West Coast General Corporation
Mr. David E. Davey
13700 Stowe Drive, Suite 100
Poway, CA 92064
P: (619) 561-4200 F: (619) 561-4205

City of San Diego

CONTRACTOR'S NAME: _____
ADDRESS: _____
TELEPHONE NO.: _____ **FAX NO.:** _____
CITY CONTACT: Eleida Felix Yackel - Contract Specialist, Email: EFelixYackel@sandiego.gov
Phone No. (619) 533-3449, Fax No. (619) 533-3633
JSleiman/BDoringo/Lad

CONTRACT DOCUMENTS

ORIGINAL

FOR

MYF REHAB RUNWAY 5/23 & TAXIWAY G

VOLUME 1 OF 2

BID NO.: K-15-6020-DBB-3
SAP NO. (WBS/IO/CC): B-00910
CLIENT DEPARTMENT: 2111
COUNCIL DISTRICT: 6
PROJECT TYPE: AA

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

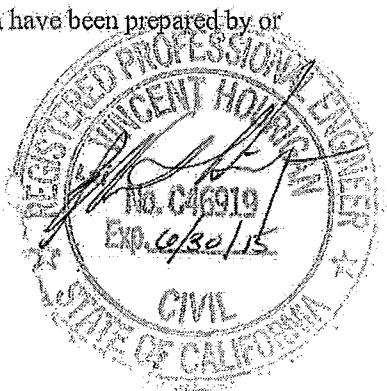
- FEDERAL EQUAL OPPORTUNITY CONTRACTING REQUIREMENTS.
- PREVAILING WAGE RATES: PREVAILING WAGE RATES: STATE ☒ FEDERAL ☒
- APPRENTICE REQUIREMENTS
- THIS IS A U.S. DEPARTMENT OF TRANSPORTATION FUNDED CONTRACT THROUGH THE FEDERAL AVIATION ADMINISTRATION.

BID DUE DATE:

2:00 PM
SEPTEMBER 17, 2014
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14TH FLOOR, MS 614C
SAN DIEGO, CA 92101

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:



1) Registered Engineer _____ 8-7-14 Date Seal:

2) For City Engineer _____ 8-7-2014 Date Seal:

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CITY OF SAN DIEGO, CALIFORNIA

NOTICE INVITING BIDS

1. **RECEIPT AND OPENING OF BIDS:** Bids will be received at the Public Works Contracts at the location, time, and date shown on the cover of these specifications for performing work on **MYF Rehab of Runway 5/23 & Taxiway G** (Project).

2. **SUMMARY OF WORK:** The Work involves furnishing all labor, materials, equipment, services, and other incidental works and appurtenances for the construction of the Project as described in ATTACHMENT A and Technical Specifications Section 40-Scope of Work.

3. **BIDS ARE PUBLIC RECORDS:** Upon receipt by the City, Bids shall become public records subject to public disclosure. It is the responsibility of the respondent to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the Bid. General references to sections of the California Public Records Act (PRA) will not suffice. If the Contractor does not provide applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City shall be free to release the information when required in accordance with the PRA, pursuant to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.

4. **SUBCONTRACTING PARTICIPATION PERCENTAGES:**

   4.1. The City affirms that in any contract entered into pursuant to this advertisement, DBE will be afforded full opportunity to submit Bids in response to this invitation.

   4.2. This Federally assisted project includes subcontracting participation percentages for DBE participation. DBE goal commitments and Good Faith Efforts (GFE) shall be made prior to bidding. DBE commitments and GFE made after the Bid opening will not be considered for the Award of Contract.

   4.3. This project is subject to the federal equal opportunity regulations and the following requirements. The City reserves the right to audit the Contractor's compliance with the federal requirements set forth below.

   4.4. Following are federally subcontracting participation percentages for this contract. For the purpose of achieving the subcontractor participation percentage, Additive or Deductive, and Type II Allowance Bid Items will not be included in the calculation.

   4.5. **FAA-** Certified DBE Bidder(s) shall meet the DBE goal or have a good faith effort. They receive no credit toward the goal for their own DBE status. The City has determined that the following goals shall apply to this project:

   Total DBE Percentage **18.3%**

   The Contractor shall meet the Project specific goals for DBE's as outlined in the Specifications or satisfy GFE documentation requirements.

4.6. Bid will be declared **non-responsive** if the Bidder fails any of the following conditions:

1. Submission of GFE documentation, as specified in the Agency Specific Provisions.
2. Attending the Pre-Submittal Meeting.
3. Bidder's submission of Good Faith Effort documentation, saved in searchable Portable Document Format (PDF) and stored on Compact Disc (CD) or Digital Video Disc (DVD), demonstrating the Bidder made a good faith effort to outreach to and include DBE Subcontractors shall be submitted within **4 Working Days** of the Bid opening.

4.7. For additional Equal Opportunity Contracting Program requirements, see Attachment C.

4.8. For additional Equal Opportunity Contracting Program requirements, funding agency provisions, see Attachment D.

5. PRE-BID MEETING:

5.1. There will be a Pre-Bid Meeting to discuss the scope of the Project, bidding requirements, pre-qualification process, and Equal Opportunity Contracting Program requirements and reporting procedures in the Public Works Contracts, Conference Room at 1010 Second Avenue, 14th Floor, San Diego, CA 92101 **at 10:00 AM, on AUGUST 28, 2014.**

5.2. **The Pre-Bid Meeting has been designated as MANDATORY. All potential bidders are required to attend.** Bid will be declared **non-responsive** if the Bidder fails to attend the Pre-Bid Meeting when specified to be mandatory Attendance at the Pre-Bid Meeting will be evidenced by the representative's signature on the attendance roster. It shall be the responsibility of the Bidder's representative to complete and sign the attendance roster. **No Bidder will be admitted after the specified start time of the mandatory Pre-Bid Meeting.**

5.3. To request a copy of the agenda on an alternative format, or to request a sign language or oral interpreter for this meeting, call the Public Works Contracs at (619) 533-3450 at least 5 Working Days prior to the Pre-Bid Meeting to ensure availability.

6. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:

6.1. **Prior** to the Award of the Contract or each Task Order, you and your Subcontractors and Suppliers must register with the City's web-based contract compliance website, Prism®, located here:

https://pro.prismcompliance.com/default.aspx.

6.2. The City may not award the contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified in the Notice of Intent to Award letter, the City reserves the right to rescind the Notice of Award / Intent to Award and to make the award to the next responsive and responsible bidder / proposer.

7. **PRE-BID SITE VISIT:** The prospective Bidders are encouraged to visit the Work Site with the Engineer. The purpose of the Site visit is to acquaint Bidders with the Site conditions. To request a sign language or oral interpreter for this visit, call the Public Works Contracts at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. A Pre-Bid Site Visit is offered when the details are provided as follows:

Time:	**1:30 PM**
Date:	**AUGUST 28, 2014**
Location:	**3750 John J. Montgomery Drive, San Diego, CA 92123**

8. **JOINT VENTURE CONTRACTORS.** Provide a copy of the Joint Venture agreement and the Joint Venture license to the City within 10 Working Days after receiving the Contract forms. See 2-1.1.2, "Joint Venture Contractors" in The WHITEBOOK for details.

9. **PREVAILING WAGE RATES:** Refer to Attachment D, Funding Agency Provisions.

10. **INSURANCE REQUIREMENTS:**

10.1. All certificates of insurance and endorsements required by the contract are to be provided upon issuance of the City's Notice of Intent to Award letter.

10.2. Refer to sections 7-3, "LIABILITY INSURANCE", and 7-4, "WORKERS' COMPENSATION INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

11. **PREQUALIFICATION OF CONTRACTORS:**

11.1. Contractors submitting Bid must be pre-qualified for the total amount proposed, inclusive of all alternate items prior to the date of submittal. Bids from contractors who have not been pre-qualified as applicable and Bids that exceed the maximum dollar amount at which contractors are pre-qualified will be deemed **non-responsive** and ineligible for award. Complete information and prequalification questionnaires are available at:

http://www.sandiego.gov/cip/bidopps/prequalification.shtml

11.2. The completed questionnaire, financial statement, and bond letter or a copy of the contractor's SLBE-ELBE certification and bond letter, must be submitted no later than 2 weeks prior to the bid opening to the Public Works Contracts, Prequalification Program, 1010 Second Avenue, 14th floor, San Diego, CA 92101. For additional information or the answer to questions about the prequalification program, contact David Stucky at 619-533-3474 or dstucky@sandiego.gov.

12. **REFERENCE STANDARDS:** Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

Title	Edition	Document Number
Standard Specifications for Public Works Construction ("The GREENBOOK")	2012	PITS070112-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")*	2012	PITS070112-02
City of San Diego Standard Drawings*	2012	PITS070112-03
Caltrans Standard Specifications	2010	PITS070112-04
Caltrans Standard Plans	2010	PITS070112-05
California MUTCD	2012	PITS070112-06
City Standard Drawings - Updates Approved For Use*	Varies	Varies
Standard Federal Equal Employment Opportunity Construction Contract Specifications and the Equal Opportunity Clause Dated 09-11-84	1984	769023
NOTE: *Available online under Engineering Documents and References at: http://www.sandiego.gov/publicworks/edocref/index.shtml		

13. **CITY'S RESPONSES AND ADDENDA:** The City at its option, may respond to any or all questions submitted in writing, via letter, or FAX in the form of an addendum. No oral comment shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addendum are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda on the form provided for this purpose in the Bid.

14. **CITY'S RIGHTS RESERVED:** The City reserves the right to cancel the Notice Inviting Bids at any time, and further reserves the right to reject submitted Bids, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Bidder(s) as a result of preparing Bids under the Notice Inviting Bids shall be the sole responsibility of each bidder. The Notice Inviting Bids creates or imposes no obligation upon the City to enter a contract.

15. **CONTRACT PRICING FORMAT:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth in the Bid Proposal Form(s), Volume 2.

16. **SUBMITTAL OF "OR EQUAL" ITEMS:** See Section 4-1.6, "Trade Names or Equals" in The WHITEBOOK and as amended in the SSP.

17. **AWARD PROCESS:**

17.1. The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.

17.2. Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening and award the Contract approximately within 7 days of receipt of properly executed Contract, bonds, and insurance documents.

17.3. This contract will be deemed executed, and effective, only upon the signing of the Contract by the Mayor or designee of the City.

18. **SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 2-3, "SUBCONTRACTS" in The GREENBOOK and as amended in the SSP which requires the Contractor to self perform the amount therein stipulated. Failure to comply with these requirements may render the Bid **non-responsive** and ineligible for award.

19. **AVAILABILITY OF PLANS AND SPECIFICATIONS:** Contract Documents may be obtained by visiting the City's website: http://www.sandiego.gov/cip/. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Public Works Contracts.

20. **SUBMISSION OF QUESTIONS:**

20.1. The Director (or designee), of the Public Works Department is the officer responsible for opening, examining, and evaluating the competitive Bids submitted to the City for the acquisition, construction and completion of any public improvement except when otherwise set forth in these documents. All questions related to this solicitation shall be submitted to:

Public Works Contracts
1010 Second Avenue, 14th Floor
San Diego, California, 92101
Attention: [Contract Specialist listed on the front cover hereof]

OR:

Email address of the Contract Specialist listed on the front cover hereof.

20.2. Questions received less than 14 days prior to the date for opening of Bids may not be considered.

20.3. Clarifications deemed by the City to be material shall be issued by Addenda and uploaded to the City's online bidding service.

20.4. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. It is the Bidder's responsibility to become informed of any Addenda that have been issued and to include all such information in its Bid.

21. **ELIGIBLE BIDDERS:** No person, firm, or corporation shall be allowed to make, file, or be interested in **more** than one (1) Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf. Any Bidder who submits more than one bid will result in the rejection of all bids submitted.

22. **SAN DIEGO BUSINESS TAX CERTIFICATE:** The Contractor and Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, first floor and submit to the Contract Specialist upon request or as specified in the Contract Documents. Tax

Identification numbers for both the Bidder and the listed Subcontractors must be submitted on the City provided forms with the Notice Inviting Bids and Contract forms.

23. PROPOSAL FORMS: Bid shall be made only upon the Bidding Documents i.e., Proposal form attached to and forming a part of the specifications. The signature of each person signing shall be in longhand.

23.1. Bidder shall complete and submit all pages in the "Bidding Document" Section (see Volume 2) as their Bid per the schedule given under "Required Documents Schedule," (see Volume 1). Bidder is requested to retain for their reference other portions of the Contract Documents that are not required to be submitted with the Bid. The entire specifications for the bid package do not need to be submitted with the bid.

23.2. The City may require any Bidder to furnish a statement of experience, financial responsibility, technical ability, equipment, and references.

23.3. Bids and certain other forms and documents as specified in the Volume 2 of 2 of the Contract Documents shall be enclosed in a sealed envelope and shall bear the title of the work and name of the Bidder and the appropriate State Contractors License designation which the Bidder holds.

23.4. Bids may be withdrawn by the Bidder prior to, but not after, the time fixed for opening of Bids.

24. BIDDERS' GUARANTEE OF GOOD FAITH (BID SECURITY):

24.1. With the exception of the contracts valued $5,000 or less, JOC and Design-Build contracts, and contracts subject to the Small and Local Business Program of $250,000 or less e.g., ELBE contracts, each Bidder shall accompany its Bid with either a cashier's check upon some responsible bank, or a check upon such bank properly certified or an approved corporate surety bond payable to the City of San Diego, for an amount of not less than 10% of the aggregate sum of the Bid, which check or bond, and the monies represented thereby shall be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into such contract and furnish the required final bonds.

24.2. The Bidder agrees that in case of Bidder's refusal or failure to execute this contract and give required final bonds, the money represented by a cashier's or certified check shall remain the property of the City, and if the Bidder shall fail to execute this contract, the Surety agrees that it will pay to the City damages which the City may suffer by reason of such failure, not exceeding the sum of 10% of the amount of the Bid.

24.3. A Bid received without the specified bid security will be rejected as being **non-responsive.**

25. AWARD OF CONTRACT OR REJECTION OF BIDS:

25.1. This contract may be awarded to the lowest responsible and reliable Bidder.

25.2. Bidders shall complete the entire Bid schedule (also referred to as "schedule of prices" or Proposal form). Incomplete price schedules will be rejected as being non-responsive.

25.3. The City reserves the right to reject any or all Bids, and to waive any informality or technicality in Bids received and any requirements of these specifications as to bidding procedure.

25.4. Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City from the Bidder within 3 Working Days, excluding Saturdays, Sundays, and state holidays, after the opening of Bids, of written notice which includes proof of honest, credible, clerical error of material nature, free from fraud or fraudulent intent, and of evidence that reasonable care was observed in the preparation of the Bid.

25.5. A non-selected Bidder may protest award of the Contract to the selected Bidder by submitting a written "Notice of Intent to Protest" including supporting documentation which shall be received by Public Works Contracts no later than 10 days after the City's announcement of the selected Bidder or no later than 10 days from the date that the City issues notice of designation of a Bidder as non-responsible in accordance with San Diego Municipal Code Chapter 2, § 22.3029, "Protests of Contract Award."

25.6. The City of San Diego will not discriminate with regard to race, religious creed, color, national origin, ancestry, physical handicap, marital status, sex or age, in the award of contracts.

25.7. Each Bid package properly executed as required by these specifications shall constitute a firm offer, which may be accepted by the City within the time specified in the Proposal.

25.8. The City reserves the right to evaluate all Bids and determine the lowest Bidder on the basis of any proposed alternates, additive items or options, at its discretion that will be disclosed in the Volume 2 of 2.

26. BID RESULTS:

26.1. The Bid opening by the City shall constitute the public announcement of the Apparent Low Bidder. In the event that the Apparent Low Bidder is subsequently deemed non-responsive or non-responsible, a public announcement will be posted in the City's web page: http://www.sandiego.gov/cip/index.shtml, with the name of the newly designated Apparent Low Bidder.

26.2. To obtain Bid results, either attend Bid opening, review the results on the City's web site, or provide a self-addressed, stamped envelope, referencing Bid number, and Bid tabulation will be mailed to you upon verification of extensions. Bid results cannot be given over the telephone.

27. THE CONTRACT:

27.1. The Bidder to whom award is made shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance certificates specified by the City within 14 days after receipt by Bidder of a form of contract for execution unless an extension of time is granted to the Bidder in writing.

27.2. If the Bidder takes longer than 14 days to fulfill these requirements, then the additional time taken shall be added to the Bid guarantee. The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.

27.3. If the Bidder to whom the award is made fails to enter into the contract as herein provided, the award may be annulled and the Bidder's Guarantee of Good Faith will be subject to forfeiture. An award may be made to the next lowest responsible and reliable Bidder who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

27.4. Pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 14 Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.

27.5. The award of the Contract is contingent upon the satisfactory completion of the above mentioned items and becomes effective upon the signing of the Contract by the Mayor or designee. If the Apparent Low Bidder does not execute the Contract or submit required documents and information, the City may award the Contract to the next lowest responsible and reliable Bidder who shall fulfill every condition precedent to award. A corporation designated as the Apparent Low Bidder shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.

28. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:

The Bidder shall examine carefully the Project Site, the Plans and Specifications, other materials as described in the Special Provisions, Section 2-7, and the proposal forms (e.g., Bidding Documents). The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, and as to the requirements of the Bidding Documents Proposal, Plans, and Specifications.

29. CITY STANDARD PROVISIONS. This contract is subject to the following standard provisions. See The WHITEBOOK for details.

29.1. The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.

29.2. The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.

29.3. The City of San Diego Municipal Code §22.3004 for Pledge of Compliance.

29.4. The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.

29.5. Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.

29.6. The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).

29.7. The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

30. PRE-AWARD ACTIVITIES:

30.1. The selected contractor by the City to execute a contract for this Work shall provide the information required within the time specified in "Required Documents," of this bid package. Failure to provide the information within the time specified may result in the Bid being rejected as **non-responsive.**

30.2. If the Bid is rejected as non-responsive, the selected contractor by the City to execute a contract for this Work shall forfeit the required Bid. The decision that the selected contractor by the City to execute a contract for this Work is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

31. ADDITIVE/DEDUCTIVE ALTERNATES:

31.1. The additive/deductive alternates have been established to allow the City to compare the cost of specific portions of the Work with the Project's budget and enable the City to make decision prior to award. The award will be established as described in the Bid. The City reserves the right to award the Contract for the Base Bid only or the Base Bid plus any combination of Additive and Deductive Alternate(s).

32. REQUIRED DOCUMENT SCHEDULE:

32.1. The Bidder's attention is directed to the City's Municipal Code §22.0807(e), (3)-(5) for important information regarding grounds for debarment for failure to submit required documentation.

32.2. The specified Equal Opportunity Contracting Program (EOCP) forms are available for download from the City's web site at:

http://www.sandiego.gov/eoc/forms/index.shtml

ITEM	WHEN DUE	FROM	DOCUMENT TO BE SUBMITTED
1.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Bid
2.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Bid Bond
3.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Non-collusion Affidavit to be Executed By Bidder and Submitted with Bid under 23 USC 112 and PCC 7106
4.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Contractors Certification of Pending Actions
5.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Equal Benefits Ordinance Certification of Compliance
6.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Lobby Prohibition, Certification and Disclosure
7.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Instructions for Completion of SF-LLL, Disclosure of Lobbying Activities
8.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Disclosure of Lobbying Activities
9.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA35 - List of Subcontractors
10.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA40 - Named Equipment/Material Supplier List
11.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA45 - Subcontractors Additive/Deductive Alternate
12.	BID SUBMITTAL DATE/TIME	ALL BIDDERS	Buy American Certification. See section 4-1.1.1
13.	WITHIN 4 WORKING DAYS OF BID OPENING	ALL BIDDERS	Federal Good Faith Documentations
14.	WITHIN 4 WORKING DAYS OF BID OPENING WITH GOOD FAITH EFFORT DOCUMENTATION	ALL BIDDERS	Proof of Valid DBE-MBE-WBE-DVBE Certification Status e.g., Certs.

ITEM	WHEN DUE	FROM	DOCUMENT TO BE SUBMITTED
15.	WITHIN 4 WORKING DAYS OF BID OPENING WITH GOOD FAITH EFFORT DOCUMENTATION	ALL BIDDERS	• Form AA61 – List of Work Made Available • Letter of Intent • Utilization Statement
16.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Names of the principal individual owners of the Apparent Low Bidder
17.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	If the Contractor is a Joint Venture: • Joint Venture Agreement • Joint Venture License
18.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Form BB05 - Work Force Report
19.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contract Forms - Agreement
20.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contract Forms - Payment and Performance Bond
21.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Certificates of Insurance and Endorsements
22.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractor Certification - Drug-Free Workplace
23.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractor Certification - American with Disabilities Act
24.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractors Standards - Pledge of Compliance

CONTRACT FORMS

AGREEMENT

CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and West Coast General Corporation, herein called "Contractor" for construction of **MYF Rehab of Runway 5/23 & Taxiway G**; Bid No. **K-15-6020-DBB-3**; in the amount of Four Million Eight Hundred Ten Thousand Five Hundred Nineteen Dollars and Twenty-One Cents ($4,810,519.21), which is comprised of the Base Bid plus Additive Alternates A,B,C,D, and E.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:

   (a) The attached Faithful Performance and Payment Bonds.

   (b) The attached Proposal included in the Bid documents by the Contractor.

   (c) Reference Standards listed in the Notice Inviting Bids and the Supplementary Special Provisions (SSP).

   (d) That certain documents entitled **MYF Rehab of Runway 5/23 & Taxiway G**, on file in the office of the Public Works Department as Document No. **B-00910**, as well as all matters referenced therein.

2. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **MYF Rehab of Runway 5/23 & Taxiway G**, Bid Number **K-15-6020-DBB-3**, San Diego, California.

3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.

4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.

5. This contract is effective as of the date that the Mayor or designee signs the agreement.

CONTRACT FORMS (continued)

AGREEMENT

IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code **§22.3102 (a)(1)** authorizing such execution.

THE CITY OF SAN DIEGO

By _____
Albert P. Rechany
Deputy Director
Public Works Contracts

Date: 11/22/14

APPROVED AS TO FORM AND LEGALITY

Jan I. Goldsmith, City Attorney

By _____

Print Name: Pedro DeLara, Jr.
Deputy City Attorney

Date: 1/26/15

CONTRACTOR

By _____
West Coast General Corporation

Print Name: David E. Davey

Title: President

Date: 11/3/14

City of San Diego License No.: B1992002309

State Contractor's License No.: 479019

CONTRACT FORMS

ATTACHMENTS

Executed in triplicate
Premium is for the contract term and is subject to adjustment based on final contract price

CONTRACT ATTACHMENT
PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

West Coast General Corporation, a corporation, as principal, and Fidelity and Deposit Company of Maryland, a corporation authorized to do business in the State of California, as Surety, hereby obligate themselves, their successors and assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of Four Million Eight Hundred Ten Thousand Five Hundred Nineteen Dollars and Twenty-One Cents ($4,810,519.21) for the faithful performance of the annexed contract, and in the sum of Four Million Eight Hundred Ten Thousand Five Hundred Nineteen Dollars and Twenty-One Cents ($4,810,519.21) for the benefit of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract **MYF Rehab of Runway 5/23 & Taxiway G**, Bid Number **K-15-6020-DBB-3**, San Diego, California then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Chapter 3 of Division 5 of Title I of the Government Code of the State of California or under the provisions of Section 3082 et seq. of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

CONTRACT ATTACHMENT (continued)
PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND

The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

Dated 10/31/2014

Approved as to Form and Legality

Jan I. Goldsmith, City Attorney

By _____
Deputy City Attorney

Approved:

By _____
Albert P. Rechany
Deputy Director
Public Works Contracts

West Coast General Corporation
Principal

By _____

David E. Davey, President
Printed Name of Person Signing for Principal

Fidelity and Deposit Company of Maryland
Surety

By _____
Aidan Smock Attorney-in-fact

777 South Figueroa Street, Suite 3900
Local Address of Surety

Los Angeles, CA 90017
Local Address (City, State) of Surety

(213) 270-0715
Local Telephone No. of Surety

Premium $ 35,323.00

Bond No. 7642534

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **THOMAS O. MCCLELLAN, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Richard HALLETT, Aidan SMOCK, Tim MCCLELLAN and Marta COLLETT, all of San Diego, California, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 3rd day of January, A.D. 2014.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: _____
Assistant Secretary
Eric D. Barnes

_____
Vice President
Thomas O. McClellan

State of Maryland
City of Baltimore

On this 3rd day of January, A.D. 2014, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **THOMAS O. MCCLELLAN, Vice President, and ERIC D. BARNES, Assistant Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____
Constance A. Dunn, Notary Public
My Commission Expires: July 14, 2015

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this ____ day of OCT 31 2014, 20____.

Geoffrey Delisio

Geoffrey Delisio, Vice President

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA

County of San Diego }

On OCT 31 2014 (Date) before me, Richard P. Hallett, Notary Public (Here Insert Name and Title of the Officer),

personally appeared Aidan Smock (Name(s) of Signer(s)),

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature _____ (Signature of Notary Public)

RICHARD P. HALLETT
Commission # 1939749
Notary Public - California
San Diego County
My Comm. Expires Jul 2, 2015

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

PROJECT TITLE: **MYF Rehab of Runway 5/23 & Taxiway G**

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 7-13.3, "Drug-Free Workplace", of the project specifications, and that;

West Coast General Corporation

(Name under which business is conducted)

has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

Signed 

Printed Name David E. Davey

Title President

CONTRACTOR CERTIFICATION

AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

PROJECT TITLE: **MYF Rehab of Runway 5/23 & Taxiway G**

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the American With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 7-13.2, "American With Disabilities Act", of the project specifications, and that;

West Coast General Corporation
(Name under which business is conducted)

has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

Signed _____

Printed Name David E. Davey

Title President

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

PROJECT TITLE: **MYF Rehab of Runway 5/23 & Taxiway G**

I declare under penalty of perjury that I am authorized to make this certification on behalf of West Coast General Corporation, as Contractor, that I am familiar with the requirements of City of San Diego Municipal Code § 22.3224 regarding Contractor Standards as outlined in the WHITEBOOK, Section 7-13.4, ("Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors whose subcontracts are greater than $50,000 in value has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3224.

Dated this 3 Day of NOV, 2014.

Signed _____

Printed Name David E. Davey

Title President

AFFIDAVIT OF DISPOSAL

WHEREAS, on the _____ DAY OF _____, _____, the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

MYF Rehab of Runway 5/23 & Taxiway G
(Name of Project)

as particularly described in said contract and identified as Bid No. **K-15-6020-DBB-3**; SAP No. (WBS/IO/CC); **B-00910** and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

_____

_____

_____

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

_____

_____

_____

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____, _____.

_____ Contractor
by

ATTEST:

State of _____
County of _____

On this _____ DAY OF _____, 2_____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared_____ _____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

ATTACHMENTS

ATTACHMENT A

SCOPE OF WORK

SCOPE OF WORK

1. **SCOPE OF WORK::** The Work involves furnishing all labor, materials, equipment, services, and other incidental works and appurtenances for the construction of the Project as described in the plans, contract documents, technical specifications and below:

   Refer to Technical Specifications Section 40 – Scope of Work.

   1.1. The Work shall be performed in accordance with:

      1.1.1. This Notice Inviting Bids and Plans numbered **37473-1-D** through **37473-84-D**, inclusive.

2. **CONSTRUCTION COST:** The City's estimated construction cost for this contract is **$3,747,000.00**

3. **LOCATION OF WORK:** The location of the Work is as follows:

   Montgomery Field, 3750 John J Montgomery Dr, San Diego, CA 92123

4. **CONTRACT TIME:** The Contract Time for completion of the Work shall be **220 Working Days.**

5. **CONTRACTOR'S LICENSE CLASSIFICATION**: In accordance with the provisions of California Law, the Contractor shall possess valid appropriate license(s) at the time that the Bid is submitted. Failure to possess the specified license(s) shall render the Bid as **non-responsive** and shall act as a bar to award of the Contract to any Bidder not possessing required license(s) at the time of Bid.

   5.1. The City has determined the following licensing classification for this contract:

Option	Classification
1	CLASS A

ATTACHMENT B

INTENTIONALLLY LEFT BLANK

ATTACHMENT C

EQUAL OPPORTUNITY CONTRACTING PROGRAM

EQUAL OPPORTUNITY CONTRACTING PROGRAM

1. To The WHITEBOOK, Chapter 10, Sections D and E, DELETE each in its entirety, and SUBSTITUTE with the following:

D. CITY'S EQUAL OPPORTUNITY COMMITMENT.

1. Nondiscrimination in Contracting Ordinance.

1. The Contractor, Subcontractors and Suppliers shall comply with requirements of the City's Nondiscrimination in Contracting Ordinance, San Diego Municipal Code §§22.3501 through 22.3517.

   The Contractor shall not discriminate on the basis of race, gender, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers. The Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. The Contractor understands and agrees that violation of this clause shall be considered a material breach of the contract and may result in contract termination, debarment, or other sanctions.

   The Contractor shall include the foregoing clause in all contracts between the Contractor and Subcontractors and Suppliers.

2. Disclosure of Discrimination Complaints. As part of its Bid or Proposal, the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors, or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

3. Upon the City's request, the Contractor agrees to provide to the City, within 60 days, a truthful and complete list of the names of all Subcontractors and Suppliers that the Contractor has used in the past 5 years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by the Contractor for each subcontract or supply contract.

4. The Contractor further agrees to fully cooperate in any investigation conducted by the City pursuant to the City's Nondiscrimination in Contracting Ordinance, Municipal Code §§22.3501 through 22.3517. The Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in remedies being ordered against the Contractor up to and including contract termination, debarment and other sanctions for violation of the provisions of the Nondiscrimination in Contracting Ordinance. The Contractor further understands and agrees that the procedures,

remedies and sanctions provided for in the Nondiscrimination in Contracting Ordinance apply only to violations of the Ordinance.

E. EQUAL EMPLOYMENT OPPORTUNITY OUTREACH PROGRAM.

1. The Contractor, Subcontractors and Suppliers shall comply with the City's Equal Employment Opportunity Outreach Program, San Diego Municipal Code §§22.2701 through 22.2707.

   The Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractor shall ensure their subcontractors comply with this program. Nothing in this section shall be interpreted to hold a prime contractor liable for any discriminatory practice of its subcontractors.

   The Contractor shall include the foregoing clause in all contracts between the Contractor and Subcontractors and Suppliers.

2. If the Contract is competitively solicited, the selected Bidder shall submit a Work Force Report (Form BB05), within 10 Working Days after receipt by the Bidder of Contract forms to the City for approval as specified in the Notice of Intent to Award letter from the City.

3. If a Work Force Report is submitted, and the City determines there are under-representations when compared to County Labor Force Availability data, the selected Bidder shall submit an Equal Employment Opportunity Plan.

4. If the selected Bidder submits an Equal Employment Opportunity Plan, it shall include the following assurances:

   1. The Contractor shall maintain a working environment free of discrimination, harassment, intimidation and coercion at all sites and in all facilities at which the Contractor's employees are assigned to work.

   2. The Contractor reviews its EEO Policy, at least annually, with all on-site supervisors involved in employment decisions.

   3. The Contractor disseminates and reviews its EEO Policy with all employees at least once a year, posts the policy statement and EEO posters on all company bulletin boards and job sites, and documents every dissemination, review and posting with a written record to identify the time, place, employees present, subject matter, and disposition of meetings.

   4. The Contractor reviews, at least annually, all supervisors' adherence to and performance under the EEO Policy and maintains written documentation of these reviews.

   5. The Contractor discusses its EEO Policy Statement with subcontractors with whom it anticipates doing business, includes the

EEO Policy Statement in its subcontracts, and provides such documentation to the City upon request.

6. The Contractor documents and maintains a record of all bid solicitations and outreach efforts to and from subcontractors, contractor associations and other business associations.

7. The Contractor disseminates its EEO Policy externally through various media, including the media of people of color and women, in advertisements to recruit, maintains files documenting these efforts, and provides copies of these advertisements to the City upon request.

8. The Contractor disseminates its EEO Policy to union and community organizations.

9. The Contractor provides immediate written notification to the City when any union referral process has impeded the Contractor's efforts to maintain its EEO Policy.

10. The Contractor maintains a current list of recruitment sources, including those outreaching to people of color and women, and provides written notification of employment opportunities to these recruitment sources with a record of the organizations' responses.

11. The Contractor maintains a current file of names, addresses and phone numbers of each walk-in applicant, including people of color and women, and referrals from unions, recruitment sources, or community organizations with a description of the employment action taken.

12. The Contractor encourages all present employees, including people of color and women employees, to recruit others.

13. The Contractor maintains all employment selection process information with records of all tests and other selection criteria.

14. The Contractor develops and maintains documentation for on-the-job training opportunities, participates in training programs, or both for all of its employees, including people of color and women, and establishes apprenticeship, trainee, and upgrade programs relevant to the Contractor's employment needs.

15. The Contractor conducts, at least annually, an inventory and evaluation of all employees for promotional opportunities and encourages all employees to seek and prepare appropriately for such opportunities.

16. The Contractor ensures the company's working environment and activities are non-segregated except for providing separate or single-user toilets and necessary changing facilities to assure privacy between the sexes.

ATTACHMENT D

FEDERAL AVIATION ADMINISTRATION (FAA)

FUNDING AGENCY PROVISIONS

FUNDING AGENCY PROVISIONS

IN THE EVENT THAT THESE REQUIREMENTS CONFLICT WITH THE CITY'S GENERAL EOC REQUIREMENTS, THE FUNDING AGENCY'S REQUIREMENTS WILL CONTROL.

1. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246).

1.1. The goal and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, as follows:

		Goal
1.	Minority Participation:	16.9%
2.	Female Participation:	6.9%

1.2. These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs Work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the Work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both federally involved and non-federally involved Work.

1.3. The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals.

1.4. The hours of minority and female employment and training shall be substantially uniform throughout the length of the Contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

1.5. The Contractor shall provide written notification to the Director the Office of Federal Contract Compliance Programs within 10 Working Days of award of any Subcontract in excess of $10,000 at any tier for Work under the Contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number of the Subcontractor; estimated dollar amount of the Subcontract; estimated starting and completion dates of the Subcontract; and the geographical area in which the subcontract is to be performed. The "covered area" is the City of San Diego.

2. EQUAL OPPORTUNITY CLAUSES:

2.1. The following equal opportunity clauses are incorporated by reference herein:

1. The equal opportunity clause located 41 CFR 60.1.4(a), which specifies the obligations imposed under Executive Order 11246.
2. The equal opportunity clause located at 41 CFR 60-741.5, which contains the obligations imposed by Section 503 of the Rehabilitation Act of 1973.
3. The "Equal Opportunity Clause" (Resolution No. 765092) filed on December 4, 1978, in the Office of the City Clerk, San Diego, California and incorporated in the "Standard Federal Employment Opportunity Construction Contract Specifications (Executive Order 11246 - Document No. 769023, filed September 11, 1984, in the Office of the City Clerk, San Diego, California) is applicable to all non-exempt City construction contracts and subcontracts of $2,000 or more.
4. Age Discrimination Act of 1975, Pub. L. 94-135.
5. Title VI of the Civil Rights Act of 1964, Pub. L. 88-352.
6. Section 13 of the Federal Water Pollution Control Acts Amendments of 1972, Pub. L. 92-5200 (the Clean Water Act).
7. Section 504 of the Rehabilitation Act of 1973, Pub. L. 93-112 (Executive Orders 11914 and 11250).
8. Women's Minority Business Enterprises, Executive Orders 11625, 12138 and 12432.
9. Section 129 of the Small Business Administration Reauthorization and Amendment Act of 1988, Pub. L. 100-590.

3. STANDARD FEDERAL EQUAL EMPLOYMENT SPECIFICATIONS:

3.1. The Contractor is required to comply with the 16 "Standard Federal Equal Employment Specifications" located at 41 CFR 60-4.3 for federal and federally-assisted construction contracts in excess of $10,000, set forth below.

3.2. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions The Contractor shall document these efforts fully, and shall implement affirmative actions steps at least as extensive as the following:

1. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign 2 or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

3. Maintain a current file of the names, addresses and telephone numbers of each minority and female walk-in applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

4. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

5. Develop on-the-job training opportunities, participate in training programs for the area, or both which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 1 above.

6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreements; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

7. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignments, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, foreman, etc., prior to the initiation of Work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and dispositions of the subject matter.

8. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

9. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

10. Encourage present minority and female employees to recruit other minority persons and women and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

11. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

12. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

13. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

14. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

15. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

16. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

4. VIOLATION OR BREACH OF REQUIREMENTS:

4.1. If at any time during the course of the Contract there is a violation of the Affirmative Action or Equal Employment Opportunity requirements by the Contractor, or the Subcontractors, the City will notify the Contractor of the breach. The City may withhold any further progress payments to the Contractor until the City is satisfied that the Contractor and Subcontractors are in full compliance with these requirements.

5. MONTHLY EMPLOYMENT UTILIZATION REPORTS:

5.1. Refer to GENERAL EQUAL OPPORTUNITY CONTRACTING PROGRAM REQUIREMENTS, CONSTRUCTION CONTRACTOR REQUIREMENTS in The WHITEBOOK and the following:

1. State of California Department of Transportation Payroll Report. Due to the City weekly.
2. Federal and Non-Federal Work in San Diego County. Submit an updated list only if work is complete or new contracts have been awarded during the span of this project.

6. RECORDS OF PAYMENTS TO DBEs:

6.1. The Contractor shall maintain records and documents of payments to DBEs for 5 years following the NOC. These records shall be made available for inspection upon request by any authorized representative of the City, DOT, or both. The reporting requirement shall be extended to any certified DBE Subcontractor.

7. FEDERAL WAGE REQUIREMENTS FOR FEDERALLY FUNDED PROJECTS:

7.1. The successful Bidder's work shall be required to comply with Executive Order 11246, entitled "Equal Employment Opportunity,", as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR chapter 60).

7.2. This Executive Order pertains to Equal Employment Opportunity regulations and contains significant changes to the regulations including new goals and timetables for women in construction and revised goals and time-tables for minorities in construction.

7.3. Minimum wage rates for this project have been predetermined by the Secretary of Labor and are set forth in the Decision of the Secretary and bound into the specifications book. Should there be any difference between the state or federal wage rates, including health and welfare funds for any given craft, mechanic, or similar classifications needed to execute the Work, it shall be mandatory upon the Contractor or subcontractor to pay the higher of the two rates.

7.4. The minimum wage rate to be paid by the Contractor and the Subcontractors shall be in accordance with the Federal Labor Standards Provisions (see pages 11 through 35 below) and Federal Wage Rates (see Wage Rates below) and General Prevailing Wage Determination made by the State of California, Director of Industrial Relations pursuant to California Labor Code Part 7, Chapter 1, Article 2, Sections 1770, 1773 and 1773.1, whichever is higher.

7.5. A Contractor having 50 or more employees and its Subcontractors having 50 or more employees and who may be awarded a contract of $50,000 or more will be required to maintain an affirmative action program, the standards for which are contained in the specifications.

7.6. To be eligible for award, each Bidder shall comply with the affirmative action requirements which are contained in the specifications.

7.7. Women will be afforded equal opportunity in all areas of employment. However, the employment of women shall not diminish the standards of requirements for the employment of minorities.

7.8. The Aviation Safety and Capacity Expansion Act of 1990, provides that preference be given to steel and manufactured products produced in the United States when funds are expanded pursuant to a grant issued under the Airport Improvement Program.

8. PREVAILING WAGE RATES: Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding $25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding $15,000, the Contractor and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below.

8.1. Compliance with Prevailing Wage Requirements. Pursuant to sections 1720 through 1861 of the California Labor Code, the Contractor and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.

8.2. Copies of such prevailing rate of per diem wages are on file at the City and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm. Contractor and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.

8.3. The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.

8.4. **Penalties for Violations.** Contractor and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed.

8.5. **Payroll Records.** Contractor and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require its subcontractors to also comply with section 1776. Contractor and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Contractor is responsible for ensuring its subcontractors submit certified payroll records to the City.

8.6. **Apprentices.** Contractor and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Contractor shall be held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.

8.7. **Working Hours.** Contractor and subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on design professionals and subcontractors of $25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections1810 through 1815.

8.8. **Required Provisions for Subcontracts.** Contractor shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.

8.9. **Labor Code Section 1861 Certification.** Contractor in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Contractor certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."

8.10. **Labor Compliance Program.** The City has its own Labor Compliance Program as authorized by the DIR. The City will withhold contract payments when payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has

been established after an investigation by the City or other governmental entity that underpayment(s) have occurred.

9. **WAGE RATES.** This contract shall be subject to the following Davis-Bacon Wage Decisions:

General Decision Number: CA140001 08/08/2014 CA1

Superseded General Decision Number: CA20130001

State: California

Construction Types: Building, Heavy (Heavy and Dredging), Highway and Residential

County: San Diego County in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	01/03/2014
1	01/10/2014
2	01/24/2014
3	02/21/2014
4	05/09/2014
5	05/23/2014
6	05/30/2014
7	06/20/2014
8	07/04/2014
9	07/11/2014
10	07/18/2014
11	07/25/2014
12	08/08/2014

ASBE0005-002 06/30/2014

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems)	$ 35.44	19.36
Fire Stop Technician (Application of Firestopping Materials for wall openings and penetrations in walls, floors, ceilings and curtain walls)	$ 24.34	16.09

ASBE0005-004 06/24/2013

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)	$ 16.95	10.23

BOIL0092-003 10/01/2012

	Rates	Fringes
BOILERMAKER	$ 41.17	28.27

BRCA0004-008 05/01/2014

	Rates	Fringes
BRICKLAYER; MARBLE SETTER	$ 34.10	15.05

BRCA0018-004 06/01/2014

	Rates	Fringes
MARBLE FINISHER	$ 28.45	11.38
TILE FINISHER	$ 23.78	9.84
TILE LAYER	$ 35.14	14.33

BRCA0018-010 09/01/2013

	Rates	Fringes
TERRAZZO FINISHER	$ 26.59	10.34
TERRAZZO WORKER/SETTER	$ 33.63	11.13

CARP0409-002 07/01/2008

	Rates	Fringes
Diver		
(1) Wet	$ 663.68	9.82
(2) Standby	$ 331.84	9.82
(3) Tender	$ 323.84	9.82
(4) Assistant Tender	$ 299.84	9.82

Amounts in "Rates' column are per day

CARP0409-008 08/01/2010

	Rates	Fringes
Modular Furniture Installer	$ 17.00	7.41

CARP0547-001 07/01/2009

	Rates	Fringes
CARPENTER		
(1) Bridge	$ 37.28	10.58
(2) Commercial Building	$ 32.30	10.58
(3) Heavy & Highway	$ 37.15	10.58
(4) Residential Carpenter	$ 25.84	10.58
(5) Residential Insulation Installer	$ 18.00	8.16
MILLWRIGHT	$ 37.65	10.58
PILEDRIVERMAN	$ 37.28	10.58

CARP0547-002 07/01/2009

	Rates	Fringes
Drywall		
(1) Work on wood framed construction of single family residences,		

apartments or condominiums
under four stories
Drywall Installer/Lather...$ 21.00 8.58
Drywall Stocker/Scrapper...$ 11.00 6.67
(2) All other work
Drywall Installer/Lather...$ 27.35 9.58
Drywall Stocker/Scrapper...$ 11.00 6.67

ELEC0569-001 06/02/2014

	Rates	Fringes
Electricians (Tunnel Work)		
Cable Splicer	$ 44.91	3%+11.87
Electrician	$ 44.16	3%+11.87
Electricians: (All Other Work, Including 4 Stories Residential)		
Cable Splicer	$ 40.00	3%+11.87
Electrician	$ 39.25	3%+11.87

ELEC0569-005 06/01/2014

	Rates	Fringes
Sound & Communications		
Sound Technician	$ 27.87	3%+10.81
Soundman	$ 22.30	3%+9.17

SOUND TECHNICIAN: Terminating, operating and performing final check-out

SOUNDMAN: Wire-pulling, splicing, assembling and installing devices

SCOPE OF WORK Assembly, installation, operation, service and maintenance of components or systems as used in closed circuit television, amplified master television distribution, CATV on private property, intercommunication, burglar alarm, fire alarm, life support and all security alarms, private and public telephone and related telephone interconnect, public address, paging, audio, language, electronic, background music system less than line voltage or any system acceptable for class two wiring for private, commercial, or industrial use furnished by leased wire, frequency modulation or other recording devices, electrical

apparatus by means of which electricity is applied to the amplification, transmission, transference, recording or reproduction of voice, music, sound, impulses and video. Excluded from this Scope of Work - transmission, service and maintenance of background music. All of the above shall include the installation and transmission over fiber optics.

ELEC0569-006 10/17/2013

Work on street lighting; traffic signals; and underground systems and/or established easements outside of buildings

	Rates	Fringes
Traffic signal, street light and underground work		
Utility Technician #1	$ 28.00	3%+7.42
Utility Technician #2	$ 23.15	3%+7.42

STREET LIGHT & TRAFFIC SIGNAL WORK:

UTILITY TECHNICIAN #1: Installation of street lights and traffic signals, including electrical circuitry, programmable controller, pedestal-mounted electrical meter enclosures and laying of pre-assembled cable in ducts. The layout of electrical systems and communication installation including proper position of trench depths, and radius at duct banks, location for manholes, street lights and traffic signals.

UTILITY TECHNICIAN #2: Distribution of material at jobsite, installation of underground ducts for electrical, telephone, cable TV land communication systems. The setting, leveling, grounding and racking of precast manholes, handholes and transformer pads.

ELEC0569-008 06/03/2013

	Rates	Fringes
ELECTRICIAN (Residential, 1-3 Stories)	$ 22.37	3%+3.30

ELEC1245-001 06/01/2013

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer	$ 50.30	15.00
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment)	$ 40.17	14.56
(3) Groundman	$ 30.73	13.48
(4) Powderman	$ 44.91	13.48

HOLIDAYS: New Year's Day, M.L. King Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and day after Thanksgiving, Christmas Day

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ELEV0018-001 01/01/2014

	Rates	Fringes
ELEVATOR MECHANIC	$ 49.03	26.785

FOOTNOTE:
PAID VACATION: Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0012-003 07/07/2014

	Rates	Fringes
OPERATOR: Power Equipment (All Other Work)		
GROUP 1	$ 39.05	22.25
GROUP 2	$ 39.83	22.25
GROUP 3	$ 40.12	22.25
GROUP 4	$ 41.61	22.25
GROUP 5	$ 41.86	22.25

GROUP 6	$ 41.83	22.25
GROUP 8	$ 41.94	22.25
GROUP 9	$ 42.19	22.25
GROUP 10	$ 42.06	22.25
GROUP 11	$ 42.31	22.25
GROUP 12	$ 42.23	22.25
GROUP 13	$ 42.33	22.25
GROUP 14	$ 42.36	22.25
GROUP 15	$ 42.44	22.25
GROUP 16	$ 42.56	22.25
GROUP 17	$ 42.73	22.25
GROUP 18	$ 42.83	22.25
GROUP 19	$ 42.94	22.25
GROUP 20	$ 43.06	22.25
GROUP 21	$ 43.23	22.25
GROUP 22	$ 43.33	22.25
GROUP 23	$ 43.44	22.25
GROUP 24	$ 43.56	22.25
GROUP 25	$ 43.73	22.25

OPERATOR: Power Equipment (Cranes, Piledriving & Hoisting)

GROUP 1	$ 40.40	22.25
GROUP 2	$ 41.18	22.25
GROUP 3	$ 41.47	22.25
GROUP 4	$ 41.61	22.25
GROUP 5	$ 41.83	22.25
GROUP 6	$ 41.94	22.25
GROUP 7	$ 42.06	22.25
GROUP 8	$ 42.23	22.25
GROUP 9	$ 42.40	22.25
GROUP 10	$ 43.40	22.25
GROUP 11	$ 44.40	22.25
GROUP 12	$ 45.40	22.25
GROUP 13	$ 46.40	22.25

OPERATOR: Power Equipment (Tunnel Work)

GROUP 1	$ 40.90	22.25
GROUP 2	$ 41.68	22.25
GROUP 3	$ 41.97	22.25
GROUP 4	$ 42.11	22.25
GROUP 5	$ 42.33	22.25
GROUP 6	$ 42.44	22.25
GROUP 7	$ 42.56	22.25

PREMIUM PAY:

$3.75 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval

Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton

Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

SEE ZONE DEFINITIONS AFTER CLASSIFICATIONS

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes loed, lull or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes loed, lull or similar types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dum jack; Screening and conveyor machine operator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (Skid steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator (small portable); Drilling machine operator, small auger types (Texoma super economatic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Hydra-hammer-aero stomper; Micro Tunneling (above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo

form setter operator; Power sweeper operator; Rock Wheel Saw/Trencher; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 5: Equipment Greaser (Grease Truck/Multi Shift).

GROUP 6: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator; Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter(concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1 drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 8: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar; Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled); Concrete mixer operator (paving); Crushing plant operator; Drill Doctor; Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator;

Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Mobark Chipper or similar; Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; Rock Drill or similar types; Rotary drill operator (excluding caisson type); Rubber-tired earth-moving equipment operator (single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bendng machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); trenching Machine with Road Miner attachment (over 6 ft depth capacity): Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 9: Heavy Duty Repairman

GROUP 10: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9 cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator; Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar

and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 11: Heavy Duty Repairman - Welder Combination, Welder - Certified.

GROUP 12: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less tha 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth- moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self- loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 13: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 14: Canal liner operator; Canal trimmer operator; Remote- control earth-moving equipment operator (operating a second piece of equipment: $1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 15: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine,

Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 18: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 19: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds.and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 21: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

GROUP 22: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

GROUP 23: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 24: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 25: Concrete pump operator-truck mounted; Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo form setter operator

GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting

device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy Duty Repairman

GROUP 7: Tunnel mole boring machine operator

ENGINEERS ZONES

$1.00 additional per hour for all of IMPERIAL County and the portions of KERN, RIVERSIDE & SAN BERNARDINO Counties as defined below:

That area within the following Boundary: Begin in San Bernardino County, approximately 3 miles NE of the intersection of I-15 and the California State line at that point which is the NW corner of Section 1, T17N,m R14E, San Bernardino Meridian. Continue W in a straight line to that point which is the SW corner of the northwest quarter of Section 6, T27S, R42E, Mt. Diablo Meridian. Continue North to the intersection with the Inyo County Boundary at that point which is the NE corner of the western half of the northern quarter of Section 6, T25S, R42E, MDM. Continue W along the Inyo and San Bernardino County boundary until the intersection with Kern County, as that point which is the SE corner of Section 34, T24S, R40E, MDM. Continue W along the Inyo and Kern County boundary until the intersection with Tulare County, at that point which is the SW corner of the SE quarter of Section 32, T24S, R37E, MDM. Continue W along the Kern and Tulare County boundary, until that point which is the NW corner of T25S, R32E, MDM. Continue S following R32E lines to the NW corner of T31S, R32E, MDM. Continue W to the NW corner of T31S, R31E, MDM. Continue S to the SW corner of T32S, R31E, MDM. Continue W to SW corner of SE quarter of Section 34, T32S, R30E, MDM. Continue S to SW corner of T11N, R17W, SBM. Continue E along

south boundary of T11N, SBM to SW corner of T11N, R7W, SBM. Continue S to SW corner of T9N, R7W, SBM. Continue E along south boundary of T9N, SBM to SW corner of T9N, R1E, SBM. Continue S along west boundary of R1E, SMB to Riverside County line at the SW corner of T1S, R1E, SBM. Continue E along south boundary of T1s, SBM (Riverside County Line) to SW corner of T1S, R10E, SBM. Continue S along west boundary of R10E, SBM to Imperial County line at the SW corner of T8S, R10E, SBM. Continue W along Imperial and Riverside county line to NW corner of T9S, R9E, SBM. Continue S along the boundary between Imperial and San Diego Counties, along the west edge of R9E, SBM to the south boundary of Imperial County/California state line. Follow the California state line west to Arizona state line, then north to Nevada state line, then continuing NW back to start at the point which is the NW corner of Section 1, T17N, R14E, SBM

$1.00 additional per hour for portions of SAN LUIS OBISPO, KERN, SANTA BARBARA & VENTURA as defined below:

That area within the following Boundary: Begin approximately 5 miles north of the community of Cholame, on the Monterey County and San Luis Obispo County boundary at the NW corner of T25S, R16E, Mt. Diablo Meridian. Continue south along the west side of R16E to the SW corner of T30S, R16E, MDM. Continue E to SW corner of T30S, R17E, MDM. Continue S to SW corner of T31S, R17E, MDM. Continue E to SW corner of T31S, R18E, MDM. Continue S along West side of R18E, MDM as it crosses into San Bernardino Meridian numbering area and becomes R30W. Follow the west side of R30W, SBM to the SW corner of T9N, R30W, SBM. Continue E along the south edge of T9N, SBM to the Santa Barbara County and Ventura County boundary at that point whch is the SW corner of Section 34.T9N, R24W, SBM, continue S along the Ventura County line to that point which is the SW corner of the SE quarter of Section 32, T7N, R24W, SBM. Continue E along the south edge of T7N, SBM to the SE corner to T7N, R21W, SBM. Continue N along East side of R21W, SBM to Ventura County and Kern County boundary at the NE corner of T8N, R21W. Continue W along the Ventura County and Kern County boundary to the SE corner of T9N, R21W. Continue North along the East edge of R21W, SBM to the NE corner of T12N, R21W, SBM. Continue West along the north edge of T12N, SBM to the SE corner of T32S, R21E, MDM. [T12N SBM is a think strip between T11N SBM and T32S MDM]. Continue North along the East side of R21E, MDM to the Kings County and Kern County border at the NE corner of T25S, R21E, MDM, continue West along the Kings County and Kern County Boundary until the intersection of San Luis Obispo County. Continue west along the Kings County and San Luis

Obispo County boundary until the intersection with Monterey County. Continue West along the Monterey County and San Luis Obispo County boundary to the beginning point at the NW corner of T25S, R16E, MDM.

$2.00 additional per hour for INYO and MONO Counties and the Northern portion of SAN BERNARDINO County as defined below:

That area within the following Boundary: Begin at the intersection of the northern boundary of Mono County and the California state line at the point which is the center of Section 17, T10N, R22E, Mt. Diablo Meridian. Continue S then SE along the entire western boundary of Mono County, until it reaches Inyo County at the point which is the NE corner of the Western half of the NW quarter of Section 2, T8S, R29E, MDM. Continue SSE along the entire western boundary of Inyo County, until the intersection with Kern County at the point which is the SW corner of the SE 1/4 of Section 32, T24S, R37E, MDM. Continue E along the Inyo and Kern County boundary until the intersection with San Bernardino County at that point which is the SE corner of section 34, T24S, R40E, MDM. Continue E along the Inyo and San Bernardino County boundary until the point which is the NE corner of the Western half of the NW quarter of Section 6, T25S, R42E, MDM. Continue S to that point which is the SW corner of the NW quarter of Section 6, T27S, R42E, MDM. Continue E in a straight line to the California and Nevada state border at the point which is the NW corner of Section 1, T17N, R14E, San Bernardino Meridian. Then continue NW along the state line to the starting point, which is the center of Section 18, T10N, R22E, MDM.

REMAINING AREA NOT DEFINED ABOVE RECIEVES BASE RATE

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* ENGI0012-004 08/01/2014

	Rates	Fringes
OPERATOR: Power Equipment (DREDGING)		
(1) Leverman	$ 48.60	22.40
(2) Dredge dozer	$ 42.63	22.40
(3) Deckmate	$ 42.52	22.40
(4) Winch operator (stern winch on dredge)	$ 41.97	22.40
(5) Fireman-Oiler,		

Deckhand, Bargeman,
Leveehand.....$ 41.43 22.40
(6) Barge Mate.....$ 42.04 22.40

IRON0377-002 07/01/2013

Rates Fringes

Ironworkers:
Fence Erector.....$ 26.58 17.74
Ornamental, Reinforcing
and Structural.....$ 33.00 26.30

PREMIUM PAY:

$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland,
Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LABO0089-001 07/01/2013

Rates Fringes

LABORER (BUILDING and all other Residential Construction)
Group 1.....$ 26.98 15.42
Group 2.....$ 27.66 15.42
Group 3.....$ 28.37 15.42
Group 4.....$ 29.17 15.42
Group 5.....$ 31.10 15.42

LABORER (RESIDENTIAL CONSTRUCTION - See definition below)

(1) Laborer.....	$ 24.88	13.75
(2) Cleanup, Landscape, Fencing (Chain Link & Wood).	$ 23.59	13.75

RESIDENTIAL DEFINITION: Wood or metal frame construction of single family residences, apartments and condominums - excluding (a) projects that exceed three stories over a garage level, (b) any utility work such as telephone, gas, water, sewer and other utilities and (c) any fine grading work, utility work or paving work in the future street and public right-of-way; but including all rough grading work at the job site behind the existing right of way

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete Screeding for Rought Strike-off; Concrete, water curing; Demolition laborer; Flagman; Gas, oil and/or water pipeline laborer; General Laborer; General clean-up laborer; Landscape laborer; Jetting laborer; Temporary water and air lines laborer; Material hoseman (walls, slabs, floors and decks); Plugging, filling of Shee-bolt holes; Dry packing of concrete; Railroad maintenance, Repair Trackman and road beds, Streetcar and railroad construction trac laborers; Slip form raisers; Slurry seal crews (mixer operator, applicator operator, squeegee man, Shuttle man, top man), filling of cracks by any method on any surface; Tarman and mortar man; Tool crib or tool house laborer; Window cleaner; Wire Mesh puling-all concrete pouring operations

GROUP 2: Asphalt Shoveler; Cement Dumper (on 1 yard or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute man, pouring concrete, the handling of the cute from ready mix trucks, such as walls, slabs, decks, floors, foundations, footings, curbs, gutters and sidewalks; Concrete curer-impervious membrane and form oiler; Cutting torch operator (demoliton); Guinea chaser; Headboard man-asphlt; Laborer, packing rod steel and pans; membrane vapor barrier installer; Power broom sweepers (small); Riiprap, stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Tank

sealer and cleaner; Tree climber, faller, chain saw operator, Pittsburgh Chipper and similar type brush shredders; Underground laborers, including caisson bellower

GROUP 3: Buggymobile; Concrete cutting torch; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2 1/2 feet drill steel or longer; Dri Pak-it machine; High sealer (including drilling of same); Hydro seeder and similar type; Impact wrench, mult-plate; Kettlemen, potmen and mean applying asphalt, lay-kold, creosote, line caustic and similar type materials (applying means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operators of pneumatic, gas, electric tools, vibratring machines, pavement breakers, air blasting, come-along, and similar mechanical tools not separately classified herein; Pipelayers back up man coating, grouting, making of joints, sealing, caulking, diapering and inclduing rubber gasket joints, pointing and any and all other services; Rotary Scarifier or multiple head concrete chipping scaarifier; Steel header board man and guideline setter; Tampers, Barko, Wacker and similar type; Trenching machine, handpropelled

GROUP 4: Asphalt raker, luterman, ironer, apshalt dumpman and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), Grinder or sander; Concrete saw man; cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Laser beam in connection with laborer's work; Oversize concrete vibrator operator 70 pounds and over; Pipelayer performing all services in the laying, installation and all forms of connection of pipe from the point of receiving pipe in the ditch until completion of oepration, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit, and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid, gas, air or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzleman), Porta shot-blast, water blasting

GROUP 5: Blasters Powderman-All work of loading holes, placing and blasting of all pwder and explosives of whatever type, regardless of method used for such loading and placing; Driller-all power drills, excluding

jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power.
LABO0089-002 11/01/2012

	Rates	Fringes
LABORER (MASON TENDER).....	$ 27.98	13.39

LABO0089-004 07/01/2013

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
Laborers:		
Group 1.....	$ 26.98	15.42
Group 2.....	$ 27.66	15.42
Group 3.....	$ 28.37	15.42
Group 4.....	$ 29.17	15.42
Group 5.....	$ 31.10	15.42

LABORER CLASSIFICATIONS

GROUP 1: Laborer: General or Construction Laborer, Landscape Laborer. Asphalt Rubber Material Loader. Boring Machine Tender (outside), Carpenter Laborer (cleaning, handling, oiling & blowing of panel forms and lumber), Concrete Laborer, Concrete Screeding for rough strike-off, Concrete water curing. Concrete Curb & Gutter laborer, Certified Confined Space Laborer, Demolition laborer & Cleaning of Brick and lumber,Expansion Joint Caulking; Environmental Remediation, Monitoring Well, Toxic waste and Geotechnical Drill tender, Fine Grader, Fire Watcher, Limbers, Brush Loader, Pilers and Debris Handlers. flagman. Gas Oil and Water Pipeline Laborer. Material Hoseman (slabs, walls, floors, decks); Plugging, filling of shee bolt holes; Dry packing of concrete and patching; Post Holer Digger (manual); Railroad maintenance, repair trackman, road beds; Rigging & signaling; Scaler, Slip-Form Raisers, Filling cracks on any surface, tool Crib or Tool House Laborer, Traffic control (signs, barriers, barricades, delineator, cones etc.), Window Cleaner

GROUP 2: Asphalt abatement; Buggymobile; Cement dumper (on 1 yd. or larger mixers and handling bulk cement); Concrete curer, impervious membrane and form oiler; Chute man, pouring concrete; Concrete cutting torch; Concrete pile

cutter; driller/Jackhammer, with drill steel 2 1/'2 feet or longer; Dry pak-it machine; Fence erector; Pipeline wrapper, gas, oil, water, pot tender & form man; Grout man; Installation of all asphalt overlay fabric and materials used for reinforcing asphalt; Irrigation laborer; Kettleman-Potman hot mop, includes applying asphalt, lay-klold, creosote, lime caustic and similar tyhpes of materials (dipping, brushing, handling) and waterproofing; Membrane vapor barrier installer; Pipelayer backup man (coating, grouting, making of joints, sealing caulkiing, diapering including rubber basket joints, pointing); Rotary scarifier, multiple head concrete chipper; Rock slinger; Roto scraper & tiller; Sandblaster pot tender; Septic tank digger/installer; Tamper/wacker operator; Tank scaler & cleaner; Tar man & mortar man; Tree climber/faller, chainb saw operator, Pittsburgh chipper & similar type brush shredders.

GROUP 3: Asphalt, installation of all frabrics; Buggy Mobile Man, Bushing hammer; Compactor (all types), Concrete Curer - Impervious membrane, Form Oiler, Concrete Cutting Torch, Concrete Pile Cutter,Driller/Jackhammer with drill steel 2 1/2 ft or longer, Dry Pak-it machine, Fence erector including manual post hole digging, Gas oil or water Pipeline Wrapper - 6 ft pipe and over, Guradrail erector, Hydro seeder, Impact Wrench man (multi plate), kettleman-Potman Hot Mop includes applying Asphalt, Lay-Kold, Creosote, lime caustic and similar types of materials (dipping, brushing or handling) and waterproofing. Laser Beam in connection with Laborer work. High Scaler, Operators of Pneumatic Gas or Electric Tools, Vibrating Machines, Pavement Breakers, Air Blasting, Come-Alongs and similar mechanical tools, Remote-Controlled Robotic Tools in connection with Laborers work. Pipelayer Backup Man (Coating, grouting,m makeing of joints, sealing, caulking, diapering including rubber gasket joints, pointing and other services). Power Post Hole Digger, Rotary Scarifier (multiple head concrete chipper scarifier), Rock Slinger, Shot Blast equipment (8 to 48 inches), Steel Headerboard Man and Guideline Setter, Tamper/Wacker operator and similar types, Trenching Machine hand propelled.

GROUP 4: Any worker exposed to raw sewage. Asphalt Raker, Luteman, Asphalt Dumpman, Asphalt Spreader Boxes, Concrete Core Cutter, Concrete Saw Man, Cribber, Shorer, Head Rock Slinger. Installation of subsurface instrumentation, monitoring wells or points, remediation system installer;

Laborer, asphalt-rubber distributor bootman; Oversize concrete vibrator operators, 70 pounds or over. Pipelayer, Prfefabricated Manhole Installer, Sandblast Nozzleman (Water Balsting-Porta Shot Blast), Traffic Lane Closure.

GROUP 5: Blasters Powderman-All work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Horizontal directional driller, Boring system, Electronic traking, Driller: all power drills excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and all other types of mechanical drills without regard to form of motive power. Environmental remediation, Monitoring well, Toxic waste and Geotechnical driller, Toxic waste removal. Welding in connection with Laborer's work.

LABO0300-005 01/01/2014

	Rates	Fringes
Asbestos Removal Laborer.....	$ 28.00	15.25

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos- containing materials and toxic waste by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers and assembly of decontamination stations.

LABO1184-001 07/01/2014

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		
(1) Drilling Crew Laborer...	$ 31.65	13.33
(2) Vehicle Operator/Hauler.	$ 31.82	13.33
(3) Horizontal Directional Drill Operator.....	$ 33.67	13.33
(4) Electronic Tracking Locator.....	$ 35.67	13.33
Laborers: (STRIPING/SLURRY SEAL)		
GROUP 1.....	$ 32.56	16.28

GROUP 2.....$ 33.86 16.28
GROUP 3.....$ 35.87 16.28
GROUP 4.....$ 37.61 16.28

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

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LABO1414-003 08/07/2013

	Rates	Fringes
LABORER		
PLASTER CLEAN-UP LABORER	$ 27.45	16.36
PLASTER TENDER	$ 30.00	16.36

Work on a swing stage scaffold: $1.00 per hour additional.

Work at Military Bases - $3.00 additional per hour:
Coronado Naval Amphibious Base, Fort Irwin, Marine Corps Air Station-29 Palms, Imperial Beach Naval Air Station, Marine Corps Logistics Supply Base, Marine Corps Pickle Meadows, Mountain Warfare Training Center, Naval Air Facility-Seeley, North Island Naval Air Station, Vandenberg AFB.

PAIN0036-001 07/01/2014

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County)	$ 26.89	12.28
(2) All Other Work	$ 30.27	12.28

REPAINT of any previously painted structure. Exceptions: work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities.

PAIN0036-010 01/01/2014

	Rates	Fringes
DRYWALL FINISHER/TAPER		
(1) Building & Heavy Construction	$ 25.69	13.79
(2) Residential Construction (Wood frame apartments, single family homes and multi-duplexes up to and including four stories)	$ 21.00	13.41

PAIN0036-012 10/01/2013

	Rates	Fringes
GLAZIER	$ 38.80	17.25

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* PAIN0036-019 07/01/2014

	Rates	Fringes
SOFT FLOOR LAYER	$ 26.77	12.75

PLAS0200-005 08/07/2013

	Rates	Fringes
PLASTERER	$ 36.11	13.13

NORTH ISLAND NAVAL AIR STATION, COLORADO NAVAL AMPHIBIOUS BASE, IMPERIAL BEACH NAVAL AIR STATION: $3.00 additional per hour.

PLAS0500-001 07/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
GROUP 1	$ 22.29	17.10
GROUP 2	$ 23.94	17.10
GROUP 3	$ 26.57	17.25

CEMENT MASONS - work inside the building line, meeting the following criteria:

GROUP 1: Residential wood frame project of any size; work classified as Type III, IV or Type V construction; interior tenant improvement work regardless the size of the project; any wood frame project of four stories or less.

GROUP 2: Work classified as type I and II construction

GROUP 3: All other work

PLUM0016-006 07/01/2014

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER		
Camp Pendleton	$ 49.21	20.36
Plumber and Pipefitter All other work except work on new additions and		

remodeling of bars,
restaurant, stores and
commercial buildings not
to exceed 5,000 sq. ft.
of floor space and work
on strip malls, light
commercial, tenant
improvement and remodel
work.....$ 44.71 20.36
Work ONLY on new additions
and remodeling of
commercial buildings,
bars, restaurants, and
stores not to exceed 5,000
sq. ft. of floor space.....$ 43.33 19.38
Work ONLY on strip malls,
light commercial, tenant
improvement and remodel
work.....$ 34.59 17.71

PLUM0016-011 07/01/2014

	Rates	Fringes
PLUMBER/PIPEFITTER		
Residential	$ 36.15	16.28

PLUM0345-001 07/01/2014

	Rates	Fringes
PLUMBER		
Landscape/Irrigation Fitter	$ 29.27	19.75
Sewer & Storm Drain Work	$ 33.24	17.13

ROOF0045-001 07/01/2012

	Rates	Fringes
ROOFER	$ 25.08	7.28

SFCA0669-001 07/01/2013

	Rates	Fringes
SPRINKLER FITTER	$ 34.86	18.66

SHEE0206-001 01/01/2012

	Rates	Fringes
SHEET METAL WORKER		
Camp Pendleton	$ 35.05	19.23
Except Camp Pendleton	$ 33.05	19.23
Sheet Metal Technician	$ 25.22	6.69

SHEET METAL TECHNICIAN - SCOPE:
a. Existing residential buildings, both single and multi-family, where each unit is heated and/or cooled by a separate system b. New single family residential buildings including tracts. c. New multi-family residential buildings, not exceeding five stories of living space in height, provided each unit is heated or cooled by a separate system. Hotels and motels are excluded. d. LIGHT COMMERCIAL WORK: Any sheet metal, heating and air conditioning work performed on a project where the total construction cost, excluding land, is under $1,000,000 e. TENANT IMPROVEMENT WORK: Any work necessary to finish interior spaces to conform to the occupants of commercial buildings, after completion of the building shell

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TEAM0036-001 07/01/2012

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 15.40	20.50
GROUP 2	$ 24.99	20.50
GROUP 3	$ 25.19	20.50
GROUP 4	$ 25.39	20.50
GROUP 5	$ 25.59	20.50
GROUP 6	$ 26.09	20.50
GROUP 7	$ 27.59	20.50

FOOTNOTE: HAZMAT PAY: Work on a hazmat job, where hazmat certification is required, shall be paid, in addition to the classification working in, as follows: Levels A, B and C - +$1.00 per hour. Workers shall be paid hazmat pay in increments of four (4) and eight (8) hours.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Fuel Man, Swamper

GROUP 2: 2-axle Dump Truck, 2-axle Flat Bed,Concrete Pumping Truck, Industrial Lift Truck, Motorized Traffic Control, Pickup Truck on Jobsite

GROUP 3: 2-axle Water Truck, 3-axle Dump Truck, 3-axle Flat Bed, Erosion Control Nozzleman, Dump Crete Truck under 6.5 yd, Forklift 15,000 lbs and over, Prell Truck, Pipeline Work Truck Driver, Road Oil Spreader, Cement Distributor or Slurry Driver, Bootman, Ross Carrier

GROUP 4: Off-road Dump Truck under 35 tons 4-axles but less than 7-axles, Low-Bed Truck & Trailer, Transit Mix Trucks under 8 yd, 3-axle Water Truck, Erosion Control Driver, Grout Mixer Truck, Dump Crete 6.5yd and over, Dumpster Trucks, DW 10, DW 20 and over, Fuel Truck and Dynamite, Truck Greaser, Truck Mounted Mobile Sweeper 2-axle Winch Truck

GROUP 5: Off-road Dump Truck 35 tons and over, 7-axles or more, Transit Mix Trucks 8 yd and over, A-Frame Truck, Swedish Cranes

GROUP 6: Off-Road Special Equipment (including but not limited to Water Pull Tankers, Athey Wagons, DJB, B70 Wuclids or like Equipment)

GROUP 7: Repairman
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with

characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour

Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

10. FEDERAL LABOR STANDARDS PROVISIONS (Office of the Secretary of Labor 29 CFR 5):

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. Minimum Wages. (i) All laborers and mechanics employed or working upon the site of the work, (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project) will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section l(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (A) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Federal Agency or its designee shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards

Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding. The Federal Agency or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the Federal Agency or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records. (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section l(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has

found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section l(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Agency or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to the Federal Agency or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired.

Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at

http://www.dol.gov/esa/whd/forms/wh347instr.htm

or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Federal Agency or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to the Federal Agency , the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or, owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional =Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b)of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Agency or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, Federal agency or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees. (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination.

Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant ',to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training

Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.59(a)(1) through (10 and such other clauses as the Federal Agency may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1)..

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

b. Contract Work Hours and Safety Standards Act. The provisions of this paragraph b are applicable where the amount of the prime contract exceeds $100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (b)(1) of this section, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (b)(1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in sub paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The Federal Agency or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (b)(1) through (4) of this section.

C. In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in Sec. 5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or

subcontractor will permit such representatives to interview employees during working hours on the job.

11. AGENCY SPECIFIC PROVISIONS:

Note: Failure to comply with these specifications e.g., taking the specified steps prior to Bid opening, and to submit the forms located in Volume 2 with the Bid will lead to the Bid being declared **non-responsive** and, therefore, shall be rejected.

11.1. FAA Funded Contracts:

11.1.1. All projects funded by the U.S. Department of Transportation Federal Aviation Administration [FAA] are subject to the equal opportunity requirements set forth at 49 CFR Part 26, as well as the following Federal Requirements.

11.1.2. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate. The provision shall be included in any agreements between Contractor and any Subcontractor.

11.1.3. To ensure there is equal participation of the DBE groups specified in 49 CFR 26.5, the City specifies a goal for Disadvantaged Business Enterprises (DBEs)

11.1.4. The Bidder shall make Work available to DBEs and select Work parts consistent with available DBE Subcontractors and Suppliers.

11.1.5. The Bidder Proposer shall meet the DBE goal shown in the Notice Inviting Bids or demonstrate that it made adequate GFE to meet this goal. Include a completed copy of the Form AA61, "List of Work Made Available" with the GFE documentation.

11.1.6. It is the Bidder's responsibility to verify that the DBE is certified as DBE at date of Bid opening or Proposal due date. For a list of DBEs certified by the California Unified Certification Program, go to: http://www.dot.ca.gov/hq/bep/find_certified.htm.

11.1.7. Only DBE participation will count towards the DBE goal. DBE participation will count towards the City's Annual Anticipated DBE Participation Level (AADPL) and the California statewide goal.

11.1.8. Credit for materials or supplies Contractor purchases from DBEs counts towards the goal in the following manner:

1. 100% counts if the materials or supplies are obtained from a DBE manufacturer.
2. 60% counts if the materials or supplies are obtained from a DBE regular dealer.

3. Only fees, commissions, and charges for assistance in the procurement and delivery of materials or supplies count if obtained from a DBE that is neither a manufacturer nor regular dealer. 49 CFR 26.55 defines "manufacturer" and "regular dealer."

11.1.9. The Contractor or Subcontractor will receive credit towards the goal if the Contractor or Subcontractor employs a DBE trucking company that performs a commercially useful function as defined in 49 CFR 26.55.

11.1.10. Subcontracting Participation Goals:

1. The Bidders are encouraged to take positive steps to diversify and expand their subcontractor solicitation base and to offer contracting opportunities to all eligible DBE certified Subcontractors. To support its Equal Opportunity Contracting commitment, the City has implemented a race-conscious and race neutral project specific goal methodology required for all FAA funded projects.
2. The Bidder is required to meet the Project specific percentages for DBE's as outlined in the Notice Inviting Bids or satisfy good faith documentation requirements.
3. The Bidder shall make good faith efforts, as defined in these specifications to meet the contract goal for DBE participation in the performance of this contract.

11.1.11. The Bidder shall include the City's DBE Policy Statement in all its Subcontracts.

12. GOOD FAITH EFFORT DOCUMENTATION SUBMITTALS:

12.1. The affirmative GFE steps documentation shall be submitted **within 4 Working Days of the Bid Opening.** If this documentation is not submitted when due, the City will declare the Bid **non-responsive** and reject it.

12.2. The required documentation shall be submitted and logged in at the following address:

CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14TH FLOOR, MS 614C
SAN DIEGO, CA 92101
SUBJECT: AFFIRMATIVE GOOD FAITH EFFORT DOCUMENTATION
BID NO. **K-15-6020-DBB-3**

12.3. The Contractor shall maintain the records documenting compliance with requirements including documentation of its GFE and data relied upon in formulating its fair share objectives.

13. FORMS:

13.1. The Contractor shall demonstrate that efforts were made to attract DBEs on this contract. The Contractor and Subcontractors shall take the steps listed in these specifications to assure that DBEs are used whenever possible as sources of supplies, construction, equipment, or services. In addition to the specified GFE documentation, the Bidder shall submit the following forms.

13.2. **VOLUME 1 FORMS** - The following forms in Volume 1 shall be completed and submitted within **4 Working Days of the Bid opening**. Failure to include any of the forms shall cause the Bid to be deemed **non-responsive**.

1. Form AA61 List of Work Made Available
2. Letter of Intent
3. Utilization Statement

14. APPENDIX:

1. DBE Policy Statement For FAA Contracts Only

FUNDING AGENCY PROVISIONS

FORMS

LIST OF WORK MADE AVAILABLE

List items of the Work the Bidder made available to DBE firms. Identify those items of the Work the Bidder might otherwise perform with its own forces and those items that have been broken down into economically feasible units to facilitate DBE participation. For each item listed, show the dollar amount and percentage of the Base Bid. The Bidder must demonstrate that enough work to meet the goal was made available to DBE firms.

ITEM OF WORK MADE AVAILABLE	NAICS CODE	BIDDER NORMALLY PERFORMS ITEM (Y/N)	ITEM BROKEN DOWN TO FACILITATE PARTICIPATION (Y/N)	AMOUNT	PERCENTAGE OF BASE BID
Asphalt Concrete	237310	N	Y	$1,309,000	35.44%
Asphalt Concrete Grinding / Pulverize	238910	Y	Y	$70,591.56	1.9%
Site Preparation	238910	Y	Y	$689,602.88	18.67%
Striping	237310	N	Y	$96,585	2.6%
Electrical	238210	N	Y	$38,075.00	1.03%
Fence	238990	N	Y	$2,480	.06%
TOTALS				$2,206,334.44	59.74%

**All amounts based on base bid only

LETTER OF INTENT

Disadvantage Business Enterprise

(This page shall be submitted for each DBE firm)

Bidder/Offer

Name:_____

Address:_____

City:_____ State:_____ Zip:_____

DBE Firm:

DBE Firm:_____

Address:_____

City:_____ State:_____ Zip:_____

DBE Contact Person: Name:_____ Phone: (___)_____

DBE Certifying Agency: _____ Expiration Date:_____

Each DBE Firm shall submit evidence (such as a photocopy) of their certification status.

Classification: ☐ Prime Contractor ☐ Subcontractor ☐ Joint Venture ☐ Manufacturer ☐ Supplier

Work item(s) to be performed by DBE	Description of Work Item	Quantity	Total

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated participation is as follows:

DBE contract amount: $_____ Percent of total contract:_____%

AFFIRMATION:

The above-named DBE firm affirms that it will perform that portion of the contract for the estimated dollar value as stated herein above.

By: _____

(Signature) *(Title)*

* In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

LIST OF WORK MADE AVAILABLE

List items of the Work the Bidder made available to DBE firms. Identify those items of the Work the Bidder might otherwise perform with its own forces and those items that have been broken down into economically feasible units to facilitate DBE participation. For each item listed, show the dollar amount and percentage of the Base Bid. The Bidder must demonstrate that enough work to meet the goal was made available to DBE firms.

ITEM OF WORK MADE AVAILABLE	NAICS CODE	BIDDER NORMALLY PERFORMS ITEM (Y/N)	ITEM BROKEN DOWN TO FACILITATE PARTICIPATION (Y/N)	AMOUNT	PERCENTAGE OF BASE BID

9/9/13

LETTER OF INTENT

Disadvantage Business Enterprise

(This page shall be submitted for each DBE firm)

Bidder/Offer

Name: West Coast General Corporation

Address: 13700 Stowe Dr

City: Poway State: CA Zip: 92064

DBE Firm:

DBE Firm: LMS Transport

Address: 3810 Wacker Drive

City: Mira Loma State: CA Zip: 91752

DBE Contact Person:

Name: Anthony Steen Phone: (951) 616-3828

DBE Certifying Agency: Caltrans Expiration Date: n/a

Each DBE Firm shall submit evidence (such as a photocopy) of their certification status.

Classification:

☐ Prime Contractor ☐ Subcontractor ☐ Joint Venture

☐ Manufacturer ☒ Supplier

Work item(s) to be performed by DBE	Description of Work Item	Quantity	Total
19	Supply and Truck Liquid AC for	1 LS	$500,845**
	bid item 19		

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated participation is as follows:

DBE contract amount: $ 500,845 ** Percent of total contract: 11.29 %

DBE credit amount is $307,500 6.9% DBE total incl all alts

AFFIRMATION:

The above-named DBE firm affirms that it will perform that portion of the contract for the estimated dollar value as stated herein above.*

By: [signature] (Signature) President (Title)

* In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Back To Query Form

Search Returned 1 Records

Mon Sep 15 13:32:57 PDT 2014

Query Criteria

Firm/DBA Name: lms transport
Firm Type: DBE

Firm ID	38327
Firm/DBA Name	LMS TRANSPORT
Address Line1	3810 WACKER DRIVE
Address Line2	
City	MIRA LOMA
State	CA
Zip Code1	91752
Zip Code2	
Mailing Address Line1	13961 ROSE AVE
Mailing Address Line2	
Mailing City	FONTANA
Mailing State	CA
Mailing Zip Code1	92337
Mailing Zip Code2	
Certification Type	DBE
EMail	orders@lms-transport.com
Contact Name	ANTHONY STEEN
Area Code	(951)
Phone Number	616-3828
Fax Area Code	(951)
Fax Phone Number	685-1862
Agency Name	DEPARTMENT OF TRANSPORTATION
Counties	19; 30; 33; 36; 37; 42; 43; 56;
Districts	04; 05; 07; 08; 11; 12;
DBE NAICS	484110; 484220; 488310; 493110;
ACDBE NAICS	
Work Codes	C0624 PETROLEUM, OIL, LUBRICANTS SUPPLIER; C9604 SUPER 10 DUMP TRUCK; C9605 FLAT BED TRUCKING; C9670 TRUCK RENTAL; C9774 TRUCKER; C9908 HEAVY EQUIPMENT RENTAL;
Licenses	
Trucks	FOR HIRE - 7;
Gender	M
Ethnicity	ASIAN PACIFIC
Firm Type	DBE

Back To Query Form

9/9/13

LETTER OF INTENT

Disadvantage Business Enterprise
(This page shall be submitted for each DBE firm)

Bidder/Offer

Name: West Coast General Corporation
Address: 13700 Stowe Dr., Suite 100
City: Poway State: CA Zip: 92064

DBE Firm:

DBE Firm: Payco Specialties
Address: 120 North Second Ave
City: Chula Vista State: CA Zip: 91910

DBE Contact Person: Name: Bill Taylor Phone: (619) 422-9204

DBE Certifying Agency: Caltrans Expiration Date: n/a

Each DBE Firm shall submit evidence (such as a photocopy) of their certification status.

Classification: ☐ Prime Contractor ☒ Subcontractor ☐ Joint Venture ☐ Manufacturer ☐ Supplier

Work item(s) to be performed by DBE	Description of Work Item	Quantity	Total
24-35, A13-A18, B20-B21		See attached	base: $96,585.00
C18-C19, D12-D15	Portion of striping	quote	alt: $14,626.00
			total: $111,211.00

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated participation is as follows:

DBE contract amount: $ $111,211.00 if base + alts Percent of total contract: 2.5 %

AFFIRMATION:
The above-named DBE firm affirms that it will perform that portion of the contract for the estimated dollar value as stated herein above.

By: _____ Vice President 9/15/2014
(Signature) (Title)

* In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Payco Specialties, Inc.
Highway - Airport - Parking Lot - Signage - Striping & Marking Removals

SBE #18502 - UDBE / DBE / WBE #102 - LABORERS LOCAL UNION #1184 - LICENSE #298637 B, C-32

BID PROPOSAL - REVISED

Project Description:	CITY OF SAN DIEGO / MYF REHAB RUNWAY 5/23 & TAXIWAY G K-15-6020-DBB-3 / B-00910			Bid Date:	9/10/2014
Contract Time Limit:	W.D.	Liquidated Damages:	per C.D.	Addendums Noted:	✓ 3

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Price	Item Total
	BASE BID				
24	RUNWAY CENTERLINE STRIPING 18" WIDE W/ REFL MEDIA	2,290.00	LF	$ 1.50	$ 3,435.00
25	RUNWAY CENTERLINE STRIPING 18" WIDE W/ REFL MEDIA	6,256.00	LF	$ 1.50	$ 9,384.00
26	RUNWAY EDGE STRIPING 36" WIDE W/ REFL MEDIA	2,240.00	LF	$ 1.50	$ 3,360.00
27	RUNWAY MARKINGS W/ REFL MEDIA	4,394.00	SF	$ 2.00	$ 8,788.00
28	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	5,010.00	LF	$ 1.20	$ 6,012.00
29	SOLID TAXIWAY EDGE STRIPING	2,175.00	LF	$ 1.60	$ 3,480.00
30	RUNWAY HOLD POSITION STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	670.00	LF	$ 8.00	$ 5,360.00
31	TAXIWAY NON-MOVEMENT LINE MARKINGS	681.00	LF	$ 5.00	$ 3,405.00
32	TAXIWAY SURFACE PAINTED HOLD POSITION MARKINGS W/ BLACK OUT BORDER & REFL MEDIA	14.00	EA	$ 600.00	$ 8,400.00
33	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	750.00	LF	$ 3.10	$ 2,325.00
34	RUNWAY SHOULDER MARKINGS	8,745.00	SF	$ 1.80	$ 15,741.00
35	TEMPORARY PVMT MARKING	4,899.00	LF	$ 5.50	$ 26,895.00
	ALTERNATE "A"				
13	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	450.00	LF	$ 1.80	$ 810.00
14	SOLID TAXIWAY EDGE STRIPING	230.00	LF	$ 2.30	$ 529.00
15	DASHEDTAXIWAY EDGE LINE STRIPING	720.00	LF	$ 1.40	$ 1,008.00
16	INTERMEDIATE HOLDING POSITION MARKING	175.00	LF	$ 2.20	$ 385.00
17	RUNWAY HOLD POSITION STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	80.00	LF	$ 6.00	$ 480.00
18	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	150.00	LF	$ 6.50	$ 975.00
	ALTERNATE "B"				
20	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	1,135.00	LF	$ 2.10	$ 2,383.50
21	TAXIWAY NON-MOVEMENT LINE MARKINGS	50.00	LF	$ 4.00	$ 200.00
	ALTERNATE "C"				
18	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	215.00	LF	$ 2.10	$ 451.50
19	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	750.00	LF	$ 2.40	$ 1,800.00
	ALTERNATE "D"				
12	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	1,065.00	LF	$ 1.60	$ 1,704.00
13	RUNWAY HOLD POSITION STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	50.00	LF	$ 15.00	$ 750.00
14	TAXIWAY SURFACE PAINTED HOLD POSITION MARKINGS W/ BLACK OUT STRIPING & REFL MEDIA	2.00	EA	$ 750.00	$ 1,500.00
15	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	300.00	LF	$ 5.50	$ 1,650.00
NOTE!!	SURVEY FOR STRIPING WILL BE REQUIRED BY THE G.C.				

STIPULATIONS: RECIPIENT IS RESPONSIBLE FOR ALL STIPULATIONS NOTED HEREON AND BELOW

- Extra Work exceeding 25% of Engineer's estimate shall be paid at contract unit price or an agreed upon price by the Prime Contractor.
- A signed Purchase Order or Subcontract is required prior to any work associated with this Proposal.
- This Proposal is based on an 8 hour shift per workday, any overtime (premium time) will be paid by the Prime Contractor.
- This Proposal is valid for 30 days after the bid date.
- If accepted, this Proposal will be incorporated as an Exhibit to the Contract or Purchase Order.
- **A minimum of 15 working days schedule notice is required AFTER ALL PAPERWORK IS COMPLETED.**
- Bond cost to be paid by Prime Contractor.
- ANY, special / additional insurance will be charged a flat rate of $400.00. Some specialized wording may not available. Please call.
- A Mobilization / Move-in is any work accomplished through consecutive shifts. Unavailable work and all extra-work will be charged additional mobilizations upon completion.

EXCLUSIONS: PLANS - PERMITS - SURVEYS - SIGNAGE - L.D.'s - SURFACE REPAIRS - SWEEPING - CLOUSERS - ESCORTS

INCLUSIONS:

# of Working Days to Complete our Work: 7 # of Move-in's Allotted: 2 Add'l Move-in's: $ 600.00

BID AMOUNT: $111,211.00 ESTIMATOR: BILL TAYLOR

120 North Second Avenue, Chula Vista, CA 91910-1127
Phone (619) 422-9204 / Fax (619) 427-1620

Payco Specialties, Inc.
Highway - Airport - Parking Lot - Signage - Striping & Marking Removals

IN 12:27 PM

SBE #18502 - UDBE / DBE / WBE #102 - LABORERS LOCAL UNION #1184 - LICENSE #298637 B, C-32

BID PROPOSAL - REVISED (MOVE-INS)

Project Description:	CITY OF SAN DIEGO / MYF REHAB RUNWAY 9/29 & TAXIWAY G K-15-8020-DBB-3 / B-00910			Bid Date:	9/10/2014
Contract Time Limit:	W.D.	Liquidated Damages:	per C.D.	Addendums Noted:	✓ - 3

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Price	Item Total
	BASE BID				
24	RUNWAY CENTERLINE STRIPING 18" WIDE W/ REFL MEDIA	2,290.00	LF	$ 1.50	$ 3,435.00
26	RUNWAY CENTERLINE STRIPING 18" WIDE W/ REFL MEDIA	6,256.00	LF	$ 1.50	$ 9,384.00
26	RUNWAY EDGE STRIPING 36" WIDE W/ REFL MEDIA	2,240.00	LF	$ 1.50	$ 3,360.00
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29	SOLID TAXIWAY EDGE STRIPING	2,175.00	LF	$ 1.60	$ 3,480.00
30	RUNWAY HOLD POSITION STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	670.00	LF	$ 8.00	$ 5,360.00
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32	TAXIWAY SURFACE PAINTED HOLD POSITION MARKINGS W/ BLACK OUT BORDER & REFL MEDIA	14.00	EA	$ 600.00	$ 8,400.00
33	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	750.00	LF	$ 3.10	$ 2,325.00
34	RUNWAY SHOULDER MARKINGS	8,745.00	SF	$ 1.80	$ 15,741.00
35	TEMPORARY PVMT MARKING	4,899.00	LF	$ 5.50	$ 26,895.00
	ALTERNATE "A"				
13	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	450.00	LF	$ 1.80	$ 810.00
14	SOLID TAXIWAY EDGE STRIPING	230.00	LF	$ 2.30	$ 529.00
15	DASHEDTAXIWAY EDGE LINE STRIPING	720.00	LF	$ 1.40	$ 1,008.00
16	INTERMEDIATE HOLDING POSITION MARKING	175.00	LF	$ 2.20	$ 385.00
17	RUNWAY HOLD POSITION STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	80.00	LF	$ 6.00	$ 480.00
18	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	150.00	LF	$ 6.50	$ 975.00
	ALTERNATE "B"				
20	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	1,135.00	LF	$ 2.10	$ 2,383.50
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	ALTERNATE "C"				
18	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	215.00	LF	$ 2.10	$ 451.50
19	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	750.00	LF	$ 2.40	$ 1,800.00
	ALTERNATE "D" E				
12	TAXIWAY CENTERLINE STRIPING W/ REFL MEDIA	1,065.00	LF	$ 1.60	$ 1,704.00
13	RUNWAY HOLD POSITION STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	50.00	LF	$ 15.00	$ 750.00
14	TAXIWAY SURFACE PAINTED HOLD POSITION MARKINGS W/ BLACK OUT STRIPING & REFL MEDIA	2.00	EA	$ 750.00	$ 1,500.00
15	TAXIWAY ENHANCED CENTERLINE STRIPING W/ BLACK OUT STRIPING & REFL MEDIA	300.00	LF	$ 5.50	$ 1,650.00
NOTE!!	SURVEY FOR STRIPING WILL BE REQUIRED BY THE G.C.				

$96,585

$4187

$2583.50

$2,251.50

$5,604.00

STIPULATIONS: RECIPIENT IS RESPONSIBLE FOR ALL STIPULATIONS NOTED HEREON AND BELOW

* Extra Work exceeding 25% of Engineer's estimate shall be paid at contract unit price or an agreed upon price by the Prime Contractor.
* A signed Purchase Order or Subcontract is required prior to any work associated with this Proposal.
* This Proposal is based on an 8 hour shift per workday, any overtime (premium time) will be paid by the Prime Contractor.
* This Proposal is valid for 30 days after the bid date.
* If accepted, this Proposal will be incorporated as an Exhibit to the Contract or Purchase Order.
* A minimum of 15 working days schedule notice is required AFTER ALL PAPERWORK IS COMPLETED.
* Bond cost to be paid by Prime Contractor.
* ANY, special / additional insurance will be charged a flat rate of $400.00. Some specialized wording may not available. Please call.
* A Mobilization / Move-In is any work accomplished through consecutive shifts. Unavailable work and all extra-work will be charged additional mobilizations upon completion.

EXCLUSIONS:

PLANS - PERMITS - SURVEYS - SIGNAGE - L.D.'s - SURFACE REPAIRS - SWEEPING - CLOUSERS - ESCORTS

INCLUSIONS:

# of Working Days to Complete our Work: 65 # of Move-In's Allotted: 13 Add'l Move-In's: $ 600.00

BID AMOUNT: $ 111,211.00 ESTIMATOR: BILL TAYLOR

120 North Second Avenue, Chula Vista, CA 91910-1127
Phone (619) 422-9204 / Fax (619) 427-1620

Back To Query Form

Search Returned 1 Records

Mon Sep 15 13:22:34 PDT 2014

Query Criteria

Firm/DBA Name: payco
Firm Type: DBE

Firm ID	102
Firm/DBA Name	PAYCO SPECIALTIES, INCORPORATED
Address Line1	120 NORTH SECOND AVE.
Address Line2	
City	CHULA VISTA
State	CA
Zip Code1	91910
Zip Code2	
Mailing Address Line1	
Mailing Address Line2	
Mailing City	
Mailing State	
Mailing Zip Code1	
Mailing Zip Code2	
Certification Type	DBE
EMail	rebecca@payco.biz
Contact Name	REBECCA LLEWELLYN
Area Code	(619)
Phone Number	422-9204
Fax Area Code	(619)
Fax Phone Number	427-1620
Agency Name	DEPARTMENT OF TRANSPORTATION
Counties	02; 13; 19; 30; 33; 37;
Districts	07; 08; 10; 11; 12;
DBE NAICS	237310; 238990;
ACDBE NAICS	
Work Codes	C1201 TRAFFIC CONTROL SYSTEM; C5601 SIGN STRUCTURE; C5620 ROADSIDE SIGN; C8201 OBJECT MARKER; C8405 THERMOPLASTIC TRAFFIC STRIPING & MARKING; C8406 PAINTED TRAFFIC STRIPING & MARKING; C8501 PAVEMENT MARKING; C9905 SANDBLASTING;
Licenses	B General Building Contractor; C32 Parking and Highway Improvement Contractor;
Trucks	
Gender	F
Ethnicity	CAUCASIAN
Firm Type	DBE

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9/9/13

LETTER OF INTENT

Disadvantage Business Enterprise
(This page shall be submitted for each DBE firm)

Bidder/Offer
Name: West Coast General Corporation
Address: 13700 Stowe Dr., Suite 100
City: Poway State: CA Zip: 92064

DBE Firm:
DBE Firm: Bert W Salas, Inc.
Address: 10769 Woodside Avenue, Suite 201
City: Santee State: CA Zip: 92071

DBE Contact Person: Name: Bob Salas Phone: (619) 562-7711

DBE Certifying Agency: Caltrans Expiration Date: na
Each DBE Firm shall submit evidence (such as a photocopy) of their certification status.

Classification: ☐ Prime Contractor ☒ Subcontractor ☐ Joint Venture ☐ Manufacturer ☐ Supplier

Work item(s) to be performed by DBE	Description of Work Item	Quantity	Total
B9, B10, B11, B22,	portion of wet underground	see attached	$107,934.00
B23,B24,B25,C7,C8,		quote	
C19,C20,E7, E18, E19			

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated participation is as follows:

DBE contract amount: $ 107,934.00 Percent of total contract: 2.4% %

AFFIRMATION:
The above-named DBE firm affirms that it will perform that portion of the contract for the estimated dollar value as stated herein above.

By: [signature] (Signature) President (Title)

* In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

BERT W. SALAS, INC. LIC#275199 DBE#77 SBE#11175
10769 WOODSIDE AVE, 201 / SANTEE, CA. 92071
PHONE (619) 562-7711
Fax (619) 258-3515

IN 11:45AM

Date September 10, 2014

RE; CITY OF SAN DIEGO (MYF REHAB RUNWAY 5/23 & TAXIWAY G)
WE SUBMIT THE FOLLOWING PROPOSAL TO FURHISH AND PLACE ALL ITEMS LISTED BELOW PER ADDENDUMS NO. A THROUGH C

Item	Description	Unit	Estimated Quantity	Unit Price	Total Price
	ALTERNATE "B"				
9	RSP No. 2 Backing w/ Fabric	CY	4	$210.00	$840.00
10	RSP 3" Rock w/ Fabric	CY	14	$130.00	$1,820.00
11	RSP 6" Rock w/ Fabric	CY	4	$130.00	$520.00
22	24" RCP Storm Drain, 1750-D Pipe	LF	146	$149.00	$21,754.00
23	Concrete Pipe Collar	EA	2	$1,000.00	$2,000.00
24	Catch Basin Type "I"	EA	1	$4,800.00	$4,800.00
25	Wing & U Type Headwalls	EA	1	$3,900.00	$3,900.00
	ALTERNATE "C"				
7	Remove Storm Drain Facilities	LS	1	$2,420.00	$2,420.00
8	RSP No. 2 Backing w/ Fabric	CY	4	$210.00	$840.00
19	24" RCP Storm Drain, 1750-D Pipe	LF	274	$138.00	$37,812.00
20	Wing & U Type Headwalls	EA	1	$3,900.00	$3,900.00
	ALTERNATE "D"				
7	Remove Storm Drain Facilities	LS	1	$5,900.00	$5,900.00
17	18" RCP Strom Drain 1250-D Pipe	LF	106	$138.00	$14,628.00
18	Concrete Pipe Collar	EA	2	$1,000.00	$2,000.00
19	Catch Basin Type "I"	EA	1	$4,800.00	$4,800.00
	Total				**$107,934.00**

EXCLUSIONS:
BONDS
ENGINEERING, STAKING ,TESTING, PERMITS, EXTRA INSURANCE AND ANY FEES
CONSTRUCTION WATER
STORMWATER PROTECTION (BMP,s)
SAW CUTTING & ASPHALT & CONCRETE REPAIR
PIPE CLEANING (AFTER INSTILLATION & ANY MAINTENACE
DEWATERING (GROUNG & SURFACE)

+ 1 move @ 1500

NOTES:
THIS QUOTE IS BASED ON DAY WORK ONLY .
COCNTACTOR TO SUPPY SALAS WITH A STAGING AREA FOR PIPE.
ALL SPOIL WILL BE LEVELED AND LEFT AT EACH PROFILE.
SALAS HAS ONE MOVE INS ANY MORE WILL COST $1,500.00 EACH.
SUITABLE ACCESS TO ALL WORK.
ANY QUESTIONS PLEASE CALL ME AT (619) 977-5608

1000
-5900
4900
1,600 -

BERT W. SALAS, INC.

BOB SALAZ (PRESIDENT)

Back To Query Form

Search Returned 1 Records

Mon Sep 15 14:08:27 PDT 2014

Query Criteria

Firm/DBA Name: bert w sa
Firm Type: DBE

Firm ID	77
Firm/DBA Name	BERT W SALAS, INC.
Address Line1	10769 WOODSIDE AVENUE, SUITE 201
Address Line2	
City	SANTEE
State	CA
Zip Code1	92071
Zip Code2	3175
Mailing Address Line1	
Mailing Address Line2	
Mailing City	
Mailing State	
Mailing Zip Code1	
Mailing Zip Code2	
Certification Type	SMBE
EMail	bsalaz@bertsalas.com
Contact Name	BOB E. SALAZ
Area Code	(619)
Phone Number	562-7711
Fax Area Code	(619)
Fax Phone Number	258-3515
Agency Name	DEPARTMENT OF TRANSPORTATION
Counties	00;
Districts	00;
DBE NAICS	237310; 238110; 238120; 238910; 238990;
ACDBE NAICS	
Work Codes	C1601 CLEARING & GRUBBING; C1901 ROADWAY EXCAVATION; C1920 STRUCTURE EXCAVATION; C1930 STRUCTURE BACKFILL; C1940 DITCHES EXCAVATION; C5105 MINOR CONCRETE STRUCTURE; C5501 STEEL STRUCTURES; C5570 STEEL CRIB WALL; C6200 ALTERNATIVE PIPE CULVERT; C6500 REINFORCED CONCRETE PIPE; C6650 CORRUGATED METAL PIPE (CSP); C6819 FILTER FABRIC; C7065 DEBRIS RACK-DRAINAGE GATE; C7140 CLAY SEWER PIPE; C7191 SEWER MANHOLE; C7215 CONCRETED-ROCK SLOPE PROTECTION; C7301 CONCRETE CURB & SIDEWALK - MISC; C7500 MISC IRON & STEEL FRAME, COVER & GRATE; C9980 DEMOLITION;
Licenses	A General Engineering Contractor;
Trucks	
Gender	M
Ethnicity	HISPANIC
Firm Type	

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UTILIZATION STATEMENT
Disadvantage Business Enterprise (DBE)

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner. (*Please mark the appropriate box*)

- ☐ **The bidder/offeror is committed to a minimum of _____% DBE utilization on this contract.**
- ☒ **The bidder/offeror, while unable to meet the DBE contract goal of 18.3 %, hereby commits to a minimum of 10.94 % DBE utilization on this contract and submits the attached documentation as evidence demonstrating good faith efforts (GFE) in seeking participation by certified DBE firms.**

The undersigned hereby further assures that the information included herein is true and correct, and that the DBE firm or firms identified within the submitted Letter-of-Intent forms have agreed to perform a commercially useful function for the indicated work elements.

The undersigned further understands that no changes to this statement may be made without prior approval from the Owner and the Federal Aviation Administration

West Coast General Corporation
Bidder's/Offerors Firm Name

Signature

9-16-14
Date

DBE UTILIZATION SUMMARY

	Contract Amount		DBE Amount	Contract Percentage
DBE Prime Contractor	$ _____	x 1.00 =	$ _____	_____ %
DBE Subcontractor	$ 94,585.00	x 1.00 =	$ 96,585.00	2.6 %
DBE Supplier	$ 482,987.50	x 0.60 =	$ 289,792.50	7.8 %
DBE Manufacturer*	$ 17,857.50	x 1.00 =	$ 17,857.50	.48% %
Total Amount DBE			$ 404,235	10.94 %
DBE Goal			$ 675,989.24	18.3 %

* If the total proposed DBE participation is less than the established DBE goal, Bidder must provide written documentation of the good faith efforts as required by 49 CFR Part 26.

*Transport of Material by DBE
**All information on this sheet is based on base bid.

UTILIZATION STATEMENT
Disadvantage Business Enterprise (DBE)

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner. (*Please mark the appropriate box*)

- ☐ **The bidder/offeror is committed to a minimum of _____% DBE utilization on this contract.**

- ☐ **The bidder/offeror, while unable to meet the DBE contract goal of _____%, hereby commits to a minimum of _____% DBE utilization on this contract and submits the attached documentation as evidence demonstrating good faith efforts (GFE) in seeking participation by certified DBE firms.**

The undersigned hereby further assures that the information included herein is true and correct, and that the DBE firm or firms identified within the submitted Letter-of-Intent forms have agreed to perform a commercially useful function for the indicated work elements.

The undersigned further understands that no changes to this statement may be made without prior approval from the Owner and the Federal Aviation Administration

_____
Bidder's/Offerors Firm Name

_____ _____
Signature Date

DBE UTILIZATION SUMMARY

	Contract Amount		DBE Amount	Contract Percentage
DBE Prime Contractor	$_____	x 1.00 =	$_____	_____%
DBE Subcontractor	$_____	x 1.00 =	$_____	_____%
DBE Supplier	$_____	x 0.60 =	$_____	_____%
DBE Manufacturer	$_____	x 1.00 =	$_____	_____%
Total Amount DBE			$_____	_____%
DBE Goal			$_____	_____%

* If the total proposed DBE participation is less than the established DBE goal, Bidder must provide written documentation of the good faith efforts as required by 49 CFR Part 26.

DBE POLICY STATEMENT FOR FAA CONTRACTS

The City of San Diego (Sponsor) has established a Disadvantaged Business Enterprise (DBE) program in accordance with the requirements of the U.S. Department of Transportation (DOT). As a recipient of funding from the DOT, the City of San Diego signed an assurance to comply with the provisions of 49 CFR Part 26, "Participation by Disadvantaged Business Enterprise in DOT Programs."

It is the policy of the Airports Division that DBE's, as defined in 49 CFR Part 26, shall have the maximum opportunity to participate in the performance of contracts assisted in whole or in part by funds granted by the DOT.

The Airports Division prohibits discrimination against any person because of race, color, sex, or national origin, in the award or performance of any contract subject to the requirements of 49 CFR Part 26.

The Airports Division will require its employees, agents, and contractors to adhere to the provisions of this program.

This policy statement is disseminated to appropriate departments of the City of San Diego, to organizations of minority and disadvantaged businesses and to non-minority business and community organizations of the City of San Diego.

_____

Deputy Director, Airports Division

Date: _____

ATTACHMENT E

SUPPLEMENTARY SPECIAL PROVISIONS

SUPPLEMENTARY SPECIAL PROVISIONS

The following Supplementary Special Provisions (SSP) modifies the following documents:

1) Standard Specifications for Public Works Construction (The GREENBOOK) currently in effect.

2) The City of San Diego Standard Specifications for Public Works Construction (The WHITEBOOK).

SECTION 1 – TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

1-2 TERMS AND DEFINITIONS.

Normal Working Hours. To the City Supplements, ADD the following:

The Normal Working Hours are 7:30 AM to 3:30 PM.

SECTION 2 - SCOPE AND CONTROL OF WORK

2-3.2 Self Performance. DELETE in its entirety and SUBSTITUTE with the following:

1. You must perform, with your own organization, Contract work amounting to at least 50% of the base bid alone or base bid and any additive or deductive alternate(s) that together when added or deducted form the basis of award.

2. The self performance percentage requirement will be waived for contracts when a "B" License is required or allowed.

2-7 SUBSURFACE DATA. ADD the following:

4. In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests of subsurface conditions at the Work Site:

    1. Geotechnical Report for Montgomery Field Airport Runway 5/23 and Taxiways Rehabilitation Project dated August 30, 2011by Ninyo & Moore and Associates.

5. The report(s) listed above is(are) available for review by contacting the Project Manager via email at jsleiman@sandiego.gov.

2-9.2 **Survey Service.** DELETE in its entirety and SUBSTITUTE with the following:

The Contractor shall be responsible for all surveying services or as may be specified in the special provisions.

The payment for survey services shall be included in the various Bid items unless a Bid item for Survey Service has been provided.

2-14.3 **Coordination.** To the City Supplement,, ADD the following:

Other adjacent City project(s) is scheduled for construction for the same time period in the vicinity of Montgomery Field Airport Limits. Coordinate the Work with the adjacent project(s) as listed below:

a) Montgomery Field ADA Terminal Upgrade, Michael Maria, Project Manager (619-533-4688).

2-15 **TECHNICAL STUDIES AND DATA.** To the City Supplement, ADD the following:

5. In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests at the Work Site:

    1. Montgomery Field Airport 5/23 and Taxiways Rehabilitation Project Biological Resources Report dated January 8, 2013, prepared by Rock Biological Consulting.

6. The report(s) listed above is(are) available for review by contacting the Project Manager via email at jsleiman@sandiego.gov:

SECTION 4 - CONTROL OF MATERIALS

ADD:

4-1.1.1 **Buy America.** The Buy America preference requirement, at 49 USC § 50101, requires compliance with the Buy America requirements in AIP funded contracts

The Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP-funded projects are produced in the United States, unless the FAA has issued a waiver for the product, the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

A Bidder must submit the Buy America certification with all Bids. Bids that are not accompanied by a completed Buy America certification shall be declared **non-responsive.**

4-1.6 **Trade Names or Equals.** ADD the following:

You must submit your list of proposed substitutions for "an equal" ("or equal") item(s) **no later than 5 Working Days after the determination of the Apparent Low Bidder** and on a City form when provided by the City.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-3 **LIABILITY INSURANCE.** DELETE in its entirety and SUBSTITUTE with the following:

The insurance provisions herein must not be construed to limit your indemnity obligations contained in the Contract.

7-3.1 **Policies and Procedures.**

1. You must procure the insurance described below, at its sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.

2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.

3. You must maintain this insurance for the duration of this contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this contract.

4. Payment for insurance is included in the various items of Work as bid by you, and except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any work under this contract until you have provided and the City has approved all required insurance.

5. Policies of insurance must provide that the City is entitled to 30 days (10 days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

7-3.2 **Types of Insurance.**

7-3.2.1 **Commercial General Liability Insurance.**

1. Commercial General Liability Insurance must be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.

2. The policy must cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).

3. There must be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You must maintain the same or equivalent insurance for at least 10 years following completion of the Work.

4. All costs of defense must be outside the policy limits. Policy coverage must be in liability limits of not less than the following:

General Annual Aggregate Limit	Limits of Liability
Other than Products/Completed Operations	$2,000,000
Products/Completed Operations Aggregate Limit	$2,000,000
Personal Injury Limit	$1,000,000
Each Occurrence	$1,000,000

7-3.2.2 Commercial Automobile Liability Insurance.

1. You must provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of $1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles ("Any Auto").

2. All costs of defense must be outside the limits of the policy.

7-3.2.5 Contractors Builders Risk Property Insurance..

1. You must provide at its expense, and maintain until Final Acceptance of the Work, a Special Form Builders Risk Policy or Policies. This insurance must be in an amount equal to the replacement cost of the completed Work (without deduction for depreciation) including the cost of excavations, grading, and filling. The policy or policies limits must be 100% of this contract value of the Work plus15% to cover administrative costs, design costs, and the costs of inspections and construction management.

2. Insured property must include material or portions of the Work located away from the Site but intended for use at the Site, and must cover material or portions of the Work in transit. The policy or policies must include as insured property scaffolding, falsework, and temporary buildings located at the Site. The policy or policies must cover the cost of removing debris, including demolition.

3. The policy or policies must provide that all proceeds thereunder must be payable to the City as Trustee for the insured, and must name the City, the

Contractor, Subcontractors, and Suppliers of all tiers as named insured. We as Trustee will collect, adjust, and receive all monies which may become due and payable under the policy or policies, may compromise any and all claims thereunder, and will apply the proceeds of such insurance to the repair, reconstruction, or replacement of the Work.

4. Any deductible applicable to the insurance must be identified in the policy or policies documents and responsibility for paying the part of any loss not covered because of the application of such deductibles must be apportioned among the parties except for the City as follows: if there is more than one claimant for a single occurrence, then each claimant must pay a pro-rata share of the per occurrence deductible based upon the percentage of their paid claim to the total paid for insured. The City must be entitled to 100% of its loss. The Contractor must pay the City any portion of that loss not covered because of a deductible, at the same time the proceeds of the insurance are paid to the City as trustee.

5. Any insured, other than the City, making claim to which a deductible applies must be responsible for 100% of the loss not insured because of the deductible. Except as provided for under California law, the policy or policies must provide that the City is entitled to 30 days prior written notice (10 days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.3 **Rating Requirements.** Except for the State Compensation Insurance Fund, all insurance required by this contract as described herein must be carried only by responsible insurance companies with a rating of, or equivalent to, at least "A-, VI" by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

7-3.3.1 **Non-Admitted Carriers.** The City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers must be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7-3.4 **Evidence of Insurance.** Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document must be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

7-3.5 **Policy Endorsements.**

7-3.5.1 **Commercial General Liability Insurance**

7-3.5.1.1 Additional Insured.

a) You must provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.

b) To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy must be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.

c) The additional insured coverage for projects for which the Engineer's Estimate is $1,000,000 or more must include liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) your products, (c) your work, e.g., your completed operations performed by you or on your behalf, or (d) premises owned, leased, controlled, or used by you.

d) The additional insured coverage for projects for which the Engineer's Estimate is less than $1,000,000 must include liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) your products, or (c) premises owned, leased, controlled, or used by you.

7-3.5.1.2 **Primary and Non-Contributory Coverage.** The policy must be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it must provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives must be in excess of your insurance and must not contribute to it.

7-3.5.1.3 Project General Aggregate Limit.

The policy or policies must be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work must reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit must be in addition to the aggregate limit provided for the products-completed operations hazard.

7-3.5.2 Commercial Automobile Liability Insurance.

7-3.5.2.1 **Additional Insured.** Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy must be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

7-3.5.5 Builders Risk Endorsements.

7-3.5.5.1 **Waiver of Subrogation.** The policy or policies must be endorsed to provide that the insurer will waive all rights of subrogation against the City, and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from work performed by the Named Insured for the City.

7-3.5.5.2 **Builders Risk – Partial Utilization.** If the City desire to occupy or use a portion or portions of the Work prior to Acceptance in accordance with this contract, the City will notify you and you must immediately notify your Builder's Risk insurer and obtain an endorsement that the policy or policies must not be cancelled or lapse on account of any such partial use or occupancy. You must obtain the endorsement prior to our occupation and use.

7-3.6 **Deductibles and Self-Insured Retentions.** You must pay for all deductibles and self-insured retentions. You must disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

7-3.7 **Reservation of Rights.** The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this contract.

7-3.8 **Notice of Changes to Insurance.** You must notify the City 30 days prior to any material change to the policies of insurance provided under this contract.

7-3.9 **Excess Insurance.** Policies providing excess coverage must follow the form of the primary policy or policies e.g., all endorsements.

7-4 **WORKERS' COMPENSATION INSURANCE.** DELETE in its entirety and SUBSTITUTE with the following:

7-4.1 **Workers' Compensation Insurance and Employers Liability Insurance.**

1. In accordance with the provisions of §3700 of the California Labor Code, you must provide at your expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.

2. Limits for this insurance must be not less than the following:

Workers' Compensation	Statutory Employers Liability
Bodily Injury by Accident	$1,000,000 each accident
Bodily Injury by Disease	$1,000,000 each employee
Bodily Injury by Disease	$1,000,000 policy limit

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which require every employer to be

insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you must comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

7-4.1.1 Waiver of Subrogation.

The policy or policies must be endorsed to provide that the insurer will waive all rights of subrogation against the City, and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from work performed by the Named Insured for the City.

7-10.5.3 Steel Plate Covers. Table 7-10.5.3(A), REVISE the plate thickness for 5'-3" trench width to read 1 ¾".

7-13.1 Environmental & Safety Laws. To the City Supplement, ADD the following:

11. Texting When Driving:

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10 "Text Messaging While Driving" (12/30/2009), FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or sub-grant.

The Contractor must promote policies and initiatives for employees and other work personnel that decrease crashes by distracted drivers, including policies to ban text messaging while driving. The Contractor must include these policies in each third party subcontract involved on this project.

7-15 INDEMNIFICATION AND HOLD HARMLESS AGREEMENT. To the City Supplement,, fourth paragraph, last sentence, DELETE in its entirety and SUBSTITUTE with the following:

Your duty to indemnify and hold harmless does not include any claims or liability arising from the established active or sole negligence, or willful misconduct of the City, its officers, or employees.

7-16 COMMUNITY LIASON. To the City Supplement, DELETE in its entirety and SUSBTITUTE with the following:

ADD:
7-16 COMMUNITY OUTREACH.

7-16.1 General.

1. To ensure consistency with the City's community outreach plan for the project, the City will work with the Contractor to inform the public (which includes, but is not limited to, property owners, renters, homeowners, business owners,

recreational users, and other community members and stakeholders) of construction impacts. Efforts by the Contractor to mitigate construction impacts by communicating with the public require close coordination and cooperation with the City.

2. The Contractor will perform the community outreach activities required throughout the Contract Time.

3. The Contractor shall closely coordinate the Work with the businesses, institutions, residents and property owners impacted by the Project. Example duties of the Contractor include notification to the businesses, institutions and residents of the commencement of construction activities not less than 5 days in advance, coordination of access for vehicular and pedestrian traffic to businesses, institutions and residences impacted by the Project, reporting of Contractor activities at all Project progress meetings scheduled by the Engineer, attendance to the Project Pre-construction Meeting, attendance at 2 community meetings, response to community questions and complaints related to Contractor activities, and written documentation including logging in all inquiries and complaints received into the City's Public Contact Log located on the City's SDShare site:

   http://sdshare/forums/ecp/PITS/picr/Lists/Public%20Contact%20Log/AllItems.aspx

4. The Contractor shall execute the Information Security Policy Acknowledgement Form - For Non-City Employees within 15 days of the award of the Contract if:

   a) The contact information for the Contractor is made available on any outreach materials or;

   b) The Contractor will be the primary point of contact to resolve project related inquiries and complaints.

5. Electronic Communication.

   All inquiries and complaints will be logged in to the City's SDShare site within 24 hours of receipt of inquiries and complaints.

   Any updates or a resolution of inquiries, and complaints shall be documented in the City's SDShare site within 24 hours.

   Copies of email communications shall be saved on to the City's SDShare site as individually as an Outlook Message Format (*.msg).

   All graphics, photos, and other electronic files associated with the inquiries and or complaints shall be saved into the individual record.

6. **When specified in the Special Provisions**, present your Exclusive Community Liaison to the Engineer, in writing, within 15 days of the award of the Contract.

7-16.2 Submittals.

1. The Contractor shall submit to the Resident Engineer, for review and approval, all drafts of letters, notices, postcards, door hangers, signs, mailing lists, proposed addresses for hand-delivery, and any other notices and letters that are to be mailed and or distributed to the public.

    a. Prior to distributing or mailing, the Contractor shall submit final drafts of letters, notices, postcards, door hangers, signs, and any other notices and letters to the Resident Engineer for final review and approval.

    b. After distributing or mailing, the Contractor shall submit verification of delivery and any copies of returned notices to the Resident Engineer.

2. The Contractor will use the City's SDShare site to identify and summarize communications (via phone, in person, and email) with the public the within 24 hours of receipt, even if the Contractor's response to the individual is still incomplete. The Contractor will upload to the City's SDShare site copies of all written, electronic, and verbal communications and conversations with the public.

7-16.3 Public Notice by Contractor.

1. Furnish and distribute public notices in the form of door hangers using the City's format to all occupants and/or property owners along streets where Work is to be performed at least 5 days before starting the Work as directed by the Resident Engineer.

2. For all Work on private property, contact each owner and occupant individually a minimum of 15 days prior to the Work. If the Work has been delayed, re-notify owners and occupants of the new Work schedule, as directed by the Resident Engineer.

7-16.4 Quality Assurance.

1. During the course of community outreach, the Contractor shall ensure the character of all persons that conduct community outreach (distributing door hangers, attending community meetings, interacting with the public, etc.), on behalf of the Contractor:

    a. Have the ability to speak and comprehend English and/or Spanish, as appropriate for the community or public they are informing,

    b. Possess and display easily verifiable and readable personal identification that identifies the person as an employee of the Contractor,

    c. Have the interpersonal skills to effectively, professionally, and tactfully represent the project, Contractor, and City to the public.

7-16.5 Communications with the Public.

1. The Contractor shall provide updates on construction impacts to the Resident Engineer. The Contractor shall notify the Resident Engineer in advance about time-sensitive construction impacts and may be required to distribute construction impact notices to the public on short notice.

2. The Contractor shall incorporate community outreach activities related to construction impacts in the baseline schedule and update the Resident Engineer with each week's submittal of the Three-Week Look Ahead Schedule.

3. At the request of the Resident Engineer, the Contractor shall attend and participate in project briefings at community meetings.

4. The Contractor shall coordinate with the Resident Engineer on all responses and actions taken to address public inquiries and complaints within 24-hours that they are received.

7-16.6 Communications with Media.

1. The City may allow members of the media access to its construction site(s) on a case-by-case basis only.

2. Occasionally, members of the media may show up at construction sites, uninvited. Members of the media (including, but not limited to newspaper, magazine, radio, television, bloggers, and videographers) do not have the legal right to be in the construction site without the City's permission.

3. In the event media representatives arrive near or on the construction site(s), the Contractor shall keep them off the site(s), in a courteous and professional manner, until a Public Information Officer is available to meet them at an approved location.

4. The Contractor shall report all members of the media visits to the Resident Engineer as quickly as possible, so that the City's Public Information Officer can meet with the members of the media at the construction site(s).

5. If the City allows members of the media to access a construction site, the Contractor shall allow the City to escort the media representatives while they are on the construction site and shall ensure their safety.

6. The Contractor shall require media representatives to sign in and out of the Site Visitor Log and to use Personal Protective Equipment.

7. The Contractor has a right to speak to members of the media about its company and its role on the project. All other questions shall be referred to the City.

7-16.7 Exclusive Community Liaison Services.

If directed to conduct Exclusive Community Liaison Services, the Contractor shall retain an Exclusive Community Liaison for the Project whose sole responsibilities will be as follows:

1. Develop a contact list of community, tenants, property owners, and agencies with a stake in the project.

2. Notify businesses, institutions, property owners, and residents of the commencement of construction activities and utility service interruptions not less than 5 days in advance.

3. Coordinate access for vehicular and pedestrian traffic to businesses, institutions and residences impacted by the Project.

4. Prepare and present of materials in coordination with the Resident Engineer (the City's standards and guidelines for the communication materials are available for review by Bidders by sending a request to the Contract Specialist).

5. Respond to community questions and complaints related to Contractor activities.

6. Write, edit, update, or produce brochures, pamphlets and news releases.

7. Provide standard telephone inquiries and e-mail responses:

    a) Respond to telephone calls and e-mails from the public.

    b) Record calls and e-mails on the City's SDShare site.

8. Report Exclusive Community Liaison activities at all progress meetings scheduled by the Resident Engineer.

9. Attendance at pre-construction, community and stakeholders meetings.

7-16.7.1 **Exclusive Community Liaison Work Plan.** The Work plan for the Exclusive Community Liaison shall address the items of Work specified in these specifications. Present your Exclusive Community Liaison and submit your exclusive community outreach plan (in writing) as **specified in the Special Provisions** within 15 days of the Award of the Contract.

7-16.8 **Payment.** The Payment for the community outreach and public notices is included in the various Bid items. The payment for exclusive community liaison is in the bid item for "Exclusive Community Liaison Services" when provided as a separate Bid item." If no Bid item has been provided the payment is included in the various Bid items.

7-20 **ELECTRONIC COMMUNICATION.** ADD the following:

Virtual Project Manager will be used on this contract.

SECTION 8 - FACILITIES FOR AGENCY PERSONNEL

8-2 **FIELD OFFICE FACILITIES.** To the City Supplement, DELETE in its entirety.

SECTION 9 - MEASUREMENT AND PAYMENT

9-3.2.5 **Withholding of Payment.** To the City Supplement, item i), DELETE in its entirety and SUBSTITUTE with the following:

i) Your failure to comply with 7-2.3, "PAYROLL RECORDS" and 2-16, "CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM."

ADD:

9-3.7 **Compensation Adjustments for Price Index Fluctuations.** This Contract is not subject to the provisions of The WHITEBOOK for Compensation Adjustments for Price Index Fluctuations for the paving asphalt.

SECTION 203 – BITUMINOUS MATERIALS

203-15 **RUBBER POLYMER MODIFIED SLURRY (RPMS).** To the City Supplement, CORRECT section numbering as follows:

OLD SECTION NUMBER	TITLE	NEW SECTION NUMBER
203-15	RUBBER POLYMER MODIFIED SLURRY (RPMS)	203-16
203-15.1	General	203-16.1
203-15.2	Materials	203-16.2
203-15.3	Composition and Grading	203-16.3
203-15.4	Mix Design	203-16.4

ADD the following:

RPMS shall be used on this contract.

SECTION 207 – PIPE

207-17.2.3 **Pipe Manufacturer.** To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

PVC products as manufactured or distributed by J-M Manufacturing Company shall not be used on the Contract for pressurized pipe **unless specified otherwise.**

207-27 **FUSIBLE NON-PRESSURE POLYVINYLCHLORIDE PIPE.** DELETE in its entirety.

SECTION 209 – STREET LIGHTING AND TRAFFIC SIGNAL MATERIALS

209-6.4 **Induction Cobra Head Luminaire.** To the City Supplement, CORRECT certain section numbering as follows:

OLD SECTION NUMBER	TITLE	NEW SECTION NUMBER
209-6.4.7	Luminaire Identification	209-6.4.8
209-6.4.8	Photometric Documentation	209-6.4.9
209-6.4.9	Quality Assurance	209-6.4.10

SECTION 300 – EARTHWORK

300-1.4 **Payment.** To the City Supplement, paragraph (2), DELETE in its entirety and SUBSTITUTE with the following:

2. Payment for existing pavement removal and disposal of up to 12" thick, within the excavation e.g., trench limits, shall be included in the Bid item for installation of the mains or the Work item that requires pavement removal.

SECTION 302 – ROADWAY SURFACING

302-3 **PREPARATORY REPAIR WORK.** To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

302-3 **PREPARATORY REPAIR WORK.**

1. Prior to roadway resurfacing or the application of slurry, the Contractor shall complete all necessary preparation and repair work to the road segment e.g., tree trimming, weed spray, weed abatement, crack sealing, asphalt repair, hump removal, miscellaneous asphalt patching, removal of raised pavement markers, removal of pavement markings, etc. and as specified in the Special Provisions.

2. Preparatory work shall include, but not be limited to, tree trimming, weed spray, weed abatement, crack sealing, asphalt repair i.e., mill and pave, hump removal, miscellaneous asphalt patching, removal of raised pavement markers, removal of pavement markings, etc.

3. The Contractor shall repair areas of distressed asphalt concrete pavement by milling or removing damaged areas of pavement to a minimum depth of 2" for Residential streets, and a minimum depth of 3" for all others to expose firm and unyielding pavement. The Contractor shall prepare subgrade as needed and install a minimum of 2" for residential streets, and a minimum of 3" for all others, of compacted asphalt concrete pavement over compacted native material as directed by the Engineer.

4. If, in order to achieve the minimum specified depth, the base material is exposed, the material shall be compacted to 95% relative compaction to a depth 10" below the finished grade (dig out). Compaction tests shall be made to ensure compliance with the specifications. The Engineer will determine when and where the test will occur. The City will pay for the soils testing required by the Engineer, which meets the required compaction. The Contractor shall

reimburse the City for the cost of retesting failing compaction tests. If additional base material is required, the Contractor shall use Class 2 Aggregate Base in accordance with 200-2.2, "Crushed Aggregate Base."

5. Recycled base material shall conform to Crushed Miscellaneous Base Material in accordance with 200-2.4, "Crushed Miscellaneous Aggregate Base."

6. Prior to replacing asphalt, the area shall be cleaned by removing all loose and damaged material, moisture, dirt, and other foreign matter and shall be tack coated in accordance with 302-5.4 "Tack Coat."

7. The Contractor shall install new asphalt within the repair area or for patches in accordance with 302-5, "ASPHALT CONCRETE PAVEMENT." Asphalt concrete shall be C2-PG 64-10 in compliance with 400-4, "ASPHALT CONCRETE."

8. No preparatory asphalt work shall be done when the atmospheric temperature is below 50 °F or during unsuitable weather.

9. Following the asphalt placement, the Contractor shall roll the entire area of new asphalt in both directions at least twice. The finished patch shall be level and smooth in compliance with 302-5.6.2 "Density and Smoothness." After placement and compaction of the asphalt patch, the Contractor shall seal all finished edges with a 4" wide continuous band of SS-1H.

10. The minimum dimension for each individual repair shall be 4' x 4' and shall be subject to the following conditions:

    a) If the base material is exposed to achieve the required minimum removal thickness, the base material shall be prepared conforming to 301-1, "SUBGRADE PREPARATION."

    b) When additional base material is required, then the contractor shall use Class 2 Aggregate Base in accordance with 200-2.2, "Crushed Aggregate Base." Recycled base material shall conform to Crushed Miscellaneous Base Material in accordance with 200-2.4, "Crushed Miscellaneous Aggregate Base."

    c) The Contractor may use grinding as a method for removal of deteriorated pavement when the areas indicated for removal are large enough (a minimum of the machine drum width) and when approved by the Engineer.

    d) For both scheduled and unscheduled base repairs, failed areas may be removed by milling or by excavation provided that the edges are cut cleanly with a saw. The areas shall be cleaned and tack coated in accordance with 302-5.4, "Tack Coat" before replacing the asphalt. The areas for scheduled repairs have been marked on the street.

302-3.1 Asphalt Patching.

1. Asphalt patching shall consist of patching potholes, gutter-line erosion, and other low spots in the pavement that are deeper than ½" per 302-5.6.2, "Density and Smoothness." These areas are generally smaller and more isolated than those areas in need of mill and pave.

2. The areas requiring patching have been identified in the Contract Documents, marked on the streets, or as directed by the Engineer. The Contractor shall identify any new areas that may require patching prior to slurry work to ensure the smoothness and quality of the finished product.

3. The Contractor shall identify and repair any areas that may require patching, prior to the placement of slurry seal for smooth finished product.

4. Asphalt overlay shall not be applied over deteriorated pavement. Preparatory asphalt work shall be completed and approved by the Engineer before proceeding with asphalt overlay.

5. The Contractor shall remove distressed asphalt pavement either by saw cutting or milling, to expose firm and unyielding pavement; prepare subgrade (as needed); and install compacted asphalt concrete pavement over compacted native material as directed by the Engineer.

6. Prior to replacing asphalt, the area shall be cleaned and tack coated per 302-5.4, "Tack Coat".

7. Following the asphalt placement, the Contractor shall roll the entire patch in both directions covering the patch at least twice.

8. After placement and compaction of the asphalt patch, the Contractor shall seal all finished edges with a 4" wide continuous band of SS-1H.

9. Base repairs shall not exceed 20% RAP in content.

302-3.2 Payment.

1. Payment for replacement of existing pavement when required shall be included in the unit bid price for Asphalt Pavement repair for the total area replaced and no additional payment shall be made regardless of the number of replacements completed. No payment shall be made for areas of over excavation or outside trench areas in utility works unless previously approved by the Engineer. No payment for pavement replacement will be made when the damage is due to the Contractor's failure to protect existing improvements. The Contractor shall reimburse the City for the cost of retesting all failing compaction tests.

2. The areas and quantities shown on the road segments and in appendices are given only for the Contractor's aid in planning the Work and preparing Bids. The Engineer will designate the limits to be removed and these designated areas shall be considered to take precedent over the area shown in an Appendix

to the Contract Documents. The quantities shown in the appendices are based on a street assessment survey and may vary.

3. At the end of each day, the Contractor shall submit to the Engineer an itemized list of the asphalt pavement repair work completed. The list shall include the location of the work and the exact square footage of the repair.

4. Preparatory repair work and tack coating will be paid at the Contract unit price per ton for Asphalt Pavement Repair. No payment shall be made for areas of over excavation unless previously approved by the Engineer.

5. Milling shall be included in the Bid item for Asphalt Pavement Repair unless separate Bid item has been provided.

6. Payment for miscellaneous asphalt patching shall be included in the Contract unit price for slurry and no additional payment shall be made therefore.

302-5.1.1 **Damaged AC Pavement Replacement.** To the City Supplement, DELETE in its entirety.

302-5.1.2 **Measurement and Payment.** To the City Supplement, DELETE in its entirety.

302-5.2.1 **Measurement and Payment.** To the City Supplement, item c), ADD the following:

Imported Subgrade material shall be paid per bid item "Imported Backfill".

SECTION 306 – UNDERGROUND CONDUIT CONSTRUCTION

306-1.6 **Basis of Payment for Open Trench Installations.** ADD the following:

Payment for imported backfill when the Contractor elects to import material from a source outside the project limits and when authorized by the Engineer shall be included in the Bid unit price for Imported Backfill. The price shall include the removal and disposal of unsuitable materials.

SECTION 701 – WATER POLLUTION CONTROL

701-11 **Post-Construction Requirements.** To the City Supplement, second paragraph, ADD the following:

Comply with the following post-construction requirements:

Reference Technical Specifications Section P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control for Water Pollution Control requirements.

SECTION 707 – RESOURCE DISCOVERIES

ADD:

707-1.1 **Environmental Document.** The City of San Diego Environmental Analysis Section (EAS) of the Development Services Department has prepared Notice of Exemption for **MYF Rehab of Runway 5/23 and Taxiway G**, DEP No. **WBS # B-00910.02.06**, as referenced in the Contract Appendix. You must comply with all requirements of the Notice of Exemption as set forth in the Contract Appendix A.

Compliance with the City's environmental document is included in the various Bid items, unless a bid item has been provided.

END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

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PART I -GENERAL PROVISIONS

SECTION 10

DEFINITION OF TERMS

See 2012 Edition of the Standard Specifications for Public Works Construction as supplemented by the 2012 edition of the City of San Diego Standard Specifications for Public Works Construction (the "WhiteBook"). Whenever the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows in accordance with these two documents and as supplemented herein:

10-01 AASHTO. See 2012 GreenBook, Section 1, Subsection 1-3.3 "Institutions".

10-02 ACCESS ROAD.

The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.

10-03 ADVERTISEMENT.

A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.

10-04 AIP.

The Airport Improvement Program, a grant-in-aid program, administered by the Federal Aviation Administration.

10-05 AIR OPERATIONS AREA.

For the purpose of these specifications, the term air operations area shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway,taxiway, or apron.

10-06 AIRPORT.

Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; and airport buildings and facilities located in any of these areas, and includes a heliport.

10-07 ASTM.

See 2012 GreenBook, Section 1, Subsection 1-3.3 "Institutions".

10-08 AWARD.

See 2012 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.

10-09 BIDDER.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-10 BUILDING AREA.

An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.

10-11 CALENDAR DAY.

Every day shown on the calendar.

10-12 CHANGE ORDER.

See GreenBook, Section 1, Subsection 1-2.

10-13.1 CITY.

City of San Diego, a political subdivision of the State of California, as created by law. Also See GreenBook, Section 1, Subsection 1-2 "Terms and Definitions" Agency and 2012 City Supplement.

10-13.2 CITY ENGINEER.

The Director, Department of Public Works, and the appointed official of the City of San Diego authorized to administer the contract.

10-14 CONTRACT.

See 2012 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.

10-15 CONTRACT ITEM (PAY ITEM).

A specific unit of work for which a price is provided in the contract.

10-16 CONTRACTOR.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-17 DRAINAGE SYSTEM.

The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.

10-18 ENGINEER.

See GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-19 EQUIPMENT.

All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.

10-20 EXTRA WORK.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-21 FAA.

The Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or his/her duly authorized representative.

10-22 FEDERAL SPECIFICATIONS.

The Federal Specifications and Standards, Commercial Item Descriptions, and supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.

10-23 FORCE ACCOUNT.

Force account construction work is construction that is accomplished through the use of material, equipment, labor, and supervision provided by the Owner or by another public agency pursuant to an agreement with the Owner.

10-24 INSPECTOR.

An authorized representative of the Engineer assigned to make all necessary inspections and/or tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

10-25 HOLIDAY. See 2012 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.

10-26 INTENTION OF TERMS. Whenever, in these specifications or on the plans, the words ``directed,'' ``required,'' ``permitted,'' ``ordered,'' ``designated,'' ``prescribed,'' or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer is intended; and similarly, the words ``approved,'' ``acceptable,'' ``satisfactory,'' or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer, subject in each case to the final determination of the Owner.

Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of

the entire section, specification item, or cited standard that may be pertinent to such specific reference.

10-27 LABORATORY.

The official testing laboratories of the Owner or such other laboratories as may be designated by the Engineer.

10-28 LIGHTING.

A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers,floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.

10-29 MAJOR AND MINOR CONTRACT ITEMS.

A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20 percent of the total amount of the award contract. All other items shall be considered minor contract items.

10-30 MATERIALS.

Any substance specified for use in the construction of the contract work.

10-31 NOTICE TO PROCEED.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-32 OWNER.

The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. For AIP contracts, the term "sponsor" shall have the same meaning as the term "Owner." Where the term "Owner" is capitalized in this document, it shall mean airport owner or sponsor only. Also See 2012 Supplement Section 1, Subsection 1.2 Terms and Definitions under Owner or City.

10-33 PAVEMENT.

The combined surface course, base course, and subbase course, if any, considered as a single unit.

10-34 PLANS.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions". In the above definitions, the following terms are defined as follows:

Standard Plans

The Standard Plans issued by the City of San Diego Standard Drawings.

Project Plans

The project plans are specific details and dimensions peculiar to the work and are supplemented by the Standard Plans insofar as the same may apply

10-35 PROJECT.

See 2012 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.

10-36 PROPOSAL.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-37 RUNWAY.

The area on the airport prepared for the landing and takeoff of aircraft.

10-38 SPECIFICATIONS.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-39 SPONSOR.

See definition above of "Owner."

10-40 STRUCTURES.

Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; flexible and rigid pavements; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.

10-41 SUBGRADE.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions"..

10-42 SUPERINTENDENT.

The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the Engineer, and who shall supervise and direct the construction.

10-43 SUPPLEMENTAL AGREEMENT.

A written agreement between the Contractor and the Owner covering (1) work that would increase or decrease the total amount of the awarded contract, or any major contract item, by more than 25 percent, such increased or decreased work being within the scope of the originally awarded contract; or (2) work that is not within the scope of the originally awarded contract.

10-44 SURETY.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

10-45 TAXIWAY.

For the purpose of this document, the term taxiway means the portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways or aircraft parking areas.

10-46 WORK.

See 2012 GreenBook, Section 1, Subsection 1-2 "Terms and Definitions".

END OF SECTION 10

SECTION 20

PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 ADVERTISEMENT (Notice Inviting Bids).

See "White Book" 2012 Edition.

20-02 PREQUALIFICATION OF BIDDERS.

See requirements outlined in "Notice Inviting Bids".

20-03 CONTENTS OF PROPOSAL FORMS.

See requirements outlined in "Notice Inviting Bids".

20-04 ISSUANCE OF PROPOSAL FORMS.

The Owner reserves the right to refuse to issue a proposal form to a prospective bidder should such bidder be in default for any of the following reasons:

a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.

b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force (with the Owner) at the time the Owner issues the proposal to a prospective bidder.

c. Contractor default under previous contracts with the Owner.

d. Unsatisfactory work on previous contracts with the Owner.

20-05 INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES.

An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly or by implication agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as hereinafter provided in the subsection titled ALTERATION OF WORK AND QUANTITIES of Section 40 without in any way invalidating the unit bid prices.

Implementation of the Safety Plan is incidental to the individual bid items and no separate payment shall be made.

20-06 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE.

See requirements outlined in "Notice Inviting Bids".

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which he may make or obtain from his/her examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

Also see GreenBook, Section 2, Subsection 2-7.

20-07 PREPARATION OF PROPOSAL.

The bidder shall submit his/her proposal on the forms furnished by the Owner. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) in clearly legible figures for which he proposes to do each pay item furnished in the proposal. In case of conflict between words and number, the words shall govern. In case of error between unit price and the sum of the estimated quantity and stated unit price, the unit price shall govern.

The bidder shall sign his/her proposal correctly and in ink. If the proposal is made by an individual, his/her name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state under the laws of which the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of his/her authority to do so and that the signature is binding upon the firm or corporation.

20-08 IRREGULAR PROPOSALS.

Proposals shall be considered irregular for the following reasons:

a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.

b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.

c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

d. If the proposal contains unit prices that are obviously unbalanced.

e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-09 BID GUARANTEE.

See requirements outlined in "Notice Inviting Bids".

20-10 DELIVERY OF PROPOSAL.

Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place
specified in the advertisement before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-11 WITHDRAWAL OR REVISION OF PROPOSALS.

A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing or by telegram before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-12 PUBLIC OPENING OF PROPOSALS.

See requirements outlined in "Notice Inviting Bids".

20-13 DISQUALIFICATION OF BIDDERS.

A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in ``default" for any reason specified in the subsection titled ISSUANCE OF PROPOSAL FORMS of this section.

20-14 RELIEF OF BIDDER.

Attention is directed to the provisions of Public Contract Code Sections 5100 to 5107, inclusive, concerning relief of bidders and in particular to the requirement therein, that if the bidder claims a mistake was made in the bid presented, the bidder shall give the Engineer

written notice within 5 days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred.

END OF SECTION 20

SECTION 30

AWARD AND EXECUTION OF CONTRACT

30-01 CONSIDERATION OF PROPOSALS.

After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in the subsection titled IRREGULAR PROPOSALS of Section 20.

b. If the bidder is disqualified for any of the reasons specified in the subsection titled DISQUALIFICATION OF BIDDERS of Section 20.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 AWARD OF CONTRACT.

The award of a contract, if it is to be awarded, shall be made within 90 calendar days of the date specified for publicly opening proposals, unless otherwise specified herein. Award of the contract shall be made by the Owner to the lowest, qualified bidder whose proposal conforms to the cited requirements of the Owner.

For AIP contracts, unless otherwise specified in this subsection, no award shall be made until the FAA has concurred in the Owner's recommendation to make such award and has approved the Owner's proposed contract to the extent that such concurrence and approval are required by 49 CFR Part 18.

30-03 CANCELLATION OF AWARD.

The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with the subsection titled APPROVAL OF CONTRACT of this section.

30-04 RETURN OF PROPOSAL GUARANTY.

All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as hereinbefore specified in the subsection

titled CONSIDERATION OF PROPOSALS of this section. Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contracts bonds as specified in the subsection titled REQUIREMENTS OF CONTRACT BONDS of this section.

30-05 REQUIREMENTS OF CONTRACT BONDS.

See 2012 GreenBook, Section 2, Subsection 2-4 "Contract Bonds".

30-06 EXECUTION OF CONTRACT.

See requirements outlined in "Notice Inviting Bids".

30-07 APPROVAL OF CONTRACT.

See requirements outlined in "Notice Inviting Bids".

30-08 FAILURE TO EXECUTE CONTRACT.

See requirements outlined in "Notice Inviting Bids".

END OF SECTION 30

SECTION 40

SCOPE OF WORK

40-01 INTENT OF CONTRACT.

The intent of the contract is to provide for construction and completion, in every detail, of the work described on the plans and these contract documents for the Montgomery Field Runway 5/23 and Taxiway G and Run-Up Pads Rehabilitation. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 ALTERATION OF WORK AND QUANTITIES.

The owner reserves and shall have the right to make such alterations in the work as may be necessary or desirable to complete the work originally intended in an acceptable manner. Unless otherwise specified herein, the Engineer shall be and is hereby authorized to make such alterations in the work as may increase or decrease the originally awarded contract quantities, provided that the aggregate of such alterations does not change the total contract cost or the total cost of any major contract item by more than 25 percent (total cost being based on the unit prices and estimated quantities in the awarded contract). Alterations that do not exceed the 25 percent limitation shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations as if the altered work had been a part of the original contract. These alterations that are for work within the general scope of the contract shall be covered by ``Change Orders" issued by the Engineer. Change orders for altered work shall include extensions of contract time where, in the Engineer's opinion, such extensions are commensurate with the amount and difficulty of added work.

Should the aggregate amount of altered work exceed the 25 percent limitation hereinbefore specified, such excess altered work shall be covered by supplemental agreement. If the owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

All supplemental agreements shall be approved by the FAA and shall include valid wage determinations of the U.S. Secretary of Labor when the amount of the supplemental agreement exceeds $2,000. However, if the Contractor elects to waive the limitations on work that increase or decrease the originally awarded contract or any major contract item by more than 25 percent, the supplemental agreement shall be subject to the same U.S. Secretary of Labor wage determination as was included in the originally awarded contract.

All supplemental agreements shall require consent of the Contractor's surety and separate performance and payment bonds.

40-03 OMITTED ITEMS.

The Engineer may, in the Owner's best interest, omit from the work any contract item, except major contract items. Major contract items may be omitted by a supplemental agreement.

Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be nonperformed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with the subsection titled PAYMENT FOR OMITTED ITEMS of Section 90.

40-04 EXTRA WORK.

Should acceptable completion of the contract require the Contractor to perform an item of work for which no basis of payment has been provided in the original contract or previously issued change orders or supplemental agreements, the same shall be called "Extra Work." Extra Work that is within the general scope of the contract shall be covered by written change order. Change orders for such Extra Work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the Engineer's opinion, is necessary for completion of such Extra Work.

When determined by the Engineer to be in the Owner's best interest, he may order the Contractor to proceed with Extra Work by force account as provided in the subsection titled PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK of Section 90.

Extra Work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a Supplemental Agreement as hereinbefore defined in the subsection titled SUPPLEMENTAL AGREEMENT of Section 10.

Any claim for payment of Extra Work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

40-05 MAINTENANCE OF TRAFFIC.

It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas of the airport with respect to his/her own operations and the operations of all his/her subcontractors as specified in the subsection titled LIMITATION OF OPERATIONS of Section 80. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in the subsection titled CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS in Section 70.

With respect to his/her own operations and the operations of all his/her subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying: personnel; equipment; vehicles; storage areas; and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport.

When the contract requires the maintenance of vehicular traffic on an existing road, street, or

highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish erect, and maintain barricades, warning signs, flagperson, and other traffic control devices in reasonable conformity with the manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), unless otherwise specified herein. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways.

The Contractor shall make his/her own estimate of all labor, materials, equipment, and incidentals necessary for providing the maintenance of aircraft and vehicular traffic as specified in this subsection.

The cost of maintaining the aircraft and vehicular traffic specified in this subsection shall not be measured or paid for directly, but shall be included in the various contract items.

40-06 REMOVAL OF EXISTING STRUCTURES.

All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Engineer shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the Engineer in accordance with the provisions of the contract.

Except as provided in the subsection titled RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK of this section, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be utilized in the work as otherwise provided for in the contract and shall remain the property of the Owner when so utilized in the work.

40-07 RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK.

Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be either embankment or waste, he may at his/her option either:

a. Use such material in another contract item, providing such use is approved by the Engineer and is in conformance with the contract specifications applicable to such use; or,

b. Remove such material from the site, upon written approval of the Engineer; or

c. Use such material for his/her own temporary construction on site; or,

d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., he shall request the Engineer's approval in advance of such use.

Should the Engineer approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at his/her own expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for his/her use of such material so used in the work or removed from the site.

Should the Engineer approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of his/her exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 FINAL CLEANING UP.

Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. He shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the contractor has obtained the written permission of such property owner.

END OF SECTION 40

SECTION 50

CONTROL OF WORK

50-01 AUTHORITY OF THE ENGINEER.

The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work. The Engineer shall decide all questions that may arise as to the interpretation of the specifications or plans relating to the work. The Engineer shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for the under contract.

The Engineer does not have the authority to accept pavements that do not conform to FAA specification requirements.

50-02 CONFORMITY WITH PLANS AND SPECIFICATIONS.

All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans or specifications.

If the Engineer finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications but that the portion of the work affected will, in his/her opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, he will advise the Owner of his/her determination that the affected work be accepted and remain in place. In this event, the Engineer will document his/her determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. The Engineer's determination and recommended contract price adjustments will be based on good engineering judgment and such tests or retests of the affected work as are, in his/her opinion, needed. Changes in the contract price shall be covered by contract modifications (change order or supplemental agreement) as applicable.

If the Engineer finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Engineer's written orders.

For the purpose of this subsection, the term ``reasonably close conformity'' shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the Engineer's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's prosecution of the work, when, in the Engineer's opinion, such compliance is essential to provide an acceptable finished portion of the work.

For the purpose of this subsection, the term ``reasonably close conformity'' is also intended to

provide the Engineer with the authority, after consultation with the FAA, to use good engineering judgment in his/her determinations as to acceptance of work that is not in strict conformity but will provide a finished product equal to or better than that intended by the requirements of the contract, plans and specifications. The Engineer will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 COORDINATION OF CONTRACT, PLANS, AND SPECIFICATIONS.

The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited FAA advisory circulars; contract general provisions shall govern over plans, cited standards for materials or testing, and cited FAA advisory circulars; plans shall govern over cited standards for materials or testing and cited FAA advisory circulars. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, he shall immediately call upon the Engineer for his/her interpretation and decision, and such decision shall be final.

The Order of Precedence of contract documents shall be as described in the "White Book" 2010 Edition Section 2-5.2

50-04 COOPERATION OF CONTRACTOR.

The Contractor will be supplied with five copies each of the plans and specifications. He shall have available on the work at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and he shall cooperate with the Engineer and his/her inspectors and with other contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as his/her agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Engineer or his/her authorized representative.

50-05 COOPERATION BETWEEN CONTRACTORS.

The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract. See "White Book" 2012 Edition Section 2-14 "Site Activities By The City or Separate Contractors."

50-06 CONSTRUCTION LAYOUT AND STAKES.

The Engineer shall establish horizontal and vertical control. Bench marks and control are

established and shown on the plans. Such stakes and markings as the Engineer may set for either his/her own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or his/her employees, resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor at the discretion of the Engineer.

The Contractor will be required to furnish all lines, grades and measurements from the control points necessary for the proper prosecution and control of the work contracted for under these specifications.

The Contractor must give weekly copies of the survey notes to the Engineer so that the Engineer may check them as to accuracy and method of staking. All areas that are staked by the Contractor must be checked by the Engineer prior to beginning any work in the area. The Engineer will make periodic checks of the grades and alignment set by the Contractor. In case of error on the part of the Contractor, or his/her employees, resulting in establishing grades and/or alignment that are not in accordance with the plans or established by the Engineer, all construction not in accordance with the established grades and/or alignment shall be replaced without additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses therewith. The cost thereof shall be included in the price of the bid for the various items of the Contract.

Construction Staking and Layout includes but is not limited to:

Clearing and Grubbing perimeter staking.

Rough Grade slope stakes at 100-foot stations.

Drainage Swales slope stakes and flow line blue tops at 50-foot stations.

Subgrade blue tops at 25 foot stations and 25 foot offset distance (max.) for the following section locations:

a. Runway – minimum 5 per station

b. Taxiways – minimum 3 per station

c. Holding apron areas – minimum 3 per station

d. Roadways – minimum 3 per station

Base Course blue tops at 25 foot stations and 25 foot offset distance (max.) for the following section locations:

a. Runway – minimum 5 per station

b. Taxiways – minimum 3 per station

c. Holding apron areas – minimum 3 per station

Pavement areas:

a. Edge of Pavement hubs and tacks (for stringline by Contractor) at 100 foot stations

b. Between Lifts at 25 foot stations for the following section locations:

(1). Runways – each paving lane width

(2). Taxiways – each paving lane width

(3). Holding areas – each paving lane width

c. After finish paving operations at 50 foot stations

(1). All paved areas – Edge of each paving lane prior to next paving lot

d. Shoulder and safety area blue tops at 50 foot stations and at all break points with maximum of 50 foot offsets

Fence lines at 100 foot stations. Electrical and Communications System locations, lines and grades including but not limited to duct runs, connections, fixtures, signs, lights, VASI's, PAPI's, REIL's, Wind Cones, Distance Markers (signs), pull boxes and manholes.

Drain lines, cut stakes and alignment on 25-foot stations, inlet and manholes. Painting and Striping layout (pinned with 1.5 inch PK nails) marked for paint Contractor. (All nails shall be removed after painting by the Contractor)
Laser, or other automatic control devices, shall be checked with temporary control point or grade hub at a minimum of once per 400 feet per pass (i.e. paving lane).

NOTE: Controls and stakes disturbed or suspect of having been disturbed shall be checked and/or reset as directed by the Engineer by the Contractor without additional cost to the Owner.

50-07 AUTOMATICALLY CONTROLLED EQUIPMENT.

Whenever batching or mixing plant equipment is required to be operated automatically under the contract and a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually or by other methods for a period 48 hours following the breakdown or malfunction, provided this method of operations will produce results which conform to all other requirements of the contract.

50-08 AUTHORITY AND DUTIES OF INSPECTORS.

Inspectors employed by the Owner shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract.

Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor. Inspectors employed by the Owner are authorized to notify the Contractor or his/her representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the Engineer for his/her decision.

50-09 INSPECTION OF THE WORK.

Reference GreenBook Section 2, Subsection 2-11 Inspection.

If the Engineer requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Any work done or materials used without supervision or inspection by an authorized representative of the Owner may be ordered removed and replaced at the Contractor's expense unless the Owner's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK.

All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the Engineer as provided in the subsection titled CONFORMITY WITH PLANS AND SPECIFICATIONS of this section.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of the subsection titled CONTRACTOR'S RESPONSIBILITY FOR WORK of Section 70.

No removal work made under provision of this subsection shall be done without lines and grades having been given by the Engineer. Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the plans or as given, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply forthwith with any order of the Engineer made under the provisions of this subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due the Contractor.

Also see 2012 GreenBook Section 4, Subsection 4-1.3 "Inspection Requirements."

50-11 LOAD RESTRICTIONS.

The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at his/her own expense.

50-12 MAINTENANCE DURING CONSTRUCTION.

The Contractor shall maintain the work during construction and until the work is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 FAILURE TO MAINTAIN THE WORK.

Should the Contractor at any time fail to maintain the work as provided in the subsection titled MAINTENANCE DURING CONSTRUCTION of this section, the Engineer shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the Engineer's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be deducted from monies due or to become due the Contractor.

50-14 PARTIAL ACCEPTANCE.

If at any time during the prosecution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, he may request the Engineer to make final inspection of that unit. If the Engineer finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, he may accept it as being completed, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 FINAL ACCEPTANCE.

Upon due notice from the Contractor of presumptive completion of the entire project, the Engineer and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be completed in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The Engineer shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the Engineer will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 CLAIMS FOR ADJUSTMENT AND DISPUTES.

If for any reason the Contractor deems that additional compensation is due him for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, he shall notify the Engineer in writing of his/her intention to claim such additional compensation before he begins the work on which he bases the claim. If such notification is not given or the Engineer is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the Engineer has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit his/her written claim to the Engineer who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

50-17 COST REDUCTION INCENTIVE.

The provisions of this subsection will apply only to contracts awarded to the lowest bidder pursuant to competitive bidding.

On projects with original contract amounts in excess of $100,000, the Contractor may submit to the Engineer, in writing, proposals for modifying the plans, specifications or other requirements of the contract for the sole purpose of reducing the cost of construction. The cost reduction proposal shall not impair, in any manner, the essential functions or characteristics of the project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, design and safety standards. This provision shall not apply unless the proposal submitted is specifically identified by the Contractor as being presented for consideration as a value engineering proposal.

Not eligible for cost reduction proposals are changes in the basic design of a pavement type, runway and taxiway lighting, visual aids, hydraulic capacity of drainage facilities, or changes in grade or alignment that reduce the geometric standards of the project.

As a minimum, the following information shall be submitted by the Contractor with each proposal:

a. A description of both existing contract requirements for performing the work and the proposed changes, with a discussion of the comparative advantages and disadvantages of each;

b. An itemization of the contract requirements that must be changed if the proposal is adopted;

c. A detailed estimate of the cost of performing the work under the existing contract and under the proposed changes;

d. A statement of the time by which a change order adopting the proposal must be issued;

e. A statement of the effect adoption of the proposal will have on the time for completion of the contract; and

f. The contract items of work affected by the proposed changes, including any quantity variation attributable to them.

The Contractor may withdraw, in whole or in part, any cost reduction proposal not accepted by the Engineer, within the period specified in the proposal. The provisions of this subsection shall not be construed to require the Engineer to consider any cost reduction proposal that may be submitted.

The Contractor shall continue to perform the work in accordance with the requirements of the contract until a change order incorporating the cost reduction proposal has been issued. If a change order has not been issued by the date upon which the Contractor's cost reduction proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such cost reduction proposal shall be deemed rejected.

The Engineer shall be the sole judge of the acceptability of a cost reduction proposal and of the estimated net savings from the adoption of all or any part of such proposal. In determining the estimated net savings, the Engineer may disregard the contract bid prices if, in the Engineer's judgment such prices do not represent a fair measure of the value of the work to be performed or deleted.

The Owner may require the Contractor to share in the Owner's costs of investigating a cost reduction proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall acknowledge acceptance of it in writing. Such acceptance shall constitute full authority for the Owner to deduct the cost of investigating a cost reduction proposal from amounts payable to the Contractor under the contract.

If the Contractor's cost reduction proposal is accepted in whole or in part, such acceptance will be by a contract change order that shall specifically state that it is executed pursuant to this subsection. Such change order shall incorporate the changes in the plans and specifications which are necessary to permit the cost reduction proposal or such part of it as has been accepted and shall include any conditions upon which the Engineer's approval is

based. The change order shall also set forth the estimated net savings attributable to the cost reduction proposal. The net savings shall be determined as the difference in costs between the original contract costs for the involved work items and the costs occurring as a result of the proposed change. The change order shall also establish the net savings agreed upon and shall provide for adjustment in the contract price that will divide the net savings equally between the Contractor and the Owner.

The Contractor's 50 percent share of the net savings shall constitute full compensation to the Contractor for the cost reduction proposal and the performance of the work.

Acceptance of the cost-reduction proposal and performance of the cost-reduction work shall not extend the time of completion of the contract unless specifically provided for in the contract change order.

END OF SECTION 50

SECTION 60

CONTROL OF MATERIALS

60-01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS.

The materials used on the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the Engineer as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the Engineer's option, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that conforms to the requirements of cited materials specifications. In addition, where an FAA specification for airport lighting equipment is cited in the plans or specifications, the Contractor shall furnish such equipment that is:

a. Listed in FAA Advisory Circular (AC) 150/5345-53, Airport Lighting Equipment Certification Program, that is in effect on the date of advertisement; and,

b. Produced by the manufacturer qualified (by FAA) to produce such specified and listed equipment.

The following airport lighting equipment is required for this contract and is to be furnished by the Contractor in accordance with the requirements of this subsection:

Light Can Spacers

L-867/868 Light Base and Transformer Housing

60-02 SAMPLES, TESTS, AND CITED SPECIFICATIONS.

Unless otherwise designated, all materials used in the work shall be inspected, tested, and approved by the Engineer before incorporation in the work. Any work in which untested materials are used without approval or written permission of the Engineer shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the Engineer, shall be removed at the Contractor's expense. Unless otherwise designated, tests in accordance with the cited standard methods of ASTM, AASHTO, Federal Specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids, will be made by and at the expense of the Engineer. The testing organizations performing on site field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel, including the Contractor's representative at his/her request. Unless otherwise

designated, samples will be taken by a qualified representative of the Engineer. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at his/her request.

The Contractor shall employ a testing organization to perform all Contractor required tests. The Contractor shall submit to the Engineer resumes on all testing organizations and individual persons who will be performing the tests. The Engineer will determine if such persons are qualified. All the test data shall be reported to the Engineer after the results are known. A legible, handwritten copy or electronic copy provided either in a Microsoft Office version software or PFD, of all test data shall be given to the Engineer daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the Engineer showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

60-03 CERTIFICATION OF COMPLIANCE.

See 2012 Greenbook Section 4, Subsection 4-1.5 Certificate of Compliance. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the Engineer.

When a material or assembly is specified by ``brand name or equal" and the Contractor elects to furnish the specified ``brand name," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

a. Conformance to the specified performance, testing, quality or dimensional requirements; and,

b. Suitability of the material or assembly for the use intended in the contract work.

Should the Contractor propose to furnish an ``or equal" material or assembly, he shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the Engineer shall be the sole judge as to whether the proposed ``or equal" is suitable for use in the work.

The Engineer reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 PLANT INSPECTION.

The Engineer or his/her authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for his/her acceptance of the material or assembly.

Should the Engineer conduct plant inspections, the following conditions shall exist:

a. The Engineer shall have the cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.

b. The Engineer shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the Engineer, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space should be conveniently located with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The Engineer shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 ENGINEER'S FIELD OFFICE.

No Field Office required. The Contractor shall provide access to any on-site office equipment or facilities provided for Contractor's own use to the Engineer as required throughout the duration of this work. Access to equipment shall include photocopy machine, water, and sanitary facilities. No direct payment will be made for providing this access. The cost hereof shall be included in the price bid for the various items of the contract. The Contractor and his/her superintendent shall provide all reasonable facilities to enable to the Engineer to inspect the workmanship and materials entering into the work.

60-06 STORAGE OF MATERIALS.

Materials shall be so stored as to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the Engineer. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the Engineer. Private property shall not be used for storage purposes without written permission of the owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the Engineer a copy of the property owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at his/her entire expense, except as otherwise agreed to (in writing) by the owner or lessee of the property.

60-07 UNACCEPTABLE MATERIALS.

Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the Engineer.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the Engineer has approved its used in the work.

60-08 OWNER FURNISHED MATERIALS.

The Contractor shall furnish all materials required to complete the work, except those specified herein (if any) to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified herein.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

SECTION 70

LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-01 LAWS TO BE OBSERVED.

The Contractor shall keep fully informed of all Federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all his/her officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by himself or his/her employees.

70-02 PERMITS, LICENSES, AND TAXES.

The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

70-03 PATENTED DEVICES, MATERIALS, AND PROCESSES.

See 2012 GreenBook, Section 7,Subsection 7-11, "Patent Fees or Royalties".

70-04 RESTORATION OF SURFACES DISTURBED BY OTHERS.

The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work.

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the Engineer.

Should the owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such owners by arranging and performing the work in this contract so as to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the Engineer, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 FEDERAL AID PARTICIPATION.

For AIP contracts, the United States Government has agreed to reimburse the Owner for some portion of the contract costs. Such reimbursement is made from time to time upon the Owner's request to the FAA. In consideration of the United States Government's (FAA's)

agreement with the Owner, the Owner has included provisions in this contract pursuant to the requirements of Title 49 of the United States Code (USC) and the Rules and Regulations of the FAA that pertain to the work.

As required by the USC, the contract work is subject to the inspection and approval of duly authorized representatives of the Administrator, FAA, and is further subject to those provisions of the rules and regulations that are cited in the contract, plans, or specifications.

No requirement of the USC, the rules and regulations implementing the USC, or this contract shall be construed as making the Federal Government a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 SANITARY, HEALTH, AND SAFETY PROVISIONS.

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his/her employees as may be necessary to comply with the requirements of the state and local Board of Health, or of other bodies or tribunals having jurisdiction.

Attention is directed to Federal, state, and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to his/her health or safety.

70-07 PUBLIC CONVENIENCE AND SAFETY.

The Contractor shall control his/her operations and those of his/her subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to his/her own operations and those of his/her subcontractors and all suppliers in accordance with the subsection titled MAINTENANCE OF TRAFFIC of Section 40 hereinbefore specified and shall limit such operations for the convenience and safety of the traveling public as specified in the subsection titled LIMITATION OF OPERATIONS of Section 80 hereinafter.

70-08 BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS.

The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 25 feet apart. Barricades, warning signs, and markings shall be paid for under Section 40-05 and Section 148.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office).

When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of AC 150/5340-1, Standards for Airport Markings. Contractor shall prepare and submit to Engineer FAA Form 7460-1 a minimum of 45 days prior to commencing work to allow time to process through FAA.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and his/her parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2, Operational Safety on Airports During Construction.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their dismantling is directed by the Engineer. Open-flame type lights shall not be permitted within the air operations areas of the airport.

70-09 USE OF EXPLOSIVES.

Use of explosives is not authorized on this project.

70-10 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.

The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect, or misconduct in his/her manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the nonexecution thereof by the Contractor, he shall restore, at his/her own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner.

70-11 RESPONSIBILITY FOR DAMAGE CLAIMS.

The Contractor shall indemnify and save harmless the Engineer and the Owner and their officers, and employees from all suits actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property on account

of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the ``Workmen's Compensation Act,'' or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of his/her contract as may be considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, his/her surety may be held until such suit(s), action(s), or claim(s) for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he is adequately protected by public liability and property damage insurance.

70-12 THIRD PARTY BENEFICIARY CLAUSE.

It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create the public or any member thereof a third party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 OPENING SECTIONS OF THE WORK TO TRAFFIC.

Should it be necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such ``phasing'' of the work shall be specified herein and indicated on the plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified. The Contractor shall make his/her own estimate of the difficulties involved in arranging his/her work to permit such beneficial occupancy by the Owner .

Upon completion of any portion of the work, such portion shall be accepted by the Owner in accordance with the subsection titled PARTIAL ACCEPTANCE of Section 50. No portion of the work may be opened by the Contractor for public use until ordered by the Engineer in writing. Should it become necessary to open a portion of the work to public traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the Engineer, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at his/her expense.

The Contractor shall make his/her own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

Contractor shall be required to conform to safety standards contained AC 150/5370-2, Operational Safety on Airports During Construction (See Special Provisions.)

Contractor shall refer to the approved safety plan to identify barricade requirements and other safety requirements prior to opening up sections of work to traffic.

70-14 CONTRACTOR'S RESPONSIBILITY FOR WORK.

Until the Engineer's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with the subsection titled PARTIAL ACCEPTANCE of Section 50, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the nonexecution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at his/her expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seedings, and soddings furnished under his/her contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS.

As provided in the subsection titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control his/her operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of his/her responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the owners of all utility services or other facilities of his/her plan of operations. Such notification shall be in writing addressed to THE PERSON TO CONTACT as provided hereinbefore in this subsection and the subsection titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section. A copy of each notification shall be given to the Engineer.

In addition to the general written notification hereinbefore provided, it shall be the responsibility of the Contractor to keep such individual owners advised of changes in his/her plan of operations that would affect such owners.

Prior to commencing the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such owner of his/her plan of operation. If, in the Contractor's opinion, the owner's assistance is needed to locate the utility service or facility or the presence of a representative of the owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's PERSON TO CONTACT no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the Engineer.

The Contractor's failure to give the two day's notice hereinabove provided shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use excavation methods acceptable to the Engineer within 3 feet (90 cm) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, he shall immediately notify the proper authority and the Engineer and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the Engineer continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to his/her operations whether or not due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or his/her surety.

70-15.1 FAA FACILITIES AND CABLE RUNS.

The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the prosecution of the project work, shall comply with the following:

a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.

b. The Contractor shall notify the above named FAA Airway Facilities Point-of-Contact seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.

c. If prosecution of the project work requires a facility outage, the Contractor shall contact the above named FAA Point-of-Contact a minimum of 48 hours prior to the time of the required outage.

d. If prosecution of the project work results in damages to existing FAA equipment or cables, the Contractor shall repair the damaged item in conformance with FAA Airway Facilities' standards to the satisfaction of the above named FAA Point-of-Contact.

e. If the project work requires the cutting or splicing of FAA owned cables, the above named FAA Point-of-Contact shall be contacted a minimum of 48 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA Airway Facilities representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA Airway Facilities' specifications and require approval by the above named FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA Airway Facilities restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA Airway Facilities, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 FURNISHING RIGHTS-OF-WAY.

See GreenBook Section 2, Subsection 2-8 "Right-Of- Way".

70-17 PERSONAL LIABILITY OF PUBLIC OFFICIALS.

In carrying out any of the contract provisions or in exercising any power or authority granted to him by this contract, there shall be no liability upon the Engineer, his/her authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 NO WAIVER OF LEGAL RIGHTS.

Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or his/her surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his/her obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the owner's rights under any warranty or guaranty.

70-19 ENVIRONMENTAL PROTECTION.

The Contractor shall comply with all Federal, state, and local laws and regulations controlling pollution of the environment. Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 ARCHAEOLOGICAL AND HISTORICAL FINDINGS.

Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Also see GreenBook Section 6, Subsection 6-3.2 "Archaeological and Paleontogical Discoveries".

Should the Contractor encounter, during his/her operations, any building, part of a building, structure, or object that is incongruous with its surroundings, he shall immediately cease operations in that location and notify the Engineer. The Engineer will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume his/her operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract modification (change order or supplemental agreement) as provided in the subsection titled EXTRA WORK of Section 40 and the subsection titled PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT WORK of Section 90. If appropriate, the contract modification shall include an extension of contract time in accordance with the subsection titled DETERMINATION AND EXTENSION OF CONTRACT TIME of Section 80.

END OF SECTION 70

SECTION 80

PROSECUTION AND PROGRESS

80-01 SUBLETTING OF CONTRACT.

The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Engineer.

Should the Contractor elect to assign his/her contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner. In case of approval, the Contractor shall file copies of all subcontracts with the Engineer.

The Contractor shall perform, with his organization, an amount of work equal to at least 50 percent of the total contract cost.

80-02 NOTICE TO PROCEED.

The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged. The Contractor shall begin the work to be performed under the contract within 10 days of the date set by the Engineer in the written notice to proceed, but in any event, the Contractor shall notify the Engineer at least 24 hours in advance of the time actual construction operations will begin.

80-03 PROSECUTION AND PROGRESS.

Unless otherwise specified, the Contractor shall submit his/her progress schedule for the Engineer's approval within 10 days after the effective date of the notice to proceed. The Contractor's progress schedule, when approved by the Engineer, may be used to establish major construction operations and to check on the progress of the work. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the Engineer's request, submit a revised schedule for completion of the work within the contract time and modify his/her operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the prosecution of the work be discontinued for any reason, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

For AIP contracts, the Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the Owner.

80-04 LIMITATION OF OPERATIONS.

The Contractor shall control his/her operations and the operations of his/her subcontractors and all suppliers so as to provide for the free and unobstructed movement of aircraft in the AIR OPERATIONS AREAS (AOA) of the airport.

When the work requires the Contractor to conduct his/her operations within an AIR OPERATIONS AREA of the airport, the work shall be coordinated with airport operations (through the Engineer) at least 48 hours prior to commencement of such work. The Contractor shall not close an AIR OPERATIONS AREA until so authorized by the Engineer and until the necessary temporary marking and associated lighting is in place as provided in the subsection titled BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS of Section 70.

This contract work requires the Contractor to work within an AIR OPERATIONS AREA (AOA) of the airport on an intermittent basis (intermittent opening and closing of the AIR OPERATIONS AREA), the Contractor shall maintain constant communications as hereinafter specified; immediately obey all instructions to vacate the AIR OPERATIONS AREA; immediately obey all instructions to resume work in such AIR OPERATIONS AREA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AIR OPERATIONS AREA until the satisfactory conditions are provided. The following AIR OPERATIONS AREA will require phasing of the work so that maintenance of aircraft traffic routes is achieved:

Phase	Duration	Predecessor (Phase)	Successor (Phase)	Notes
1	40	NTP		
1A	40	NTP	2,3,and 4	
2	20	1A, 5, 5A, 5B	4	
3	20	1A, 5, 5A, 5B	4	
4	10	1A, 2, 3, 5, 5A, 5B	6	
5	40	NTP	2, 3, 4, and 5B	
5A	30	NTP	2, 3, 4, and 5B	
5B	10	1A	2, 3, and 4,	5B can commence upon completion of intersection of Rwy 5-23 and Twy F inside of the Taxiway Object Free Area. Phase 1A and portion of Phase 5)
6	10	4	7 and 8	
6A	20	4, 6, and 8		Can be concurrent with Phase 7
7	20	4, 6 and 8		Can be concurrent with Phase 6A
8	20	NTP	6	Can be constructed at any time before Phase 6 commences.

Traffic shall not cross Runway 10L-28R at any time during construction. Runway 10R-28L will be closed during reconstruction efforts in Phases 2 and 3. Closure of this runway will require scheduling with Airport Operations and the Air Traffic Control Tower a minimum of 20 days prior to closure. Closure of Runway 10R-28L, while used as an alternate taxiway route during phases 4, 5, 5A, and 5B, shall be coordinated with Airport Operations and ATCT. and cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

AOA Runway 5-23
TIME PERIODS AOA CAN BE CLOSED for a period consisting of Phases 1, 3, and 5..
TYPE OF COMMUNICATIONS REQUIRED WHEN WORKING IN AN AOA: continuous radio communication with Airport Escort and ATCT.
CONTROL AUTHORITY: Airport Manager or his/her authorized designee.

AOA Runway 10R-28L
TIME PERIODS AOA CAN BE CLOSED for a period consisting of Phases 2 and 3.
TYPE OF COMMUNICATIONS REQUIRED WHEN WORKING IN AN AOA: continuous radio communication with Airport Escort and ATCT.
CONTROL AUTHORITY: Airport Manager or his/her authorized designee.

AOA Runway 10L-28R
RUNWAY 10L-28R SHALL NOT BE CLOSED. nor impeded with construction traffic.
CONTROL AUTHORITY: Airport Manager or his/her authorized designee.

Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction.

80-04.1 OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION.

The Contractor shall follow the guidelines and procedures contained in Federal Aviation Administration Advisory Circular 150/5370-2 (latest addition) "Operational Safety on Airports During Construction"; and other applicable Sections of these Specifications. Contractor is responsible for preparing and submitting for approval, prior to issuance of Notice to Proceed, a project specific Safety Plan Compliance Document (SPCD) following the guidelines contained in Federal Aviation Administration Advisory Circular 150/5370-2 (latest addition) "Operational Safety on Airports During Construction". Contractor will be provided a copy of the project approved Construction Safety and Phasing Plan (CSPP). **NOTE: this is not a standard construction safety plan.**

The Contractor shall implement all necessary SPCD measures prior to commencement of any work activity. The Contractor shall conduct routine checks of the SPCD measures to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved SPCD unless approved in writing by the Owner or Engineer.

80-05 CHARACTER OF WORKERS, METHODS, AND EQUIPMENT.

The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations and, in the opinion of the Engineer, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Engineer, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the Engineer.

Should the Contractor fail to remove such persons or person, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to met requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than specified in the contract, he may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this subsection.

80-06 TEMPORARY SUSPENSION OF THE WORK.

The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods as he may deem necessary, due to unsuitable weather, or such other conditions as are considered unfavorable for the prosecution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor

has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the Engineer's order to suspend work to the effective date of the Engineer's order to resume the work. Claims for such compensation shall be filed with the Engineer within the time period stated in the Engineer's order to resume work. The Contractor shall submit with his/her claim information substantiating the amount shown on the claim. The Engineer will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather, for suspensions made at the request of the Owner, or for any other delay provided for in the contract, plans, or specifications.

If it should become necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. He shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 DETERMINATION AND EXTENSION OF CONTRACT TIME.

The number of calendar or working days allowed for completion of the work shall be stated in the proposal and contract and shall be known as the CONTRACT TIME.

Should the contract time require extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

a. CONTRACT TIME based on WORKING DAYS shall be calculated weekly by the Engineer. The Engineer will furnish the Contractor a copy of his/her weekly statement of the number of working days charged against the contract time during the week and the number of working days currently specified for completion of the contract (the original contract time plus the number of working days, if any, that have been included in approved CHANGE ORDERS or SUPPLEMENTAL AGREEMENTS covering EXTRA WORK).

   The Engineer shall base his/her weekly statement of contract time charged on the following considerations:

   (1) No time shall be charged for days on which the Contractor is unable to proceed with the principal item of work under construction at the time for at least 4 hours with the normal work force employed on such principal item. Should the normal work force be on a double-shift, 12 hours shall be used. Should the normal work force be on a triple-shift, 18 hours shall apply. Conditions beyond the Contractor's control such as strikes, lockouts, unusual delays in transportation, temporary suspension of the principal item of work under construction or temporary suspension of the entire work which have been ordered by the Owner for reasons not the fault of the Contractor, shall not be charged against the contract time.

   (2) The Engineer will not make charges against the contract time prior to the effective date of the notice to proceed.

(3) The Engineer will begin charges against the contract time on the first working day after the effective date of the notice to proceed.

(4) The Engineer will not make charges against the contract time after the date of final acceptance as defined in the subsection titled FINAL ACCEPTANCE of Section 50.

(5) The Contractor will be allowed 1 week in which to file a written protest setting forth his/her objections to the Engineer's weekly statement. If no objection is filed within such specified time, the weekly statement shall be considered as acceptable to the Contractor.

The contract time (stated in the proposal) is based on the originally estimated quantities as described in the subsection titled INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES of Section 20. Should the satisfactory completion of the contract require performance of work in greater quantities than those estimated in the proposal, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in contract time shall not consider either the cost of work or the extension of contract time that has been covered by change order or supplemental agreement and shall be made at the time of final payment.

b. CONTRACT TIME based on CALENDAR DAYS shall consist of the number of calendar days stated in the contract counting from the effective date of the notice to proceed and including all Saturdays, Sundays, holidays, and nonwork days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

c. When the contract time is a specified completion date, it shall be the date on which all contract work shall be substantially completed.

If the Contractor finds it impossible for reasons beyond his/her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, he may, at any time prior to the expiration of the contract time as extended, make a written request to the Engineer for an extension of time setting forth the reasons which he believes will justify the granting of his/her request. Requests for extension of time on calendar day projects, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of inclement weather exceeded which could normally be expected during the contract period. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in

such amount as the conditions justify. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion..

80-08 FAILURE TO COMPLETE ON TIME.

For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in the subsection titled DETERMINATION AND EXTENSION OF CONTRACT TIME of this Section) the sum specified in the contract and proposal as liquidated damages will be deducted from any money due or to become due the Contractor or his/her surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in his/her contract.

SCHEDULE	LIQUIDATED DAMAGES COST	ALLOWED CONSTRUCTION TIME
Contract Completion Time	$2,000 per day	210 working days
Completion of Phase 1	$2,000 per day	40 working days
Completion of Phase 1A	$2,000 per day	40 working days
Completion of Phase 2	$2,000 per day	20 working days
Completion of Phase 3	$2,000 per day	20 working days
Completion of Phase 4	$2,000 per day	10 working days
Completion of Phase 5	$2,000 per day	40 working days
Completion of Phase 5A	$2,000 per day	30 working days
Completion of Phase 5B	$2,000 per day	10 working days
Completion of Phase 6	$2,000 per day	10 working days
Completion of Phase 6A	$2,000 per day	20 working days
Completion of Phase 7	$2,000 per day	20 working days
Completion of Phase 8	$2,000 per day	Prior to start of Phase 6

The maximum construction time allowed for all phases of construction not more than 210 working days. This period includes a startup mobilization period of approximately 40 working days to address site preparation, submittal preparation and approval (NTP for field construction will not be granted until approval of the P-401 job mix formula). The 30 calendar period between final bituminous pavement placement and final application of Paint coats as required by P-620 for the entire project area is also included within the end of this construction duration.

Delete GreenBook Section 6, Subsection 6-7 and "White Book" 2012 Edition Section 6-9 concerning Liquated Damages.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a wavier on the part of the Owner of any of its rights under the contract.

80-09 DEFAULT AND TERMINATION OF CONTRACT.

See 2012 GreenBook Section 6-4 Default by the Contractor.

80-10 TERMINATION FOR NATIONAL EMERGENCIES.

The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the prosecution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer.

Termination of the contract or a portion thereof shall neither relieve the Contractor of his/her responsibilities for the completed work nor shall it relieve his/her surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 WORK AREA, STORAGE AREA AND SEQUENCE OF OPERATIONS.

The Contractor shall obtain approval from the Engineer prior to beginning any work in all areas of the airport. No operating runway, taxiway, or Air Operations Area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate his/her work in such a manner as to insure safety and a minimum of hindrance to flight operations. All Contractor equipment and material stockpiles shall be stored a minimum or 250 feet from the centerline of an active runway. No equipment will be allowed to park within the approach area of an active runway at any time. No equipment shall be within 200 feet of an active runway at any time. Contractor shall move all equipment from the AOA at the end of each work period.

END OF SECTION 80

SECTION 90

MEASUREMENT AND PAYMENT

90-01 MEASUREMENT OF QUANTITIES.

All work completed under the contract will be measured by the Engineer, or his/her authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meter) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the Engineer.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

In computing volumes of excavation the average end area method or other acceptable methods will be used.

The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inches.

The term ``ton" will mean the short ton consisting of 2,000 pounds (907 kilograms) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designed by the Engineer. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

When requested by the Contractor and approved by the Engineer in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon (liter) or ton (kilogram). When measured by volume, such volumes will be measured at 60 F (15 C) or will be corrected to the volume at 60 F (15 C) using ASTM D 1250 for asphalts or ASTM D 633 for tars.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton (kilogram) or hundredweight (kilogram).

Timber will be measured by the thousand feet board measure (M.F.B.M.) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The term ``lump sum" when used as an item of payment will mean complete payment for the work described in the contract. See GreenBook Section 9, Subsection 9-2 "Lump Sum Work" for additional requirements.

When a complete structure or structural unit (in effect, ``lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered by the Engineer in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account work as provided in the subsection titled PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK of this section.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.

Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1 percent of the nominal rated capacity of the scale, but not less than 1 pound (454 grams). The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound (2.3 kilogram) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales ``overweighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.

In the event inspection reveals the scales have been ``underweighing" (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.

When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the Engineer. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 SCOPE OF PAYMENT.

The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the prosecution thereof, subject to the provisions of the subsection titled NO WAIVER OF LEGAL RIGHTS of Section 70.

When the ``basis of payment" subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 COMPENSATION FOR ALTERED QUANTITIES.

When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in the subsection titled ALTERATION OF WORK AND QUANTITIES of Section 40 will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from his/her unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 PAYMENT FOR OMITTED ITEMS.

As specified in the subsection titled OMITTED ITEMS of Section 40, the Engineer shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the Engineer omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the Engineer's order to omit or nonperform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the Engineer's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the Engineer's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK.

Extra work, performed in accordance with the subsection titled EXTRA WORK of Section 40, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work. When the change order or supplemental agreement authorizing the extra work requires that it be done by force account, such force account shall be measured and paid for based on expended labor, equipment, and materials plus a negotiated and agreed upon allowance for overhead and profita. Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

a. **Miscellaneous**. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

b. **Comparison of Record**. The Contractor and the Engineer shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor and the Engineer or their duly authorized representatives.

c. **Statement.** No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with duplicate itemized statements of the cost of such force account work detailed as follows:

(1) Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman.

(2) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

(3) Quantities of materials, prices, and extensions.

(4) Transportation of materials.

(5) Cost of property damage, liability and workman's compensation insurance premiums, unemployment insurance contributions, and social security tax.

Statements shall be accompanied and supported by a receipted invoice for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

90-06 PARTIAL PAYMENTS.

Partial payments will be made at least once each month as the work progresses. Said payments will be based upon estimates prepared by the Engineer of the value of the work performed and materials complete in place in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the subsection titled PAYMENT FOR MATERIALS ON HAND of this section.

No partial payment will be made when the amount due the Contractor since the last estimate amounts to less than five hundred dollars.

From the total of the amount determined to be payable on a partial payment, 10 percent of such total amount will be deducted and retained by the Owner until the final payment is made, except as may be provided (at the Contractor's option) in the subsection titled PAYMENT OF WITHHELD FUNDS of this section. The balance (90 percent) of the amount payable, less all previous payments, shall be certified for payment. Should the Contractor exercise his/her option, as provided in the subsection titled PAYMENT OF WITHHELD FUNDS of this section, no such 10 percent retainage shall be deducted.

When not less than 95 percent of the work has been completed, the Engineer may, at the Owner's discretion and with the consent of the surety, prepare an estimate from which will be retained an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the Engineer to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection titled ACCEPTANCE AND FINAL PAYMENT of this section.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final retained percentage or final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 PAYMENT FOR MATERIALS ON HAND.

Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the Engineer at or on an approved site.

b. The Contractor has furnished the Engineer with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the Engineer with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material so stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of his/her responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price

for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this subsection.

90-08 PAYMENT OF WITHHELD FUNDS.

At the Contractor's option, he/she may request that the Owner accept (in lieu of the 10 percent retainage on partial payments described in the subsection titled PARTIAL PAYMENTS of this section) the Contractor's deposits in escrow under the following conditions.

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the 10 percent retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 ACCEPTANCE AND FINAL PAYMENT.

When the contract work has been accepted in accordance with the requirements of the subsection titled FINAL ACCEPTANCE of Section 50, the Engineer will prepare the final estimate of the items of work actually performed. The Contractor shall approve the Engineer's final estimate or advise the Engineer of his/her objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the Engineer shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the Engineer's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the Engineer's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with the subsection titled CLAIMS FOR ADJUSTMENT AND DISPUTES of Section 50.
After the Contractor has approved, or approved under protest, the Engineer's final estimate, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of the subsection titled CLAIMS FOR ADJUSTMENTS AND DISPUTES of Section 50 or under the provisions of this subsection, such claims will be considered by the Owner in accordance

with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

END OF SECTION 90

SECTION 100

CONTRACTOR QUALITY CONTROL PROGRAM

100-01 GENERAL.

The specification requires a Contractor Quality Control Program, the Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The intent of this section is to enable the Contractor to establish a necessary level of control that will:

a. Adequately provide for the production of acceptable quality materials.

b. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.

c. Allow the Contractor as much latitude as possible to develop his or her own standard of control.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, his/her understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed by the Engineer. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed.

The quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the Engineer.

100-02 DESCRIPTION OF PROGRAM.

1. **General Description.** The Contractor shall establish a Quality Control Program to perform inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control.

2. **Quality Control Program.** The Contractor shall describe the Quality Control Program in a written document that shall be reviewed by the Engineer prior to the start of any

production, construction, or off-site fabrication. The written Quality Control Program shall be submitted to the Engineer for review at least 10 calendar days before the Notice to Proceed.

The Quality Control Program shall be organized to address, as a minimum, the following items:

a. Quality control organization;

b. Project progress schedule;

c. Submittals schedule;

d. Inspection requirements;

e. Quality control testing plan;

f. Documentation of quality control activities; and

g. Requirements for corrective action when quality control and/or acceptance criteria are not met.

The Contractor is encouraged to add any additional elements to the Quality Control Program that he/she deems necessary to adequately control all production and/or construction processes required by this contract.

100-03 QUALITY CONTROL ORGANIZATION.

The Contractor Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be utilized for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the Quality Control Program, the personnel assigned shall be subject to the qualification requirements of paragraph 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The quality control organization shall consist of the following minimum personnel:

a. **Program Administrator**. The Program Administrator shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of 5 years of experience in airport and/or highway construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.

Additional qualifications for the Program Administrator shall include at least 1 of the following requirements:

(1) Professional engineer with 1 year of airport paving experience acceptable to the Engineer.

(2) Engineer-in-training with 2 years of airport paving experience acceptable to the Engineer.

(3) An individual with 3 years of highway and/or airport paving experience acceptable to the Engineer, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.

(4) Construction materials technician certified at Level III by the National Institute for Certification in Engineering Technologies (NICET).

(5) Highway materials technician certified at Level III by NICET.

(6) Highway construction technician certified at Level III by NICET.

(7) A NICET certified engineering technician in Civil Engineering Technology with 5 years of highway and/or airport paving experience acceptable to the Engineer.

The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and technical specifications. The Program Administrator shall report directly to a responsible officer of the construction firm. The Program Administrator may supervise the Quality Control Program on more than one project provided that person can be at the job site within 2 hours after being notified of a problem.

b. **Quality Control Technicians**. A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II or higher construction materials technician or highway construction technician and shall have a minimum of 2 years of experience in their area of expertise.

The quality control technicians shall report directly to the Program Administrator and shall perform the following functions:

(1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by Section 100-06.
(2) Performance of all quality control tests as required by the technical specifications and Section 100-07.

Certification at an equivalent level, by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

c. **Staffing Levels**. The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Where material is being produced in

a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.

100-04 PROJECT PROGRESS SCHEDULE.

The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), PERT, or other format, or as otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

100-05 SUBMITTALS SCHEDULE.

The Contractor shall submit a detailed listing of all submittals (e.g., mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include:

a. Specification item number;

b. Item description;

c. Description of submittal;

d. Specification paragraph requiring submittal; and

e. Scheduled date of submittal.

100-06 INSPECTION REQUIREMENTS.

Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by Section 100-07.

Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work. These shall include the following minimum requirements:

a. During plant operation for material production, quality control test results and periodic inspections shall be utilized to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment utilized in proportioning and mixing shall be inspected to ensure its proper operating condition. The

Quality Control Program shall detail how these and other quality control functions will be accomplished and utilized.

b. During field operations, quality control test results and periodic inspections shall be utilized to ensure the quality of all materials and workmanship. All equipment utilized in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The Program shall document how these and other quality control functions will be accomplished and utilized.

100-07 QUALITY CONTROL TESTING PLAN.

As a part of the overall Quality Control Program, the Contractor shall implement a quality control testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional quality control tests that the Contractor deems necessary to adequately control production and/or construction processes. The testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

a. Specification item number (e.g., P-401);

b. Item description (e.g., Plant Mix Bituminous Pavements);

c. Test type (e.g., gradation, grade, asphalt content);

d. Test standard (e.g., ASTM or AASHTO test number, as applicable);

e. Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated);

f. Responsibility (e.g., plant technician); and

g. Control requirements (e.g., target, permissible deviations).

The testing plan shall contain a statistically based procedure of random sampling for acquiring test samples in accordance with ASTM D 3665. The Engineer shall be provided the opportunity to witness quality control sampling and testing. All quality control test results shall be documented by the Contractor as required by Section 100-08.

100-08 DOCUMENTATION.

The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the Engineer daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

a. **Daily Inspection Reports**. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations on a form acceptable to the Engineer. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:

   (1) Technical specification item number and description;

   (2) Compliance with approved submittals;

   (3) Proper storage of materials and equipment;

   (4) Proper operation of all equipment;

   (5) Adherence to plans and technical specifications;

   (6) Review of quality control tests; and

   (7) Safety inspection.

The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible quality control technician and the Program Administrator. The Engineer shall be provided at least one copy of each daily inspection report on the work day following the day of record.

b. **Daily Test Reports.** The Contractor shall be responsible for establishing a system that will record all quality control test results. Daily test reports shall document the following information:

   (1) Technical specification item number and description;

   (2) Test designation;

   (3) Location;

   (4) Date of test;

   (5) Control requirements;

(6) Test results;

(7) Causes for rejection;

(8) Recommended remedial actions; and

(9) Retests.

Test results from each day's work period shall be submitted to the Engineer prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical quality control charts. The daily test reports shall be signed by the responsible quality control technician and the Program Administrator.

100-09 CORRECTIVE ACTION REQUIREMENTS.

The Quality Control Program shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and utilize statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

100-10 SURVEILLANCE BY THE ENGINEER.

All items of material and equipment shall be subject to surveillance by the Engineer at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate quality control system in conformance with the requirements detailed herein and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the Engineer at the site for the same purpose.

Surveillance by the Engineer does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

100-11 NONCOMPLIANCE.

a. The Engineer will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer or his/her authorized representative to the Contractor or his/her authorized representative at the site of the work, shall be considered sufficient notice.

b. In cases where quality control activities do not comply with either the Contractor Quality Control Program or the contract provisions, or where the Contractor fails to properly

operate and maintain an effective Quality Control Program, as determined by the Engineer, the Engineer may:

(1) Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.
(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

END OF SECTION 100

SECTION 110

METHOD OF ESTIMATING PERCENTAGE OF MATERIAL WITHIN SPECIFICATION LIMITS (PWL)

110-01 GENERAL.

When the specifications provide for acceptance of material based on the method of estimating percentage of material within specification limits (PWL), the PWL will be determined in accordance with this section. All test results for a lot will be analyzed statistically to determine the total estimated percent of the lot that is within specification limits. The PWL is computed using the sample average (X) and sample standard deviation (Sn) of the specified number (n) of sublots for the lot and the specification tolerance limits, L for lower and U for upper, for the particular acceptance parameter. From these values, the respective Quality index(s), QL for Lower Quality Index and/or QU for Upper Quality Index, is computed and the PWL for the lot for the specified n is determined from Table 1. All specification limits specified in the technical sections shall be absolute values. Test results used in the calculations shall be to the significant figure given in the test procedure.

There is some degree of uncertainty (risk) in the measurement for acceptance because only a small fraction of production material (the population) is sampled and tested. This uncertainty exists because all portions of the production material have the same probability to be randomly sampled. The Contractor's risk is the probability that material produced at the acceptable quality level is rejected or subjected to a pay adjustment. The Owner's risk is the probability that material produced at the rejectable quality level is accepted.

IT IS THE INTENT OF THIS SECTION TO INFORM THE CONTRACTOR THAT, IN ORDER TO CONSISTENTLY OFFSET THE CONTRACTOR'S RISK FOR MATERIAL EVALUATED, PRODUCTION QUALITY (USING POPULATION AVERAGE AND POPULATION STANDARD DEVIATION) MUST BE MAINTAINED AT THE ACCEPTABLE QUALITY SPECIFIED OR HIGHER. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRODUCE AT QUALITY LEVELS THAT WILL MEET THE SPECIFIED ACCEPTANCE CRITERIA WHEN SAMPLED AND TESTED AT THE FREQUENCIES SPECIFIED.

110-02 METHOD FOR COMPUTING PWL.

The computational sequence for computing PWL is as follows:

a. Divide the lot into n sublots in accordance with the acceptance requirements of the specification.

b. Locate the random sampling position within the sublot in accordance with the requirements of the specification.

c. Make a measurement at each location, or take a test portion and make the measurement on the test portion in accordance with the testing requirements of the specification.

d. Find the sample average (X) for all sublot values within the lot by using the following formula:

$X = (x1 + x2 + x3 + \ldots xn) / n$

Where: X = Sample average of all sublot values within a lot

x1, x2 = Individual sublot values

n = Number of sublots

e. Find the sample standard deviation (Sn) by use of the following formula:

$Sn = [(d12 + d22 + d32 + \ldots dn2)/(n-1)]1/2$

Where: Sn = Sample standard deviation of the number of sublot values in the set

d1, d2, = Deviations of the individual sublot values x1, x2, from the average value X

that is: $d1 = (x1 - X)$, $d2 = (x2 - X)$ ... $dn = (xn - X)$

n = Number of sublots

f. For single sided specification limits (i.e., L only), compute the Lower Quality Index QL by use of the following formula:

$QL = (X - L) / Sn$

Where: L = specification lower tolerance limit

Estimate the percentage of material within limits (PWL) by entering Table 1 with QL, using the column appropriate to the total number (n) of measurements. If the value of QL falls between values shown on the table, use the next higher value of PWL.

g. For double-sided specification limits (i.e. L and U), compute the Quality Indexes QL and QU by use of the following formulas:

$QL = (X - L) / Sn$ and $QU = (U - X) / Sn$

Where: L and U = specification lower and upper tolerance limits

Estimate the percentage of material between the lower (L) and upper (U) tolerance limits (PWL) by entering Table 1 separately with QL and QU, using the column appropriate to the total number (n) of measurements, and determining the percent of material above PL and percent of material below PU for each tolerance limit. If the values of QL fall between values shown on the table, use the next higher value of PL or PU. Determine the PWL by use of the following formula:

$PWL = (PU + PL) - 100$

Where: PL = percent within lower specification limit

PU = percent within upper specification limit

EXAMPLE OF PWL CALCULATION

Project: Example Project

Test Item: Item P-401, Lot A.

A. **PWL Determination for Mat Density.**

1. Density of four random cores taken from Lot A.

   A-1 96.60

   A-2 97.55

   A-3 99.30

   A-4 98.35

   n = 4

2. Calculate average density for the lot.

   X = (x1 + x2 + x3 + . . .xn) / n

   X = (96.60 + 97.55 + 99.30 + 98.35) / 4

   X = 97.95 percent density

3. Calculate the standard deviation for the lot.

   Sn = [((96.60 - 97.95)2 + (97.55 - 97.95)2 +(99.30 -97.95)2 + (98.35 -97.95)2)) / (4 - 1)]1/2

   Sn = [(1.82 + 0.16 + 1.82 + 0.16) / 3]1/2

   Sn = 1.15

4. Calculate the Lower Quality Index QL for the lot. (L=96.3)

   QL = (X -L) / Sn

   QL = (97.95 - 96.30) / 1.15

   QL = 1.4348

5. Determine PWL by entering Table 1 with QL= 1.44 and n= 4.

   PWL = 98

B. **PWL Determination for Air Voids.**

1. Air Voids of four random samples taken from Lot A.

   A-1 5.00

   A-2 3.74

   A-3 2.30

   A-4 3.25

2. Calculate the average air voids for the lot.

   $X = (x1 + x + x3 \ldots n) / n$

   $X = (5.00 + 3.74 + 2.30 + 3.25) / 4$

   $X = 3.57$ percent

3. Calculate the standard deviation Sn for the lot.

   $Sn = [((3.57 - 5.00)2 + (3.57 - 3.74)2 + (3.57 - 2.30)2 + (3.57 - 3.25)2) / (4 - 1)]1/2$

   $Sn = [(2.04 + 0.03 + 1.62 + 0.10) / 3]1/2$

   $Sn = 1.12$

4. Calculate the Lower Quality Index QL for the lot. (L= 2.0)

   $QL = (X - L) / Sn$

   $QL = (3.57 - 2.00) / 1.12$

   $QL = 1.3992$

5. Determine PL by entering Table 1 with QL = 1.41 and n = 4.

   PL = 97

6. Calculate the Upper Quality Index QU for the lot. (U= 5.0)

   $QU = (U - X) / Sn$

   $QU = (5.00 - 3.57) / 1.12$

   $QU = 1.2702$

7. Determine PU by entering Table 1 with QU = 1.29 and n = 4.

   PU = 93

8. Calculate Air Voids PWL

PWL = (PL + PU) - 100

PWL = (97 + 93) - 100 = 90

EXAMPLE OF OUTLIER CALCULATION (Reference ASTM E 178)

Project: Example Project

Test Item: Item P-401, Lot A.

A. **Outlier Determination for Mat Density.**

1. Density of four random cores taken from Lot A. arranged in descending order.

A-3	99.30
A-4	98.35
A-2	97.55
A-1	96.60

2. Use n=4 and upper 5 percent significance level of to find the critical value for test criterion =1.463.

3. Use average density, standard deviation, and test criterion value to evaluate density measurements.

   a. For measurements greater than the average:

      If: (measurement - average)/(standard deviation) is less than test riterion,
      Then: the measurement is not considered an outlier for A-3 Check if (99.30 - 97.95) / 1.15 greater than 1.463
      1.174 is less than 1.463, the value is not an outlier

   b. For measurements less than the average:

      If (average - measurement)/(standard deviation) is less than test criterion,the measurement is not considered an outlier
      for A-1 Check if (97.95 - 96.60) / 1.15 greater than 1.463
      1.0 is less than 1.463, the value is not an outlier

NOTE: In this example, a measurement would be considered an outlier if the density was:
greater than (97.95+1.463x1.15) = 99.63 percent or,
less than (97.95-1.463x1.15) = 96.27 percent

TABLE 1. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)								
Percent Within Limits (P_L and P_U)	Positive Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520	1.9994	2.0362
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053	1.8379	1.8630
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993	1.7235	1.7420
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127	1.6313	1.6454
95	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381	1.5525	1.5635
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4717	1.4829	1.4914
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112	1.4199	1.4265
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554	1.3620	1.3670
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032	1.3081	1.3118
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541	1.2576	1.2602
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075	1.2098	1.2115
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630	1.1643	1.1653
87	1.0597	1.1100	1.1173	1.1192	1.1199	1.1204	1.1208	1.1212
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794	1.0791	1.0789
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399	1.0389	1.0382
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015	1.0000	0.9990
83	0.9939	0.9900	0.9785	0.9715	0.9671	0.9643	0.9624	0.9610
82	0.9749	0.9600	0.9452	0.9367	0.9315	0.9281	0.9258	0.9241
81	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928	0.8901	0.8882
80	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583	0.8554	0.8533
79	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245	0.8214	0.8192
78	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915	0.7882	0.7858
77	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590	0.7556	0.7531
76	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271	0.7236	0.7211
75	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958	0.6922	0.6896
74	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649	0.6613	0.6587
73	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344	0.6308	0.6282
72	0.7360	0.6600	0.6316	0.6176	0.6095	0.6044	0.6008	0.5982
71	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747	0.5712	0.5686
70	0.6787	0.6000	0.5719	0.5582	0.5504	0.5454	0.5419	0.5394
69	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164	0.5130	0.5105
68	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877	0.4844	0.4820
67	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592	0.4560	0.4537
66	0.5563	0.4800	0.4545	0.4424	0.4355	0.4310	0.4280	0.4257
65	0.5242	0.4500	0.4255	0.4139	0.4073	0.4030	0.4001	0.3980
64	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753	0.3725	0.3705
63	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477	0.3451	0.3432
62	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203	0.3179	0.3161
61	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931	0.2908	0.2892
60	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660	0.2639	0.2624
59	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391	0.2372	0.2358
58	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122	0.2105	0.2093
57	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855	0.1840	0.1829
56	0.2164	0.1800	0.1688	0.1636	0.1607	0.1588	0.1575	0.1566
55	0.1806	0.1500	0.1406	0.1363	0.1338	0.1322	0.1312	0.1304
54	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057	0.1049	0.1042
53	0.1087	0.0900	0.0843	0.0817	0.0802	0.0793	0.0786	0.0781
52	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528	0.0524	0.0521
51	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264	0.0262	0.0260
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 1. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)								
Percent Within Limits (P_L and P_U)	Negative Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
49	-0.0363	-0.0300	-0.0281	-0.0272	-0.0267	-0.0264	-0.0262	-0.0260
48	-0.0725	-0.0600	-0.0562	-0.0544	-0.0534	-0.0528	-0.0524	-0.0521
47	-0.1087	-0.0900	-0.0843	-0.0817	-0.0802	-0.0793	-0.0786	-0.0781
46	-0.1447	-0.1200	-0.1125	-0.1090	-0.1070	-0.1057	-0.1049	-0.1042
45	-0.1806	-0.1500	-0.1406	-0.1363	-0.1338	-0.1322	-0.1312	-0.1304
44	-0.2164	-0.1800	-0.1688	-0.1636	-0.1607	-0.1588	-0.1575	-0.1566
43	-0.2519	-0.2100	-0.1971	-0.1911	-0.1877	-0.1855	-0.1840	-0.1829
42	-0.2872	-0.2400	-0.2254	-0.2186	-0.2147	-0.2122	-0.2105	-0.2093
41	-0.3222	-0.2700	-0.2537	-0.2461	-0.2418	-0.2391	-0.2372	-0.2358
40	-0.3568	-0.3000	-0.2822	-0.2738	-0.2691	-0.2660	-0.2639	-0.2624
39	-0.3911	-0.3300	-0.3107	-0.3016	-0.2964	-0.2931	-0.2908	-0.2892
38	-0.4251	-0.3600	-0.3392	-0.3295	-0.3239	-0.3203	-0.3179	-0.3161
37	-0.4586	-0.3900	-0.3679	-0.3575	-0.3515	-0.3477	-0.3451	-0.3432
36	-0.4916	-0.4200	-0.3967	-0.3856	-0.3793	-0.3753	-0.3725	-0.3705
35	-0.5242	-0.4500	-0.4255	-0.4139	-0.4073	-0.4030	-0.4001	-0.3980
34	-0.5563	-0.4800	-0.4545	-0.4424	-0.4355	-0.4310	-0.4280	-0.4257
33	-0.5878	-0.5100	-0.4836	-0.4710	-0.4638	-0.4592	-0.4560	-0.4537
32	-0.6187	-0.5400	-0.5129	-0.4999	-0.4924	-0.4877	-0.4844	-0.4820
31	-0.6490	-0.5700	-0.5423	-0.5290	-0.5213	-0.5164	-0.5130	-0.5105
30	-0.6787	-0.6000	-0.5719	-0.5582	-0.5504	-0.5454	-0.5419	-0.5394
29	-0.7077	-0.6300	-0.6016	-0.5878	-0.5798	-0.5747	-0.5712	-0.5686
28	-0.7360	-0.6600	-0.6316	-0.6176	-0.6095	-0.6044	-0.6008	-0.5982
27	-0.7636	-0.6900	-0.6617	-0.6477	-0.6396	-0.6344	-0.6308	-0.6282
26	-0.7904	-0.7200	-0.6921	-0.6781	-0.6701	-0.6649	-0.6613	-0.6587
25	-0.8165	-0.7500	-0.7226	-0.7089	-0.7009	-0.6958	-0.6922	-0.6896
24	-0.8417	-0.7800	-0.7535	-0.7401	-0.7322	-0.7271	-0.7236	-0.7211
23	-0.8662	-0.8100	-0.7846	-0.7716	-0.7640	-0.7590	-0.7556	-0.7531
22	-0.8897	-0.8400	-0.8160	-0.8036	-0.7962	-0.7915	-0.7882	-0.7858
21	-0.9124	-0.8700	-0.8478	-0.8360	-0.8291	-0.8245	-0.8214	-0.8192
20	-0.9342	-0.9000	-0.8799	-0.8690	-0.8625	-0.8583	-0.8554	-0.8533
19	-0.9550	-0.9300	-0.9123	-0.9025	-0.8966	-0.8928	-0.8901	-0.8882
18	-0.9749	-0.9600	-0.9452	-0.9367	-0.9315	-0.9281	-0.9258	-0.9241
17	-0.9939	-0.9900	-0.9785	-0.9715	-0.9671	-0.9643	-0.9624	-0.9610
16	-1.0119	-1.0200	-1.0124	-1.0071	-1.0037	-1.0015	-1.0000	-0.9990
15	-1.0288	-1.0500	-1.0467	-1.0435	-1.0413	-1.0399	-1.0389	-1.0382
14	-1.0448	-1.0800	-1.0817	-1.0808	-1.0800	-1.0794	-1.0791	-1.0789
13	-1.0597	-1.1100	-1.1173	-1.1192	-1.1199	-1.1204	-1.1208	-1.1212
12	-1.0736	-1.1400	-1.1537	-1.1587	-1.1613	-1.1630	-1.1643	-1.1653
11	-1.0864	-1.1700	-1.1909	-1.1995	-1.2043	-1.2075	-1.2098	-1.2115
10	-1.0982	-1.2000	-1.2290	-1.2419	-1.2492	-1.2541	-1.2576	-1.2602
9	-1.1089	-1.2300	-1.2683	-1.2860	-1.2964	-1.3032	-1.3081	-1.3118
8	-1.1184	-1.2600	-1.3088	-1.3323	-1.3461	-1.3554	-1.3620	-1.3670
7	-1.1269	-1.2900	-1.3508	-1.3810	-1.3991	-1.4112	-1.4199	-1.4265
6	-1.1342	-1.3200	-1.3946	-1.4329	-1.4561	-1.4717	-1.4829	-1.4914
5	-1.1405	-1.3500	-1.4407	-1.4887	-1.5181	-1.5381	-1.5525	-1.5635
4	-1.1456	-1.3800	-1.4897	-1.5497	-1.5871	-1.6127	-1.6313	-1.6454
3	-1.1496	-1.4100	-1.5427	-1.6181	-1.6661	-1.6993	-1.7235	-1.7420
2	-1.1524	-1.4400	-1.6016	-1.6982	-1.7612	-1.8053	-1.8379	-1.8630
1	-1.1541	-1.4700	-1.6714	-1.8008	-1.8888	-1.9520	-1.9994	-2.0362

END OF SECTION 110

SECTION 120

NUCLEAR GAGES

120-01 TESTING.

When the specifications provide for nuclear gauge acceptance testing of material for Items P-152, P-154, P-208, and P-209, the testing shall be performed in accordance with this section. At each sampling location, the field density shall be determined in accordance with ASTM D 6938 using the Direct Transmission Method. The nuclear gauge shall be calibrated in accordance with ASTM D 6938. Calibration and operation of the gauge shall be in accordance with the requirements of the manufacturer. The operator of the nuclear gauge must show evidence of training and experience in the use of the instrument. The gauge shall be standardized daily in accordance with ASTM standards.

When using the nuclear method, ASTM D 6938 shall be used to determine the moisture content of the material. The calibration curve furnished with the nuclear gauges shall be checked in accordance with ASTM standards. The calibration checks shall be made at the beginning of a job and at regular daily intervals.

gauge

The material shall be accepted on a lot basis. Each Lot shall be divided into eight (8) sublots when ASTM D 6938 is used.

120-02 When PWL concepts are incorporated, compaction shall continue until a PWL of 90 percent or more is achieved using the lower specification tolerance limits (L) below.

The percentage of material within specification limits (PWL) shall be determined in accordance with the procedures specified in Section 110 of the General Provisions.

The lower specification tolerance limit (L) for density shall be:

Specification Item Number	Specification Tolerance (L) for Density, (percent of laboratory maximum)
Item P-152	90.5 for cohesive material, 95.5 for non- ohesive
Item P-154	95.5
Item P-208	97.0
Item P-209	97.0

If the PWL is less than 90 percent, the lot shall be reworked and recompacted by the Contractor at the Contractor's expense. After reworking and recompaction, the lot shall be resampled and retested. Retest results for the lot shall be reevaluated for acceptance. This procedure shall continue until the PWL is 90 percent or greater.

120-03 VERIFICATION TESTING.

(For Items P-152 and P-154 only.) The Engineer will verify the maximum laboratory density of material placed in the field for each lot. A minimum of one test will be made for each lot of material at the site. The verification process will consist of; (1) compacting the material and determining the dry density and moisture-density in accordance with ASTM D 698 for

aircraft gross weights less than 60,0000 pounds, and (2) comparing the result with the laboratory moisture-density curves for the material being placed. This verification process is commonly referred to as a "one-point Proctor".

If the material does not conform to the existing moisture-density curves, the Engineer will establish the laboratory maximum density and optimum moisture content for the material in accordance with ASTM D 698 for aircraft gross weights less than 60,0000 pounds.

Additional verification tests will be made, if necessary, to properly classify all materials placed in the lot.

The percent compaction of each sampling location will be determined by dividing the field density of each sublot by the laboratory maximum density for the lot.

END OF SECTION 120

PART II - EARTHWORK

ITEM P-101

SURFACE PREPARATION

101-1.1 This item shall consist of preparation of existing pavement surfaces for overlay, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable drawings.

101-2.1 EQUIPMENT

All equipment shall be specified hereinafter or as approved by the Engineer. The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 REMOVAL OF EXISTING PAVEMENT

Asphaltic Concrete: Asphaltic concrete pavement to be removed shall be cut to the full depth of the bituminous material around the perimeter of the area to be removed. The pavement shall be removed in such a manner that the joint for each new asphalt pavement layer is offset a minimum of two feet from the joint in the preceding layer. This top surface joint shall be located two (2) feet outside the match line shown on the plans. The material shall be broken to a maximum size as to facilitate hauling to the disposal site.

All join lines shall be sawcut vertical and cleaned to remove debris full depth. Join line shall be straight and perpendicular to the mat longitudinal joint.

Removal activities are anticipated to include two types of work on this project:

- Milling of existing pavement surface to remove from the existing base material
- Pulverizing in place the existing bituminous pavement.

Milling of existing pavement surface to remove from the existing base material: Milling shall be performed by a machine specially designed for cold milling of asphalt concrete pavement. Cold milling shall be performed in a manner to protect the existing adjacent pavement and or surface. Any portion of a concrete collar or gutter damaged during milling operations shall be repaired as directed by the Engineer at the Contractor's expense. Any repairs to a concrete gutter or collar shall be repaired to the next joint.

Milling full depth shall remove the entire bituminous pavement, including any irregularities within the specified pavement depth. The Contractor shall continuously control the depth of milling to stay no more than a 0.5 inch (12mm) below the full depth of the existing pavement. In areas of resurfaced trenches, individual excavations or bore holes, the required depth of milling shall be the same as that of the adjacent pavement.

Profile milling shall be used at tie in locations and shall consist of the controlled removal of a portion of the existing pavement to a nominal depth using longitudinal grade controls.

Pulverizing in place the existing bituminous pavement: Pulverizing shall be performed by

a machine specially designed for full depth pulverization of the asphalt pavement surface. Pulverizing shall be performed in a manner to protect the existing adjacent pavement to remain. The Contractor shall continuously control the depth of pulverizing to stay no more than a 0.5 inch (12mm) below the full depth of the existing pavement. Speed of the pulverizing shall be set to develop the gradation specified for processed miscellaneous base course under Item P-208. Pulverizing shall include removal of existing subgrade to a depth that allows installation of the pavement sections proposed in the plans.

101-3.2 REMOVAL OF PAINT AND RUBBER.

All paint and rubber outside the limits of pavement removal that requires realignment as shown on the plans shall be removed from the surface of the existing pavement. Chemicals, high-pressure water, heater scarifier (asphaltic concrete only), cold milling, or sandblasting may be used. Any methods used shall not cause major damage to the pavement to remain. Black out paint shall not be used. Major damage is defined as changing the properties of the pavement or removing pavement over 1/8 in deep. If chemicals are used, they shall comply with the state's environmental protection regulations. No material shall be deposited on the runway shoulders. All removal wastes shall be disposed of off airport at a legal disposal site.

Removal of Paint and Markings not associated with the pavement removal area yet requiring realignment as identified on the plans on existing pavement to remain, shall be removed using high-pressure water or sandblasting. Black out paint shall not be used. Use of sandblasting shall require careful cleanup to leave no debris or residue from the operation on the adjacent pavement. Damage to pavement surface shall be repaired using seal coat material as approved by the Engineer. Contractor shall submit material based on degree of damage to pavement surface scheduled to remain.

101-3.3 COLD PLANING.

a. **Tie in Milling**: The machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the pavement to remain. The machine shall have a positive method of controlling the depth of cut. The area shall be laid out with straightedges in increments of 1-foot widths. The area to be milled shall cover only the area required for the construction of the new tie in pavement at the end of each construction phase and at join locations along taxiways and within the blast pad prior to overlay placement. Minimum thickness of the transition pavement or overlay shall be 2 inches deep. Milling shall be accomplished to provide a minimum new pavement thickness within the profile transition tie in of a minimum of 2 inches. Any excessive area that is milled because the Contractor doesn't have the appropriate machine, or areas that are damaged because of his negligence, shall not be included in the measurement for payment. Corrective milling / removal to clean joints that are spalled or not vertical shall be accomplished to provide a clean, vertical joint acceptable to the Engineer.

b. **Profiling, Grade Correction, or Surface Correction**: The machine shall have a minimum width of 10 feet. It shall be equipped with electronic grade control devices on both sides that will cut the surface to the grade and tolerances specified. The machine shall cut vertical edges. A positive method of dust control shall be provided. The machine shall be capable of discharging the millings in a truck or leaving them in a defined windrow.

101-3.4 POTHOLING EXISTING UTILITIES.

Contractor shall pothole existing utilities as required to verify record drawing data shown on plans. Depth shown on plans is from a compilation of record data. As such not all subsurface utilities are shown. Contractor shall field verify and coordinate with Engineer. Contractor potholing shall confirm depth data and alignment. Contractor shall also pothole all existing utilities prior to digging around to confirm depth and alignment. Pothole data shall be submitted to the Engineer prior to commencing any work around said utility.

METHOD OF MEASUREMENT

101-4.1 MEASUREMENT.

a. **General**: If there is no quantity shown in the bidding schedule, the work covered by this section shall be considered as a subsidiary obligation of the Contractor covered under the other contract items. Only accepted work will be measured. The quantity of work covered in this section may vary from zero to 125% of the estimated quantity provided in the bid schedule. No adjustment to the unit price shall be granted for this variation.

b. **Pavement Removal**: The unit of measurement for pavement removal shall be the number of square yards removed by the Contractor by either pulverizing in place or by milling. No separate measurement will be made for the removal of striping that is included with the removal of the pavement surface. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment.

c. **Removal of Pavement Markings**: Removal of Pavement Markings shall be considered incidental to the installation of new pavement markings. No separate measurement will be made for the removal of any striping requiring to be removed or the removal of temporary striping required to be removed as part of this project. Any striping removed outside the limits of removal or otherwise damaged by negligence on the part of the Contractor shall be replaced at the expense of the Contractor.

d. **Tie in Milling**: The unit of measurement for tie in milling by cold planning (milling) at the end of each construction phase, at taxiway tie-in locations, and at tie-in locations for paved shoulder milling shall be the number of square yards of profile milling completed by the contractor and accepted by the Engineer. Measurement shall be the area, by Square Yard of pavement to receive pavement overlay treatment or transition pavement.

e. **Profiling, grade correction, or surface correction**: No separate measurement shall be made for profiling grade correction, or surface correction.

f. **Potholing**. The unit of measurement for potholing utilities to be protected shall be lump sum. Lump sum payment will be prorated by month over the life of the contract.

BASIS OF PAYMENT

101-5.1 PAYMENT.

Payment shall be made at contract unit price for the unit of measurement as specified hereinbefore. This price shall be full compensation for furnishing all materials and for all

preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item. Removal of Pavement Markings shall be considered incidental to the installation of new pavement markings and no separate payment will be made.

Item #	Item Description	
P-101-5.1	Cold Milling Asphalt Concrete Pavement	per square yard
P-101-5.2	Pulverize Asphalt Concrete Pavement	per square yard
P-101-5.3	Removal of Pavement Markings	per square foot
P-101-5.4	Tie in Milling	per square yard
P-101-5.5	Potholing	per lump sum

END OF ITEM P-101

ITEM P-148

AIRFIELD CONSTRUCTION AREA CONTROL

DESCRIPTION

148-1 GENERAL.

This item shall consist of furnishing, installing, maintaining, adjusting, and removing construction signs, barricades, warning lights, and furnishing gate guards, flagging operations, project radios, furnishing, operating and maintaining sweepers and FOD Control, managing and providing all labor, equipment, and materials required to close the runway as required, and providing items as requested for safety and security at locations shown on the Plans, as specified in these Specifications, and as directed by the Engineer.

MATERIALS AND CONSTRUCTION REQUIREMENTS

148-2.1 BARRICADES.

Barricades shall be placed at the locations shown on the Plans and as directed by the Engineer. Prior to starting work on each phase of the project, the Contractor shall prepare and submit a proposed barricade layout plan, barricade placement and removal schedule, and temporary storage location(s) for approval by the Engineer.

These additional requirements shall be followed:

a. Barricades required on all phases of the project shall be installed, maintained and repositioned as needed and as directed by the Engineer. Barricades shall only be in place while construction activities are underway and a portion of the taxiway or runway is closed to traffic other than construction activities. All barricades must be removed from traffic areas prior to opening those areas to traffic.

b. Barricades shall be positioned outside of the area of construction as shown on the Plans unless otherwise directed by the Engineer.

c. All barricades located outside the air operations area (AOA) and used for directing vehicular traffic shall be as approved by the Engineer for use in work zone traffic control.

d. Barricades shall be properly secured and inspected regularly by the Contractor to ensure that the barricades remain in-place and that all lights are operational. Inspections shall be conducted daily prior to the end of each shift allowing enough time for all barricades and lights to be repaired and fully operational at the end of the shift.

e. Barricades shall be spaced as outlined on the plans or as directed by the Engineer.

f. Barricades used on the airfield side of construction shall be low profile type 1. The Contractor shall submit to the Engineer shop drawings or manufacture's cut sheets for the specific barricade type that will be used, for review prior to use on the airfield.

   Low Profile Type 1 barricades shall be of the 10-inch high x 96-inch long portable plastic water ballasted type equipped with reflective striping (on both sides) and steady burn battery or solar powered red lights. The Type 1 barricades shall be furnished in orange

and white and be installed so that the colors alternate on adjacent barricades. Type 1 barricades shall be weighted with water to resist movement by jet blast. Each barricade shall have two lights. Barricades used on the landside, adjacent to open roadways or as shown on the plans, shall be Caltrans Barricades, Type II.

All barricades shall remain the property of the Contractor and be removed from the Airport by the Contractor upon completion of the Work.

g. The Contractor shall maintain a 15 percent reserve in the number of barricades maintained at the project site. These reserve barricades shall be used by the Contractor only when and as directed by the Engineer or Airport Operations. No additional measurement or payment will be made for the maintenance and use of reserve barricades on the project site.

h. All maintenance work required to keep barricades, warning lights/ batteries, etc. in good operating condition shall be provided by the Contractor at the Contractor's sole expense.

i. Contractor shall maintain barricades 24 hours a day and over non work periods. If more than two adjacent lights on the barricades fail the contractor shall immediately repair or replace the lights with operational units. Response times to calls concerning barricade maintenance shall be less than 20 minutes.

j. All unused barricade lights shall be turned off during daylight hours. Lights on barricades used during weekend closures shall be operating.

148-2.2 BARRICADE LIGHTS.

Barricade lights shall be placed on each barricade. Barricade lights shall be in accordance with the current requirements of ITE Standards for Flashing and Steady Burning Warning Lights, Type A, as shown below:

Warning Lights	Type A Low Intensity
Flashing Rate Per Minute	55 to 75
Flash Duration1	10%
Minimum Effective Intensity2	5 Candles
Minimum Beam Candle Power2	-----
Hours of Operations	Dusk to Dawn
Diameter of Lens	7 inches Minimum

[1] Length of time that instantaneous intensity shall be equal to or greater than effective intensity.

[2] These values shall be maintained within an angle of 9 degrees on each side of the vertical axis and 5 degrees above and below the horizontal axis.

Barricade lights shall be solar or battery-operated and be housed in a weatherproof enclosure. Lights shall be equipped with a solar switch which shall turn the light on at dusk and off at dawn. All barricade lights used on the AOA shall be red.

Barricade lights shall be secured to the constructed signs, barricade or support by tamper-proof bolts.

148-2.3 LIGHTED RUNWAY CLOSURE SIGNS.

The Contractor shall use the required number of runway closure signals (lighted X) as identified on the plans. The lighted runway closure signs (lighted X) will be provided by the airport. The runway closure signals shall meet the requirements of AC 150/5345-55 and the requirements as shown on the plans. Runway Closure Signals are mobile units with trailer hitches to accommodate movement. At the completion of the work, the lighted signals shall be serviced and turned back over to the airport.

Contractor shall install prior to each runway closure Lighted X Runway Closure Signals as shown on the plans and directed by the Engineer. The maintenance and servicing (prior to the start of construction and before turning back over to the Airport) of the Lighted X Runway Closure Signals shall be the responsibility of the Contractor. Maintenance and servicing includes, but is not limited to, providing fuel, checking fuel and fluid levels, and repairing / replacing bulbs. Contractor shall install and remove the Lighted X Runway Closure Signals at the start and end of each runway closure after approval to occupy the runway is granted by the Airport. This includes all work, including the extended closures and the nightly closures. At the completion of the work, the lighted signals shall be serviced and returned to the Airport.

148-2.4 CONTRACTOR HAUL ROUTES.

All Contractor's haul routes shall be clearly marked with traffic cones, traffic barricades with yellow flashing lights, and other traffic control devices, as shown on the Plans and as directed by the Engineer. Prior to starting work on each phase of the project, the Contractor shall prepare and submit a proposed haul route layout and marking plan for approval by the Engineer. All haul routes must be approved by the Engineer prior to use by the Contractor. Haul route cones shall only be in place while construction activities are underway. The Contractor shall set up the cones at the beginning of each work period and take them down prior to the end that period.

148-2.5 GATE GUARDS.

The Contractor shall furnish trained personnel, approved by the Owner, at the entrances to secure areas whenever these entrances are in use.

All Airport perimeter gates (new and existing) that are used by the Contractor for operations shall require a gate guard at all times the gate is in use. The gate shall be closed and locked (with a lock provided by the Owner) during off-hours, when construction is not in progress, and when the gate guards are not at the station. The Contractor shall be responsible for controlling access through the gate. All gate guards shall have communications equipment capable of contacting Contractor management staff should any problems or questions arise.

A minimum of one gate guard shall be provided at each AOA access gate. Guard shall review and log in each person entering the AOA. Guard shall check the equipment entering the AOA.

148-2.6 FLAGGING.

The Contractor shall furnish trained and adequately equipped flagging personnel during construction working hours to maintain a safe flow of construction and non-construction traffic. Flaggers shall be positioned at each side of any active aircraft movement area (taxiway) to clear equipment across the taxiway when no aircraft traffic is present. Aircraft traffic shall be given priority at all times. Construction equipment shall be held at the Taxiway OFA limit while aircraft approach and pass. Two flaggers shall be provided at each active taxiway crossing. Crossing of active runways is not permitted.

148-2.7 VEHICLE MONITORS.

All vehicles operating in the active air operations area (AOA) must be properly marked, lighted, and equipped with a properly trained driver. Any vehicles operating on the Airport without a properly trained driver shall be under the observation of a vehicle monitor. Vehicle monitors shall move about the project site to make sure that all construction traffic is operating within designated areas. Vehicle monitors shall comply with the following criteria:

a. Possess a valid State of California driver's license,

b. Monitor's vehicle shall be clearly marked with the company name and logo,

c. Attend operations and communications training provided by Airport Operations,

d. Attend all pre-phase meetings.

The Contractor shall provide the number of monitors required to adequately monitor areas under construction and all haul routes. The Contractor should also note that the more spread-out the construction activities are, the more monitors will be necessary to provide adequate coverage. If at any time, at the Engineer's sole determination, the Contractor is not providing sufficient monitoring of the work areas, the Engineer shall require that additional monitors be provided by the Contractor at the Contractor's sole expense. Adequate, sufficient monitoring shall be considered control maintained of all workers within the designated work areas with zero infractions of open airfield surfaces.

If the United States Department of Homeland Security raises the security threat level to "Orange" or higher, or if required by the Owner, FAA, or Transportation Security Administration, at any time during the course of the Work, additional monitors or vehicle escorts shall be provided by the Contractor at a rate of up to 1 escort or monitor per each vehicle entering the Work site as directed by the Engineer. The additional monitors or escorts shall be provided by the Contractor at the Contractor's sole expense.

148-2.8 FOD CONTROL AND SWEEPERS.

Contractor shall maintain a clean work site at all time within the AOA and contractor yards. Contractor shall, as shown on the plans, provide for the number of operational sweepers at all times as specified. Back up sweepers of similar type should be provided in case a sweeper is taken out of service due to maintenance issues. Sweepers shall maintain all haul routes in a clean condition with no tracking of material onto or around the haul route. A sweeper shall be stationed and operating at all active taxiway crossings and shall be in radio communication with the lead flagger at this crossing.

Foreign Object Debris (FOD) is a major concern on an active airfield. As such the contractor shall minimize the potential for FOD by maintaining a clean work area and patrolling the complete area and removing anything that could cause FOD. Loose trash, construction debris, small pebbles, etc are unacceptable within the airfield area.

148-2.9 SAFETY.

The Contractor shall follow the guidelines and procedures contained in Federal Aviation Administration Advisory Circular 150/5370-2 (latest addition) "Operational Safety on Airports During Construction"; and other applicable Sections of these Specifications. Contractor is responsible for preparing and submitting for approval, prior to issuance of Notice to Proceed, a project specific Safety Plan Compliance Document (SPCD) following the guidelines contained in Federal Aviation Administration Advisory Circular 150/5370-2 (latest addition) "Operational Safety on Airports During Construction". Contractor will be provided a copy of the project approved Construction Safety and Phasing Plan (CSPP).

The Contractor shall acquaint its supervisors and employees of the Airport activity and operations that are inherent to this active air carrier Airport and shall conduct its construction activities to conform to all routine requirements and emergency air traffic requirements and guidelines on safety specified in these Specifications.

All vehicles that are authorized to operate on the Airport shall display in full view above the vehicle a 3'x3' or larger orange and white checkerboard flag, each checkerboard color being 1' square. Any vehicle operating in the active AOA during the hours of darkness shall be equipped with a flashing amber (yellow) dome light, mounted on top of the vehicle and of such intensity to conform to local codes for maintenance and emergency vehicles.

All vehicles that are required to cross active runways, instrument or approach clear zones, active taxiways or aprons shall do so under the direct control of the Air Traffic Control Tower or shall be escorted by a vehicle in contact with the Air Traffic Control Tower. All aircraft traffic shall have priority over the Contractor's traffic.

No runway, taxiway, apron or airport roadway shall be closed without written approval of the Airport. The Airport will issue "Notices to Airmen" (NOTAM) and other necessary advisories to airport services or tenants. The Contractor shall provide a minimum of 72 hours notice of the requested closing to the Engineer, who will coordinate the request with Airport Operations.

Open-flame welding or torch-cutting operations shall be prohibited unless adequate fire and safety precautions are provided and have been approved by the Engineer. All vehicles are to be parked and serviced behind the building restriction line or in an area designed by the Engineer.

Open trenches, excavations, and stockpiled material at the construction site shall be prominently marked with orange flags and lighted by flashing yellow light units (acceptable to the Airport and the FAA) during hours of restricted visibility/darkness. Under no circumstances are flare pots to be used.

Stockpiled material shall be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions. Material should not be stored near aircraft turning areas or movement areas.

Debris, waste and loose material capable of causing damage to aircraft or being ingested in jet engines are not allowed on active aircraft movement areas. The Contractor shall remove it immediately and continuously during construction.

148-2.10 SECURITY.

Contractor shall comply with all security requirements specified herein and comply with all applicable Federal safety and security regulations. The Contractor shall appoint and designate to the Engineer in writing the name of its Chief of Security. The Chief of Security shall represent the Contractor on the safety and security requirements of the project.

The Contractor shall comply with all security requirements specified herein.

Access to the Site. The Contractor's access to the site shall be as shown on the Plans. No other access points shall be allowed unless approved by the Engineer. All access points shall be secured (i.e. locked gate) or manned by a guard. All manned access points shall have a physical barrier that must be moved or otherwise operated by the guard to allow vehicles to pass through the access point. Contractor traffic authorized to enter the site shall be escorted by Contractor personnel in accordance with these Specifications, FAA Advisory Circular 150/5370-2F, and Airport's "Airport Operational Safety and Security Requirements" and "Security Instructions" manuals included elsewhere herein. The Contractor shall maintain traffic control to and from the various areas of the Work. The Contractor shall immediately clean any debris deposited along any route used as a result of its construction traffic. Directional signing at the access point and along the delivery route to the storage area or Work site shall be as directed by the Engineer.

Materials Delivered to the Site. Delivery vehicles for Contractor's material orders shall be escorted by the Contractor to the delivery site.

Inspection. If the United States Department of Homeland Security raises the security threat level to "Orange" or higher, or if required by the Airport, FAA, or Transportation Security Administration, at any time during the course of the Work, trained Contractor supplied personnel shall search all vehicles associated with the project entering the AOA or Work site.

The Contractor shall provide a sufficient quantity of inspection staff as to cause no delay in the through put of materials and deliveries to the project site. The Contractor shall assume in his bid that the Orange level of security will be in place for more than one half of the project duration.

Identification – Personnel. The Contractor shall maintain a master list of personnel onsite and it shall be available for the Airport's examination during construction hours.

Contractor's personnel operating vehicles on active runways or taxiways shall complete a driver training class presented to familiarize them of the allowable haul routes, speed limits, and open airfield areas.

Identification – Vehicles. The Contractor, through the Chief of Security, shall establish and maintain a list of vehicles authorized to operate on the Airport. Vehicles delivering materials to the construction site shall sign in with the Contractor's gate security personnel. The personal vehicles of Contractor's employees are not allowed on the airfield at any time, adequate off-site parking is available.

148-2.11 RUNWAY CLOSURES.

Contractor shall coordinate all runway closure needs with the Engineer and Airfield Manager. Closures shall be identified on the construction schedule – base line schedule and all updates. A minimum of 72 hours prior notification in addition to the schedule data is required to be provided to Airfield Operations for all runway closures. No closure shall commence until cleared by Airfield Manager.

Runway closures are required for all work to be performed within the Runway Safety Area (RSA). No work shall be allowed within the RSA without a runway closure. For this project, the majority of the work will be done under hard closures.

Hard Runway Closures: This type of closure requires the contractor to close the runway completely for the entire duration of work within the RSA. Closure activities shall include setting up runway closure X markings, lighted, at the both ends of the runway and coordinating the turn off of all runway approach lighting and edge lighting systems. Maintenance and fueling of the lighted X markers shall be the responsibility of the Contractor. The majority of the construction is on Runways 5-23. Runway 5-23 must be closed during all phases. Runway 10R-28L must be closed during Phase II, III and IV. Runway 10L-28R will remain operational during all phases.

148-2.12 PROJECT RADIOS.

The Contractor shall provide a minimum of five (5) 800mHz hand held radios to facilitate communications between the Contractor's ACC, shift superintendents, Owner, and Airport Management staff. The project radios shall be Motorola XTS 1500 or equal. The Contractor shall acquire the radios by lease, purchase or other methods appropriate to meet the communication requirements defined above.

148-2.13 AIRPORT CONSTRUCTION COORDINATOR.

The contractor shall provide for the entire life of the contract an Airport Construction Coordinator (ACC) in sufficient numbers to cover all periods of time when construction activities take place within the AOA. The Contractor shall not be allowed to perform work at any time when an approved ACC is not present and working on the project site. The ACC shall be a Contractor employee who shall be paid by and report to the Contractor, but who shall have responsibility to comply with the directions of the Owner's designated representatives (Airport Construction Manager, Airport Operations staff and FAA Control Tower Personnel), as required to effectively perform the identified duties. While on duty as the ACC, the ACC shall have no additional project responsibilities beyond the requirements to perform this assignment. The ACC may also serve as Site Safety Representative and Chief of Security if adequately trained and approved by the Owner to perform those tasks. The ACC shall NOT also serve as the project superintendent.

1. Role and Responsibilities of the ACC:

a) Serve as liaison between the Contractor's construction on/off site personnel and the airport operator, namely its airport operations personnel, and the project inspectors regarding coordination of activities and conditions within the AOA.

b) Through communication with Airport Manager and Construction personnel, control the movement of Contractor personnel, equipment and materials so as to maintain construction progress in a manner that provides safe operation of the airport.

c) Responsible for the Contractor's compliance with the requirements identified in Appendix 2 "Airport Operational Safety and Security Requirements," and Appendix 3 "Contractor Security Instructions" of the project contract documents.

d) Communicate with the Airport Manager on duty regarding the airport facilities' operational conditions and status.

e) Communicate with the Project Manager (PM), Project Inspector (PI), Contractor personnel, and Airport M airport conditions each work day; and any known or reported airport special conditions, events or activities that may affect the safe operations of the airport.

f) Serve as the designated representative of the Contractor for control of the opening and closing of the construction site regarding compliance with the operational safety requirements of the airport.

g) Serve as the designated representative of the Contractor for airport construction and operations.

h) Confer with Airport Management personnel on matters of interest to the construction activities and / or airport operational safety.

2. Minimum qualifications of the ACC:

a) The ACCs shall possess the following minimum qualifications and experience prior to attending the Familiarization / Qualifications Program, identified below:

b) Practical knowledge of aviation terminology; radio communications techniques and procedures; air traffic control services or procedures; aircraft operations.

c) Practical knowledge of airport airside facility components, markings, and lighting; and airport operating rules and procedures, especially ground operations procedures.

d) Skills and practical experience in the coordination of several simultaneous, independent or interdependent activities.

e) Ability to communicate concisely verbally and in writing.

f) Ability to function effectively under stress or pressure.

g) Have worked at an airport, field site, in activities involving the operations of airport, aircraft, aviation support services, air traffic control, or similar related activities.

3. Familiarization / qualification program. The ACC's will be required to successfully complete a one-day familiarization / qualification program conducted by Airport Management personnel on subject matters aimed at verifying / validating their ability to meet the above qualifications and experience requirements. The program will include at least the following:

   a) Security briefing

   b) Operations briefing

   c) Air Traffic Control Tower briefing

   d) Project briefing

   e) Field Tour

148-2.14 **REMOVE AND RESTORE CHAIN LINK GATE AND FENCE.** As shown on the plans, remove and restore chain link fence and gate. Replace any damaged material with similar material to that which was removed meeting the requirements of GreenBook Section 206-6. Restore in accordance with GreenBook Section 304-3. Concrete foundations shall utilize P-610 concrete with a compressive strength of 2500 psi minimum.

METHOD OF MEASUREMENT

148-3.1 Airfield traffic control shall be measured by the lump sum and shall include furnishing installing, removing, storage, maintenance, and reinstalling, as needed, barricades, cones, barricade lights, providing trained vehicle monitors, flaggers, gate guards, Chief of Security, temporary vehicle traffic control pavement markings, and all other trained personnel to provide the requirements of this item.

148-3.2 Sweepers and FOD Control shall be measured by the lump sum and shall include furnishings, maintaining, and operating sweepers and conducting regular FOD checks.

148-3.3 Measurement for Lighted X Runway Closure Signals will be made on a per each basis to install as required to close runways during construction, maintain throughout use, service at the beginning of the project and end of project to restore to prior condition, and return to airport. Upon completion of the work, lighted X runway closure signals shall be returned to the airport.

148-3.4 Contractor Project Radios will measured as a lump sum item.

148-3.5 Chain Link Fence, remove and replace, shall be measured by the linear foot and shall be full compensation for and furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved, as shown on the plans, as specified in the 2012 GreenBook and these special provisions, and as directed by the Engineer.

BASIS OF PAYMENT

148-4.1 Payment for airfield construction area control, including furnishing installing, removing, storage, maintenance, and reinstalling, as needed, barricades, runway closure markings, cones, barricade lights, providing trained vehicle monitors, flaggers, gate guards, Chief of Security, temporary vehicle traffic control pavement markings, and all other trained personnel to provide the requirements of this item shall be made at the lump sum price bid. The price bid shall be full compensation for furnishing all materials, and for all labor, equipment, tools, and incidentals necessary to complete construction safety and security. Partial payments for construction safety and security under this item will be made in accordance with the following provisions:

a. The first partial payment for airfield traffic control will be made at 25-percent of the lump sum price bid, at such time that: (1) the project submittals required are provided to the satisfaction of the Engineer; (2) the barricades have been delivered to the Work Site; and (3) Contractor's personnel have received badges and all necessary security driver and operations training as defined in these Specifications.

b. The remaining partial payments for construction safety and security will be made on each monthly progress pay at a rate of 75-percent of the lump sum price bid divided by the number of months established for the duration of the Work.

148-4.2 Sweepers and FOD Control shall be paid for per the contract unit price per lump sum and shall include furnishing, maintaining, operating the required number of operational sweepers plus any backups and conducting regular FOD checks. Payment shall be based on satisfactory compliance and paid on a prorated monthly basis of the lump sum amount evenly distributed over the construction duration. Failure to maintain the required number of sweepers and adequately clean the area may cause a month's payment to be withheld.

148-4.3 Payment for Lighted X Runway Closure Signal will be made on a per each basis, which shall be full compensation for performing the work specified and procuring and furnishing all materials, labor, facilities, and services and performing all the work involved as specified herein.

148-4.4 Contractor Project Airfield Radios will be paid as a lump sum item. Compensation for Contractor Project Radios shall be paid monthly based on the prorated share of the lump sum contract price.

148-4.6 Chain Link Fence, remove and replace, shall be paid for per linear foot, which shall be full compensation for performing the work specified and procuring and furnishing all materials, labor, facilities, and services and performing all the work involved as specified herein.

Payment will be under:

Item P-148-4.1 Airfield Construction Area Control – per Lump Sum.

Item P-148-4.2 Sweepers and FOD Control – per Lump Sum

Item P-148-4.3 Lighted X Runway Closure Signal – per Each

Item P-148-4.4 Contractor Project Airfield Radios – per Lump Sum

Item P-148-4.5 Chain Link Fence, remove and replace – per Linear Foot

END OF ITEM P-148

ITEM P-150

MOBILIZATION/DEMOBILIZATION

DESCRIPTION

150-1 General. This item shall consist of payment for mobilization, demobilization, preparatory work, and staging area development and is intended to compensate the Contractor for operations required to start up and close down the project, including but not limited to:

- Obtaining Safety Training
- Establishment of Contractor Yard
- Movement of equipment
- Movement of personnel
- Supplies
- Schedule development, review and approval by client
- Supplies and incidentals for the project site
- Payment of Bonds and Insurance for the project
- Contractor Field Office Establishment
- Utilities required for the Site
- Furnishing, installing, relocating and maintaining barricades and safety equipment for airfield closures prior to each work shift and at the end of each work shift
- And all other work required to be performed prior to the start of operations and construction.

All facilities and equipment which are established at or brought to the worksite by the Contractor shall conform to the provisions of this Section unless the Engineer specifically directs in writing otherwise. The Contractor shall be solely responsible for the adequacy of all facilities and equipment.

Upon completion of the project and prior to final acceptance all areas used to support the construction shall be restored to their original, pre-construction conditions and all equipment shall be removed from the airport.

METHOD OF MEASUREMENT

150-2 Payment for mobilization and demobilization will be made on a lump sum basis. Payment shall be allowed upon completion of the mobilization demonstrated by movement of acceptable equipment to the project staging area, submittal of the JMF for P-401, material submittals required for the other items of work, mobilizing on site all required barricades for closing taxiways and runways as required, the safety plan approval, and the acceptance of the initial project schedule. Demobilization payment shall be allowed upon acceptance of the project and the restoration of all areas used to support the construction.

BASIS OF PAYMENT

150-3 Payment for mobilization and demobilization will be made at the lump sum price, which shall be full compensation for performing the work specified and furnishing all materials, labor, facilities, and services and performing all the work involved as specified herein.

Payment will be made for:

Item P-150-3 Mobilization – per lump sum

Item P-150-3 Demobilization – per lump sum

END OF ITEM P-150

ITEM P-152

EXCAVATION AND EMBANKMENT

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 CLASSIFICATION.

All material excavated shall be classified as defined below:

a. **Unclassified Excavation.** Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature, which is not otherwise classified and paid for under the following items.

b. **Embankment Material.** Processed miscellaneous base material consisting of old millings from the runway and taxiway cold planning blended with the existing shoulder material to dress the edge slopes of the runway and taxiway.

152-1.3 UNSUITABLE EXCAVATION.

Any material containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material, when approved by the Engineer as suitable to support vegetation, may be used on the embankment slope. Unsuitable excavation material shall be removed from the embankment and disposed of off airport at a legal dump site.

152-1.4 REMOVE STORM DRAIN FACILITIES.

Remove of Storm Drain Facilities shall consist of the excavation and disposal of all material.

152-1.5 ROCK SLOPE PROTECTION

a. **No. 2 Backing with Fabric.** No. 2 Backing with Fabric shall consist of the size/class and depths as indicated on the plans.

b. **3" Diameter Rock with Fabric.** 3" Diameter Rock with Fabric shall consist of the size/class and depths as indicated on the plans.

c. **6" Diameter Rock with Fabric.** 6" Diameter Rock with Fabric shall consist of the size/class and depths as indicated on the plans.

CONSTRUCTION METHODS

152-2.1 GENERAL.

Before beginning excavation, grading, and embankment operations in any area, the area shall be completely cleared and grubbed to be free of all organic material, plants, weeds, etc.

The suitability of material to be placed in embankments shall be subject to approval by the Engineer. All unsuitable material shall be disposed of in waste areas shown on the plans. All waste areas shall be graded to allow positive drainage of the area and of adjacent areas. The surface elevation of waste areas shall not extend above the surface elevation of adjacent usable areas of the airport, unless specified on the plans or approved by the Engineer.
When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued. At the direction of the Engineer, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Those areas outside of the pavement areas in which the top layer of soil material has become compacted, by hauling or other activities of the Contractor shall be scarified and disked to a depth of 4 in (100 mm), in order to loosen and pulverize the soil.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the Engineer, who shall arrange for their removal if necessary. The Contractor shall, at his/her own expense, satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

152-2.2 EXCAVATION.

No excavation shall be started until the work has been staked out by the Contractor and the Contractor has obtained elevations and measurements of the ground surface and submitted them to the Engineer. All suitable excavated material shall be used in the formation of embankment, subgrade, or for other purposes shown on the plans. All unsuitable material shall be disposed of.

When the volume of the excavation exceeds that required to construct the embankments to the grades indicated, the excess shall be disposed of off airport. When the volume of excavation is not sufficient for constructing the fill to the grades indicated, the deficiency shall be obtained from borrow fill.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the work.

a. **Selective Grading.** When selective grading is indicated on the plans, the more suitable material as designated by the Engineer shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to

place this material in its final location, it shall be stockpiled in approved areas so that it can be measured for payment for rehandling as specified in paragraph 3.3.

b. **Compaction Requirements.** The subgrade under areas to be paved shall be compacted to a depth and density percent of the maximum density as shown on the plans as determined by ASTM **D698.** The material to be compacted shall be within +/- 2 percent of optimum moisture content before rolled to obtain the prescribed compaction (except for expansive soils).

The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 2167. Stones or rock fragments larger than 4 in (100 mm) in their greatest dimension will not be permitted in the top 6 in (150 mm) of the subgrade. The finished grading operations, conforming to the typical cross section, shall be completed and maintained at least 1,000 feet (300 m) ahead of the paving operations or as directed by the Engineer.

The shoulder dressing shall be compacted to a depth of **6 inches** plus the dressing depth and to a density of not less than **95 percent for cohesive soils and 100 percent for non-cohesive soils** of the maximum density as determined by ASTM **D698.** The material to be compacted shall be within +/- 2 percent of optimum moisture content before rolled to obtain the prescribed compaction (except for expansive soils).

In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the plans or as directed by the Engineer.

Blasting will not be allowed.

152-2.3 BORROW EXCAVATION. Borrow material is to be obtained off airport. No borrow areas are available within the airport property.

When borrow sources are outside the **boundaries** of the airport property, it shall be the Contractor's responsibility to locate and obtain the supply, subject to the approval of the Engineer. The Contractor shall notify the Engineer, at least 15 days prior to beginning the excavation, so necessary measurements and tests can be made. All unsuitable material shall be disposed of by the Contractor. All borrow pits shall be opened up to expose the vertical face of various strata of acceptable material to enable obtaining a uniform product. Borrow pits shall be excavated to regular lines to permit accurate measurements, and they shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

152-2.4 PREPARATION OF EMBANKMENT AREA. Where an embankment is to be constructed to a height of 4 feet (120 cm) or less, all sod and vegetable matter shall be removed from the surface upon which the embankment is to be placed, and the cleared surface shall be completely broken up by plowing or scarifying to a minimum depth of 6 in (150 mm). This area shall then be compacted as indicated in paragraph 2.6. When the height of fill is greater than 4 feet (120 cm), sod not required to be removed shall be thoroughly disked and recompacted to the density of the surrounding ground before construction of embankment.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.5 FORMATION OF EMBANKMENTS. Embankments shall be formed in successive horizontal layers of not more than 8 in (200 mm) in loose depth for the full width of the cross section, unless otherwise approved by the Engineer.

Subgrade preparation shall consist of over-excavation and the construction of new embankment at the specified density and depth as indicated on the plans. Temporary lifts of windrowed material is not allowed and the material shall be temporarily stockpiled within the stockpile area. During the removal of material for the subgrade preparation, if unsuitable material is encountered, Contractor shall immediately notify the Engineer and, if agreed that the material is unsuitable for foundation construction, the boundaries and depth of required removal as unsuitable material will be noted. All removal shall be accomplished as Unsuitable Excavation and the material shall be disposed of off airport.

The grading operations shall be conducted, and the various soil strata shall be placed, to produce a soil structure as shown on the typical cross section or as directed. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Operations on earthwork shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, or other unsatisfactory conditions of the field. The Contractor shall drag, blade, or slope the embankment to provide proper surface drainage.

The material in the layer shall be within +/-2 percent of optimum moisture content before rolling to obtain the prescribed compaction. In order to achieve a uniform moisture content throughout the layer, wetting or drying of the material and manipulation shall be required when necessary. Should the material be too wet to permit proper compaction or rolling, all work on all of the affected portions of the embankment shall be delayed until the material has dried to the required moisture content. Sprinkling of dry material to obtain the proper moisture content shall be done with approved equipment that will sufficiently distribute the water. Sufficient equipment to furnish the required water shall be available at all times. Samples of all embankment materials for testing, both before and after placement and compaction, will be taken for each **1000 cubic yards of material placed per plan dimensions**. Based on these tests, the Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content in order to achieve the correct embankment density.

Rolling operations shall be continued until the embankment is compacted to not less than 95 percent of maximum density for noncohesive soils, and 90 percent of maximum density for cohesive soils as determined by ASTM **D698**.

On all areas outside of the pavement areas, no compaction will be required on the top 4 in (100 mm).
The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 2167.

Compaction areas shall be kept separate, and no layer shall be covered by another until the proper density is obtained.

During construction of the embankment, the Contractor shall route his/her equipment at all times, both when loaded and when empty, over the layers as they are placed and shall distribute the travel evenly over the entire width of the embankment. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay, or other chunky soil material will be broken up into small particles and become incorporated with the other material in the layer.

In the construction of embankments, layer placement shall begin in the deepest portion of the fill; as placement progresses, layers shall be constructed approximately parallel to the finished pavement grade line.

152-2.6 FINISHING AND PROTECTION OF SUBGRADE. After the subgrade has been substantially completed the full width shall be conditioned by removing any soft or other unstable material that will not compact properly. The resulting areas and all other low areas, holes or depressions shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans.

Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the subgrade from damage. He/she shall limit hauling over the finished subgrade to that which is essential for construction purposes.

All ruts or rough places that develop in a completed subgrade shall be smoothed and recompacted.

No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been approved by the Engineer.

152-2.7 HAUL. All hauling will be considered a necessary and incidental part of the work. Its cost shall be considered by the Contractor and included in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

152-2.8 TOLERANCES. In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that, when tested with a 16 ft (4.8 m) straightedge applied parallel and at right angles to the centerline, it shall not show any deviation in excess of 1/2 in (12 mm), or shall not be more than 0.05 ft (0.015 m) from true grade as established by grade hubs or pins. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and recompacting by sprinkling and rolling.

On safety areas, intermediate and other designated areas, the surface shall be of such smoothness that it will not vary more than 0.10 ft (0.03 m) from true grade as established by grade hubs. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.9 **REMOVE STORM DRAIN FACILITIES.** All existing storm drain utilities (pipes and structures) in conflict with the proposed work shall be removed as indicated on the plans, and the material disposed of. All remaining storm drain facility voids shall be backfilled with suitable material and compacted as specified herein.

152-2.10 **ROCK SLOPE PROTECTION.** Rock slope protection will consist of placing rock of the size/class and depths as indicated on the plans. Rock slope protection fabric shall be placed prior to placing rock slope protection.

METHOD OF MEASUREMENT

152-3.1 Embankment in Place will be measured by the Square Yard measured in final position based on actual field quantities measured.

152-3.2 Excavate and Export (Unclassified) will be measured by the Cubic Yard measured per neat plan dimensions.

152-3.3 The quantity of Subgrade Preparation to be paid for shall be the number of Square Yard measured in its final position on grade per neat plan dimensions.

152-3.4 The quantity of unsuitable excavation to be paid for shall be the number of cubic yards measured in its original position as determined by the Engineer.

152-3.5 The removal of storm drain facilities shall be measured as a lump sum.

152-3.6 The quantity of rock slope protection No.2 backing with fabric to be paid for shall be the number of cubic yards (cubic meters).

152-3.7 The quantity of rock slope protection 3" diameter rock with fabric to be paid for shall be the number of cubic yards (cubic meters).

152-3.8 The quantity of rock slope protection 6" diameter rock with fabric to be paid for shall be the number of cubic yards (cubic meters).

Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed.

BASIS OF PAYMENT

152-4.1 For ``Embankment in Place" payment shall be made at the contract unit price per square yard (square meter). This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 For "Excavate and Export (Unclassified)" payment shall be made at the contract unit price per cubic yard (cubic meter). This price shall be full compensation for furnishing all material, labor, equipment, tools, and incidentals necessary to complete this item.

152-4.3 For "Subgrade Preparation" payment shall be made at the Contract Unit Price per square yard (square meter). This price shall include excavation, haul, temporary stockpiling, placement

on grade, compaction, labor equipment, tools, and incidentals necessary to complete this item.

152-4.4 For ``Unsuitable excavation" payment shall be made at the contract unit price per cubic yard (cubic meter). This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item. The quantity of work covered by this item may vary from zero to 125% of the estimated quantity provided in the bid schedule based on the material found in the field after the pavement surface is removed. No adjustment to the unit price shall be granted for this variation.

152-4.5 For ``Removal of Storm Drain" payment shall be made at the lump sum price. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.6 For ``Rock Slope Protection" payment shall be made at the contract unit price per cubic yard (cubic meter) based on class. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under

Item P-152-4.1 Embankment in Place - per square yard (square meter)

Item P-152-4.2 Excavate and Export (Unclassified) - per cubic yard (cubic meter)

Item P-152-4.3 Subgrade Preparation - per square yard (square meter)

Item P-152-4.4 Unsuitable Excavation – per cubic yard (cubic meter)

Item P-152-4.5 Remove Storm Drain Facilities – lump sum

Item P-152-4.6 Rock Slope Protection - No. 2 Backing with Fabric – per cubic yard (cubic meter)

Item P-152-4.7 Rock Slope Protection - 3" Diameter Rock with Fabric – per cubic yard (cubic meter)

Item P-152-4.8 Rock Slope Protection - 6" Diameter Rock with Fabric – per cubic yard (cubic meter)

TESTING REQUIREMENTS

ASTM D 698	Test for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-pound (2.49 kg) Rammer and 12-inch (305 mm) Drop
ASTM D 1556	Test for Density of Soil In Place by the Sand-Cone Method

ASTM D 1557	Test for Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D 2167	Test for Density and Unit Weight of Soil In Place by the Rubber Ballon Method.

END OF ITEM P-152

ITEM P-153

CONTROLLED LOW-STRENGTH MATERIAL (CLSM)

DESCRIPTION

153.1.1 This item shall consist of furnishing, transporting, and placing a controlled low-strength material (CLSM) as flowable backfill in trenches or at other locations shown on the plans or as directed by the Engineer.

MATERIALS

153-2.1 MATERIALS

a. **Portland Cement.** Portland cement shall conform to the requirements of ASTM C 150 Type II. If for any reason, cement becomes partially set or contains lumps of caked cement, it shall be rejected. Cement salvaged from discarded or used bags shall not be used.

b. **Fly Ash.** Fly Ash shall conform to ASTM C 618, Class C or F.

c. **Fine Aggregate (Sand).** Fine aggregate shall conform to the requirements of ASTM C 33 except for aggregate gradation. Any aggregate gradation which produces performance characteristics of the CLSM specified herein will be accepted, except as follows.

Sieve Size	Percent Passing by weight
3/4 inch (19.0 mm)	100
No. 200 (0.075 mm)	0 - 12

d. **Water.** Water used in mixing shall be free of oil, salt, acid, alkali, sugar, vegetable matter, or other substances injurious to the finished product.

e. **Dye.** For backfill in electrical utility trenches, when used, a dye shall be added to color the material a color red that is acceptable to the Engineer.

MIX DESIGN

153-3.1 PROPORTIONS.

The contractor shall submit, to the Engineer, a mix design including the proportions and source of materials, admixtures, and dry cubic yard (cubic meter) batch weights. The mix shall contain a minimum of 50 pounds of cement and 250 pounds fly ash per cubic yard (30 kg of cement and 148 kg of fly ash per cubic meter), with the remainder of the volume composed of sand, water, and any approved admixtures.

a. **Compressive Strength.** CLSM shall be designed to achieve a 28-day compressive strength of 100 to 200 psi (690 to 3,680 kPa) when tested in accordance with ASTM **D 4832**. There should be no significant strength gain after 28 days. Test specimens shall be made in accordance with ASTM **D 4832**.

b. **Consistency.** Consistency of the fresh mixture shall be such that the mixture may be placed without segregation. A desired consistency may be approximated by filling an open-ended three-inch (75 mm) diameter cylinder, six inches (150 mm) high to the top, with the mixture and the cylinder immediately pulled straight up. The correct consistency of the mixture will produce an approximate eight-inch (205 mm) diameter circular-type spread without segregation. Adjustments of the proportions of materials should be made to achieve proper solid suspension and flowable characteristics, however the theoretical yield shall be maintained at one cubic yard (cubic meter) for the given batch weights.

CONSTRUCTION METHODS

153-4.1 PLACEMENT.

a. **Placement.** CLSM may be placed by any reasonable means from a mixing unit into the space to be filled. Agitation is required during transportation and waiting time. Placement shall be performed in such a manner that structures or pipes are not displaced from their desired final position and intrusion of CLSM into undesirable areas is avoided. The material shall be brought up uniformly to the fill line shown on the plans or as directed to the Engineer. Each placement of CLSM shall be as continuous an operation as possible. If CLSM is placed in more than one layer, the base layer shall be free of surface water and loose of foreign material prior to placement of the next layer.

b. **Limitations of Placement.** CLSM shall not be placed on frozen ground. Mixing and placing may begin when the air or ground temperature is at least 35 degrees F (2 degrees C) and rising. At the time of placement, CLSM shall have a temperature of at least 40 degrees F (4 degrees C). Mixing and placement shall stop when the air temperature is 40 degrees F (4 degrees C) and falling or when the anticipated air or ground temperature will be 35 degrees F (2 degrees C) or less in the 24 hour period following proposed placement.

153-4.2 CURING AND PROTECTION

a. Curing. The air in contact with the CLSM should be maintained at temperatures above freezing for a minimum of 72 hours. If the CLSM is subjected to temperatures below 32 degrees F (0 degrees C), the material may be rejected by the Engineer if damage to the material is observed.

b. Protection. The CLSM shall not be subject to loads and shall remain undisturbed by construction activities for a period of 48 hours or until a compressive strength of 15 psi (105 kPa) is obtained. The Contractor shall be responsible for providing evidence to the Engineer that the material has reached the desired strength. Acceptable evidence shall be based upon compressive tests made in accordance with paragraph 153-3.1a.

MATERIAL ACCEPTANCE

153-5.1 Acceptance.

Acceptance of CLSM delivered and placed as shown on the plans or as directed by the Engineer shall be based upon mix design approval and batch tickets provided by the Contractor to confirm that the delivered material conforms to the mix design. The Contractor

shall verify by additional testing, each 5,000 cubic yards (3,825 cubic meters) of material used. Verification shall include confirmation of material proportions and tests of compressive strength to confirm that the material meets the original mix design and the requirements of CLSM as defined in this specification. Adjustments shall be made as necessary to the proportions and materials prior to further production.

METHOD OF MEASUREMENT

153-6.1 Measurement.

Controlled Low Strength Material shall be considered incidental to the item of work the trench is constructed for and no separate measurement will be made.

BASIS OF PAYMENT

153-7.1 Payment.

Accepted quantities of Controlled Low Strength Material shall be considered incidental to the backfilled item of work and no separate payment will be made. Payment shall be included in item of work trench backfill is required for and shall include full compensation for all materials, equipment, labor, and incidentals required to complete the work as specified.

TESTING REQUIREMENTS

ASTM D 4832	Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders

MATERIAL REQUIREMENTS

ASTM C 33	Specification for Concrete Aggregates
ASTM C 150	Specification for Portland Cement
ASTM C 618	Specification for Coal Flyash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C 595	Specification for Blended Hydraulic Cements

END OF ITEM P-153

ITEM P-154

SUBBASE COURSE

DESCRIPTION

154-1 This item shall consist of a subbase course composed of granular materials constructed on a prepared subgrade or underlying course in accordance with these specifications, and in conformity with the dimensions and typical cross section shown on the plans.

MATERIALS

154-2 MATERIALS.

The subbase material shall consist of hard durable particles or fragments of granular aggregates. This material will be mixed or blended with fine sand, clay, stone dust, or other similar binding or filler materials produced from approved sources. This mixture must be uniform and shall comply with the requirements of these specifications as to gradation, soil constants, and shall be capable of being compacted into a dense and stable subbase. The material shall be free from vegetable matter, lumps or excessive amounts of clay, and other objectionable or foreign substances. Pit-run material may be used, provided the material meets the requirements specified.

TABLE 1 GRADATION REQUIREMENTS

Sieve designation (square openings) as per ASTM C 136 and ASTM D 422	Percentage by weight passing sieves
3 inch (75.0 mm)	100
No. 10 (2.0 mm)	20-100
No. 40 (0.450 mm)	5-60
No. 200 (0.075 mm)	0-8

The portion of the material passing the No. 40 (0.450 mm) sieve shall have a liquid limit of not more than 25 and a plasticity index of not more than 6 when tested in accordance with ASTM D 4318.

The maximum amount of material finer than 0.02 mm in diameter shall be less than 3%.

CONSTRUCTION METHODS

154-3.1 GENERAL.

The subbase course shall be placed where designated on the plans or as directed by the Engineer. The material shall be shaped and thoroughly compacted within the tolerances specified.

Granular subbases which, due to grain sizes or shapes, are not sufficiently stable to support without movement the construction equipment, shall be mechanically stabilized to the depth

necessary to provide such stability as directed by the Engineer. The mechanical stabilization shall principally include the addition of a fine-grained medium to bind the particles of the subbase material sufficiently to furnish a bearing strength, so that the course will not deform under the traffic of the construction equipment. The addition of the binding medium to the subbase material shall not increase the soil constants of that material above the limits specified.

154-3.2 OPERATION IN PITS.

All work involved in clearing and stripping pits and handling unsuitable material encountered shall be performed by the Contractor at his/her own expense. The subbase material shall be obtained from pits or sources that have been approved. The material in the pits shall be excavated and handled in such manner that a uniform and satisfactory product can be secured.

154-3.3 PREPARING UNDERLYING COURSE.

Before any subbase material is placed, the underlying course shall be prepared and conditioned as specified. The course shall be checked and accepted by the Engineer before placing and spreading operations are started.

To protect the subgrade and to ensure proper drainage, the spreading of the subbase shall begin along the centerline of the pavement on a crowned section or on the high side of pavements with a one-way slope.

154-3.4 MATERIALS ACCEPTANCE IN EXISTING CONDITION.

When the entire subbase material is secured in a uniform and satisfactory condition and contains approximately the required moisture, such approved material may be moved directly to the spreading equipment for placing. The material may be obtained from gravel pits, stockpiles, or may be produced from a crushing and screening plant with the proper blending. The materials from these sources shall meet the requirements for gradation, quality, and consistency. It is the intent of this section of the specifications to secure materials that will not require further mixing. The moisture content of the material shall be approximately that required to obtain maximum density. Any minor deficiency or excess of moisture may be corrected by surface sprinkling or by aeration. In such instances, some mixing or manipulation may be required, immediately preceding the rolling, to obtain the required moisture content. The final operation shall be blading or dragging, if necessary, to obtain a smooth uniform surface true to line and grade.

154-3.5 PLANT MIXING.

WhenWhen materials from several sources are to be blended and mixed, the subbase material shall be processed in a central or travel mixing plant. The subbase material, together with any blended material, shall be thoroughly mixed with the required amount of water. After the mixing is complete, the material shall be transported to and spread on the underlying course without undue loss of the moisture content.

154-3.6 GENERAL METHODS FOR PLACING.

The subbase course shall be constructed in layers. Any layer shall be not less than 3 inches (75 mm) nor more than 8 inches (200 mm) of compacted thickness. The subbase material

shall be deposited and spread evenly to a uniform thickness and width. The material, as spread, shall be of uniform gradation with no pockets of fine or coarse materials. The subbase, unless otherwise permitted by the Engineer, shall not be spread more than 2,000 square yards (1700 square meters) in advance of the rolling. Any necessary sprinkling shall be kept within this limit. No material shall be placed in snow or on a soft, muddy, or frozen course.

When more than one layer is required, the construction procedure described herein shall apply similarly to each layer.

During the placing and spreading, sufficient caution shall be exercised to prevent the incorporation of subgrade, shoulder, or foreign material in the subbase course mixture.

154-3.7 FINISHING AND COMPACTING.

After spreading or mixing, the subbase material shall be thoroughly compacted by rolling and sprinkling, when necessary. Sufficient rollers shall be furnished to adequately handle the rate of placing and spreading of the subbase course.

The field density of the compacted material shall be at least 100 percent of the maximum density of laboratory specimens prepared from samples of the subbase material delivered to the jobsite. The laboratory specimens shall be compacted and tested in accordance with **ASTM D 698**. The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 6938. The moisture content of the material at the start of compaction shall not be below nor more than 2 percentage points above the optimum moisture content.

When nuclear density gages are to be used for density determination, testing shall be in accordance with Section 120 and ASTM 6938.

The course shall not be rolled when the underlying course is soft or yielding or when the rolling causes undulation in the subbase. When the rolling develops irregularities that exceed 1/2 inch (12 mm) when tested with a 16-foot (4.8 m) straightedge, the irregular surface shall be loosened and then refilled with the same kind of material as that used in constructing the course and again rolled as required above.

Along places inaccessible to rollers, the subbase material shall be tamped thoroughly with mechanical or hand tampers.

Sprinkling during rolling, if necessary, shall be in the amount and by equipment approved by the Engineer. Water shall not be added in such a manner or quantity that free water will reach the underlying layer and cause it to become soft.

154-3.8 SURFACE TEST.

After the course is completely compacted, the surface shall be tested for smoothness and accuracy of grade and crown; any portion found to lack the required smoothness or to fail in accuracy of grade or crown shall be scarified, reshaped, recompacted, and otherwise manipulated as the Engineer may direct until the required smoothness and accuracy re obtained. The finished surface shall not vary more than 1/2 inch (12 mm) when tested with a 16-foot (4.8 m) straightedge applied parallel with, and at right angles to, the centerline.

154-3.9 THICKNESS.

The thickness of the completed subbase course shall be determined by depth tests or sample holes taken at intervals so each test shall represent no more than 500 square yards (420 square meters). When the deficiency in thickness is more than 1/2 inch (12 mm), the Contractor shall correct such areas by scarifying, adding satisfactory mixture, rolling, sprinkling, reshaping, and finishing in accordance with these specifications. The Contractor shall replace at his/her expense the subbase material where borings are taken for test purposes.

154-3.10 PROTECTION.

Work Work on subbase course shall not be conducted during freezing temperature nor when the subgrade is wet. When the subbase material contains frozen material or when the underlying course is frozen, the construction shall be stopped.

154-3.11 MAINTENANCE.

Following the final shaping of the material, the subbase shall be maintained throughout its entire length by the use of standard motor graders and rollers until, in the judgment of the Engineer, the subbase meets all requirements and is acceptable for the construction of the next course.

METHOD OF MEASUREMENT

154-4 The yardage of subbase course to be paid for shall be the number of cubic yards (cubic meters) of subbase course material placed, compacted, and accepted in the completed course. The quantity of subbase course material shall be measured in final position based upon depth tests or cores taken as directed by the Engineer, or at the rate of 1 depth test for each 500 square yards (420 square meters) of subbase course, or by means of average end areas on the complete work computed from elevations to the nearest 0.01 foot (3 mm). On individual depth measurements, thicknesses more than 1/2 inch (12 mm) in excess of that shown on the plans shall be considered as the specified thickness plus 1/2 inch (12 mm) in computing the yardage for payment. Subbase materials shall not be included in any other excavation quantities.

BASIS OF PAYMENT

154-5 Payment shall be made at the contract unit price per cubic yard (cubic meter) for subbase course. This price shall be full compensation for furnishing all materials; for all preparation, hauling, and placing of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-154-5.1 Subbase Course—per cubic yard (cubic meter)

TESTING REQUIREMENTS

ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM D 422	Particle Size Analysis of Soils

ASTM D 698	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb (2.49 kg) Rammer and 12 in (305 mm) Drop
ASTM D 1556	Density of Soil in Place by the Sand-Cone Method
ASTM D 1557	Test for Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D 6938	In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods
ASTM D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils

END OF ITEM P-154

ITEM P-156

TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL

DESCRIPTION

156-1 Contractor shall adhere to Section 701 – Water Pollution Control of the City Supplement to the 2012 Standard Specifications for Public Works Construction (the "WhiteBook") and these special provisions. In case of conflict between these requirements, the more stringent requirement shall govern.

156-2 This item shall consist of temporary control measures as shown on the plans or as ordered by the Engineer during the life of a contract to control water pollution, soil erosion, and siltation through the use of berms, dikes, dams, sediment basins, fiber mats, gravel, and other erosion control devices or methods.

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses in accordance with General Permit Order No. 2009-009-DWQ, NPDES No. CAS000002, (the General Permit) issued by the California State Water Resource Control Board (SWRCB). The Contractor shall control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices. Contractor shall utilize Best Management Practices to control storm water pollution as shown in the contract drawings, in conformance with local, state and federal water pollution control regulations, in accordance with the General Permit and as directed by the Engineer and any additional BMPs identified in the Water Pollution Control section of this Item for which there are no separate contract items of work.

Contractor shall be responsible for providing a Qualified SWPPP Practitioner (QSP) on-site in accordance with the General Permit.

The QSP or Contractor shall train all employees and subcontractors regarding:

A. Material pollution prevention and control;

B. Waste management;

C. Non-storm water management;

D. Identifying and handling hazardous substances; and

E. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances.

Training shall take place before starting work on this project. New employees shall receive the complete training before starting work on this project. The QSP or Contractor shall have regular weekly meetings to discuss and reinforce spill prevention and control; material delivery, storage, use, and disposal; waste management; and non-storm water management procedures.

Instructions for material and waste handling, storage, and spill reporting and cleanup shall be posted at all times in an open, conspicuous, and accessible location at the construction site.

Vehicles and equipment at the construction site shall be inspected by the QSP on a frequent, predetermined schedule and by the operator each day of use. Leaks shall be repaired immediately, or the vehicle or equipment shall be removed from the construction site.

The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

MATERIALS

156-2 MATERIALS.

All materials shall meet commercial grade standards and shall be approved by the Engineer before being incorporated into the project. CASQA Stormwater Best Management Practice Handbook Portal: Construction – November 2009 for construction shall be used for reference. Details in the handbook for various temporary erosion control measures shall be implemented with the project.

CONSTRUCTION REQUIREMENTS

156-3.1 GENERAL.

In the event of conflict between these requirements and pollution control laws, rules, or regulations of other Federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The Engineer shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

156-3.2 SCHEDULE.

Prior to the start of construction, the Contractor shall submit schedules for accomplishment of temporary and permanent erosion control work, as are applicable for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads, plant sites, work areas, and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the Engineer.

156-3.3 AUTHORITY OF ENGINEER.

The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, to limit the surface area of erodible earth material exposed by excavation, borrow and fill operations, and to direct the Contractor to provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent

streams or other watercourses, lakes, ponds, or other areas of water impoundment.

156-3.4 CONSTRUCTION DETAILS.

The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the accepted schedule. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion is likely to be a problem, clearing and grubbing operations should be scheduled and performed so that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise, temporary erosion control measures may be required between successive construction stages.

The Engineer will limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, and other such permanent control measures current in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified.

In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or are ordered by the Engineer, such work shall be performed by the Contractor at his/her own expense.
The Engineer may increase or decrease the area of erodible earth material to be exposed at one time as determined by analysis of project conditions.

The erosion control features installed by the Contractor shall be acceptably maintained by the Contractor or QSP during the construction period.

Whenever construction equipment must cross watercourses at frequent intervals, and such crossings will adversely affect the sediment levels, temporary structures should be provided.

Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into or near rivers, streams, and impoundments or into natural or manmade channels leading thereto.

156-3.5 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS

Water pollution control work shall conform to the provisions in this section. Prior to commencing any working on the Airport, the contractor shall prepare and submit to the Engineer for approval a SWPPP in accordance with National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002). The SWPPP needs to be prepared by a Qualified SWPPP Developer (QSD). A QSD shall

have one of the following registrations or certifications, and appropriate experience, as required for:

- A California registered professional civil engineer;
- A California registered professional geologist or engineering geologist;
- A California registered landscape architect;
- A professional hydrologist registered through the American Institute of Hydrology;
- A Certified Professional in Erosion and Sediment Control (CPESC) registered through Enviro Cert International, Inc.; or
- A professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies (NICET);

Effective September 2, 2011, a QSD shall have attended a State Water Board-sponsored or approved QSD training course.

The Contractor shall list the name and telephone number of the QSD in the SWPPP. In addition, the Contractor shall ensure that the SWPP and each amendment will be signed by the QSD. The Contractor shall include a listing of the date of the initial preparation and the date of each amendment to the SWPPP in the SWPPP document.

The Owner/LRP is responsible for designating the QSD and/or the QSP as approved signatories in the SWPPP and providing a copy of the written agreement or other mechanism that provides this authority from the Owner/Legally Responsible Person (LRP) in the SWPPP.

The Contractor may obtain other NPDES permits that apply to activities and mobile operations within or outside of the project limits including hot mix asphalt batch plants, material borrow areas, concrete plants, staging areas, storage yards, or access roads.

The Contractor or QSP shall perform water pollution control work in conformance with the requirements in the General Permit, CASQA Stormwater Best Management Practice Handbook Portal: Construction – November 2009 and its addenda in effect on the day the Notice to Contractors is dated.

The Handbook and other references for performing water pollution control work are available for purchase from the California Stormwater Quality Association web site at:

https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx

The Contractor shall designate in writing a QSP. The Contractor shall submit a statement of qualifications describing the training, work history, and expertise of the proposed QSP. Effective September 2, 2011, a QSP shall be either a QSD or have one of the following certifications:

- A certified erosion, sediment and storm water inspector registered through Enviro Cert International, Inc.; or
- A certified inspector of sediment and erosion control registered through Certified Inspector of Sediment and Erosion Control, Inc.

Effective two years after the adoption date of this General Permit, a QSP shall have attended

a State Water Board-sponsored or approved QSP training course.

Before the start of job site activities, the QSP shall provide training for project managers, supervisory personnel, and employees involved with water pollution control work. The training shall include:

A. Rules and regulations

B. Implementation and maintenance for:

1. Temporary Soil Stabilization
2. Temporary Sediment Control
3. Tracking Control
4. Wind Erosion Control

C. Good Housekeeping Practices

The QSP shall have primary responsibility and significant authority for the implementation and maintenance of approved SWPPP. The QSP will be available at all times throughout the duration of the project. Duties of the QSP include but are not limited to:

- Ensuring full compliance with the SWPPP and the General Permit
- Implementing all elements of the SWPPP, including but not limited to:
  - Implementation of prompt and effective erosion and sediment control measures
  - Implementing all non-storm water management, and materials and waste management activities such as: monitoring discharges (dewatering, diversion devices); general site clean-up; vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than storm water are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems; etc.
- Ensuring elimination of all unauthorized discharges
- The QSP shall be assigned authority by the Owner/ LRP to mobilize crews in order to make immediate repairs to the control measures
- Coordinate with the Contractor to assure all of the necessary corrections/repairs are made immediately, and that the project complies with the SWPPP, the General Permit and approved plans at all times
- Submitting Notices of Discharge and reports of Illicit Connections or Illegal Discharges
- Pre-storm inspections
- Storm event inspections
- Post-storm inspections
- Routine inspections as specified in the project's specifications or described in the SWPPP
- Updates/Amendments to the SWPPP, as needed
- Preparing annual compliance certification for LRP's, or LRP's authorized representative, signature

The Contractor may designate one individual as the QSD to prepare the SWPPP and a different individual as the QSP to implement the plan provided these individuals meet the

qualifications outlined above.

RISK ASSESSMENT

The Contractor or QSD shall calculate the site's sediment risk and receiving water risk during periods of soil exposure and use the calculated risks to determine a Risk Level(s) using the methodology in Appendix 1 of the General Permit. The Contractor shall notify the State Water Board of the site's Risk Level determination and shall include this determination as a part of submitting the Permit Registration Documents (PRDs) through the State Water Boards Storm Water Multi-Application and Report Tracking System (SMARTS). Depending on the Risk Level results, the Contractor or QSD shall prepare and implement the SWPPP appropriate to the Risk Level for the Site. Risk Level 1 Requirements are described in Attachment C of the General Permit. Risk Level 2 Requirements are described in Attachment D of the General Permit and Risk Level 3 Requirements are described in Attachment E of the General Permit

SMARTS

Prior to construction commencing, the Contractor or other approved signatory as designated by the Owner/LRP shall gather and post required documents to SMARTS. This includes posting the Notice of Intent, SWPPP, and other permit registration documents (PRDs). The Owner/LRP is obligated to certify the PRDs through SMARTS with the SWRCB or other jurisdictions to comply with any applicable laws.

This Contractor or other approved signatory shall be responsible for posting the AnnualCertifications and associated inspection reports to SMARTS as required by the General Permit

STORM WATER POLLUTION PREVENTION PLAN

The Contractor shall submit a SWPPP to the Engineer for approval. The SWPPP shall conform to the requirements in the General Permit and these special provisions.

According to the General Permit, the SWPPP shall be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;

2. Where not otherwise required to be under a Regional Water Quality Control Board (RWQCB) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;

3. Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard;

4. Calculations and design details as well as BMP controls for site run-on are complete and correct, and

5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

6. Identify post-construction BMPs, which are those measures to be installed during construction that are intended to reduce or eliminate pollutants after construction is completed (as required by local governing jurisdiction or General Permit Section XIII.B). Note that post-construction BMPs should be developed early in the project planning/design process and reports or drawings related to permanent BMP design should be referenced as needed.

7. Identify and provide methods to implement BMP inspection, visual monitoring, Rain Event Action Plan (REAP) (Risk Level 2 and 3 sites only) and Construction Site Monitoring Program (CSMP) requirements to comply with the General Permit.

The SWPPP will be modified and amended by the Contractor and QSD to reflect any amendments to the Permit or any changes in construction or operations that may affect the discharge of pollutants from the construction site to surface waters, groundwaters, or the municipal separate storm sewer system (MS4). The SWPPP will also be amended by the Contractor or QSD if it is in violation of any condition of the Permit or has not achieved the general objective of reducing pollutants in storm water discharges.

The SWPPP shall include water pollution control practices:

A. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:

   1. Staging areas.

   2. Storage yards.

   3. Access roads.

B. Appropriate for each season as described in "Implementation Requirements" of this Item.

C. For activities or mobile operations related to all NPDES permits.

The Contractor shall develop a Water Pollution Control Schedule that describes the timing of grading or other work activities that could affect water pollution. The Water Pollution Control Schedule shall be updated by the Contractor to reflect changes in the Contractor's operations that would affect the necessary implementation of water pollution control practices.

One hundred percent (100%) of exposed disturbed areas, including all flat areas and slopes, shall have erosion protection BMPs properly installed and maintainedyear round. Unpaved roadways, pathways, trails and traveled ways within contractor's onsite yards are exempt from 100% erosion control protection requirement but shall have BMPs installed such as gravel bag chevrons, where appropriate.

The SWPPP shall include a schedule that:

A. Describes when work activities that could cause water pollution will be performed.

B. Identifies soil stabilization and sediment control practices for disturbed soil area.

C. Includes dates when these practices will be 25, 50, and 100 percent complete.

D. Shows 100 percent completion of these practices.

The SWPPP shall include the following temporary water pollution control practices and their associated contract items of work as shown on the plans, specified in these special provisions.

A. Temporary Soil Stabilization

B. Temporary Sediment Control

C. Tracking Control

D. Wind Erosion Control

E. Non-Storm Water Management

F. Waste Management and Materials Pollution Control

Within 5 working days after the date the Notice to Proceed is issued, the Contractor shall submit 5 copies of the SWPPP to the Engineer.

The Contractor shall not perform work that may cause water pollution until the SWPPP has been approved by the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the SWPPP while minor revisions are being completed. The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements.

If there is a change in construction schedule or activities, the Contractor or QSD shall prepare an amendment to the SWPPP to identify additional or revised water pollution control practices. The Contractor shall submit the amendment to the Engineer for review within a time agreed to by the Engineer not to exceed the number of days specified for the initial submittal of the SWPPP. The Engineer will review the amendment within the same time allotted for the review of the initial submittal of the SWPPP.

If directed by the Engineer or requested in writing by the Contractor and approved by the Engineer, changes to the water pollution control work specified in these special provisions will be allowed. Changes may include addition of new water pollution control practices. The Contractor or QSD shall incorporate these changes in the SWPPP.

The Contractor shall keep a copy of the approved SWPPP and approved amendments at the job site. The SWPPP and approved amendments shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the Engineer.

CONSTRUCTION SITE MONITORING PLAN

The Contractor shall include a CSMP in the SWPPP to monitor the effectiveness of the water pollution control practices. The Contractor shall prepare the CSMP in conformance with the General Permit. The purpose of the CSMP is to address the following objectives:

- To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;
- To determine whether immediate corrective actions, additional BMP implementation, or SWPPP revisions are necessary to reduce pollutants in stormwater discharges and authorized nonstormwater discharges; and
- To determine whether BMPs included in the SWPPP and/or Rain Event Action Plan (REAP) are effective in preventing or reducing pollutants in stormwater discharges and authorized non-stormwater discharges.

The CSMP needs to be developed to meet the specific requirements and objectives identified in the General Permit for the appropriate Risk Level as determined by the calculated sediment risk and receiving water risk for the site described above.
The QSP shall be responsible for collecting water quality samples as outlined in the CSMP.

In the CSMP, the Contractor or QSD shall describe the following water quality sampling procedures:

A. Sampling locations and preparation,

B. Collection,

C. Quality assurance and quality control,

D. Sample labeling,

E. Collection documentation,

F. Sample shipping,

G. Chain of custody,

H. Sample numbering, and

I. Precautions from the construction site health and safety plan.

The QSP shall document sample collection and, inspections before and after qualifying rain events, and inspection for non-stormwater discharges. The General Permit requires dischargers to designate and train personnel to collect, maintain, and ship water quality samples in accordance with the *Surface Water Ambient Monitoring Program (SWAMP) 2008 Quality Assurance Program Plan (QAPrP)*, which is available at:

http://www.swrcb.ca.gov/water_issues/programs/swamp/tools.shtml#qa.

Samples to be analyzed in the field shall be taken by the QSP using collection and analysis methods, and equipment calibration specified by the manufacturer of the sampling

equipment. The Contractor shall identify the State-certified laboratory, sample containers, preservation requirements, holding times, and analysis method in the CSMP. A list of State-certified laboratories that are approved by the State is available at:

http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx.

The Contractor shall contract with the selected Analytical laboratory prior to the construction activities to minimize potential disruptions during the critical sampling period.

Sampling by Risk Level

The Contractor or QSD shall include a sampling and analysis strategy applicable to the site's Risk Level as described above. All risk level categories are required to implement a visual monitoring of storm water and non-storm water protocol per the General Permit; therefore, the non-visible pollutant sampling protocol and inspection requirements are described below.

The Contractor or QSD shall develop an effluent monitoring program for pH and turbidity for all Risk Level 2 and 3 sites in accordance with the General Permit. The General Permit sets Numeric Action Level (NAL) and Numeric Effluent Limitations (NEL) for pH and turbidity. If an exceedance of an NAL occurs, the Contractor shall implement additional BMPs and revise the SWPPP accordingly. The Contractor or QSD shall report all NAL exceedances in SMARTS. NEL exceedances are considered a violation of the General Permit. If an exceedance of an NEL occurs, the Contractor shall implement additional BMPs and revise the SWPPPs accordingly. The Contractor shall notify the State and Regional Water Quality Control Board through SMARTS and provide an NEL Violation Report.

For Risk Level 3 sites larger than 30 acres and with direct discharges to receiving waters, the Contractor or QSD shall develop a bioassessment sampling strategy before and after site completion to determine if significant degradation to the receiving water's biota has occurred.

Non-Visible Pollutants

This project has the potential to discharge non-visible pollutants in storm water from the construction site. The Contractor or QSD shall include in the CSMP a description of the sampling and analysis strategy to be implemented on the project for monitoring non-visible pollutants.

In the CSMP, the Contractor or QSD shall identify potential non-visible pollutants that will be present on the construction site associated with the following:

A. Construction materials and wastes;

B. Existing contamination due to historical site usage; or

C. Application of soil amendments, including soil stabilization products, with the potential to alter pH or contribute toxic pollutants to storm water.

The Contractor or QSD shall show the locations planned for storage and use of the potential non-visible pollutants on the SWPPP Erosion Control Drawings.

The Contractor or QSD shall include in the CSMP the following list of conditions that require

sampling when observed during a storm water inspection:

A. Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions.

B. Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but:

   1. A breach, leakage, malfunction, or spill is observed;
   2. The leak or spill has not been cleaned up before precipitation; and
   3. There is the potential for discharge of non-visible pollutants to surface waters or drainage system.

C. Construction activities; such as application of fertilizer, pesticide, herbicide, methyl methacrylate concrete sealant, or non-pigmented curing compound; have occurred during precipitation or within 24 hours preceding precipitation, and have the potential to discharge pollutants to surface waters or drainage system.

D. Soil amendments, including soil stabilization products, with the potential to alter pH levels or contribute toxic pollutants to storm water runoff have been applied, and have the potential to discharge pollutants to surface waters or drainage system (unless independent test data are available that demonstrate acceptable concentrations of non-visible pollutants in the soil amendment).

E. Storm water runoff from an area contaminated by historical usage of the site has the potential to discharge pollutants to surface waters or drainage system.

The Contractor or QSD shall describe in the CSMP the schedule for collecting a sample downstream from each non-visible pollutant source and an uncontaminated control sample, in the event of a BMP failure, breach, or spill during a qualifying rain event during normal business hours that result in enough discharge for sample collection. If discharge flows to the non-visible pollutant source, a sample shall be collected immediately downstream from where the discharge enters the public right of way. If precipitation occurs again after at least 72 hours of dry weather the QSP shall take new samples. A qualifying rain event is defined as 50%or greater probability of precipitation (PoP). These forecasts can be obtained at http://www.srh.noaa.gov/.

In the CSMP, the Contractor or QSD shall identify sampling locations for collecting downstream and control samples, and the reason for their selection. The control sampling location shall be selected so the sample does not come into contact with materials, wastes or areas associated with potential non-visible pollutants or disturbed soil areas. The Contractor or QSD shall show non-visible pollutant sampling locations on the SWPPP Erosion Control Drawings.

The Contractor shall identify in the CSMP the analytical method to be used for downstream and control samples for potential non-visible pollutants on the project.

Analytical Results and Evaluation

The Contractor or QSP shall submit a hard copy and electronic copy of water quality analytical results, and quality assurance and quality control data to the Engineer within 5 days

of sampling for field analyses, and within 30 days for laboratory analyses. The Contractor or QSP shall also provide an evaluation of whether the downstream samples show levels of the tested parameter higher than in the control sample. If downstream samples show increased levels, the Contractor or QSP will assess the water pollution control measures, site conditions, and surrounding influences to determine the probable cause for the increase. As determined by the assessment, the Contractor or QSP will repair or modify water pollution control measures to address increases and amend the SWPPP as necessary. Electronic results (in one of the following file formats: .xls, .txt, or .csv,) shall have the following information:

A. Sample identification number.

B. Contract number.

C. Constituent.

D. Reported value.

E. Analytical method.

F. Method detection limit.

G. Reported limit.

The Contractor or QSP shall maintain the water quality sampling documentation and analytical results with the SWPPP on the project site. If construction activities or knowledge of site conditions change such that discharges or sampling locations change, the Contractor shall amend the CSMP in conformance with the General Permit.

IMPLEMENTATION REQUIREMENTS

The Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work.

If the Contractor or QSP or the Engineer identifies a deficiency in the implementation of the approved SWPPP, the deficiency shall be corrected immediately, unless an agreed date for correction is approved in writing by the Engineer. The deficiency shall be corrected before the onset of a qualifying rain event. If the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the Engineer may correct the deficiency and deduct the cost of correcting deficiencies from payments.

If the Contractor fails to conform to the provisions of this section, "Water Pollution Control," the Engineer may order the suspension of work until the project complies with the requirements of this section.

INSPECTION AND MAINTENANCE

The QSP shall inspect the water pollution control practices identified in the SWPPP as follows:

A. Within two days prior to a qualifying rain event,

B. Within two days following a qualifying rain event,

C. At 24-hour intervals during extended precipitation,

D. On a predetermined schedule, a minimum of once a week.

The QSP shall oversee the maintenance of the water pollution control practices.

The QSP shall use the Risk Level 1, 2, 3 Visual Inspection Field Log Sheet included in the CASQA Stormwater Best Management Practice Handbook Portal: Construction – November 2009 or an alternative inspection checklist provided by the Engineer. A copy of the completed site inspection checklist shall be submitted to the Engineer within 24 hours of finishing the inspection.

REPORTING REQUIREMENTS

If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 4 calendar days of the discharge, notice or order. The report shall include the following information:

A. The date, time, location, and nature of the operation, type of discharge and quantity, and the cause of the notice or order.

B. The water pollution control practices used before the discharge, or before receiving the notice or order.

C. The date of placement and type of additional or altered water pollution control practices placed after the discharge, or after receiving the notice or order.

D. A maintenance schedule for affected water pollution control practices.

The Contractor shall notify the Engineer at least 3 days in advance of first-time non-storm water discharge events, excluding exempted discharges. The Contractor shall notify the Engineer of the operations causing non-storm water discharges and shall obtain field approval for first-time non-storm water discharges. Non-storm water discharges shall be monitored at first-time occurrences and routinely thereafter.

This Contractor or other approved signatory shall be responsible for posting the Annual Certifications and associated inspection reports and sampling results (including any NAL or NEL exceedances) to SMARTS as required by the General Permit.

The Contractor shall retain records of all stormwater monitoring information and copies of all reports (including Annual Reports) for a period of at least three years from date of submittal or longer if required by the RWQCB. Records are to be kept on-site while construction is ongoing.

156-3.6 CONSTRUCTION BMPS

SEDIMENT CONTROL

Sediment runoff including soil runoff, pavement grindings or other fines capable of migrating away from the site during storm water runoff shall be controlled by the use of inlet protection at all storm drain inlets adjacent to the work in accordance with the contract drawings and these special provisions. Inlet protection shall consist of gravel bags as indicated in the project details.

SPILL PREVENTION AND CONTROL

The Contractor shall implement spill and leak prevention procedures when chemicals or hazardous substances are stored. Spills of petroleum products; substances listed under CFR Title 40, Parts 110, 117, and 302; and sanitary and septic waste shall be contained and cleaned up as soon as is safe.

Minor spills involve small quantities of oil, gasoline, paint, or other material that can be controlled by the first responder upon discovery of the spill. Cleanup of minor spills includes:

A. Containing the spread of the spill,

B. Recovering the spilled material using absorption,

C. Cleaning the contaminated area, and

D. Disposing of contaminated material promptly and properly.

Semi-significant spills are those that can be controlled by the first responder with the help of other personnel. Cleanup of semi-significant spills shall be immediate. Cleanup of semi-significant spills includes:

A. Containing the spread of the spill;

B. Recovering the spilled material using absorption if the spill occurs on paved or an impermeable surface;

C. Containing the spill with an earthen dike and digging up contaminated soil for disposal if the spill occurs on dirt;

D. Covering the spill with plastic or other material to prevent contaminating runoff if the spill occurs during precipitation; and

E. Disposing of contaminated material promptly and properly.

Significant or hazardous spills are those that cannot be controlled by construction personnel. Notifications of these spills shall be immediate. The following steps shall be taken:

A. Construction personnel shall not attempt to clean up the spill until qualified staff has arrived;

B. Notify the Engineer and follow up with a written report;

C. Obtain the services of a spills contractor or hazardous material team immediately;

D. Notify the local emergency response team by dialing 911 and city officials at the emergency phone numbers kept on the construction site;

E. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550;

F. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities in conformance with CFR Title 40, Parts 110, 119, and 302;

G. Notify other agencies as appropriate, including:

1. Fire Department,
2. Public Works Department,
3. Coast Guard,
4. Highway Patrol,
5. City Police or County Sheriff Department,
6. Department of Toxic Substances,
7. California Division of Oil and Gas,
8. Cal OSHA, or
9. Regional Water Resources Control Board.

The QSP shall oversee and enforce proper spill prevention and control measures. Minor, semi-significant, and significant spills shall be reported to the QSP who shall notify the Engineer immediately.

The Contractor or QSP shall prevent spills from entering storm water runoff before and during cleanup. Spills shall not be buried or washed with water.

The Contractor or QSP shall keep material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored. Plastic shall be placed under paving equipment when not in use to catch drips.

MATERIAL MANAGEMENT

Material shall be delivered, used, and stored for this contract in a manner that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses.

The Contractor shall implement the practices described in this section when taking delivery of, using, or storing the following materials:

A. Hazardous chemicals including:

1. Acids,
2. Lime,
3. Glues,

4. Adhesives,
5. Paints,
6. Solvents, and
7. Curing compounds;

B. Soil stabilizers and binders;

C. Fertilizers;

D. Detergents;

E. Plaster;

F. Petroleum products including:

1. Fuel,
2. Oil, and
3. Grease;

G. Asphalt components and concrete components; and

H. Pesticides and herbicides.

The Contractor shall supply the Material Safety Data Sheet to the Engineer for material used or stored. The Contractor shall keep an accurate inventory of material delivered and stored at the construction site.

Employees trained in emergency spill cleanup procedures shall be present when hazardous materials or chemicals are unloaded.

The Contractor shall use recycled or less hazardous products when practical.

Material Storage

The Contractor shall store liquids, petroleum products, and substances listed in CFR Title 40, Parts 110, 117, and 302 in containers or drums approved by the United States Environmental Protection Agency, and place them in secondary containment facilities.

Secondary containment facilities shall be impervious to the materials stored there for a minimum contact time of 72 hours.

Secondary containment facilities shall be covered during non-working days and when precipitation is predicted. Secondary containment facilities shall be adequately ventilated.

The Contractor or QSP shall keep the secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, accumulated liquid shall be collected and placed into drums within 24 hours. These liquids shall be handled as

hazardous waste in accordance with the provisions in "Hazardous Waste" of these special provisions, unless testing determines them to be nonhazardous.

Incompatible materials, such as chlorine and ammonia, shall not be stored in the same secondary containment facility.

Materials shall be stored in the original containers with the original product labels maintained in legible condition. Damaged or illegible labels shall be replaced immediately.

The secondary containment facility shall have the capacity to contain precipitation from a 24-hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or all of the volume of the largest container within the facility, whichever is greater.

The Contractor shall store bagged or boxed material on pallets. Bagged or boxed material shall be protected from wind and rain during non-working days and when precipitation is predicted.

The Contractor shall provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas shall be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.

The Contractor or QSP shall repair or replace perimeter controls, containment structures, covers, and liners as needed. Storage areas shall be inspected before and after precipitation, and at least weekly during other times.

Stockpile Management

The Contractor shall reduce or eliminate potential air and water pollution from stockpiled material including soil, paving material, or pressure treated wood. Stockpiles shall be located out of floodplains when possible, and at least 50 feet from concentrated flows of storm water, drainage courses, or inlets unless written approval is obtained from the Engineer.

The Contractor may discontinue adding or removing material for up to 21 calendar days before the stockpile is considered inactive.

The Contractor or QSP shall protect active stockpiles with plastic or geotextile cover, soil stabilization measures, or with linear sediment barrier when precipitation is predicted. Active stockpiles of cold mix asphalt concrete shall be placed on an impervious surface and covered with plastic when precipitation is predicted.

The Contractor or QSP shall protect inactive soil stockpiles with a plastic or geotextile cover, or with soil stabilization measures at all times. A linear sediment barrier around the perimeter of the stockpile shall also be used. The Contractor shall control wind erosion during dry weather as provided in Section 10, "Dust Control," of the Caltrans Standard Specifications.

Stockpiles of portland cement concrete rubble, asphalt concrete (AC), hot mix asphalt (HMA), AC and HMA rubble, aggregate base, or aggregate subbase shall be covered with plastic or geotextile, or protected with a linear sediment barrier when precipitation is predicted.

Stockpiles of cold mix asphalt concrete shall be placed on and covered with impermeable material at all times when precipitation is predicted.

Stockpiles of pressure treated wood shall be covered with impermeable material and placed on pallets at when precipitation is predicted.

The Contractor or QSP shall repair or replace linear sediment barriers and covers as needed or as directed by the Engineer to keep them functioning properly. Sediment shall be removed when it accumulates to 1/3 of the linear sediment barrier height.

WASTE MANAGEMENT

Solid Waste

The Contractor or QSP shall not allow litter or debris to accumulate anywhere on the construction site, including storm drain grates, trash racks, and ditch lines. The Contractor or QSP shall pick up and remove trash and debris from the construction site at least once a week. The QSP shall monitor solid waste storage and disposal procedures on the construction site. The Contractor shall provide enough dumpsters of sufficient size to contain the solid waste generated by the project. Dumpsters shall be emptied when refuse reaches the fill line. Dumpsters shall be watertight. The Contractor shall not wash out dumpsters on the construction site. The Contractor shall provide additional containers and more frequent pickup during the demolition phase of construction

Solid waste includes:

A. Brick,

B. Mortar,

C. Timber,

D. Metal scraps,

E. Sawdust,

F. Pipe,

G. Electrical cuttings,

H. Non-hazardous equipment parts,

I. Styrofoam and other packaging materials,

J. Vegetative material and plant containers from highway planting, and

K. Litter and smoking material, including litter generated randomly by the public.

Trash receptacles shall be provided and used in the Contractor's yard, field trailers, and locations where workers gather for lunch and breaks. FOD prevention within the AOA

requires the contractor to continuously police the area for potential FOD from the construction activity. This FOD check shall be performed prior to the end of each shift and continuously throughout the shift.

Hazardous Waste

The Contractor shall implement hazardous waste management practices when waste is generated on the construction site from the following substances:

A. Petroleum products,

B. Asphalt products,

C. Concrete curing compound,

D. Pesticides,

E. Acids,

F. Paints,

G. Stains,

H. Solvents,

I. Wood preservatives,

J. Roofing tar, and

K. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302.

Nothing in this Item shall relieve the Contractor of the responsibility for compliance with Federal, State, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.

Hazardous material existing on the construction site before mobilization shall be handled and disposed of in accordance with these special provisions.

The QSP shall oversee and enforce hazardous waste management practices. Production of hazardous materials and hazardous waste on the construction site shall be kept to a minimum. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced when damaged.

The Contractor shall have a laboratory certified by the State's Department of Health Services (DHS) sample and test waste when hazardous material levels are unknown to determine safe methods for storage and disposal.

The Contractor shall segregate potentially hazardous waste from nonhazardous waste at the construction site. Hazardous waste shall be handled, stored, and disposed of as required in

California Code of Regulations, Title 22, Division 4.5, Section 66262.34; and in CFR Title 49, Parts 261, 262, and 263.

The Contractor shall store hazardous waste in sealed containers constructed and labeled with the contents and date accumulated as required in California Code of Regulations, Title 22, Division 4.5; and in CFR Title 49, Parts 172, 173, 178, and 179. Hazardous waste containers shall be kept in temporary containment facilities conforming to the provisions in "Material Storage" of these special provisions.

There shall be adequate storage volume and containers shall be conveniently located for hazardous waste collection. Containers of hazardous waste shall not be overfilled and hazardous wastes shall not be mixed. Containers of dry waste that are not watertight shall be stored on pallets. The Contractor shall not allow potentially hazardous waste to accumulate on the ground. Hazardous waste shall be stored away from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall clean water based or oil based paint from brushes or equipment within a contained area and shall not contaminate soil, watercourses, or storm drain systems. Paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste.

The Contractor shall dispose of hazardous waste within 90 days of being generated. Hazardous waste shall be disposed of by a licensed hazardous waste transporter using uniform hazardous waste manifest forms and taken to a Class I Disposal Site. A copy of the manifest shall be provided to the Engineer

Contaminated Soil

The Contractor or QSP shall identify contaminated soil from spills or leaks by noticing discoloration, odors, or differences in soil properties. Soil with evidence of contamination shall be sampled and tested by a laboratory certified by DHS. If levels of contamination are found to be hazardous, the soil shall be handled and disposed of as hazardous waste.

Contaminated soil existing on the construction site before mobilization shall be handled and disposed of in accordance with these special provisions.

The Contractor shall prevent the flow of water, including ground water, from mixing with contaminated soil by using one or a combination of the following measures:

A. Berms,

B. Cofferdams,

C. Grout curtains,

D. Freeze walls, or

E. Concrete seal course.

If water mixes with contaminated soil and becomes contaminated, the water shall be sampled

and tested by a laboratory certified by the DHS. If levels of contamination are found to be hazardous, the water shall be handled and disposed of as hazardous waste.

Concrete Waste

The Contractor shall implement practices to prevent the discharge of portland cement concrete, AC, or HMA waste into storm drain systems or watercourses. Portland cement concrete, AC, or HMA waste shall be collected at the following locations and disposed of:

A. Where concrete material, including grout, is used;

B. Where concrete dust and debris result from demolition;

C. Where sawcutting, coring, grinding, grooving, or hydro-concrete demolition of portland cement concrete, AC, or HMA creates a residue or slurry; or

D. Where concrete trucks or other concrete-coated equipment is cleaned at the construction site.

Sanitary and Septic Waste

Wastewater from sanitary or septic systems shall not be discharged or buried within the Airport property. The QSP shall inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Sanitary facilities that discharge to the sanitary sewer system shall be properly connected and free from leaks.

The Contractor shall obtain written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, and provide a copy to the Engineer. The Contractor shall comply with local health agency requirements when using an on-site disposal system.

Liquid Waste

The Contractor shall not allow construction site liquid waste, including the following, to enter storm drain systems or watercourses:

A. Drilling slurries or fluids,

B. Grease-free or oil-free wastewater or rinse water,

C. Dredgings,

D. Liquid waste running off a surface including wash or rinse water, or

E. Other non-storm water liquids not covered by separate permits.

The Contractor shall hold liquid waste in structurally sound, leak proof containers such as:

A. Sediment traps,

B. Roll-off bins, or

C. Portable tanks.

Liquid waste containers shall be of sufficient quantity and volume to prevent spills and leaks. The containers shall be stored at least 50 feet from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall remove and dispose of deposited solids from sediment traps as provided in "Solid Waste" of this Item, unless determined infeasible by the Engineer.

Liquid waste may require testing to determine hazardous material content before disposal.

Drilling fluids and residue shall be disposed of outside the highway right of way. If the Engineer determines that an appropriate location is available, fluids and residue exempt under California Code of Regulations, Title 23, Section 2511(g) may be dried by infiltration and evaporation in a leak proof container. The remaining solid waste may be disposed of as provided in "Solid Waste" of this Item.

NON-STORM WATER MANAGEMENT

Water Control and Conservation

The Contractor shall prevent erosion or the discharge of pollutants into storm drain systems or watercourses by managing the water used for construction operations. The Contractor shall obtain the Engineer's approval before washing anything on the construction site with water that could discharge into a storm drain system or watercourse. Discharges shall be reported to the Engineer immediately.

The Contractor shall implement water conservation practices when water is used on the construction site. Irrigation areas shall be inspected and watering schedules shall be adjusted to prevent erosion, excess watering, or runoff. The Contractor shall shut off the water source to broken lines, sprinklers, or valves, and they shall be repaired as soon as possible. When possible, water from waterline flushing shall be reused for landscape irrigation. Paved areas shall be swept and vacuumed, not washed with water.

Construction water runoff, including water from water line repair, shall be directed to areas to infiltrate into the ground and shall not be allowed to enter storm drain systems or watercourses. Spilled water shall not be allowed to escape water truck filling areas. When possible, the Contractor shall direct water from off-site sources around the construction site, or shall minimize contact with the construction site.

Illegal Connection and Discharge Detection and Reporting

The Contractor or QSP shall inspect the construction site and the site perimeter before beginning work for evidence of illegal connections, discharges, or dumping. Subsequently, the construction site and perimeter shall be inspected on a frequent, predetermined schedule.

The Contractor or QSP shall immediately notify the Engineer when illegal connections, discharges, or dumping are discovered. The Contractor shall take no further action unless

directed by the Engineer. Unlabeled or unidentifiable material shall be assumed to be hazardous.

The Contractor or QSP shall look for the following evidence of illegal connections, discharges, or dumping:

A. Debris or trash piles,

B. Staining or discoloration on pavement or soils,

C. Pungent odors coming from drainage systems,

D. Discoloration or oily sheen on water,

E. Stains or residue in ditches, channels or drain boxes,

F. Abnormal water flow during dry weather,

G. Excessive sediment deposits,

H. Nonstandard drainage junction structures, or

I. Broken concrete or other disturbances near junction structures.

Vehicle and Equipment Cleaning

The Contractor shall limit vehicle and equipment cleaning or washing on the construction site to that necessary to control vehicle tracking or hazardous waste. Vehicles and equipment shall not be cleaned on the construction site with soap, solvents, or steam until the Engineer has been notified. The resulting waste shall be contained and recycled, or disposed of as provided in "Liquid Waste" or "Hazardous Waste" of this item, whichever is applicable. The Contractor shall not use diesel to clean vehicles or equipment, and shall minimize the use of solvents.

The Contractor shall clean or wash vehicles and equipment in a structure equipped with disposal facilities. If using a structure is not possible, vehicles and equipment shall be cleaned or washed in an outside area with the following characteristics:

A. Located at least 50 feet from storm drainage systems or watercourses,

B. Paved with AC, HMA, or portland cement concrete,

C. Surrounded by a containment berm, and

D. Equipped with a sump to collect and dispose of wash water.

When washing vehicles or equipment with water, the Contractor shall use as little water as possible. Hoses shall be equipped with a positive shutoff valve.

Wash racks shall discharge to a recycle system or to another system approved by the Engineer. Sumps shall be inspected regularly, and liquids and sediments shall be removed as needed.

Vehicle and Equipment Fueling and Maintenance

The Contractor shall fuel or perform maintenance on vehicles and equipment off the construction site whenever practical. When fueling or maintenance must be done at the construction site, the Contractor shall designate a site, or sites, and obtain approval from the Engineer before using. The fueling or maintenance site shall be protected from storm water, shall be on level ground, and shall be located at least 50 feet from drainage inlets or watercourses. The QSP shall inspect the fueling or maintenance site regularly. Mobile fueling or maintenance shall be kept to a minimum.

The Contractor shall use containment berms or dikes around the fueling and maintenance area. Adequate amounts of absorbent spill cleanup material and spill kits shall be kept in the fueling and maintenance area and on fueling trucks. Spill cleanup material and kits shall be disposed of immediately after use. Drip pans or absorbent pads shall be used during fueling or maintenance unless performed over an impermeable surface.

Fueling or maintenance operations shall not be left unattended. Fueling nozzles shall be equipped with an automatic shutoff control. Vapor recovery fueling nozzles shall be used where required by the Air Quality Management District. Nozzles shall be secured upright when not in use. Fuel tanks shall not be topped-off.

The Contractor shall recycle or properly dispose of used batteries and tires.

Material and Equipment Used Over Water

Drip pans and absorbent pads shall be placed under vehicles or equipment used over water, and an adequate supply of spill cleanup material shall be kept with the vehicle or equipment. Drip pans or plastic sheeting shall be placed under vehicles or equipment on docks, barges, or other surfaces over water when the vehicle or equipment will be idle for more than one hour.

The Contractor shall provide watertight curbs or toe boards on barges, platforms, docks, or other surfaces over water to contain material, debris, and tools. Material shall be secured to prevent spills or discharge into water due to wind.

Structure Removal Over or Adjacent to Water

The Contractor shall not allow demolished material to enter storm water systems or watercourses. The Contractor shall use covers and platforms approved by the Engineer to collect debris. Attachments shall be used on equipment to catch debris on small demolition operations. Debris catching devices shall be emptied regularly and debris shall be handled as provided in "Waste Management" of this Item.

The QSP shall inspect demolition sites within 50 feet of storm water systems or watercourses every day.

Paving, Sealing, Sawcutting, and Grinding Operations

The Contractor shall prevent the following material from entering storm drain systems or water courses:

A. Cementitious material,

B. Asphaltic material,

C. Aggregate or screenings,

D. Grinding or sawcutting residue,

E. Pavement chunks, or

F. Shoulder backing.

The Contractor shall cover drainage inlets and use linear sediment barriers to protect downhill watercourses until paving, surface preparation, sealing, sawcutting, or grinding operations are completed and excess material has been removed. Drainage inlets shall be covered during the application of seal coat, tack coat, slurry seal, or fog seal.

When a qualifying rain event is predicted, paving, sawcutting, and grinding operations shall be limited to places where runoff can be captured. Seal coat, tack coat, slurry seal, or fog seal operations shall not begin if precipitation is predicted for the application or the curing period. The Contractor shall not excavate material from existing roadways during precipitation.

The Contractor shall vacuum up slurry from sawcutting operations immediately after the slurry is produced. Slurry shall not be allowed to run onto lanes open to public traffic or off the pavement.
The Contractor shall collect residue from portland cement concrete grinding operations with a vacuum attachment on the grinding machine. The residue shall not be left on the pavement or allowed to flow across the pavement.

Material excavated from existing roadways may be stockpiled as provided in "Stockpile Management" of these special provisions if approved by the Engineer. Asphalt Concrete or Hot Mix Asphalt chunks used in embankment shall be placed above the water table and covered by at least one foot of material.

Substances used to coat asphalt trucks and equipment shall not contain soap, foaming agents, or toxic chemicals.

Concrete Curing

The Contractor shall not overspray chemical curing compound. Drift shall be minimized by spraying as close to the concrete as possible. Drainage inlets shall be covered before applying curing compound.

The Contractor shall minimize the use and discharge of water by using wet blankets or similar methods to maintain moisture when curing concrete.

Concrete Finishing

The Contractor shall collect and dispose of water and solid waste from high-pressure water blasting. Drainage inlets within 50 feet shall be covered before sandblasting. The nozzle shall be kept as close to the surface of the concrete as possible to minimize drift of dust and blast material. Blast residue may contain hazardous material.

Containment structures for concrete finishing operations shall be inspected for damage before each day of use and before predicted precipitation. Liquid and solid waste shall be removed from the containment structure after each work shift.

DEWATERING

Dewatering shall consist of discharging accumulated storm water, ground water, or surface water from excavations or temporary containment facilities. The Contractor shall discharge water within the limits of the project.

Dewatering discharge shall not cause erosion, scour, or sedimentary deposits that impact natural bedding materials.

The Contractor shall conduct dewatering activities in accordance with the Field Guide for Construction Dewatering available at:

http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm

Before dewatering, the Contractor shall submit a Dewatering and Discharge Plan to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Caltrans Standard Specifications and "Water Pollution Control," of this Item. At a minimum, the Dewatering and Discharge Plan shall include the following:

A. A title sheet and table of contents;

B. A description of the dewatering and discharge operations detailing the locations, quantity of water, equipment, and discharge point;

C. The estimated schedule for dewatering and discharge (begin and end dates, intermittent or continuous);

D. Discharge alternatives such as dust control or percolation; and

E. Visual monitoring procedures with inspection log.

The Contractor shall not discharge storm water or non-storm water that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface and shall notify the Engineer immediately upon discovery.

If water cannot be discharged within the project limits due to site constraints it shall be disposed of in the same manner specified for material in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Caltrans Standard Specifications.

METHOD OF MEASUREMENT

156-4.1 Temporary erosion and pollution (temporary water pollution, soil erosion, and siltation control work) control work required which is not attributed to the Contractor's negligence, carelessness, or failure to install permanent controls will be performed as scheduled, as shown on the drawings, or ordered by the Engineer. Completed and accepted work will be measured as follows:

a. Temporary air and water pollution, soil erosion and siltation control, SWPPP Preparation and implementation, fiber rolls, silt fence, gravel bags, concrete washouts, stabilized construction entrances, inlet protection and other BMPs shall be measured as a lump sum. A detailed list of each item installed and maintained shall be prepared and provided by the contractor if requested.

156-4.2 Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor with costs included in the contract prices bid for the items to which they apply.

BASIS OF PAYMENT

156-5 The contract lump sum price paid for temporary erosion control shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in SWPPP preparation and implementation, spill prevention and control, material management, waste management, non-storm water management, dewatering, identifying, sampling, testing, handling, and disposing of hazardous waste, as specified in the Caltrans Standard Specifications, this Item, and CASQA Stormwater Best Management Practice Handbook Portal: Construction – November 2009 and any additional BMPs identified in the Water Pollution Control portion of this Item for which there are no separate contract items of work, and as directed by the Engineer. Development and Implementation for the entire project (all bid alternatives) is included within the Base Bid and no separate payment shall be made for additional bid alternatives awarded.

Accepted quantities of temporary erosion control ordered by the Engineer and measured as provided in paragraph 156-4.1 will be paid for under:

Item P-156-5.1 Water Pollution Control Program Development – lump sum
Item P-156-5.2 Water Pollution Control Program Implementation– lump sum

Temporary control features not covered by contract items that are ordered by the Engineer will be paid for in accordance with Section 701-13.8.4.

END OF ITEM P-156

PART III - FLEXIBLE BASE COURSES

ITEM P-208

MISCELLANEOUS BASE

DESCRIPTION

208-1 This item shall consist of a base course composed of crushed coarse aggregate bonded with either soil or fine aggregate or both or processed miscellaneous base produced from pulverized asphalt pavement.. It shall be constructed on a prepared underlying course in accordance with these specifications and shall conform to the dimensions and typical cross section shown on the plans.

MATERIALS

208-2.1 CRUSHED COARSE AGGREGATE.

The aggregates shall consist of both fine and coarse fragments of crushed stone, crushed slag, or crushed gravel mixed or blended with sand, screenings, or other similar approved materials. The crushed stone shall consist of hard, durable particles or fragments of stone and shall be free from excess flat, elongated, soft or disintegrated pieces, dirt, or other objectionable matter.

The crushed slag shall be air-cooled, blast furnace slag and shall consist of angular fragments reasonably uniform in density and quality and shall be reasonably free from thin, elongated, or soft pieces, dirt, and other objectionable matter. It shall weigh not less than 70 pounds per cubic foot (1.12 Mg/cubic meter) as determined by ASTM C 29.

The crushed gravel shall consist of hard, durable stones, rock, and boulders crushed to specified size and shall be free from excess flat, elongated, soft or disintegrated pieces, dirt, or other objectionable matter. The method used in production of crushed gravel shall be such that the fractured particles occurring in the finished product shall be as nearly constant and uniform as practicable and shall result in a minimum of 60% of the material retained on the No. 4 sieve having at least 2 fractured faces and 75% having at least 1 fractured face.

If necessary to meet this requirement or to eliminate an excess of fine, uncrushed particles, the gravel shall be screened before crushing. All stones, rocks, and boulders of inferior quality in the pit shall be wasted.

The crushed coarse aggregate shall have a percent of wear not more than 50 at 500 revolutions as determined by ASTM C 131.

All material passing the No. 4 mesh (4.75 mm) sieve produced in the crushing operation of either stone, slag, or gravel shall be incorporated in the base material to the extent permitted by the gradation. requirements.

208-2.2 GRADATION.

The gradation of the uncrushed or crushed material shall meet the requirements of one of the gradations given in Table 1 when tested in accordance with ASTM C 117, ASTM C 136, and

ASTM D 422. Testing for verification of the gradation shall be done by the Quality Control team on a daily basis (one work shift).

TABLE 1. REQUIREMENTS FOR GRADATION OF AGGREGATE

Sieve Designation	Percentage by weight passing sieves	
	1 1/2" maximum	1"maximum
2 inch (50.0 mm)	--	--
1-1/2 inch (37.0 mm)	100	--
1 inch (25.0 mm)	70-100	100
3/4 inch (13.0 mm)	55-85	70-100
No. 4 (4.75 mm)	30-60	35-65
No. 40 (0.45 mm)	10-30	10-25
No. 200 (0.075 mm)	5-15	5-15

The gradations in the table represent the limits that shall determine suitability of aggregate for use from the sources of supply. The final gradations decided on within the limits designated in the table shall be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieves, or vice versa.

The amount of the fraction of material passing the No. 200 mesh (0.075 mm) sieve shall not exceed one-half the fraction passing the No. 40 mesh (0.45 mm) sieve. The aggregate blend shall not contain more than 3% material finer than 0.02 mm unless all materials are produced from crushed stone.

The portion of the filler and binder, including any blended material, passing the No. 40 mesh (0.45 mm) sieve have a liquid limit not more than 25 and a plasticity index not more than 6 when tested in accordance with ASTM D 4318.

The selection of any of the gradations shown in the table shall be such that the maximum size aggregate used in any course shall be not more than two-thirds the thickness of the layer of the course being constructed

208-2.3 PROCESSED MISCELLANEOUS BASE.

Processed miscellaneous base shall consist of broken or crushed (pulverized) asphalt concrete obtained from the removal of the bituminous pavement on airport removed by this project. The material retained on the No. 4 (4.75 mm) Sieve shall contain no more than 75 percent gravel particles defined as gravel composed entirely of particles that have no more than one fractured face. The material shall be free of any detrimental quantity of deleterious material as defined as soft, friable, thin, elongated, or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance.

Grading of processed miscellaneous base shall be uniformly graded and shall conform to the gradation outline in Table 2 Gradation for Processed Miscellaneous Base.

Table 2 Gradation for Processed Miscellaneous Base

Table 2

Sieve Designation	Percentage by weight passing sieves
2 inch (50.0 mm)	100
1-1/2 inch (37.0 mm)	100
1 inch (25.0 mm)	100
3/4 inch (13.0 mm)	85-100
3/8 inch (9.5 mm)	55-80
No. 4 (4.75 mm)	35-60
No. 30 (0.60 mm)	10-30
No. 200 (0.075 mm)	2-9
ASTM C 131 Grading	B

If, after testing, the pulverized material does not conform to the gradation specified in Table 2, a maximum of 35 percent rock product conforming to Standard Specifications for Public Works Construction, 2012 Edition, The Greenbook Section 200-1 may be blended into the pulverized material to correct the gradation. The Contractor shall determine the amount of rock material to be blended. The rock products shall be uniformly spread and blended over the area requiring correction of gradation.
When there is a difference in specific gravity (bulk saturated surface dry conforming to ASTM C 127) of 0.2 or more between that portion retained and that portion passing the number 4 sieve, a modified grading will be required. The grading will be modified in accordance with California Test 105.

Quality requirements for this material shall conform to the requirements of Table 3:

Table 3

Test	Test Method No.	Requirement
R-value1	California 301	78 minimum
Sand Equivalent	California 217	35 minimum
Percentage Wear		
100 revolutions		15 maximum
500 revolutions		52 maximum

1. The R-value requirement may be waived provided the material has an SE of 40 or more.

The Engineer may waive the percentage wear requirements provided the material has a minimum durability of 35 in accordance with California Test 229.

208-2.4 FILLER FOR BLENDING.

If filler, in addition to that naturally present in the base course material, is necessary for satisfactory bonding of the material, for changing the soil constants of the material passing the No. 40 mesh (0.45 mm) sieve, or for correcting the gradation to the limitations of the specified gradation, it shall be uniformly blended with the base course material at the crushing plant or at the mixing plant. The material for such purpose shall be obtained from sources approved by the Engineer and shall be of a gradation necessary to accomplish the specified gradation in the finally processed material.

The additional filler may be composed of sand, but the amount of sand shall not exceed 20% by weight of the total combined base aggregate. All the sand shall pass a No. 4 mesh (4.75 mm) sieve and not more than 5% by weight shall pass a No. 200 mesh (0.075 mm) sieve.

CONSTRUCTION METHODS

208-3.1 OPERATIONS IN PITS AND QUARRIES.

All work involved in clearing and stripping pits and quarries, including handling of unsuitable material, shall be performed by the Contractor. All material shall be handled in a manner that shall secure a uniform and satisfactory base product. The base course material shall be obtained from sources that have been approved

.208-3.2 PREPARING UNDERLYING COURSE.

The underlying course shall be checked and accepted by the Engineer before placing and spreading operations are started. Any ruts or soft, yielding places due to improper drainage conditions, hauling, or any other cause, shall be corrected and rolled to the required density before the base course is placed thereon.

To protect the underlying course and to ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope

208-3.3 METHODS OF PRODUCTION

a. **Plant Mix.** When provided in the proposal, or when selected by the Contractor and approved by the Engineer, the base material shall be uniformly blended or mixed in an approved plant. The mixing plant shall include bins for storage and batching of the aggregate, pump and tanks for water, and batch mixers of either the pug mill or drum type. All mineral aggregates shall be batched into the mixer by weight. The agitation shall be such that a thorough dispersion of moisture is obtained. The size of the batch and the time of mixing shall be fixed by the Engineer and shall produce the results and requirements specified. The base course material produced by combining two or more materials from different sources shall be mixed in a mixing plant described herein. The mixture material shall be at a satisfactory moisture content to obtain maximum density.

b. **T ravel Plant.** When the use of a traveling plant is allowed, the plant shall blend and mix the materials to meet these specifications. It shall accomplish a thorough mixing in one trip. The agitation shall be such that the dispersion of the moisture is complete. The machine shall move at a uniform rate of speed and this speed shall be regulated to fix the mixing time. If a windrow-type of travel plant is employed for mixing, the aggregate shall be placed in windrows parallel to the pavement centerline.

   The windrow volume shall be sufficient to cover exact areas as planned. The windrow contents shall produce a mixture of the required gradation and bonding qualities. If a travel plant is used which is of the type that mixes previously spread aggregates in-place, the material shall have been spread in such thickness and proportions as may be handled by the machine to develop a base course of the thickness of each layer and of the gradation required. With either type of equipment, the mixed material shall be at a satisfactory moisture content to obtain the maximum density.

c. **Materials of Proper Gradation.** When the entire base course material from coarse to fine is secured in a uniform and well-graded condition and contains approximately the proper moisture, such approved material may be handled directly to the spreading

equipment. The material may be obtained from gravel pits, stockpiles, or produced from a crushing and screening plant with the proper blending. The materials from these sources shall meet the requirements for gradation, quality, and consistency. The intent of this section of these specifications is to secure materials that will not require further mixing. The base material shall be at a satisfactory moisture content to obtain maximum density. Any minor deficiency or excess of moisture may be corrected by surface sprinkling or by aeration. In such instances some mixing or manipulation may be required immediately preceding the rolling to obtain the required moisture content. The final operation shall be blading, if necessary, to obtain a smooth uniform surface true to line and grade.

208-3.4 PLACING.

a. The aggregate base material that is correctly proportioned, or has been processed in a plant, shall be placed on the prepared underlying course and compacted in layers of the thickness shown on the plans. The depositing and spreading of the material shall commence where designated and shall progress continuously without breaks. The material shall be deposited and spread in lanes in a uniform layer and without segregation of size to such loose depth that, when compacted, the layer shall have the required thickness. The base aggregate shall be spread by spreader boxes or other approved devices having positive thickness controls that shall spread the aggregate in the required amount to avoid or minimize the need for hand manipulation. Dumping from vehicles in piles that require rehandling shall not be permitted. Hauling over the uncompacted base course shall not be permitted.

b. The aggregate base material that has been processed in a traveling plant, or mixed and blended in-place, shall be spread in a uniform layer of required depth and width and to the typical cross section. The spreading shall be by a self-powered blade grader, mechanical spreader, or other approved method. In spreading, care shall be taken to prevent cutting into the underlying layer. The material shall be bladed until a smooth, uniform surface is obtained, true to line and grade.

c. The base course shall be constructed in a layer not less than 3 inches (75 mm) nor more than 6 inches (150 mm) of compacted thickness. The aggregate as spread shall be of uniform grading with no pockets of fine or coarse materials. The aggregate, unless otherwise permitted by the Engineer, shall not be spread more than 2,000 square yards (1700 square meters) in advance of the rolling. Any necessary sprinkling shall be kept within these limits. No material shall be placed in snow or on a soft, muddy, or frozen course.

When more than one layer is required, the construction procedure described herein shall apply similarly to each layer.

During the mixing and spreading process, sufficient caution shall be exercised to prevent the incorporation of subgrade, subbase, or shoulder material in the base course mixture.

208-3.5 COMPACTION.

Immediately upon completion of the spreading operations, the aggregate shall be thoroughly compacted. The number, type, and weight of rollers shall be sufficient to compact the material to the required density.

The moisture content of the material during placing operations shall not be below, nor more than 2 percentage points above, the optimum moisture content as determined by ASTM **6938.**

If nuclear density machines are to be used for density determination, the machines shall be calibrated in accordance with ASTM D 2922. The nuclear equipment shall be calibrated using blocks of materials with densities that extend through a range representative of the density of the proposed base material.

208-3.6 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY.

Aggregate base course shall be accepted for density on a lot basis. A lot will consist of one day's production where it is not expected to exceed 2400 square yards (2000 square meters). A lot will consist of one-half day's production where a day's production is expected to consist of between 2400 and 4800 square yards (2000 and 4000 square meters).

Each lot shall be divided into two equal sublots. One test shall be made for each sublot. Sampling locations will be determined by the Engineer on a random basis in accordance with statistical procedures contained in ASTM D 3665.

Each lot will be accepted for density when the field density is at least 100 percent of the maximum density of laboratory specimens prepared from samples of the material delivered to the jobsite. The specimens shall be compacted and tested in accordance with ASTM **D698.** The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 2167. If the specified density is not attained, the entire lot shall be reworked and/or recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached.

If nuclear density machines are to be used for density determination, the machines shall be calibrated in accordance with ASTM 6938. The nuclear equipment shall be calibrated using blocks of materials with densities that extend through a range representative of the density of the proposed base material. ASTM 3017 may be used to determine the moisture content of the material. (See Section 120 of the General Provisions for additional guidance).

208-3.7 SURFACE TEST.

After the course has been completely compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified, reshaped, recompacted, and otherwise manipulated as the Engineer may direct until the required smoothness and accuracy are obtained. The finished surface shall not vary more than 3/8 inch (9 mm) from a 16-foot (4.8 m) straightedge when applied to the surface parallel with, and at right angles to, the centerline. Grade shall not vary more than 3/8 inch from plan elevations.

208-3.8 THICKNESS.

The thickness of the base course shall be determined by depth tests or cores taken at intervals in such manner that each test shall represent no more than 300 square yards (250 square meters). Thickness tests shall be conducted by the Contractor and witnessed by the Engineer. When the base deficiency is more than 1/2 inch (12 mm), the Contractor shall correct such areas by scarifying, adding satisfactory base mixture, rolling, sprinkling, reshaping, and finishing in accordance with these specifications. The Contractor shall replace, at his/her

expense, the base material where borings have been taken for test purposes..

208-3.9 PROTECTION.

Work on the base course shall not be accomplished when the subgrade is wet.

Hauling equipment may be routed over completed portions of the base course, provided no damage results and provided that such equipment is routed over the full width of the base course to avoid rutting or uneven compaction. However, the Engineer in charge shall have full and specific authority to stop all hauling over completed or partially completed base course when, in his/her opinion, such hauling is causing damage. Any damage resulting to the base course from routing equipment over the base course shall be repaired by the Contractor at his/her own expense.

208-3.10 MAINTENANCE.

Following the completion of the base course, the Contractor shall perform all maintenance work necessary to keep the base course in a condition satisfactory for priming. After priming, the surface shall be kept clean and free from foreign material. The base course shall be properly drained at all times. If cleaning is necessary, or if the prime coat becomes disturbed, any work or restitution necessary shall be performed at the expense of the Contractor.

Before preparations begin for the application of a surface treatment or for a surface course, the base course shall be allowed to partially dry until the average moisture content of the full depth of base is less than 80% of the optimum moisture of the base mixture. The drying shall not continue to the extent that the surface of the base becomes dusty with consequent loss of binder. If during the curing period the surface of the base dries too fast, it shall be kept moist by sprinkling until such time as the prime coat or surfacing is applied as directed.

The Contractor shall remove all survey and grade hubs from the base courses prior to placing any bituminous surface course.

METHOD OF MEASUREMENT

208-4.1 The quantity of **crushed** aggregate and processed miscellaneous base course to be paid for shall be the number of cubic yards (cubic meters) of base course material placed, bonded, and accepted in the completed base course. The quantity of base course material shall be measured in final position based upon depth test, or cores taken as directed by the Engineer, or at the rate of 1 depth test for each 300 square yards (250 square meters) of base course. On individual depth measurements, thicknesses more than 1/2 inch (12 mm) in excess of that shown on the plans shall be considered as specified thickness in computing the yardage for payment. Base materials shall not be included in any other excavation quantities.

Crushed Aggregate Base Course shall be material supplied from off-airport locations meeting the requirements of these specifications.

208-4.2 Processed Miscellaneous Base Course shall be material made on airport from pulverizing the existing asphalt pavement surface meeting the requirements of these specifications. The quantity of processed miscellaneous base produced by pulverizing the existing asphalt pavement surface shall be paid for by the cubic yard (cubic meters) manufactured from

pulverizing the existing asphalt pavement surface in place and measured in final position based upon depth tests, or cores taken by the contractor as the rate of **1 depth test for each 300 square yards** of processed miscellaneous base course. The quantity of the processed miscellaneous base manufactured shall be equal to the material placed within the construction of the new pavement structure. Demolition and stockpiling of demolished pavement material into stockpiles at the processing plant shall be included in the measurement of removal quantities. Transport from processed stockpile of processed miscellaneous base to final grade shall be included within measurement of processed miscellaneous base.

BASIS OF PAYMENT

208-5.1 Payment shall be made at the contract unit price per cubic yard (cubic meter) for crushed aggregate base course. This price shall be full compensation for furnishing all materials and for all operations, hauling, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item

208-5.2 Payment shall be made at the contract unit price per cubic yard (cubic meter) for processed miscellaneous base course. This price shall be full compensation for furnishing all materials and for all operations, hauling, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-208-5.1 Crushed Aggregate Base Course—per cubic yard (cubic meter)

Item P-208-5.2 Processed Miscellaneous Base Course –per cubic yard (cubic meter)

TESTING REQUIREMENTS

ASTM C 29 Unit Weight of Aggregate

ASTM C 117 Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing

ASTM C 131 Resistance to Abrasion of Small Size Coarse Aggregate by Use of the Los Angeles Machine

ASTM C 136 Sieve Analysis of Fine and Coarse Aggregates

ASTM D 422 Particle Size Analysis of Soils

ASTM D 698 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb (2.49 kg) Rammer and 12 in (305 mm) Drop

ASTM D 1556 Density of Soil in Place by the Sand-Cone Method

ASTM D 1557 Test for Laboratory Compaction Characteristics of Soil Using Modified Effort

ASTM D 2167 Density of Soil in Place by the Rubber-Balloon Method

ASTM D 3665 Random Sampling of Paving Materials

ASTM D 4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

ASTM D 6938 In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods

END OF ITEM P-208

PART IV - FLEXIBLE SURFACE COURSES

ITEM P-401

PLANT MIX BITUMINOUS PAVEMENTS

DESCRIPTION

401-1 This item shall consist of pavement courses composed of mineral aggregate and bituminous material mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 AGGREGATE.

Aggregates shall consist of crushed stone, crushed gravel, or crushed slag with or without natural sand or other inert finely divided mineral aggregate. The portion of combined materials retained on the No. 4 (4.75 mm) sieve is coarse aggregate. The portion of combined materials passing the No. 4 (4.75 mm) sieve and retained on the No. 200 (0.075 mm) sieve is fine aggregate, and the portion passing the No. 200 (0.075 mm) sieve is mineral filler.

a. **Coarse Aggregate.** Coarse aggregate shall consist of sound, tough, durable particles, free from adherent films of matter that would prevent thorough coating and bonding with the bituminous material and be free from organic matter and other deleterious substances. The percentage of wear shall not be greater than 40 percent when tested in accordance with ASTM C 131. The sodium sulfate soundness loss shall not exceed 10 percent, or the magnesium sulfate soundness loss shall not exceed 13 percent, after five cycles, when tested in accordance with ASTM C 88.

Aggregate shall contain at least **50** percent by weight of individual pieces having two or more fractured faces and **65** percent by weight having at least one fractured face. The area of each face shall be equal to at least 75 percent of the smallest midsectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be obtained by crushing.

The aggregate shall not contain more than a total of 8 percent, by weight, of flat particles, elongated particles, and flat and elongated particles, when tested in accordance with ASTM D 4791 with a value of 5:1.

The course aggregate shall have a minimum cleanliness value (CV) of 75 as determined by California Test 227. The contractor shall ensure that all aggregate incorporated into the mix meets the minimum CV by processing or washing, as necessary.

Slag shall be air-cooled, blast furnace slag, and shall have a compacted weight of not less than 70 pounds per cubic foot (1.12 mg/cubic meter) when tested in accordance with ASTM C 29.

b. **Fine Aggregate**. Fine aggregate shall consist of clean, sound, durable, angular shaped particles produced by crushing stone, slag, or gravel that meets the requirements for wear and soundness specified for coarse aggregate. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter and shall contain no clay balls. The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D 4318.

Natural (nonmanufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. The amount of sand to be added will be adjusted to produce mixtures conforming to requirements of this specification. The fine aggregate shall not contain more than 15 percent natural sand by weight of total aggregates. If used, the natural sand shall meet the requirements of ASTM D 1073 and shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D 4318.

The aggregate shall have sand equivalent values of **45** or greater when tested in accordance with ASTM D 2419.

Fine aggregate shall be washed prior to incorporation into the mix.

c. **Sampling**. ASTM D 75 shall be used in sampling coarse and fine aggregate, and ASTM C 183 shall be used in sampling mineral filler.

401-2.2 MINERAL FILLER.

If filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D 242.

401-2.3 BITUMINOUS MATERIAL.

Bituminous material shall conform to the following requirements: AASHTO M320 Performance Grade (PG) 76-22. Test data indicating grade certification shall be provided by the supplier at the time of delivery of each load to the mix plant. Copies of these certifications shall be submitted to the Engineer.

Property	Minimum Value	Standard
Elastic Recovery *	75%	AASHTO T 301

* The binder (RTFO) aged residue shall be tested in accordance with AASHTO T 301 for ElasticRecovery at 25 degrees Celsius.

Contractor shall furnish vendor's certified test reports for each lot of bituminous material shipped to the project. The vendor's certified test report for bituminous material can be used for acceptance or tested independently by the Engineer.

401-2.4 PRELIMINARY MATERIAL ACCEPTANCE.

Prior to delivery of materials to the job site, the Contractor shall submit certified test reports to the Engineer for the following materials:

a. **Coarse Aggregate.**

(1) Percent of wear.

(2) Soundness.

(3) Unit weight of slag.

(4) Percent fractured faces.

(5) Cleanliness Value (CV)

b. **Fine Aggregate.**

(1) Liquid limit.

(2) Plasticity index.

(3) Sand equivalent.

c. **Mineral Filler.**

d. **Bituminous Material.** Test results for bituminous material shall include temperature/viscosity charts for mixing and compaction temperatures.

The certification(s) shall show the appropriate ASTM test(s) for each material, the test results, and a statement that the material meets the specification requirement.

The Engineer may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

401-2.5 ANTI-STRIPPING AGENT.

Any anti-stripping agent or additive if required shall be heat stable, shall not change the asphalt cement viscosity beyond specifications, shall contain no harmful ingredients, shall be added in recommended proportion by approved method, and shall be a material approved by the California Department of Transportation (CALTRANS).

COMPOSITION

401-3.1 COMPOSITION OF MIXTURE.

The bituminous plant mix shall be composed of a mixture of well-graded aggregate, filler and anti-strip agent if required, and bituminous material. The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 JOB MIX FORMULA.

No bituminous mixture for payment shall be produced until a job mix formula has been approved in writing by the Engineer. The bituminous mixture shall be designed using

procedures contained in Chapter 5, MARSHALL METHOD OF MIX DESIGN, of the Asphalt Institute's Manual Series No. 2 (MS-2), Mix Design Methods for Asphalt Concrete, sixth edition.

The design criteria in Table 1 are target values necessary to meet the acceptance requirements contained in paragraph 401-5.2b. The criteria is based on a production process which has a material variability with the following standard deviations:

Stability (lbs.) = 270
Flow (0.01 inch) = 1.5
Air Voids (%) = 0.65

If material variability exceeds the standard deviations indicated, the job mix formula and subsequent production targets shall be based on a stability greater than shown in Table 1, and the flow and air voids shall be targeted close to the mid-range of the criteria in order to meet the acceptance requirements.

Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867, shall not be less than 80, nor shall the dry strength be less than 100 psi as determined by ASTM D 1074. Anti-stripping agent shall be added to the asphalt, as necessary, to produce a TSR of not less than 80 while maintaining a minimum dry strength of 100 psi. If an anti-strip agent is required, it will be provided by the Contractor at no additional cost to the Owner.

The job mix formula shall be submitted in writing by the Contractor to the Engineer at least **30** days prior to the start of paving operations and shall include as a minimum:

a. Percent passing each sieve size for total combined gradation, individual gradation of all aggregate stockpiles and percent by weight of each stockpile used in the job mix formula.

b. Percent of asphalt cement.

c. Asphalt performance, viscosity or penetration grade, and type of modifier if used.

d. Number of blows of hammer compaction per side of molded specimen.

e. Mixing temperature.

f. Compaction temperature.

g. Temperature of mix when discharged from the mixer.

h. Temperature-viscosity relationship of the asphalt cement.

i. Plot of the combined gradation on the Federal Highway Administration (FHWA) 45 power gradation curve. The contractor shall evaluate the gradation plots for sensitivity and tenderness.

j. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content.

k. Percent natural sand.

l. Percent fractured faces.

m. Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).

n. Tensile Strength Ratio (TSR).

o. Dry Strength

p. Antistrip agent (if required).

q. Asphalt film thickness

r. Dust to asphalt ratio (using effective asphalt content).

s. Cleanliness Value of coarse aggregate

t. Date the job mix formula was developed. Must be within 90 days of the start of production paving.

u. The extraction oven calibration testing certification for the proposed mix design be used for determining the asphalt content per paragraph 401-6.3A .

The Contractor shall submit to the Engineer the results of verification testing of three (3) asphalt samples prepared at the optimum asphalt content. The average of the results of this testing shall indicate conformance with the job mix formula requirements specified in Tables 1, 2 and 3.

When the project requires asphalt mixtures of differing aggregate gradations, a separate job mix formula and the results of job mix formula verification testing must be submitted for each mix.

The job mix formula for each mixture shall be in effect until a modification is approved in writing by the Engineer. Should a change in sources of materials be made, a new job mix formula must be submitted within 10 days and approved by the Engineer in writing before the new material is used. After the initial production job mix formula(s) has/have been approved by the Engineer and a new or modified job mix formula is required for whatever reason, the subsequent cost of the Engineer's approval of the new or modified job mix formula will be borne by the Contractor. There will be no time extension given or considerations for extra costs associated with the stoppage of production paving or restart of production paving due to the time needed for the Engineer to approve the initial, new or modified job mix formula.

TABLE 1. MARSHALL DESIGN CRITERIA

TEST PROPERTY	Pavements Designed for Aircraft Gross Weights of less than 60,000 Lbs. or Tire Pressures Less than 100 Psi
Number of blows	**50**
Stability, pounds (newtons) minimum	**1400 (6227)**
Flow, 0.01 in. (0.25 mm)	**10-18**

Air voids (percent)	**2.8-4.2**
Film Thickness, minimum Dust to Effective Asphalt Content Ratio	**8 microns** **06-1.2 (max)**
Voids Filled with Asphalt	**See Table 2**
Percent voids in mineral aggregate, minimum	

Note: The film thickness shall be calculated at each asphalt content from the asphalt content and surface area of aggregate, using computational methods described in NCAT Report 98-1, "A Critical Review of VMA Requirements in Superpave", except that the effective asphalt content shall be used in the computation.

Note: Dust is defined as the amount of material passing the No. 200 sieve.

TABLE 2. MINIMUM PERCENT VOIDS IN MINERAL AGGREGATE

Maximum Particle Size		**Minimum Voids in Mineral Aggregate, percent**
in.	**mm**	**Percent**
¾	19.0	15
1	25.0	14

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 3 when tested in accordance with ASTM C 136 and C 117.

The gradations in Table 3 represent the limits that shall determine the suitability of aggregate for use from the sources of supply. The aggregate, as selected (and used in the JMF), shall have a gradation within the limits designated in Table 3 and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa, but shall be well graded from coarse to fine.

Deviations from the final approved mix design for bitumen content and gradation of aggregates shall be within the action limits for individual measurements as specified in paragraph 401-6.5a. The limits still will apply if they fall outside the master grading band in Table 3.

The maximum size aggregate used shall not be more than one-half of the thickness of the course being constructed except where otherwise shown on the plans or ordered by the Engineer.

TABLE 3. AGGREGATE - BITUMINOUS PAVEMENTS

Sieve Size	Percentage by Weight Passing Sieve	
	1" max.	¾" max.
1-½ in. (37.50 mm)	-	
1 in. (25.0 mm)	100	
¾ in. (19.0 mm)	76-98	100
½ in. (12.5 mm)	66-86	79-99
⅜ in. (9.5 mm)	57-77	68-88
No. 4 (4.75 mm)	40-60	48-68
No. 8 (2.36 mm)	26-46	33-53
No. 16 (1.18 mm)	17-37	20-40
No. 30 (0.60 mm)	11-27	14-30
No. 50 (0.30 mm)	7-19	9-21
No. 100 (0.15 mm)	6-16	6-16
No. 200 (0.075 mm)	3-6	3-6
Asphalt percent		
Stone or gravel	4.5-7.0	5.0-7.5
Slag	5.0-7.5	6.5-9.5

Note No. 1 – Material passing the No. 200 sieve may consist of fine particles of aggregate, mineral filler, or both. Material passing the No. 30 sieve shall be non-plastic when tested in accordance with the requirements of ASTM D 4318.

Note No. 2 – If the aggregate does not satisfy tensile strength ratio requirements, add appropriate amount of an approved anti-stripping agent.

Note No. 3 – Job mix formula shall follow a smooth curve within the specified limits for all sieve sizes of Table 3, but should not fall on the maximum density line and should not cross the maximum density line below the No. 4 sieve. The maximum density line will be determined by plotting the gradations on a 0.45 power graph paper, and drawing a straight line between the amount passing the No. 200 sieve and the amount which is retained on the largest sieve.

Note No. 4 – Notify the Engineer if a satisfactory job mix formula using Table 3 cannot be obtained.

Note No. 5 - Dust is defined as the amount of material passing the No. 200 sieve.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute Manual Series No. 2 (MS-2), Chapter 3. The specific gravities and absorption of both coarse and fine aggregates will be determined in accordance with ASTM C 127 and ASTM C 128. The bulk specific gravity of the aggregate blend shall be submitted with the mix design.

401-3.3 RECYCLED ASPHALT CONCRETE.

Reclaimed asphalt pavement (RAP) shall not be included within the new pavement.

401-3.4 TEST SECTION.

Prior to full production, the Contractor shall prepare and place a quantity of bituminous mixture according to the job mix formula. The amount of mixture shall be sufficient to construct a test section **300** long and **24-25 feet** wide, placed in two lanes, with a longitudinal cold joint, and shall be of the same depth specified for the construction of the course which it represents. The Contractor shall coordinate with the Airport to determine test strip location. A cold joint is an exposed construction joint at least 4 hours old or whose mat has cooled to less than 160° F. The underlying grade or pavement structure upon which the test section is to be constructed shall be the same as the remainder of the course represented by the test section. The equipment used in construction of the test section shall be the same type and weight to be used on the remainder of the course represented by the test section.

THE TEST SECTION SHALL BE EVALUATED FOR ACCEPTANCE AS A SINGLE LOT IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA IN PARAGRAPH 401-5.1 AND 401-6.3. THE TEST SECTION SHALL BE DIVIDED INTO EQUAL SUBLOTS. AS A MINIMUM THE TEST SECTION SHALL CONSIST OF 3 SUBLOTS.

The test section shall be considered acceptable if; 1) stability, flow, mat density, air voids, and joint density are 90 percent or more within limits, 2) gradation and asphalt content are within the action limits specified in paragraphs 401-6.5a and 5b, and 3) the voids in the mineral aggregate are within the limits of Table 2.

If the initial test section should prove to be unacceptable, the necessary adjustments to the job mix formula, plant operation, placing procedures, and/or rolling procedures shall be made. A second test section shall then be placed. If the second test section also does not meet specification requirements, both sections shall be removed at the Contractor's expense. Additional test sections, as required, shall be constructed and evaluated for conformance to the specifications. Any additional sections that are not acceptable shall be removed at the Contractor's expense. Full production shall not begin until an acceptable section has been constructed and accepted in writing by the Engineer. Once an acceptable test section has been placed, payment for the initial test section and the section that meets specification requirements shall be made in accordance with paragraph 401-8.1.

Job mix control testing shall be performed by the Contractor at the start of plant production and in conjunction with the calibration of the plant for the job mix formula. If aggregates produced by the plant do not satisfy the gradation requirements or produce a mix that meets the JMF. It will be necessary to reevaluate and redesign the mix using plant-produced aggregates. Specimens shall be prepared and the optimum bitumen content determined in the same manner as for the original design tests.

Contractor will not be allowed to place the test section until the Contractor Quality Control Program, showing conformance with the requirements of Paragraph 401-6.1, has been approved, in writing, by the Engineer.

401-3.5 TESTING LABORATORY.

The Contractor's laboratory used to develop the job mix formula shall meet the requirements of ASTM D 3666 including the requirement to be accredited by a national authority such as the National Voluntary Laboratory Accreditation Program (NVLAP), the American

Association for Laboratory Accreditation (AALA), or AASHTO Accreditation Program (AAP). Laboratory personnel shall meet the requirements of Section 100 of the General Provisions. A certification signed by the manager of the laboratory stating that it meets these requirements shall be submitted to the Engineer prior to the start of construction. The certification shall contain as a minimum.

a. Qualifications of personnel; laboratory manager, supervising technician, and testing technicians.

b. A listing of equipment to be used in developing the job mix.

c. A copy of the laboratory's quality control system.

d. Evidence of participation in the AASHTO Materials Reference Laboratory (AMRL) program.

e. ASTM D 3666 certification of accreditation by a nationally recognized accreditation program.

CONSTRUCTION METHODS

401-4.1 WEATHER LIMITATIONS.

The bituminous mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the Engineer, if requested; however, all other requirements including compaction shall be met.

TABLE 4. BASE TEMPERATURE LIMITATIONS

Mat Thickness	Base Temperature (Minimum)	
	Deg. F	Deg. C
3 in. (7.5 cm) or greater	40	4
Greater than 1 in. (2.5 cm) but less than 3 in. (7.5 cm)	45	7
1 in. (2.5 cm) or less	50	10

401-4.2 BITUMINOUS MIXING PLANT.

Plants used for the preparation of bituminous mixtures shall conform to the requirements of ASTM D 995 with the following changes:

a. **Requirements for All Plants.**

(1) Truck Scales. The bituminous mixture shall be weighed on approved scales furnished by the Contractor, or on certified public scales at the Contractor's expense. Scales shall be inspected and sealed as often as the Engineer deems necessary to assure their accuracy. Scales shall conform to the requirements of the General Provisions, Section 90-01.

In lieu of scales, and as approved by the Engineer, asphalt mixture weights may be determined by the use of an electronic weighing system equipped with an automatic printer that weighs the total paving mixture. Contractor must furnish calibration certification of the weighing system prior to mix production and as often thereafter as requested by the Engineer.

(2) **Testing Facilities**. The Contractor shall provide laboratory facilities at the plant for the use of the Engineer's acceptance testing and the Contractor's quality control testing. The Engineer will always have priority in the use of the laboratory. The lab shall have sufficient space and equipment so that both testing representatives (Engineer's and Contractor's) can operate efficiently. The lab shall also meet the requirements of ASTM D 3666.

The plant testing laboratory shall have a floor space area of not less than 150 square feet, with a ceiling height of not less than 7-½ feet. The laboratory shall be weather tight, sufficiently heated in cold weather, air-conditioned in hot weather to maintain temperatures for testing purposes of 70 degrees F +/- 5 degrees F. The plant testing laboratory shall be located on the plant site to provide an unobstructed view, from one of its windows, of the trucks being loaded with the plant mix materials.

Laboratory facilities shall be kept clean, and all equipment shall be maintained in proper working condition. The Engineer shall be permitted unrestricted access to inspect the Contractor's laboratory facility and witness quality control activities. The Engineer will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

As a minimum, the plant testing laboratory shall have:

(a) Adequate artificial lighting

(b) Electrical outlets sufficient in number and capacity for operating the required testing equipment and drying samples.

(c) Fire extinguishers (2), Underwriter's Laboratories approved

(d) Work benches for testing, minimum 2-½ feet by 10 feet.

(e) Desk with 2 chairs

(f) Sanitary facilities convenient to testing laboratory

(g) Exhaust fan to outside air, minimum 12 inch blade diameter

(h) A direct telephone line and telephone including a FAX machine operating 24 hours per day, seven days per week

(i) File cabinet with lock for Engineer

(j) Sink with running water, attached drain board and drain capable of handling separate material

(k) Metal stand for holding washing sieves

(l) Two element hot plate or other comparable heating device, with dial type thermostatic controls for drying aggregates

(m) Mechanical shaker and appropriate sieves (listed in JMF, Table 3) meeting the requirements of ASTM E-11 for determining the gradation of coarse and fine aggregates in accordance with ASTM C 136

(n) Marshall testing equipment meeting ASTM D 6926, ASTM D 6927, automatic compaction equipment capable of compacting three specimens at once and other apparatus as specified in ASTM C 127, D 2172, D 2726, and D 2041

(o) Oven, thermostatically controlled, inside minimum 1 cubic foot

(p) Two volumetric specific gravity flasks, 500 cc

(q) Other necessary hand tools required for sampling and testing

(r) Library containing contract specifications, latest ASTM volumes 4.01, 4.02, 4.03 and 4.09, AASHTO standard specification parts I and II, and Asphalt Institute Publication MS-2.

(s) Equipment for Theoretical Specific Gravity testing including a 4,000 cc pycnometer, vacuum pump capable of maintaining 30 ml mercury pressure and a balance, 16-20 kilograms with accuracy of 0.5 grams

(t) Extraction equipment, centrifuge and reflux types and ROTOflex equipment

(u) A masonry saw with diamond blade for trimming pavement cores and samples

(v) Telephone

Approval of the plant and testing laboratory by the Engineer requires all facilities and equipment to be in good working order during production, sampling and testing. Failure to provide the specified facilities shall be sufficient cause for disapproving bituminous plant operations.

The Owner shall have access to the lab and the plant whenever Contractor is in production.

(3) **Inspection of Plant.** The Engineer, or Engineer's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

(4) **Storage Bins and Surge Bins.** Use of surge and storage bins for temporary storage of hot bituminous mixtures will be permitted as follows:
(a) The bituminous mixture may be stored in surge bins for a period of time not to exceed 3 hours.

(b) The bituminous mixture may be stored in insulated storage bins for a period of time not to exceed 24 hours.

The bins shall be such that mix drawn from them meets the same requirements as mix loaded directly into trucks.

If the Engineer determines that there is an excessive amount of heat loss, segregation, or oxidation of the mixture due to temporary storage, no temporary storage will be allowed.

401-4.3 HAULING EQUIPMENT.

Trucks used for hauling bituminous mixtures shall have tight, clean, and smooth metal beds. To prevent the mixture from adhering to them, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other approved material. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.4 BITUMINOUS PAVERS.

Bituminous pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of bituminous plant mix material that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

The paver shall be equipped with a control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices that will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within plus or minus 0.1 percent.

The controls shall be capable of working in conjunction with any of the following attachments:

a. Ski-type device of not less than 30 feet (9.14 m) in length.

b. Taut stringline (wire) set to grade.

c. Short ski or shoe.

d. Laser control.

If, during construction, it is found that the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not

satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued and satisfactory equipment shall be provided by the Contractor.

401-4.5 ROLLERS.

Rollers of the vibratory, steel wheel, and pneumatic-tired type shall be used. They shall be in good condition, capable of operating at slow speeds to avoid displacement of the bituminous mixture. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition.

All rollers shall be specifically designed and suitable for compacting hot mix bituminous concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used. Depressions in pavement surfaces caused by rollers shall be repaired by the Contractor at its own expense.

The use of equipment that causes crushing of the aggregate will not be permitted.

The use of equipment that causes crushing of the aggregate will not be permitted.

a. **Nuclear Densometer**. The Contractor shall have on site a nuclear densometer during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall also supply a qualified technician during all paving operations to calibrate the nuclear densometer and obtain accurate density readings for all new bituminous concrete. These densities shall be supplied to the Engineer upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

401-4.6 PREPARATION OF BITUMINOUS MATERIAL.

The bituminous material shall be heated in a manner that will avoid local overheating and provide a continuous supply of the bituminous material to the mixer at a uniform temperature. The temperature of the bituminous material delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325 degrees F (160 degrees C), unless otherwise required by the manufacturer.

401-4.7 PREPARATION OF MINERAL AGGREGATE.

The aggregate for the mixture shall be heated and dried prior to introduction into the mixer. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350 degrees F (175 degrees C) when the asphalt is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.8 PREPARATION OF BITUMINOUS MIXTURE.

The aggregates and the bituminous material shall be weighed or metered and introduced into the mixer in the amount specified by the job mix formula.

The combined materials shall be mixed until the aggregate obtains a uniform coating of bitumen and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D 2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95 percent of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all bituminous mixtures upon discharge shall not exceed 0.5 percent.

401-4.9 PREPARATION OF THE UNDERLYING SURFACE.

Immediately before placing the bituminous mixture, the underlying course shall be cleaned of all dust and debris. A prime coat or tack coat shall be applied in accordance with Item P-602 or P-603, if shown on the plans.

401-4.10 LAYDOWN PLAN, TRANSPORTING, PLACING, AND FINISHING.

Prior to the placement of the bituminous mixture, the Contractor shall prepare a laydown plan for approval by the Engineer. This is to minimize the number of cold joints in the pavement. The laydown plan shall include the sequence of paving laydown by stations, width of lanes, temporary ramp location(s), and laydown temperature. The laydown plan shall also include estimated time of completion for each portion of the work (i.e. milling, paving, rolling, cooling, etc.). Modifications to the laydown plan shall be approved by the Engineer.

The bituminous mixture shall be transported from the mixing plant to the site in vehicles conforming to the requirements of paragraph 401-4.3. Deliveries shall be scheduled so that placing and compacting of mixture is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to atmospheric temperature.

Paving during nighttime construction shall require the following:

a. All paving machines, rollers, distribution trucks and other vehicles required by the Contractor for his operations shall be equipped with artificial illumination sufficient to safely complete the work.

b. Minimum illumination level shall be twenty (20) horizontal foot candles and maintained in the following areas:

   (1) An area of 30 feet wide by 30 feet long immediately behind the paving machines during the operations of the machines.
   (2) An area 15 feet wide by 30 feet long immediately in front and back of all rolling equipment, during operation of the equipment.
   (3) An area 15 feet wide by 15 feet long at any point where an area is being tack coated prior to the placement of pavement.

c. As partial fulfillment of the above requirements, the Contractor shall furnish and use, complete artificial lighting units with a minimum capacity of 3,000 watt electric beam

lights, affixed to all equipment in such a way to direct illumination on the area under construction.

d. In addition, the Contractor shall furnish required number of portable floodlight units spaced at no more than 150 feet on center or as needed to provide adequate lighting of the entire work area for testing as acceptable to the engineer. Lighting shall cover the full width of the construction area.

If the Contractor places any out of specification mix in the project work area, the Contractor is required to remove it at its own expense, to the satisfaction of the Engineer. If the Contractor has to continue placing non-payment bituminous concrete, as directed by the Engineer, to make the surfaces safe for aircraft operations, the Contractor shall do so to the satisfaction of the Engineer. It is the Contractor's responsibility to leave the facilities to be paved in a safe condition ready for aircraft operations. No consideration for extended closure time of the area being paved will be given. As a first order of work for the next paving shift, the Contractor shall remove all out of specification material and replace with approved material to the satisfaction of the Engineer. When the above situations occur, there will be no consideration given for additional construction time or payment for extra costs.

The initial placement and compaction of the mixture shall occur at a temperature suitable for obtaining density, surface smoothness, and other specified requirements but not less than 250 degrees F (121 degrees C).

Edges of existing bituminous pavement abutting the new work shall be saw cut and carefully removed as shown on the drawings and painted with asphalt cold joint adhesive (Item P-605 Joint Sealing Filler and Joint Adhesives) before new material is placed against it.

Upon arrival, the mixture shall be placed to the full width by a bituminous paver. It shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the bituminous mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of **12.5 feet** except where edge lanes require less width to complete the area. Additional screed sections shall not be attached to widen paver to meet the minimum lane width requirements specified above unless additional auger sections are added to match. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet (3 m) from transverse joints in the previous course.

Transverse joints in adjacent lanes shall be offset a minimum of 10 feet (3 m).

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools. Areas of segregation in the surface course, as determined by the Engineer, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of 2 inches deep. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

401-4.11 COMPACTION OF MIXTURE.

After placing, the mixture shall be thoroughly and uniformly compacted by power rollers. The surface shall be compacted as soon as possible when the mixture has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross section, and the required field density is obtained.

To prevent adhesion of the mixture to the roller, the wheels shall be equipped with a scraper and kept properly moistened but excessive water will not be permitted.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power driven tampers. Tampers shall weigh not less than 275 pounds, have a tamping plate width not less than 15 inches, be rated at not less than 4,200 vibrations per minute, and be suitably equipped with a standard tamping plate wetting device.

Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.12 JOINTS.

The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid mixture except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be given a coat of P-605 Joint Adhesive bituminous material before placing any fresh mixture against the joint.

Longitudinal joints which are irregular, damaged, uncompacted, or otherwise defective or which have been left exposed for more than 4 hours, or whose surface temperature has cooled to less than 160° F shall be cut back six inches (and a maximum of 8 inches) to expose a clean, sound surface for the full depth of the course. All contact surfaces shall be cleaned and dry prior and given a coat of asphalt cold joint adhesive (P-605) or P-603 for base course material prior to placing any fresh mixture against the joint. The cost of this work shall be considered incidental to the cost of the bituminous course. Cost of the P-605 Joint Adhesive shall be measured and paid for under P-605 Joint Adhesive. Cost of P-603 Bituminous Tack Coat shall be measured and paid for under P-603 Bituminous Tack Coat.

MATERIAL ACCEPTANCE

401-5.1 ACCEPTANCE SAMPLING AND TESTING.

Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the Engineer at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

Testing organizations performing these tests shall meet the requirements of ASTM D 3666. All equipment in Contractor furnished laboratories shall be calibrated by an independent testing organization prior to the start of operations at the Contractor's expense.

a. **Plant-Produced Material.** Plant-produced material shall be tested for stability, flow, and air voids on a lot basis. Sampling shall be from material deposited into trucks at the plant or from trucks at the job site. Samples shall be taken in accordance with ASTM D 979. A lot will consist of:

- one day or shift's production not to exceed 2,000 tons (1 814 000 kg), or
- a half day or shift's production where a day's production is expected to consist of between 2,000 and 4,000 tons (1 814 000 and 3 628 000 kg), or
- similar subdivisions for tonnages over 4,000 tons (3 628 000 kg).

Where more than one plant is simultaneously producing material for the job, the lot sizes shall apply separately for each plant.

(1) **Sampling.** Each lot will consist of four equal sublots. Sufficient material for preparation of test specimens for all testing will be sampled by the Engineer on a random basis, in accordance with the procedures contained in ASTM D 3665. One set of laboratory compacted specimens will be prepared for each sublot in accordance with ASTM D 6926, at the number of blows required by paragraph 401-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test portions prepared from the same sample increment.

The sample of bituminous mixture may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to stabilize to compaction temperature. The compaction temperature of the specimens shall be as specified in the job mix formula.

(2) **Testing.** Sample specimens shall be tested for stability and flow in accordance with ASTM D 6927. Air voids will be determined by the Engineer in accordance with ASTM D 3203.

Prior to testing, the bulk specific gravity of each test specimen shall be measured by the Engineer in accordance with ASTM D 2726 using the procedure for laboratory-prepared thoroughly dry specimens, or ASTM D 1188, whichever is applicable, for use in computing air voids and pavement density.

For air voids determination, the theoretical maximum specific gravity of the mixture shall be measured one time for each sublot in accordance with ASTM D 2041, Type C, D or E container. The value used in the air voids computation for each sublot shall

be based on theoretical maximum specific gravity measurement for the sublot.

The stability and flow for each sublot shall be computed by averaging the results of all test specimens representing that sublot.

(3) **Acceptance.** Acceptance of plant produced material for stability, flow, and air voids shall be determined by the Engineer in accordance with the requirements of paragraph 401-5.2b.

b. **Field Placed Material.** Material placed in the field shall be tested for mat and joint density on a lot basis.

(1) **Mat Density.** The lot size shall be the same as that indicated in paragraph 401-5.1a and shall be divided into four equal sublots. One core of finished, compacted materials shall be taken by the Contractor from each sublot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665. Cores shall not be taken closer than one foot from a transverse or longitudinal joint.

(2) **Joint Density.** The lot size shall be the total length of longitudinal joints constructed bya lot of material as defined in paragraph 401-5.1a. The lot shall be divided into four equal sublots. One core of finished, compacted materials shall be taken by the Contractor from each sublot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665. ALL CORING SHALL BE CENTERED ON THE JOINT. THE MINIMUM CORE DIAMETER FOR JOINT DENSITY DETERMINATION SHALL BE 5 INCHES.

(3) **Sampling.** Samples shall be neatly cut with a core drill. The cutting edge of the core drill bit shall be of hardened steel or other suitable material with diamond chips embedded in the metal cutting edge. The minimum diameter of the sample shall be five inches. Samples that are clearly defective, as a result of sampling, shall be discarded and another sample taken. The Contractor shall furnish all tools, labor, and materials for cutting samples, cleaning, and filling the cored pavement. Cored pavement shall be cleaned and core holes shall be filled in a manner acceptable to the Engineer and within one day after sampling.

(4) **Testing.** The bulk specific gravity of each cored sample will be measured by the Engineer in accordance with ASTM D 2726 or ASTM D 1188, whichever is applicable. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each sublot sample by the average bulk specific gravity of all laboratory prepared specimens for the lot, as determined in paragraph 401-5.1a(2). The bulk specific gravity used to determine the joint density at joints formed between different lots shall be the lowest of the bulk specific gravity values from the two different lots.

(5) **Acceptance.** Acceptance of field placed material for mat density will be determined by the Engineer in accordance with the requirements of paragraph 401-5.2b(1). Acceptance for joint density will be determined in accordance with the requirements of paragraph 401-5.2b(3).

c. **Partial Lots** — Plant-Produced Material. When operational conditions cause a lot to be terminated before the specified number of tests have been made for the lot, or when the Contractor and Engineer agree in writing to allow overages or other minor tonnage placements to be considered as partial lots, the following procedure will be used to adjust the lot size and the number of tests for the lot. The last batch produced where production is halted will be sampled, and its properties shall be considered as representative of the particular sublot from which it was taken. In addition, an agreed to minor placement will be sampled, and its properties shall be considered as representative of the particular sublot from which it was taken. Where three sublots are produced, they shall constitute a lot. Where one or two sublots are produced, they shall be incorporated into the next lot, and the total number of sublots shall be used in the acceptance plan calculation, i.e., n = 5 or n = 6, for example. Partial lots at the end of asphalt production on the project shall be included with the previous lot.

d. **Partial Lots — Field Placed Material.** The lot size for field placed material shall correspond to that of the plant material, except that, in no cases, shall less than three (3) cored samples be obtained, i.e., n = 3.

401-5.2 ACCEPTANCE CRITERIA.

a. **General.** Acceptance will be based on the following characteristics of the bituminous mixture and completed pavement as well as the implementation of the Contractor Quality Control Program and test results:

(1) Stability

(2) Flow

(3) Air voids

(4) Mat density

(5) Joint density

(6) Thickness

(7) Smoothness

(8) Grade

(9) Gradation of aggregate

(10) Voids Filled with Mineral Aggregate (VMA)

(11) Film Thickness

Mat density and air voids will be evaluated for acceptance in accordance with paragraph 401-5.2b(1). Stability and flow will be evaluated for acceptance in accordance with paragraph 401-5.2b(2). Joint density will be evaluated for acceptance in accordance with paragraph 401-5.2b(3).

Thickness will be evaluated by the Engineer for compliance in accordance with paragraph 401-5.2b(4). Acceptance for smoothness will be based on the criteria contained in paragraph

401-5.2b(5). Acceptance for grade will be based on the criteria contained in paragraph 401-5.2b(6).

The Engineer may at any time, notwithstanding previous plant acceptance, reject and require the Contractor to dispose of any batch of bituminous mixture which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or improper mix temperature. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the Engineer, and if it can be demonstrated in the laboratory, in the presence of the Engineer, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

b **Acceptance Criteria.**

(1) **Mat Density and Air Voids.** Acceptance of each lot of plant produced material for mat density and air voids shall be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. Acceptance and payment shall be determined in accordance with paragraph 401-8.1.

(2) **Stability and Flow.** Acceptance of each lot of plant produced material for stability and flow shall be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. If the PWL is less than 90 percent, the Contractor shall determine the reason and take corrective action. If the PWL is below 80 percent, the Contractor must stop production until the reason for poor stability and/or flow has been determined and adjustments to the mix are made

(3) **Joint Density.** Acceptance of each lot of plant produced material for joint density shall be based on the percentage of material within specification limits (PWL). If the PWL of the lot is equal to or exceeds 90 percent, the lot shall be considered acceptable. If the PWL is less than 90 percent, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80 percent, the Contractor shall cease operations and until the reason for poor compaction has been determined. IF THE PWL IS LESS THAN 71 PERCENT, THE PAY FACTOR FOR THE LOT USED TO COMPLETE THE JOINT SHALL BE REDUCED BY 15 PERCENTAGE POINTS. This lot pay factor reduction shall be incorporated and evaluated in accordance with paragraph 401-8.1.

(4) **Thickness.** Thickness of each lift of surface course shall be evaluated by the Engineer for compliance to the requirements shown on the plans. Measurements of thickness shall be made by the Engineer using the cores extracted for each sublot for density measurement. The maximum allowable deficiency at any point shall not be more than ¼ inch less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, shall not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or sublot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the Engineer to circumscribe the deficient area.

(5) **Smoothness**. The final surface shall be free from roller marks. The finished surfaces of each course of the pavement, except the finished surface of the final course, shall not vary more than ⅜ inch when evaluated with a 16 foot straightedge. The finished surface of the final course of pavement shall not vary more than ¼ inch when evaluated with a 16 foot straightedge. The lot size shall be 2,000 square yards (square meters). Smoothness measurements shall be made at 50 foot intervals and as determined by the Engineer. In the longitudinal direction, a smoothness reading shall be made at the center of each paving lane. In the transverse direction, smoothness readings shall be made continuously across the full width of the pavement. However, transverse smoothness readings shall not be made across designed grade changes. At warped transition areas, straightedge position shall be adjusted to measure surface smoothness and not design grade transitions. When more than 15 percent of all measurements within a lot exceed the specified tolerance, the Contractor shall remove the deficient area to the depth of the final course of pavement and replace with new material. Skin patching shall not be permitted. Isolated high points may be ground off providing the course thickness complies with the thickness specified on the plans. High point grinding will be limited to 15 square yards. Areas in excess of 15 square yards will require removal and replacement of the pavement in accordance with the limitations noted above.

(6) **Grade**. The finished surface of the pavement shall not vary from the gradeline elevations and cross sections shown on the plans by more than ½ inch (12.70 mm). The finished grade of each lot will be determined by running levels at intervals of 50 feet (15.2 m) or less longitudinally and all breaks in grade transversely (not to exceed 50 feet) to determine the elevation of the completed pavement. The Contractor shall pay the cost of surveying of the level runs that shall be performed by a licensed surveyor. The documentation, stamped and signed by a licensed surveyor, shall be provided by the Contractor to the Engineer. The lot size shall be 2000 square yards (square meters). When more than 15 percent of all the measurements within a lot are outside the specified tolerance, or if any one shot within the lot deviates ¾ inch or more from planned grade, the Contractor shall remove the deficient area to the depth of the final

course of pavement and replace with new material. Skin patching shall not be permitted. Isolated high points may be ground off providing the course thickness complies with the thickness specified on the plans. The surface of the ground pavement shall have a texture consisting of grooves between 0.090 and 0.130 inches wide. The peaks and ridges shall be approximately 1/32 inch higher than the bottom of the grooves. The pavement shall be left in a clean condition. The removal of all of the slurry resulting from the grinding operation shall be continuous The grinding operation should be controlled so the residue from the operation does not flow across other lanes of pavement. High point grinding will be limited to 15 square yards. Areas in excess of 15 square yards will require removal and replacement of the pavement in accordance with the limitations noted above.

(7) **Voids in Mineral Aggregate (VMA).** The Engineer will evaluate VMA for substantial compliance to the minimum VMA requirements contained in Table 2 on a lot basis. During production, a tolerance of -0.5 percent shall be applied to the minimum VMA required for the mix design as contained in Table 2. The Engineer shall evaluate VMA for compliance to Table 2 using this criterion. If the VMA is below the minimum on a consistent basis (two consecutive tests or three out of 5

consecutive tests), the Engineer may require the JMF to be redesigned at the contractor's sole expense, without increasing the contract time.

(8) **Film Thickness.** The Engineer will evaluate the Film Thickness for substantial compliance to the minimum requirements contained in Table 1 on a lot basis. During production, computation methods described in the NCAT Report 98-1 shall be applied to the results obtained from the extracted asphalt content and aggregate gradations obtained from paragraphs 401-6.3a and 401-6.3b.

c. **Percentage of Material Within Specification Limits (PWL).** The percentage of material within specification limits (PWL) shall be determined in accordance with procedures specified in Section 110 of the General Provisions. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

d. **Outliers.** All individual tests for mat density and air voids shall be checked for outliers (test criterion) in accordance with ASTM E 178, at a significance level of 5 percent. Outliers shall be discarded, and the PWL shall be determined using the remaining test values.

TABLE 5. MARSHALL ACCEPTANCE LIMITS FOR STABILITY, FLOW, AIR VOIDS, DENSITY

TEST PROPERTY	**Pavements Designed for Aircraft Gross Weights of 60,000 Lbs. or Less or Tire Pressures Less than 100 Psi**	
Number of Blows	50	
	Specification Tolerance	
	L	U
Stability, minimum, pounds	1000	--
Flow, 0.01-inch	8	120
Air Voids Total Mix, percent	2	5
Mat Density, percent	96.3	101.3
Joint density, percent	93.3	--

The criteria in Table 5 is based on production processes which have a variability with the following standard deviations:

Surface Course Mat Density (%), 1.30

Base Course Mat Density (%), 1.55

Joint Density (%), 2.1

The Contractor should note that (1) 90 PWL is achieved when consistently producing a surface course with an average mat density of at least 98 percent with 1.30% or less variability, and (2) 90 PWL is achieved when consistently producing joints with an average joint density of at least 96 percent with 2.1% or less variability.

401-5.3 RESAMPLING PAVEMENT FOR MAT DENSITY.

a. **General.** Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the Engineer. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-5.1b and 401-5.2b(1). Only one resampling per lot will be permitted.

(1) A redefined PWL shall be calculated for the resampled lot. The number of tests used to calculate the redefined PWL shall include the initial tests made for that lot plus the retests.
(2) The cost for resampling and retesting shall be borne by the Contractor.

b. **Payment for Resampled Lots.** The redefined PWL for a resampled lot shall be used to calculate the payment for that lot in accordance with Table 6.

c. **Outliers.** Check for outliers in accordance with ASTM E 178, at a significance level of 5 percent.

CONTRACTOR QUALITY CONTROL

401-6.1 GENERAL.

The Contractor shall develop a Quality Control Program in accordance with Section 100 of the General Provisions. The program shall address all elements that affect the quality of the pavement including, but not limited to:

a. Mix Design

b. Aggregate Grading

c. Quality of Materials

d. Stockpile Management

e. Proportioning

f. Mixing and Transportation

g. Placing and Finishing

h. Joints

i. Compaction

j. Surface Smoothness

k. Personnel

l. Laydown Plan

m. Dust to Effective Asphalt Content Ratio

The Contractor shall perform quality control sampling, testing, and inspection during all phases of the work and shall perform them at a rate sufficient to ensure that the work conforms to the contract requirements, and at minimum test frequencies required by paragraph 401-6.3 and Section 100 of the General Provisions. As a part of the process for approving the Contractor's plan, the Engineer may require the Contractor's technician to perform testing of samples to demonstrate an acceptable level of performance.

No partial payment will be made for materials that are subject to specific quality control requirements without an approved plan.

401-6.2 TESTING LABORATORY.

The Contractor shall provide a fully equipped asphalt laboratory meeting the requirements of paragraph 401-3.5 and 401-4.2a(2) located at the plant or job site. The Contractor shall provide the Engineer with certification stating that all of the testing equipment to be used is properly calibrated and will meet the specifications applicable for the specified test procedures.

401-6.3 QUALITY CONTROL TESTING.

The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved Quality Control Program. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A Quality Control Testing Plan shall be developed as part of the Quality Control Program.

a. **Asphalt Content.** A minimum of two tests shall be performed per lot in accordance with ASTM D 6307 or ASTM D 2172 for determination of asphalt content. The weight of ash portion of the test, as described in ASTM D 2172, shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter, for the duration of plan production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture. The asphalt content for the lot will be determined by averaging the test results.

b. **Gradation.** Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with ASTM D 5444 and ASTM C 136 (Dry Sieve).

c. **Moisture Content of Aggregate.** The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C 566.

d. **Moisture Content of Mixture.** The moisture content of the mixture shall be determined once per lot in accordance with ASTM D 1461.

e. **Temperatures.** Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the bitumen in the storage tank, the mixture at the plant, and the mixture at the job site.

f. **In-Place Density Monitoring.** The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D 2950.

g. **Additional Testing.** Any additional testing that the Contractor deems necessary to control the process may be performed at the Contractor's option.

h. **Monitoring.** The Engineer reserves the right to monitor any or all of the above testing.

i. **Dust to Effective Asphalt Content Ratio.** Dust to effective asphalt content ratio shall be computed twice per lot. Computer results shall be plotted on a graph showing the limits of 0.6 and 1.2 bands.

401-6.4 SAMPLING.

When directed by the Engineer, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-6.5 CONTROL CHARTS.

The Contractor shall maintain linear control charts both for individual measurements and range (i.e., difference between highest and lowest measurements) for aggregate gradation asphalt content and dust to effective asphalt content ratio.

Control charts shall be posted in a location satisfactory to the Engineer and shall be kept current. Copies shall be submitted to engineer daily. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the Engineer may suspend production or acceptance of the material.

a. **Individual Measurements.** Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation and asphalt content. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

CONTROL CHART LIMITS FOR INDIVIDUAL MEASUREMENTS		
Sieve	Action Limit	Suspension Limit
1 inch	0%	0%
¾ inch (19.0 mm)	+/-6%	+/-9%
½ inch (12.5 mm)	+/-6%	+/-9%
⅜ inch (9.5 mm)	+/-6%	+/-9%
No. 4 (4.75 mm)	+/-6%	+/-9%

No. 16 (1.18 mm)	+/-5%	+/-7.5%
No. 50 (0.30 mm)	+/-3%	+/-4.5%
No. 200 (0.075 mm)	+/-2%	+/-3%
Asphalt Content	+/-0.45%	+/-0.70%

b. **Range.** Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

CONTROL CHART LIMITS BASED ON RANGE (Based on n = 2)	
Sieve	Suspension Limit
1 inch	0 percent
¾ inch	11 percent
½ inch (12.5 mm)	11 percent
⅜ inch (9.5 mm)	11 percent
No. 4 (4.75 mm)	11 percent
No. 16 (1.18 mm)	9 percent
No. 50 (0.30 mm)	6 percent
No. 200 (0.075 mm)	3.5 percent
Asphalt Content	0.8 percent

c. **Corrective Action.** The Contractor Quality Control Program shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

(1) One point falls outside the Suspension Limit line for individual measurements or range;
or
(2) Two points in a row fall outside the Action Limit line for individual measurements.

401-6.6 QUALITY CONTROL REPORTS.

The Contractor shall maintain records and shall submit reports of quality control activities daily, in accordance with the Contractor Quality Control Program described in General Provisions, Section 100.

METHOD OF MEASUREMENT

401-7 MEASUREMENT.

Plant mix bituminous concrete pavement shall be measured by the number of tons (kg) of bituminous mixture used in the accepted work. Excess pavement placed along longitudinal joints not ultimately included within the completed construction shall not be measured nor included in calculations for payment. Recorded batch weights or truck scale weights will be

used to determine the basis for the tonnage. Sawcutting to prepare joints or cold joints between new lanes shall not be measured and shall be considered incidental to the placement of plant mix bituminous concrete pavement.

BASIS OF PAYMENT

401-8 PAYMENT.

Payment for an accepted lot of bituminous concrete pavement shall be made at the contract unit price per ton (kg) for bituminous mixture adjusted according to paragraph 401-8.1a, subject to the limitation that:

The total project payment for plant mix bituminous concrete pavement shall not exceed 100 percent of the product of the contract unit price and the total number of tons (kg) of bituminous mixture used in the accepted work (See Note 2 under Table 6).

The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

a. **Basis of Adjusted Payment.** The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100 percent or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100 percent or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100 percent.

TABLE 6. PRICE ADJUSTMENT SCHEDULE 1

Percentage of Material Within Specification Limits (PWL)	Lot Pay Factor (Percent of Contract Unit Price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4PWL – 12
Below 55	Reject 2

[1] ALTHOUGH IT IS THEORETICALLY POSSIBLE TO ACHIEVE A PAY FACTOR OF 106 PERCENT FOR EACH LOT, ACTUAL PAYMENT ABOVE 100 PERCENT SHALL BE SUBJECT TO THE TOTAL PROJECT PAYMENT LIMITATION SPECIFIED IN PARAGRAPH 401-8.1.

[2] The lot shall be removed and replaced. However, the Engineer may decide to allow the rejected lot to remain. In that case, if the Engineer and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50 percent of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment

limitation specified in paragraph 401-8.1. Joint density deductions, if applicable, shall be taken after PWL calculation adjustments are calculated. Payment in excess of 100 percent for accepted lots of bituminous concrete pavement shall be used to offset payment for accepted lots of bituminous concrete pavement that achieve a lot pay factor less than 100 percent.

Payment will be made under:

Item P-401-8.1 Bituminous Concrete Pavement—per ton (kg)

TESTING REQUIREMENTS

ASTM C 29	Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	Specific Gravity and Absorption of Coarse Aggregate
ASTM C 131	Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 183	Sampling and the Amount of Testing of Hydraulic Cement
ASTM C 566	Total Evaporable Moisture Content of Aggregate by Drying
ASTM D 75	Sampling Aggregates
ASTM D 979	Sampling Bituminous Paving Mixtures
ASTM D 995	Mixing Plants for Hot-Mixed Hot-Laid Bituminous Paving Mixtures
ASTM D 1073	Fine Aggregate for Bituminous Paving Mixtures
ASTM D 1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
ASTM D 1461	Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D 2489	Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D 2726	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 3665	Random Sampling of Construction Materials
ASTM D 3666	Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D 4125	Asphalt Content of Bituminous Mixtures by the Nuclear Method
ASTM D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4791	Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D 4867	Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D 5444	Mechanical Size Analysis of Extracted Aggregate
ASTM D 6926	Preparation of Bituminous Specimens Using MARSHALL Apparatus
ASTM D 6927	MARSHALL Stability and Flow of Bituminous Mixtures
ASTM E 11	Wire-Cloth Sieves for Testing Purposes

ASTM E 178	Dealing with Outlying Observations
ASTM E 1274	Measuring Pavement Roughness Using a Profilograph
AASHTO T 30	Mechanical Analysis of Extracted Aggregate
AASHTO T 110	Moisture or Volatile Distillates in Bituminous Paving Mixtures
The Asphalt Institute's Manual No. 2 (MS-2)	Mix Design Methods for Asphalt Concrete

MATERIAL REQUIREMENTS

ASTM D 242	Mineral Filler for Bituminous Paving Mixtures
ASTM D 946	Penetration Graded Asphalt Cement for Use in Pavement Construction
ASTM D 3381	Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 4552	Classifying Hot-Mix Recycling Agents
AASHTO M320	Performance Graded Asphalt Binder

END OF ITEM P-401

PART V - MISCELLANEOUS

ITEM P-603

BITUMINOUS TACK COAT

DESCRIPTION

603-1.1 This item shall consist of preparing and treating a bituminous or concrete surface with bituminous material in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

603-1.2 Bituminous tack coat shall be applied to all surfaces jointed to new P-401 excluding the surfaces treated with P-605 joint sealing filler and joint adhesive.

MATERIALS

603-2 BITUMINOUS MATERIALS.

The bituminous material shall be either cutback asphalt, emulsified asphalt, or tar and shall conform to the requirements of Table 1. The type, grade, controlling specification, and application temperature of bituminous material to be used shall be specified by the Engineer.

TABLE 1. BITUMINOUS MATERIAL

Type and Grade	Specification	Application Temperature Deg. F	Deg. C
Emulsified Asphalt			
SS-1, SS-1h	ASTM D 977	75-130	25-55

CONSTRUCTION METHODS

603-3.1 WEATHER LIMITATIONS.

The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is above 45°F (8°C). The temperature requirements may be waived, but only when so directed by the Engineer.

603-3.2 EQUIPMENT.

The Contractor shall provide equipment for heating and applying the bituminous material.

The distributor shall be designed, equipped, maintained, and operated so that bituminous material at even heat may be applied uniformly on variable widths of surface at the specified rate. The allowable variation from the specified rate shall not exceed 10 percent. Distributor equipment shall include a tachometer, pressure gages, volume-measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents. The distributor shall be self-powered and shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

If the distributor is not equipped with an operable quick shut off valve, the tack operations shall be started and stopped on building paper. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the owner.

A power broom and/or blower shall be provided for any required cleaning of the surface to be treated.

603-3.3 APPLICATION OF BITUMINOUS MATERIAL.

Immediately before applying the tack coat, the full width of surface to be treated shall be swept with a power broom and/or airblast to remove all loose dirt and other objectionable material.

Emulsified asphalt shall be diluted by the addition of water when directed by the Engineer and shall be applied a sufficient time in advance of the paver to ensure that all water has evaporated before any of the overlying mixture is placed on the tacked surface.

The bituminous material including vehicle or solvent shall be uniformly applied with a bituminous distributor at the rate of 0.05 to 0.15 gallons per square yard (0.24 to 0.72 liters per square meter) depending on the condition of the existing surface. The type of bituminous material and application rate shall be approved by the Engineer prior to application.

Following the application, the surface shall be allowed to cure without being disturbed for such period of time as may be necessary to permit drying out and setting of the tack coat. This period shall be determined by the Engineer. The surface shall then be maintained by the Contractor until the next course has been placed. Suitable precautions shall be taken by the Contractor to protect the surface against damage during this interval.

603-3.4 BITUMINOUS MATERIAL CONTRACTOR'S RESPONSIBILITY.
Samples of the bituminous material that the Contractor proposes to use, together with a statement as to its source and character, must be submitted and approved before use of such material begins. The Contractor shall require the manufacturer or producer of the bituminous material to furnish material subject to this and all other pertinent requirements of the contract. Only satisfactory materials so demonstrated by service tests, shall be acceptable.

The Contractor shall furnish the vendor's certified test reports for each carload, or equivalent, of bituminous material shipped to the project. The tests reports shall contain all the data required by the applicable specification. If the Contractor applies the material prior to receipt of the tests reports, payment for the material shall be withheld until they are received. If the material does not pass the specifications it shall be replaced at the contractor's expense. The report shall be delivered to the Engineer before permission is granted for use of the material. The furnishing of the vendor's certified test report for the bituminous material shall not be interpreted as a basis for final acceptance. All such test reports shall be subject to verification by testing samples of material received for use on the project.

603-3.5 FREIGHT AND WEIGH BILLS. . Before the final estimate is allowed, the Contractor shall file with the Engineer receipted bills when railroad shipments are made, and certified weigh bills when materials are received in any other manner, of the bituminous materials actually used in the construction covered by the contract. The Contractor shall not remove bituminous material from the tank car or storage tank until the initial outage and temperature measurements have been taken by the Engineer, nor shall the car or tank be released until the final outage has been taken by the Engineer. Copies of freight bills and weigh bills shall be furnished to the Engineer during the progress of the work.

METHOD OF MEASUREMENT

603-4 The bituminous material for tack coat shall be measured by the **gallon (liter)**. Volume shall be corrected to the volume at 60°F (15°C) in accordance with TableIV-3 of The Asphalt Institute's Manual MS-6 for emulsified asphalt. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

603-5 Payment shall be made at the contract unit price per **gallon (liter)** of bituminous material. This price shall be full compensation for furnishing all materials, for all preparation, delivery, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-603-5.1 Bituminous Tack Coat—per gallon (liter)

MATERIAL REQUIREMENTS

ASTM D 633	Volume Correction Table for Road Tar
ASTM D 977	Emulsified Asphalt
ASTM D 1250	Petroleum Measurement Tables
ASTM D 2028	Cutback Asphalt (Rapid-Curing Type)
ASTM D 2397	Cationic Emulsified Asphalt
Asphalt Institute Manual MS-6 Table IV-3	Asphalt Pocketbook of Useful Information (Temperature-Volume Corrections for Emulsified Asphalts)

END OF ITEM P-603

ITEM P-605

JOINT SEALING FILLER AND JOINT ADHESIVES

DESCRIPTION

605-1 This item shall consist of providing and installing a resilient and adhesive joint sealing filler capable of effectively sealing joints and cracks in pavements and providing and installing a waterproof pavement joint adhesive to the asphalt pavement joints (including those cold joints related to the asphalt test sections from Section P-401) to reduce crack formation and raveling of joints. All vertical joints between asphalt courses (on the surface course only), including joints between new and existing asphalt and between two new paving lanes, shall be treated with P-605 Joint Adhesive. Base course joints between bituminous surfaces shall be tacked with P-603 material.

MATERIALS

605-2 Asphalt Cold Joint Adhesive.

Joint adhesive materials shall consist of a hot applied modified asphalt composition used as an adhesive and tacking material for cold contraction joints in asphalt concrete pavement. Joint adhesive materials shall me the requirements shown in Table 1.

Table 1 – Joint Adhesive Specification Conformance Requirements.

Test	Standard	Specification
Brookfield Viscosity, 400 Degrees F	ASTM D 2669	4,000 to 10,000 cp
Cone Penetration, 77 Degrees F	ASTM D 5329	60 to 100
Flow, 140 Degrees F	ASTM D 5329	5 mm Maximum
Resilience, 77 Degrees F	ASTM D 5329	30% Maximum
Ductility, 77 Degrees F	ASTM D 113	30 cm Minimum
Ductility, 39.2 Degrees F	ASTM D 113	30 cm Maximum
Tensile Adhesion, 77 Degrees F	ASTM D 5329	500% Minimum
Flexibility, 0Degrees F	Manufacturer Procedure	Pass
Softening Point	ASTM D 36	170 Degrees F Minimum
Asphalt Compatibility	ASTM D 5329	Pass
Recommended Pour Temperature	-	380 Degrees F
Safe Heating Temperature	-	410 Degrees F

The asphalt cold joint adhesive shall be Pavement Joint Adhesive, Part No. 34524, as manufactured by Crafco[tm] Inc., 420 North Roosevelt Avenue, Chandler, Arizona 85226 or an approved equal. Phone number for Crafco, inc is (800) 528-8242, or www.crafco.com.

The pavement joint adhesive material shall be a hot applied modified asphalt composition effectively bonding the paving passes together creating a watertight seal during thermal movement.

Each lot or batch of sealing compound shall be delivered to the jobsite in the manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, the safe heating temperature, and shall be accompanied by the

manufacturer's certification stating that the compound meets the requirements of this specification.

EQUIPMENT

605-3 General. Equipment for hot applied joint sealing and adhesive materials shall be an oil-jacketed, double boiler, melter kettle equipped with both agitation and re-circulating systems that is approved by the joint sealing manufacturer and the joint adhesive manufacturer. The kettle shall contain a feed wand applicator system with an applicator shoe attached.

CONSTRUCTION METHODS

605-4.1 INSTALLATION OF SEALANTS.

Joints shall be inspected for proper width, depth, alignment, and preparation, and shall be approved by the Engineer before sealing is allowed. Sealants shall be installed in accordance with the following requirements:

605-4.2 ASPHALT COLD JOINT ADHESIVE.

Joint adhesive material shall be applied to the vertical face of **all asphalt to asphalt joints (P-401) prior to placing the adjacent paving lane** on the surface lift of the pavement section. This includes joints **between two new paving lanes and between old asphalt and new P-401**.

A. Asphalt Joint Adhesive Representative. The Contractor shall provide a representative from the manufacturer of the asphalt joint adhesive material to be present during the initial construction of the joint adhesive. The representative shall be present at least three (3) work shifts during the initial paving.

B. Surface Preparation. Prior to the application of the asphalt joint adhesive, the Contractor shall ensure that the face of the longitudinal joint of the first paving lane paved is thoroughly dry and free from any loose material, dust, or any other debris that would inhibit adhesion. When the joint is not clean, the Contractor shall clean the joint face by the use of compressed air. If moisture is present, the Contractor shall use a hot compressed air lance. The Contractor shall ensure the preparation process occurs shortly before the application to prevent the return of debris on the joint face prior to applying the asphalt joint adhesive.

C. Asphalt Joint Adhesive Temperature Control. The Contractor shall ensure the temperature of the asphalt joint adhesive is between 380 degree F and 410 degrees F when applied to the longitudinal joint.

D. Asphalt Joint Adhesive Application. The Contractor shall ensure the pavement temperature is a minimum of 40 Degrees F during the application of the adhesive. Prior to applying the adhesive, the Contractor shall demonstrate competence in applying the adhesive to the satisfaction of the Engineer. The joint adhesive shall be heated in a melter kettle to the specified temperature range. The joint adhesive shall be pumped

from the melter kettle, through the wand onto the vertical face of the joint. The adhesive shall be applied in a continuous, 1/8 – inch thick band over the entire face of the longitudinal joint. Application excesses should not exceed an overlap of more than 2 inches at the bottom of the joint, or more than ½ - inch at the top of the joint. Upon completion of the joint adhesive application, the contractor swill place and compact the adjacent lane against the face of the joint coated with eh asphalt joint adhesive.

E. Asphalt Joint Adhesive Certification. The Contractor shall furnish an original asphalt joint adhesive manufacturer's certification to the Engineer stating the material conforms to all requirements herein prior to use.

METHOD OF MEASUREMENT

605-5 Asphalt Cold Joint Adhesive shall be measured by the linear foot of adhesive applied in place, completed, and accepted by the Engineer.

BASIS OF PAYMENT

605-6.1 Payment for asphalt cold joint adhesive shall be made at the contract unit price per **linear foot (meter).** The price shall be full compensation for furnishing all materials, for all preparation, delivering, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-605-6.1	Asphalt Cold Joint Adhesive -– per linear foot (meter)

TESTING REQUIREMENTS

ASTM D 412	Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension
ASTM D 1644	Test Methods for Nonvolatile Content of Varnishes

MATERIAL REQUIREMENTS

ASTM D 1854	Jet-Fuel-Resistant Concrete Joint Sealer, Hot-Applied Elastic Type
ASTM D 3406	Joint Sealants, Hot-Applied, Elastomeric-Type, for Portland Cement Concrete Pavements
ASTM D 3569	Joint Sealant, Hot-Applied, Elastometric, Jet-Fuel-Resistant Type, for Portland Cement Concrete Pavements
ASTM D 3581	Joint Sealant, Hot-Applied, Jet-Fuel-Resistant Type, for Portland Cement Concrete and Tar-Concrete Pavements
ASTM D 5893	Standard Specifications for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements

ASTM D 6690	Joint and Crack Sealants, Hot-Applied, for Concrete and Asphalt Pavements
FED SPEC	Sealants, Joint, Two-Component, Jet-Blast Resistant, Cold Applied SS-S-200E(2)

END ITEM P-605

ITEM P-610

STRUCTURAL PORTLAND CEMENT CONCRETE

DESCRIPTION

610-1.1 This item shall consist of plain structural portland cement concrete, prepared and constructed in accordance with these specifications, at the locations and of the form and dimensions shown on the plans.

610-1.2 This item shall consist concrete non-shrink grout applied and bonded to existing concrete, prepared and constructed in accordance with these specifications, at existing light can locations required to be adjusted to grade when the overlay / shoulder treatment adds between ¼ to ½ inch of new material around light fixture locations.

MATERIALS

610-2.1 GENERAL.

Only approved materials, conforming to the requirements of these specifications, shall be used in the work. They may be subjected to inspection and tests at any time during the progress of their preparation or use. The source of supply of each of the materials shall be approved by the Engineer before delivery or use is started. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be scored and handled to insure the preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed therein.

In no case shall the use of pit-run or naturally mixed aggregates be permitted. Naturally mixed aggregate shall be screened and washed, and all fine and coarse aggregates shall be stored separately and kept clean. The mixing of different kinds of aggregates from different sources in one storage pile or alternating batches of different aggregates will not be permitted.

a. **Reactivity.** Aggregates shall be tested for deleterious reactivity with alkalies in the cement that may cause excessive expansion of the concrete. Acceptance of aggregates shall be based upon satisfactory evidence furnished by the Contractor that the aggregates, combined with other mixture constituents, do not produce excessive expansion in the concrete. This evidence shall include service records of concrete of comparable properties under similar conditions or exposure and certified records of tests by a testing laboratory that meets the requirements of ASTM C 1077. Tests shall be made in accordance with ASTM C 1260. Test specimens shall be produced using all components (e.g. coarse aggregate, fine aggregate, cement and fly ash...) to be included in the produced concrete. If the mean expansion of the test specimens, tested in accordance with ASTM C 1260, does not exceed 0.10 % at 16 days from casting the aggregates shall be accepted. If the mean expansion at 16 days is greater than 0.10% but less than 0.15%, the aggregate may be accepted based upon satisfactory service records and acceptance of the aggregate by a State Highway Department specifically addressing Alkali-Silica Reactivity. If the expansion is greater than 0.15%, the aggregate shall not be accepted for use.

610-2.2 COARSE AGGREGATE.

The coarse aggregate for concrete shall meet the requirements of ASTM C 33. Crushed stone aggregate shall have a durability factor, as determined by ASTM C 666, greater than or equal to 95. The Engineer may consider and reserve final approval of other State classification procedures addressing aggregate durability.

Coarse aggregate shall be well graded from coarse to fine and shall meet one of the gradations shown in Table 1, using ASTM C 136.

610-2.3 FINE AGGREGATE.

The fine aggregate for concrete shall meet the requirements of ASTM C 33.

The fine aggregate shall be well graded from fine to coarse and shall meet the requirements of Table 2 when tested in accordance with ASTM C 136:

TABLE 1. GRADATION FOR COARSE AGGREGATE

Sieve Designation (square openings)	Percentage by Weight Passing Sieves						
	2"	1-1/2"	1"	3/4"	1/2"	3/8"	No.4
No. 4 to 3/4 in. (4.75-19.0 mm)			100	90-100		20-55	0-10
No. 4 to 1 in. (4.75-25.0 mm)		100	90-100		25-60		0-10
No. 4 to 1-1/2 in. (4.75-38.1 mm)	100	95-100		35-70		10-30	0-5

TABLE 2. GRADATION FOR FINE AGGREGATE

Sieve Designation (square openings)	Percentage by Weight Passing Sieves
3/8 inch (9.5 mm)	100
No. 4 (4.75 mm)	95-100
No. 16 (1.18 mm)	45-80
No. 30 (0.60 mm)	25-55
No. 50 (0.30 mm)	10-30
No. 100 (0.15 mm)	2-10

Blending will be permitted, if necessary, in order to meet the gradation requirements for fine aggregate. Fine aggregate deficient in the percentage of material passing the No. 50 mesh sieve may be accepted, provided that such deficiency does not exceed 5% and is remedied by the addition of pozzolanic or cementitious materials other than portland cement, as specified in 610-2.6 on admixtures, in sufficient quantity to produce the required workability as approved by the Engineer.

610-2.4 CEMENT.

Cement shall conform to the requirements of ASTM C 150 Type II.

The Contractor shall furnish vendors' certified test reports for each carload, or equivalent, of cement shipped to the project. The report shall be delivered to the Engineer before permission to use the cement is granted. All such test reports shall be subject to verification by testing sample materials received for use on the project.

610-2.5 WATER.

The water used in concrete shall be free from sewage, oil, acid, strong alkalies, vegetable matter, and clay and loam. If the water is of questionable quality, it shall be tested in accordance with AASHTO T 26.

610-2.6 ADMIXTURES.

The use of any material added to the concrete mix shall be approved by the Engineer. Before approval of any material, the Contractor shall be required to submit the results of complete physical and chemical analyses made by an acceptable testing laboratory. Subsequent tests shall be made of samples taken by the Engineer from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

Pozzolanic admixtures shall be fly ash or raw or calcined natural pozzolons meeting the requirements of ASTM C 618, Class F or N with the exception of loss of ignition, where the maximum shall be less than 6 percent. Class F or N flyash for use in mitigating alkali-silica reactivity shall have a Calcium Oxide (CaO) content of less than 13 percent and a total equivalent alkali content less than 3 percent.

Air-entraining admixtures shall meet the requirements of ASTM C 260. Air-entraining admixtures shall be added at the mixer in the amount necessary to produce the specified air content.

Water-reducing, set-controlling admixtures shall meet the requirements of ASTM C 494, Type A, water-reducing or Type D, water-reducing and retarding. Water-reducing admixtures shall be added at the mixer separately from air-entraining admixtures in accordance with the manufacturer's printed instructions.

610-2.7 STEEL REINFORCEMENT.

Reinforcing shall consist of **Deformed** Bars conforming to the requirements of **ASTM A 184.**

610-2.8 COVER MATERIALS FOR CURING.

Curing materials shall conform to one of the following specifications:

Waterproof paper for curing concrete	ASTM C 171
Polyethylene Sheeting for Curing Concrete	ASTM C 171
Liquid Membrane-Forming Compounds for Curing Concrete	ASTM C 309, Type 2

610-2.9 NON SHRINK GROUT.

Provide non shrink, rapid setting, high strength repair mortar for horizontal structural patch and repair of existing concrete substrate.

Provide high strength, non-metallic, Portland cement based non shrink grout.

Non Shrink rapid setting high strength, hydraulic cement based repair mortar and Non Shrink Grouts for horizontal applications. Comply with the following:

1. Manufacturer: Fastset™ Non Shrink Grout (#1585-09) as manufactured by the QUIKRETE® Companies or approved equal.

2. Performance and Physical Properties at 73 degrees F and 50 percent relative humidity:

   a. Compliance: ASTM C 928 R-3 specifications ASTM C 1107 CRD 621

   b. Working Time, ASTM C 1107: 15-20 minutes.

   c. Final Set Time, ASTM C 191: 20-45 minutes.

   d. Compressive Strength, ASTM C 109 Modified:

   Plastic: 3000 psi (20.7 MPa) @ 3 hours, 5000 psi (34.5 MPa) @ 24 hours,

   6000 psi (41.3 MPs) @ 7 days and 8000 psi (55.1 MPs) @ 28 days.

   e. Slant Shear Bond Strength, ASTM C 928: 1000 psi (6.9 MPa) @ 24 hours, 1500 psi (10.3 MPa) @ 7 days and 2500 psi (17.2 MPa) @ 28 days.

   f. Height Change, ASTM C 1090: 0-0.2%.

   g. Flow at Fluid Consistency, ASTM C 939: 20-30 seconds.

CONSTRUCTION METHODS

610-3.1 GENERAL.

The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified herein. All machinery and equipment owned or controlled by the Contractor, which he proposes to use on the work, shall be of sufficient size to meet the requirements of the work, and shall be such as to produce satisfactory work; all work shall be subject to the inspection and approval of the Engineer.

610-3.2 CONCRETE COMPOSITION.

The concrete shall develop a compressive strength of **4000** psi in 28 days as determined by test cylinders made in accordance with ASTM C 31 and tested in accordance with ASTM C 39. The concrete shall contain not less than 470 pounds of cement per cubic yard (280 kg per cubic meter). The concrete shall contain 5 percent of entrained air, plus or minus 1 percent, as determined by ASTM C 231 and shall have a slump of not more than 4 inches (10 cm) as determined by ASTM C 143.

610-3.3 ACCEPTANCE SAMPLING AND TESTING.

Concrete for each structure will be accepted on the basis of the compressive strength specified in paragraph 3.2. The concrete shall be sampled in accordance with ASTM C 172. Compressive strength specimens shall be made in accordance with ASTM C 31 and tested in accordance with ASTM C 39.

Concrete cylindrical test specimens shall be made in accordance with ASTM C 31 and tested in accordance with ASTM C 39. The Contractor shall cure and store the test specimens under such conditions as directed. The Engineer will make the actual tests on the specimens at no expense to the Contractor.

610-3.4 PROPORTIONING AND MEASURING DEVICES.

When package cement is used, the quantity for each batch shall be equal to one or more whole sacks of cement. The aggregates shall be measured separately by weight. If aggregates are delivered to the mixer in batch trucks, the exact amount for each mixer charge shall be contained in each batch compartment. Weighing boxes or hoppers shall be approved by the Engineer and shall provide means of regulating the flow of aggregates into the batch box so that the required and exact weight of aggregates can be readily obtained.

610-3.5 CONSISTENCY.

The consistency of the concrete shall be checked by the slump test specified in ASTM C 143.

610-3.6 MIXING.

Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C 94.

610-3.7 MIXING CONDITIONS.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without permission of the Engineer. If permission is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his/her expense.
Retempering of concrete by adding water or any other material shall not be permitted.

The delivery of concrete to the job shall be in such a manner that batches of concrete will be deposited at uninterrupted intervals.

610-3.8 FORMS.

Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the Engineer. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as designed on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent

displacement and sagging between supports. The Contractor shall bear responsibility for their adequacy. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes.

The internal ties shall be arranged so that, when the forms are removed, no metal will show in the concrete surface or discolor the surface when exposed to weathering. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied shortly before the concrete is placed. Forms shall be constructed so that they can be removed without injuring the concrete or concrete surface. The forms shall not be removed before the expiration of at least 30 hours from vertical faces, walls, slender columns, and similar structures; forms supported by falsework under slabs, beams, girders, arches, and similar construction shall not be removed until tests indicate that at least 60% of the design strength of the concrete has developed.

610-3.9 PLACING REINFORCEMENT.

All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concreting. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.10 EMBEDDED ITEMS.

Before placing concrete, any items that are to be embedded shall be firmly and securely fastened in place as indicated. All such items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The embedding of wood shall be avoided. The concrete shall be spaded and consolidated around and against embedded items.

610-3.11 PLACING CONCRETE.

All concrete shall be placed during daylight, unless otherwise approved. The concrete shall not be placed until the depth and character of foundation, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved. Concrete shall be placed as soon as practical after mixing and in no case later than 1 hour after water has been added to the mix. The method and manner of placing shall be such to avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. Dropping the concrete a distance of more than 5 feet (1.5 m), or depositing a large quantity at one point, will not be permitted. Concrete shall be placed upon clean, damp surfaces, free from running water, or upon properly consolidated soil.

The concrete shall be compacted with suitable mechanical vibrators operating within the concrete. When necessary, vibrating shall be supplemented by hand spading with suitable tools to assure proper and adequate compaction. Vibrators shall be manipulated so as to work the concrete thoroughly around the reinforcement and embedded fixtures and into corners and angles of the forms. The vibration at any joint shall be of sufficient duration to accomplish compaction but shall not be prolonged to the point where segregation occurs. Concrete deposited under water shall be carefully placed in a compact mass in its final position by means of a tremie, a closed bottom dump bucket, or other approved method and shall not be disturbed after being deposited.

610-3.12 DEFECTIVE WORK.

Any defective work discovered after the forms have been removed shall be immediately removed and replaced. If any dimensions are deficient, or if the surface of the concrete is bulged, uneven, or shows honeycomb, which in the opinion of the Engineer cannot be repaired satisfactorily, the entire section shall be removed and replaced at the expense of the Contractor

610-3.13 SURFACE FINISH.

All exposed concrete surfaces shall be true, smooth, and free from open or rough spaces, depressions, or projections. The concrete in horizontal plane surfaces shall be brought flush with the finished top surface at the proper elevation and shall be struck-off with a straightedge and floated. Mortar finishing shall not be permitted, nor shall dry cement or sand-cement mortar be spread over the concrete during the finishing of horizontal plane surfaces.

When directed, the surface finish of exposed concrete shall be a rubbed finish. If forms can be removed while the concrete is still green, the surface shall be pointed and wetted and then rubbed with a wooden float until all irregularities are removed. If the concrete has hardened before being rubbed, a carborundum stone shall be used to finish the surface. When approved, the finishing can be done with a rubbing machine.

610-3.14 CURING AND PROTECTION.

All concrete shall be properly cured and protected by the Contractor. The work shall be protected from the elements, flowing water, and from defacement of any nature during the building operations. The concrete shall be cured as soon as it has sufficiently hardened by covering with an approved material. Water-absorptive coverings shall be thoroughly saturated when placed and kept saturated for a period of at least 3 days. All curing mats or blankets shall be sufficiently weighted or tied down to keep the concrete surface covered and to prevent the surface from being exposed to currents of air. Where wooden forms are used, they shall be kept wet at all times until removed to prevent the opening of joints and drying out of the concrete. Traffic shall not be allowed on concrete surfaces for 7 days after the concrete has been placed.

610-3.15 NON-SHRINK GROUT.

a. **Examine**

1. Examine substrates and conditions under which materials will be installed. Do not proceed

2. With installation until unsatisfactory conditions are corrected.

3. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect

4. Adjacent areas landscaping from contact due to mixing and handling of materials.

5. Install spacer ring required to extend can. Spacer ring shall be in accordance with the

requirements for L-867 light can meeting FAA Specifications for edge light cans. Submittal required. In locations where the total change in pavement elevation is less than ¼ inch, do not install spacer and warp pavement around light to prevent surface water from running to light fixture

6. Clean light fixture prior to re-installation

b. **Surface Preparation:** Comply with manufacturer's printed instructions and the following:

1. Remove all spalled and unsound concrete from area to be raised.

2. Roughen existing surface to provide bond by hammering with powered jack hammer.Method to roughen and depth of removal to be as approved by Engineer/

3. Clean surface to be repaired of all materials including dust, oil, dirt and grease.

4. Dampen with clean water before patching and remove standing water.

c. **Mixing**: Comply with manufacturer's printed instructions and the following:

1. Material should be mechanically mixed for a minimum of 3 minutes using a five gallon (19L) bucket with a ½" (12mm) drill and paddle mixer. For large grouting applications a standard mortar mixer should be used.

2. Add 1 ¼ gallon (4.7L) of clean water for each 60lb (27.2 kg) bag to achieve a plastic consistency. (Flowable: 1½ gallon (5.7L), fluid 1¾ gal. (6.6L)). Add the powder to the water and mix to achieve required placing consistency. Add water sparingly to reach the desired consistency. Do not mix more material than can be placed in 15 minutes.

3. For repair deeper than 2" (50 mm), up to 30 lbs (13.6kg) of clean, high quality ½" (12mm) gravel may be added to the mix at the plastic consistency. The water required will be reduced to 1 gallon (3.8 L) per 60-pound (27.2 kg) bag.

4. Do not re-temper with additional water.

d. **Application**: Comply with manufacturer's printed instructions and the following:

1. Instructions for use as a Grout

   i. The area to be grouted should be thoroughly flushed and soaked with clean water prior to grouting. Leave no standing water.

   ii. Place the grout quickly and continuously use light rodding or strapping is permitted to eliminate air bubbles.

   iii. Grout temperature should be maintained from 50°F to 90°F (10°C - 32°C) to achieve specified results. Use cold water in hot weather or hot water in cold weather to achieve desired grout temperature. Do not use if temperature is expected to go below 32°F (0°C) within a 12 hour period.

2. Instructions for use as a Repair Mortar

   i. Remove all areas of spalled and unsound concrete from surface to be repaired.

   ii. Repair areas that are subject to heavy traffic should have a vertical edge of ½" (12 mm) or more, formed by use of a pneumatic jackhammer or sawing.

   iii. Dampen surface with clean water before patching. Remove standing water.

   iv. The repaired areas should be filled by placing material full depth, from one end to the other to eliminate partial depth lifts between batches.

   v. Consolidate the material by hand tamping or chopping with a shovel or trowel. This is particularly important around the edges.

   vi. Screed and finish to create a surface that matches the surrounding finish and is sloped away from the light fixture.

   vii. Repair Mortar temperature should be maintained from 50°F to 90°F (10°C - 32°C) to achieve specified results. Use cold water in hot weather or hot water in cold weather to achieve desired grout temperature. Do not use if temperature is expected to go below 32°F (0°C) within a 12 hour period.

e. **Curing.** Grouting applications must be damp cured for at least one day and protected from shrinkage cracking or surface cracking for seven days.

f. **Cleaning.** Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

METHOD OF MEASUREMENT

610-4.1 Installation of new concrete collar with reinforcing and spacer rings for light cans to adjust lights to grade **for light adjustments greater than ½ inch** shall be measured by each light adjusted complete in place and accepted. Measurement shall include removing existing light fixture, cleaning existing light fixture, furnishing and installing spacer, forming, chipping existing concrete to depth specified on plans, installing new reinforcing and new concrete, and re-installing light fixture.

610-4.2 Installation of non shrink grout and spacer rings for light cans to adjust lights to grade **for light adjustments between ¼ to ½ inch** shall be measured by each light adjusted complete in place and accepted. Measurement shall include removing existing light fixture, cleaning existing light fixture, furnishing and installing spacer, forming, chipping existing concrete to roughen, installing non-shrink grout (minimum depth of ¼ inch), and re-installing light fixture.

610-4.3 For conditions less than a ¼ inch change in grade, measurement shall include removing existing light fixture, cleaning existing light fixture, furnishing and installing spacer, and warping pavement to drain away from existing concrete collar.

BASIS OF PAYMENT

610-5.1-3 Payment shall be made at the contract unit price per each light system adjusted per the details on the plans. These prices shall be full compensation for furnishing all materials and for all preparation delivery and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-610-5.1	Adjust Light Fixture to Grade (> ½ ") – per each
Item P-610-5.2	Adjust Light Fixture to Grade (¼" to ½") – per each
Item P-610-5.3	Adjust Light Fixture to Grade (<¼") – per each

TESTING REQUIREMENTS

ASTM C 31	Making and Curing Test Specimens in the Field
ASTM C 39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 138	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
ASTM C 143	Slump of Hydraulic Cement Concrete
ASTM C 231	Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 666	Resistance of Concrete to Rapid Freezing and Thawing
ASTM C 1077	Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM C 1260	Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)

MATERIAL REQUIREMENTS

ASTM A 184	Specification for Fabricated Deformed Steel Bar or Rod Mats for Concrete Reinforcement
ASTM A 185	Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM A 497	Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
ASTM A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 704	Welded Steel Plain Bars or Rod Mats for Concrete Reinforcement
ASTM C 33	Concrete Aggregates
ASTM C 94	Ready-Mixed Concrete
ASTM C 150	Portland Cement

ASTM C 171	Sheet Materials for Curing Concrete
ASTM C 172	Sampling Freshly Mixed Concrete
ASTM C 260	Air-Entraining Admixtures for Concrete
ASTM C 309	Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494	Chemical Admixtures for Concrete
ASTM C 595	Blended Hydraulic Cements
ASTM C 618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM D 1751	Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)
ASTM D 1752	Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
AASHTO T 26	Quality of Water to be Used in Concrete

END OF ITEM P-610

ITEM P-620

RUNWAY AND TAXIWAY PAINTING

DESCRIPTION

620-1 This item shall consist of the painting of numbers, markings, and stripes on the surface of runways, taxiways, including all temporary markings, in accordance with these specifications and at the locations shown on the plans, or as directed by the Engineer. One coat of paint shall be applied for temporary markings, and two coats of paint shall be applied, with reflective medians required, for all other markings and striping.

MATERIALS

620-2.1 MATERIALS ACCEPTANCE.

The Contractor shall furnish manufacturer's certified test reports for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. The reports can be used for material acceptance or the Engineer may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the Engineer upon arrival of a shipment of materials to the site.

620-2.2 PAINT.

Paint shall be **Waterborne** in accordance with the requirements of paragraph 620-2.2. Paint shall be furnished in **White – 37925, Yellow – 33538 or 33655, Red – 31136, and Black – 37038** in accordance with Federal Standard No 595.

a. **WATERBORNE.** Paint shall meet the requirements of Federal Specification TT-P-1952E, **Type II.**

b. **EPOXY.** Not used.

c. **METHACRYLATE.** Not used.

620-2.3 REFLECTIVE MEDIA.

Glass beads shall meet the requirements for **Federal Specification TT-B-1325D Type I, gradation A.** Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

CONSTRUCTION METHODS

620-3.1 WEATHER LIMITATIONS.

The painting shall be performed only when the surface is dry and when the surface temperature is at least 45°F (7 °C) and rising and the pavement surface temperature is at least 5°F (2.7 °C) above the dew point. **Painting operations shall be discontinued when the surface temperature exceeds 110 degrees F.** Markings shall not be applied when the pavement temperature is greater than 120°F.

620-3.2 EQUIPMENT.

Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall apply markings of uniform cross sections and clear-cut edges without running or spattering and without over spray.

620-3.3 PREPARATION OF SURFACE.

Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material that would reduce the bond between the paint and the pavement. The area to be painted shall be cleaned by sweeping and blowing or by other methods as required to remove all dirt, laitance, and loose materials without damage to the pavement surface. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the Engineer. Temporary (first application) paint shall be applied to the Bituminous Pavement as soon as practical but only after the Bituminous Pavement has cooled enough to accept the paint and the application of the paint will not damage the surface.

620-3.4 LAYOUT OF MARKINGS.

The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

Glass beads shall be incorporated into the following locations:

1. All runway and taxiway holding position markings.
2. Runway and taxiway centerline and edge striping
3. Runway Markings including threshold bars, threshold markings, aiming point markings, touchdown markings, arrows and arrowheads, chevrons, and numerals.
4. Geographical position marking.
5. Surface painted signs.
6. Non-movement Area boundary markings.

620-3.5 APPLICATION.

Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the Engineer.

The edges of the markings shall not vary from a straight line more than 1/2 inch (12 mm) in 50 feet (15 m) and marking dimensions and spacings shall be within the following tolerances:

Dimension and Spacing	Tolerance
36 inches (910 mm) or less	±1/2 inch (12 mm)
greater than 36 inches to 6 feet (910 mm to 1.85 m)	± 1 inch (25 mm)
greater than 6 feet to 60 feet (1.85 m to 18.3 m)	± 2 inches (51 mm)
greater than 60 feet (18.3 m)	± 3 inches (76 mm)

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate(s) shown in Table 1. The addition of thinner will not be permitted. A period of **30 days** shall elapse between placement of a bituminous surface course and application of the final paint application.

TABLE 1. APPLICATION RATES FOR PAINT AND GLASS BEADS
(See Note regarding Red and Pink Paint)

Paint Type	Paint Square feet per gallon, ft2/gal (Square meters per liter, m2/l)	Glass Beads, Type I, Gradation A Pounds per gallon of paint—lb./gal. (Kilograms per liter of paint—kg/l)	Glass Beads, Type III Pounds per gallon of paint—lb./gal. (Kilograms per liter of paint—kg/l	Glass Beads, Type IV Pounds per gallon of paint—lb./gal. (Kilograms per liter of paint—kg/l)
Waterborne	**115 ft2/gal. maximum (2.8 m2/l)**	**7 lb./gal. minimum (0.85 kg/l)**	**10 lb./gal. minimum (1.2 kg/l)**	--

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Note: The glass bead application rate for Red and Pink paint shall be reduced by 2 lb./gal. (0.24 kg/l) for Type I and Type IV beads. Type III beads shall not be applied to Red or Pink paint.

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished which is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate(s) shown in Table 1. Glass beads shall not be applied to black paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made.

All emptied containers shall be returned to the paint storage area for checking by the Engineer. The containers shall not be removed from the airport or destroyed until authorized by the Engineer.

New paint markings shall be applied in two application coats after the cure period for the bituminous material. These applications do not include the preliminary application required to reopen the pavement to use.

Each portion of new pavement is desired to be opened to aircraft traffic prior to the required 30 day cure time required for new bituminous pavement, a preliminary application of paint markings shall be applied. This preliminary application shall be applied at a rate of 50% as

specified in Table 1 and shall include glass beads for markings and striping requiring glass beads in the completed product. After the waiting period is complete the final application of marking and striping shall be applied at the rate outline in Table 1 above.

620-3.6 **TEMPORARY PAVEMENT MARKINGS.** Temporary pavement markings shall consist of one application coat of paint for markings installed for temporary use to direct aircraft around work areas as shown on the plans. This temporary application shall be applied at a rate of 50% as specified in Table 1 and shall include glass beads for markings and striping requiring glass beads in the completed product.

620-3.7 **PROTECTION AND CLEANUP.** After application of the paint, all markings shall be protected from damage until the paint is dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings of paint. The Contractor shall remove from the site all debris, waste, loose or adhered reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the Engineer. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and Federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1 The quantity of Runway Centerline Striping to be paid for shall be the number of linear feet (linear meters) of 18 or 36 inch white stripe painted on asphalt concrete pavement and the number of pounds (kilograms) of reflective media installed without regard for the gaps in the striping in accordance with the specifications and accepted by the Engineer in two applications.

620-4.2 The quantity of Runway Edge Line Striping to be paid for shall be the number of linear feet (linear meters) of 18 or 36 inch white stripe and the number of pounds (kilograms) of reflective media installed in accordance with the specifications and accepted by the Engineer in two applications.

620-4.3 The quantity of Runway Markings (Threshold Bars, Threshold Markings, Aiming Point Markings, Touchdown Markings, Arrows and Arrowheads, Chevrons, and Numerals) to be paid for shall be the number of square feet (square meters) of white markings and the number of pounds (kilograms) of reflective media at the required number of applications performed in accordance with the specifications and accepted by the Engineer in two applications.

620-4.4 The quantity of Taxiway Centerline Striping to be paid for shall be the number of linear feet (linear meter) of 6 inch yellow stripe painted on asphalt pavement and the number of pounds (kilograms) of reflective media performed in accordance with the specifications and accepted by the engineer in two applications.

620-4.5 The quantity of Solid Taxiway Edge Line Striping to be paid for shall be the number of linear feet (linear meter) of dual 6 inch solid yellow stripes painted on asphalt pavement in accordance with the specifications and accepted by the engineer.

620-4.6 The quantity of Dashed Taxiway Edge Line Striping to be paid for shall be the number of linear feet (linear meter) of dual 6 inch dashed yellow stripe painted on asphalt pavement in accordance with the specifications and accepted by the engineer.

620-4.7 The quantity of Intermediate Holding Position Markings to be paid for shall be the number of linear feet (linear meter) of 12 inch dashed yellow stripe painted on asphalt pavement in accordance with the specifications and accepted by the engineer.

620-4.8 The quantity of Runway Hold Position Striping to be paid for shall be the number of linear feet (linear meters) of dual 12 inch yellow stripes plus dual 12 inch dashed yellow plus black out striping and the number of pounds (kilograms) of reflective media performed in accordance with the specifications and accepted by the Engineer in two applications.

620-4.9 The quantity of Taxiway Non-Movement Line Markings shall be paid for by the number of linear feet of 6 inch yellow stripe and dashes 3 ft in length and 6 inches wide spaced 3 ft between each dash on black outline striping painted on asphalt pavement in accordance with the specifications and accepted by the Engineer.

620-4.10 The quantity of Surface Painted Hold Position Signs shall be the number of marking per each of red and white markings, with black out painted border and the number of reflective media performed in accordance with the specifications and accepted by the Engineer in two applications.

620-4.11 The quantity of Taxiway Enhanced Centerline Striping to be paid for shall be the number of linear feet (linear meters) of 6 inch yellow stripe and dashes 9 ft in length and 6 inches wide spaced 3 ft between each dash on black outline striping painted on asphalt pavement and the number of pounds (kilograms) of reflective media performed in accordance with the specifications and accepted by the Engineer in two applications.

620-4.12 The quantity of Runway Shoulder Markings to be paid for shall be the number of square feet (square meter) of yellow paint in accordance with the specifications and accepted by the Engineer.

620-4.1 3 The quantity of Temporary Pavement Markings to be paid for shall be the number of linear feet (linear meters) of 6 inch yellow stripes painted on asphalt pavement in accordance with the specifications and accepted by the Engineer. Removal of temporary pavement markings shall be considered incidental to the installation of temporary pavement markings. No separate measurement will be made for the removal of any temporary striping.

BASIS OF PAYMENT

620-5 Payment shall be made at the respective contract **unit price** for taxiway painting and markings **inclusive of** reflective media and multiple applications. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-620-5.1	Runway Centerline Striping 18" wide with reflective media per linear foot (linear meter)
Item P-620-5.2	Runway Centerline Striping 36" wide with reflective media per linear foot (linear meter)
Item P-620-5.3	Runway Edge Striping 18" wide with reflective media per linear foot (linear meter)
Item P-620-5.4	Runway Edge Striping 36" wide with reflective media per linear foot (linear meter)

Item P-620-5.5	Runway Markings with reflective media per square foot (square meter)
Item P-620-5.6	Taxiway Centerline Striping with reflective media per linear foot (linear meter)
Item P-620-5.7	Solid Taxiway Edge Line Striping per linear foot (linear meter)
Item P-620-5.8	Dashed Taxiway Edge Line Striping per linear foot (linear meter)
Item P-620-5.9	Intermediate Holding Position Marking per linear foot (linear meter)
Item P-620-5.10	Runway Hold Position Striping with black out striping and reflective media per linear foot (linear meter)
Item P-620-5.11	Taxiway Non-Movement Line Markings per linear foot (linear meter)
Item P-620-5.12	Taxiway Surface Painted Hold Position Markings with black out border and reflective media per each
Item P-620-5.13	Taxiway Enhanced Centerline Striping with black out striping and reflective media per linear foot (linear meter)
Item P-620-5.14	Runway shoulder markings per square foot (square meter)
Item P-620-5.15	Temporary Pavement Markings per linear foot (linear meter)

TESTING REQUIREMENTS

ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 146	Chemical Analysis of Glass Sand
ASTM C 371	Wire-Cloth Sieve Analysis of Nonplastic Ceramic Powders
ASTM D 92	Test Method for Flash and Fire Points by Cleveland Open Cup
ASTM D 711	No-Pick-Up Time of Traffic Paint
ASTM D 968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D 1213-54(1975)	Test Method for Crushing Resistance of Glass Spheres
ASTM D 1652	Test Method for Epoxy Content of Epoxy Resins
ASTM D 2074	Test Method for Total Primary, Secondary, and Tertiary Amine

	Values of Fatty Amines by Alternative Indicator Method
ASTM D 2240	Test Method for Rubber Products-Durometer Hardness
ASTM G 15453	Operating Light and Water-Exposure Apparatus (Fluorescent Light Apparatus UV-Condensation Type) for Exposure of Nonmetallic Materials.
Federal Test Method	Paint, Varnish, Lacquer and Related Materials; Methods of Standard No. 141D/GEN Inspection, Sampling and Testing

MATERIAL REQUIREMENTS

ASTM D 476	Specifications for Dry Pigmentary Titanium Dioxide Pigments Products
Code of Federal Regulations	40 CFR Part 60, Appendix A – Definition of Traverse Point Number and Location
Code of Federal Regulations	29 CFR Part 1910.1200 – Hazard Communications
FED SPEC TT-B-1325D	Beads (Glass Spheres) Retroreflective
AASHTO M 247	Glass Beads Used in Traffic Paints
FED SPEC TT-P-1952E	Paint, Traffic and Airfield Marking, Waterborne
Commercial Item Description (CID) A-A-2886B	Paint, Traffic, Solvent Based
FED STD 595	Colors used in Government Procurement
AC 150/5340-1J	Standards for Airport Markings

END OF ITEM P-620

PART VI - DRAINAGE

ITEM D-701

PIPE FOR STORM DRAINS AND CULVERTS

DESCRIPTION

701-1 This item shall consist of the construction of pipe culverts and storm drains in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

MATERIALS

701-2.1 Materials shall meet the requirements shown on the plans and specified below.

701-2.2 PIPE.

The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements.

Reinforced Concrete Pipe	ASTM C 76
Reinforced Concrete D-Load Pipe	ASTM C 655

701-2.3 CONCRETE.

Concrete for pipe collars, lugs and encasement shall have a minimum compressive strength as shown on the drawings at 28 days and conform to the requirements of ASTM C 94.

701-2.4 RUBBER GASKETS.

Rubber gaskets for rigid pipe shall conform to the requirements of ASTM C 443. Rubber gaskets for PVC pipe and polyethylene pipe shall conform to the requirements of ASTM F 477. Rubber gaskets for zinc-coated steel pipe and precoated galvanized pipe shall conform to the requirements of ASTM D 1056, for the "RE" closed cell grades.

701-2.5 JOINT MORTAR.

Pipe joint mortar shall consist of one part Portland cement and two parts sand. The Portland cement shall conform to the requirements of ASTM C 150, Type I. The sand shall conform to the requirements of ASTM C 144.

701-2.6 JOINT FILLERS. Not used.

701-2.7 PLASTIC GASKETS. Not used.

701-2.8 BUTT STRAP CONNECTORS. Not used.

701-2.9 GEOTEXTILE FILTER FABRIC. Not used.

CONSTRUCTION METHODS

701-3.1 EXCAVATION.

The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but it shall not be less than the external diameter of the pipe plus 6 inches (150 mm) on each side. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, the Contractor shall remove it from below the foundation grade for a depth of at least 12 inches (300 mm) or one-half inch (12 mm) for each foot of fill over the top of the pipe (whichever is greater) but for no more than three quarters of the nominal diameter of the pipe. The width of the excavation shall be at least 1 foot (30 cm) greater than the horizontal outside diameter of the pipe. The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches (150 mm) in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The Engineer shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

701-3.2 BEDDING.

The pipe bedding shall conform to the class specified on the plans.

a. **Rigid Pipe.** Type A bedding shall consist of a bed of granular material having a thickness of at least 6 inches below the bottom of the pipe and extending up around the pipe up to the springline. The bedding shall consist of 3/4" rock in accordance with SSPWC "Greenbook" section 200-1 Table 200-1.2. The layer of bedding material shall have recesses shaped to receive the bell of bell and spigot pipe. The bedding shall consist of gravel or crushed aggregate. Backfill above the springline shall be as shown on the drawings.

701-3.3 LAYING PIPE.

The pipe laying shall begin at the lowest point of the trench and proceed upgrade. The lower segment of the pipe shall be in contact with the bedding throughout its full length. Bell or groove ends of rigid pipes and outside circumferential laps of flexible pipes shall be placed facing upgrade.

701-3.4 JOINING PIPE.

Joints shall be made with rubber gaskets, as shown on the drawings. Rubber ring gaskets shall be installed to form a flexible watertight seal.

a. **Concrete Pipe.** Concrete pipe may be either bell and spigot or tongue and groove. The method of joining pipe sections shall be such that the ends are fully entered and the inner surfaces are reasonably flush and even. Joints shall be thoroughly wetted before mortar or

grout is applied.

b. **Metal Pipe.** Not used.

c. **PVC Pipe.** Not used.

701-3.5 BACKFILLING.

Pipes shall be inspected before any backfill is placed; any pipes found to be out of alignment, unduly settled, or damaged shall be removed and re-laid or replaced at the Contractor's expense.

Material for backfill shall be as shown on the drawings.

All backfill shall be compacted to the density required under Item P-152.

METHOD OF MEASUREMENT

701-4 The length of pipe shall be measured in linear feet (meters) of pipe in place, completed, and approved. It shall be measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The several classes, types and size shall be measured separately. All fittings shall be included in the footage as typical pipe sections in the pipe being measured.

BASIS OF PAYMENT

701-5 Payment will be made at the contract unit price per linear foot (meter) for each kind of pipe of the type and size designated on the plans. These prices shall fully compensate the Contractor for furnishing all materials and for all preparation, excavation, pipe laying, backfilling up to finish grade per trench details and installation of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item D-701-5.2 24 inch RCP Storm Drain 1750-D pipe - per linear foot (meter)

MATERIAL REQUIREMENTS

ASTM C 14	Concrete Sewer, Storm Drain, and Culvert Pipe
ASTM C 76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C 94	Ready Mixed Concrete
ASTM C 144	Aggregate for Masonry Mortar
ASTM C 150	Portland Cement
ASTM C 443	Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets

ASTM C 655	Reinforced Concrete D-Load Culvert, Storm Drain and Sewer Pipe
AASHTO M 198	Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets

END ITEM D-701

ITEM D-751

CATCH BASINS, CONCRETE COLLAR, INLETS, AND HEADWALLS

DESCRIPTION

751-1.1 This item shall consist of construction of catch basins, concrete collar, inlets, and headwalls, in accordance with these specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the plans or required by the Engineer.

MATERIALS

751-2.1 BRICK. Not used.

751-2.2 MORTAR.

Mortar shall consist of one part Portland cement and two parts sand and the strength requirements as shown on the drawings. The Portland cement shall conform to the requirements of ASTM C 150, Type I. The sand shall conform to the requirements of ASTM C 144.

751-2.3 CONCRETE.

Plain and reinforced concrete used in structures, connections of pipes with structures, and the support of structures or frames shall conform to the details as shown on the drawings and P-610.

751-2.4 PRECAST CONCRETE PIPE MANHOLE RINGS.

Precast rings shall consist of concrete rings matching the existing diameter of the rings to be replaced. The rings shall conform to the requirements of ASTM C 478.

751-2.5 CORRUGATED METAL. Not used.

751-2.6 FRAMES, COVERS, AND GRATES.

The castings shall conform to one of the following requirements:

a. Gray iron castings shall meet the requirements of ASTM A 48, Class 30B and 35B.

b. Malleable iron castings shall meet the requirements of ASTM A 47.

c. Steel castings shall meet the requirements of ASTM A 27.

d. Structural steel for grates and frames shall conform to the requirements of ASTM A 283, Grade D.

e. Ductile iron castings shall conform to the requirements of ASTM A 536.

f. Austempered ductile iron castings shall conform to the requirements of ASTM A 897.

All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings, aircraft gear configuration and/or direct loading, specified.
Each frame and cover or grate unit shall be provided with fastening members to prevent it from being dislodged by traffic but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A 123.

751-2.7 STEPS. Not used.

CONSTRUCTION METHODS

751-3.1 UNCLASSIFIED EXCAVATION.

a. The Contractor shall do all excavation for structures and structure footings to the lines and grades or elevations, shown on the plans, or as staked by the Engineer. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown. The elevations of the bottoms of footings, as shown on the plans, shall be considered as approximately only; and the Engineer may order, in writing, changes in dimensions or elevations of footings necessary to secure a satisfactory foundation.

b. Boulders, logs, or any other objectionable material encountered in excavation shall be removed. All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped, or serrated, as directed by the Engineer. All seams or crevices shall be cleaned out and grouted. All loose and disintegrated rock and thin strata shall be removed. When concrete is to rest on a surface other than rock, special care shall be taken not to disturb the bottom of the excavation, and excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.

c. The Contractor shall do all bracing, sheathing, or shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheathing, or shoring shall be included in the unit price bid for the structure.

d. Unless otherwise provided, bracing, sheathing, or shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall be effected in a manner that will not disturb or mar finished masonry. The cost of removal shall be included in the unit price bid for the structure.

e. After each excavation is completed, the Contractor shall notify the Engineer to that effect; and concrete or reinforcing steel shall be placed after the Engineer has approved the depth of the excavation and the character of the foundation material.

751-3.2 BRICK STRUCTURES. Not used.

751-3.3 CONCRETE STRUCTURES.
Concrete structures shall be built on prepared foundations, conforming to the dimensions and form indicated on the plans. The construction shall conform to the requirements as shown on

the drawings and Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the Engineer before the concrete is poured.

All invert channels shall be constructed and shaped accurately so as to be smooth, uniform, and cause minimum resistance to flowing water. The interior bottom shall be sloped downward toward the outlet.

751-3.4 PRECAST CONCRETE PIPE STRUCTURES. Not used.

751-3.5 CORRUGATED METAL STRUCTURES. Not used.

751-3.6 INLET AND OUTLET PIPES.

Inlet and outlet pipes shall extend through the walls of the structures for a sufficient distance beyond the outside surface to allow for connections but shall be cut off flush with the wall on the inside surface, unless otherwise directed. For concrete or brick structures, the mortar shall be placed around these pipes so as to form a tight, neat connection.

751-3.7 PLACEMENT AND TREATMENT OF CASTINGS, FRAMES, AND FITTINGS.

All castings, frames, and fittings shall be placed in the positions indicated on the plans or as directed by the Engineer, and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

When frames or fittings are to be placed upon previously constructed masonry, the bearing surface or masonry shall be brought true to line and grade and shall present an even bearing surface in order that the entire face or back of the unit will come in contact with the masonry. The unit shall be set in mortar beds and anchored to the masonry as indicated on the plans or as directed and approved by the Engineer. All units shall set firm and secure.

After the frames or fittings have been set in final position and the concrete or mortar has been allowed to harden for 7 days, then the grates or covers shall be placed and fastened down.

751-3.8 INSTALLATION OF STEPS. Not used.

751-3.9 BACKFILLING.

a. After a structure has been completed, the area around it shall be filled with approved material, in horizontal layers not to exceed 8 inches (200 mm) in loose depth, and compacted to the density required in Item P-152. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the Engineer.

b. Backfilling shall not be placed against any structure until permission is given by the Engineer. In the case of concrete, such permission shall not be given until the concrete has been in place 7 days, or until tests made by the laboratory under supervision of the Engineer establish that the concrete has attained sufficient strength to provide a factor of

safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.

c. Backfill shall not be measured for direct payment. Performance of this work shall be considered on obligation of the Contractor covered under the contract unit price for the structure involved.

751-3.10 CLEANING AND RESTORATION OF SITE.

After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as ordered by the Engineer. The Contractor shall restore all disturbed areas to their original condition.

After all work is completed, the Contractor shall remove all tools and equipment, leaving the entire site free, clear, and in good condition.

METHOD OF MEASUREMENT

751-4 Catch basins, concrete collar, inlets, and headwalls shall be measured by the unit.

BASIS OF PAYMENT

751-5.1 The accepted quantities of catch basins, concrete collar, and headwalls will be paid for at the contract unit price per each in place when completed. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling and placing of the materials; furnishing and installation of grates, frames, covers and other such specials and connections to pipes and other structures as may be required to complete the item as shown on the plans; and for all labor equipment, tools and incidentals necessary to complete the structure.

Payment will be made under:

Item D-751-5.1	Wing and U Type Headwalls - per each
Item D-751-5.2	Catch Basin Type "I" - per each
Item D-751-5.3	Concrete Pipe Collar - per each

MATERIAL REQUIREMENT

ASTM A 27	Steel Castings, Carbon, for General Application
ASTM A 47	Ferritic Malleable Iron Castings
ASTM A 48	Gray Iron Castings
ASTM A 123	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 283	Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes, and Bars
ASTM A 536	Ductile Iron Castings

ASTM A 897	Austempered Ductile Iron Castings
ASTM C 144	Aggregate for Masonry Mortar
ASTM C 150	Portland Cement
ASTM C 478	Precast Reinforced Concrete Manhole Sections

END OF ITEM D-751

PART VII - LIGHTING INSTALLATION

ITEM L-100 ELECTRICAL GENERAL REQUIREMENTS

DESCRIPTION

100.1.1 GENERAL. This Item includes furnishing and installing all material, equipment and apparatus, and all labor, tools, services and equipment required for the demolition/removal of portions of the existing airfield lighting systems as specified in this specification and as shown in the drawings.

Installation shall be in accordance with Specifications FAA-C-1217 and FAA-C-1391, except as specified herein. Perform all work not included in the FAA Specifications in accordance with the National Electrical Code, applicable local and City of San Diego standards and regulations.

100.1.2 DEMOLITION AND SALVAGE. Removal and/or salvage of airfield electrical elements as included under this Item shall include the intent, but not be limited to the specific elements, of the following:

Light fixtures and isolation transformers.
Signs and isolation transformers.

Removal of other elements associated with the airfield electrical system is included under this Item. Elements covered shall include the intent, but not be limited to the specific elements, of the following:

Power and signal cables.
Under ground conduits and duct banks, both concrete encased and direct earth buried.
Sign and light concrete encased bases and miscellaneous concrete footings.
Grading and backfill associated with removal of the foregoing elements shall be covered under other Items of these specifications (P-152, "Excavation and Embankment").

100.1.3 RELATED DOCUMENTS. The General Provisions of the Contract, including General and Special Conditions, apply to work specified in this Item.

See Interpretation of Estimated Proposal Quantities and Laws to be Observed for the sequence of construction.

100.1.4 TEMPORARY LIGHTING AND CIRCUITS.

Contractor shall coordinate with Operations and Maintenance 2 hours before the end of each work shift to verify that all airfield lighting circuits are operational. Contractor shall provide all labor and material for this work.

Contractor shall provide and maintain on hand sufficient equipment required to provide temporary lighting and circuit extensions. This includes, but is not limited to the following:

L-823 connector kits.
isolation transformers of the various sizes on the project,
two-inch conduit,
L-824 cables.

The intent of maintaining the foregoing material is to be able to provide expeditious repairs during the phases of the project requiring temporary circuitry or the interception/interruption of existing circuitry. As coordinated with the Owner and Engineer, and as the project winds down and the need for repairs decreases, it is expected that the Contractor may draw down this material for use in permanent installations.

100.1.5 SPECIFICATIONS AND STANDARDS. As a supplement to the installation requirements of this item, the following standard specifications and regulations of the issues in effect on the date of this solicitation are incorporated herein by reference and are made a part hereof for electrical work and installation and splicing of underground cables.

NEC	National Electrical Code
FAA-STD-019	Lightning Protection, Grounding, Bonding and Shielding Requirements for Facilities
FAA-C-1217	Electrical Work, Interior
FAA-C-1391	Installation and Splicing of Underground Cables
Utility Company Rules	San Diego Gas and Electric (SDG&E) and Regulations
Local Governing Bodies' Codes and Regulations	City of San Diego

100.1.6 SHOP DRAWINGS AND MATERIAL LISTS. Prior to the installation of any material and equipment and within 30 days of contract award, the Contractor shall submit to the Owner for approval eight (8) copies of manufacturers' brochures containing complete dimensional and performance characteristics, wiring diagrams, installation and operation instructions, etc., for the equipment listed in the individual L-Series specification Items.

A materials list shall be submitted listing each specification paragraph number and stating whether the materials proposed are as specified or are substitutions. If the item is a substitute item, a complete submittal as described in the above paragraph shall be provided for that item.

Unless otherwise coordinated with the Engineer, the submittal shall be complete and made in one submission in booklet form with hard-bound cover. Partial submissions will not be reviewed or considered.

EQUIPMENT AND MATERIALS

100.2.1 EQUIPMENT. Conduits, conduit fittings, conductors, connectors, boxes, wiring devices, panelboards, and circuit breakers shall meet requirements of Specification FAA-C-1217.

100.2.2 CONDUIT, EXTERIOR. Conduits in concrete slabs, in block walls or exterior exposed shall be rigid galvanized steel (RGS). Conduits run on the exterior of the building above or below the grade for the earth grounding system shall be rigid zinc-coated steel. Radius of bends in RGS shall be minimum 12 nominal pipe diameters. Rigid galvanized steel conduit run in concrete or below slab on grade, or in the ground, shall be field wrapped or shall have

factory-applied coating as required in Specification FAA-C-1217. Field-made joints, fittings, abrasions and holidays shall be coated or wrapped with material equal to the original coating or wrapping.

100.2.3 CONDUIT, UNDERGROUND. Conduits run underground are specified in Item L-110 of these specifications.

100.2.4 600 VOLT WIRE. All wire shall have copper conductors. Size shall be American Wire Gauge (AWG) with size for power circuit as shown on the project drawings. Size for all control circuits shall be #16 AWG. All Power wire and all control wire shall be stranded. Insulation shall be Type THW or THWN and shall be continuous and color coded as follows:

		120/208V	277/480V
Line 1 or	Phase "A"	Black	Brown
Line 2 or	Phase "B"	Red	Orange
	Phase "C"	Blue	Yellow
	Neutral	White	Gray
	Ground	See Item 100-3.8	
	Control	Black with numbered adhesive Markers on both ends	

All wire shall be continuous; no splices will be permitted. All wire shall be drawn into conduit with adequate lubricating compound to prevent damage to insulation. Pull tension shall not exceed manufacturer's recommendation.

100.2.5 CONDUIT FITTINGS. Each conduit and nipple entrance to junction boxes, panelboards, disconnect switches, duct, raceway, equipment cabinets, and other such electrical enclosures shall be fitted with double locknuts (one each side of metal penetrated) and insulating bushing. Bushings on 1-1/4 inch and larger conduits shall be insulated metallic, type OZ/Gedney Cat. No. IBC Series, or equal; bushings for 3/4 inch and 1 inch shall be plastic insulated T&B rated for 150 C, or equal. All openings where conduits enter junction boxes, other enclosures and shelters shall be sealed weathertight. The conduit shall be capped, if left empty, or sealed with Ducseal, or equal, around the conductors for exterior conduits.

100.2.6 CONCRETE-ENCASED DUCT. Concrete-encased PVC duct shall be provided with a 3-inch minimum encasement with spacing between conduits and strength of concrete as detailed on the plans. Concrete shall be colored red (3lbs red oxide per sack) or shall be provided with a vinyl warning tape as detailed on the plans and specified in Item L-110.

100.2.7 CONCRETE DUCT MARKERS. Markers shall be as specified in Item L-110 and as detailed on drawings.

100.2.8 LIGHT BASES AND TRANSFORMER HOUSING. Bases and covers shall be specified in item L-867/868 and as detailed on drawings.

100.2.9 OTHER ELECTRICAL EQUIPMENT. Cutouts, relays, terminal blocks, transfer relays, circuit breakers, and all other regularly used commercial items of electrical equipment not covered by FAA equipment specifications shall conform to the applicable rulings and standards of the Institute of Electrical and Electronic Engineers (IEEE) or the National Electrical Manufacturers Association (NEMA). When specified, test reports from a testing laboratory indicating that the equipment meets the specifications shall be supplied. In all

cases, equipment shall be new and a first-grade product. This equipment shall be supplied in the quantities required for the specific project and shall incorporate the electrical and mechanical characteristics specified in the specification and plans.

CONSTRUCTION METHODS

100.3.1 EXISTING UTILITIES. Prior to any excavation or trenching, provide utility locator and verify any existing cables and utilities which will be crossed by the trench. Ensure these utilities are permanently disconnected if they are going to be demolished. The existing service lines shall be exposed by hand-digging in those areas that will be crossed and shall be protected from any possible damage. If any damage occurs, it shall be the Contractor's responsibility to immediately repair such damage with materials and methods approved by the Owner and in compliance with applicable codes and standards, at no additional cost to the Owner. Existing utilities to be abandoned or removed at the point of crossing as shown on the drawings.

100.3.2 DEMOLITION.

General Airfield Lighting.

Remove indicated signs, and lights and salvage to Airport or store securely for reinstallation as noted on drawings.

Remove indicated conduits, ducts, handholes, manholes and conductors from site and dispose of according to local regulations. Provide backfill meeting the requirements of P-152. Backfill shall be incidental to the demolition items.

Salvageable material and equipment, including light fixture and signs shall be reinstalled or turned over to the appropriate airport personnel. All lights and signs deemed non-salvageable by the Airport and isolation transformers (which are not slated for reinstallation) shall become the property of the Contractor and shall be removed from the site. Nonsalvageable material, including conduit, concrete handholes, basecans and conductors, shall become the property of the Contractor and shall be removed from the site.

100.3.3 CONDUCTORS. Installation of underground 5 kV conductors is specified in Item L-108 of these specifications.

100.3.4 GROUNDING. All metal support structures and metal enclosures shall be grounded in accordance with the requirements of the Specifications FAA-C-1217, FAA-C-1391, and FAA-STD-019, and as indicated on the drawings.

100.3.5 GROUND RODS. Grounding rods shall be 3/4-inch diameter by 10 feet long copper-jacketed steel. Grounding connections shall be by the exothermic weld process, Cadweld or equal. Extruded, drawn or stamped-type ground clamps will not be acceptable unless otherwise noted. Ground rod connections shall be made accessible by installing a handhole with minimum nominal dimensions of 7-7/8 inches diameter by 12 inches deep at a maximum of 500 feet spacing. In traffic areas the handhole shall be Brooks Products (El Monte, California) with No. 1-RD body and No. 1-RDT cast iron cover; Quickset Utility Vault WA-17 (Associated Concrete, Santa Ana, California), or equal. In areas not subject to vehicular traffic, the handhole may be Ametek Products (Sheboygan, Wisconsin) No. 10-181-014 with twist-lock cover No. 10-181-015, or equal. Handhole shall be installed in such a

manner that ground rod clamp is in center and 3 inches below handhole cover. The resistance to ground shall not exceed 25 ohms.

100.3.6 GROUND CONDUCTORS. Equipment grounding conductors shall be insulated copper, except where shown on the project drawings to be bare, and sized as shown on the project drawings; and all grounds will be shown in accordance with Article 250-95 of the National Electrical Code and with FAA-STD-019. Attachment of wire to supports, boxes, etc., shall be accomplished using approved ground lug attached with a separate stainless steel screw, lock washer and nut. Screws used for support of the electrical enclosure shall not be used for connection of the ground wire. Pipe straps shall not be used for ground purposes.

COLOR CODING OF GROUND CONDUCTORS

TYPE OF GROUND CONDUCTOR	COLOR OF INSULATION
Grounding Electrode Conductor	Bare - No Insulation
Equipment Grounding Conductor	Green (safety)
*Multipoint Ground (Frame)	Green with bright orange tracer
*Signal Ground	Green with bright yellow tracer

*Where these cables are concealed and not color coded, an exposed portion of the cable and each end of the cable for a minimum length of 2 feet shall be color coded with green tape overlaid with a bright orange or yellow to form a tracer. Where routed through raceways or wireways, the color coding shall be such that by removing or opening any one cover, the coding will be visible. Where conductors are routed through cable trays, color coding shall be accomplished at intervals not exceeding 3 feet.

The multi-ground system supplements but does not replace the equipment grounding conductor required by the National Electrical Code.

Each of these separate ground conductors is insulated in order to keep it distinct and not allow contact with any other conductor.

Electrical continuity of cable armor or shield shall be maintained. Grounding of the cable armor or shield shall be required at all terminations and shall be accomplished by connecting a #6 AWG solid bare copper wire to the cable armor or shield by means of a compression-type ground clamp installed within the terminating enclosure. Armor or shield ground wire shall be connected to the ground electrode conductor using split bolt connector, Burndy or equal. Grounding of direct earth burial (DEB) armored power and shielding control cable shall be at each end in accordance with FAA-C-1391.

100.3.7 IDENTIFICATION. Handhole, manhole, fixture and sign identification shall be as detailed on the drawings and as indicated in the associated "L" series Items. Cable tagging and markers shall be identified as per FAA-C-1391, Sections 3.5.1 and 2.

100.3.8 NOTIFICATION OF TESTING. The Contractor shall notify the project RE and the Owner a minimum of 48 hours in advance of system, or partial system, testing, including but not limited to, installed cable megger testing, operational testing of any modified lighting circuit and fixture and signs photometric testing.

100.3.9 **TESTING AND SUBMITTALS.** Equipment and materials list and shop drawings shall be submitted as per FAA-C-1217, Section 5.1. Testing shall be required and performed as per FAA-C-1217, Section 5.3 and FAA-C-1391, Section 4. The Contractor shall pretest all cable on the reel prior to installation and provide a copy of the test results to the Owner. The Contractor shall be responsible for repairs or replacement of any cable found defective after installation.

The Contractor shall secure the services of an independent testing service to test the installed airfield lighting and miscellaneous power cables prior to the start of and at the completion of this project. The results of the testing shall be provided to the Owner and Construction Manager for review and acceptance. The Contractor shall be responsible for repairs or replacement of any cable found defective after installation.

The Contractor shall secure the services of an independent testing service to test the new, installed airfield lighting fixtures and new, installed constant current regulators per Item L-100a.

Installation tests in addition to all tests contained in other L-Series Items shall be provided as follows:

Item	Test Required	Manufacturer's Rep. Present?
5 kV Rated Airfield Lighting and Power Cables (On the Reel, Not Including Equipment)	Megger check to 2.0 times nominal system rated voltage prior to installation. Values of insulation resistance for each reel shall be noted and given to the Construction Manager/ Owner for acceptance. It is expected that the readings will be greater than 1000 megohms (1 gigohm).	No
5 kV Rated Airfield Lighting and Power Cables (Installed in This Project)	Megger check at 1000 volts at the completion of installation. Test every circuit for conductor-to-ground and conductor-to-conductor (between circuits) insulation resistance. Test results shall be tabulated and given to the Construction Manager/Owner for acceptance. It is required that the readings be greater than 100 megohms.	No

Item	Test Required	Manufacturer's Rep. Present?
5 kV Rated Airfield Lighting and Power Cables (All Circuits Modified in This Project, Emanating from any Lighting Vault)	Megger check at 1000 volts prior to the start of and at the completion of installation. Test every circuit for conductor-to-ground and conductor-to-conductor (between circuits) insulation resistance. Test results shall be tabulated and given to the Construction Manager/Owner for acceptance.	No
5 kV and 600 Volt and Multi-pair Cables	Continuous-tape pull tension readings for each section of cable shall be provided to the Construction Manager for review.	No
Bases	All in-pavement lighting cans shall be fitted in accordance with FAA Advisory Circulars such that the base of the fitting, when installed, shall be level with the surrounding surface. Alignment jigs as supplied by Jaquith Industries, Inc. (or equal) shall be used to ensure the can is aligned in such a way that no portion of the can shall be above the level of the surrounding surface and the can is geometrically positioned such that when the fitting is installed, the light beam will be directed in accordance with the appropriate advisory circulars for that type of fitting and its location.	No
Airfield Light Fixture	Each light fixture will be tested prior to installation to ensure that lenses, where required, have been fitted, no signs of physical damage to the fittings exist and the lamps are working by connecting the fittings' electrical leads to a DC voltage source not exceeding 6 volts, such as a motorcycle battery. Any failures are to be reported to the Construction Manager. The fittings, when installed, shall be torqued to manufacturer's and FAA requirements and noted.	No

METHOD OF MEASUREMENT

100.4.1 ELECTRICAL SERVICES. The electrical services to be paid under this Item shall include:

Demolition. Removal of indicated portions of the airfield lighting system, including the salvage for reinstallation, or, if deemed acceptable, the salvage to Airport, of all light fixtures, signs, transformers and fixture base covers. Removal of all conductors which are not to remain in service and conduit, duct banks, fixture bases and concrete handholes are to be selectively demolished as part of the grading and excavation or abandoned in place and paid for under this item.

BASIS OF PAYMENT

100.5.1 DEMOLITION AND SALVAGE. Payment will be made at the contract price for the electrical services completed and accepted. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete this Item. The unit price of each of these items shall also include Contractor's overhead, profit and markup.

Payment will be made under:

Item L-100-5.1	Electrical Demolition – per Lump Sum

END OF ITEM L-100

ITEM L-108 UNDERGROUND POWER CABLE FOR AIRPORTS

DESCRIPTION

108-1.1 This item shall consist of furnishing and installing power cables direct buried and furnishing and/or installing power cables within conduit or duct banks in accordance with these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the Engineer. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of any cable for FAA facilities. Requirements and payment for trenching and backfilling for the installation of underground conduit and duct banks is covered under Item L-110 "Airport Underground Electrical Duct Banks and Conduits."

108-1.2 SHOP DRAWINGS AND MATERIAL LISTS. Shall be in accordance with Section L-100, Paragraph 100-1.6, for the following equipment:

5 kV power cable.

L-823 5 kV connector kits

Bare copper grounding and counterpoise conductor

EQUIPMENT AND MATERIALS

108-2.1 GENERAL.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be approved under the Airport Lighting Equipment Certification Program described in Advisory Circular (AC) 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the Engineer.

c. Manufacturer's certifications shall not relieve the Contractor of the Contractor's responsibility to provide materials in accordance with these specifications and acceptable to the Engineer. Materials supplied and/or installed that do not materially comply with these specifications shall be removed, when directed by the Engineer and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

d. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of

electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. The Engineer reserves the right to reject any and all equipment, materials or procedures, which, in the Engineer's opinion, does not meet the system design and the standards and codes, specified herein.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall be responsible to maintain an insulation resistance of 50 megohms minima, (1000V megger) with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period.

108-2.2 CABLE. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall be Type C, No. 8 AWG, copper, 7 strand, single conductor cable with 5,000 volt cross-linked polyethylene insulation and shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Federal Specification J-C-30 and shall be type THWN-2.

Cable type, size, number of conductors, strand and service voltage shall be as specified on the plans.

108-2.3 BARE COPPER WIRE (COUNTERPOISE OR GROUND) AND GROUND RODS. Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG solid for counterpoise and or No. 6 AWG stranded for ground wire conforming to ASTM B 3 and ASTM B 8, and shall be bare copper wire conforming to the requirements of ASTM D 33.

Ground rods shall be copper-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case shall they be less than 8-feet long nor less than 5/8 inch diameter.

108-2.4 CABLE CONNECTIONS. In-line connections of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. **The Cast Splice.** A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by Minnesota Mining and Manufacturing Company,

"Scotchcast" Kit No. 82--B, or as manufactured by Hysol Corporation, "Hyseal Epoxy Splice" Kit No. E1135, or equivalent, is used for potting the splice is acceptable.

b. **The Field-attached Plug-in Splice.** Figure 3 of AC 150/5345-26, Specification for L-823 Plug and Receptacle, Cable Connectors, employing connector kits, is acceptable for field attachment to single conductor cable. It shall be the Contractor's responsibility to determine the outside diameter of the cable to be spliced and to furnish appropriately sized connector kits and/or adapters and heat shrink tubing with integral sealant.

c. **The Factory-Molded Plug-in Splice.** Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. **The Taped or Heat-Shrinked Splice.** Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D 4388 and the plastic tape should comply with Mil Spec. MIL-I-24391or Fed. Spec. A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

e. In all the above cases, connections of cable conductors shall be made using crimp connectors utilizing a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made in accordance with the manufacturer's recommendations and listings.

f. All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except the base can ground clamp connector shall be used for attachment to the base can. All exothermic connections shall be made in accordance with the manufacturer's recommendations and listings.

108-2.5 SPLICER QUALIFICATIONS. Every airfield lighting cable splicer shall be qualified in making cable splices and terminations on cables rated above 5,000 volts AC. The Contractor shall submit to the Engineer proof of the qualifications of each proposed cable splicer for the cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 CONCRETE. Concrete for cable markers shall conform to Specification Item P-610, Structural Portland Cement Concrete.

108-2.7 FLOWABLE BACKFILL. Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

108-2.8 CABLE IDENTIFICATION TAGS. Cable identification tags shall by made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 **TAPE.** Electrical tapes shall be Scotch Electrical Tapes – number Scotch 88 (1-1/2" wide) and Scotch 130C linerless rubber splicing tape (2" wide), as manufactured by the Minnesota Mining and Manufacturing Company, or approved equivalent.

108-2.10 **ELECTRICAL COATING.** Scotchkote shall be as manufactured by Minnesota Mining and Manufacturing Company, or approved equivalent.

108-2.11 **EXISTING CIRCUITS.** Whenever the scope of work requires, connection to an existing circuit, the circuit's insulation resistance shall be tested, in the presence of the Engineer. The test shall be performed in accordance with this item and prior to any activity affecting the respective circuit. The Contractor shall record the results on forms acceptable to the engineer. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the Engineer. The Contractor shall record the results on forms acceptable to the engineer. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual.

108-2.12 **INNERDUCT**

Innerduct: Shall be Detectable Outdoor Textile Innerduct: 2-inch, 3-cell (in 2-inch conduits) and 4-inch, 3-cell (in 4-inch conduits) polyester/nylon textile innerduct containing 1250lb polyester flat woven pull tape, and a solid copper, polyvinyl color coated conductor (19AWG minimum) for tracing and rated for a minimum of 6 amps and 600 volts. Conductor shall be placed in the sidewall edge fold of the textile sleeve.

Conduit Plugs: Compression-type conduit plugs with locking nuts for sealing and securing one or more textile innerducts within a 4-inch inside diameter conduit, e.g.: a. 4-inch plug with nine holes for cables in a 3 pack (9-cell) configuration.

Pull Tape: Shall be color-coded, measuring and pulling tape constructed of synthetic fiber, printed with accurate sequential footage marks.

CONSTRUCTION METHODS

108-3.1 **GENERAL.** The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Wherever possible, cable shall be run without splices, from connection to connection.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections, unless otherwise authorized in writing by the Engineer or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed or at least once in each access point where L-823 connectors are not installed.

Provide not less than 3 feet of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot vertically above the top of the access structure. This requirement also applies where primary cable passes through empty base cans, junction and access structures to allow for future connections, or as designated by the Engineer.

108-3.2 INSTALLATION IN DUCT BANKS OR CONDUITS. This item includes the installation of the cable in duct banks or conduit as described below. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be in accordance with the latest National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and interferences are avoided.

Duct banks or conduits shall be installed as a separate item in accordance with Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to insure that the duct bank or conduit is open, continuous and clear of debris. Mandrel size shall be compatible with conduit size. The Contractor shall swab out all conduits/ducts and clean base can, manhole, etc. interiors IMMEDIATELY prior to pulling cable. Once cleaned and swabbed the base cans and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc. is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the Engineer of any blockage in the existing ducts. The cable shall be installed in a manner to prevent harmful stretching of the conductor, injury to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall be governed by cable manufacturer's recommendations. A non-hardening lubricant recommended for the type of cable being installed shall be used where pulling lubricant is required.

The manufacturer's minimum bend radius or the NEC requirements whichever is more restrictive shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the Engineer, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or utilize other appropriate means to prevent abrasion to the cable jacket.

108-3.4 **SPLICING.** Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. **Field-attached Plug-in Splices.** These shall be assembled in accordance with manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. In all cases the joint where the connectors come together shall be wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint.

b. **Factory-Molded Plug-in Splices.** These shall be made by plugging directly into mating connectors. In all cases, the joint where the connectors come together shall be wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (37 mm) on each side of the joint.

c. **Taped or Heat-Shrinked Splices.** A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches on each end) is clean. After scraping wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. Throughout the rest of the splice less tension should be used. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately 1 inch over the original jacket.Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do

not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminates prior to application.

108-3.5 BARE WIRE INSTALLATION FOR SAFETY OR EQUIPMENT GROUNDING. As shown on the details or included in the job specifications, a bare copper grounding wire shall be installed for safety (personnel protection) per paragraph 12.6 of AC-150-5340-30C, "Design and Installation Details for Airport Visual Aids". The safety ground shall be a #6 AWG bare jumper connected to the ground lug at the fixture base to a ground rod installed beside the fixture. The resistance to ground of the base must be 25 ohms or less per measurement with a ground tester. See the NEC Handbook for additional information about grounding electrode installation and testing. **The equipment ground shall be incidental to the installation of each base, light or sign.**

108-3.6 BARE COUNTERPOISE WIRE INSTALLATION FOR LIGHTNING PROTECTION AND GROUNDING. If shown on the plans or included in the job specifications, bare counterpoise copper wire shall be installed for lightning protection of the underground cables. Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables. Where the cable or duct/conduit trench runs parallel to the edge of pavement, the counterpoise shall be installed in a separate trench located half the distance between the pavement edge and the cable or duct/conduit trench. In trenches not parallel to pavement edges, counterpoise wire shall be installed continuously a minimum of 4 inches above the cable, conduit or duct bank, or as shown on the plans if greater. Additionally, counterpoise wire shall be installed at least 8 inches below the top of subgrade in paved areas or 10 inches below finished grade in un-paved areas. This dimension may be less than 4 inches where conduit is to be embedded in existing pavement. Counterpoise wire shall not be installed in conduit.

The counterpoise wire shall be routed around to each light fixture base, mounting stake, or junction/access structures. The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 feet apart around the entire circuit.

The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode grounding system. The connections shall be made as shown on the plans and in the specifications.

If shown on the plans or in the specifications, a separate equipment (safety) ground system shall be provided in addition to the counterpoise wire using one of the following methods:

(1) A ground rod installed at and securely attached to each light fixture base, mounting stake if painted, and to all metal surfaces at junction/access structures.

(2) Install an insulated equipment ground conductor internal to the conduit system and securely attached it to each light fixture base and to all metal surfaces at junction/access

structures. This equipment ground conductor shall also be exothermically welded to ground rods installed not more than 500 feet apart around the circuit.

a. **Counterpoise Installation above Multiple Conduits and Duct Banks.** Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete cone of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete cone of protection measured 22 ½ degrees each side of vertical.

   Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

b. **Counterpoise Installation at Existing Duct Banks.** When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.6 EXOTHERMIC BONDING. Bonding of counterpoise wire shall be by the exothermic welding process. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the Engineer, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

a. All slag shall be removed from welds.

b. For welds at light fixture base cans, all galvanized coated surface areas and "melt" areas, both inside and outside of base cans, damaged by exothermic bond process shall be restored by coating with a liquid cold-galvanizing compound conforming to U.S. Navy galvanized repair coating meeting Mil. Spec. MIL-P-21035. Surfaces to be coated shall be prepared and compound applied in accordance with manufacturer's recommendations.

c. All buried copper and weld material at weld connections shall be thoroughly coated 6 mil of 3M "Scotchkote," or approved equivalent, or coated with coal tar bitumastic material to prevent surface exposure to corrosive soil or moisture."

108-3.7 TESTING. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the Engineer. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the Engineer. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase and results meeting the specifications below must be maintained by the Contractor throughout the entire project as well as during the ensuing warranty period.

Earth resistance testing methods shall be submitted to the Engineer for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the Engineer. All such testing shall be at the sole expense of the Contractor.

Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The Engineer shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the Engineer the following:

a. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

b. That all affected circuits (existing and new) are free from unspecified grounds.

c. That the insulation resistance to ground of all new non-grounded series circuits or cable segments is not less than 100 megohms.

d. That the insulation resistance to ground of all non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

e. That all affected circuits (existing and new) are properly connected in accordance with applicable wiring diagrams.

f. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

g. That the impedance to ground of each ground rod does not exceed 25 ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be utilized, as described by ANSI/IEEE Standard 81, to verify this requirement.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the Engineer. Where connecting new cable to existing cable, ground resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved "repair" procedures for items that have failed testing other than complete replacement.

108-3.8 CABLE IDENTIFICATION. All power (5 kV and 600 V), fiber optic and multi-pair cables shall be identified at every handhole, manhole, light base and termination cabinet by use of engraved or stamped plastic or nonferrous metallic tags as detailed on the Plans. Tags shall be secured to cables by use of #14 copper wire. Tags must identify system (i.e., power, control, fiber optic) and destination or circuit (i.e., TC, TCS, ALCS, etc.) Tags shall be

installed on both sides of L-823 splices or at entry and exit of every manhole and handhole. For un-spliced cables labeling shall be in accordance with FAA-C-1391.

METHOD OF MEASUREMENT

108-4.1 Insulated cable or bare grounding and counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet of cable or counterpoise wire installed in trenches, duct bank or conduit, including ground rods and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurement shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item shall include additional quantities required for slack.

BASIS OF PAYMENT

108-5-.1 Payment will be made at the contract unit price for insulated cable and bare counterpoise wire installed in trench (direct-buried), or insulated cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors, trenching, backfill of trench, and trench marking tape, necessary to complete this item.

Payment will be made under:

Item L-108-5.1	L-824, Type C, 1/C #8, 5 kV Cable – per LF
Item L-108-5.2	Bare #6 AWG Counterpoise, installed in Trench including Ground Rods – per LF

MATERIAL REQUIREMENTS

AC 150/5345-7	Specification for L-824 Underground Electrical Cables for airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors (including Changes 1 and 2)

REFERENCE DOCUMENTS

NFPA No. 70 National Electrical Code (NEC)

MIL-S-23586C	Sealing Compound, Electrical, Silicone Rubber Building Industry Consulting Service International (BICSI)
ANSI/IEEE Std 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System

END OF ITEM L-108

ITEM L-110

AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS

DESCRIPTION

110-1.1 This item shall consist of underground electrical conduits and duct banks installed in accordance with this specification at the locations and in accordance with the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical duct banks and individual and multiple underground conduits. It shall also include all in-field paving, trenching, backfilling, removal, and restoration of any paved or "dirt" areas; concrete encasement, mandreling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables in accordance with the plans and specifications. This item shall also include furnishing and installing conduits and all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification.

EQUIPMENT AND MATERIALS

110-2.1 GENERAL.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when so requested by the Engineer.

b. Manufacturer's certifications shall not relieve the Contractor of the Contractor's responsibility to provide materials in accordance with these specifications and acceptable to the Engineer. Materials supplied and/or installed that do not materially comply with these specifications shall be removed, when directed by the Engineer and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. The Engineer reserves the right to reject any and all equipment, materials or procedures, which, in the Engineer's opinion, does not meet the system design and the standards and codes, specified herein.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months

from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

110-2.2 STEEL CONDUIT. Rigid galvanized steel conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standard 6, 514B, and 1242.

110-2.3 PLASTIC CONDUIT. Plastic conduit and fittings-shall conform to the requirements of Fed. Spec. W-C-1094, Underwriters Laboratories Standards UL-651 and Article 347 of the current National Electrical Code shall be one of the following, as shown on the plans:

a. Type I–Schedule 40 PVC suitable for underground use either direct-buried or encased in concrete.

b. Type II–Schedule 40 PVC suitable for either above ground or underground use. The type of adhesive shall be as recommended by the conduit/fitting manufacturer.

110-2.4 SPLIT CONDUIT. Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

110-2.5 CONDUIT/DUCT SPACER SYSTEM. On all multiple conduit arrays, the Contractor shall furnish and install a conduit spacer system as required to maintain uniform conduit spacing. The system shall consist of plastic spacers that interlock vertically and horizontally. A spacer assembly shall consist of base spacers, intermediate spacers, and top spacers to provide a completely enclosed and locked-in conduit assembly. Install spacers per manufacturer's instructions, but provide a minimum of five spacer assemblies per 20 feet of 2" conduit array or a minimum of four spacer assemblies per 20 feet of 4" and larger conduit arrays. Conduit spacers shall be prefabricated interlocking units manufactured for the intended purpose. They shall be of double wall construction made of high grade, high density polyethylene complete with interlocking cap and base pads, They shall be designed to accept No. 4 reinforcing bars installed vertically.

110-2.6 CONCRETE. Concrete shall conform to Item P-610, Structural Portland Cement Concrete, using 3/4 inch maximum size coarse aggregate with a minimum 28 day compressive strength of 4,000 psi. Where reinforced duct banks are specified, reinforcing steel shall conform to ASTM A 615 Grade 60. Concrete and reinforcing steel are incidental to the respective pay item of which they are a component part.

110-2.7 DETECTABLE WARNING TAPE. Plastic, detectable, yellow magnetic tape shall be polyethylene film with a metallized foil core and shall be 4-6 inches wide. Detectable tape is incidental to the respective bid item.

CONSTRUCTION METHODS

110-3.1 GENERAL. The Contractor shall install underground duct banks and conduits at the approximate locations indicated on the plans. The Engineer shall indicate specific locations as the work progresses, if required to differ from the plans. Duct banks and conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at

least 3 inches per 100 feet. On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. No duct bank or underground conduit shall be less than 18 inches below finished grade. Where installed under pavement, the top of the duct bank shall not be less than 18 inches below the subgrade.

The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4-inch smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits/ducts and clean base can, manhole, pull boxes, etc. interiors IMMEDIATELY prior to pulling cable. Once cleaned and swabbed the base cans, manhole, pull boxes, etc. and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc. is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be recleaned at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the Engineer of any blockage in the existing ducts.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 200 pound test polypropylene pull rope. The ends shall be secured and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminate from entering the conduits. Any conduit section having a defective joint shall not be installed.

Unless otherwise shown on the plans, concrete encased duct banks shall be utilized when crossing under pavements expected to carry aircraft loads.

Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches below the required conduit or duct bank depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. The Contractor shall ascertain the type of soil or rock to be excavated before bidding. All such rock removal shall be performed and paid for under Item P-152.

Underground electrical warning (caution) tape shall be installed in the trench above all underground duct banks and conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the Engineer. If not shown on the plans, the warning tape shall be located six inches above the duct/conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared in accordance with the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, or in duct banks, joints in the conduit shall be staggered a minimum of 2 feet.

Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the Engineer, the unsuitable material shall be removed in accordance with Item P-152 and replaced with suitable material. Alternatively, additional duct bank supports that are adequate and stable shall be installed, as approved by the Engineer.

All excavation shall be unclassified and shall be considered incidental to the respective L-110 pay item of which it is a component part. Dewatering necessary for duct installation, erosion and turbidity control, in accordance with Federal, State, and Local requirements is incidental to its respective pay item as a part of Item L-110. The cost of all excavation, regardless of type of material encountered, shall be included in the unit price bid for the L-110 Item.

Unless otherwise specified, excavated materials that are deemed by the Engineer to be unsuitable for use in backfill or embankments shall be removed and disposed of off site.

Any excess excavation shall be filled with suitable material approved by the Engineer and compacted in accordance with item P-152.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall insure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred

(2) Trenching, etc., in cable areas shall then proceed with approval of the Engineer, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair.

110-3.2 DUCT BANKS. Unless otherwise shown in the plans, duct banks shall be installed so that the top of the concrete envelope is not less than 18 inches below the bottom of the base or stabilized base course layers where installed under runways, taxiways, aprons, or other paved areas, and not less than 18 inches below finished grade where installed in unpaved areas.

Unless otherwise shown on the plans, duct banks under paved areas shall extend at least 3 feet beyond the edges of the pavement or 3 feet beyond any underdrains that may be installed alongside the paved area. Trenches for duct banks shall be opened the complete length before concrete is placed so that if any obstructions are encountered, proper provisions can be made to avoid them. Unless otherwise shown on the plans, all duct banks shall be placed on a layer of concrete not less than 3 inches thick prior to its initial set. Where two or more conduits in the duct bank are intended to carry conductors of equivalent voltage insulation rating, the Contractor shall space the conduits not less than 1-1/2 inches apart (measured from outside wall to outside wall). Where two or more conduits in the duct bank are intended to carry conductors of differing voltage insulation rating, the Contractor shall space the conduits not less than 3 inches apart (measured from outside wall to outside wall). All such multiple conduits shall be placed using conduit spacers applicable to the type of conduit. As the conduit laying progresses, concrete shall be placed around and on top of the conduits not less than 3 inches thick unless otherwise shown on the plans. End bells or couplings shall be installed flush with the concrete encasement at access points.

Conduits forming the duct bank shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth prior to placing the concrete encasement. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the Engineer for review prior to use.

When specified, the Contractor shall reinforce the bottom side and top of encasements with steel reinforcing mesh or fabric or other approved metal reinforcement. When directed, the Contractor shall supply additional supports where the ground is soft and boggy, where ducts cross under roadways, or where shown on the plans. Under such conditions, the complete duct structure shall be supported on reinforced concrete footings, piers, or piles located at approximately 5 foot intervals.

All pavement surfaces that are to have ducts installed therein shall be neatly saw cut to form a vertical face. All excavation shall be included in the contract with price for the duct.

Install a plastic, detectable, color as noted, 4-6 inch wide tape 8 inches minimum below grade above all underground conduit or duct lines not installed under pavement.

When existing cables are to be placed in split duct, encased in concrete, the cable shall be carefully located and exposed by hand tools. Prior to being placed in duct, the Engineer shall be notified so that he may inspect the cable and determine that it is in good condition. Where required split duct shall be installed as shown on the drawings or as required by the Engineer.

110-3.3 CONDUITS WITHOUT CONCRETE ENCASEMENT. Trenches for single-conduit lines shall be not less than 6 inches, nor more than 12 inches wide, and the trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 4 inches thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material shall consist of soft dirt, sand or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch sieve. The bedding material shall be tamped until firm. Flowable backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits are at least 18 inches below the finished grade.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 2 inches apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and lot less than 6 inches apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5 -foot intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the Engineer for review prior to use.

110-3.4 **MARKERS.** The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet square and 4-6 inches thick extending approximately 1 inch above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building.

The Contractor shall impress the word "DUCT" or "CONDUIT" on each marker slab. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the Engineer. The letters shall be 4 inches high and 3 inches wide with width of stroke 1/2-inch and 1/4-inch deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

110-3.5 **BACKFILLING FOR CONDUITS.** For conduits, 8 inches of sand, soft earth, or other fine fill (loose measurement) shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted in accordance with Item P-152, Excavation and Embankment, except that material used for back fill shall be select material not larger than 4 inches in diameter.

Trenches shall not contain pools of water during back, filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface: except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of in accordance with instructions issued by the Engineer.

110-3.7 **RESTORATION.** Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the work shall be restored to its original condition. The restoration shall be as shown on the civil plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. All restoration shall be considered incidental to the respective L-110 pay item

METHOD OF MEASUREMENT

110-4.1 Underground conduits and duct banks shall be measured by the linear feet of conduits and duct banks installed, including encasement, locator tape, trenching and backfill with designated material, and for drain lines, all measured in place, completed, and accepted. Separate measurement shall be made for the various types and sizes.

BASIS OF PAYMENT

110-5.1 Payment for underground conduits will be made at the contract unit price per linear foot for each type and size of conduit and duct bank completed and accepted, including trench and backfill with the designated material, and for drain lines. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, supervision, equipment, tools, and incidentals necessary to complete this item in accordance with the provisions and intent of the plans and specifications.

Payment will be made under:

Item L-110-5.1	Single-way 2" Conduit, Direct Buried – per Linear Foot

MATERIAL REQUIREMENTS

Fed.Spec.W-C-1094	Conduit and Conduit Fittings; Plastic, Rigid (cancelled; replaced by UL 514 Boxes, Nonmetallic Outlet, Flush Device Boxes, and Covers, and UL 651 Standard for Conduit and Hope Conduit, Type EB and A Rigid PVC)
Underwriters Laboratories Standard 6	Rigid Metal Conduit
Underwriters Laboratories Standard 514B	Fittings for Cable and Conduit
Underwriters Laboratories Standard 1242	Intermediate Metal Conduit

Underwriters Laboratories Standard 651	Schedule 40 and 80 Rigid PVC Conduit (for Direct Burial)
Underwriters Laboratories Standard 651A	Type EB and A Rigid PVC Conduit and HDPE Conduit (for concrete encasement)

END OF ITEM L-110

ITEM L-858

AIRPORT GUIDANCE LIGHTING SYSTEMS (SIGNAGE)

DESCRIPTION

858-1.1 RELATED DOCUMENTS. The General Provisions of the Contract, including General and Special Conditions apply to work specified in this Item.

858-1.2 GENERAL. This Item shall consist of installing internally lighted and unlighted airport guidance signage in accordance with this specification, the referenced specifications, the manufacturer's recommendations, and the applicable codes, standards and Advisory Circulars. The signs shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all associated equipment (concrete foundations, base cans, frangible legs, cable or counterpoise wire, ground rods, grounding connectors, mounting stacks and appurtenances), materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the Engineer. This Item also shall include the electrical adjustment of multi-step signs per sign manufacturer's installation requirements.

858-1.3 FAA ADVISORY CIRCULARS AND STANDARDS.

a. Taxiway signs and related materials covered by FAA specifications shall have the prior approval of the Federal Aviation Administration, Airports Service, Washington, DC 20591, and shall be listed in the latest edition of Advisory Circular 150/5345-53, Airport Lighting Equipment Certification Program, shall be certified by an approved laboratory such as ETL as conforming with applicable FAA standards and requirements, or shall be verified as exceeding FAA standards as required by these specifications.

b. All other equipment and material covered by other referenced specifications shall be subjected to acceptance through manufacturer's certification of compliance with the applicable specification. All electrical materials and equipment for which there is a nationally recognized standard shall bear the conformance labeling of the third party inspection authority, such as Underwriters Laboratories, Inc., Factory Mutual, ETL, or approved equal.

c. The following documents, of the issue in effect on date of application for qualification, are applicable to the extent specified:

Federal Aviation Administration (FAA) Advisory Circulars:

AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connections (including Changes 1 & 2)
AC 150/5345-42	Specification for Light Base and Transformer Housings, Junction Boxes and Accessories (including Change 1)
AC 150/5345-44	Specification for Taxiway and Runway Signs

AC 150/5345-47 Isolation Transformers for Airport Lighting Systems

AC 150/5345-53 Airport Lighting Equipment Certification Program

Section 1.01 Federal Specifications

L-S-300 Sheeting and Tape -- Reflective; Nonexposed Lens, Adhesive Backing

Article II Military Standard

MIL-STD-810 Environmental Test Methods

American Society for Testing and Materials (ASTM)

ASTM D 4956 Specification for Retroreflective Sheeting for Traffic Control

National Fire Protection Association (NFPA)

NFPA 70 National Electrical Code

The signs shall meet or exceed FAA requirements when subjected to the qualification tests as described in the latest edition of AC 150/5345-44.

The installation of Underground Cable for Airports, Airport Underground Electrical Duct, and Airport Lighting Systems that are not a part of this item are covered under the separate respective items of these specifications.

858-1.4 SHOP DRAWINGS AND MATERIAL LISTS. Prior to the installation of any material and equipment and within 30 days of contract award, the Contractor shall submit to the Owner for approval six (6) copies of manufacturers' brochures containing complete dimensional and performance characteristics, installation and operation instructions, etc., for the following equipment: This list shall include the name of each item, the Federal Aviation Administration specification number, the manufacture's name, the manufacturer's catalog number, and the size, type and/or rating of each item.

a. Shop drawings shall be submitted showing: installation requirements (i.e., foundation size, anchor bolt location, etc.); sign assembly, including all fabrication assembly and internal and external wiring diagrams; message layout for each sign; and tabulation of total volt-ampere (VA) for each sign at highest intensity step.

b. Catalog cuts shall be submitted showing: sign and sign base (features and accessories, installation details); results of tests performed by an independent laboratory testing source in accordance with AC 150/5345-44 addressing visual examination, wind load and frangibility load tests, photometric test results with luminance maps, environmental tests, production tests; load data for all brightness steps, as measured from the primary side of the isolation transformer, and power factor; lamp life.

c. Sign schedules including sign numbers and face panel descriptions.

d. Steel L-867 base and steel cover (sign base and transformer enclosure.)

e. Dimensioned and detailed pre-cast concrete bases foundations.

f. Manufacturer's statement of warranty (see paragraph 858-2.8 b).

In addition to the above specific items, a materials list shall be submitted listing each specification paragraph number and stating whether the materials proposed are as specified or are substitutions. If the item is a substitute item, a complete submittal as described in the above paragraph shall be provided for that item.

The submittal shall be complete and made in one submission in booklet form with hard-bound cover. Partial submissions will not be reviewed or considered.

858-1.5 MATERIAL DELIVERY SCHEDULE AND REQUIREMENTS. All signs and associated materials (transformers and connecting cables, transformer housings, anchor bolts, floor flanges, breakable couplings, foundations, mounting stakes, and incidental mounting hardware), for the project shall be procured under this contract in accordance with the material delivery directed by the Engineer. The following material distinction is made to define the material to be delivered:

a. Mounting Hardware. Mounting hardware shall include detailed installation shop drawings as prepared by the sign supplier and approved by the Engineer, frangible legs, mounting hardware, transformer housings, mounting stakes, anchor bolts and floor flange templates, and sign markers (blank).

b. Sign. Signs shall include the actual sign to be installed, transformer and connecting cables, floor flanges, breakable couplings, tethers, and all other incidentals necessary to provide a complete and operable sign.

EQUIPMENT AND MATERIALS

858-2.1 GENERAL. Airfield guidance signs, hereinafter referred to as "Signs," are Contractor furnished and shall be FAA Type L-858 internally illuminated or unlighted, conforming to AC 150/5345-44, other referenced publications, and to the requirements of this Item.

Airport signage equipment and materials covered by FAA specifications shall have the prior approval of the Federal Aviation Administration, Airports Service, Washington, D.C. 20591, and shall be listed in Advisory Circular 150/5345-53A, Airport Lighting Equipment Certification Program.

All other equipment and materials covered by other referenced specifications shall be subject to acceptance through the manufacturer's certification of compliance with the applicable specifications and subject to Owner's approval.

Lists of the equipment and materials required for a particular system are contained in the applicable Advisory Circulars.

858-2.2 SIGN CLASSIFICATION. The classification of each sign shall be as shown on the Construction Drawings and as specified below:

a. Types. Signs of the following types are included:

Type L-858Y. Direction, Destination, and Boundary Sign. Black legend on a yellow background.

Type L-858L.Taxiway Location Sign. Yellow legend and border on a black background.

Type L-858R. Mandatory Hold Sign. White legend and border on a red background.

b. Sizes. Signs of the following sizes are included:

(1) Size 1. 12-inch (760 mm) sign face with a 18-inch (460 mm) legend

c. Styles. Signs of the following styles are included:

(1) Style 5. Powered from a single-step series lighting circuit (5.5 amperes)
(2) Style 4. Unlighted

d. Classes. Lighted signs of the following classes are included:

(1) Class 1. For operation down to -20 degrees C.
(2) Class 2. For operation down to -55 degrees C. (unlighted)

e. Modes. Unlighted signs of the following modes are included:

(1) Mode 2. To withstand wind loads of 200 mph.

858-2.3 NAMEPLATE. Each sign shall have a nameplate giving the Sign Name as shown on the Construction Drawings, Type, Size, Style, Class, manufacturer's name, address, catalog number, and lamp data (if applicable), including type and rating. The nameplate on Style 2, 3, and 5 signs shall give the total maximum volt-amp load and power factor as seen from the primary of the isolation transformer. The total maximum volt-amp load indicated shall reflect the highest possible volt-amp loading on the regulator and shall include loading due to a "worst case" isolation transformer, and any required ballast and/or adaptor units. The nameplate shall be mounted to the exterior of the sign enclosure at the top side of the sign.

858-2.4 WORKMANSHIP. The equipment shall be fabricated in accordance with the highest quality workmanship. All wiring shall be neatly run and laced. All sharp edges and burrs shall be removed. Painted surfaces shall be free from runs, blotches, and scratches.

858-2.5 INSTRUCTION BOOKLET. Ten (10) copies of an instruction booklet shall be included with each order of signs, which shall include installation instructions, maintenance procedures (including operating voltage and point readings), and a complete parts list, including recommended spare parts list. It shall also describe the lamp wattage or current needed to maintain the luminance levels specified herein.

858-2.6 SIGN COVER. Sign covers shall be capable of fully covering the sign and withstanding the weather conditions and jet blast to which it may be subjected during its installation. The material shall be sufficiently heavy (similar to canvas) to completely obscure the sign message so that it cannot be read.

858-2.7 CONCRETE. Concrete for foundations shall conform to the requirements of Item P-610 Structural Portland Cement Concrete with a compressive strength of not less than 4000 psi.

858-2.8 CONDUIT. Rigid steel and EMT conduit and fittings shall conform to the requirements of Fed. Spec. WW-C-581. PVC conduit and fittings shall conform to the requirements of Fed. Spec. W-C-1094.

858-2.9 LIGHT BASE. Type L-867, size B, 24-inch-deep, one-piece with steel cover plate meeting the requirements of FAA AC 150/5345-42C, current edition, as procured by the Contractor and as provided by the Owner in accordance with Section 24 of the Special Provisions. Provide with grounding lug as shown on the drawings. **The equipment ground defined in 858-2.10 shall be incidental to the installation of each base, light or sign.**

858-2.10 BARE WIRE INSTALLATION FOR SAFETY OR EQUIPMENT GROUNDING. As shown on the details or included in the job specifications, a bare copper grounding wire shall be installed for safety (personnel protection) per paragraph 12.6 of AC-150-5340-30C, "Design and Installation Details for Airport Visual Aids". The safety ground shall be a #6 AWG bare jumper connected to the ground lug at the fixture base to a ground rod installed beside the fixture. The resistance to ground of the base must be 25 ohms or less per measurement with a ground tester. See the NEC Handbook for additional information about grounding electrode installation and testing. **The equipment ground shall be incidental to the installation of each base, light or sign.**

858-2.11 ISOLATION TRANSFORMER. An isolating transformer shall be provided with each Owner furnished sign and shall conform to the requirements of the applicable Advisory Circular.

CONSTRUCTION METHODS

858-3.1 GENERAL. The installation and testing details for the systems shall be as specified in the applicable Advisory Circulars.

858-3.2 PHASING AND INTERRUPTIONS. The construction phasing and airfield operational requirements for this project may require that new signs are installed, tested, switched to OFF, and covered until directed by the RE to activate the signs. Activating the signs will be done as directed by the RE.

858-3.3 LOCATION/ELEVATION. The signs shall be installed at the locations indicated in the plans. Guidance signs shall be located where indicated, offset 11'-0" from marked edge of taxiway pavement. Runway Distance Remaining (RDR) markers shall be located at indicated stations offset 150'-0" from centerline of runway to centerline of light unless otherwise noted. Longitudinal tolerance is 1'-0". Foundation elevation shall be 1 to 2 inches above finish grade as established on the civil grading and drainage drawings.

858-3.4 TRANSFORMER. The transformer shall be installed in the L-867 base at location and position as indicated on the plans. The primary cable connections shall be made by use of the L-823 plug and receptacle cable connectors and with heat-shrinkable sleeves over the connectors.

858-3.5 HARDWARE. All bolts, nuts, washers and lockwashers shall be stainless steel. Install using Loctite 252 compound.

858-3.6 CABLE, CONNECTOR, AND ISOLATION TRANSFORMERS. The primary and secondary cable leads of the transformers are supplied with factory-installed molded connectors. Visual inspection of these items during installation is very important. Minor cuts, bruises, or mishandling may result in progressive deterioration which will eventually cause complete failure, but not until sometime after acceptance tests. During installation, these items shall be inspected for the following:

a. The mating surfaces of molded connectors are clean and dry when plugged together. If clean and dry inside, these high voltage connectors, with taping, form a connection equal or superior to a conventional high voltage splice. Conversely, if they are wet or dirty no amount of taping can produce a satisfactory connection. Two or three turns of tape should be used to hold the connector together and keep the parting line clean. Cleanliness of mating surfaces can be ensured by keeping the factory-installed caps in place until the final connection is made. The mating surfaces of uncapped connectors should not be laid down, touched, or breathed upon. If a connection must be broken, the connectors should be immediately capped.

b. The connectors are completely plugged together. After initial plugging, trapped air pressure may partially separate the plug and receptacle. If this happens, wait a few seconds and push them together again. Two or three turns of tape should be used to hold them in place.

c. The cables are not cut by shovels, kinked, crushed by vehicle wheels bruised by rocks, or damaged in any way during handling and installation.

d. The cables do not directly cross each other and are separated by the specified distance.

e. The cables are not bent sharply where they enter (or leave) a conduit, and are supported properly by tamped ground so future settling will not cause sharp bends.

858-3.7 IDENTIFICATION NUMBERS. An identifying number shall be assigned to each sign in accordance with the information provided by Airport Operations. The placing of these numbers shall be accomplished by use of 2-inch diameter nonferrous metal tag, with the numerals approximately 1/4-inch in height, stamped in, embedded in the concrete base as detailed on the drawings, so each faces the taxiway or runway.

858-3.8 FIELD TESTS AND INSPECTIONS

a. Contractor shall provide the RE Engineer 10 working days notice prior to test(s). All deficiencies found shall be corrected and tests repeated.

b. **Operation.** Upon completion of all the tests required under other sections, the Contractor shall show by in-service demonstration that all circuits, control equipment, and all lights covered by the contract are in good operating condition. The testing of each circuit shall be made using local control switches on the regulators in each lighting vault. Each switch shall be operated so that each switch position is engaged at least five times. During this process, all lights and associate equipment shall be observed to determine that each circuit operates properly. Telephone or radio communication between the operator and the observers shall be provided. The above tests shall be repeated from the alternate control station, from the remote control points, and also again from the local control switches on the

regulators. Each lighting circuit shall be tested by operating the lighting circuits at each brightness step. Visual examination shall be made at the beginning and at the end of this test to determine that the correct signs are energized.

METHOD OF MEASUREMENT

858-4.1 INSTALL RELOCATED EXISTING L-858 SIGN ON NEW FOUNDATION. The quantity of each relocated sign installation shall include: Reinstallation of each salvaged L-858 sign; furnishing and installing new isolation transformer; furnishing and installing a new concrete foundation, L-867 Type I base, conduits to sign and stub out from base; and reinstalling/wiring of sign with new L-823 connectors with heat-shrinkable rubber sleeve over the connectors. Installed as completed unit, connected to circuit, operating for a minimum of one-week burn-in period, ready for operation and accepted.

858-4.2 SIGN PANELS. The quantity of each new sign panel shall include: Furnishing and installing each sign panel on relocated L-858 sign module as shown on plans. The unit price shall be full compensation for all labor, supervision, materials, equipment, testing, and incidentals necessary to complete the Item as accepted by the Owner.

858-4.3 UNLIGHTED SIGNS. The quantity of each unlighted sign shall include: Furnishing and installing each unlighted sign on frangible mounting stakes as shown on plans and approved shop drawings. The unit price shall be full compensation for all labor, supervision, materials, equipment, testing, and incidentals necessary to complete the Item as accepted by the Owner.

BASIS OF PAYMENT

858-5.1 SYSTEM COMPONENT. Payment will be made at the contract unit price for each complete system component listed below installed in place by the Contractor and accepted. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this Item.

Payment will be made under:

Item L-858-5.1	Relocate and Install Size 1 Sign on New Concrete Foundation – per Each
Item L-858-5.2	New Size 1 Sign Panels – per Each
Item L-858-5.3	Unlighted Sign Replacement – per Each

REFERENCED PUBLICATIONS

858-6.1 FEDERAL SPECIFICATIONS REFERENCED IN ITEM L-858.

Number	Title
WW-C-581	Conduit, Metal, Rigid; and Coupling, Elbow; and Nipple, Electrical Conduit: Zinc-Coated
W-C-1094	Conduit, Plastic-Type II Schedule 40

858-6.2 FAA SPECIFICATION REFERENCED IN L-858. All references are current edition.

AC 150/5340-18	Standards for Airport Sign Systems.
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connections (including Changes 1 & 2)
AC 150/5345-39	Specification for L-853 Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Light Base and Transformer Housings, Junction Boxes and Accessories (including Change 1)
AC 150/5345-44	Specification for Taxiway and Runway Signs
AC 150/5345-47	Isolation Transformers for Airport Lighting Systems
AC 150/5345-53	Airport Lighting Equipment Certification Program

END OF ITEM L-858

ITEM L-861T

ELEVATED MEDIUM INTENSITY TAXIWAY EDGE LIGHTS

DESCRIPTION

861T-1.1 RELATED DOCUMENTS. The General Provisions of the Contract, including General and Special Conditions apply to work specified in this Item.

861T-1.2 GENERAL. This Item shall consist of installing new or salvaged elevated taxiway lights in accordance with this specification, the referenced specifications, the manufacturer's recommendations, and the applicable codes, standards and Advisory Circulars. The lights shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all associated equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the Engineer. This Item shall consist of the following general elements:

a. Installing Owner furnished (Existing lights to be relocated on New Base with New Isolation Transformer) L-861T medium intensity taxiway edge lights (MITL) and isolation transformers.

b. Installing Contractor furnished (New lights to be placed on existing base cans) L-861T medium intensity taxiway edge lights (MITL) and isolation transformers.

This Item involves the following work:

c. Install all new conduit/duct system (per Item L-110) and the bottom portion of the L-867 bases (or extension type base) (per Item L-867/868) including concrete foundations and appurtenances as shown on the plans. Encase the base section with P-610 concrete according to the detail shown on the plans. Trench for and install conduit system (per details, under Item L-110). Encase conduit with flowable backfill (per P-153).

d. Install temporary "mud" covers on bases prior to paving operations. Backfill above light base to bottom of pavement with excavated base material.

e. Upon completion of the shoulder paving operations, core drill completed shoulder pavement and install Type L-867 base extensions or raise extension types to required elevations. Encase the L-867 bases and extensions with P-610 concrete according to the detail shown on the plans.

f. Install all new 5 kV lighting cable between lights for entire loop circuit (per Item L-108).

g. After paving and area grading have been completed, install and connect the various elevated lights.

861T-1.3 APPLICABLE DOCUMENTS. The publications listed at the end of this Item are incorporated herein by reference and form a part of this Item to the extent indicated by the references thereto. Except where a specific date is given, the issue in effect (including amendments, addenda, revisions, supplements, and errata) on the date of this solicitation

shall be applicable. In the text of this Item, such publications are referred to by basic designation only. Additional details and specifications pertaining to a specific system are contained in these documents and are to be considered as part of this Item. Perform all work in accordance with these documents except as specified herein. In the event of a conflict between contract documents and the referenced documents, the more stringent rule shall be applied.

861T-1.4 IDENTIFICATION NUMBERS. See Layout Plan for identification numbers.

861T-1.5 LOCATION/ELEVATION. Lights shall be spaced on centers as indicated on the drawings. Longitudinal tolerance is 6 inches.

Elevation of bases shall be coordinated with the civil grading and drainage drawings. The base shall be set so that the top of light fixture base plate shall be within +1 to +2-inch of the adjacent finished grade.

MATERIALS

861T-2.1 GENERAL. Airport lighting equipment and materials covered by FAA specifications shall have the prior approval of the Federal Aviation Administration, Airports Service, Washington, D.C. 20590, and shall be listed in Advisory Circular 150/5345-53, Airport Lighting Equipment Certification Program, current edition.

861T-2.2 MEDIUM-INTENSITY ELEVATED TAXIWAY LIGHT FIXTURES. Fixtures shall be Owner furnished where existing lights are to be relocated on New Base with New Isolation Transformer and Contractor furnished where installing new light on existing base, Type L-861T, LED, omni-directional, meeting the requirements of FAA AC 150/5345-46, current edition. Installed height to top of globe shall be 14 inches above base.

861T-2.3 LIGHT BASE. Type L-867, Size B, two-piece or extension type, or Type L-868, Size B, two-piece, with appropriate base plate and adaptors rings (for L-868 bases) meeting the requirements of FAA AC 150/5345-42. Refer to Item L-867/868 for base and base plate specifications. Provide with grounding lug as shown on the drawings. The equipment ground of Item L-108-3.4 shall be incidental to the installation of each base, light or sign.

861T-2.4 ISOLATION TRANSFORMER. Transformers shall be Type L-830, wattage appropriate to the fixture type, 60 hertz, meeting the requirements of FAA AC 150/5345-47, current edition.

861T-2.5 HARDWARE. All bolts, nuts, washers and lock washers shall be stainless steel. Install using Loctite 252 compound.

861T-2.6 PLUG AND RECEPTACLE CABLE CONNECTORS. L-823, Type I, Class A, meeting the requirements of FAA AC 150/5345-26, current edition.

861T-2.7 CONCRETE. Concrete for foundations shall conform to the requirements of Item P-610 Structural Portland Cement Concrete, 4000 psi.

METHOD OF MEASUREMENT

861T-3.1 EXISTING ELEVATED LIGHTS, SALVAGE AND REINSTALL ON NEW BASE. The quantity to be measured shall be for each elevated taxiway edge or runway guard light fixture, salvaged and reinstalled on a new base (Item L-867/L-868: including light base, counterpoise loop and ground rod) with isolation transformer, connectors and secondary cable, receptacle assemblies, and testing in accordance with the plans and specifications and as accepted by the Owner.

861T-3.2 NEW ELEVATED LIGHTS, INSTALL ON EXISTING BASE. The quantity to be measured shall be for each new taxiway edge or high intensity runway edge light installed on existing base as accepted by the Owner. The quantity of work covered in this section may vary from zero to 125% of the estimated quantity provided in the bid schedule. No adjustment to the unit price shall be granted for this variation.

BASIS OF PAYMENT

861T-4.1 EXISTING ELEVATED LIGHTS, SALVAGE AND REINSTALL ON NEW BASE. Payment for the salvage and reinstallation of elevated taxiway edge and runway guard lights shall be made at the contract unit price for installing each fixture. The unit price shall be full compensation for all labor, materials, equipment and incidentals necessary to complete the item.

861T-4.2 NEW ELEVATED LIGHTS, INSTALL ON EXISTING BASE. Payment for the installation of new elevated taxiway edge lights shall be made at the contract unit price for installing each fixture. The unit price shall be full compensation for all labor, materials, equipment and incidentals necessary to complete the item.

Payment will be made under:

Item L-861T-4.1	Re-install Elevated Lights on New Base -per each
Item L-861T-4.2	Furnish and Install New L-861T Taxiway Edge Light on Existing Base -per each

REFERENCED PUBLICATIONS

861-5.1 FAA SPECIFICATIONS REFERENCED IN L-861T. All references shall be current edition.

AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connections (including Changes 1 and 2)
AC 150-5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Light Base and Transformer Housings, Junction Boxes and Accessories (including Change 1)
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures

AC 150/5345-47 Isolation Transformers for Airport Lighting Systems

AC 150/5345-53 Airport Lighting Equipment Certification Program

END OF ITEM L-861T

ITEM L-867/868

LIGHT BASE AND TRANSFORMER HOUSING

DESCRIPTION

867/868-1.1 RELATED DOCUMENTS. The General Provisions of the Contract, including General and Special Conditions apply to work specified in this Item.

867/868-1.2 GENERAL. Elements under this Section shall consist of bases and/or appurtenances for the following work:

a. L-867 bases and covers for use for miscellaneous system cable splices.

b. L-867 bases and appurtenances for any Elevated Fixture (Taxiway Edge Lights, Runway Guard Lights, Runway Edge Lights).

c. L-868 bases and appurtenances (including L-868 to L-867 adaptor ring) for any Elevated Fixture (Taxiway Edge Lights, Runway Guard Lights) installed in the PCC pavement.

d. L-868 bases and appurtenances for any In-pavement (Taxiway Centerline Lights, Runway Guard Lights, Runway Status Lights, Runway Edge Lights).

e. Installation methods for L-868 base shall include the following options:

(1) "Standard" two-step installation (base and appurtenances (grounding, rebar cage, etc.) set in concrete, plus shallow core drill for extension to final grade).

(2) The "Diamond Leave-out" installations (form around base location with concrete in-fill) at intersections of paving lanes and saw cut joints where fixture cannot be moved far enough to avoid the intersection.

(3) Either of two "Core Drill" installations (full depth core drill with concrete in-fill) for fixtures at paving lane or saw cut joints.

f. Blank covers for vacated existing L-867 bases.

g. Aircraft load rated blank covers for new or vacated existing L-868 bases.

This Section is also for reference for L-867 bases for Junction Can Plazas (under Item L-115) and guidance sign foundations (under Item L-858). These bases installed under this contract are to be provided as part of other Sections in these specifications.

867/868-2.1 SHOP DRAWINGS AND MATERIAL LISTS. Shall be in accordance with Item L-100, Paragraph 100-1.5, for the following equipment:

a. Bases, extensions, rings and adaptor rings.
b. Blank cover plates.
c. Flange Rings.

867/868-2.2 LOCATION/ELEVATION. Bases shall be located as indicated on the drawings.

Elevation of in-pavement bases shall be coordinated with the civil grading and drainage drawings per the requirements of Item L-852.

Elevation of in asphalt shoulder bases shall be coordinated with the civil grading and drainage drawings per the requirements of Item L-861T.

867/868-2.3 LIGHT BASE AND LIGHT INSTALLATION ALIGNMENT TOOL. The tolerance requirement for location, elevation, and orientation of all light fixtures is of critical importance and must be maintained. In order to do so the light bases and lights shall be installed using an installation and alignment tool. This tool shall be capable of achieving the final alignment specified and shall be of sufficient strength to support the light base during placement and compaction of concrete around the base. The Contractor shall submit to the Engineer the proposed installation and alignment tool for approval. Upon approval, the Contractor shall procure a sufficient number of these tools to use in the installation process. No light base or light shall be installed without using an approved installation and alignment tool.

MATERIALS

867/868-3.1 GENERAL. Airport lighting equipment and materials covered by FAA specifications shall have the prior approval of the Federal Aviation Administration, Airports Service, Washington, D.C. 20590, and shall be listed in Advisory Circular 150/5345-53, Airport Lighting Equipment Certification Program, current edition.

867/868-3.2 CONSTRUCTION.

a. Steel shall be used in the construction of L-867 and L-868 bases, extensions, and accessories and shall meet the requirements of ASTM A-36. All welds shall be continuous to provide a watertight enclosure. All bases, sections, and extensions shall meet the test requirements in Sections 868-3.1 to 3.6.

b. Construction of PVC, polyethylene plastic or other non-metallic materials for L-868 and L-867 bases will not be accepted.

867/868-3.3 TOP FLANGE. The dimensions of the flange and its bolt circle shall be as required for the appropriate fixture. The flat surface of the flange shall be installed at an angle of 90 degrees, plus or minus 0.25 degree, to the axis of the cylindrical body. The flange shall be continuously attached to the body to provide a watertight seal.

867/868-3.4 BODY. The dimensions of the base and/or extension shall be as shown on the plans. Two duct couplings or grommets shall be provided and installed near the bottom of the base as shown on the plans. The location and size, as shown on the plans, shall be considered standard. However, the location, number, type, and size of the duct connections can be altered to meet special conditions. Any sharp edges formed on the inside of the bases where duct couplings meet the inside surface of the housing shall be removed to prevent cutting of cable insulation at these points. The length of the body section as shown in the plans shall be considered standard, but the length

may vary to meet special conditions. Extensions may vary in height as required to the closest 1/16 inch.

L-868 bases and extensions shall be provided with anti-rotational lugs and/or fins welded to the steel body prior to galvanizing.

867/868-3.5 **L-867/868 LIGHT BASE ASSEMBLY.** Type L-867/868, size B, meeting the requirements of FAA AC 150/5345-42, current edition. Provide with grounding lug as shown on the drawings.

867/868-3.6 **FLANGE RINGS, EXTENSION RINGS AND SHIMS.** Each base will be provided with, as indicated, a flange ring (AKA dam ring), one 1/2-inch and one 1/4-inch and one 1/8-inch thick steel extension rings with appropriate bolt hole pattern. The Contractor is required to maintain an adequate supply of grade adjustment shims on the project site at all times.

NOTES:

1. Each L-868 base can for L-852G (RGL) and L-852S (RSL) fixtures shall be provided with 12-bolt hole pattern top flange, spacer ring(s) and flange ring.

2. Each L-868 base can for L-861T fixtures installed in PCC pavement shall be furnished with a bolt pattern appropriate adaptor ring, spacer ring(s) and flange ring.

867/868-3.7 **HARDWARE.** Bolts and lock washers shall be supplied with each base and extension assembly. The bolts shall conform to dimensions specified in the AC light base manufacturer specifications and shall be fabricated from 18-8 stainless steel. All bolts must be of sufficient length so that a minimum of 2" extends beyond the inside base flange. Install with Loctite 252 compound.

867/868-3.8 **"MUD" COVERS.** Plywood protection and installation covers shall be fabricated according to the details and dimensions compatible with bases to be installed. The covers shall be fabricated from exterior grade plywood or a material of equal strength and weather resistance.

867/868-3.9 **BLANK COVERS.** Blank base covers shall be steel, minimum 3/4-inch thick, with traffic rating of 100,000 pounds. Covers used temporarily during construction/paving may be reused in permanent installations at project completion. Any remaining covers shall be turned over to TEX Maintenance at job completion, if requested by the Owner. Otherwise, Contractor shall dispose of all remaining covers off site.

867/868-3.10 **GROMMETS.** Grommets supplied for duct entrances into bases shall be sized to provide a watertight connection and be made of a material suitable for direct earth burials or encasement by asphalt, Portland cement concrete, or epoxy sealers. The grommet material shall have a hardness of 50 □5 as determined by a durometer (ASTM D-2240). Typical grommet details are shown on the plans.

867/868-3.11 **GROUNDING LUGS.** An internal ground connector shall be supplied with each L-867 or L-868 base and for / on each L-867 fixture base plate (see drawings). For

steel bases, a steel lug shall be welded to the interior wall of each base before galvanizing. The details and location of the grounding lug are shown on the plans. The location of the lug may be varied to meet specified conditions. A three-hole bronze or copper ground connector shall be fastened to the steel lug after galvanizing.

867/868-3.12 **PROTECTIVE COATING.** After fabrication, burrs and sharp edges shall be removed, and all metal parts shall be treated for corrosion protection. Prior to tapping operations, all parts of bases, junction boxes, spacer rings in excess of 1/4-inch in thickness, extensions, and conversion rings shall be hot-dip galvanized as specified in ASTM A-386, Class A, and applied in accordance with ASTM A-385. Base flanges, covers, and rings shall be wiped smooth to a flatness of +0.010 inch. Mud plates, grooved spacer rings, and other spacer rings 1/4-inch or less in thickness shall be plated with zinc in accordance with the requirements of Federal Specification QQ-Z-325, Type II, Class 1, or with cadmium in accordance with the requirements of Fed. Spec. QQ-P-416, Type II, Class 1. Tapped holes shall be protected with a polyurethane varnish or equivalent. A zinc dust primer meeting MIL-P-26915 (USAF) shall be permitted for touchup. The area covered by zinc dust primer shall not exceed 10 percent of the total treated area. Any case iron may be coated with a minimum of 2.0 mils of oxyplast powder in lieu of galvanizing.

867/868-3.13 **QUALIFICATION TEST.** Tests shall be in accordance with FAA AC 150/5345-42C dated 1/4/82.

PREPARATION FOR DELIVERY

867/868-4.1 **BASES - PACKING.** Each unit shall be individually packed as follows: The flange surface of each light base and transformer housing shall be protected by a cover as described in Paragraph 2.7 herein. A polyethylene gasket of 3-mil thickness shall be placed between the shipping cover and the base flange. The shipping cover shall be bolted to the flange by means of size 3/8, 16 hex-head stainless steel machine bolts seated to 25 inch-pounds of torque. Threaded duct entrances shall be protected with an anti-seize compound and standard thread protectors.

867/868-4.2 **BASES - MARKING.** Light bases and transformer housing, extensions, and accessories shall be marked for shipment with consignee's name and address, manufacturer's name and address, and other pertinent information as needed by the installer to identify non-standard length bases, special extensions, or other accessories.

CONSTRUCTION METHODS

867/868-5.1 **LIGHT BASES.** Light bases shall be installed at the locations shown on the plans. The bases shall be installed per the details shown on the plans. The standard base can configuration shall include two drilled openings toward the bottom of the base for the installation of the conduit grommets. The Contractor shall drill, in the appropriate location(s), any additional openings for additional conduit entries. Provide with grounding lug as shown on the drawings. **The equipment ground of Item L-108-3.4 shall be incidental to the installation of each base, light or sign.**

867/868-5.2 **CONDUIT CONNECTIONS.** Prior to concrete encasement, conduit connections shall be made at the base hubs to form a watertight connection as shown on the plans.

867/868-5.3 **EXCAVATION AND BACKFILL.** Refer to details on the plans for the various installation configurations. The coverplates shall be visible and free of debris following completion of the backfill.

867/868-5.4 **CONCRETE.** Concrete for backfill shall conform to the requirements of Item P-610 Structural Portland Cement Concrete (4,000 psi).

867/868-5.5 **GROUT AND SEALANT.** Filling/sealing grout used to encase in-pavement transformer/light bases in concrete shall meet FAA Specification P-606 and shall be a two-component liquid, rapid curing, stress-relieved epoxy adhesive for use in waterproofing nonmoving joints in Portland cement concrete pavement. Filling/sealing sealant used to encase in-pavement transformer/light bases in asphalt shall meet FAA Specification P-606 and shall meet the requirements of ASTM D 3405, Joint Sealants, hot poured for bituminous pavements, and applicable section(s) of FAA Specification Item P-606. Each lot or batch of sealing compound shall be delivered to the job site in the manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, and the safe heating temperature and shall be accompanied by the manufacturer's certification stating that the compound meets the requirements of this specification.

Prior to application the exposed surfaces of the hole-saw cut shall be sand blasted to a clean, rough surface finish to assure adequate bond between the grout and the Portland cement concrete pavement.

METHOD OF MEASUREMENT

867/868-6.1 **SIZE "B" L-867/868 BASES FOR SIGN/LIGHT FIXTURES.** The quantity to be measured shall for the installation of each new L-867/868 base can and adaptor ring, with appurtenances, installation of ground rod, connections, and testing in accordance with the Plans and Specifications and as accepted by OWNER.

BASIS OF PAYMENT

867/868-7.1 **BASE CANS FOR IN-PAVEMENT AND ELEVATED LIGHTS.** No separate payment shall be made for these Items. Payment for these installations shall be part of payment for the various types of in-pavement lights installed under Section 861T.

REFERENCED PUBLICATIONS

867/868-8.1 **FAA SPECIFICATIONS REFERENCED IN L-867/868.** All references are current edition.

AC 150/5345-42 Specification for Light Base and Transformer Housing, Junction Boxes and Accessories (Including Changes)

AC 150/5345-53 Airport Lighting Equipment Certification Program

END OF ITEM L-867/868

SUPPLEMENTARY SPECIAL PROVISIONS

APPENDICES

APPENDIX A

Notice of Exemption

NOTICE OF EXEMPTION

(Check one or both)

TO: __X__ RECORDER/COUNTY CLERK
P.O. BOX 1750, MS A-33
1600 PACIFIC HWY, ROOM 260
SAN DIEGO, CA 92101-2422

_____ OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET, ROOM 121
SACRAMENTO, CA 95814

FROM: CITY OF SAN DIEGO
DEVELOPMENT SERVICES DEPARTMENT
1222 FIRST AVENUE, MS 501
SAN DIEGO, CA 92101

PROJECT NO.: **WBS #B-00910.02.06** PROJECT TITLE: **Montgomery Field Runway 5-23 and Taxiway G Pavement Rehabilitation Project**

PROJECT LOCATION-SPECIFIC: Montgomery Field Airport is located at 3750 John J. Montgomery Drive, Kearny Mesa Community Planning Area.
PROJECT LOCATION-CITY/COUNTY: San Diego/San Diego

DESCRIPTION OF NATURE AND PURPOSE OF THE PROJECT: This project will rehabilitate the existing pavement on Runway 5-23 and Taxiway G involving pulverizing the existing asphalt concrete pavement within the approximately 2,450 feet long by 75 feet wide runway. The pulverized asphalt will be compacted and used as a base material for the new 3 inches of asphalt concrete. The project will also pulverize and reconstruct approximately 2,200 feet long by 50 feet wide taxiway pavement along Taxiway G and approximately 1,150 feet long by 40 feet wide pavement along Taxiway H, run-up pavement at the intersection of Taxiway H and Taxiway F, and approximately 275 feet long by 50 feet wide pavement along Taxiway F between Runway 5-23 and Taxiway G. The project will also mill and repave the outer 37.5 feet from centerline of the existing runway pavement and re-establish pavement as shoulder pavement. The project will also reconstruct an existing drain pipe crossing Taxiway F and repair the area to provide positive drainage flow.

NAME OF PUBLIC AGENCY APPROVING PROJECT: City of San Diego

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: Public Works - E&CP Dept/Jihad Sleiman
525 B Street, Suite 7500 (MS 908A)
San Diego, CA 92101, 619 533-7532

EXEMPT STATUS: (CHECK ONE)

( ) MINISTERIAL (SEC. 21080(b)(1); 15268);
(X) CATEGORICAL EXEMPTION: 15301(C) (EXISTING FACILITIES) AND 15304 (MINOR ALTERATIONS TO LAND)

REASONS WHY PROJECT IS EXEMPT: The City of San Diego has conducted an environmental review and determined that the project meets the categorical exemption criteria set forth in the State CEQA Guideline § 15301(c) "Existing Facilities" which allows for additions to existing structures involving negligible expansion of use including street, highways or similar facilities and 15304 "Minor Alterations to Land" which allows for minor alterations to land conditions that would not involve removal of scenic trees or land for agricultural use. The project will be constructed within developed or existing pavement areas and the exceptions listed in Section 15300.2 would not apply.

LEAD AGENCY CONTACT PERSON: MYRA HERRMANN, SENIOR PLANNER TELEPHONE: (619) 446-5372

IF FILED BY APPLICANT:

1. ATTACH CERTIFIED DOCUMENT OF EXEMPTION FINDING.
2. HAS A NOTICE OF EXEMPTION BEEN FILED BY THE PUBLIC AGENCY APPROVING THE PROJECT?
   ( ) YES ( ) NO

IT IS HEREBY CERTIFIED THAT THE CITY OF SAN DIEGO HAS DETERMINED THE ABOVE ACTIVITY TO BE EXEMPT FROM CEQA

Myra Herrmann

SENIOR PLANNER — December 6, 2013

SIGNATURE/TITLE — DATE

CHECK ONE:

(X) SIGNED BY LEAD AGENCY

DATE RECEIVED FOR FILING WITH COUNTY CLERK OR OPR:

APPENDIX B

Fire Hydrant Meter Program

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 1 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

1. **PURPOSE**

1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

2.1 All authorities and references shall be current versions and revisions.

2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15

2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986

2.4 California Code of Regulations, Titles 17 and 22

2.5 California State Penal Code, Section 498B.0

2.6 State of California Water Code, Section 110, 500-6, and 520-23

2.7 Water Department Director

Reference

2.8 State of California Guidance Manual for Cross Connection Programs

2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention

2.10 American Water Works Association Standards for Water Meters

2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.

3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. POLICY

4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.

4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.

4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:

a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.

b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:

1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.

3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).

4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).

5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).

6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.

7. All private fire hydrant meters shall have backflow devices attached when installed.

8. The customer must maintain and repair their own private meters and private backflows.

9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.

10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.

12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.

13. The outlet shall have a 2 ½ "National Standards Tested (NST) fire hydrant male coupling.

14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).

4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.

4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.

4.6 **Conditions and Processes for Issuance of a Fire Hydrant Meter**

Process for Issuance

a. Fire hydrant meters shall only be used for the following purposes:

1. Temporary irrigation purposes not to exceed one year.

2. Construction and maintenance related activities (see Tab 2).

b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.

c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.

d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.

e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.

f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.

g. After the fees have been paid and an account has been created, the

meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 **Relocation of Existing Fire Hydrant Meters**

a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as "Hotline"), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter's relocation.

b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.

c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 **Disconnection of Fire Hydrant Meter**

a. After ten (10) months a "Notice of Discontinuation of Service" (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.

b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

for removal of the meter.

c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.

d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.

e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. EXCEPTIONS

5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. MOBILE METER

6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

a) **Vehicle Mounted Meters**: Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters**: Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

    1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.

    2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

7. FEE AND DEPOSIT SCHEDULES

7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. Theses deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. UNAUTHORIZED USE OF WATER FROM A HYDRANT

8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.

8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.

8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.

8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

Larry Gardner
Water Department Director

Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index:
Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders

Application for Fire Hydrant Meter (EXHIBIT A)

City of San Diego PUBLIC UTILITIES Water & Wastewater

METER SHOP (619) 527-7449

(For Office Use Only)

NS REQ	FAC#
DATE	BY

Application Date	Requested Install Date:

Meter Information

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) Zip:	T.B.	G.B. (CITY USE)
Specific Use of Water:		
Any Return to Sewer or Storm Drain, If so , explain:		
Estimated Duration of Meter Use: ☐	☐ Check Box if Reclaimed Water	

Company Information

Company Name:			
Mailing Address:			
City:	State:	Zip:	Phone: ( )
*Business license#	*Contractor license#		
A Copy of the Contractor's license OR Business License is required at the time of meter issuance.			
Name and Title of Billing Agent: (PERSON IN ACCOUNTS PAYABLE)			Phone: ( )
Site Contact Name and Title:			Phone: ( )
Responsible Party Name:			Title:
Cal ID#			Phone: ( )
Signature:	Date:		

Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter

☐ Fire Hydrant Meter Removal Request	Requested Removal Date:	
Provide Current Meter Location if Different from Above:		
Signature:	Title:	Date:
Phone: ( )	Pager: ( )	

☐ City Meter	☐ Private Meter	
Contract Acct #:	Deposit Amount: $ 936.00	Fees Amount: $ 62.00
Meter Serial #	Meter Size: 05	Meter Make and Style: 6-7
Backflow #	Backflow Size:	Backflow Make and Style:
Name:	Signature:	Date:

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro Blasting
Hydro Seeing
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing

Note:

1. If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charges.

Date

Name of Responsible Party
Company Name and Address
Account Number:_____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter #_____, located at *(Meter Location Address)* ends in 60 days and will be removed on or after *(Date Authorization Expires)*. Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please contact the Water Department, or mail your request for an extension to:

City of San Diego
Water Department
Attention: Meter Services
2797 Caminito Chollas
San Diego, CA 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant Hotline at (619)_____-_____.

Sincerely,

Water Department

APPENDIX C

Materials Typically Accepted by Certificate of Compliance

Materials Typically Accepted by Certificate of Compliance

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

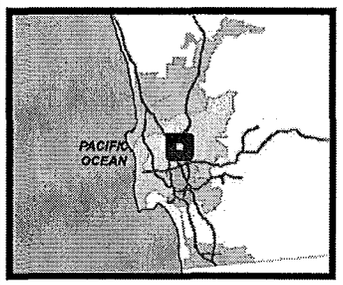
APPENDIX D

SAMPLE CITY INVOICE

City of San Diego, Field Engineering Div., 9485 Aero Drive, SD CA 92123					Contractor's Name:					
Project Name:					Contractor's Address:					
Work Order No or Job Order No.										
City Purchase Order No.					Contractor's Phone #:				Invoice No.	
Resident Engineer (RE):					Contractor's Fax #:				Invoice Date:	
RE Phone#:		RE Fax#:			Contact Name:				Billing Period:	
Item #	Item Description	Contract Authorization				Previous Estimate		This Estimate		Totals to Date	
		Unit	Qty	Price	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1	2 Parallel 4" PVC C900	LF	1,380	$34.00	$46,920.00						
2	48" Primary Steel Casing	LF	500	$1,000.00	$500,000.00						
3	2 Parallel 12" Secondary Steel	LF	1,120	$53.00	$59,360.00						
4	Construction and Rehab of PS 49	LS	1	$150,000.00	$150,000.00						
5	Demo	LS	1	$14,000.00	$14,000.00						
6	Install 6' High Chain Link Fence	LS	1	$5,600.00	$5,600.00						
7	General Site Restoration	LS	1	$3,700.00	$3,700.00						
8	10" Gravity Sewer	LF	10	$292.00	$2,920.00						
9	4" Blow Off Valves	EA	2	$9,800.00	$19,600.00						
10	Bonds	LS	1	$16,000.00	$16,000.00						
11	Field Orders	AL	1	80,000	$80,000.00						
11.1	**Field Order 1**	**LS**	**5,500**	**$1.00**	$5,500.00						
11.2	**Field Order 2**	**LS**	**7,500**	**$1.00**	$7,500.00						
11.3	**Field Order 3**	**LS**	**10,000**	**$1.00**	$10,000.00						
11.4	**Field Order 4**	**LS**	**6,500**	**$1.00**	$6,500.00						
12	**Certified Payroll**	**LS**	**1**	**$1,400.00**	$1,400.00						
	CHANGE ORDERS										
Change Order 1		**4,890**									
Items 1-4					**$11,250.00**						
Item 5-Deduct Bid Item 3		**LF**	**120**	**-$53.00**	**($6,360.00)**						
Change Order 2		**160,480**									
Items 1-3					**$95,000.00**						
Item 4 Deduct Bid Item 1		**LF**	**380**	**-$340.00**	**($12,920.00)**						
Item 5-Encrease bid Item 9		**LF**	**8**	**$9,800.00**	**$78,400.00**						
Change Order 3 (Close Out)		**-121,500**									
Item 1 Deduct Bid Item 3			**53**	**-500.00**	**($26,500.00)**						
Item 2 Deduct Bid Item 4		**LS**	**-1**	**45,000.00**	**($45,000.00)**						
Items 3-9			**1**	**-50,500.00**	**($50,500.00)**						
	SUMMARY							Total This	$ -	**Total Billed**	$0.00
A. Original Contract Amount							**Retention and/or Escrow Payment Schedule**				
B. Approved Change Order 1 Thru 3							Total Retention Required as of this billing				
C. Total Authorized Amount (A+B)							Previous Retention Withheld in PO or in Escrow				
D. Total Billed to Date							Add'l Amt to Withhold in PO/Transfer in Escrow:				
E. Less Total Retention (5% of D)							Amt to Release to Contractor from PO/Escrow:				
F. Less Total Previous Payments											
G. Payment Due Less Retention						**Contractor Signature and Date:**					
H. Remaining Authorized Amount											

APPENDIX E

LOCATION MAP



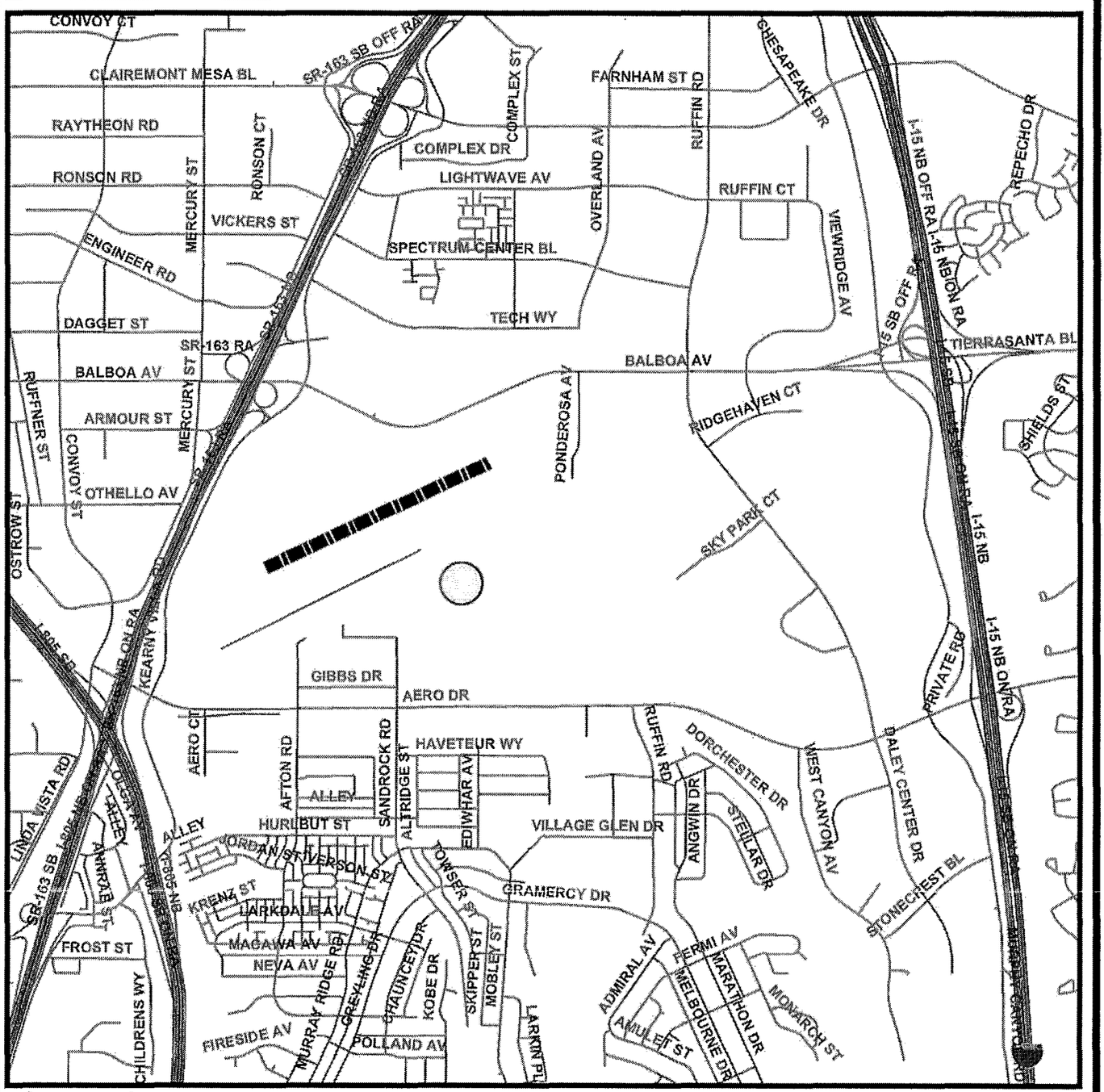
MONTGOMERY FIELD (MYF) REHABILITATION OF RUNWAY 5/23 AND TAXIWAY G

SENIOR ENGINEER
ELIF CETIN
619-533-4640

PROJECT MANAGER
MICHAEL MARIA
619-533-4688

CITY OF SAN DIEGO
Engineering & Capital Projects Department

Division Name - AEP



Legend

- MONTGOMERY FIELD AIRPORT
- RUNWAY 5/23
- TAXIWAY G

N W E S

No Scale

COMMUNITY NAME: KEARNY MESA | COUNCIL DISTRICT: 6 | SAP ID: B00910

APPENDIX F

CONSTRUCTION SAFETY AND PHASING PLAN

Construction Safety and Phasing Plan

City of San Diego

Montgomery Field (MYF) Runway 5-23 and Taxiway G Rehabilitation

100% Design Submittal

For

City of San Diego

January 2013

A-E
Kimley-Horn and Associates, Inc.
401 B Street
Suite 600
San Diego, CA 92101
Telephone: (619) 744-0195
Project Engineer: E. Vincent Hourigan, PE

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Appendices

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CONSTRUCTION SAFETY PLAN

1.0 GENERAL CONSIDERATION

1.1 COORDINATION

Contractor along with Airport Operations will use prebid and preconstruction conferences to introduce the subject of airport operational safety during construction (see AC 150/5300-9). Weekly construction meetings shall include a brief overview of work being performed by the contractor for the next two weeks, changes to the master schedule, and changes that affect established airport travel ways.

Operational safety shall be a standing agenda item all construction progress meetings. Airport Operations will notify all users and the FAA of any condition adversely affecting the operational safety of the airport and issue the proper NOTAMS prior to each change in phase construction.

Daily notifications/communications of construction issues and progress will be held between the Construction Manager and Airport Operations. Airport Operations will brief FAA, ARFF, and tenants as necessary.

Communication with the FAA ATCT personnel and Tech Ops personnel will be coordinated by the Construction Manager in conjunction with Airport Operations.

Contractor's equipment and vehicles shall be clearly marked, lighted and / or flagged in accordance with AC 150/5370-2 (current edition) and Airport Rules and Requirements.

1.2 PHASING

The Contractor shall be required to carry out operations in a manner that will cause minimal interference with air traffic, and shall be required to cooperate with the Federal Aviation Administration (FAA), the City, end users, and other Contractors working in the area. All work shall be completed in accordance with the phasing plans and the Federal Aviation Administration Advisory Circular 150/5370-2(current edition).

The Contractor shall follow the guidelines and procedures contained in Federal Aviation Administration Advisory Circular 150/5370-2 (current addition) "Operational Safety on Airports During Construction"; and other applicable Sections of these Specifications. Contractor is responsible for preparing and submitting for approval, prior to issuance of Notice to Proceed, a project specific Safety Plan Compliance Document (SPCD) following the guidelines contained in Federal Aviation Administration Advisory Circular 150/5370-2 (current addition) "Operational Safety on Airports During Construction". Contractor will be provided a copy of the project approved Construction Safety and Phasing Plan (CSPP).

The project will be constructed in seven (7) phases. A breakdown of each phase is as follows; (See **Appendix A** for construction phasing exhibits):

Phase I construction consists of rehabilitating the northern portion of Runway 5-23 from Sta. 132+00 to Sta. 144+00 at the termination of the Runway 10L-28R project limits. Also included in the northern portion of the project, is the rehabilitation of the connector taxiway, Taxiway C to the Runway Safety Area, 250 feet off runway centerline. Another significant portion of Phase I consists of part of the realignment of Taxiway G, from the connection of with Taxiway H to approximately 42ft north of Taxiway H centerline to get out of the 39.5' TSA. Taxiway G between Taxiway H and Runway 10R-28L is considered the airport's "hot spot" for runway incursions. To help mitigate this, based on FAA recommendations, the portion of taxiway between H and 10R-28L will be realignment using the more traditional perpendicular geometry pilots are used to seeing. In an effort to expedite construction, the portion of Taxiway F south of Runway 5-23 will also be included in this phase. Construction will begin at the east edge of Runway 5-23 and continue down to the TSA of Taxiway G, allowing plane movement to operate normally on Taxiway G. This is due in part to the continued pavement failure at the storm drain crossing on Taxiway F. By grouping this section of taxiway into Phase I, the contractor will have more time to work on fixing the storm drain failure while the other areas of the phase are being constructed. This means the following phases will be shorter durations as they don't have to take the storm drain construction into consideration. (See **Appendix A**)

During Phase I, Runway 5-23 will be NOTAM'd closed and temporary runway closure X's will be placed at either end of the runway. Airplanes landing on 10L-28R that would normally exit via Taxiway G and proceed down G to the hangars east of G or to Taxiway L will need to continue taxiing down 10L-28R and turn south on Runway 5-23 and using either Taxiway H to taxi to Taxiway G or Taxiway F to Taxiway G. A portion of Taxiway H will be temporarily closed to aircraft operations to allow the construction of the new alignment of Taxiway G to be constructed up to the edge of Taxiway H, closure will be from the intersection of Taxiway G and H to Taxiway D.

The limits for construction around these open operating surfaces is set 10 ft back from the runway safety area and taxiway safety area to allow for maintenance of the barricades placed close to the runway without encroaching into the RSA and TSA. Phase I limits of construction is therefore as follows:

Sta. 132+90 to 144+00 (Runway 5/23): access to work area from Contractor Staging Area is provided via service / perimeter road through the existing gate North of Runway 5-23 at Ponderosa Avenue.

Sta. 13+70 to 15+70 (Taxiway F) and Sta.11+50 to 12+40 (New Taxiway G): access to work area is provided via Taxiway G from Contractor Staging Area. Taxiway G will be an active taxiway and the Contractor will need to be escorted from the staging area to the work area by an Airport representative.

Phase II construction consists of rehabilitating the intersection of Runway 10R-28L and Taxiway G & E from Taxiway G sta. 3+55 to 7+12 continuing the rehabilitation of Taxiway G where the Runway 10L-28R project terminated. The construction on Runway 10R-28L will terminate at the 250 foot RSA (approx. Sta. 22+00) for Runway 5-23 and end at approximately Runway 10R-28L Sta. 24+12. Construction on Taxiway E will begin at Sta.

2+92 where the Runway 10L-28R project terminated and continue into Taxiway G. Also included is the completion of the realignment of Taxiway G, from the where Phase I ended to the connection with Runway 10R-28L. To round out Phase II, the portion of existing Taxiway G being realigned will be removed and reseeded, only after the realignment is approved and open to aircraft traffic. (See **Appendix A**)

Phase II work can be concurrent with Phase I but Phase II can only start work after construction of new Taxiway G alignment has been completed in full and the existing pavement has been completely demolished to the limits of Taxiway H OFA, and Taxiway H is open to aircraft traffic. Contractor must yield to airplane traffic on all active pavement with radio contact to the ATCT (via their escort).

During Phase II, Runway 5-23 and 10R-28L will be NOTAM'd closed and temporary runway closure marking X's will be placed at either end of the runways. Airplanes landing on 10L-28R that would normally exit via Taxiway G and proceed down G to the hangars east of G or to Taxiway L will need to continue taxiing down 10L-28R and turn south on Runway 5-23, using either Taxiway H to taxi to Taxiway G or Taxiway F to Taxiway G. This construction phase is maintained small to minimize the down time for 10R-28L.

The limits for construction around these open operating surfaces is set 10 ft back from the runway safety area and taxiway safety area to allow for maintenance of the barricades placed close to the runway without encroaching into the RSA and TSA. Phase II limits of construction is therefore as follows:

Sta. 3+55 to 7+12 (Taxiway G), Sta. 2+92 (Taxiway E) and Sta. 22+00 to 24+25 (Runway 10R-28L): access to work area from Contractor Staging Area is provided via Taxiway G and H and will be on active taxiways. The Contractor will need to be escorted from the staging area to the work area by an Airport representative. Contractor must yield to airplane traffic on all active pavement with radio contact to the ATCT (via their escort).

Phase III construction consists of the rehabilitation of the intersection of Runway 5-23 and Runway 10R-28L from Runway 5-23 Sta. 117+50 to 122+50 and Runway 10R-28L Sta. 14+96 to 22+12 connecting with the limits of Phase II. (See **Appendix A**)

During Phase III, both Runway 5-23 and 10R-28L will be NOTAM'd closed and temporary runway closure X's will be placed at either end of the runways. Airplanes landing on 10L-28R that would normally exit via Taxiway G and proceed down G to the hangars east of G or to Taxiway L will not need to change their taxiing pattern other than they will be using the newly realigned portion of Taxiway G after taxiing across 10R-28L to turn west on Taxiway H before turning south onto the existing Taxiway G proceeding to their destination. Airplanes will not have the option of taxiing south on Runway 5-23, if they miss the exit at Taxiway E or G they will need to proceed down to the end of the runway and taxi back on Taxiway F.

The limits for construction around these open operating surfaces is set 10 ft back from the runway safety area and taxiway safety area to allow for maintenance of the barricades

placed close to the runway without encroaching into the RSA and TSA. Phase III limits of construction is therefore as follows:

Sta. 117+50 to 122+50 (Runway 5-23) and Sta. 14+86 to 22+22 (Runway 10R-28L): access to work area from Contractor Staging Area B1 of B2 is provided via Taxiway G and F turning down closed Runway 5-23. Taxiways G and F will be active taxiways and the Contractor will need to be escorted from the staging area to the work area by an Airport representative. Contractor must yield to airplane traffic on all active pavement with radio contact to the ATCT (via their escort).

Phase IV construction consists of the rehabilitation of the intersection of Taxiway H and Taxiway G from Taxiway G ~Sta. 10+81 to the edge of pavement along Taxiway H and Taxiway H between the Taxiway G TSA limit. Phase IV construction will include the construction of a temporary strip of pavement to be used for exit access from the hangars off of Taxiway G in successive stages between National Air College (NAC) west and Taxiway I (See **Appendix A**).

During Phase IV, Runway 5-23 and 10R-28L will be NOTAM'd closed to takeoffs and landing (use as a runway) and will be used as a taxiway, temporary runway closure X's will be placed at either end of the runway. Airplanes exiting their hangars located off of Taxiway G will need to taxi on Taxiway F to Runway 5-23 and turn on 10R-28L, continue on 10R-28L and exit on the new realigned portion of Taxiway G and proceed onto Taxiway H as normal.

The limits for construction around these open operating surfaces is set 10 feet back from the runway safety area and taxiway safety area to allow for maintenance of the barricades placed close to the runway without encroaching into the RSA and TSA. Phase IV limits of construction is therefore as follows:

Taxiway G Sta. 10+81 to the edge of pavement along Taxiway H and Taxiway H between the Taxiway G TSA limit, access to work area from Contractor Staging Area is provided via Taxiway G. Taxiway G will be an active taxiway and the Contractor will need to be escorted from the staging area to the work area by an Airport representative. Contractor must yield to airplane traffic on all active pavement with radio contact to the ATCT (via their escort).

Phase V construction consists of the rehabilitation of the intersection of Runway 5-23 and Taxiway H from Runway 5-23 ~Sta. 110+00 to 118+00, connecting at the termination of Phase III, and Taxiway H from the full intersection of Taxiway H and Taxiway F connecting to the limits of Phase IV construction of the Taxiway G and H intersection. Also included are the rehabilitation of the portion of pavement on Taxiway G bounded by Phase VI and the run up apron at the intersection of Taxiways H and F (See **Appendix A**).

During Phase V, Runway 5-23 will be NOTAM'd closed and temporary runway closure X's will be placed at either end of the runway. Airplanes landing on 10L-28R that would normally exit via Taxiway G and proceed down G to the hangars east of G or to Taxiway L will not need to change their taxiing pattern other than they will be using the newly

realigned portion of Taxiway G after taxiing across 10R-28L to turn west on Taxiway H before turning south onto the existing Taxiway G proceeding to their destination. If airplanes miss their exit on Taxiway G they will have the option of taxiing south on Runway 5-23 turning onto Runway 10R-28L continuing on to the new realignment of G onto their final destination.

The limits for construction around these open operating surfaces is set 10 ft back from the runway safety area and taxiway safety area to allow for maintenance of the barricades placed close to the runway without encroaching into the RSA and TSA. Phase V limits of construction is therefore as follows:

Sta. 110+00 to 118+00 (Runway 5-23) and Taxiway H and F intersection connecting to the limits of Phase IV (Taxiway H) and the portion of Taxiway G bound by Phase VI: access to work area from Contractor Staging Area is provided via Taxiway G. Taxiway G will be an active taxiway and the Contractor will need to be escorted from the staging area to the work area by an Airport representative.

Contractor must yield to airplane traffic on all active pavement with radio contact to the ATCT (via their escort).

Phase VI construction consists of the rehabilitation of the most southerly portion of Taxiway G from approximately 20+00 to 28+00 and the connection of Taxiway L out to the TSA of Taxiway G. The rehabilitation will connect to the southerly limit of Phase V construction the Taxiway G and F intersections allowing for planes parked in the hangar to exist via Taxiway F. Planes currently parking in the hangars location via Taxiway L will be temporarily relocated to the hangars accessed by Taxiway G. Also included is a portion of Taxiway G from approximately station 18+00 to the termination of Phase IV (intersection of Taxiway G and H). (See **Appendix A**)

During Phase VI, Runway 5-23 will be NOTAM'd closed and temporary runway closure X's will be placed at either end of the runway. Airplanes landing on 10L-28R that would normally exit via Taxiway G and proceed down G to the hangars east of G or to Taxiway L will not need to change their taxiing pattern other than they will be using the newly realigned portion of Taxiway G after taxiing across 10R-28L to turn west on Taxiway H before turning south onto the existing Taxiway G proceeding to their destination. Airplanes will have to use the temporary pavement placed in Phase IV to avoid the construction at the intersection of Taxiway F and G in order access the hangars located off both Taxiway G and L. If airplanes miss their exit on Taxiway G they will have the option of taxiing south on Runway 5-23 turning onto Taxiway H and continuing on to their final destination.

The limits for construction around these open operating surfaces is set 10 ft back from the runway safety area and taxiway safety area to allow for maintenance of the barricades placed close to the runway without encroaching into the RSA and TSA. Phase VI limits of construction is therefore as follows:

Sta. 20+00 to 28+00 (Taxiway G) and 18+00 (Taxiway G) to termination of Phase IV: access to work area from Contractor Staging Area is provided via Taxiway G. A Taxiway G

will be an active taxiway and the Contractor will need to be escorted from the staging area to the work area by an Airport representative.

Contractor must yield to airplane traffic on all active pavement with radio contact to the ATCT (via their escort).

Phase VII consists of the application of the second coat of paint for the runway/taxiway striping and markings.

All phases include the removal of existing taxiway pavement markings within the limits of the construction. Replacement markings shall meet the requirements of FAA Advisory Circular 150/5340-1K, Standards for Airport Markings.

It is anticipated that the construction will be accomplished under normal work hours and limitations set by the City. Planning has included the following assumptions:

Work days shall be Monday through Friday excluding holidays.

Work hours shall be 0700 to 1630 on any given work day.

Construction Duration The estimated construction duration is assumed to be 183 working days (20 working days included for mobilization) broken out as follows:

Phase	Duration (days)
Phase I	50
Phase II	10
Phase III	20
Phase IV	10
Phase V	40
Phase VI	30
Phase VII	3 days (after a cure period for the bituminous material of 30 days)
Total	183 days

2.0 AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY

Figure 4 in **Appendix B** highlights the sequences of construction while figures in **Appendix A** highlight the closed or partially closed runways and taxiways and temporary changes to

taxi operations. The Engineer, Airport and Air Traffic Control Tower (ATCT) have had coordination meetings to address the impacts to air traffic on the airfield.

The Airport Rescue and Fire Fighting (ARFF) facility is the City of San Diego Fire Station 28 and is located at 3880 Kearny Villa Road (cross street – Aero Drive), access to the airfield is via a direct paved access road at the Police Air Support. During all phases, access will be provided to Runway 5-23 and its adjacent taxiways via Taxiway H. Access to the southwest portion of the airport is not impacted by this project.

Figures 3A-G in **Appendix B** highlight the various ARFF access routes during the three phases of construction.

An FAA 7460-1 is required to be submitted by the contractor for the actual construction area planned to be used prior to the start of construction.

Contractor will establish specific procedures to ensure that the maintenance, protection, and accessibility of underground utilities are preserved at all times throughout construction.

3.0 PROTECTION OF NAVIGATION AIDS (NAVAIDS)

NAVAIDS for Runway 10L-28R will not be turned off for the construction of this project. Project will not impact the NAVIDs on the airport.

4.0 CONTRACTOR ACCESS

Figure 4 in **Appendix B** highlights the sequences of construction, the construction phase areas, required barricading, and the haul route to each construction area. It also highlights the contractor yard which will be used for processing material, receiving deliveries, and staging construction crews. Contractor's personnel shall be required to park within this area.

Contractor haul routes shall be limited to the routes shown on **Figure 4** in **Appendix B** unless otherwise approved by the Airport Operator. Contractor shall clearly mark all entrances to work zones so as to prevent airport traffic from accessing the area. All other areas of the work zones shall be barricaded and lighted.

Temporary stockpiles within the construction area are limited to height of 5 feet above grade. Temporary is defined as within one work shift. Refer to section 4.7 for FOD management.

Equipment and materials are not authorized to be stockpiled within the RSAs, ROFAs, or OFZs and shall be relocated to the staging area at the end of each shift. Materials and equipment adjacent to these areas must be marked and lighted during hours of restricted visibility or darkness.

Cranes and equipment within the construction area is standard pavement demolition and construction equipment. Cranes are anticipated to be service vehicle cranes for the maintenance of paving equipment. Anticipated height is less than 20 feet. All equipment and cranes will be lighted and have an orange and white checkerboard flag at the peak.

Communication with the FAA ATCT personnel and Tech Ops personnel will be coordinated by the Construction Manager in conjunction with Airport Operations.

Maintaining security of the airfield is critical throughout construction. The contractor shall have access to the AOA through two access point throughout construction. These gates are required to be kept locked at all times when not in use. During use the contractor is required to staff the gate with access control gate guards who will control and monitor who has access into the AOA and track their departure.

No privately owned vehicles or unescorted suppliers will be allowed onto the AOA. The Contractor shall provide a minimum of five (5) 800mHz hand held radios to facilitate communications between the Contractor's ACC, shift superintendents, Owner, and Airport Management staff. The project radios shall be Motorola XTS 1500 or equal. The Contractor shall acquire the radios by lease, purchase or other methods appropriate to meet the communication requirements defined above.

The contractor shall provide for the entire life of the contract an Airport Construction Coordinator (ACC) in sufficient numbers to cover all periods of time when construction activities take place within the AOA. The Contractor shall not be allowed to perform work at any time when an approved ACC is not present and working on the project site. The ACC shall be a Contractor employee who shall be paid by and report to the Contractor, but who shall have responsibility to comply with the directions of the Owner's designated representatives (Airport Operations staff and FAA Control Tower Personnel, as required to effectively perform the identified duties. While on duty as the ACC, the ACC shall have no additional project responsibilities beyond the requirements to perform this assignment. The ACC may also serve as Site Safety Representative and Chief of Security if adequately trained and approved by the Owner to perform those tasks. The ACC shall NOT also serve as the project superintendent.

1. Role and Responsibilities of the ACC:

    a) Serve as liaison between the Contractor's construction on/off site personnel and the airport operator, namely its airport operations personnel, and the project inspectors regarding coordination of activities and conditions within the AOA.
    b) Through communication with Airport Manager and Construction personnel, control the movement of Contractor personnel, equipment and materials so as to maintain construction progress in a manner that provides safe operation of the airport.

c) Responsible for the Contractor's compliance with the requirements identified in Appendix 2 "Airport Operational Safety and Security Requirements," and Appendix 3 "Contractor Security Instructions" of AC 150/5370-2F.
d) Communicate with the Airport Manager on duty regarding the airport facilities' operational conditions and status.
e) Communicate with the Project Manager (PM), Project Inspector (PI), Contractor personnel, and Airport Manger detailed and timely information on construction activities and resulting airport conditions each work day; and any known or reported airport special conditions, events or activities that may affect the safe operations of the airport.
f) Serve as the designated representative of the Contractor for control of the opening and closing of the construction site regarding compliance with the operational safety requirements of the airport.
g) Serve as the designated representative of the Contractor for airport construction and operations.
h) Confer with Airport Management personnel on matters of interest to the construction activities and / or airport operational safety.

2. Minimum qualifications of the ACC:

a) The ACCs shall possess the following minimum qualifications and experience prior to attending the Familiarization / Qualifications Program, identified below:
b) Practical knowledge of aviation terminology; radio communications techniques and procedures; air traffic control services or procedures; aircraft operations.
c) Practical knowledge of airport airside facility components, markings, and lighting; and airport operating rules and procedures, especially ground operations procedures.
d) Skills and practical experience in the coordination of several simultaneous, independent or interdependent activities.
e) Ability to communicate concisely verbally and in writing.
f) Ability to function effectively under stress or pressure.
g) Have worked at an airport, field site, in activities involving the operations of airport, aircraft, aviation support services, air traffic control, or similar related activities.

3. Familiarization / qualification program. The ACC's will be required to successfully complete a one-day familiarization / qualification program conducted by Airport Management personnel on subject matters aimed at verifying / validating their ability to meet the above qualifications and experience requirements. The program will include at least the following:

a) Security briefing
b) Operations briefing

c) Air Traffic Control Tower briefing
d) Project briefing
e) Field Tour

Contractor is required to sign and mark all equipment in conformance with AC 150/5210-5 "Painting, Marking, and Lighting of Vehicles Used on an Airport" and 5370-2F. Company name, beacons or orange and white checkerboard flags are required on all vehicles. Construction areas are also required to be barricaded to prevent construction activities from exiting these areas to areas not authorized for construction personnel.

The Contractor shall follow the guidelines and procedures contained in Federal Aviation Administration Advisory Circular 150/5370-2 (latest addition) "Operational Safety on Airports During Construction"; and other applicable Sections of these Specifications. Contractor is responsible for preparing and submitting for approval, prior to issuance of Notice to Proceed, a project specific Safety Plan Compliance Document (SPCD) following the guidelines contained in Federal Aviation Administration Advisory Circular 150/5370-2 (latest addition) "Operational Safety on Airports During Construction". Contractor will be provided a copy of the project approved Construction Safety and Phasing Plan (CSPP).

5.0 WILDLIFE MANAGEMENT

Parts of the airport are included in the City's Multi-Habitat Planning Area (MHPA). Construction is limited to existing pavements and existing shoulders. Due to these limits, construction should not affect the onsite vernal pools containing fairy shrimp (**Figure 5**). Construction traffic shall be limited to haul routes in order to avoid vernal pools. For details, refer to the "Montgomery Field Reconstruct 5-23 and Taxiway G Project Biological Resources Report" prepared by Rocks Biological Consulting dated January 8, 2013.

The Contractor's staging area shown on **Figure 4** in **Appendix B** is located within an area designated as "Development Area" per "Final Environmental Constraint Report for West and Northwest Areas of Montgomery Field Airport, San Diego, California" prepared by RECON dated May 19, 2008. Because of the location of the staging area, the contractor must fence off and ID the area designated as mitigation area shown on **Figure 4** in **Appendix B**, per above mentioned report. The fencing and ID will protect the area from grading, dumping or access for the duration of the project. The area of fenced of mitigation area must be equal to or greater than the staging area.

Construction activities should not create an attractant to wildlife within the area. Proper housekeeping and maintenance by the contractor with continuous ongoing inspection by the construction inspection team and Airport Operations will maintain this condition.

6.0 FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

Contractor shall maintain Foreign Object Debris (FOD) removal throughout the construction area. The contractor is required to maintain three operational vacuum sweepers at all times to monitor operational runways and taxiways.

Dust control will be the responsibility of the contractor and will be done using construction water and sweepers.

Contractor is responsible for inspecting the construction areas and haul routes on a regular ongoing basis to maintain safety and FOD control. These inspections will be monitored by the construction inspector and Airport Operations. Refer to section 4.11 for inspection requirements as required.

Construction stages will be working around operating aircraft. Prop blast aspects will be reviewed and discussed with contractor to make sure provisions for safety are maintained.

7.0 HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

Contractor shall coordinate all HazMat material storage through the construction manager with the ARFF staff. Key HazMat potential material includes fuel oil storage for generators and equipment, solvents, and greases. Storage of material is limited to the contractor's storage yard. Refer to section 4.11 for inspection requirements as required.

8.0 NOTIFICATION OF CONSTRUCTION ACTIVITIES

In the event of an emergency of any type on or affecting the airport and airport operations, the Airport Operations Supervisor will coordinate shutdown of operations with the Construction Manager. Contractor crews, when directed, will cease operations and return all equipment to the contractor staging area.

Owner:
City of San Diego
600 B Street, Suite 800 MS 908A
San Diego, CA 92101
Phone: 619-533-4688 Fax: 619-533-5176
Contact: Michael Maria

Airport Contact:
Montgomery Field Airport
3750 John J. Montgomery Dr.
San Diego, CA, 92123
Phone: 858-573-1430
Contact: Ernie Gesell, Airport Manager

ARFF Station:
3880 Kearny Villa Road
San Diego, CA, 92123
Phone: 9-1-1 (Emergency) & 619-533-4300 (Non-Emergency)Hospital:
Sharp Memorial Hospital
7901 Frost Street
San Diego, CA, 92123
Phone: 9-1-1 (Emergency) & 858-939-3400 (Non-Emergency)

Police:
San Diego Police Department Eastern Division
9225 Aero Drive
San Diego, CA, 92123
Phone: 9-1-1 (Emergency) & 858-495-7900 (Non-Emergency)

Poison Control:
California Poison Control System – San Diego Division
University of California San Diego Medical Center
200 West Arbor Drive
San Diego, CA 92103
Phone: 1-800-222-1222

An FAA 7460-1 is required to be submitted by the contractor for the actual construction area planned to be used prior to the start of construction.

9.0 INSPECTION REQUIREMENTS

Contractor shall be responsible for inspecting the construction areas and haul routes on a regular ongoing basis to maintain safety and FOD control. These inspections will be monitored by the construction inspector and Airport Operations daily and before opening up to air traffic.

Prior to re-opening a temporary closed runway or taxiway, the pavement must be thoroughly cleaned of all Foreign Object Debris (FOD). The contractor shall arrange to have the engineer and MYF operations inspect the site to confirm that the pavement is being left in a satisfactory and clean condition. The contractor shall allow sufficient time to make any corrections to pavement found to be deficient before opening the pavement to aircraft movement. Any pavement that does not pass the engineer's and MYF Operations' inspection shall remain closed until corrective measures are completed by the contractor and approved by MYF Operations. The contractor shall be subject to damages per the specifications for late re-opening of pavements to air traffic.

Final inspection and acceptance by the engineer and MYF Operations of each phase is required prior to the Contractor commencing the following phase.

10.0 UNDERGROUND UTILITIES

It is the contractor's responsibility to locate all existing utilities and underground airport facilities that may be affected by this project and to verify their exact location and elevation prior to commencing work. Existing utility information, lighting ducts and cables shown on the plans were compiled based on the best record data available to the engineer. A reasonable attempt has been made to show the locations of underground obstructions, utilities, and underground airport facilities in the work areas. The utilities and facilities shown are not to be interpreted as the exact location, or as the only underground utilities, airport facilities, or obstacles that may occur on the site. The owner and engineer bear no responsibility for utilities not shown or shown in an incorrect location or elevation on the plans. Any damage to existing utilities shall be repaired at the contractor's expense. All excavations immediately adjacent to utilities shall be done by hand. Utilities interfering with construction shall be reset or relocated by the contractor or utility company concerned unless noted otherwise. The contractor shall provide a utility locator and verify existing conditions prior to construction and proceed with caution around any such features. The contractor shall give proper notice to all utility companies and facility owners regarding removal/relocation, or when working in the vicinity of utility lines and airport facilities

The contractor shall be responsible for any damage to existing utility lines or airport facilities encountered during construction. Any damage to utilities must be repaired immediately by the contractor, to the satisfaction of the engineer and at no cost to the airport.

Any damage to the existing airport lighting system or navigational aids caused by construction operations shall be reported to the owner immediately and repaired at the contractor's expense.

The contractor shall notify the San Diego gas & electric company prior to starting work near company facilities and shall coordinate his/her work with company representatives.

Notice:
All electrical and gas services within this project are 'underground installations'. For location of electrical cables and gas piping and appurtenances contact the San Diego Gas & Electric company. Telephone 1-800-227-2600.

The contractor shall notify the pacific telephone company prior to starting work near company facilities and shall coordinate his/her work with company representatives.

Notice:

All telephone services within this project boundary are 'underground installations'. For location of cables and appurtenances contact the telephone company.

Before excavating verify location of
Underground utilities contact:

Underground service alert	(800) 422-4133 or 811
Sewer	(800) 422-4133
Communications division	(619) 236-5505
Park & recreation dept. (irrigation)	(619) 235-1179
Cox cable TV	(619) 262-1122
Street division	(619) 527-7500
Facilities maintenance	(619) 525-8540

11.0 PENALTIES

Noncompliance with airport rules and regulations and the safety plan could result in permanent ejection from the airport property and/or an assessment of fines.

12.0 SPECIAL CONDITIONS

No special conditions.

13.0 RUNWAY AND TAXIWAY VISUAL AIDS - MARKING, LIGHTING, SIGNS AND VISUAL NAVAIDS

Airport markings, lighting, signs, and visual NAVAIDs must be clearly visible to pilots, not misleading, confusing, or deceptive. All must be secured in place to prevent movement by prop wash, jet blast, wing vortices, or other wind currents and constructed of materials and in a frangible matter that would minimize damage to an aircraft in the event of inadvertent contact.

Signs adjacent to areas used by aircraft must comply with the frangibility requirements of AC 150/5220-23, Frangible Connections, which may require modification to size and height guidance in the MUTCD.

Markings must be in compliance with the standards of AC 150/5340-1, Standards for Airport Markings and lighting must be in conformance with AC 150/5340-30, Design and Installation Details for Airport Visual Aids, and AC 150/5345-50, Specification for Portable Runway and Taxiway Lights. Temporary runways and runway exit taxiways closed to aircraft operations are marked with a yellow X. Runway closures will be broadcast using lighted X signals, both day and night, placed on or near the runway designation numbers

facing the approach and away from the Air Traffic Control Tower (ATCT) so as to not provide a light source to the operators (see **Appendix A** for locations of both lighted runway closure and temporary runway and taxiway closure locations).

Signs must be in conformance with AC 150/5345-44, Specifications for Runway and Taxiway Signs and AC 150/5340-18, Standard for Airport Sign Systems and AC 150/5345-53 Airport Lighting Certification Program. Figures in **Appendix A** indicate signs that require to be covered in each phase of work. Lighting circuits will be turned off by contractor at the request of Airport Operations. Lockout/tag out procedures will be used when turning lighting circuits off and on.

14.0 MARKING AND SIGNS FOR ACCESS ROUTES

Pavement markings and signs intended for construction personnel should conform to AC 150/5340-18 and, to the extent practicable, with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or Stat highway specifications. Signs adjacent to areas used by aircraft must comply with the frangibility requirements of AC 150/5220-23, Frangible Connections, which may require modification to size and height guidance in the MUTCD.

15.0 HAZARD MARKING AND LIGHTING

The Contractor shall provide and maintain barricades, temporary runway and taxiway lighting, temporary runway and taxiway signs, for all runway/taxiway closures as indicated on the figures in **Appendix A.** Upon completion of each phase, the contractor shall remove the associated barricades and uncover airfield signs and edge lights.

Barricades, temporary markers, and other objects placed and left in areas adjacent to any open runway, taxiway, taxi lane, or apron are to be as low as possible to the ground, and no more than 18 inches high. Contractor shall have a representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades.

16.0 PROTECTION OF RUNWAY AND TAXIWAY SAFETY AREAS, OBJECT FREE AREAS, OBSTACLE FREE ZONES AND APPROACH/DEPARTURE SURFACES

Construction is intended to construct the new pavement system along Runway 5-23 and Taxiway G and the adjacent taxiways. The majority of construction will be on Runway 5-23 and within the RSA and the TSA of Taxiway G. Runway 5-23 must be closed during all phases. Runway 10R-28L must be closed during Phase II, III and IV. Runway 10L-28R will remain operational during all phases.

All open trenches during construction will be marked, barricaded and lighted. If a trench is required to be left open within an active RSA (250ft from runway centerline) or TSA (39.5ft from taxiway centerline), contractor is required to submit a plating plan capable of carrying the heaviest aircraft loading across the excavation with no more than a 1.5 inch change in grade.

Due to the location of construction, no operations on Runway 5-23 can occur during construction. Runway 10R-28L must be closed during Phase II, III, and IV but may be operational during Phase I, V, VI, and VII construction. Runway 10L-28R will maintain normal operations throughout the duration of construction.

Runway Safety Areas:

The runway safety areas for Runways 5-23 are impacted by this construction. Prior to opening any pavement to aircraft traffic the area will be cleaned thoroughly by the contractor and inspected and approved by the City.

While the runway is open for aircraft operations, no construction or open trenches shall be allowed to occur within the RSA and personnel, material, or equipment may not penetrate the OFZ. All equipment must be removed from the ROFA when it is not being used.

Barricades shall be installed at all closed taxiways to prevent aircraft from reaching dead-ends (see figures in **Appendix A** for locations).

Prior to opening up phases or surrounding aircraft pavement for operations the RSAs must be restored and meet requirements outlined in AC 150/5300-13(current edition).

Taxiway Safety Areas:

Taxiways C, E, F, G, H and L have full construction within their respective Taxiway Safety Areas (TSAs). During Phase I a portion of Taxiway G between Runway 10P-28L and Taxiway H will not be operational. Taxiway C north of Runway 10L-28R will also be non-operational during Phase I. During Phase II, Taxiway E and G (north of Taxiway H) will not be operational but all others will be open. During Phase III all taxiways will be operational. During Phase IV, the intersection of Taxiway G and Taxiway H will not be operational along with the most southerly span of Taxiway G, all others will be open. During Phase V, Taxiway H and west of Taxiway G will not be operational but all others will be open. During Phase VI, Taxiway F south of Taxiway H and Taxiway G at the intersection of F will not be operational but all others will be open. During Phase VII, a portion of Taxiway G (south of Taxiway H) will not be operational but all others will be open. Construction will be barricaded and lighted.

No construction or open trenches will be allowed within the TSAs while taxiway is open for aircraft operations. No construction will be allowed within the Taxiway Object Free Area (TOFA), but trenches do not have to be brought up to standards, while taxiway is open for aircraft operations. Prior to opening up phases or surrounding aircraft pavement for operations the TSAs must be restored and meet requirements outlined in AC 150/5300-13(current edition).

Runway Approach / Departure Areas and Clearways:

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces, as defined in Appendix 2 of AC 150/5300-13, of "Threshold Siting Requirements." Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

17.0 OTHER LIMITATIONS ON CONSTRUCTION

Open-flame welding or torch-cutting operations shall be prohibited unless adequate fire and safety precautions are provided and have been approved by the Engineer.

Under no circumstances are flare pots to be used.

Blasting is not allowed.

APPENDIX

Appendix A: Construction Phasing Exhibits

Appendix B: Construction Safety Plan Exhibits

Appendix 3. Safety and Phasing Plan Checklist

This appendix is keyed to Section 2. Plan Requirements. In the electronic version of this AC, clicking on the paragraph designation in the Reference column will access the applicable paragraph. There may be instances where the CSPP requires provisions that are not covered by the list in this appendix.

This checklist is intended as an aid, not as a required submittal.

Coordination	Reference	Addressed			Remarks
General Considerations					
Requirements for predesign, prebid, and preconstruction conferences to introduce the subject of airport operational safety during construction are specified.	205	☒ Yes	☐ No	☐ NA	
Operational safety is a standing agenda item for construction progress meetings.	205	☒ Yes	☐ No	☐ NA	
Scheduling of the construction phases is properly addressed.	206	☒ Yes	☐ No	☐ NA	
Areas and Operations Affected by Construction Activity					
Drawings showing affected areas are included.	207.a	☒ Yes	☐ No	☐ NA	
Closed or partially closed runways, taxiways, and aprons are depicted on drawings.	207.a(1)	☒ Yes	☐ No	☐ NA	
Access routes used by ARFF vehicles affected by the project are addressed.	207.a(2)	☒ Yes	☐ No	☐ NA	
Access routes used by airport and airline support vehicles affected by the project are addressed.	207.a(3)	☒ Yes	☐ No	☐ NA	Access Routes Shown
Underground utilities, including water supplies for fire fighting and drainage.	207.a(4)	☒ Yes	☐ No	☐ NA	
Approach/departure surfaces affected by heights of temporary objects are addressed.	207.a(5)	☐ Yes	☐ No	☒ NA	Not affected
Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads are properly depicted on drawings.	207.a	☒ Yes	☐ No	☐ NA	
Temporary changes to taxi operations are addressed.	207.b(1)	☒ Yes	☐ No	☐ NA	

Coordination	Reference	Addressed			Remarks
Detours for ARFF and other airport vehicles are identified.	207.b(2)	☒ Yes	☐ No	☐ NA	
Maintenance of essential utilities and underground infrastructure is addressed.	207.b(3)	☒ Yes	☐ No	☐ NA	
Temporary changes to air traffic control procedures are addressed.	207.b(4)	☒ Yes	☐ No	☐ NA	
NAVAIDS					
Critical areas for NAVAIDs are depicted on drawings.	208	☐ Yes	☐ No	☒ NA	Not affected
Effects of construction activity on the performance of NAVAIDS, including unanticipated power outages, are addressed.	208	☐ Yes	☐ No	☒ NA	Not affected
Protection of NAVAID facilities is addressed.	208	☐ Yes	☐ No	☒ NA	Not affected
The required distance and direction from each NAVAID to any construction activity is depicted on drawings.	208	☐ Yes	☐ No	☒ NA	Not affected
Procedures for coordination with FAA ATO/Technical Operations, including identification of points of contact, are included.	208, 213.a, 213.e(3)(a), 218.a	☐ Yes	☐ No	☒ NA	Not affected
Contractor Access					
The CSPP addresses areas to which contractor will have access and how the areas will be accessed.	209	☒ Yes	☐ No	☐ NA	
The application of 49 CFR Part 1542 Airport Security, where appropriate, is addressed.	209	☐ Yes	☐ No	☒ NA	Not affected
The location of stockpiled construction materials is depicted on drawings.	209.a	☒ Yes	☐ No	☐ NA	
The requirement for stockpiles in the ROFA to be approved by FAA is included.	209.a	☒ Yes	☐ No	☐ NA	
Requirements for proper stockpiling of materials are included.	209.a	☒ Yes	☐ No	☐ NA	

Coordination	Reference	Addressed			Remarks
Construction site parking is addressed.	209.b(1)	☒ Yes	☐ No	☐ NA	
Construction equipment parking is addressed.	209.b(2)	☒ Yes	☐ No	☐ NA	
Access and haul roads are addressed.	209.b(3)	☒ Yes	☐ No	☐ NA	
A requirement for marking and lighting of vehicles to comply with AC 150/5210-5, Painting, Marking and Lighting of Vehicles Used on an Airport, is included.	209.b(4)	☒ Yes	☐ No	☐ NA	
Proper vehicle operations, including requirements for escorts, are described.	209.b(5), 209.b(6)	☒ Yes	☐ No	☐ NA	
Training requirements for vehicle drivers are addressed.	209.b(7)	☐ Yes	☐ No	☒ NA	Escort Trucks
Two-way radio communications procedures are described.	209.b(9)	☐ Yes	☐ No	☒ NA	Not affected
Maintenance of the secured area of the airport is addressed.	209.b(10)	☒ Yes	☐ No	☐ NA	
Wildlife Management					
The airport operator's wildlife management procedures are addressed.	210	☒ Yes	☐ No	☐ NA	
Foreign Object Debris Management					
The airport operator's FOD management procedures are addressed.	211	☒ Yes	☐ No	☐ NA	
Hazardous Materials Management					
The airport operator's hazardous materials management procedures are addressed.	212	☒ Yes	☐ No	☐ NA	
Notification of Construction Activities					
Procedures for the immediate notification of airport user and local FAA of any conditions adversely affecting the operational safety of the airport are detailed.	213	☒ Yes	☐ No	☐ NA	

Coordination	Reference	Addressed			Remarks
Maintenance of a list by the airport operator of the responsible representatives/points of contact for all involved parties and procedures for contacting them 24 hours a day, seven days a week is specified.	213.a	☒ Yes	☐ No	☐ NA	
A list of local ATO/Technical Operations personnel is included.	213.a	☒ Yes	☐ No	☐ NA	
A list of ATCT managers on duty is included.	213.a	☒ Yes	☐ No	☐ NA	
A list of authorized representatives to the OCC is included.	213.b	☒ Yes	☐ No	☐ NA	
Procedures for coordinating, issuing, maintaining and cancelling by the airport operator of NOTAMS about airport conditions resulting from construction are included.	208, 213.b, 218.b(4)(i)	☒ Yes	☐ No	☐ NA	
Provision of information on closed or hazardous conditions on airport movement areas by the airport operator to the OCC is specified.	213.b	☒ Yes	☐ No	☐ NA	
Emergency notification procedures for medical, fire fighting, and police response are addressed.	213.c	☒ Yes	☐ No	☐ NA	
Coordination with ARFF personnel for non-emergency issues is addressed.	213.d	☒ Yes	☐ No	☐ NA	
Notification to the FAA under 14 CFR parts 77 and 157 is addressed.	213.e	☒ Yes	☐ No	☐ NA	
Reimbursable agreements for flight checks and/or design and construction for FAA owned NAVAIDs are addressed.	213.e(3)(b)	☒ Yes	☐ No	☐ NA	
Inspection Requirements					
Daily inspections by both the airport operator and contractor are specified.	214.a	☒ Yes	☐ No	☐ NA	
Final inspections at certificated airports are specified when required.	214.b	☒ Yes	☐ No	☐ NA	
Underground Utilities					
Procedures for protecting existing underground facilities in excavation areas are described.	215	☒ Yes	☐ No	☐ NA	

Coordination	Reference	Addressed			Remarks
Penalties					
Penalty provisions for noncompliance with airport rules and regulations and the safety plans are detailed.	216	☒ Yes	☐ No	☐ NA	
Special Conditions					
Any special conditions that affect the operation of the airport or require the activation of any special procedures are addressed.	217	☐ Yes	☐ No	☒ NA	
Runway and Taxiway Visual Aids - Marking, Lighting, Signs, and Visual NAVAIDs					
The proper securing of temporary airport markings, lighting, signs, and visual NAVAIDs is addressed.	218.a	☒ Yes	☐ No	☐ NA	
Frangibility of airport markings, lighting, signs, and visual NAVAIDs is specified.	218.a, 218.c, 219, 220.b(4)	☒ Yes	☐ No	☐ NA	
The requirement for markings to be in compliance with AC 150/5340-1, Standards for Airport Markings is specified.	218.b	☒ Yes	☐ No	☐ NA	
The requirement for lighting to conform to AC 150/5340-30, Design and Installation Details for Airport Visual Aids, AC 150/5345-50, Specification for Portable Runway and Taxiway Lights , and AC 150/5345-53 Airport Lighting Certification Program, is specified.	218.b(1)(f)	☒ Yes	☐ No	☐ NA	
The use of a lighted X is specified where appropriate.	218.b(1)(b), 218.b(3)	☒ Yes	☐ No	☐ NA	
The requirement for signs to conform to AC 150/5345-44, Specification for Runway and Taxiway Signs, AC 50/5340-18, Standards for Airport Sign Systems, and AC 150/5345-53, Airport Lighting Certification Program, is specified.	218.c	☒ Yes	☐ No	☐ NA	
Marking and Signs For Access Routes					
The CSPP specifies that pavement markings and signs intended for construction personnel should conform to AC 150/5340-18 and, to the extent practicable, with the MUTCD and/or State highway specifications.	219	☒ Yes	☐ No	☐ NA	
Hazard Marking and Lighting					
Prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles are specified.	220.a	☒ Yes	☐ No	☐ NA	

Coordination	Reference	Addressed			Remarks
Hazard marking and lighting are specified to identify open manholes, small areas under repair, stockpiled material, and waste areas.	220.a	☒ Yes	☐ No	☐ NA	
The CSPP considers less obvious construction-related hazards.	220.a	☒ Yes	☐ No	☐ NA	
Equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast is specified.	220.b(1)	☒ Yes	☐ No	☐ NA	
The spacing of barricades is specified such that a breach is physically prevented barring a deliberate act.	220.b(1)	☒ Yes	☐ No	☐ NA	
Red lights meeting the luminance requirements of the State Highway Department are specified.	220.b(2)	☒ Yes	☐ No	☐ NA	
Barricades, temporary markers, and other objects placed and left in areas adjacent to any open runway, taxiway, taxi lane, or apron are specified to be as low as possible to the ground, and no more than 18 in high.	220.b(4)	☒ Yes	☐ No	☐ NA	
Barricades marked with diagonal, alternating orange and white stripes are specified to indicate construction locations in which no part of an aircraft may enter.	220.b(4)	☒ Yes	☐ No	☐ NA	
Highly reflective barriers with lights are specified to barricade taxiways leading to closed runways.	220.b(5)	☒ Yes	☐ No	☐ NA	
Markings for temporary closures are specified.	220.b(5)	☒ Yes	☐ No	☐ NA	
The provision of a contractor's representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades is specified.	220.b(7)	☒ Yes	☐ No	☐ NA	
Protection of Runway and Taxiway Safety Areas					
The CSPP clearly states that no construction may occur within a safety area while the associated runway or taxiway is open for aircraft operations.	221.a(1), 221.c(1)	☒ Yes	☐ No	☐ NA	
The CSPP specifies that the airport operator coordinates the adjustment of RSA or TSA dimensions with the ATCT and the appropriate FAA Airports Regional or District Office and issues a local NOTAM.	221.a(2), 221.c(2)	☐ Yes	☐ No	☒ NA	Currently, no adjustment required.

Coordination	Reference	Addressed			Remarks
Procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations, are detailed.	221.c(3)	☐ Yes	☐ No	☒ NA	Blasting not allowed
The CSPP specifies that open trenches or excavations are not permitted within a safety area while the associated runway or taxiway is open.	221.a(4)	☒ Yes	☐ No	☐ NA	
Appropriate covering of excavations in the RSA or TSA that cannot be backfilled before the associated runway or taxiway is open is detailed.	221.a(4)	☒ Yes	☐ No	☐ NA	
The CSPP includes provisions for prominent marking of open trenches and excavations at the construction site.	221.a(4)	☒ Yes	☐ No	☐ NA	
Grading and soil erosion control to maintain RSA/TSA standards are addressed.	221.c(5)	☒ Yes	☐ No	☐ NA	
The CSPP specifies that equipment is to be removed from the ROFA when not in use.	221.b	☒ Yes	☐ No	☐ NA	
The CSPP clearly states that no construction may occur within a taxiway safety area while the taxiway is open for aircraft operations.	221.c	☒ Yes	☐ No	☐ NA	
Appropriate details are specified for any construction work to be accomplished in a taxiway object free area.	221.d	☒ Yes	☐ No	☐ NA	
Measures to ensure that personnel, material, and/or equipment do not penetrate the OFZ or threshold siting surfaces while the runway is open for aircraft operations are included.	221.e	☒ Yes	☐ No	☐ NA	
Provisions for protection of runway approach/departure areas and clearways are included.	221.f	☒ Yes	☐ No	☐ NA	
Other Limitations on Construction					
The CSPP prohibits the use of open flame welding or torches unless adequate fire safety precautions are provided and the airport operator has approved their use.	222.a(2)	☒ Yes	☐ No	☐ NA	
The CSPP prohibits the use of flare pots within the AOA at any time.	222.a(4)	☒ Yes	☐ No	☐ NA	
The CSPP prohibits the use of electrical blasting caps on or within 1,000 ft (300 m) of the airport property.	222.a(3)	☒ Yes	☐ No	☐ NA	

Appendix 4. Construction Project Daily Safety Inspection Checklist

The situations identified below are potentially hazardous conditions that may occur during airport construction projects. Safety area encroachments, unauthorized and improper ground vehicle operations, and unmarked or uncovered holes and trenches near aircraft operating surfaces pose the most prevalent threats to airport operational safety during airport construction projects. The list below is one tool that the airport operator or contractor may use to aid in identifying and correcting potentially hazardous conditions. It should be customized as appropriate for each project.

Potentially Hazardous Conditions

Item	Action Required	or	None
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.			☐
Mounds of earth, construction materials, temporary structures, and other obstacles near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any sign or marking.			☐
Runway resurfacing projects resulting in lips exceeding 3 in (7.6 cm) from pavement edges and ends.			☐
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.			☐
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.			☐
Tall and especially relatively low visibility units (that is, equipment with slim profiles) — cranes, drills, and similar objects — located in critical areas, such as OFZ and approach zones.			☐
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on any apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.			☐
Obstacles, loose pavement, trash, and other debris on or near AOA. Construction debris (gravel, sand, mud, paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.			☐

Item	Action Required	or	None
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.			☐
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.			☐
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.			☐
Obliterated or faded temporary markings on active operational areas.			☐
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.			☐
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.			☐
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway / taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services; and/or loss of communications.			☐
Restrictions on ARFF access from fire stations to the runway / taxiway system or airport buildings.			☐
Lack of radio communications with construction vehicles in airport movement areas.			☐
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircraft operations.			☐
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.			☐
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.			☐

Item	Action Required	or	None
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).			☐
Failure to provide for proper electrical lockout and tagging procedures. At larger airports with multiple maintenance shifts/workers, construction contractors should make provisions for coordinating work on circuits.			☐
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.			☐
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.			☐
Site burning, which can cause possible obscuration.			☐
Construction work taking place outside of designated work areas and out of phase.			☐

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ATTACHMENT F

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City of San Diego

CITY CONTACT: Eleida Felix Yackel, Contract Specialist, Email: EFelixYackel@sandiego.gov
Phone No. (619) 533-3449, Fax No. (619) 533-3633

ADDENDUM "C"

FOR

MYF REHAB RUNWAY 5/23 & TAXIWAY G

BID NO.:	K-15-6020-DBB-3
SAP NO. (WBS/IO/CC):	B-00910
CLIENT DEPARTMENT:	2111
COUNCIL DISTRICT:	6
PROJECT TYPE:	AA

BID DUE DATE:

2:00 PM
SEPTEMBER 10, 214
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14th FLOOR, MS 614C
SAN DIEGO, CA 92101

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

B. BIDDER's QUESTIONS

Q1. Page 4 of the Vol I specifications Items 4.4 and 4.5– Is the DBE percentage applied to the base bid only?

A1. Yes.

Q2. Section 208-3.10 of the specifications - Is Prime Coat required on any of the aggregate base surfacing?

A2. Yes. Prime Coat is required on the aggregate base surfacing per 401-4.9 and Item P-603.

Q3. Will the City provide 4 lighted X barricades as need for the phases? Plan sheet 18 mentioned 2?

A3. Per note 18 on Sheet 18: The contractor is responsible for the operation of the two owner provided lighted runway "X" closure signals and maintaining a standby closure signal per the detail on this sheet and the specifications. During the project a total of 4 closure lighted closure markings are required for a period, plus the one standby closure signal. It is the contractor's responsibility to provide all lighted closure markings beyond the two available from the city during this construction.

Q4. Alternate Bid B - Bid Item 2 – Pulverize Asphalt Concrete Pavement is listed as 526 SY, Bid Item 1 is listed as 6740 SY of Cold Milling, what are the designated limits of Cold Milling in Alternate Bid Schedule B, please explain.

A4. Per the limits shown on sheets 24 and 25 along with the typical sections on sheet 28 the Twy L and Twy G pavement is to be removed. This removal is to be accomplished by either pulverizing or milling depending on the operation required for preparing the pulverized or milled material as future PMB and installing the P-154 and preparing the subgrade (P-152). Payment items reflect how it is anticipated to be accomplished but means and methods to obtain the required gradation and finished product is a determination by the Contractor as approved by the Resident Engineer.

Q5. Alternate Bid B - Bid Item 14 - calls for 2001 CY of Aggregate base. The Typicals for this section do not show Aggregate Base in these sections, but only PMB. Please Clarify

A5. Per the limits shown on sheet 24 and the typical sections on sheet 28: The Taxiway L pavement contains 9" of PMB, as shown under bid item 15. The Taxiway G pavement contains 11" of CAB, as shown under bid item 14.

However, PMB, if available on site, can be substituted for imported P-208 CAB if quantities are available on site. Estimates for quantities are developed to estimate the total anticipated P-208 CAB anticipated to be required to import. The total quantity of P-208 material (CAB and PMB combined) equates to the estimated quantity of the total material to be used for this item.

Q6. Can the City clarify the geographic locations of the Alternate Bid Schedules A-E? Bidders need to see how the alternates relate to the Job Phases 1-7. Will alternate schedules cross lines of phasing areas? For example would Alt A be contained in one or more of the seven phases? Would multiple alternate schedules be contained in one phase? Bidders need the configuration of the alternates in order to assign accurate costs to each of the items in these alternates. Without guidance from the City as to the actual work areas being addressed by the alternates, it is not possible to provide accurate cost estimates.

A6. Please see Sheet 37473-10-D for both data on the phases of construction and the areas of work contained in each bid alternative. This data is further explained within Note 7 on this sheet. Sheets 37473-11-D through 37473-16-D and sheet 37473-84-D. For clarity purposes the names within the Vol 2 bid tables where changed by label only. For clarification please see the following:

Bidding Documents Alternative Designation	Plans Sheet 37473-10-D and Technical Specifications Alternative Designation
A	1
B	2
C	3
D	4
E	5

C. VOLUME 1

1. To Attachment E, Technicals, Part VI - Drainage, Item D-701, Pipe for Storm Drains and Culverts, page 304, Basis of Payment, to Section 701-5, **DELETE** in its entirety and **SUBSTITUE** with the following:

701-5 Payment will be made at the contract unit price per linear foot (meter) for each kind of pipe of the type and size designated on the plans. These prices shall fully compensate the Contractor for furnishing all materials and for all preparation, excavation, pipe laying, backfilling up to finish grade per trench details and installation of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item D-701-5.2 24 inch RCP Storm Drain 1750-D pipe - per linear foot (meter)

Item D-701-5.1 18 inch RCP Storm Drain 1750-D pipe - per linear foot (meter).

D. VOLUME 2

1. To Bidding Documents, Proposal (Bid), pages 15 through 25, **DELETE** in their entirety and **SUBSTITUTE** with pages 5 through 15 of this Addendum.

James Nagelvoort, Director
Public Works Department

Dated: *August 28, 2014*
San Diego, California

JN/BD/egz

PROPOSAL (BID)

The Bidder agrees to the construction of **MYF Rehab. Runway 5/23 &Taxiway G**, for the City of San Diego, in accordance with these contract documents for the prices listed below. The Bidder guarantees the Contract Price for a period of (90 days for federally funded contracts and contracts valued at $500,000 or less) from the date of Bid opening to Award of the Contract. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
BASE BID							
1.	1	LS	P-150-3.1	237310	Mobilization		$
2.	1	LS	P-150-3.2	237310	Demobilization		$
3.	63,596	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$	$
4.	685	SY	P-101-5.3	237310	Tie-in Milling	$	$
5.	1	LS	P-101-5.4	237310	Potholing		$
6.	1	LS	P-148-4.1	237310	Airfield Construction Area Control		$
7.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$
8.	4	EA	P-148-4.3	238210	Lighted X Runway Closure Signal	$	$
9.	1	LS	P-148-4.4	238210	Contractor Project Airfield Radios		$
10.	40	LF	P-148-4.5	238990	Chain Link Fence, Remove and Replace	$	$
11.	21,308	SY	P-152-4.1	237310	Embankment in Place	$	$
12.	24,179	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$	$
13.	63,596	SY	P-152-4.3	237310	Subgrade Preparation	$	$
14.	1,185	CY	P-152-4.4	237310	Unsuitable Excavation	$	$

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
15.	12,521	CY	P-154-5.1	237310	Subbase Course	$	$
16.	1	LS	P-156-5.1	541330	Water Pollution Control Program Development		$
17.	1	LS	P-156-5.2	541330	Water Pollution Control Program Implementation		$
18.	14,400	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$	$
19.	9,406	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$	$
20.	9,539	GAL	P-603-5.1	237310	Bituminous Tack Coat	$	$
21.	36,565	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$	$
22.	8	EA	P-610-5.1	238210	Adjust Light Fixture to Grade (>1/2")	$	$
23.	1	EA	P-610-5.2	238210	Adjust Light Fixture to Grade (1/4" to 1/2")	$	$
24.	2,290	LF	P-620-5.1	237310	Runway Centerline Striping 18" Wide with Reflective Media	$	$
25.	6,256	LF	P-620-5.3	237310	Runway Edge Striping 18" Wide with Reflective Media	$	$
26.	2,240	LF	P-620-5.4	237310	Runway Edge Striping 36" Wide with Reflective Media	$	$
27.	4,394	SF	P-620-5.5	237310	Runway Markings with Reflective Media	$	$
28.	5,010	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$	$
29.	2,175	LF	P-620-5.7	237310	Solid Taxiway Edge Line Striping	$	$
30.	670	LF	P-620-5.10	237310	Runway Hold Position Striping with Black out Striping and Reflective Media	$	$
31.	681	LF	P-620-5.11	237310	Taxiway Non-Movement Line Markings	$	$
32.	14	EA	P-620-5.12	237310	Taxiway Surface Painted Hold Position Markings with Blackout Border and Reflective Media	$	$

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
33.	750	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$	$
34.	8,745	SF	P-620-5.14	237310	Runway Shoulder Markings	$	$
35.	4,890	LF	P-620-5.15	237310	Temporary Pavement Markings	$	$
36.	75	LF	L-108-5.1	238210	L-824, Type C, 1/C #8, 5kV Cable	$	$
37.	75	LF	L-108-5.2	238210	Bare #6 AWG Counterpoise, Installed in Trench Including Ground Rods	$	$
38.	75	LF	L-110-5.1	238210	Single-way 2" Conduit, Direct Buried	$	$
39.	30	EA	L-861T-4.2	238210	Furnish and Install New L-861T Taxiway Edge Light on Existing Base	$	$
40.	2	EA	L-858-5.1	238210	Relocate and Install Size 1 Sign on New Concrete Foundation	$	$
41.	1	EA	L-858-5.3	238210	Unlighted Sign Replacement	$	$
42.	4	EA	L-858-5.2	238210	New Size 1 Sign Panels	$	$
43.	1	AL	9-3.5		Field Orders - Type II		$166,526.00
					ESTIMATED TOTAL BASE BID:		**$**
					ALTERNATE "A"		
1.	5,153	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$	$
2.	25	SY	P-101-5.3	237310	Tie-in Milling	$	$
3.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$
4.	900	SY	P-152-4.1	237310	Embankment in Place	$	$
5.	2,015	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$	$

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
6.	5,153	SY	P-152-4.3	237310	Subgrade Preparation	$	$
7.	99	CY	P-152-4.4	237310	Unsuitable Excavation	$	$
8.	876	CY	P-154-5.1	237310	Subbase Course	$	$
9.	1,313	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$	$
10.	858	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$	$
11.	773	GAL	P-603-5.1	237310	Bituminous Tack Coat	$	$
12.	3,220	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$	$
13.	450	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$	$
14.	230	LF	P-620-5.7	237310	Solid Taxiway Edge Line Striping	$	$
15.	720	LF	P-620-5.8	237310	Dashed Taxiway Edge Line Striping	$	$
16.	175	LF	P-620-5.9	237310	Intermediate Holding Position Marking	$	$
17.	80	LF	P-620-5.10	237310	Runway Hold Position Striping with Black out Striping and Reflective Media	$	$
18.	150	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$	$
19.	390	LF	L-108-5.1	238210	L-824, Type C, 1/C #8, 5kV Cable	$	$
20.	390	LF	L-108-5.2	238210	Bare #6 AWG Counterpoise, Installed in Trench Including Ground Rods	$	$
21.	390	LF	L-110-5.1	238210	Single-way 2" Conduit, Direct Buried	$	$
22.	6	EA	L-861T-4.1	238210	Re-install Elevated Lights on New Base	$	$
23.	1	AL	9-3.5		Field Orders - Type II		$14,060.00
					ESTIMATED TOTAL BID ALTERNATE "A":		**$**

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
ALTERNATE "B"							
1.	6,740	SY	P-101-5.1	237310	Cold Milling Asphalt Concrete Pavement	$	$
2.	526	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$	$
3.	25	SY	P-101-5.3	237310	Tie-in Milling	$	$
4.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$
5.	1,075	SY	P-152-4.1	237310	Embankment in Place	$	$
6.	3,052	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$	$
7.	7,073	SY	P-152-4.3	237310	Subgrade Preparation	$	$
8.	150	CY	P-152-4.4	237310	Unsuitable Excavation	$	$
9.	4	CY	P-152-4.6	237310	Rock Slope Protection - No. 2 Backing with Fabric	$	$
10.	14	CY	P-152-4.7	237310	Rock Slope Protection - 3" Diameter Rock with Fabric	$	$
11.	4	CY	P-152-4.8	237310	Rock Slope Protection - 6" Diameter Rock with Fabric	$	$
12.	1,202	CY	P-154-5.1	237310	Subbase Course	$	$
13.	1	LS	P-156-5.1	541330	Temporary Erosion Control		$
14.	2,001	CY	P-208-5.1	237310	Crushed Aggregate Base Course	$	$
15.	134	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$	$
16.	1,178	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$	$
17.	1,061	GAL	P-603-5.1	237310	Bituminous Tack Coat	$	$
18.	4,185	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$	$

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
19.	2	EA	P-610-5.1	238210	Adjust Light Fixture to Grade (>1/2")	$	$
20.	1,135	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$	$
21.	50	LF	P-620-5.11	237310	Taxiway Non-Movement Line Markings	$	$
22.	146	LF	D-701-5.2	237110	24 inch RCP Storm Drain 1750-D Pipe	$	$
23.	2	EA	D-751-5.3	237110	Concrete Pipe Collar	$	$
24.	1	EA	D-751-5.2	237110	Catch Basin Type "I"	$	$
25.	1	EA	D-751-5.1	237110	Wing and U Type Headwalls	$	$
26.	1	AL	9-3.5		Field Orders - Type II		$26,525.00
					ESTIMATED TOTAL BID ALTERNATE "B":		**$**
					ALTERNATE "C"		
1.	1,233	SY	P-101-5.1	237310	Cold Milling Asphalt Concrete Pavement	$	$
2.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$
3.	360	SY	P-152-4.1	237310	Embankment in Place	$	$
4.	516	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$	$
5.	1,198	SY	P-152-4.3	237310	Subgrade Preparation	$	$
6.	25	CY	P-152-4.4	237310	Unsuitable Excavation	$	$
7.	1	LS	P-152-4.5	237110	Remove Storm Drain Facilities		$
8.	4	CY	P-152-4.6	237310	Rock Slope Protection - No. 2 Backing with Fabric	$	$
9.	204	CY	P-154-5.1	237310	Subbase Course	$	$

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
10.	1	LS	P-156-5.1	541330	Temporary Erosion Control		$
11.	366	CY	P-208-5.1	237310	Crushed Aggregate Base Course	$	$
12.	199	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$	$
13.	180	GAL	P-603-5.1	237310	Bituminous Tack Coat	$	$
14.	808	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$	$
15.	1	EA	P-610-5.1	238210	Adjust Light Fixture to Grade (>1/2")	$	$
16.	1	EA	P-610-5.3	238210	Adjust Light Fixture to Grade (<1/4")	$	$
17.	215	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$	$
18.	750	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$	$
19.	274	LF	D-701-5.2	237110	24 inch RCP Storm Drain 1750-D Pipe	$	$
20.	1	EA	D-751-5.1	237110	Wing and U Type Headwalls	$	$
21.	1	AL	9-3.5		Field Orders - Type II		$8,225.00
					ESTIMATED TOTAL BID ALTERNATE "C":		**$**
					ALTERNATE "D"		
1.	1	LS	L-100-5.1	238210	Electrical Demolition	$	$
2.	13	EA	L-858-5.3	238210	Unlighted Sign Replacement	$	$
3.	1	AL	9-3.5		Field Orders - Type II		$988.00
					ESTIMATED TOTAL BID ALTERNATE "D":		**$**

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
ALTERNATE "E"							
1.	1,615	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$	$
2.	35	SY	P-101-5.3	237310	Tie-in Milling	$	$
3.	75	SY	P-152-4.1	237310	Embankment in Place	$	$
4.	639	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$	$
5.	1,437	SY	P-152-4.3	237310	Subgrade Preparation	$	$
6.	96	CY	P-152-4.4	237310	Unsuitable Excavation	$	$
7.	1	LS	P-152-4.5	237110	Remove Storm Drain Facilities		$
8.	240	CY	P-154-5.1	237310	Subbase Course	$	$
9.	280	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$	$
10.	250	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$	$
11.	216	GAL	P-603-5.1	237310	Bituminous Tack Coat	$	$
12.	675	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$	$
13.	1,065	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$	$
14.	50	LF	P-620-5.10	237310	Runway Hold Position Striping with Black out Striping and Reflective Media	$	$
15.	2	EA	P-620-5.12	237310	Taxiway Surface Painted Hold Position Markings with Blackout Border and Reflective Media	$	$
16.	300	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$	$
17.	106	LF	D-701-5.1	237110	18 inch RCP Storm Drain 1750-D pipe	$	$
18.	2	EA	D-751-5.3	237110	Concrete Pipe Collar	$	$

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
19.	1	EA	D-751-5.2	237110	Catch Basin Type "I"	$	$
20.	960	LF	L-108-5.1	238210	L-824, Type C, 1/C #8, 5kV Cable	$	$
21.	960	LF	L-108-5.2	238210	Bare #6 AWG Counterpoise, Installed in Trench Including Ground Rods	$	$
22.	960	LF	L-110-5.1	238210	Single-way 2" Conduit, Direct Buried	$	$
23.	6	EA	L-858-5.1	238210	Relocate and Install Size 1 Sign on New Concrete Foundation	$	$
24.	6	EA	L-858-5.2	238210	New Size 1 Sign Panels	$	$
25.	19	EA	L-861T-4.1	238210	Re-install Elevated Lights on New Base	$	$
26.	1	AL	9-3.5		Field Orders - Type II		$4,873.00
					ESTIMATED TOTAL BID ALTERNATE "E":		**$**
					ESTIMATED TOTAL BASE BID PLUS ADDITIVE ALTERNATES A, B, C, D, AND E:		**$**

TOTAL BID PRICE FOR BID (Items 1 through 43, Additive Alternate A, 1 through 23, Additive Alternate B, 1 through 26, Additive Alternate C, 1 through 21, Additive Alternate D, 1 through 3 and Additive Alternate E, 1 through 26, inclusive) amount written in words:

_____

The Bid shall contain an acknowledgment of receipt of all addenda, the numbers of which shall be filled in on the Bid form. If an addendum or addenda has been issued by the City and not noted as being received by the Bidder, this proposal shall be rejected as being **non-responsive**. The following addenda have been received and are acknowledged in this bid:_____

The names of all persons interested in the foregoing proposal as principals are as follows:

_____

_____

_____

_____

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

Bidder: _____

Title: _____

Business Address: _____

Place of Business: _____

Place of Residence: _____

Signature: _____

NOTES:

A. The City shall determine the low Bid based on the Base Bid plus the following Additive Alternates: A, B, C, D, and E.

B. After the low Bid has been determined, the City may award the Contract for the Base Bid alone or if applicable, for the Base Bid plus any combination of alternates selected in the City's sole discretion.

C. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Bidder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the bid proposal.

D. Failure to initial all corrections made in the bidding documents may cause the Bid to be rejected as **non-responsive** and ineligible for further consideration.

E. Blank spaces must be filled in, using figures. Bidder's failure to submit a price for any Bid item that requires the Bidder to submit a price shall render the Bid **non-responsive** and shall be cause for its rejection.

F. Unit prices shall be entered for all unit price items. Unit prices shall not exceed two (2) decimal places. If the Unit prices entered exceed two (2) decimal places, the City will only use the first two digits after the decimal points without rounding up or down.

G. All extensions of the unit prices bid will be subject to verification by the City. In the case of inconsistency or conflict between the product of the Quantity x Unit Price and the Extension, the product shall govern.

H. In the case of inconsistency or conflict, between the sums of the Extensions with the estimated total Bid, the sum of the Extensions shall govern.

I. Bids shall not contain any recapitulation of the Work. Conditional Bids will be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.

J. Subcontractors' License Number must be filled in. Failure to provide the information specified may deem the bidder **non-responsive**.

City of San Diego

CITY CONTACT: Eleida Felix Yackel - Contract Specialist, Email: EFelixYackel@sandiego.gov
Phone No. (619) 533-3449, Fax No. (619) 533-3633

ADDENDUM "B"

FOR

MYF REHAB RUNWAY 5/23 & TAXIWAY G

BID NO.:	K-15-6020-DBB-3
SAP NO. (WBS/IO/CC):	B-00910
CLIENT DEPARTMENT:	2111
COUNCIL DISTRICT:	6
PROJECT TYPE:	AA

BID DUE DATE:

2:00 PM
SEPTEMBER 10, 2014
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14th FLOOR, MS 614C
SAN DIEGO, CA 92101

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

B. VOLUME 1

1. To ATTACHMENT D, FEDERAL AVIATION ADMINISTRATION (FAA), FUNDING AGENCY PROVISIONS, pages 42 though 72, Item 9 WAGE RATES, **DELETE** in their entirety and **SUBSTITUTE** with pages 3 through 29 of this Addendum.

James Nagelvoort, Director
Public Works Department

Dated: *August 22, 2014*
San Diego, California

JN/BD/ls

9. WAGE RATES. This contract shall be subject to the following Davis-Bacon Wage Decisions:

General Decision Number: CA140001 08/22/2014 CA1

Superseded General Decision Number: CA20130001

State: California

Construction Types: Building, Heavy (Heavy and Dredging), Highway and Residential

County: San Diego County in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	01/03/2014
1	01/10/2014
2	01/24/2014
3	02/21/2014
4	05/09/2014
5	05/23/2014
6	05/30/2014
7	06/20/2014
8	07/04/2014
9	07/11/2014
10	07/18/2014
11	07/25/2014
12	08/08/2014
13	08/22/2014

ASBE0005-002 06/30/2014

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems)	$ 35.44	19.36
Fire Stop Technician (Application of Firestopping Materials for wall openings and penetrations in walls, floors, ceilings and curtain walls)	$ 24.34	16.09

ASBE0005-004 06/24/2013

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)	$ 16.95	10.23

BOIL0092-003 10/01/2012

	Rates	Fringes
BOILERMAKER	$ 41.17	28.27

BRCA0004-008 05/01/2014

	Rates	Fringes
BRICKLAYER; MARBLE SETTER	$ 34.10	15.05

BRCA0018-004 06/01/2014

	Rates	Fringes
MARBLE FINISHER	$ 28.45	11.38
TILE FINISHER	$ 23.78	9.84
TILE LAYER	$ 35.14	14.33

BRCA0018-010 09/01/2013

	Rates	Fringes
TERRAZZO FINISHER	$ 26.59	10.34
TERRAZZO WORKER/SETTER	$ 33.63	11.13

CARP0409-002 07/01/2008

	Rates	Fringes
Diver		
(1) Wet	$ 663.68	9.82
(2) Standby	$ 331.84	9.82
(3) Tender	$ 323.84	9.82
(4) Assistant Tender	$ 299.84	9.82

Amounts in "Rates' column are per day

CARP0409-008 08/01/2010

	Rates	Fringes
Modular Furniture Installer	$ 17.00	7.41

CARP0547-001 07/01/2009

	Rates	Fringes
CARPENTER		
(1) Bridge	$ 37.28	10.58
(2) Commercial Building	$ 32.30	10.58
(3) Heavy & Highway	$ 37.15	10.58
(4) Residential Carpenter	$ 25.84	10.58
(5) Residential Insulation Installer	$ 18.00	8.16
MILLWRIGHT	$ 37.65	10.58
PILEDRIVERMAN	$ 37.28	10.58

CARP0547-002 07/01/2009

	Rates	Fringes
Drywall		
(1) Work on wood framed construction of single family residences, apartments or condominiums under four stories		
Drywall Installer/Lather	$ 21.00	8.58
Drywall Stocker/Scrapper	$ 11.00	6.67
(2) All other work		
Drywall Installer/Lather	$ 27.35	9.58
Drywall Stocker/Scrapper	$ 11.00	6.67

ELEC0569-001 06/02/2014

	Rates	Fringes
Electricians (Tunnel Work)		
Cable Splicer	$ 44.91	3%+11.87
Electrician	$ 44.16	3%+11.87
Electricians: (All Other Work, Including 4 Stories Residential)		
Cable Splicer	$ 40.00	3%+11.87
Electrician	$ 39.25	3%+11.87

ELEC0569-005 06/01/2014

	Rates	Fringes
Sound & Communications		
Sound Technician	$ 27.87	3%+10.81
Soundman	$ 22.30	3%+9.17

SOUND TECHNICIAN: Terminating, operating and performing final check-out

SOUNDMAN: Wire-pulling, splicing, assembling and installing devices

SCOPE OF WORK Assembly, installation, operation, service and maintenance of components or systems as used in closed circuit television, amplified master television distribution, CATV on private property, intercommunication, burglar alarm, fire alarm, life support and all security alarms, private and public telephone and related telephone interconnect, public address, paging, audio, language, electronic, background music system less than line voltage or any system acceptable for class two wiring for private, commercial, or industrial use furnished by leased wire, frequency modulation or other recording devices, electrical apparatus by means of which electricity is applied to the amplification, transmission, transference, recording or reproduction of voice, music, sound, impulses and video. Excluded from this Scope of Work - transmission, service and maintenance of background music. All of the above shall include the installation and transmission over fiber optics.

ELEC0569-006 10/17/2013

Work on street lighting; traffic signals; and underground systems and/or established easements outside of buildings

	Rates	Fringes
Traffic signal, street light and underground work		
Utility Technician #1	$ 28.00	3%+7.42
Utility Technician #2	$ 23.15	3%+7.42

STREET LIGHT & TRAFFIC SIGNAL WORK:

UTILITY TECHNICIAN #1: Installation of street lights and traffic signals, including electrical circuitry, programmable controller, pedestal-mounted electrical meter enclosures and laying of pre-assembled cable in ducts. The layout of electrical systems and communication installation including proper position of trench depths, and radius at duct banks, location for manholes, street lights and traffic signals.

UTILITY TECHNICIAN #2: Distribution of material at jobsite, installation of underground ducts for electrical, telephone, cable TV land communication systems. The setting, leveling, grounding and racking of precast manholes, handholes and transformer pads.

ELEC0569-008 06/03/2013

	Rates	Fringes
ELECTRICIAN (Residential, 1-3 Stories)	$ 22.37	3%+3.30

ELEC1245-001 06/01/2013

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer	$ 50.30	15.00
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment)	$ 40.17	14.56
(3) Groundman	$ 30.73	13.48
(4) Powderman	$ 44.91	13.48

HOLIDAYS: New Year's Day, M.L. King Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and day after Thanksgiving, Christmas Day

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ELEV0018-001 01/01/2014

	Rates	Fringes
ELEVATOR MECHANIC	$ 49.03	26.785

FOOTNOTE:
PAID VACATION: Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0012-003 07/07/2014

	Rates	Fringes
OPERATOR: Power Equipment (All Other Work)		
GROUP 1	$ 39.05	22.25
GROUP 2	$ 39.83	22.25
GROUP 3	$ 40.12	22.25
GROUP 4	$ 41.61	22.25
GROUP 5	$ 41.86	22.25
GROUP 6	$ 41.83	22.25
GROUP 8	$ 41.94	22.25
GROUP 9	$ 42.19	22.25
GROUP 10	$ 42.06	22.25
GROUP 11	$ 42.31	22.25
GROUP 12	$ 42.23	22.25
GROUP 13	$ 42.33	22.25
GROUP 14	$ 42.36	22.25
GROUP 15	$ 42.44	22.25
GROUP 16	$ 42.56	22.25
GROUP 17	$ 42.73	22.25
GROUP 18	$ 42.83	22.25
GROUP 19	$ 42.94	22.25
GROUP 20	$ 43.06	22.25
GROUP 21	$ 43.23	22.25
GROUP 22	$ 43.33	22.25
GROUP 23	$ 43.44	22.25
GROUP 24	$ 43.56	22.25
GROUP 25	$ 43.73	22.25
OPERATOR: Power Equipment (Cranes, Piledriving & Hoisting)		
GROUP 1	$ 40.40	22.25
GROUP 2	$ 41.18	22.25
GROUP 3	$ 41.47	22.25
GROUP 4	$ 41.61	22.25
GROUP 5	$ 41.83	22.25
GROUP 6	$ 41.94	22.25
GROUP 7	$ 42.06	22.25
GROUP 8	$ 42.23	22.25

	Rates	Fringes
GROUP 9	$ 42.40	22.25
GROUP 10	$ 43.40	22.25
GROUP 11	$ 44.40	22.25
GROUP 12	$ 45.40	22.25
GROUP 13	$ 46.40	22.25
OPERATOR: Power Equipment (Tunnel Work)		
GROUP 1	$ 40.90	22.25
GROUP 2	$ 41.68	22.25
GROUP 3	$ 41.97	22.25
GROUP 4	$ 42.11	22.25
GROUP 5	$ 42.33	22.25
GROUP 6	$ 42.44	22.25
GROUP 7	$ 42.56	22.25

PREMIUM PAY:
$3.75 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton

Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

SEE ZONE DEFINITIONS AFTER CLASSIFICATIONS

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes loed, lull or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes loed, lull or similar types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dum jack; Screening and conveyor machine operator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (Skid steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator (small portable); Drilling machine operator, small auger types (Texoma super economatic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Hydra-hammer-aero stomper; Micro Tunneling (above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo form setter operator; Power sweeper operator; Rock Wheel Saw/Trencher; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 5: Equipment Greaser (Grease Truck/Multi Shift).

GROUP 6: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator; Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter(concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1 drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 8: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar; Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled); Concrete mixer operator (paving); Crushing plant operator; Drill Doctor;

Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator; Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Mobark Chipper or similar; Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; Rock Drill or similar types; Rotary drill operator (excluding caisson type); Rubber-tired earth-moving equipment operator (single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bendng machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); trenching Machine with Road Miner attachment (over 6 ft depth capacity): Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 9: Heavy Duty Repairman

GROUP 10: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9 cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator; Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 11: Heavy Duty Repairman - Welder Combination, Welder - Certified.

GROUP 12: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less tha 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth- moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self- loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 13: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 14: Canal liner operator; Canal trimmer operator; Remote- control earth-moving equipment operator (operating a second piece of equipment: $1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 15: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 18: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 19: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine,

Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds.and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 21: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

GROUP 22: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

GROUP 23: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 24: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 25: Concrete pump operator-truck mounted; Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs,

Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo form setter operator

GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy Duty Repairman

GROUP 7: Tunnel mole boring machine operator

ENGINEERS ZONES

$1.00 additional per hour for all of IMPERIAL County and the portions of KERN, RIVERSIDE & SAN BERNARDINO Counties as defined below:

That area within the following Boundary: Begin in San Bernardino County, approximately 3 miles NE of the intersection of I-15 and the California State line at that point which is the NW corner of Section 1, T17N,m R14E, San Bernardino Meridian. Continue W in a straight line to that point which is the SW corner of the northwest quarter of Section 6, T27S, R42E, Mt. Diablo Meridian. Continue North to the intersection with the Inyo County Boundary at that point which is the NE corner of the western half of the northern quarter of Section 6, T25S, R42E, MDM. Continue W along the Inyo and San

Bernardino County boundary until the intersection with Kern County, as that point which is the SE corner of Section 34, T24S, R40E, MDM. Continue W along the Inyo and Kern County boundary until the intersection with Tulare County, at that point which is the SW corner of the SE quarter of Section 32, T24S, R37E, MDM. Continue W along the Kern and Tulare County boundary, until that point which is the NW corner of T25S, R32E, MDM. Continue S following R32E lines to the NW corner of T31S, R32E, MDM. Continue W to the NW corner of T31S, R31E, MDM. Continue S to the SW corner of T32S, R31E, MDM. Continue W to SW corner of SE quarter of Section 34, T32S, R30E, MDM. Continue S to SW corner of T11N, R17W, SBM. Continue E along south boundary of T11N, SBM to SW corner of T11N, R7W, SBM. Continue S to SW corner of T9N, R7W, SBM. Continue E along south boundary of T9N, SBM to SW corner of T9N, R1E, SBM. Continue S along west boundary of R1E, SMB to Riverside County line at the SW corner of T1S, R1E, SBM. Continue E along south boundary of T1s, SBM (Riverside County Line) to SW corner of T1S, R10E, SBM. Continue S along west boundary of R10E, SBM to Imperial County line at the SW corner of T8S, R10E, SBM. Continue W along Imperial and Riverside county line to NW corner of T9S, R9E, SBM. Continue S along the boundary between Imperial and San Diego Counties, along the west edge of R9E, SBM to the south boundary of Imperial County/California state line. Follow the California state line west to Arizona state line, then north to Nevada state line, then continuing NW back to start at the point which is the NW corner of Section 1, T17N, R14E, SBM

$1.00 additional per hour for portions of SAN LUIS OBISPO, KERN, SANTA BARBARA & VENTURA as defined below:

That area within the following Boundary: Begin approximately 5 miles north of the community of Cholame, on the Monterey County and San Luis Obispo County boundary at the NW corner of T25S, R16E, Mt. Diablo Meridian. Continue south along the west side of R16E to the SW corner of T30S, R16E, MDM. Continue E to SW corner of T30S, R17E, MDM. Continue S to SW corner of T31S, R17E, MDM. Continue E to SW corner of T31S, R18E, MDM. Continue S along West side of R18E, MDM as it crosses into San Bernardino Meridian numbering area and becomes R30W. Follow the west side of R30W, SBM to the SW corner of T9N, R30W, SBM. Continue E along the south edge of T9N, SBM to the Santa Barbara County and Ventura County boundary at that point whch is the SW corner of Section 34.T9N, R24W, SBM, continue S along the Ventura County line to that point which is the SW corner of the SE quarter of Section 32, T7N, R24W, SBM. Continue E along the south edge of T7N, SBM to the SE corner to T7N, R21W, SBM. Continue N along East side of R21W, SBM to Ventura County and Kern County boundary at the NE corner of T8N, R21W. Continue W along the Ventura County and Kern County boundary to the SE corner of T9N, R21W. Continue North along the East edge of R21W, SBM to the NE corner of T12N, R21W, SBM. Continue West along the north edge of T12N, SBM to the SE corner of T32S, R21E, MDM. [T12N SBM is a think strip between T11N SBM and T32S MDM]. Continue North along the East side of R21E, MDM

to the Kings County and Kern County border at the NE corner of T25S, R21E, MDM, continue West along the Kings County and Kern County Boundary until the intersection of San Luis Obispo County. Continue west along the Kings County and San Luis Obispo County boundary until the intersection with Monterey County. Continue West along the Monterey County and San Luis Obispo County boundary to the beginning point at the NW corner of T25S, R16E, MDM.

$2.00 additional per hour for INYO and MONO Counties and the Northern portion of SAN BERNARDINO County as defined below:

That area within the following Boundary: Begin at the intersection of the northern boundary of Mono County and the California state line at the point which is the center of Section 17, T10N, R22E, Mt. Diablo Meridian. Continue S then SE along the entire western boundary of Mono County, until it reaches Inyo County at the point which is the NE corner of the Western half of the NW quarter of Section 2, T8S, R29E, MDM. Continue SSE along the entire western boundary of Inyo County, until the intersection with Kern County at the point which is the SW corner of the SE 1/4 of Section 32, T24S, R37E, MDM. Continue E along the Inyo and Kern County boundary until the intersection with San Bernardino County at that point which is the SE corner of section 34, T24S, R40E, MDM. Continue E along the Inyo and San Bernardino County boundary until the point which is the NE corner of the Western half of the NW quarter of Section 6, T25S, R42E, MDM. Continue S to that point which is the SW corner of the NW quarter of Section 6, T27S, R42E, MDM. Continue E in a straight line to the California and Nevada state border at the point which is the NW corner of Section 1, T17N, R14E, San Bernardino Meridian. Then continue NW along the state line to the starting point, which is the center of Section 18, T10N, R22E, MDM.

REMAINING AREA NOT DEFINED ABOVE RECIEVES BASE RATE

ENGI0012-004 08/01/2014

	Rates	Fringes
OPERATOR: Power Equipment (DREDGING)		
(1) Leverman	$ 48.60	22.40
(2) Dredge dozer	$ 42.63	22.40
(3) Deckmate	$ 42.52	22.40
(4) Winch operator (stern winch on dredge)	$ 41.97	22.40
(5) Fireman-Oiler, Deckhand, Bargeman, Leveehand	$ 41.43	22.40
(6) Barge Mate	$ 42.04	22.40

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* IRON0377-002 07/01/2014

	Rates	Fringes
Ironworkers:		
Fence Erector	$ 26.58	17.74
Ornamental, Reinforcing and Structural	$ 33.50	26.74

PREMIUM PAY:

$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland,
Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LABO0089-001 07/01/2013

	Rates	Fringes
LABORER (BUILDING and all other Residential Construction)		
Group 1	$ 26.98	15.42
Group 2	$ 27.66	15.42
Group 3	$ 28.37	15.42
Group 4	$ 29.17	15.42
Group 5	$ 31.10	15.42
LABORER (RESIDENTIAL CONSTRUCTION - See definition below)		
(1) Laborer	$ 24.88	13.75
(2) Cleanup, Landscape, Fencing (Chain Link & Wood)	$ 23.59	13.75

RESIDENTIAL DEFINITION: Wood or metal frame construction of single family residences, apartments and condominums - excluding (a) projects that exceed three stories over a garage level, (b) any utility work such as telephone, gas, water, sewer and other utilities and (c) any fine grading

work, utility work or paving work in the future street and public right-of-way; but including all rough grading work at the job site behind the existing right of way

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete Screeding for Rought Strike-off; Concrete, water curing; Demolition laborer; Flagman; Gas, oil and/or water pipeline laborer; General Laborer; General clean-up laborer; Landscape laborer; Jetting laborer; Temporary water and air lines laborer; Material hoseman (walls, slabs, floors and decks); Plugging, filling of Shee-bolt holes; Dry packing of concrete; Railroad maintenance, Repair Trackman and road beds, Streetcar and railroad construction trac laborers; Slip form raisers; Slurry seal crews (mixer operator, applicator operator, squeegee man, Shuttle man, top man), filling of cracks by any method on any surface; Tarman and mortar man; Tool crib or tool house laborer; Window cleaner; Wire Mesh puling-all concrete pouring operations

GROUP 2: Asphalt Shoveler; Cement Dumper (on 1 yard or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute man, pouring concrete, the handling of the cute from ready mix trucks, such as walls, slabs, decks, floors, foundations, footings, curbs, gutters and sidewalks; Concrete curer-impervious membrane and form oiler; Cutting torch operator (demoliton); Guinea chaser; Headboard man-asphlt; Laborer,
packing rod steel and pans; membrane vapor barrier installer; Power broom sweepers (small); Riiprap, stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Tank sealer and cleaner; Tree climber, faller, chain saw operator, Pittsburgh Chipper and similar type brush shredders; Underground laborers, including caisson bellower

GROUP 3: Buggymobile; Concrete cutting torch; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2 1/2 feet drill steel or longer; Dri Pak-it machine; High sealer (including drilling of same); Hydro seeder and similar type; Impact wrench, mult-plate; Kettlemen, potmen and mean applying asphalt, lay-kold, creosote, line caustic and similar type materials (applying means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operators of pneumatic, gas, electric tools, vibratring machines, pavement breakers, air blasting, come-along, and similar mechanical tools not separately classified herein; Pipelayers back up man coating, grouting, making of joints, sealing, caulking, diapering and inclduing rubber gasket joints, pointing and any and all other services; Rotary Scarifier or multiple head concrete chipping scaarifier; Steel header board man and guideline setter; Tampers, Barko, Wacker and similar type; Trenching machine, handpropelled

GROUP 4: Asphalt raker, luterman, ironer, apshalt dumpman and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), Grinder or sander; Concrete saw man; cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Laser beam in connection with laborer's work; Oversize concrete vibrator operator 70 pounds and over; Pipelayer performing all services in the laying, installation and all forms of connection of pipe from the point of receiving pipe in the ditch until completion of oepration, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit, and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid, gas, air or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzleman), Porta shot-blast, water blasting

GROUP 5: Blasters Powderman-All work of loading holes, placing and blasting of all pwder and explosives of whatever type, regardless of method used for such loading and placing; Driller-all power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power.

LABO0089-002 11/01/2012

	Rates	Fringes
LABORER (MASON TENDER).....	$ 27.98	13.39

LABO0089-004 07/01/2013

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
Laborers:		
Group 1.....	$ 26.98	15.42
Group 2.....	$ 27.66	15.42
Group 3.....	$ 28.37	15.42
Group 4.....	$ 29.17	15.42
Group 5.....	$ 31.10	15.42

LABORER CLASSIFICATIONS

GROUP 1: Laborer: General or Construction Laborer, Landscape Laborer. Asphalt Rubber Material Loader. Boring Machine Tender (outside), Carpenter Laborer (cleaning, handling, oiling & blowing of panel forms and lumber), Concrete Laborer, Concrete Screeding for rough strike-off, Concrete

water curing. Concrete Curb & Gutter laborer, Certified Confined Space Laborer, Demolition laborer & Cleaning of Brick and lumber,Expansion Joint Caulking; Environmental Remediation, Monitoring Well, Toxic waste and Geotechnical Drill tender, Fine Grader, Fire Watcher, Limbers, Brush Loader, Pilers and Debris Handlers. flagman. Gas Oil and Water Pipeline Laborer. Material Hoseman (slabs, walls, floors, decks); Plugging, filling of shee bolt holes; Dry packing of concrete and patching; Post Holer Digger (manual); Railroad maintenance, repair trackman, road beds; Rigging & signaling; Scaler, Slip-Form Raisers, Filling cracks on any surface, tool Crib or Tool House Laborer, Traffic control (signs, barriers, barricades, delineator, cones etc.), Window Cleaner

GROUP 2: Asphalt abatement; Buggymobile; Cement dumper (on 1 yd. or larger mixers and handling bulk cement); Concrete curer, impervious membrane and form oiler; Chute man, pouring concrete; Concrete cutting torch; Concrete pile cutter; driller/Jackhammer, with drill steel 2 1/'2 feet or longer; Dry pak-it machine; Fence erector; Pipeline wrapper, gas, oil, water, pot tender & form man; Grout man; Installation of all asphalt overlay fabric and materials used for reinforcing asphalt; Irrigation laborer; Kettleman-Potman hot mop, includes applying asphalt, lay-klold, creosote, lime caustic and similar tyhpes of materials (dipping, brushing, handling) and waterproofing; Membrane vapor barrier installer; Pipelayer backup man (coating, grouting, making of joints, sealing caulkiing, diapering including rubber basket joints, pointing); Rotary scarifier, multiple head concrete chipper; Rock slinger; Roto scraper & tiller; Sandblaster pot tender; Septic tank digger/installer; Tamper/wacker operator; Tank scaler & cleaner; Tar man & mortar man; Tree climber/faller, chainb saw operator, Pittsburgh chipper & similar type brush shredders.

GROUP 3: Asphalt, installation of all frabrics; Buggy Mobile Man, Bushing hammer; Compactor (all types), Concrete Curer - Impervious membrane, Form Oiler, Concrete Cutting Torch, Concrete Pile Cutter,Driller/Jackhammer with drill steel 2 1/2 ft or longer, Dry Pak-it machine, Fence erector including manual post hole digging, Gas oil or water Pipeline Wrapper - 6 ft pipe and over, Guradrail erector, Hydro seeder, Impact Wrench man (multi plate), kettleman-Potman Hot Mop includes applying Asphalt, Lay-Kold, Creosote, lime caustic and similar types of materials (dipping, brushing or handling) and waterproofing. Laser Beam in connection with Laborer work. High Scaler, Operators of Pneumatic Gas or Electric Tools, Vibrating Machines, Pavement Breakers, Air Blasting, Come-Alongs and similar mechanical tools, Remote-Controlled Robotic Tools in connection with Laborers work. Pipelayer Backup Man (Coating, grouting,m makeing of joints, sealing, caulking, diapering including rubber gasket joints, pointing and other services). Power Post Hole Digger,

Rotary Scarifier (multiple head concrete chipper scarifier), Rock Slinger, Shot Blast equipment (8 to 48 inches), Steel Headerboard Man and Guideline Setter, Tamper/Wacker operator and similar types, Trenching Machine hand propelled.

GROUP 4: Any worker exposed to raw sewage. Asphalt Raker, Luteman, Asphalt Dumpman, Asphalt Spreader Boxes, Concrete Core Cutter, Concrete Saw Man, Cribber, Shorer, Head Rock Slinger. Installation of subsurface instrumentation, monitoring wells or points, remediation system installer; Laborer, asphalt-rubber distributor bootman; Oversize concrete vibrator operators, 70 pounds or over. Pipelayer, Prfefabricated Manhole Installer, Sandblast Nozzleman (Water Balsting-Porta Shot Blast), Traffic Lane Closure.

GROUP 5: Blasters Powderman-All work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Horizontal directional driller, Boring system, Electronic traking, Driller: all power drills excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and all other types of mechanical drills without regard to form of motive power. Environmental remediation, Monitoring well, Toxic waste and Geotechnical driller, Toxic waste removal. Welding in connection with Laborer's work.

LABO0300-005 01/01/2014

	Rates	Fringes
Asbestos Removal Laborer.....	$ 28.00	15.25

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos- containing materials and toxic waste by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers and assembly of decontamination stations.

LABO1184-001 07/01/2014

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		
(1) Drilling Crew Laborer...	$ 31.65	13.33
(2) Vehicle Operator/Hauler.	$ 31.82	13.33
(3) Horizontal Directional Drill Operator.....	$ 33.67	13.33
(4) Electronic Tracking Locator.....	$ 35.67	13.33

Laborers: (STRIPING/SLURRY SEAL)

GROUP 1	$ 32.56	16.28
GROUP 2	$ 33.86	16.28
GROUP 3	$ 35.87	16.28
GROUP 4	$ 37.61	16.28

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

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LABO1414-003 08/07/2013

	Rates	Fringes
LABORER		
PLASTER CLEAN-UP LABORER	$ 27.45	16.36
PLASTER TENDER	$ 30.00	16.36

Work on a swing stage scaffold: $1.00 per hour additional.

Work at Military Bases - $3.00 additional per hour:
Coronado Naval Amphibious Base, Fort Irwin, Marine Corps Air Station-29 Palms, Imperial Beach Naval Air Station, Marine Corps Logistics Supply Base, Marine Corps Pickle Meadows,

Mountain Warfare Training Center, Naval Air Facility-Seeley, North Island Naval Air Station, Vandenberg AFB.

PAIN0036-001 07/01/2014

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County)	$ 26.89	12.28
(2) All Other Work	$ 30.27	12.28

REPAINT of any previously painted structure. Exceptions: work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities.

PAIN0036-010 01/01/2014

	Rates	Fringes
DRYWALL FINISHER/TAPER		
(1) Building & Heavy Construction	$ 25.69	13.79
(2) Residential Construction (Wood frame apartments, single family homes and multi-duplexes up to and including four stories)	$ 21.00	13.41

PAIN0036-012 10/01/2013

	Rates	Fringes
GLAZIER	$ 38.80	17.25

PAIN0036-019 07/01/2014

	Rates	Fringes
SOFT FLOOR LAYER	$ 26.77	12.75

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* PLAS0200-005 08/06/2014

	Rates	Fringes
PLASTERER	$ 37.43	13.28

NORTH ISLAND NAVAL AIR STATION, COLORADO NAVAL AMPHIBIOUS BASE, IMPERIAL BEACH NAVAL AIR STATION: $3.00 additional per hour.

PLAS0500-001 07/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
GROUP 1	$ 22.29	17.10
GROUP 2	$ 23.94	17.10
GROUP 3	$ 26.57	17.25

CEMENT MASONS - work inside the building line, meeting the following criteria:

GROUP 1: Residential wood frame project of any size; work classified as Type III, IV or Type V construction; interior tenant improvement work regardless the size of the project; any wood frame project of four stories or less.

GROUP 2: Work classified as type I and II construction

GROUP 3: All other work

PLUM0016-006 07/01/2014

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER		
Camp Pendleton	$ 49.21	20.36
Plumber and Pipefitter All other work except work on new additions and remodeling of bars, restaurant, stores and commercial buildings not to exceed 5,000 sq. ft. of floor space and work on strip malls, light commercial, tenant improvement and remodel work	$ 44.71	20.36
Work ONLY on new additions and remodeling of commercial buildings, bars, restaurants, and stores not to exceed 5,000 sq. ft. of floor space	$ 43.33	19.38
Work ONLY on strip malls, light commercial, tenant improvement and remodel work	$ 34.59	17.71

PLUM0016-011 07/01/2014

	Rates	Fringes
PLUMBER/PIPEFITTER		
Residential	$ 36.15	16.28

PLUM0345-001 07/01/2014

	Rates	Fringes
PLUMBER		
Landscape/Irrigation Fitter	$ 29.27	19.75
Sewer & Storm Drain Work	$ 33.24	17.13

ROOF0045-001 07/01/2012

	Rates	Fringes
ROOFER	$ 25.08	7.28

SFCA0669-001 07/01/2013

	Rates	Fringes
SPRINKLER FITTER	$ 34.86	18.66

SHEE0206-001 01/01/2012

	Rates	Fringes
SHEET METAL WORKER		
Camp Pendleton	$ 35.05	19.23
Except Camp Pendleton	$ 33.05	19.23
Sheet Metal Technician	$ 25.22	6.69

SHEET METAL TECHNICIAN - SCOPE:
a. Existing residential buildings, both single and multi-family, where each unit is heated and/or cooled by a separate system b. New single family residential buildings including tracts. c. New multi-family residential buildings, not exceeding five stories of living space in height, provided each unit is heated or cooled by a separate system. Hotels and motels are excluded. d. LIGHT COMMERCIAL WORK: Any sheet metal, heating and air conditioning work performed on a project where the total construction cost, excluding land, is under $1,000,000 e. TENANT IMPROVEMENT WORK: Any work necessary to finish interior spaces to conform to the occupants of commercial buildings, after completion of the building shell

TEAM0036-001 07/01/2012

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 15.40	20.50
GROUP 2	$ 24.99	20.50
GROUP 3	$ 25.19	20.50
GROUP 4	$ 25.39	20.50
GROUP 5	$ 25.59	20.50
GROUP 6	$ 26.09	20.50
GROUP 7	$ 27.59	20.50

FOOTNOTE: HAZMAT PAY: Work on a hazmat job, where hazmat certification is required, shall be paid, in addition to the classification working in, as follows: Levels A, B and C - +$1.00 per hour. Workers shall be paid hazmat pay in increments of four (4) and eight (8) hours.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Fuel Man, Swamper

GROUP 2: 2-axle Dump Truck, 2-axle Flat Bed,Concrete Pumping Truck, Industrial Lift Truck, Motorized Traffic Control, Pickup Truck on Jobsite

GROUP 3: 2-axle Water Truck, 3-axle Dump Truck, 3-axle Flat Bed, Erosion Control Nozzleman, Dump Crete Truck under 6.5 yd, Forklift 15,000 lbs and over, Prell Truck, Pipeline Work Truck Driver, Road Oil Spreader, Cement Distributor or Slurry Driver, Bootman, Ross Carrier

GROUP 4: Off-road Dump Truck under 35 tons 4-axles but less than 7-axles, Low-Bed Truck & Trailer, Transit Mix Trucks under 8 yd, 3-axle Water Truck, Erosion Control Driver, Grout Mixer Truck, Dump Crete 6.5yd and over, Dumpster Trucks, DW 10, DW 20 and over, Fuel Truck and Dynamite, Truck Greaser, Truck Mounted Mobile Sweeper 2-axle Winch Truck

GROUP 5: Off-road Dump Truck 35 tons and over, 7-axles or more, Transit Mix Trucks 8 yd and over, A-Frame Truck, Swedish Cranes

GROUP 6: Off-Road Special Equipment (including but not limited to Water Pull Tankers, Athey Wagons, DJB, B70 Wuclids or like Equipment)

GROUP 7: Repairman

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

City of San Diego

CITY CONTACT: Eleida Felix Yackel - Contract Specialist, Email: EFelixYackel@sandiego.gov
Phone No. (619) 533-3449, Fax No. (619) 533-3633

ADDENDUM "A"

FOR

MYF REHAB RUNWAY 5/23 & TAXIWAY G

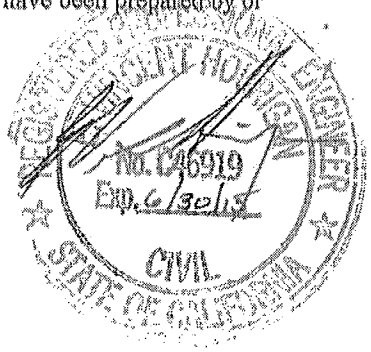
BID NO.:	K-15-6020-DBB-3
SAP NO. (WBS/IO/CC):	B-00910
CLIENT DEPARTMENT:	2111
COUNCIL DISTRICT:	6
PROJECT TYPE:	AA

BID DUE DATE:

2:00 PM
SEPTEMBER 10, 2014
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14th FLOOR, MS 614C
SAN DIEGO, CA 92101

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:



1) Registered Engineer — 8/18/2014 Date — Seal:

2) For City Engineer — 8/18/2014 Date — Seal:

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **REVISED AS STATED ON THE COVER PAGE.**

B. VOLUME 1

1. To the NOTICE INVITING BIDS, page 5, item 5, PRE-BID MEETING, **DELETE** in its entirety and **SUBSTITUTE** with the following:

5. PRE-BID MEETING:

5.1 There will be a Pre-Bid Meeting to discuss the scope of the Project, bidding requirements, pre-qualification process, and Equal Opportunity Contracting Program requirements and reporting procedures in the Public Works Contracts, Conference Room at 1010 Second Avenue, 14th Floor, San Diego, CA 92101 at **10:00 AM,** on **AUGUST 27th, 2014.**

5.2 **The Pre-Bid Meeting has been designated as MANDATORY. All potential bidders are required to attend.** Bid will be declared **non-responsive** if the Bidder fails to attend the Pre-Bid Meeting when specified to be mandatory Attendance at the Pre-Bid Meeting will be evidenced by the representative's signature on the attendance roster. It shall be the responsibility of the Bidder's representative to complete and sign the attendance roster. **No Bidder will be admitted after the specified start time of the mandatory Pre-Bid Meeting.**

5.3 To request a copy of the agenda on an alternative format, or to request a sign language or oral interpreter for this meeting, call the Public Works Contract at (619) 533-3450 at least 5 Working Days prior to the Pre-Bid Meeting to ensure availability.

2. To the NOTICE INVITING BIDS, page 6, item 7, PRE-BID SITE VISIT, **DELETE** in its entirety and **SUBSTITUTE** with the following:

7. **PRE-BID SITE VISIT:** The prospective Bidders are encouraged to visit the Work Site with the Engineer. The purpose of the Site visit is to acquaint Bidders with the Site conditions. To request a sign language or oral interpreter for this visit, call the Public Works Contracts at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. A Pre-Bid Site Visit is offered when the details are provided as follows:

Time:	1:30 PM
Date:	August 27th, 2014
Location:	3750 John J. Montgomery Drive, San Diego, CA 92123

C. PLANS

1. To DRAWING SHEET number 37473-1-D, **DELETE** in its entirety and **REPLACE** with page 5 of this Addendum.

James Nagelvoort, Director
Public Works Department

Dated: *August 18, 2014*
San Diego, California

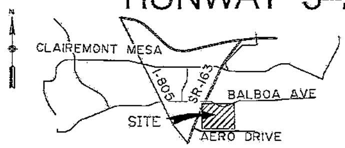
JN/BD/ls

IMPROVEMENT PLANS FOR: MONTGOMERY FIELD REHABILITATION OF RUNWAY 5-23 AND TAXIWAY G

GENERAL NOTES:

1. APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A PERMIT OR A NOTICE TO PROCEED HAS BEEN ISSUED.
2. CONTRACTOR SHALL IMPLEMENT AN EROSION AND SEDIMENT CONTROL PROGRAM DURING THE PROJECT GRADING AND/OR CONSTRUCTION ACTIVITIES. THE PROGRAM SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE STATE WATER RESOURCE CONTROL BOARD AND THE CITY OF SAN DIEGO MUNICIPAL CODE AND STORM WATER STANDARDS MANUAL.
3. "PUBLIC IMPROVEMENT SUBJECT TO DESUETUDE OR DAMAGE." IF REPAIR OR REPLACEMENT OF SUCH PUBLIC IMPROVEMENT IS REQUIRED, THE OWNER SHALL OBTAIN THE REQUIRED PERMITS FOR WORK IN THE PUBLIC RIGHT-OF-WAY, SATISFACTORY TO THE PERMIT-ISSUING AUTHORITY.
4. PRIOR TO ANY DISTURBANCE TO THE SITE, EXCLUDING UTILITY MARK-OUTS AND SURVEYING, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR A PRE-CONSTRUCTION MEETING WITH THE CITY OF SAN DIEGO FIELD ENGINEERING DIVISION (858) 627-3200.
5. DEVIATIONS FROM THESE SIGNED PLANS WILL NOT BE ALLOWED UNLESS A CONSTRUCTION CHANGE IS APPROVED BY THE CITY ENGINEER OR THE CHANGE IS REQUIRED BY CITY INSPECTOR.
6. AS-BUILT DRAWINGS MUST BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO ACCEPTANCE OF THIS PROJECT BY THE CITY OF SAN DIEGO.
7. THE AREA THAT IS DEFINED AS NON-GRADING AREA WHICH IS NOT TO BE DISTURBED SHALL BE STAKED PRIOR TO START OF THE WORK. THE PERMIT APPLICANT AND ALL THEIR REPRESENTATIVES OR CONTRACTORS SHALL COMPLY WITH THE REQUIRSMENTS FOR PROTECTION OF THIS AREA AS REQUIRED BY ANY APPLICABLE AGENCY.

9. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND FACILITIES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO OTHER EXISTING FACILITIES EXCEPT AS SHOWN ON THESE PLANS. HOWEVER, THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING FACILITY SHOWN HEREON AND ANY OTHER WHICH IS NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
10. LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.
11. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED OR DAMAGED BY THE CONSTRUCTION OF THIS PROJECT.
12. ALL NEW STRIPING AND REMOVAL OF REDUNDANT STRIPING SHALL BE DONE BY CONTRACTOR.
13. ALL CUT AND FILL SLOPES THREE FEET (3') OR HIGHER CREATED BY GRADING SHALL BE HYDROSEEDED WITH CITY OF SAN DIEGO APPROVED HYDROSEED MIXTURE. HYDROSEEDED SLOPES SHALL BE IRRIGATED BY WATER TRUCK UNTIL THE MIXTURE GERMINATES AND GROWTH IS ESTABLISHED.



VICINITY MAP
NOT TO SCALE

SOURCE OF TOPO:

CITY OF SAN DIEGO
SURVEY SECTION
ENGINEERING AND CAPITAL PROJECTS
9485 AERO DRIVE MS 18
SAN DIEGO, CA 92123
(858)627-3200

ASSESSOR'S PARCEL NO.:

760-222-31-00

OWNER:

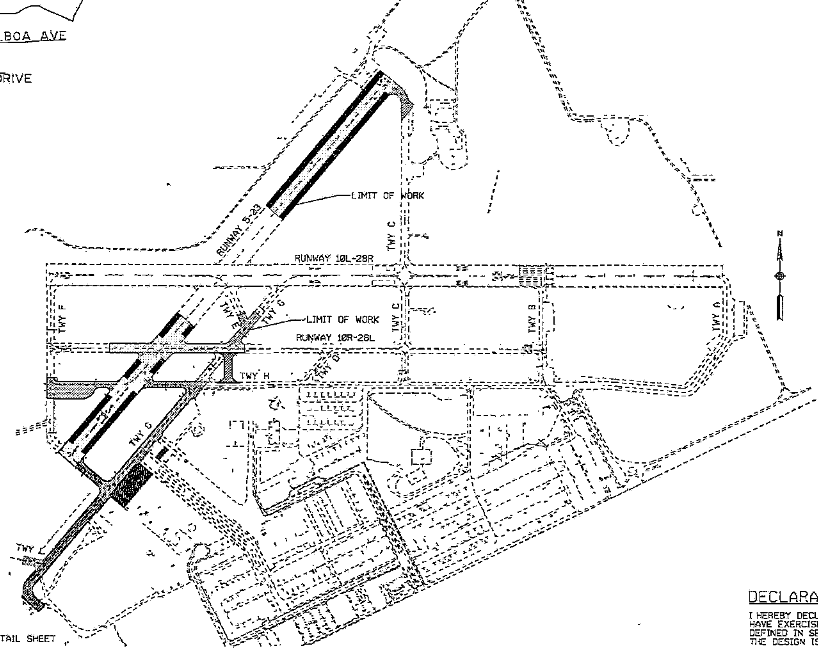
CITY OF SAN DIEGO
525 B STREET, SUITE 750, MS 908A
SAN DIEGO, CA 92101
PHONE: (619) 533-7352, FAX: (619) 533-5176
CONTACT: JIHAD SLEIMAN

REFERENCE DRAWINGS:

PLANS FOR CONSTRUCTION OF 27417-D
MONTGOMERY FIELD IMPORVEMENTS

AS CONSTRUCTED PLANS FOR 12849-L
GIBBS MUNICIPAL AIRPORT

SHEET INDEX:



SITE PLAN
SCALE: 1"=500'

WORK TO BE DONE:

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND THE SPECIFICATIONS AND STANDARD DRAWINGS OF THE CITY OF SAN DIEGO.

A FULL REHABILITATION OF RUNWAY 5-23 AND TAXIWAY G. ALSO INCLUDED IS A NEW SECTION OF TAXIWAY G (REALIGNMENT) AS WELL AS PORTIONS OF THE CONNECTING TAXIWAYS AND RUNWAY 10R-28L.

DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT. THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR THE PROJECT DESIGN.

BY: [signature] 6/26/2014
E. VINCENT HOURIGAN RCE 46919 DATE

REGISTERED PROFESSIONAL ENGINEER · E. VINCENT HOURIGAN · No. 46919 · Exp. 6-30-15 · CIVIL · STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

PLANS FOR THE IMPROVEMENT OF :

MONTGOMERY FIELD
RUNWAY 5-23 AND TAXIWAY G PAVEMENT REHABILITATION
TITLE SHEET

CITY OF SAN DIEGO, CALIFORNIA
PUBLIC WORKS DEPARTMENT
SHEET 01 OF 84 SHEETS

WBS NO. B-00910

[signature] FOR CITY ENGINEER — 8/14/14 DATE

ELIF CETIN — SECTION HEAD

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	KHA			

JIHAD SLEIMAN — PROJECT MANAGER

234-1725 — CCS27 COORDINATE

1874-6285 — CCS83 COORDINATE

CONTRACTOR ______ DATE STARTED ______
INSPECTOR ______ DATE COMPLETED ______

37473-01-D

Kimley-Horn and Associates, Inc.
401 B Street - Suite 600 - San Diego, Ca. - 92101-4218
Tel: (619) 234-9411 Fax: (619) 234-9433

MONTGOMERY FIELD RUNWAY 5-23 AND TAXIWAY G PAVEMENT REHABILITATION

City of San Diego

CONTRACTOR'S NAME: West Coast General Corporation
ADDRESS: 13700 Stowe Dr., Suite 100, Poway, CA 92064
TELEPHONE NO.: 619.561.4200 FAX NO.: 619.561.4205
CITY CONTACT: Eleida Felix Yackel - Contract Specialist, Email: EFelixYackel@sandiego.gov
Phone No. (619) 533-3449, Fax No. (619) 533-3633
JSleiman/BDoringo/Lad

CONTRACT DOCUMENTS

FOR

MYF REHAB RUNWAY 5/23 & TAXIWAY G

VOLUME 2 OF 2

BID NO.:	K-15-6020-DBB-3
SAP NO. (WBS/IO/CC):	B-00910
CLIENT DEPARTMENT:	2111
COUNCIL DISTRICT:	6
PROJECT TYPE:	AA

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- FEDERAL EQUAL OPPORTUNITY CONTRACTING REQUIREMENTS.
- PREVAILING WAGE RATES: STATE ☒ FEDERAL ☒
- APPRENTICE REQUIREMENTS
- THIS IS A U.S. DEPARTMENT OF TRANSPORTATION FUNDED CONTRACT THROUGH THE FEDERAL AVIATION ADMINISTRATION.

THIS BIDDING DOCUMENT TO BE SUBMITTED IN ITS ENTIRETY
REFER TO VOLUME 1 COVER PAGE FOR TIME, DATE, AND LOCATION

TABLE OF CONTENTS

DESCRIPTION PAGE NUMBER

Volume 2 - Bidding Documents

The following forms must be completed in their entirety and submitted with the Bid. Include the form(s) even if the information does not apply. Where the information does not apply write in N/A. Failure to include any of the forms may cause the Bid to be deemed **non-responsive.** If you are uncertain or have any questions about any required information, contact the City no later than 14 days prior to Bid due date.

PROPOSAL

Bidder's General Information

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE:

(1) Name under which business is conducted N/A

(2) Signature (Given and surname) of proprietor _____

(3) Place of Business (Street & Number) _____

(4) City and State _____ Zip Code _____

(5) Telephone No. _____ Facsimile No. _____

(6) E-Mail Address: _____

IF A PARTNERSHIP, SIGN HERE:

(1) Name under which business is conducted N/A

(2) Name of each member of partnership, indicate character of each partner, general or special (limited):

(3) Signature (Note: Signature must be made by a general partner)

Full Name and Character of partner

(4) Place of Business (Street & Number)

(5) City and State Zip Code

(6) Telephone No. Facsimile No.

(7) E-Mail Address:

IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted West Coast General Corporation

(2) Signature, with official title of officer authorized to sign for the corporation:

(Signature)

David E. Davey
(Printed Name)

President
(Title of Officer)

(Impress Corporate Seal Here)

(3) Incorporated under the laws of the State of California

(4) Place of Business (Street & Number) 13700 Stowe Drive, Suite 100

(5) City and State Poway, CA Zip Code 92064

(6) Telephone No. 619.561.4200 Facsimile No. 619.561.4205

(7) E-Mail Address: ddavey@wcgcorp.com

THE FOLLOWING SECTIONS MUST BE FILLED IN BY ALL PROPOSERS:

In accordance with the "**NOTICE INVITING BIDS**", the bidder holds a California State Contractor's license for the following classification(s) to perform the work described in these specifications:

LICENSE CLASSIFICATION A & B

LICENSE NO. 479019 EXPIRES September 30, 2015

This license classification must also be shown on the front of the bid envelope. Failure to show license classification on the bid envelope may cause return of the bid unopened.

TAX IDENTIFICATION NUMBER (TIN): [redacted]

E-Mail Address: ddavey@wcgcorp.com

THIS PROPOSAL MUST BE NOTARIZED BELOW:

I certify, under penalty of perjury, that the representations made herein regarding my State Contractor's license number, classification and expiration date are true and correct.

Signature _____ Title David E. Davey, President

SUBSCRIBED AND SWORN TO BEFORE ME, THIS 9th DAY OF September, 2014.

Notary Public in and for the County of San Diego, State of California

Cynthia L. Steele

(NOTARIAL SEAL)

CYNTHIA L. STEELE
Commission # 2053264
Notary Public - California
San Diego County
My Comm. Expires Jan 20, 2018

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That West Coast General Corporation as Principal, and Fidelity and Deposit Company of Maryland as Surety, are held and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the bidding schedule(s) of the OWNER's Contract Documents entitled

MYF Rehab Runway 5/23 & Taxiway G

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" enters into a written Agreement on the form of agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 2 day of September, 20 14.

West Coast General Corporation (SEAL)	Fidelity and Deposit Company of Maryland (SEAL)
(Principal)	(Surety)
By: _____ (Signature)	By: _____ (Signature)
David E. Davey	Aidan Smock
President	Attorney-in-Fact

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **THOMAS O. MCCLELLAN, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Richard HALLETT, Aidan SMOCK, Tim MCCLELLAN and Marta COLLETT, all of San Diego, California, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND,** this 3rd day of January, A.D. 2014.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: _____
Assistant Secretary
Eric D. Barnes

_____
Vice President
Thomas O. McClellan

State of Maryland
City of Baltimore

On this 3rd day of January, A.D. 2014, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **THOMAS O. MCCLELLAN, Vice President, and ERIC D. BARNES, Assistant Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____
Constance A. Dunn, Notary Public
My Commission Expires: July 14, 2015

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA

County of San Diego }

On SEP 02 2014 (Date) before me, Richard P. Hallett, Notary Public (Here Insert Name and Title of the Officer),

personally appeared Aidan Smock (Name(s) of Signer(s)),

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature _____ (Signature of Notary Public)

RICHARD P. HALLETT
Commission # 1939749
Notary Public - California
San Diego County
My Comm. Expires Jul 2, 2015

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
- ☐ Individual
- ☐ Corporate Officer — Title(s): _____
- ☐ Partner — ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____
- ☐ Individual
- ☐ Corporate Officer — Title(s): _____
- ☐ Partner — ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23 UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106

State of California)
) ss.
County of San Diego)

David E. Davey, being first duly sworn, deposes and says that he or she is President of the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signed: _____

Title: David E. Davey, President

Subscribed and sworn to before me this 9th day of September, 2014

Cynthia L. Steele
Notary Public

CYNTHIA L. STEELE
Commission # 2053264
Notary Public - California
San Diego County
My Comm. Expires Jan 20, 2018

(SEAL)

CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

☒ The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

☐ The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

Date of Claim	Location	Description of Claim	Litigation (Y/N)	Status	Resolution/Remedial Action Taken
		NONE			

Contractor Name: West Coast General Corporation

Certified By David E. Davey Title President

Name

Signature

Date 9/9/14

USE ADDITIONAL FORMS AS NECESSARY

EQUAL BENEFITS ORDINANCE CERTIFICATION OF COMPLIANCE

For additional information, contact:
CITY OF SAN DIEGO
EQUAL BENEFITS PROGRAM
202 C Street, MS 9A, San Diego, CA 92101
Phone (619) 533-3948 Fax (619) 533-3220

COMPANY INFORMATION

Company Name: West Coast General Corporation	Contact Name: David E. Davey
Company Address: 13700 Stowe Dr., Suite 100	Contact Phone: 619.561.4200 ext 14
Poway, CA 92064	Contact Email: ddavey@wcgcorp.com

CONTRACT INFORMATION

Contract Title: MYF Rehab Runway 5/23 & Taxiway G	Start Date: T.B.D
Contract Number (if no number, state location): K-15-6020-DBB-3	End Date: 220 W.D from N.T.P

SUMMARY OF EQUAL BENEFITS ORDINANCE REQUIREMENTS

The Equal Benefits Ordinance [EBO] requires the City to enter into contracts only with contractors who certify they will provide and maintain equal benefits as defined in SDMC §22.4302 for the duration of the contract. To comply:

- Contractor shall offer equal benefits to employees with spouses and employees with domestic partners.
  - Benefits include health, dental, vision insurance; pension/401(k) plans; bereavement, family, parental leave; discounts, child care; travel/relocation expenses; employee assistance programs; credit union membership; or any other benefit.
  - Any benefit not offer an employee with a spouse, is not required to be offered to an employee with a domestic partner.
- Contractor shall post notice of firm's equal benefits policy in the workplace and notify employees at time of hire and during open enrollment periods.
- Contractor shall allow City access to records, when requested, to confirm compliance with EBO requirements.
- Contractor shall submit *EBO Certification of Compliance*, signed under penalty of perjury, prior to award of contract.

NOTE: This summary is provided for convenience. Full text of the EBO and Rules Implementing the EBO are available at *www.sandiego.gov/administration*.

CONTRACTOR EQUAL BENEFITS ORDINANCE CERTIFICATION

Please indicate your firm's compliance status with the EBO. The City may request supporting documentation.

☒ I affirm **compliance** with the EBO because my firm *(contractor must select one reason):*

- ☒ Provides equal benefits to spouses and domestic partners.
- ☐ Provides no benefits to spouses or domestic partners.
- ☐ Has no employees.
- ☐ Has collective bargaining agreement(s) in place prior to January 1, 2011, that has not been renewed or expired.

☐ I request the City's approval to pay affected employees a cash equivalent in lieu of equal benefits and verify my firm made a reasonable effort but is not able to provide equal benefits upon contract award. I agree to notify employees of the availability of a cash equivalent for benefits available to spouses but not domestic partners and to continue to make every reasonable effort to extend all available benefits to domestic partners.

It is unlawful for any contractor to knowingly submit any false information to the City regarding equal benefits or cash equivalent associated with the execution, award, amendment, or administration of any contract. [San Diego Municipal Code §22.4307(a)]

Under penalty of perjury under laws of the State of California, I certify the above information is true and correct. I further certify that my firm understands the requirements of the Equal Benefits Ordinance and will provide and maintain equal benefits for the duration of the contract or pay a cash equivalent if authorized by the City.

David E. Davey, President		9/9/14
Name/Title of Signatory	Signature	Date

FOR OFFICIAL CITY USE ONLY

Receipt Date: EBO Analyst: ☐ Approved ☐ Not Approved – Reason:

rev 02/15/2011

LOBBY PROHIBITION, CERTIFICATION AND DISCLOSURE

In acknowledgment that funds received under this agreement have been provided pursuant to a Federal grant, recipient hereby recognizes the prohibitions against lobbying the Federal government with any of these funds. Recipient agrees that it shall comply with the laws set forth at 31 U.S.C. § 1352 (1989) and 24 C.F.R. part 87, to wit:

A. Conditions on use of funds

Recipient shall not expend any funds received pursuant to this agreement to pay any person to influence an officer or employee of Federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with any of the following Covered Federal actions:

(1) The awarding of any federal contract
(2) The making of any Federal grant
(3) The making of any Federal Loan
(4) The entering into of any cooperative agreement
(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

For purposes of defining the terms of this part of the agreement, the definitions set forth in 24 C.F.R. § 87.105 are hereby adopted and incorporated herein by reference.

B. Certification and Disclosure

Each recipient at every tier under this agreement shall file a certification regarding lobbying, and a Disclosure Form-LLL, where required by 24 C.F.R. § 87.110. The certification form and Disclosure Form-LLL are attached to this agreement.

C. Certifications must be filed:

(1) By any person upon each submission that initiates agency consideration for an award of a Federal contract, grant, or cooperative agreement exceeding $100,000, or a Federal loan or loan guarantee exceeding $150,000.
(2) Upon receipt by any person of a Federal contract, grant, or cooperative agreement exceeding $100,000, or upon receipt of a Federal loan or loan guarantee exceeding $150,000.
(3) By any person who requests or receives from a person referred to in subsections 1 and 2 of this paragraph:
   a. A subcontract exceeding $100,000 at any tier under a Federal contract;
   b. A subgrant, contract or subcontract exceeding $100,000 at any tier under a Federal grant;
   c. A contract or subcontract exceeding $100,000 at any tier under a Federal loan exceeding $150,000;
   d. A contract or subcontract exceeding $100,000 at any tier under a Federal cooperative agreement.

D. Disclosure Forms-LLL must be filed in every instance when a person applies for, requests, or receives Federal appropriations exceeding $100,000 pursuant to a contract, subcontract, grant, subgrant, loan, or cooperative agreement when such person has paid or expects to pay any sum, in cash or in kind, to influence or attempt to influence any officer or employee of an agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress. Further, Disclosure Form-LLL must be filed by recipients at any tier at the end of each calendar quarter in which there occurs any event that requires disclosure or materially affects information submitted in prior disclosures. Such events include:

(1) 1. An increase of $25,000 in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action;
(2) 2. A change in the person(s) influencing or attempting to influence a covered action;
(3) 3. A change in the officer(s), employee(s), or member(s) contacted to influence a covered action.

All disclosure Forms-LLL, but not certifications, shall be forwarded from tier to tier until received by the principal recipient, which in turn will file them with the appropriate Federal agency.

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLLA Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing there port in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item4) to the lobbying entity (item10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature..
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLLA Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing datasources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB 0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

(See reverse for public burden disclosure)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
☐ a. Contract a. Grant b. Cooperative agreement c. Loan d. Loan guarantee e. Loan insurance	☐ a. bid/offer/application b. initial award c. post-award	☐ a. initial finding b. material change **For Material Change Only** year_____ quarter _____ date of last report_____

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:
☐ Prime ☐ Subawardee Tier _____, *if known:* Congressional District, *if known:*	Congressional District, *if known:*
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable:* _____
8. Federal Action Number, if known:	**9. Award Amount,** if known: $
10. a. Name and Address of Lobbying Entity (if individual, last name, first name, M)	**b. Individuals Performing Services** (including address if different from No. 10a) (last name, first name, MI):

(attach Continuation Sheet(s) SF-LLL*A*, *if necessary*)

11. Amount of Payment (check all that apply)	13. Type of Payment (check all that apply)
$_____ ☐ **actual** ☐ **planned**	☐ a. retainer ☐ b. one-time lee ☐ c. commission ☐ d. contingent fee ☐ e. deferral ☐ f. other: specify:_____
12. Form of Payment (check all that apply) ☐ a, cash ☐ b. in-kind: specify: nature _____ Value_____	

14. Brief Description of Services Performed or to be Performed and Date(s) of Service, Including officer(s), employee(s), or Member(s), contacted, for Payment indicated in item 11:

(attach Continuation Sheet(s) SF-LLLA, *if necessary*)

15. Continuation Sheet(s) SF-LLLA attached: ☐ Yes ☐ No

16. Information requested through this for misauthorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less that $10,000 and not more than $100,000 for each such failure.

Signature: _____

Print Name: West Coast General Corporation

Title: David E. Davey, President

Telephone No.: 619.561.4200 Date: 9/9/14

Federal Use Only:

Authorized for Local Reproduction Standard Form LLL (Rev. 7-07)

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Approved by
OMB0348-0046

Reporting Entity: _____ Page _____ of _____

NONE

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Standard Form - LLL-A

BUY AMERICA CERTIFICATION

Certificate of Compliance Based on Equipment and Materials Used on the Project (Non-building heavy construction projects such as runway or roadway construction; or equipment acquisition projects)

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that all steel and each manufactured good proposed for use on this project are made in the United States of 100% United States materials, unless 1) the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; 2) the FAA has issued a waiver for the product, as indicated by its inclusion in the FAA Nationwide Buy American Waivers Issued list, or 3) the item is listed by the bidder or offeror below or on a separate and clearly identified attachment to this bid/proposal. For those items, the bidder or offeror will provide sufficient documentation to the sponsor to allow the sponsor to request and receive an FAA waiver for the product in advance of its use on the project. If the FAA does not issue a waiver, the bidder or offeror must use manufactured goods that meet the Buy American Preference requirement.

Product	Country of Origin	% of United States Components and Subcomponents

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

9/9/14

Date

Signature

West Coast General Corporation

Company Name

David E. Davey, President

Title

Reference
Title 49 U.S.C. § 50101
Revised
8/12/2013

PROPOSAL (BID)

The Bidder agrees to the construction of **MYF Rehab. Runway 5/23 &Taxiway G**, for the City of San Diego, in accordance with these contract documents for the prices listed below. The Bidder guarantees the Contract Price for a period of (90 days for federally funded contracts and contracts valued at $500,000 or less) from the date of Bid opening to Award of the Contract. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
BASE BID							
1.	1	LS	P-150-3.1	237310	Mobilization		$ 97,859—
2.	1	LS	P-150-3.2	237310	Demobilization		$ 1110 —
3.	63,596	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$ 2.03	$ 129,099.88
4.	685	SY	P-101-5.3	237310	Tie-in Milling	$ 1.95	$ 1335.75
5.	1	LS	P-101-5.4	237310	Potholing		$ 40,515—
6.	1	LS	P-148-4.1	237310	Airfield Construction Area Control		$ 116,828 —
7.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$ 148,074—
8.	4	EA	P-148-4.3	238210	Lighted X Runway Closure Signal	$ 9479—	$ 37,916—
9.	1	LS	P-148-4.4	238210	Contractor Project Airfield Radios		$ 351—
10.	40	LF	P-148-4.5	238990	Chain Link Fence, Remove and Replace	$ 69—	$ 2760 —
11.	21,308	SY	P-152-4.1	237310	Embankment in Place	$ 2.33	$ 49,647.64
12.	24,179	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$ 21—	$ 507,759—
13.	63,596	SY	P-152-4.3	237310	Subgrade Preparation	$ 2.28	$ 144,998.88
14.	1,185	CY	P-152-4.4	237310	Unsuitable Excavation	$ 29 —	$ 34,365—

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
15.	12,521	CY	P-154-5.1	237310	Subbase Course	$ 17 -	$ 212,857 -
16.	1	LS	P-156-5.1	541330	Water Pollution Control Program Development		$ 389 -
17.	1	LS	P-156-5.2	541330	Water Pollution Control Program Implementation		$ 26,779 -
18.	14,400	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$ 26 -	$ 374,400 -
19.	9,406	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$ 143 -	$ 1,345,058 -
20.	9,539	GAL	P-603-5.1	237310	Bituminous Tack Coat	$ 7 -	$ 66,773 -
21.	36,565	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$ 1.25	$ 45706.25
22.	8	EA	P-610-5.1	238210	Adjust Light Fixture to Grade (>1/2")	$ 555 -	$ 4440 -
23.	1	EA	P-610-5.2	238210	Adjust Light Fixture to Grade (1/4" to 1/2")	$ 333 -	$ 333 -
24.	2,290	LF	P-620-5.1	237310	Runway Centerline Striping 18" Wide with Reflective Media	$ 1.67	$ 3824.30
25.	6,256	LF	P-620-5.3	237310	Runway Edge Striping 18" Wide with Reflective Media	$ 1.67	$ 10447.52
26.	2,240	LF	P-620-5.4	237310	Runway Edge Striping 36" Wide with Reflective Media	$ 1.67	$ 3740.80
27.	4,394	SF	P-620-5.5	237310	Runway Markings with Reflective Media	$ 2.22	$ 9754.68
28.	5,010	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$ 1.33	$ 6663.30
29.	2,175	LF	P-620-5.7	237310	Solid Taxiway Edge Line Striping	$ 1.78	$ 3871.50
30.	670	LF	P-620-5.10	237310	Runway Hold Position Striping with Black out Striping and Reflective Media	$ 9 -	$ 6030 -
31.	681	LF	P-620-5.11	237310	Taxiway Non-Movement Line Markings	$ 6 -	$ 4086 -
32.	14	EA	P-620-5.12	237310	Taxiway Surface Painted Hold Position Markings with Blackout Border and Reflective Media	$ 666 -	$ 9324 -

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
33.	750	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$ 3.44	$ 2580 –
34.	8,745	SF	P-620-5.14	237310	Runway Shoulder Markings	$ 2 –	$ 17,490 –
35.	4,890	LF	P-620-5.15	237310	Temporary Pavement Markings	$ 6 –	$ 29340 –
36.	75	LF	L-108-5.1	238210	L-824, Type C, 1/C #8, 5kV Cable	$ 3.33	$ 249.75
37.	75	LF	L-108-5.2	238210	Bare #6 AWG Counterpoise, Installed in Trench Including Ground Rods	$ 6 –	$ 450 –
38.	75	LF	L-110-5.1	238210	Single-way 2" Conduit, Direct Buried	$ 28 –	$ 2100 –
39.	30	EA	L-861T-4.2	238210	Furnish and Install New L-861T Taxiway Edge Light on Existing Base	$ 500 –	$ 15,000 –
40.	2	EA	L-858-5.1	238210	Relocate and Install Size 1 Sign on New Concrete Foundation	$ 2775 –	$ 5550 –
41.	1	EA	L-858-5.3	238210	Unlighted Sign Replacement	$ 2220 –	$ 2220 –
42.	4	EA	L-858-5.2	238210	New Size 1 Sign Panels	$ 1332 –	$ 5328 –
43.	1	AL	9-3.5		Field Orders - Type II		$166,526.00
					ESTIMATED TOTAL BASE BID:		$ 3,693,930.35
					ALTERNATE "A"		
1.	5,153	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$ 1.81	$ 9326.93
2.	25	SY	P-101-5.3	237310	Tie-in Milling	$ 1.80	$ 45 –
3.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$ 1020 –
4.	900	SY	P-152-4.1	237310	Embankment in Place	$ 3.06	$ 2754 –
5.	2,015	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$ 22 –	$ 44330 –

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
6.	5,153	SY	P-152-4.3	237310	Subgrade Preparation	$ 2.09	$ 10,769.77
7.	99	CY	P-152-4.4	237310	Unsuitable Excavation	$ 36-	$ 3564-
8.	876	CY	P-154-5.1	237310	Subbase Course	$ 16-	$ 14,016-
9.	1,313	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$ 24-	$ 31,512-
10.	858	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$ 134-	$ 114,972-
11.	773	GAL	P-603-5.1	237310	Bituminous Tack Coat	$ 6-	$ 4638-
12.	3,220	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$ 1.20	$ 3864-
13.	450	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$ 1.84	$ 828-
14.	230	LF	P-620-5.7	237310	Solid Taxiway Edge Line Striping	$ 2.35	$ 540.50
15.	720	LF	P-620-5.8	237310	Dashed Taxiway Edge Line Striping	$ 1.43	$ 1029.60
16.	175	LF	P-620-5.9	237310	Intermediate Holding Position Marking	$ 2.24	$ 392-
17.	80	LF	P-620-5.10	237310	Runway Hold Position Striping with Black out Striping and Reflective Media	$ 6-	$ 480-
18.	150	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$ 7-	$ 1050-
19.	390	LF	L-108-5.1	238210	L-824, Type C, 1/C #8, 5kV Cable	$ 3.06	$ 1193.40
20.	390	LF	L-108-5.2	238210	Bare #6 AWG Counterpoise, Installed in Trench Including Ground Rods	$ 5-	$ 1950-
21.	390	LF	L-110-5.1	238210	Single-way 2" Conduit, Direct Buried	$ 18-	$ 7020-
22.	6	EA	L-861T-4.1	238210	Re-install Elevated Lights on New Base	$ 816-	$ 4896-
23.	1	AL	9-3.5		Field Orders - Type II		$14,060.00
					ESTIMATED TOTAL BID ALTERNATE "A":		$ 274,251.20

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
ALTERNATE "B"							
1.	6,740	SY	P-101-5.1	237310	Cold Milling Asphalt Concrete Pavement	$ 1.93	$ 13008.20
2.	526	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$ 2.95	$ 1551.70
3.	25	SY	P-101-5.3	237310	Tie-in Milling	$ 1.80	$ 45—
4.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$ 1020—
5.	1,075	SY	P-152-4.1	237310	Embankment in Place	$ 3.06	$ 3289.50
6.	3,052	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$ 22—	$ 67144—
7.	7,073	SY	P-152-4.3	237310	Subgrade Preparation	$ 2.09	$ 14,782.57
8.	150	CY	P-152-4.4	237310	Unsuitable Excavation	$ 36—	$ 5400—
9.	4	CY	P-152-4.6	237310	Rock Slope Protection - No. 2 Backing with Fabric	$ 214—	$ 856—
10.	14	CY	P-152-4.7	237310	Rock Slope Protection - 3" Diameter Rock with Fabric	$ 133—	$ 1862—
11.	4	CY	P-152-4.8	237310	Rock Slope Protection - 6" Diameter Rock with Fabric	$ 133—	$ 532—
12.	1,202	CY	P-154-5.1	237310	Subbase Course	$ 16—	$ 19232—
13.	1	LS	P-156-5.1	541330	Temporary Erosion Control		$ 4747—
14.	2,001	CY	P-208-5.1	237310	Crushed Aggregate Base Course	~~$ 28—~~ D.D. $ 58—	~~$ 56,058—~~ D.D. $ 116,058—
15.	134	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$ 24—	$ 3216—
16.	1,178	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$ 131—	$ 154,318—
17.	1,061	GAL	P-603-5.1	237310	Bituminous Tack Coat	$ 6—	$ 6366—
18.	4,185	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$ 1.08	$ 4519.80

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
19.	2	EA	P-610-5.1	238210	Adjust Light Fixture to Grade (>1/2")	$ 510-	$ 1020-
20.	1,135	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$ 2.14	$ 2428.90
21.	50	LF	P-620-5.11	237310	Taxiway Non-Movement Line Markings	$ 4.08	$ 204-
22.	146	LF	D-701-5.2	237110	24 inch RCP Storm Drain 1750-D Pipe	$ 138-	$ 20,148-
23.	2	EA	D-751-5.3	237110	Concrete Pipe Collar	$ 1224-	$ 2448-
24.	1	EA	D-751-5.2	237110	Catch Basin Type "I"	$ 6834-	$ 6834-
25.	1	EA	D-751-5.1	237110	Wing and U Type Headwalls	$ 4284-	$ 4284-
26.	1	AL	9-3.5		Field Orders - Type II		$26,525.00
					ESTIMATED TOTAL BID ALTERNATE "B":		**$ 481,839.67**
					ALTERNATE "C"		
1.	1,233	SY	P-101-5.1	237310	Cold Milling Asphalt Concrete Pavement	$ 1.93	$ 2379.69
2.	1	LS	P-148-4.2	237310	Sweepers and FOD Control		$ 1020-
3.	360	SY	P-152-4.1	237310	Embankment in Place	$ 3.06	$ 1101.60
4.	516	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$ 36-	$ 18,576-
5.	1,198	SY	P-152-4.3	237310	Subgrade Preparation	$ 2.09	$ 2503.82
6.	25	CY	P-152-4.4	237310	Unsuitable Excavation	$ 36-	$ 900-
7.	1	LS	P-152-4.5	237110	Remove Storm Drain Facilities		$ 5814-
8.	4	CY	P-152-4.6	237310	Rock Slope Protection - No. 2 Backing with Fabric	$ 214-	$ 856-
9.	204	CY	P-154-5.1	237310	Subbase Course	$ 20-	$ 4080-

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
10.	1	LS	P-156-5.1	541330	Temporary Erosion Control		$ 153-
11.	366	CY	P-208-5.1	237310	Crushed Aggregate Base Course	$ ~~29~~ 60- D.D.	$ ~~10,614~~ 21,960- D.D.
12.	199	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$ 148-	$ 29,452-
13.	180	GAL	P-603-5.1	237310	Bituminous Tack Coat	$ 6-	$ 1080-
14.	808	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$ 2.37	$ 1914.96
15.	1	EA	P-610-5.1	238210	Adjust Light Fixture to Grade (>1/2")	$ 510-	$ 510-
16.	1	EA	P-610-5.3	238210	Adjust Light Fixture to Grade (<1/4")	$ 255-	$ 255-
17.	215	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$ 2.14	$ 460.10
18.	750	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$ 2.45	$ 1837.50
19.	274	LF	D-701-5.2	237110	24 inch RCP Storm Drain 1750-D Pipe	$ 141-	$ 38634-
20.	1	EA	D-751-5.1	237110	Wing and U Type Headwalls	$ 3978-	$ 3978-
21.	1	AL	9-3.5		Field Orders - Type II		$8,225.00
					ESTIMATED TOTAL BID ALTERNATE "C":		$ 145,690.67
					ALTERNATE "D"		
1.	1	LS	L-100-5.1	238210	Electrical Demolition	$ 3060-	$ 3060-
2.	13	EA	L-858-5.3	238210	Unlighted Sign Replacement	$ 2140-	$ 27,820-
3.	1	AL	9-3.5		Field Orders - Type II		$988.00
					ESTIMATED TOTAL BID ALTERNATE "D":		$ 31,868-

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
ALTERNATE "E"							
1.	1,615	SY	P-101-5.2	237310	Pulverize Asphalt Concrete Pavement	$ 2.95	$ 4764.25
2.	35	SY	P-101-5.3	237310	Tie-in Milling	$ 1.80	$ 63 —
3.	75	SY	P-152-4.1	237310	Embankment in Place	$ 10 —	$ 750 —
4.	639	CY	P-152-4.2	237310	Excavate and Export (Unclassified)	$ 36 —	$ 23,004 —
5.	1,437	SY	P-152-4.3	237310	Subgrade Preparation	$ 0.51	$ 732.87
6.	96	CY	P-152-4.4	237310	Unsuitable Excavation	$ 36 —	$ 3456 —
7.	1	LS	P-152-4.5	237110	Remove Storm Drain Facilities		$ 1020 —
8.	240	CY	P-154-5.1	237310	Subbase Course	$ 20 —	$ 4800 —
9.	280	CY	P-208-5.2	237310	Processed Miscellaneous Base Course	$ 31 —	$ 8680 —
10.	250	TON	P-401-8.1	237310	Bituminous Concrete Pavement	$ 165 —	$ 41,250 —
11.	216	GAL	P-603-5.1	237310	Bituminous Tack Coat	$ 6 —	$ 1296 —
12.	675	LF	P-605-6.1	237310	Asphalt Cold Joint Adhesive	$ 2.57	$ 1734.75
13.	1,065	LF	P-620-5.6	237310	Taxiway Centerline Striping with Reflective Media	$ 1.63	$ 1735.95
14.	50	LF	P-620-5.10	237310	Runway Hold Position Striping with Black out Striping and Reflective Media	$ 15 —	$ 750 —
15.	2	EA	P-620-5.12	237310	Taxiway Surface Painted Hold Position Markings with Blackout Border and Reflective Media	$ 765 —	$ 1530 —
16.	300	LF	P-620-5.13	237310	Taxiway Enhanced Centerline Striping with Black out Striping and Reflective Media	$ 6 —	$ 1800 —
17.	106	LF	D-701-5.1	237110	18 inch RCP Storm Drain 1750-D pipe	$ 125 —	$ 13250 —
18.	2	EA	D-751-5.3	237110	Concrete Pipe Collar	$ 1224 —	$ 2448 —

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
19.	1	EA	D-751-5.2	237110	Catch Basin Type "I"	$ 6834—	$ 6834—
20.	960	LF	L-108-5.1	238210	L-824, Type C, 1/C #8, 5kV Cable	$ 3.06	$ 2937.60
21.	960	LF	L-108-5.2	238210	Bare #6 AWG Counterpoise, Installed in Trench Including Ground Rods	$ 5—	$ 4800—
22.	960	LF	L-110-5.1	238210	Single-way 2" Conduit, Direct Buried	$ 18—	$ 17,280—
23.	6	EA	L-858-5.1	238210	Relocate and Install Size 1 Sign on New Concrete Foundation	$ 2040—	$ 12,240—
24.	6	EA	L-858-5.2	238210	New Size 1 Sign Panels	$ 1224—	$ 7344—
25.	19	EA	L-861T-4.1	238210	Re-install Elevated Lights on New Base	$ 714—	$ 13566—
26.	1	AL	9-3.5		Field Orders - Type II		$4,873.00
					ESTIMATED TOTAL BID ALTERNATE "E":		$ 182,939.42
					ESTIMATED TOTAL BASE BID PLUS ADDITIVE ALTERNATES A, B, C, D, AND E:		$ 4,810,519.21

TOTAL BID PRICE FOR BID (Items 1 through 43, Additive Alternate A, 1 through 23, Additive Alternate B, 1 through 26, Additive Alternate C, 1 through 21, Additive Alternate D, 1 through 3 and Additive Alternate E, 1 through 26, inclusive) amount written in words: FOUR MILLION EIGHT HUNDRED TEN THOUSAND FIVE HUNDRED NINETEEN DOLLARS AND TWENTY-ONE CENTS

The Bid shall contain an acknowledgment of receipt of all addenda, the numbers of which shall be filled in on the Bid form. If an addendum or addenda has been issued by the City and not noted as being received by the Bidder, this proposal shall be rejected as being **non-responsive**. The following addenda have been received and are acknowledged in this bid: A, B, C

The names of all persons interested in the foregoing proposal as principals are as follows:

David E. Davey, President

Robert H. Garcia, Vice President

Cynthia L. Steele, Secretary/Treasurer

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

Bidder: West Coast General Corporation

Title: David E. Davey, President

Business Address: 13700 Stowe, Dr., Suite 100, Poway, CA 92064

Place of Business: Poway, CA

Place of Residence: Escondido, CA

Signature:

NOTES:

A. The City shall determine the low Bid based on the Base Bid plus the following Additive Alternates: A, B, C, D, and E.

B. After the low Bid has been determined, the City may award the Contract for the Base Bid alone or if applicable, for the Base Bid plus any combination of alternates selected in the City's sole discretion.

C. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Bidder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the bid proposal.

D. Failure to initial all corrections made in the bidding documents may cause the Bid to be rejected as **non-responsive** and ineligible for further consideration.

E. Blank spaces must be filled in, using figures. Bidder's failure to submit a price for any Bid item that requires the Bidder to submit a price shall render the Bid **non-responsive** and shall be cause for its rejection.

F. Unit prices shall be entered for all unit price items. Unit prices shall not exceed two (2) decimal places. If the Unit prices entered exceed two (2) decimal places, the City will only use the first two digits after the decimal points without rounding up or down.

G. All extensions of the unit prices bid will be subject to verification by the City. In the case of inconsistency or conflict between the product of the Quantity x Unit Price and the Extension, the product shall govern.

H. In the case of inconsistency or conflict, between the sums of the Extensions with the estimated total Bid, the sum of the Extensions shall govern.

I. Bids shall not contain any recapitulation of the Work. Conditional Bids will be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.

J. Subcontractors' License Number must be filled in. Failure to provide the information specified may deem the bidder **non-responsive**.

BIDDING DOCUMENTS
LIST OF SUBCONTRACTORS

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act", Division 2, Part 1, Chapter 4 of the Public Contract Code, the Bidder shall list below the name and address of each Subcontractor who will perform work, labor, render services or specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also list below the portion of the work which will be done by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement shall result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

Subcontractors' License Number must be filled in. Failure to provide the information specified may deem the bidder **non-responsive**.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT (MUST BE FILLED OUT)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNERSHIP
Name: Pavement Recycling Systems Address: City: Jurupa Valley State: Ca Zip: Phone: Email:	Constructor "C"	569352	Portion of AC ~~pulverize~~ Pulverize	$80,783— D.A.			
Name: Payco Specialties Address: City: Chula Vista State: Ca Zip: Phone: Email:	C	298637	Portion of striping	$96,585—	DBE	State CA	

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

31.70

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

LIST OF SUBCONTRACTORS

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act", Division 2, Part 1, Chapter 4 of the Public Contract Code, the Bidder shall list below the name and address of each Subcontractor who will perform work, labor, render services or specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also list below the portion of the work which will be done by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement shall result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

Subcontractors' License Number must be filled in. Failure to provide the information specified may deem the bidder **non-responsive**.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT (MUST BE FILLED OUT)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNERSHIP
Name: Daily Corp Address: City: Lakeside State: Ca Zip: Phone: Email:	C	749995	Portion of AC Paving	$1,309,785.-			
Name: Galsky Electric Inc Address: City: El Cajon State: Ca Zip: Phone: Email:	C	879402	Portion of Electrical and Air Field signage	$38,075.-			

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

The Bidder seeking the recognition of equipment, materials, or supplies obtained from Suppliers towards achieving any mandatory, voluntary, or both subcontracting participation percentages shall list the Supplier(s) on the Named Equipment/Material Supplier List. The Named Equipment/Material Supplier List, at a minimum, shall have the name, locations (City) and the **DOLLAR VALUE** of the Suppliers. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for such materials and supplies unless vendor manufactures or substantially alters materials and supplies in which case 100% will be credited. The Bidder is to indicate (Yes/No) whether listed firm is a supplier or manufacturer. In calculating the subcontractor participation percentages, vendors/suppliers will receive 60% credit of the listed **DOLLAR VALUE**, whereas manufacturers will receive 100% credit. If no indication provided, listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage, Suppliers will receive 60% credit of the listed **DOLLAR VALUE**, whereas manufacturers will receive 100% credit. If no indication provided, listed firm will be credited at 60% of the listed **DOLLAR VALUE** for purposes of calculating the subcontractor participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OF SUPPLIES (MUST BE FILLED OUT)	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED②
Name: LMS Transport Address: City: Miraloma State: CA Zip: Phone: Email:	Both	D.D. ~~$307,500~~ $500,845	Yes	NO	DBE	STATE CA
Name: Address: City: State: Zip: Phone: Email:						

① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE,SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification

SUBCONTRACTORS ADDITIVE/DEDUCTIVE ALTERNATE (USE ONLY WHEN ADDITIVE ALTERNATES ARE REQUIRED)

Bidder shall list all Subcontractors described in the Bidder's *Base Bid* whose percentage of work will increase or decrease if alternates are selected for award. Bidder shall also list additional Subcontractors not described in the Bidder's *Base Bid* who, as a result of the alternates, will perform work or labor, or render services, or specially fabricate and install a portion [type] of work or improvements in an amount in excess of 0.5%.. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

Subcontractors' License Number must be filled in. Failure to provide the information specified may deem the bidder **non-responsive.**

ADDITIVE/ DEDUCTIVE ALTERNATE	NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT (MUST BE FILLED OUT)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNERSHIP
B, C, D	Name: BERTH. SALAS INC Address: City: Sanfee State: CA Zip: Phone: Email:	C	275199	Portion of Wet underground	$107,934-	DBE	State CA	
A, B, C, E	Name: PAVEMENT RECYCLING SYSTEMS Address: City: Jurupa Valley State: CA Zip: Phone: Email:	C	569352	portion of AC pulverize	$11,436-			

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

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SUBCONTRACTORS ADDITIVE/DEDUCTIVE ALTERNATE (USE ONLY WHEN ADDITIVE ALTERNATES ARE REQUIRED)

Bidder shall list all Subcontractors described in the Bidder's *Base Bid* whose percentage of work will increase or decrease if alternates are selected for award. Bidder shall also list additional Subcontractors not described in the Bidder's *Base Bid* who, as a result of the alternates, will perform work or labor, or render services, or specially fabricate and install a portion [type] of work or improvements in an amount in excess of 0.5%.. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

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ADDITIVE/ DEDUCTIVE ALTERNATE	NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT (MUST BE FILLED OUT)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNERSHIP
A, B, C, E	Name: PAYCO Specialties Address: City: Chula Vista State: CA Zip: Phone: Email:	C	298637	portion of striping	$14,626-	DBE	State CA	
A, B, C, E	Name: Daily Corp Address: City: LAKESIDE State: CA Zip: Phone: Email:	C	749995	Portion of AC paving	$ 359,428-			

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

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ADDITIVE/ DEDUCTIVE ALTERNATE	NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT (MUST BE FILLED OUT)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNERSHIP
A, B, C, D, E	Name: Ensley Electric Inc Address: City: El Cajon State: CA Zip: Phone: Email:	C	879402	Portion of Electrical and Air field Signage	$ 103,105-			
	Name: Address: City: State: Zip: Phone: Email:							

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

The Bidder will not receive any subcontracting participations percentages if the Bidder fails to submit the required proof of certification.