

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

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*Flex your power!
Be energy efficient!*

July 13, 2012

07-LA-5-2.4/4.0

07-215934

Project ID 0700001833

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN LOS ANGELES COUNTY IN SANTA FE SPRINGS AND NORWALK FROM 0.1 MILE NORTH OF CARMENITA ROAD OVERCROSSING TO 0.1 MILE NORTH OF SILVERBOW AVENUE PEDESTRIAN 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 Thursday, July 26, 2012.

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

Project Plan Sheets 3, 23, 27, 60, 61, 79, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 130, 134, 137, 159, 161, 163, 165, 175, 212, 213, 215, 216, 217, 226, 229, 233, 250, 251, 258, 259, 286, 289, 292, 295, 296, 297, 298, 299, 300, 301, 302, 304, 305, 306, 309, 310, 311, 312, 313, 314, 317, 318, 323, 374, 375, 376, 473, 474, 498, 519, 537, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 688, 703, 795, 796, 814, 815, 825, 856, 859, 860, 861, 862, 863, 864, 865, 876, 893, 895, 988, 1004, 1007, 1026, 1028, 1030, 1079, 1169, 1257, 1258, 1259, 1260, 1263, and 1269 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 257A, 1288A, 1288B, 1288C, 1288D, 1288E, 1288F, 1288G, 1288H, 1288I, 1288J, 1288K, 1288L, and 1288M are added. Copies of the added sheets are attached for addition to the project plans.

In the Special Provisions, Section 5-1.12, "SUPPLEMENTAL PROJECT INFORMATION," items 20 and 21 are added to the list in the table as follows:

- "20. Foundation Report for Soundwalls 160, 204 and 205, dated July 11, 2012
21. Railroad pre-emption operation information."

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In the Special Provisions, Section 5-1.20, "NONHIGHWAY FACILITIES (INCLUDING UTILITIES)," the table titled "Utility Relocation and Date of Relocation" is revised as follows:

Utility Relocation and Date of the Relocation

Utility	Location	Date
KinderMorgan 16" Oil in 20" Casing (Active)	Crossing Route-5 at Shoemaker Ave - Sta 157+00 to Sta 161+00 (Sheet U- 3)	Finish 10/1/2012
KinderMorgan 24" Oil in 30" Casing (Active)	Crossing Route-5 at Shoemaker Ave - Sta 157+00 to Sta 161+00 (Sheet U- 3)	Finish 10/1/2012
Charter Communications Overhead Cable	On Rosecrans Ave from Sta 9+00 to Sta 22+00 Lt (Sheet U-5)	Finish 12/1/2012
Time Warner Overhead Cable	On Rosecrans Ave from Sta 9+00 to Sta 22+00 Lt (Sheet U-5)	Finish 12/1/2012
Sunesys Overhead Cable	On Rosecrans Ave from Sta 9+00 to Sta 22+00 Lt (Sheet U-5)	Finish 12/1/2012
Verizon Overhead Cable	On Rosecrans Ave from Sta 9+00 to Sta 22+00 Lt (Sheet U-5)	Finish 3/4/2013
Southern California Edison Transmission Overhead lines on pole 4123415E 2056167E 4457039E 562494E 2056166E 529957E 2062097E	On Rosecrans Ave from Sta 9+00 to Sta 22+00 Lt (Sheet U-5)	Finish 7/1/13
Southern California Edison Power Pole 4613943E	Bloomfield Ave, Sta 100+53Rt (Sht U-6)	Finish 6/3/2013
Southern California Edison Power Pole 114525E	Bloomfield Ave, Sta 98+95 Rt (Sht U-6)	Finish 6/3/2013
Southern California Edison Power Pole 1007100E	Bloomfield Ave, Sta 97+00 Rt (Sht U-6)	Finish 6/3/2013
Southern California Edison Power Pole 844732E	SB Route-5 "A1" Line Sta 197+22 Lt (Sht U-6)	Finish 6/3/2013
Southern California Edison Power Pole 844731E	SB Route-5 "A1" Line Sta 197+27 Lt (Sht U-6)	Finish 6/3/2013
Southern California Edison Power Pole 844730E	SB Route-5 "A1" Line Sta 199+11 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 844729E	SB Route-5 "A1" Line Sta 200+95 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 844728E	SB Route-5 "A1" Line Sta 202+68 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 844727E	SB Route-5 "A1" Line Sta 204+00 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 844725E	SB Route-5 "A1" Line Sta 205+25 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 844724E	SB Route-5 "A1" Line Sta 206+60 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 844722E	SB Route-5 "A1" Line Sta 208+00 Lt (Sht U-7)	Finish 6/3/2013

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Southern California Edison Power Pole 844721E	SB Route-5 "A1" Line Sta 208+18 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 1390551E	SB Route-5 "A1" Line Sta 209+95 Lt (Sht U-7)	Finish 6/3/2013
Southern California Edison Power Pole 1655498E	Bloomfield Ave, Sta 93+37 Rt. (Sht U-9)	Finish 6/3/2013
Southern California Edison/Verizon Power Pole M14149Y	Bloomfield Ave, Sta 93+70 Lt. (Sheet U-9)	Finish 6/3/2013
Verizon Underground Facility	Crossing Rte 5 at Shoemaker Ave	Finish 12/1/2012
Verizon/AT&T Underground Facility 15 Du Telephone	On Rosecrans Ave Sta 15+37 to Sta 22+00 Lt, On SB Route-5, Sta 185+00 to Sta 194+00 Lt (Sheet U-5, U-6)	Finish 2/17/2013
Verizon Underground Facility	Crossing Rte 5 at Silverbow Ave	Finish 3/4/2013
Verizon Power Pole M2952Y	NB Route-5 "A1" Line Sta 210+30 Lt (Sht U-7)	Finish 3/4/2013
Verizon Overhead Cable	Adjacent to NB I-5 at Silverbow Ave, "A1" Line Sta 210+00 Rt (Sheet U-7)	Finish 3/4/2013
Verizon Overhead Cable	Adjacent to SB I-5 on "A1" Line from Sta 197+75to Sta 211+00 Lt (Sheet U- 6, U-7)	Finish 6/3/2013
Parkwater Underground Facility 12" DIP Water Main	On NB Firestone Blvd, from Shoemaker Ave to Lochnevis Ave	Finish 2/15/2013
Parkwater Underground Facility 14" DIP Water Main	On Rosecran Ave from Sta 10+00 to Sta 22+00	Finish 1/1/2013
Golden State Water Underground Facility 12"DIP in 24" Csg	I-5 Fwy crossing at Sta 197+90	Finish 11/5/2012
Golden State Water Underground Facility 12"DIP in 24" Csg	I-5 Fwy crossing at Sta 210+86 & Silverbow Ave	Finish 11/5/2012
Southern California Edison Overhead Wire	Adjacent to NB Rte-5 at Silverbow Ave, "A1" Line Sta 210+00 Rt (Sheet U-7)	Finish 3/4/2013
Charter Communications Overhead Cable	Adjacent to NB Rte-5 at Silverbow Ave, "A1" Line Sta 210+00 Rt (Sheet U-7)	Finish 3/4/2013
AT&T Overhead Cable	Adjacent to NB Rte-5 at Silverbow Ave, "A1" Line Sta 210+00 Rt (Sheet U-7)	Finish 3/4/2013
Charter Communications Overhead Cable	Adjacent to SB Rte-5 on "A1" Line from Sta 197+75to Sta 211+00 Lt (Sheet U-6, U-7)	Finish 6/3/2013
Time Warner Overhead Cable	Adjacent to NB Rte-5 at Silverbow Ave, "A1" Line Sta 210+00 Rt (Sheet U-7)	Finish 3/4/2013

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Southern California Gas Company 10" Main in 24" Csg	West of Bloomfield Ave, crossing Rte 5 at Sta 197+60	Finish 3/4/2013
Southern California Gas Company 8" Main	East of Bloomfield Ave, & N. Firestone Blvd (North)	Finish 3/4/2013
Southern California Gas Company 2" Main	East of Rosecrans Ave, & N. Firestone Blvd (North)	Finish 3/4/2013
Southern California Gas Company 2" Main	SB Rte 5, on Araby Ave	Finish 11/15/2012
Southern California Gas Company 2" Main	SB Rte 5, on Belmart Ave	Finish 11/15/2012
Southern California Gas Company 2" Main	SB Rte 5, on Silverbow Ave	Finish 11/15/2012
Southern California Gas Company Power Pole	SB Rte, adjacent to Alley St. "A1" Line Sta 197+50 Lt (Sheet U-6)	Finish 3/4/2013
Southern California Edison Power Pole 816285E	N. Firestone Blvd (Sheet U-3)	Finish 3/4/2013
Southern California Edison Power Pole 816284E	N. Firestone Blvd (Sheet U-3)	Finish 3/4/2013
Southern California Edison Power Pole 964686E	N. Firestone Blvd (Sheet U-3)	Finish 3/4/2013
Southern California Edison Power Pole 977805E	N. Firestone Blvd (Sheet U-3)	Finish 3/4/2013
Southern California Edison Power Pole 1104931E	On N. Firestone Blvd "A1" Line Sta 170+13 Rt (Sheet U-4)	Finish 3/4/2013
AT&T 9 Du Underground Telephone Conduit	On Rosecrans Ave, Sta 12+80 to 13+90 Lt	Finish 12/10/2012

In the Special Provisions, Section 5-1.20, "NONHIGHWAY FACILITIES (INCLUDING UTILITIES)," the table titled "Utility Relocation and Contractor Arranged Time for the Relocation" is revised as follows:

Utility	Utility Address	Location	Days
Golden State Water Relocate Water Meters	1920 W. Corporate Way Anaheim, CA 92801	See Irrigation Plan	60
Park Water Company Relocate Water Meters	9750 Washburn P.O. Box 7002 Downey, CA 90241	See Irrigation Plan	60

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Southern California Edison Electrolier 4666250E	1924 Cashdan Street Compton, CA 90220	SB Route-5 "A1" Line Sta 159+53 Rt (Sht U-3)	90
Southern California Edison Electrolier 1104853E	1924 Cashdan Street Compton, CA 90220	N. Firestone Blvd "NFRS1" Line Sta 28+25 Lt (Sht U-4)	90
Southern California Edison Electrolier 1104852E	1924 Cashdan Street Compton, CA 90220	N. Firestone Blvd "A1" Line Sta 166+48 Rt (Sheet U-4)	90
Southern California Edison Electrolier 1104851E	1924 Cashdan Street Compton, CA 90220	N. Firestone Blvd "A1" Line Sta 168+70 Rt (Sheet U-4)	90
Southern California Edison Electrolier 4281429E	1924 Cashdan Street Compton, CA 90220	In median on Rosecrans Ave, Sta 15+36 (Sheet U-5)	90
Southern California Edison Electrolier 4098187E	1924 Cashdan Street Compton, CA 90220	SB Route-5 "A1" Line Sta 209+95 Lt (Sht U-7)	90
AT&T 9 Du Underground Telephone Conduit	100 N. Stoneman Ave, Rm 265 Alhambra, CA 91801	On Firestone Blvd, across Bloomfield Ave	90
Southern California Edison Electrolier (No Id)	1924 Cashdan Street Compton, CA 90220	On Rosecrans Ave Sta 12+94 Rt (Sheet U-5)	90
Southern California Gas Company 6" Main (Active)	1919 S. State College Blvd. Anaheim, CA, 92806	East of Shoemaker Ave OC, crossing Rte 5 at Sta 159+00	90
US Air Force 6" Jet Fuel (Inactive)	915 Wilshire Blvd., Suite 1101 Los Angeles, CA 90017	Bloomfield Ave under Rte-5, "BL-1" Line Sta 97+00 to 105+00 (Sheet U-6)	90
Verizon Business 6" Crude Oil (Inactive)	157 S. Lilac Ave Rialto, CA 92376	Crossing Route-5 at "A- 1" Line Sta 196+33 (Sheet U-6)	90
Verizon Business 3" Natural Gas	157 S. Lilac Ave Rialto, CA 92376	Crossing Route-5 at "A- 1" Line Sta 196+36 (Sheet U-6)	90
Verizon Business 6" Crude Oil (Inactive)	157 S. Lilac Ave Rialto, CA 92376	Crossing Route-5 at "A- 1" Line Sta 196+39 (Sheet U-6)	90
Verizon Business 8" Crude Oil (Inactive)	157 S. Lilac Ave Rialto, CA 92376	Crossing Route-5 at "A- 1" Line Sta 196+41 (Sheet U-6)	90
AT&T MH 27495	100 N. Stoneman Ave. Rm 265 Alhambra, CA 91801	Rosecrans Ave, Sta 12+00 Lt	30
AT&T MH 27496	100 N. Stoneman Ave. Rm 265 Alhambra, CA 91801	Rosecrans Ave, Sta 19+96 Lt	30

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In the Special Provisions, Section 9, "DESCRIPTION OF BRIDGE WORK," the following paragraph is added after the last paragraph.

"SPECIAL DESIGN FOR SOUND WALLS

Construct barrier and pile caps on cast-in-drilled-hole piles to span existing footings, reinforced box culverts and reinforced concrete piles at Sound Walls No. 160, 204 and 205."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the fourth paragraph is revised as follows:

"Construction of Firestone Boulevard (North) between Stations 21+74 and 28+85 is a first order of work in Stage 1-Phase 1. This roadway must be completed and open to traffic after 4-months of closing for construction."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the fifth paragraph is revised as follows:

"During Stage 2 construction, completion of pavement between Stations 147+50 and 151+00 and reconnecting southbound off ramp traffic to Carmenita Road is a first order of work and must be completed in one 55-hour or less shift."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the eighth paragraph is revised as follows:

"Access from the Ranch Market strip mall at 12836 Rosecrans Avenue, Norwalk to Firestone Boulevard must be maintained during business hours."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the ninth paragraph is revised as follows:

"Vehicular access from Rosecrans Avenue for Camping World at 12624 Rosecrans Avenue, Santa Fe Springs must be kept available between 0700 and 2100."

In the Special Provisions, Section 10-1.115, "TEMPORARY FENCE (TYPE CL-6, SLATTED)," is added as attached.

In the Special Provisions, Section 10-1.21, "RIGHT OF WAY OBSTRUCTIONS," the table is revised as follows:

Parcel No.	Description	Date Available
77088	Work Around Parcel	01/15/2013 T
77093	Work Around Parcel	02/28/2013 T
77096	Work Around Parcel	01/30/2013 T
77098	Work Around Parcel	02/28/2013 T
77100	Work Around Parcel	06/19/2013 T
77623	Work Around Parcel	12/30/2012 T
77629	Work Around Parcel	12/04/2012 T
79048	Work Around Parcel	06/19/2013 T
79898	Work Around Parcel	05/18/2013 T
79899	Work Around Parcel	03/31/2013 T
79900	Work Around Parcel	03/31/2013 T
80161	Work Around Parcel	11/27/2012 T

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In the Special Provisions, Section 10-1.36, "EXISTING HIGHWAY FACILITIES," subsection "REMOVE CONCRETE," the following subsection is added after the last paragraph.

"REMOVE STEEL PIPE

"Existing steel pipe, where any portion of these pipes are within 3 feet of the grading plane in excavation areas, or within one foot of original ground in embankment areas, or where shown on the plans to be removed, shall be completely removed and disposed of.

Full compensation for excavation, removing, backfill, and dispose of steel pipe shall be considered as included in the contract unit price paid per linear foot for remove steel pipe and no separate payment will be made therefor."

In the Special Provisions, Section 10-1.71, "SOUND WALL," subsection "DESCRIPTION," the second sentence is revised as follows:

"Sound wall shall be supported on concrete barriers and pile caps as shown on the plan."

In the Special Provisions, Section 10-1.71, "SOUND WALL," subsection "MEASUREMENT AND PAYMENT," the following paragraphs are added after the fourth paragraph.

"Sound wall pile caps will be measured and paid for as structural concrete, sound wall.

The contract price paid per cubic yard for structural concrete, sound wall shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the pile caps, complete in place, including excavation, backfill, and reinforcement, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer."

In the Special Provisions, Section 10-1.74, "JOINT SEAL ASSEMBLIES (MAXIMUM MOVEMENT RATING, 4 INCHES)," the fourth paragraph is deleted.

In the Special Provisions, Section 10-1.88, "CLEAN AND PAINT JOINT SEAL ASSEMBLIES AND PTFE BEARINGS," the following paragraph is added after the second paragraph.

"Certification in conformance with the requirements in SSPC-QP 1 and SSPC-QP 2, of the "SSPC: The Society for Protective Coatings" will not be required for cleaning and painting of joint seal assemblies and PTFE bearings."

In the Special Provisions, Section 10-1.1075, "CHAIN LINK FENCE (TYPE CL-6, SLATTED)," is added as attached.

In the Special Provisions, Section 10-3.21, "LIGHT EMITTING DIODE PEDESTRIAN SIGNAL FACE MODULES," is revised as attached.

In the Special Provisions, Section 10-3.215, "ACCESSIBLE PEDESTRIAN SIGNAL," is added as attached.

In the Special Provisions, Section 10-3.305, "INTERNALLY ILLUMINATED SIGN - LIGHT EMITTING DIODE R3-1 SIGN," is added as attached.

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In the Bid book, in the "Bid Item List," Items 2, 52, 64, 89, 110, 113, 129, 139, 142, 144, 155, 165, 167, 195, 196, 213, 214, 220, 225, 251, 252, 253, 254, 255, 257, are revised, Items 283, 284, 285, 286, 287, 288, and 289 are added and Items 120 and 282 are deleted as attached.

To Bid book holders:

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

Attached are copies of foundation report and Railroad pre-emption operation information to be added to the Information Handout.

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.

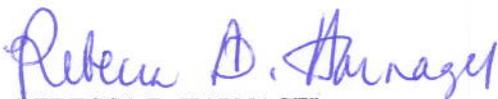
Inform subcontractors and suppliers as necessary.

This addendum and attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/07/07-215934

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,



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

Attachments

10-1.115 TEMPORARY FENCE (TYPE CL-6, SLATTED)

Temporary fence (Type CL-6, slatted) consisting of chain link fence (Type CL-6) with wood or plastic slats inserted vertically in the chain link fabric, shall be furnished, constructed, maintained, and later removed as shown on the plans, as specified in these special provisions and as directed by the Engineer.

Except as otherwise specified in this section, temporary fence (Type CL-6, slatted) shall conform to the plan details and the specifications for permanent fence of similar character as provided in Section 80, "Fences," of the Standard Specifications.

Used materials may be installed provided the used materials are good, sound and are suitable for the purpose intended, as determined by the Engineer.

Materials may be commercial quality provided the dimensions and sizes of the materials are equal to, or greater than, the dimensions and sizes shown on the plans or specified herein.

Temporary fence fabric shall be woven from 9-gage galvanized steel wire. Mesh openings in the temporary fence fabric shall be approximately 3-1/4 inches vertically and 5-1/4 inches horizontally.

Wood slats shall consist of clear redwood or light to medium weight wood produced by the species Shorea (Meranti). Wood slats shall be not less than 1/4 inch thick and approximately 2-5/16 inches wide with a length sufficient to fill the vertical opening of the fabric. The slats shall be inserted vertically in the mesh openings so that the slats fit snugly and shall be fastened in a manner to prevent easy removal or displacement.

Plastic slats shall be manufactured from a high density virgin polyethylene with ultraviolet inhibitors, shall be dark green in color, and shall conform to the following:

A. Plastic slats shall have a flat tubular cross section with a wall thickness of approximately 0.03-inch; depth of approximately 0.325-inch; width of approximately 2.38 inches; and a length equal to the designated fence height.

B. The plastic slats shall have the following material specifications:

Property	Value	ASTM Designation
Melt Index	0.24	D 1238
Density	0.951	D 1505
Low Temperature Brittleness	-76° F	D 746
Tensile Strength	3,700 psi	D 638

Posts shall be either metal or wood at the Contractor's option.

Galvanizing and painting of steel items will not be required.

Treating wood with a wood preservative will not be required.

Concrete footings for metal posts will not be required.

Temporary fence (Type CL-6, slatted) that is damaged during the progress of the work shall be repaired or replaced by the Contractor at the Contractor's expense.

When no longer required for the work, as determined by the Engineer, temporary fence (Type CL-6, slatted) shall be removed. Removed facilities shall become the property of the Contractor and shall be removed from the site of the work, except as otherwise provided in this section.

Removed temporary fence (Type CL-6, slatted) materials that are not damaged may be constructed in the permanent work provided the materials conform to the requirements specified for the permanent work and such materials are new when used for the temporary fence.

Holes caused by the removal of temporary fence (Type CL-6, slatted) shall be backfilled in conformance with the provisions in the second paragraph of Section 15-1.02, "Preservation of Property," of the Standard Specifications.

Temporary fence (Type CL-6, slatted) will be measured and paid for in the same manner specified for permanent fence of similar character as provided in Section 80, "Fences," of the Standard Specifications.

Full compensation for maintaining, removing, and disposing of temporary fence (Type CL-6, slatted) shall be considered as included in the contract prices paid per linear foot for temporary fence (Type CL-6, slatted) and no additional compensation will be allowed therefor.

10-1.1075 CHAIN LINK FENCE (TYPE CL-6, SLATTED)

Chain link fence (Type CL-6, slatted) consisting of chain link fence (Type CL-6) with wood or plastic slats inserted vertically in the chain link fabric shall conform to the provisions in Section 80, "Fences," of the Standard Specifications and these special provisions.

Chain link fence fabric shall be woven from 9-gage galvanized steel wire. Mesh openings in the chain link fence fabric shall be approximately 3-1/4 inches vertically and 5-1/4 inches horizontally.

Wood slats shall consist of clear redwood or light to medium weight wood produced by the species Shorea (Meranti). Wood slats shall be not less than 1/4 inch thick and approximately 2-5/16 inches wide with a length sufficient to fill the vertical opening of the fabric. The slats shall be inserted vertically in the mesh openings so that the slats fit snugly and shall be fastened in a manner to prevent easy removal or displacement.

Plastic slats shall be manufactured from a high density virgin polyethylene with ultraviolet inhibitors, shall be dark green in color, and shall conform to the following:

A. Plastic slats shall have a flat tubular cross section with a wall thickness of approximately 0.03-inch; depth of approximately 0.325-inch; width of approximately 2.38 inches; and a length equal to the designated fence height.

B. The plastic slats shall have the following material specifications:

Property	Value	ASTM Designation
Melt Index	0.24	D 1238
Density	0.951	D 1505
Low Temperature Brittleness	-76° F	D 746
Tensile Strength	3,700 psi	D 638

10-3.21 LIGHT EMITTING DIODE COUNTDOWN PEDESTRIAN SIGNAL FACE MODULES

GENERAL

Summary

This work includes installing Light Emitting Diode (LED) countdown pedestrian signal face (PSF) module into standard Type A pedestrian signal housing. Comply with Section 86, "Electrical Systems," of the Standard Specifications, TEES and the California MUTCD.

Submittals

Before shipping to job site, submit the LED countdown PSF modules and the following to the Transportation Laboratory:

1. Delivery form including district number, Contract Number, and contact information
2. List containing serial numbers of LED countdown PSF modules anticipated for use
3. Installation manuals and schematic wiring diagram.
4. Manufacturer's name, trademark, model number, lot number, month and year of manufacture

Submit documentation of manufacturer's production quality assurance testing performed on LED countdown PSF module. The documentation must include test data that conforms to the specified requirements and the following:

1. Luminous intensity as specified in "Photometric Requirements" of these special provisions.
2. Power factor after burn-in.
3. Test current flow measurements in amperes after burn in. Measured values must conform with design qualification figures and with this specification. The measured ampere values with rated voltage must be recorded on the product labels.

Failure to submit manufacturer test documentation will be cause for rejection.

Quality Control and Assurance

If the Engineer determines by visual inspection that there is exterior physical damage, assembly anomalies, scratches, abrasions, cracks, chips, discoloration, or other defects to surface of the lens, modules will be rejected.

The State will test LED countdown PSF module shipments as specified in ANSI/ASQ Z1.4. Testing will be completed within 30 days of delivery to the Transportation Laboratory. LED countdown PSF module submitted for testing must be representative of typical production units. LED countdown PSF modules will be tested as specified in California Test 606. All parameters of the specification may be tested on the module.

Non-compliant materials will be rejected. You must resubmit new LED countdown PSF module for retesting and pick up the failed units within 7 days of written notification. If the failed materials are not removed within that period, it may be shipped to you at your expense. You must allow 30 days for retesting.

After successful testing, you must pick up the tested LED countdown PSF module from the Transportation Laboratory and deliver to the job site.

Warranty

You must provide a manufacturer's written warranty against defects in materials and workmanship for LED countdown PSF module for a minimum period of 60 months from the date of successful completion of acceptance testing. Replacement LED countdown PSF modules must be provided within 15 days after receipt of failed module at no cost to the State, except for the cost of shipping. All warranty documentation must be submitted to the Engineer before installation. Replacement LED countdown PSF modules must be delivered to State Maintenance Electrical Shop at 7310 E. Bandini Blvd, Commerce, CA 90040.

MATERIALS

LED countdown PSF module must:

1. Be from the same manufacturer.
2. Be installed in standard Type A pedestrian signal housing.
3. Use LED as the light source.
4. Be designed to mount behind or replace face plates of standard Type A housing as specified in ITE publication, Equipment and Material Standards, Chapter 3, "Pedestrian Traffic Control Signal Indications" and the "California MUTCD."
5. Have a minimum power consumption of 10 W for the UPRAISED HAND.
6. Use required color and be ultra bright type rated for 100,000 hours of continuous operation for a temperature range of -40 to +74 °C.
7. Be able to replace signal lamp optical units.
8. Fit into pedestrian signal section housings without modifications.
9. Be a single, self-contained device, not requiring on-site assembly for installation.
10. Have the following information permanently marked on the back of module:
 - 10.1. Manufacturer's name
 - 10.2. Trademark
 - 10.3. Model number
 - 10.4. Serial number
 - 10.5. Lot number
 - 10.6. Month and year of manufacture
 - 10.7. Required operating characteristics, as follows:
 - 10.7.1. Rated voltage
 - 10.7.2. Power consumption
 - 10.7.3. Volt-ampere (VA)
 - 10.7.4. Power factor
11. Have prominent and permanent vertical markings for accurate indexing and orientation within the signal housing if a specific mounting orientation is required. Markings must include an up arrow, or the word "UP" or "TOP." Marking must be a minimum of 1-inch diameter.

Circuit board and power supply must be contained inside the LED countdown PSF modules. Circuit board must comply with Chapter 1, Section 6 of TEES.

Individual LEDs must be wired so catastrophic loss or failure of 1 LED will not result in loss of more than 5 percent of the PSF module light output. Failure of an individual LED in a string must not result in the loss of entire string, or the indication.

LEDs must be evenly distributed in each indication. Do not use outline shape.

No special tools for installation are allowed.

Installation of the LED countdown PSF module into pedestrian signal face must require only removal of lenses, reflectors, lamps, and existing LED modules.

Assembly and manufacturing processes for LED countdown PSF module must assure that all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

Material used for LED countdown PSF module must comply with ASTM D 3935.

Enclosures containing the power supply or electronic components of LED countdown PSF module, except lenses, must be made of UL94VO flame-retardant material.

Each symbol must not be less than 9 inches high and 5.25-inches wide. The uniformity of the signal output across the emitting section of the module lens for the WALKING PERSON and UPRAISED HAND symbol and the countdown display must not exceed a ratio of 5 to 1 between highest and lowest luminance values. Symbols must comply with ITE publication, Equipment and Material Standards, Chapter 3, "Pedestrian Traffic Control Signal Indications," and the "California MUTCD."

LED countdown PSF module must be designed to operate over the specified ambient temperature and voltage range, and be readable (both day and night) at all distances from 10 feet to the full width of the area to be crossed.

LED countdown PSF module must maintain an average luminance value over 60 months of continuous use in signal operation for a temperature range of -40 to +74 °C. In addition, LED countdown PSF module must meet or exceed the following luminance values upon initial testing at 25 °C.

Luminance Values

PSF module	Luminance
UPRAISED HAND and two digital countdown	1,094 FL
WALKING PERSON	1,547 FL

Color output of LED countdown PSF module must comply with chromaticity requirements in Section 5.3 of ITE publication, Equipment and Material Standards, Chapter 3, "Pedestrian Traffic Control Signal Indications."

Measured chromaticity coordinates of LED countdown PSF module must comply with the following chromaticity requirements for 60 months when operating over a temperature range of -40 to +74 °C.

Chromaticity Standards (CIE Chart)

UPRAISED HAND and COUNTDOWN TIMER (portland orange)	Not greater than 0.390, nor less than 0.331, nor less than 0.997-X
WALKING PERSON (lunar white)	X: not less than 0.280, nor greater than 0.320 Y: not less than 1.055(X) - 0.0128, nor greater than 1.055(X) + 0.0072

LED countdown PSF module maximum power consumption must not exceed the following values:

Power Consumption Requirements

PSF module	Power Consumption @ 24 °C	Power Consumption @ 74 °C
UPRAISED HAND	10.0 W	12.0 W
WALKING PERSON	9.0 W	12.0 W
Two digital COUNTDOWN TIMER	6.0 W	8.0 W

Wiring and terminal block must comply with Section 13.02 of ITE publication, Equipment and Material Standards, Chapter 2, "Vehicle Traffic Control Signal Heads." The LED countdown PSF module must be supplied with spade lugs and 3 secured, color-coded, 3-foot long, 600 V(ac), 20 AWG minimum stranded jacketed copper wires. Wires must comply with NEC, rated for service at +105 °C.

LED countdown PSF module must operate:

1. At a frequency of 60 ± 3 Hz over a voltage range from 95 to 135 V(ac) without perceptible flicker to the unaided eye. Fluctuations of line voltage must have no visible effect on luminous intensity of the indications. Rated voltage for measurements must be 120 V(ac).
2. Compatible with currently used State controller assemblies including solid state load switches, flashers, and conflict monitors. Comply with TEES Chapters 3 and 6. If a 20 mA alternating current or less is applied to the unit, the voltage read across the 2 leads must be 15 V(ac) or less.
3. Where the control and regulation module must be "smart" to exhibit countdown displays automatically adjusted with the traffic controller programmed intervals.
4. The mode of operation of the countdown PSF module must be during the pedestrian change interval. The module will begin counting down when the flashing "Upraised Hand" interval turns on counting down to "0" and turn off when the steady "Upraised Hand interval" turns on.

LED countdown PSF module on-board circuitry must:

1. Include voltage surge protection to withstand high-repetition noise transients. The voltage surge protection must comply with NEMA Standard TS2, Section 2.1.6.
2. Comply with FCC, Title 47, Subpart B, Section 15 regulations for Class A emission limits for electronic noise.

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REVISED PER ADDENDUM NO. 1 DATED JULY 13, 2012

LED countdown PSF module must provide a power factor of 0.90 or greater.

Total harmonic distortion from current and voltage induced into an alternating current power line by LED countdown PSF module must not exceed 20 percent at an operating temperature of 25 °C.

The LED countdown PSF module circuitry must prevent perceptible light emission to the unaided eye when a voltage, 50 V(ac) or less is applied to the unit.

When power is applied to LED countdown PSF module, light emission must occur within 90 ms.

The "UPRAISED HAND" and "WALKING PERSON" symbol indications must be electrically isolated from each other. Sharing a power supply or interconnect circuitry between the 3 indications is not allowed.

MEASUREMENT AND PAYMENT

Full compensation for installing light emitting diode countdown pedestrian signal face module is included in the contract lump sum price paid for various items of electrical work involved, and no additional compensation will be allowed therefor.

10-3.215 ACCESSIBLE PEDESTRIAN SIGNAL

GENERAL

Summary

This work includes installing accessible pedestrian signal (APS). Comply with Section 86, "Electrical Systems," of the Standard Specifications, the Transportation Electrical Equipment Specifications (TEES), and the California MUTCD.

Definitions

APS: As defined in the California MUTCD.

accessible walk indication: Activated audible and vibrotactile action during the walk interval.

ambient sound: Background sound level in dB at a given location.

ambient sound sensing microphone: Microphone that measures the ambient sound level in dB and automatically adjusts the APS speaker's volume, accordingly.

APS pedestrian push button (APS PPB) assembly: Assembly that connects a pedestrian push button to an APS electronic device to actuate the components of the APS.

audible speech walk message: Audible prerecorded message that communicates to pedestrians which street has the walk interval.

programming mechanism: Device to program the APS operation.

push button information message: Audible prerecorded message actuated when the push button is pressed and the walk interval is not timing.

push button locator tone: As defined in the California MUTCD.

vibrotactile pedestrian device: As defined in the California MUTCD.

Submittals

Submit the APS wiring diagram and product data.

Submit 2 APS user and operator manuals for each signalized location. Manuals must include a master item index that describes the purpose of each manual and brief description to the directory. The index must include an overall description of the APS and its associated equipment and cables with illustrative block diagrams; manufacturer contact information, technical data specification, parts list, part descriptions, and settings. The manuals must include fault diagnostic and repair procedures and procedures for preventative maintenance in order to maintain APS performance parameters.

Before shipping APSs to the job site, submit APSs and the following to the Transportation Laboratory:

1. Delivery form including contract number and contact information
2. List containing all APS serial numbers
3. Manufacturer's name, trademark, model number, lot number, and month and year of manufacture
4. Programming mechanism if not integral to the APS

Submit a record of completed field tests, APS final configuration, audible sound levels and threshold, and a list of all parameter settings.

Quality Control and Assurance

The APS must be compatible with the State-furnished Model 170E/2070L controller assembly.

Power to the APS must be connected to the pedestrian signal section terminal blocks.

The Department will test APSs. Testing will be completed within 30 days of delivery to the Transportation Laboratory.

All functional and dimensional parameters of these specifications may be tested on the APSs.

Noncompliant materials will be rejected. Delays resulting from the submittal of noncompliant materials do not relieve you from executing the contract within the allotted time.

If material is rejected, submit replacement material and allow 30 days for retesting. Retesting period starts when the replacement material is delivered to the test site. You must pay for all retesting costs.

Remove rejected materials within 7 days after written notification of rejection. If the rejected materials are not removed within that period, the materials may be shipped to you at your expense.

You must pay for all shipping, handling and transportation costs related to testing and retesting.

After testing, pick up the compliant APS from the Transportation Laboratory and deliver it to the job site.

Functional Testing

Field tests must be completed twice, when traffic is noisy (e.g. peak traffic hours) and when traffic is quiet (e.g. off peak hours). Notify the Engineer 15 days before testing the APS.

Warranty

Provide a 2-year manufacturer replacement warranty for the APS effective from the date of installation against any defects or failures. All warranty documentation must be submitted to the Engineer before installation.

Replacement parts must be provided within 10 days after receipt of the failed part at no cost to the Department and must be delivered to the Department's Maintenance Electrical Shop at 7310 E. Bandini Blvd, Commerce, CA 90040.

MATERIALS

The APS PPB assembly must include:

1. PPB actuator with a minimum diameter of 2 inches. The PPB must be rainproof and shockproof in any weather condition. If a mechanical switch is used, the switch must have:
 - 1.1. Operating force of 3.5 lbs
 - 1.2. Maximum pretravel of 5/64 inch
 - 1.3. Minimum overtravel of 1/32 inch
 - 1.4. Differential travel from 0.002 to 0.04 inches
2. Vibrotactile device on the push button or on the arrow.
3. Enclosure with an ambient sound level sensing microphone and weatherproof speaker. A Type B PPB assembly may be substituted with an APS PPB assembly enclosure, but must be less than 7 lb, be less than 16" x 6" x 5", and fit the standard. Maximum diameter of the hole for passage of wiring must not exceed 1.125". Attachment to the pole must be with 2 screws of diameter from 1/4 to 3/8 inch suitable for use in tapped holes. Clear space between any 2 holes in the post must be at least twice the diameter of the larger hole.

The APS speakers and electronic equipment must be installed inside the APS PPB assembly enclosure. Speakers must not interfere with the PPB or its mounting hardware. Speaker grills must be located on the APS PPB assembly enclosure.

Nine No. 20 conductor cable complying with MIL-W-16878D must be used between the APS PPB assembly and the pedestrian signal head. Wiring must comply with Section 13.02 of ITE publication, Equipment and Material Standards, Chapter 2, "Vehicle Traffic Control Signal Heads" and NEC, rated for service at +105 °C.

Electronic switches, a potentiometer, or a handheld device must be used to control and program the volume level and the messaging for the APS. Programming mechanism must be submitted to the Engineer upon successful APS installation.

The APS must:

1. Include a provision to enable and disable the APS operation.
2. Have a failsafe operation. In the event of APS failure, the pedestrian push buttons, when pressed, must activate the pedestrian WALK signal timing.
3. Provide information using:
 - 3.1. Audible speech walk message plays when the PPB is pressed. The message must include the name of the street to be crossed associated with that push button. An example of the message is: "Peachtree, "walk" sign is "on" to cross Peachtree." The message must be repeated for the duration of the "walk" interval. The APS must include at least five sound options to be played during the "walk" interval. The Engineer may field select the "walk" sound option. The message must be activated for use from the beginning of the "walk" interval. The message must have a percussive tone consisting of multiple frequencies with a dominant component of 880 Hz. If the tone is selected as the "message" it must repeat 8 to 10 ticks per second.
 - 3.2. Push button information message provides the name of the street to be crossed associated with that push button. The message must play when the PPB is pressed. An example of the message is: "Wait to cross Howard at Grand. Wait."
 - 3.3. Push button locator tone that clicks or beeps. The locator tone must come from the PPB and repeat at 1 tone per second interval. Each tone has a maximum duration of 0.15 second. The locator tone volume must adjust in response to ambient sound and be audible up to 12 feet from the push button or to the building line, whichever is less.

CONSTRUCTION

Arrange, at your expense, to have a manufacturer's representative qualified to work on APS present whenever the equipment is installed, modified, connected, and reconnected. The APS must not interfere with the State-furnished controller assembly, the signal installation on signal standards, the pedestrian signal heads, or the terminal compartment blocks. The APS electronic control equipment must reside inside the APS PPB assembly and the standard pedestrian signal head.

You are responsible for the compatibility of the components and for making the necessary calibration adjustment to deliver the performance specified. Provide the equipment and hardware required to install, set up, calibrate, and verify the performance of the APS.

Upon successful completion of the APS installation, disable the APS operation.

TRAINING

Provide a minimum of 2 hours of training by a certified manufacturer's representative for up to 6 Department employees selected by the Engineer. The content of the training must include instruction on how to install, program, adjust, calibrate, and maintain the APS.

Provide materials and equipment for the training. Notify the Engineer 15 days before the training. The time and location of the training must be agreed upon by you and the Engineer and you. If no agreement can be reached, the Engineer will determine the time and location.

MEASUREMENT AND PAYMENT

Full compensation for installing accessible pedestrian signal is included in the contract lump sum price paid for various items of electrical work involved and no separate payment will be made therefor.

10-3.305 INTERNALLY ILLUMINATED SIGN - LIGHT EMITTING DIODE R3-1 SIGN

GENERAL

Summary

This work includes installing LED R3-1 SIGN "NO RIGHT-TURN"

MATERIAL

Enclosure NEMA 3R

Enclosure is constructed from 5052 H32 sheet aluminum in 0.090" thick material.

The area on the sign body where the mounting brackets will be placed has a 0.125" thick reinforcement plate welded on the inside of the sign for additional strength when mounting the sign. This reinforcement area has been tested to withstand loads greater than 6,600 lb.

All exposed seams are continuously welded using Gas Metal Arc Welding (GMAW) or Gas Tungsten Arc Welding (GTAW) to ensure a watertight seal.

Weep holes are incorporated in the bottom of the enclosure to prevent possible buildup of condensation.

Enclosure is constructed aluminum in height, and width 24" x 24".

All exposed seams are ensured a watertight seal.

Enclosures use a neoprene gasket strip to provide a watertight seal between the door and the display lens.

A 0.260" x 1" gasket is used around the door frame and a 0.125" x 0.5" gasket is used around the lens.

Glare shields are retained with #10 stainless steel hardware.

Lens

Lenses are cut from nominal 0.120" thick matte finish polycarbonate lexan.

Hardware

All hardware is stainless steel. Door latches and keepers are a turn-lock style requiring no tools to open the enclosure. The hinges are stainless steel and of a full length continuous piano hinge style construction. Hinges are riveted to the door and bolted to the enclosure body.

Finish

The standard finish for the enclosure body is powder coated satin black on external aluminum surfaces. The message board mask is finished in a flat black powder coat. The inside surface of the glare shield will be powder coated Flat Black and the outside surface of the glare shield will be powder coated the selected color of the enclosure body.

Mounting

Mounting patterns is Tri-stud patterns top and bottom.

OPERATIONS

General

BOS's (Blank Out Signs) with one symbol is basically a "on" or "off" sign. One 120 V(ac) power line is connected to the sign terminal blocks from the BOS Control Cabinet which controls the "on" "off" function of the sign. Status or alarms (if any) are controlled by the BOS control cabinet controller or conflict monitor.

Electrical

Each sign consists of electronics package that is custom designed for its particular application. In general, it consists of an AC to DC power supply, LED Light Engine, and dimming and or flashing circuitry. All the electronics are mounted onto a panel located on the rear of the enclosure body. A 3 A fast blow fuse is used to protect the unit from over current conditions. Surge protection and voltage regulation devices must be installed in the control cabinet to protect the PCB (printed circuit board) from power surges and brownouts.

Wiring

Wiring from panels to the PCB uses a modular wire harness. Connectors are used to plug into the PCB from the terminal block to prevent accidental removal.

Wires are cut to a specific length in order route the wiring properly, the wires do have sufficient length however to re-strip and connect.

Terminal blocks are located on the back panel for ease of accessibility and are used for field connection 120 V(ac).

All wiring and wires are IAW NEMA standards.

A 2 k Ω 10 W 5 percent ceramic Load Resistor is mounted on the back panel in the enclosure body. The load resistor serves to drain current leakage that occurs with certain load switches in traffic control cabinets. If the load switch used in the Control Cabinet has a leak rate of 15.8 V(ac) or less the load resistors will not be necessary and can be omitted.

Light Engine

The light engine consists of discrete LED's mounted onto printed circuit boards (PCB) which are conformal coated as specified in NEMA TS1 Signal Monitor Specification. The PCBs are mounted onto a message board mask and protected from the elements by the body lens. The PCBs have a full sized copper ground plane to provide noise shielding, and a heat sink for the LEDs.

The LEDs are connected in parallel with one another, with each LED having a dedicated current limiting resistor. This configuration insures that the remaining LEDs will continue operating should a failure occur in another path. The LED drive current is limited to about 75 percent of the LEDs rated maximum to ensure long life and to minimize any heat buildup.

5 V(dc) electrical power is delivered to the light engine through a 4 pin 0.156" MTA series header and connector. This connector is rated at 600 V, 6 A, and used on 18 AWG wire. Friction lock tabs are used to prevent accidental removal of the connector.

The standard LED choices are listed in the table below. The LED color shall be visible at a distance of 700 yard under normal atmospheric conditions.

Color	Color WL(nM)	Intensity (MCD)	Viewing Angle (Deg)
White		31000	15
Red	630	12000	20

Specific Details

The LED symbols are constructed from 4 PCB's to form one symbolic display over 18". Symbols that are 18" or less require only 1 PCB.

Nominal pixel pitch is normally 1/2".

The light engine operates on the standard 5 V power supply.

Power Supply

130 W switching class 1 power supply.

Dimming and Flashing

Flashing is an optional feature that is easily incorporated into the Blank Out Signs. BOS shall have a dimming feature. The dimmer is a two level design (Bright/Dim) allowing the light engine to normally operate at full intensity. When the dimmer is active, the power to the light engine is reduced by approximately 50 percent which reduces the intensity. The dimmer incorporates a failsafe feature where the light engine will continue operating at its full intensity in the event of a dimmer relay or resistor failure. The dimmer can be controlled locally by an optional electric photocell mounted on the enclosure, or by an external 120 V(ac) signal. Flashing is accomplished through the use of a flasher relay with variable on and off times. This provides an infinitely adjustable combination of flash rates and durations ranging from 0.6 seconds to 24 hours.

Submittals

Before shipping LED signal modules to job site, submit the following to the Transportation Laboratory:

1. Delivery form including district number, Contract Number, and contact information
2. List containing all LED signal module serial numbers anticipated for use
3. LED signal modules

Quality Assurance Testing

The State will test LED signal module shipments per Normal Sampling Plan (ANSI/ASQC Z1.4-1993), Tables for Inspection by Attributes. Testing will be completed within 30 days of delivery to the Transportation Laboratory. LED signal modules tested or submitted for testing must be representative of typical production units. LED and circular LED signal modules will be tested as specified in California Test 604. Arrow, LED signal modules will be tested as specified in California Test 3001. All parameters of the specification may be tested on the modules. LEDs must be spread evenly across the module. LED arrow indication must provide the minimum initial luminous intensity listed. Measurements will be performed at the rated operating voltage of 120 V(ac).

Delays resulting from submittal of non-compliant materials do not relieve you from executing the contract within the allotted time. Non-compliant materials will be rejected. You must resubmit new LED for retesting and pick up the failed units within one week of notification. You must provide new LED signal modules and allow a minimum of 30 days for the retest. You must pay for all shipping and handling costs related to testing and retesting. Delays resulting from resubmittal and retesting are your responsibility and no extra time will be allowed.

After testing, you must pick up the tested LED signal modules from the Transportation Laboratory and deliver to the job site.

Warranty

The manufacturer must provide a written warranty against defects in materials and workmanship for LED signal modules for a minimum period of 48 months after installation of LED signal modules. Replacement LED signal modules must be provided within 15 days after receipt of failed LED modules at no cost to the State, except the cost of shipping the failed modules. All warranty documentation must be submitted to the Engineer before installation. Replacement LED signal modules must be delivered to State Maintenance Electrical Shop at: Department of Transportation, Electrical Maintenance Yard, 7300 Bandini Blvd, Commerce, CA. 90040.

MATERIAL

LED R3-1 SIGN "No right-turn" module must:

1. Be weather tight and connect directly to electrical wiring.
2. Be capable of optical unit replacement.
3. Have manufacturer's name, trademark, model number, serial number, lot number, month and year of manufacture, and required operating characteristics, including rated voltage, power consumption, and volt-ampere, permanently marked on the back of the module.
4. Be AlInGaP technology
5. Be ultra bright type rated for 100,000 hours of continuous operation from -40 to +74 °C
6. Each module must provide an average luminous intensity of at least 1,547 foot-lambert / 5,300 candela/m² throughout the useful life over the operating temperature range.
7. The uniformity ratio of an illuminated symbol must not exceed 4 to 1 between the highest luminance area and the lowest luminance area in the module.
8. The color output of the module must conform to the requirements of Section 5.3 in the ITE Publication: Equipment and Material Standards, Chapter 3 (Pedestrian Traffic Control Signal Indications).
9. R3-1 SIGN "No right-turn" must be lunar white with measured chromatically coordinates of LED module operating over a temperature range of -40 to +74 °C as follows:
 - a. x: not less than 0.270, nor greater than 0.330
 - b. y: not less than $1.055(x) - 0.0128$, nor greater than $1.055(x) + 0.0072$
10. Use LED as the light source.
11. Use required color and be ultra bright type rated for 100,000 hours of continuous operation from -40 to +74 °C.
12. Be a single, self-contained device, not requiring on-site assembly for installation.
13. Module Identification
 - a. Each module must have the manufacturer's name, trademark, model number, serial number, date of manufacture (month-year), and lot number as identification permanently marked on the back of the module.
 - b. The following operating characteristics must be permanently marked on the back of the module: rated voltage and rated power in Watts and Volt-Ampere.

14. Maximum power consumption requirements for the LED modules are as follows (in Watts):

	25 °C	74 °C
R3-1 SIGN "No right-turn"	15.0	17.0

LED R3-1 SIGN "No right-turn" module must have an operational lifecycle rating of 48 months. During the operational lifecycle, LED signal module must meet all parameters of this specification.

Individual LEDs must be wired so catastrophic loss or failure of one LED will result in loss of not more than 5 percent of the PSF module light output. Failure of an individual LED in a string must not result in the loss of entire string or other indication.

No special tools for installation are allowed.

Wiring and terminal block must comply with Section 13.02 of ITE publication, Equipment and Material Standards, Chapter 2, "Vehicle Traffic Control Signal Heads." The LED PSF module must be supplied with spade lugs and 3 secured, color-coded, 3-foot long, 600 V, 20 AWG minimum stranded jacketed copper wires. Wires must comply with NEC, rated for service at +105 °C.

LED R3-1 SIGN "No right-turn" module must operate:

1. At a frequency of 60 Hz \pm 3 Hz, over a voltage range from 95 V(ac) to 135 V(ac), without perceptible flicker to the unaided eye. Fluctuations of line voltage must have no visible effect on luminous intensity of the indications. Rated voltage for measurements must be 120 V(ac).
2. Compatible with currently used State controller assemblies, including solid state load switches, flashers, and conflict monitors. Comply with TEES Chapters 3 and 6. If a 20 mA alternating current or less is applied to the unit, the voltage read across the 2 leads must be 15 V(ac) or less.

LED R3-1 SIGN "No right-turn" module on-board circuitry must:

1. Include voltage surge protection to withstand high-repetition noise transients. The voltage surge protection must comply with NEMA Standard TS2, Section 2.1.6.
2. Comply with FCC, Title 47, SubPart B, Section 15 regulations for Class A emission limits for electronic noise.

LED signal module must provide a power factor of 0.90 or greater.

Total harmonic distortion from current and voltage induced into an alternating current power line by LED signal module must not exceed 20 percent at an operating temperature of 25 °C.

When power is applied to LED signal module, light emission must occur within 90 ms.

Power supply must be integral to the module.

Internal components must be adequately supported to withstand mechanical shock and vibration from high winds and other sources.

Lens and LED signal module material must comply with the ASTM specifications for that material.

Enclosures containing either the power supply or electronic components of LED signal module, except lenses, must be made of UL94VO flame-retardant material.

If a specific mounting orientation is required, the LED signal module must have prominent and permanent vertical markings for accurate indexing and orientation within the signal housing. Markings must include an up arrow, or the word "UP" or "TOP".

PAYMENT

Full compensation for LED R3-1 SIGN "NO RIGHT-TURN" is included in the contract lump sum price paid for modify signal and lighting (city street location 4) and no additional compensation will be allowed therefor.

BID ITEM LIST

07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
2	071321	TEMPORARY FENCE (TYPE CL-6)	LF	4,300		
3	023113	30' TEMPORARY CHAIN LINK GATE (TYPE CL-6)	EA	1		
4	023114	12' TEMPORARY CHAIN LINK GATE (TYPE CL-6)	EA	2		
5	023115	38' TEMPORARY ROLLING CHAIN LINK GATE	EA	1		
6	043740	TEMPORARY PEDESTRIAN ACCESS STRUCTURE	LS	LUMP SUM	LUMP SUM	
7	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
8	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
9	074026	TEMPORARY MULCH	SQYD	10,000		
10	074027	TEMPORARY EROSION CONTROL BLANKET	SQYD	44,600		
11	074028	TEMPORARY FIBER ROLL	LF	13,700		
12	074031	TEMPORARY GRAVEL BAG BERM	LF	28,300		
13	074032	TEMPORARY CONCRETE WASHOUT FACILITY	EA	10		
14	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	28		
15	074034	TEMPORARY COVER	SQYD	6,000		
16	074037	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	8		
17	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	200		
18	074041	STREET SWEEPING	LS	LUMP SUM	LUMP SUM	
19	074055	TEMPORARY SOIL BINDER	SQYD	44,600		
20	074056	RAIN EVENT ACTION PLAN	EA	82	500.00	41,000.00

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	074057	STORM WATER ANNUAL REPORT	EA	4	2,000.00	8,000.00
22	074058	STORM WATER SAMPLING AND ANALYSIS DAY	EA	52		
23	090100	TIME-RELATED OVERHEAD (WDAY)	WDAY	920		
24	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
25	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
26	120116	TYPE II BARRICADE	EA	52		
27	120119	TRAFFIC CONE	EA	110		
28	120120	TYPE III BARRICADE	EA	23		
29	120165	CHANNELIZER (SURFACE MOUNTED)	EA	500		
30	129000	TEMPORARY RAILING (TYPE K)	LF	50,350		
31	129100	TEMPORARY CRASH CUSHION MODULE	EA	400		
32	141103	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	LF	25,000		
33	150206	ABANDON CULVERT	LF	820		
34	150224	ABANDON MANHOLE	EA	1		
35	150241	ABANDON SEWER	LF	1,790		
36	023116	ABANDON SANITARY SEWER MANHOLE	EA	7		
37	150305	OBLITERATE SURFACING	SQYD	17,300		
38	150608	REMOVE CHAIN LINK FENCE	LF	6,240		
39	150662	REMOVE METAL BEAM GUARD RAILING	LF	7,020		
40	150667	REMOVE DOUBLE METAL BEAM BARRIER	LF	2,990		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	150711	REMOVE PAINTED TRAFFIC STRIPE	LF	129,000		
42	150713	REMOVE PAVEMENT MARKING	SQFT	6,590		
43	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	55,300		
44	150722	REMOVE PAVEMENT MARKER	EA	17,800		
45	150741	REMOVE ROADSIDE SIGN MOUNTED ON MAST ARM	EA	5		
46	150744	REMOVE ROADSIDE SIGN (WOOD POST)	EA	88		
47	150745	REMOVE ROADSIDE SIGN (METAL POST)	EA	54		
48	150747	REMOVE ROADSIDE SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	54		
49	150760	REMOVE SIGN STRUCTURE	EA	6		
50	150763	REMOVE SIGN PANEL	EA	7		
51	150767	REMOVE BRIDGE MOUNTED SIGN	EA	3		
52	150806	REMOVE PIPE	LF	2,390		
53	150820	REMOVE INLET	EA	25		
54	150824	REMOVE SEWER MANHOLE	EA	3		
55	150825	REMOVE REINFORCED CONCRETE BOX CULVERT	CY	920		
56	150826	REMOVE MANHOLE	EA	1		
57	150829	REMOVE RETAINING WALL	LF	1,520		
58	150841	REMOVE SEWER PIPE	LF	220		
59	150846	REMOVE CONCRETE PAVEMENT	SQYD	29,200		
60	150860	REMOVE BASE AND SURFACING	CY	3,180		

**BID ITEM LIST
07-215934**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	152391	RELOCATE ROADSIDE SIGN (METAL POST)	EA	25		
62	152475	ADJUST SEWER MANHOLE	EA	3		
63	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	12,900		
64	153210	REMOVE CONCRETE	CY	490		
65	153211	REMOVE CONCRETE SIDEWALK AND DRIVEWAY	SQFT	79,500		
66	153215	REMOVE CONCRETE (CURB AND GUTTER)	LF	36,400		
67	023117	REMOVE PORTABLE CONCRETE BARRIER (TYPE 60K)	LF	1,810		
68	023118	REMOVE MASONRY BLOCK WALL	LF	680		
69	153251	REMOVE SOUND WALL (LF)	LF	2,410		
70	155003	CAP INLET	EA	2		
71	023119	CAP SEWER MANHOLE	EA	1		
72	157551	BRIDGE REMOVAL, LOCATION A	LS	LUMP SUM	LUMP SUM	
73	157552	BRIDGE REMOVAL, LOCATION B	LS	LUMP SUM	LUMP SUM	
74	157553	BRIDGE REMOVAL, LOCATION C	LS	LUMP SUM	LUMP SUM	
75	157554	BRIDGE REMOVAL, LOCATION D	LS	LUMP SUM	LUMP SUM	
76	157561	BRIDGE REMOVAL (PORTION), LOCATION A	LS	LUMP SUM	LUMP SUM	
77	157562	BRIDGE REMOVAL (PORTION), LOCATION B	LS	LUMP SUM	LUMP SUM	
78	157563	BRIDGE REMOVAL (PORTION), LOCATION C	LS	LUMP SUM	LUMP SUM	
79	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
80	190101	ROADWAY EXCAVATION	CY	141,000		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81	023120	ROADWAY EXCAVATION (CONTAMINATED SOIL)	CY	370		
82	190108	ROADWAY EXCAVATION (TYPE Y-2) (AERIALY DEPOSITED LEAD)	CY	9,600		
83	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
84	190111	ADL BURIAL LOCATION REPORT	LS	LUMP SUM	LUMP SUM	
85	023121	HAZARDOUS MATERIALS MITIGATION PLANS	LS	LUMP SUM	LUMP SUM	
86 (F)	192001	STRUCTURE EXCAVATION	CY	322		
87 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	CY	28,115		
88 (F)	043741	STRUCTURE EXCAVATION (AUSTIN VAULT)	CY	3,675		
89 (F)	192037	STRUCTURE EXCAVATION (RETAINING WALL)	CY	18,214		
90 (F)	192058	STRUCTURE EXCAVATION (TYPE Y-2) (AERIALY DEPOSITED LEAD)	CY	8,424		
91	043742	SAND BED (AUSTIN VAULT)	CY	260		
92 (F)	193001	STRUCTURE BACKFILL	CY	191		
93 (F)	043743	STRUCTURE BACKFILL (AUSTIN VAULT)	CY	482		
94 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	CY	18,130		
95 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	CY	29,835		
96 (F)	193031	PERVIOUS BACKFILL MATERIAL (RETAINING WALL)	CY	2,433		
97	193114	SAND BACKFILL	CY	210		
98 (F)	193119	LEAN CONCRETE BACKFILL	CY	65		
99	194001	DITCH EXCAVATION	CY	26		
100	198001	IMPORTED BORROW	CY	128,000		

**BID ITEM LIST
07-215934**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101	200001	HIGHWAY PLANTING	LS	LUMP SUM	LUMP SUM	
102	200114	ROCK BLANKET	SQYD	6,200		
103	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM	LUMP SUM	
104	208000	IRRIGATION SYSTEM	LS	LUMP SUM	LUMP SUM	
105 (F)	208028	3" SUPPLY LINE (BRIDGE)	LF	930		
106	208310	IRRIGATION SLEEVE	LF	510		
107	208808	8" WELDED STEEL PIPE CONDUIT (.250" THICK)	LF	600		
108	250401	CLASS 4 AGGREGATE SUBBASE	CY	6,540		
109	260203	CLASS 2 AGGREGATE BASE (CY)	CY	5,940		
110	260303	CLASS 3 AGGREGATE BASE (CY)	CY	48,300		
111	280000	LEAN CONCRETE BASE	CY	30,900		
112	023122	LEAN CONCRETE BASE (RAPID SETTING CONCRETE)	CY	140		
113	390131	HOT MIX ASPHALT	TON	32,700		
114	394060	DATA CORE	LS	LUMP SUM	LUMP SUM	
115	394073	PLACE HOT MIX ASPHALT DIKE (TYPE A)	LF	110		
116	394076	PLACE HOT MIX ASPHALT DIKE (TYPE E)	LF	2,110		
117	394077	PLACE HOT MIX ASPHALT DIKE (TYPE F)	LF	310		
118	394090	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SQYD	1,430		
119	397005	TACK COAT	TON	6		
120	BLANK					

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121	401050	JOINTED PLAIN CONCRETE PAVEMENT	CY	44,500		
122	023123	JOINTED PLAIN CONCRETE (RAPID STRENGTH CONCRETE)	CY	300		
123	023124	INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)	CY	130		
124	404092	SEAL PAVEMENT JOINT	LF	62,200		
125	404093	SEAL ISOLATION JOINT	LF	1,000		
126	415101	CRACK EXISTING CONCRETE PAVEMENT	SQYD	19,600		
127	490550	FURNISH 24" STEEL PIPE PILING	LF	46,442		
128	490555	DRIVE 24" STEEL PIPE PILE	EA	974		
129	490603	24" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	21,135		
130	490736	FURNISH PILING (CLASS 90)	LF	70,110		
131	490737	DRIVE PILE (CLASS 90)	EA	1,891		
132	498016	16" CAST-IN-DRILLED-HOLE CONCRETE PILING (SOUND WALL)	LF	12,413		
133	498022	24" CAST-IN-DRILLED-HOLE CONCRETE PILING (SOUND WALL)	LF	130		
134	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
135	043744	TEMPORARY PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
136	510050	STRUCTURAL CONCRETE	CY	131		
137 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	CY	5,030		
138 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	CY	18,410		
139 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	CY	12,437		
140 (F)	510085	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	CY	25		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	CY	1,250		
142 (F)	510090	STRUCTURAL CONCRETE, BOX CULVERT	CY	2,135		
143 (F)	043745	STRUCTURE CONCRETE (AUSTIN VAULT)	CY	646		
144 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	454		
145 (F)	510526	MINOR CONCRETE (BACKFILL)	CY	156		
146 (F)	510705	PILASTER, SOUND WALL	CY	119		
147 (F)	043746	ARCHITECTURAL TREATMENT (AUSTIN VAULT)	SQFT	1,150		
148 (F)	043747	ARCHITECTURAL TREATMENT (SUNRAY - SPLIT SLATE)	SQFT	23,130		
149 (F)	043748	ARCHITECTURAL TREATMENT (BRIDGE)	SQFT	1,070		
150 (F)	043749	ARCHITECTURAL TREATMENT (SLOPE PAVING)	SQFT	1,975		
151 (F)	043750	ARCHITECTURAL TREATMENT (SPLIT SLATE)	SQFT	2,900		
152 (F)	043751	ARCHITECTURAL TREATMENT (SPLIT SLATE - FRACTURED RIB)	SQFT	94,025		
153	511106	DRILL AND BOND DOWEL	LF	15		
154	043752	REPAIR SOFFIT SURFACE AREA	SQFT	47		
155 (F)	518002	SOUND WALL (MASONRY BLOCK)	SQFT	91,145		
156	518050	PTFE BEARING	EA	8		
157	518051	PTFE SPHERICAL BEARING	EA	6		
158	519081	JOINT SEAL (MR 1/2")	LF	219		
159	519088	JOINT SEAL (MR 1")	LF	25		
160	519092	JOINT SEAL ASSEMBLY (MR 2 1/2")	LF	114		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	519093	JOINT SEAL ASSEMBLY (MR 3")	LF	78		
162	519100	JOINT SEAL (MR 2")	LF	1,300		
163 (F)	520101	BAR REINFORCING STEEL	LB	42,387		
164 (F)	520102	BAR REINFORCING STEEL (BRIDGE)	LB	5,242,400		
165 (F)	520103	BAR REINFORCING STEEL (RETAINING WALL)	LB	2,048,710		
166 (F)	043753	BAR REINFORCING STEEL (AUSTIN VAULT)	LB	159,449		
167 (F)	520107	BAR REINFORCING STEEL (BOX CULVERT)	LB	454,157		
168 (F)	520120	HEADED BAR REINFORCEMENT	EA	1,237		
169 (F)	560203	FURNISH SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	LB	6,358		
170 (F)	560204	INSTALL SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	LB	6,358		
171 (F)	560213	FURNISH SIGN STRUCTURE (LIGHTWEIGHT)	LB	20,575		
172 (F)	560214	INSTALL SIGN STRUCTURE (LIGHTWEIGHT)	LB	20,575		
173 (F)	560218	FURNISH SIGN STRUCTURE (TRUSS)	LB	195,140		
174 (F)	560219	INSTALL SIGN STRUCTURE (TRUSS)	LB	195,140		
175	560233	FURNISH FORMED PANEL SIGN (OVERHEAD)	SQFT	2,360		
176	560245	FURNISH LAMINATED PANEL SIGN (1"-TYPE B)	SQFT	120		
177	560248	FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SQFT	920		
178	560249	FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SQFT	240		
179	560251	FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-FRAMED)	SQFT	190		
180	560252	FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-FRAMED)	SQFT	130		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
181	023125	INSTALL SIGN PANEL ON SOUND WALL	EA	12		
182	561005	36" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	70		
183	561016	60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	270		
184	562001	METAL (ROADSIDE SIGN)	LB	73		
185	562002	METAL (BARRIER MOUNTED SIGN)	LB	1,070		
186	566011	ROADSIDE SIGN - ONE POST	EA	42		
187	566012	ROADSIDE SIGN - TWO POST	EA	2		
188	568001	INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	50		
189	568007	INSTALL SIGN OVERLAY	SQFT	29		
190	568016	INSTALL SIGN PANEL ON EXISTING FRAME	SQFT	390		
191	568017	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	EA	2		
192	568023	INSTALL ROADSIDE SIGN (LAMINATED WOOD BOX POST)	EA	1		
193	641113	24" PLASTIC PIPE	LF	76		
194	650012	15" REINFORCED CONCRETE PIPE	LF	280		
195	650014	18" REINFORCED CONCRETE PIPE	LF	1,940		
196	650018	24" REINFORCED CONCRETE PIPE	LF	12,800		
197	650022	30" REINFORCED CONCRETE PIPE	LF	890		
198	665717	18" SLOTTED CORRUGATED STEEL PIPE (.079" THICK)	LF	270		
199	680903	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	LF	100		
200	023126	6" PLASTIC PIPE UNDERDRAIN (AUSTIN VAULT)	LF	640		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
201	023127	FILTER FABRIC (AUSTIN VAULT)	SQYD	570		
202	023128	PERMEABLE MATERIAL (AUSTIN VAULT)	CY	220		
203	043754	12" WELDED STEEL PIPE CASING (BRIDGE)	LF	106		
204	704175	JACKED 24" WELDED STEEL PIPE (.250" THICK)	LF	240		
205	707217	36" PRECAST CONCRETE PIPE MANHOLE	LF	50		
206	023129	10" VITRIFIED CLAY SEWER PIPE	LF	1,170		
207	023130	15" VITRIFIED CLAY SEWER PIPE	LF	300		
208	717006	6" SEWER PIPE (LATERAL)	LF	27		
209	719190	SEWER MANHOLE FRAME AND COVER	EA	11		
210	023131	SANITARY SEWER MANHOLE	EA	11		
211 (F)	721810	SLOPE PAVING (CONCRETE)	CY	91		
212	023132	GABION (AUSTIN VAULT)	CY	40		
213	727901	MINOR CONCRETE (DITCH LINING)	CY	190		
214	727905	MINOR CONCRETE (CHANNEL LINING)	CY	65		
215	731507	MINOR CONCRETE (GUTTER DEPRESSION)	CY	6		
216	731510	MINOR CONCRETE (CURB, GUTTER, SIDEWALK AND DRIVEWAY)	CY	1,840		
217	023133	MINOR CONCRETE (RETAINING CURB)	CY	24		
218	731530	MINOR CONCRETE (TEXTURED PAVING)	SQFT	21,100		
219	731623	MINOR CONCRETE (CURB RAMP)	CY	47		
220 (F)	750001	MISCELLANEOUS IRON AND STEEL	LB	89,436		

**BID ITEM LIST
07-215934**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
221	023134	MISCELLANEOUS METAL (AUSTIN VAULT)	LB	230		
222 (F)	750041	ISOLATION CASING	LB	14,700		
223 (F)	750501	MISCELLANEOUS METAL (BRIDGE)	LB	9,802		
224 (F)	750505	BRIDGE DECK DRAINAGE SYSTEM	LB	11,070		
225	800360	CHAIN LINK FENCE (TYPE CL-6)	LF	1,240		
226	802501	4' CHAIN LINK GATE (TYPE CL-6)	EA	3		
227	802580	12' CHAIN LINK GATE (TYPE CL-6)	EA	5		
228	832001	METAL BEAM GUARD RAILING	LF	160		
229	023135	METAL HANDRAILING	LF	520		
230	023136	CHAIN LINK RAILING (TYPE 6 MODIFIED)	LF	2,570		
231 (F)	043755	CHAIN LINK RAILING (TYPE 3 MODIFIED)	LF	1,010		
232 (F)	043756	CHAIN LINK RAILING TYPE 31 MODIFIED 1)	LF	440		
233 (F)	043757	CHAIN LINK RAILING (TYPE 3L MODIFIED 2)	LF	1,970		
234 (F)	833142	CONCRETE BARRIER (TYPE 26 MODIFIED)	LF	1,010		
235 (F)	839521	CABLE RAILING	LF	580		
236	839541	TRANSITION RAILING (TYPE WB)	EA	2		
237	839584	ALTERNATIVE IN-LINE TERMINAL SYSTEM	EA	2		
238	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2		
239	839603	CRASH CUSHION (ADIEM)	EA	1		
240	839604	CRASH CUSHION (REACT 9CBB)	EA	1		

**BID ITEM LIST
07-125934**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
241	839706	CONCRETE BARRIER (TYPE 60G)	LF	6,500		
242	839709	CONCRETE BARRIER (TYPE 60GE)	LF	380		
243	023137	CONCRETE BARRIER (TYPE 60E MODIFIED)	LF	360		
244	023138	CONCRETE BARRIER (TYPE 736B MODIFIED)	LF	2,750		
245 (F)	043758	CONCRETE BARRIER (TYPE 60GA MODIFIED)	LF	646		
246 (F)	043759	CONCRETE BARRIER (TYPE 736 MODIFIED 1)	LF	1,200		
247 (F)	043760	CONCRETE BARRIER (TYPE 736 MODIFIED 2)	LF	461		
248 (F)	043761	CONCRETE BARRIER (TYPE 736A MODIFIED 2)	LF	3,903		
249 (F)	043762	CONCRETE BARRIER (TYPE 736SV MODIFIED)	LF	3,404		
250 (F)	043763	CONCRETE BARRIER (TYPE 736A MODIFIED 1)	LF	2,915		
251	840504	4" THERMOPLASTIC TRAFFIC STRIPE	LF	45,100		
252	840506	8" THERMOPLASTIC TRAFFIC STRIPE	LF	9,460		
253	840508	8" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 12-3)	LF	3,280		
254	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	17,300		
255	840521	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)	LF	1,480		
256	840525	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 36-12)	LF	23,800		
257	840526	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)	LF	13,100		
258	840656	PAINT TRAFFIC STRIPE (2-COAT)	LF	144,000		
259	840666	PAINT PAVEMENT MARKING (2-COAT)	SQFT	1,280		
260	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	10,600		

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
261	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	10,100		
262	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM	LUMP SUM	
263	860201	SIGNAL AND LIGHTING	LS	LUMP SUM	LUMP SUM	
264	860252	SIGNAL AND LIGHTING (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
265	860300	SIGNAL AND LIGHTING (CITY STREET LOCATION 1)	LS	LUMP SUM	LUMP SUM	
266	860302	SIGNAL AND LIGHTING (CITY STREET LOCATION 2)	LS	LUMP SUM	LUMP SUM	
267	860303	SIGNAL AND LIGHTING (CITY STREET LOCATION 3)	LS	LUMP SUM	LUMP SUM	
268	023139	MODIFY SIGNAL AND LIGHTING (CITY STREET LOCATION 4)	LS	LUMP SUM	LUMP SUM	
269	860400	LIGHTING (TEMPORARY)	LS	LUMP SUM	LUMP SUM	
270	860402	LIGHTING (CITY STREET)	LS	LUMP SUM	LUMP SUM	
271	860460	LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM	LUMP SUM	
272	860705	INTERCONNECTION CONDUIT AND CABLE (LS)	LS	LUMP SUM	LUMP SUM	
273 (F)	860772	COMMUNICATION CONDUIT (BRIDGE) (LF)	LF	1,265		
274	860797	ELECTRIC SERVICE (IRRIGATION)	LS	LUMP SUM	LUMP SUM	
275	860889	MODIFY TRAFFIC MONITORING STATION	LS	LUMP SUM	LUMP SUM	
276	860930	TRAFFIC MONITORING STATION	LS	LUMP SUM	LUMP SUM	
277	023140	MODIFY COMMUNICATION SYSTEM	LS	LUMP SUM	LUMP SUM	
278	023141	WORK AT NORWALK HUB AND LOS ANGELES REGIONAL TRANSPORTATION MANAGEMENT CENTER	LS	LUMP SUM	LUMP SUM	
279	861100	RAMP METERING SYSTEM	LS	LUMP SUM	LUMP SUM	
280	861497	MODIFY SIGNAL AND LIGHTING (LOCATION 1)	LS	LUMP SUM	LUMP SUM	

BID ITEM LIST
07-215934

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
281	861504	MODIFY LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM	LUMP SUM	
282	BLANK					
283	800365	CHAIN LINK FENCE (TYPE CL-6, SLANTED)	LF	700		
284	024553	TEMPORARY FENCE (TYPE CL-6, SLOTTED)	LE	490		
285	024554	REMOVE STEEL PIPE	LF	28		
286	490604	30" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	255		
287	510061	STRUCTURAL CONCRETE SOUNDWALL	CY	40		
288	044035	CONCRETE BARRIER (TYPE 73654 MODIFIED 1)	LF	152		
289	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID:

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