

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

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November 23, 2011

04-Sol-12,80-L1.8/L2.0,13.3/15.7

04-0A5354

Project ID 0400000153

ACNH-X095(023)E

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SOLANO COUNTY IN AND NEAR FAIRFIELD ON ROUTE 12 FROM 80/12 EAST JUNCTION TO 0.2 MILE WEST OF CHADBOURNE ROAD UNDERCROSSING AND ON ROUTE 80 AT VARIOUS LOCATIONS FROM 0.2 MILE WEST OF SUISUN VALLEY ROAD OVERCROSSING TO 0.5 MILE WEST OF ABERNATHY ROAD OVERCROSSING.

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 Wednesday, December 14, 2011.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, and the Bid book.

Project Plan Sheets 289, 697, are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

In the Special Provisions, Section 10-1.37, "EARTHWORK," the following paragraph is added after the fifth paragraph.

"Excess roadway excavation will become the property of the contractor. Full compensation for disposal of the excess material shall be considered as included in the contract price paid per cubic yard for roadway excavation and no additional compensation will be allowed therefore."

In the Special Provisions, Section 12-2.12, "COMMUNICATION TOWER," is revised as attached.

In the Special Provisions, Section 12-10.14, "AUXILARY INSPECTION PEDESTAL," is deleted.

In the Special Provisions, Section 12-16.14, "WEIGH-IN-MOTION SYSTEM," subsection "ON-SITE EQUIPMENT," the first paragraph is revised as follows:

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"The WIM system shall provide for double threshold weighing, and operate over a speed range of 5 mph to 70 mph. Double threshold weighing shall consist of a scale or scales in each lane of travel. The weigh scales shall cover the entire lane width of 12 feet. The WIM system shall consist of the minimum following components:"

In the Special Provisions, Section 12-16.14, "WEIGH-IN-MOTION SYSTEM," subsection "FUNCTIONAL REQUIREMENTS," the tables are revised as follows:

"The WIM system shall be able to accommodate vehicles and vehicle combinations with up to nine axles and shall automatically determine for each vehicle, by lane of travel:

1. Weight of each axle:

Accuracy:	MEAN	STD. DEV.
single axle	±5%	3%
tandem axle	±5%	2%
gross weight	±5%	1.5%

2. Axle spacing, vehicle length, and speed:

Accuracy:	MEAN	STD. DEV.
Axle spacing	±6"	6"
Vehicle length(Total Wheelbase)	±12"	12"
Speed	±1 mph	2 mph

"

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In the Bid book, in the "Bid Item List," Item 68 is revised as attached.

To Bid book holders:

Replace page 6 of the "Bid Item List" in the Bid book with the attached revised page 6 of the Bid Item List. The revised Bid Item List is to be used in the bid.

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 Bidders section of the Notice to Bidders 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 Bid book.

Submit bids in the Bid 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.

This addendum, attachments and the modified wage rates are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-0A5354

If you are not a Bid 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,



FOR

REBECCA D. HARNAGEL
Chief, Office of Plans, Specifications & Estimates
Office Engineer
Division of Engineering Services

Attachments

12-2.12 COMMUNICATION TOWER

PART 1 - GENERAL

SUMMARY

Scope: This work shall consist of the following items which shall be executed in accordance with the details shown on the plans and these special provisions:

1. Designing, fabricating, furnishing and installing a four legged, open lattice, steel communication antenna tower, including support footings
2. Constructing the reinforced concrete foundation slab for the future pre-fabricated communication building (building by others.)

The communication tower shall be designed, constructed assembled and installed in accordance with applicable requirements of the Electronic Industries Association (EIA).

Concrete and reinforcement shall be as specified under "Cast-In-Place Concrete" in Section 12-3, "Concrete and Reinforcement," of these special provisions.

All earthwork including excavation and backfill for tower foundation footings, future building slab and grade beam shall be in accordance with the requirements of "Earthwork for Building Work" in Section 12-2, "Sitework," of these special provisions.

SYSTEM DESCRIPTION

Design Requirements:

The tower shall be designed to conform to:

1. California Code of Regulations Title 24, California Building Code (CBC), Part 2 Chapter 16A, Structural Design Sections:
 - 1.1. 1608A Snow Loads – Snow loads shall be assumed as a minimum of 1 inch in depth at ground level.
 - 1.2. 1609A Wind Loads – The basic wind speed shall be 120 miles per hour, 3 second gust. The surface roughness category shall be C. The exposure category shall be exposure C.
 - 1.3. 1612A.1 General
 - 1.4. 1613A Earthquake Loads – Occupancy Category for Flood, wind, Snow, Earthquake, and Ice Loads shall be IV (essential facility) per ASCE Standard 7-05, Chapter 1, Section 1.5, Table 1-1.
2. American Institute of Steel Construction (AISC) Allowable Stress Design specifications and TIA-222-G:
 - 2.1. The allowable unit stresses and actual member stresses resulting from the specified design loads shall not exceed those referenced.
 - 2.2. Classification of Structure - Section 2.2, Table 2-1 as a Class III structure (essential communications).
 - 2.3. Section 2.6.3, Tables 2-2 and 2-3 provide corresponding values for: Wind Direction Probability Factor (K_d); and Importance Factors for Wind Load With Ice, Wind Load Without Ice, Ice Thickness and Earthquake.
 - 2.4. The maximum limit of complete tower twist at the antenna attachment point shall not exceed 2.0 degrees at an elevation of more than 80' and 0.7 degrees at an elevation of 80' and lower. The twist requirement shall be maintained through wind speeds to 70 mph and shall be determined by analytical methods and noted on the formal type-written detailed stress analysis.

- 2.5. The maximum limit of complete tower sway at the antenna attachment point shall not exceed 2.0 degrees at an elevation of more than 80' and 0.7 degrees at an elevation of 80' and lower. The sway requirement shall be maintained through wind speeds to 70 mph and shall be determined by analytical methods and noted on the formal type-written detailed stress analysis.
- 2.6. The telecommunications tower deflection limits are to be held both vertically and horizontally. Deflection must be determined at each specific point on the tower where an antenna is attached.
- 2.7. All members of the structure shall be considered primary members for the purpose of establishing allowable compressive stresses, except those members whose sole function is to reduce the effective slenderness ratio of primary members.
- 2.8. The telecommunication tower shall have a safety factor for uplift as referenced.
- 2.9. Foundation shall be designed with sufficient reserve capacity to match the tower leg reserve capacity.
- 2.10. Combined telecommunication tower wind loads and antenna loads shall be applied in combination such that the maximum axial forces are produced in girders, diagonals, and legs.
- 2.11. The telecommunications tower ice loading requirements shall include, as a minimum, one-half inch (1/2") of solid radial ice.
- 2.12. All antenna and appurtenances wind loading calculations shall be developed using Annex C: Design Wind Force On Typical Antennas (Normative).
- 2.13. Under wind pressure up to 35 mph (5 psi), all horizontal members shall be capable of supporting a 300 lbs vertical load at mid-span, in addition to all other design loads.
- 2.14. The square foot area, for wind loading, and ice loading calculations, of each VHF/UHF antenna and its associated outrigger shall be calculated as 10 square feet when developing the tower basic wind speed loading and the tower ice loading.

The tower and footings shall be designed to support the following antennas:

ANTENNA 1

Antenna size	8'
Center line height of antenna	70'
Azimuth from true North, clockwise	180°
Operating frequency	6.2 GHz
Location of distant end of MW path	Downtown future
Antenna type	Parabolic
Antenna manufacturer	Andrew
Antenna manufacturer model	UXH8-65
Radome manufacturer	Andrew
Radome requirements	Yes
Second antenna strut required	No
Antenna mount type	
Antenna mount style	4' minimum x 4 inch dia. Pipe
Antenna mount location	Center South face

ANTENNA 2

Antenna size	8'
Center line height of antenna	60'
Azimuth from true North, clockwise	60°
Operating frequency	6.2 GHz
Location of distant end of MW path	Bercut
Antenna type	Parabolic
Antenna manufacturer	Andrew
Antenna manufacturer model	UXH8-65
Radome manufacturer	Andrew
Radome requirements	Yes
Second antenna strut required	No
Antenna mount type	
Antenna mount style	4' minimum x TBD dia. Pipe
Antenna mount location	Southwest corner leg

ANTENNA 3

Antenna size	8'
Center line height of antenna	80'
Azimuth from true North, clockwise	270°
Operating frequency	6.2 GHz
Location of distant end of MW path	CHP W. Sac
Antenna type	Parabolic
Antenna manufacturer	Andrew
Antenna manufacturer model	UXH8-65
Radome manufacturer	Andrew
Radome requirements	Yes
Second antenna strut required	No
Antenna mount type	
Antenna mount style	4' minimum x 4 inch dia. Pipe
Antenna mount location	Center West face

ANTENNA 4

Antenna mounting height	120'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
Top of tower, 75° Clockwise from true North, Northeast corner leg	
Antenna mount type	Valmont-Microflex 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 5

Antenna mounting height	120'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
Top of tower, 165° Clockwise from true North, Southeast corner leg	
Antenna mount type	Valmont Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 6

Antenna mounting height	120'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
Top of tower, 255° Clockwise from true North, Southwest corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 7

Antenna mounting height	120'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
Top of tower, 345° Clockwise from true North, Northwest corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 8

Antenna mounting height	80'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
75° Clockwise from true North, Northeast corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 9

Antenna mounting height	80'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
165° Clockwise from true North, Southeast corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 10

Antenna mounting height	80'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
255° Clockwise from true North, Southwest corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 11

Antenna mounting height	80'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
345° Clockwise from true North, Northwest corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 12

Antenna mounting height	60'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
75° Clockwise from true North, Northeast corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 13

Antenna mounting height	60'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
165° Clockwise from true North, Northeast corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A

ANTENNA 14

Antenna mounting height	60'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
255° Clockwise from true North, Southwest corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A
Responsible Agency	

ANTENNA 15

Antenna mounting height	60'
Antenna length above mounting position	15'
Antenna length below mounting position	2'
Antenna mount location	
345° Clockwise from true North, Northwest corner leg	
Antenna mount type	Valmont-Microflect 6'
Standoff Wireless Mount	
Antenna type	Omni
Antenna manufacturer	Kreco
Antenna manufacturer model	CO-41A
Responsible Agency	

SUBMITTALS

Product Data: Manufacturer's descriptive data and installation instructions shall be submitted for approval.

Working Drawings:

Working drawings and design calculations shall be submitted for approval. Design calculations shall show the size of concrete foundations, governing codes, design criteria, stress level, displacement and drift. Submittals shall be approved prior to the start of fabrication. Working drawings shall be prepared, stamped and signed by an engineer who is registered as a Civil or Structural Engineer in the State of California.

If design calculations consist of computerized or tabulated calculations for a series of manufactured products, the portions and values pertaining to this project shall be identified, described and indexed.

QUALITY ASSURANCE

Certificates of Compliance: Certificates of compliance shall be furnished for the communication tower in accordance with the requirements specified in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

PART 2 - PRODUCTS

Tower:

Tower shall be four legged, open lattice, self-supporting steel tower, 120 feet in height with concrete footings and an OSHA approved access ladder. The access ladder shall be complete with base section. The tower face dimensions shall be 17 feet at the ground elevation and 9 feet at the 120 foot elevation.

Tower framing members, brackets, fasteners, accessories, appurtenances, and supplementary parts shall be hot-dip galvanized after fabrication.

VHF/UHF Antenna Mounting Structures:

The VHF and UHF antenna mounting structures shall be "Valmony-Microflect 6' Standard Wireless Mounts" will be supplied by others.

For parabolic type microwave antennas the waveguide circuit runs and their respective support systems shall extend from ground level to the heights indicated and terminate 8" below the horizontal center line position of the respective antennas, and terminate 8" vertically from the rear of the respective antenna mounting position.

For microwave antennas, the horizontal waveguide support systems shall terminate approximately 8" above the microwave antenna port for each respective antenna. The microwave antenna horizontal support system shall contain provisions for fastening and supporting the respective antenna waveguide at intervals not greater than 36" along the entire horizontal run.

Vertical Waveguide and Coaxial Cable Rigid Support System:

The telecommunications tower shall contain a vertical waveguide and coaxial cable rigid support system located within 20 inches of the tower-climbing ladder. The vertical waveguide and coaxial cable rigid support system horizontal and vertical run support bars shall be positioned a maximum of each 30 inches of run. Vertical run supports to the tower shall be positioned a maximum of each 10 feet of vertical run.

The vertical waveguide and coaxial cable rigid support system supports shall be made to attach waveguide clamp heads equal to or better than the Microflect Company Inc. waveguide support system. Horizontal runs shall include ice shields equal to or better than Valmount Microflect Company Inc. waveguide covers.

Horizontal Waveguide and Coaxial Cable Rigid Support System:

The telecommunications tower shall contain a horizontal waveguide and coaxial bridge support system. The system shall include inverted horizontal rigid waveguide channels and inverted coaxial bridge channels for all antennas located 10 feet or greater distance below any work platform. All waveguide and coax cables shall be supported below the bridge channel using donuts.

Electrical Operational Requirements:

All electrical wiring shall be insulated, solid, copper, type THHN wire.

All insulated electrical wiring, of size 4 gauge or smaller, shall be colored coded their entire length(s), by the wiring manufacturer. Colored identification tape is not acceptable.

All circuits shall be wired with single lead conductors. Multiple conductor cables are not acceptable.

The neutral conductor shall have the same current rating as the current carrying conductors.

The tower electrical wiring systems shall contain a green (safety) conductor extending from the site common ground bus to the tower electrical circuit(s). The green (safety) conductor shall be an insulated conductor.

All tower electrical circuits (work platform electrical outlets, and any required FAA tower lighting), shall be located in rigid galvanized metal conduits.

Microwave Antenna Mounting Structure:

A microwave antenna mounting structure shall be furnished and installed at each microwave centerline height for each antenna at its respective azimuth, as identified in microwave antenna section. Where the telecommunications tower leg, at the position required for a microwave antenna mount, is vertical, and is a 4 inch diameter pipe (4-1/2" o.d.), the microwave antenna may be mounted directly to said tower leg, and no "microwave antenna mounting structure" is required.

The microwave antenna mounting structure shall consist of a vertically positioned galvanized steel pipe of 4" inside diameter per ASTM A 53. The angle, of this steel pipe shall be true vertical (+2 degrees) in all planes.

The microwave antenna mounting structure shall be secured to the tower leg with a minimum of two u-bolts, at both its upper end and at its lower end, or a minimum four bolt assemblies, at both its upper end and at its lower end.

The microwave antenna mounting structure shall consist of a vertical pipe, measuring a minimum of 6', and a maximum of 8' in length.

Pipe mounts shall be positioned to prevent the antenna feed horn assembly from being directly opposite a tower member. Pipe mount positioning shall not prevent direct waveguide installation to any antenna.

Each microwave antenna mounting structure shall include two associated microwave antenna stiff arm supports locations within 8 feet of the respective microwave antenna horizontal center line. The stiff arm locations shall be within 25 degrees of the antenna's horizontal centerline. The stiff arm support locations shall meet the support requirements as listed by the microwave antenna manufacture, in their latest microwave antenna installation bulletin. The stiff arm support location shall be adequate to maintain the respective microwave antenna within 3 dB of the antenna beam width through winds up to 70 miles per hour, and survive winds up to 125 miles per hour without damage.

Mounts and stiff arm support locations shall meet or exceed the standards specified by the antenna manufacturer in their latest installation bulletin.

Antenna mounts shall be positioned to allow the indicated antenna to be adjusted in horizontal azimuth continuously from +18 degrees through -18 degrees of the indicated antenna azimuth.

Antenna mounts shall be positioned to allow the indicated antenna to be adjusted in vertical altitude angle continuously from +3 degrees through -9 degrees of zero horizontal angle.

Climbing Facilities:

The tower may be climbed by climbers as defined in TIA-222-G, Section 12.2 Definitions as Authorized (Basic) Climber.

Fixed Ladders:

The telecommunications tower shall contain one fixed ladder and shall also contain four step-bolt ladders per the following specifications (per paragraph 5.24.3.8)

The telecommunications tower fixed ladder shall be located on the East tower face. And shall conform to CCR Title 8, Chapter 4, Subchapter 7, Group 1, Article 4, Section 3277 – Fixed ladders, inclusive. And the fixed ladder's clear climbing space shall conform to CCR Title 8, chapter 4, Subchapter 7, Group 1, Article 4, Section 2177, Fixed Ladders, inclusive.

The fixed ladder shall be fabricated of steel. Step bolts shall not be used for this ladder. The maximum allowable spacing of the horizontal step rungs will be 12". The minimum diameter of the step rungs will be 3/4" and will support a concentrated load of 300 lbs. The minimum allowable spacing of the side rails shall be 16".

A clear climbing space shall be maintained on the climbing side of the ladder and extending a minimum of 30 inches from the center of the ladder climbing rungs (at a right angle to the climbing rungs).

A clear climbing space shall be maintained on the climbing side of the ladder and extending a minimum of 15 inches from the center line of the ladder climbing rungs (parallel to the climbing rungs).

The fixed ladder system shall be fabricated from and supported by rigid steel members, cables are not acceptable. And shall contain a safety cable climbing system.

The safety cable climbing system shall consist of a 3/8" diameter, 7 x 19 strand aircraft cable with intermediate cable guides provided every 25 feet. The 3/8" steel cable extends from the ground level to the top of the tower, fastened at the ends. The safety cable system must meet or exceed OSHA and ANSI requirements for tower climbing ladder safety.

The bottom 10 feet of the climbing ladder shall have an anti-climbing shield.

The telecommunications tower legs shall contain step bolts, on each of the tower legs, above the elevations of 20 feet.

Work Platforms:

The telecommunications tower shall contain work platforms located at the 100' ($\pm 2'$), and 50' ($\pm 2'$) elevations.

The work platforms shall consist of a level platform of steel grating and shall be a full coverage platforms. The platforms shall provide reasonable access to work. Safety handrails shall be provided around the perimeter of the platform with the upper railing at 42" above the deck and the intermediate rail at 18" above the deck. Safety toe-rail shall be provided around the perimeter of the platform.

The telecommunications diagonals may be used to support platform handrails.

Work platform shall be designed to support two concentrated live loads of 300 lbs each. Live loads imposed by persons on the platform shall be considered to concentrate at such points that will cause maximum stress in the structural members being considered.

Work Platform Electrical Requirements:

The telecommunications tower shall contain one duplex receptacle outlet on each work platform. The duplex outlets shall be mounted 1 foot above their respective work platform deck.

The duplex receptacle outlets shall be provided with weatherproof, GFI protected, 120 V, 20 A, NEMA 5-20R receptacle. Duplex receptacle outlets shall be installed on the same circuit as a home-run, individual circuit. And be a circuit breaker protected circuit, rated at 20 amperes, with ground fault protection.

The duplex outlet circuit breaker shall be located in the telecommunications equipment building.

The duplex convenience outlet circuit shall be installed in rigid galvanized metallic conduit, for its full length to equipment building and shall be installed using a minimum of 10 gauge copper wire, with THWN insulation.

The duplex convenience outlets shall be wired with a 10 gauge copper green insulated wire installed from a ground point on the duplex outlet metallic frame to the radio vault ground bus bar at the electrical distribution panel.

Lightning Protection and Grounding System:

The lightning protection and grounding system shall meet or exceed the building ground system requirements of CCR Title 24, California Building Standards Code, Part 3 – California Electric Code.

The lightning protection grounding system shall also conform to the requirements of NFPA 780 for Class 11 structures.

The site lightning protection and grounding system shall be engineered, furnished and installed as part of the site requirements by others.

PART 3 - EXECUTION

Assembly, Erection and Installation:

The communication tower shall be assembled, erected and installed by the tower manufacturer or by an authorized representative of the manufacturer, using qualified workmen skilled in the installation of such towers. Assembly, erection and installation work shall be performed in accordance with the manufacturer's recommendations, EIA recommended procedures, and the approved working drawings.

Grounding shall be furnished and installed in accordance with the tower manufacturer's recommendations.

Painting: The tower shall be finish coated in accordance with the requirements specified for steel and other ferrous metals under "Painting" in Section 12-9, "Finishes," of these special provisions. Paint colors shall be in accordance with the requirements of the Federal Aviation Administration.

Permits and Certifications:

All design and analysis computations and installation drawings shall be certified and stamped by a licensed, State of California, Professional Engineer in the area being certified.

All design and analysis computations and installation drawings shall be approved and stamped by the State of California, Office of the State Architect.

BID ITEM LIST

04-0A5354

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	CY	2,155		
62 (F)	192037	STRUCTURE EXCAVATION (RETAINING WALL)	CY	215		
63 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	CY	955		
64 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	CY	580		
65	193114	SAND BACKFILL	CY	70		
66 (F)	197020	EARTH RETAINING STRUCTURE	SQFT	47,400		
67	043192	SETTLEMENT MONITORING PROGRAM	LS	LUMP SUM	LUMP SUM	
68	198001	IMPORTED BORROW (CY)	CY	145,000		
69	198205	SUBGRADE ENHANCEMENT GEOTEXTILE	SQYD	41,500		
70	200001	HIGHWAY PLANTING	LS	LUMP SUM	LUMP SUM	
71	200101	IMPORTED TOPSOIL	CY	7,190		
72	200114	ROCK BLANKET	SQYD	940		
73	200118	DECOMPOSED GRANITE (MISCELLANEOUS AREAS) (SQYD)	SQYD	3,000		
74	020999	BOULDERS	TON	100		
75	203002	EROSION CONTROL (COMPOST BLANKET)	CY	2,520		
76	203021	FIBER ROLLS	LF	28,600		
77	203026	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	10		
78	203032	EROSION CONTROL (HYDROSEED) (ACRE)	ACRE	19		
79	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM	LUMP SUM	
80	208000	IRRIGATION SYSTEM	LS	LUMP SUM	LUMP SUM	