| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | NH-072-1(51)          | 2007           | 24           | 106             |

-ANCHOR BOLT (2 MIN. FOLLOW

3.5' MIN. (MEASURED FROM

LOWEST ADJUSTMENT GRADE)

STEEL CASING (MIN. 5.5" Ø O.D.)

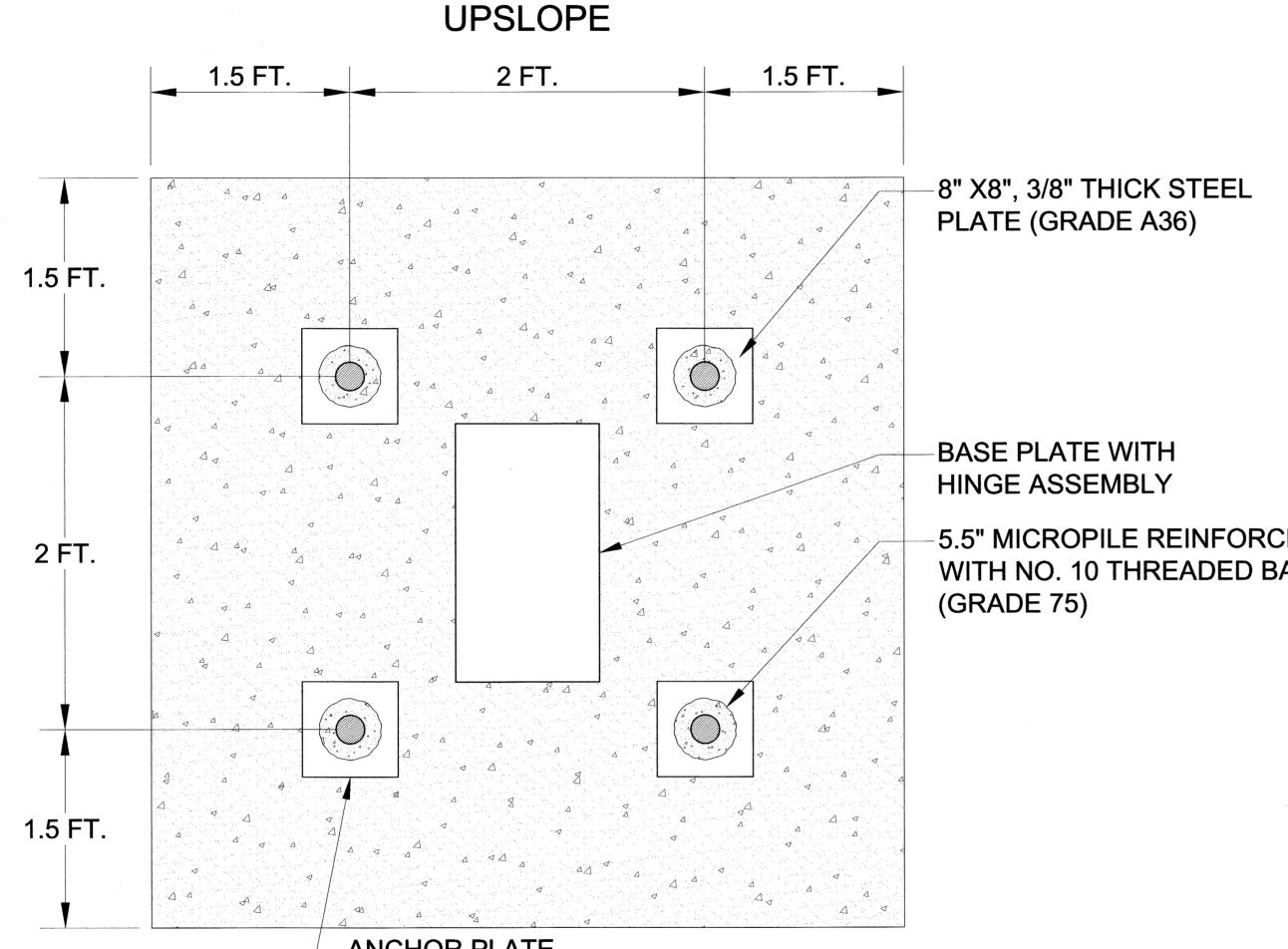
10' MIN.

BONDED

LENGHT

MANUFACTURER'S REQUIREMENTS)

5' UNBONDED LENGTH WITH PERMANENT



DETAILS OF CONCRETE BLOCK POST FOUNDATION (CROSS-SECTION)

NOT TO SCALE

BASE PLATE WITH

TO POST

HINGE CONNECTION

TOP OF CONCRETE

TO SHED WATER

CONCRETE BLOCK

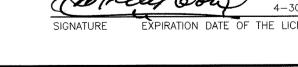
5'x5'x3.5' MIN. 4,000

PSI MIN. AT 28-DAY

SHALL BE CROWNED

3" CLEARANCE





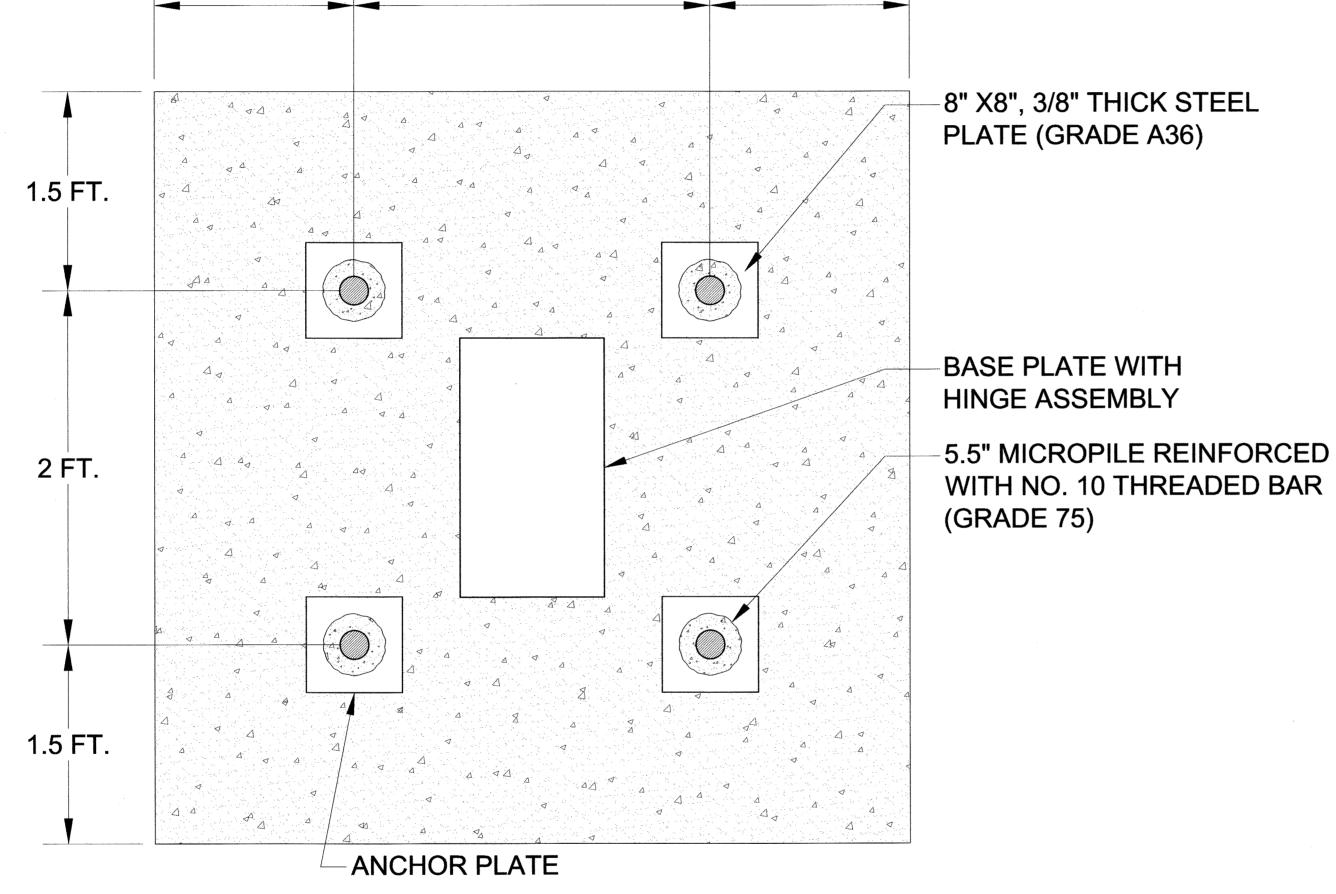
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

Kalanianaole Highway Improvements Retaining Wall at Makapuu, Oahu Federal-Aid Project No. NH-072-1(51)

Scale: As Noted

Date: April 2007 SHEET No. G-7 OF 8 SHEETS

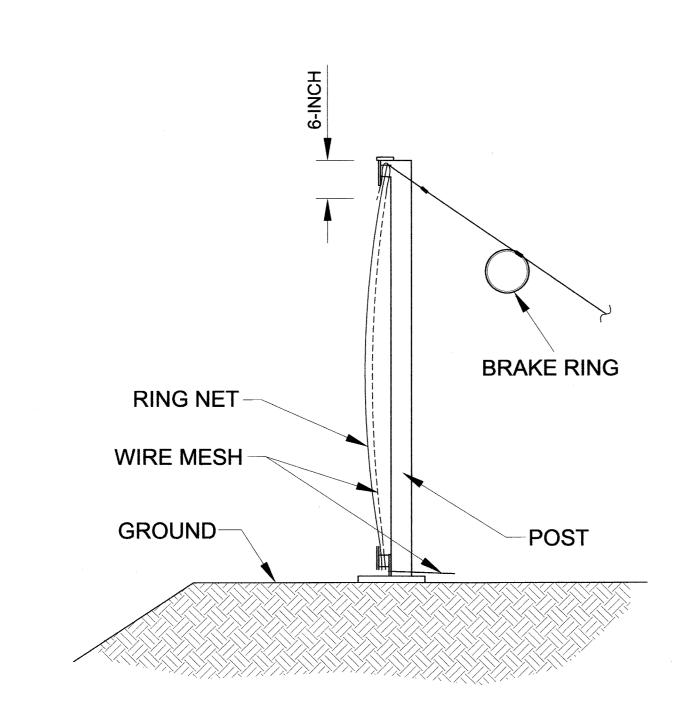


CONCRETE BLOCK POST FOUNDATION (PLAN VIEW)

DOWNSLOPE

NOT TO SCALE

| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR |    |     |
|------------------------|-------|-----------------------|----------------|----|-----|
| HAWAII                 | HAW.  | NH-072-1(51)          | 2007           | 25 | 106 |

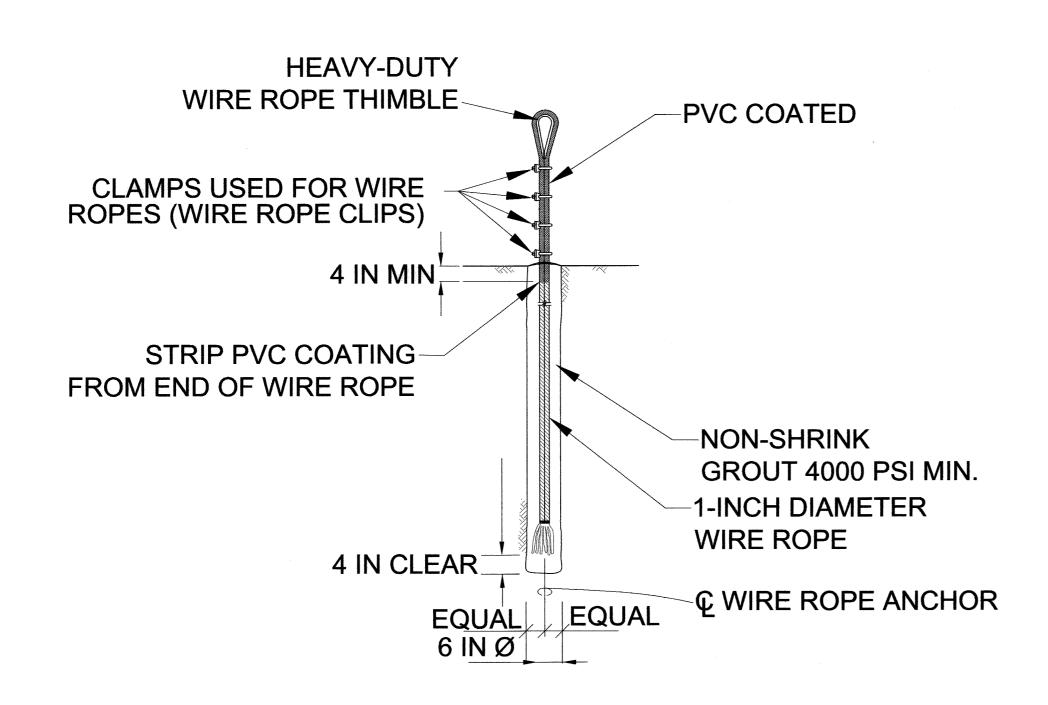


**NEW METAL GUARDRAIL** WOVEN GEOTEXTILE (MIRAFI 500X OR EQUAL) MAX. 12" **EROSION CONTROL MATTING** -2H: 1V MAX. 5' MIN. OVER-**EXCAVATION EXISTING** N **GROUND** RECOMPACT BOTTOM OF OVER-EXCAVATION TO MIN. 90% RELATIVE COMPACTION AGGREGATE SUBBASE COMPACTED TO MIN. 95% RELATIVE COMPACTION

## TYPICAL WIRE MESH PLACEMENT NOT TO SCALE

## DETAILS OF REINFORCED BACKFILL

NOT TO SCALE



WIRE CABLE ANCHOR (FRONT VIEW)

NOT TO SCALE

TOP OF CONCRETE/GROUT PVC COATED SHALL BE CROWNED TO SHED WATER 4 IN MIN STRIP PVC COATING FROM END OF WIRE ROPE NON-SHRINK GROUT 4000 PSI MIN. -1-INCH DIAMETER **WIRE ROPE** 4 IN CLEAR • G WIRE ROPE ANCHOR EQUAL EQUAL 6 IN Ø ]

> WIRE CABLE ANCHOR (SIDE VIEW) NOT TO SCALE

## NOTES:

- 1. DRILL 6" MIN. DIA. ANCHOR HOLES TO A MINIMUM DEPTH OF 25 FT. FOR TOP, BOTTOM AND LATERAL SUPPORT ANCHORS AND 15 FT. FOR UPSLOPE RETAINING ANCHOR.
- 2. WIRE ROPE ANCHOR ENDS TO BE SPLAYED BEFORE SETTING IN CONCRETE.
- 3. ANCHORS SHALL HAVE A PULLOUT CAPACITY OF 26 TONS (52 KIPS) AND 19 TONS (38 KIPS) FOR SUPPORT AND UPSLOPE RETAINING ANCHORS, RESPECTIVELY.
- 4. NON-SHRINK GROUT SHALL BE DRY-PACK WITH NON-METALIC AND NON-GASEOUS CEMENTITIOUS GROUT.



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

Kalanianaole Highway Improvements Retaining Wall at Makapuu, Oahu Federal-Aid Project No. NH-072-1(51)

Scale: As Noted

SHEET No. G-8 OF 8 SHEETS

Date: April 2007