FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1E-01-11M	2012	13	49

CONSTRUCTION SEQUENCE OF SHOTCRETE WALL INSTALLATION:

1. Select working area to fit the Contractor's daily capacity to install soil nail. Where shotcrete wall is to be constructed, prepare slope by removing trees, roots, other unsuitable material and loose soil. Start first lift level of soil nail installation from top down.
2. Install pre-production verification test nails prior to any drilling or installation of production nails. Successful testing as accepted by Engineer. See Special Provisions. Subsection 657.06(G) - Nail Installation.
3. Install 4" thick of Initial Shotcrete Layer, 1st lift with geocomposite drain, wire mesh, anchor bars and weep holes along area to be worked on.
4. Install minimum 2" thick Initial Shotcrete Layer, 2nd lift with wire mesh and waler bars along the finished face of Initial Shotcrete Layer, 1st Lift.
5. After Step 4, use a metal detector to locate the anchor bars and waler bars installed in Steps 3 and 4. Drill holes for soil nails without cutting these reinforcemets. Insert threaded soil nails and grout the drilled holes until completion of work in this working area. Cure the grout for load proof testing to be performed in Step 7.
6. While waiting for load proof test to be performed in Step 6, continue installing soil nails by repeating Step 1 and Steps 3 through 5 for the next selected working area along the length of shotcrete wall.
7. In accordance with the requirements in Special Provisions Subsection 657.06(S) - Proof Testing of Production Nails, perform load proof test on the embedment capacity of the installed Soil Nail after minimum 3 days of grout curing and the required proof test strength of grout has been attained.
8. After Step 7, install the required anchor plates with studs into soil nails against the complete Initial Shotcrete Layer, 2nd lift and lock the nails with nuts.
9. After Step 8, install rebar cage of the Final Shotcrete Layer by securing the rebar cage to the anchor bars protruding from the installation of Step 3 above.
10. After Steps 8 and 9 are completed, bottom row of soil nails, construct a 1'-0" wide by 4'-0" deep trench for cutoff wall installation, as indicated in Plans.
11. Install rebar cage of cutoff wall in the trench and place shotcrete for cutoff wall construction.
12. After minimum 24 hours of curing of the cutoff wall concrete, place shotcrete for Final Shotcrete layer according to Special Provisions Subsection 628.03(Q) Final Shotcrete Layer with Sculpted Rock Finish Texture to complete shotcrete wall.

SHOTCRETE WALL GENERAL NOTES:

1. Design Specifications: AASHTO LRFD Bridge Design Specifications 5th Edition 2010 with Interim Specifications and in accordance with procedures contained in the FHWA "Manual for the Design and the Construction Monitoring of Soil Nail Walls", Report No. FHWA-SA-96-069R and current edition.
2. Construction Specifications: State of Hawaii Department of Transportation "Standard Specifications for Road and Bridge Construction, 2005", except as noted in the Special Provisions for this contract.

SHOTCRETE WALL GENERAL NOTES: (CONT.)

3. Surcharge: Live Load Surcharge = 2 feet of soil.
4. Seismic Load: Acceleration coefficient 0.18G, response spectra with Site class D.
5. Soil Nail: Soil Nail shall be #10 epoxy coated threaded bar conforming to ASTM A 615, Grade 75 and ASTM A 934. All soil nails shall contain encapsulation corrosion protection and centralizers.
6. Reinforcing Steel: All reinforcing steel shall be ASTM A 615, Grade 60. Dimensions relating to barspacing are center to center. Bending dimensions are from out to out of the bars.
7. Shotcrete: All shotcrete shall have a 28-day compressive cylinder strength of F'C = 4000 PSI.
8. Grout: See related section specified in Construction Specifications in Note 2 above.
9. Structural Steel: All structural steel, including bearing plates, stud heads, studs, washers and nuts shall be ASTM A 36 unless otherwise noted. All structural steel shall be hot-dipped galvanized after fabrication.
10. Welded Wire Fabric (WWF): Welded Wire Fabric shall conform to ASTM A 82.
11. Geocomposite Drain: See Special Provisions for this contract.
12. Locations of existing columns and bottom of footing (BOF) elevations shown on Sht. No. SN-1 and SN-2 are based on best information available. The Contractor shall compare these BOF elevations with Soil Nail drilling elevations shown on Sht. No. SN-3 and shall exercise extra caution on soil nail drilling in the vicinity of existing building.
13. All concrete cover for rebar shall be 3" clear unless otherwise noted.
14. The base of Final Shotcrete receiving the Soil Nail steel bearing plate shall be grinded to an even surface meeting the requirement of 15° drilling direction of soil nail.

ORIGINAL PLANS — NOTE BOOK — No. —
SURVEY PLOTTED BY — DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

J:/SSWP-Aiea Stream Erosion Control/Cadd/Sheets/CN-1.dgn

GERALD Y. SEKI — LICENSED PROFESSIONAL ENGINEER — No. 5635-C — HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE — 04/30/12 EXPIRATION DATE OF THE LICENSE — GEOLABS, INC.

HUI PANG CHEN — LICENSED PROFESSIONAL ENGINEER — No. 3865-S — HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE — 04/30/12 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION NOTES

INTERSTATE ROUTE H-1
AIEA STREAM EROSION CONTROL
Project No. H1E-01-11M

Scale: None — Date: September 2011

SHEET No. CN-1 OF 1 SHEETS