

Diary Number: _____

Inspector Name: _____

TRACS Number: _____

Date: _____

Division VI: Structures

Title: Soil Nail

Route
Wall Number
Offset
Start Station
Station End
Roll Number

Attribute Numbers	Compliance	Narratives	References
0.		All stakeholders have participated in the pre-activity meeting (can be combined with other pre-activity).	Recommended
1.		Have certificate of compliance been submitted and approved for the soil nail, plates, notes, washers materials?	Standard Specifications 106.05
2.		Detailed design calculations, details, installation instructions and specifications for the soil nail wall system shall be prepared by a qualified soil nail wall contractor approved by the Engineer, shall be sealed by a Professional Engineer registered in the State of Arizona and shall be submitted to the Engineer for review.	Standard Specifications 105.03
3.		The soil nail wall Contractor (last 10 years' experience with at least 5 similar soil nail walls) and Engineer qualifications (a minimum of 5 years' experience designing) were submitted to the Engineer for review and approval.	Special Provisions 924
4.		Prior to the start of work, the soil nail Contractor will submit a project personnel list identifying the superintendent (minimum of 5 years' experience), drill rig operators and on-site supervisors minimum of 2 years' experience) assigned to the project.	Special Provisions 924

5.		Prior to the start of work, the shotcrete nozzlemen shall be certified to be knowledgeable and to possess previously demonstrated ability in the application of wet mix shotcrete for structural applications, in accordance with the certification procedure presented in Section 506.3R of the ACI Manual of Concrete Practice, latest edition.	Special Provisions 924
6.		The Certificates of Compliance state that steel or iron products incorporated into the project meet the "Buy America" Act requirements; certifying that all manufacturing processes producing a steel or iron product, including any application of a coating to iron or steel, occurred in the United States.	23 CFR Part 635.410 Special Provisions 106.05
7.		Certification on file that the epoxy coating is a minimum of 12 mils thick.	Special Provisions 924
8.		Approved Grout mix design has been approved with a minimum of 3-day compressive strength of 1,500 psi and 28-days of 3,000 psi on file. [Standard Specifications 1006-2.01]	Special Provisions 924
9.		Approved Shotcrete mix design has been approved with a minimum 28-days compressive strength of 3,000 psi on file. [Standard Specifications 1006-2.01]	Special Provisions 924
10.		The Contractor has provided a description of the test setup, jack, pressure gauge and load cell calibration curves.	Special Provisions 924
11.		Testing equipment shall include dial gauges, dial gauge support, jack and pressure gauge unit, electronic load cell, and a reaction frame.	Special Provisions 924
12.		Has the proof loading equipment (load cell) been calibrated?	Special Provisions 924
13.		Areas are Blued Staked prior to beginning work.	Standard Specifications 107.15
14.		Is cut performed in reasonably close conformity to the lines, grades and cross sections shown on the design details?	Standard Specifications 601-4.02
15.		Field personal and inspector have a copy of the approved drawing for location of work.	Special Provisions 924
16.		Epoxy coated bars were handled and stored in a way that will prevent them from being damaged.	Special Provisions 924
17.		Damaged epoxy coating shall be repaired. Repaired areas shall have a minimum 1/8-inch coating thickness.	Special Provisions 924
18.		The minimum auger hole is 8 inches in diameter.	Special Provisions 924
19.		The Contractor has excavated from the top down in a staged lift sequence for the soil nails.	Special Provisions 924-3.01
20.		All nail bars are clean and free of excessive rust and mill scale at the time of installation and type noted on the approved drawing.	Special Provisions 924
21.		Are unforeseen conditions being addressed in a timely manner?	Special Provisions 924
22.		Was hole drilled at the correct angle?	Project Plan Approved Drawing
23.		The contractor shall flush cuttings from the excavate nail hole at the locations, lengths and inclinations shown on the approved working drawings prior to grout placement?	Special Provisions 924-3.01

24.		The Contractor has provide bar sizes and grades for each nail hole as indicated in the approved working drawings.	Special Provisions 924
25.		Verification testing of pre-production sacrificial nails and proof testing of production nails has been required (documentation turned into the Engineer for approval).	Special Provisions 924
26.		Nail holes shall be grouted within 60 minutes of soil nail bar installation.	Special Provisions 924
27.		*** No Weight Indicated in the Word Document, so left at Major! ***Bars were fitted with centralizers as shown in the approved working drawings (at least two centralizers per bar), and inserted into the hole to the required depth without difficulty and in such a manner as to prevent damage to the drill hole.	Special Provisions 924
28.		The contractor has started at the lowest point to inject grout into the hole after the nail holes have been drilled.	Special Provisions 924
29.		The Contractor has control grout pressures to prevent excessive ground heave or fracturing.	Special Provisions 924
30.		The Contractor has to perform a minimum of two verification tests for each wall and each soil unit to verify the installation methods, soil conditions and nail adhesion capacity meets the required factor of safety in the presence of the Engineer [Contractor will notify the Engineer at least 7 working days prior to observe the test(s)].	Special Provisions 924
31.		Has proper testing documentation been maintained on verification of soil nail installation and documented in the inspector daily diary.	Construction Manual 105.11
32.		Testing of the nail grout, frequency is no less than one test for every 10 cubic yards of grout placed or once per week minimum.	Special Provisions 924
33.		*** Unable to enter entire Narrative because of character limit! ***Test nail is acceptable when: 1. a creep rate less than 0.08 inches per log cycle of time between the 6 and 60 minute readings is observed....	Special Provisions 924
34.		Welded wire mesh to be used in the shotcrete is a minimum of 4"x4", W40xW40 or size noted on the approved drawing.	Special Provisions 924
35.		The waler bars placed is number deform steel bars conforming to approved plans and place accordance.	Special Provisions 924
36.		Geocomposite drain been placed per the plan sheets.	Plan Sheet Approved Drawing
37.		Does the wall facing reasonably conform to the line, grade and cross sections shown on the design details?	Standard Specifications 601-4.02
38.		The thickness of the shotcrete is corroding to the project plans of a minimum 6 inches. [The Allowable tolerances for the shotcrete thickness are 0 inches.]	Plan Sheet Details
39.		Cure used is Type 1D or Type 2.	Special Provisions 924

40.		The Contractor will provide the Engineer with documentation drawings with locations of nails, nail lengths, bonded lengths and unbonded lengths; steel and grout verifications and or mill reports; grouting records indicating cement type and quantity used; working drawings of each type of test performed for each nails; and test results including a letter, sealed by the Contractor's Professional Engineer certifying that the test results conform to specifications.	Special Provisions 924
41.		Does the plan sheet show Soil Nail monitoring locations?	Special Provisions and Plan Sheet
42.		Grout shall be tested in accordance with AASHTO T 106/ASTM C 109 at a frequency of one test per mix design and a minimum of one test for every 40 cubic meters (52 cubic yards) of grout placed. Grout cube test results shall be provided to the Owner's Engineer within 24 hours of testing.	Special Provisions and Plan Sheet
43.		Did the contractor submit soil nail testing equipment calibration, such Jack and Pressure Gage calibration report?	Special Provisions
44.		Quantlist Minimum Frequency is being followed of one per location.	Construction Bulletin 07-01