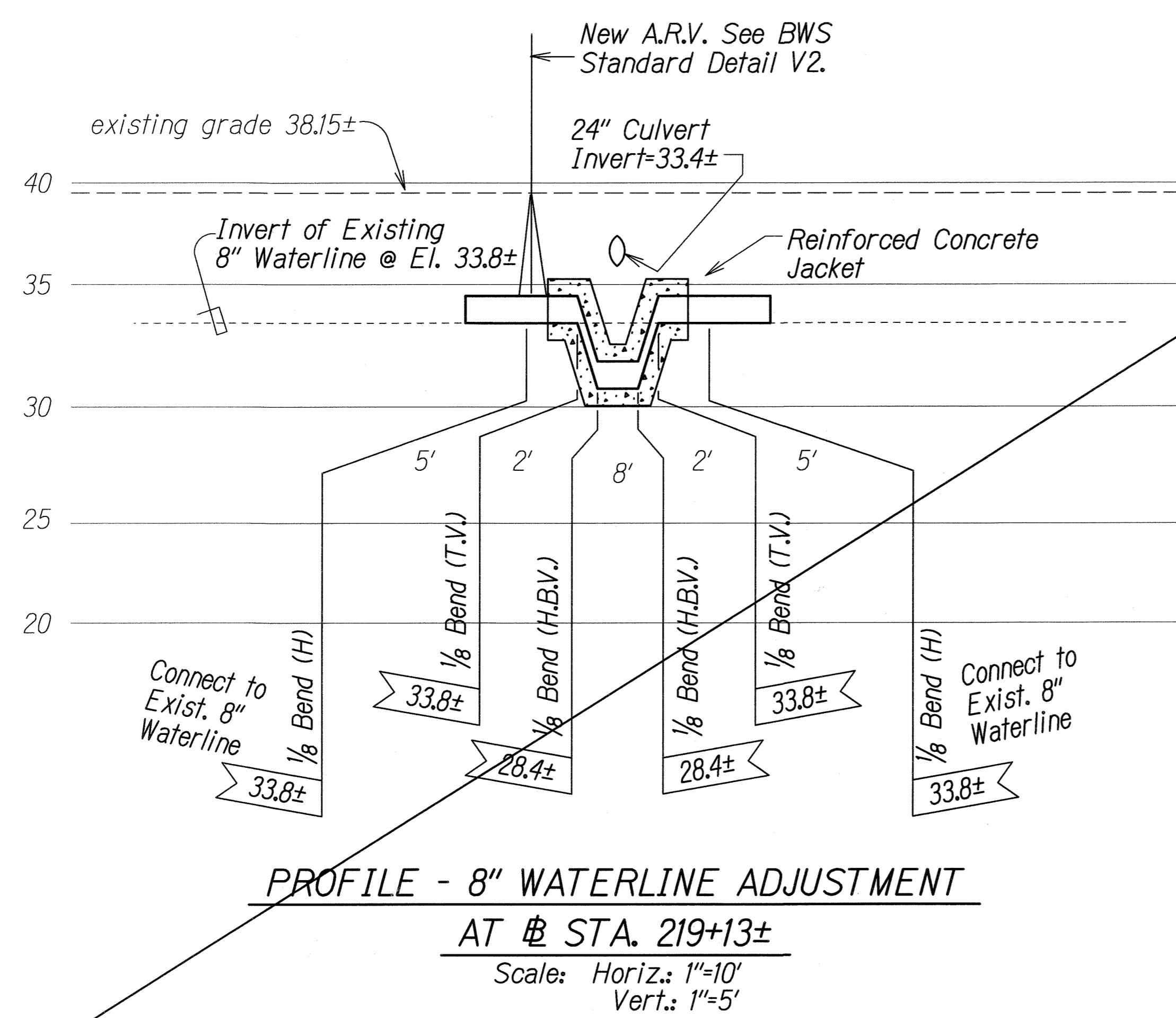
SEWER MANHOLE FRAME & COVER ADJUSTMENT
MANHOLE DETAILS
STA. 224+30.85± 0/S 20.58± RT.
KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

Scale: As Noted
Date: Aug. 2004

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2006	C.O.29S-1	60



- NOTES:**
1. Maintain 5'-0" between (H) and (T.V.) bends to allow for use of test blocks.
 2. Minimum length of new pipe to connect to existing waterline using sleeve is 4'-0".
 3. All required outages shall be performed by NAVFAC Hawaii PW6. The Contractor shall request the outage 14 days prior to the desired date. Contractor shall call Mike Fitzgerald (473-2557) or Greg Hayaishi (473-0388).
 4. Gate valve shall conform to AWWA C509 "Resilient-Seated Gate Valves for Water Supply Service."
 5. Contractor shall flush and disinfect all new water lines in accordance to AWWA C651 "Disinfecting Water Mains."



IN C

SURVEY PLOTTED BY	DATE
DESIGNED BY	16/12/09
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
REVISIONS	

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

WATERLINE ADJUSTMENT DETAILS

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

Scale: As Shown Date: Sept., 2006

SHEET No. 1 OF 1 SHEETS

"AS-BUILT"

C.O. 29 S-1