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**** WARNING ** WARNING ** WARNING ** WARNING ****
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May 7, 2007

11-SD-78-45.7
11-271804
ACSTP-4120(004)E

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SAN DIEGO COUNTY IN SAN DIEGO AT 1.8 KM EAST OF BANDY CANYON ROAD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on May 17, 2007.

This addendum is being issued to revise the Notice to Contractors and Special Provisions, the Information Handout and the Federal Minimum Wages with Modification Number 5 dated 4-20-07.

In the "NOTICE TO CONTRACTORS," the seventh paragraph is revised as follows:

"At the time this contract is awarded, the Contractor shall possess either a Class A license or one of the following Class C licenses: C-12."

In the Special Provisions, Section 10-1.19, "ROCK-FALL PROTECTION (WIRE MESH AND CABLE NET DRAPERY)," is replaced with Section 10-1.19, "ROCK-FALL PROTECTION (WIRE MESH AND CABLE NET DRAPERY)," as attached.

To Proposal and Contract book holders:

The Information Handout is revised as follows:

"On page 3, the slope scaling work tentatively scheduled for March 16, 2007, was not completed."

To Proposal and Contract book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the NOTICE TO CONTRACTORS section of the Notice to Contractors and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

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This office is sending this addendum by confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

PEDRO ORSO-DELGADO
District Director

Attachment

10-1.19 ROCK-FALL PROTECTION (WIRE MESH AND CABLE NET DRAPERY)

Rock-fall protection (wire mesh and cable net drapery) shall consist of furnishing and constructing a wire mesh and cable net drapery as shown on the plans, as specified in these special provisions, as instructed by the manufacturer, and as directed by the Engineer.

The wire mesh and cable net drapery shall be capable of controlling rock fall as large as the size shown in the table below. The drapery shall not allow rocks greater than 120 mm in minimum dimension to pass through the wire mesh.

The wire mesh and cable net drapery shall have demonstrated satisfactory performance in similar applications and capacities. Results of said performances shall be made available to the Engineer.

The wire mesh and cable net drapery design shall have the structural strength to retain the load imposed by the rocks in the configuration shown in the plans with no distress of connecting elements. Engineering calculations demonstrating such shall be made available to the Engineer 10 days prior to the installation at each location. The wire mesh and cable net drapery shall be comprised of standard components to the extent practical and shall require minimal maintenance when subjected to the design parameters. The wire mesh and cable net drapery shall be resistant to corrosion, UV degradation, and thermal deterioration. The wire mesh and cable net drapery shall be capable of being pulled on/out at the bottom for rock removal.

The Contractor may use one of the following manufacturer’s products or equal:

CABLE NET SUPPLIERS:

Geobruigg North America
551 West Cordova Road #730
Santa Fe, NM 87505
505-438-6161

Rotec
PO Box 31536
Santa Fe, NM 87594-1536
505-753-6586

Chama Valley Productions, LLC
State Route 95 #265
HC 75 Box 1317
Rutherton, NM 87551
505-588-0332

Maccaferri Incorporated
3650 Seaport Blvd.
West Sacramento, CA 95691
916-371-5805

Cut Slope	Rock Size, diameter (meters)
10+60 - 12+00	3.0

DOUBLE TWISTED WIRE MESH SUPPLIERS:

Maccaferri Incorporated
3650 Seaport Blvd.
West Sacramento, CA 95691
916-371-5805

TerraAqua
PO Box 7546
Reno, NV 89510
800-736-9089

SLOPES AND FOUNDATION CONDITIONS

The following table is a summary of slope and foundation conditions.

Cut Slope	Estimated Vertical Slope Height (meters)	Estimated Slope Angle	Foundation Conditions
10+00 - 10+30	10 - 30	35 - 60	Intensely weathered to decomposed granitic rock with abundant fresh, hard, rounded rock outcrops. Widely spaced deeply weathered joint sets, often yielding residual core stones and boulders to several meters in dimension within a decomposed rock and soils matrix.
10+30 - 10+60	30	35 - 65	
10+60 - 11+80	37	60 - 75	
11+80 - 12+00	20 - 37	55 - 70	
12+00 - 12+20	9 - 20	70	

As the table indicates, the Contractor should expect to encounter a broad range of foundation materials, from very hard rock to soil, when installing drapery anchor.

SUBMITTALS

Ten sets of complete working drawings and engineering calculations, stamped by a California-registered professional engineer or engineering geologist, shall be submitted by the Contractor to the Engineer in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. Three sets of the manufacturer's recommended maintenance program shall be submitted by the Contractor to the Engineer in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. Working drawings shall be 56 cm x 86 cm (22" x 34") in size and each drawing and calculation sheet shall include the contract number. The manufacturer's name, address and telephone number shall be shown on the working drawings. Each sheet shall be numbered in the lower right hand corner and shall contain a blank space in the upper right hand corner for future contract sheet numbers.

The Contractor shall allow the Engineer two weeks to review the working drawings after all ten complete sets have been received. If revisions are required, the Engineer will provide comments and specify the date that the review stopped. The Contractor shall revise and resubmit the working drawings within 7 days of receipt of the Engineer's comments. The Engineer's review will resume when the complete working drawing is resubmitted. If the Engineer fails to complete the review within the time allowed and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay, the Contractor will be compensated for resulting losses, and an extension of time will be granted, as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications. Fabrication of the wire mesh and cable net drapery shall commence only after the review and approval of the working drawings by the Engineer.

MATERIAL

The wire mesh and cable net drapery and all hardware shall be protected from corrosion by galvanization.

All structural steel components, including anchors and clamps, shall conform to the requirements in ASTM Designation: A36. All bolts, nuts, and washers shall conform to the requirements in ASTM Designation: A 325.

The wire ropes, cable net, and support ropes shall be galvanized in conformance with the requirements of Federal Specification RR-W-410D.

All miscellaneous hardware shall be supplied by the manufacturer with the system and shall be galvanized in conformance with Section 75-1.05, "Galvanizing," of the Standard Specifications.

All materials shall be labeled by the manufacturer in order for the Contractor to identify the materials on the manufacturer's working drawings.

WIRE MESH

Wire mesh fabric shall be double twisted, 12 gage and zinc coated (244g per square meter). Individual wires of mesh shall meet the following minimum requirements:

Property	Test Method	Test Value
Tensile Strength (MPa)	ASTM A 370	414 Min.

Tensile area includes galvanization.

The mesh shall form a uniform hexagonal pattern and shall be formed with a nonraveling twist. The major axis of any opening shall not exceed 120 mm. The area of hexagonal opening, 82.6 mm by 114 mm, shall not exceed 73.5 square cm.

The wire mesh shall be securely fastened to each cable net panel and to the cable infrastructure. Spacing of the tie wires or connectors shall be every 305 mm. The wire mesh and cable net shall be flush with no gaps to exceed 100 mm.

There shall be no discontinuity in the wire mesh. Tie wires or connectors used to fasten the wire mesh to cable net or adjacent panels shall have a connection strength equal to or greater than the strength of the mesh.

The wire mesh and cable net shall be connected prior to placing the drapery on the slope. The wire mesh shall be placed between the slope and the cable net.

CABLE NET

Cable net shall be comprised of square or rectangular cable mesh panels joined at the panel boundaries to form a continuous drapery. Each cable mesh panel shall incorporate a uniform grid pattern of square openings approximately 305 mm by 305 mm formed by the woven crossing of nearly continuous cable strands. The major axis of any opening shall not exceed 305 mm and the area of any opening shall not exceed 930 square cm. Each perpendicular cable crossing shall be securely fastened at an angle of approximately 90 degrees using a crossing clip of sufficient strength to resist slippage or breakage of the crossing connection when subject to the loads generated by the controlled rock fall. Cable mesh fabric shall have a minimum diameter of 8 mm and have a minimum breaking strength of 1.95 kN.

Connection of the cable mesh panels shall be made with 8 mm lacing cable. The wire mesh and cable net drapery shall be placed on the slope in a manner that will follow the contours of the slope and minimize gaps and large spaces between the drapery and the ground surface as determined by the Engineer.

The top of the wire mesh and cable net drapery shall be secured to a top support cable. The top support cable shall be wire rope with a minimum diameter of 18 mm and shall be positioned a minimum of 1.5 meters above the top of the cut slope. The tag line cable used to connect the perimeter cable to the anchors shall be wire rope having a minimum diameter of 18 mm.

ANCHORS

The Contractor shall submit working drawings for the anchor based on the geological conditions at the site, as shown on the plans and as provided in these special provisions.

Anchors shall be placed at the spacing and locations shown on the plans or as directed by the Engineer but not to exceed 8 m apart. The anchors shall be composed of a bonded and an unbonded length. The unbonded length of the anchors shall penetrate the thickness of the weak material and shall extend at least 2 m below the ground surface. The bonded length shall be determined by the pullout test as specified in these special provisions.

All anchors shall be installed in drilled or hand dug holes using centralizers. Centralizers shall adequately support the anchor in the center of the drilled hole and shall be spaced at a maximum of 600 mm. The drill hole diameter shall be a minimum of 55 mm. Hand dug hole diameters shall be a minimum of 175 mm.

The anchor holes in soil may encounter running/caving conditions. The Contractor shall have casing available on site for use in such conditions. Anchor holes may also encounter very hard rock. The Contractor shall have heavy on site drilling equipment capable of installing the anchors in very hard rock, under the access limitations as later provided under "Installation" of these specifications.

The full length of the anchors below ground shall be encased in concrete or grout. All anchors shall be galvanized in accordance with section 75-1.05, "Galvanizing" of the Standard Specifications.

Prior to pouring the concrete in the drilled hole, the Contractor shall moisten the subgrade to a minimum depth of 50 mm from the soil concrete interface and remove all loose soil or rocks from the hole. Concrete shall conform to the Section 90-10, "Minor Concrete," of the Standard Specifications. The Contractor shall cure the concrete at a minimum temperature of 10 degrees C for a period of 72 hours and at a minimum temperature of 0 degrees C for an additional period of 72 hours. At the option of the Contractor, concrete may be cured in accordance with Section 90-7.01B, "Curing Compound Method" of the Standard Specifications.

Grout in the drilled hole shall conform to the provisions in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications. California Test 541 will not be required nor will the grout be required to pass through the screen with a 1.8 mm-maximum clear opening prior to being introduced into the grout pump. Fine aggregate may be added to the grout mixture of Portland cement and water for use in drilled holes 100 mm in diameter or greater, but only to the extent that the cement content of the grout is not less than 502 kilograms per cubic meter of grout. Fine aggregate, if used, shall conform to the provisions in Section 90-2, "Materials," and Section 90-3, "Aggregate Gradings," of the Standard Specifications.

Selected anchors shall be tested by the Contractor at 1.5 times the allowable design load in accordance with the testing section in these special provisions. The allowable design load shall be as shown on the working drawings. The minimum allowable design load shall be 98 kN. A minimum of 20 percent of the total number of anchors shall be tested and the Engineer shall select the location of each test anchor. If more than 20 percent of the anchors tested fail, 50 percent of the total number of anchors shall be tested. All failed anchors shall be replaced and retested at the Contractor's expense.

The shear force acting on the anchor bar shall be limited to 80 percent of the allowable design load (pullout load).

TESTING

Testing shall be performed against a temporary yoke or load frame. No part of the yoke or load frame shall bear within 0.9 m of the anchor.

Anchor assemblies selected for testing shall be pullout tested by the Contractor in the presence of the Engineer. A pullout test consists of incrementally loading the anchor assembly to the maximum test load or failure point, whichever occurs first. Failure point shall be the point where the movement of the anchor continues without an increase in the load or when the anchor has displaced 50 mm. The failure load corresponding to the failure point shall be recorded as part of the test data.

During the load test, the Contractor shall monitor and record displacement of the anchors relative to a stable reference point which is founded a minimum distance of 0.9 m from the anchor and test load reaction points.

The pullout test shall be conducted by measuring the test load applied to the anchor and the anchor end movement at each load.

Applied test loads shall be measured by the Contractor with either a calibrated pressure gage or a load cell. Movements of the end of the anchor shall be measured and recorded during the load tests.

The pressure gage shall have an accurately reading dial at least 150 mm in diameter and each jack and its gage shall be calibrated as a unit with the cylinder extension in the approximate position that it will be at final jacking force, and shall be accompanied by a certified calibration chart. The gauge shall have been calibrated within one year prior to use on the project.

The anchor shall be unloaded only after completion of the test.

MISCELLANEOUS METAL

All miscellaneous hardware such as bolts, nuts, connectors, clamps, tie wires, and appurtenances shall be galvanized and conform to Section 75, "Miscellaneous Metal," of the Standard Specifications.

INSPECTION CLIMBING EQUIPMENT SYSTEM

The Contractor shall provide for the State's exclusive possession and use three (3) complete inspection climbing equipment systems specifically capable of allowing the inspection staff safe climbing access to the work site. The inspection climbing equipment provided shall be the latest available equipment and technology meeting the standards of Union International Des Assocotions d'Alpneisine/International Organization of Alpine Clubs (UIAA). Before purchase and delivery of the inspection climbing equipment, the Contractor shall submit to the Engineer for approval a detailed list of all inspection climbing equipment the Contractor proposes to furnish. The minimum inspection climbing equipment furnished for each system shall include the following listed items:

- A. 1 each – Helmet. The helmet shall be adult size and of an industrial standard and certified to meet CE, EN 397 type I class E, ANSI Z89.1-2003;
- B. 1 each – Harness. The harness shall be adult size and multi-purpose, fully adjustable, and certified to meet CE, EN 12277 type C, UIAA 105;
- C. 2 each – Ascenders. A right and left hand ascender shall be provided to be used with 6-14 mm rope, and shall have a breaking strength not less than 7 kN;
- D. 6 each – Carabiners-automatic locking. Carabiners shall be automatic locking ISO standard D shape, shall meet strength requirements of no less than 25 kN for the long axis, 7 kN for open gate, 7 kN for short axis and be CE certified;
- E. 10 each – Carabiners-non-locking. Carabiners shall be non-locking standard D shape, shall meet strength requirements of no less than 23 kN for the long axis, 10 kN for open gate, 10 kN for short axis and be CE certified;
- F. 2 each – Rescue 8. The rescue 8 belay device with horns shall be hot forged aircraft aluminum, hard-anodized and shall have a breaking strength not less than 44 kN;
- G. 2 each – 900 mm daisy chain. The daisy chain shall be made of durable webbing and shall have a loop strength of 4 kN and an overall strength rating of 27 kN;
- H. 1 each – 60 meters of 11 mm static climbing rope;
- I. 1 each – 60 meter rope bag.

The Contractor shall furnish all equipment warranties and receipts to the Engineer. The Engineer shall return to the Contractor within 5 days any equipment that is defective and requires replacement. The Contractor shall replace or provide substitute equipment within 5 days, or as agreed to by the Engineer based on warranties specific to the equipment and to allow inspection of the work site.

The furnished inspection climbing equipment systems shall become the property of the State and will not be returned to the Contractor. The State will compensate the Contractor in conformance with the provisions in Section 4-1.03, "Extra Work," of the Standard Specifications for replacement of equipment if the original equipment is damaged, lost or stolen after delivery to the Engineer.

INSTALLATION

The wire mesh and cable net drapery shall be installed in accordance with the requirements of the manufacturer, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

Vegetation encountered on slopes on which the wire mesh and cable net drapery is to be placed shall be preserved whenever possible. Vegetation shall be removed or pruned only when anchoring is required, the effectiveness of the wire mesh and cable net drapery is compromised, or as directed by the Engineer. Vegetation from the hinge point of the slope to 10 m upslope from the hinge point shall be removed or pruned only as required or as directed by the Engineer. Root systems shall be left in-place. Vegetation shall not be removed beyond this limit unless directed by the Engineer. Access to the top of the cut slope and to the anchor installation area shall be limited to 10 m upslope of the wire mesh and cable net drapery limits. The Contractor shall not conduct operations that disturb vegetation beyond the area required for installation.

The Contractor shall scatter excess excavated anchor material around the vicinity of the wire mesh and cable net drapery and dress it out to match the existing ground surface to prevent unwanted jumping ramps for falling rocks.

CERTIFICATE OF COMPLIANCE

The Contractor shall provide the Engineer with a Certificate of Compliance from the manufacturer in accordance with the provisions of Section 6-1.07, "Certificate of Compliance," of the Standard Specifications.

MEASUREMENT AND PAYMENT

The quantity of rock-fall protection (wire mesh and cable net drapery) to be paid for will be determined by the square meter of the individual panels of cable net placed on the slope.

The contract price paid per square meter for the rock-fall protection (wire mesh and cable net drapery) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved with the wire mesh and cable net drapery, complete in place, as shown on the plans and the working drawings, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for developing and revising the working drawings shall be considered as included in the contract price paid per square meter for rock-fall protection (wire mesh and cable net drapery) and no separate payment will be made therefor.

Full compensation for preserving, removing, or pruning of vegetation shall be considered as included in the contract price paid per square meter for rock-fall protection (wire mesh and cable net drapery) and no separate payment will be made therefor.

If slope scaling is required, as determined by the Engineer, the work will be paid for as extra work in conformance with the provisions in Section 4-1.03D, "Extra Work," of the Standard Specifications.