

LEGEND FOR

AS-BUILT POSTINGS

Roadway Text for as-built

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ORIGINAL PLAN

Tieback Anchor Notes:

- 1. Tieback Anchor threaded bar shall be ASTM A722, type II, Grade 150 and galvanized per ASTM A153. See Schedule for Bar diameter. Yield strength shall not be reduced by more than 5% after galvanizing. In addition, angle compensating nuts or bevel washer set shall be galvanizing per ASTM 123.
- 2. Tieback anchor design load is 36 kips, test load is 48 kips, and lock off load is 27 kips.
- 3. Grout tubes shall be placed thru the 2" x 8" x 8" steel bearing plate. Size and locations shall ensure full grouting of hole. The contractor shall submit grouting details for approval by the engineer.
- 4. Centralizers shall be placed at 10-feet intervals in the bonded length, with the bottom centralizer located 5 feet from the bottom of the bonded length.
- 5. Drilling of the tieback anchor holes may encounter loose/soft fill extremely weathered basalt rock and hard unweathered basalt rock. Special drilling tools for drilling into the basalt rock formation will be required. Temporary casing of the drilled holes for the tieback anchors may be required when cave-in conditions occur during the drilling of the tieback anchor holes, especially in the loose/soft fill and the extremely weathered basalt rock at the site.
- 6. Grouts shall attain a minimum compressive strength of 4000 psi prior to stressing. Testing for compressive strength shall conform to ASTM C-109 mortar and sand.
- 7. Smooth and corrugated sheaths/sleeves shall be High-Density Polyethylene (HDPE) conforming to ASTM D 3350 and having a minimum strength of 7,000 psi and 0.06 in wall thickness.
- 8. When lifting the tieback anchors for installation into the holes, multiple pick points shall be used to avoid bending or damaging the threaded bar and/or encapsulation grout.
- 9. Tieback anchor threaded bar shall be new and free of any surface damages, kinks, and sharp bend.
- 10. A Geotechnical Engineer, licensed in the State of Hawaii, shall be present to monitor the installation and testing of the tieback anchors. Contractor shall coordinate the installation and testing schedule with the State's Project Engineer.
- 11. A performance test on the first installed tieback anchor shall be performed. See specifications for details.
- 12. All other tieback anchors shall be proof tested. See specifications for details.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TIEBACK ANCHOR DETAILS

HANA HIGHWAY EMERGENCY REPAIRS

MILEPOST 14.0

FEDERAL AID PROJECT No. ER-16(009)

Scale: As Noted

Date: June 2012

SHEET No. S-5 OF 6 SHEETS

DOPIRATION DATE OF THE LICENSE 4/30/2014
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.