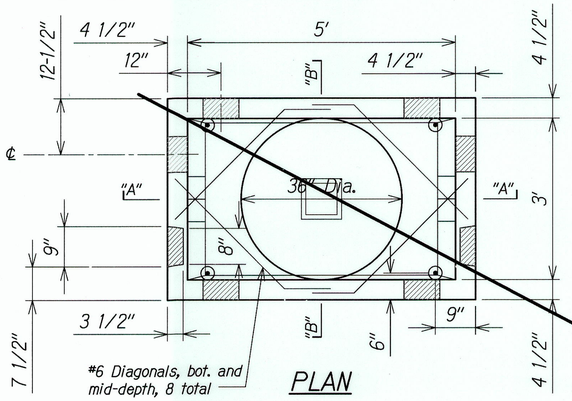
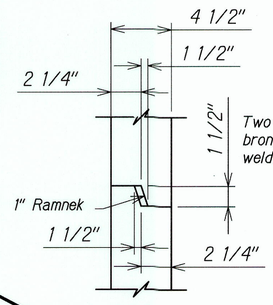
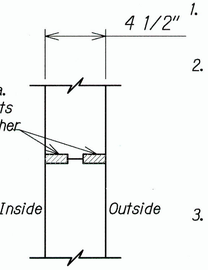
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-019-1(35)	2004	39	70



PLAN

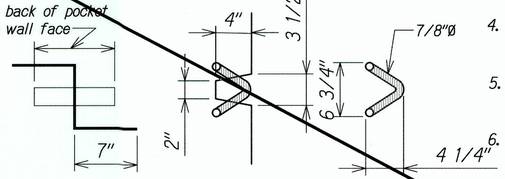


JOINT DETAIL
Not to Scale



GROUND
Not to Scale

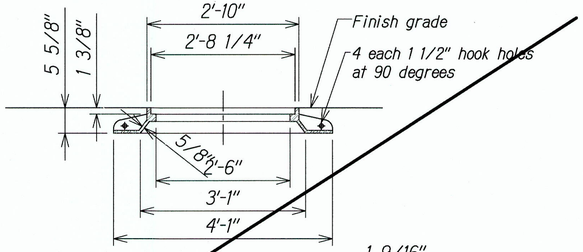
	WEIGHT (LBS.)	CONCRETE (C.Y.)
Base	3,900	0.87
Roof	1,800	0.38
Riser	600	0.15

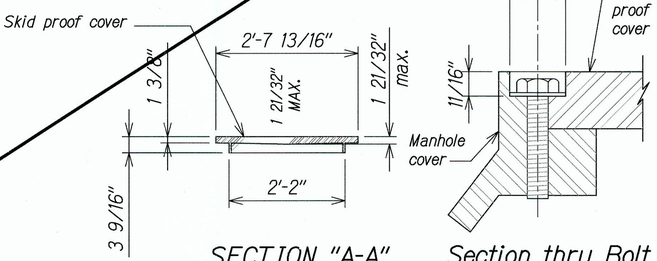


STAINLESS STEEL PULLING IRON
Not to Scale

NOTES:

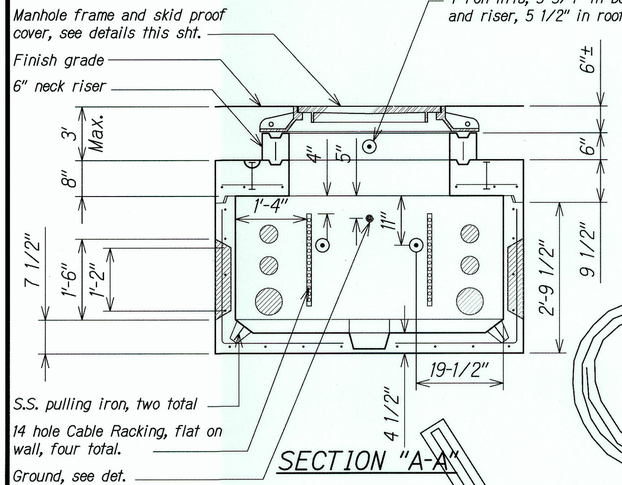
1. Concrete shall have a compressible strength of 5,000 PSI at 28 days.
2. All reinforcing steel shall be new stock deformed bars conforming to ASTM A706W grade 60 unless otherwise noted. Placement of rebars shall be in accordance with ACI-315 & ACI-318. All bars shall be clean of rust, grease or other materials likely to impair bond. All bends shall be made cold.
3. All reinforcing bars shall be accurately & securely placed. All reinforcing shall be lapped 40 Bar diameters or eighteen (18) inches, whichever is greater at splices. All splices shall be made away from point of maximum stress.
4. Concrete cover to reinforcing steel shall be 1-1/2" minimum.
5. Allow concrete to cure a minimum of 7 days prior to shipping.
6. Structural Design Criteria:
   A. AASHTO HS20-44 loading
   B. Active Earth Pressure above the water table = 40 PCF
   C. Soil unit weight = 110 PCF
7. Manhole shall not be placed below the water table.
8. Manhole shall not be constructed flush to the surrounding finish grade.
9. Details shown hereon were not designed or prepared by Mitsunaga & Assoc, Inc. and is provided for information only.



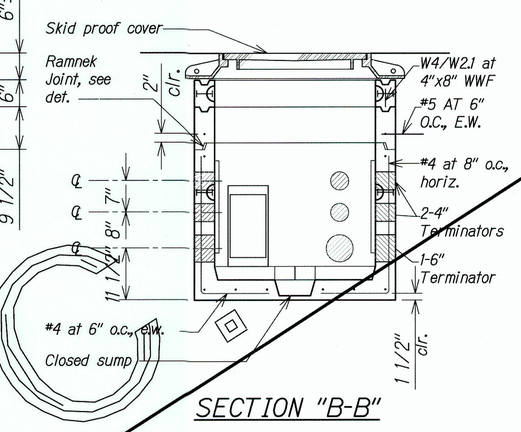


SECTION "A-A"

Section thru Bolt
Not to scale

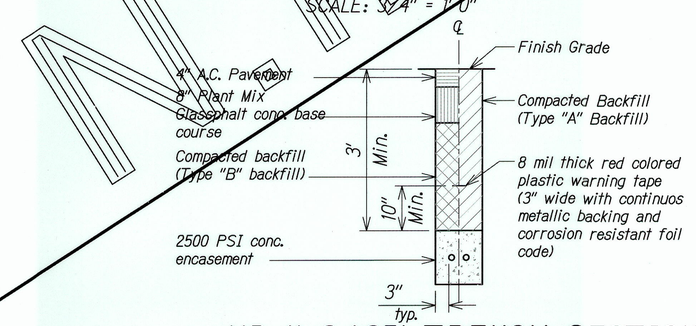


SECTION "A-A"



SECTION "B-B"

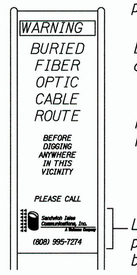
3'-0"x5'-0" MANHOLE DETAILS (UM-35)
SCALE: 3/4" = 1'-0"

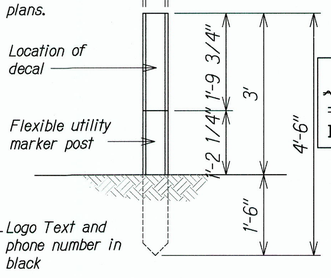


UD (1x2-1.25) TRENCH SECTION
SCALE: 3/4" = 1'-0"

NOTE:
Warning signs shall be placed at locations shown on the plans.

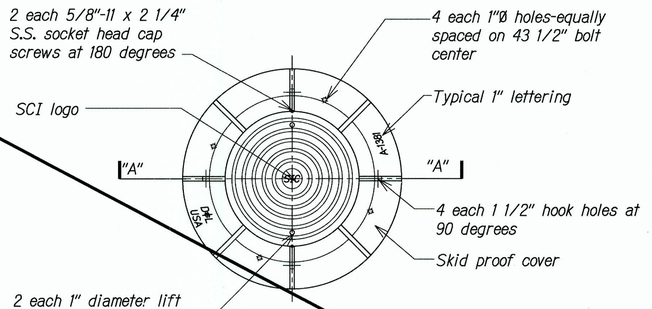
Decal Layout





STATE R.O.W. (BM53FS)

WARNING SIGN ASSEMBLY UNIT
Not to Scale



PLAN

MANHOLE COVER
SCALE: 3/4" = 1'-0"

LEGEND FOR AS-BUILT POSTING

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY G.LIN	
NOTE BOOK	TRACED BY	
No.	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

CHAD M. MCDONALD
LICENSED PROFESSIONAL ENGINEER
No. 9793-C
HAWAII, U.S.A.

This work was prepared by me or under my supervision

4/30/2012
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIC MANHOLE AND DETAILS

QUEEN KAAHUMANU HIGHWAY
Resurfacing and Intersection Improvements
Federal-Aid Project No. NH-019-1(35)

Scale: As Noted Date: March 2004

SHEET No. C-37 OF 68 SHEETS

"AS-BUILT"